



Lakeland Industry & Community Association

JUNE 2021

Monthly Ambient Air Quality Monitoring Report

LICA-202106

Operation and Maintenance:

Bureau Veritas Canada

Data Validation and Report:

Lakeland Industry & Community Association

July 13, 2021

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July 13, 2021

Alberta Environment and Parks (AEP)

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Edmonton, AB, T5K 2J6

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

Enclosed is the June 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

Michael Bisaga, Monitoring Programs Manager

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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		√	√
	PRECIPTATION		√	√
	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 June 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.
- **TRS:** A repeat zero-span check was completed on June 30 hour 6 to investigate negative span drift. The check results showed an improvement on the drift. The analyzer will be scheduled to have an early July calibration to correct the drift. One hour of downtime was recorded due to this event.
- **THC/CH4/NMHC:**
 - A repeat zero-span check was completed after the span gas cylinder replacement on June 10. One hour of downtime was recorded due to this event.
 - HC channels were put offline while the AMA HG#300 hydrogen generator, s/n: 210567071, was being installed on June 28. One hour of downtime was recorded due to this activity.
 - Elevated NMHC concentrations were recorded starting June 27 due to extreme hot ambient temperatures. Environment Canada issued a special air quality statement for several parts of Alberta's Central and Southern regions on June 29 amid the ongoing heatwave. The stagnant weather conditions under a high pressure ridge caused pollution to build up.
- **WS/WD/STDWD:** Suspicious low wind data were recorded during cold and calm weather conditions earlier in the year during winter months. A RM Young 05305VK wind system, s/n:

92412, was installed and is running parallel on June 10 for investigative purposes. Data that were collected using this instrument will not be included in the monthly reports and are only used for diagnostic purposes. The wind channels were put offline while the parallel wind system was being installed. Three hours of downtime were recorded as a result.

Tamarack (formerly Maskwa)

- 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 gas parameters:** Communication between the datalogger and the server was lost on June 6. The datalogger was rebooted and a repeat zero-span check was completed on June 8 hour 9. One hour of downtime was recorded due to this event.
- **H2S:** The analyzer failed the repeat zero-span check on June 4 between hour 6 and hour 7 and the scheduled zero-span check on June 6 and 7. A successful monthly calibration was completed to correct the span drift issue on June 10. As the analyzer passed the monthly calibration, no data were discarded. However, one hour of downtime were recorded due to the additional quality check.
- **O3:** The channel was put offline while the glass manifold was being clean on June 10. One hour of downtime was recorded.
- **THC/CH4/NMHC:**
 - The analyzer failed the daily zero-span check on June 10 due to the span gas depletion. The gas cylinder was replaced following a successful repeat zero-span check. One hour of downtime was recorded due to this additional quality check.
 - The HC channels were put offline while the glass manifold was being cleaned on June 10. One hour of downtime was recorded.
 - Elevated NMHC concentrations were recorded starting June 27 due to extreme hot ambient temperatures. Environment Canada issued a special air quality statement for several parts of Alberta's Central and Southern regions on June 29 amid the ongoing heatwave. The stagnant weather conditions under a high pressure ridge caused pollution to build up.

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.
- **THC/CH4/NMHC:**
 - HC channels were put offline while the AMA HG#300 hydrogen generator, s/n: 210567070, was being installed on June 28. A successful repeat zero-span check was completed afterwards. Two hours of downtime were recorded due to this activity.
 - Elevated NMHC concentrations were recorded starting June 27 due to extreme hot ambient temperatures. Environment Canada issued a special air quality statement for several parts of Alberta's Central and Southern regions on June 29 amid the ongoing heatwave. The stagnant weather conditions under a high pressure ridge caused pollution to build up.
- **RH:** Fifty-eight hours of data were invalidated as values were recorded above the full scale.

Integrated Sampling

All the integrated sampling analytical results are included in the June 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 June 3, 9, 15, 21 and 27.
- **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 June 3, 9, 15, 21 and 27.
- **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 June 3, 9, 15, 21 and 27.
- **Passive Sampling System:**
 - The passive sample filters were installed at the stations between May 28 and May 31, and were removed between June 29 and July 2.
 - 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 June 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).

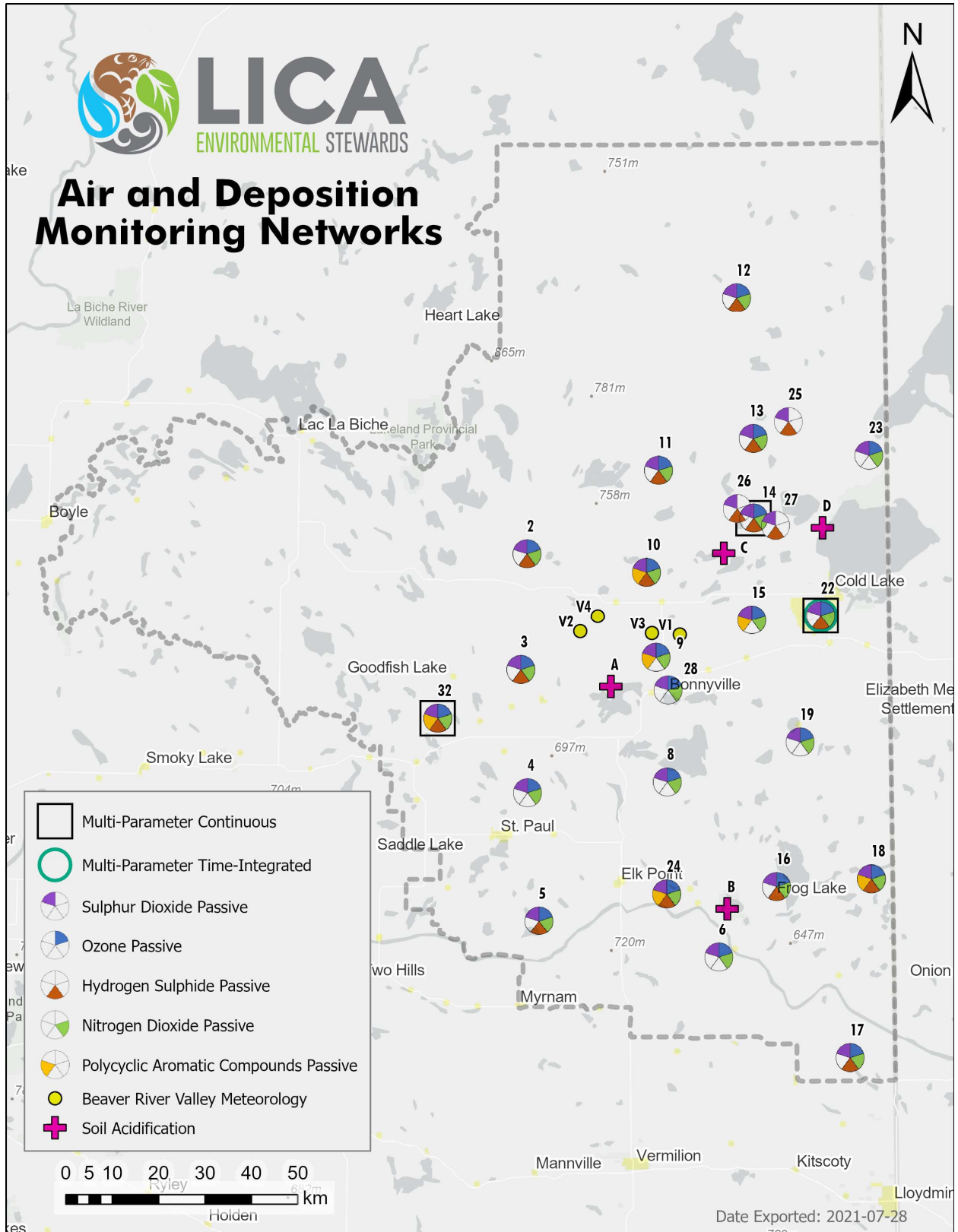
I certify that I have reviewed and verified this report and that the information is complete, accurate and representative of the monitoring results, reporting timeframe and the specified analysis, summarization and reporting requirements. I also certify that at the time of this report's submission, all 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 June 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

July 13, 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	June 22, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Total Reduced Sulphur (TRS)	Thermo / 450i	812728560	June 22, 2021
<ul style="list-style-type: none"> A repeat zero-span check was completed on June 30 hour 6 to investigate negative span drift. The check results showed an improvement on the drift. The analyzer will be scheduled an early calibration in July to correct the drift. One hour of downtime was recorded due to this event. 			
Total Hydrocarbons / Methane/ Non-methane Hydrocarbons (THC/CH4/NMHC)	Thermo / 55i	1180030034	June 22, 2021
<ul style="list-style-type: none"> A repeat zero-span check was completed after the span gas cylinder replacement on June 10. One hour of downtime was recorded due to this event. A new H2 and N2 gas cylinders were connected on June 26. HC channels were put offline while the AMA HG#300 hydrogen generator, s/n: 210567071, was being installed on June 28. One hour of downtime was recorded due to this activity. 			
Oxide of Nitrogen / Nitric Oxide/ Nitrogen Dioxide (NOx/NO/NO2)	Thermo / 42i	1505664393	June 22, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Ozone (O3)	Thermo / 49i	700419951	June 22, 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)	Teledyne T640	575	June 10, 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. Suspicious low wind data were recorded during cold and calm weather conditions. A RM Young 05305VK wind system, s/n: 92412, was installed and is running parallel on June 10 for investigating purposes. Data that were collected using this instrument will not be included in the monthly reports and are only used for diagnostic purposes. The wind channels were put offline while the parallel wind system was being installed. Three hours of downtime were recorded as a result. 			

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	0.1	0	3	June 6 at hour 8	5.5	NW	0.4	June 21	100.0	95.0
TRS (ppb)	-	-	-	-	-	-	0.4	0	3	June 2 at hour 5	3.9	WSW	1.0	June 2	99.9	94.7
NOx (ppb)	-	-	-	-	-	-	2.1	0	24	June 7 at hour 10	4.2	ENE	3.8	June 7	100.0	94.7
NO (ppb)	-	-	-	-	-	-	0.2	0	19	June 7 at hour 10	4.2	ENE	1.4	June 7	100.0	94.7
NO2 (ppb)	159	-	-	0	-	-	1.9	0	8	June 7 at hour 9	2.1	W	2.7	June 3	100.0	94.7
O3 (ppb)	76	-	-	0	-	-	29.1	2.1	70.3	June 15 at hour 15	4.7	SE	51.5	June 15	100.0	95.0
THC (ppm)	-	-	-	-	-	-	1.98	1.82	2.71	June 29 at hour 5	0.4	ENE	2.26	June 29	99.7	94.7
CH4 (ppm)	-	-	-	-	-	-	1.96	1.82	2.61	June 30 at hour 2	0.4	SE	2.14	June 28	99.7	94.7
NMHC (ppm)	-	-	-	-	-	-	0.02	0.00	0.21	June 29 at hour 20	4.5	SE	0.13	June 29	99.7	94.7
PM2.5 (µg/m3)	80	29	-	0	0	-	6.2	1	21	June 5 at hour 7	5.3	W	11.6	June 30	100.0	99.9
RH (%)	-	-	-	-	-	-	63.3	19	100	June 4 at hour 22	1.4	S	98.0	June 10	100.0	100.0
BP (millibar)	-	-	-	-	-	-	947	934	959	June 27 at hour 7	5.6	NNE	957	June 27	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	18.3	4.5	35.3	June 30 at hour 15	10.3	SSE	28.0	June 30	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	23.3	21.5	25.8	June 22 at hour 5	2	SW	24.1	June 8	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	2.8	0.0	23.2	June 17 at hour 0	23.2	WSW	13.1	June 16	99.6	99.6
WDV (sector)	-	-	-	-	-	-	269 (W)	-	-	-	-	-	-	-	99.6	99.6

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

Alberta Ambient Air Quality Objectives (AAAQOs) 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	June 10, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Hydrogen Sulphide (H2S)	Thermo / 450i	CM17360005	June 10, 2021
<ul style="list-style-type: none"> The analyzer failed the repeat zero-span check on June 4 between hour 6 and hour 7 and the scheduled zero-span check on June 6 and 7. A successful monthly calibration was completed to correct the span drift issue on June 10. As the analyzer passed the monthly calibration, no data were discarded. However, one hour of downtime were recorded due to the additional quality check. 			
Oxide of Nitrogen / Nitric Oxide/ Nitrogen Dioxide (NOx/NO/NO2)	Thermo / 42i	1180930028	June 10, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Ozone (O3)	Thermo / 49iQ	1202068570	June 28, 2021
<ul style="list-style-type: none"> The channel was put offline while the glass manifold was being clean on June 10. One hour of downtime was recorded. 			
Total Hydrocarbons / Methane/ Non-methane Hydrocarbons (THC/CH4/NMHC)	Thermo / 55i	1314057759	June 28, 2021
<ul style="list-style-type: none"> The analyzer failed the daily zero-span check on June 10 due to the span gas depletion. The gas cylinder was replaced following a successful repeat zero-span check. One hour of downtime was recorded due to this additional quality check. The channel was put offline while the glass manifold was being clean on June 10. One hour of downtime was recorded. 			
Particulate Matter 2.5 (PM2.5)	Thermo / Sharp 5030	CM 2209	June 28, 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	0.8	0	13	June 26 at hour 6	1.1	WNW	2.7	June 23	99.9	95.0
H2S (ppb)	10	3	-	0	0	-	0.2	0	4	June 26 at hour 6	1.1	WNW	0.5	June 25	99.6	94.6
NOx (ppb)	-	-	-	-	-	-	3.2	0	34	June 26 at hour 6	1.1	WNW	6.8	June 23	99.9	94.7
NO (ppb)	-	-	-	-	-	-	0.6	0	22	June 26 at hour 6	1.1	WNW	2.0	June 26	99.9	94.7
NO2 (ppb)	159	-	-	0	-	-	2.5	0	15	June 4 at hour 5	1.9	WSW	4.8	June 23	99.9	94.7
O3 (ppb)	76	-	-	0	-	-	28.3	2.1	62.6	June 3 at hour 12	8.3	WSW	41.8	June 30	99.7	94.8
THC (ppm)	-	-	-	-	-	-	1.90	1.79	2.93	June 26 at hour 6	1.1	WNW	2.03	June 26	99.6	94.7
CH4 (ppm)	-	-	-	-	-	-	1.90	1.79	2.61	June 26 at hour 6	1.1	WNW	2.01	June 26	99.6	94.7
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.33	June 26 at hour 6	1.1	WNW	0.03	June 23	99.6	94.7
PM2.5 (µg/m3)	80	29	-	0	0	-	7.5	0	75	June 26 at hour 15	7.7	NNW	17.8	June 24	100.0	99.9
RH (%)	-	-	-	-	-	-	60.9	19	100	June 5 at hour 2	1.6	WNW	96.6	June 10	100.0	100.0
BP (millibar)	-	-	-	-	-	-	935	922	948	June 27 at hour 8	2.6	N	946	June 27	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	17.9	3.5	34.5	June 30 at hour 14	12.4	S	28.6	June 30	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	21.5	20.7	23.3	June 13 at hour 4	0.2	WSW	23.1	June 12	100.0	100.0
Precipitation (mm)*	-	-	-	-	-	-	123.9	0.0	13.8	June 10 at hour 13	4.9	NNE	2.9	June 10	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	2.8	0.1	21.5	June 16 at hour 19	21.5	WNW	13.9	June 16	100.0	100.0
WDV (sector)	-	-	-	-	-	-	264 (W)	-	-	-	-	-	-	-	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 measured ambient air quality was within the AAAQOs for all monitored parameters.

St. Lina Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	Calibration Date
Sulphur Dioxide (SO2)	Thermo / 43i-TLE	1180930030	June 09, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Hydrogen Sulphide (H2S)	Thermo / 450i	CM18010058	June 09, 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	1180930029	June 09, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Total Hydrocarbons / Methane/ Non-methane Hydrocarbons (THC/CH4/NMHC)	Thermo / 55i	1236656107	June 09, 2021
<ul style="list-style-type: none"> A new H2 gas cylinder was exchanged on June 9. HC channels were put offline while the AMA HG#300 hydrogen generator, s/n: 210567070, was being installed on June 28. A successful repeat zero-span check was completed afterwards. Two hours of downtime were recorded due to this activity. 			
Ozone (O3)	Thermo / 49i	1002240371	June 09, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Particulate Matter 2.5 (PM2.5)	Thermo / Sharp 5030i	CM17091001 / CM17461021	June 29, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			

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"> Fifty-eight 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	0.1	0	3	June 21 at hour 9	17.7	WSW	0.7	June 21	100.0	95.0
H2S (ppb)	10	3	-	0	0	-	0.4	0	4	June 28 at hour 5	10.3	SSW	1.1	June 30	100.0	94.8
NOx (ppb)	-	-	-	-	-	-	1.3	0	8	June 12 at hour 7	7.1	SW	2.9	June 3	100.0	94.7
NO (ppb)	-	-	-	-	-	-	0.1	0	3	June 1 at hour 7	6.6	SW	0.4	June 1	100.0	94.7
NO2 (ppb)	159	-	-	0	-	-	1.2	0	6	June 22 at hour 8	6.5	SW	2.6	June 14	100.0	94.7
O3 (ppb)	76	-	-	0	-	-	32.6	10.6	60.5	June 3 at hour 12	11.3	NW	46.7	June 29	100.0	95.0
THC (ppm)	-	-	-	-	-	-	1.93	1.81	2.46	June 28 at hour 20	6.3	E	2.00	June 14	99.7	94.7
CH4 (ppm)	-	-	-	-	-	-	1.93	1.81	2.33	June 22 at hour 6	6.7	SW	2.00	June 14	99.7	94.7
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.17	June 28 at hour 20	6.3	E	0.01	June 29	99.7	94.7
PM2.5 (µg/m3)	80	29	-	0	0	-	5.9	1	18	June 3 at hour 10	14.5	WSW	10.7	June 15	100.0	99.9
RH (%)	-	-	-	-	-	-	59.8	26	98	June 19 at hour 1	7.8	WSW	88.5	June 17	91.9	91.9
BP (millibar)	-	-	-	-	-	-	916	904	926	June 27 at hour 3	7.1	NNE	924	June 27	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	17.8	5.4	34.1	June 30 at hour 14	16	S	27.8	June 30	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	23.0	19.9	24.9	June 3 at hour 23	9.1	NNW	24.3	June 5	100.0	100.0
Precipitation (mm)*	-	-	-	-	-	-	69.1	0.0	11.7	June 14 at hour 21	9.2	NNW	0.9	June 10	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	4.5	1.0	38.6	June 17 at hour 0	38.6	W	23.1	June 16	100.0	100.0
WDV (sector)	-	-	-	-	-	-	274 (W)	-	-	-	-	-	-	-	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

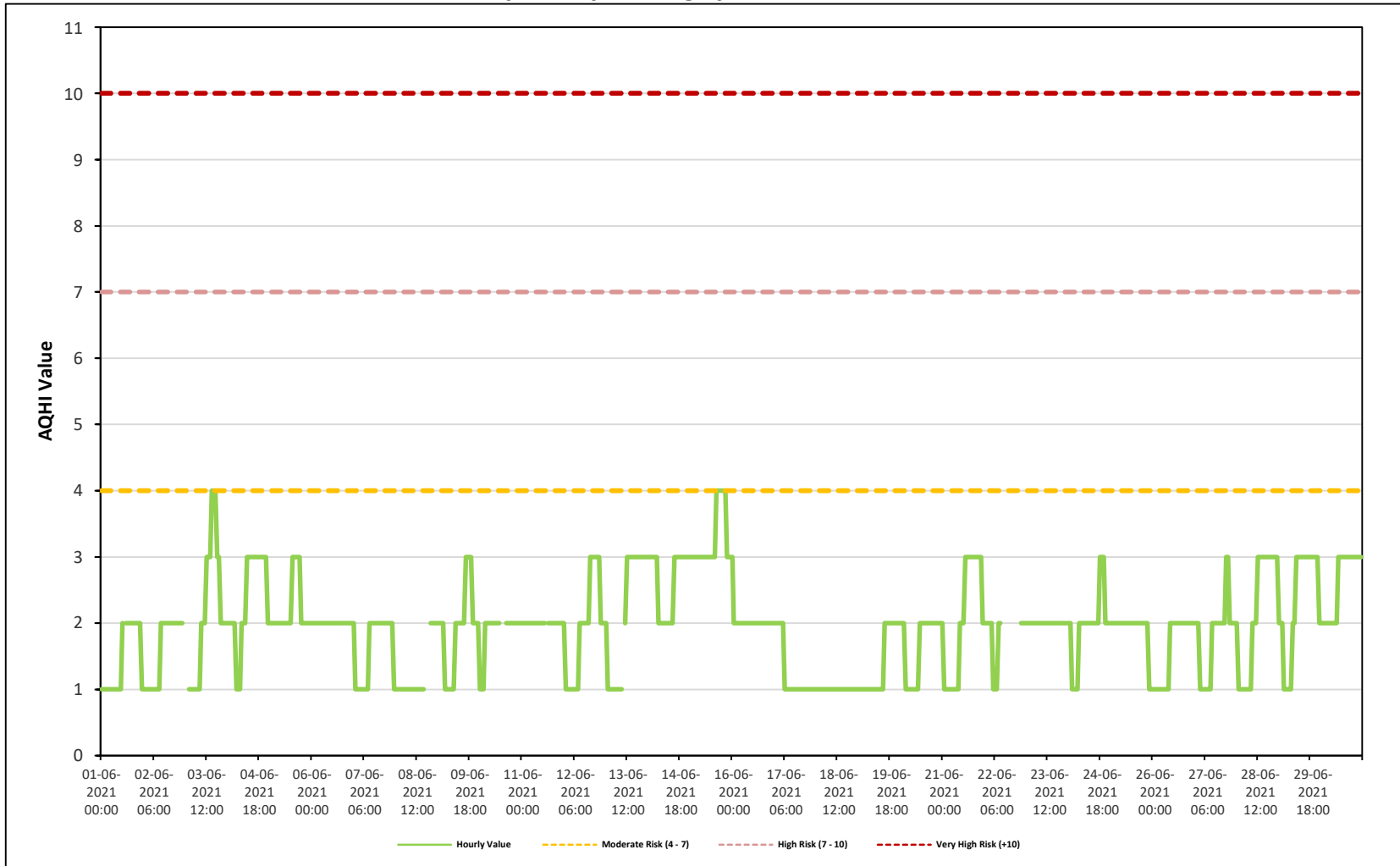
Alberta Ambient Air Quality Objectives (AAAQOs) Exceedances

The 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





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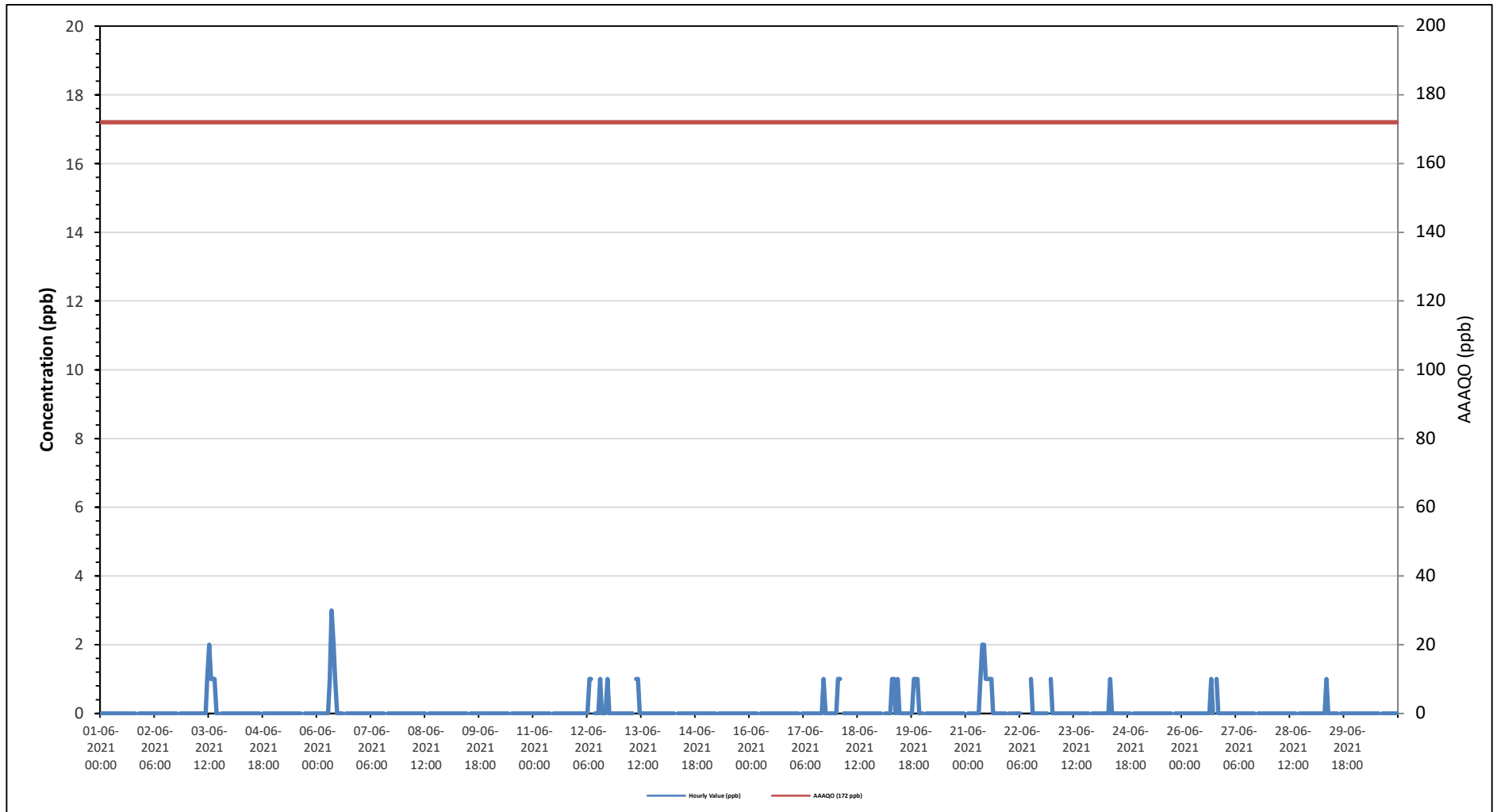
Cold Lake South Station - June 2021

Summary of Hourly Averages

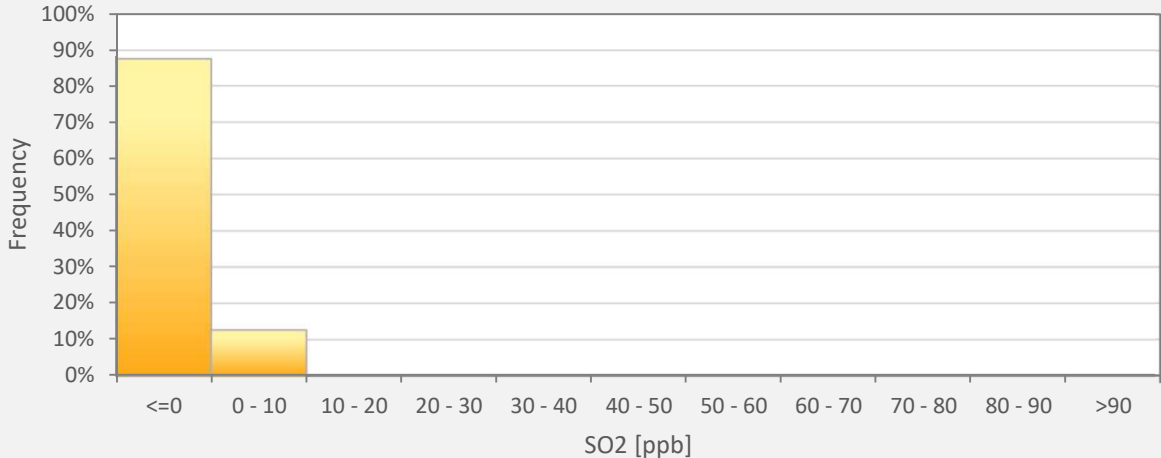
SULPHUR DIOXIDE (SO₂) in ppb

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: 3 ppb on June 6 at hour 8												Hours in Service: 720																
Maximum Daily Value: 0.4 ppb on June 21												Hours of Data: 684																
Minimum Hourly Value: 0 ppb on June 1 at hour 0												Hours of Missing Data: 0																
Minimum Daily Value: 0.0 ppb on June 1												Hours of Calibration: 36																
Monthly Average: 0.1 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				
Jun 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0
Jun 2	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
Jun 3	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1	1	0	0	S	0	0	0	0	0	0	0	0	0
Jun 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	S	0	0	0	0	0	0	0	0	0	
Jun 5	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	
Jun 6	0	0	0	0	0	0	0	1	3	2	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	
Jun 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	
Jun 8	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	
Jun 9	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	
Jun 10	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	
Jun 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	
Jun 12	0	0	0	0	0	0	0	1	1	S	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	
Jun 13	0	0	0	0	0	0	0	0	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Jun 14	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	
Jun 15	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	
Jun 16	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	
Jun 17	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	
Jun 18	0	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Jun 19	0	S	S	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	
Jun 20	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	
Jun 21	S	0	0	0	0	0	0	0	1	2	2	1	1	1	1	0	0	0	0	0	0	0	0	S	0	0	0	
Jun 22	0	0	0	0	0	0	0	C	C	C	C	C	1	0	0	0	0	0	0	0	0	0	S	1	0	0	0	
Jun 23	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	
Jun 24	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	
Jun 25	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	
Jun 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	S	S	1	0	0	0	0	0	0	0	
Jun 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	
Jun 28	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	
Jun 29	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	S	S	0	0	0	0	0	0	0	0	0	0	
Jun 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	
Diurnal Maximum	0	1	1	0	0	0	0	1	3	2	2	1	2	1	1	1	1	1	0	1	1	1	0	1				
Daiurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0				
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 - Cold Lake South Station



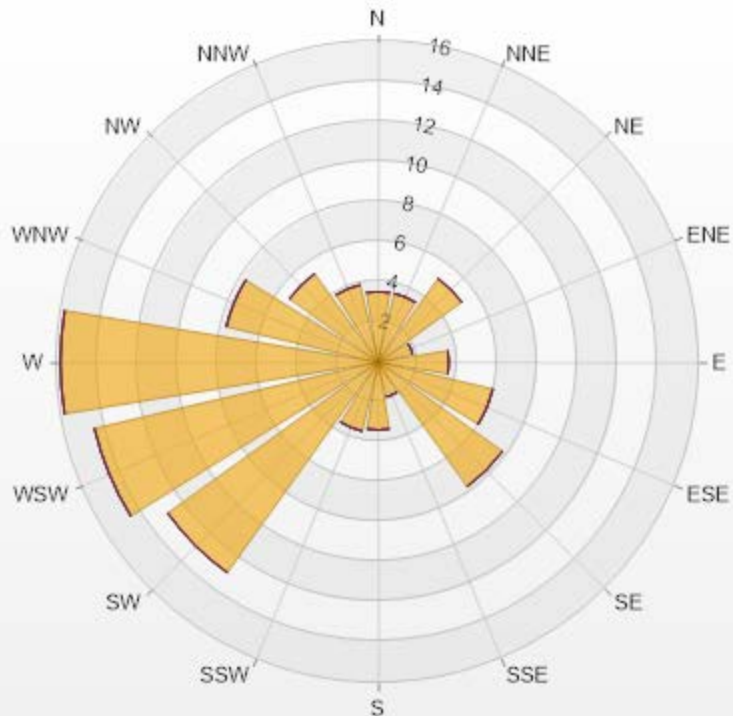
SO2[ppb] Histogram: Cold Lake South Monthly: 06-2021 1 Hr.



Classes	SO2
<=0	87.43%
0 - 10	12.57%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.72% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	3.52	0	0	0	0	3.52
NNE	3.52	0	0	0	0	3.52
NE	5.13	0	0	0	0	5.13
ENE	1.76	0	0	0	0	1.76
E	3.52	0	0	0	0	3.52
ESE	5.87	0	0	0	0	5.87
SE	7.62	0	0	0	0	7.62
SSE	1.76	0	0	0	0	1.76
S	3.37	0	0	0	0	3.37
SSW	3.52	0	0	0	0	3.52
SW	12.9	0	0	0	0	12.9
WSW	14.52	0	0	0	0	14.52
W	15.84	0	0	0	0	15.84
WNW	7.77	0	0	0	0	7.77
NW	5.43	0	0	0	0	5.43
NNW	3.96	0	0	0	0	3.96
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)

100 0-10

0 10-50

0 50-100

0 100-172

0 >172.0



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Cold Lake South Station - June 2021

Summary of Hourly Averages

TOTAL REDUCED SULPHUR (TRS) in ppb

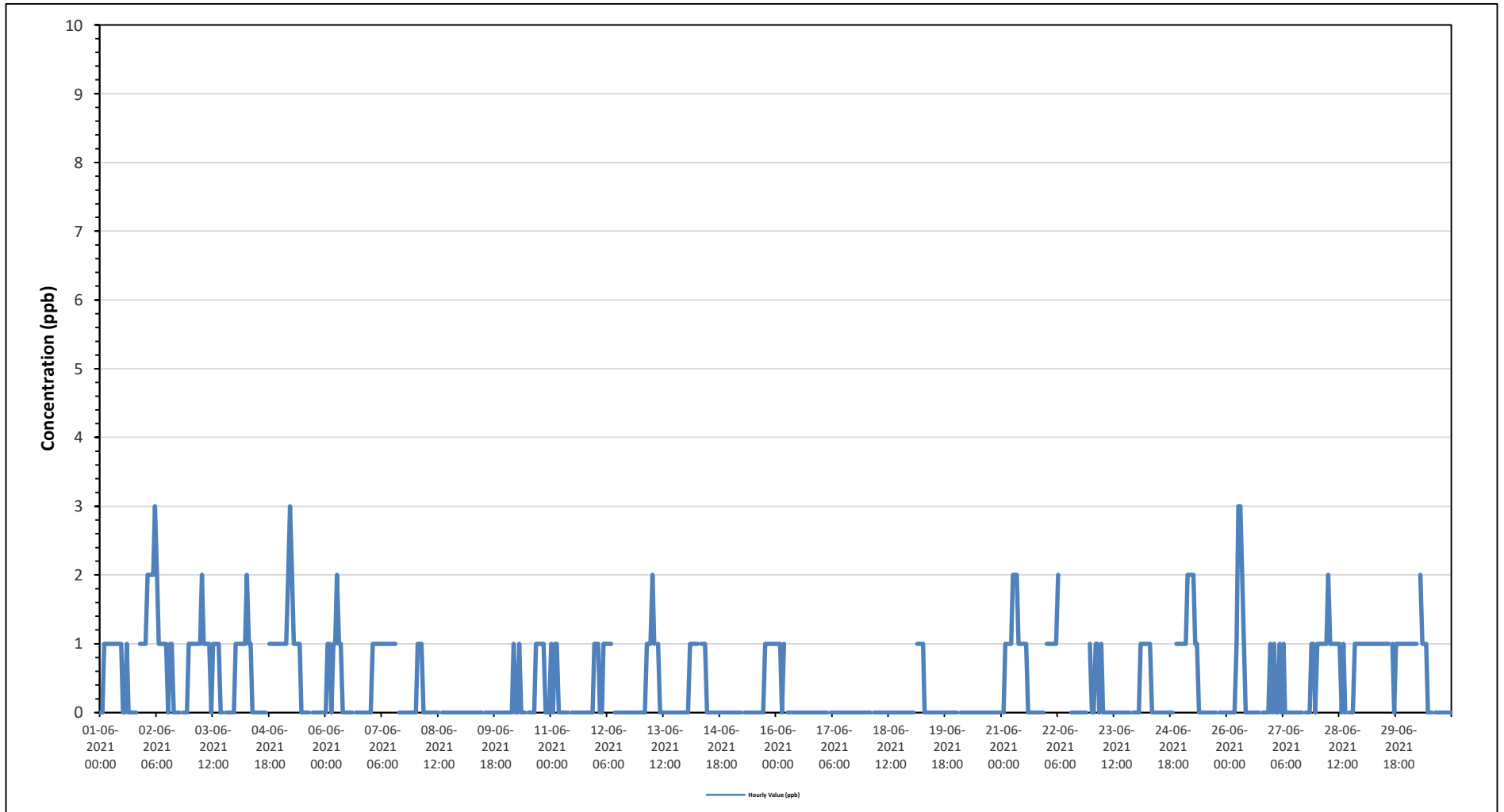
Maximum Hourly Value:	3 ppb on June 2 at hour 5	Hours in Service:	720
Maximum Daily Value:	1.0 ppb on June 2	Hours of Data:	682
Minimum Hourly Value:	0 ppb on June 1 at hour 0	Hours of Missing Data:	1
Minimum Daily Value:	0.0 ppb on June 9	Hours of Calibration:	37
Monthly Average:	0.4 ppb	Operational 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	
Jun 1	0	0	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	S	1	1	1	0	1	0.6	
Jun 2	1	2	2	2	2	3	2	1	1	1	1	1	0	1	1	0	0	0	0	0	S	0	0	0	1	0	3	1.0
Jun 3	1	1	1	1	1	1	2	1	1	1	1	0	1	1	1	0	0	0	S	S	0	0	0	0	0	0	2	0.7
Jun 4	1	1	1	1	1	1	2	1	1	1	0	0	0	0	0	0	0	S	S	1	1	1	1	1	1	0	2	0.7
Jun 5	1	1	1	1	2	3	2	1	1	1	1	0	0	0	0	0	S	S	0	0	0	0	0	0	0	0	3	0.7
Jun 6	0	1	1	0	1	1	2	1	1	0	0	0	0	0	0	S	S	0	0	0	0	0	0	0	0	0	2	0.3
Jun 7	0	1	1	1	1	1	1	1	1	1	1	1	1	1	S	S	0	0	0	0	0	0	0	0	0	0	1	0.6
Jun 8	0	1	1	1	0	0	0	0	0	0	0	0	0	0	S	S	0	0	0	0	0	0	0	0	0	0	1	0.1
Jun 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	S	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 10	0	0	0	0	1	0	0	1	0	0	0	0	0	S	S	0	0	0	0	0	0	0	0	0	0	0	1	0.3
Jun 11	1	0	1	1	0	0	0	0	0	0	0	S	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2
Jun 12	1	1	0	0	1	1	1	1	1	S	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3
Jun 13	0	0	0	1	1	1	2	1	S	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3
Jun 14	0	0	1	1	1	1	1	S	S	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3
Jun 15	0	0	0	0	0	0	S	S	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	1	0.3
Jun 16	1	1	1	0	1	S	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2
Jun 17	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
Jun 18	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
Jun 19	0	0	S	S	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2
Jun 20	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	0.0
Jun 21	S	0	1	1	1	1	2	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.7
Jun 22	1	1	1	1	1	2	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	-
Jun 23	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0.1
Jun 24	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	0.4
Jun 25	1	1	1	2	2	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	S	S	0	0	0	0	2	0.6
Jun 26	0	0	0	0	0	1	3	3	2	1	0	0	0	0	0	0	0	0	0	S	S	0	0	0	0	1	3	0.5
Jun 27	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	S	S	0	0	0	1	1	0	1	0.2
Jun 28	1	1	1	1	1	1	2	1	1	1	1	1	1	0	1	0	S	S	0	0	0	1	1	1	1	1	2	0.8
Jun 29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	S	S	1	0	1	1	1	1	1	1	1	1.0
Jun 30	1	1	1	1	1	1	NRM	2	1	1	1	0	0	S	S	0	0	0	0	0	0	0	0	0	0	0	2	0.5
Diurnal Maximum	1.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Diurnal Average	0.4	0.6	0.7	0.7	0.8	0.9	1.1	0.8	0.6	0.4	0.4	0.2	0.2	0.2	0.2	0.0	0.1	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3			

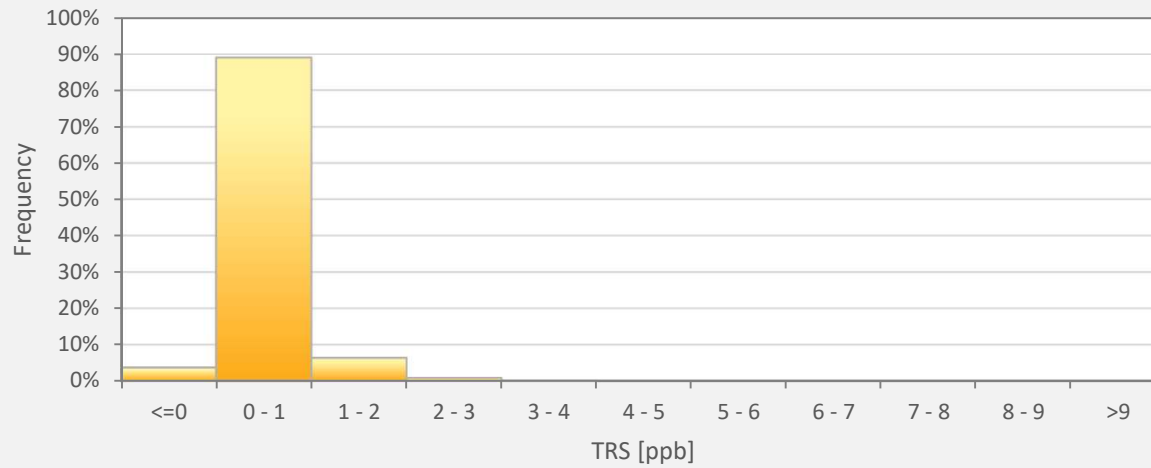
C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction /Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

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 TRS - Cold Lake South Station



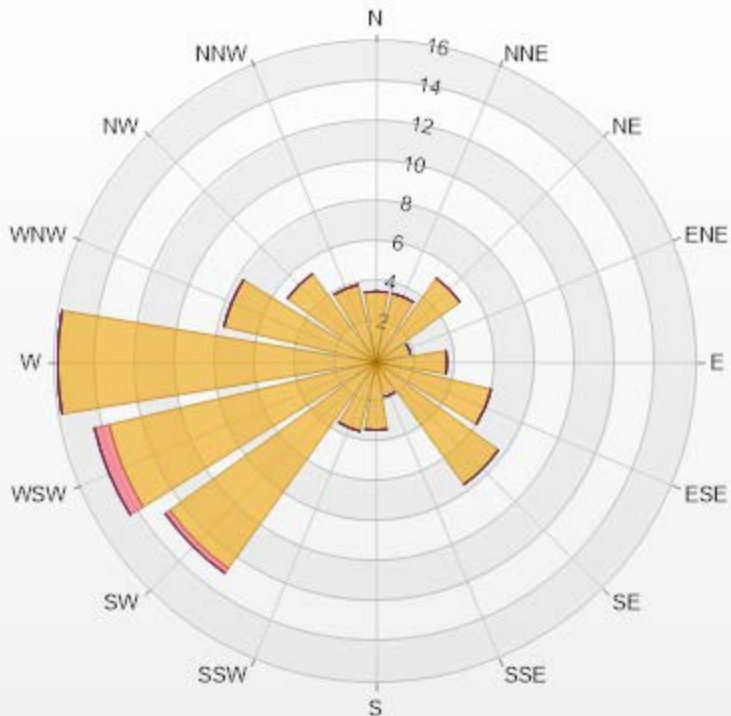
TRS[ppb] Histogram: Cold Lake South Monthly: 06-2021 1 Hr.



Classes	TRS
<=0	3.67%
0 - 1	89.00%
1 - 2	6.30%
2 - 3	0.88%
3 - 4	0.15%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.44% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	3.53	0	0	0	0	3.53
NNE	3.53	0	0	0	0	3.53
NE	5.15	0	0	0	0	5.15
ENE	1.76	0	0	0	0	1.76
E	3.53	0	0	0	0	3.53
ESE	5.88	0	0	0	0	5.88
SE	7.5	0	0	0	0	7.5
SSE	1.76	0	0	0	0	1.76
S	3.38	0	0	0	0	3.38
SSW	3.53	0	0	0	0	3.53
SW	12.65	0.29	0	0	0	12.94
WSW	13.68	0.74	0	0	0	14.42
W	15.88	0	0	0	0	15.88
WNW	7.79	0	0	0	0	7.79
NW	5.44	0	0	0	0	5.44
NNW	3.97	0	0	0	0	3.97
Summary	98.96	1.03	0	0	0	100



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% Icon Classes (ppb)

99 0-2

1 2-5

0 5-10

0 10-50

0 >50.0



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Cold Lake South Station - June 2021

Summary of Hourly Averages

OXIDES OF NITROGEN (NOx) in ppb

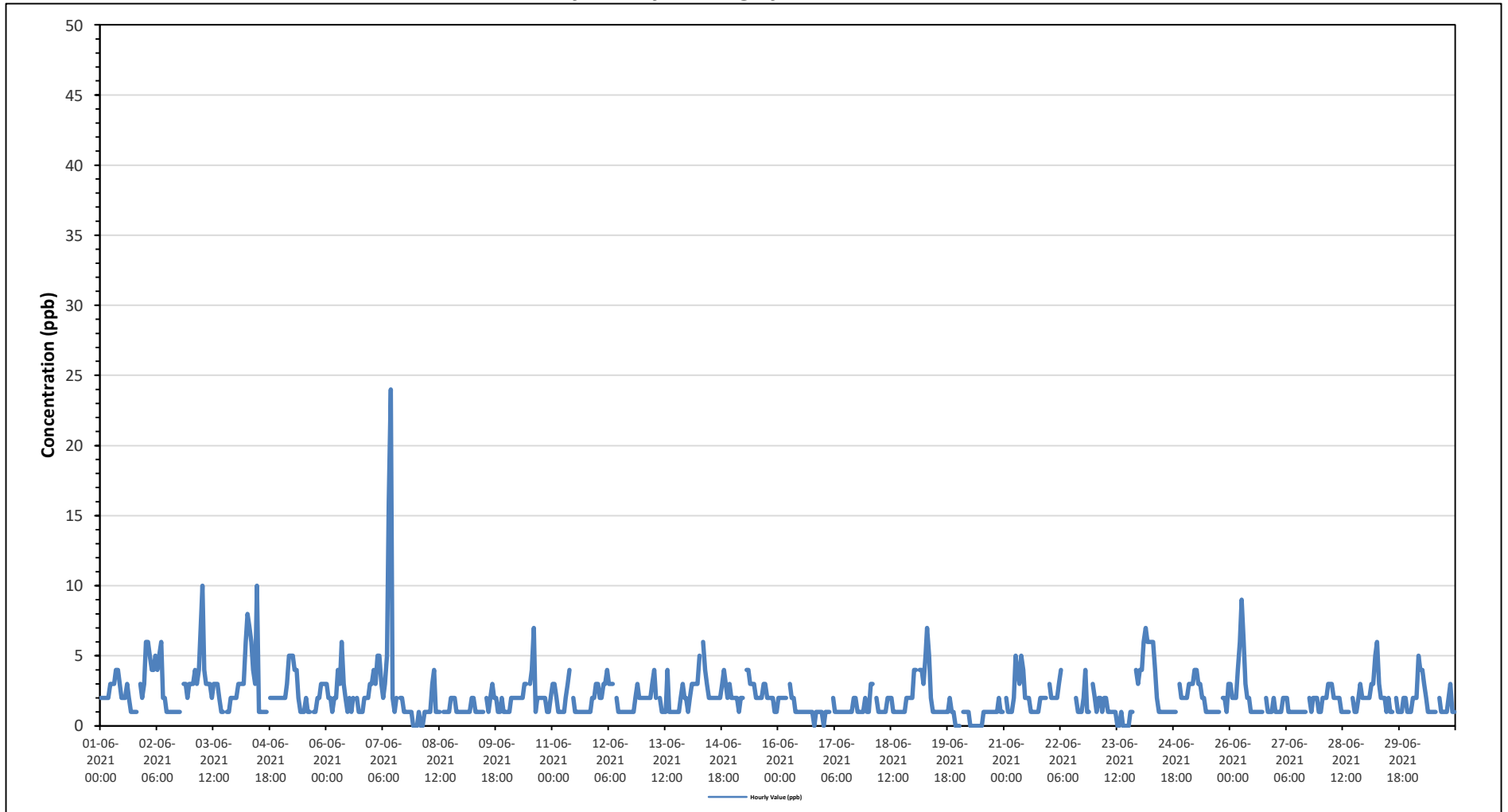
Maximum Hourly Value:	24 ppb on June 7 at hour 10	Hours in Service:	720
Maximum Daily Value:	3.8 ppb on June 7	Hours of Data:	682
Minimum Hourly Value:	0 ppb on June 7 at hour 22	Hours of Missing Data:	0
Minimum Daily Value:	0.7 ppb on June 20	Hours of Calibration:	38
Monthly Average:	2.1 ppb	Operational 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
Jun 1	2	2	2	2	2	3	3	3	4	4	3	2	2	2	3	2	1	1	1	1	S	3	2	3	1	4	2.3
Jun 2	6	6	5	4	4	5	4	5	6	2	2	1	1	1	1	1	1	1	1	S	3	3	2	3	1	6	3.0
Jun 3	3	3	4	3	4	7	10	4	3	3	2	3	3	3	2	1	1	S	1	1	2	2	2	2	1	10	3.0
Jun 4	2	3	3	3	3	6	8	7	6	4	3	10	1	1	1	1	S	2	2	2	2	2	2	2	1	10	3.3
Jun 5	2	2	2	3	5	5	5	4	4	2	1	1	1	2	1	1	S	1	1	2	2	3	3	3	1	5	2.4
Jun 6	3	2	2	1	2	2	4	3	6	3	2	1	2	1	2	S	2	1	1	1	2	2	2	3	1	6	2.2
Jun 7	3	4	3	5	5	3	2	3	5	16	24	2	1	2	S	2	2	1	1	1	1	1	0	0	0	24	3.8
Jun 8	0	1	0	0	1	1	1	1	3	4	1	1	1	S	1	1	1	1	2	2	2	1	1	1	0	4	1.2
Jun 9	1	1	1	1	1	2	2	1	1	1	1	1	S	2	1	2	3	2	2	1	1	2	1	1	1	3	1.4
Jun 10	1	1	2	2	2	2	2	2	2	3	3	S	3	4	7	1	2	2	2	2	2	1	1	2	1	7	2.2
Jun 11	3	3	2	1	1	1	1	2	3	4	S	2	1	1	1	1	1	1	1	1	1	2	2	3	1	4	1.7
Jun 12	3	2	2	3	3	4	3	3	3	S	2	1	1	1	1	1	1	1	1	1	2	3	2	2	1	4	2.0
Jun 13	2	2	2	2	2	3	4	2	S	2	1	1	1	4	1	1	1	1	1	1	2	3	2	2	1	4	1.9
Jun 14	1	2	3	3	3	3	5	S	6	4	3	2	2	2	2	2	2	3	3	4	3	2	3	2	1	6	2.8
Jun 15	2	2	2	1	2	2	S	4	4	3	3	3	2	2	2	2	3	3	2	2	2	2	1	1	1	4	2.3
Jun 16	2	2	2	2	2	S	3	2	2	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	3	1.3
Jun 17	0	1	1	1	S	2	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	2	1	0	2	1.1
Jun 18	1	3	3	S	2	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	2	2	2	2	1	3	1.5
Jun 19	4	4	S	4	4	3	5	7	5	2	1	1	1	1	1	1	1	1	1	2	1	1	0	0	0	7	2.2
Jun 20	0	S	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	1	1	0	2	0.7
Jun 21	S	2	1	1	1	2	5	4	3	5	4	2	2	2	1	1	1	1	1	2	2	2	2	S	1	5	2.1
Jun 22	3	2	2	2	2	3	4	C	C	C	C	C	C	C	2	1	1	1	1	2	4	1	1	3	1	4	-
Jun 23	2	1	2	2	1	2	2	1	1	1	1	1	0	0	1	0	0	0	0	1	1	S	4	3	0	4	1.2
Jun 24	4	4	6	7	6	6	6	6	4	2	1	1	1	1	1	1	1	1	1	1	S	3	2	2	1	7	3.0
Jun 25	2	2	3	3	3	4	4	3	3	2	2	1	1	1	1	1	1	1	1	S	2	2	1	3	1	4	2.0
Jun 26	3	2	2	2	4	6	9	6	3	2	2	1	1	1	1	1	1	1	S	2	1	1	1	2	1	9	2.4
Jun 27	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	S	2	1	2	2	2	1	1	2	1.3
Jun 28	1	2	2	2	3	3	3	2	2	2	2	1	1	1	1	1	S	2	1	1	2	3	2	2	1	3	1.8
Jun 29	2	2	2	3	3	5	6	3	2	2	2	1	2	1	1	S	2	1	1	1	2	2	1	1	1	6	2.1
Jun 30	1	2	2	2	5	4	4	3	2	1	1	1	1	1	S	2	1	1	1	1	2	3	1	1	1	5	1.9
Diurnal Maximum	6	6	6	7	6	7	10	7	6	16	24	10	3	4	7	2	3	3	3	4	3	3	4	3			
Diurnal Average	2.1	2.3	2.2	2.3	2.7	3.2	3.8	3.0	3.1	2.8	2.6	1.6	1.3	1.5	1.5	1.2	1.3	1.2	1.3	1.5	1.7	2.0	1.7	1.8			

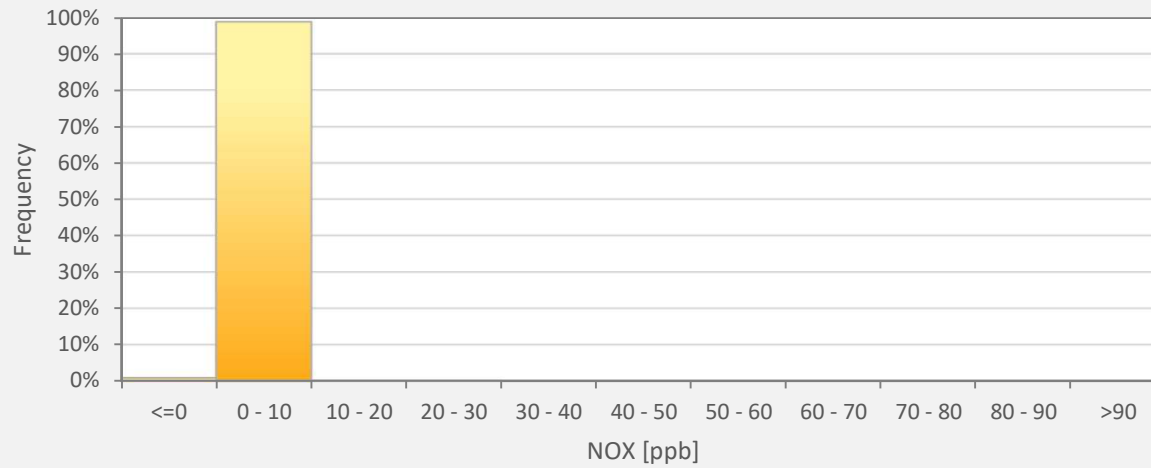
C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction /Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

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 NOx - Cold Lake South Station



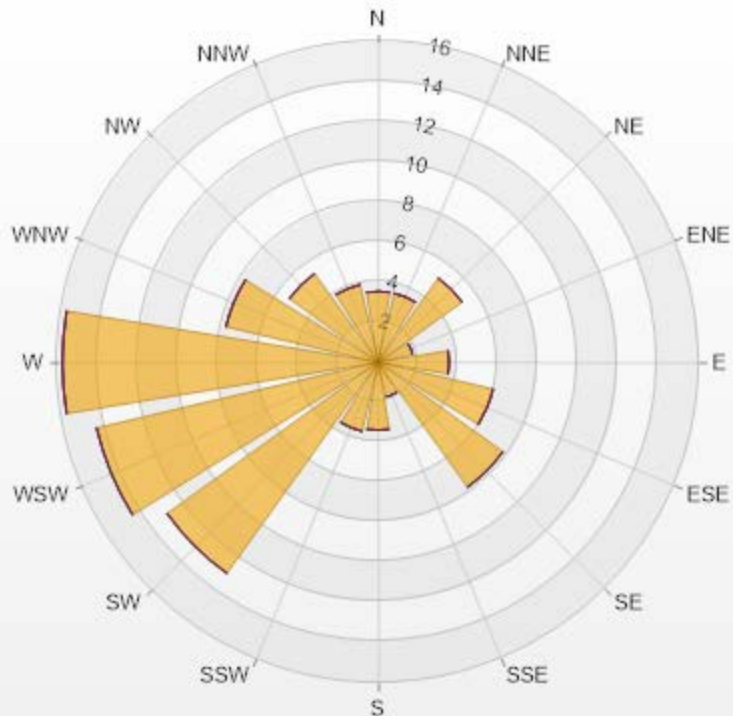
NOX[ppb] Histogram: Cold Lake South Monthly: 06-2021 1 Hr.



Classes	NOX
<=0	0.88%
0 - 10	98.83%
10 - 20	0.15%
20 - 30	0.15%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.44% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.53	0	0	0	0	3.53
NNE	3.53	0	0	0	0	3.53
NE	5.15	0	0	0	0	5.15
ENE	1.76	0	0	0	0	1.76
E	3.53	0	0	0	0	3.53
ESE	5.88	0	0	0	0	5.88
SE	7.65	0	0	0	0	7.65
SSE	1.76	0	0	0	0	1.76
S	3.38	0	0	0	0	3.38
SSW	3.53	0	0	0	0	3.53
SW	12.94	0	0	0	0	12.94
WSW	14.41	0	0	0	0	14.41
W	15.74	0	0	0	0	15.74
WNW	7.79	0	0	0	0	7.79
NW	5.44	0	0	0	0	5.44
NNW	3.97	0	0	0	0	3.97
Summary	100	0	0	0	0	100




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% Icon Classes (ppb)

100  0-30

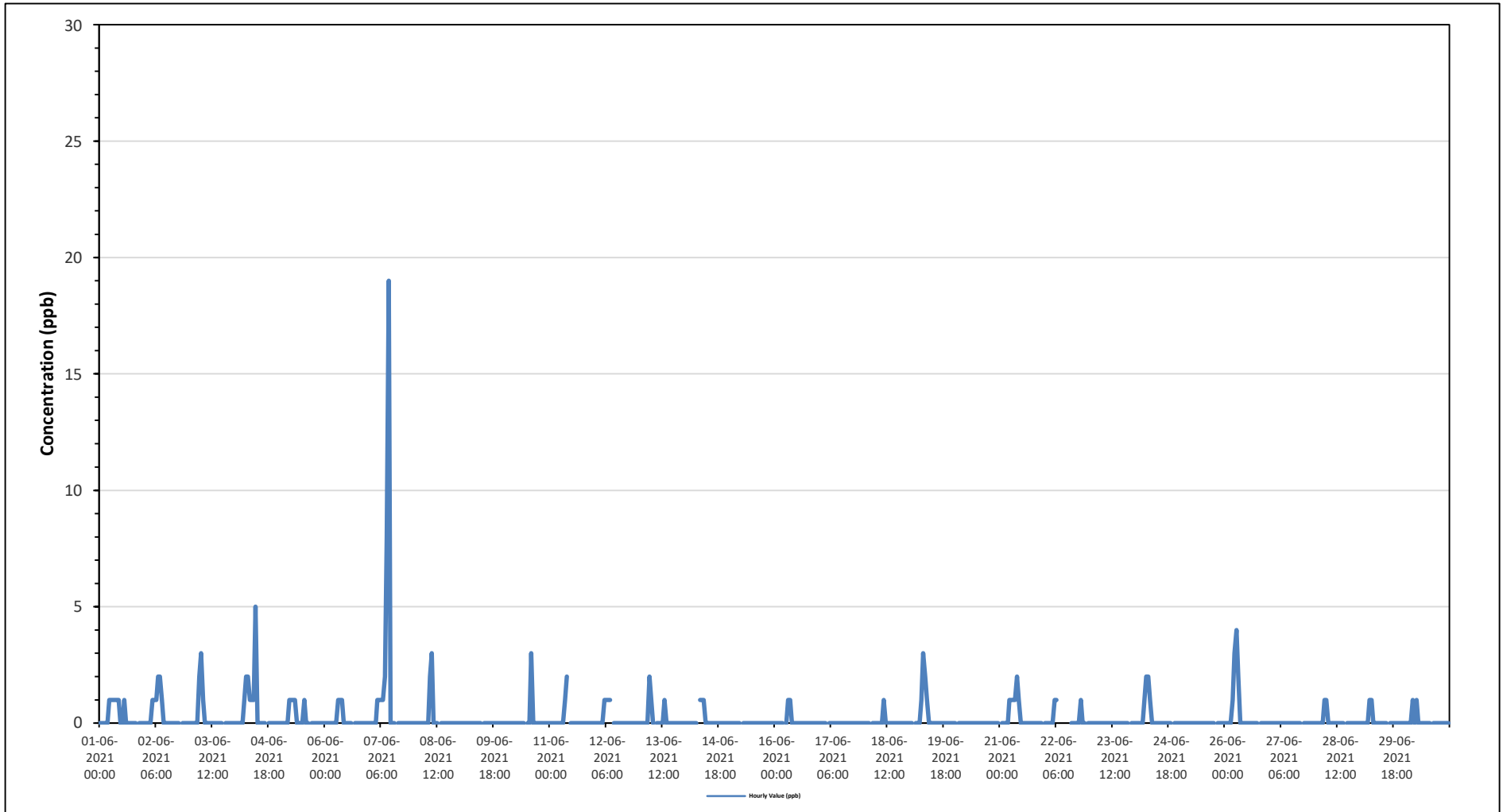
0  30-50

0  50-76

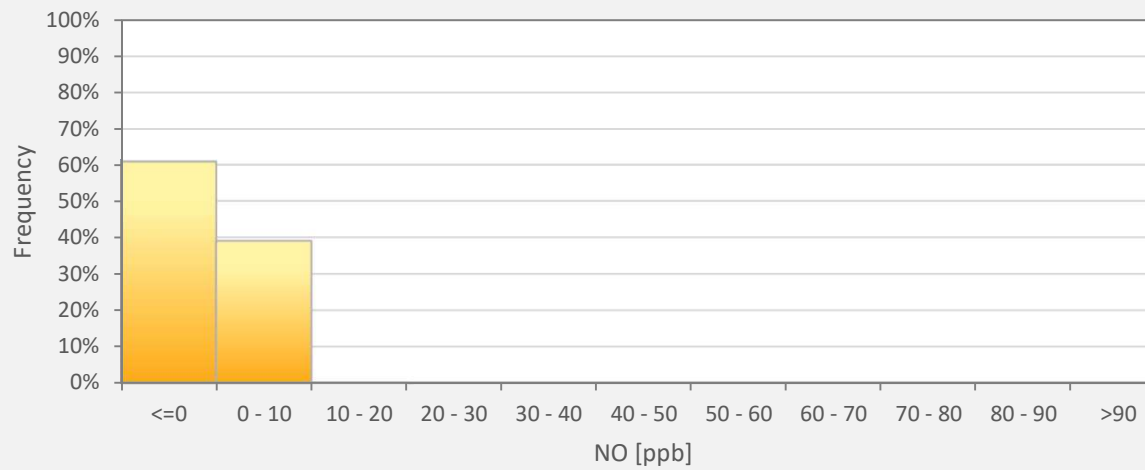
0  76-159

0  >159.0

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



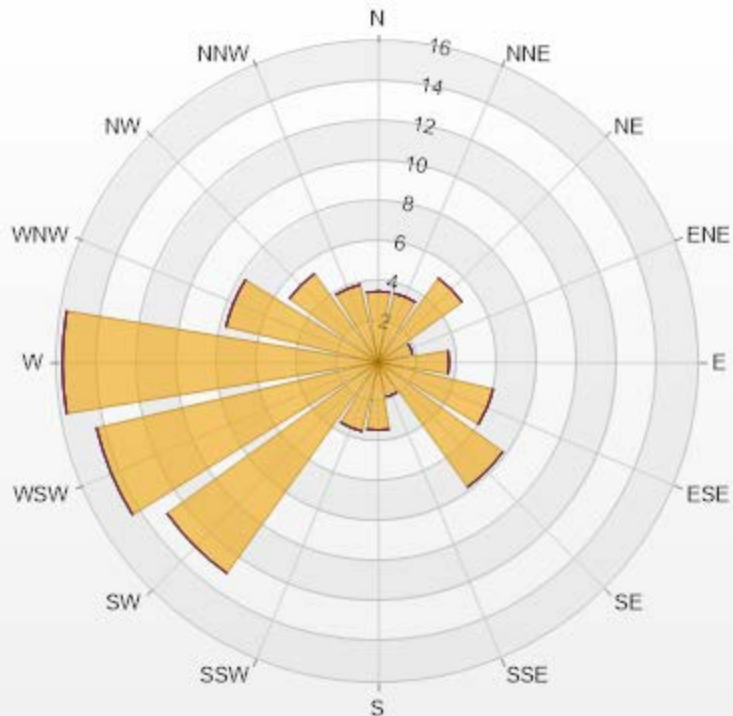
NO[ppb] Histogram: Cold Lake South Monthly: 06-2021 1 Hr.



Classes	NO
<=0	60.85%
0 - 10	39.00%
10 - 20	0.15%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.44% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.53	0	0	0	0	3.53
NNE	3.53	0	0	0	0	3.53
NE	5.15	0	0	0	0	5.15
ENE	1.76	0	0	0	0	1.76
E	3.53	0	0	0	0	3.53
ESE	5.88	0	0	0	0	5.88
SE	7.65	0	0	0	0	7.65
SSE	1.76	0	0	0	0	1.76
S	3.38	0	0	0	0	3.38
SSW	3.53	0	0	0	0	3.53
SW	12.94	0	0	0	0	12.94
WSW	14.41	0	0	0	0	14.41
W	15.74	0	0	0	0	15.74
WNW	7.79	0	0	0	0	7.79
NW	5.44	0	0	0	0	5.44
NNW	3.97	0	0	0	0	3.97
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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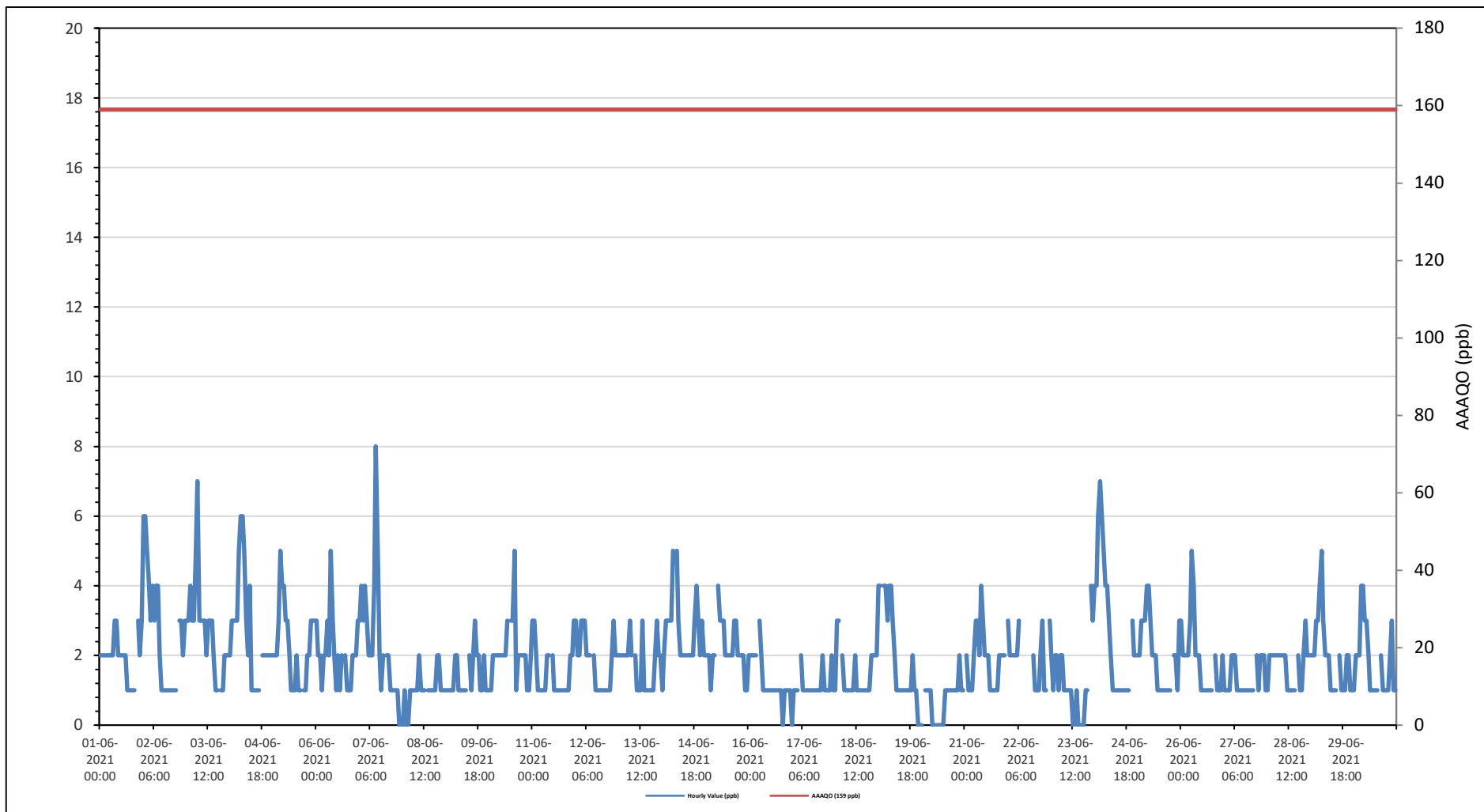
Cold Lake South Station - June 2021

Summary of Hourly Averages

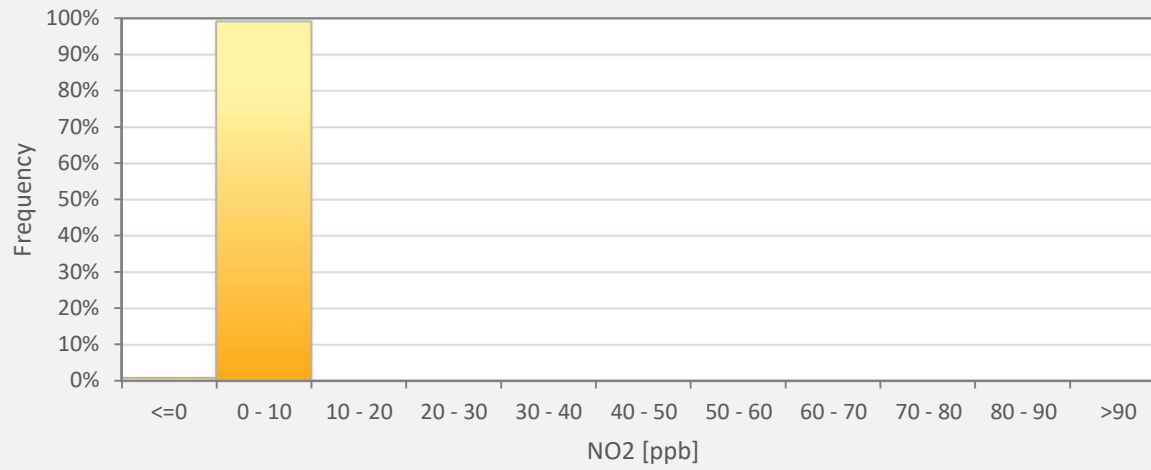
NITROGEN DIOXIDE (NO₂) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 159 ppb																											
Number of 1-Hour Exceedences: 0																											
Maximum Hourly Value: 8 ppb on June 7 at hour 9												Hours in Service: 720															
Maximum Daily Value: 2.7 ppb on June 3												Hours of Data: 682															
Minimum Hourly Value: 0 ppb on June 7 at hour 22												Hours of Missing Data: 0															
Minimum Daily Value: 0.7 ppb on June 20												Hours of Calibration: 38															
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			
Jun 1	2	2	2	2	2	2	2	2	3	3	2	2	2	2	2	1	1	1	1	1	S	3	2	3	1	3	2.0
Jun 2	6	6	5	4	3	4	3	4	4	2	1	1	1	1	1	1	1	1	1	S	3	3	2	3	1	6	2.7
Jun 3	3	3	4	3	3	5	7	3	3	3	3	2	3	3	3	2	1	1	S	1	1	2	2	2	1	7	2.7
Jun 4	2	3	3	3	3	5	6	6	5	3	2	4	1	1	1	1	1	S	2	2	2	2	2	2	1	6	2.7
Jun 5	2	2	2	3	5	4	4	3	3	2	1	1	1	2	1	1	S	1	1	2	2	3	3	3	1	5	2.3
Jun 6	3	2	2	1	2	2	3	2	5	3	2	1	2	1	2	S	2	1	1	1	2	2	2	3	1	5	2.0
Jun 7	3	4	3	4	3	2	2	4	8	5	2	1	2	1	2	S	2	2	1	1	1	1	0	0	0	8	2.3
Jun 8	0	1	0	0	1	1	1	1	1	2	1	1	1	S	1	1	1	1	1	2	2	1	1	1	0	2	1.0
Jun 9	1	1	1	1	1	2	2	1	1	1	1	1	S	2	1	2	3	2	2	1	1	2	1	1	1	3	1.4
Jun 10	1	1	2	2	2	2	2	2	2	2	3	S	3	3	5	1	2	2	2	2	2	1	1	2	1	5	2.0
Jun 11	3	3	2	1	1	1	1	1	2	2	S	2	1	1	1	1	1	1	1	1	1	2	2	3	1	3	1.5
Jun 12	3	2	2	3	3	3	2	2	2	S	2	1	1	1	1	1	1	1	1	1	1	2	3	2	1	3	1.8
Jun 13	2	2	2	2	2	2	3	2	S	2	1	1	1	3	1	1	1	1	1	1	2	3	2	2	1	3	1.7
Jun 14	1	2	3	3	3	3	5	S	5	3	2	2	2	2	2	2	2	2	3	4	3	2	3	2	1	5	2.7
Jun 15	2	2	2	1	2	2	S	4	3	3	3	2	2	2	2	2	3	3	2	2	2	2	1	1	1	4	2.2
Jun 16	2	2	2	2	2	S	3	2	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	3	1.3
Jun 17	0	1	1	1	S	2	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1	0	2	1.1
Jun 18	1	3	3	S	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	2	2	2	2	1	3	1.4
Jun 19	4	4	S	4	4	3	4	4	3	2	1	1	1	1	1	1	1	1	1	2	1	1	0	0	0	4	2.0
Jun 20	0	S	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	1	1	0	2	0.7
Jun 21	S	2	1	1	1	2	3	3	2	4	3	2	2	2	1	1	1	1	1	2	2	2	2	S	1	4	1.9
Jun 22	3	2	2	2	2	2	3	C	C	C	C	C	C	C	2	1	1	1	2	3	1	1	4	3	1	3	-
Jun 23	2	1	2	2	1	2	2	1	1	1	1	1	0	0	1	0	0	0	0	1	1	S	4	3	0	4	1.2
Jun 24	4	4	6	7	6	5	4	4	3	2	1	1	1	1	1	1	1	1	1	1	S	3	2	2	1	7	2.7
Jun 25	2	2	3	3	3	4	4	3	2	2	2	1	1	1	1	1	1	1	1	S	2	2	1	3	1	4	2.0
Jun 26	3	2	2	2	2	3	5	4	2	2	2	1	1	1	1	1	1	1	S	2	1	1	1	2	1	5	1.9
Jun 27	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	S	2	1	2	2	1	1	2	1.3
Jun 28	1	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	S	2	1	1	2	3	2	2	1	3	1.7
Jun 29	2	2	2	3	3	4	5	3	2	2	2	1	1	1	1	S	2	1	1	1	1	2	2	1	1	5	2.0
Jun 30	1	2	2	2	4	4	3	3	2	1	1	1	1	1	S	2	1	1	1	1	2	3	1	1	1	4	1.8
Diurnal Maximum	6	6	6	7	6	5	7	6	5	8	5	4	3	3	5	2	3	3	3	4	3	3	4	3			
Diurnal Average	2.1	2.3	2.2	2.3	2.4	2.7	2.9	2.4	2.4	2.2	1.7	1.4	1.3	1.4	1.4	1.2	1.3	1.2	1.3	1.4	1.7	2.0	1.7	1.8			
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 NO2 - Cold Lake South Station



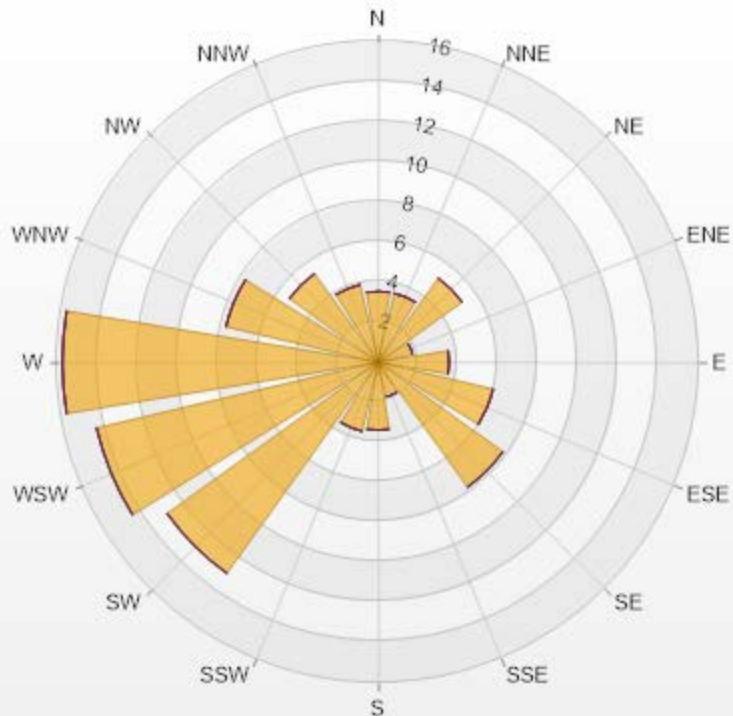
NO2[ppb] Histogram: Cold Lake South Monthly: 06-2021 1 Hr.



Classes	NO2
<=0	0.88%
0 - 10	99.12%
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-NO2[ppb] Monthly: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.44% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	3.53	0	0	0	0	3.53
NNE	3.53	0	0	0	0	3.53
NE	5.15	0	0	0	0	5.15
ENE	1.76	0	0	0	0	1.76
E	3.53	0	0	0	0	3.53
ESE	5.88	0	0	0	0	5.88
SE	7.65	0	0	0	0	7.65
SSE	1.76	0	0	0	0	1.76
S	3.38	0	0	0	0	3.38
SSW	3.53	0	0	0	0	3.53
SW	12.94	0	0	0	0	12.94
WSW	14.41	0	0	0	0	14.41
W	15.74	0	0	0	0	15.74
WNW	7.79	0	0	0	0	7.79
NW	5.44	0	0	0	0	5.44
NNW	3.97	0	0	0	0	3.97
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 - June 2021

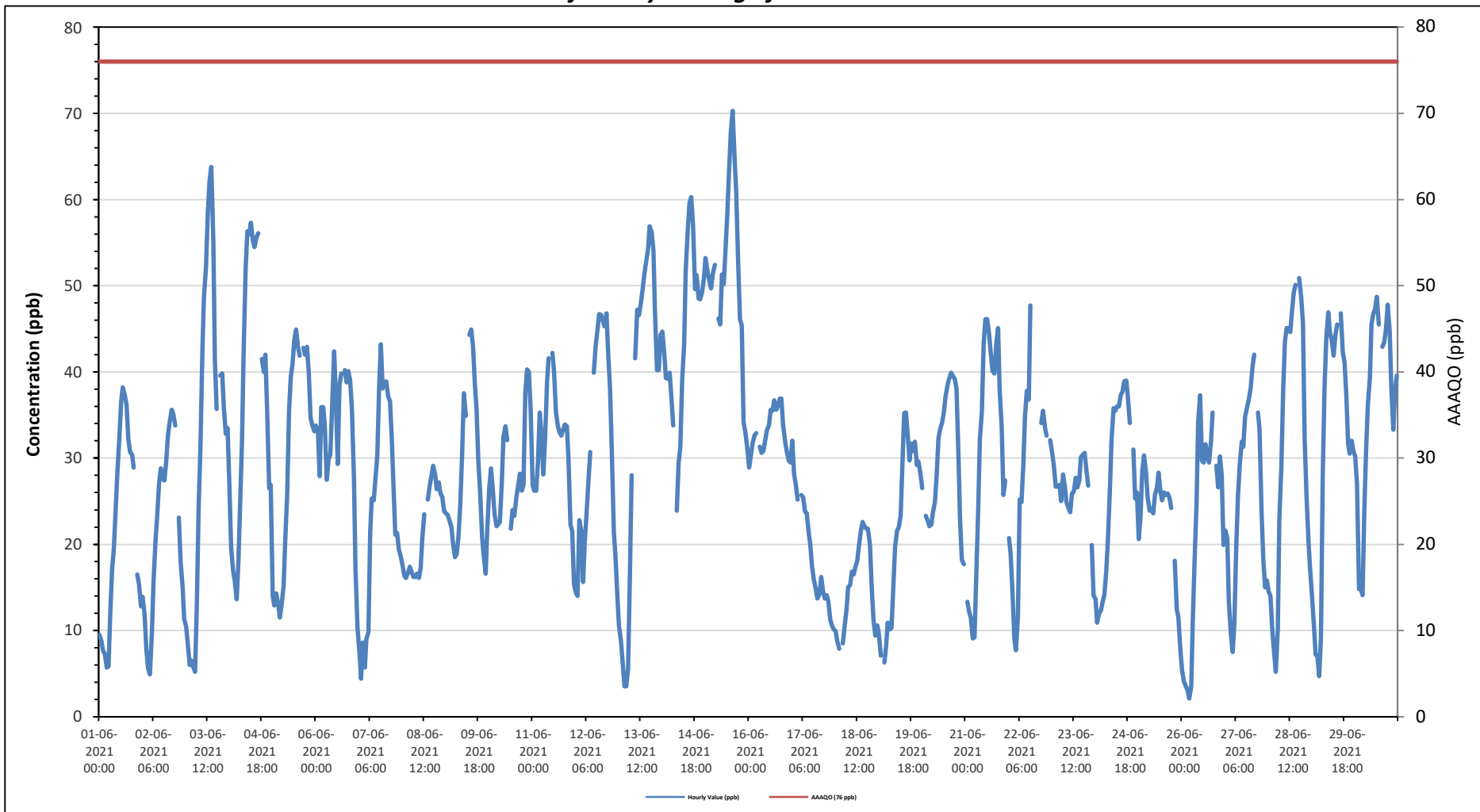
Summary of Hourly Averages

OZONE (O₃) in ppb

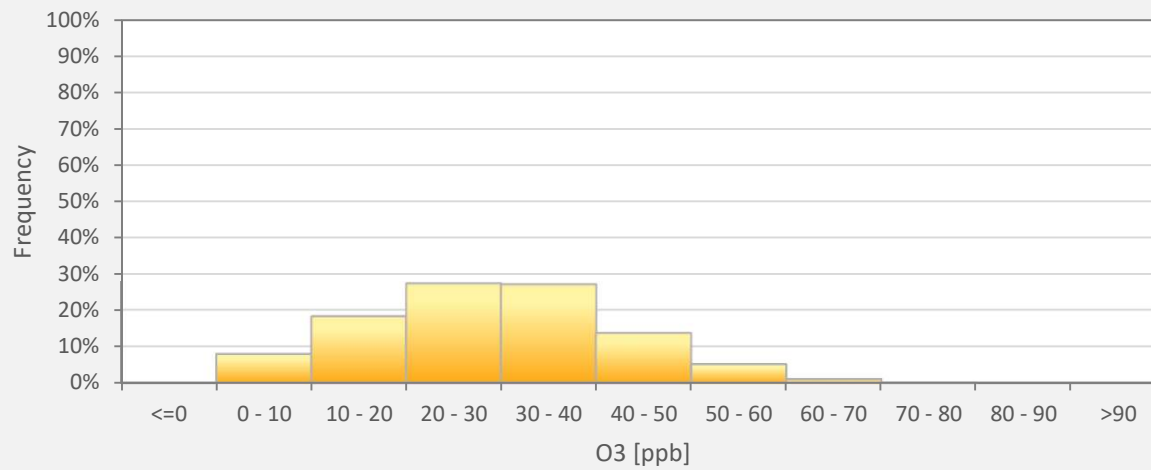
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 76 ppb																												
Number of 1-Hour Exceedences: 0																												
Maximum Hourly Value: 70.3 ppb on June 15 at hour 15												Hours in Service: 720																
Maximum Daily Value: 51.5 ppb on June 15												Hours of Data: 684																
Minimum Hourly Value: 2.1 ppb on June 26 at hour 4												Hours of Missing Data: 0																
Minimum Daily Value: 15.3 ppb on June 18												Hours of Calibration: 36																
Monthly Average: 29.1 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				
Jun 1	9.5	8.8	7.7	7.2	5.7	5.8	12.1	17.1	19.5	24.0	28.4	32.0	36.6	38.2	37.3	36.2	32.2	30.7	30.4	28.9	S	16.5	15.4	12.8	5.7	38.2	21.4	
Jun 2	13.9	11.9	7.8	5.6	4.9	9.8	15.5	20.3	23.4	27.0	28.8	27.6	27.4	29.5	32.6	34.2	35.6	35.1	33.8	S	23.1	18.0	15.0	11.3	4.9	35.6	21.4	
Jun 3	10.4	8.2	6.0	6.5	5.8	5.2	13.1	24.3	31.1	42.6	48.7	52.1	58.3	62.2	63.8	55.1	41.4	35.7	S	39.6	39.8	36.0	32.8	33.5	5.2	63.8	32.7	
Jun 4	27.0	19.7	16.9	15.8	13.6	18.2	25.2	32.1	41.8	51.8	56.3	56.0	57.3	55.2	54.5	55.6	56.1	S	41.5	40.0	42.0	35.5	26.5	26.9	13.6	57.3	37.6	
Jun 5	14.0	12.9	14.3	13.1	11.5	13.0	15.2	20.3	25.8	35.3	39.4	40.9	43.7	44.9	43.0	41.9	S	42.8	42.0	42.9	39.9	34.7	33.8	33.1	11.5	44.9	30.4	
Jun 6	33.8	33.1	27.9	35.9	35.9	33.8	27.5	29.9	30.4	36.0	42.4	37.8	29.3	38.5	39.8	S	40.2	38.8	40.1	39.0	35.6	27.7	17.2	10.3	10.3	42.4	33.1	
Jun 7	7.7	4.4	8.6	5.7	9.0	9.8	21.4	25.3	25.1	27.7	30.3	38.0	43.2	38.1	S	38.9	37.1	36.6	32.3	26.5	21.1	21.3	19.4	18.5	4.4	43.2	23.7	
Jun 8	17.6	16.3	16.1	16.7	17.4	16.8	16.2	16.2	16.6	16.1	17.3	20.6	23.5	S	25.2	26.7	27.9	29.1	28.1	26.4	27.2	25.9	25.5	23.9	16.1	29.1	21.4	
Jun 9	23.6	23.4	22.8	22.0	20.2	18.5	18.9	21.0	24.7	30.3	37.5	34.9	S	44.3	44.9	43.0	38.8	35.7	29.7	26.1	20.8	18.8	16.6	21.5	16.6	44.9	27.7	
Jun 10	26.5	28.8	26.4	23.5	22.1	22.3	22.6	27.5	32.5	33.7	32.1	S	21.8	24.0	23.3	25.5	26.6	28.2	26.2	26.9	37.5	40.3	40.0	35.8	21.8	40.3	28.4	
Jun 11	26.9	26.2	26.2	29.6	35.3	32.7	28.1	32.2	39.0	41.6	S	42.2	40.2	35.3	33.8	33.0	32.6	33.4	33.9	33.7	30.0	22.3	21.5	15.4	15.4	42.2	31.5	
Jun 12	14.4	14.0	22.8	21.6	15.6	20.1	23.8	27.4	30.7	S	39.9	42.9	45.0	46.7	46.6	45.9	45.3	46.8	41.9	38.1	30.7	21.4	18.8	13.9	13.9	46.8	31.1	
Jun 13	10.6	8.8	6.2	3.5	3.5	5.6	16.0	28.0	S	41.6	47.2	46.6	47.9	49.5	51.5	52.7	54.3	56.9	56.2	54.1	47.0	40.2	40.2	44.3	3.5	56.9	35.3	
Jun 14	44.7	42.0	39.3	39.2	39.9	36.9	33.8	S	23.9	29.4	31.3	38.9	43.2	51.7	56.3	59.6	60.3	57.0	49.6	51.2	48.5	48.4	49.3	50.9	23.9	60.3	44.6	
Jun 15	53.2	51.7	50.6	49.7	51.4	52.4	S	46.2	45.5	51.3	50.2	54.8	58.3	63.4	67.9	70.3	64.6	60.9	52.5	46.1	45.4	34.2	32.8	31.3	31.3	70.3	51.5	
Jun 16	28.9	30.3	31.8	32.6	32.9	S	31.3	30.6	30.8	32.2	33.2	33.8	35.6	35.5	36.7	35.6	36.0	36.9	36.9	33.8	31.9	30.8	29.7	29.5	28.9	36.9	32.9	
Jun 17	32.0	28.2	26.7	25.2	S	25.7	25.4	23.8	23.6	21.5	19.9	17.4	15.9	14.7	13.7	14.2	16.2	14.6	13.7	14.1	13.4	11.2	10.5	10.2	10.2	32.0	18.8	
Jun 18	9.9	8.8	7.9	S	8.5	10.4	12.5	15.0	15.3	16.8	16.5	17.4	18.1	19.9	21.5	22.6	22.1	21.8	21.8	20.0	15.0	11.2	9.4	10.6	7.9	22.6	15.3	
Jun 19	9.6	7.1	S	6.3	8.3	10.9	10.1	10.3	15.0	19.7	21.6	21.9	23.3	23.3	35.2	35.3	32.2	29.7	31.7	30.8	31.9	29.2	29.6	28.2	6.3	35.3	22.1	
Jun 20	26.5	S	23.3	22.7	22.1	22.3	23.8	24.9	28.1	32.3	33.4	34.1	35.2	37.2	38.5	39.2	39.9	39.5	39.2	38.1	30.0	22.9	18.2	17.7	17.7	39.9	30.0	
Jun 21	S	13.3	12.3	11.4	9.1	9.2	16.4	24.6	32.1	35.4	43.2	46.1	46.1	44.5	42.2	40.1	39.8	43.1	45.1	37.9	33.7	25.7	27.4	S	9.1	46.1	30.9	
Jun 22	20.7	19.0	14.9	9.1	7.7	11.5	25.2	24.9	29.0	34.9	37.8	36.8	47.7	C	C	C	C	C	C	34.1	35.5	33.5	32.6	S	32.1	7.7	47.7	27.1
Jun 23	30.6	29.0	26.7	26.7	26.9	25.0	28.1	26.7	24.9	24.2	23.7	25.9	26.1	27.7	26.6	27.4	30.1	30.4	30.6	28.6	26.8	S	19.9	14.1	14.1	30.6	26.4	
Jun 24	13.6	10.9	12.0	12.3	13.3	14.2	16.8	20.8	26.8	32.2	35.8	35.5	36.0	36.0	37.3	37.7	38.9	39.0	37.2	34.1	S	31.0	25.3	26.0	10.9	39.0	27.1	
Jun 25	20.6	23.1	28.6	30.3	28.3	25.5	23.9	24.1	23.6	25.7	26.6	28.3	26.0	25.1	26.0	25.7	25.9	25.4	24.2	S	18.1	12.4	11.6	7.8	7.8	30.3	23.3	
Jun 26	5.3	4.1	3.6	3.1	2.1	3.5	11.1	18.0	24.9	34.1	37.3	29.7	29.5	31.6	30.1	29.5	32.0	35.3	S	29.1	26.6	30.2	28.0	19.9	2.1	37.3	21.7	
Jun 27	21.6	20.7	13.4	9.6	7.5	10.9	19.5	25.6	29.2	31.9	31.3	34.8	35.9	36.7	38.1	40.5	42.0	S	35.3	33.3	23.8	18.1	15.0	15.8	7.5	42.0	25.7	
Jun 28	14.5	14.0	10.2	7.6	5.2	10.2	22.9	29.0	37.7	43.5	45.1	45.1	44.6	47.4	49.2	50.1	S	50.9	48.7	45.7	32.0	25.7	20.3	17.2	5.2	50.9	31.2	
Jun 29	13.9	10.7	7.2	7.0	4.7	9.2	27.8	38.1	43.9	46.9	44.7	43.6	41.9	44.3	45.5	S	46.8	42.3	41.1	37.3	31.7	30.5	32.0	30.8	4.7	46.9	31.4	
Jun 30	30.2	27.0	14.8	15.0	14.1	24.1	31.0	36.3	39.4	45.9	46.7	47.3	48.7	45.5	S	42.9	43.4	44.9	47.8	44.6	38.4	33.3	37.9	39.6	14.1	48.7	36.5	
Diurnal Maximum	53.2	51.7	50.6	49.7	51.4	52.4	33.8	46.2	45.5	51.8	56.3	56.0	58.3	63.4	67.9	70.3	64.6	60.9	56.2	54.1	48.5	48.4	49.3	50.9				
Daiurnal Average	21.1	19.2	18.4	17.7	16.6	17.7	21.2	25.5	28.8	33.3	35.4	36.7	37.5	39.2	39.3	39.2	38.5	37.8	36.6	35.1	31.3	27.1	24.8	23.5				
C	Monthly Calibration						S	Daily Zero-Span Check						Q	Quality Assurance													
K	Collection Error						N	No Data (Machine Not in Service)						Y	Routine Maintenance						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 O3 - Cold Lake South Station



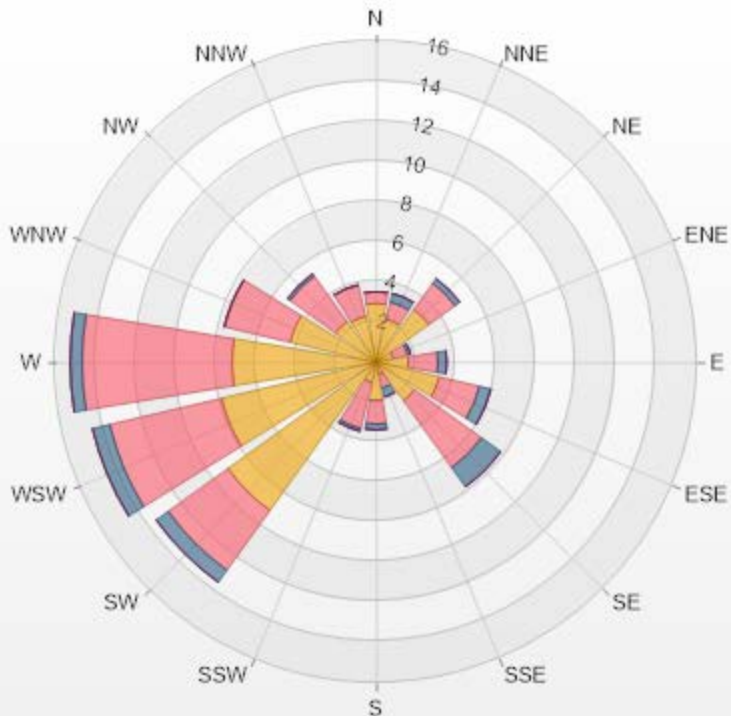
O3[ppb] Histogram: Cold Lake South Monthly: 06-2021 1 Hr.



Classes	O3
<=0	0.00%
0 - 10	7.89%
10 - 20	18.13%
20 - 30	27.19%
30 - 40	26.90%
40 - 50	13.60%
50 - 60	5.12%
60 - 70	1.02%
70 - 80	0.15%
80 - 90	0.00%
>90	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-O3[ppb] Monthly: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.72% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.93	0.59	0	0	0	3.52
NNE	2.2	0.88	0.44	0	0	3.52
NE	3.23	1.61	0.29	0	0	5.13
ENE	0.88	0.73	0.15	0	0	1.76
E	1.61	1.47	0.44	0	0	3.52
ESE	3.23	2.05	0.59	0	0	5.87
SE	2.35	4.11	1.17	0	0	7.63
SSE	0.59	0.73	0.44	0	0	1.76
S	1.91	1.17	0.29	0	0	3.37
SSW	1.03	2.35	0.15	0	0	3.53
SW	9.09	3.67	0.73	0	0	13.49
WSW	7.92	5.72	0.88	0	0	14.52
W	7.18	7.48	0.59	0	0	15.25
WNW	4.4	3.37	0	0	0	7.77
NW	2.49	2.79	0.15	0	0	5.43
NNW	2.35	1.61	0	0	0	3.96
Summary	53.39	40.33	6.31	0	0	100



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% Icon Classes (ppb)	53	0-30	40	30-50	6	50-76	0	76-159	0	>159.0
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LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - June 2021

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

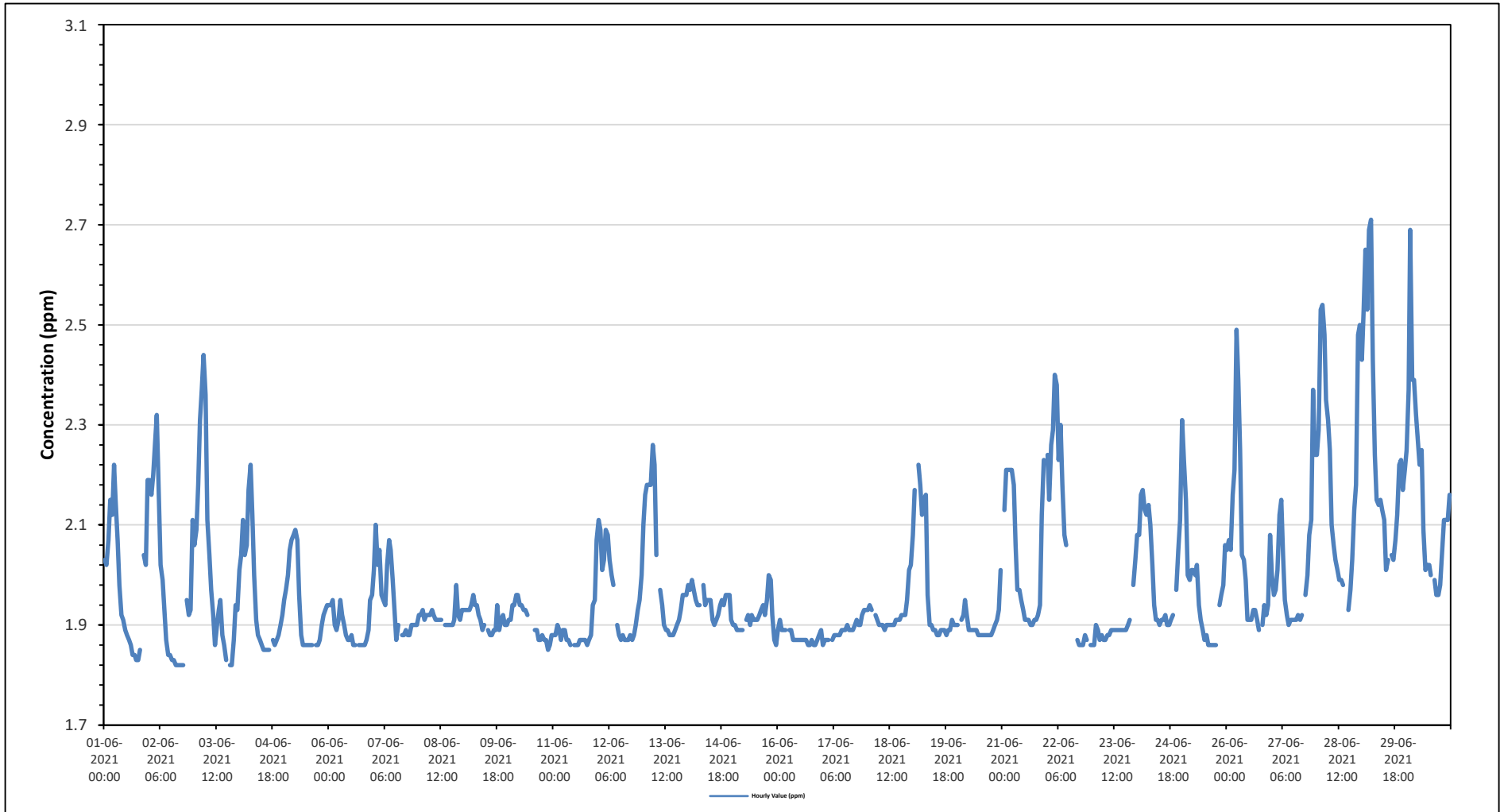
Maximum Hourly Value:	2.71 ppm on June 29 at hour 5	Hours in Service:	720
Maximum Daily Value:	2.26 ppm on June 29	Hours of Data:	682
Minimum Hourly Value:	1.82 ppm on June 2 at hour 14	Hours of Missing Data:	2
Minimum Daily Value:	1.88 ppm on June 16	Hours of Calibration:	36
Monthly Average:	1.98 ppm	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	
Jun 1	2.03	2.02	2.07	2.15	2.12	2.22	2.15	2.07	1.98	1.92	1.91	1.89	1.88	1.87	1.86	1.84	1.84	1.83	1.83	1.85	S	2.04	2.02	2.19	1.83	2.22	1.98	
Jun 2	2.19	2.16	2.20	2.27	2.32	2.16	2.02	1.99	1.93	1.87	1.84	1.84	1.83	1.83	1.82	1.82	1.82	1.82	1.82	S	1.95	1.92	1.93	2.11	1.82	2.32	1.98	
Jun 3	2.06	2.09	2.18	2.31	2.37	2.44	2.36	2.11	2.04	1.97	1.92	1.86	1.90	1.93	1.95	1.88	1.86	1.83	S	1.82	1.82	1.87	1.94	1.93	1.82	2.44	2.02	
Jun 4	2.01	2.04	2.11	2.04	2.06	2.17	2.22	2.12	2.00	1.91	1.88	1.87	1.86	1.85	1.85	1.85	1.85	S	1.87	1.86	1.87	1.88	1.90	1.92	1.85	2.22	1.96	
Jun 5	1.95	1.97	2.00	2.05	2.07	2.08	2.09	2.07	1.96	1.88	1.86	1.86	1.86	1.86	1.86	1.86	1.86	S	1.86	1.86	1.87	1.90	1.92	1.93	1.94	1.86	2.09	1.94
Jun 6	1.94	1.94	1.95	1.90	1.89	1.91	1.95	1.92	1.90	1.88	1.87	1.87	1.88	1.86	1.86	S	1.86	1.86	1.86	1.86	1.86	1.87	1.89	1.95	1.96	1.86	1.96	1.90
Jun 7	2.01	2.10	2.02	2.05	1.96	1.95	1.94	2.02	2.07	2.05	1.99	1.93	1.87	1.90	S	1.88	1.88	1.89	1.88	1.88	1.88	1.90	1.90	1.90	1.90	1.87	2.10	1.95
Jun 8	1.92	1.92	1.93	1.91	1.92	1.92	1.92	1.93	1.92	1.91	1.91	1.91	S	1.90	1.90	1.90	1.90	1.90	1.90	1.91	1.98	1.92	1.91	1.93	1.90	1.98	1.98	1.92
Jun 9	1.93	1.93	1.93	1.93	1.94	1.96	1.94	1.94	1.92	1.91	1.89	1.90	S	1.89	1.88	1.88	1.89	1.89	1.94	1.89	1.91	1.92	1.90	1.90	1.88	1.96	1.91	1.91
Jun 10	1.91	1.91	1.94	1.94	1.96	1.96	1.94	1.94	1.93	1.93	1.92	S	1.90	NRM	1.89	1.89	1.87	1.87	1.88	1.87	1.87	1.87	1.85	1.86	1.88	1.85	1.96	1.91
Jun 11	1.88	1.88	1.90	1.89	1.87	1.89	1.89	1.87	1.87	1.86	S	1.86	1.86	1.86	1.87	1.87	1.87	1.87	1.86	1.87	1.88	1.94	1.95	2.07	1.86	2.07	1.89	
Jun 12	2.11	2.09	2.01	2.03	2.09	2.08	2.03	2.00	1.98	S	1.90	1.88	1.87	1.88	1.87	1.87	1.87	1.88	1.87	1.88	1.87	1.88	1.90	1.93	1.95	2.00	1.87	1.96
Jun 13	2.10	2.16	2.18	2.18	2.18	2.26	2.22	2.04	S	1.97	1.94	1.90	1.89	1.89	1.88	1.88	1.88	1.89	1.90	1.91	1.93	1.96	1.96	1.96	1.88	2.26	2.00	
Jun 14	1.98	1.97	1.99	1.97	1.95	1.94	1.94	S	1.98	1.94	1.95	1.95	1.91	1.90	1.91	1.92	1.94	1.95	1.94	1.96	1.96	1.96	1.91	1.90	1.99	1.99	1.95	
Jun 15	1.90	1.90	1.89	1.89	1.89	1.89	S	1.91	1.92	1.90	1.92	1.91	1.91	1.91	1.92	1.93	1.94	1.92	1.95	2.00	1.99	1.92	1.87	1.86	1.86	2.00	1.91	
Jun 16	1.89	1.91	1.89	1.89	1.89	S	1.89	1.89	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.86	1.86	1.87	1.86	1.86	1.87	1.88	1.89	1.86	1.91	1.88	
Jun 17	1.86	1.87	1.87	1.87	S	1.87	1.88	1.88	1.88	1.88	1.89	1.89	1.89	1.90	1.89	1.89	1.89	1.90	1.91	1.90	1.90	1.92	1.93	1.93	1.86	1.93	1.89	
Jun 18	1.93	1.94	1.93	S	1.92	1.91	1.90	1.90	1.90	1.89	1.90	1.90	1.90	1.90	1.91	1.91	1.91	1.91	1.92	1.92	1.92	1.95	2.01	2.02	1.89	2.02	1.92	
Jun 19	2.08	2.17	S	2.22	2.18	2.12	2.15	2.16	1.96	1.90	1.90	1.89	1.89	1.88	1.88	1.89	1.89	1.89	1.88	1.89	1.89	1.91	1.90	1.90	1.88	2.22	1.97	
Jun 20	1.90	S	1.91	1.92	1.95	1.92	1.89	1.89	1.89	1.89	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.89	1.90	1.91	1.93	2.01	1.88	2.01	1.90	
Jun 21	S	2.13	2.21	2.21	2.21	2.21	2.18	2.06	1.97	1.97	1.95	1.93	1.91	1.91	1.91	1.90	1.90	1.91	1.91	1.92	1.94	2.12	2.23	S	1.90	2.23	2.03	
Jun 22	2.24	2.15	2.26	2.29	2.40	2.38	2.23	2.30	2.18	2.08	2.06	C	C	C	C	C	1.87	1.86	1.86	1.86	1.88	1.87	S	1.86	2.40	2.09	2.09	
Jun 23	1.86	1.86	1.90	1.89	1.87	1.88	1.87	1.87	1.88	1.88	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.90	1.91	S	1.98	2.03	1.86	2.03	1.90		
Jun 24	2.08	2.08	2.16	2.17	2.13	2.12	2.14	2.10	2.02	1.94	1.91	1.91	1.90	1.91	1.91	1.92	1.90	1.90	1.91	1.92	S	1.97	2.05	2.11	1.90	2.17	2.01	
Jun 25	2.31	2.23	2.15	2.00	1.99	2.01	2.01	2.00	2.02	1.94	1.91	1.89	1.87	1.88	1.86	1.86	1.86	1.86	1.86	S	1.94	1.96	1.98	2.06	1.86	2.31	1.98	
Jun 26	2.05	2.07	2.05	2.16	2.21	2.49	2.39	2.25	2.04	2.03	1.99	1.91	1.91	1.91	1.93	1.93	1.91	1.89	S	1.90	1.94	1.92	1.94	2.08	1.89	2.49	2.04	
Jun 27	2.00	1.96	1.97	2.01	2.12	2.15	2.04	1.95	1.92	1.90	1.91	1.91	1.91	1.91	1.92	1.91	1.92	S	1.96	2.00	2.08	2.11	2.37	2.24	1.90	2.37	2.01	
Jun 28	2.24	2.29	2.53	2.54	2.48	2.35	2.31	2.25	2.10	2.06	2.03	2.01	1.99	1.99	1.98	Y	S	1.93	1.97	2.03	2.13	2.18	2.48	2.50	1.93	2.54	2.20	
Jun 29	2.43	2.53	2.65	2.53	2.69	2.71	2.43	2.24	2.15	2.14	2.15	2.13	2.11	2.01	2.03	S	2.04	2.03	2.07	2.12	2.22	2.23	2.17	2.21	2.01	2.71	2.26	
Jun 30	2.25	2.37	2.69	2.39	2.39	2.32	2.27	2.22	2.25	2.09	2.01	2.02	2.02	2.00	S	1.99	1.96	1.96	1.98	2.05	2.11	2.11	2.11	2.16	1.96	2.69	2.16	
Diurnal Maximum	2.43	2.53	2.69	2.54	2.69	2.71	2.43	2.30	2.25	2.14	2.15	2.13	2.11	2.01	2.03	1.99	2.04	2.03	2.07	2.12	2.22	2.23	2.48	2.50				
Diurnal Average	2.04	2.06	2.09	2.09	2.10	2.11	2.08	2.03	1.98	1.94	1.93	1.91	1.90	1.90	1.89	1.89	1.89	1.89	1.90	1.91	1.94	1.96	2.00	2.02				

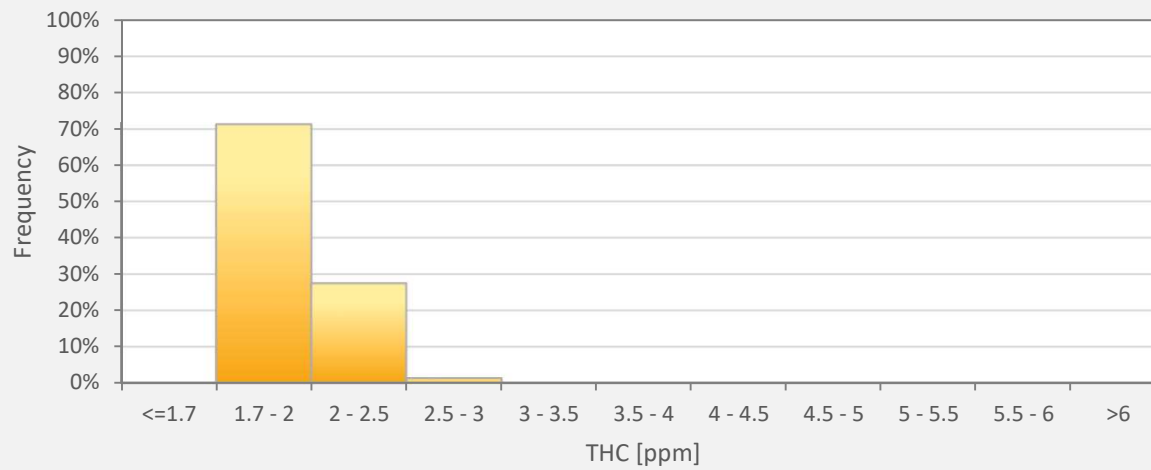
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

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



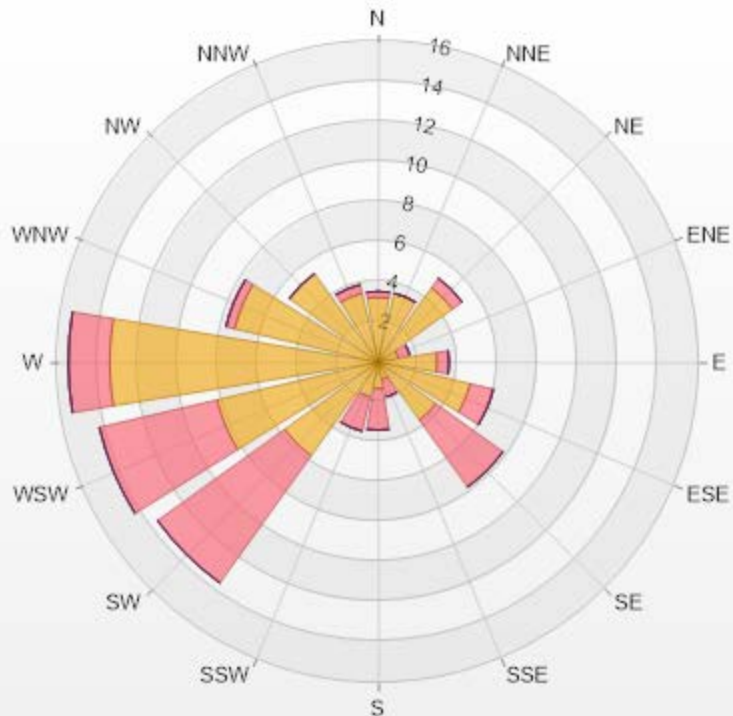
THC55[ppm] Histogram: Cold Lake South Monthly: 06-2021 1 Hr.



Classes	THC55
<=1.7	0.00%
1.7 - 2	71.26%
2 - 2.5	27.42%
2.5 - 3	1.32%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.44% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	3.24	0.29	0	0	0	3.53
NNE	3.53	0	0	0	0	3.53
NE	4.56	0.59	0	0	0	5.15
ENE	1.03	0.59	0	0	0	1.62
E	2.94	0.59	0	0	0	3.53
ESE	4.71	1.18	0	0	0	5.89
SE	3.53	4.12	0	0	0	7.65
SSE	0.88	0.88	0	0	0	1.76
S	1.32	2.06	0	0	0	3.38
SSW	1.76	1.76	0	0	0	3.52
SW	5.74	7.79	0	0	0	13.53
WSW	8.24	6.03	0	0	0	14.27
W	13.38	2.06	0	0	0	15.44
WNW	7.35	0.44	0	0	0	7.79
NW	5.44	0	0	0	0	5.44
NNW	3.53	0.44	0	0	0	3.97
Summary	71.18	28.82	0	0	0	100



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% Icon Classes (ppm)

71 0-2

29 2-5

0 5-10

0 10-40

0 >40.0



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Cold Lake South Station - June 2021

Summary of Hourly Averages

METHANE (CH₄) in ppm

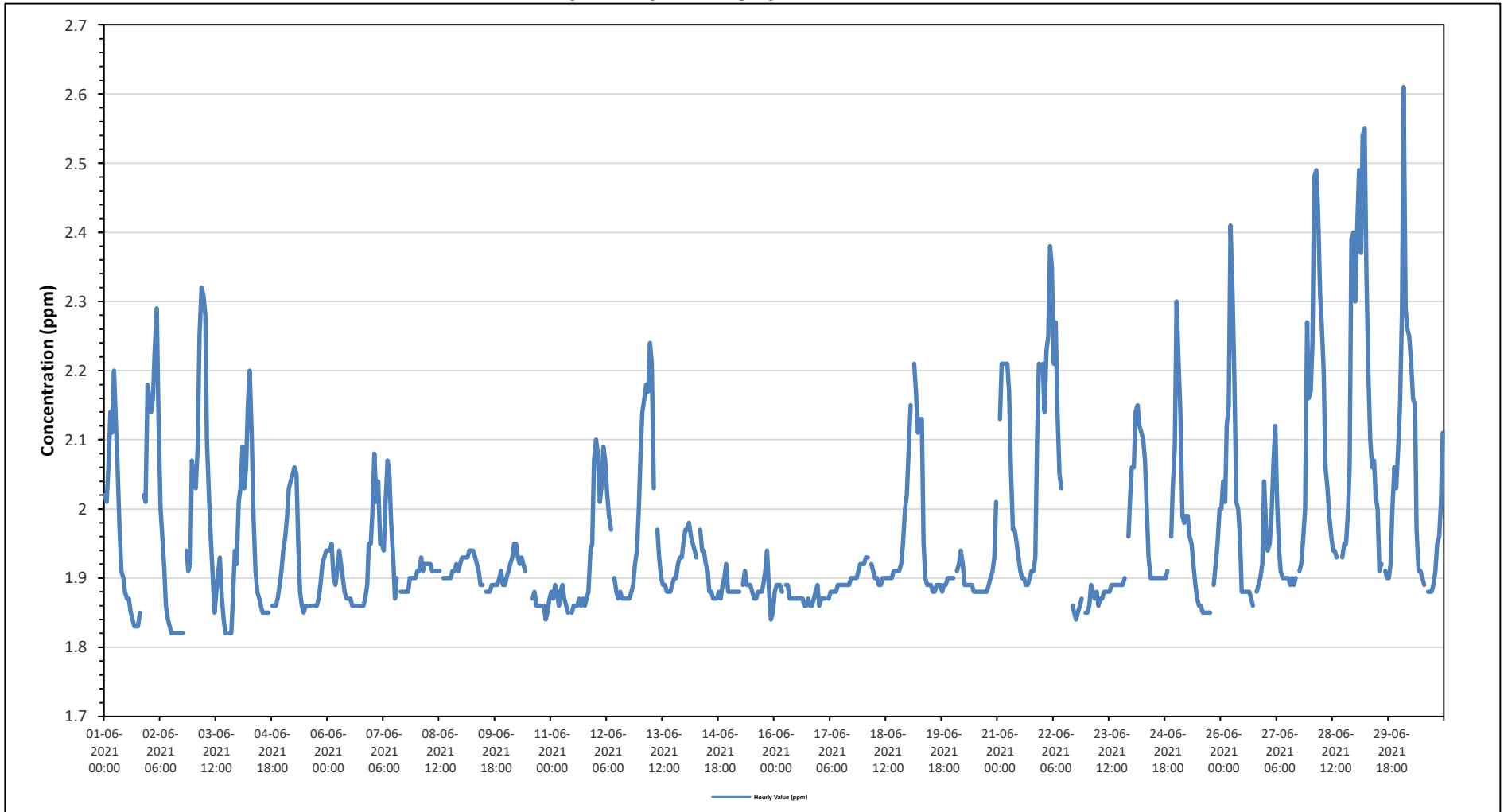
Maximum Hourly Value:	2.61 ppm on June 30 at hour 2	Hours in Service:	720
Maximum Daily Value:	2.14 ppm on June 28	Hours of Data:	682
Minimum Hourly Value:	1.82 ppm on June 2 at hour 12	Hours of Missing Data:	2
Minimum Daily Value:	1.87 ppm on June 16	Hours of Calibration:	36
Monthly Average:	1.96 ppm	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
Jun 1	2.02	2.01	2.06	2.14	2.11	2.20	2.13	2.06	1.97	1.91	1.90	1.88	1.87	1.87	1.85	1.84	1.83	1.83	1.83	1.85	S	2.02	2.01	2.18	1.83	2.20	1.97
Jun 2	2.16	2.14	2.16	2.23	2.29	2.13	2.00	1.96	1.91	1.86	1.84	1.83	1.82	1.82	1.82	1.82	1.82	1.82	1.82	S	1.94	1.91	1.92	2.07	1.82	2.29	1.96
Jun 3	2.04	2.03	2.09	2.25	2.32	2.31	2.28	2.10	2.03	1.96	1.91	1.85	1.88	1.91	1.93	1.87	1.84	1.82	S	1.82	1.82	1.87	1.94	1.92	1.82	2.32	1.99
Jun 4	2.01	2.03	2.09	2.03	2.06	2.15	2.20	2.11	1.99	1.91	1.88	1.87	1.86	1.85	1.85	1.85	1.85	S	1.86	1.86	1.86	1.87	1.89	1.91	1.85	2.20	1.95
Jun 5	1.94	1.96	1.99	2.03	2.04	2.05	2.06	2.05	1.95	1.88	1.86	1.85	1.86	1.86	1.86	1.86	1.86	S	1.86	1.86	1.87	1.89	1.92	1.93	1.94	1.85	2.06
Jun 6	1.94	1.94	1.95	1.90	1.89	1.91	1.94	1.92	1.90	1.88	1.87	1.87	1.87	1.86	1.86	S	1.86	1.86	1.86	1.86	1.86	1.87	1.89	1.95	1.95	1.86	1.95
Jun 7	2.00	2.08	2.01	2.04	1.95	1.95	1.94	2.01	2.07	2.05	1.98	1.93	1.87	1.90	S	1.88	1.88	1.88	1.88	1.88	1.88	1.90	1.90	1.90	1.90	1.87	2.08
Jun 8	1.91	1.91	1.93	1.91	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.91	S	1.90	1.90	1.90	1.90	1.90	1.90	1.91	1.91	1.92	1.91	1.92	1.90	1.93
Jun 9	1.93	1.93	1.93	1.93	1.94	1.94	1.94	1.93	1.92	1.91	1.89	1.89	S	1.88	1.88	1.88	1.89	1.89	1.89	1.89	1.89	1.90	1.91	1.89	1.89	1.88	1.94
Jun 10	1.90	1.91	1.92	1.93	1.95	1.95	1.93	1.92	1.93	1.92	1.91	S	1.88	NRM	1.87	1.88	1.86	1.86	1.86	1.86	1.86	1.86	1.84	1.85	1.87	1.84	1.95
Jun 11	1.88	1.87	1.89	1.88	1.86	1.88	1.89	1.87	1.86	1.85	S	1.85	1.86	1.86	1.86	1.87	1.86	1.87	1.86	1.87	1.88	1.94	1.95	2.07	1.85	2.07	
Jun 12	2.10	2.08	2.01	2.03	2.09	2.07	2.02	1.99	1.97	S	1.90	1.88	1.87	1.88	1.87	1.87	1.87	1.87	1.87	1.88	1.89	1.92	1.94	2.00	1.87	2.10	
Jun 13	2.09	2.14	2.16	2.18	2.17	2.24	2.21	2.03	S	1.97	1.93	1.90	1.89	1.89	1.88	1.88	1.88	1.89	1.90	1.90	1.92	1.93	1.93	1.95	1.88	2.24	
Jun 14	1.97	1.97	1.98	1.96	1.95	1.94	1.93	S	1.97	1.94	1.94	1.92	1.91	1.88	1.88	1.87	1.87	1.87	1.88	1.87	1.89	1.90	1.92	1.88	1.87	1.98	
Jun 15	1.88	1.88	1.88	1.88	1.88	1.88	S	1.89	1.91	1.89	1.89	1.89	1.88	1.87	1.87	1.88	1.88	1.88	1.89	1.91	1.94	1.88	1.84	1.85	1.84	1.94	
Jun 16	1.88	1.89	1.89	1.89	1.88	S	1.89	1.89	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.86	1.86	1.87	1.86	1.86	1.87	1.88	1.89	1.86	1.89		
Jun 17	1.86	1.87	1.87	1.87	S	1.87	1.88	1.88	1.88	1.88	1.89	1.89	1.89	1.89	1.89	1.89	1.90	1.90	1.90	1.90	1.91	1.92	1.92	1.86	1.92		
Jun 18	1.92	1.93	1.93	S	1.92	1.91	1.90	1.90	1.89	1.89	1.90	1.90	1.90	1.90	1.90	1.91	1.91	1.91	1.91	1.91	1.92	1.95	2.00	2.02	1.89	2.02	
Jun 19	2.08	2.15	S	2.21	2.17	2.11	2.13	2.13	1.95	1.90	1.89	1.89	1.89	1.88	1.88	1.89	1.89	1.88	1.89	1.89	1.89	1.90	1.90	1.90	1.88	2.21	
Jun 20	1.90	S	1.91	1.92	1.94	1.92	1.89	1.89	1.89	1.89	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.89	1.90	1.91	1.93	2.01	1.88	2.01	
Jun 21	S	2.13	2.21	2.21	2.21	2.21	2.17	2.06	1.97	1.97	1.95	1.93	1.91	1.90	1.89	1.89	1.90	1.91	1.91	1.91	1.93	2.10	2.21	S	1.89	2.21	
Jun 22	2.21	2.14	2.23	2.25	2.38	2.35	2.21	2.27	2.14	2.05	2.03	C	C	C	C	C	1.86	1.85	1.84	1.85	1.86	1.87	S	1.85	1.84	2.38	
Jun 23	1.85	1.86	1.89	1.88	1.87	1.88	1.86	1.87	1.87	1.88	1.88	1.88	1.88	1.89	1.89	1.89	1.89	1.89	1.89	1.90	S	1.96	2.02	1.85	2.02		
Jun 24	2.06	2.06	2.14	2.15	2.12	2.11	2.10	2.07	2.00	1.93	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.91	S	1.96	2.03	1.90	2.15		
Jun 25	2.30	2.21	2.14	1.99	1.98	1.99	1.99	1.96	1.95	1.92	1.89	1.87	1.86	1.86	1.85	1.85	1.85	1.85	S	1.89	1.92	1.95	2.00	1.85	2.30		
Jun 26	2.00	2.04	2.01	2.12	2.15	2.41	2.31	2.19	2.01	2.00	1.96	1.88	1.88	1.88	1.88	1.88	1.87	1.86	S	1.88	1.89	1.90	1.92	2.04	1.86	2.41	
Jun 27	1.97	1.94	1.95	1.99	2.07	2.12	2.01	1.94	1.91	1.90	1.90	1.90	1.90	1.89	1.90	1.89	1.90	S	1.91	1.92	1.96	2.00	2.27	2.16	1.89	2.27	
Jun 28	2.17	2.24	2.48	2.49	2.43	2.31	2.27	2.20	2.06	2.03	1.99	1.96	1.94	1.94	1.93	Y	S	1.93	1.95	1.95	2.00	2.06	2.39	2.40	1.93	2.49	
Jun 29	2.30	2.41	2.49	2.37	2.54	2.55	2.34	2.19	2.10	2.06	2.07	2.02	2.00	1.91	1.92	S	1.91	1.90	1.90	1.92	2.00	2.06	2.03	2.09	1.90	2.55	
Jun 30	2.15	2.29	2.61	2.29	2.26	2.25	2.21	2.16	2.15	1.97	1.91	1.91	1.90	1.89	S	1.88	1.88	1.88	1.89	1.91	1.95	1.96	2.01	2.11	1.88	2.61	
Diurnal Maximum	2.30	2.41	2.61	2.49	2.54	2.55	2.34	2.27	2.15	2.06	2.07	2.02	2.00	1.94	1.93	1.90	1.91	1.93	1.95	1.95	2.00	2.10	2.39	2.40			
Diurnal Average	2.01	2.04	2.06	2.07	2.08	2.09	2.05	2.01	1.96	1.93	1.91	1.89	1.89	1.88	1.88	1.88	1.87	1.88	1.88	1.89	1.90	1.93	1.97	1.99			

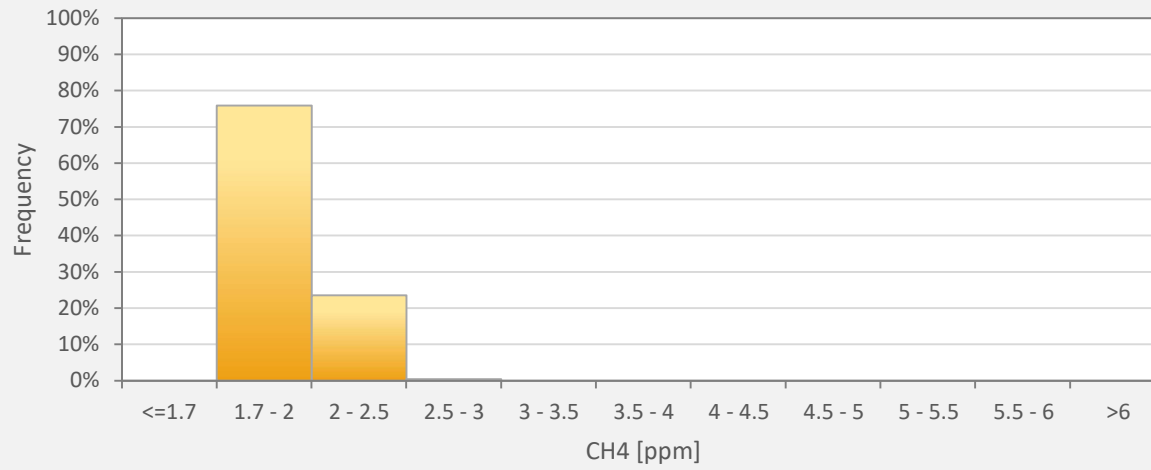
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

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



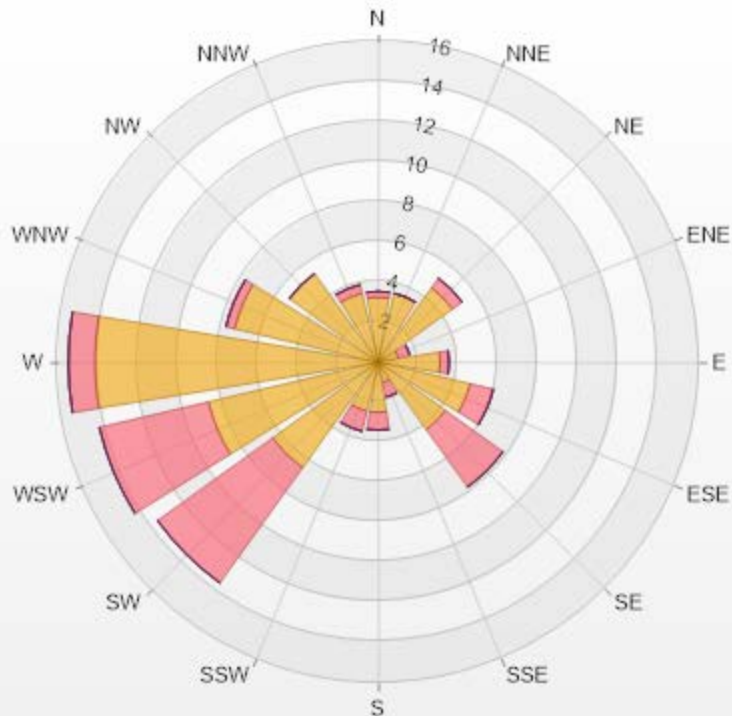
CH4[ppm] Histogram: Cold Lake South Monthly: 06-2021 1 Hr.



Classes	CH4
<=1.7	0.00%
1.7 - 2	75.95%
2 - 2.5	23.61%
2.5 - 3	0.44%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.44% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	3.24	0.29	0	0	0	3.53
NNE	3.53	0	0	0	0	3.53
NE	4.56	0.59	0	0	0	5.15
ENE	1.03	0.59	0	0	0	1.62
E	3.09	0.44	0	0	0	3.53
ESE	4.71	1.18	0	0	0	5.89
SE	4.12	3.53	0	0	0	7.65
SSE	1.03	0.74	0	0	0	1.77
S	2.5	0.88	0	0	0	3.38
SSW	2.5	1.03	0	0	0	3.53
SW	6.47	7.06	0	0	0	13.53
WSW	8.68	5.59	0	0	0	14.27
W	14.12	1.32	0	0	0	15.44
WNW	7.35	0.44	0	0	0	7.79
NW	5.44	0	0	0	0	5.44
NNW	3.53	0.44	0	0	0	3.97
Summary	75.9	24.12	0	0	0	100



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% Icon Classes (ppm)

76 0-2

24 2-5

0 5-10

0 10-20

0 >20.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - June 2021

Summary of Hourly Averages

NON-METHANE HYDROCARBONS (NMHC) in ppm

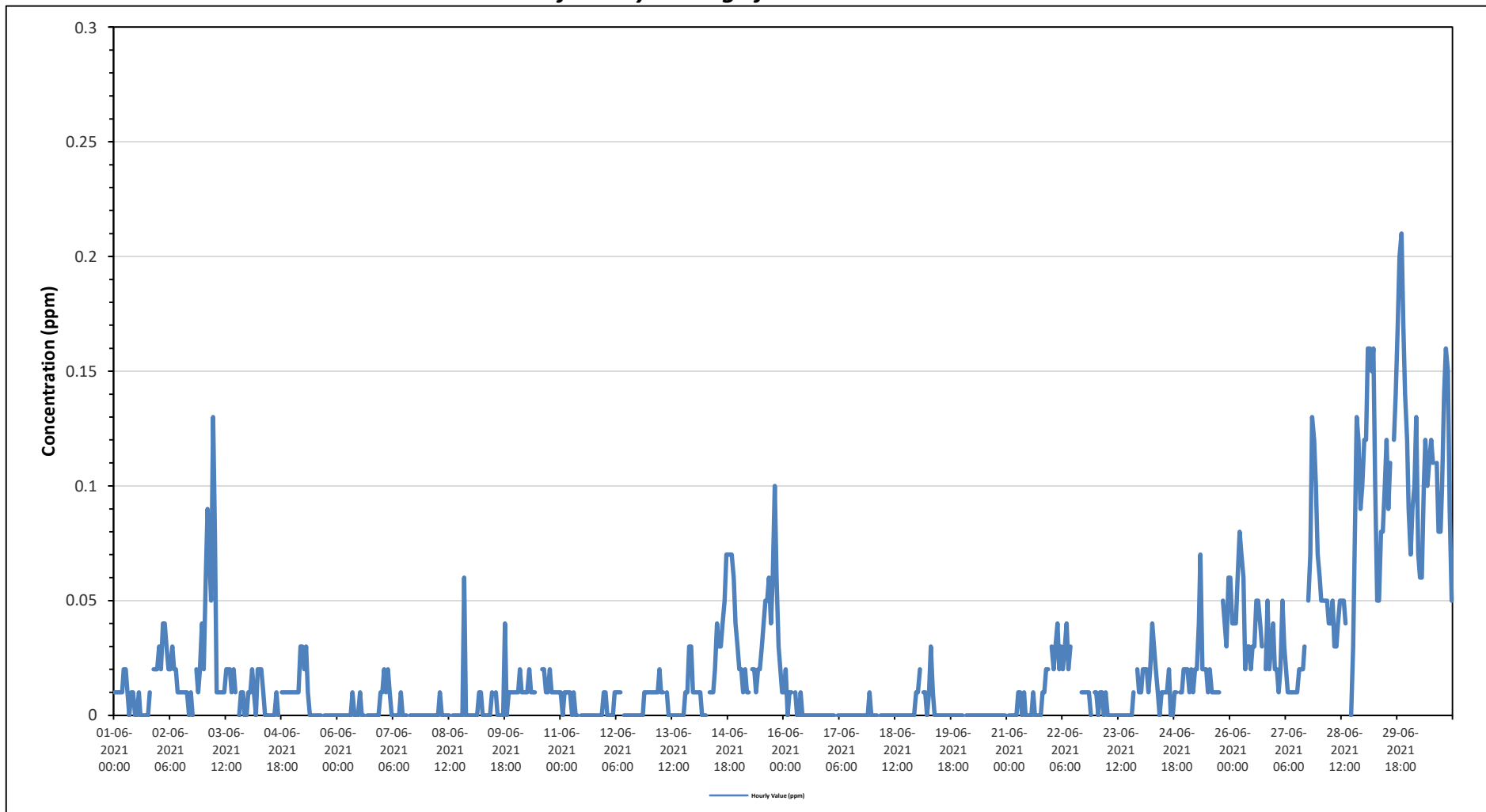
Maximum Hourly Value:	0.21 ppm on June 29 at hour 20	Hours in Service:	720
Maximum Daily Value:	0.13 ppm on June 29	Hours of Data:	682
Minimum Hourly Value:	0.00 ppm on June 1 at hour 8	Hours of Missing Data:	2
Minimum Daily Value:	0.00 ppm on June 20	Hours of Calibration:	36
Monthly Average:	0.02 ppm	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	
Jun 1	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	S	0.02	0.02	0.02	0.00	0.02	0.01	
Jun 2	0.03	0.02	0.04	0.04	0.03	0.02	0.02	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.00	S	0.02	0.01	0.02	0.04	0.00	0.04	0.02	
Jun 3	0.02	0.06	0.09	0.07	0.05	0.13	0.08	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.01	0.02	S	S	0.00	0.01	0.01	0.00	0.00	0.00	0.13	0.03	
Jun 4	0.01	0.01	0.02	0.01	0.00	0.02	0.02	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	S	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.02	0.01	
Jun 5	0.01	0.01	0.01	0.01	0.03	0.03	0.02	0.03	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	0.03	0.01	
Jun 6	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	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	
Jun 7	0.01	0.02	0.01	0.02	0.01	0.00	0.00	0.00	0.00	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	0.02	0.00	
Jun 8	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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.06	0.00	
Jun 9	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	S	0.01	0.00	0.00	0.00	0.00	0.04	0.00	0.01	0.01	0.01	0.01	0.00	0.04	0.01	
Jun 10	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	S	0.02	NRM	0.02	0.02	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	
Jun 11	0.01	0.00	0.01	0.01	0.01	0.01	0.01	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	0.01	0.00	0.01	0.00	
Jun 12	0.01	0.00	0.00	0.00	0.00	0.01	0.01	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	0.01	0.01	0.01	0.01	0.01	0.00	
Jun 13	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	S	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.03	0.03	0.01	0.00	0.03	0.01	0.01	
Jun 14	0.01	0.01	0.01	0.01	0.00	0.00	0.00	S	0.01	0.01	0.01	0.02	0.04	0.03	0.03	0.04	0.05	0.07	0.07	0.07	0.07	0.06	0.04	0.03	0.00	0.07	0.03	
Jun 15	0.02	0.02	0.01	0.02	0.01	0.01	S	0.02	0.02	0.01	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.04	0.06	0.10	0.06	0.03	0.02	0.01	0.01	0.10	0.03	
Jun 16	0.01	0.02	0.00	0.01	0.01	S	0.01	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	0.02	0.00	
Jun 17	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	0.01	0.00	0.00	0.01	0.00	0.00	
Jun 18	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	0.01	0.00	0.01	0.00	0.00	
Jun 19	0.01	0.02	S	0.01	0.01	0.00	0.01	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	
Jun 20	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	
Jun 21	S	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.02	S	0.00	0.02	0.00	0.00	
Jun 22	0.03	0.02	0.03	0.04	0.02	0.03	0.02	0.03	0.04	0.02	0.03	C	C	C	C	0.01	0.01	0.01	0.01	0.01	0.01	0.00	S	0.01	0.00	0.04	0.02	
Jun 23	0.01	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	S	0.02	0.01	0.00	0.02	0.00	0.00	
Jun 24	0.01	0.02	0.02	0.02	0.01	0.02	0.04	0.03	0.02	0.01	0.00	0.01	0.01	0.01	0.01	0.02	0.00	0.00	0.01	0.01	S	0.01	0.01	0.02	0.00	0.04	0.01	
Jun 25	0.02	0.02	0.01	0.02	0.01	0.02	0.02	0.04	0.07	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	S	0.05	0.04	0.03	0.06	0.01	0.07	0.02	
Jun 26	0.06	0.04	0.04	0.04	0.06	0.08	0.07	0.06	0.02	0.03	0.03	0.02	0.03	0.03	0.05	0.05	0.04	0.03	S	0.02	0.05	0.02	0.03	0.04	0.02	0.08	0.04	
Jun 27	0.02	0.02	0.01	0.02	0.05	0.03	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.03	S	0.05	0.07	0.13	0.12	0.10	0.07	0.01	0.13	0.04	
Jun 28	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.05	0.03	0.03	0.04	0.05	0.05	0.05	0.04	Y	S	0.00	0.03	0.08	0.13	0.12	0.09	0.10	0.00	0.13	0.06	
Jun 29	0.12	0.12	0.16	0.16	0.15	0.16	0.10	0.05	0.05	0.08	0.08	0.10	0.12	0.09	0.11	S	0.12	0.14	0.17	0.20	0.21	0.17	0.14	0.12	0.05	0.21	0.13	
Jun 30	0.09	0.07	0.09	0.10	0.13	0.07	0.06	0.06	0.10	0.12	0.10	0.11	0.12	0.11	S	0.11	0.08	0.08	0.10	0.14	0.16	0.15	0.09	0.05	0.05	0.16	0.10	
Diurnal Maximum	0.12	0.12	0.16	0.16	0.15	0.16	0.10	0.06	0.10	0.12	0.10	0.11	0.12	0.11	0.11	0.11	0.12	0.14	0.17	0.20	0.21	0.17	0.14	0.12	0.05	0.21	0.13	
Diurnal Average	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.01	0.01	0.02	0.01	0.02	0.01	0.02	0.03	0.04	0.03	0.02	0.02	0.05	0.16	0.10

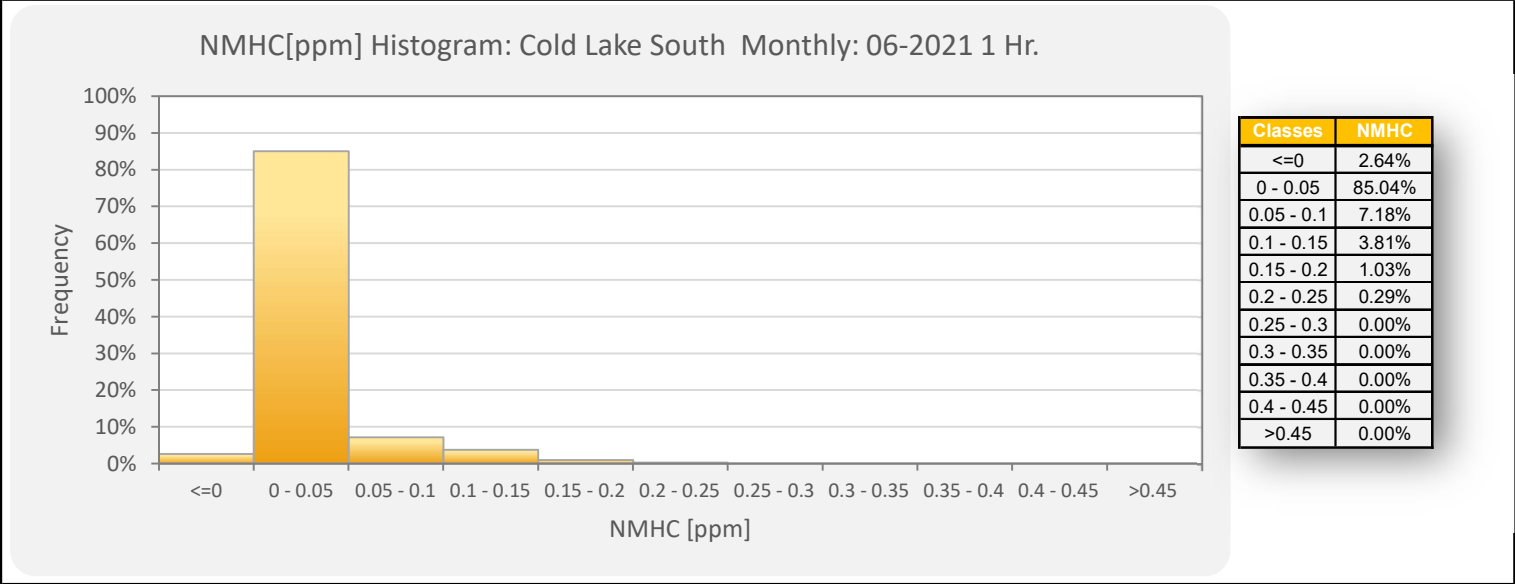
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

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

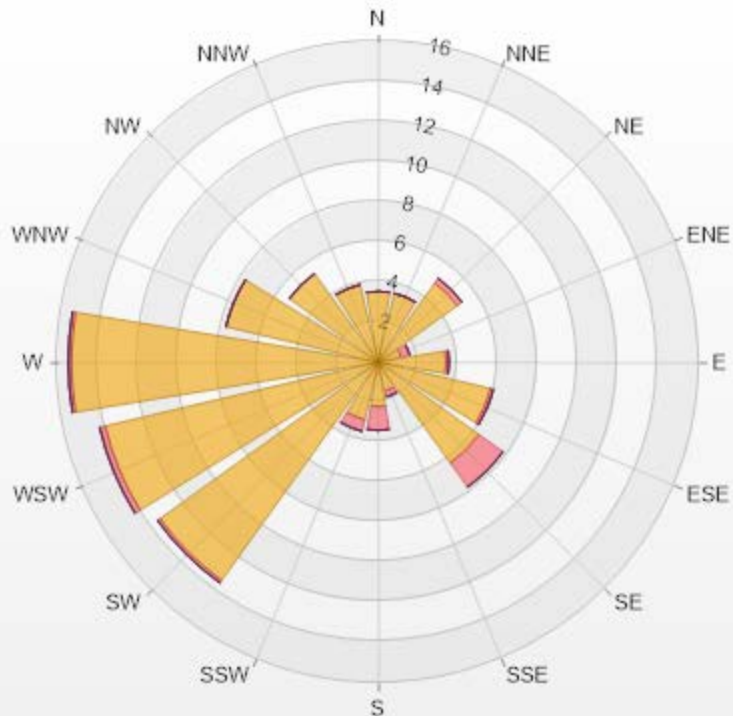


NMHC[ppm] Histogram: Cold Lake South Monthly: 06-2021 1 Hr.



Wind: Cold Lake South Poll.: Cold Lake South-NMHC[ppm] Monthly: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.44% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-0.9	0.9-2	>2.0	Total
N	3.53	0	0	0	0	3.53
NNE	3.53	0	0	0	0	3.53
NE	4.85	0.29	0	0	0	5.14
ENE	1.18	0.44	0	0	0	1.62
E	3.38	0.15	0	0	0	3.53
ESE	5.74	0.15	0	0	0	5.89
SE	6.18	1.47	0	0	0	7.65
SSE	1.47	0.29	0	0	0	1.76
S	2.21	1.18	0	0	0	3.39
SSW	2.94	0.59	0	0	0	3.53
SW	13.38	0.15	0	0	0	13.53
WSW	13.97	0.29	0	0	0	14.26
W	15.29	0.15	0	0	0	15.44
WNW	7.79	0	0	0	0	7.79
NW	5.44	0	0	0	0	5.44
NNW	3.97	0	0	0	0	3.97
Summary	94.85	5.15	0	0	0	100



LICA-202106

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% Icon Classes (ppm)

95 ■ 0-0.1

5 ■ 0.1-0.3

0 ■ 0.3-0.9

0 ■ 0.9-2

0 ■ >2.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - June 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/m³, Alberta Ambient Air Quality Objectives (AAAO): 24-Hour 29 µg/m³

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

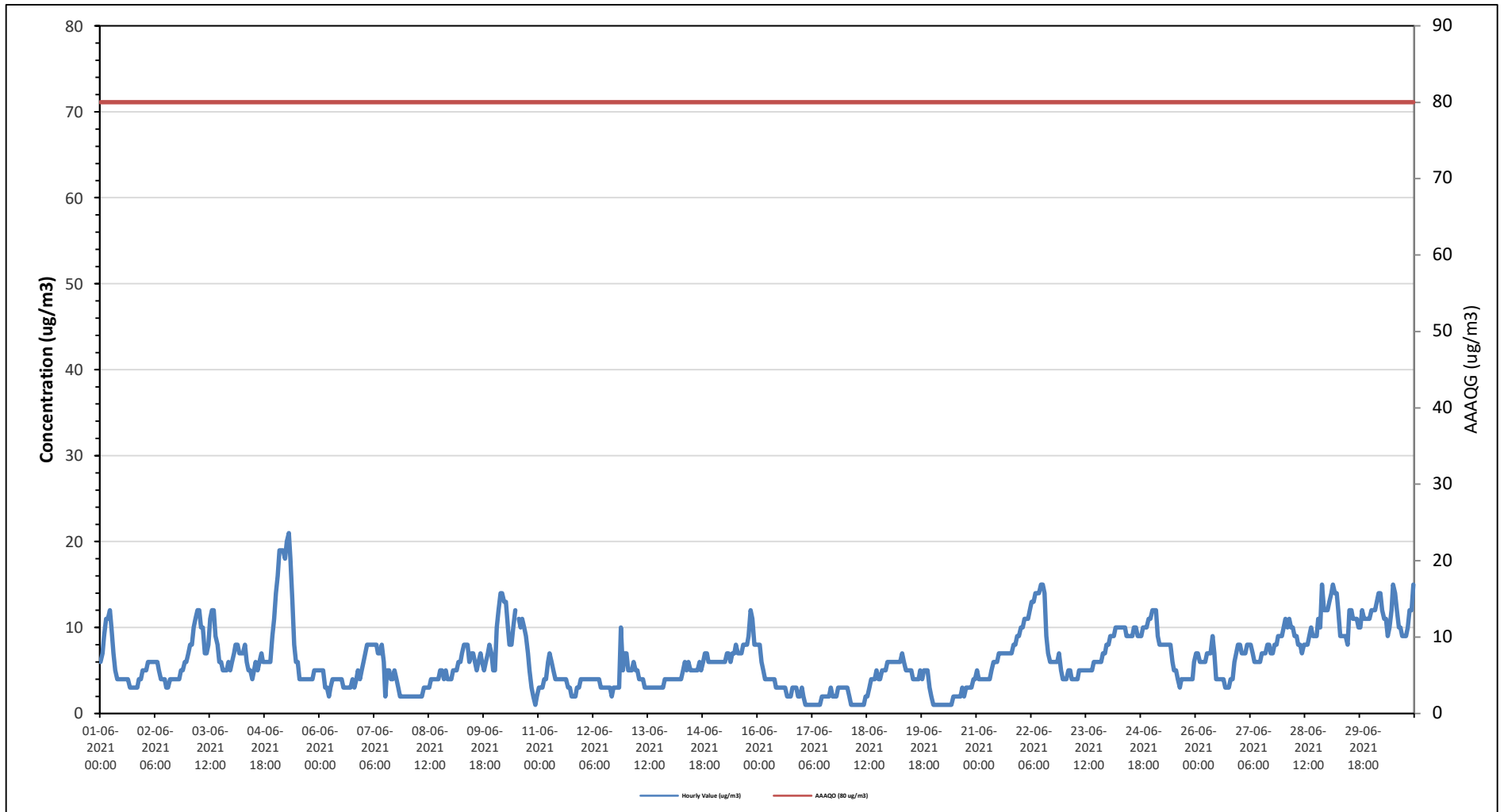
Maximum Hourly Value:	21 µg/m ³ on June 5 at hour 7	Hours in Service:	720
Maximum Daily Value:	11.6 µg/m ³ on June 30	Hours of Data:	719
Minimum Hourly Value:	1 µg/m ³ on June 10 at hour 22	Hours of Missing Data:	0
Minimum Daily Value:	2 µg/m ³ on June 17	Hours of Calibration:	1
Monthly Average:	6.2 µg/m ³	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily	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	Average	
Jun 1	6	7	9	11	11	12	10	7	5	4	4	4	4	4	4	3	3	3	3	3	3	4	4	5	3	12	5.6	
Jun 2	5	5	6	6	6	6	6	6	5	4	4	4	3	3	4	4	4	4	4	4	5	5	6	6	3	6	4.8	
Jun 3	7	8	8	10	11	12	12	10	10	7	7	8	11	12	12	9	8	6	6	5	5	5	6	5	5	12	8.3	
Jun 4	6	7	8	8	7	7	7	8	6	5	5	4	5	6	5	6	7	6	6	6	6	6	9	11	4	11	6.5	
Jun 5	14	16	19	19	19	18	20	21	18	13	8	6	4	4	4	4	4	4	4	4	4	5	5	5	4	21	10.2	
Jun 6	5	5	5	3	3	2	3	4	4	4	4	4	4	3	3	3	3	3	4	3	4	5	4	5	2	5	3.8	
Jun 7	6	7	8	8	8	8	8	8	7	7	8	6	2	5	5	4	4	5	4	3	2	2	2	2	2	8	5.4	
Jun 8	2	2	2	2	2	2	2	2	2	3	3	3	3	4	4	4	4	4	5	4	5	4	5	4	2	5	3.2	
Jun 9	4	5	5	5	6	6	7	8	8	8	6	7	7	6	5	6	7	6	5	6	7	8	7	5	4	8	6.3	
Jun 10	5	10	12	14	14	13	13	10	8	8	10	12	C	11	10	11	10	9	7	5	3	2	1	2	1	14	8.7	
Jun 11	3	3	3	4	4	6	7	6	5	4	4	4	4	4	4	3	3	2	2	2	2	3	3	4	2	7	3.8	
Jun 12	4	4	4	4	4	4	4	4	4	4	3	3	3	3	3	3	2	3	3	3	3	10	5	7	2	10	3.9	
Jun 13	7	5	5	5	6	5	5	4	4	4	3	3	3	3	3	3	3	3	3	3	3	4	4	4	3	7	4.0	
Jun 14	4	4	4	4	4	4	4	5	6	5	6	5	5	5	5	6	5	6	7	7	6	6	6	6	4	7	5.2	
Jun 15	6	6	6	6	6	6	6	7	7	6	7	7	8	7	7	8	8	8	9	12	11	8	8	6	12	7.4		
Jun 16	8	8	6	5	4	4	4	4	4	4	3	3	3	3	3	2	2	2	2	3	3	2	2	2	2	8	3.7	
Jun 17	3	2	1	1	1	1	1	1	1	1	1	2	2	2	2	3	2	2	2	2	3	3	3	3	1	3	1.9	
Jun 18	3	3	2	1	1	1	1	1	1	1	1	2	2	3	4	4	4	5	4	4	5	5	5	6	1	6	2.9	
Jun 19	6	6	6	6	6	6	6	7	6	5	5	5	4	4	4	4	5	4	4	5	5	3	2	2	7	5.0		
Jun 20	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	3	2	3	3	3	3	4	4	1	4	1.9		
Jun 21	5	4	4	4	4	4	4	4	5	6	6	6	7	7	7	7	7	7	7	7	8	8	9	9	4	9	6.1	
Jun 22	10	10	11	11	11	12	13	13	14	14	14	15	15	14	9	7	6	6	6	6	6	6	7	5	4	15	10.0	
Jun 23	4	4	5	5	4	4	4	4	5	5	5	5	5	5	5	5	6	6	6	6	6	7	7	8	4	8	5.3	
Jun 24	8	9	9	9	10	10	10	10	10	10	9	9	9	9	10	10	9	9	9	10	10	10	10	11	11	8	11	9.6
Jun 25	12	12	12	9	8	8	8	8	8	8	8	6	5	5	4	3	4	4	4	4	4	4	4	6	3	12	6.6	
Jun 26	7	7	6	6	6	6	7	7	7	9	7	4	4	4	4	3	3	3	4	4	4	6	7	8	3	9	5.5	
Jun 27	8	7	7	7	8	8	8	7	6	6	6	6	7	7	7	8	8	7	7	8	8	9	9	9	6	9	7.4	
Jun 28	10	11	10	11	10	10	9	9	8	8	7	8	8	8	9	10	9	9	9	11	10	15	12	12	7	15	9.7	
Jun 29	12	13	14	15	14	14	12	9	9	9	9	8	12	12	11	11	11	10	10	12	11	11	11	11	8	15	11.3	
Jun 30	12	12	12	13	14	14	12	11	11	9	10	12	15	14	12	10	10	9	9	9	10	12	12	15	9	15	11.6	
Diurnal Maximum	14	16	19	19	19	18	20	21	18	14	14	15	15	14	12	11	11	10	10	12	12	15	12	15				
Diurnal Average	6.4	6.8	7.0	7.1	7.1	7.1	7.1	6.9	6.5	6.1	5.8	5.8	5.8	6.0	5.7	5.6	5.5	5.3	5.2	5.4	5.5	6.3	5.9	6.3				

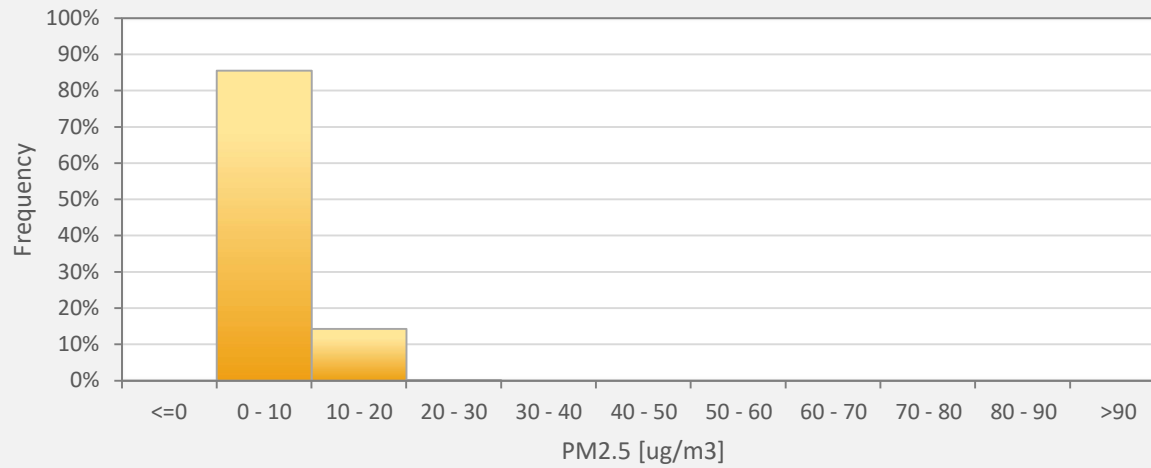
C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction /Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

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 PM2.5 - Cold Lake South Station



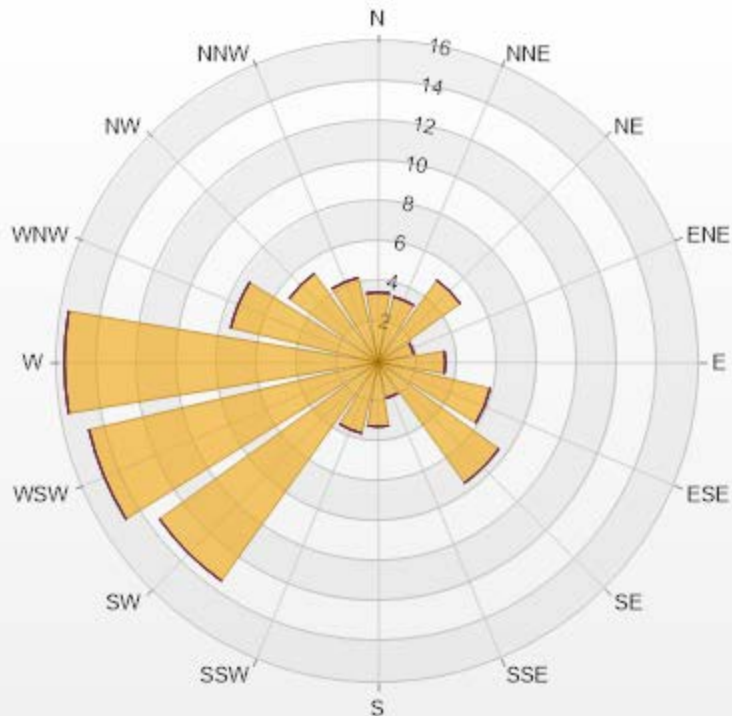
PM2.5[ug/m3(L)] Histogram: Cold Lake South Monthly: 06-2021 1 Hr.



Classes	PM2.5
<=0	0.00%
0 - 10	85.54%
10 - 20	14.33%
20 - 30	0.14%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 99.44% Calm Avg: 0.00 [ug/m3(L)]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	3.49	0	0	0	0	3.49
NNE	3.35	0	0	0	0	3.35
NE	5.03	0	0	0	0	5.03
ENE	1.82	0	0	0	0	1.82
E	3.35	0	0	0	0	3.35
ESE	5.73	0	0	0	0	5.73
SE	7.4	0	0	0	0	7.4
SSE	1.82	0	0	0	0	1.82
S	3.21	0	0	0	0	3.21
SSW	3.63	0	0	0	0	3.63
SW	13.41	0	0	0	0	13.41
WSW	14.8	0	0	0	0	14.8
W	15.64	0	0	0	0	15.64
WNW	7.54	0	0	0	0	7.54
NW	5.45	0	0	0	0	5.45
NNW	4.33	0	0	0	0	4.33
Summary	100	0	0	0	0	100





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - June 2021

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

Maximum Hourly Value:	100 %	on June 4 at hour 22	Hours in Service:	720
Maximum Daily Value:	98.0 %	on June 10	Hours of Data:	720
Minimum Hourly Value:	19 %	on June 4 at hour 11	Hours of Missing Data:	0
Minimum Daily Value:	46.3 %	on June 30	Hours of Calibration:	0
Monthly Average:	63.3 %		Operational Uptime:	100.0

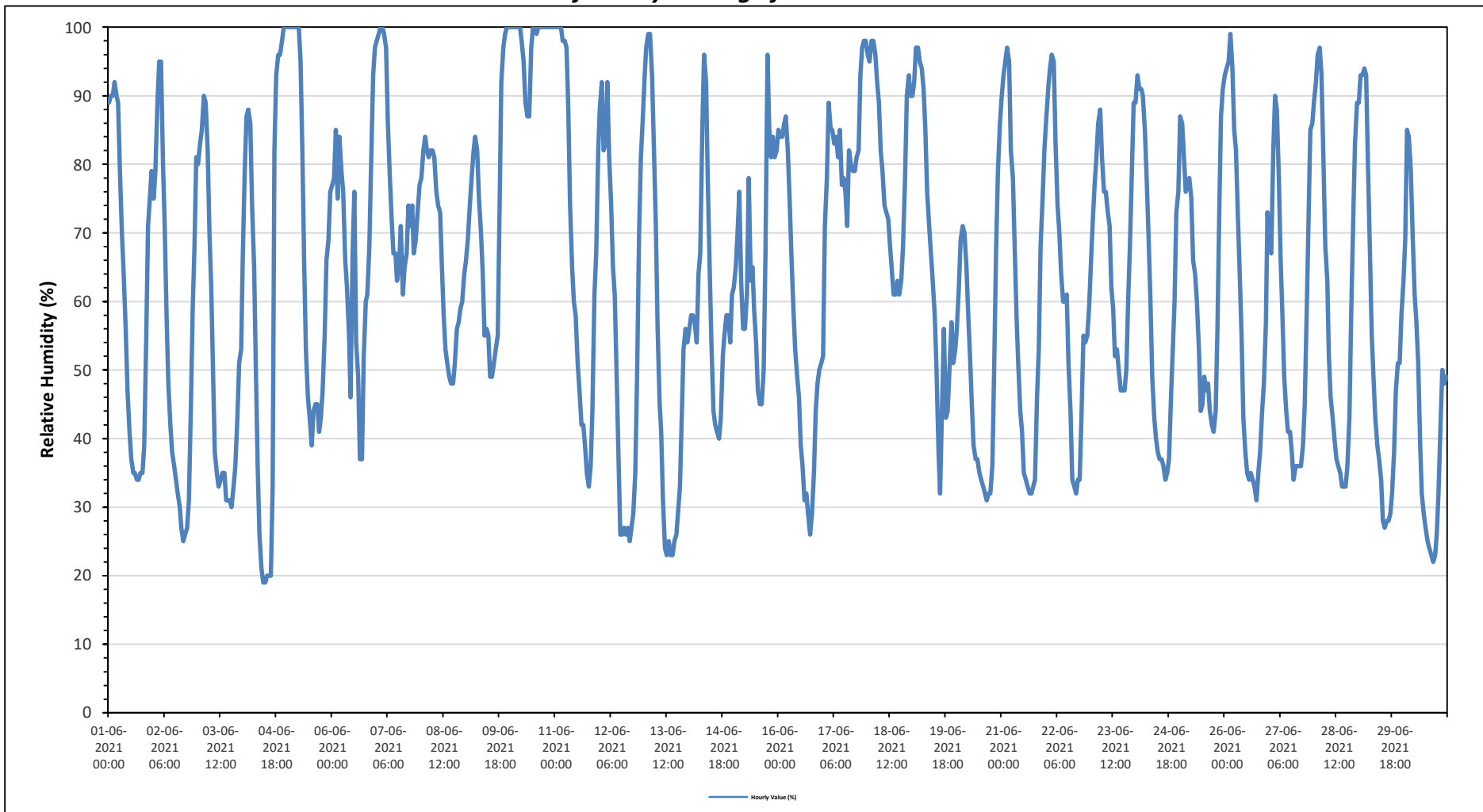
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Jun 1	89	90	90	92	90	89	78	70	64	56	47	41	37	35	35	34	34	35	35	39	55	71	75	79	34	92	60.8	
Jun 2	75	79	89	95	95	80	72	58	48	42	38	36	34	32	30	27	25	26	27	31	45	59	68	81	25	95	53.8	
Jun 3	80	83	85	90	89	82	70	62	50	38	35	33	34	35	35	31	31	31	30	33	36	43	51	53	30	90	51.7	
Jun 4	66	79	87	88	86	74	65	50	36	26	21	19	19	20	20	20	33	82	93	96	96	98	100	100	19	100	61.4	
Jun 5	100	100	100	100	100	100	100	95	82	66	53	46	43	39	44	45	45	41	43	47	55	66	69	76	39	100	69.0	
Jun 6	77	78	85	75	84	79	76	66	62	55	46	67	76	54	49	37	37	52	60	61	68	80	93	97	37	97	67.3	
Jun 7	98	99	100	100	99	97	86	78	72	67	67	63	65	71	61	65	67	74	71	74	67	69	73	77	61	100	77.5	
Jun 8	78	82	84	82	81	82	82	81	76	74	73	65	58	53	51	49	48	48	51	56	57	59	60	64	48	84	66.4	
Jun 9	66	69	74	78	82	84	82	75	70	64	55	56	55	49	49	51	53	55	73	92	97	99	100	100	49	100	72.0	
Jun 10	100	100	100	100	100	100	98	95	89	87	87	97	100	100	99	100	100	100	100	100	100	100	100	100	87	100	98.0	
Jun 11	100	100	100	100	100	98	97	88	74	65	60	58	51	47	42	42	39	35	33	36	44	61	67	82	33	100	67.4	
Jun 12	88	92	82	83	92	81	74	65	61	50	37	26	26	27	26	27	25	27	29	35	49	70	81	87	25	92	55.8	
Jun 13	93	97	99	99	93	83	71	56	45	41	31	24	23	25	23	23	25	26	29	33	43	53	56	54	23	99	51.9	
Jun 14	56	58	58	57	54	64	67	85	96	92	79	65	54	44	42	41	40	43	52	55	58	58	54	61	40	96	59.7	
Jun 15	62	65	70	76	63	56	56	61	78	63	65	59	54	47	45	45	50	67	96	85	81	84	81	82	45	96	66.3	
Jun 16	85	84	84	86	87	82	75	67	59	53	49	46	39	36	31	32	29	26	29	35	44	48	50	51	26	87	54.5	
Jun 17	52	71	78	89	85	85	83	84	81	85	77	78	76	71	82	80	79	79	81	82	93	97	98	98	52	98	81.8	
Jun 18	96	95	98	98	96	92	89	82	79	74	73	68	64	61	61	63	61	63	68	78	90	93	90	61	98	79.3		
Jun 19	90	92	97	97	95	94	91	85	76	71	67	63	58	50	38	32	45	56	43	44	51	57	51	53	32	97	66.5	
Jun 20	56	62	69	71	70	65	58	52	45	39	37	37	35	34	33	32	31	32	32	36	50	68	79	86	31	86	50.4	
Jun 21	90	93	95	97	95	82	78	68	57	51	44	41	35	34	33	32	32	33	34	46	53	68	75	82	32	97	60.3	
Jun 22	87	91	94	96	95	83	74	70	64	60	60	61	51	44	34	33	32	34	34	43	55	54	55	59	32	96	61.0	
Jun 23	66	72	77	81	86	88	81	76	76	73	71	62	59	52	53	50	47	47	47	50	60	68	78	89	47	89	67.0	
Jun 24	89	93	91	91	90	85	78	69	60	49	43	40	38	37	37	36	34	35	37	46	53	60	73	76	34	93	60.0	
Jun 25	87	86	81	76	77	78	75	66	64	60	53	44	45	49	47	48	44	42	41	44	56	75	87	91	41	91	63.2	
Jun 26	93	94	95	99	94	85	82	73	65	55	43	38	35	34	35	34	33	31	35	38	44	48	57	73	31	99	58.9	
Jun 27	68	67	82	90	88	78	66	58	49	44	41	41	38	34	36	36	36	36	39	45	59	72	85	86	34	90	57.3	
Jun 28	89	92	96	97	93	80	68	63	52	46	43	40	37	36	35	33	33	33	36	43	58	72	83	89	33	97	60.3	
Jun 29	89	93	93	94	93	80	67	55	48	43	39	37	34	28	27	28	28	29	32	38	47	51	51	58	27	94	53.4	
Jun 30	63	69	85	84	79	70	61	57	51	39	32	29	27	25	24	23	22	23	26	32	42	50	48	49	22	85	46.3	
Diurnal Maximum	100	100	100	100	100	100	100	95	96	92	87	97	100	100	99	100	100	100	100	100	100	100	100	100	100	100	100	100
Daiurnal Average	80.9	84.2	87.3	88.7	87.6	82.5	76.7	70.3	64.3	57.6	52.2	49.5	46.8	43.5	41.9	40.9	41.3	44.6	47.7	52.1	59.8	68.3	73.0	77.4				

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

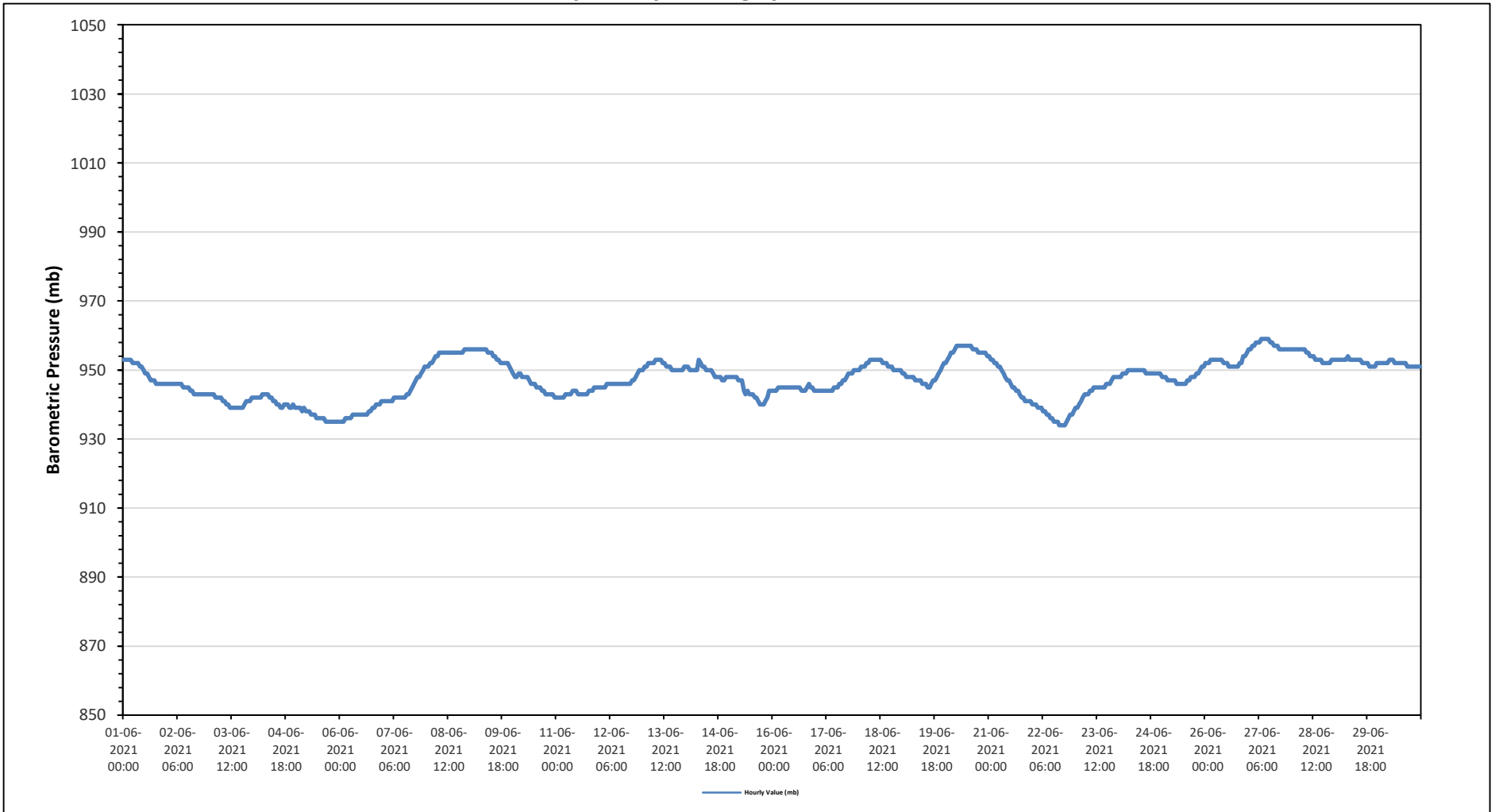
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.

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

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



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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - June 2021

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

Maximum Hourly Value:	35.3 °C	on June 30 at hour 15	Hours in Service:	720
Maximum Daily Value:	28.0 °C	on June 30	Hours of Data:	720
Minimum Hourly Value:	4.5 °C	on June 21 at hour 3	Hours of Missing Data:	0
Minimum Daily Value:	12.0 °C	on June 7	Hours of Calibration:	0
Monthly Average:	18.3 °C		Operational Uptime:	100.0

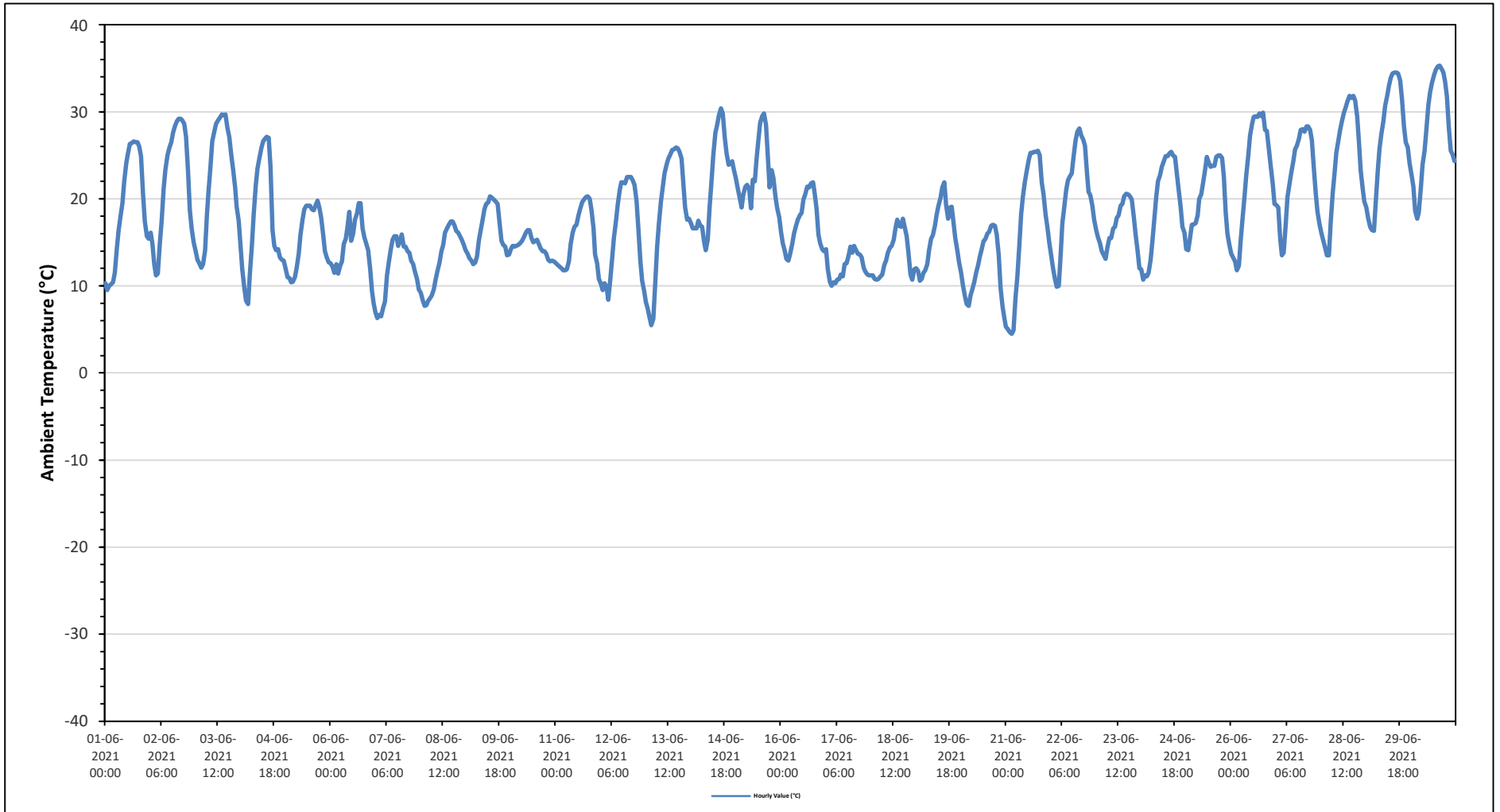
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Jun 1	10.3	9.5	10	10.2	10.4	11.5	14.3	16.4	17.9	19.5	22	24.1	25.1	26.3	26.4	26.6	26.5	26.5	26	24.9	20.5	17.4	15.7	15.4	9.5	26.6	18.9
Jun 2	16.1	14.8	12.5	11.2	11.4	14.9	17.4	21.2	23.4	25	25.8	26.5	27.6	28.3	28.9	29.2	29.2	29	28.6	27.1	23.1	18.7	16.6	15	11.2	29.2	21.7
Jun 3	14.1	13	12.6	12.1	12.5	14.1	18.1	20.7	23.7	26.6	27.7	28.6	29	29.3	29.7	29.6	29.7	28.1	27.1	25	23.4	21.3	19.1	17.5	12.1	29.7	22.2
Jun 4	14.7	11.9	9.8	8.3	7.9	11.4	14.7	18.2	21.5	23.5	24.6	25.8	26.6	26.9	27.1	27	23.7	16.4	14.6	14.1	14.2	13.3	13	12.9	7.9	27.1	17.6
Jun 5	11.9	11	10.9	10.4	10.5	11	12.1	13.7	15.9	17.6	18.8	19.2	19.2	19.2	18.8	18.7	19.3	19.8	19	17.9	15.9	14	13.3	12.7	10.4	19.8	15.5
Jun 6	12.6	12.2	11.5	12.5	11.4	12.3	12.8	14.8	15.4	16.6	18.5	15.2	16	17.6	18.3	19.5	19.5	16.6	15.6	14.8	14.1	11.9	9.4	7.9	7.9	19.5	14.5
Jun 7	6.9	6.3	6.7	6.5	7.5	8.2	11.2	12.7	14.2	15.3	15.7	15.7	14.6	15.2	15.9	14.5	14.5	14	13.8	12.9	12.5	11.6	10.8	9.6	6.3	15.9	12.0
Jun 8	9.2	8.4	7.7	7.8	8.3	8.6	8.9	9.6	10.7	11.8	12.6	14	14.7	16.1	16.6	17	17.4	17.4	16.9	16.3	16.1	15.7	15.3	14.7	7.7	17.4	13.0
Jun 9	14.1	13.7	13.2	12.9	12.5	12.7	13.4	15.2	16.5	17.6	18.8	19.4	19.6	20.3	20.1	19.9	19.7	19.4	17.4	15.2	14.7	14.5	13.5	13.6	12.5	20.3	16.2
Jun 10	14.2	14.6	14.5	14.6	14.7	14.9	15.2	15.6	16.1	16.4	16.4	15.5	15	15.2	15.3	14.8	14.3	14	14	13.7	13	12.8	12.9	12.8	12.8	16.4	14.6
Jun 11	12.6	12.4	12.2	12	11.8	11.8	11.9	12.8	14.8	16.1	16.8	17	18	18.8	19.6	19.9	20.2	20.3	20	18.7	16.6	13.6	12.6	10.8	10.8	20.3	15.5
Jun 12	10.3	9.5	10.3	9.9	8.4	10.8	13.1	15.5	17.4	19.3	21	21.9	21.9	21.8	22.5	22.5	22.5	22.1	21.6	19.8	16.7	12.9	10.6	9.4	8.4	22.5	16.3
Jun 13	8.1	7.4	6.4	5.5	6.2	10	14.5	17.2	19.7	21.3	22.9	23.9	24.6	25.1	25.6	25.7	25.9	25.8	25.4	24.6	21.8	19	17.6	17.7	5.5	25.9	18.4
Jun 14	17.2	16.6	16.6	16.6	17.5	16.9	16.8	15.2	14.1	15.3	18.9	22.1	25.1	27.6	28.5	29.6	30.4	29.8	27	25.2	23.9	24	24.3	23.3	14.1	30.4	21.8
Jun 15	22.4	21.2	20.2	19	20.5	21.4	21.6	21.1	18.9	22.2	22	24.6	26.7	28.7	29.5	29.8	28.5	25	21.3	23.3	22.4	20.3	18.9	17.9	17.9	29.8	22.8
Jun 16	16.2	14.9	14	13.1	12.9	13.7	14.8	16	16.9	17.6	18.1	18.4	19.9	20.6	21.4	21.3	21.8	21.9	20.7	18.8	15.9	14.9	14.2	14	12.9	21.9	17.2
Jun 17	14.2	11.9	10.5	10	10.4	10.3	10.7	10.8	11.3	11.1	12.5	12.6	13.4	14.5	13.8	14.6	14.1	13.7	13.6	13.3	12.1	11.6	11.3	11.2	10.0	14.6	12.2
Jun 18	11.2	11.2	10.8	10.7	10.8	11.1	11.3	12.4	12.9	13.8	14.4	14.6	15.3	16.6	17.6	16.9	16.8	17.7	16.8	15.7	13.8	11.3	10.7	11.9	10.7	17.7	13.6
Jun 19	12	11.7	10.6	10.8	11.5	11.8	12.5	14.1	15.4	15.8	16.9	18.2	19.2	20.1	21.3	21.9	19.3	17.7	19	19.1	17.3	15.5	14.1	12.7	10.6	21.9	15.8
Jun 20	11.5	10.1	8.8	7.9	7.7	8.9	9.6	10.5	11.5	12.4	13.3	14.2	15.1	15.4	16	16.2	16.9	17	16.9	15.9	13.5	9.8	7.6	6.3	6.3	17.0	12.2
Jun 21	5.3	5	4.7	4.5	4.9	8.7	11	14.7	18.2	20.3	22	23.2	24.5	25.3	25.3	25.4	25.4	25.5	25	21.9	20.5	18.2	16.8	14.9	4.5	25.5	17.1
Jun 22	13.5	11.9	10.8	9.9	10	13.4	17.2	18.9	21	22.1	22.6	22.9	24.8	26.7	27.7	28.1	27.3	26.8	26.1	22.9	20.8	20.4	19.2	17.6	9.9	28.1	20.1
Jun 23	16.4	15.6	14.9	14	13.5	13.1	14.4	15.5	15.5	16.6	16.8	17.8	18.1	19.2	19.4	20.3	20.6	20.5	20.3	19.9	17.9	15.9	14	12	12.0	20.6	16.8
Jun 24	11.9	10.7	11.2	11.1	11.5	13	15.1	17.8	20.2	22	22.7	23.7	24.3	24.9	24.9	25.2	25.4	25	24.8	22.9	21.1	19.1	16.8	16.1	10.7	25.4	19.2
Jun 25	14.2	14.1	15.5	17	17.1	17.2	18.1	20	20.5	21.8	23.3	24.8	24.2	23.7	23.8	23.8	24.8	25	25	24.7	22.5	18.5	16	14.8	14.1	25.0	20.4
Jun 26	13.7	13.3	12.8	11.8	12.3	15.2	17.6	20.2	22.7	25	27.3	28.6	29.4	29.5	29.4	29.8	29.5	29.9	27.9	27.8	25.7	23.8	21.8	19.4	11.8	29.9	22.7
Jun 27	19.3	19	15.6	13.5	13.8	17	20.2	21.7	23	24.3	25.7	26.1	26.9	27.9	28	27.7	28.3	28.3	27.9	26.7	23.8	20.7	18.5	17.1	13.5	28.3	22.5
Jun 28	16.1	15.2	14.4	13.5	13.5	17.3	20.7	22.9	25.3	26.5	27.9	28.9	29.9	30.5	31.2	31.8	31.6	31.8	31.3	29.5	26.5	23.2	21.1	19.7	13.5	31.8	24.2
Jun 29	19	17.8	16.8	16.4	16.3	19.6	23.2	25.8	27.4	28.9	30.7	31.8	33	33.9	34.4	34.5	34.5	34.4	33.6	31.5	28.3	26.5	25.9	24.1	16.3	34.5	27.0
Jun 30	22.7	21.4	18.6	17.7	18.4	21.1	23.9	25.5	27.9	30.8	32.3	33.3	34.2	34.8	35.2	35.3	34.9	34.5	33.4	31.7	28.3	25.5	25.1	24.3	17.7	35.3	28.0
Diurnal Maximum	22.7	21.4	20.2	19.0	20.5	21.4	23.9	25.8	27.9	30.8	32.3	33.3	34.2	34.8	35.2	35.3	34.9	34.5	33.6	31.7	28.3	26.5	25.9	24.3			
Diurnal Average	13.7	12.9	12.2	11.7	11.9	13.4	15.2	16.9	18.3	19.8	21.0	21.8	22.5	23.3	23.7	23.9	23.8	23.1	22.4	21.2	19.2	17.2	15.9	14.9			

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 AT - Cold Lake South Station





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - June 2021

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

Maximum Hourly Value:	25.8 °C	on June 22 at hour 5	Hours in Service:	720
Maximum Daily Value:	24.1 °C	on June 8	Hours of Data:	720
Minimum Hourly Value:	21.5 °C	on June 4 at hour 8	Hours of Missing Data:	0
Minimum Daily Value:	22.2 °C	on June 3	Hours of Calibration:	0
Monthly Average:	23.3 °C		Operational Uptime:	100.0

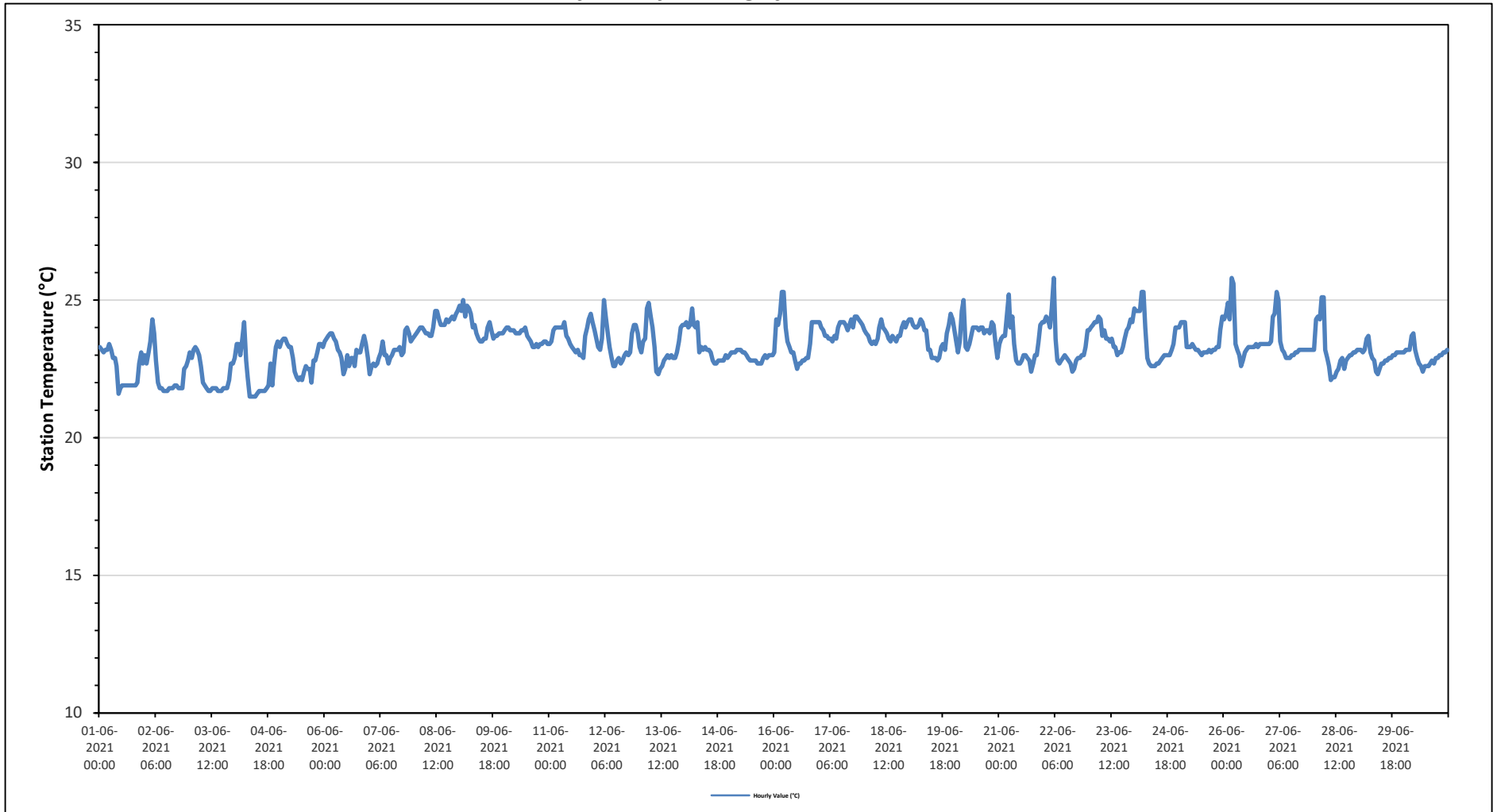
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Jun 1	23.3	23.2	23.1	23.2	23.2	23.4	23.2	22.9	22.9	22.6	21.6	21.8	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	22.0	22.7	23.1	22.7	21.6	23.4	22.5
Jun 2	23.0	22.7	23.1	23.5	24.3	23.8	22.8	22.0	21.8	21.8	21.7	21.7	21.7	21.8	21.8	21.8	21.9	21.9	21.8	21.8	21.8	22.5	22.6	22.8	21.7	24.3	22.4
Jun 3	23.1	22.9	23.2	23.3	23.2	23.0	22.6	22.0	21.9	21.8	21.7	21.7	21.8	21.8	21.8	21.7	21.7	21.7	21.8	21.8	21.8	22.1	22.7	22.7	21.7	23.3	22.2
Jun 4	22.9	23.4	23.4	23.0	23.6	24.2	22.8	22.2	21.5	21.5	21.5	21.5	21.6	21.7	21.7	21.7	21.8	21.9	22.7	21.9	22.6	23.3	23.5	21.5	24.2	22.4	
Jun 5	23.3	23.5	23.6	23.6	23.4	23.3	23.3	22.9	22.4	22.2	22.1	22.2	22.1	22.4	22.6	22.5	22.5	22.0	22.8	22.8	23.1	23.4	23.4	23.3	22.0	23.6	22.9
Jun 6	23.5	23.6	23.7	23.8	23.8	23.6	23.5	23.2	23.1	22.9	22.3	22.5	23.0	22.6	22.9	22.9	22.6	23.2	23.1	23.1	23.4	23.7	23.4	22.9	22.3	23.8	23.2
Jun 7	22.3	22.6	22.7	22.6	22.7	22.9	23.1	23.5	23.0	23.0	22.7	22.9	23.0	23.2	23.2	23.2	23.3	23.0	23.1	23.9	24.0	23.8	23.5	23.6	22.3	24.0	23.1
Jun 8	23.7	23.8	23.9	24.0	24.0	23.9	23.8	23.8	23.7	23.7	24.0	24.6	24.6	24.3	24.1	24.1	24.1	24.3	24.2	24.3	24.4	24.3	24.5	24.6	23.7	24.6	24.1
Jun 9	24.8	24.6	25.0	24.4	24.8	24.7	24.5	24.0	24.1	23.8	23.6	23.5	23.5	23.6	23.6	24.0	24.2	23.9	23.6	23.7	23.7	23.8	23.8	23.8	23.5	25.0	24.0
Jun 10	23.9	24.0	24.0	23.9	23.9	23.9	23.8	23.8	23.8	23.9	23.9	24.0	23.7	23.6	23.5	23.3	23.3	23.4	23.3	23.4	23.4	23.5	23.5	23.4	23.3	24.0	23.7
Jun 11	23.4	23.5	23.9	24.0	24.0	24.0	24.0	24.0	24.2	23.7	23.6	23.4	23.3	23.2	23.1	23.2	23.0	23.0	22.9	23.7	24.0	24.3	24.5	24.2	22.9	24.5	23.7
Jun 12	23.9	23.6	23.3	23.2	23.6	25.0	24.4	23.8	23.3	22.9	22.6	22.6	22.8	22.9	22.7	22.8	23.0	23.1	23.0	23.1	23.8	24.1	24.1	23.8	22.6	25.0	23.4
Jun 13	23.3	23.1	23.5	23.6	24.7	24.9	24.4	24.0	23.3	22.4	22.3	22.5	22.6	22.8	22.9	23.0	22.9	23.0	22.9	22.9	23.1	23.5	24.0	24.1	22.3	24.9	23.3
Jun 14	24.1	24.2	24.0	24.1	24.7	24.1	24.0	24.2	23.1	23.3	23.2	23.3	23.2	23.2	23.1	22.8	22.7	22.7	22.8	22.8	22.8	23.0	22.9	22.9	22.7	24.7	23.4
Jun 15	23.0	23.1	23.1	23.1	23.2	23.2	23.2	23.1	23.1	23.0	22.9	22.8	22.8	22.8	22.8	22.7	22.7	22.7	22.9	23.0	22.9	23.0	23.0	23.0	22.7	23.2	23.0
Jun 16	23.1	24.3	24.1	24.5	25.3	25.3	24.0	23.5	23.3	23.1	23.1	22.8	22.5	22.7	22.7	22.8	22.8	22.9	22.9	23.4	24.2	24.2	24.2	24.2	22.5	25.3	23.6
Jun 17	24.2	24.0	23.9	23.7	23.7	23.6	23.6	23.5	23.7	23.6	24.0	24.2	24.2	24.1	23.9	24.1	24.3	24.0	24.4	24.4	24.3	24.2	24.1	23.5	24.4	24.0	
Jun 18	23.9	23.8	23.7	23.5	23.4	23.5	23.4	23.6	24.0	24.3	24.0	23.9	23.8	23.6	23.5	23.7	23.6	23.5	23.7	23.7	24.0	24.2	24.0	24.2	23.4	24.3	23.8
Jun 19	24.3	24.3	24.1	24.0	24.0	24.1	24.3	24.2	23.9	23.9	23.2	23.2	22.9	22.9	22.9	22.8	22.9	23.3	23.4	23.2	23.8	24.1	24.5	24.3	22.8	24.5	23.7
Jun 20	23.9	23.5	23.1	23.5	24.6	25.0	23.3	23.2	23.4	23.7	24.0	24.0	24.0	23.9	24.0	24.0	23.8	23.9	23.9	23.8	24.2	24.1	23.4	22.9	22.9	25.0	23.8
Jun 21	23.4	23.6	23.7	23.7	24.4	25.2	24.0	24.4	23.4	22.8	22.7	22.7	22.8	23.0	23.0	22.9	22.8	22.4	22.7	23.0	23.0	23.5	24.1	24.2	22.4	25.2	23.4
Jun 22	24.2	24.4	24.3	24.0	24.7	25.8	23.6	22.8	22.7	22.8	22.9	23.0	22.9	22.8	22.7	22.4	22.5	22.8	22.9	22.9	23.0	23.0	23.3	23.9	22.4	25.8	23.3
Jun 23	23.9	24.0	24.1	24.2	24.2	24.4	24.3	23.7	23.9	23.6	23.6	23.5	23.6	23.3	23.3	23.0	23.1	23.1	23.3	23.6	23.9	24.0	24.3	24.2	23.0	24.4	23.8
Jun 24	24.7	24.6	24.6	24.6	25.3	25.3	24.0	22.9	22.7	22.6	22.6	22.6	22.7	22.7	22.8	22.9	23.0	23.0	23.0	23.2	23.4	24.0	24.0	22.6	25.3	23.5	
Jun 25	24.0	24.2	24.2	24.2	23.3	23.3	23.3	23.4	23.3	23.2	23.2	23.1	23.0	23.1	23.1	23.1	23.2	23.1	23.2	23.2	23.3	23.3	23.9	24.4	23.0	24.4	23.4
Jun 26	24.3	24.5	24.9	24.3	25.8	25.6	23.4	23.2	23.0	22.6	22.8	23.1	23.2	23.3	23.3	23.3	23.3	23.4	23.3	23.4	23.4	23.4	23.4	22.6	25.8	23.7	
Jun 27	23.4	23.5	24.4	24.5	25.3	25.0	23.5	23.2	23.1	22.9	22.9	22.9	23.0	23.0	23.1	23.1	23.2	23.2	23.2	23.2	23.2	23.2	23.2	22.9	25.3	23.4	
Jun 28	23.2	24.3	24.4	24.3	25.1	25.1	23.2	22.9	22.6	22.1	22.2	22.2	22.4	22.5	22.8	22.9	22.5	22.8	22.9	23.0	23.0	23.1	23.1	22.1	25.1	23.2	
Jun 29	23.2	23.2	23.1	23.2	23.6	23.7	23.1	22.9	22.8	22.4	22.3	22.5	22.7	22.7	22.8	22.8	22.9	22.9	23.0	23.0	23.1	23.1	23.1	22.3	23.7	23.0	
Jun 30	23.1	23.2	23.2	23.2	23.7	23.8	23.2	22.9	22.7	22.6	22.4	22.6	22.6	22.6	22.7	22.8	22.7	22.9	22.9	23.0	23.0	23.1	23.1	22.4	23.8	23.0	
Diurnal Maximum	24.8	24.6	25.0	24.6	25.8	25.8	24.5	24.4	24.2	24.3	24.0	24.6	24.6	24.3	24.1	24.1	24.2	24.3	24.2	24.4	24.4	24.3	24.5	24.6			
Daiurnal Average	23.6	23.7	23.8	23.8	24.1	24.2	23.6	23.3	23.1	23.0	22.9	22.9	22.9	22.9	23.0	22.9	22.9	23.0	23.0	23.2	23.3	23.5	23.6	23.6			

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 ST - Cold Lake South Station





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - June 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

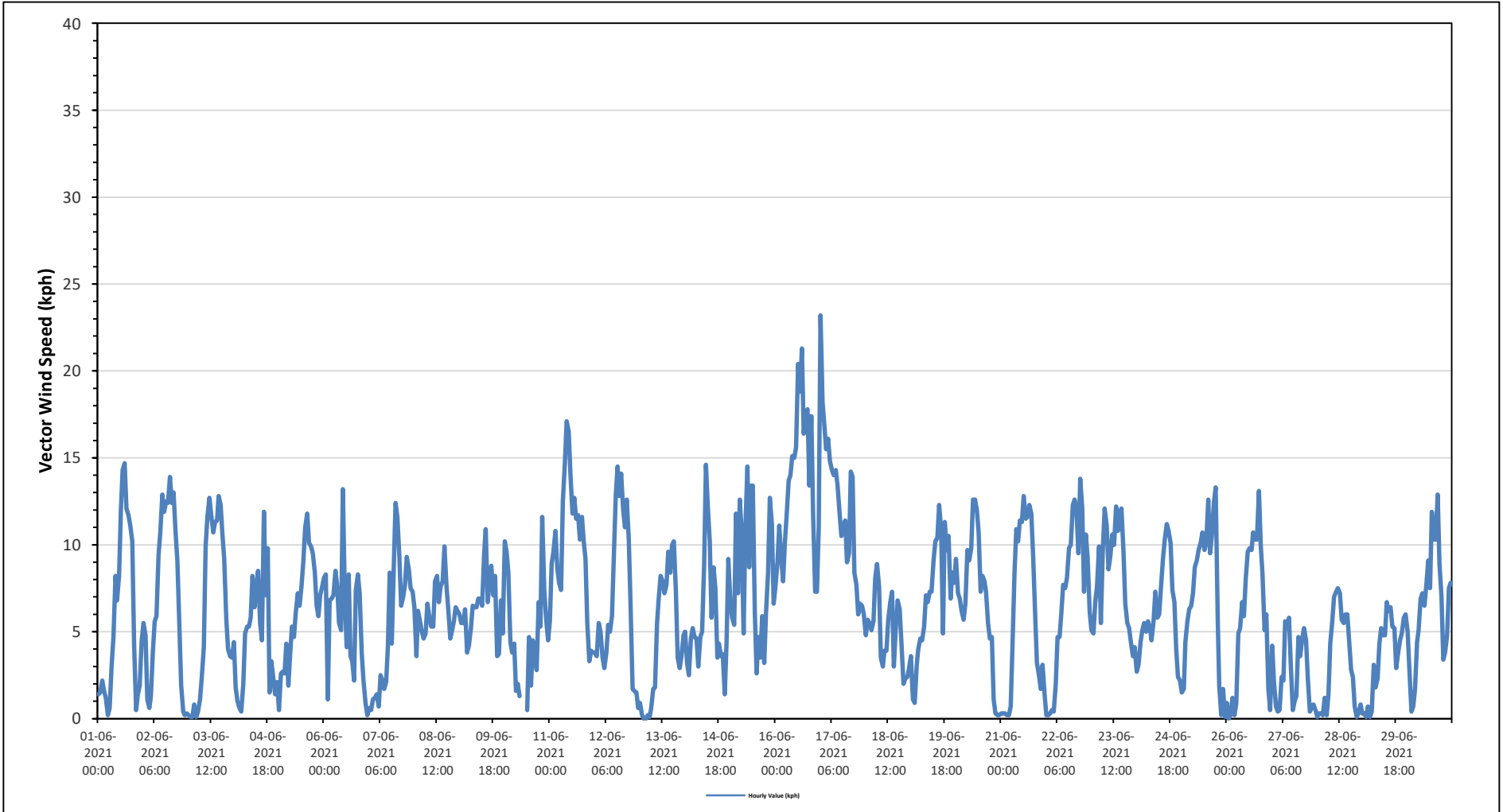
Maximum Hourly Value:	23.2 kph	on June 17 at hour 0	Hours in Service:	720
Maximum Daily Value:	13.1 kph	on June 16	Hours of Data:	717
Minimum Hourly Value:	0.0 kph	on June 13 at hour 2	Hours of Missing Data:	3
Minimum Daily Value:	0.5 kph	on June 27	Hours of Calibration:	0
Monthly Average:	2.8 kph		Operational Uptime:	99.6

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
Jun 1	1.4	1.5	2.2	1.6	1.2	0.2	0.6	3.1	4.7	8.2	6.8	8.2	11.9	14.3	14.7	12.1	11.7	11.1	10.2	4.3	0.5	1.4	1.9	4.5	0.2	14.7	5.2
Jun 2	5.5	4.8	1.1	0.6	1.3	3.9	5.6	5.9	9.4	10.7	12.9	11.9	12.5	12.4	13.9	12.4	13.0	10.7	9.1	5.3	1.9	0.4	0.2	0.3	0.2	13.9	6.7
Jun 3	0.2	0.1	0.1	0.8	0.1	0.4	1.1	2.4	4.1	9.9	11.6	12.7	11.7	10.7	11.3	11.4	12.8	12.3	10.6	9.2	5.8	4.0	3.6	3.5	0.1	12.8	5.0
Jun 4	4.4	1.8	1.0	0.6	0.4	2.0	4.9	5.3	5.3	5.8	8.2	6.4	7.6	8.5	5.5	4.5	11.9	7.1	9.8	1.5	3.3	2.3	1.4	2.1	0.4	11.9	3.4
Jun 5	0.5	2.6	2.7	2.6	4.3	1.9	3.7	5.3	4.7	6.1	7.2	6.5	7.7	9.1	11.0	11.8	10.1	9.9	9.5	8.4	6.5	5.9	7.1	7.6	0.5	11.8	6.1
Jun 6	8.1	8.3	1.1	6.8	6.9	7.1	8.5	7.6	5.5	5.1	13.2	6.8	4.1	8.3	3.6	3.3	2.2	7.4	8.3	7.2	3.8	2.2	0.9	0.2	0.2	13.2	2.5
Jun 7	0.6	0.5	1.1	1.2	1.4	0.7	2.5	2.2	1.7	2.1	4.2	8.4	4.3	8.2	12.4	11.6	9.3	6.5	7.0	7.7	9.3	8.6	7.5	7.3	0.5	12.4	3.0
Jun 8	6.4	3.6	6.2	5.6	5.0	4.6	4.9	6.6	5.8	5.3	5.3	7.9	8.2	6.7	7.6	7.9	9.9	7.6	6.3	4.6	5.0	5.6	6.4	6.2	3.6	9.9	5.8
Jun 9	6.0	5.5	5.5	6.3	3.8	4.2	5.2	6.5	6.4	6.4	6.9	6.9	6.5	9.5	10.9	6.7	7.9	8.8	7.1	8.2	3.6	3.7	6.8	4.9	3.6	10.9	6.0
Jun 10	10.2	9.6	8.4	4.4	3.8	4.3	1.6	2.0	1.3	Y	Y	Y	0.5	4.7	1.9	4.5	3.8	2.8	6.7	5.3	11.6	7.4	5.8	4.5	0.5	11.6	0.9
Jun 11	5.6	8.9	9.6	10.8	8.7	7.8	7.4	12.5	14.7	17.1	16.5	14.0	11.8	12.7	11.5	11.7	10.3	11.6	10.2	9.2	5.5	3.3	3.9	3.8	3.3	17.1	8.9
Jun 12	3.8	3.6	5.5	5.0	3.5	2.9	3.8	5.4	5.0	5.9	9.2	12.9	14.5	12.8	14.1	12.0	11.0	12.6	10.3	6.5	1.7	1.6	1.5	0.6	0.6	14.5	6.8
Jun 13	0.9	0.2	0.0	0.0	0.2	0.1	0.6	1.7	1.8	5.5	7.0	8.2	7.9	7.2	7.7	9.6	8.4	10.0	10.2	7.3	3.5	2.9	3.6	4.8	0.0	10.2	3.6
Jun 14	5.0	3.2	2.5	4.6	5.2	4.7	4.6	3.0	4.7	5.0	8.9	14.6	12.3	10.2	5.8	8.7	7.5	3.5	4.3	3.6	3.7	1.4	4.4	9.2	1.4	14.6	4.4
Jun 15	6.7	5.8	5.4	11.8	7.2	12.6	10.8	4.9	11.0	14.5	8.7	13.4	13.4	6.1	2.6	4.7	3.5	5.9	3.2	6.1	8.4	12.7	11.2	6.6	2.6	14.5	2.6
Jun 16	7.6	9.0	11.1	9.2	7.9	10.1	11.7	13.7	14.0	15.1	15.0	15.6	20.4	18.8	21.3	16.4	17.6	17.8	13.4	17.4	11.7	7.3	7.3	11.0	7.3	21.3	13.1
Jun 17	23.2	18.2	16.9	15.5	16.1	14.8	14.3	14.0	14.3	13.4	11.8	10.5	10.8	11.4	9.0	9.5	14.2	13.9	8.4	7.7	6.0	6.6	6.5	6.0	6.0	23.2	11.4
Jun 18	4.8	5.7	5.5	5.1	5.6	8.1	8.9	7.6	3.5	3.0	3.9	3.9	5.7	6.7	7.3	3.0	5.3	6.8	6.3	4.3	2.0	2.3	2.4	2.9	2.0	8.9	3.9
Jun 19	3.6	1.1	0.9	3.1	4.0	4.6	4.5	5.3	7.1	6.7	7.3	7.3	9.1	10.2	10.4	12.3	10.8	4.9	11.3	9.7	10.5	6.9	8.4	7.8	0.9	12.3	5.5
Jun 20	9.2	7.2	6.9	6.2	5.7	6.6	9.7	9.1	9.8	12.6	12.6	12.0	10.7	7.3	8.2	7.9	7.3	5.5	4.6	4.7	1.1	0.3	0.2	0.2	0.2	12.6	5.8
Jun 21	0.3	0.3	0.3	0.2	0.2	0.7	4.2	8.4	10.9	10.2	11.4	11.3	12.8	11.5	11.6	12.3	11.8	9.4	6.0	3.2	2.5	1.7	3.1	1.4	0.2	12.8	5.9
Jun 22	0.2	0.2	0.3	0.5	0.4	2.0	4.7	4.7	6.1	7.7	7.5	8.1	9.8	10.0	12.3	12.6	12.1	9.5	13.8	12.1	7.3	10.6	9.3	6.2	0.2	13.8	5.8
Jun 23	5.1	4.9	6.7	7.6	9.9	5.5	9.8	12.1	11.1	8.6	9.3	10.6	10.0	12.2	10.8	11.8	12.1	9.6	6.6	5.5	5.2	4.4	3.6	4.1	3.6	12.2	7.9
Jun 24	2.7	3.1	4.4	5.1	5.5	5.0	5.6	5.2	4.5	5.6	7.3	5.8	6.0	7.5	9.2	10.3	11.2	10.8	10.1	7.4	6.7	4.0	2.4	2.2	2.2	11.2	5.7
Jun 25	1.5	1.7	4.4	5.6	6.3	6.5	7.2	8.7	9.1	9.7	10.1	10.7	9.7	10.1	12.6	9.5	10.5	12.4	13.3	5.8	1.9	0.2	1.7	0.1	0.1	13.3	6.1
Jun 26	0.9	0.0	0.2	1.2	0.2	0.9	4.9	5.2	6.7	5.9	8.0	9.6	9.8	9.7	10.7	10.3	10.3	13.1	10.0	8.3	5.1	6.0	1.7	0.5	0.0	13.1	4.4
Jun 27	4.2	2.1	0.7	0.4	0.5	2.4	2.2	5.6	5.2	5.8	3.1	0.5	1.0	1.3	4.7	3.6	4.6	5.2	4.5	2.3	0.4	0.6	0.8	0.5	0.4	5.8	0.5
Jun 28	0.1	0.3	0.3	0.2	1.2	0.2	1.4	4.3	5.6	7.0	7.3	7.5	7.2	5.7	5.5	6.0	6.0	4.3	2.8	2.4	0.7	0.1	0.3	0.8	0.1	7.5	3.0
Jun 29	0.3	0.3	0.1	0.7	0.1	0.4	3.1	1.8	2.3	4.3	5.2	4.8	4.8	6.7	6.2	6.4	5.3	5.2	2.9	3.7	4.5	4.9	5.8	6.0	0.1	6.7	3.0
Jun 30	5.0	2.8	0.4	0.7	1.7	4.4	5.1	6.9	7.2	6.5	7.6	9.1	7.5	11.9	10.3	10.3	12.9	8.9	7.0	3.4	3.8	4.8	7.5	7.8	0.4	12.9	5.9
Diurnal Maximum	23	18	17	16	16	15	14	14	15	17	17	16	20	19	21	16	18	18	14	17	12	13	11	11			
Daiurnal Average	4.5	3.9	3.7	4.1	3.9	4.3	5.4	6.2	6.8	7.9	8.8	9.2	9.0	9.4	9.5	9.2	9.5	8.8	8.1	6.4	4.8	4.1	4.2	4.1			

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

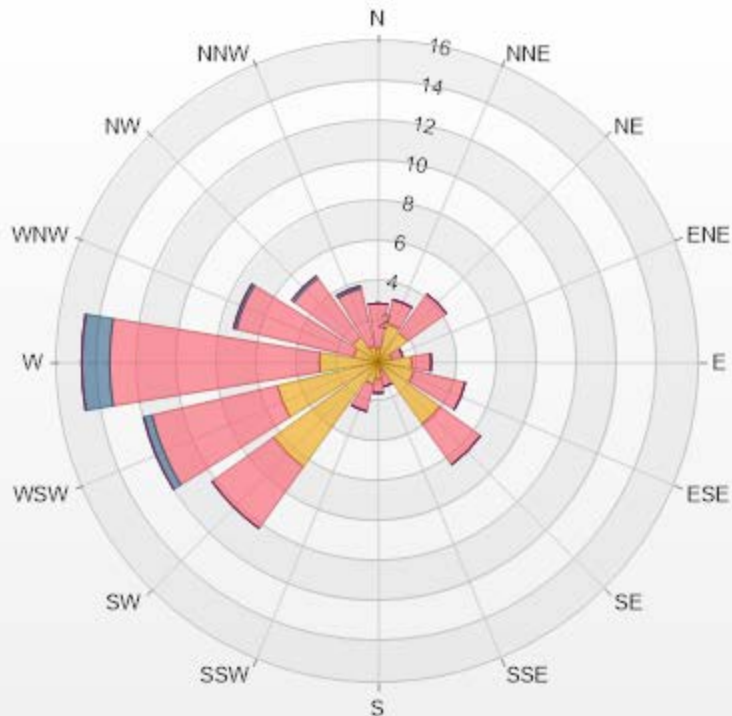
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

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



Wind: Cold Lake South Monitor: WDS [kph] Monthly: 06-2021 Type: WindRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 16.18% Valid Data: 99.58%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	0.7	2.23	0	0	0	2.93
NNE	1.95	1.26	0	0	0	3.21
NE	1.81	2.37	0	0	0	4.18
ENE	0.7	0.56	0	0	0	1.26
E	1.67	0.98	0	0	0	2.65
ESE	1.81	2.65	0	0	0	4.46
SE	3.77	2.51	0	0	0	6.28
SSE	0.42	0.84	0	0	0	1.26
S	0.84	0.7	0	0	0	1.54
SSW	1.12	1.39	0	0	0	2.51
SW	6.42	3.77	0	0	0	10.19
WSW	5.16	6.42	0.42	0	0	12
W	2.93	10.46	1.39	0	0	14.78
WNW	1.26	6	0.14	0	0	7.4
NW	1.53	3.63	0.14	0	0	5.3
NNW	0.84	2.93	0.14	0	0	3.91
Summary	32.93	48.7	2.23	0	0	83.86



LICA-202106

% Icon Classes (kph)	33	1.8-6.0	49	6.0-15.0	2	15.0-29.0	0	29.0-39.0	0	>39.0
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LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - June 2021

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average:	269 (W) degree	Hours in Service:	720
		Hours of Data:	717
		Hours of Missing Data:	3
		Hours of Calibration:	0
		Operational Uptime:	99.6

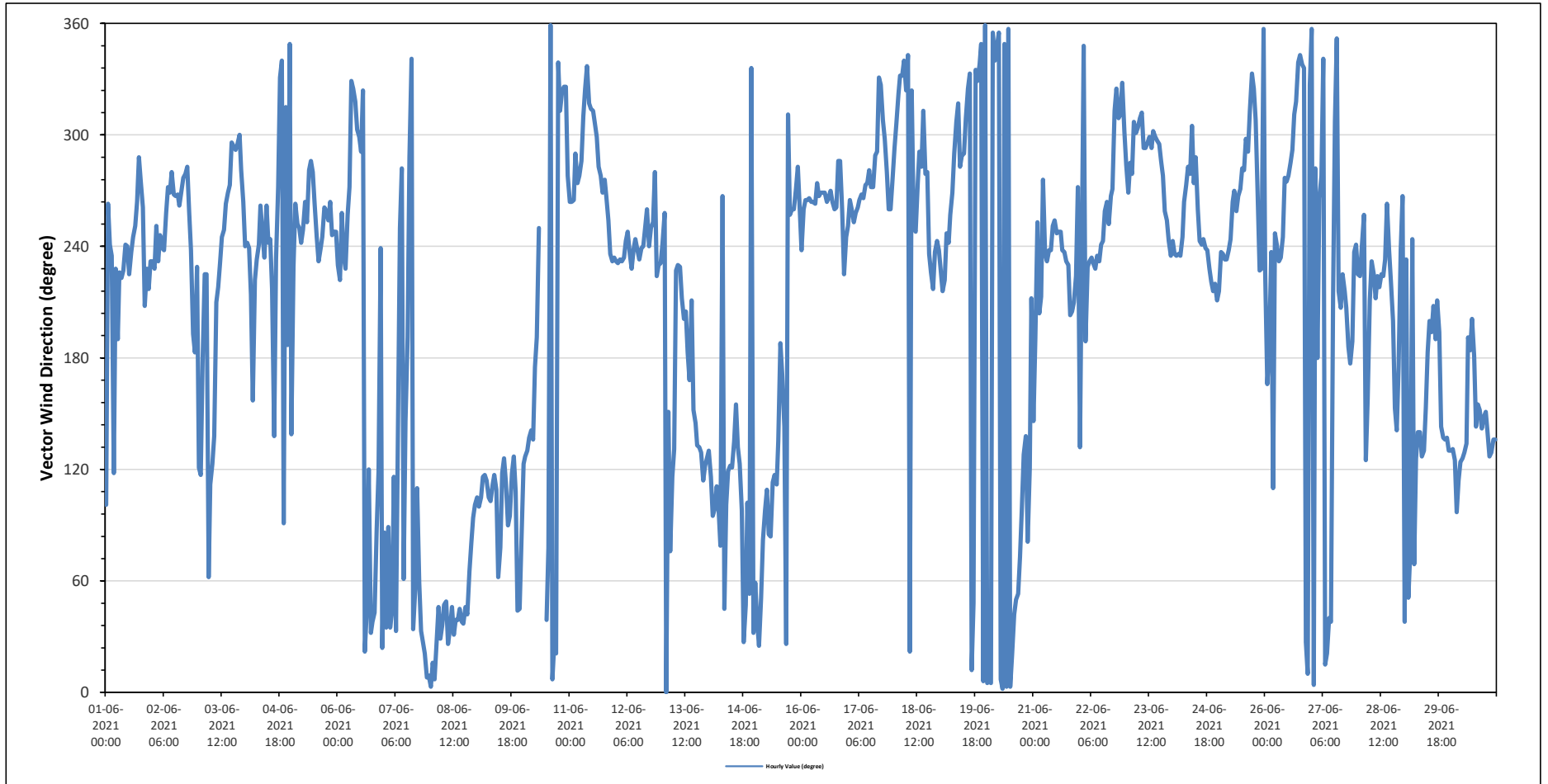
Day	Hourly Period Starting at (MST)																							Daily Average			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant	
Jun 1	E	W	WSW	SW	ESE	SW	S	SW	SW	WSW	WSW	SW	SW	WSW	WSW	W	WNW	W	W	SSW	SW	SW	SW	SW	246	WSW	
Jun 2	SW	SW	WSW	SW	WSW	WSW	SW	WSW	W	W	W	W	W	W	W	W	W	W	W	WSW	SW	S	S	SW	265	W	
Jun 3	ESE	ESE	S	SW	SW	ENE	ESE	ESE	SE	SSW	SW	SW	WSW	WSW	W	W	WNW	WNW	WNW	WNW	WNW	WNW	W	W	259	WSW	
Jun 4	WSW	WSW	WSW	SSW	SSE	SW	SW	WSW	W	WSW	SW	W	WSW	WSW	SW	SE	SW	W	NNW	NNW	E	NW	S	NNW	248	WSW	
Jun 5	SE	SW	W	WSW	WSW	WSW	WSW	W	WSW	W	WNW	W	W	WSW	SW	WSW	WSW	W	WSW	WSW	W	WSW	WSW	WSW	254	WSW	
Jun 6	SW	SW	WSW	SW	SW	WSW	W	NNW	NW	NW	WNW	WNW	WNW	NW	NNE	NE	ESE	NNE	NE	E	ESE	WSW	NNE	303	WNW		
Jun 7	E	NE	E	NE	NE	ESE	NNE	SE	WSW	W	ENE	SE	S	WNW	NNW	NE	NE	ESE	ENE	NNE	NNE	N	N	33	NNE		
Jun 8	N	NNE	N	NNE	NE	NNE	NE	NE	NE	NNE	NE	NE	NNE	NE	NE	NE	NE	NE	NE	ENE	E	E	E	42	NE		
Jun 9	ESE	E	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ENE	ENE	ESE	SE	ESE	E	E	ESE	SE	ESE	NE	NE	E	103	ESE	
Jun 10	ESE	SE	SE	SE	SE	SE	S	S	WSW	Y	Y	Y	NE	ENE	N	N	NNE	NNE	NNW	NW	NW	NW	NW	W	41	NE	
Jun 11	W	W	W	WNW	W	W	WNW	NW	NW	NNW	NW	NW	NW	NW	WNW	W	W	W	W	W	W	WSW	SW	SW	SW	292	WNW
Jun 12	SW	SW	SW	SW	SW	WSW	WSW	SW	SW	WSW	WSW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	SW	SW	SW	241	WSW
Jun 13	WSW	WSW	N	SSE	ENE	ESE	SE	SW	SW	SW	SSW	SSW	SSW	S	SSE	SSW	SSE	SE	SE	SE	SE	ESE	ESE	SE	171	S	
Jun 14	SE	ESE	E	E	ESE	E	ENE	W	NE	E	ESE	ESE	ESE	SE	SSE	SE	ESE	E	NNE	NE	E	NE	NNW	NNE	105	ESE	
Jun 15	ENE	NE	NNE	NE	E	E	ESE	E	E	ESE	ESE	ESE	SE	S	S	SE	NNE	NW	WSW	WSW	WSW	W	W	102	E		
Jun 16	SW	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	WSW	W	WNW	WNW	WSW	WSW	265	W	
Jun 17	WSW	W	WSW	WSW	WSW	W	W	W	W	W	W	W	W	W	WNW	WNW	NNW	NW	NW	WNW	W	WSW	WSW	W	274	W	
Jun 18	WNW	NW	NW	NNW	NNW	NNW	NW	NNW	NNE	NW	WSW	WSW	W	WNW	W	NW	W	W	SW	SW	SW	SW	WSW	SW	296	WNW	
Jun 19	SW	SW	SW	WSW	WSW	WSW	W	WNW	NW	NW	W	WNW	WNW	NW	NW	NNW	NNE	NE	NNW	NNW	NNW	N	N	320	NW		
Jun 20	N	N	N	N	NNW	NNW	N	N	N	NNW	N	N	N	NNE	NE	NE	NE	ENE	E	SE	SE	E	ESE	SSW	13	NNE	
Jun 21	SE	S	WSW	SSW	SSW	W	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SSW	SSW	SSW	SW	W	240	WSW		
Jun 22	SE	WSW	NNW	S	SW	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	W	WSW	W	W	NW	NW	NW	NW	NNW	WNW	272	W	
Jun 23	WNW	W	WNW	W	NW	WNW	WNW	NW	NW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	WSW	WSW	WSW	SW	292	WNW	
Jun 24	WSW	SW	SW	SW	SW	WSW	W	W	W	W	WNW	W	WNW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SSW	249	WSW		
Jun 25	SW	SW	SW	SW	SW	SW	WSW	W	W	WSW	W	W	W	W	WNW	WNW	NW	NNW	NW	NW	W	SW	SW	N	279	W	
Jun 26	SW	SSE	S	SW	ESE	WSW	WSW	SW	SW	WSW	W	W	W	WNW	WNW	NW	NW	NNW	NNW	NNW	NNW	NNE	N	NW	299	WNW	
Jun 27	N	N	W	S	W	W	NNW	NNE	NNE	NE	NE	SSW	NW	N	SW	SSW	SW	SW	SSW	S	S	S	SW	WSW	294	WNW	
Jun 28	SW	SW	WSW	WSW	SE	SSE	SSW	SW	SW	SSW	SW	SW	SW	SW	SW	W	SW	SW	SSW	SSE	SE	S	SW	W	223	SW	
Jun 29	NE	SW	NE	ENE	WSW	ENE	SE	SE	SE	SE	SE	SSE	S	SSW	SSW	SSW	S	SSW	SSW	SE	SE	SE	SE	SE	162	SSE	
Jun 30	SE	SE	SE	E	ESE	ESE	SE	SE	SE	S	S	SSW	S	SE	SSE	SSE	SE	SE	SSE	SE	SE	SE	SE	SE	149	SSE	

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 VWD - Cold Lake South Station





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - June 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 June 17 at hour 0										Hours in Service:		720													
Maximum Daily Value:		13.1 kph on June 16										Hours of Data:		717													
Minimum Hourly Value:		0.0 kph on June 13 at hour 2										Hours of Missing Data:		3													
Minimum Daily Value:		0.5 kph on June 27										Hours of Calibration:		0													
Monthly Average:		2.8 kph										Operational Uptime:		99.6													
WIND DIRECTION																											
Monthly Average:		269 (W) 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			
Jun 1	1.4	1.5	2.2	1.6	1.2	0.2	0.6	3.1	4.7	8.2	6.8	8.2	11.9	14.3	14.7	12.1	11.7	11.1	10.2	4.3	0.5	1.4	1.9	4.5	0.2	14.7	5.2
	E	W	WSW	SW	ESE	SW	S	SW	SW	SW	WSW	WSW	SW	SW	WSW	WSW	W	WNW	W	W	SSW	SW	SW	SW			
Jun 2	5.5	4.8	1.1	0.6	1.3	3.9	5.6	5.9	9.4	10.7	12.9	11.9	12.5	12.4	13.9	12.4	13.0	10.7	9.1	5.3	1.9	0.4	0.2	0.3	0.2	13.9	6.7
	SW	SW	WSW	SW	WSW	WSW	SW	WSW	W	W	W	W	W	W	W	W	W	W	W	W	WSW	SW	S	S			
Jun 3	0.2	0.1	0.1	0.8	0.1	0.4	1.1	2.4	4.1	9.9	11.6	12.7	11.7	10.7	11.3	11.4	12.8	12.3	10.6	9.2	5.8	4.0	3.6	3.5	0.1	12.8	5.0
	ESE	ESE	S	SW	SW	ENE	ESE	ESE	SE	SSW	SW	SW	WSW	WSW	W	W	W	WNW	WNW	WNW	WNW	WNW	W	W			
Jun 4	4.4	1.8	1.0	0.6	0.4	2.0	4.9	5.3	5.3	5.8	8.2	6.4	7.6	8.5	5.5	4.5	11.9	7.1	9.8	1.5	3.3	2.3	1.4	2.1	0.4	11.9	3.4
	WSW	WSW	WSW	SSW	SSE	SW	SW	WSW	W	WSW	SW	W	WSW	WSW	SW	SE	SW	W	NNW	NNW	E	NW	S	NNW			
Jun 5	0.5	2.6	2.7	2.6	4.3	1.9	3.7	5.3	4.7	6.1	7.2	6.5	7.7	9.1	11.0	11.8	10.1	9.9	9.5	8.4	6.5	5.9	7.1	7.6	0.5	11.8	6.1
	SE	SW	W	WSW	WSW	WSW	W	WSW	W	NNW	W	W	WSW	SW	WSW	WSW	W	WSW	WSW	W	WSW	WSW	WSW	WSW			
Jun 6	8.1	8.3	1.1	6.8	6.9	7.1	8.5	7.6	5.5	5.1	13.2	6.8	4.1	8.3	3.6	3.3	2.2	7.4	8.3	7.2	3.8	2.2	0.9	0.2	0.2	13.2	2.5
	SW	SW	WSW	SW	WSW	W	NNW	NW	NW	NNW	WNW	WNW	NNW	NW	NNE	NE	ESE	NNE	NE	NE	E	ESE	WSW	NNE			
Jun 7	0.6	0.5	1.1	1.2	1.4	0.7	2.5	2.2	1.7	2.1	4.2	8.4	4.3	8.2	12.4	11.6	9.3	6.5	7.0	7.7	9.3	8.6	7.5	7.3	0.5	12.4	3.0
	E	NE	E	NE	NE	ESE	NNE	SE	WSW	W	ENE	SE	S	WNW	NNW	NE	NE	ESE	ENE	NNE	NNE	N	N	N			
Jun 8	6.4	3.6	6.2	5.6	5.0	4.6	4.9	6.6	5.8	5.3	5.3	7.9	8.2	6.7	7.6	7.9	9.9	7.6	6.3	4.6	5.0	5.6	6.4	6.2	3.6	9.9	5.8
	N	NNE	N	NNE	NE	NNE	NE	NE	NE	NNE	NE	NE	NNE	NE	NE	NE	NE	NE	NE	NE	ENE	E	E	E			
Jun 9	6.0	5.5	5.5	6.3	3.8	4.2	5.2	6.5	6.4	6.4	6.9	6.9	6.5	9.5	10.9	6.7	7.9	8.8	7.1	8.2	3.6	3.7	6.8	4.9	3.6	10.9	6.0
	ESE	E	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ENE	ENE	ESE	SE	ESE	E	E	ESE	SE	ESE	NE	NE	E			
Jun 10	10.2	9.6	8.4	4.4	3.8	4.3	1.6	2.0	1.3	Y	Y	Y	0.5	4.7	1.9	4.5	3.8	2.8	6.7	5.3	11.6	7.4	5.8	4.5	0.5	11.6	0.9
	ESE	SE	SE	SE	SE	SE	S	WSW	Y	Y	Y	NE	ENE	N	N	NNE	NNE	NNW	NW	NW	NW	NW	W	W			
Jun 11	5.6	8.9	9.6	10.8	8.7	7.8	7.4	12.5	14.7	17.1	16.5	14.0	11.8	12.7	11.5	11.7	10.3	11.6	10.2	9.2	5.5	3.3	3.9	3.8	3.3	17.1	8.9
	W	W	W	WNW	W	W	WNW	NW	NW	NNW	NW	NW	NW	NW	NW	W	W	W	W	W	W	WSW	SW	SW			
Jun 12	3.8	3.6	5.5	5.0	3.5	2.9	3.8	5.4	5.0	5.9	9.2	12.9	14.5	12.8	14.1	12.0	11.0	12.6	10.3	6.5	1.7	1.6	1.5	0.6	0.6	14.5	6.8
	SW	SW	SW	SW	SW	WSW	SW	SW	WSW	WSW	WSW	WSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	SW	SW	SW			
Jun 13	0.9	0.2	0.0	0.0	0.2	0.1	0.6	1.7	1.8	5.5	7.0	8.2	7.9	7.2	7.7	9.6	8.4	10.0	10.2	7.3	3.5	2.9	3.6	4.8	0.0	10.2	3.6
	WSW	WSW	N	SSE	ENE	ESE	SE	SW	SW	SW	SSW	SSW	S	SSE	SSW	SSE	SE	SE	SE	SE	SE	ESE	ESE	SE			
Jun 14	5.0	3.2	2.5	4.6	5.2	4.7	4.6	3.0	4.7	5.0	8.9	14.6	12.3	10.2	5.8	8.7	7.5	3.5	4.3	3.6	3.7	1.4	4.4	9.2	1.4	14.6	4.4
	SE	ESE	E	E	ESE	E	ENE	W	NE	E	ESE	ESE	SE	SSE	SE	ESE	E	NNE	NE	E	NE	NNW	NNE	NNE			
Jun 15	6.7	5.8	5.4	11.8	7.2	12.6	10.8	4.9	11.0	14.5	8.7	13.4	13.4	6.1	2.6	4.7	3.5	5.9	3.2	6.1	8.4	12.7	11.2	6.6	2.6	14.5	2.6
	ENE	NE	NNE	NE	E	E	ESE	E	E	ESE	ESE	SE	S	S	SE	NNE	NW	WSW	WSW	WSW	W	W	W	W			
Jun 16	7.6	9.0	11.1	9.2	7.9	10.1	11.7	13.7	14.0	15.1	15.0	15.6	20.4	18.8	21.3	16.4	17.6	17.8	13.4	17.4	11.7	7.3	7.3	11.0	7.3	21.3	13.1
	SW	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	WSW	W	WNW	WSW	WSW	WSW			
Jun 17	23.2	18.2	16.9	15.5	16.1	14.8	14.3	14.0	14.3	13.4	11.8	10.5	10.8	11.4	9.0	9.5	14.2	13.9	8.4	7.7	6.0	6.6	6.5	6.0	6.0	23.2	11.4
	WSW	W	WSW	WSW	WSW	W	W	W	W	W	W	W	W	W	W	WNW	NNW	NW	NNW	NW	WSW	WSW	WSW	WSW			
Jun 18	4.8	5.7	5.5	5.1	5.6	8.1	8.9	7.6	3.5	3.0	3.9	3.9	5.7	6.7	7.3	3.0	5.3	6.8	6.3	4.3	2.0	2.3	2.4	2.9	2.0	8.9	3.9
	NNW	NW	NW	NNW	NNW	NNW	NW	NNW	NNE	NW	WSW	WSW	W	NNW	W	NW	W	W	SW	SW	SW	SW	SW	SW			
Jun 19	3.6	1.1	0.9	3.1	4.0	4.6	4.5	5.3	7.1	6.7	7.3	7.3	9.1	10.2	10.4	12.3	10.8	4.9	11.3	9.7	10.5	6.9	8.4	7.8	0.9	12.3	5.5
	SW	SW	SW	WSW	WSW	WSW	W	NNW	NW	NW	W	NNW	NNW	NW	NW	NNW	NNE	NE	NNW	NNW	NNW	NNW	N	N			
Jun 20	9.2	7.2	6.9	6.2	5.7	6.6	9.7	9.1	9.8	12.6	12.6	12.0	10.7	7.3	8.2	7.9	7.3	5.5	4.6	4.7	1.1	0.3	0.2	0.2	0.2	12.6	5.8
	N	N	N	N	NNW	NNW	N	N	N	NNW	N	N	N	NNE	NE	NE	NE	ENE	E	SE	SE	E	ESE	SSW			



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - June 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 June 17 at hour 0	Hours in Service:	720																						
Maximum Daily Value:	13.1	kph	on June 16	Hours of Data:	717																						
Minimum Hourly Value:	0.0	kph	on June 13 at hour 2	Hours of Missing Data:	3																						
Minimum Daily Value:	0.5	kph	on June 27	Hours of Calibration:	0																						
Monthly Average:	2.8	kph		Operational Uptime:	99.6																						
WIND DIRECTION																											
Monthly Average:	269	(W)	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			
Jun 21	0.3	0.3	0.3	0.2	0.2	0.7	4.2	8.4	10.9	10.2	11.4	11.3	12.8	11.5	11.6	12.3	11.8	9.4	6.0	3.2	2.5	1.7	3.1	1.4	0.2	12.8	5.9
	SE	S	WSW	SSW	SSW	W	SW	SW	SW	SW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	SSW	SSW	SSW	SW	W				
Jun 22	0.2	0.2	0.3	0.5	0.4	2.0	4.7	4.7	6.1	7.7	7.5	8.1	9.8	10.0	12.3	12.6	12.1	9.5	13.8	12.1	7.3	10.6	9.3	6.2	0.2	13.8	5.8
	SE	WSW	NNW	S	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	W	WSW	W	W	NW	NW	NW	NW	NNW	WNW				
Jun 23	5.1	4.9	6.7	7.6	9.9	5.5	9.8	12.1	11.1	8.6	9.3	10.6	10.0	12.2	10.8	11.8	12.1	9.6	6.6	5.5	5.2	4.4	3.6	4.1	3.6	12.2	7.9
	WNW	W	WNW	W	NW	WNW	WNW	NW	NW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	WSW	WSW	WSW	SW				
Jun 24	2.7	3.1	4.4	5.1	5.5	5.0	5.6	5.2	4.5	5.6	7.3	5.8	6.0	7.5	9.2	10.3	11.2	10.8	10.1	7.4	6.7	4.0	2.4	2.2	2.2	11.2	5.7
	WSW	SW	SW	SW	SW	WSW	W	W	W	WNW	W	WNW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	SW	SSW			
Jun 25	1.5	1.7	4.4	5.6	6.3	6.5	7.2	8.7	9.1	9.7	10.1	10.7	9.7	10.1	12.6	9.5	10.5	12.4	13.3	5.8	1.9	0.2	1.7	0.1	0.1	13.3	6.1
	SW	SW	SW	SW	SW	WSW	W	W	WSW	W	W	W	W	WNW	WNW	NW	NNW	NW	NW	NW	W	SW	SW	N			
Jun 26	0.9	0.0	0.2	1.2	0.2	0.9	4.9	5.2	6.7	5.9	8.0	9.6	9.8	9.7	10.7	10.3	10.3	13.1	10.0	8.3	5.1	6.0	1.7	0.5	0.0	13.1	4.4
	SW	SSE	S	SW	ESE	WSW	WSW	SW	SW	WSW	W	W	W	WNW	WNW	NW	NW	NNW	NNW	NNW	NNW	NNE	N	NW			
Jun 27	4.2	2.1	0.7	0.4	0.5	2.4	2.2	5.6	5.2	5.8	3.1	0.5	1.0	1.3	4.7	3.6	4.6	5.2	4.5	2.3	0.4	0.6	0.8	0.5	0.4	5.8	0.5
	N	N	W	S	W	W	NNW	NNE	NNE	NE	NE	SSW	NW	N	SW	SSW	SW	SW	SSW	S	S	S	SW	WSW			
Jun 28	0.1	0.3	0.3	0.2	1.2	0.2	1.4	4.3	5.6	7.0	7.3	7.5	7.2	5.7	5.5	6.0	6.0	4.3	2.8	2.4	0.7	0.1	0.3	0.8	0.1	7.5	3.0
	SW	SW	WSW	WSW	SE	SSE	SSW	SW	SW	SSW	SW	SW	SW	SW	SW	W	SW	SW	SSW	SSE	SE	S	SW	W			
Jun 29	0.3	0.3	0.1	0.7	0.1	0.4	3.1	1.8	2.3	4.3	5.2	4.8	4.8	6.7	6.2	6.4	5.3	5.2	2.9	3.7	4.5	4.9	5.8	6.0	0.1	6.7	3.0
	NE	SW	NE	ENE	WSW	ENE	SE	SE	SE	SE	SSE	S	SSW	SSW	SSW	S	SSW	SSW	SE	SE	SE	SE	SE	SE			
Jun 30	5.0	2.8	0.4	0.7	1.7	4.4	5.1	6.9	7.2	6.5	7.6	9.1	7.5	11.9	10.3	10.3	12.9	8.9	7.0	3.4	3.8	4.8	7.5	7.8	0.4	12.9	5.9
	SE	SE	SE	E	ESE	ESE	SE	SE	SE	S	SSW	S	SE	SSE	SSE	SE	SE	SSE	SE	SE	SE	SE	SE	SE			
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 - June 2021

Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

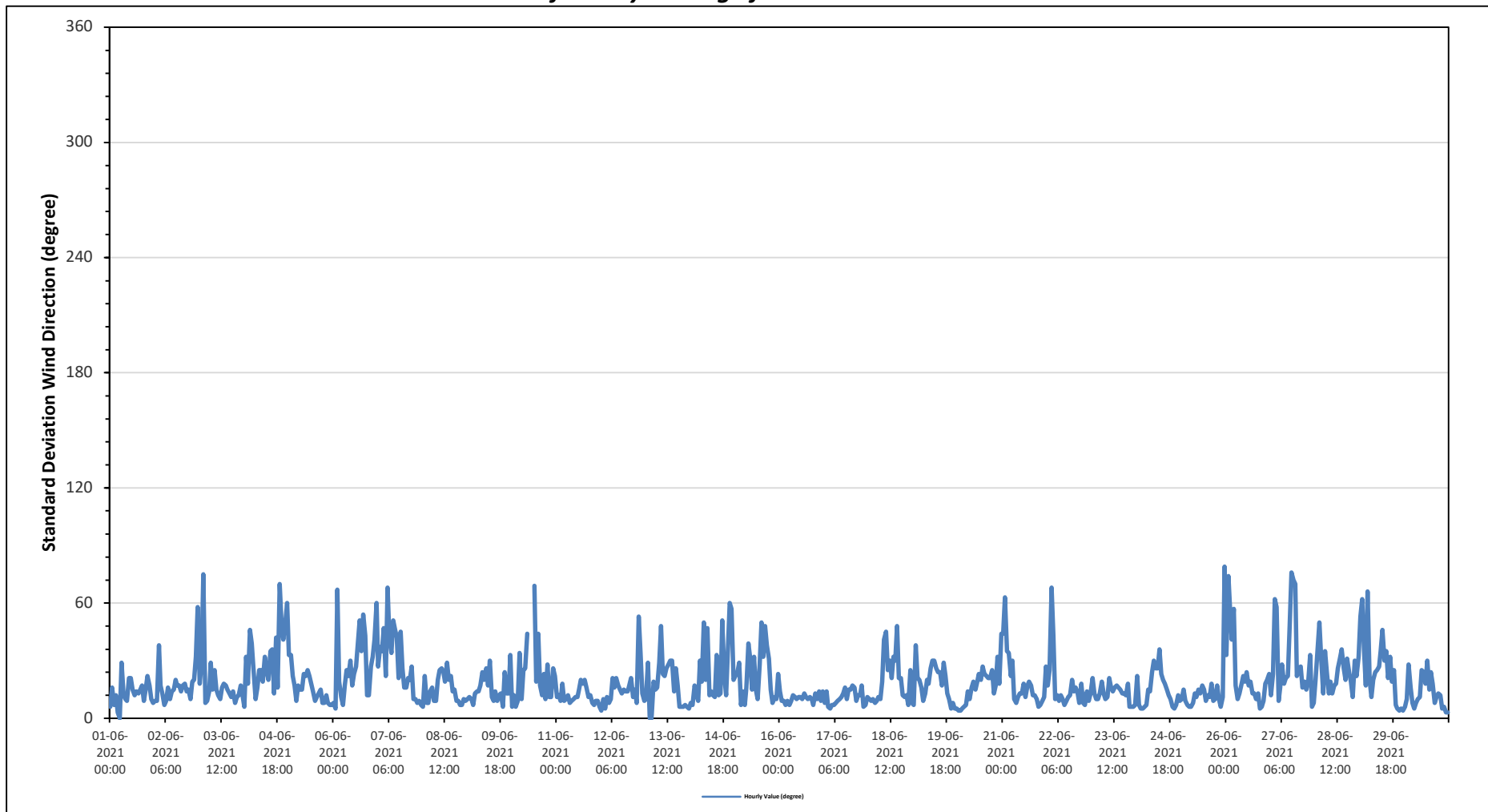
Maximum Hourly Value: 79 degree on June 25 at hour 23	Hours in Service: 720
	Hours of Data: 717
Minimum Hourly Value: 0 degree on June 1 at hour 5	Hours of Missing Data: 3
	Hours of Calibration: 0
	Operational Uptime: 99.6

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
Jun 1	6	16	7	12	3	0	29	12	10	9	21	21	15	12	14	13	15	17	9	15	22	17	10	8	0	29
Jun 2	9	9	38	17	13	7	9	16	10	14	15	20	17	17	14	17	18	14	15	10	19	20	32	58	7	58
Jun 3	18	29	75	8	9	14	29	15	25	15	12	10	16	18	17	15	13	11	14	8	11	12	17	12	8	75
Jun 4	6	32	18	46	39	25	10	16	25	25	19	32	25	20	35	36	13	42	16	70	50	41	50	60	6	70
Jun 5	33	33	22	17	9	17	15	15	23	22	25	22	18	14	9	11	13	15	8	8	12	8	7	7	7	33
Jun 6	8	5	67	19	11	7	17	25	22	30	17	23	27	39	51	35	54	43	12	12	27	32	41	60	5	67
Jun 7	27	37	35	47	22	68	42	34	51	47	42	21	45	26	16	16	21	20	27	10	10	8	9	7	7	68
Jun 8	6	22	8	8	14	16	9	9	20	25	26	24	19	29	20	22	14	15	9	9	7	7	10	9	6	29
Jun 9	10	11	10	7	13	14	14	17	24	20	26	17	30	11	9	14	9	12	13	6	24	13	13	33	6	33
Jun 10	6	12	6	9	34	10	25	26	44	Y	Y	Y	69	19	44	17	12	23	10	28	11	11	26	22	6	69
Jun 11	11	12	9	18	9	10	12	8	9	10	11	11	15	20	18	20	16	11	12	8	7	9	9	6	6	20
Jun 12	4	10	5	11	8	10	21	16	21	17	15	13	15	14	14	17	21	11	15	8	53	34	13	9	4	53
Jun 13	10	29	0	0	19	15	16	29	48	23	22	26	28	30	30	14	26	17	6	6	6	7	6	5	0	48
Jun 14	8	7	17	13	9	30	19	50	20	47	12	14	12	11	33	12	13	51	22	12	36	60	57	20	7	60
Jun 15	22	23	29	7	14	7	16	39	31	15	32	15	10	28	50	32	48	38	31	15	8	11	10	23	7	50
Jun 16	14	9	9	7	9	7	9	12	11	10	11	11	10	13	11	10	11	10	7	13	10	14	9	14	7	14
Jun 17	8	14	6	5	7	7	8	9	10	11	13	16	10	15	15	17	16	9	12	12	17	6	7	11	5	17
Jun 18	10	9	10	8	9	11	10	19	41	45	25	30	21	32	30	48	21	21	12	11	12	7	25	8	7	48
Jun 19	7	38	21	20	16	9	13	20	18	26	30	30	26	24	24	17	29	22	13	10	5	8	5	5	5	38
Jun 20	4	4	5	6	7	14	10	16	19	15	19	23	20	27	23	22	21	21	25	13	17	32	18	44	4	44
Jun 21	44	63	35	34	22	30	10	8	11	13	13	18	11	17	19	17	12	12	10	6	7	9	11	27	6	63
Jun 22	17	25	68	43	10	12	9	12	10	7	9	11	12	20	14	16	13	8	18	8	7	14	9	13	7	68
Jun 23	21	13	10	10	13	19	13	10	11	21	16	14	16	17	16	15	13	13	12	18	6	6	6	7	6	21
Jun 24	22	7	5	5	6	7	15	14	24	30	26	26	36	23	20	18	15	12	10	6	5	7	12	9	5	36
Jun 25	10	15	9	7	6	6	8	13	11	15	13	17	15	9	12	11	18	9	10	17	10	6	11	79	6	79
Jun 26	33	74	58	41	57	17	10	13	17	22	19	24	17	19	13	13	10	13	5	6	9	18	20	23	5	74
Jun 27	12	23	62	58	9	16	28	18	21	22	48	76	72	70	22	26	27	16	19	15	20	33	6	8	6	76
Jun 28	20	34	50	31	13	35	24	13	19	13	17	18	26	31	36	26	20	31	24	19	11	30	22	32	11	50
Jun 29	53	62	36	17	66	20	11	20	24	25	27	35	46	30	35	21	32	19	25	7	5	4	5	4	4	66
Jun 30	6	10	28	16	8	5	8	10	11	25	24	18	30	15	24	18	8	11	13	12	5	6	3	3	3	30
Diurnal Minimum	4	4	0	0	3	0	8	8	9	7	9	10	10	9	9	10	8	8	5	6	5	4	3	3		
Diurnal Maximum	53	74	75	58	66	68	42	50	51	47	48	76	72	70	51	48	54	51	31	70	53	60	57	79		

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

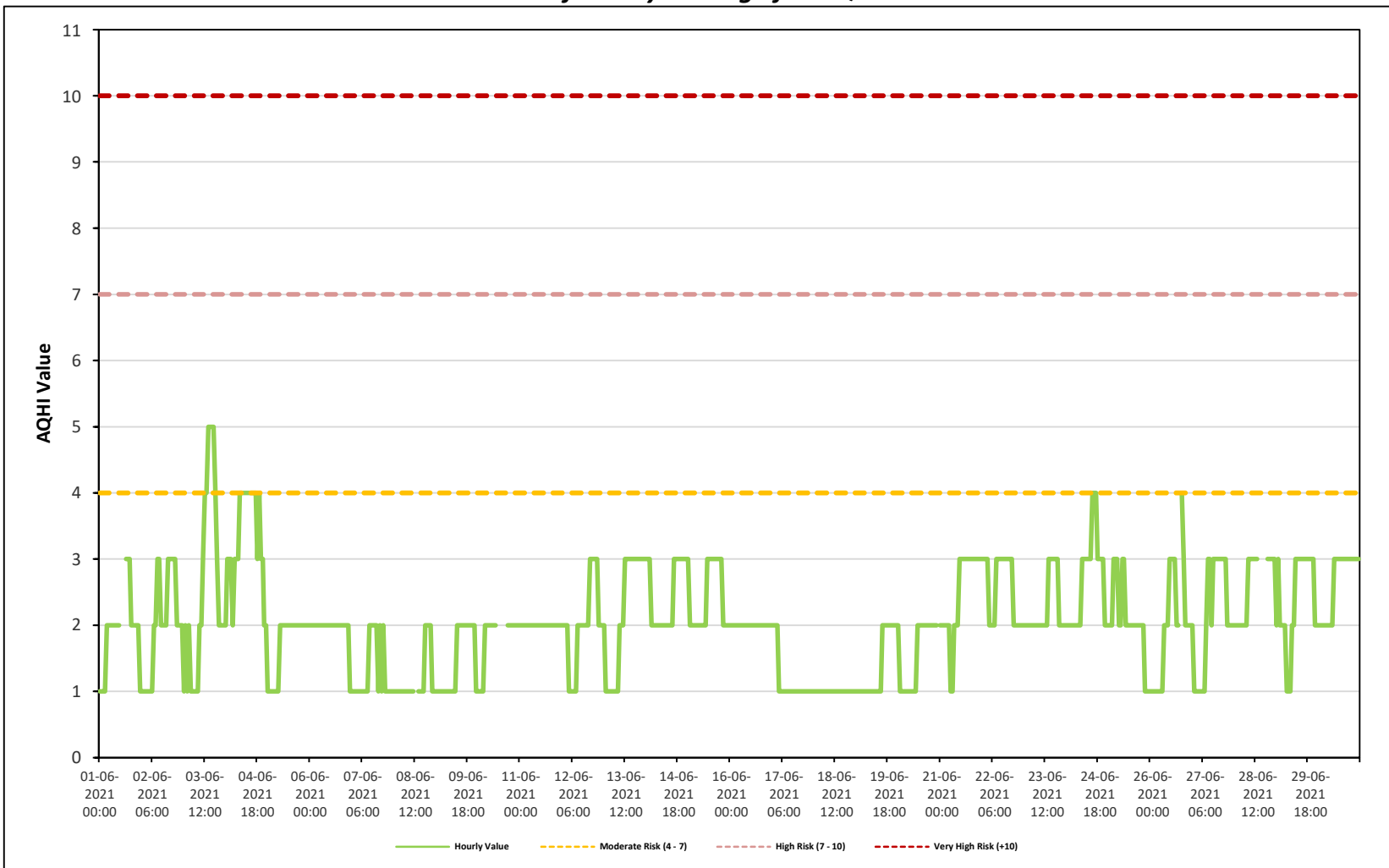
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

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 - June 2021

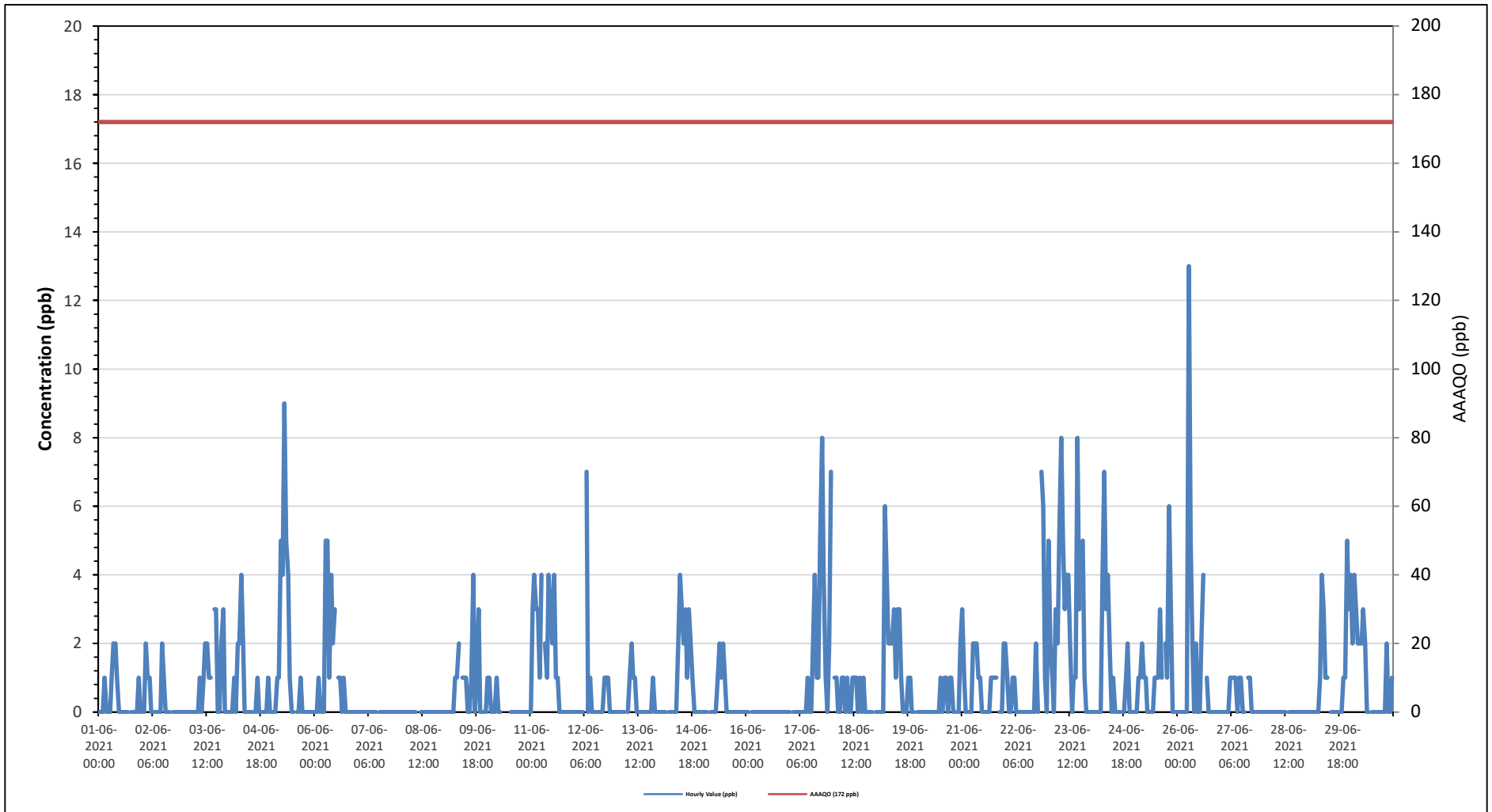
Summary of Hourly Averages

SULPHUR DIOXIDE (SO₂) in ppb

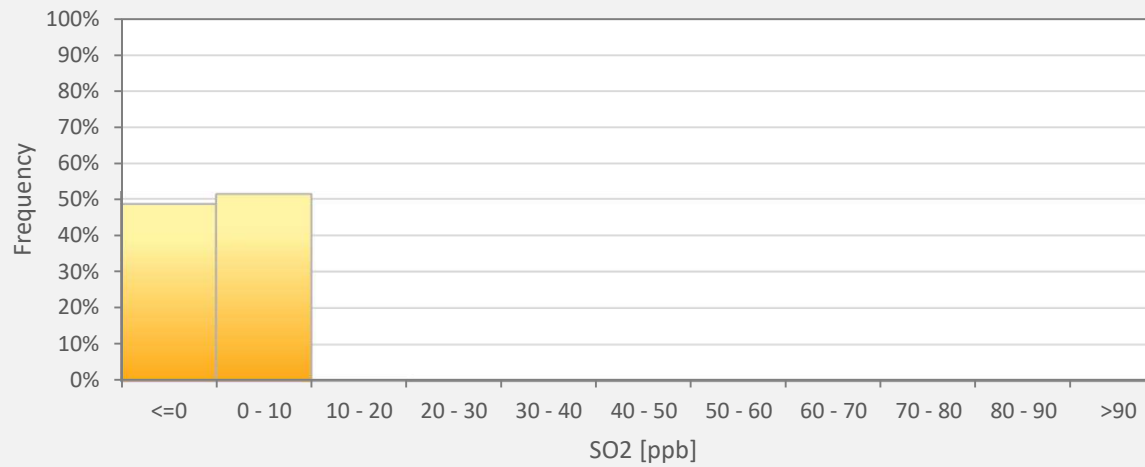
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb																																	
Number of 1-Hour Exceedences: 0					Number of 24-Hour Exceedences: 0					30-Day Exceedence: 0																							
Maximum Hourly Value: 13 ppb on June 26 at hour 6					Hours in Service: 720																												
Maximum Daily Value: 2.7 ppb on June 23					Hours of Data: 684																												
Minimum Hourly Value: 0 ppb on June 1 at hour 0					Hours of Missing Data: 1																												
Minimum Daily Value: 0.0 ppb on June 7					Hours of Calibration: 35																												
Monthly Average: 0.8 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									
Jun 1	0	0	0	1	0	0	0	1	2	2	1	0	0	0	0	0	0	S	0	0	0	0	1	0	0	0	2	0.3					
Jun 2	0	0	2	1	1	0	0	0	0	0	0	2	1	0	0	0	S	0	0	0	0	0	0	0	0	0	2	0.3					
Jun 3	0	0	0	0	0	0	0	0	1	0	1	2	2	1	1	S	3	3	0	0	2	3	0	0	0	3	0.8						
Jun 4	0	0	0	1	0	2	2	4	2	0	0	0	0	0	S	0	1	0	0	0	0	0	1	0	0	4	0.6						
Jun 5	0	0	0	1	1	5	4	9	5	4	1	0	0	S	0	0	1	0	0	0	0	0	0	0	0	9	1.3						
Jun 6	0	0	1	0	0	0	5	5	1	4	2	3	S	1	1	0	1	0	0	0	0	0	0	0	0	5	1.0						
Jun 7	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						
Jun 8	0	0	0	0	0	0	0	0	0	0	NRM	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0						
Jun 9	0	0	0	0	0	0	1	1	2	S	1	1	1	0	0	1	4	0	1	3	0	0	0	0	0	4	0.7						
Jun 10	1	1	0	0	0	1	0	0	S	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2						
Jun 11	0	3	4	3	3	1	4	S	2	1	4	3	2	4	1	1	0	0	0	0	0	0	0	0	0	4	1.6						
Jun 12	0	0	0	0	0	0	S	7	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	7	0.5						
Jun 13	0	0	0	0	0	S	0	1	2	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0.3						
Jun 14	0	0	0	0	S	0	0	0	0	0	2	4	3	2	3	1	3	2	1	0	0	0	0	0	0	4	0.9						
Jun 15	0	0	0	S	0	0	0	0	1	2	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3						
Jun 16	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						
Jun 17	0	S	0	0	0	0	0	0	0	0	1	0	0	2	4	1	1	5	8	4	1	0	2	7	0	8	1.6						
Jun 18	S	1	1	0	0	1	1	0	1	0	1	1	1	1	0	1	0	1	0	0	0	0	0	S	0	1	0.5						
Jun 19	0	0	0	0	0	6	4	2	2	2	3	1	3	3	1	0	0	0	1	1	0	0	S	0	0	6	1.3						
Jun 20	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	1	1	0	0	S	0	2	0	2	0.3						
Jun 21	3	1	0	0	0	0	2	2	2	1	1	0	0	0	0	0	1	1	1	1	S	0	0	2	0	3	0.8						
Jun 22	2	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	0	S	7	6	1	0	0	7	0.9							
Jun 23	5	2	1	0	3	2	5	8	5	3	4	4	2	0	1	1	8	3	S	5	1	0	0	0	8	2.7							
Jun 24	0	0	0	0	0	0	4	7	3	4	2	0	1	0	0	0	0	S	0	1	2	0	0	0	0	7	1.0						
Jun 25	0	0	1	1	2	1	1	0	0	0	0	1	1	1	3	1	S	2	1	6	3	0	0	0	0	6	1.1						
Jun 26	0	0	0	0	0	0	13	5	2	0	2	0	2	4	S	1	0	0	0	0	0	0	0	0	13	1.3							
Jun 27	0	0	0	0	0	1	1	1	1	0	1	1	0	0	S	1	1	0	0	0	0	0	0	0	0	1	0.3						
Jun 28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0						
Jun 29	0	0	0	0	0	0	0	1	4	3	1	1	S	0	0	0	0	0	0	0	0	1	1	5	3	0	0.9						
Jun 30	4	2	4	3	2	2	2	3	2	0	0	S	0	0	0	0	0	0	0	0	2	0	0	1	0	4	1.2						
Diurnal Maximum	5	3	4	3	3	6	13	9	5	4	4	4	3	4	4	1	8	5	8	6	7	6	5	7									
Daiurnal Average	0.5	0.4	0.5	0.4	0.4	0.8	1.7	2.0	1.4	1.0	1.0	1.0	0.7	0.6	0.7	0.3	0.9	0.8	0.5	0.8	0.7	0.3	0.3	0.5									
C	Monthly Calibration										S	Daily Zero-Span Check										Q	Quality Assurance										
K	Collection Error										N	No Data (Machine Not in Service)										Y	Routine Maintenance					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 - Tamarack Site



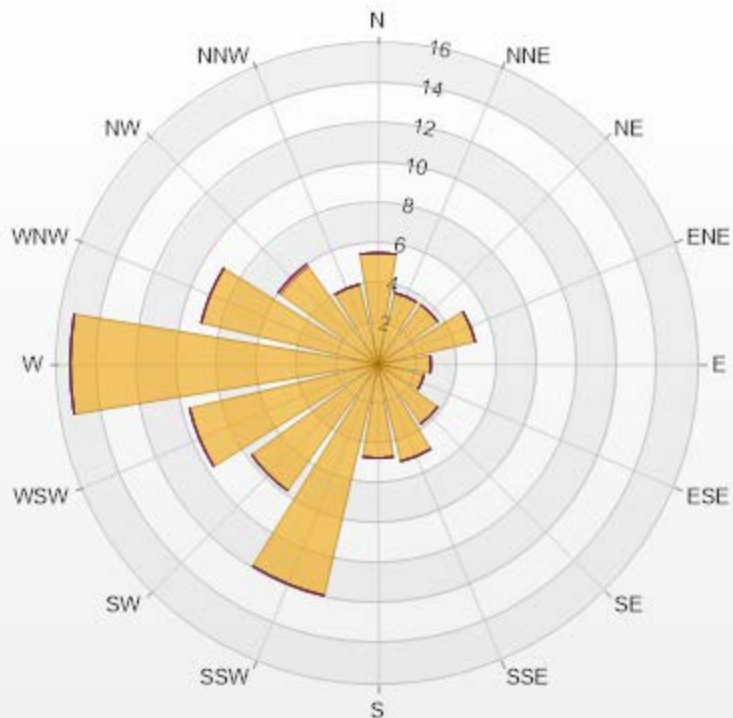
SO2[ppb] Histogram: Tamarack Monthly: 06-2021 1 Hr.



Classes	SO2
<=0	48.54%
0 - 10	51.32%
10 - 20	0.15%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.00% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	5.56	0	0	0	0	5.56
NNE	3.65	0	0	0	0	3.65
NE	3.65	0	0	0	0	3.65
ENE	4.97	0	0	0	0	4.97
E	2.63	0	0	0	0	2.63
ESE	2.34	0	0	0	0	2.34
SE	3.65	0	0	0	0	3.65
SSE	4.97	0	0	0	0	4.97
S	4.68	0	0	0	0	4.68
SSW	11.84	0	0	0	0	11.84
SW	7.75	0	0	0	0	7.75
WSW	9.65	0	0	0	0	9.65
W	15.35	0	0	0	0	15.35
WNW	9.06	0	0	0	0	9.06
NW	5.99	0.15	0	0	0	6.14
NNW	4.09	0	0	0	0	4.09
Summary	100	0.15	0	0	0	100



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% Icon Classes (ppb)

100 0-10

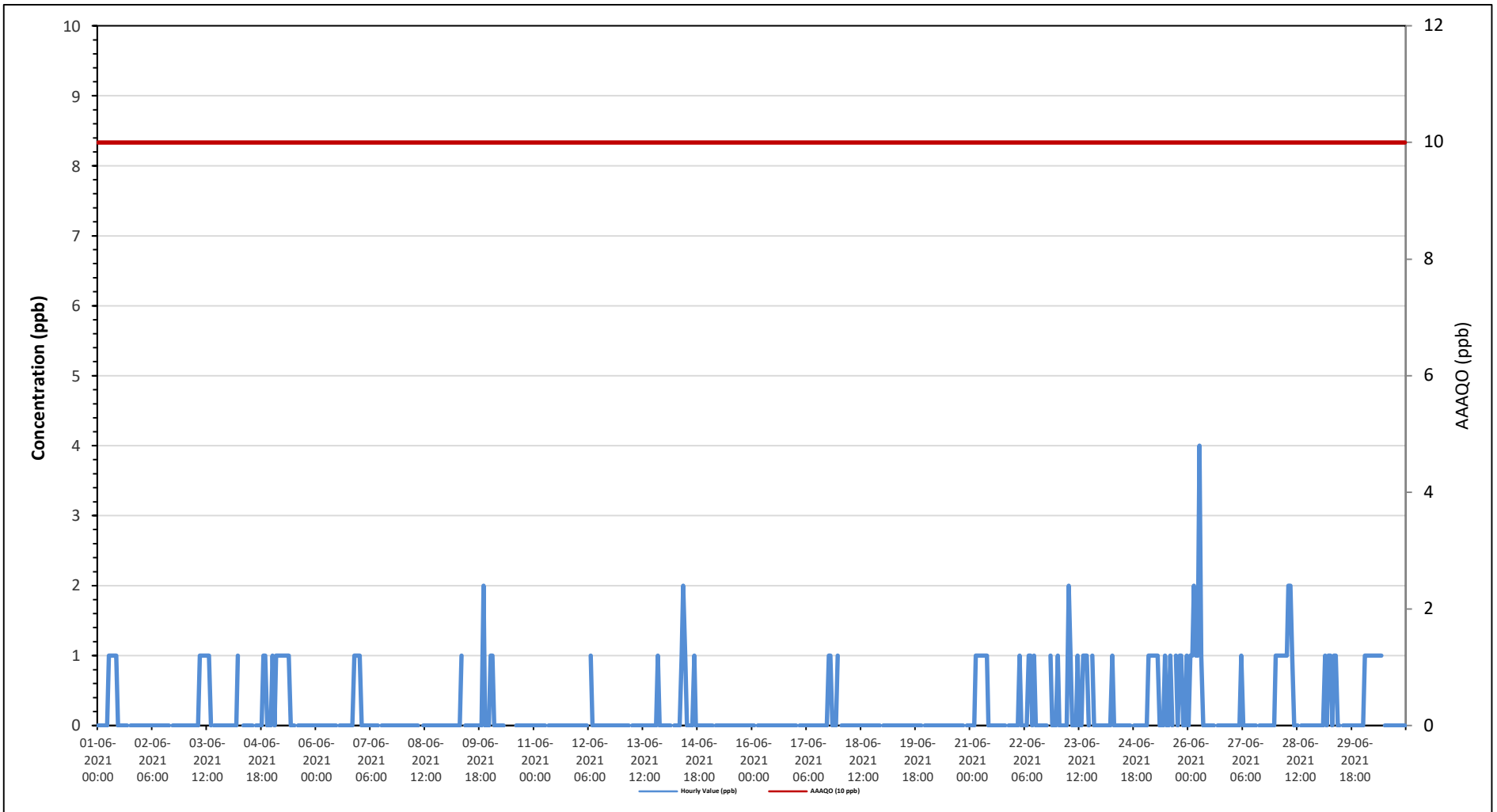
0 10-50

0 50-100

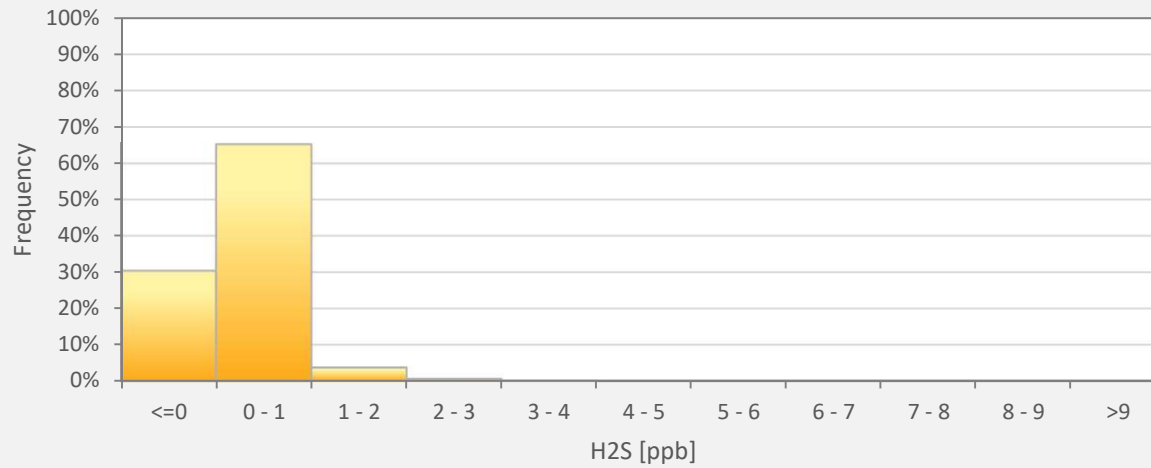
0 100-172

0 >172.0

Timeseries Chart of Hourly Average for H2S - Tamarack Site



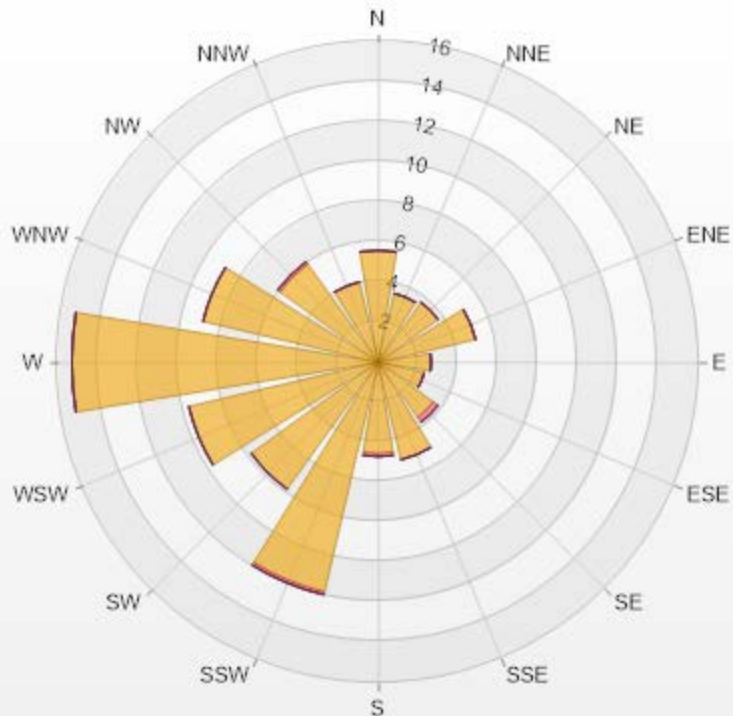
H2S[ppb] Histogram: Tamarack Monthly: 06-2021 1 Hr.



Classes	H2S
<=0	30.40%
0 - 1	65.20%
1 - 2	3.67%
2 - 3	0.59%
3 - 4	0.15%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.58% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	5.58	0	0	0	0	5.58
NNE	3.52	0	0	0	0	3.52
NE	3.67	0	0	0	0	3.67
ENE	4.99	0	0	0	0	4.99
E	2.64	0	0	0	0	2.64
ESE	2.35	0	0	0	0	2.35
SE	3.38	0.29	0	0	0	3.67
SSE	4.99	0	0	0	0	4.99
S	4.55	0.15	0	0	0	4.7
SSW	11.75	0.15	0	0	0	11.9
SW	7.78	0	0	0	0	7.78
WSW	9.69	0	0	0	0	9.69
W	15.27	0	0	0	0	15.27
WNW	8.96	0	0	0	0	8.96
NW	6.02	0.15	0	0	0	6.17
NNW	4.11	0	0	0	0	4.11
Summary	99.25	0.74	0	0	0	100



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% Icon Classes (ppb)

99 0-2

1 2-5

0 5-10

0 10-50

0 >50.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - June 2021

Summary of Hourly Averages

OXIDES OF NITROGEN (NOx) in ppb

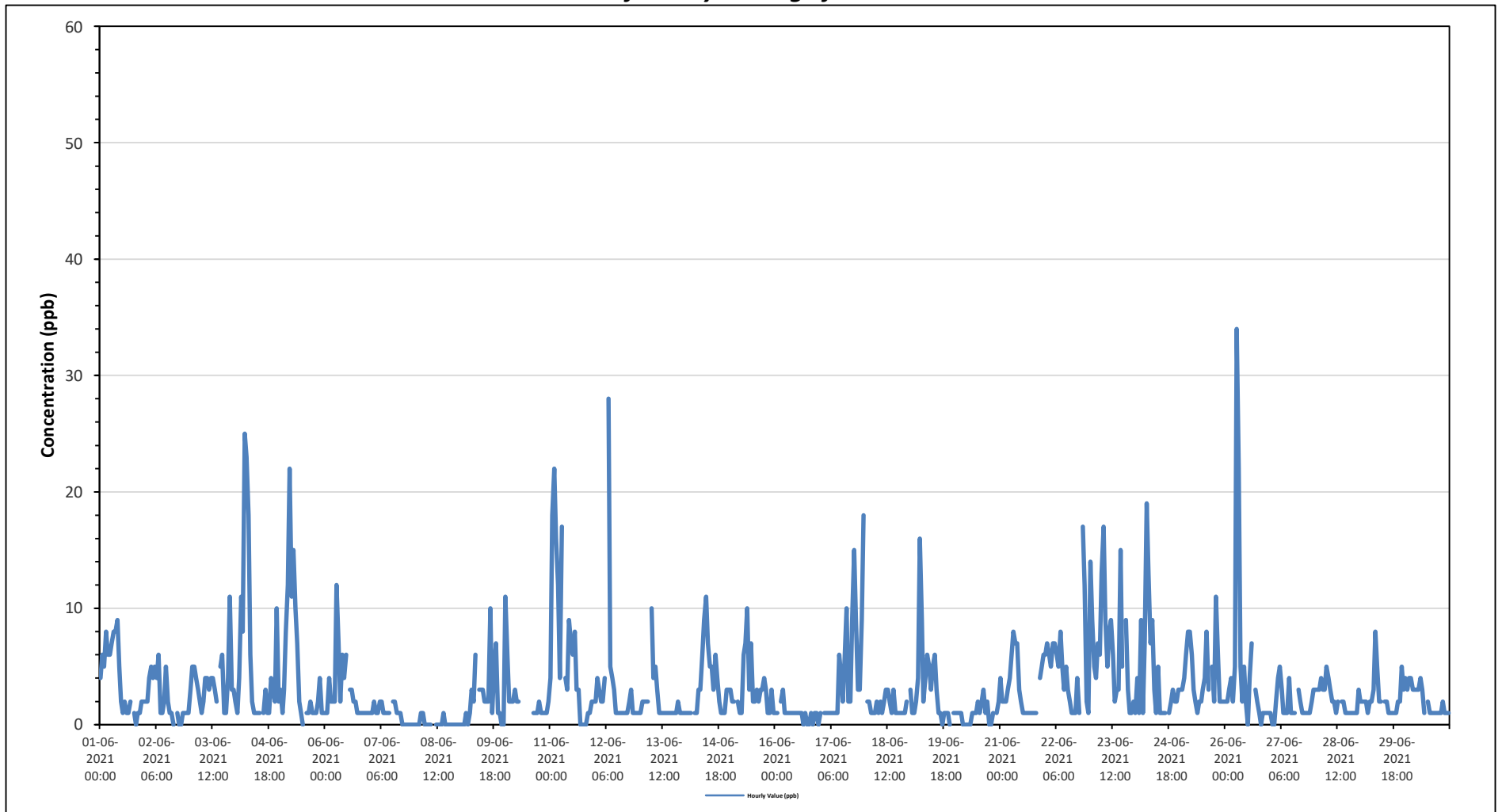
Maximum Hourly Value:	34 ppb on June 26 at hour 6	Hours in Service:	720
Maximum Daily Value:	6.8 ppb on June 23	Hours of Data:	682
Minimum Hourly Value:	0 ppb on June 1 at hour 19	Hours of Missing Data:	1
Minimum Daily Value:	0.1 ppb on June 8	Hours of Calibration:	37
Monthly Average:	3.2 ppb	Operational 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	
Jun 1	4	6	5	8	6	6	7	8	8	9	5	2	1	2	1	1	2	S	1	0	1	1	2	2	0	9	3.8	
Jun 2	2	2	4	5	4	5	4	6	1	1	2	5	2	1	1	0	S	1	0	0	1	1	1	1	0	6	2.2	
Jun 3	3	5	5	4	3	2	1	2	4	4	3	4	4	3	2	S	5	6	1	1	4	11	3	3	1	11	3.6	
Jun 4	2	1	4	11	8	25	23	18	6	2	1	1	1	1	S	1	3	1	1	4	3	2	10	2	1	25	5.7	
Jun 5	3	1	3	8	12	22	11	15	10	7	2	1	0	S	1	1	2	1	1	1	2	4	1	1	0	22	4.8	
Jun 6	1	1	4	2	2	2	12	7	2	6	4	6	S	3	3	2	2	1	1	1	1	1	1	1	1	12	2.9	
Jun 7	1	1	2	1	1	2	2	1	1	1	1	S	2	2	1	1	1	0	0	0	0	0	0	0	0	2	0.9	
Jun 8	0	0	0	1	1	0	0	0	0	NRM	S	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0.1
Jun 9	0	0	0	1	0	1	3	2	6	S	3	3	3	2	2	2	10	1	5	7	1	1	0	0	0	10	2.3	
Jun 10	11	6	2	2	2	3	2	2	S	C	C	C	C	C	C	C	1	1	1	2	1	1	1	2	1	11	-	
Jun 11	4	18	22	16	12	4	17	S	4	3	9	7	6	8	3	3	0	0	0	0	1	1	2	2	0	22	6.2	
Jun 12	2	4	3	2	2	4	S	28	5	4	3	1	1	1	1	1	1	1	2	3	1	1	1	1	1	28	3.2	
Jun 13	1	2	2	2	2	S	10	4	5	3	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	10	2.0	
Jun 14	1	1	1	1	S	1	1	3	3	6	9	11	7	5	3	6	4	2	1	1	1	3	3	3	1	11	3.4	
Jun 15	3	2	2	S	2	1	1	6	7	10	3	7	2	2	3	3	2	3	3	4	3	1	1	3	1	10	3.1	
Jun 16	1	1	S	2	3	1	1	1	1	1	1	1	1	1	0	1	0	0	1	0	1	1	0	0	3	0.9		
Jun 17	1	S	1	1	1	1	1	1	1	1	6	4	2	6	10	2	2	9	15	9	3	3	9	18	1	18	4.7	
Jun 18	S	2	2	1	1	1	2	1	2	1	2	3	3	2	1	3	1	1	1	1	1	1	1	2	S	1	3	1.6
Jun 19	3	1	1	2	4	16	9	2	4	6	5	3	5	6	3	1	1	0	1	1	1	1	0	1	0	16	3.3	
Jun 20	1	1	1	1	0	0	0	0	0	1	1	1	2	1	2	3	1	2	0	0	1	S	1	2	0	3	1.0	
Jun 21	4	2	2	2	3	4	6	8	7	7	3	2	1	1	1	1	1	1	1	1	S	4	5	6	1	8	3.2	
Jun 22	6	7	6	5	7	7	6	5	8	5	3	5	3	2	1	1	1	4	1	S	17	12	2	1	1	17	5.0	
Jun 23	14	9	5	4	7	6	13	17	9	5	8	9	6	2	3	3	15	5	S	9	3	1	1	2	1	17	6.8	
Jun 24	1	4	1	9	1	7	19	13	7	9	3	1	5	1	1	1	1	S	1	2	3	2	2	3	1	19	4.2	
Jun 25	3	3	4	6	8	8	6	3	2	1	2	2	3	4	8	3	S	5	2	11	6	2	2	2	1	11	4.2	
Jun 26	2	2	3	4	2	5	34	22	5	2	5	2	0	4	7	S	3	2	1	0	1	1	1	1	0	34	4.7	
Jun 27	1	0	0	2	4	5	3	1	1	1	4	1	1	1	S	3	2	1	1	1	1	1	1	2	3	0	5	1.7
Jun 28	3	3	3	4	3	3	5	4	3	2	2	1	2	S	2	2	1	1	1	1	1	1	1	1	3	1	5	2.3
Jun 29	2	2	2	2	1	2	2	3	8	5	2	2	2	1	1	1	1	1	1	1	2	2	5	3	1	8	2.3	
Jun 30	4	3	4	4	3	3	3	3	4	3	1	S	2	1	1	1	1	1	1	1	2	1	1	1	1	4	2.1	
Diurnal Maximum	14	18	22	16	12	25	34	28	10	10	9	11	7	8	10	3	15	9	15	11	17	12	10	18				
Diurnal Average	2.9	3.1	3.2	3.9	3.6	5.1	7.0	6.4	4.3	3.9	3.4	3.2	2.4	2.4	2.5	1.6	2.5	1.9	1.7	2.1	2.1	2.0	2.2	2.3				

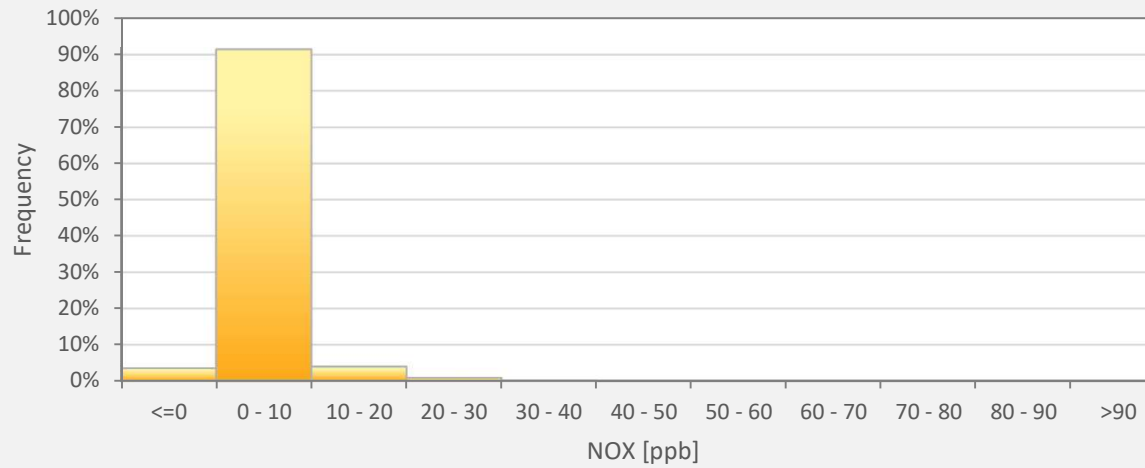
C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction /Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

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 NOx - Tamarack Site



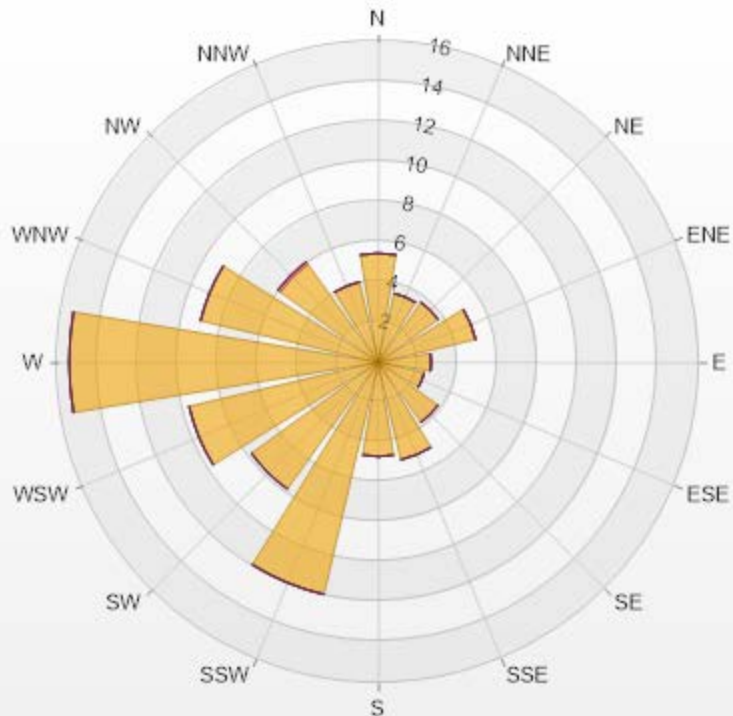
NOX[ppb] Histogram: Tamarack Monthly: 06-2021 1 Hr.



Classes	NOX
<=0	3.52%
0 - 10	91.50%
10 - 20	3.96%
20 - 30	0.88%
30 - 40	0.15%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.72% Calm Avg: 0.00 [ppb]


Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	5.43	0	0	0	0	5.43
NNE	3.52	0	0	0	0	3.52
NE	3.67	0	0	0	0	3.67
ENE	4.99	0	0	0	0	4.99
E	2.64	0	0	0	0	2.64
ESE	2.35	0	0	0	0	2.35
SE	3.67	0	0	0	0	3.67
SSE	4.99	0	0	0	0	4.99
S	4.69	0	0	0	0	4.69
SSW	11.88	0	0	0	0	11.88
SW	7.77	0	0	0	0	7.77
WSW	9.68	0	0	0	0	9.68
W	15.4	0	0	0	0	15.4
WNW	9.09	0	0	0	0	9.09
NW	6.01	0.15	0	0	0	6.16
NNW	4.11	0	0	0	0	4.11
Summary	100	0.15	0	0	0	100



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% Icon Classes (ppb)

100  0-30

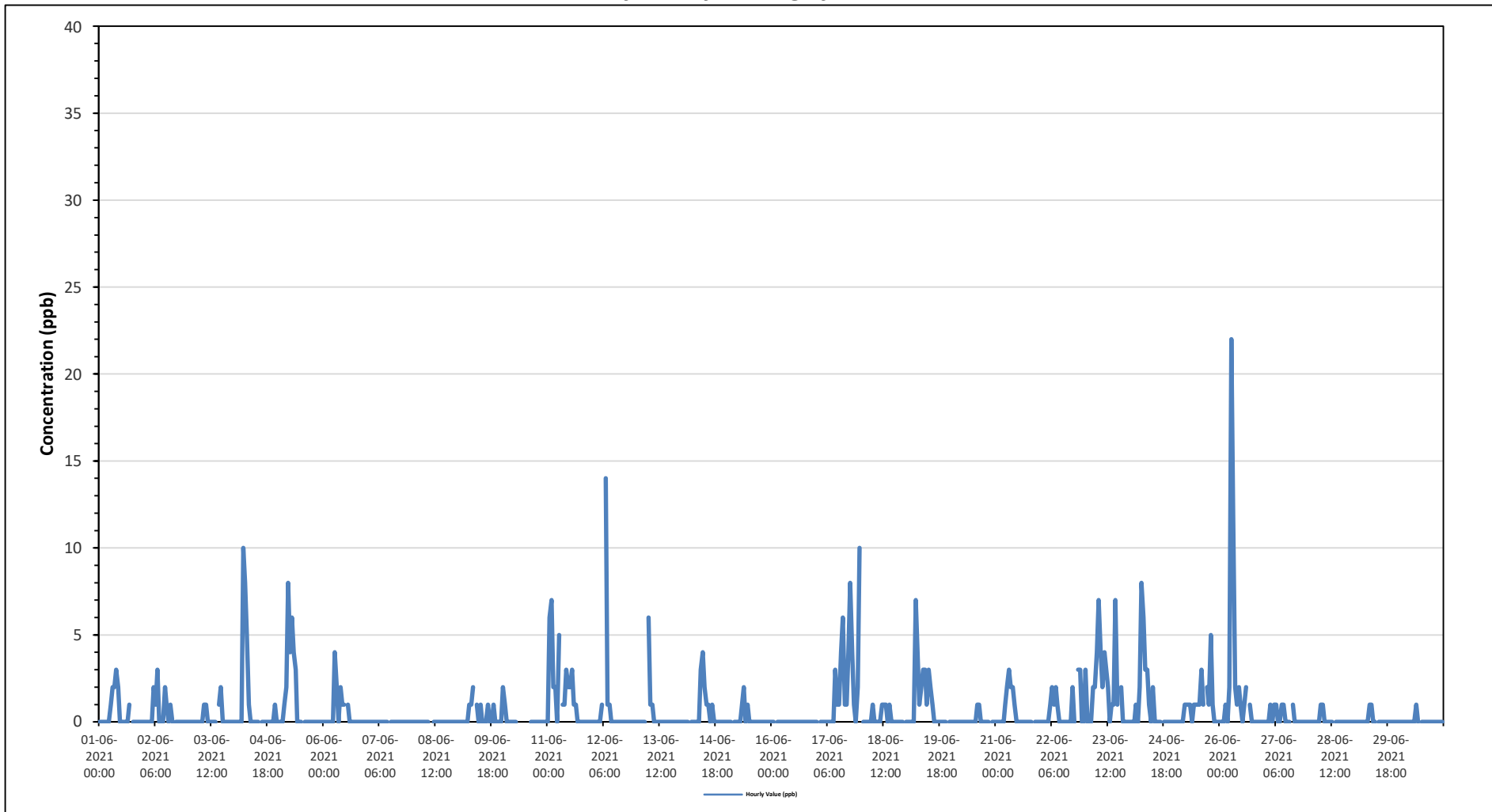
0  30-50

0  50-76

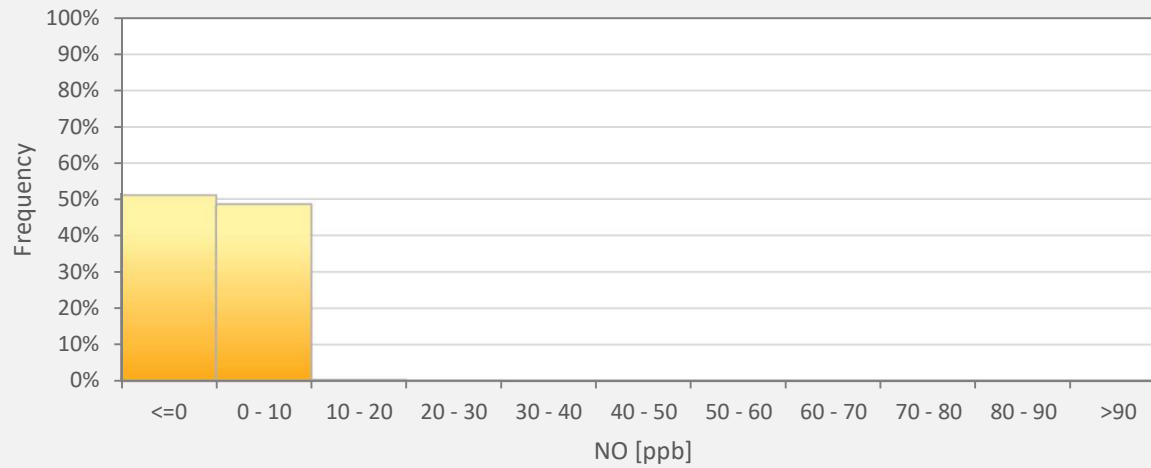
0  76-159

0  >159.0

Timeseries Chart of Hourly Average for NO - Tamarack Site



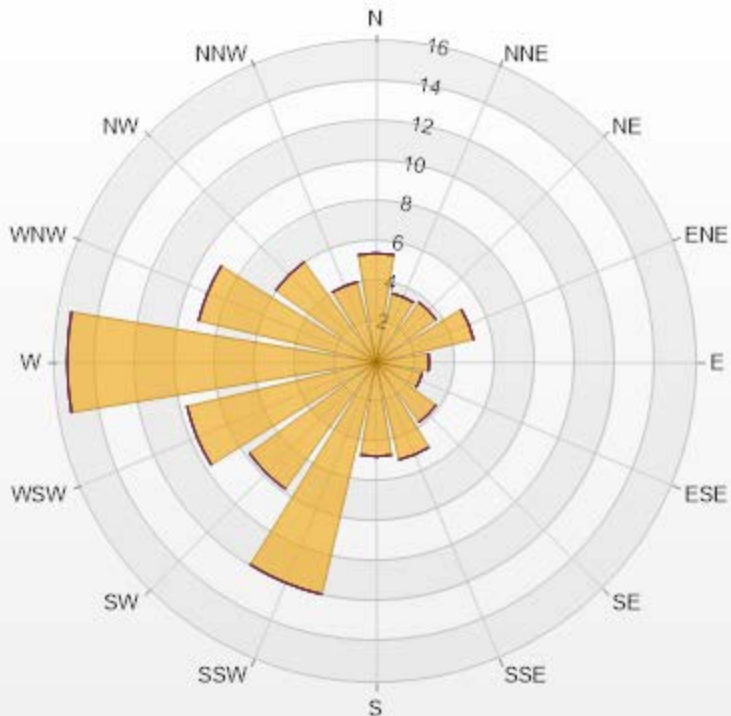
NO[ppb] Histogram: Tamarack Monthly: 06-2021 1 Hr.



Classes	NO
<=0	51.03%
0 - 10	48.53%
10 - 20	0.29%
20 - 30	0.15%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.72% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	5.43	0	0	0	0	5.43
NNE	3.52	0	0	0	0	3.52
NE	3.67	0	0	0	0	3.67
ENE	4.99	0	0	0	0	4.99
E	2.64	0	0	0	0	2.64
ESE	2.35	0	0	0	0	2.35
SE	3.67	0	0	0	0	3.67
SSE	4.99	0	0	0	0	4.99
S	4.69	0	0	0	0	4.69
SSW	11.88	0	0	0	0	11.88
SW	7.77	0	0	0	0	7.77
WSW	9.68	0	0	0	0	9.68
W	15.4	0	0	0	0	15.4
WNW	9.09	0	0	0	0	9.09
NW	6.16	0	0	0	0	6.16
NNW	4.11	0	0	0	0	4.11
Summary	100	0	0	0	0	100



LICA-202106

% Icon Classes (ppb)	100	0-30	0	30-50	0	50-76	0	76-159	0	>159.0
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Tamarack Site - June 2021

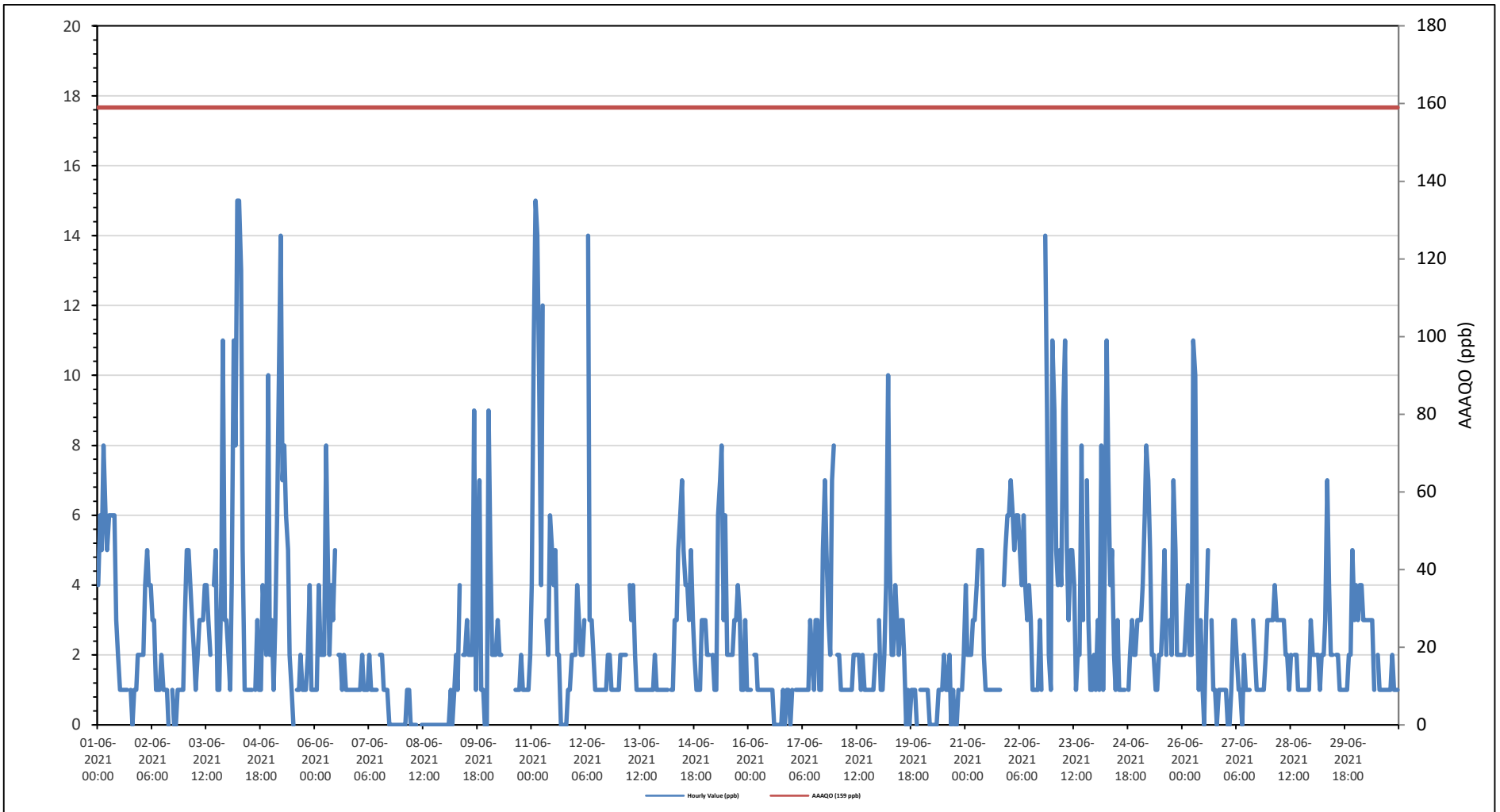
Summary of Hourly Averages

NITROGEN DIOXIDE (NO₂) in ppb

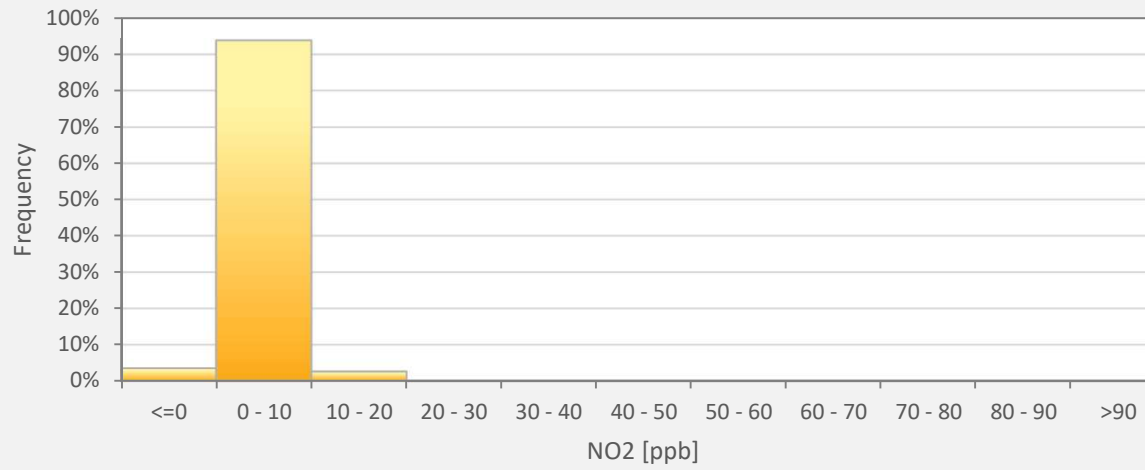
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 159 ppb																												
Number of 1-Hour Exceedences: 0																												
Maximum Hourly Value: 15 ppb on June 4 at hour 5												Hours in Service: 720																
Maximum Daily Value: 4.8 ppb on June 23												Hours of Data: 682																
Minimum Hourly Value: 0 ppb on June 1 at hour 19												Hours of Missing Data: 1																
Minimum Daily Value: 0.1 ppb on June 8												Hours of Calibration: 37																
Monthly Average: 2.5 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				
Jun 1	4	6	5	8	6	5	6	6	6	6	3	2	1	1	1	1	1	S	1	0	1	1	2	2	0	8	3.3	
Jun 2	2	2	4	5	4	4	3	3	1	1	1	2	1	1	1	0	S	1	0	0	1	1	1	1	0	5	1.7	
Jun 3	3	5	5	4	3	2	1	2	3	3	3	4	4	3	2	S	4	5	1	1	4	11	3	3	1	11	3.4	
Jun 4	2	1	4	11	8	15	15	13	5	1	1	1	1	1	S	1	3	1	1	4	3	2	10	2	1	15	4.6	
Jun 5	3	1	3	6	10	14	7	8	6	5	2	1	0	S	1	1	2	1	1	4	3	2	4	1	1	0	14	3.5
Jun 6	1	1	4	2	2	2	8	5	2	4	3	5	S	2	2	1	2	1	1	1	1	1	1	1	1	1	8	2.3
Jun 7	1	1	2	1	1	1	2	1	1	1	1	S	2	2	1	1	1	0	0	0	0	0	0	0	0	0	2	0.9
Jun 8	0	0	0	1	1	0	0	0	0	0	NRM	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jun 9	0	0	0	1	0	1	2	1	4	S	2	2	3	2	2	2	9	1	5	7	1	1	0	0	0	9	2.0	
Jun 10	9	5	2	2	2	3	2	2	S	C	C	C	C	C	C	1	1	1	2	1	1	1	1	2	1	9	-	
Jun 11	4	11	15	14	10	4	12	S	3	2	6	5	4	5	2	2	0	0	0	0	1	1	2	2	0	15	4.6	
Jun 12	2	4	3	2	2	3	S	14	3	3	2	1	1	1	1	1	1	1	2	2	1	1	1	1	1	14	2.3	
Jun 13	1	2	2	2	2	S	4	3	4	2	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	4	1.6	
Jun 14	1	1	1	1	S	1	1	3	3	5	6	7	5	4	4	3	5	3	2	1	1	1	3	3	1	7	2.8	
Jun 15	3	2	2	S	2	1	1	6	7	8	3	6	2	2	2	2	3	3	4	3	1	1	3	1	1	8	3.0	
Jun 16	1	1	S	2	2	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1	0	1	1	0	0	2	0.8	
Jun 17	1	S	1	1	1	1	1	1	1	1	3	2	1	3	3	1	1	5	7	5	3	2	7	8	1	8	2.6	
Jun 18	S	2	2	1	1	1	1	1	1	2	2	2	2	2	1	2	1	1	1	1	1	1	1	1	1	2	1.4	
Jun 19	3	1	1	2	4	10	5	2	4	3	2	3	3	2	0	1	0	1	1	1	1	0	S	1	0	10	2.3	
Jun 20	1	1	1	1	0	0	0	0	0	1	1	1	2	1	1	2	0	1	0	0	1	S	1	2	0	2	0.8	
Jun 21	4	2	2	2	3	3	4	5	5	5	2	1	1	1	1	1	1	1	1	1	S	4	5	6	1	6	2.7	
Jun 22	6	7	6	5	6	6	5	4	6	4	3	4	3	1	1	1	3	1	S	7	14	9	2	1	1	14	4.3	
Jun 23	11	9	5	4	5	4	9	11	5	3	5	5	4	1	2	2	8	3	S	7	3	1	1	2	1	11	4.8	
Jun 24	1	3	1	8	1	5	11	7	4	5	2	1	3	1	1	1	1	S	1	2	3	2	2	3	1	11	3.0	
Jun 25	3	3	4	6	8	7	5	2	2	1	1	2	2	3	5	2	S	3	2	7	5	2	2	2	1	8	3.4	
Jun 26	2	2	3	4	2	2	11	10	3	1	3	1	0	3	5	S	3	1	1	0	1	1	1	1	0	11	2.7	
Jun 27	1	0	0	1	3	3	2	1	1	0	2	1	1	1	S	3	2	1	1	1	1	1	2	3	0	3	1.4	
Jun 28	3	3	3	4	3	3	3	3	3	2	2	1	2	S	2	2	1	1	1	1	1	1	1	3	1	4	2.1	
Jun 29	2	2	2	2	1	2	2	3	7	4	2	2	S	2	2	1	1	1	1	1	1	2	2	5	3	7	2.3	
Jun 30	4	3	4	4	3	3	3	3	3	3	1	S	2	1	1	1	1	1	1	1	2	2	1	1	1	4	2.1	
Diurnal Maximum	11	11	15	14	10	15	15	14	7	8	6	7	5	5	5	3	9	5	7	7	14	11	10	8				
Diurnal Average	2.7	2.8	3.0	3.7	3.3	3.7	4.4	4.2	3.2	2.9	2.4	2.3	1.9	1.8	1.7	1.3	2.0	1.5	1.4	1.8	2.0	1.9	2.1	1.9				
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 NO2 - Tamarack Site



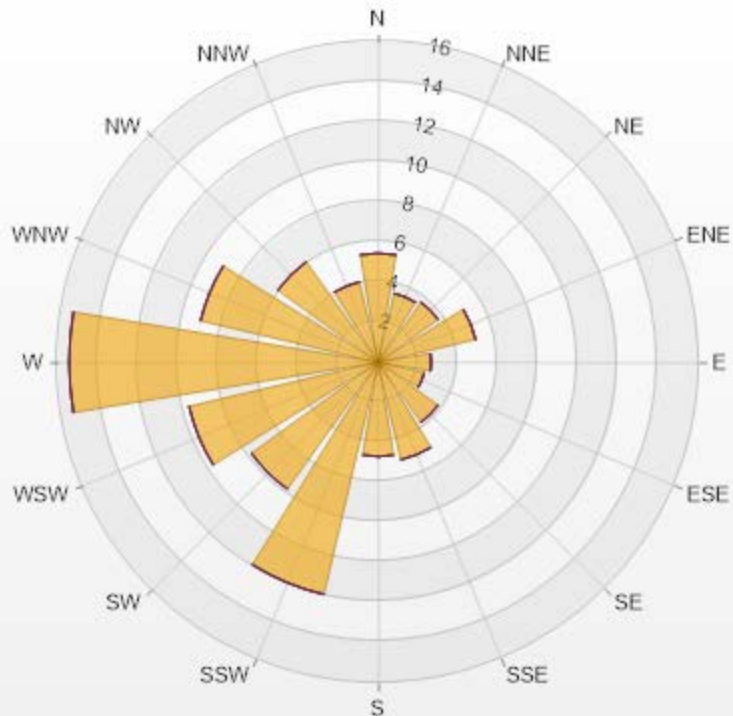
NO2[ppb] Histogram: Tamarack Monthly: 06-2021 1 Hr.



Classes	NO2
<=0	3.52%
0 - 10	93.84%
10 - 20	2.64%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.72% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	5.43	0	0	0	0	5.43
NNE	3.52	0	0	0	0	3.52
NE	3.67	0	0	0	0	3.67
ENE	4.99	0	0	0	0	4.99
E	2.64	0	0	0	0	2.64
ESE	2.35	0	0	0	0	2.35
SE	3.67	0	0	0	0	3.67
SSE	4.99	0	0	0	0	4.99
S	4.69	0	0	0	0	4.69
SSW	11.88	0	0	0	0	11.88
SW	7.77	0	0	0	0	7.77
WSW	9.68	0	0	0	0	9.68
W	15.4	0	0	0	0	15.4
WNW	9.09	0	0	0	0	9.09
NW	6.16	0	0	0	0	6.16
NNW	4.11	0	0	0	0	4.11
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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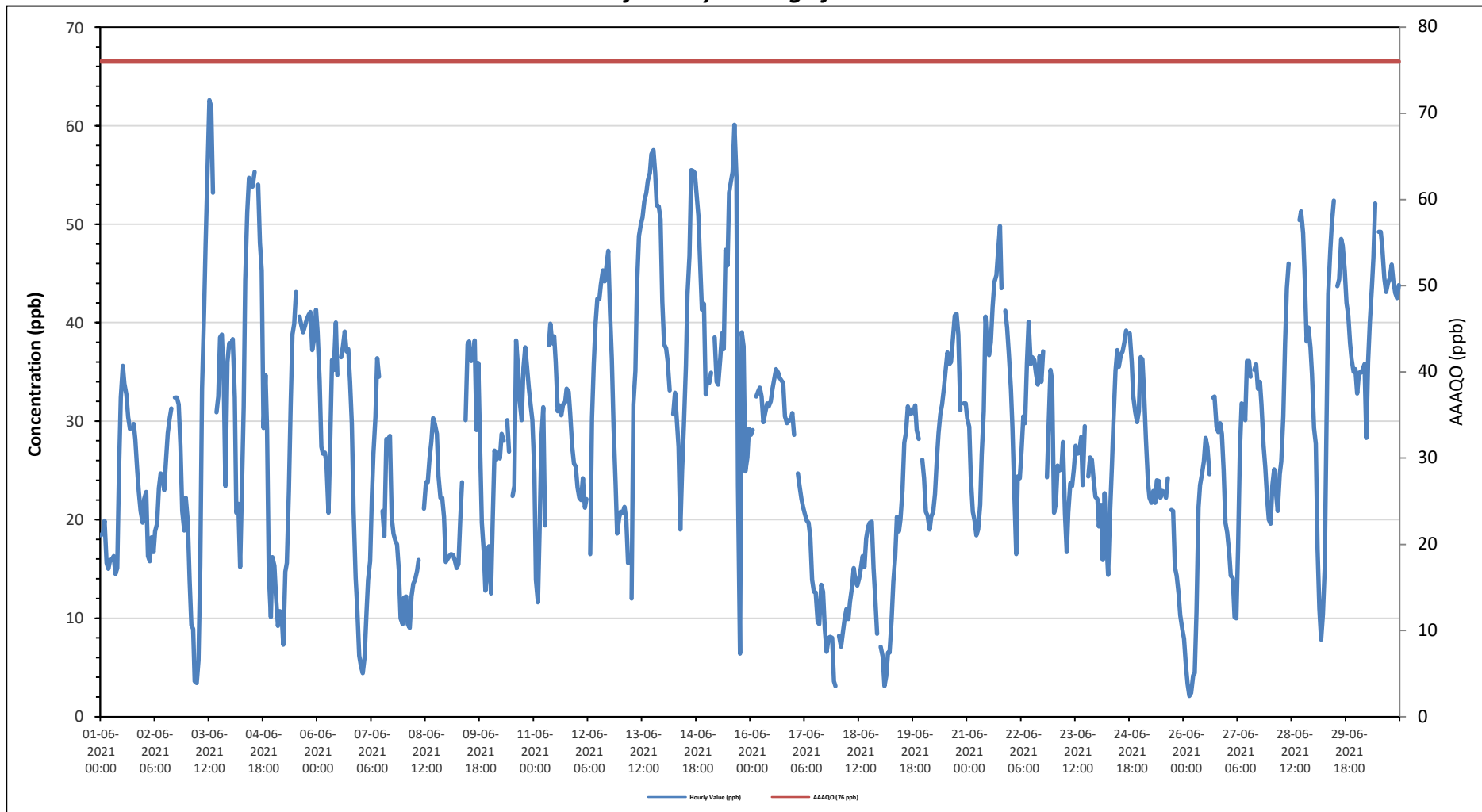
Tamarack Site - June 2021 Summary of Hourly Averages

OZONE (O₃) in ppb

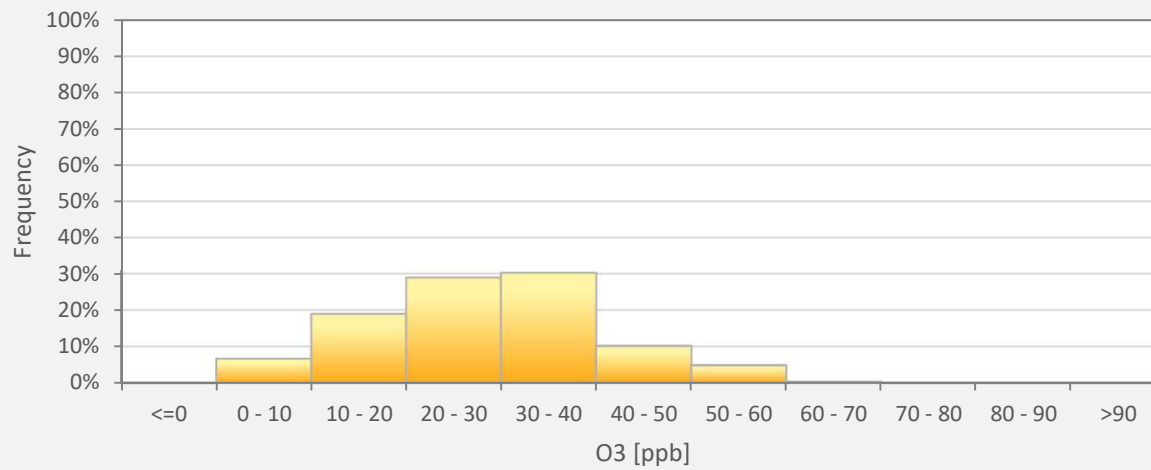
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 76 ppb																																															
Number of 1-Hour Exceedences: 0																																															
Maximum Hourly Value: 62.6 ppb on June 3 at hour 12												Hours in Service: 720																																			
Maximum Daily Value: 41.8 ppb on June 30												Hours of Data: 683																																			
Minimum Hourly Value: 2.1 ppb on June 26 at hour 3												Hours of Missing Data: 2																																			
Minimum Daily Value: 13.4 ppb on June 18												Hours of Calibration: 35																																			
Monthly Average: 28.3 ppb												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																							
Jun 1	18.4	18.7	19.9	15.6	15.0	15.9	15.9	16.3	14.5	15.1	25.1	32.4	35.6	33.8	32.7	30.4	29.2	S	29.7	28.2	24.9	22.8	20.9	19.7	14.5	35.6	23.1																				
Jun 2	22.1	22.8	16.3	15.8	18.2	16.7	18.8	19.6	23.2	24.7	24.5	23.0	26.0	28.8	30.2	31.3	S	32.4	32.4	31.7	27.5	20.9	18.9	22.2	15.8	32.4	23.8																				
Jun 3	19.8	13.9	9.3	8.9	3.6	3.4	5.7	15.3	33.3	41.1	47.9	55.8	62.6	61.9	53.2	S	30.9	32.5	38.5	38.8	33.4	23.4	36.0	37.9	3.4	62.6	30.7																				
Jun 4	37.8	38.3	32.4	20.7	21.6	15.2	23.2	31.4	44.3	51.2	54.7	54.5	53.8	55.3	S	54.0	48.1	45.3	29.3	34.7	29.2	14.6	10.1	16.2	10.1	55.3	35.5																				
Jun 5	15.3	12.3	9.2	10.7	10.6	7.3	14.7	15.6	22.9	31.6	38.8	39.9	43.1	S	40.6	39.7	39.0	39.7	40.3	40.8	41.1	37.2	38.3	41.3	7.3	43.1	29.1																				
Jun 6	39.1	34.2	27.4	26.7	26.8	25.7	20.7	28.0	36.2	35.2	40.0	34.7	S	36.5	37.6	39.1	37.1	37.3	34.0	29.7	20.8	14.1	11.2	6.2	6.2	40.0	29.5																				
Jun 7	5.1	4.4	6.0	10.7	13.9	15.8	22.4	26.7	30.4	36.4	34.5	S	20.9	18.3	28.2	28.0	28.5	20.2	18.6	17.9	17.5	14.9	10.0	9.4	4.4	36.4	19.1																				
Jun 8	12.1	12.2	9.4	9.0	12.2	13.5	13.9	14.8	15.9	NRM	S	21.1	23.8	23.8	26.2	27.9	30.3	29.7	28.7	24.5	22.2	22.2	20.3	15.7	9.0	30.3	19.5																				
Jun 9	16.0	16.3	16.5	16.4	15.9	15.1	15.5	20.0	23.8	S	30.1	37.8	38.1	36.1	36.3	38.2	29.1	35.9	27.6	19.7	16.6	12.8	15.2	17.3	12.8	38.2	23.8																				
Jun 10	12.5	20.1	27.0	26.1	26.8	26.2	28.7	28.0	S	30.1	26.9	Y	22.4	23.4	38.2	35.3	32.1	30.1	35.4	37.5	35.5	33.4	31.7	30.1	12.5	38.2	29.0																				
Jun 11	24.8	13.9	11.6	19.4	28.4	31.4	19.4	S	37.7	39.9	37.9	38.6	36.0	31.0	31.6	30.6	31.7	31.9	33.3	33.0	30.8	27.4	25.7	25.4	11.6	39.9	29.2																				
Jun 12	23.3	22.2	22.0	24.2	21.2	22.1	S	16.5	30.3	35.8	39.9	42.4	42.4	43.9	45.3	44.2	45.5	47.3	41.1	36.4	29.4	23.6	18.6	20.2	16.5	47.3	32.1																				
Jun 13	20.8	20.7	21.3	20.0	15.6	S	12.0	31.7	35.1	43.6	48.8	49.9	50.7	52.3	53.2	54.4	55.2	57.1	57.5	55.2	51.9	51.8	50.5	42.1	12.0	57.5	41.4																				
Jun 14	37.8	37.4	36.1	33.1	S	30.7	32.9	30.2	27.4	19.0	25.0	29.6	35.6	42.8	46.8	55.5	55.4	55.2	52.7	50.9	45.3	41.3	41.9	32.7	19.0	55.5	38.9																				
Jun 15	34.3	33.9	34.9	S	38.5	34.0	33.7	36.3	38.9	37.3	47.4	45.8	53.2	54.3	55.3	60.1	54.8	23.5	6.4	39.0	37.6	24.9	26.3	29.2	6.4	60.1	38.2																				
Jun 16	28.6	29.1	S	32.5	33.0	33.4	32.5	29.9	30.8	31.8	31.5	32.0	33.3	35.3	34.9	34.4	34.1	33.9	30.5	29.8	30.1	30.1	30.8	28.6	28.6	35.3	32.0																				
Jun 17	28.6	S	24.7	23.5	22.1	21.2	20.5	19.9	19.7	18.2	13.9	12.7	12.6	9.6	9.4	13.4	12.7	8.9	6.6	8.0	8.1	8.0	3.6	3.1	3.1	28.6	14.3																				
Jun 18	S	8.2	7.1	8.5	9.9	10.9	9.9	11.6	13.1	15.1	13.7	13.3	14.0	15.1	16.3	15.2	18.1	19.3	19.7	19.8	15.1	11.9	8.4	S	7.1	19.8	13.4																				
Jun 19	7.1	6.1	3.1	4.1	6.5	6.5	9.8	13.7	16.1	20.3	18.8	20.0	23.0	27.8	28.9	31.5	30.7	31.2	30.8	31.6	29.1	28.2	S	26.1	3.1	31.6	19.6																				
Jun 20	24.2	20.8	20.4	19.0	20.3	20.8	22.6	26.0	28.8	30.7	31.7	33.3	35.2	37.0	35.8	36.0	38.5	40.7	40.9	38.8	31.1	S	31.8	31.8	19.0	40.9	30.3																				
Jun 21	30.3	29.4	24.4	20.8	19.9	18.4	19.0	21.5	26.6	31.0	40.6	37.5	36.7	38.0	41.6	44.1	44.8	47.0	49.8	43.5	S	41.2	39.5	36.8	18.4	49.8	34.0																				
Jun 22	33.3	29.4	23.1	16.5	24.4	24.2	27.0	30.5	29.8	35.8	40.1	35.8	36.5	36.2	34.8	33.7	36.6	34.0	37.1	S	24.3	29.1	35.2	34.2	16.5	40.1	31.4																				
Jun 23	20.7	21.6	25.5	25.0	25.1	27.9	20.6	16.7	20.7	23.7	23.4	25.1	27.5	26.7	26.8	28.4	23.5	29.5	S	24.4	26.3	26.1	24.0	22.3	16.7	29.5	24.4																				
Jun 24	22.1	19.3	21.5	15.9	22.7	18.0	14.4	20.3	25.5	30.0	35.1	37.2	35.5	36.7	37.1	38.0	39.2	S	38.9	36.0	32.5	30.9	29.9	31.0	14.4	39.2	29.0																				
Jun 25	36.5	36.3	32.6	28.1	23.8	22.2	21.7	22.9	21.7	24.0	23.9	22.2	22.9	22.8	22.2	24.2	S	21.0	20.9	15.2	14.3	12.4	10.3	8.9	8.9	36.5	22.2																				
Jun 26	7.9	5.3	3.3	2.1	2.4	4.2	4.4	10.6	21.2	23.5	24.7	25.9	28.3	27.4	24.6	S	32.4	32.5	29.4	28.9	29.8	28.7	25.0	19.7	2.1	32.5	19.2																				
Jun 27	18.7	16.6	14.3	14.1	10.1	10.0	17.2	27.0	31.8	31.5	30.1	36.1	36.1	34.5	S	35.2	35.8	33.3	34.0	31.7	27.6	25.3	22.2	20.0	10.0	36.1	25.8																				
Jun 28	19.6	23.5	25.1	22.8	20.9	24.6	25.9	30.5	37.9	43.5	46.0	C	C	C	C	C	50.4	51.3	49.1	44.2	38.1	39.5	37.5	34.8	19.6	51.3	35.0																				
Jun 29	29.3	27.7	17.0	11.0	7.8	10.4	15.0	29.3	42.9	47.3	50.0	52.4	S	43.7	44.4	48.5	47.8	45.3	42.0	40.7	37.9	36.3	35.0	35.3	7.8	52.4	34.7																				
Jun 30	32.8	34.9	34.9	35.2	35.8	28.3	36.0	40.1	43.6	46.6	52.1	S	49.2	47.6	44.5	43.1	44.0	44.5	45.9	44.3	43.0	42.5	43.8	28.3	52.1	41.8																					
Diurnal Maximum	39.1	38.3	36.1	35.2	38.5	34.0	36.0	40.1	44.3	51.2	54.7	55.8	62.6	61.9	55.3	60.1	55.4	57.1	57.5	55.2	51.9	51.8	50.5	43.8																							
Diurnal Average	23.4	21.7	19.9	18.5	19.1	19.1	19.8	23.5	28.4	31.9	34.4	34.2	34.6	35.0	35.6	36.9	37.0	35.4	33.9	33.0	29.4	26.8	25.9	25.7																							
C	Monthly Calibration											S	Daily Zero-Span Check											Q	Quality Assurance																						
K	Collection Error											N	No Data (Machine Not in Service)											Y	Routine Maintenance											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 O3 - Tamarack Site



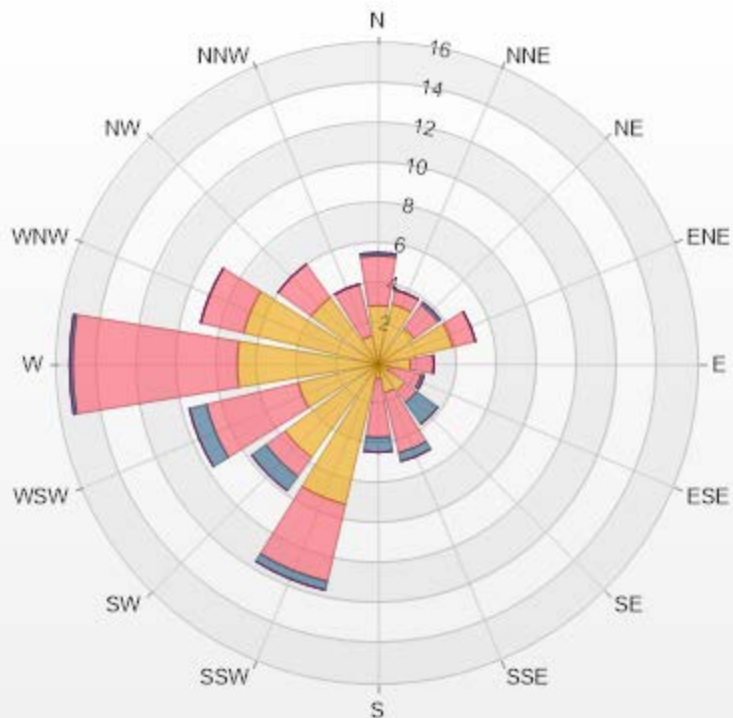
O3[ppb] Histogram: Tamarack Monthly: 06-2021 1 Hr.



Classes	O3
<=0	0.00%
0 - 10	6.73%
10 - 20	18.89%
20 - 30	28.84%
30 - 40	30.16%
40 - 50	10.10%
50 - 60	4.83%
60 - 70	0.44%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Tamarack Poll.: Tamarack-O3[ppb] Monthly: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.86% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.93	2.49	0.15	0	0	5.57
NNE	3.07	0.73	0	0	0	3.8
NE	2.2	1.46	0.15	0	0	3.81
ENE	3.81	1.17	0	0	0	4.98
E	1.61	1.17	0	0	0	2.78
ESE	0.59	1.61	0.15	0	0	2.35
SE	1.61	0.73	1.32	0	0	3.66
SSE	1.46	3.07	0.44	0	0	4.97
S	0.73	2.93	0.73	0	0	4.39
SSW	7.17	3.95	0.44	0	0	11.56
SW	5.71	1.17	0.88	0	0	7.76
WSW	4.1	4.69	0.88	0	0	9.67
W	7.03	8.2	0.15	0	0	15.38
WNW	6.88	2.2	0	0	0	9.08
NW	4.1	2.05	0	0	0	6.15
NNW	1.46	2.64	0	0	0	4.1
Summary	54.46	40.26	5.29	0	0	100



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% Icon Classes (ppb)

54 0-30

40 30-50

5 50-76

0 76-159

0 >159.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - June 2021

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

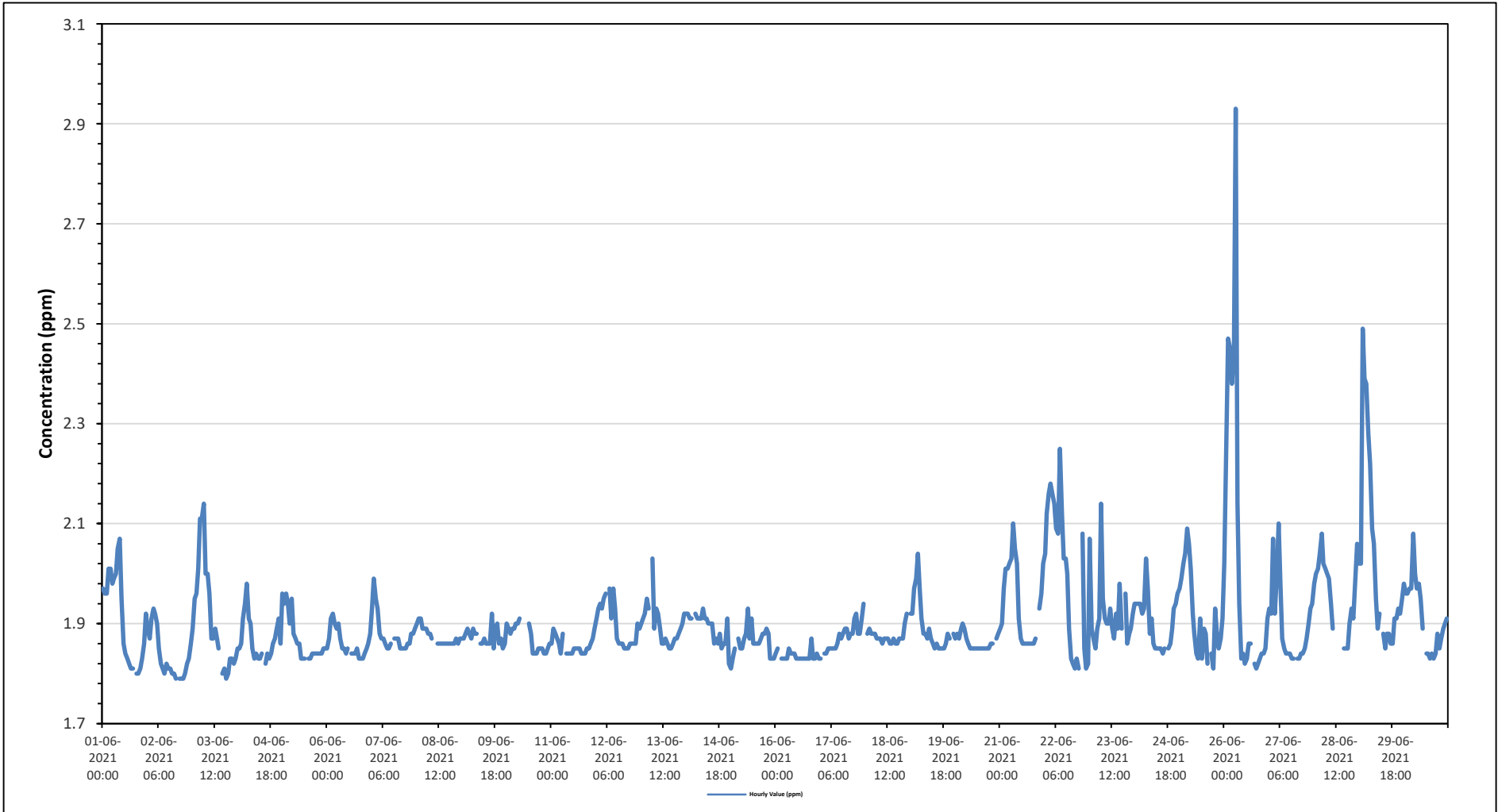
Maximum Hourly Value: 2.93 ppm on June 26 at hour 6	Hours in Service: 720
Maximum Daily Value: 2.03 ppm on June 26	Hours of Data: 682
Minimum Hourly Value: 1.79 ppm on June 2 at hour 15	Hours of Missing Data: 3
Minimum Daily Value: 1.84 ppm on June 2	Hours of Calibration: 35
Monthly Average: 1.90 ppm	Operational Uptime: 99.6

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	
Jun 1	1.97	1.96	1.96	2.01	2.01	1.98	1.99	2.00	2.05	2.07	1.95	1.86	1.84	1.83	1.82	1.81	1.81	S	1.80	1.80	1.81	1.83	1.86	1.92	1.80	2.07	1.91	
Jun 2	1.89	1.87	1.91	1.93	1.92	1.90	1.85	1.82	1.81	1.80	1.82	1.81	1.81	1.80	1.80	1.79	S	1.79	1.79	1.79	1.80	1.82	1.83	1.86	1.79	1.93	1.84	
Jun 3	1.89	1.95	1.96	2.01	2.11	2.11	2.14	2.00	2.00	1.96	1.87	1.87	1.89	1.87	1.85	S	1.80	1.81	1.79	1.80	1.83	1.83	1.82	1.83	1.79	2.14	1.91	
Jun 4	1.85	1.85	1.86	1.91	1.94	1.98	1.91	1.90	1.85	1.83	1.84	1.83	1.83	1.84	S	1.82	1.84	1.83	1.84	1.86	1.87	1.89	1.91	1.86	1.82	1.98	1.87	
Jun 5	1.96	1.94	1.96	1.94	1.90	1.95	1.88	1.87	1.86	1.86	1.83	1.83	1.83	S	1.83	1.83	1.84	1.84	1.84	1.84	1.84	1.84	1.85	1.85	1.83	1.96	1.87	
Jun 6	1.85	1.87	1.91	1.92	1.90	1.89	1.90	1.87	1.85	1.85	1.84	1.85	S	1.84	1.84	1.84	1.85	1.83	1.83	1.83	1.84	1.85	1.86	1.88	1.83	1.92	1.86	
Jun 7	1.93	1.99	1.95	1.93	1.88	1.87	1.87	1.86	1.85	1.85	1.86	S	1.87	1.87	1.87	1.85	1.85	1.85	1.85	1.86	1.86	1.88	1.88	1.89	1.85	1.99	1.88	
Jun 8	1.90	1.91	1.91	1.89	1.89	1.89	1.88	1.88	1.87	NRM	S	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.87	1.86	1.87	1.86	1.91	1.87	
Jun 9	1.87	1.87	1.88	1.89	1.88	1.87	1.89	1.88	1.88	S	1.86	1.86	1.87	1.86	1.86	1.86	1.92	1.85	1.89	1.90	1.86	1.87	1.85	1.86	1.85	1.92	1.87	
Jun 10	1.90	1.89	1.88	1.89	1.89	1.90	1.90	1.91	S	1.89	NRM	Y	1.90	1.88	1.84	1.84	1.85	1.85	1.84	1.85	1.85	1.84	1.85	1.86	1.84	1.91	1.87	
Jun 11	1.86	1.89	1.88	1.87	1.86	1.84	1.88	S	1.84	1.84	1.84	1.84	1.85	1.85	1.85	1.84	1.84	1.84	1.85	1.85	1.86	1.87	1.89	1.84	1.89	1.86		
Jun 12	1.91	1.93	1.94	1.93	1.95	1.96	S	1.97	1.91	1.97	1.93	1.87	1.86	1.86	1.86	1.85	1.85	1.85	1.86	1.86	1.86	1.86	1.86	1.86	1.85	1.97	1.90	
Jun 13	1.90	1.91	1.92	1.95	1.93	S	2.03	1.89	1.93	1.92	1.89	1.86	1.86	1.87	1.86	1.85	1.85	1.86	1.87	1.87	1.88	1.89	1.90	1.92	1.85	2.03	1.90	
Jun 14	1.92	1.92	1.91	1.91	S	1.92	1.91	1.91	1.91	1.93	1.91	1.91	1.90	1.90	1.90	1.86	1.87	1.86	1.88	1.85	1.86	1.86	1.91	1.82	1.82	1.93	1.89	
Jun 15	1.81	1.83	1.85	S	1.87	1.85	1.85	1.87	1.88	1.93	1.87	1.91	1.86	1.86	1.86	1.86	1.87	1.88	1.88	1.89	1.88	1.83	1.83	1.83	1.81	1.93	1.86	
Jun 16	1.84	1.85	S	1.83	1.83	1.83	1.83	1.85	1.84	1.84	1.84	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.87	1.83	1.83	1.84	1.83	1.83	1.84	
Jun 17	1.83	S	1.84	1.84	1.85	1.85	1.85	1.85	1.85	1.86	1.88	1.87	1.88	1.89	1.89	1.87	1.88	1.88	1.91	1.92	1.88	1.88	1.91	1.94	1.83	1.94	1.87	
Jun 18	S	1.88	1.89	1.88	1.88	1.88	1.87	1.87	1.87	1.86	1.87	1.87	1.87	1.86	1.86	1.87	1.86	1.86	1.87	1.87	1.87	1.87	1.90	1.92	S	1.86	1.92	
Jun 19	1.92	1.92	1.97	1.99	2.04	1.97	1.91	1.88	1.88	1.87	1.89	1.87	1.86	1.85	1.86	1.85	1.85	1.85	1.85	1.86	1.88	1.87	S	1.88	1.85	2.04	1.89	
Jun 20	1.87	1.88	1.87	1.89	1.90	1.89	1.87	1.86	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.86	1.86	S	1.87	1.88	1.85	1.90	1.86	
Jun 21	1.89	1.90	1.97	2.01	2.01	2.02	2.03	2.10	2.05	2.02	1.91	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.87	S	1.93	1.96	2.02	1.86	2.10	1.94	
Jun 22	2.04	2.12	2.16	2.18	2.16	2.14	2.09	2.08	2.25	2.12	2.03	2.03	2.00	1.89	1.83	1.82	1.81	1.83	1.81	S	S	2.08	1.85	1.81	1.82	1.81	2.25	2.00
Jun 23	2.07	1.89	1.87	1.85	1.89	1.91	2.14	1.95	1.91	1.90	1.90	1.93	1.89	1.87	1.92	1.89	1.98	1.89	S	1.96	1.86	1.88	1.89	1.92	1.85	2.14	1.92	
Jun 24	1.94	1.94	1.94	1.94	1.92	1.93	2.03	1.97	1.88	1.91	1.86	1.85	1.85	1.85	1.85	1.84	1.85	S	1.85	1.86	1.89	1.93	1.94	1.96	1.84	2.03	1.90	
Jun 25	1.97	1.99	2.02	2.04	2.09	2.06	2.01	1.92	1.88	1.84	1.83	1.91	1.83	1.89	1.88	1.82	S	1.84	1.81	1.93	1.88	1.85	1.87	1.91	1.81	2.09	1.92	
Jun 26	2.02	2.26	2.47	2.45	2.38	2.44	2.93	2.14	1.94	1.83	1.84	1.82	1.83	1.86	1.86	S	1.82	1.81	1.82	1.83	1.84	1.84	1.85	1.91	1.81	2.93	2.03	
Jun 27	1.93	1.92	2.07	1.92	2.00	2.10	1.98	1.87	1.85	1.84	1.84	1.84	1.83	1.83	S	1.83	1.83	1.84	1.84	1.85	1.87	1.90	1.93	1.94	1.83	2.10	1.90	
Jun 28	1.98	2.00	2.01	2.04	2.08	2.02	2.01	2.00	1.99	1.94	1.89	C	C	C	C	C	1.85	1.85	1.85	1.90	1.93	1.91	1.99	2.06	1.85	2.08	1.96	
Jun 29	2.02	2.02	2.49	2.39	2.38	2.28	2.22	2.09	2.06	1.95	1.89	1.92	S	1.88	1.85	1.88	1.88	1.86	1.86	1.91	1.91	1.93	1.92	1.95	1.85	2.49	2.02	
Jun 30	1.98	1.96	1.96	1.97	1.97	2.08	2.00	1.97	1.98	1.95	1.89	S	1.84	1.84	1.83	1.84	1.83	1.84	1.88	1.85	1.87	1.89	1.90	1.91	1.83	2.08	1.91	
Diurnal Maximum	2.07	2.26	2.49	2.45	2.38	2.44	2.93	2.14	2.25	2.12	2.03	2.03	2.00	1.90	1.92	1.89	1.98	1.89	1.91	1.96	2.08	1.93	1.99	2.06				
Diurnal Average	1.92	1.93	1.97	1.97	1.98	1.98	1.99	1.93	1.92	1.90	1.88	1.87	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.86	1.87	1.87	1.88	1.90				

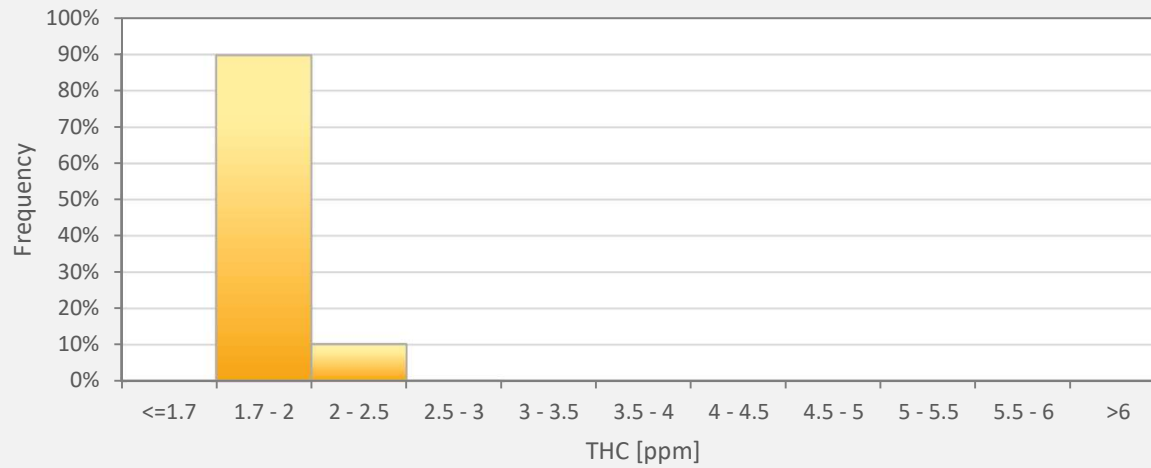
C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction /Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

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



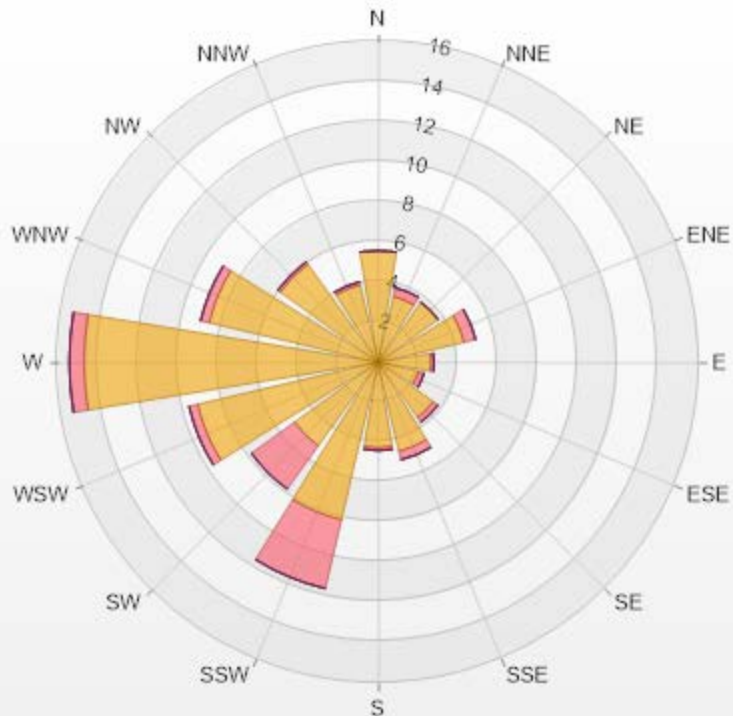
THC55[ppm] Histogram: Tamarack Monthly: 06-2021 1 Hr.



Classes	THC55
<=1.7	0.00%
1.7 - 2	89.74%
2 - 2.5	10.12%
2.5 - 3	0.15%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.72% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	5.57	0	0	0	0	5.57
NNE	3.37	0.44	0	0	0	3.81
NE	3.67	0	0	0	0	3.67
ENE	4.4	0.59	0	0	0	4.99
E	2.64	0.15	0	0	0	2.79
ESE	2.05	0.29	0	0	0	2.34
SE	3.37	0.29	0	0	0	3.66
SSE	4.55	0.44	0	0	0	4.99
S	4.25	0.15	0	0	0	4.4
SSW	8.06	3.52	0	0	0	11.58
SW	5.13	2.64	0	0	0	7.77
WSW	9.24	0.44	0	0	0	9.68
W	14.66	0.73	0	0	0	15.39
WNW	8.65	0.44	0	0	0	9.09
NW	6.01	0.15	0	0	0	6.16
NNW	3.96	0.15	0	0	0	4.11
Summary	89.58	10.42	0	0	0	100



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% Icon Classes (ppm)

90 0-2

10 2-5

0 5-10

0 10-40

0 >40.0



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Tamarack Site - June 2021 Summary of Hourly Averages

METHANE (CH₄) in ppm

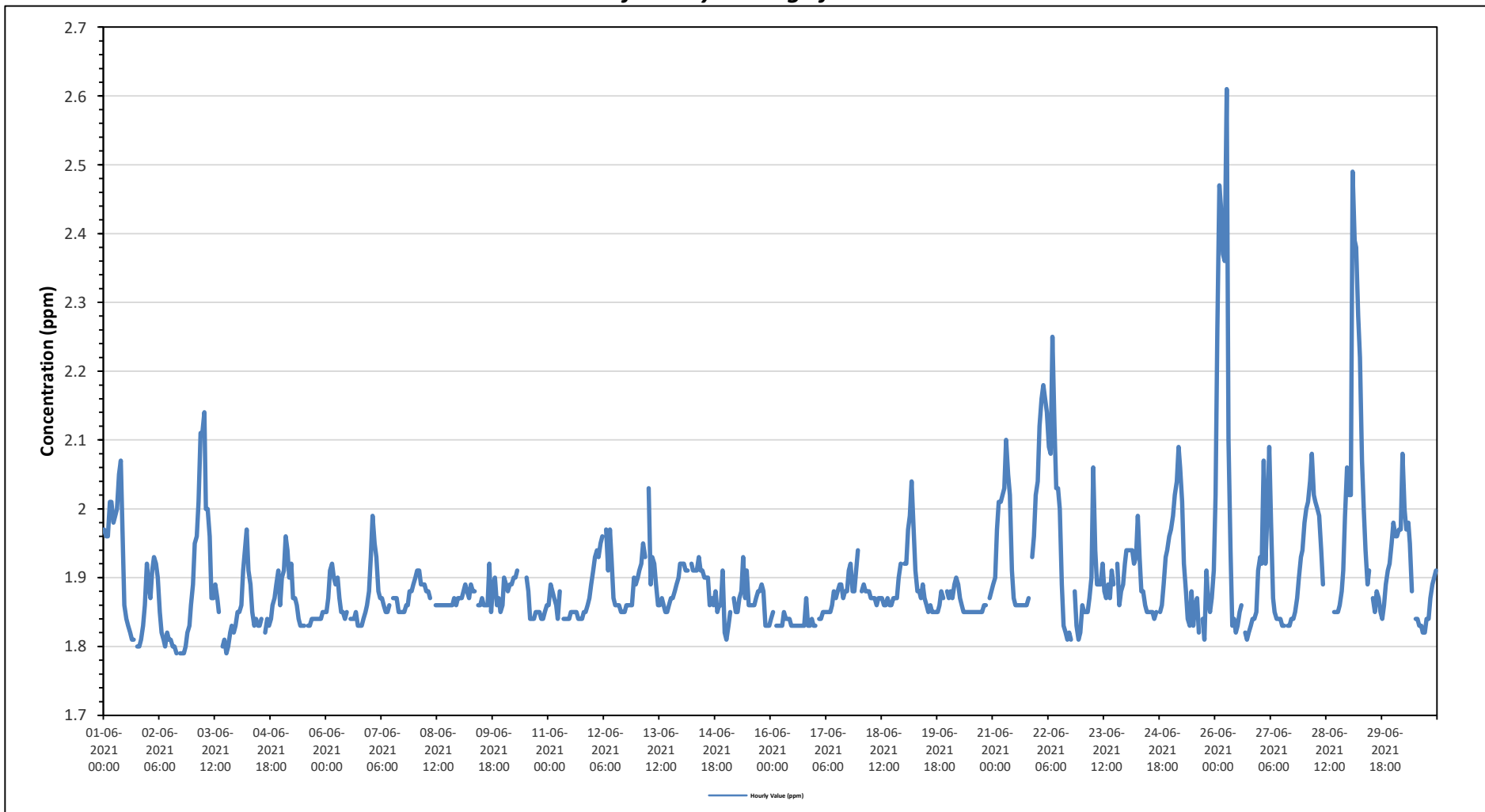
Maximum Hourly Value:	2.61 ppm on June 26 at hour 6	Hours in Service:	720
Maximum Daily Value:	2.01 ppm on June 26	Hours of Data:	682
Minimum Hourly Value:	1.79 ppm on June 2 at hour 15	Hours of Missing Data:	3
Minimum Daily Value:	1.84 ppm on June 2	Hours of Calibration:	35
Monthly Average:	1.90 ppm	Operational Uptime:	99.6

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
Jun 1	1.97	1.96	1.96	2.01	2.01	1.98	1.99	2.00	2.05	2.07	1.95	1.86	1.84	1.83	1.82	1.81	1.81	S	1.80	1.80	1.81	1.83	1.86	1.92	1.80	2.07	1.91
Jun 2	1.89	1.87	1.91	1.93	1.92	1.90	1.85	1.82	1.81	1.80	1.82	1.81	1.81	1.80	1.80	1.79	S	1.79	1.79	1.79	1.80	1.82	1.83	1.86	1.79	1.93	1.84
Jun 3	1.89	1.95	1.96	2.01	2.11	2.11	2.14	2.00	2.00	1.96	1.87	1.87	1.89	1.87	1.85	S	1.80	1.81	1.79	1.80	1.82	1.83	1.82	1.83	1.79	2.14	1.91
Jun 4	1.85	1.85	1.86	1.91	1.94	1.97	1.91	1.89	1.85	1.83	1.84	1.83	1.83	1.84	S	1.82	1.84	1.83	1.84	1.86	1.87	1.89	1.91	1.86	1.82	1.97	1.87
Jun 5	1.90	1.91	1.96	1.94	1.90	1.92	1.87	1.87	1.86	1.84	1.83	1.83	1.83	S	1.83	1.83	1.84	1.84	1.84	1.84	1.84	1.84	1.85	1.85	1.83	1.96	1.86
Jun 6	1.85	1.87	1.91	1.92	1.90	1.89	1.90	1.87	1.85	1.85	1.84	1.85	S	1.84	1.84	1.84	1.85	1.83	1.83	1.84	1.85	1.86	1.88	1.83	1.92	1.86	1.86
Jun 7	1.93	1.99	1.95	1.93	1.88	1.87	1.87	1.86	1.85	1.85	1.86	S	1.87	1.87	1.87	1.85	1.85	1.85	1.85	1.86	1.86	1.88	1.88	1.89	1.85	1.99	1.88
Jun 8	1.90	1.91	1.91	1.89	1.89	1.89	1.88	1.88	1.88	1.87	NRM	S	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.87	1.86	1.87	1.86	1.91	1.87
Jun 9	1.87	1.87	1.88	1.89	1.88	1.87	1.89	1.88	1.88	S	1.86	1.86	1.87	1.86	1.86	1.86	1.92	1.85	1.89	1.90	1.86	1.87	1.85	1.86	1.85	1.92	1.87
Jun 10	1.90	1.89	1.88	1.89	1.89	1.90	1.90	S	1.89	NRM	Y	1.90	1.88	1.84	1.84	1.84	1.85	1.85	1.84	1.84	1.85	1.85	1.86	1.84	1.91	1.87	1.87
Jun 11	1.86	1.89	1.88	1.87	1.86	1.84	1.88	S	1.84	1.84	1.84	1.85	1.85	1.85	1.85	1.84	1.84	1.84	1.85	1.85	1.86	1.87	1.89	1.84	1.89	1.86	1.86
Jun 12	1.91	1.93	1.94	1.93	1.95	1.96	S	1.97	1.91	1.97	1.93	1.87	1.86	1.86	1.86	1.85	1.85	1.85	1.86	1.86	1.86	1.86	1.86	1.86	1.85	1.97	1.90
Jun 13	1.90	1.91	1.92	1.95	1.93	S	2.03	1.89	1.93	1.92	1.89	1.86	1.86	1.87	1.86	1.85	1.85	1.86	1.87	1.87	1.88	1.89	1.90	1.92	1.85	2.03	1.90
Jun 14	1.92	1.92	1.91	1.91	S	1.92	1.91	1.91	1.91	1.93	1.91	1.91	1.90	1.90	1.90	1.86	1.87	1.86	1.88	1.85	1.86	1.86	1.91	1.82	1.82	1.93	1.89
Jun 15	1.81	1.83	1.85	S	1.87	1.85	1.85	1.85	1.87	1.88	1.93	1.87	1.91	1.86	1.86	1.86	1.87	1.88	1.88	1.89	1.88	1.83	1.83	1.83	1.81	1.93	1.86
Jun 16	1.84	1.85	S	1.83	1.83	1.83	1.83	1.85	1.84	1.84	1.84	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.87	1.83	1.83	1.84	1.83	1.83	1.84
Jun 17	1.83	S	1.84	1.84	1.85	1.85	1.85	1.85	1.85	1.86	1.88	1.87	1.88	1.89	1.89	1.87	1.88	1.88	1.91	1.92	1.88	1.88	1.91	1.94	1.83	1.94	1.87
Jun 18	S	1.88	1.89	1.88	1.88	1.88	1.87	1.87	1.87	1.86	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.86	1.87	1.87	1.87	1.87	1.90	1.92	S	1.86	1.92
Jun 19	1.92	1.92	1.97	1.99	2.04	1.97	1.91	1.88	1.88	1.87	1.89	1.87	1.86	1.85	1.86	1.85	1.85	1.85	1.85	1.86	1.88	1.87	S	1.88	1.85	2.04	1.89
Jun 20	1.87	1.88	1.87	1.89	1.90	1.89	1.87	1.86	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.86	1.86	S	1.87	1.88	1.85	1.90	1.86
Jun 21	1.89	1.90	1.97	2.01	2.01	2.02	2.03	2.10	2.05	2.02	1.91	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.87	S	1.93	1.96	2.02	1.86	2.10
Jun 22	2.04	2.12	2.16	2.18	2.16	2.14	2.09	2.08	2.25	2.12	2.03	2.03	2.00	1.89	1.83	1.82	1.81	1.82	1.81	S	S	1.88	1.83	1.81	1.82	1.81	2.25
Jun 23	1.86	1.85	1.85	1.85	1.87	1.90	2.06	1.94	1.89	1.89	1.89	1.92	1.88	1.87	1.89	1.87	1.91	1.89	S	1.92	1.86	1.88	1.89	1.92	1.85	2.06	1.89
Jun 24	1.94	1.94	1.94	1.94	1.92	1.93	1.99	1.93	1.88	1.88	1.86	1.85	1.85	1.85	1.85	1.84	1.85	S	1.85	1.86	1.89	1.93	1.94	1.96	1.84	1.99	1.90
Jun 25	1.97	1.99	2.02	2.04	2.09	2.06	2.01	1.92	1.88	1.84	1.83	1.88	1.83	1.86	1.87	1.82	S	1.84	1.81	1.91	1.87	1.85	1.87	1.91	1.81	2.09	1.91
Jun 26	2.02	2.26	2.47	2.44	2.37	2.36	2.61	2.10	1.94	1.83	1.84	1.82	1.83	1.85	1.86	S	1.82	1.81	1.82	1.83	1.84	1.84	1.85	1.91	1.81	2.61	2.01
Jun 27	1.93	1.92	2.07	1.92	2.00	2.09	1.98	1.87	1.85	1.84	1.84	1.84	1.83	1.83	S	1.83	1.83	1.84	1.84	1.85	1.87	1.90	1.93	1.94	1.83	2.09	1.90
Jun 28	1.98	2.00	2.01	2.04	2.08	2.02	2.01	2.00	1.99	1.94	1.89	C	C	C	C	C	1.85	1.85	1.85	1.86	1.88	1.91	1.99	2.06	1.85	2.08	1.96
Jun 29	2.02	2.02	2.49	2.39	2.38	2.28	2.22	2.07	2.00	1.94	1.89	1.91	S	1.87	1.85	1.88	1.87	1.85	1.84	1.86	1.89	1.91	1.92	1.95	1.84	2.49	2.01
Jun 30	1.98	1.96	1.96	1.97	1.97	2.08	2.00	1.97	1.98	1.95	1.88	S	1.84	1.84	1.83	1.83	1.82	1.82	1.84	1.84	1.87	1.89	1.90	1.91	1.82	2.08	1.91
Diurnal Maximum	2.04	2.26	2.49	2.44	2.38	2.36	2.61	2.10	2.25	2.12	2.03	2.03	2.00	1.90	1.90	1.88	1.92	1.89	1.91	1.92	1.89	1.93	1.99	2.06			
Diurnal Average	1.91	1.93	1.97	1.97	1.98	1.97	1.97	1.93	1.91	1.90	1.88	1.87	1.86	1.86	1.85	1.84	1.85	1.84	1.84	1.86	1.86	1.87	1.88	1.90			

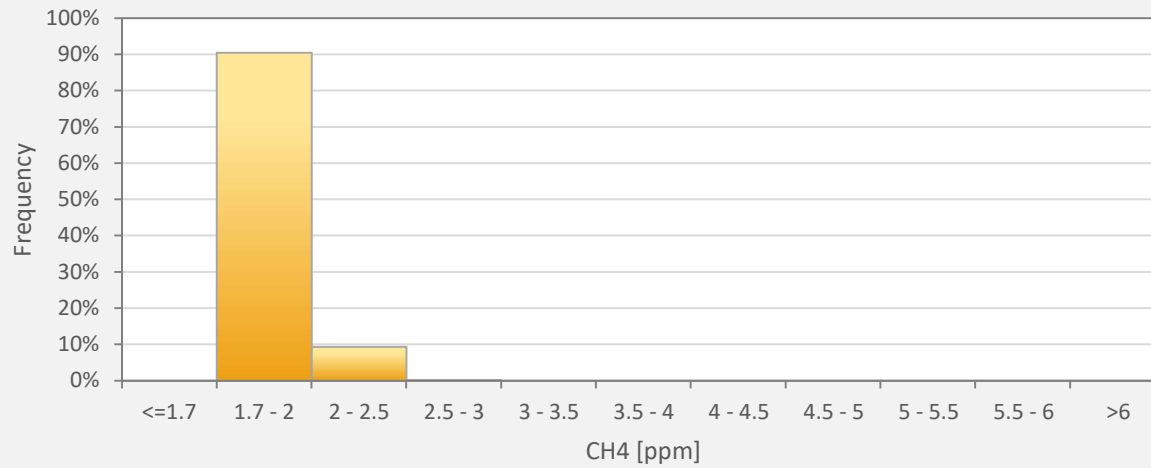
C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction /Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

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



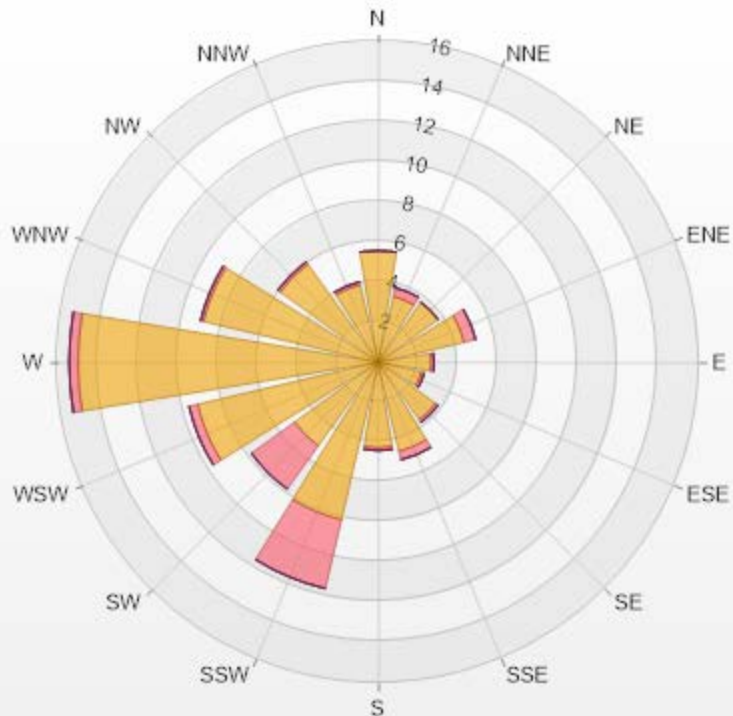
CH4[ppm] Histogram: Tamarack Monthly: 06-2021 1 Hr.



Classes	CH4
<=1.7	0.00%
1.7 - 2	90.47%
2 - 2.5	9.38%
2.5 - 3	0.15%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.72% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	5.57	0	0	0	0	5.57
NNE	3.37	0.44	0	0	0	3.81
NE	3.67	0	0	0	0	3.67
ENE	4.4	0.59	0	0	0	4.99
E	2.64	0.15	0	0	0	2.79
ESE	2.2	0.15	0	0	0	2.35
SE	3.52	0.15	0	0	0	3.67
SSE	4.55	0.44	0	0	0	4.99
S	4.25	0.15	0	0	0	4.4
SSW	8.06	3.52	0	0	0	11.58
SW	5.13	2.64	0	0	0	7.77
WSW	9.24	0.44	0	0	0	9.68
W	14.96	0.44	0	0	0	15.4
WNW	8.94	0.15	0	0	0	9.09
NW	6.01	0.15	0	0	0	6.16
NNW	3.96	0.15	0	0	0	4.11
Summary	90.47	9.56	0	0	0	100



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% Icon Classes (ppm)

90 0-2

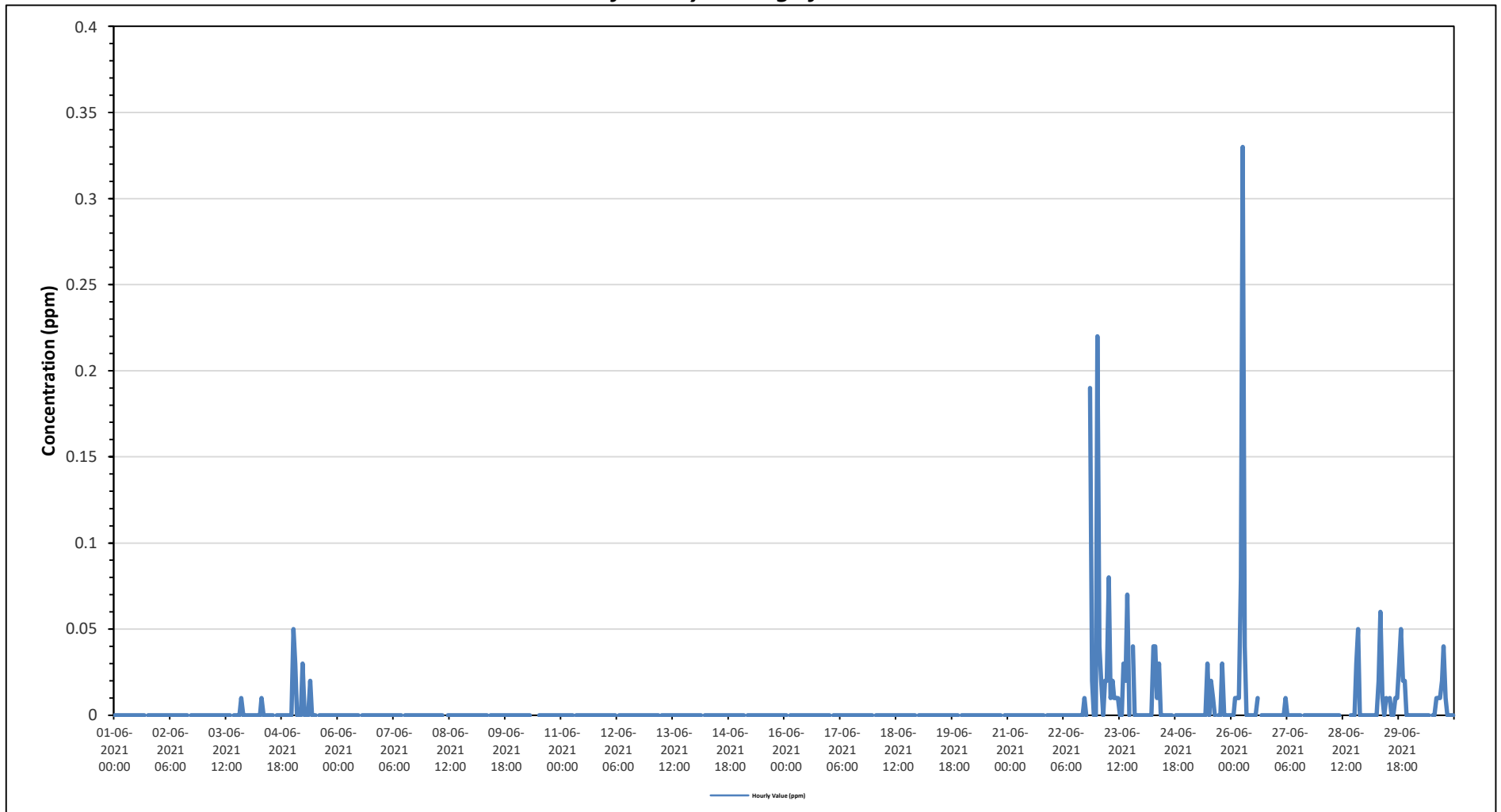
10 2-5

0 5-10

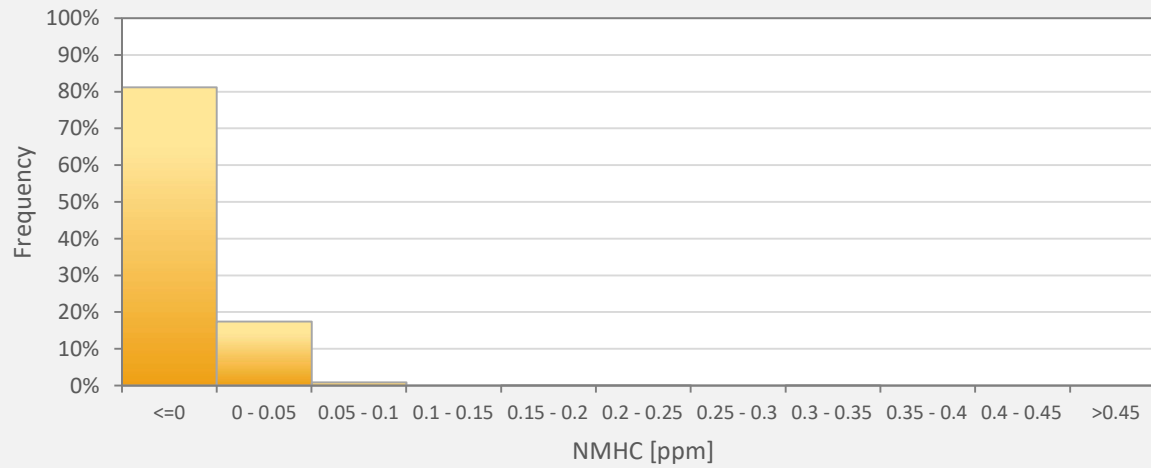
0 10-20

0 >20.0

Timeseries Chart of Hourly Average for NMHC - Tamarack Site



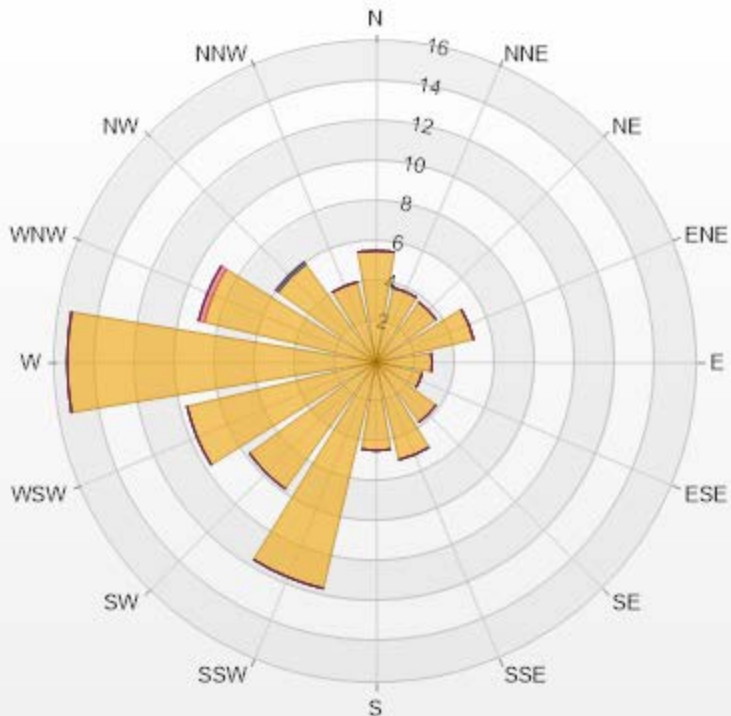
NMHC[ppm] Histogram: Tamarack Monthly: 06-2021 1 Hr.



Classes	NMHC
<=0	81.23%
0 - 0.05	17.45%
0.05 - 0.1	0.88%
0.1 - 0.15	0.00%
0.15 - 0.2	0.15%
0.2 - 0.25	0.15%
0.25 - 0.3	0.00%
0.3 - 0.35	0.15%
0.35 - 0.4	0.00%
0.4 - 0.45	0.00%
>0.45	0.00%

Wind: Tamarack Poll.: Tamarack-NMHC[ppm] Monthly: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.72% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-0.9	0.9-2	>2.0	Total
N	5.57	0	0	0	0	5.57
NNE	3.81	0	0	0	0	3.81
NE	3.67	0	0	0	0	3.67
ENE	4.99	0	0	0	0	4.99
E	2.79	0	0	0	0	2.79
ESE	2.35	0	0	0	0	2.35
SE	3.67	0	0	0	0	3.67
SSE	4.99	0	0	0	0	4.99
S	4.4	0	0	0	0	4.4
SSW	11.58	0	0	0	0	11.58
SW	7.77	0	0	0	0	7.77
WSW	9.68	0	0	0	0	9.68
W	15.4	0	0	0	0	15.4
WNW	8.8	0.29	0	0	0	9.09
NW	6.01	0	0.15	0	0	6.16
NNW	4.11	0	0	0	0	4.11
Summary	100	0.29	0.15	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

Tamarack Site - June 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/m³, Alberta Ambient Air Quality Objectives (AAAO): 24-Hour 29 µg/m³
 Number of 1-Hour Exceedences: 0 Number of 24-Hour Exceedences: 0

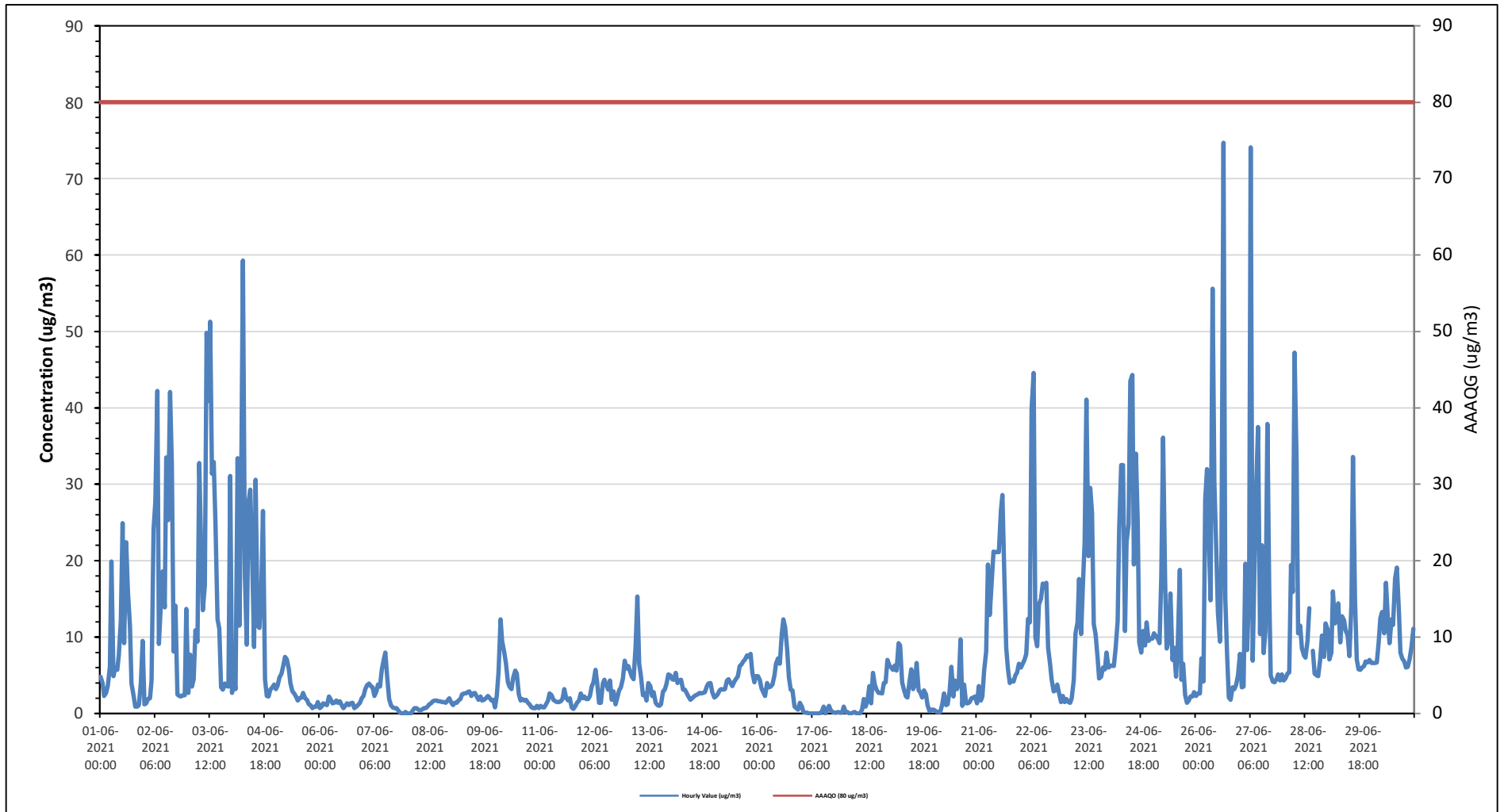
Maximum Hourly Value:	75 µg/m ³ on June 26 at hour 15	Hours in Service:	720
Maximum Daily Value:	17.8 µg/m ³ on June 24	Hours of Data:	719
Minimum Hourly Value:	0 µg/m ³ on June 7 at hour 21	Hours of Missing Data:	0
Minimum Daily Value:	0 µg/m ³ on June 17	Hours of Calibration:	1
Monthly Average:	7.5 µg/m ³	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	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	Average	
Jun 1	5	4	2	3	4	6	20	5	6	6	8	12	25	9	22	16	11	4	2	1	1	4	10	1	25	7.8		
Jun 2	1	1	2	2	4	24	28	42	9	15	19	14	34	25	42	33	8	14	3	2	2	2	2	14	1	42	14.2	
Jun 3	3	8	4	5	11	9	33	22	14	17	50	41	51	31	33	25	12	11	3	3	4	4	4	31	3	51	17.8	
Jun 4	3	4	3	33	12	29	59	18	9	28	29	20	9	31	12	11	17	27	5	2	2	3	3	4	2	59	15.5	
Jun 5	3	4	5	5	6	7	7	6	4	3	2	2	2	2	2	3	2	2	1	1	1	1	1	2	1	7	3.1	
Jun 6	1	1	1	1	1	2	2	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1.3	
Jun 7	2	3	4	4	4	3	2	3	4	4	6	7	8	5	2	1	1	1	1	0	0	0	0	0	0	8	2.7	
Jun 8	0	0	0	0	1	1	1	0	1	1	1	1	1	1	2	2	2	2	2	2	2	1	2	2	0	2	1.0	
Jun 9	1	1	1	1	2	2	3	3	3	3	3	2	3	3	2	2	2	2	2	2	2	2	2	2	1	3	2.1	
Jun 10	1	2	5	12	10	8	7	4	4	3	5	6	5	3	2	2	2	2	1	1	1	1	1	1	1	12	3.6	
Jun 11	1	1	1	1	1	2	3	2	2	2	2	2	2	2	3	2	2	2	1	1	1	1	2	3	1	3	1.6	
Jun 12	2	2	2	2	2	4	4	6	4	1	1	4	4	4	3	4	2	3	1	2	3	3	5	7	1	7	3.2	
Jun 13	6	6	6	5	5	9	15	7	5	2	3	2	4	4	2	3	1	1	1	1	3	3	4	5	1	15	4.2	
Jun 14	5	5	4	5	4	4	4	3	3	3	2	2	2	2	2	3	3	3	3	3	4	4	4	3	2	5	3.3	
Jun 15	2	2	3	3	3	3	3	4	5	4	4	5	5	6	6	7	7	8	7	8	7	8	5	4	5	2	8	4.7
Jun 16	5	4	3	3	2	4	3	4	4	5	7	7	7	11	12	11	8	5	3	3	1	1	1	1	1	12	4.8	
Jun 17	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	1	0	1	0.3	
Jun 18	0	0	0	0	0	0	0	0	0	1	2	1	2	4	1	5	4	3	3	3	3	4	4	7	0	7	1.9	
Jun 19	6	6	6	6	6	9	9	4	3	2	2	4	6	3	4	7	3	3	2	3	3	1	0	1	0	9	4.1	
Jun 20	1	0	0	0	0	1	3	1	1	3	6	2	4	3	4	10	1	4	1	1	2	2	2	2	0	10	2.3	
Jun 21	1	4	2	2	6	8	20	13	17	21	21	21	21	27	29	18	9	6	4	4	4	5	5	7	1	29	11.4	
Jun 22	6	7	7	8	12	12	40	45	10	9	14	15	17	17	17	9	6	4	3	3	4	3	2	2	2	45	11.3	
Jun 23	2	2	2	1	2	4	11	12	18	10	17	23	41	21	30	26	12	10	7	5	5	6	6	8	1	41	11.6	
Jun 24	6	6	6	6	9	12	24	33	33	11	22	25	44	44	20	34	25	9	8	11	9	12	10	10	6	44	17.8	
Jun 25	10	11	10	10	9	18	36	17	9	10	16	7	9	5	9	19	4	7	2	1	2	2	2	3	1	36	9.4	
Jun 26	2	3	3	7	4	28	32	23	15	56	30	22	13	9	21	75	15	8	2	2	3	3	4	5	2	75	16.1	
Jun 27	8	3	4	20	8	16	74	7	19	30	38	10	22	8	11	38	16	5	4	4	5	5	4	5	3	74	15.2	
Jun 28	4	5	5	5	19	16	47	33	11	12	9	8	7	10	14	C	8	5	5	5	7	10	7	12	4	47	11.4	
Jun 29	11	7	8	16	12	13	14	9	13	12	11	10	8	14	34	15	7	6	6	6	6	6	7	7	6	34	10.8	
Jun 30	7	7	7	7	9	13	13	11	17	13	9	12	12	18	19	13	8	7	7	6	6	7	9	11	6	19	10.3	
Diurnal Maximum	11	11	10	33	19	29	74	45	33	56	50	41	51	44	42	75	25	27	8	11	9	12	10	31				
Diurnal Average	3.5	3.6	3.5	5.8	5.6	8.9	17.2	11.2	8.0	9.5	11.3	9.6	12.2	10.6	12.0	13.5	6.7	5.4	3.1	2.9	3.1	3.4	3.4	5.7				

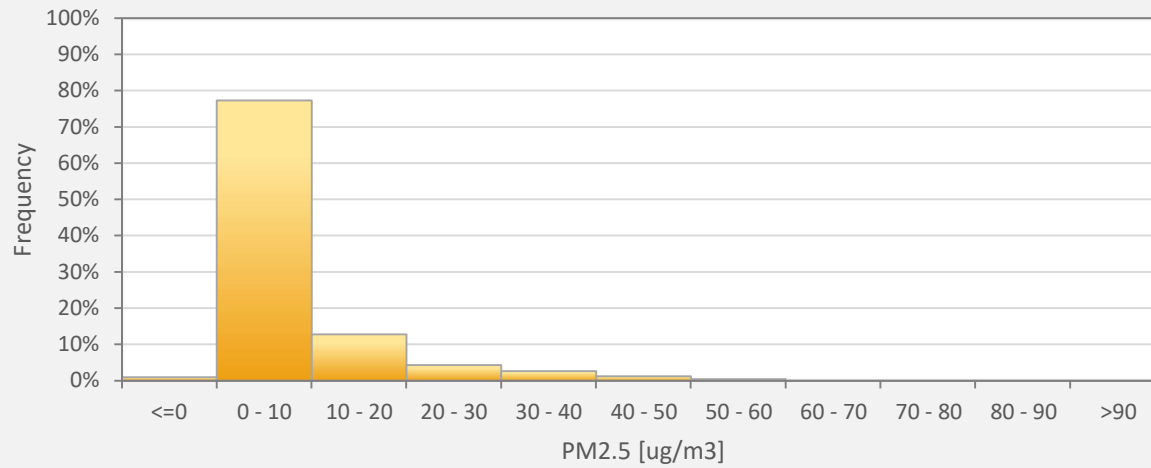
C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction /Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

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 PM2.5 - Tamarack Site



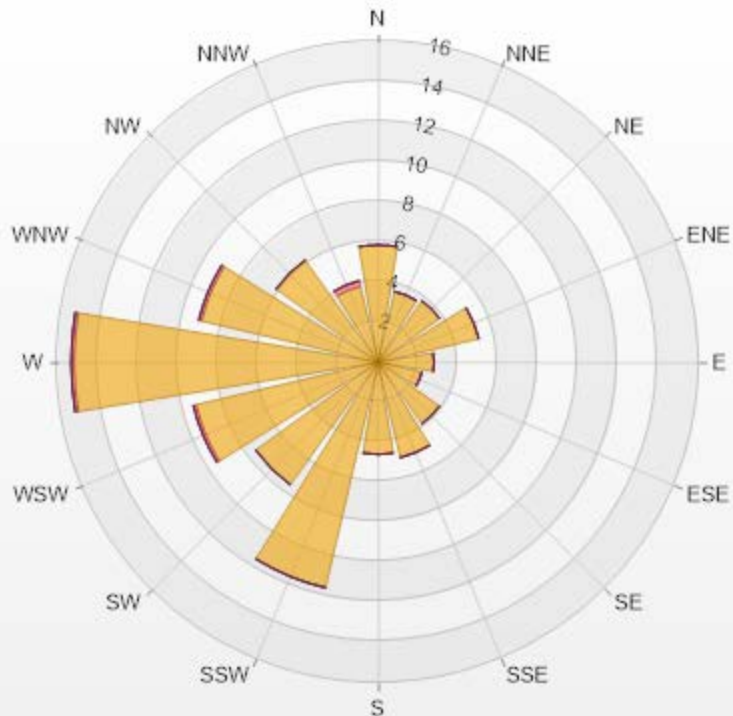
PM2.5[ug/m3(L)] Histogram: Tamarack Monthly: 06-2021 1 Hr.



Classes	PM2.5
<=0	0.97%
0 - 10	77.33%
10 - 20	12.80%
20 - 30	4.31%
30 - 40	2.64%
40 - 50	1.25%
50 - 60	0.42%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Tamarack Poll.: Tamarack-PM2.5[ug/m3(L)] Monthly: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 99.86% Calm Avg: 0.00 [ug/m3(L)]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	5.84	0	0	0	0	5.84
NNE	3.62	0	0	0	0	3.62
NE	3.76	0	0	0	0	3.76
ENE	5.15	0	0	0	0	5.15
E	2.78	0	0	0	0	2.78
ESE	2.23	0	0	0	0	2.23
SE	3.76	0	0	0	0	3.76
SSE	4.87	0	0	0	0	4.87
S	4.59	0	0	0	0	4.59
SSW	11.54	0	0	0	0	11.54
SW	7.51	0	0	0	0	7.51
WSW	9.32	0.14	0	0	0	9.46
W	15.16	0.14	0	0	0	15.3
WNW	9.04	0.14	0	0	0	9.18
NW	6.26	0	0	0	0	6.26
NNW	3.89	0.28	0	0	0	4.17
Summary	99.32	0.7	0	0	0	100



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% Icon Classes (ug/m3(L))	99	1	0	0	0
0-50	99	1	0	0	0
50-80	0	1	0	0	0
80-120	0	0	0	0	0
120-240	0	0	0	0	0
>240.0	0	0	0	0	0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - June 2021

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

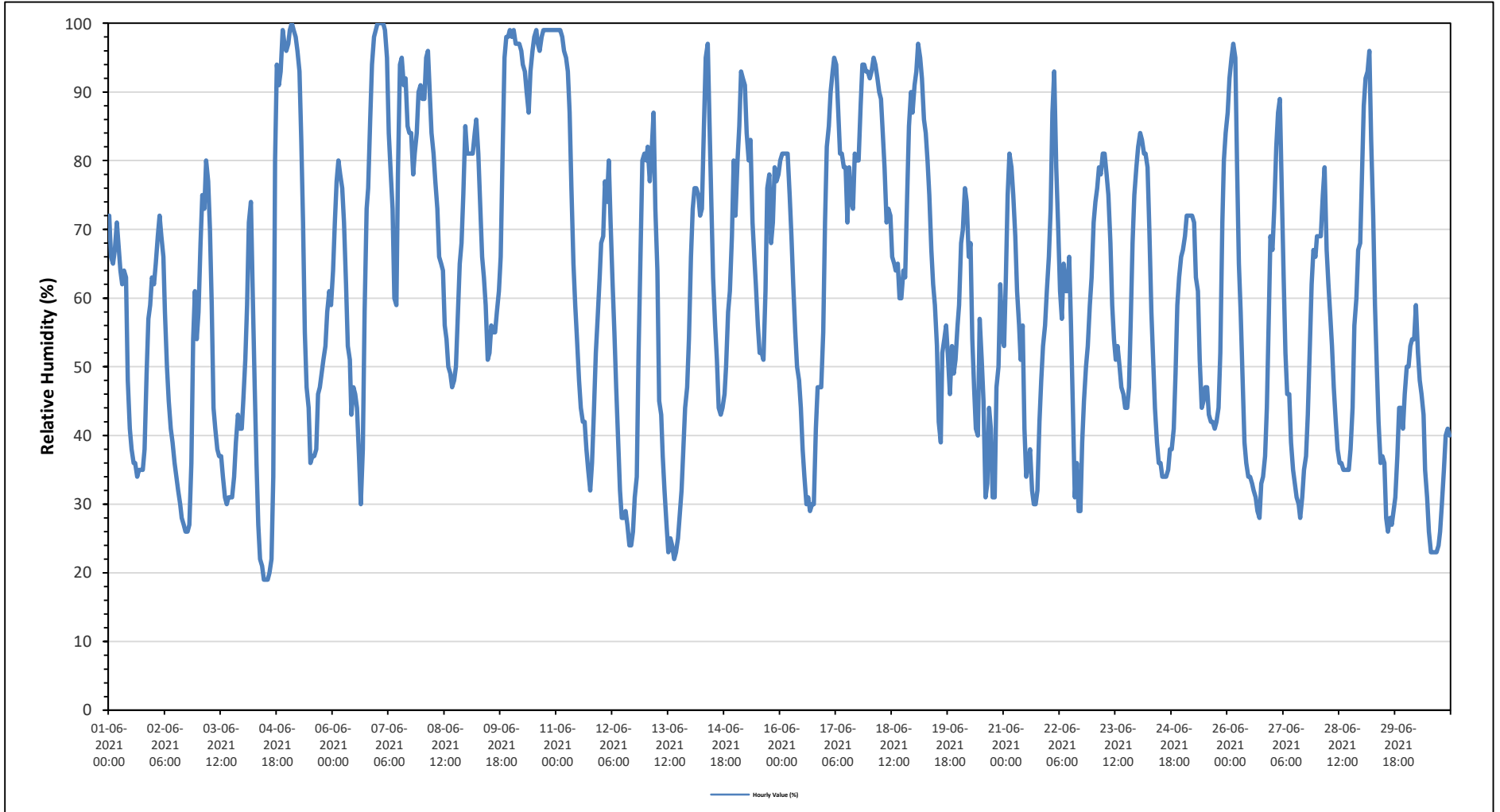
Maximum Hourly Value:	100 %	on June 5 at hour 2	Hours in Service:	720
Maximum Daily Value:	96.6 %	on June 10	Hours of Data:	720
Minimum Hourly Value:	19 %	on June 4 at hour 11	Hours of Missing Data:	0
Minimum Daily Value:	38.7 %	on June 30	Hours of Calibration:	0
Monthly Average:	60.9 %		Operational 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				
Jun 1	72	66	65	67	71	68	64	62	64	63	48	41	38	36	36	34	35	35	35	38	49	57	59	63	34	72	52.8	
Jun 2	62	65	69	72	69	66	58	50	45	41	39	36	34	32	30	28	27	26	26	27	36	54	61	54	26	72	46.1	
Jun 3	58	68	75	73	80	77	70	59	44	41	38	37	37	34	31	30	31	31	31	34	39	43	41	41	30	80	47.6	
Jun 4	45	51	59	71	74	61	47	36	27	22	21	19	19	19	20	22	34	80	94	91	93	99	97	96	19	99	54.0	
Jun 5	97	99	100	99	98	96	93	83	71	55	47	44	36	37	37	38	46	47	49	51	53	58	61	59	36	100	64.8	
Jun 6	64	71	77	80	78	76	71	62	53	51	43	47	46	44	37	30	38	58	73	76	86	94	98	99	30	99	64.7	
Jun 7	100	100	100	100	99	95	84	78	73	60	59	78	94	95	91	92	85	84	84	78	81	84	90	91	59	100	86.5	
Jun 8	89	89	95	96	90	84	81	77	73	66	65	64	56	54	50	49	47	48	50	58	65	68	75	85	47	96	69.8	
Jun 9	81	81	81	81	84	86	81	74	66	63	59	51	52	56	55	55	58	61	66	80	95	98	98	99	51	99	73.4	
Jun 10	98	99	97	97	97	96	94	93	90	87	93	96	98	99	97	96	98	99	99	99	99	99	99	99	87	99	96.6	
Jun 11	99	99	99	98	96	95	93	87	76	65	59	54	48	44	42	42	38	35	32	36	43	52	57	63	32	99	64.7	
Jun 12	68	69	77	74	80	71	62	55	47	40	32	28	28	29	27	24	24	26	31	34	52	67	80	81	24	81	50.3	
Jun 13	80	82	77	81	87	73	64	45	43	37	32	27	23	25	24	22	23	25	28	32	38	44	47	54	22	87	46.4	
Jun 14	66	73	76	76	75	72	73	85	95	97	87	74	63	56	51	44	43	44	46	50	58	61	69	80	43	97	67.3	
Jun 15	72	80	85	93	92	91	84	80	83	71	66	62	56	52	52	51	61	76	78	68	71	79	77	78	51	93	73.3	
Jun 16	80	81	81	81	81	75	69	62	55	50	48	44	38	34	30	31	29	30	30	41	47	47	47	55	29	81	52.8	
Jun 17	71	82	85	90	93	95	94	88	81	81	79	79	71	79	74	73	81	80	80	88	94	94	93	93	71	95	84.1	
Jun 18	92	93	95	94	92	90	89	84	79	71	73	72	66	65	64	65	60	60	64	63	75	85	90	87	60	95	77.8	
Jun 19	91	93	97	95	92	86	84	80	75	67	62	59	53	42	39	52	54	56	51	46	53	49	51	56	39	97	66.0	
Jun 20	59	68	70	76	74	66	68	54	47	41	40	57	51	45	31	33	44	41	31	31	47	50	62	54	31	76	51.7	
Jun 21	53	63	75	81	79	75	69	61	56	51	56	41	34	36	38	32	30	30	32	42	48	53	56	61	30	81	52.2	
Jun 22	66	73	87	93	79	71	61	57	65	61	61	66	56	43	31	36	29	29	39	45	50	53	59	63	29	93	57.2	
Jun 23	71	74	76	79	78	81	81	78	75	68	59	54	51	53	50	47	46	44	44	47	57	68	75	79	44	81	64.0	
Jun 24	82	84	83	81	81	79	70	58	51	44	39	36	36	34	34	34	35	38	38	41	49	59	63	66	34	84	54.8	
Jun 25	67	69	72	72	72	71	63	61	51	44	45	47	47	43	42	42	41	42	44	52	71	80	84	41	84	58.1		
Jun 26	87	92	95	97	95	79	65	58	49	39	36	34	34	33	32	31	29	28	33	34	37	44	58	69	28	97	53.7	
Jun 27	67	73	82	87	89	75	63	52	46	46	39	35	33	31	30	28	31	35	37	43	53	62	67	66	28	89	52.9	
Jun 28	69	69	69	75	79	67	62	57	53	47	42	38	36	36	35	35	35	35	38	44	56	60	67	68	35	79	53.0	
Jun 29	78	88	92	93	96	83	72	59	49	42	36	37	36	28	26	28	27	29	31	37	44	44	41	46	26	96	51.8	
Jun 30	50	50	53	54	54	59	52	48	46	43	35	31	26	23	23	23	23	24	26	30	35	40	41	40	23	59	38.7	
Diurnal Maximum	100	100	100	100	99	96	94	93	95	97	93	96	98	99	97	96	98	99	99	99	99	99	99	99	99	99	99	99
Daiurnal Average	74.5	78.1	81.5	83.5	83.5	78.7	73.0	66.2	61.3	55.4	51.2	49.5	46.5	44.7	42.0	41.6	42.8	45.8	47.9	50.9	58.5	64.5	68.6	71.0				

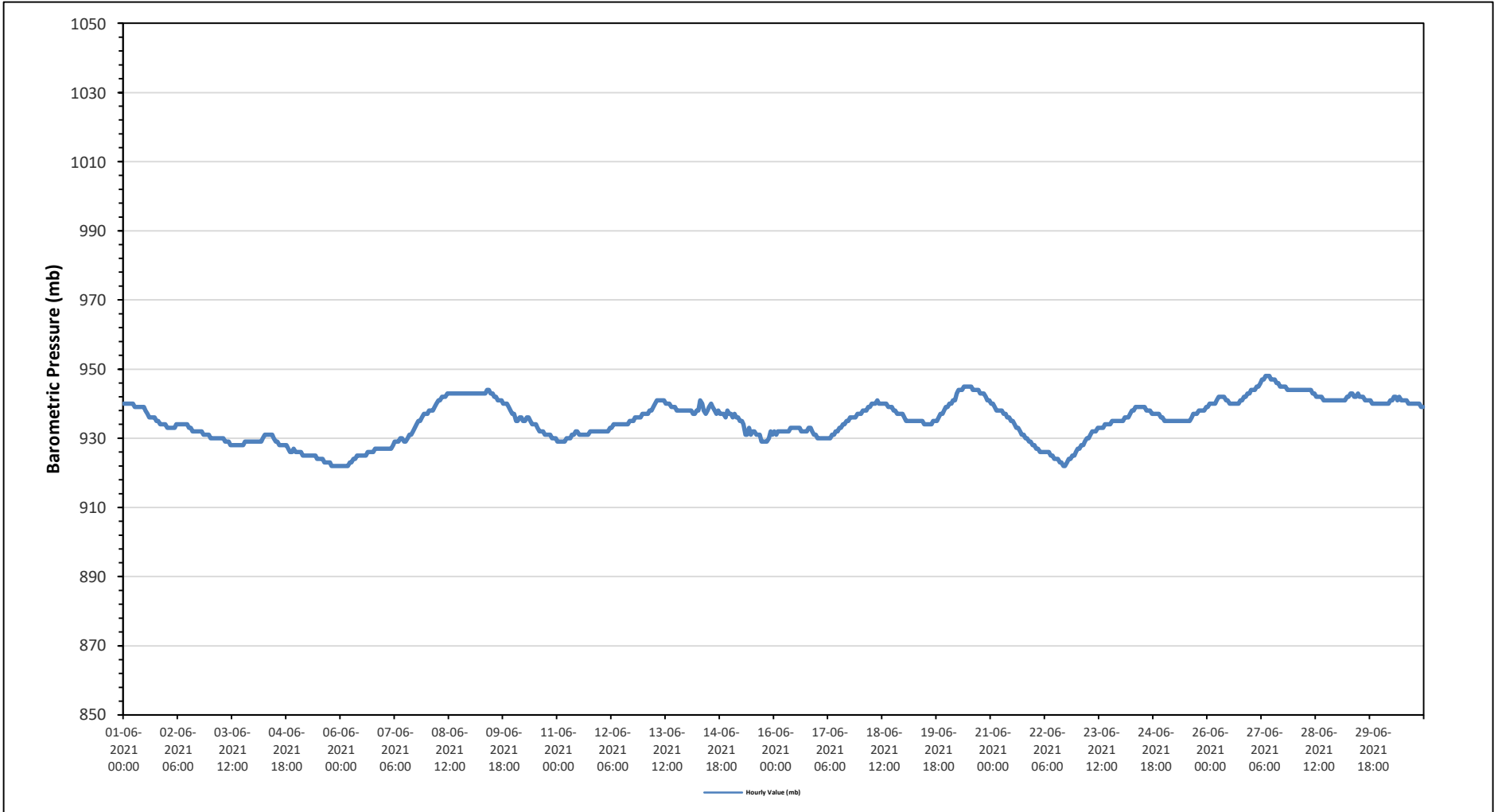
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

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 RH - Tamarack Site



Timeseries Chart of Hourly Average for BP - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - June 2021

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

Maximum Hourly Value:	34.5 °C	on June 30 at hour 14	Hours in Service:	720
Maximum Daily Value:	28.6 °C	on June 30	Hours of Data:	720
Minimum Hourly Value:	3.5 °C	on June 8 at hour 3	Hours of Missing Data:	0
Minimum Daily Value:	9.9 °C	on June 7	Hours of Calibration:	0
Monthly Average:	17.9 °C		Operational Uptime:	100.0

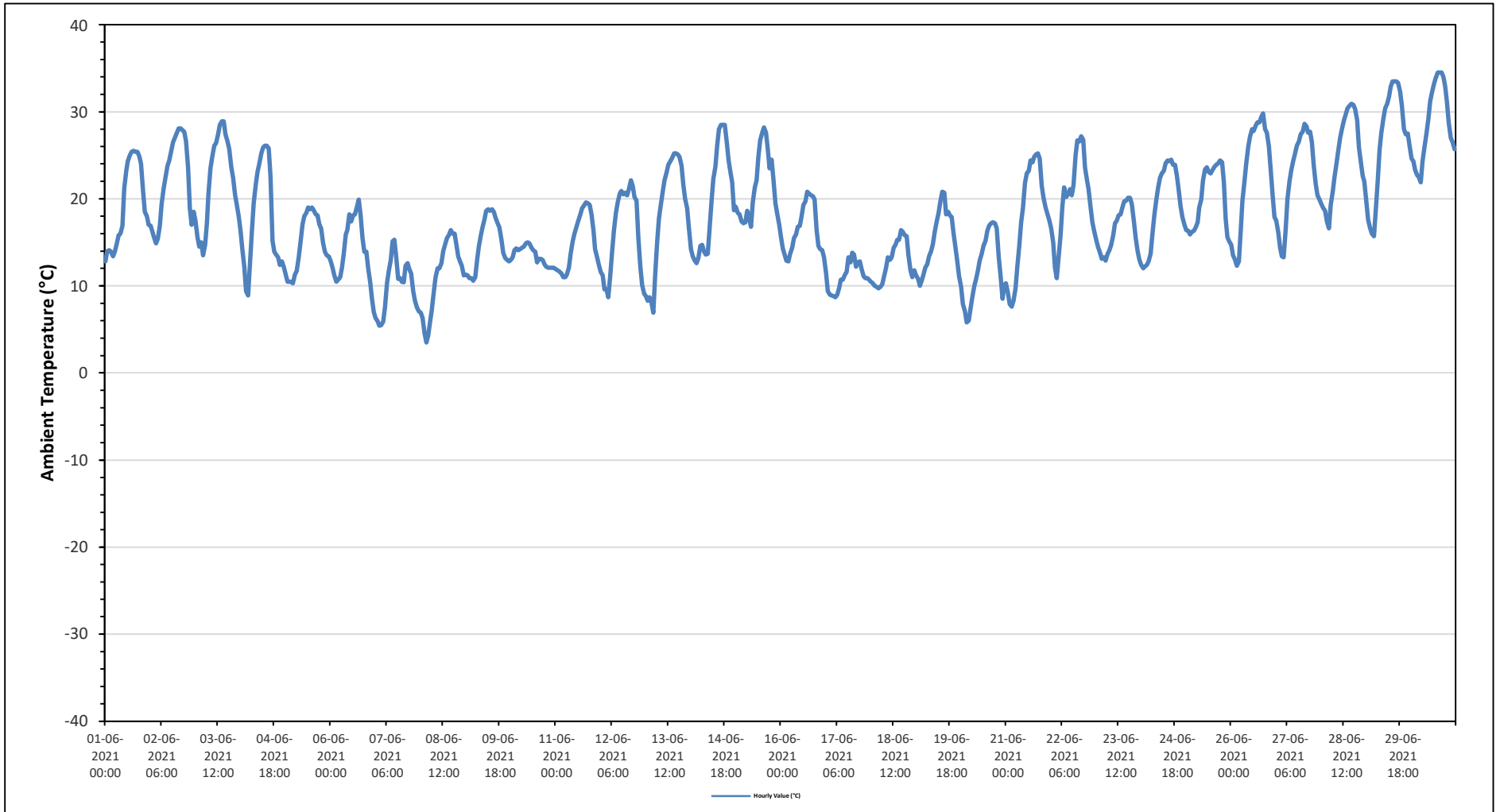
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Jun 1	12.8	14	14.1	13.9	13.4	13.9	14.9	15.8	16	16.9	21.2	23.2	24.3	25	25.4	25.5	25.4	25.4	24.9	24	20.9	18.5	18	17	12.8	25.5	19.4
Jun 2	16.9	16.2	15.5	14.9	15.4	16.9	19.4	21.2	22.4	23.8	24.4	25.5	26.5	27	27.6	28.1	28.1	27.9	27.7	26.6	23.6	18.9	17	18.5	14.9	28.1	22.1
Jun 3	17.5	15.6	14.5	15	13.5	14.7	17.2	20.5	23.5	24.8	26.1	26.4	27.4	28.5	28.9	28.9	27.4	26.6	25.7	23.6	22.4	20.4	19.4	18	13.5	28.9	21.9
Jun 4	16.4	14.3	12.2	9.4	8.9	12.4	16.3	19.5	21.6	23.1	24	25.2	25.9	26.1	26.1	25.8	22.6	15.2	13.9	13.6	13.3	12.4	12.8	12.2	8.9	26.1	17.6
Jun 5	11.3	10.5	10.5	10.5	10.3	11.3	11.7	13.3	15	17.1	18	18.4	19	18.8	19	18.7	18.2	18.1	17.1	16.6	14.9	13.9	13.5	13.4	10.3	19.0	15.0
Jun 6	12.9	12.1	11.2	10.5	10.7	11	12.1	13.7	15.9	16.4	18.2	17.4	18.1	18.2	19.1	19.9	18.2	15.4	13.9	13.9	12	10.4	8.5	7	7.0	19.9	14.0
Jun 7	6.3	6	5.4	5.5	5.9	7.5	10.3	11.7	13	15.1	15.3	13.1	10.8	10.9	10.5	10.4	12.3	12.6	11.9	11.4	9.4	8.3	7.5	7.1	5.4	15.3	9.9
Jun 8	6.9	6.3	4.5	3.5	4.3	5.8	7.2	9.3	11	12	12	12.6	14	14.7	15.5	15.8	16.4	16	16	14.9	13.4	12.8	12.3	11.2	3.5	16.4	11.2
Jun 9	11.3	11.2	10.9	10.9	10.6	11	12.9	14.5	15.8	16.8	17.6	18.6	18.8	18.6	18.8	18.5	17.8	17.2	16.7	15.3	13.8	13.2	13	12.8	10.6	18.8	14.9
Jun 10	13	13.3	14.1	14.3	14.1	14.2	14.4	14.5	14.9	15	14.9	14.4	14.1	13.9	12.7	13.1	13.1	13	12.5	12.2	12.1	12.1	12.1	12.1	12.1	15.0	13.5
Jun 11	11.9	11.8	11.6	11.4	11	11	11.3	12.1	13.7	15.1	16	16.8	17.5	18.1	18.9	19.2	19.6	19.5	19.3	18.2	16.3	14.2	13.3	12.4	11.0	19.6	15.0
Jun 12	11.6	11.2	9.6	9.6	8.7	11.3	13.9	16.3	18.4	19.6	20.6	20.9	20.5	20.7	20.4	21.1	22.1	21.5	20.2	19.8	15.6	12.2	10.1	9.1	8.7	22.1	16.0
Jun 13	8.8	8.3	8.7	8.2	6.9	11.1	15	17.7	19.4	20.8	22.1	23	23.9	24.3	24.7	25.2	25.2	25.1	24.8	23.8	21.6	20	18.9	16.6	6.9	25.2	18.5
Jun 14	14.2	13.4	12.9	12.6	13.2	14.6	14.7	14	13.6	13.7	16.5	19.8	22.3	23.7	26.1	28	28.5	28.5	28.5	26.7	24.4	23.1	21.9	18.7	12.6	28.5	19.7
Jun 15	19.1	18.4	18.2	17.4	17.2	17.3	18.6	17.7	16.8	19.6	21.3	22.1	24.8	26.7	27.6	28.2	27.6	25.7	23.5	24.5	22.3	19.5	18.3	17	16.8	28.2	21.2
Jun 16	15.6	14.3	13.5	12.9	12.8	13.7	14.4	15.5	15.9	16.8	16.9	18	19.3	19.7	20.8	20.6	20.4	20.3	19.9	16.4	14.6	14.2	14.1	13.3	12.8	20.8	16.4
Jun 17	11.5	9.4	9	8.9	8.8	8.7	9	9.8	10.7	10.7	11.2	11.6	13.3	12.7	13.8	13.6	12.2	12.7	12.8	11.9	11.1	10.9	10.9	10.7	8.7	13.8	11.1
Jun 18	10.5	10.3	10	9.9	9.7	9.9	10.2	11.2	12.1	13.3	13	13.3	14.4	14.7	15.3	15.3	16.4	16.2	15.8	15.7	13.5	11.8	11	11.8	9.7	16.4	12.7
Jun 19	11.2	10.8	10	10.6	11.3	12.1	12.5	13.4	14	14.8	16.3	17.4	18.3	19.8	20.8	20.7	18.2	18.5	18.1	17.9	16.1	14.6	12.8	11.1	10.0	20.8	15.1
Jun 20	9.9	7.9	7.1	5.8	6	7.4	8.7	10	10.8	11.9	12.9	13.7	14.6	15.2	16.3	16.9	17.2	17.3	17.2	16.6	13.3	11.2	8.5	10.1	5.8	17.3	11.9
Jun 21	10.3	9.2	7.9	7.6	8.3	9.7	12.2	14.7	17.3	18.9	21.8	22.9	23.2	24.4	24.2	24.8	25.1	25.2	24.6	21.5	20.1	19	18.3	17.5	7.6	25.2	17.9
Jun 22	16.6	15	12.1	10.9	13.5	15.8	19.1	21.3	20.2	20.5	21.1	20.4	21.6	25	26.7	26.6	27.2	26.8	23.6	22.1	21.1	19.3	17.3	16.3	10.9	27.2	20.0
Jun 23	15.3	14.5	13.8	13.1	13.3	12.9	13.6	14.1	14.7	15.8	17.2	17.5	18.1	18.2	19	19.7	19.8	20.1	20.1	19.4	17.5	15.6	14	13	12.9	20.1	16.3
Jun 24	12.4	12	12.2	12.4	12.8	13.7	15.9	18.2	19.8	21.2	22.4	22.9	23.2	24.1	24.4	24.3	24.5	23.9	23.9	22.7	21.1	19.1	17.9	17	12.0	24.5	19.3
Jun 25	16.4	16.3	15.9	16.2	16.3	16.7	17.3	19	19.9	22.1	23.4	23.6	23.1	22.9	23.3	23.7	23.9	24.1	24.4	24.2	21.9	17.7	15.6	15.1	15.1	24.4	20.1
Jun 26	14.7	13.5	13	12.3	12.8	16.2	19.8	22	24.1	26	27.2	28	27.8	28.4	28.8	28.8	29.4	29.8	28	27.6	26	23.4	20.3	17.9	12.3	29.8	22.7
Jun 27	17.5	16.1	14.4	13.4	13.3	16.5	20	22	23.3	24.4	25.2	26.1	26.6	27.4	27.7	28.6	28.3	27.6	27.7	26.5	23.9	21.7	20.4	19.9	13.3	28.6	22.4
Jun 28	19.4	18.9	18.6	17.4	16.6	19.3	20.8	22.5	23.9	25.4	27	28	29	29.7	30.4	30.7	30.9	30.8	30.3	29	25.9	24.3	22.6	22	16.6	30.9	24.7
Jun 29	19.7	17.6	16.6	16	15.7	18.6	22.1	25.6	27.6	29.2	30.4	30.9	31.7	32.9	33.5	33.5	33.5	33.3	32.3	30.6	28	27.4	27.5	26.1	15.7	33.5	26.7
Jun 30	24.6	24.3	23.3	22.7	22.5	21.9	24.3	26	27.4	29.2	31.2	32.2	33.2	33.9	34.5	34.5	34.5	34	32.9	31.1	28.7	27	26.5	25.7	21.9	34.5	28.6
Diurnal Maximum	24.6	24.3	23.3	22.7	22.5	21.9	24.3	26.0	27.6	29.2	31.2	32.2	33.2	33.9	34.5	34.5	34.5	34.0	32.9	31.1	28.7	27.4	27.5	26.1			
Daiurnal Average	13.9	13.1	12.4	11.9	11.9	13.2	15.0	16.6	17.8	19.0	20.2	20.8	21.5	22.1	22.7	23.0	22.8	22.3	21.6	20.6	18.6	16.9	15.8	15.0			

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 AT - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

**Tamarack Site - June 2021
Summary of Hourly Averages**

STATION TEMPERATURE (ST) in Degree Celsius

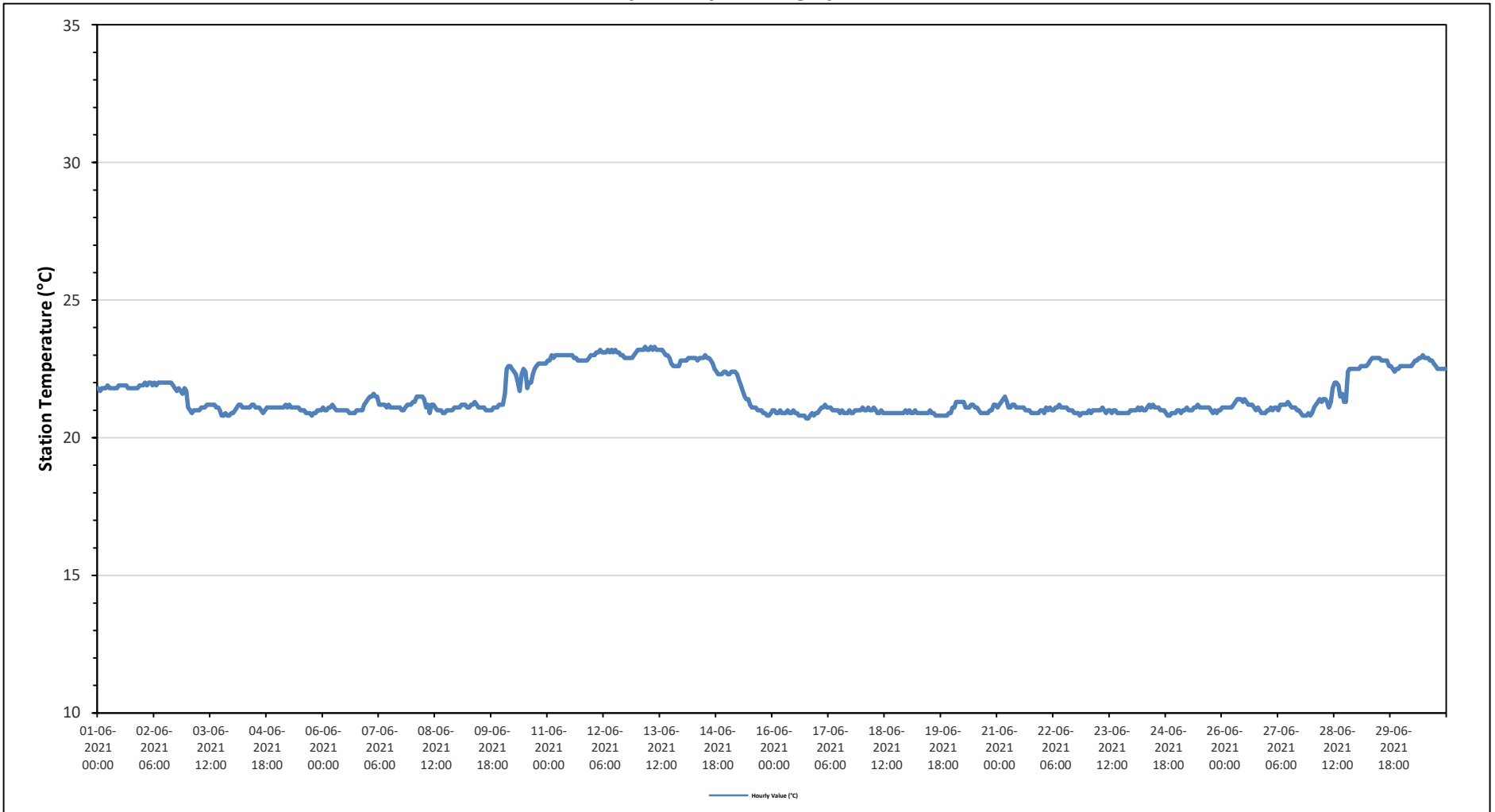
Maximum Hourly Value:	23.3 °C	on June 13 at hour 4	Hours in Service:	720
Maximum Daily Value:	23.1 °C	on June 12	Hours of Data:	720
Minimum Hourly Value:	20.7 °C	on June 16 at hour 18	Hours of Missing Data:	0
Minimum Daily Value:	20.9 °C	on June 16	Hours of Calibration:	0
Monthly Average:	21.5 °C		Operational 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		
Jun 1	21.8	21.7	21.8	21.8	21.8	21.9	21.8	21.8	21.8	21.8	21.8	21.9	21.9	21.9	21.9	21.9	21.8	21.8	21.8	21.8	21.8	21.9	21.9	21.7	21.9	21.8	21.6	22.0	21.9
Jun 2	21.9	22.0	21.9	22.0	22.0	21.9	22.0	21.9	22.0	22.0	22.0	22.0	22.0	22.0	22.0	21.9	21.8	21.7	21.8	21.7	21.6	21.8	21.7	21.6	21.8	21.7	21.6	22.0	21.9
Jun 3	21.1	21.0	20.9	21.0	21.0	21.0	21.0	21.1	21.1	21.1	21.1	21.2	21.2	21.2	21.2	21.1	21.0	20.9	21.0	20.8	20.8	20.9	20.8	20.8	20.9	20.8	21.2	21.0	
Jun 4	20.9	21.0	21.1	21.2	21.2	21.1	21.1	21.1	21.1	21.1	21.1	21.2	21.2	21.1	21.1	21.0	20.9	21.0	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.2	21.1
Jun 5	21.1	21.1	21.1	21.1	21.2	21.1	21.2	21.1	21.1	21.1	21.1	21.1	21.0	21.0	21.0	20.9	20.9	20.9	20.8	20.9	20.9	21.0	21.0	21.0	21.0	21.0	21.2	21.0	
Jun 6	21.1	21.0	21.0	21.1	21.1	21.2	21.1	21.0	21.0	21.0	21.0	21.0	21.0	21.0	20.9	20.9	20.9	20.9	21.0	21.0	21.0	21.0	21.0	21.0	21.2	21.3	20.9	21.3	21.0
Jun 7	21.4	21.5	21.5	21.6	21.5	21.5	21.5	21.2	21.2	21.2	21.1	21.2	21.1	21.1	21.1	21.1	21.1	21.1	21.0	21.0	21.0	21.1	21.2	21.2	21.2	21.2	21.0	21.6	21.2
Jun 8	21.3	21.3	21.5	21.5	21.5	21.5	21.4	21.1	21.2	20.9	21.2	21.2	21.1	21.0	21.0	21.0	20.9	20.9	21.0	21.0	21.0	21.0	21.0	21.1	21.1	21.1	20.9	21.5	21.2
Jun 9	21.1	21.1	21.2	21.2	21.2	21.1	21.1	21.2	21.2	21.3	21.2	21.1	21.1	21.1	21.1	21.0	21.0	21.0	21.0	21.1	21.1	21.1	21.2	21.2	21.0	21.3	21.1	21.0	21.1
Jun 10	21.2	21.6	22.5	22.6	22.6	22.5	22.4	22.3	22.0	21.7	22.3	22.5	22.4	21.8	22.0	22.0	22.3	22.5	22.6	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.3	
Jun 11	22.8	22.8	23.0	22.9	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	22.9	22.9	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.9	23.0	22.8	23.0	22.9
Jun 12	23.0	23.0	23.1	23.1	23.2	23.1	23.1	23.1	23.2	23.1	23.2	23.1	23.2	23.1	23.2	23.1	23.0	23.0	22.9	22.9	22.9	22.9	22.9	23.0	23.1	22.9	23.2	23.1	23.1
Jun 13	23.2	23.2	23.2	23.2	23.3	23.2	23.2	23.3	23.2	23.3	23.2	23.2	23.2	23.2	23.1	23.0	23.0	22.9	22.7	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.8
Jun 14	22.8	22.8	22.8	22.9	22.9	22.9	22.9	22.9	22.8	22.9	22.9	22.9	23.0	22.9	22.9	22.8	22.7	22.5	22.4	22.3	22.3	22.3	22.4	22.4	22.3	23.0	22.7	22.7	
Jun 15	22.3	22.3	22.4	22.4	22.4	22.3	22.1	21.9	21.7	21.5	21.4	21.4	21.2	21.1	21.1	21.0	21.0	21.0	20.9	20.9	20.8	20.8	20.8	20.9	20.8	20.8	20.8	22.4	21.5
Jun 16	21.0	21.0	20.9	20.9	21.0	20.9	20.9	20.9	21.0	20.9	20.9	21.0	20.9	20.9	20.8	20.8	20.8	20.8	20.7	20.7	20.8	20.9	20.8	20.9	20.8	20.9	21.0	20.9	20.9
Jun 17	20.9	21.0	21.1	21.1	21.2	21.1	21.1	21.1	21.0	21.0	21.0	21.0	20.9	21.0	20.9	20.9	20.9	21.0	20.9	20.9	21.0	21.0	21.0	21.0	21.0	21.0	21.2	21.0	21.0
Jun 18	21.1	21.0	21.0	21.1	21.0	21.0	21.1	21.0	20.9	20.9	21.0	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9	21.0	21.1	21.0	21.0
Jun 19	20.9	21.0	20.9	20.9	21.0	20.9	20.9	20.9	20.9	20.9	20.9	20.9	21.0	20.9	20.9	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.9	20.9	20.8	21.0	20.9	20.9
Jun 20	21.1	21.1	21.3	21.3	21.3	21.3	21.3	21.1	21.1	21.1	21.2	21.2	21.1	21.1	21.0	20.9	20.9	20.9	20.9	20.9	21.0	21.0	21.2	21.2	20.9	21.3	21.1	21.0	21.1
Jun 21	21.1	21.2	21.3	21.4	21.5	21.3	21.1	21.1	21.2	21.2	21.1	21.1	21.1	21.1	21.1	21.0	21.0	21.0	20.9	20.9	20.9	20.9	20.9	21.0	20.9	21.5	21.1	21.0	21.1
Jun 22	21.0	20.9	21.1	21.0	21.1	21.0	21.0	21.1	21.1	21.2	21.1	21.1	21.1	21.1	21.0	21.0	21.0	20.9	20.9	20.8	20.9	20.9	20.9	20.9	20.8	21.2	21.0	21.0	21.0
Jun 23	20.9	21.0	20.9	21.0	21.0	21.0	21.0	21.0	21.1	21.0	20.9	21.0	20.9	21.0	20.9	21.0	21.0	20.9	20.9	20.9	20.9	20.9	20.9	21.0	20.9	21.1	21.0	21.0	21.0
Jun 24	21.0	21.0	21.0	21.1	21.0	21.1	21.0	21.0	21.1	21.2	21.1	21.2	21.1	21.1	21.1	21.0	21.0	21.0	20.9	20.8	20.8	20.9	20.9	20.9	20.8	21.2	21.0	21.0	21.0
Jun 25	21.0	21.0	20.9	21.0	21.0	21.1	21.0	21.0	21.0	21.1	21.1	21.2	21.1	21.1	21.1	21.1	21.1	21.1	21.0	20.9	21.0	20.9	21.0	21.0	20.9	21.2	21.0	21.0	21.0
Jun 26	21.1	21.1	21.1	21.1	21.1	21.1	21.2	21.3	21.4	21.4	21.4	21.3	21.4	21.3	21.2	21.2	21.1	21.0	21.1	21.0	20.9	20.9	20.9	20.9	20.9	21.4	21.2	21.0	21.0
Jun 27	21.0	21.0	21.1	21.0	21.1	21.1	21.0	21.2	21.2	21.2	21.2	21.3	21.2	21.1	21.1	21.1	21.0	21.0	20.9	20.8	20.8	20.8	20.9	20.8	21.3	21.0	21.0	21.0	21.0
Jun 28	20.9	21.1	21.2	21.3	21.4	21.3	21.4	21.4	21.3	21.1	21.3	21.8	22.0	22.0	21.9	21.5	21.6	21.3	21.3	22.4	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	21.6
Jun 29	22.5	22.5	22.6	22.6	22.6	22.6	22.7	22.8	22.9	22.9	22.9	22.9	22.9	22.8	22.8	22.8	22.8	22.6	22.6	22.5	22.4	22.5	22.5	22.6	22.4	22.9	22.7	22.7	22.7
Jun 30	22.6	22.6	22.6	22.6	22.6	22.6	22.7	22.8	22.8	22.8	22.9	22.9	22.9	22.9	22.9	22.8	22.8	22.7	22.6	22.5	22.5	22.5	22.5	22.5	22.5	23.0	22.7	22.7	22.7
Diurnal Maximum	23.2	23.2	23.2	23.2	23.3	23.2	23.2	23.3	23.2	23.3	23.2	23.2	23.2	23.2	23.1	23.0	23.0	22.9	22.9	22.9	22.9	22.9	23.0	23.1	22.9	23.0	23.0	23.0	23.1
Daiurnal Average	21.5	21.5	21.6	21.6	21.7	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.5	21.5	21.5	21.5	21.4	21.4	21.4	21.4	21.4	21.5	21.5	21.5	21.5	21.5	21.5	21.5

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 ST - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - June 2021

Summary of Hourly Averages

PRECIPITATION in mm

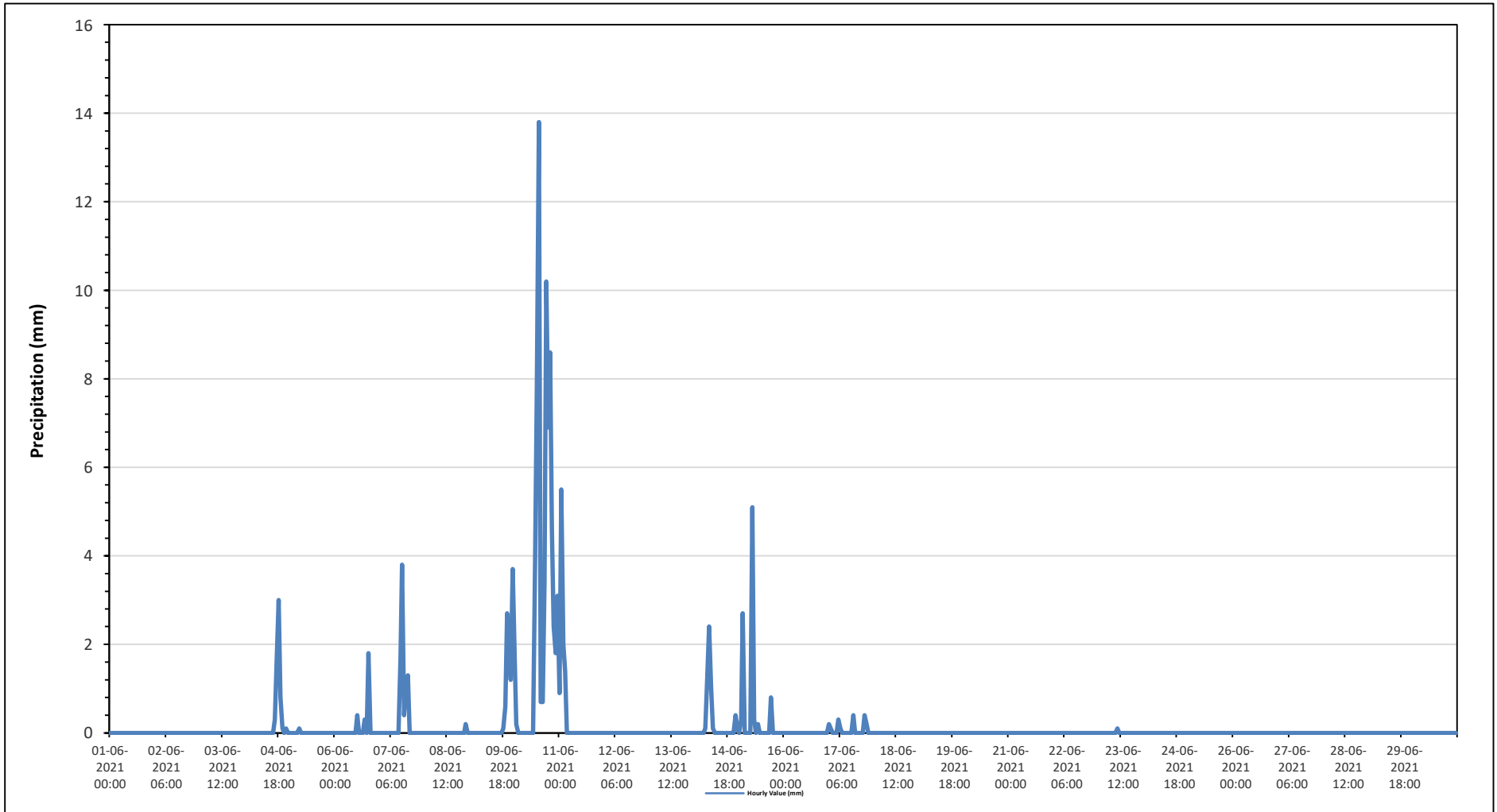
Maximum Hourly Value:	13.8 mm on June 10 at hour 13	Hours in Service:	720
Maximum Daily Value:	2.9 mm on June 10	Hours of Data:	720
Minimum Hourly Value:	0.0 mm on June 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0 mm on June 1	Hours of Calibration:	0
Monthly Total:	#### mm	Operational 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
Jun 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
Jun 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
Jun 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
Jun 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.6	3	0.8	0.1	0	0.1	0	0.0	3.0	0.2
Jun 5	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.0
Jun 6	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0	0.3	0	1.8	0	0	0	0	0	0	0.0	1.8	0.1
Jun 7	0	0	0	0	0	0	0	0	0	0	0	1.7	3.8	0.4	1	1.3	0	0	0	0	0	0	0	0	0.0	3.8	0.3
Jun 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0.0	0.2	0.0	
Jun 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.6	2.7	2.2	1.2	3.7	0	0.0	3.7	0.4	
Jun 10	1.9	0.2	0	0	0	0	0	0	0	0	3.9	7.9	13.8	0.7	0.7	3.4	10.2	6.9	8.6	4.6	2.4	1.8	3.1	0.0	13.8	2.9	
Jun 11	0.9	5.5	2	1.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	5.5	0.4	
Jun 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	
Jun 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	
Jun 14	0	0	0	0	0	0	0.1	1.3	2.4	1	0.1	0	0	0	0	0	0	0	0	0	0	0.4	0.1	0.0	2.4	0.2	
Jun 15	0	0.3	2.7	0	0	0	0	5.1	0.3	0	0.2	0	0	0	0	0	0.8	0	0	0	0	0	0	0.0	5.1	0.4	
Jun 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	
Jun 17	0.2	0.1	0	0	0	0.3	0.1	0	0	0	0	0	0.4	0	0	0	0	0.4	0.2	0	0	0	0	0.0	0.4	0.1	
Jun 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	
Jun 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	
Jun 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	
Jun 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	
Jun 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	
Jun 23	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	0.1	0.0	
Jun 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	
Jun 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	
Jun 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	
Jun 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	
Jun 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	
Jun 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	
Jun 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	
Diurnal Maximum	1.9	5.5	2.7	1.4	0.0	0.3	0.1	5.1	2.4	1.0	0.2	3.9	7.9	13.8	1.0	1.3	3.4	10.2	6.9	8.6	4.6	2.4	1.8	3.7			
Diurnal Average	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.2	0.4	0.5	0.1	0.1	0.1	0.4	0.4	0.3	0.3	0.2	0.1	0.2			

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 Precipitation - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - June 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

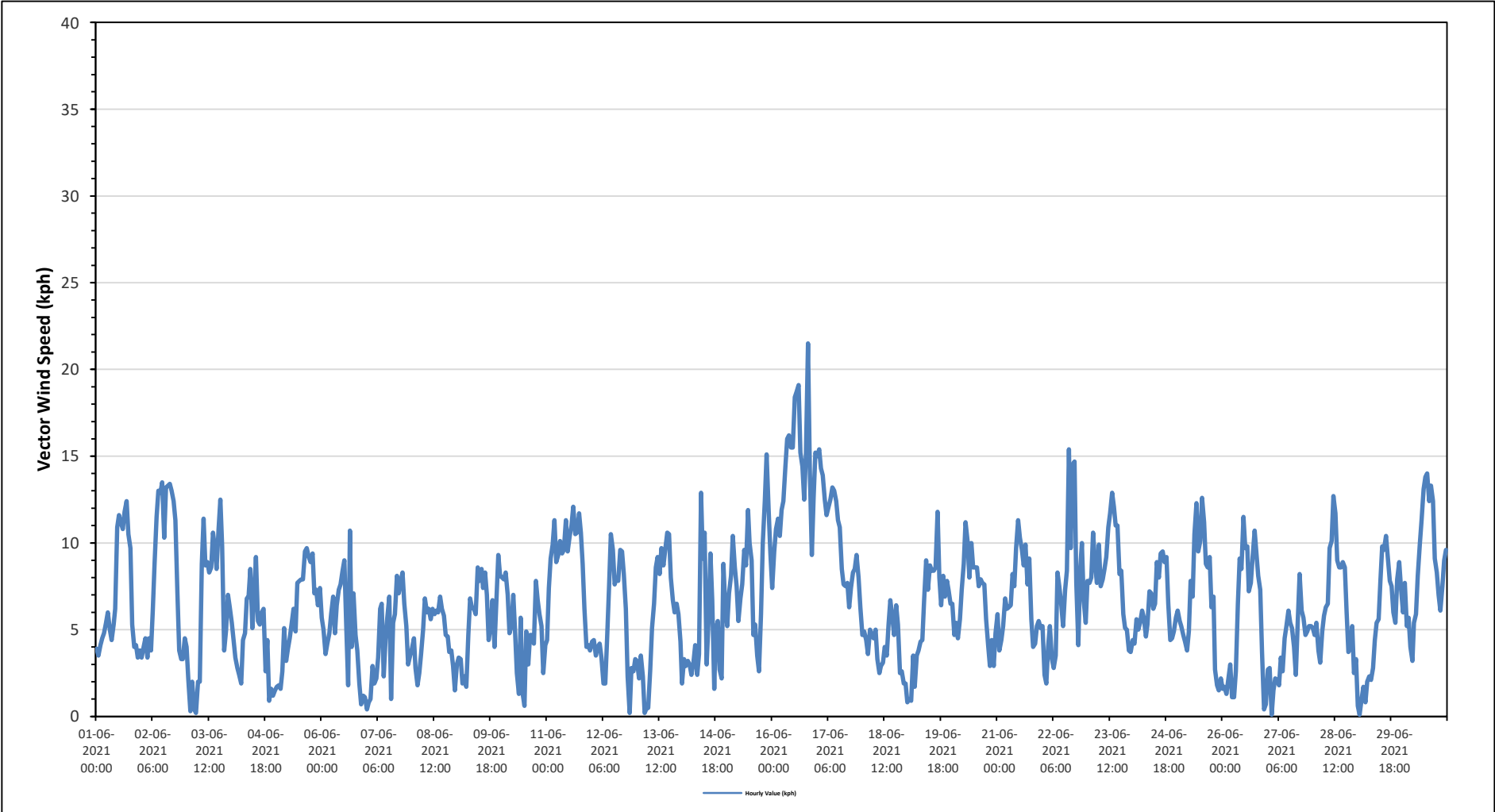
Maximum Hourly Value:	21.5 kph	on June 16 at hour 19	Hours in Service:	720
Maximum Daily Value:	13.9 kph	on June 16	Hours of Data:	720
Minimum Hourly Value:	0.1 kph	on June 27 at hour 2	Hours of Missing Data:	0
Minimum Daily Value:	1.0 kph	on June 27	Hours of Calibration:	0
Monthly Average:	2.8 kph		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
Jun 1	3.9	3.5	4.1	4.5	4.8	5.4	6.0	5.0	4.4	5.3	6.2	10.9	11.6	11.2	10.8	11.8	12.4	10.5	9.7	5.3	4.0	4.1	3.4	3.8	3.4	12.4	6.0
Jun 2	3.4	4.0	4.5	3.4	4.5	3.8	6.1	8.8	11.5	13.0	12.9	13.5	10.3	13.2	13.3	13.4	13.0	12.4	11.3	7.1	3.8	3.3	3.3	4.5	3.3	13.5	7.5
Jun 3	4.0	2.1	0.3	2.0	0.4	0.2	2.0	2.0	8.8	11.4	8.7	8.9	8.3	8.6	10.6	9.6	8.5	10.8	12.5	9.8	3.8	4.9	7.0	6.3	0.2	12.5	4.7
Jun 4	5.4	4.4	3.4	2.8	2.4	1.9	4.4	4.8	6.8	6.9	8.5	5.1	6.9	9.2	5.5	5.3	6.0	6.2	2.6	4.4	0.9	1.6	1.2	1.5	0.9	9.2	3.6
Jun 5	1.7	1.8	1.6	2.6	5.1	3.2	3.9	4.5	5.4	6.2	4.9	7.7	7.8	7.9	7.9	9.5	9.7	9.2	8.9	9.4	7.1	7.3	6.4	7.4	1.6	9.7	5.8
Jun 6	5.7	5.0	3.6	4.2	4.8	5.9	6.9	4.8	6.4	7.3	7.6	8.4	9.0	5.0	1.8	10.7	4.0	7.1	4.7	3.8	1.9	0.7	1.2	1.1	0.7	10.7	3.1
Jun 7	0.4	0.8	1.0	2.9	1.9	2.2	3.4	6.2	6.5	2.3	4.4	5.7	6.9	1.0	5.4	5.9	8.1	7.1	7.8	8.3	6.5	5.2	3.0	3.5	0.4	8.3	3.9
Jun 8	3.9	4.5	2.8	1.8	2.5	3.6	5.0	6.8	6.0	6.2	5.6	6.2	5.9	6.1	6.0	6.9	6.2	5.8	4.7	4.6	3.7	3.8	2.9	1.5	1.5	6.9	4.4
Jun 9	3.0	3.4	3.3	1.9	2.3	1.7	4.7	6.8	6.3	6.2	5.9	8.6	7.8	8.5	7.4	8.3	7.0	4.4	5.2	6.7	4.0	6.5	9.3	8.1	1.7	9.3	5.4
Jun 10	8.0	7.9	8.3	7.0	4.8	5.2	7.0	4.9	2.5	1.3	5.7	1.4	0.6	4.9	3.0	4.7	4.7	4.2	7.8	6.7	5.9	5.2	2.5	4.1	0.6	8.3	1.4
Jun 11	4.4	7.4	9.1	9.9	11.3	8.9	9.3	10.1	9.4	9.6	11.3	9.5	10.4	11.0	12.1	10.5	10.6	11.7	10.6	8.8	6.2	4.0	4.1	3.8	3.8	12.1	8.3
Jun 12	4.3	4.4	3.5	4.0	4.2	3.4	1.9	1.9	4.4	7.5	10.5	9.6	7.6	8.0	7.8	9.6	9.5	8.2	6.2	2.3	0.2	2.8	2.6	3.3	0.2	10.5	4.6
Jun 13	3.2	2.2	3.5	2.3	0.2	0.5	0.5	2.7	5.1	6.5	8.6	9.2	8.2	9.7	8.7	9.6	10.6	10.5	8.0	6.7	6.0	6.5	5.9	4.3	0.2	10.6	4.9
Jun 14	1.9	3.3	2.9	3.2	3.0	2.4	3.1	4.1	2.4	3.6	12.9	9.1	10.6	3.0	5.4	9.4	6.7	1.6	5.0	5.5	2.7	2.2	8.8	6.4	1.6	12.9	3.4
Jun 15	5.2	7.1	8.1	10.4	8.6	7.5	5.5	6.8	7.6	9.6	8.7	11.9	10.0	9.0	4.7	5.3	3.5	2.6	5.9	10.0	12.4	15.1	11.9	9.4	2.6	15.1	1.1
Jun 16	7.4	9.5	10.8	11.4	10.4	11.9	12.4	14.4	16.0	16.2	15.5	15.5	18.4	18.7	19.1	15.2	14.4	12.5	15.2	21.5	14.3	9.3	12.6	15.2	7.4	21.5	13.9
Jun 17	15.0	15.4	14.3	13.9	12.5	11.6	12.1	12.5	13.2	13.0	12.4	11.3	10.9	8.5	7.6	7.5	7.7	6.3	7.4	8.3	8.5	9.3	8.0	6.3	6.3	15.4	9.9
Jun 18	4.7	4.9	4.4	3.6	5.0	4.7	4.5	5.0	3.3	2.5	2.9	3.1	4.0	3.5	5.3	6.7	4.7	6.4	5.3	2.5	2.6	1.9	1.9	1.9	1.9	6.7	2.9
Jun 19	0.8	1.0	0.9	3.5	1.7	3.5	3.8	4.3	4.4	6.7	9.0	7.3	8.7	8.4	8.4	8.6	11.8	8.0	6.4	8.1	6.9	7.8	7.3	6.5	0.8	11.8	5.0
Jun 20	6.5	4.7	5.4	4.5	5.6	7.3	8.8	11.2	10.1	8.0	10.0	8.6	8.6	8.6	7.5	7.9	7.7	7.6	5.6	4.1	2.9	4.4	2.9	4.8	2.9	11.2	5.4
Jun 21	5.9	3.8	4.4	5.2	6.8	6.2	6.3	6.4	8.2	7.5	9.7	11.3	10.3	9.6	8.7	9.9	7.6	9.1	5.6	4.0	4.2	5.2	5.5	5.1	3.8	11.3	6.0
Jun 22	5.2	2.4	1.9	4.0	5.2	3.3	2.8	3.5	8.3	7.5	6.4	5.2	7.3	8.4	15.4	9.7	14.5	14.7	7.7	4.1	8.4	10.0	6.7	5.4	1.9	15.4	5.0
Jun 23	7.8	7.7	8.0	10.6	8.8	7.7	9.9	7.5	7.9	8.5	9.2	10.9	11.7	12.9	12.1	11.0	11.0	8.2	8.4	5.9	5.1	5.0	3.8	3.7	3.7	12.9	8.1
Jun 24	4.4	4.2	5.6	5.0	5.4	6.1	5.7	4.6	5.3	7.2	7.1	6.2	6.5	8.9	8.0	9.4	9.5	8.9	9.2	6.5	4.4	4.5	4.9	5.7	4.2	9.5	5.5
Jun 25	6.1	5.5	5.2	4.7	4.3	3.8	4.9	7.8	6.9	10.5	12.3	9.5	10.1	12.6	11.2	8.8	8.6	9.2	6.3	6.9	2.7	1.8	1.5	2.2	1.5	12.6	5.4
Jun 26	1.6	1.7	1.3	2.1	3.0	1.1	1.1	2.6	6.5	9.1	8.5	11.5	9.7	9.8	7.2	7.7	9.2	10.7	9.4	8.1	7.3	3.7	0.4	0.7	0.4	11.5	4.1
Jun 27	2.7	2.8	0.1	1.5	2.2	2.1	1.8	3.4	2.6	4.5	5.2	6.1	5.4	5.1	4.0	2.4	5.6	8.2	6.1	5.7	4.7	4.9	5.2	5.2	0.1	8.2	1.0
Jun 28	5.1	4.7	5.4	3.8	3.1	4.9	5.8	6.3	6.5	9.7	10.1	12.7	11.7	9.0	8.6	8.6	8.9	8.6	6.0	3.7	3.9	5.2	2.5	3.3	2.5	12.7	6.5
Jun 29	0.6	0.1	1.0	1.7	0.8	2.0	2.3	2.1	2.8	4.4	5.4	5.6	7.8	9.8	9.6	10.4	9.2	7.8	7.5	6.0	5.4	7.9	8.9	7.4	0.1	10.4	4.7
Jun 30	6.0	7.7	5.2	5.7	4.0	3.2	5.4	5.9	8.1	9.9	11.3	13.1	13.8	14.0	12.4	13.3	12.4	9.1	8.3	7.0	6.1	7.5	9.0	9.6	3.2	14.0	8.4
Diurnal Maximum	15	15	14	14	13	12	12	14	16	16	16	16	18	19	19	15	15	15	15	22	14	15	13	15			
Diurnal Average	4.6	4.6	4.5	4.8	4.7	4.5	5.2	5.9	6.8	7.6	8.6	8.8	8.9	8.8	8.5	8.9	8.8	8.2	7.5	6.8	5.2	5.4	5.2	5.1			

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

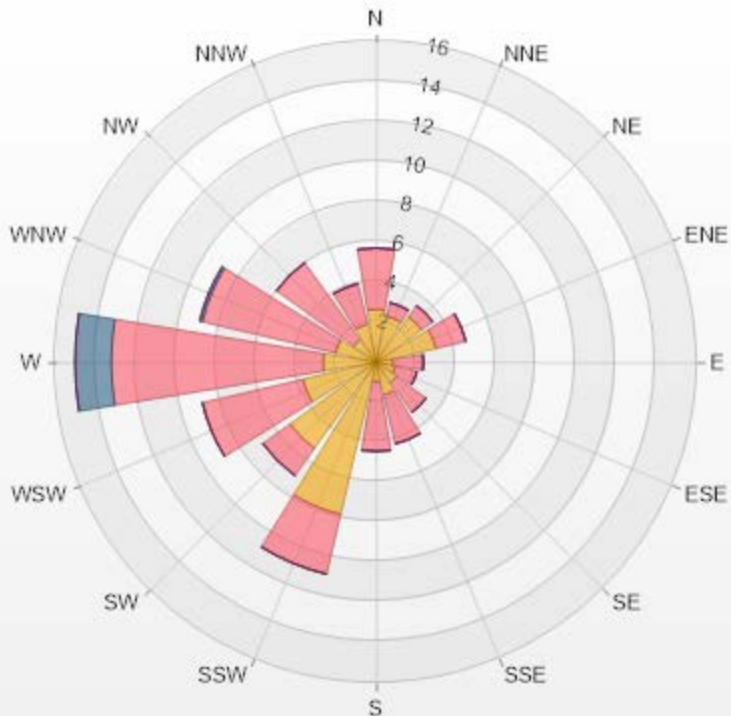
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for VWS - Tamarack Site



Wind: Tamarack Monitor: WDS [kph] Monthly: 06-2021 Type: WindRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 6.25% 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	2.64	3.06	0	0	0	5.7
NNE	2.36	0.69	0	0	0	3.05
NE	2.78	0.69	0	0	0	3.47
ENE	3.06	1.53	0	0	0	4.59
E	0.83	1.53	0	0	0	2.36
ESE	0.97	1.11	0	0	0	2.08
SE	1.25	1.81	0	0	0	3.06
SSE	1.67	2.5	0	0	0	4.17
S	0.97	3.47	0	0	0	4.44
SSW	7.78	3.06	0	0	0	10.84
SW	5.28	1.67	0	0	0	6.95
WSW	3.75	5.14	0	0	0	8.89
W	2.64	10.56	1.81	0	0	15.01
WNW	2.08	6.81	0.14	0	0	9.03
NW	1.39	4.72	0	0	0	6.11
NNW	1.94	2.08	0	0	0	4.02
Summary	41.39	50.43	1.95	0	0	93.77



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% Icon Classes (kph)

41

1.8-6.0

50

6.0-15.0

2

15.0-29.0

0

29.0-39.0

0

>39.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - June 2021

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average:	264 (W) degree	Hours in Service:	720
		Hours of Data:	720
		Hours of Missing Data:	0
		Hours of Calibration:	0
		Operational Uptime:	100.0

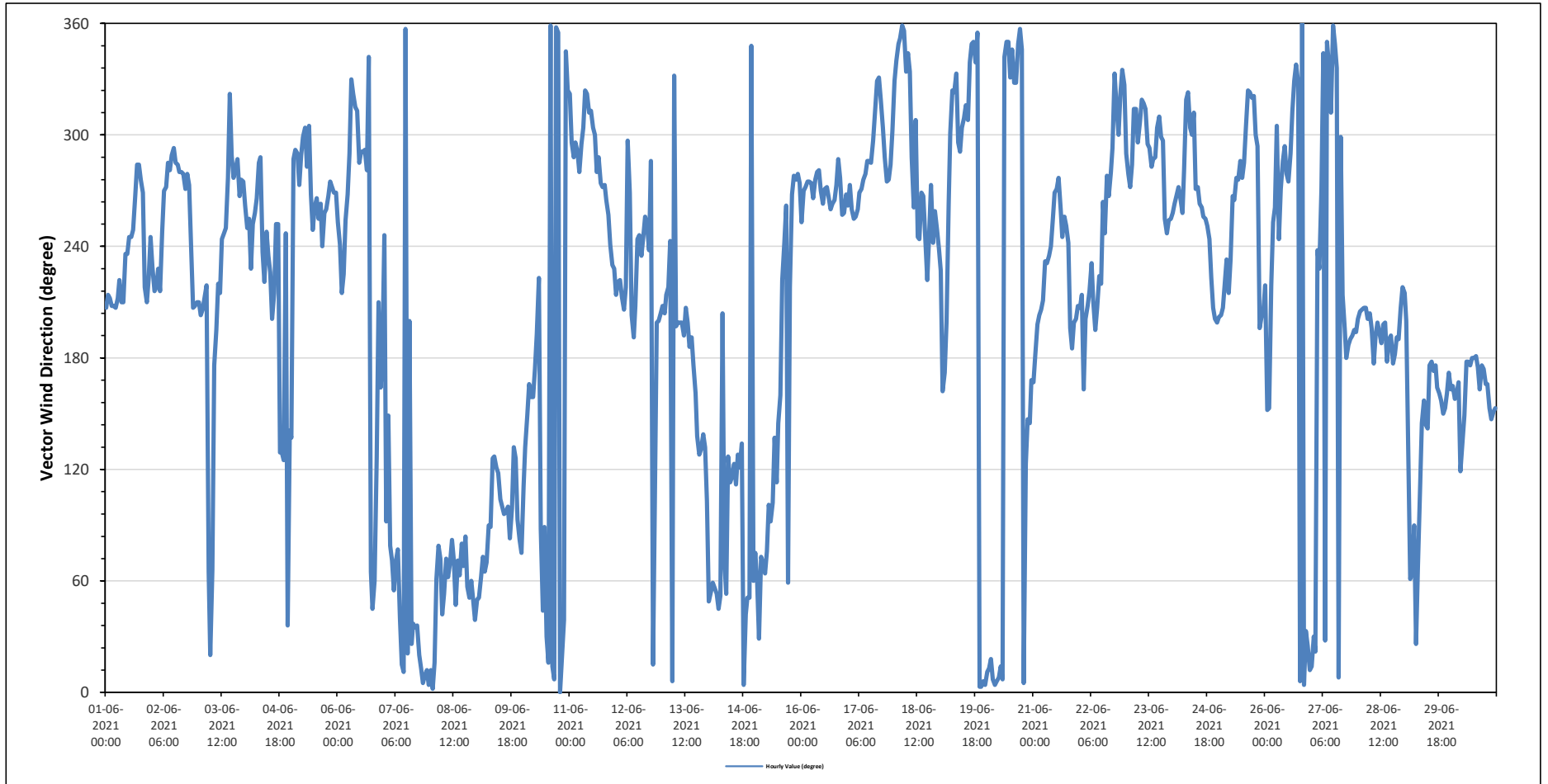
Day	Hourly Period Starting at (MST)																							Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant
Jun 1	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SSW	SSW	SW	SW	WSW	WSW	WSW	W	WNW	WNW	W	W	SW	SSW	SW	SSW	242	WSW
Jun 2	SW	SW	SW	SW	SW	WSW	W	W	WNW	W	WNW	WNW	WNW	WNW	W	W	W	W	W	W	WSW	SSW	SSW	SSW	271	W
Jun 3	SSW	SSW	SSW	SSW	SW	ENE	NNE	ENE	S	SSW	SW	SSW	WSW	WSW	W	NW	WNW	W	W	WNW	W	W	W	W	253	WSW
Jun 4	W	WSW	WSW	SW	WSW	WSW	W	WNW	WNW	SW	SW	WSW	SW	SW	SSW	SSW	WSW	WSW	SE	SE	SE	WSW	NE	SE	239	WSW
Jun 5	SE	WNW	WNW	WNW	W	WNW	WNW	WNW	W	WNW	W	WSW	W	W	WSW	W	WSW	WSW	WSW	W	W	W	W	W	268	W
Jun 6	WSW	WSW	SSW	SW	WSW	W	WNW	NNW	NW	NW	NW	WNW	WNW	WNW	W	NNW	ENE	NE	ENE	SE	SSW	SSE	S	292	WNW	
Jun 7	WSW	E	SSE	ENE	ENE	NE	ENE	ENE	NE	NNE	NNE	N	NNE	SSW	NNE	NE	NE	NNE	NNE	N	N	NNE	N	29	NNE	
Jun 8	NNE	N	NNE	ENE	ENE	ENE	NE	NE	ENE	ENE	ENE	E	ENE	NE	ENE	ENE	E	ENE	E	ENE	NE	ENE	NE	NE	60	ENE
Jun 9	NE	NE	ENE	ENE	ENE	ENE	E	E	SE	SE	ESE	ESE	ESE	E	E	E	E	E	SE	SE	E	E	ENE	98	E	
Jun 10	ESE	SE	SSE	SSE	SSE	SSE	S	S	SW	E	NE	E	NNE	NNE	N	NNE	N	N	N	N	NNE	NE	NNW	NW	72	ENE
Jun 11	NW	WNW	WNW	WNW	WNW	W	WNW	WNW	NW	NW	NW	NW	WNW	WNW	W	WNW	W	W	W	W	WSW	WSW	SW	SW	290	WNW
Jun 12	SSW	SW	SW	SSW	SSW	SW	WNW	W	SSW	S	SSW	WSW	WSW	SW	WSW	WSW	SW	WNW	NNE	ESE	SSW	SSW	SSW	232	SW	
Jun 13	SSW	SSW	SSW	SW	WSW	N	NNW	SSW	SSW	SSW	SSW	S	SSW	SSW	S	S	SSE	SE	SE	SE	SE	SE	ESE	176	S	
Jun 14	NE	NE	ENE	NE	NE	NE	NE	SSW	ENE	NE	SE	ESE	ESE	ESE	ESE	SE	ESE	SE	N	NE	NE	NE	NNW	ENE	86	E
Jun 15	ENE	ENE	NNE	ENE	ENE	ENE	ENE	E	E	SE	ESE	ESE	SE	SSE	SW	WSW	W	ENE	SW	W	W	W	W	118	ESE	
Jun 16	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	WSW	W	W	W	WNW	W	WSW	WSW	W	271	W
Jun 17	W	W	WSW	WSW	WSW	WSW	W	W	W	W	WNW	WNW	WNW	WNW	NW	NNW	NNW	NW	WNW	WNW	W	W	WNW	WNW	280	W
Jun 18	NNW	NNW	NNW	N	N	N	NNW	NNW	NNW	WNW	W	NW	WSW	WSW	W	W	WSW	SW	WSW	W	WSW	WSW	WSW	291	WNW	
Jun 19	SW	SSE	S	SSW	W	WNW	NW	NW	NNW	WNW	WNW	WNW	NW	NW	NNW	NNW	N	NNW	N	N	N	N	N	330	NNW	
Jun 20	NNE	NNE	NNE	N	N	N	N	NNE	N	NNW	N	NNW	NNW	NNW	NNW	NNW	N	NNW	N	ENE	SE	SE	SSE	358	N	
Jun 21	SSE	S	SSW	SSW	SSW	SSW	SW	SW	SW	WSW	WSW	W	W	W	WSW	WSW	WSW	WSW	SSW	S	SSW	SSW	SSW	235	SW	
Jun 22	SSW	SSW	SSE	SSW	SSW	SW	SW	SSW	SSW	SSW	SSW	SW	SW	W	WSW	W	W	WNW	NNW	NW	WNW	NW	NNW	NW	266	W
Jun 23	WNW	W	W	WNW	NW	NW	WNW	NW	NW	NW	NW	WNW	WNW	W	WNW	WNW	WNW	NW	WNW	WNW	WSW	WSW	WSW	WSW	293	WNW
Jun 24	WSW	W	W	W	W	WSW	W	NW	NW	WNW	WNW	NW	W	W	W	WSW	WSW	WSW	WSW	SW	SSW	SSW	SSW	265	W	
Jun 25	SSW	SSW	SSW	SW	SW	SSW	SW	W	W	W	WNW	W	WNW	WNW	NW	NW	NW	NW	WNW	WNW	SSW	SSW	SSW	SSW	276	W
Jun 26	SW	SSE	SSE	SW	WSW	W	WNW	WSW	W	WNW	WNW	W	W	WNW	NW	NNW	NNW	NNW	N	N	N	NNE	NNE	NNE	310	NW
Jun 27	NNE	NNE	NNE	SW	SW	W	NNW	NNE	N	NNW	NW	N	NNW	NNW	N	WNW	SSW	SSW	S	S	S	S	SSW	SSW	259	WSW
Jun 28	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	SSW	SSW	S	SSW	SSW	S	S	S	S	S	S	S	SSW	SSW	194	SSW
Jun 29	SSW	SSW	SE	ENE	ENE	E	NNE	ENE	ESE	SE	SSE	SE	SE	S	S	S	S	SSE	SSE	SSE	SSE	SSE	SSE	S	158	SSE
Jun 30	SSE	SSE	SSE	SSE	SSE	ESE	SE	SSE	S	S	S	S	S	S	SSE	S	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	167	SSE

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 VWD - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - June 2021

Summary of Hourly Averages

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

WIND SPEED																												
Maximum Hourly Value:		21.5 kph on June 16 at hour 19										Hours in Service:		720														
Maximum Daily Value:		13.9 kph on June 16										Hours of Data:		720														
Minimum Hourly Value:		0.1 kph on June 27 at hour 2										Hours of Missing Data:		0														
Minimum Daily Value:		1.0 kph on June 27										Hours of Calibration:		0														
Monthly Average:		2.8 kph										Operational Uptime:		100														
WIND DIRECTION																												
Monthly Average:		264 (W) 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				
Jun 1	3.9	3.5	4.1	4.5	4.8	5.4	6.0	5.0	4.4	5.3	6.2	10.9	11.6	11.2	10.8	11.8	12.4	10.5	9.7	5.3	4.0	4.1	3.4	3.8	3.4	12.4	6.0	
	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SSW	SSW	SW	SW	WSW	WSW	WSW	W	WNW	WNW	W	W	SW	SSW	SW	WSW				
Jun 2	3.4	4.0	4.5	3.4	4.5	3.8	6.1	8.8	11.5	13.0	12.9	13.5	10.3	13.2	13.3	13.4	13.0	12.4	11.3	7.1	3.8	3.3	3.3	4.5	3.3	13.5	7.5	
	SW	SW	SW	SW	SW	WSW	W	W	WNW	W	WNW	WNW	WNW	WNW	W	W	W	W	W	W	WSW	SSW	SSW	SSW				
Jun 3	4.0	2.1	0.3	2.0	0.4	0.2	2.0	2.0	8.8	11.4	8.7	8.9	8.3	8.6	10.6	9.6	8.5	10.8	12.5	9.8	3.8	4.9	7.0	6.3	0.2	12.5	4.7	
	SSW	SSW	SSW	SSW	SW	ENE	NNE	ENE	S	SSW	SW	SSW	WSW	WSW	WSW	W	NW	WNW	W	W	WNW	W	W	W				
Jun 4	5.4	4.4	3.4	2.8	2.4	1.9	4.4	4.8	6.8	6.9	8.5	5.1	6.9	9.2	5.5	5.3	6.0	6.2	2.6	4.4	0.9	1.6	1.2	1.5	0.9	9.2	3.6	
	W	WSW	WSW	SW	WSW	WSW	W	WNW	WNW	SW	SW	WSW	SW	SW	SSW	SSW	WSW	WSW	SE	SE	SE	WSW	NE	SE				
Jun 5	1.7	1.8	1.6	2.6	5.1	3.2	3.9	4.5	5.4	6.2	4.9	7.7	7.8	7.9	7.9	9.5	9.7	9.2	8.9	9.4	7.1	7.3	6.4	7.4	1.6	9.7	5.8	
	SE	WNW	WNW	WNW	W	WNW	WNW	WNW	W	WNW	W	WSW	W	W	WSW	W	WSW	WSW	WSW	WSW	W	W	W	W	W			
Jun 6	5.7	5.0	3.6	4.2	4.8	5.9	6.9	4.8	6.4	7.3	7.6	8.4	9.0	5.0	1.8	10.7	4.0	7.1	4.7	3.8	1.9	0.7	1.2	1.1	0.7	10.7	3.1	
	WSW	WSW	SSW	SW	WSW	W	WNW	NNW	NW	NW	NW	WNW	WNW	WNW	NNW	W	NNW	ENE	NE	ENE	SE	SSW	SSE	S				
Jun 7	0.4	0.8	1.0	2.9	1.9	2.2	3.4	6.2	6.5	2.3	4.4	5.7	6.9	1.0	5.4	5.9	8.1	7.1	7.8	8.3	6.5	5.2	3.0	3.5	0.4	8.3	3.9	
	WSW	E	SSE	ENE	ENE	NE	ENE	NE	NNE	NNE	N	NNE	SSW	NNE	NE	NE	NE	NE	NNE	NNE	N	N	NNE	N				
Jun 8	3.9	4.5	2.8	1.8	2.5	3.6	5.0	6.8	6.0	6.2	5.6	6.2	5.9	6.1	6.0	6.9	6.2	5.8	4.7	4.6	3.7	3.8	2.9	1.5	1.5	6.9	4.4	
	NNE	N	NNE	ENE	ENE	NE	ENE	NE	ENE	ENE	ENE	E	ENE	NE	ENE	ENE	E	ENE	E	ENE	NE	ENE	NE	NE				
Jun 9	3.0	3.4	3.3	1.9	2.3	1.7	4.7	6.8	6.3	6.2	5.9	8.6	7.8	8.5	7.4	8.3	7.0	4.4	5.2	6.7	4.0	6.5	9.3	8.1	1.7	9.3	5.4	
	NE	NE	ENE	ENE	ENE	ENE	E	E	SE	SE	ESE	ESE	ESE	E	E	E	E	E	E	SE	SE	E	E	ENE				
Jun 10	8.0	7.9	8.3	7.0	4.8	5.2	7.0	4.9	2.5	1.3	5.7	1.4	0.6	4.9	3.0	4.7	4.7	4.2	7.8	6.7	5.9	5.2	2.5	4.1	0.6	8.3	1.4	
	ESE	SE	SSE	SSE	SSE	SSE	S	S	SW	E	NE	E	NNE	NNE	N	NNE	N	N	N	N	N	NNE	NE	NNW				
Jun 11	4.4	7.4	9.1	9.9	11.3	8.9	9.3	10.1	9.4	9.6	11.3	9.5	10.4	11.0	12.1	10.5	10.6	11.7	10.6	8.8	6.2	4.0	4.1	3.8	3.8	12.1	8.3	
	NW	WNW	WNW	WNW	WNW	W	WNW	WNW	NW	NW	NW	NW	WNW	WNW	W	WNW	W	W	W	W	WSW	WSW	SW	SW				
Jun 12	4.3	4.4	3.5	4.0	4.2	3.4	1.9	1.9	4.4	7.5	10.5	9.6	7.6	8.0	7.8	9.6	9.5	8.2	6.2	2.3	0.2	2.8	2.6	3.3	0.2	10.5	4.6	
	SSW	SW	SW	SSW	SW	WNW	W	SSW	S	SSW	WSW	WSW	SW	WSW	WSW	WSW	SW	WNW	NNE	ESE	SSW	SSW	SSW	SSW				
Jun 13	3.2	2.2	3.5	2.3	0.2	0.5	0.5	2.7	5.1	6.5	8.6	9.2	8.2	9.7	8.7	9.6	10.6	10.5	8.0	6.7	6.0	6.5	5.9	4.3	0.2	10.6	4.9	
	SSW	SSW	SSW	SW	WSW	N	NNW	SSW	SSW	SSW	S	SSW	SSW	S	S	S	SSE	SE	SE	SE	SE	SE	SE	ESE				
Jun 14	1.9	3.3	2.9	3.2	3.0	2.4	3.1	4.1	2.4	3.6	12.9	9.1	10.6	3.0	5.4	9.4	6.7	1.6	5.0	5.5	2.7	2.2	8.8	6.4	1.6	12.9	3.4	
	NE	NE	ENE	NE	NE	NE	NE	SSW	ENE	NE	SE	ESE	ESE	ESE	ESE	SE	ESE	SE	N	NE	NE	NE	NNW	ENE				
Jun 15	5.2	7.1	8.1	10.4	8.6	7.5	5.5	6.8	7.6	9.6	8.7	11.9	10.0	9.0	4.7	5.3	3.5	2.6	5.9	10.0	12.4	15.1	11.9	9.4	2.6	15.1	1.1	
	ENE	ENE	NNE	ENE	ENE	ENE	E	E	E	SE	ESE	SE	SSE	SW	WSW	W	ENE	SW	W	W	W	W	W	W				
Jun 16	7.4	9.5	10.8	11.4	10.4	11.9	12.4	14.4	16.0	16.2	15.5	15.5	18.4	18.7	19.1	15.2	14.4	12.5	15.2	21.5	14.3	9.3	12.6	15.2	7.4	21.5	13.9	
	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	WSW	W	W	W	W	WNW	W	WSW	WSW	W			
Jun 17	15.0	15.4	14.3	13.9	12.5	11.6	12.1	12.5	13.2	13.0	12.4	11.3	10.9	8.5	7.6	7.5	7.7	6.3	7.4	8.3	8.5	9.3	8.0	6.3	6.3	15.4	9.9	
	W	W	WSW	WSW	WSW	WSW	W	W	W	W	WNW	WNW	WNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW				
Jun 18	4.7	4.9	4.4	3.6	5.0	4.7	4.5	5.0	3.3	2.5	2.9	3.1	4.0	3.5	5.3	6.7	5.7	4.7	6.4	5.3	2.5	2.6	1.9	1.9	1.9	6.7	2.9	
	NNW	NNW	NNW	N	N	N	NNW	NNW	NNW	NNW	W	NW	WSW	WSW	W	W	WSW	SW	WSW	W	WSW	WSW	WSW	WSW				
Jun 19	0.8	1.0	0.9	3.5	1.7	3.5	3.8	4.3	4.4	6.7	9.0	7.3	8.7	8.4	8.4	8.6	11.8	8.0	6.4	8.1	6.9	7.8	7.3	6.5	0.8	11.8	5.0	
	SW	SSE	S	SSW	W	WNW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	N	N	N	N				
Jun 20	6.5	4.7	5.4	4.5	5.6	7.3	8.8	11.2	10.1	8.0	10.0	8.6	8.6	8.6	7.5	7.9	7.7	7.6	5.6	4.1	2.9	4.4	2.9	4.8	2.9	11.2	5.4	
	NNE	NNE	NNE	N	N	N	N	NNE	N	NNW	N	N	NNW	NNW	NNW	NNW	NNW	NNW	N	NNW	N	ESE	SE	SSE				



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - June 2021

Summary of Hourly Averages

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

WIND SPEED																											
Maximum Hourly Value:	21.5	kph	on June 16 at hour 19	Hours in Service:	720																						
Maximum Daily Value:	13.9	kph	on June 16	Hours of Data:	720																						
Minimum Hourly Value:	0.1	kph	on June 27 at hour 2	Hours of Missing Data:	0																						
Minimum Daily Value:	1.0	kph	on June 27	Hours of Calibration:	0																						
Monthly Average:	2.8	kph		Operational Uptime:	100																						
WIND DIRECTION																											
Monthly Average:	264	(W)	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			
Jun 21	5.9	3.8	4.4	5.2	6.8	6.2	6.3	6.4	8.2	7.5	9.7	11.3	10.3	9.6	8.7	9.9	7.6	9.1	5.6	4.0	4.2	5.2	5.5	5.1	3.8	11.3	6.0
	SSE	S	SSW	SSW	SSW	SSW	SW	SW	SW	WSW	WSW	W	W	W	WSW	WSW	WSW	WSW	WSW	SSW	S	SSW	SSW	SSW			
Jun 22	5.2	2.4	1.9	4.0	5.2	3.3	2.8	3.5	8.3	7.5	6.4	5.2	7.3	8.4	15.4	9.7	14.5	14.7	7.7	4.1	8.4	10.0	6.7	5.4	1.9	15.4	5.0
	SSW	SSW	SSE	SSW	SSW	SW	SW	SSW	SSW	SSW	SW	SW	W	WSW	W	W	W	WNW	NNW	NW	WNW	NW	NNW	NW			
Jun 23	7.8	7.7	8.0	10.6	8.8	7.7	9.9	7.5	7.9	8.5	9.2	10.9	11.7	12.9	12.1	11.0	11.0	8.2	8.4	5.9	5.1	5.0	3.8	3.7	3.7	12.9	8.1
	WNW	W	W	WNW	NW	NW	WNW	NW	NW	NW	WNW	WNW	W	WNW	WNW	WNW	WNW	NW	WNW	WNW	WSW	WSW	WSW	WSW			
Jun 24	4.4	4.2	5.6	5.0	5.4	6.1	5.7	4.6	5.3	7.2	7.1	6.2	6.5	8.9	8.0	9.4	9.5	8.9	9.2	6.5	4.4	4.5	4.9	5.7	4.2	9.5	5.5
	WSW	W	W	W	W	WSW	W	NW	NW	WNW	WNW	NW	W	W	W	W	WSW	WSW	WSW	WSW	SW	SSW	SSW	SSW			
Jun 25	6.1	5.5	5.2	4.7	4.3	3.8	4.9	7.8	6.9	10.5	12.3	9.5	10.1	12.6	11.2	8.8	8.6	9.2	6.3	6.9	2.7	1.8	1.5	2.2	1.5	12.6	5.4
	SSW	SSW	SSW	SW	SW	SSW	SW	W	W	W	WNW	W	WNW	WNW	NW	NW	NW	NW	NW	WNW	WNW	SSW	SSW	SSW			
Jun 26	1.6	1.7	1.3	2.1	3.0	1.1	1.1	2.6	6.5	9.1	8.5	11.5	9.7	9.8	7.2	7.7	9.2	10.7	9.4	8.1	7.3	3.7	0.4	0.7	0.4	11.5	4.1
	SW	SSE	SSE	SW	WSW	W	WNW	WSW	W	WNW	WNW	W	W	WNW	NW	NNW	NNW	NNW	N	N	N	NNE	NNE	NNE			
Jun 27	2.7	2.8	0.1	1.5	2.2	2.1	1.8	3.4	2.6	4.5	5.2	6.1	5.4	5.1	4.0	2.4	5.6	8.2	6.1	5.7	4.7	4.9	5.2	5.2	0.1	8.2	1.0
	NNE	NNE	NNE	SW	SW	W	NNW	NNE	N	NNW	NW	N	NNW	NNW	N	WNW	SSW	SSW	S	S	S	S	SSW	SSW			
Jun 28	5.1	4.7	5.4	3.8	3.1	4.9	5.8	6.3	6.5	9.7	10.1	12.7	11.7	9.0	8.6	8.6	8.9	8.6	6.0	3.7	3.9	5.2	2.5	3.3	2.5	12.7	6.5
	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	SSW	SSW	S	SSW	SSW	S	S	S	S	S	S	S	SSW	SSW			
Jun 29	0.6	0.1	1.0	1.7	0.8	2.0	2.3	2.1	2.8	4.4	5.4	5.6	7.8	9.8	9.6	10.4	9.2	7.8	7.5	6.0	5.4	7.9	8.9	7.4	0.1	10.4	4.7
	SSW	SSW	SE	ENE	ENE	E	NNE	ENE	ESE	SE	SE	S	S	S	S	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	S			
Jun 30	6.0	7.7	5.2	5.7	4.0	3.2	5.4	5.9	8.1	9.9	11.3	13.1	13.8	14.0	12.4	13.3	12.4	9.1	8.3	7.0	6.1	7.5	9.0	9.6	3.2	14.0	8.4
	SSE	SSE	SSE	SSE	SSE	ESE	SE	SSE	S	S	S	S	S	S	S	SSE	S	SSE	SSE	SSE	SSE	SE	SSE	SSE			
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 - June 2021

Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

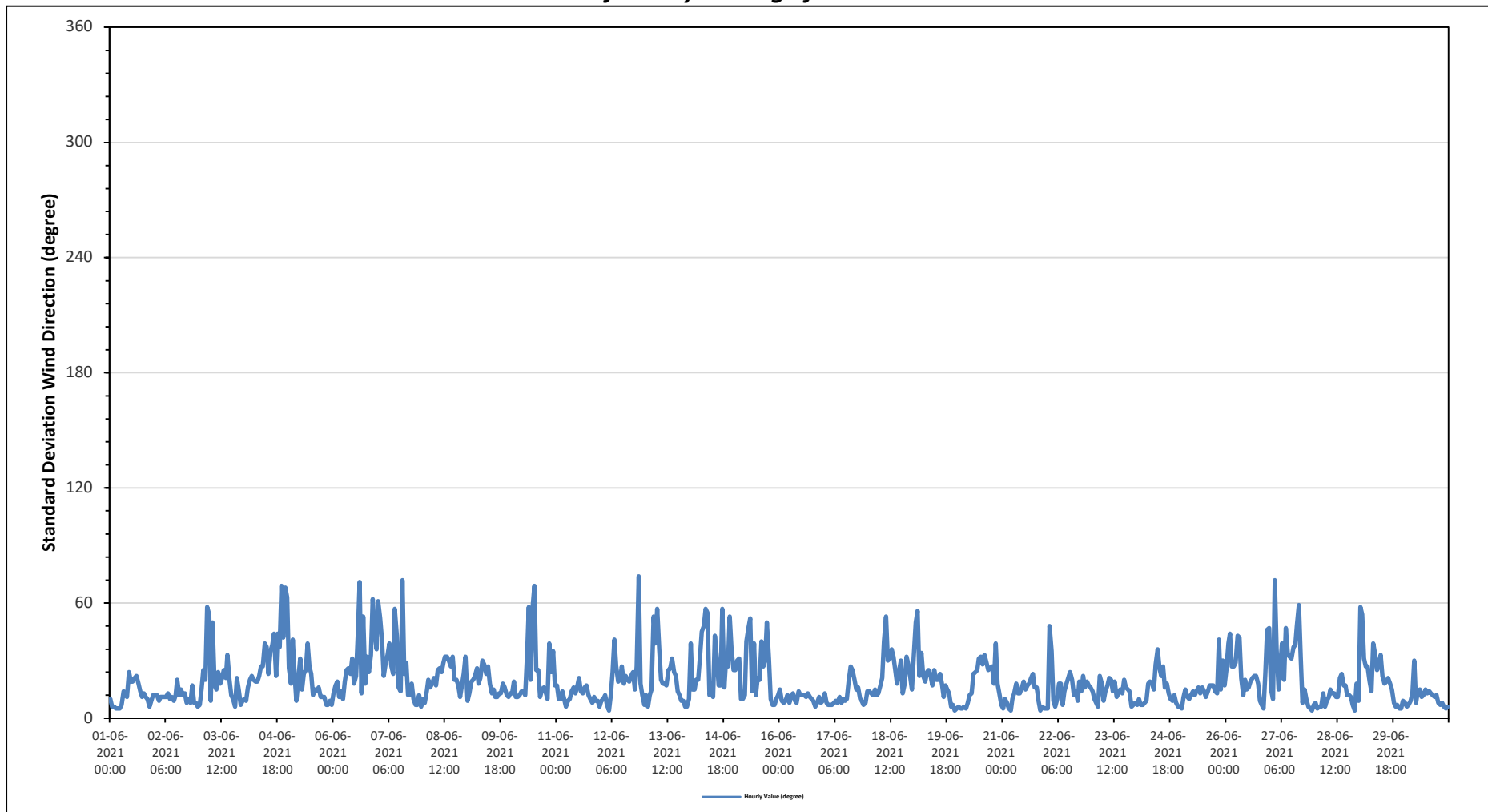
Maximum Hourly Value:	74 degree on June 12 at hour 20	Hours in Service:	720
Minimum Hourly Value:	4 degree on June 12 at hour 4	Hours of Data:	720
		Hours of Missing Data:	0
		Hours of Calibration:	0
		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			23	
Jun 1	10	6	6	5	5	5	7	14	12	11	24	19	19	21	22	18	14	11	13	11	10	6	9	12	5	24	
Jun 2	12	12	9	11	11	11	11	13	10	11	9	12	20	12	15	12	13	8	10	8	17	8	8	6	6	20	
Jun 3	7	15	25	20	58	54	9	50	17	15	24	18	21	25	21	33	20	12	10	6	21	15	7	9	6	58	
Jun 4	10	9	16	20	22	20	19	19	22	27	27	39	37	23	35	38	44	22	44	37	69	42	68	63	9	69	
Jun 5	26	18	41	23	9	19	31	15	23	25	39	27	23	12	15	14	16	11	11	11	7	7	9	7	7	41	
Jun 6	13	17	19	11	14	10	19	25	26	23	31	18	22	44	71	13	53	18	32	24	33	62	46	36	10	71	
Jun 7	61	52	41	22	29	33	39	27	23	57	43	16	14	72	23	29	12	12	18	10	7	7	12	6	6	72	
Jun 8	10	8	14	20	16	18	21	17	25	26	24	29	32	32	30	27	32	20	20	17	11	17	23	32	8	32	
Jun 9	9	13	19	20	22	26	18	21	30	28	23	27	18	13	15	11	11	13	13	18	16	12	11	13	9	30	
Jun 10	13	19	11	11	12	14	14	12	35	58	20	58	69	25	25	11	15	16	14	10	39	24	35	17	10	69	
Jun 11	17	10	10	14	10	6	9	10	14	16	13	17	21	14	13	16	17	12	10	8	11	9	9	6	6	21	
Jun 12	9	10	12	7	4	12	24	41	27	19	20	27	18	22	20	19	22	24	15	27	74	18	12	7	4	74	
Jun 13	12	6	12	15	53	39	57	36	20	18	18	17	25	26	31	24	22	14	12	9	9	6	6	10	6	57	
Jun 14	39	15	15	20	20	32	45	48	57	55	12	14	11	43	32	17	17	57	16	31	27	53	36	25	11	57	
Jun 15	25	30	31	10	10	12	40	47	52	14	39	12	21	20	40	27	30	50	31	10	7	7	10	12	7	52	
Jun 16	15	9	8	9	12	8	12	13	9	8	14	12	12	12	11	13	11	10	9	6	8	11	8	9	6	15	
Jun 17	13	8	7	7	7	8	9	8	11	8	10	9	10	19	27	25	20	15	16	10	9	7	8	14	7	27	
Jun 18	14	13	12	15	12	13	17	21	40	53	30	31	36	32	25	18	24	30	13	18	32	28	21	15	12	53	
Jun 19	32	50	56	22	34	22	19	24	25	22	17	25	20	20	23	18	11	17	15	13	6	7	4	5	4	56	
Jun 20	6	5	5	6	5	8	12	13	23	24	25	31	32	28	33	29	25	26	27	18	39	18	13	7	5	39	
Jun 21	5	10	8	5	4	10	13	18	13	13	16	19	15	17	18	21	23	16	16	9	4	6	5	5	4	23	
Jun 22	5	48	35	9	6	10	18	18	7	14	18	21	24	20	12	14	9	19	14	22	16	19	17	16	5	48	
Jun 23	14	10	8	6	22	18	9	14	17	21	20	14	19	11	13	15	13	20	16	15	14	6	7	8	6	22	
Jun 24	7	10	7	7	8	9	18	19	18	15	28	36	26	22	27	16	18	13	10	9	12	8	6	6	6	36	
Jun 25	5	11	15	11	10	12	14	12	14	16	13	16	14	11	14	17	17	14	13	41	15	30	17	5	41	41	
Jun 26	25	39	44	27	27	29	43	42	21	12	20	15	16	19	21	22	22	18	9	7	5	23	46	47	5	47	
Jun 27	15	10	72	36	15	26	39	20	47	33	32	31	37	38	48	59	32	8	15	10	6	5	4	7	4	72	
Jun 28	8	5	6	6	13	6	9	11	15	13	13	11	11	21	23	17	17	12	12	11	7	4	18	9	4	23	
Jun 29	58	54	31	27	27	19	14	39	33	25	28	33	22	18	19	21	18	15	8	6	7	5	5	9	5	58	
Jun 30	8	6	7	9	13	30	8	14	15	11	12	15	13	14	13	12	11	12	8	7	8	6	5	6	5	30	
Diurnal Minimum	5	5	5	5	4	5	7	8	7	8	9	9	10	11	11	11	9	8	8	6	4	4	4	4	5		
Dalurnal Maximum	61	54	72	36	58	54	57	50	57	58	43	58	69	72	71	59	53	57	44	37	74	62	68	63			

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

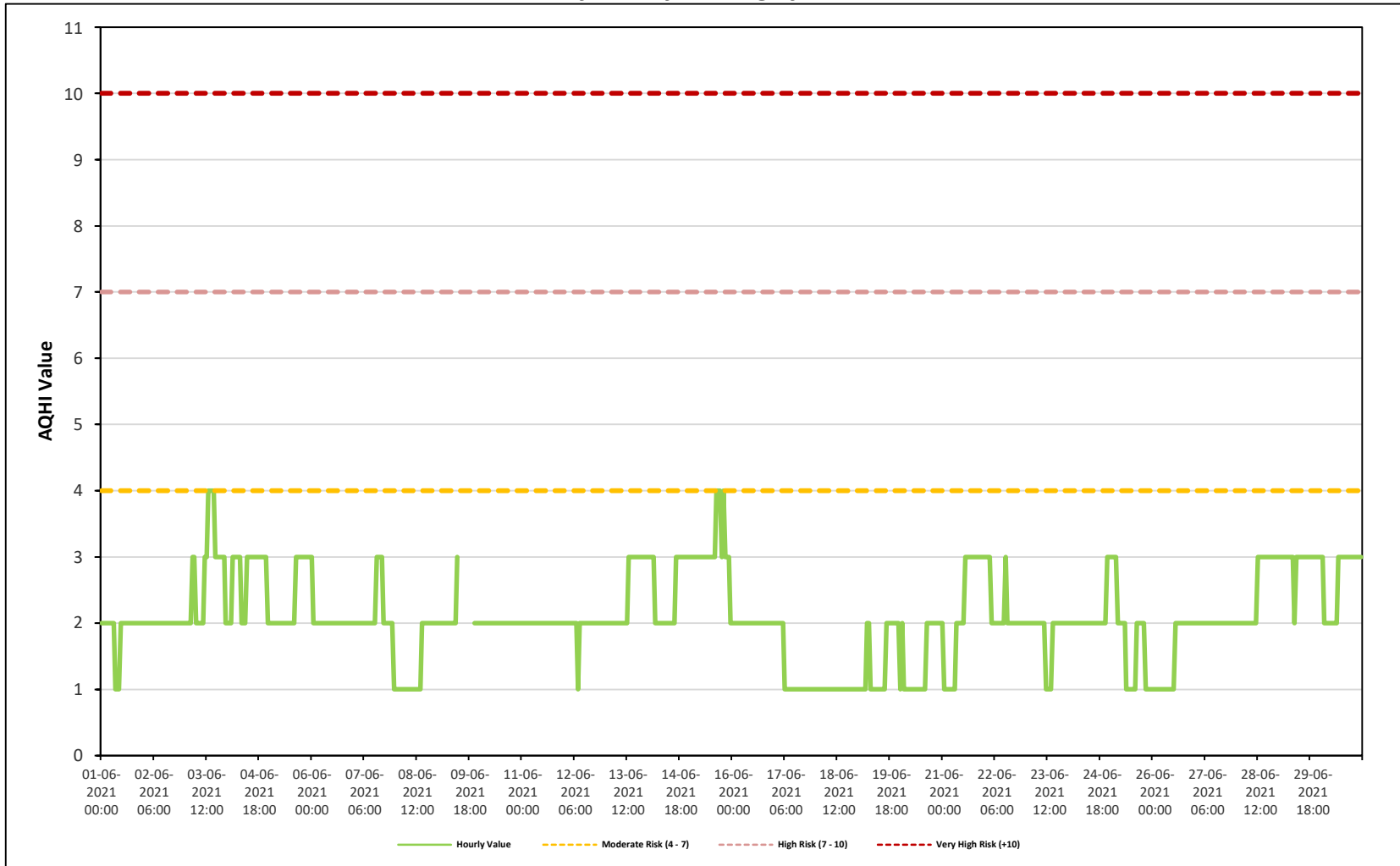
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for STDWD - Tamarack Site

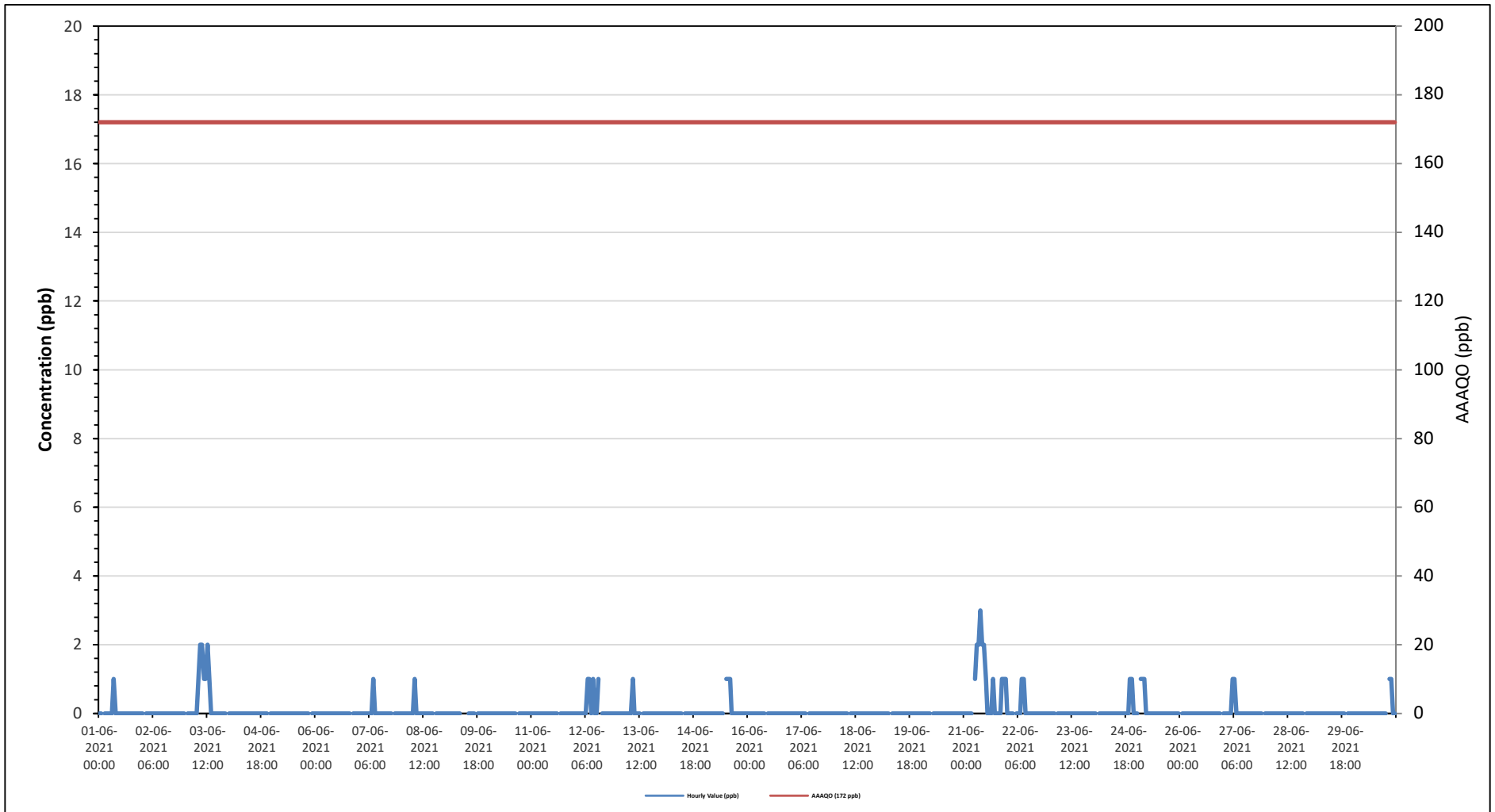


ST. LINA STATION

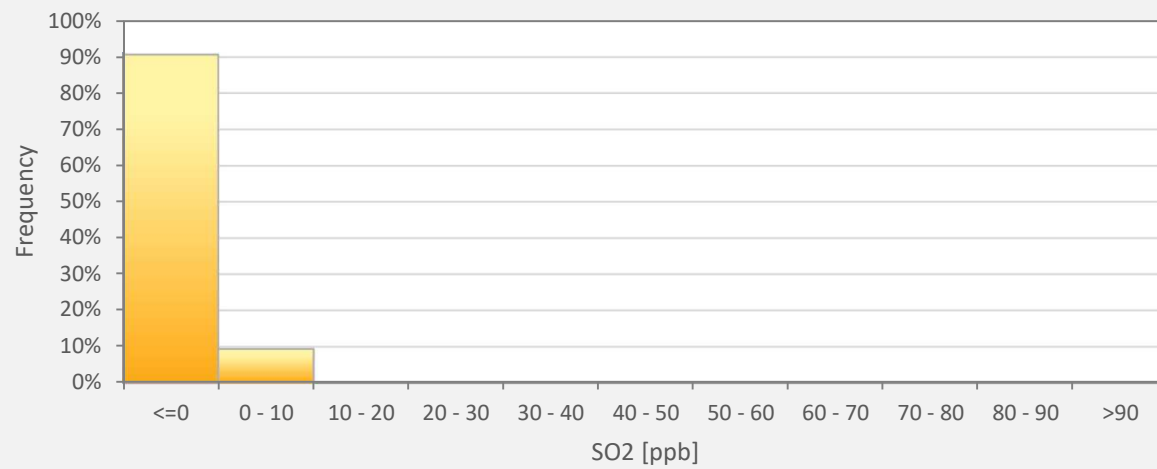
Timeseries Chart of Hourly Average for AQHI - St. Lina Site



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



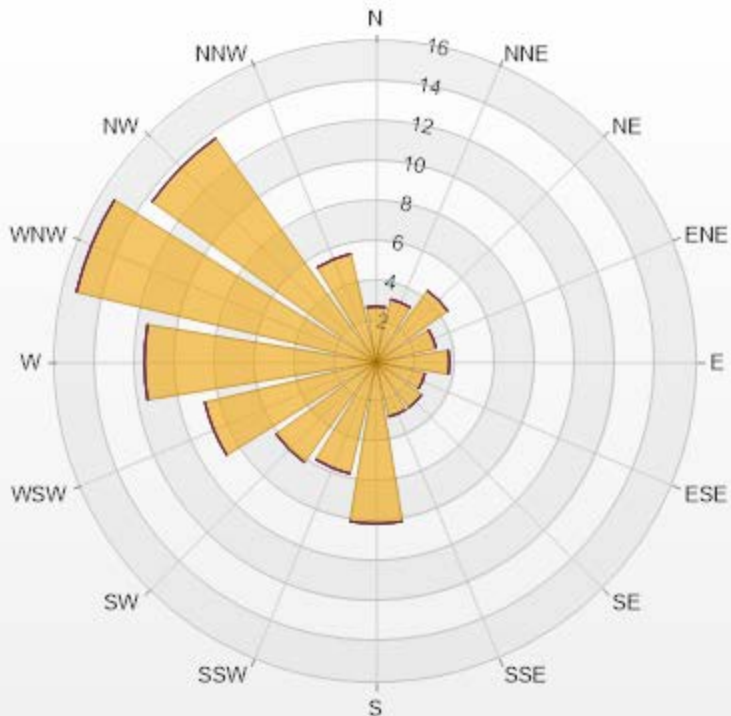
SO2[ppb] Histogram: St. Lina Monthly: 06-2021 1 Hr.



Classes	SO2
<=0	90.64%
0 - 10	9.36%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.00% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	2.78	0	0	0	0	2.78
NNE	3.22	0	0	0	0	3.22
NE	4.39	0	0	0	0	4.39
ENE	3.07	0	0	0	0	3.07
E	3.65	0	0	0	0	3.65
ESE	2.49	0	0	0	0	2.49
SE	2.78	0	0	0	0	2.78
SSE	2.78	0	0	0	0	2.78
S	8.04	0	0	0	0	8.04
SSW	5.7	0	0	0	0	5.7
SW	6.14	0	0	0	0	6.14
WSW	8.77	0	0	0	0	8.77
W	11.55	0	0	0	0	11.55
WNW	15.35	0	0	0	0	15.35
NW	13.74	0	0	0	0	13.74
NNW	5.56	0	0	0	0	5.56
Summary	100	0	0	0	0	100



LICA-202106

% Icon Classes (ppb)

100 0-10

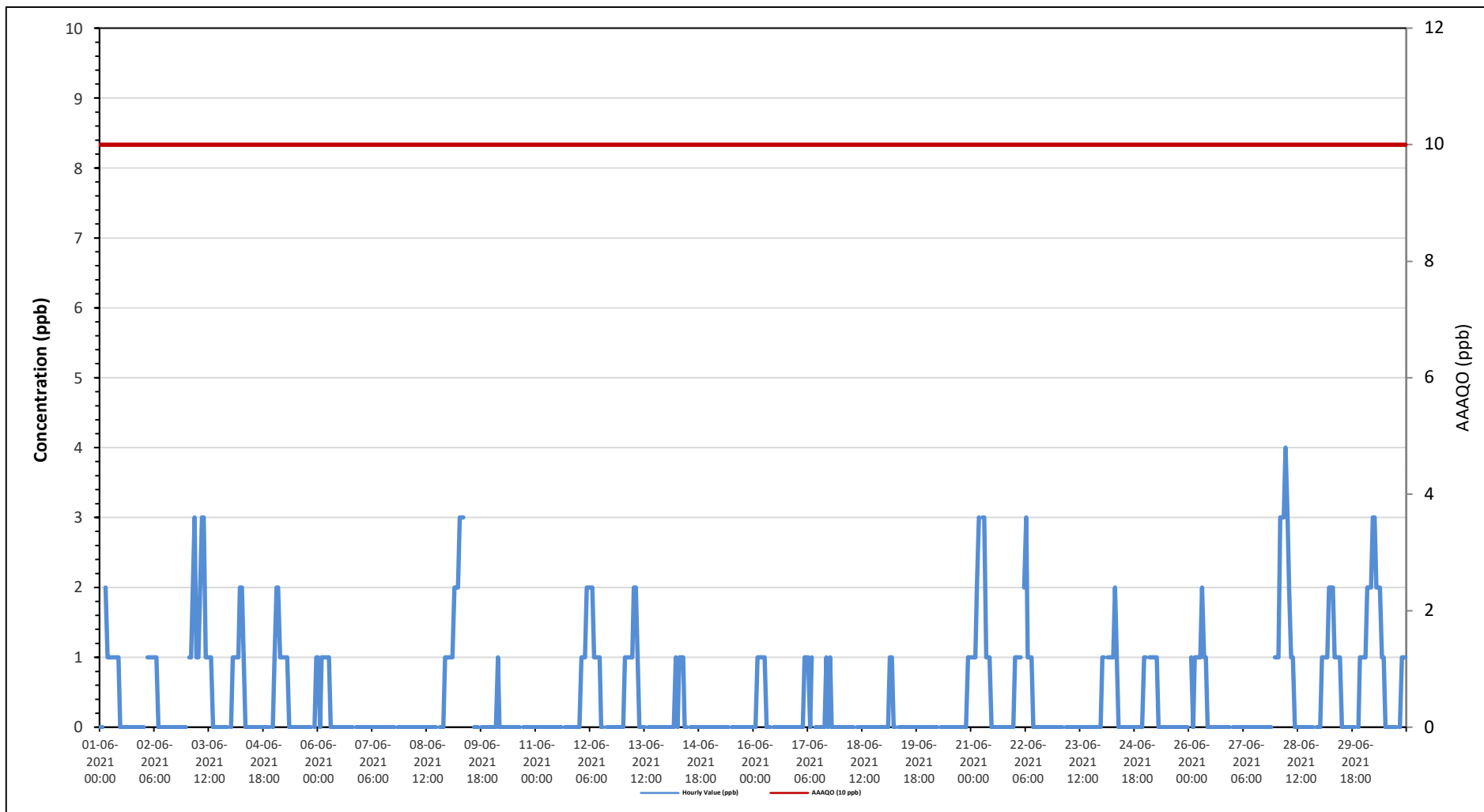
0 10-50

0 50-100

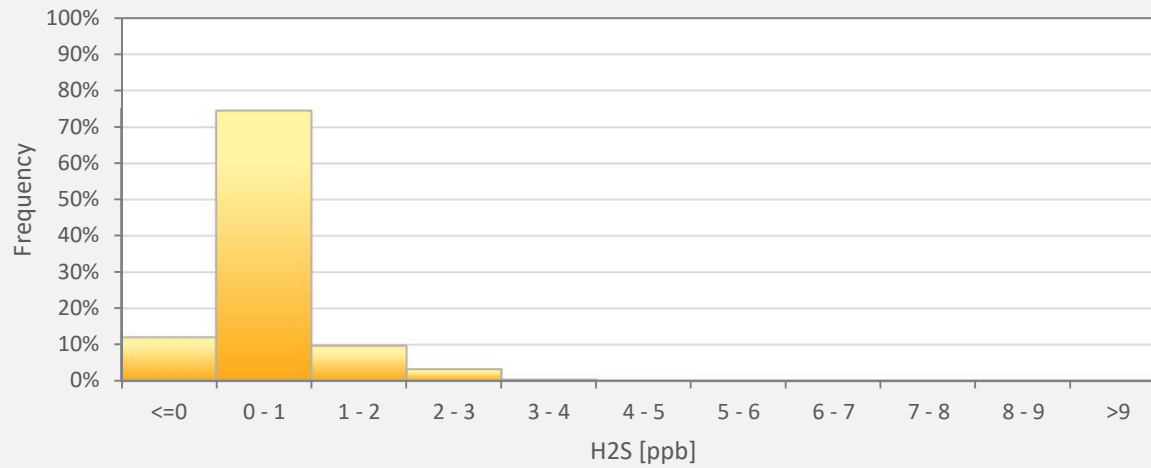
0 100-172

0 >172.0

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



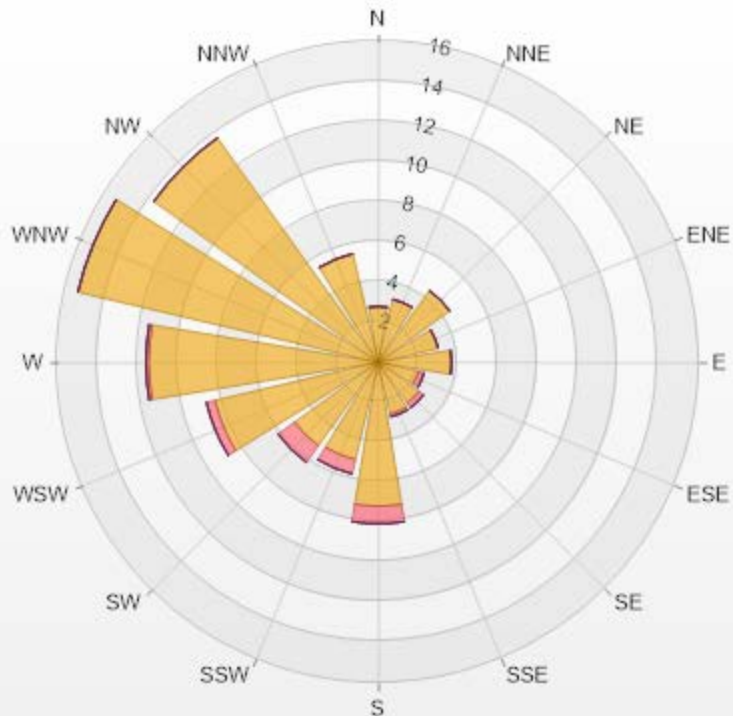
H2S[ppb] Histogram: St. Lina Monthly: 06-2021 1 Hr.



Classes	H2S
<=0	12.01%
0 - 1	74.52%
1 - 2	9.66%
2 - 3	3.22%
3 - 4	0.44%
4 - 5	0.15%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.86% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	2.78	0	0	0	0	2.78
NNE	3.22	0	0	0	0	3.22
NE	4.39	0	0	0	0	4.39
ENE	3.07	0	0	0	0	3.07
E	3.66	0	0	0	0	3.66
ESE	2.05	0.29	0	0	0	2.34
SE	2.49	0.29	0	0	0	2.78
SSE	2.64	0.15	0	0	0	2.79
S	7.17	0.88	0	0	0	8.05
SSW	4.98	0.73	0	0	0	5.71
SW	5.12	1.02	0	0	0	6.14
WSW	8.35	0.44	0	0	0	8.79
W	11.42	0.15	0	0	0	11.57
WNW	15.37	0	0	0	0	15.37
NW	13.76	0	0	0	0	13.76
NNW	5.56	0	0	0	0	5.56
Summary	96.03	3.95	0	0	0	100



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% Icon Classes (ppb)

96

0-2

4

2-5

5-10

0

10-50

0

>50.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - June 2021

Summary of Hourly Averages

OXIDES OF NITROGEN (NOx) in ppb

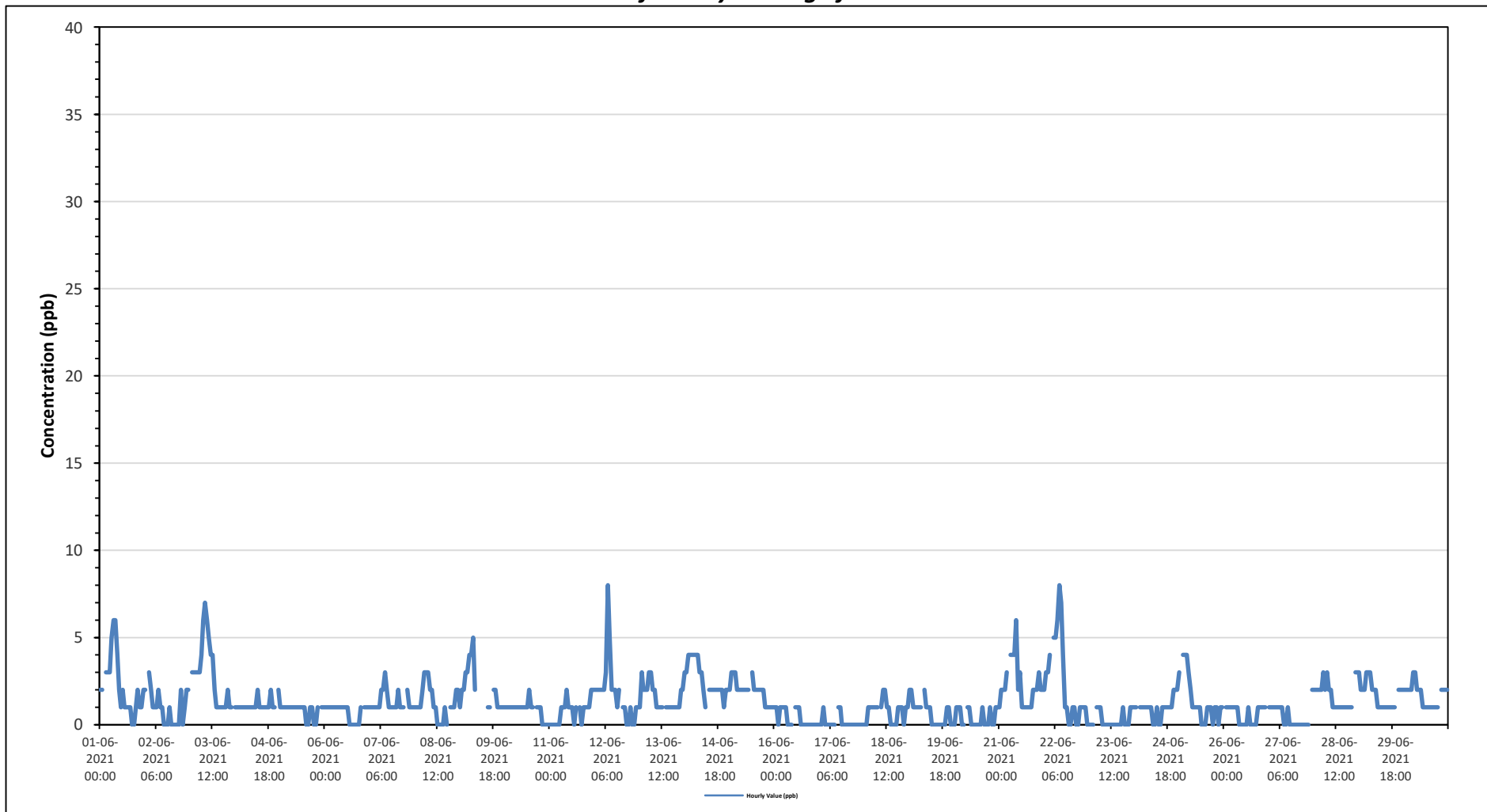
Maximum Hourly Value:	8 ppb on June 12 at hour 7	Hours in Service:	720
Maximum Daily Value:	2.9 ppb on June 3	Hours of Data:	682
Minimum Hourly Value:	0 ppb on June 1 at hour 17	Hours of Missing Data:	0
Minimum Daily Value:	0.1 ppb on June 17	Hours of Calibration:	38
Monthly Average:	1.3 ppb	Operational 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
Jun 1	2	2	S	3	3	3	5	6	6	4	2	1	2	1	1	1	0	0	1	2	1	1	2	0	6	2.2	
Jun 2	2	S	3	2	1	1	1	2	1	1	0	0	0	1	0	0	0	0	2	0	1	2	2	0	3	1.0	
Jun 3	S	3	3	3	3	3	4	6	7	6	5	4	4	2	1	1	1	1	1	2	1	1	S	2	1	7	2.9
Jun 4	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	2	1	1	S	2	1	2	1.1
Jun 5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	0	0	1	S	1	1	0	1	0.8
Jun 6	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	S	1	1	1	0	1	0.7
Jun 7	1	1	1	1	1	2	3	2	1	1	1	1	1	1	2	1	1	1	1	1	S	2	1	1	1	3	1.3
Jun 8	1	1	1	1	2	3	3	3	2	2	1	1	0	0	0	1	0	1	S	1	1	1	2	2	0	3	1.3
Jun 9	1	2	2	3	3	4	4	5	2	C	C	C	C	C	C	1	1	S	2	2	1	1	1	1	1	5	-
Jun 10	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	S	1	1	1	1	0	0	0	0	0	2	0.9
Jun 11	0	0	0	0	0	0	1	1	1	2	1	1	1	0	1	S	1	0	1	1	1	1	2	2	0	2	0.8
Jun 12	2	2	2	2	2	2	3	8	5	2	2	2	1	2	S	1	1	0	0	1	0	0	1	1	0	8	1.8
Jun 13	1	3	2	2	2	3	3	2	2	1	1	1	1	S	1	1	1	1	1	1	1	1	2	2	1	3	1.6
Jun 14	3	3	4	4	4	4	4	4	3	3	2	1	S	2	2	2	2	2	2	2	2	2	2	2	1	4	2.6
Jun 15	2	3	3	3	2	2	2	2	2	2	2	S	3	2	2	2	2	2	2	2	1	1	1	1	1	3	2.0
Jun 16	1	1	0	1	1	1	1	0	0	0	S	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.4
Jun 17	0	0	1	0	0	0	0	0	0	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jun 18	0	0	1	1	1	1	1	S	1	2	2	1	1	0	0	0	0	0	1	1	1	0	1	1	0	2	0.8
Jun 19	2	2	1	1	1	1	1	S	2	1	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0.7
Jun 20	0	1	1	1	0	0	S	1	1	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	1	0.4
Jun 21	1	2	2	2	3	S	4	4	4	6	2	3	1	1	1	1	1	1	2	2	2	3	2	2	1	6	2.3
Jun 22	2	3	3	4	S	5	5	6	8	7	4	1	1	0	0	0	1	0	0	1	1	1	1	0	0	8	2.4
Jun 23	0	0	0	S	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0.3
Jun 24	1	1	S	1	1	1	1	1	1	1	0	0	1	0	0	1	1	1	1	1	1	1	2	2	0	2	1.0
Jun 25	3	S	4	4	4	3	2	1	1	1	1	1	0	0	1	1	1	0	1	1	1	1	1	0	4	1.4	
Jun 26	S	1	1	1	1	1	1	1	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	0	1	0.6
Jun 27	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	S	2	0	2	0.5
Jun 28	2	2	2	2	2	3	2	3	2	2	1	1	1	1	1	1	1	1	1	1	1	S	3	3	1	3	1.7
Jun 29	3	2	2	2	3	3	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	S	2	2	1	3	1.7
Jun 30	2	2	2	2	2	3	3	2	2	2	1	1	1	1	1	1	1	1	1	1	S	2	2	2	1	3	1.7
Diurnal Maximum	3	3	4	4	4	5	5	8	8	7	5	4	4	2	2	2	2	2	2	2	2	3	3	3			
Daiurnal Average	1.3	1.5	1.6	1.8	1.7	1.9	2.1	2.3	2.1	1.9	1.3	1.0	0.9	0.8	0.5	0.7	0.7	0.6	0.7	1.0	0.9	0.9	1.3	1.3			

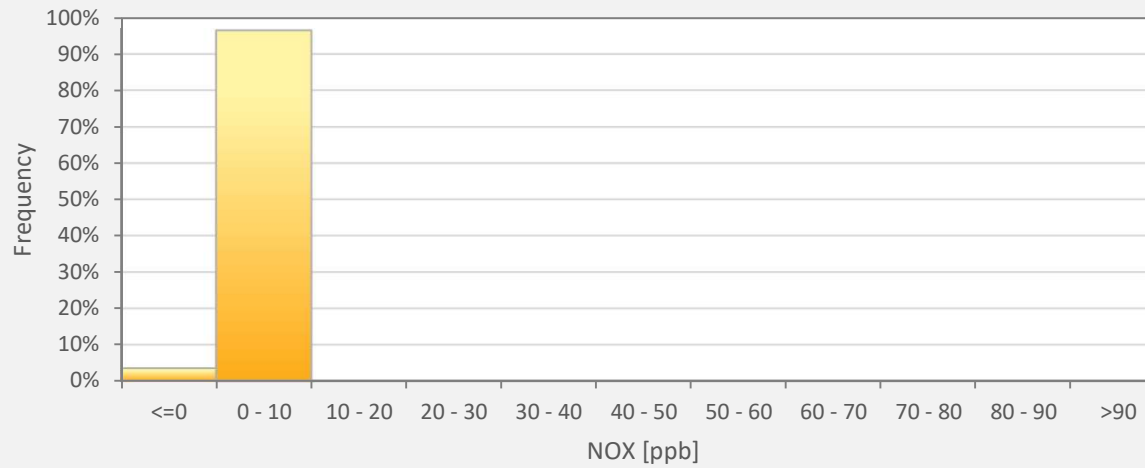
C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction /Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

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 NOx - St. Lina Site



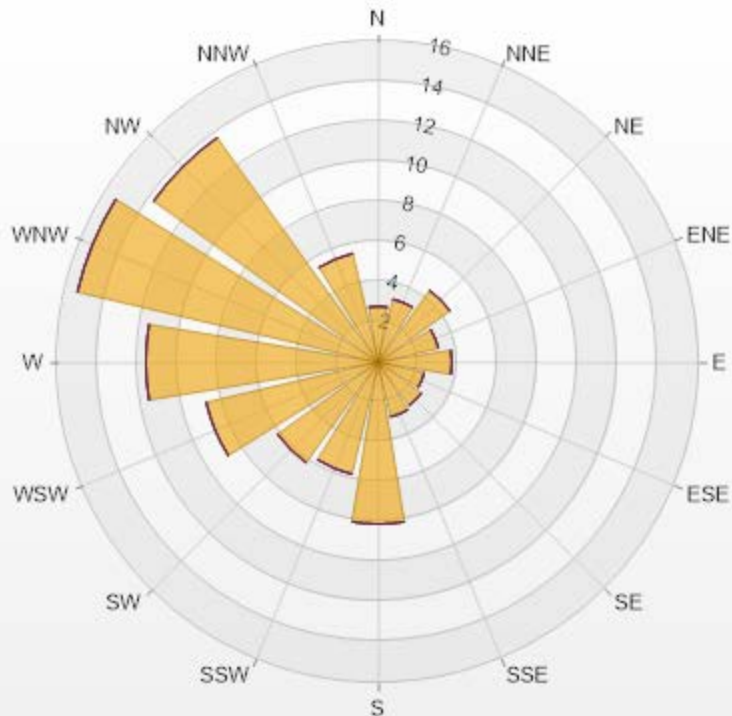
NOX[ppb] Histogram: St. Lina Monthly: 06-2021 1 Hr.



Classes	NOX
<=0	3.52%
0 - 10	96.48%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.72% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.79	0	0	0	0	2.79
NNE	3.23	0	0	0	0	3.23
NE	4.4	0	0	0	0	4.4
ENE	3.08	0	0	0	0	3.08
E	3.67	0	0	0	0	3.67
ESE	2.35	0	0	0	0	2.35
SE	2.64	0	0	0	0	2.64
SSE	2.79	0	0	0	0	2.79
S	8.06	0	0	0	0	8.06
SSW	5.72	0	0	0	0	5.72
SW	6.16	0	0	0	0	6.16
WSW	8.8	0	0	0	0	8.8
W	11.58	0	0	0	0	11.58
WNW	15.4	0	0	0	0	15.4
NW	13.78	0	0	0	0	13.78
NNW	5.57	0	0	0	0	5.57
Summary	100	0	0	0	0	100



LICA-202106

% Icon Classes (ppb)

100

0-30

0

30-50

0

50-76

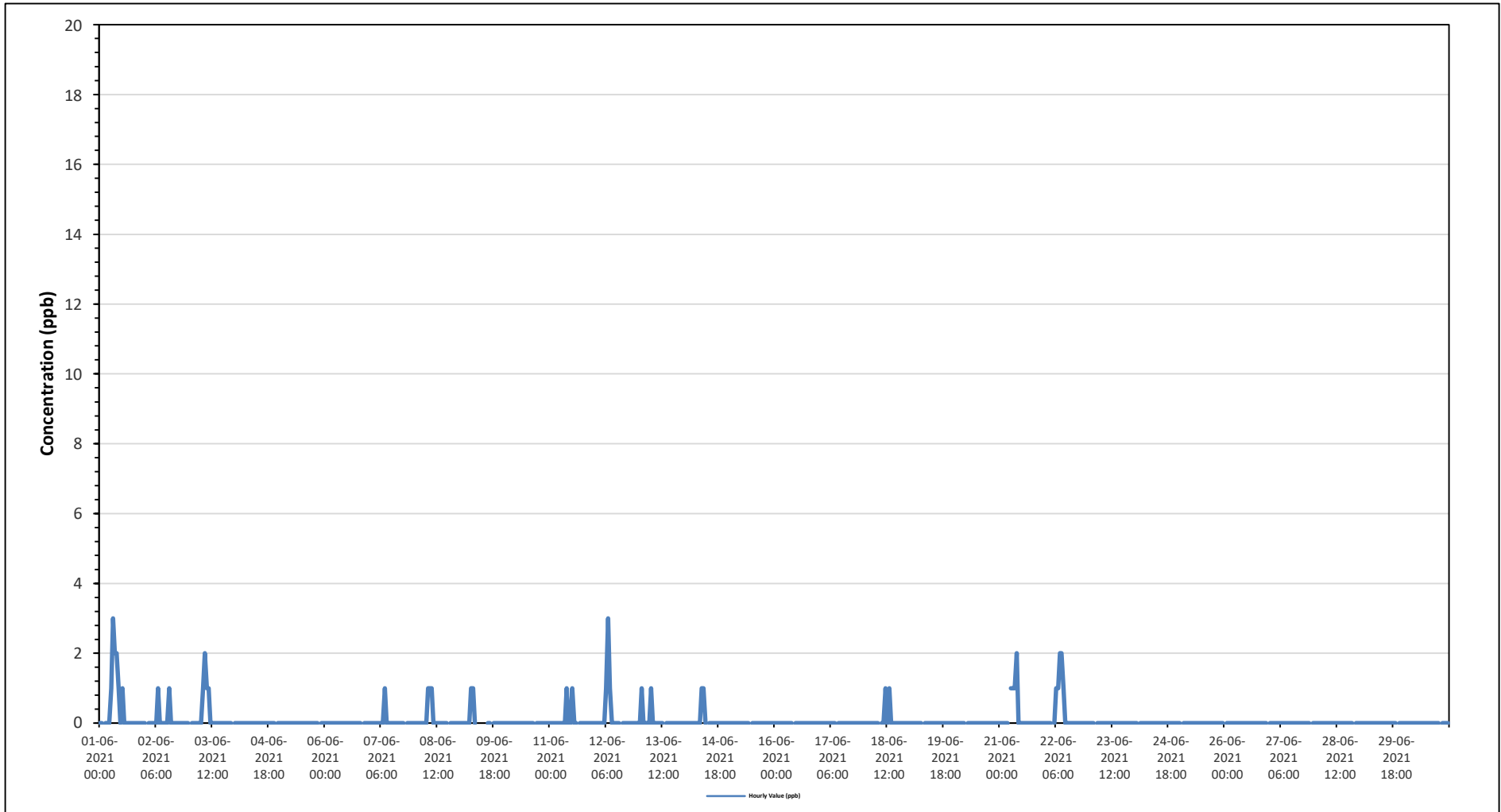
0

76-159

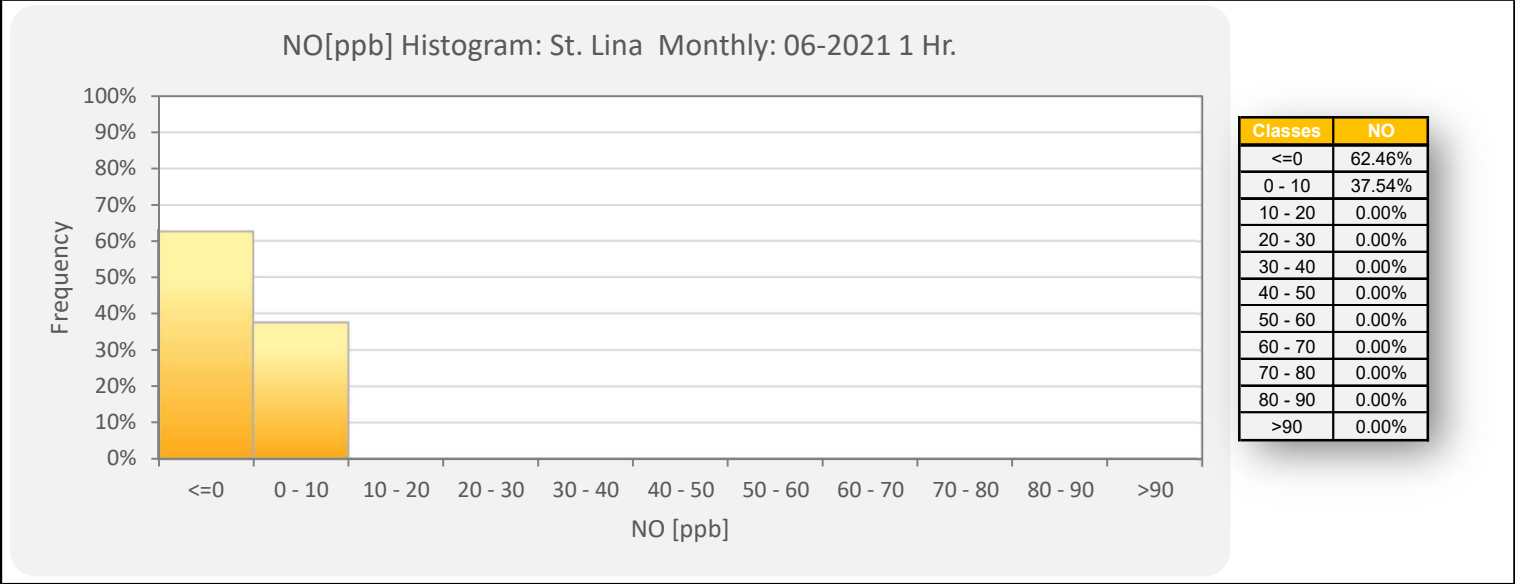
0

>159.0

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

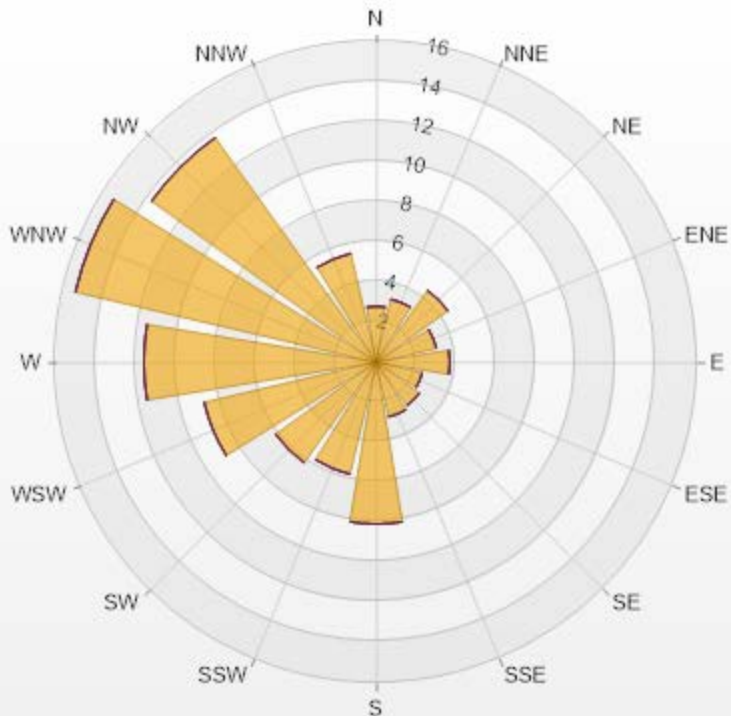


NO[ppb] Histogram: St. Lina Monthly: 06-2021 1 Hr.



Wind: St. Lina Poll.: St. Lina-NO[ppb] Monthly: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.72% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.79	0	0	0	0	2.79
NNE	3.23	0	0	0	0	3.23
NE	4.4	0	0	0	0	4.4
ENE	3.08	0	0	0	0	3.08
E	3.67	0	0	0	0	3.67
ESE	2.35	0	0	0	0	2.35
SE	2.64	0	0	0	0	2.64
SSE	2.79	0	0	0	0	2.79
S	8.06	0	0	0	0	8.06
SSW	5.72	0	0	0	0	5.72
SW	6.16	0	0	0	0	6.16
WSW	8.8	0	0	0	0	8.8
W	11.58	0	0	0	0	11.58
WNW	15.4	0	0	0	0	15.4
NW	13.78	0	0	0	0	13.78
NNW	5.57	0	0	0	0	5.57
Summary	100	0	0	0	0	100



LICA-202106

% Icon Classes (ppb)

100

0-30

0

30-50

0

50-76

0

76-159

0

>159.0



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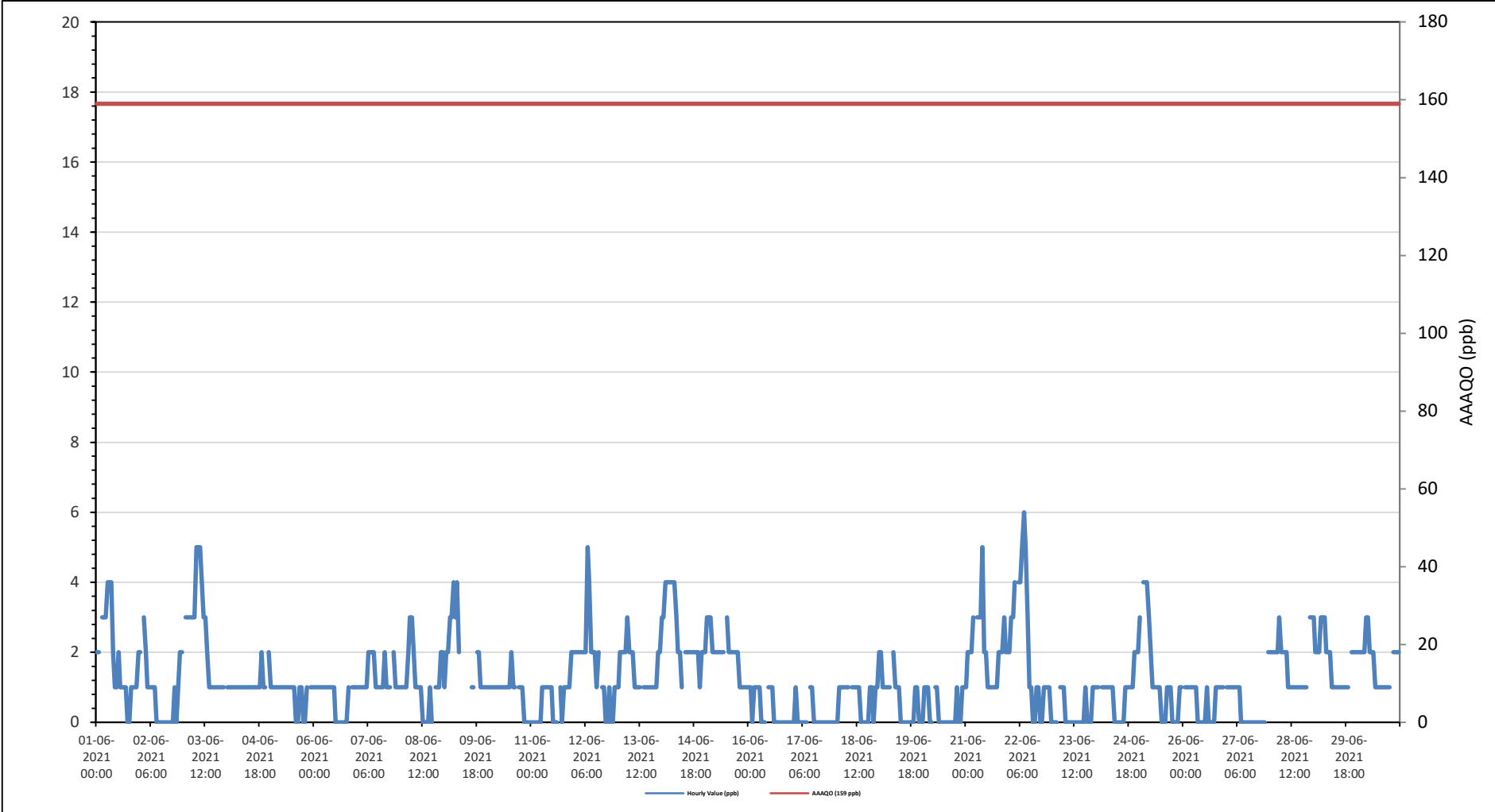
St. Lina Site - June 2021

Summary of Hourly Averages

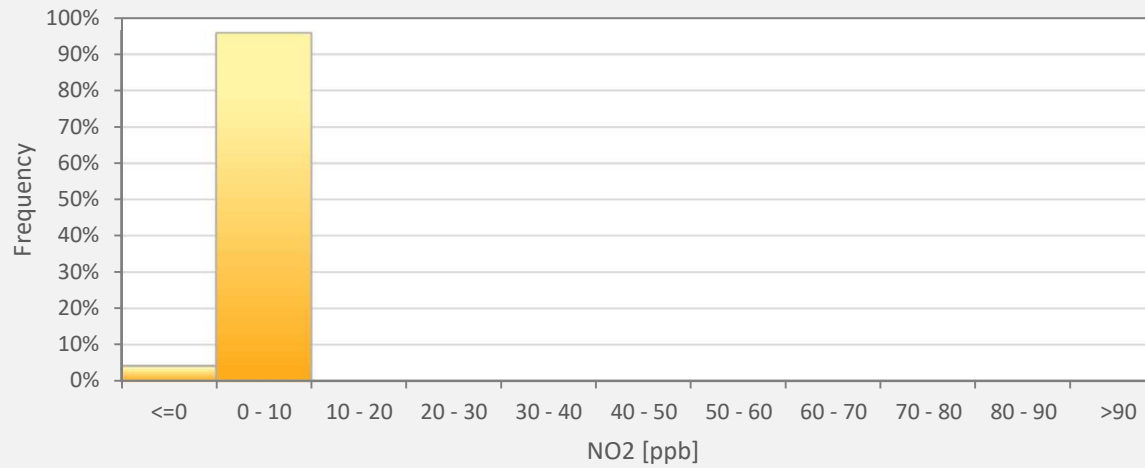
NITROGEN DIOXIDE (NO₂) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 159 ppb																											
Number of 1-Hour Exceedences: 0																											
Maximum Hourly Value: 6 ppb on June 22 at hour 8												Hours in Service: 720															
Maximum Daily Value: 2.6 ppb on June 14												Hours of Data: 682															
Minimum Hourly Value: 0 ppb on June 1 at hour 17												Hours of Missing Data: 0															
Minimum Daily Value: 0.1 ppb on June 17												Hours of Calibration: 38															
Monthly Average: 1.2 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			
Jun 1	2	2	S	3	3	3	4	4	4	2	1	1	2	1	1	1	0	0	1	1	1	1	1	2	0	4	1.8
Jun 2	2	S	3	2	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2	0	3	0.8
Jun 3	S	3	3	3	3	3	3	5	5	5	4	3	3	2	1	1	1	1	1	1	1	1	1	S	1	5	2.5
Jun 4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	S	2	1	2	1.1
Jun 5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	0	0	1	S	1	1	0	1	0.8
Jun 6	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	S	1	1	1	0	1	0.7
Jun 7	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	2	1	1	1	S	2	1	1	1	1	2	1.3
Jun 8	1	1	1	1	2	3	3	2	2	1	1	1	0	0	0	1	0	S	1	1	1	2	2	2	0	3	1.1
Jun 9	1	2	2	3	3	4	3	4	2	C	C	C	C	C	C	1	1	S	2	2	1	1	1	1	1	4	-
Jun 10	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	S	1	1	1	1	0	0	0	0	0	2	0.9
Jun 11	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	S	1	0	1	1	1	1	2	2	0	2	0.7
Jun 12	2	2	2	2	2	2	2	5	4	2	2	2	1	2	S	1	1	0	0	1	0	0	1	1	0	5	1.6
Jun 13	1	2	2	2	2	3	2	2	2	1	1	1	1	S	1	1	1	1	1	1	1	1	2	2	1	3	1.5
Jun 14	3	3	4	4	4	4	4	4	3	2	2	1	S	2	2	2	2	2	2	2	2	2	1	2	2	4	2.6
Jun 15	2	3	3	3	2	2	2	2	2	2	2	S	3	2	2	2	2	2	2	2	1	1	1	1	1	3	2.0
Jun 16	1	1	0	1	1	1	1	0	0	0	S	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0.4
Jun 17	0	0	1	0	0	0	0	0	0	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jun 18	0	0	1	1	1	1	1	1	S	1	1	1	1	1	0	0	0	0	0	0	1	1	0	1	1	1	0.7
Jun 19	2	2	1	1	1	1	1	S	2	1	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0.7
Jun 20	0	1	1	1	0	0	S	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	0.3
Jun 21	1	2	2	2	3	S	3	3	3	5	2	2	1	1	1	1	1	2	2	2	2	3	2	2	1	5	2.0
Jun 22	2	3	3	4	S	4	4	5	6	5	3	1	1	0	0	1	1	0	0	1	1	1	1	0	0	6	2.0
Jun 23	0	0	0	S	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0.3
Jun 24	1	1	S	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2	2	0	2	0.9
Jun 25	3	S	4	4	4	3	2	1	1	1	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	4	1.3
Jun 26	S	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	S	0	1	0.6
Jun 27	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	2	0	0.4
Jun 28	2	2	2	2	2	3	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	S	3	3	1	1.7
Jun 29	3	2	2	2	3	3	3	2	2	2	1	1	1	1	1	1	1	1	1	1	S	2	2	2	1	3	1.7
Jun 30	2	2	2	2	3	3	3	2	2	2	1	1	1	1	1	1	1	1	1	S	2	2	2	2	1	3	1.7
Diurnal Maximum	3	3	4	4	4	4	4	5	6	5	4	3	3	2	2	2	2	2	2	2	2	3	3	3			
Diurnal Average	1.3	1.5	1.6	1.8	1.7	1.8	1.9	1.9	1.8	1.5	1.1	0.9	0.8	0.8	0.5	0.7	0.7	0.6	0.7	0.9	0.8	0.9	1.3	1.3			
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 NO2 - St. Lina Site



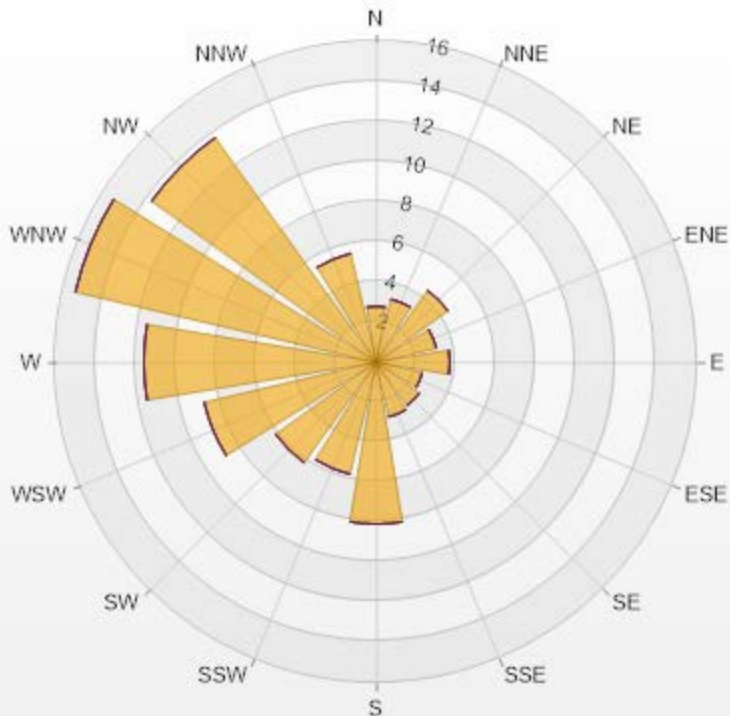
NO2[ppb] Histogram: St. Lina Monthly: 06-2021 1 Hr.



Classes	NO2
<=0	4.11%
0 - 10	95.89%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.72% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	2.79	0	0	0	0	2.79
NNE	3.23	0	0	0	0	3.23
NE	4.4	0	0	0	0	4.4
ENE	3.08	0	0	0	0	3.08
E	3.67	0	0	0	0	3.67
ESE	2.35	0	0	0	0	2.35
SE	2.64	0	0	0	0	2.64
SSE	2.79	0	0	0	0	2.79
S	8.06	0	0	0	0	8.06
SSW	5.72	0	0	0	0	5.72
SW	6.16	0	0	0	0	6.16
WSW	8.8	0	0	0	0	8.8
W	11.58	0	0	0	0	11.58
WNW	15.4	0	0	0	0	15.4
NW	13.78	0	0	0	0	13.78
NNW	5.57	0	0	0	0	5.57
Summary	100	0	0	0	0	100



LICA-202106

% 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

St. Lina Site - June 2021

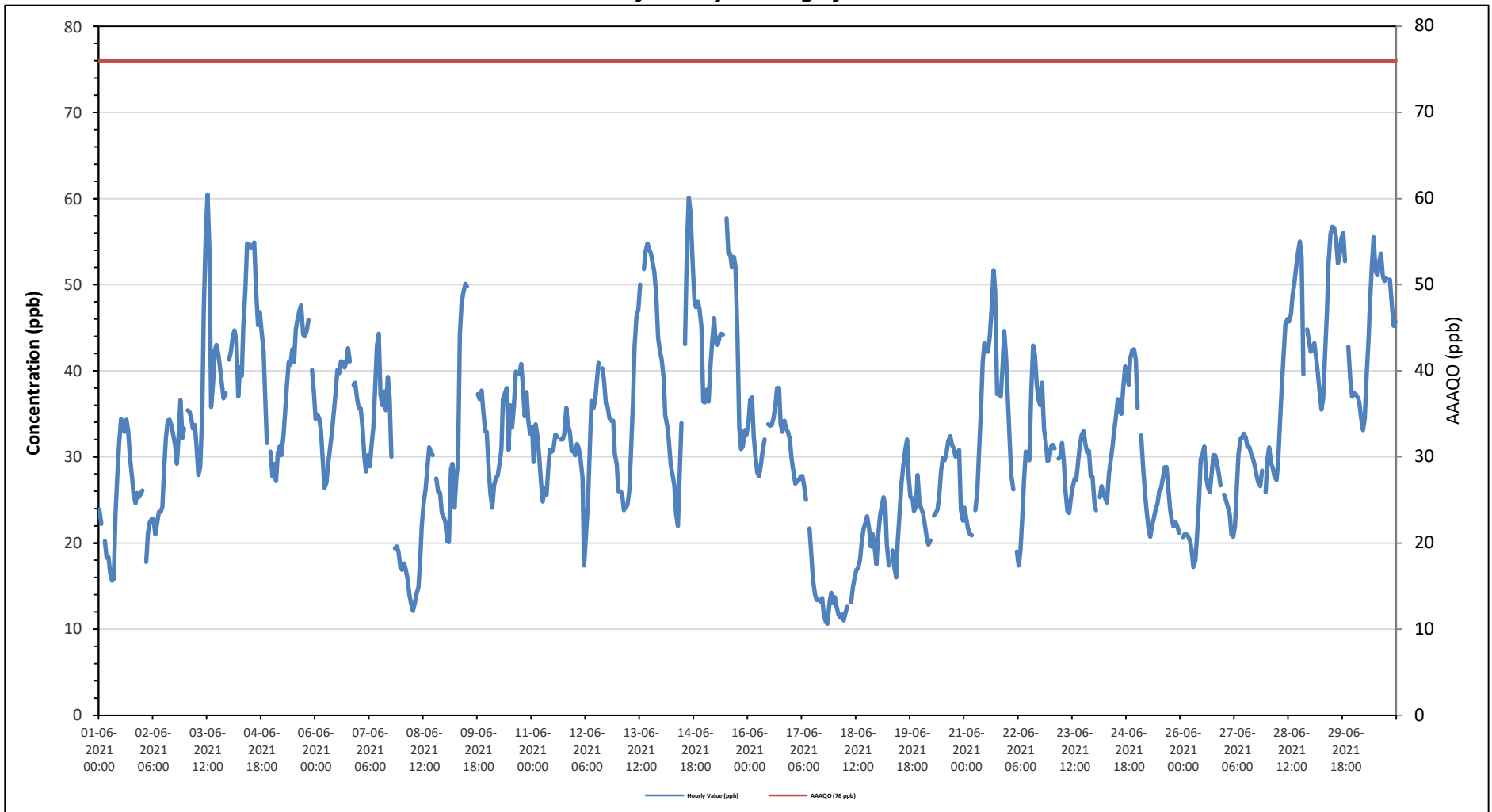
Summary of Hourly Averages

OZONE (O₃) in ppb

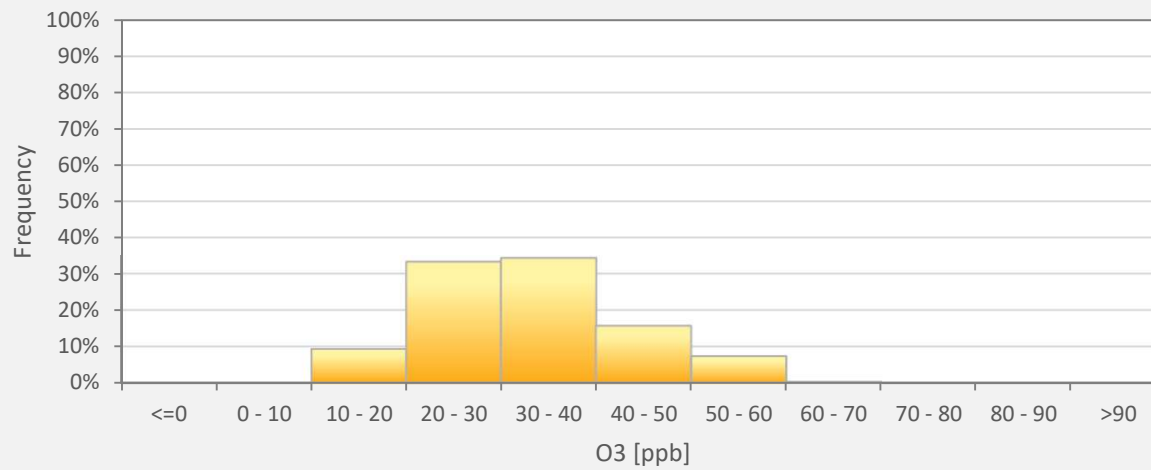
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 76 ppb																																															
Number of 1-Hour Exceedences: 0																																															
Maximum Hourly Value: 60.5 ppb on June 3 at hour 12												Hours in Service: 720																																			
Maximum Daily Value: 46.7 ppb on June 29												Hours of Data: 684																																			
Minimum Hourly Value: 10.6 ppb on June 17 at hour 20												Hours of Missing Data: 0																																			
Minimum Daily Value: 16.5 ppb on June 18												Hours of Calibration: 36																																			
Monthly Average: 32.6 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																							
Jun 1	23.9	22.2	S	20.2	18.3	18.4	16.5	15.6	15.8	23.4	27.7	31.5	34.4	33.5	32.9	34.3	33.0	29.9	27.7	25.6	24.6	25.8	25.3	25.7	15.6	34.4	25.5																				
Jun 2	26.1	S	17.8	21.2	22.4	22.8	22.8	21.0	22.3	23.6	23.6	24.2	28.8	32.3	34.2	34.3	33.6	32.6	31.4	29.2	32.5	36.6	32.2	33.3	17.8	36.6	27.8																				
Jun 3	S	35.4	35.2	34.4	33.3	33.7	31.0	27.9	28.8	34.8	47.0	55.8	60.5	54.3	35.8	38.7	42.3	43.0	42.0	40.4	38.3	36.8	37.4	S	27.9	60.5	39.4																				
Jun 4	41.3	42.2	44.1	44.7	43.5	37.0	40.4	39.4	45.2	49.3	54.8	54.7	54.3	54.5	54.9	48.9	45.3	46.8	44.6	42.3	37.2	31.6	S	30.6	30.6	54.9	44.7																				
Jun 5	27.7	29.2	27.2	30.4	31.2	30.2	32.3	34.8	38.4	41.0	40.7	42.5	41.0	44.8	46.0	47.0	47.6	44.2	44.0	44.6	45.9	S	40.1	37.2	27.2	47.6	38.6																				
Jun 6	34.4	34.9	34.4	33.1	29.3	26.4	27.0	29.3	31.0	32.7	35.2	37.1	40.1	39.7	41.1	41.0	40.4	40.9	42.6	41.1	S	38.3	38.6	36.7	26.4	42.6	35.9																				
Jun 7	35.6	35.6	33.5	29.7	28.3	30.2	28.9	31.1	33.5	38.1	42.9	44.3	37.3	36.0	37.6	35.4	39.3	36.9	30.0	S	19.4	19.6	19.0	17.1	17.1	44.3	32.1																				
Jun 8	16.9	17.6	17.0	15.8	14.0	12.9	12.1	13.1	14.1	14.9	18.3	22.1	24.8	26.3	28.7	31.1	30.6	30.2	S	27.5	25.9	25.8	23.5	23.0	12.1	31.1	21.1																				
Jun 9	22.4	20.2	20.1	28.6	29.2	24.1	27.5	29.5	44.2	47.9	49.1	50.1	49.8	C	C	C	C	C	C	37.3	36.7	37.7	35.5	33.0	32.9	20.1	50.1	34.5																			
Jun 10	28.4	25.6	24.1	26.7	27.6	27.8	29.1	30.9	36.7	37.4	38.0	30.8	36.0	33.4	35.8	39.9	S	39.6	40.8	38.1	34.7	37.5	34.2	32.7	24.1	40.8	33.3																				
Jun 11	33.5	29.4	33.8	32.4	30.0	27.1	24.8	26.4	25.6	28.4	30.8	30.6	30.9	32.6	32.3	S	32.0	32.0	32.7	35.7	33.7	32.9	30.7	30.7	24.8	35.7	30.8																				
Jun 12	30.2	31.5	31.0	29.7	27.6	17.4	21.1	24.6	30.4	36.5	35.6	36.4	39.0	40.9	S	40.3	39.1	36.2	35.8	34.5	34.2	34.2	30.4	29.1	17.4	40.9	32.4																				
Jun 13	26.0	26.0	25.7	23.8	24.2	24.4	26.0	30.6	36.4	42.8	46.4	47.1	50.0	S	51.8	53.8	54.8	54.2	53.6	52.4	51.5	48.6	43.8	42.3	23.8	54.8	40.7																				
Jun 14	41.3	39.1	34.8	33.6	31.6	29.0	27.9	26.7	23.3	22.0	28.0	33.9	S	43.1	54.9	60.1	58.3	53.3	48.3	47.4	48.0	47.2	45.1	36.4	22.0	60.1	39.7																				
Jun 15	36.3	37.8	36.4	40.4	43.3	46.1	43.3	43.0	43.9	44.3	44.2	S	57.7	53.6	53.6	52.0	53.2	52.1	43.8	33.4	30.9	31.2	33.1	32.5	30.9	57.7	42.9																				
Jun 16	33.9	36.6	36.9	32.4	30.0	28.2	27.8	29.0	30.7	32.0	S	33.8	33.6	33.7	34.5	36.1	38.0	38.0	33.8	32.9	34.2	33.4	32.9	32.1	27.8	38.0	33.2																				
Jun 17	29.9	28.4	26.9	27.1	27.3	27.7	27.8	26.6	25.0	S	21.7	18.7	15.6	14.0	13.4	13.4	13.2	13.6	11.5	10.8	10.6	13.1	14.2	13.0	10.6	29.9	19.3																				
Jun 18	13.7	12.7	11.7	11.3	11.7	11.0	12.0	12.6	S	13.1	14.8	16.0	16.9	17.1	18.0	20.1	21.6	22.4	23.1	21.7	19.6	21.0	19.7	17.5	11.0	23.1	16.5																				
Jun 19	20.6	23.1	24.3	25.3	24.4	19.8	17.4	S	19.1	17.3	16.0	20.2	23.7	27.0	29.0	30.7	32.0	27.7	25.3	25.2	23.7	24.2	27.9	24.6	16.0	32.0	23.8																				
Jun 20	24.0	23.4	22.1	20.5	19.8	20.3	S	23.2	23.5	23.9	25.6	28.4	29.9	29.6	30.6	31.8	32.4	31.4	31.0	30.0	30.4	30.8	23.9	22.6	19.8	32.4	26.5																				
Jun 21	24.1	22.7	21.7	21.0	20.9	S	23.8	26.0	30.2	35.3	41.0	43.2	42.6	42.2	44.0	47.1	51.7	49.4	37.3	37.9	37.0	40.2	44.6	41.7	20.9	51.7	35.9																				
Jun 22	36.2	32.2	27.8	26.2	S	19.0	17.4	19.1	22.8	27.3	30.6	30.5	29.6	37.9	42.9	41.8	38.5	36.6	36.0	38.6	33.2	31.9	29.5	29.7	17.4	42.9	31.1																				
Jun 23	31.2	31.4	31.0	S	29.8	29.9	31.6	29.5	26.2	27.3	23.5	25.2	26.5	27.5	27.3	29.6	31.3	32.6	33.0	31.5	30.5	30.7	27.8	27.7	23.5	33.0	29.1																				
Jun 24	24.6	23.8	S	25.3	26.6	25.7	25.2	24.7	28.0	29.4	31.2	33.1	34.5	36.7	35.6	35.0	37.9	40.5	39.7	38.4	41.4	42.4	42.5	41.3	23.8	42.5	33.2																				
Jun 25	35.7	S	32.5	29.1	25.8	23.9	21.7	20.7	22.0	22.9	24.0	24.5	26.1	26.3	27.6	28.8	28.8	26.4	24.0	22.6	21.9	22.4	22.0	21.2	20.7	35.7	25.3																				
Jun 26	S	20.6	21.0	21.0	20.8	20.2	19.2	17.2	18.0	20.6	24.8	29.7	30.3	31.2	27.6	26.5	25.9	27.8	30.2	30.2	29.3	28.1	26.7	S	17.2	31.2	24.9																				
Jun 27	25.6	24.9	24.3	23.4	21.0	20.7	21.9	26.3	30.3	32.1	32.2	32.7	32.2	31.2	31.1	30.3	29.8	29.0	27.7	27.0	26.6	28.4	S	25.9	20.7	32.7	27.6																				
Jun 28	29.8	31.1	29.3	28.7	27.7	27.3	29.3	34.2	38.3	41.9	45.4	46.0	45.7	46.6	48.7	50.1	52.2	53.6	55.0	53.1	39.6	S	44.8	43.6	27.3	55.0	41.0																				
Jun 29	42.2	42.7	43.2	41.5	39.7	37.5	35.5	36.8	41.7	46.9	52.5	55.9	56.7	56.6	55.6	52.5	53.2	55.4	56.0	52.7	S	42.8	38.9	37.0	35.5	56.7	46.7																				
Jun 30	37.4	37.3	36.9	36.4	34.4	33.1	34.5	39.3	43.7	48.2	52.2	55.5	51.7	51.1	52.6	53.6	51.0	50.4	50.7	S	50.6	47.6	45.2	45.7	33.1	55.5	45.2																				
Diurnal Maximum	42.2	42.7	44.1	44.7	43.5	46.1	43.3	43.0	45.2	49.3	54.8	55.9	60.5	56.6	55.6	60.1	58.3	55.4	56.0	53.1	51.5	48.6	45.2	45.7																							
Daiurnal Average	29.7	29.2	28.7	28.1	27.4	25.9	26.1	27.2	30.0	32.1	34.4	35.7	37.2	36.9	37.8	38.7	38.8	38.2	36.9	35.1	33.0	32.8	32.4	30.9																							
C	Monthly Calibration											S	Daily Zero-Span Check											Q	Quality Assurance																						
K	Collection Error											N	No Data (Machine Not in Service)											Y	Routine Maintenance											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 O3 - St. Lina Site



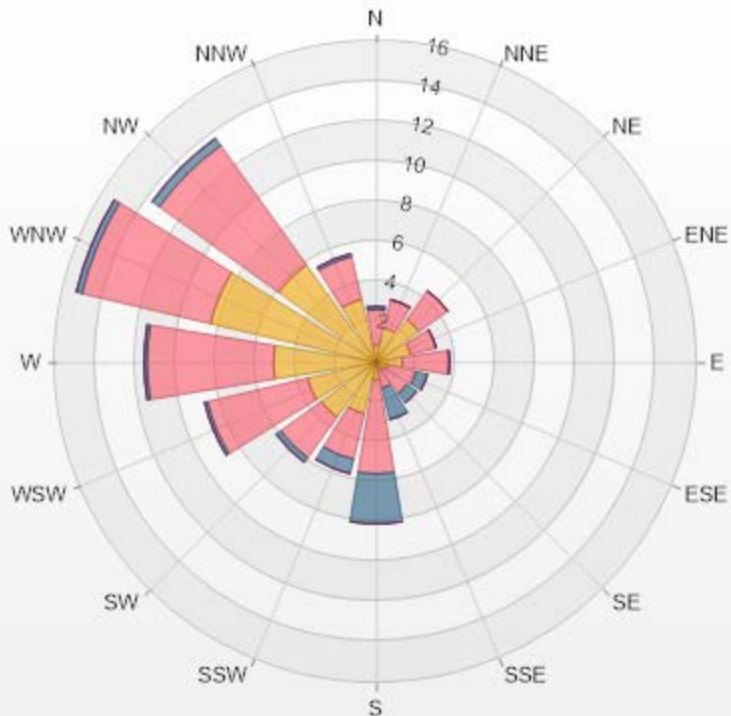
O3[ppb] Histogram: St. Lina Monthly: 06-2021 1 Hr.



Classes	O3
<=0	0.00%
0 - 10	0.00%
10 - 20	9.36%
20 - 30	33.19%
30 - 40	34.21%
40 - 50	15.64%
50 - 60	7.31%
60 - 70	0.29%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: St. Lina Poll.: St. Lina-O3[ppb] Monthly: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.00% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	0.88	1.75	0.15	0	0	2.78
NNE	1.75	1.46	0	0	0	3.21
NE	2.63	1.75	0	0	0	4.38
ENE	1.75	1.32	0	0	0	3.07
E	1.32	2.34	0	0	0	3.66
ESE	0.58	1.46	0.58	0	0	2.62
SE	0.44	1.46	0.58	0	0	2.48
SSE	0	1.32	1.61	0	0	2.93
S	0.88	4.68	2.49	0	0	8.05
SSW	2.63	2.34	0.73	0	0	5.7
SW	3.36	2.49	0.29	0	0	6.14
WSW	3.51	5.12	0.15	0	0	8.78
W	5.12	6.29	0.15	0	0	11.56
WNW	8.48	6.58	0.29	0	0	15.35
NW	5.99	7.31	0.44	0	0	13.74
NNW	3.22	2.19	0.15	0	0	5.56
Summary	42.54	49.86	7.61	0	0	100



LICA-202106

% Icon Classes (ppb)

43 0-30

50 30-50

8 50-76

0 76-159

0 >159.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - June 2021

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

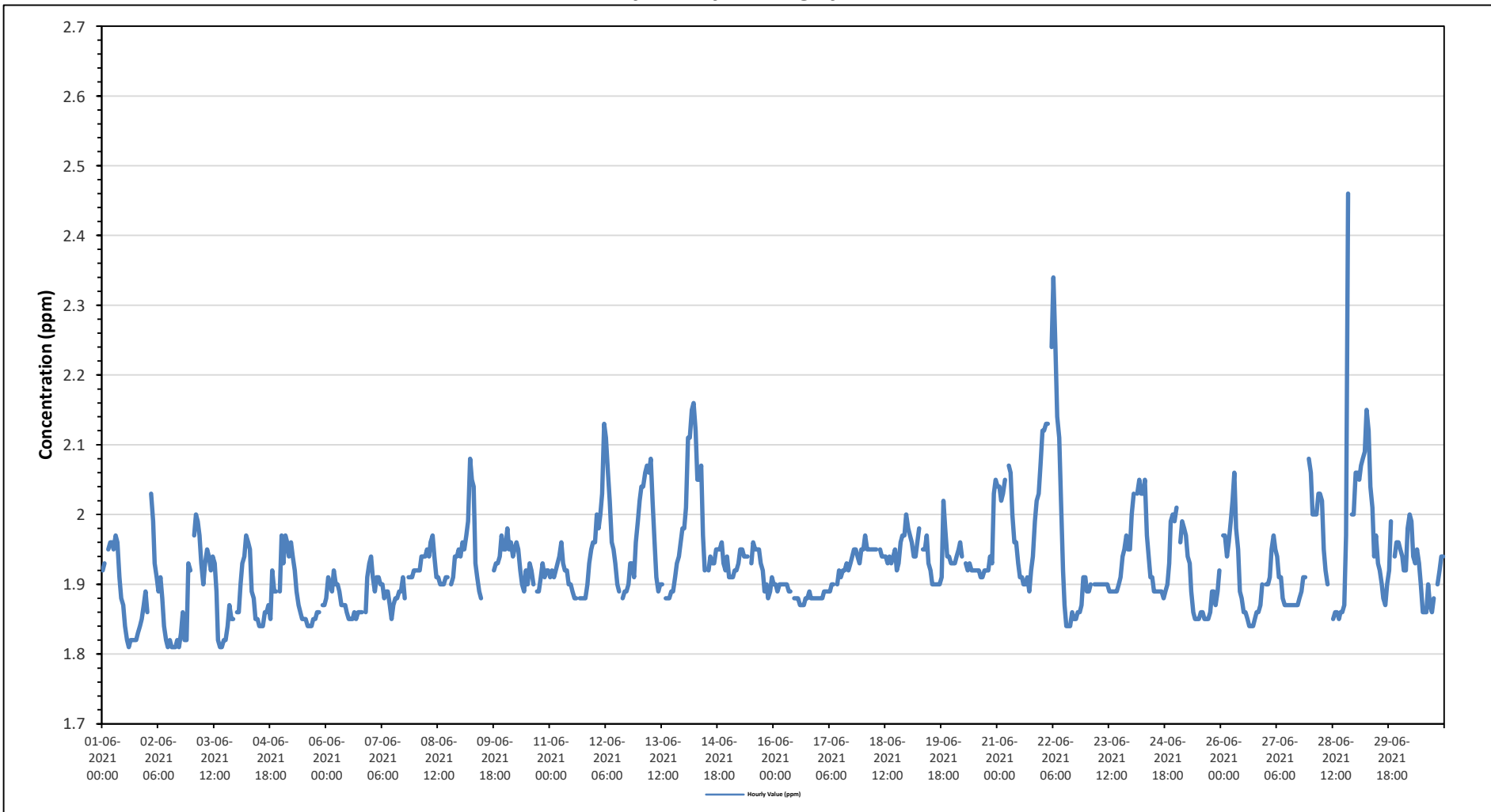
Maximum Hourly Value:	2.46 ppm on June 28 at hour 20	Hours in Service:	720
Maximum Daily Value:	2.00 ppm on June 14	Hours of Data:	682
Minimum Hourly Value:	1.81 ppm on June 1 at hour 14	Hours of Missing Data:	2
Minimum Daily Value:	1.87 ppm on June 2	Hours of Calibration:	36
Monthly Average:	1.93 ppm	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	
Jun 1	1.92	1.93	S	1.95	1.96	1.96	1.95	1.97	1.96	1.91	1.88	1.87	1.84	1.82	1.81	1.82	1.82	1.82	1.82	1.83	1.84	1.85	1.87	1.89	1.81	1.97	1.88	
Jun 2	1.86	S	2.03	1.99	1.93	1.91	1.89	1.91	1.88	1.84	1.82	1.81	1.82	1.81	1.81	1.81	1.82	1.81	1.83	1.86	1.82	1.82	1.93	1.92	1.81	2.03	1.87	
Jun 3	S	1.97	2.00	1.99	1.97	1.93	1.90	1.93	1.95	1.94	1.92	1.94	1.93	1.89	1.82	1.81	1.81	1.82	1.82	1.84	1.87	1.85	1.85	S	1.81	2.00	1.90	
Jun 4	1.86	1.86	1.90	1.93	1.94	1.97	1.96	1.95	1.89	1.88	1.85	1.85	1.84	1.84	1.84	1.86	1.86	1.87	1.85	1.92	1.89	1.89	S	1.89	1.84	1.97	1.89	
Jun 5	1.97	1.93	1.97	1.96	1.94	1.96	1.94	1.92	1.89	1.87	1.86	1.85	1.85	1.85	1.84	1.84	1.84	1.85	1.85	1.86	1.86	S	1.87	1.87	1.84	1.97	1.89	
Jun 6	1.88	1.91	1.90	1.89	1.92	1.90	1.90	1.89	1.87	1.87	1.87	1.86	1.85	1.85	1.85	1.86	1.85	1.86	1.85	1.86	S	1.86	1.91	1.93	1.85	1.93	1.88	
Jun 7	1.94	1.91	1.89	1.91	1.91	1.90	1.90	1.88	1.89	1.89	1.87	1.85	1.87	1.88	1.88	1.89	1.89	1.91	1.88	S	1.91	1.91	1.91	1.92	1.85	1.94	1.90	
Jun 8	1.92	1.92	1.92	1.94	1.94	1.94	1.95	1.94	1.96	1.97	1.94	1.91	1.91	1.90	1.90	1.90	1.91	1.91	S	1.90	1.91	1.94	1.94	1.95	1.90	1.97	1.93	
Jun 9	1.94	1.96	1.95	1.97	1.99	2.08	2.05	2.04	1.93	1.91	1.89	1.88	C	C	C	C	1.91	S	1.92	1.93	1.93	1.94	1.97	1.95	1.88	2.08	1.95	
Jun 10	1.95	1.98	1.95	1.96	1.94	1.95	1.96	1.95	1.92	1.90	1.89	1.92	1.90	1.93	1.92	1.90	S	1.89	1.89	1.91	1.93	1.91	1.92	1.92	1.89	1.98	1.93	
Jun 11	1.91	1.92	1.91	1.92	1.93	1.94	1.96	1.93	1.92	1.92	1.90	1.90	1.89	1.88	1.88	S	1.88	1.88	1.88	1.88	1.90	1.93	1.95	1.96	1.88	1.96	1.91	
Jun 12	1.96	2.00	1.98	2.00	2.03	2.13	2.11	2.06	2.02	1.96	1.95	1.93	1.90	1.89	S	1.88	1.89	1.89	1.90	1.93	1.93	1.91	1.96	1.99	1.88	2.13	1.97	
Jun 13	2.02	2.04	2.04	2.06	2.07	2.06	2.08	2.02	1.96	1.91	1.89	1.90	1.90	S	1.88	1.88	1.88	1.89	1.89	1.91	1.93	1.94	1.96	1.98	1.88	2.08	1.96	
Jun 14	1.98	2.01	2.11	2.11	2.15	2.16	2.12	2.05	2.05	2.07	1.97	1.92	S	1.92	1.94	1.93	1.93	1.95	1.95	1.95	1.96	1.93	1.92	1.94	1.92	2.16	2.00	
Jun 15	1.91	1.91	1.91	1.92	1.92	1.93	1.95	1.95	1.94	1.94	1.94	S	1.93	1.96	1.95	1.95	1.95	1.93	1.92	1.89	1.90	1.88	1.89	1.91	1.88	1.96	1.93	
Jun 16	1.90	1.90	1.89	1.90	1.90	1.90	1.90	1.90	1.89	1.89	S	1.88	1.88	1.88	1.87	1.87	1.87	1.88	1.88	1.89	1.88	1.88	1.88	1.88	1.87	1.90	1.89	
Jun 17	1.88	1.88	1.88	1.89	1.89	1.89	1.89	1.90	1.90	S	1.90	1.92	1.91	1.92	1.92	1.93	1.92	1.93	1.94	1.95	1.95	1.94	1.93	1.95	1.88	1.95	1.91	
Jun 18	1.95	1.97	1.95	1.95	1.95	1.95	1.95	1.95	S	1.95	1.94	1.94	1.94	1.93	1.94	1.93	1.94	1.95	1.92	1.93	1.96	1.97	1.97	2.00	1.92	2.00	1.95	
Jun 19	1.98	1.97	1.96	1.94	1.94	1.96	1.98	S	1.95	1.95	1.97	1.93	1.92	1.90	1.90	1.90	1.90	1.90	1.91	2.02	1.98	1.94	1.94	1.93	1.90	2.02	1.94	
Jun 20	1.93	1.93	1.94	1.95	1.96	1.94	S	1.93	1.92	1.93	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.92	1.92	1.92	1.94	1.93	2.03	2.05	1.91	2.05	1.94	
Jun 21	2.04	2.04	2.02	2.03	2.05	S	2.07	2.06	2.00	1.96	1.96	1.93	1.91	1.91	1.90	1.90	1.91	1.89	1.92	1.94	1.99	2.02	2.03	2.07	1.89	2.07	1.98	
Jun 22	2.12	2.12	2.13	2.13	S	2.24	2.34	2.24	2.14	2.11	2.02	1.92	1.87	1.84	1.84	1.84	1.86	1.85	1.85	1.86	1.86	1.87	1.91	1.91	1.84	2.34	1.99	
Jun 23	1.89	1.89	1.90	S	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.90	1.91	1.94	1.95	1.97	1.95	1.95	1.89	1.97	1.91
Jun 24	2.00	2.03	S	2.03	2.05	2.03	2.03	2.05	1.97	1.94	1.91	1.91	1.89	1.89	1.89	1.89	1.89	1.88	1.89	1.90	1.93	1.99	2.00	1.99	1.88	2.05	1.96	
Jun 25	2.01	S	1.96	1.99	1.98	1.97	1.94	1.93	1.89	1.86	1.85	1.85	1.85	1.86	1.86	1.85	1.85	1.85	1.86	1.89	1.89	1.87	1.89	1.92	1.85	2.01	1.90	
Jun 26	S	1.97	1.97	1.94	1.96	1.99	2.02	2.06	1.98	1.95	1.89	1.88	1.86	1.86	1.85	1.84	1.84	1.85	1.86	1.86	1.87	1.90	S	1.84	2.06	1.91	1.90	
Jun 27	1.90	1.90	1.91	1.95	1.97	1.95	1.94	1.91	1.91	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.88	1.89	1.91	1.91	S	2.08	1.87	2.08	1.91	
Jun 28	2.06	2.00	2.00	2.00	2.03	2.03	2.02	1.95	1.92	1.90	Y	NRM	1.85	1.86	1.86	1.85	1.86	1.86	1.87	1.97	2.46	S	2.00	2.00	1.85	2.46	1.97	
Jun 29	2.06	2.06	2.05	2.07	2.08	2.09	2.15	2.12	2.04	2.01	1.94	1.97	1.93	1.92	1.90	1.88	1.87	1.90	1.92	1.99	S	1.94	1.96	1.96	1.87	2.15	1.99	
Jun 30	1.95	1.94	1.92	1.92	1.98	2.00	1.99	1.94	1.93	1.95	1.93	1.90	1.86	1.86	1.86	1.90	1.87	1.86	1.88	S	1.90	1.92	1.94	1.94	1.86	2.00	1.92	
Diurnal Maximum	2.12	2.12	2.13	2.13	2.15	2.24	2.34	2.24	2.14	2.11	2.02	1.97	1.94	1.96	1.95	1.95	1.95	1.95	1.95	2.02	2.46	2.02	2.03	2.08				
Diurnal Average	1.95	1.96	1.96	1.97	1.97	1.98	1.99	1.97	1.94	1.93	1.91	1.90	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.91	1.93	1.91	1.94	1.95				

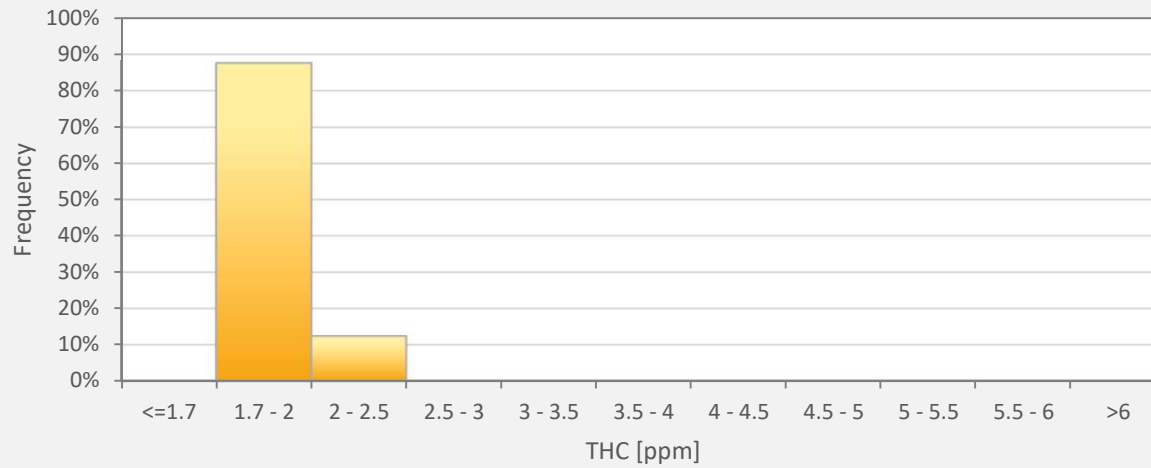
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

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



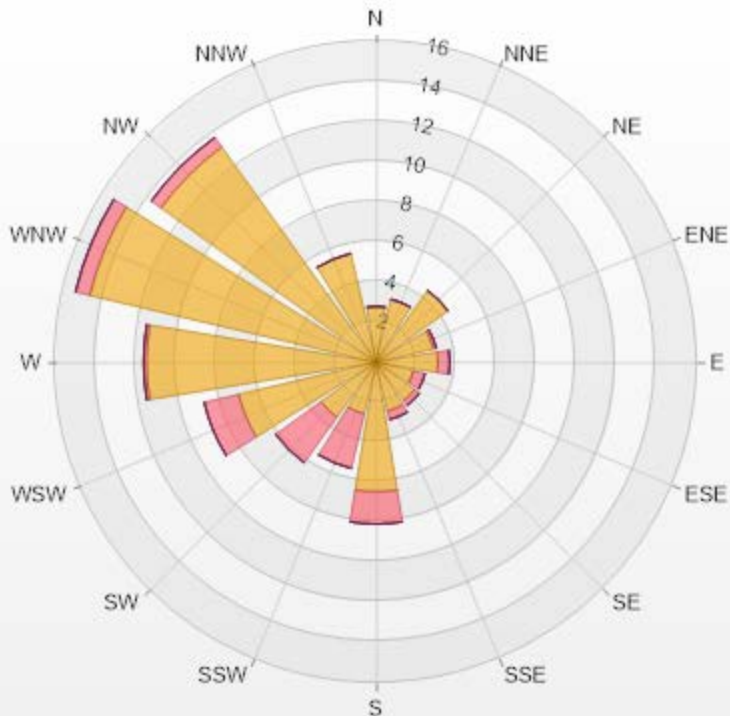
THC55[ppm] Histogram: St. Lina Monthly: 06-2021 1 Hr.



Classes	THC55
<=1.7	0.00%
1.7 - 2	87.68%
2 - 2.5	12.32%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.72% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	2.79	0	0	0	0	2.79
NNE	3.23	0	0	0	0	3.23
NE	4.4	0	0	0	0	4.4
ENE	2.93	0.15	0	0	0	3.08
E	3.08	0.59	0	0	0	3.67
ESE	1.91	0.59	0	0	0	2.5
SE	2.35	0.29	0	0	0	2.64
SSE	2.49	0.44	0	0	0	2.93
S	6.45	1.61	0	0	0	8.06
SSW	2.64	2.79	0	0	0	5.43
SW	3.37	2.79	0	0	0	6.16
WSW	7.04	1.76	0	0	0	8.8
W	11.44	0.15	0	0	0	11.59
WNW	14.66	0.73	0	0	0	15.39
NW	13.2	0.59	0	0	0	13.79
NNW	5.57	0	0	0	0	5.57
Summary	87.55	12.48	0	0	0	100



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% Icon Classes (ppm)

88

0-2

12

2-5

5-10

0

10-40

0

>40.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - June 2021

Summary of Hourly Averages

METHANE (CH₄) in ppm

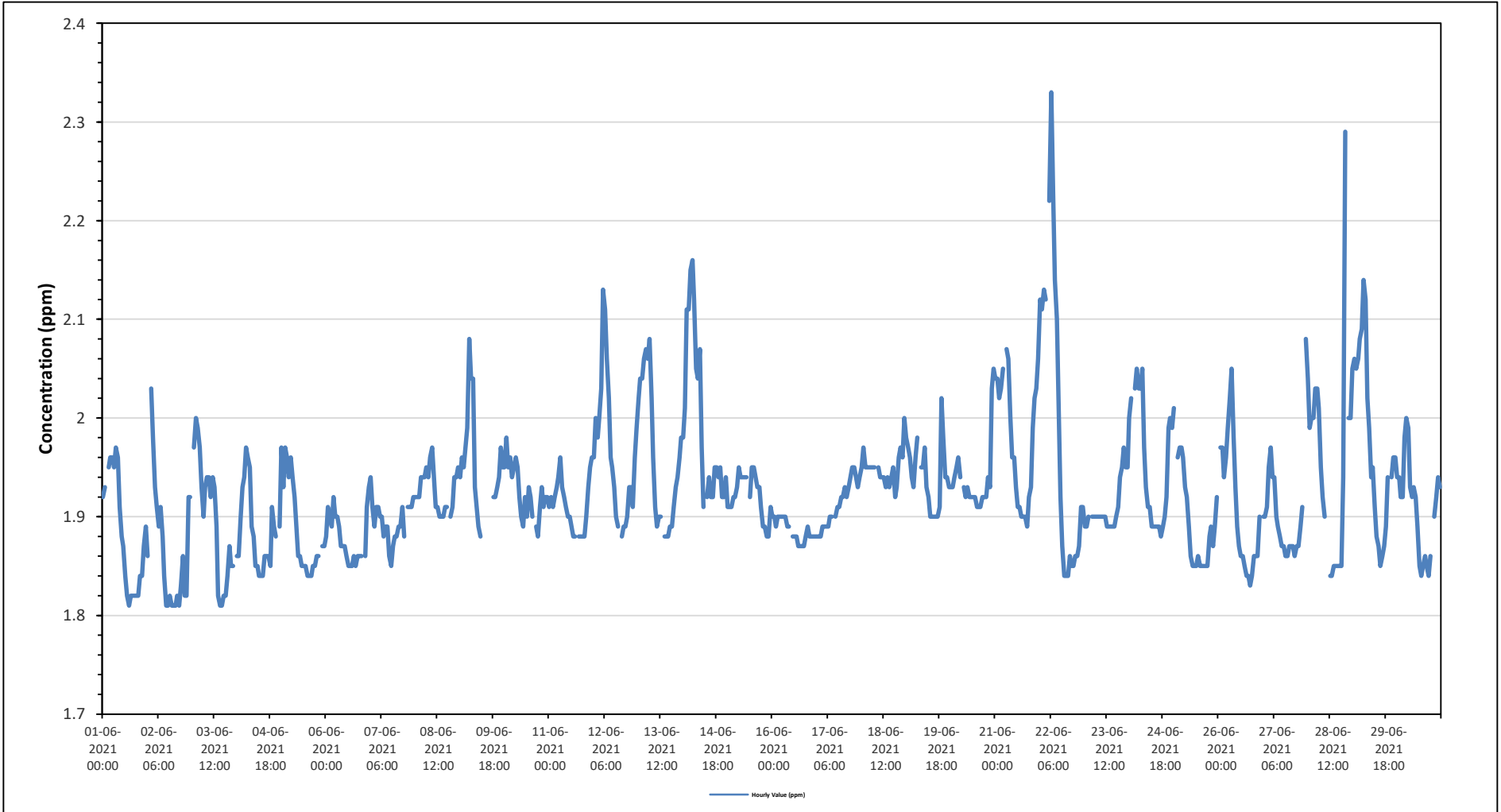
Maximum Hourly Value: 2.33 ppm on June 22 at hour 6	Hours in Service: 720
Maximum Daily Value: 2.00 ppm on June 14	Hours of Data: 682
Minimum Hourly Value: 1.81 ppm on June 1 at hour 14	Hours of Missing Data: 2
Minimum Daily Value: 1.87 ppm on June 2	Hours of Calibration: 36
Monthly Average: 1.93 ppm	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	
Jun 1	1.92	1.93	S	1.95	1.96	1.96	1.95	1.97	1.96	1.91	1.88	1.87	1.84	1.82	1.81	1.82	1.82	1.82	1.82	1.82	1.84	1.84	1.87	1.89	1.81	1.97	1.88	
Jun 2	1.86	S	2.03	1.98	1.93	1.91	1.89	1.91	1.88	1.84	1.81	1.81	1.82	1.81	1.81	1.81	1.82	1.81	1.83	1.86	1.82	1.82	1.92	1.92	1.81	2.03	1.87	
Jun 3	S	1.97	2.00	1.99	1.97	1.93	1.90	1.93	1.94	1.94	1.92	1.94	1.93	1.89	1.82	1.81	1.82	1.82	1.84	1.87	1.85	1.85	S	S	1.81	2.00	1.90	
Jun 4	1.86	1.86	1.90	1.93	1.94	1.97	1.96	1.95	1.89	1.88	1.85	1.85	1.84	1.84	1.84	1.86	1.86	1.86	1.85	1.91	1.89	1.88	S	1.89	1.84	1.97	1.89	
Jun 5	1.97	1.93	1.97	1.96	1.94	1.96	1.94	1.92	1.89	1.86	1.86	1.85	1.85	1.85	1.84	1.84	1.84	1.85	1.85	1.86	1.86	S	1.87	1.87	1.84	1.97	1.89	
Jun 6	1.88	1.91	1.90	1.89	1.92	1.90	1.90	1.89	1.87	1.87	1.87	1.86	1.85	1.85	1.85	1.86	1.85	1.86	1.86	1.86	S	1.86	1.91	1.93	1.85	1.93	1.88	
Jun 7	1.94	1.91	1.89	1.91	1.91	1.90	1.90	1.88	1.89	1.89	1.86	1.85	1.87	1.88	1.88	1.89	1.89	1.91	1.88	S	S	1.91	1.91	1.91	1.92	1.85	1.94	1.89
Jun 8	1.92	1.92	1.92	1.94	1.94	1.94	1.95	1.94	1.96	1.97	1.94	1.91	1.91	1.90	1.90	1.90	1.91	1.91	S	S	1.91	1.94	1.94	1.95	1.90	1.97	1.93	
Jun 9	1.94	1.96	1.95	1.97	1.99	2.08	2.04	2.04	1.93	1.91	1.89	1.88	C	C	C	C	1.91	S	S	1.92	1.92	1.93	1.94	1.97	1.95	1.88	2.08	1.95
Jun 10	1.95	1.98	1.95	1.96	1.94	1.95	1.96	1.95	1.92	1.90	1.89	1.92	1.90	1.93	1.92	1.90	S	S	1.89	1.88	1.91	1.93	1.91	1.92	1.92	1.88	1.98	1.93
Jun 11	1.91	1.92	1.91	1.92	1.93	1.94	1.96	1.93	1.92	1.91	1.90	1.90	1.89	1.88	1.88	S	S	1.88	1.88	1.88	1.88	1.90	1.93	1.95	1.96	1.88	1.96	1.91
Jun 12	1.96	2.00	1.98	2.00	2.03	2.13	2.11	2.06	2.02	1.96	1.95	1.93	1.90	1.89	S	S	1.88	1.89	1.89	1.90	1.93	1.93	1.91	1.96	1.99	1.88	2.13	1.97
Jun 13	2.02	2.04	2.04	2.06	2.07	2.06	2.08	2.02	1.96	1.91	1.89	1.90	1.90	S	S	1.88	1.88	1.88	1.89	1.89	1.91	1.93	1.94	1.96	1.98	1.88	2.08	1.96
Jun 14	1.98	2.01	2.11	2.11	2.15	2.16	2.12	2.05	2.04	2.07	1.97	1.91	S	S	1.92	1.94	1.92	1.92	1.95	1.95	1.94	1.95	1.92	1.92	1.94	1.91	2.16	2.00
Jun 15	1.91	1.91	1.91	1.92	1.92	1.93	1.95	1.94	1.94	1.94	1.94	S	S	1.92	1.95	1.95	1.94	1.93	1.93	1.91	1.89	1.89	1.88	1.88	1.91	1.88	1.95	1.92
Jun 16	1.90	1.90	1.89	1.90	1.90	1.90	1.90	1.90	1.89	1.89	S	S	1.88	1.88	1.88	1.87	1.87	1.87	1.87	1.88	1.89	1.88	1.88	1.88	1.88	1.87	1.90	1.89
Jun 17	1.88	1.88	1.88	1.89	1.89	1.89	1.89	1.90	1.90	S	S	1.90	1.91	1.91	1.92	1.92	1.93	1.92	1.93	1.94	1.95	1.95	1.94	1.93	1.94	1.88	1.95	1.91
Jun 18	1.95	1.97	1.95	1.95	1.95	1.95	1.95	1.95	S	S	1.95	1.94	1.94	1.93	1.94	1.93	1.94	1.93	1.94	1.95	1.92	1.93	1.96	1.97	1.96	2.00	1.92	1.95
Jun 19	1.98	1.97	1.96	1.94	1.93	1.96	1.98	S	S	1.95	1.95	1.97	1.93	1.92	1.90	1.90	1.90	1.90	1.90	1.91	2.02	1.98	1.94	1.94	1.93	1.90	2.02	1.94
Jun 20	1.93	1.93	1.94	1.95	1.96	1.94	S	S	1.93	1.92	1.93	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.92	1.92	1.92	1.94	1.93	2.03	2.05	1.91	2.05	1.94
Jun 21	2.04	2.04	2.02	2.03	2.05	S	S	2.07	2.06	2.00	1.96	1.96	1.93	1.91	1.91	1.90	1.90	1.90	1.89	1.92	1.93	1.99	2.02	2.03	2.06	1.89	2.07	1.98
Jun 22	2.12	2.11	2.13	2.12	S	S	2.22	2.33	2.23	2.14	2.10	2.01	1.92	1.87	1.84	1.84	1.84	1.86	1.85	1.85	1.86	1.86	1.87	1.91	1.91	1.84	2.33	1.99
Jun 23	1.89	1.89	1.90	S	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.90	1.91	1.94	1.95	1.97	1.95	1.95	1.89	1.97	1.91
Jun 24	2.00	2.02	S	2.03	2.05	2.03	2.03	2.03	2.05	1.97	1.93	1.91	1.91	1.89	1.89	1.89	1.89	1.89	1.88	1.89	1.90	1.92	1.99	2.00	1.99	1.88	2.05	1.95
Jun 25	2.01	S	1.96	1.97	1.97	1.96	1.93	1.92	1.89	1.86	1.85	1.85	1.85	1.86	1.85	1.85	1.85	1.85	1.85	1.88	1.89	1.87	1.89	1.92	1.85	2.01	1.89	
Jun 26	S	1.97	1.97	1.94	1.96	1.99	2.02	2.05	1.98	1.83	1.89	1.87	1.86	1.86	1.85	1.84	1.84	1.83	1.84	1.86	1.86	1.86	1.90	S	1.83	2.05	1.91	
Jun 27	1.90	1.90	1.91	1.95	1.97	1.94	1.94	1.90	1.89	1.88	1.87	1.87	1.86	1.86	1.87	1.87	1.87	1.86	1.87	1.87	1.87	1.89	1.91	S	2.08	1.86	2.08	1.90
Jun 28	2.04	1.99	2.00	2.00	2.03	2.03	2.01	1.95	1.92	1.90	Y	NRM	1.84	1.84	1.85	1.85	1.85	1.85	1.85	1.85	1.94	2.29	S	2.00	2.00	1.84	2.29	1.95
Jun 29	2.05	2.06	2.05	2.06	2.08	2.09	2.14	2.12	2.02	1.99	1.94	1.95	1.91	1.88	1.87	1.85	1.86	1.87	1.89	1.94	S	S	1.94	1.96	1.96	1.85	2.14	1.98
Jun 30	1.94	1.94	1.92	1.92	1.98	2.00	1.99	1.93	1.92	1.93	1.92	1.93	1.89	1.85	1.84	1.85	1.86	1.85	1.84	1.86	S	1.90	1.92	1.94	1.93	1.84	2.00	1.91
Diurnal Maximum	2.12	2.11	2.13	2.12	2.15	2.22	2.33	2.23	2.14	2.10	2.01	1.95	1.94	1.95	1.95	1.94	1.94	1.95	1.95	2.02	2.29	2.02	2.03	2.08				
Diurnal Average	1.95	1.96	1.96	1.97	1.97	1.98	1.99	1.97	1.94	1.93	1.91	1.89	1.88	1.88	1.88	1.87	1.88	1.88	1.88	1.90	1.92	1.91	1.93	1.95				

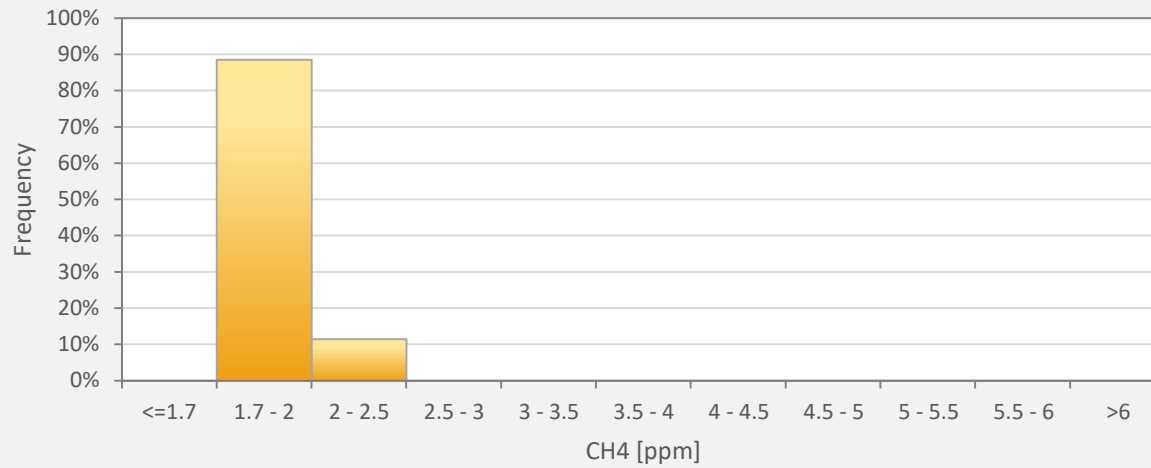
C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction /Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

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



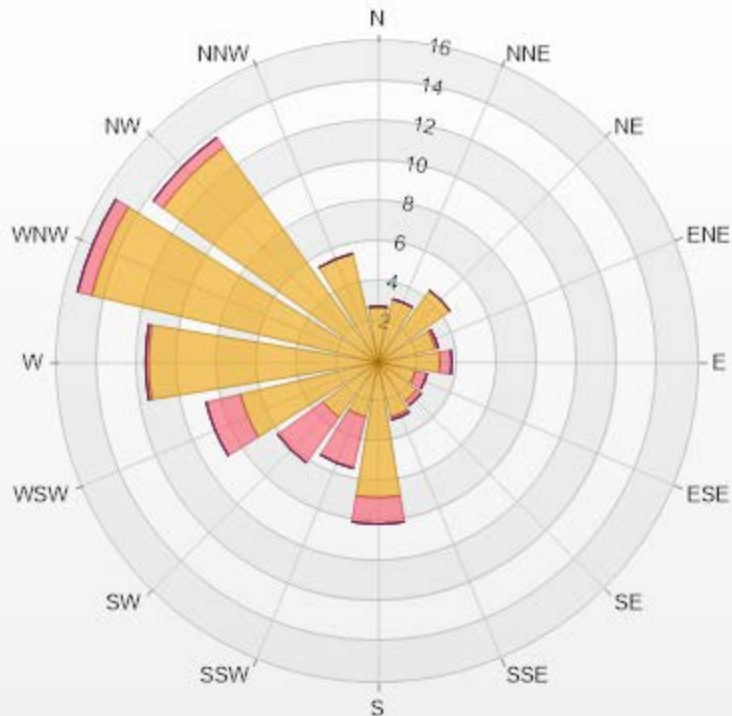
CH4[ppm] Histogram: St. Lina Monthly: 06-2021 1 Hr.



Classes	CH4
<=1.7	0.00%
1.7 - 2	88.56%
2 - 2.5	11.44%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.72% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	2.79	0	0	0	0	2.79
NNE	3.23	0	0	0	0	3.23
NE	4.4	0	0	0	0	4.4
ENE	2.93	0.15	0	0	0	3.08
E	3.08	0.59	0	0	0	3.67
ESE	1.91	0.59	0	0	0	2.5
SE	2.35	0.29	0	0	0	2.64
SSE	2.79	0.15	0	0	0	2.94
S	6.74	1.32	0	0	0	8.06
SSW	2.79	2.64	0	0	0	5.43
SW	3.37	2.79	0	0	0	6.16
WSW	7.04	1.76	0	0	0	8.8
W	11.44	0.15	0	0	0	11.59
WNW	14.66	0.73	0	0	0	15.39
NW	13.2	0.59	0	0	0	13.79
NNW	5.57	0	0	0	0	5.57
Summary	88.29	11.75	0	0	0	100

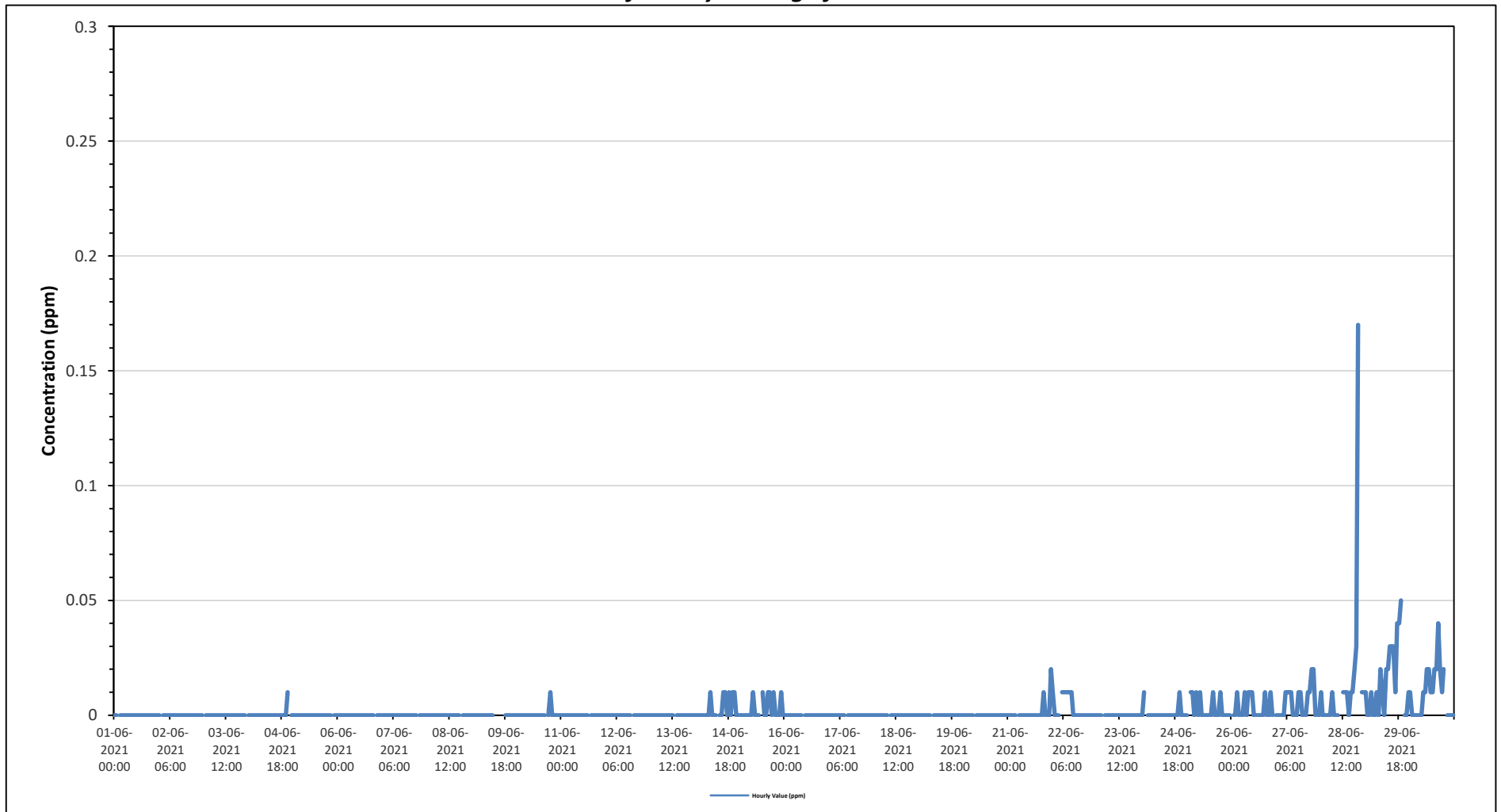


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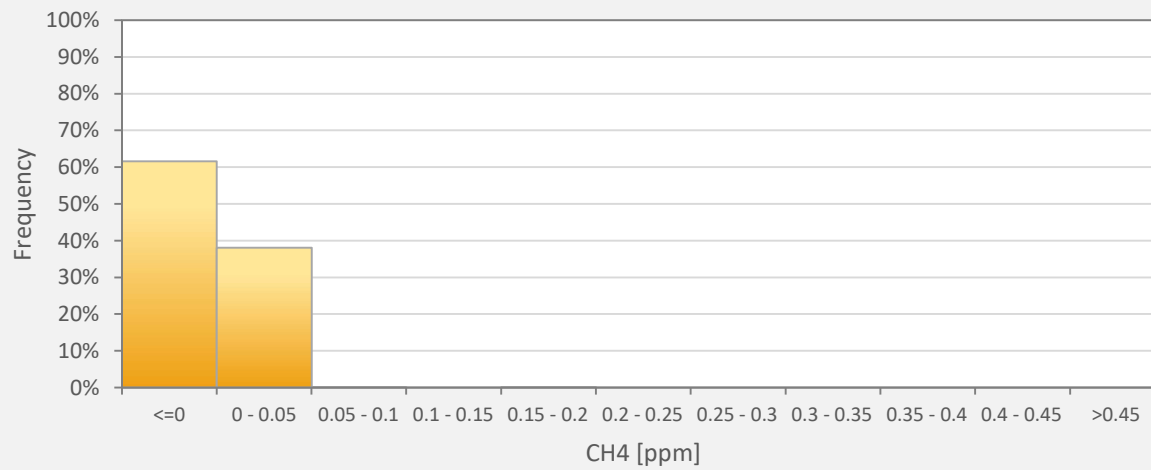
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% Icon Classes (ppm)	88	0-2	12	2-5	0	5-10	0	10-20	0	>20.0
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Timeseries Chart of Hourly Average for NMHC - St. Lina Site



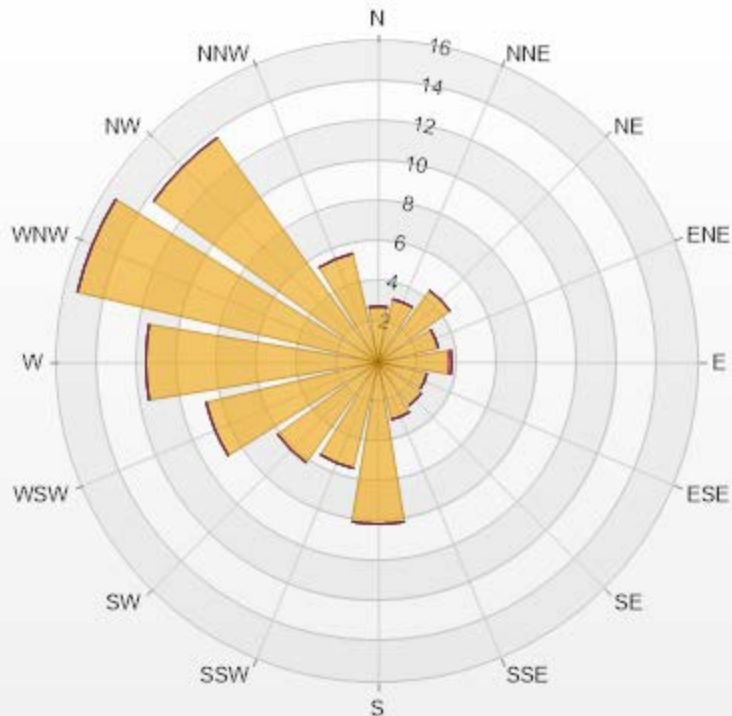
NMHC[ppm] Histogram: St. Lina Monthly: 06-2021 1 Hr.



Classes	NMHC
<=0	61.58%
0 - 0.05	38.12%
0.05 - 0.1	0.15%
0.1 - 0.15	0.00%
0.15 - 0.2	0.15%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.72% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-0.9	0.9-2	>2.0	Total
N	2.79	0	0	0	0	2.79
NNE	3.23	0	0	0	0	3.23
NE	4.4	0	0	0	0	4.4
ENE	3.08	0	0	0	0	3.08
E	3.52	0.15	0	0	0	3.67
ESE	2.49	0	0	0	0	2.49
SE	2.64	0	0	0	0	2.64
SSE	2.93	0	0	0	0	2.93
S	8.06	0	0	0	0	8.06
SSW	5.43	0	0	0	0	5.43
SW	6.16	0	0	0	0	6.16
WSW	8.8	0	0	0	0	8.8
W	11.58	0	0	0	0	11.58
WNW	15.4	0	0	0	0	15.4
NW	13.78	0	0	0	0	13.78
NNW	5.57	0	0	0	0	5.57
Summary	100	0.15	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

St. Lina Site - June 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/m³, Alberta Ambient Air Quality Objectives (AAAO): 24-Hour 29 µg/m³

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

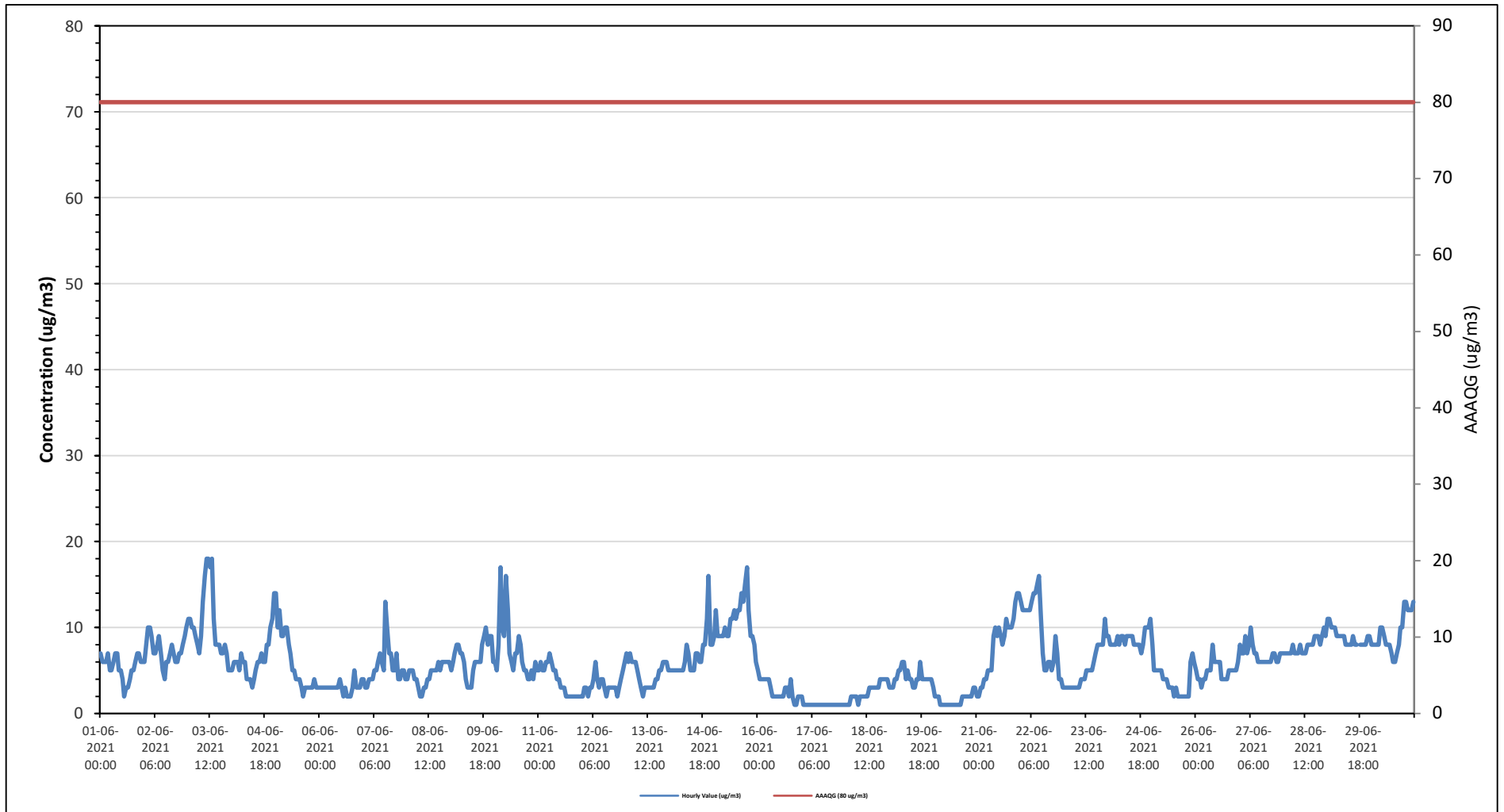
Maximum Hourly Value:	18 µg/m ³ on June 3 at hour 10	Hours in Service:	720
Maximum Daily Value:	10.7 µg/m ³ on June 15	Hours of Data:	719
Minimum Hourly Value:	1 µg/m ³ on June 16 at hour 20	Hours of Missing Data:	0
Minimum Daily Value:	1 µg/m ³ on June 17	Hours of Calibration:	1
Monthly Average:	5.9 µg/m ³	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	
Jun 1	7	6	6	6	7	5	5	6	7	7	5	5	4	2	3	3	4	5	5	6	7	7	6	6	2	7	5.4	
Jun 2	6	8	10	10	9	7	7	8	9	7	5	4	6	6	7	8	7	6	6	7	7	8	9	10	4	10	7.4	
Jun 3	11	11	10	10	9	8	7	9	13	16	18	18	17	18	11	8	8	8	7	7	8	7	5	5	5	18	10.4	
Jun 4	5	6	6	6	5	7	6	6	4	4	4	3	4	5	6	6	7	6	6	8	8	10	11	14	3	14	6.4	
Jun 5	14	10	12	9	9	10	10	8	7	5	5	4	4	4	3	2	3	3	3	3	3	4	3	3	2	14	5.9	
Jun 6	3	3	3	3	3	3	3	3	3	3	3	4	3	2	3	2	2	2	3	5	3	3	3	4	2	5	3.0	
Jun 7	4	3	3	4	4	4	5	5	6	7	6	5	13	10	7	7	5	5	7	4	4	5	5	4	3	13	5.5	
Jun 8	4	5	5	5	4	4	3	2	2	3	3	4	4	5	5	5	6	5	6	6	6	6	6	6	2	6	4.5	
Jun 9	5	6	7	8	8	7	7	6	4	3	3	3	3	5	6	6	6	6	8	9	10	8	9	9	6	10	6.5	
Jun 10	6	5	8	17	10	9	16	12	7	6	5	7	7	9	8	6	5	5	4	4	5	4	6	5	4	17	7.3	
Jun 11	5	6	5	5	6	6	7	6	5	5	4	4	3	3	3	2	2	2	2	2	2	2	2	2	2	7	3.8	
Jun 12	2	3	3	2	3	3	4	6	4	3	4	4	3	2	3	3	3	3	3	2	3	4	5	6	2	6	3.4	
Jun 13	7	6	7	6	6	6	5	4	3	2	3	3	3	3	3	4	4	5	5	6	6	6	6	5	2	7	4.6	
Jun 14	5	5	5	5	5	5	5	5	6	8	7	5	5	5	7	7	6	6	8	8	11	16	8	8	5	16	6.7	
Jun 15	9	12	9	9	9	9	10	9	9	11	11	12	11	12	12	14	13	15	17	12	9	9	8	6	6	17	10.7	
Jun 16	5	4	4	4	4	4	4	3	2	2	2	2	2	2	2	3	3	2	4	2	1	1	2	2	1	5	2.8	
Jun 17	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	
Jun 18	1	1	1	2	2	2	2	1	2	2	2	2	2	2	3	3	3	3	3	4	4	4	4	4	1	4	2.5	
Jun 19	3	3	3	4	4	5	5	6	6	4	5	4	4	3	3	4	4	6	4	4	4	4	4	4	3	6	4.2	
Jun 20	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	3	3	1	3	1.6	
Jun 21	2	2	3	3	4	4	5	5	5	9	10	9	10	9	8	9	11	10	10	10	11	13	14	14	2	14	7.9	
Jun 22	13	12	12	12	12	12	13	14	14	15	16	11	7	5	5	6	6	5	6	9	7	4	4	3	3	16	9.3	
Jun 23	3	3	3	3	3	3	3	3	3	4	4	4	5	5	5	5	6	7	8	8	8	8	11	9	3	11	5.2	
Jun 24	9	8	8	8	8	9	8	9	9	8	9	9	9	9	8	8	8	8	7	8	10	10	10	11	7	11	8.7	
Jun 25	8	5	5	5	5	5	4	4	4	3	3	3	2	3	2	2	2	2	2	2	2	6	7	6	2	8	3.8	
Jun 26	5	4	4	3	4	4	5	5	5	8	6	6	6	6	4	4	4	4	5	5	5	5	6	3	8	4.9		
Jun 27	8	7	7	9	7	8	10	8	7	7	6	6	6	6	6	6	6	6	7	7	6	6	7	7	6	10	6.9	
Jun 28	7	7	7	7	7	8	7	7	7	8	7	7	7	8	8	8	8	8	9	9	9	8	9	10	9	7	10	7.8
Jun 29	11	11	10	10	10	9	9	9	9	9	8	8	8	8	9	8	8	8	8	8	8	8	9	9	8	11	8.9	
Jun 30	8	8	8	8	8	10	10	9	8	8	8	7	6	6	7	8	10	10	13	13	12	12	12	13	6	13	9.3	
Diurnal Maximum	14	12	12	17	12	12	16	14	14	16	18	18	17	18	12	14	13	15	17	13	12	16	14	14				
Diurnal Average	6.0	5.8	5.9	6.2	5.9	5.9	6.2	6.0	5.7	6.0	5.8	5.5	5.6	5.6	5.3	5.3	5.4	5.5	6.0	6.0	6.0	6.4	6.5	6.4				

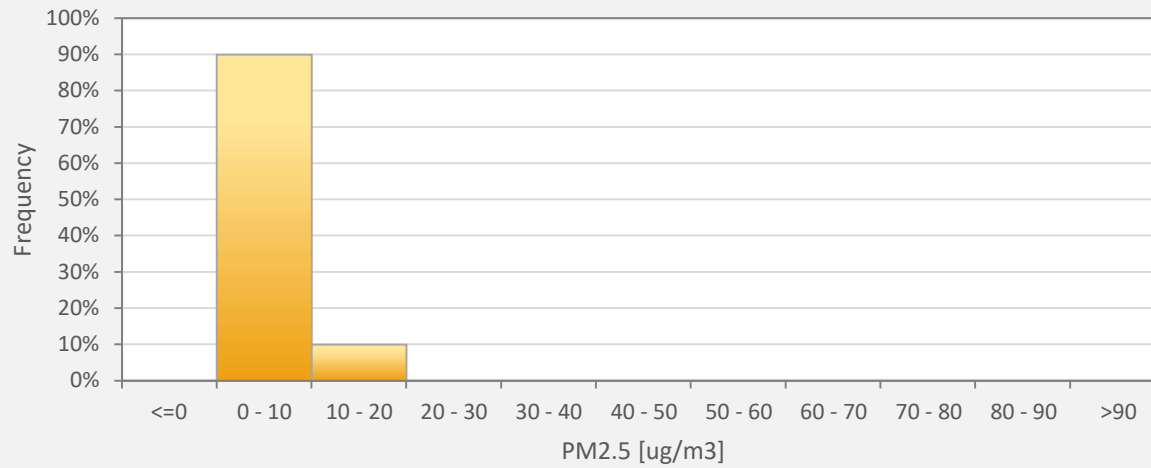
C Monthly Calibration	S Daily Zero-Span Check	Q Quality Assurance
K Collection Error	N No Data (Machine Not in Service)	Y Routine Maintenance
X InValid Data (Equipment Malfunction /Recovery)	NRM UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P Power Failure

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 PM2.5 - St. Lina Site



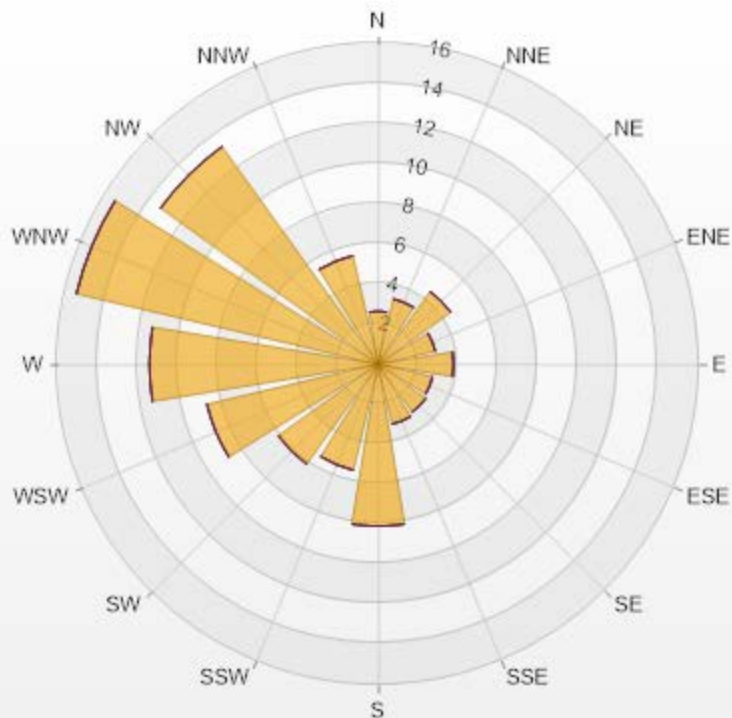
PM2.5[ug/m3(L)] Histogram: St. Lina Monthly: 06-2021 1 Hr.



Classes	PM2.5
<=0	0.00%
0 - 10	89.99%
10 - 20	10.01%
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: 06-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 99.86% Calm Avg: 0.00 [ug/m3(L)]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	2.64	0	0	0	0	2.64
NNE	3.34	0	0	0	0	3.34
NE	4.45	0	0	0	0	4.45
ENE	2.92	0	0	0	0	2.92
E	3.76	0	0	0	0	3.76
ESE	2.78	0	0	0	0	2.78
SE	2.92	0	0	0	0	2.92
SSE	3.06	0	0	0	0	3.06
S	8.07	0	0	0	0	8.07
SSW	5.42	0	0	0	0	5.42
SW	6.12	0	0	0	0	6.12
WSW	8.76	0	0	0	0	8.76
W	11.4	0	0	0	0	11.4
WNW	15.44	0	0	0	0	15.44
NW	13.35	0	0	0	0	13.35
NNW	5.56	0	0	0	0	5.56
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 - June 2021

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

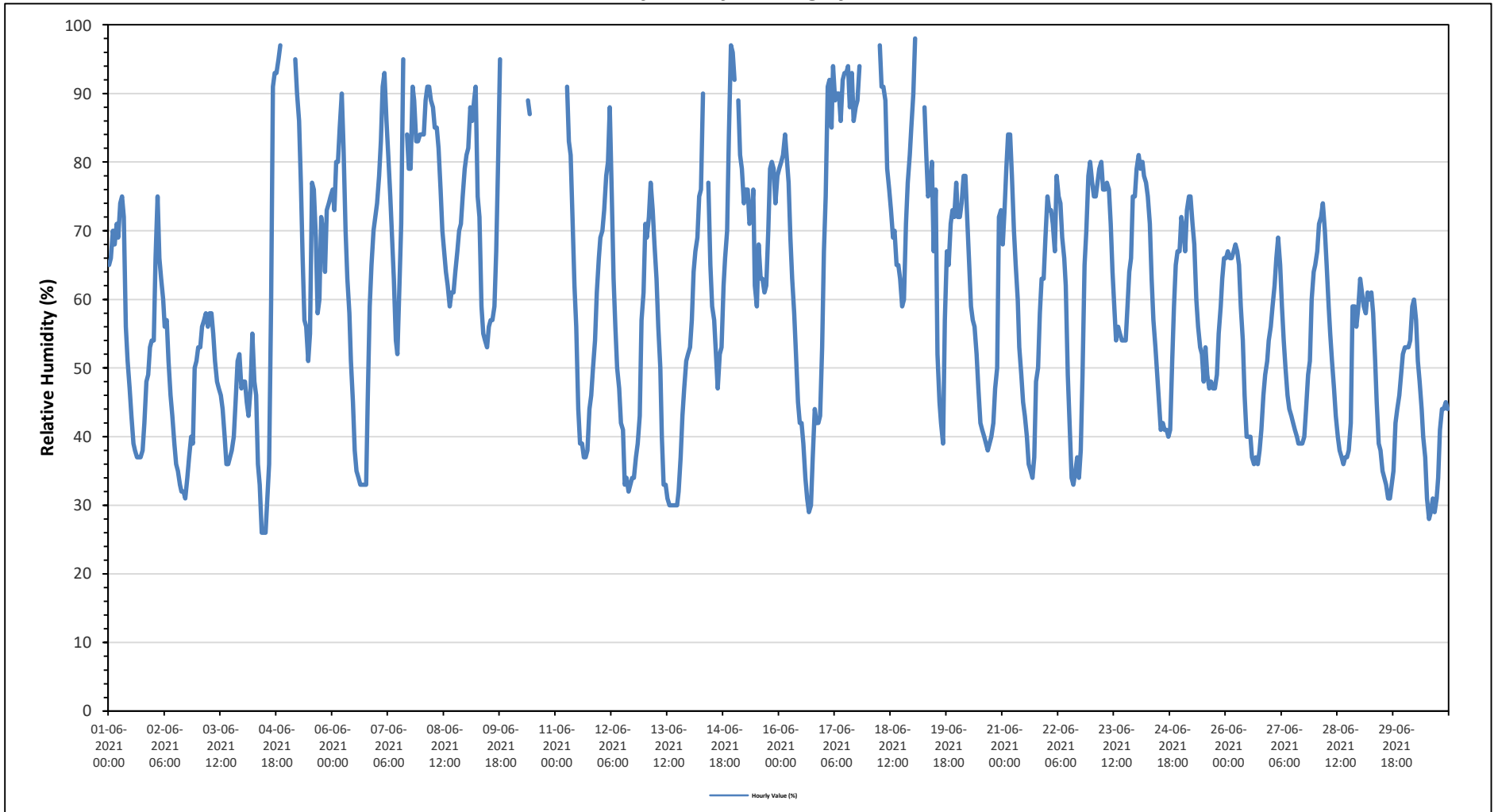
Maximum Hourly Value:	98 %	on June 19 at hour 1	Hours in Service:	720
Maximum Daily Value:	88.5 %	on June 17	Hours of Data:	662
Minimum Hourly Value:	26 %	on June 4 at hour 10	Hours of Missing Data:	58
Minimum Daily Value:	43.3 %	on June 30	Hours of Calibration:	0
Monthly Average:	59.8 %		Operational Uptime:	91.9

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
Jun 1	65	66	70	68	71	69	74	75	72	56	51	47	43	39	38	37	37	37	38	42	48	49	53	54	37	75	54.1
Jun 2	54	66	75	66	63	60	56	57	51	46	43	39	36	35	33	32	32	31	34	37	40	39	50	51	31	75	46.9
Jun 3	53	53	56	57	58	56	58	58	55	51	48	47	46	44	40	36	36	37	38	40	45	51	52	47	36	58	48.4
Jun 4	48	48	45	43	47	55	48	46	36	33	26	26	26	31	36	60	91	93	93	95	97	X	X	X	26	97	53.5
Jun 5	X	X	X	X	95	90	86	77	66	57	56	51	55	77	76	69	58	60	72	70	64	73	74	75	51	95	70.1
Jun 6	76	73	80	80	85	90	82	70	63	58	51	45	38	35	34	33	33	33	33	45	59	65	70	72	33	90	58.5
Jun 7	74	78	83	91	93	86	81	75	69	63	54	52	62	71	95	X	84	79	79	91	89	83	83	84	52	95	78.2
Jun 8	84	84	89	91	91	89	88	85	85	82	76	70	67	64	62	59	61	61	64	67	70	71	75	79	59	91	75.6
Jun 9	81	82	88	86	89	91	75	72	59	55	54	53	56	57	57	59	67	81	95	X	X	X	X	X	53	95	71.4
Jun 10	X	X	X	X	X	X	X	X	X	89	87	X	X	X	X	X	X	X	X	X	X	X	X	X	87	89	-
Jun 11	X	X	X	X	X	X	91	83	81	71	62	56	44	39	39	37	37	38	44	46	50	54	61	66	37	91	55.5
Jun 12	69	70	73	78	80	88	75	63	56	50	47	42	41	33	34	32	33	34	34	37	39	43	57	61	32	88	52.9
Jun 13	71	69	72	77	73	68	63	56	50	40	33	33	31	30	30	30	30	30	32	37	43	47	51	52	30	77	47.8
Jun 14	53	57	64	67	69	75	76	90	X	X	77	65	59	57	52	47	52	53	62	66	70	84	97	96	47	97	67.6
Jun 15	92	X	89	81	79	74	76	76	71	72	76	62	59	68	63	61	62	70	79	80	79	74	78	78	59	92	73.2
Jun 16	79	80	81	84	81	77	69	63	58	52	45	42	42	39	34	31	29	30	37	44	42	42	43	53	29	84	53.2
Jun 17	67	75	91	92	85	94	89	90	90	86	92	93	93	94	88	93	86	88	89	94	X	X	X	X	67	94	88.5
Jun 18	X	X	X	X	X	X	97	91	91	89	79	76	73	69	70	65	65	63	59	60	71	77	81	85	59	97	75.6
Jun 19	90	98	X	X	X	X	88	81	75	76	80	67	76	52	45	42	39	57	67	65	71	73	72	77	39	98	69.6
Jun 20	72	72	74	78	78	71	65	59	57	56	52	47	42	41	40	39	38	39	40	42	47	50	72	73	38	78	56.0
Jun 21	68	73	79	84	84	78	70	65	60	53	49	45	43	40	36	35	34	37	48	50	58	63	63	69	34	84	57.7
Jun 22	75	73	73	71	67	78	75	74	69	66	62	49	42	34	33	35	37	34	38	49	65	70	78	80	33	80	59.5
Jun 23	77	75	75	77	79	80	76	76	77	76	71	64	59	54	56	55	54	54	54	59	64	66	75	75	54	80	67.8
Jun 24	79	81	79	80	78	77	75	71	63	57	53	49	45	41	42	41	41	40	41	51	59	65	67	67	40	81	60.1
Jun 25	72	70	67	73	75	75	71	68	60	56	53	52	48	53	49	47	48	47	47	49	55	59	63	66	47	75	59.3
Jun 26	66	67	66	66	67	68	67	65	59	54	46	40	40	40	37	36	37	36	38	41	46	49	51	54	36	68	51.5
Jun 27	56	59	62	66	69	65	59	54	50	46	44	43	42	41	40	39	39	39	40	44	49	51	60	64	39	69	50.9
Jun 28	65	67	71	72	74	70	65	59	55	51	47	43	40	38	37	36	37	37	38	42	59	59	56	59	36	74	53.2
Jun 29	63	61	59	58	61	60	61	58	51	45	39	38	35	34	33	31	31	33	35	42	44	46	49	52	31	63	46.6
Jun 30	53	53	53	54	59	60	57	51	48	44	40	37	31	28	29	31	29	31	34	41	44	44	45	44	28	60	43.3
Diurnal Maximum	92	98	91	92	95	94	97	91	91	89	92	93	93	94	95	93	91	93	95	95	97	84	97	96			
Daiurnal Average	69.3	70.0	72.6	73.6	75.0	74.8	72.9	69.2	63.5	59.7	56.4	50.8	48.8	47.5	46.8	44.6	46.8	48.1	51.5	54.5	58.1	59.7	64.3	66.7			

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 - June 2021

Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

Maximum Hourly Value:	926 mb on June 27 at hour 3	Hours in Service:	720
Maximum Daily Value:	924 mb on June 27	Hours of Data:	720
Minimum Hourly Value:	904 mb on June 22 at hour 14	Hours of Missing Data:	0
Minimum Daily Value:	907 mb on June 5	Hours of Calibration:	0
Monthly Average:	916 mb	Operational Uptime:	100.0

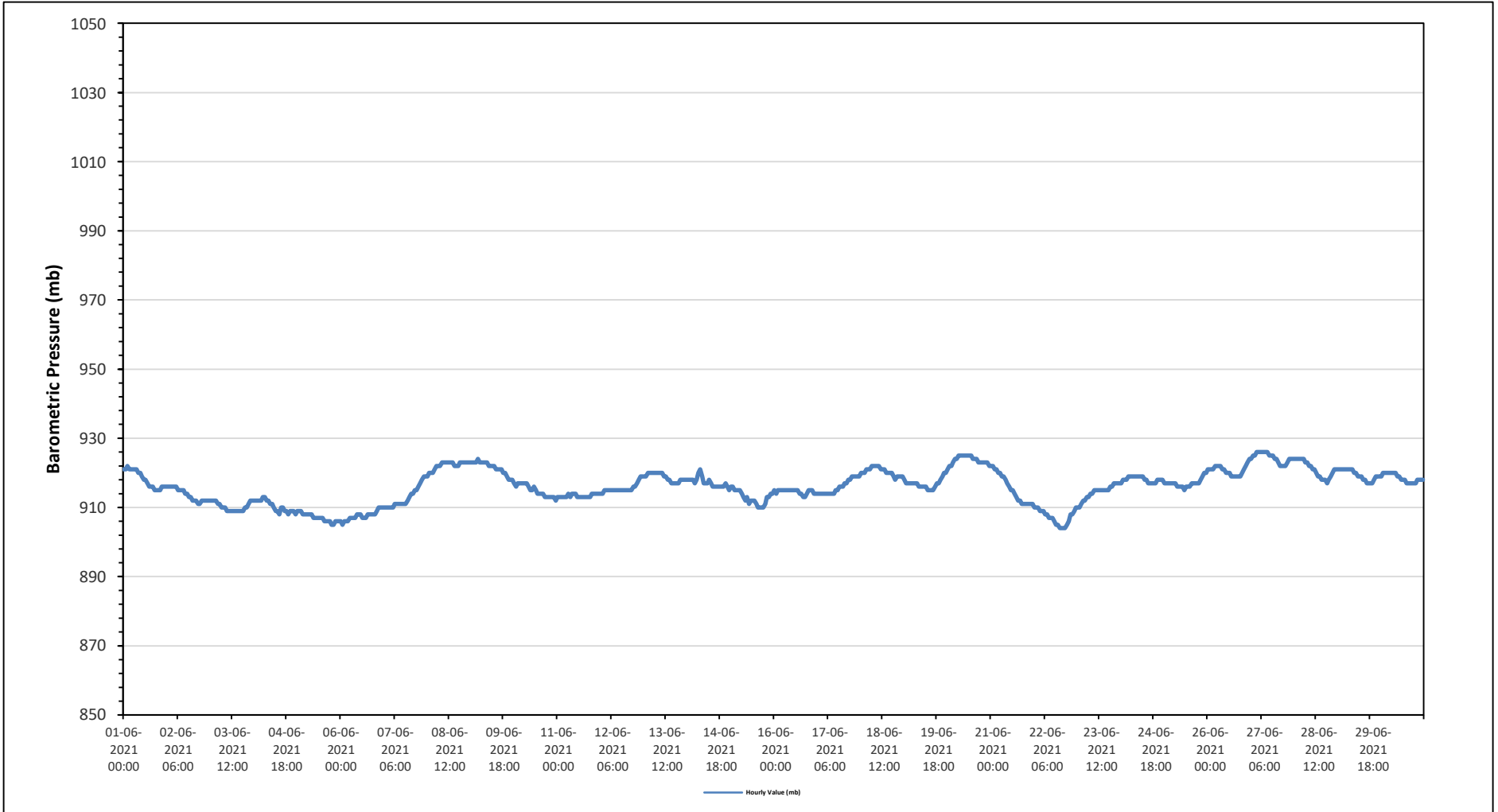
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Jun 1	921	921	922	921	921	921	921	921	920	920	919	918	918	917	916	916	916	915	915	915	915	916	916	916	915	922	918.2
Jun 2	916	916	916	916	916	916	915	915	915	915	914	914	913	913	912	912	912	911	911	912	912	912	912	912	912	916	913.7
Jun 3	912	912	912	912	911	911	910	910	910	909	909	909	909	909	909	909	909	909	909	910	910	911	912	912	912	912	910.2
Jun 4	912	912	912	912	912	913	913	912	912	911	911	910	909	909	908	910	910	909	909	909	908	909	909	909	908	913	910.4
Jun 5	909	909	909	908	908	908	908	908	908	907	907	907	907	907	907	906	906	906	906	905	905	906	906	906	909	907.0	
Jun 6	906	905	906	906	906	907	907	907	907	908	908	908	907	907	907	908	908	908	908	908	909	910	910	910	905	910	907.5
Jun 7	910	910	910	910	910	910	911	911	911	911	911	911	912	913	914	914	915	915	915	916	917	918	919	919	910	919	912.9
Jun 8	919	920	920	920	921	922	922	922	923	923	923	923	923	923	922	922	922	923	923	923	923	923	923	923	923	923	922.1
Jun 9	923	923	923	923	924	923	923	923	923	923	922	922	922	922	921	921	921	921	920	920	919	918	918	918	918	924	921.5
Jun 10	917	916	917	917	917	917	917	917	916	915	915	916	915	914	914	914	913	913	913	913	913	913	913	912	912	917	914.9
Jun 11	913	913	913	913	913	913	914	914	913	914	914	913	913	913	913	913	913	913	913	914	914	914	914	914	913	914	913.4
Jun 12	914	914	915	915	915	915	915	915	915	915	915	915	915	915	915	915	915	915	916	916	917	918	919	919	914	919	915.5
Jun 13	919	919	920	920	920	920	920	920	920	920	920	919	919	918	918	917	917	917	917	917	918	918	918	918	917	920	918.7
Jun 14	918	918	918	918	917	918	920	921	919	917	917	918	917	916	916	916	916	916	916	916	916	916	916	915	915	921	917.2
Jun 15	916	916	915	915	915	915	914	913	912	913	911	912	912	911	910	910	910	910	911	913	913	914	914	914	910	916	912.8
Jun 16	915	914	915	915	915	915	915	915	915	915	915	915	915	915	914	914	913	913	914	915	915	915	914	914	913	915	914.6
Jun 17	914	914	914	914	914	914	914	914	914	914	915	915	916	916	916	917	917	918	918	919	919	919	919	919	914	919	916.0
Jun 18	920	920	920	921	921	921	922	922	922	922	921	921	921	921	920	920	920	919	918	919	919	919	919	919	918	922	920.4
Jun 19	918	917	917	917	917	917	917	917	916	916	916	916	916	915	915	915	916	916	917	917	918	919	920	920	915	920	916.8
Jun 20	921	922	922	923	924	924	925	925	925	925	925	925	925	925	924	924	924	923	923	923	923	923	923	923	922	921	923.7
Jun 21	922	922	921	921	920	920	919	919	918	917	916	915	915	914	913	912	912	911	911	911	911	911	911	911	911	911	915.5
Jun 22	910	910	910	909	909	909	908	908	907	907	906	905	905	904	904	904	905	906	908	908	909	910	910	910	904	910	907.2
Jun 23	910	910	911	912	912	913	913	914	914	915	915	915	915	915	915	915	915	916	916	917	917	917	917	917	910	917	914.3
Jun 24	917	918	918	918	919	919	919	919	919	919	919	919	919	918	918	917	917	917	917	917	917	918	918	918	917	919	918.1
Jun 25	917	917	917	917	917	917	917	916	916	916	916	915	916	916	917	917	917	917	917	917	918	919	920	920	915	920	917.0
Jun 26	921	921	921	921	922	922	922	922	921	921	920	920	919	919	919	919	919	919	919	920	921	922	923	924	919	924	920.8
Jun 27	924	925	925	926	926	926	926	926	926	926	925	925	925	924	924	923	922	922	922	922	923	924	924	924	922	926	924.4
Jun 28	924	924	924	924	924	924	923	923	922	922	921	921	920	919	919	918	918	918	917	918	919	920	921	921	917	924	921.0
Jun 29	921	921	921	921	921	921	921	921	921	920	920	919	919	919	918	918	917	917	917	917	918	919	919	919	917	921	919.4
Jun 30	919	920	920	920	920	920	920	920	920	920	919	919	918	918	917	917	917	917	917	918	918	918	918	918	917	920	918.5
Diurnal Maximum	924	925	925	926	926	926	926	926	926	926	925	925	925	924	924	924	923	923	923	923	923	924	924	924			
Diurnal Average	917	917	917	917	917	917	917	917	917	917	916	916	916	915	915	915	915	915	915	915	916	916	916	916			

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 - June 2021

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

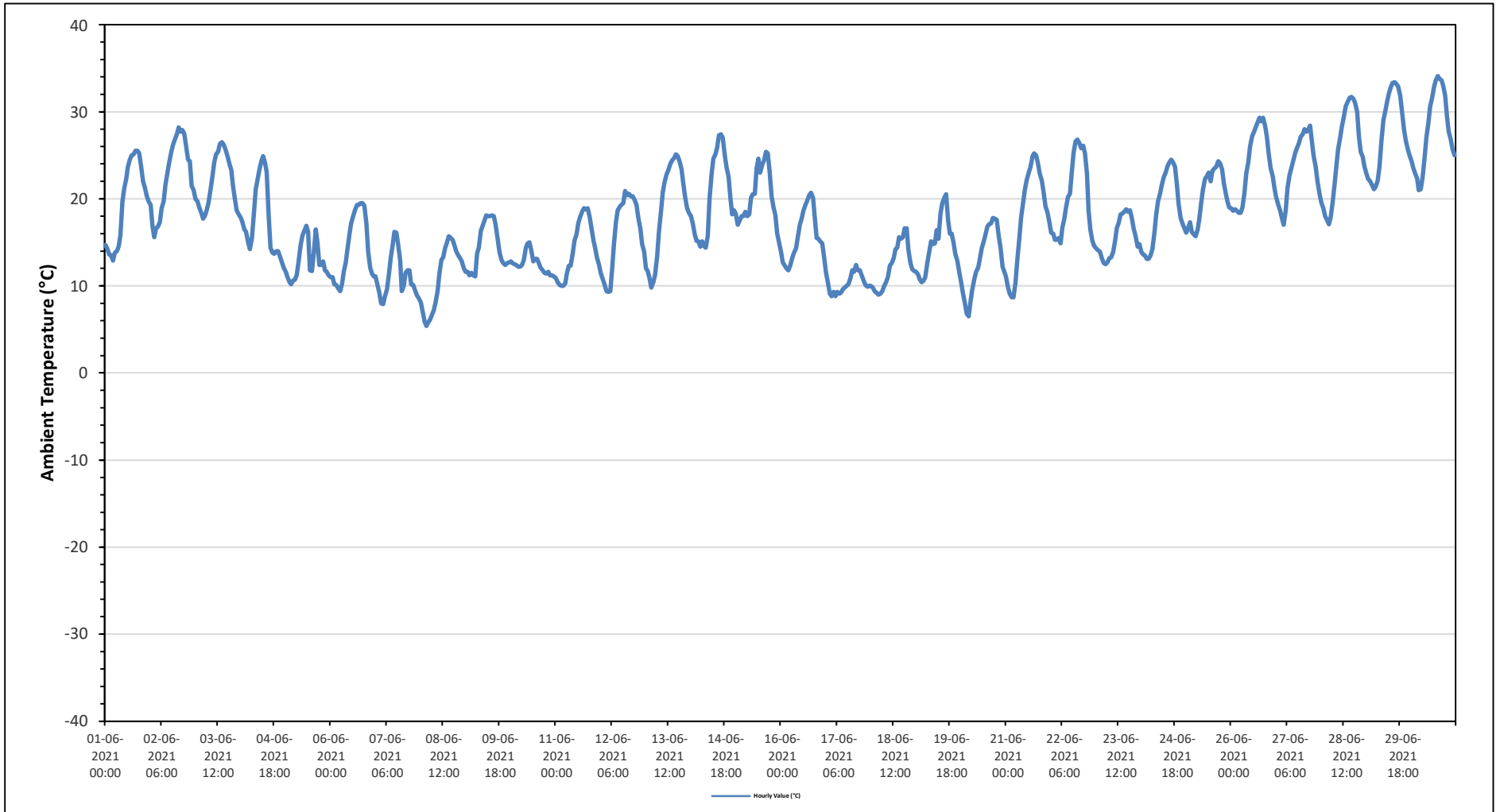
Maximum Hourly Value:	34.1 °C	on June 30 at hour 14	Hours in Service:	720
Maximum Daily Value:	27.8 °C	on June 30	Hours of Data:	720
Minimum Hourly Value:	5.4 °C	on June 8 at hour 3	Hours of Missing Data:	0
Minimum Daily Value:	10.3 °C	on June 17	Hours of Calibration:	0
Monthly Average:	17.8 °C		Operational 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
Jun 1	14.7	14.3	13.6	13.5	12.9	13.8	14	14.5	15.8	19.7	21.2	22.3	23.6	24.5	25	25.1	25.5	25.5	25.2	23.8	22	21.3	20.3	19.7	12.9	25.5	19.7
Jun 2	19.3	16.9	15.6	16.6	16.8	17.3	18.9	19.7	21.6	23	24.2	25.4	26.2	26.8	27.4	28.2	27.7	27.9	27.5	26.1	24.5	24.3	21.5	21	15.6	28.2	22.7
Jun 3	20	19.7	19	18.4	17.7	18.1	18.8	19.5	21	22.4	24.2	25.1	25.4	26.3	26.5	26.2	25.7	24.9	24.1	23.3	21.4	19.8	18.7	18.2	17.7	26.5	21.9
Jun 4	17.9	17.4	16.5	16.2	15	14.2	15.5	18	21.1	22.2	23.3	24.3	24.9	24.2	23.1	18	14.4	13.8	13.7	14	14	13.4	12.7	12.1	12.1	24.9	17.5
Jun 5	11.6	11	10.4	10.2	10.6	10.7	11.2	12.9	14.6	15.8	16.3	16.9	16.2	11.8	11.7	13.7	16.5	14.9	12.4	12.4	12.8	11.8	11.6	11.2	10.2	16.9	12.9
Jun 6	11	11	10.2	10.1	9.7	9.4	10.2	11.6	12.7	14.1	15.8	17.2	18	18.7	19.3	19.3	19.5	19.5	19.2	17.2	13.9	12.1	11.4	11.1	9.4	19.5	14.3
Jun 7	11.1	10.2	9.2	8	7.9	8.8	9.6	11.2	13.3	14.6	16.2	16.1	14.7	12.9	9.4	10	11.5	11.8	11.8	10.2	10.1	9.5	8.9	8.6	7.9	16.2	11.1
Jun 8	8.1	7.1	5.9	5.4	5.8	6.1	6.6	7.2	8.1	9.4	11.4	13	13.3	14.3	15	15.7	15.5	15.3	14.6	14	13.5	13.2	12.8	12	5.4	15.7	11.0
Jun 9	11.6	11.6	11.2	11.5	11.2	11.1	13.7	14.4	16.3	16.9	17.5	18.1	18	18	18.1	18	17	15.4	13.9	13	12.6	12.4	12.6	12.7	11.1	18.1	14.5
Jun 10	12.8	12.6	12.5	12.4	12.2	12.2	12.4	13	14.4	14.9	15	14	12.8	13.1	13.1	12.6	12.1	11.8	11.5	11.4	11.6	11.2	11.2	11.1	11.1	15.0	12.6
Jun 11	10.9	10.4	10.1	10	10	10.3	11.4	12.3	13.7	15.2	15.9	17.2	17.9	18.5	18.9	18.8	18.9	17.9	16.6	15.2	14.4	13.2	12.5	10.0	18.9	14.3	
Jun 12	11.5	10.8	10.2	9.4	9.3	9.4	11.9	14.7	17.3	18.7	19.1	19.3	19.5	20.9	20.4	20.6	20.3	20.3	19.9	19.3	17.8	16.6	14.8	13.9	9.3	20.9	16.1
Jun 13	12	11.7	10.9	9.8	10.4	11.3	13.4	16.2	18.5	20.7	21.9	22.8	23.3	24	24.4	24.7	25.1	24.9	24.3	23.4	21.7	20.2	18.9	18.4	9.8	25.1	18.9
Jun 14	18	17.2	15.9	15.2	15.1	14.5	15.1	14.6	14.4	15.7	20	22.8	24.6	25.1	25.9	27.3	27.4	27	25	23.6	22.5	20.1	18.2	18.7	14.4	27.4	20.2
Jun 15	18.3	17	17.5	18	18	18.5	18	18.2	20.1	20.5	20.6	23.5	24.6	23	23.9	24.4	25.4	25.2	23.2	20.3	19.1	18.1	16	14.9	14.9	25.4	20.3
Jun 16	13.9	12.7	12.3	12	11.8	12.3	13.2	13.8	14.3	15.6	17	17.7	18.6	19.3	19.8	20.4	20.7	20.1	18.1	15.5	15.4	15.1	14.9	13.4	11.8	20.7	15.7
Jun 17	11.5	10.4	9.1	8.8	9.3	8.8	9.3	9.1	9.2	9.6	9.8	10	10.2	10.9	11.8	11.6	12.4	11.8	11.8	11.2	10.6	10.1	9.9	10	8.8	12.4	10.3
Jun 18	10	9.8	9.4	9.2	9	9.1	9.4	10	10.4	11	12.3	12.6	13.2	14.2	14.4	15.6	15.4	15.6	16.6	16.6	14.1	12.6	11.9	11.7	9.0	16.6	12.3
Jun 19	11.6	11.3	10.7	10.4	10.6	11	12.6	13.8	15.1	14.8	14.9	16.4	15.4	18.3	19.5	20.1	20.5	17.5	16	16	15	13.7	12.9	11.7	10.4	20.5	14.6
Jun 20	10.4	9.2	8	6.8	6.5	8.2	9.6	10.8	11.6	12.1	13	14.3	15	15.9	16.8	17.1	17.2	17.8	17.7	17.6	15.7	14.4	12.2	11.6	6.5	17.8	12.9
Jun 21	11.1	9.9	9.1	8.7	8.7	10.4	13	15.5	17.9	19.4	21.1	22.2	23	23.7	24.9	25.2	25	24.1	22.9	22.1	20.8	19.1	18.5	17.3	8.7	25.2	18.1
Jun 22	16.1	16	15.3	15.3	15.5	14.9	16.7	17.6	19.1	20.2	20.6	23	25.3	26.6	26.8	26.4	25.8	26.1	25.2	22.8	18.7	16.5	15.2	14.6	14.6	26.8	20.0
Jun 23	14.3	14.1	13.9	13.2	12.6	12.5	12.7	13.2	13.3	13.9	15.1	16.6	17.2	18.2	18.3	18.5	18.8	18.5	18.7	17.8	16.5	15.7	14.5	14.8	12.5	18.8	15.5
Jun 24	13.9	13.6	13.5	13.1	13.1	13.5	14.2	16.1	18.2	19.7	20.6	21.6	22.5	23	23.8	24.2	24.5	24.2	23.7	21.7	19.4	17.8	17.2	16.6	13.1	24.5	18.7
Jun 25	16.1	16.7	17.3	16.2	15.9	15.7	16.5	17.6	19.6	21.1	22.3	22.6	23	22	23.2	23.5	23.7	24.3	24.1	23.4	21.8	20.7	19.7	19	15.7	24.3	20.3
Jun 26	18.9	18.6	18.8	18.6	18.4	18.4	19	20.7	22.9	24.2	26	27.2	27.6	28.2	28.7	29.3	28.9	29.3	28.4	27.1	25	23.5	22.6	21.2	18.4	29.3	23.8
Jun 27	20.1	19.3	18.7	17.8	17	18.6	21.2	22.7	23.5	24.4	25.2	25.8	26.4	27.1	27.4	28	27.7	27.9	28.4	26.6	24.9	23.7	22	20.6	17.0	28.4	23.5
Jun 28	19.6	18.9	18	17.6	17.1	17.9	19.7	21.6	23.7	25.7	27	28.3	29.5	30.6	31.1	31.6	31.7	31.5	31	30	27.1	25.4	24.8	23.8	17.1	31.7	25.1
Jun 29	22.9	22.3	22	21.6	21.1	21.4	22.1	23.8	26.5	29	30	31.2	32.1	32.8	33.3	33.4	33.2	32.9	31.9	30.1	28	26.7	25.7	25	21.1	33.4	27.5
Jun 30	24.3	23.5	22.9	22.3	21	21.1	22.4	24.7	27	28.7	30.6	31.5	32.8	33.6	34.1	33.8	33.6	32.9	31.8	29.5	27.7	26.8	25.7	25	21.0	34.1	27.8
Diurnal Maximum	24.3	23.5	22.9	22.3	21.1	21.4	22.4	24.7	27.0	29.0	30.6	31.5	32.8	33.6	34.1	33.8	33.6	32.9	31.9	30.1	28.0	26.8	25.7	25.0			
Diurnal Average	14.8	14.2	13.6	13.2	13.0	13.3	14.4	15.6	17.1	18.4	19.6	20.6	21.1	21.5	21.9	22.0	22.1	21.7	21.0	19.9	18.4	17.3	16.4	15.7			

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 AT - St. Lina Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - June 2021

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

Maximum Hourly Value:	24.9 °C	on June 3 at hour 23	Hours in Service:	720
Maximum Daily Value:	24.3 °C	on June 5	Hours of Data:	720
Minimum Hourly Value:	19.9 °C	on June 2 at hour 21	Hours of Missing Data:	0
Minimum Daily Value:	20.7 °C	on June 2	Hours of Calibration:	0
Monthly Average:	23.0 °C		Operational Uptime:	100.0

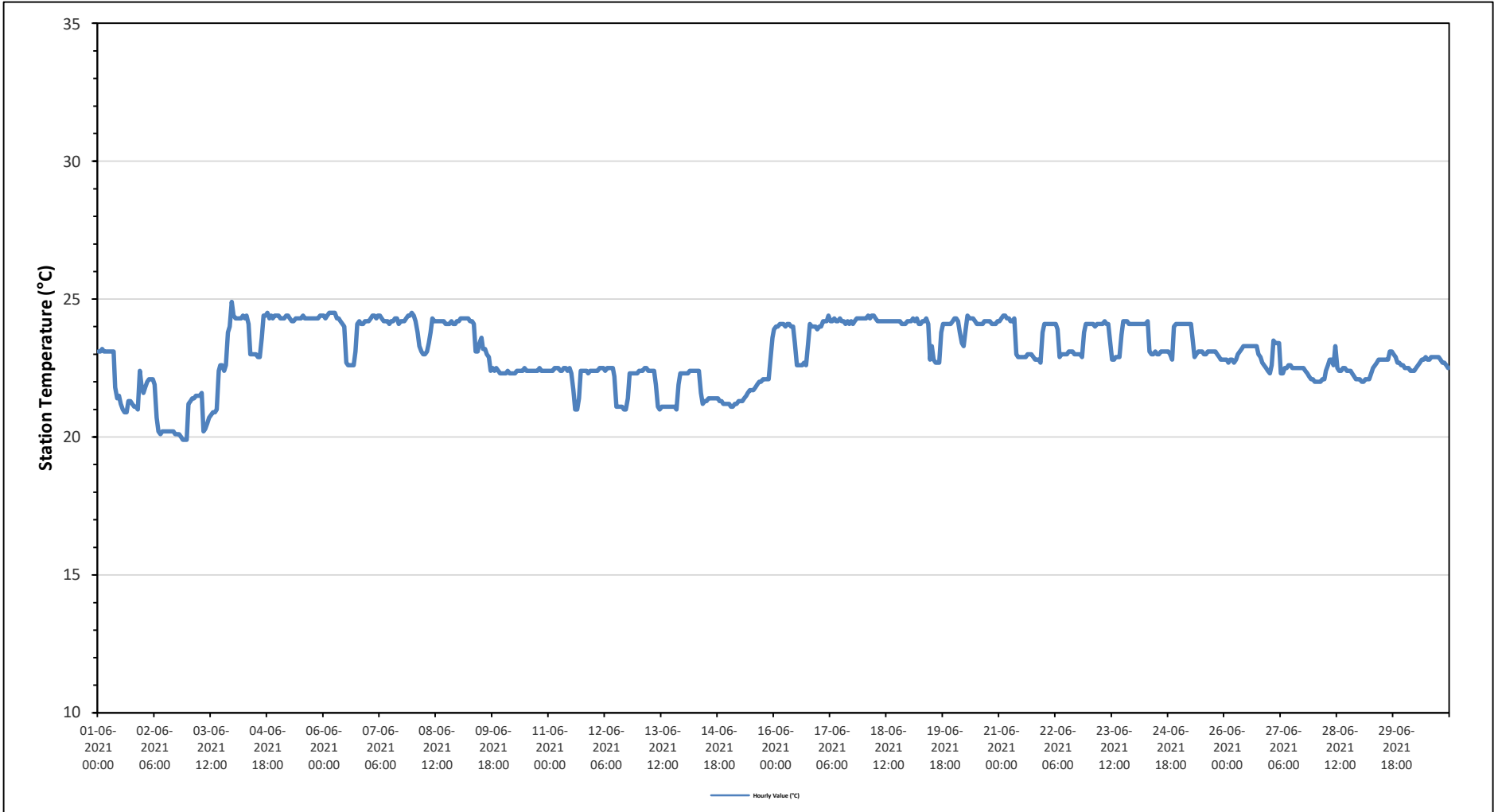
Day	Hourly Period Starting at (MST)																							Daily	Daily	Daily			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average		
Jun 1	23.1	23.1	23.2	23.1	23.1	23.1	23.1	23.1	23.1	21.8	21.4	21.5	21.2	21.0	20.9	20.9	21.3	21.3	21.2	21.1	21.1	21.0	22.4	21.9	20.9	23.2	22.0		
Jun 2	21.6	21.8	22.0	22.1	22.1	22.1	21.9	20.7	20.2	20.1	20.2	20.2	20.2	20.2	20.2	20.2	20.1	20.1	20.1	20.0	19.9	19.9	19.9	19.9	19.9	19.9	20.7		
Jun 3	21.2	21.3	21.4	21.4	21.5	21.5	21.5	21.6	20.2	20.3	20.5	20.7	20.8	20.9	20.9	21.0	22.4	22.6	22.6	22.4	22.6	23.8	24.0	24.9	20.2	24.9	21.8		
Jun 4	24.4	24.3	24.3	24.3	24.3	24.4	24.3	24.4	24.1	23.0	23.0	23.0	23.0	22.9	22.9	23.6	24.4	24.4	24.5	24.3	24.4	24.3	24.4	24.4	24.4	22.9	24.5	24.0	
Jun 5	24.4	24.3	24.3	24.3	24.4	24.4	24.3	24.2	24.2	24.3	24.3	24.3	24.3	24.4	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.4	24.4	24.2	24.4	24.3	
Jun 6	24.4	24.3	24.4	24.5	24.5	24.5	24.5	24.3	24.3	24.2	24.1	24.0	22.7	22.6	22.6	22.6	22.6	23.1	24.1	24.2	24.1	24.1	24.2	24.1	24.2	22.6	24.5	23.9	
Jun 7	24.2	24.3	24.4	24.4	24.3	24.4	24.4	24.3	24.2	24.2	24.1	24.2	24.2	24.3	24.3	24.1	24.2	24.2	24.2	24.3	24.4	24.4	24.4	24.4	24.5	24.1	24.5	24.3	
Jun 8	24.4	24.2	23.8	23.3	23.1	23.0	23.0	23.1	23.4	23.8	24.3	24.2	24.2	24.2	24.2	24.2	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.2	23.0	24.4	23.9
Jun 9	24.2	24.3	24.3	24.3	24.3	24.3	24.2	24.2	24.1	23.1	23.1	23.4	23.6	23.2	23.2	23.0	22.9	22.4	22.5	22.4	22.5	22.4	22.3	22.3	22.3	22.3	24.3	23.4	23.4
Jun 10	22.3	22.3	22.4	22.3	22.3	22.3	22.3	22.4	22.4	22.4	22.4	22.5	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.5	22.4	22.4	22.4	22.4	22.4	22.3	22.5	22.4	
Jun 11	22.4	22.4	22.4	22.5	22.5	22.5	22.4	22.4	22.5	22.5	22.4	22.5	22.3	21.7	21.0	21.0	21.4	22.4	22.4	22.4	22.4	22.3	22.4	22.4	22.4	21.0	22.5	22.2	
Jun 12	22.4	22.4	22.4	22.5	22.5	22.5	22.4	22.5	22.5	22.5	22.5	22.2	21.1	21.1	21.1	21.1	21.0	21.0	21.4	22.3	22.3	22.3	22.3	22.3	21.0	22.5	22.0		
Jun 13	22.4	22.4	22.4	22.5	22.5	22.4	22.4	22.4	22.4	21.9	21.1	21.0	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.0	21.9	22.3	22.3	21.0	22.5	21.8		
Jun 14	22.3	22.3	22.3	22.4	22.4	22.4	22.4	22.4	22.4	21.6	21.2	21.3	21.3	21.4	21.4	21.4	21.4	21.4	21.4	21.3	21.3	21.2	21.2	21.2	21.2	21.2	22.4	21.7	
Jun 15	21.2	21.1	21.1	21.2	21.2	21.3	21.3	21.3	21.4	21.5	21.6	21.7	21.7	21.7	21.8	21.9	22.0	22.0	22.1	22.1	22.1	22.1	22.1	22.1	21.1	23.6	21.7		
Jun 16	23.9	24.0	24.0	24.1	24.1	24.1	24.0	24.1	24.1	24.0	24.0	23.4	22.6	22.6	22.6	22.6	22.7	22.6	23.3	24.1	24.0	24.0	24.0	23.9	22.6	24.1	23.6		
Jun 17	24.0	24.0	24.2	24.2	24.2	24.4	24.2	24.2	24.3	24.2	24.2	24.3	24.2	24.2	24.1	24.2	24.1	24.2	24.1	24.2	24.3	24.3	24.3	24.3	24.0	24.4	24.2		
Jun 18	24.3	24.3	24.4	24.3	24.4	24.4	24.3	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.1	24.1	24.1	24.2	24.1	24.4	24.2		
Jun 19	24.2	24.2	24.3	24.2	24.3	24.1	24.1	24.2	24.2	24.3	24.1	22.8	23.3	22.8	22.7	22.7	22.7	23.8	24.1	24.1	24.1	24.1	24.1	24.1	24.2	22.7	24.3	23.8	
Jun 20	24.3	24.3	24.2	23.8	23.4	23.3	23.9	24.4	24.3	24.3	24.3	24.2	24.1	24.1	24.1	24.1	24.2	24.2	24.2	24.2	24.1	24.1	24.1	24.2	23.3	24.4	24.1		
Jun 21	24.2	24.3	24.4	24.4	24.3	24.3	24.2	24.2	24.3	23.0	22.9	22.9	22.9	22.9	23.0	23.0	23.0	23.0	22.9	22.8	22.8	22.8	22.7	23.8	22.7	24.4	23.5		
Jun 22	24.1	24.1	24.1	24.1	24.1	24.1	24.1	23.9	22.9	23.0	23.0	23.0	23.1	23.1	23.1	23.1	23.0	23.0	23.0	23.0	22.9	23.8	24.1	24.1	22.9	24.1	23.5		
Jun 23	24.1	24.1	24.1	24.0	24.1	24.1	24.1	24.1	24.1	24.2	24.1	24.1	23.4	22.8	22.8	22.9	22.9	22.9	23.7	24.2	24.2	24.2	24.1	24.1	22.8	24.2	23.8		
Jun 24	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.2	23.1	23.0	23.0	23.1	23.0	23.0	23.1	23.1	23.1	23.1	23.1	23.0	22.8	24.0	24.1	22.8	24.2	23.5		
Jun 25	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	23.5	22.9	23.0	23.1	23.1	23.0	23.0	23.1	23.1	23.1	23.1	23.0	22.9	22.8	22.8	22.8	24.1	23.4		
Jun 26	22.8	22.8	22.7	22.8	22.8	22.7	22.8	23.0	23.1	23.2	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.0	22.9	22.7	22.6	22.5	22.4	22.4	23.3	23.0		
Jun 27	22.3	22.6	23.5	23.4	23.4	23.4	22.3	22.3	22.5	22.5	22.6	22.6	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.4	22.3	22.2	22.1	22.1	22.1	23.5	22.6	
Jun 28	22.0	22.0	22.0	22.0	22.1	22.1	22.1	22.4	22.6	22.8	22.8	22.6	23.3	22.5	22.4	22.4	22.5	22.5	22.4	22.4	22.4	22.3	22.2	22.1	22.1	22.0	23.3	22.4	
Jun 29	22.1	22.0	22.0	22.1	22.1	22.1	22.3	22.5	22.6	22.7	22.8	22.8	22.8	22.8	22.8	23.1	23.1	23.0	22.9	22.7	22.7	22.6	22.6	22.6	22.0	23.1	22.6		
Jun 30	22.5	22.5	22.5	22.4	22.4	22.4	22.5	22.6	22.7	22.8	22.8	22.9	22.8	22.8	22.9	22.9	22.9	22.9	22.8	22.7	22.7	22.6	22.6	22.4	22.4	22.9	22.7		
Diurnal Maximum	24.4	24.3	24.4	24.5	24.5	24.5	24.5	24.4	24.3	24.3	24.3	24.3	24.3	24.4	24.3	24.3	24.4	24.4	24.5	24.3	24.4	24.4	24.4	24.9					
Daiurnal Average	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.2	23.1	22.9	22.9	22.7	22.7	22.6	22.7	22.8	22.9	22.9	22.9	23.0	22.9	23.0	23.1	23.2					

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 - St. Lina Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - June 2021

Summary of Hourly Averages

PRECIPITATION in mm

Maximum Hourly Value:	11.7 mm on June 14 at hour 21	Hours in Service:	720
Maximum Daily Value:	0.9 mm on June 10	Hours of Data:	720
Minimum Hourly Value:	0.0 mm on June 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0 mm on June 1	Hours of Calibration:	0
Monthly Total:	69.1 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			
Jun 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
Jun 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
Jun 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
Jun 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.4	0.7	1.6	0	0.4	0	0.2	0	0.1	0.0	2.4	0.2
Jun 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
Jun 6	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	0.1	0.0
Jun 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.4	0.1	0	0	0	0	0	0	0	0	0.0	2.4	0.1
Jun 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
Jun 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	1.4	0.9	0.1	0	0.6	6.2	0.0	6.2	0.4
Jun 10	0.7	0.2	0	0	0	0	0	0	0	0	0	2.1	2.7	1	2.3	1.1	1.5	1.8	1.4	2	0.1	0.2	2.6	1.3	0.0	2.7	0.9
Jun 11	0.5	2	0.5	0.6	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	2.0	0.2
Jun 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
Jun 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
Jun 14	0	0	0	0	0	0	0.3	1.7	1.1	0.1	0.1	0	0	0	0	0	0	0	0	0	0.5	11.7	0	0.1	0.0	11.7	0.7
Jun 15	2.6	4.9	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	4.9	0.3
Jun 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
Jun 17	0	0	0.7	0.3	0	0.1	0	0	0	0	0	0.1	0	0.2	0.4	0.2	0	0	0	0.7	0.4	0.2	0.1	0	0.0	0.7	0.1
Jun 18	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.0
Jun 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
Jun 20	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
Jun 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
Jun 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
Jun 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
Jun 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
Jun 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
Jun 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
Jun 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
Jun 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
Jun 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
Jun 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
Diurnal Maximum	2.6	4.9	0.7	0.6	0.1	0.1	0.3	1.7	1.1	0.1	0.2	2.1	2.7	1.0	2.4	2.4	1.5	1.8	1.4	2.0	0.5	11.7	2.6	6.2			
Diurnal Average	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.4	0.1	0.3			

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.



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - June 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

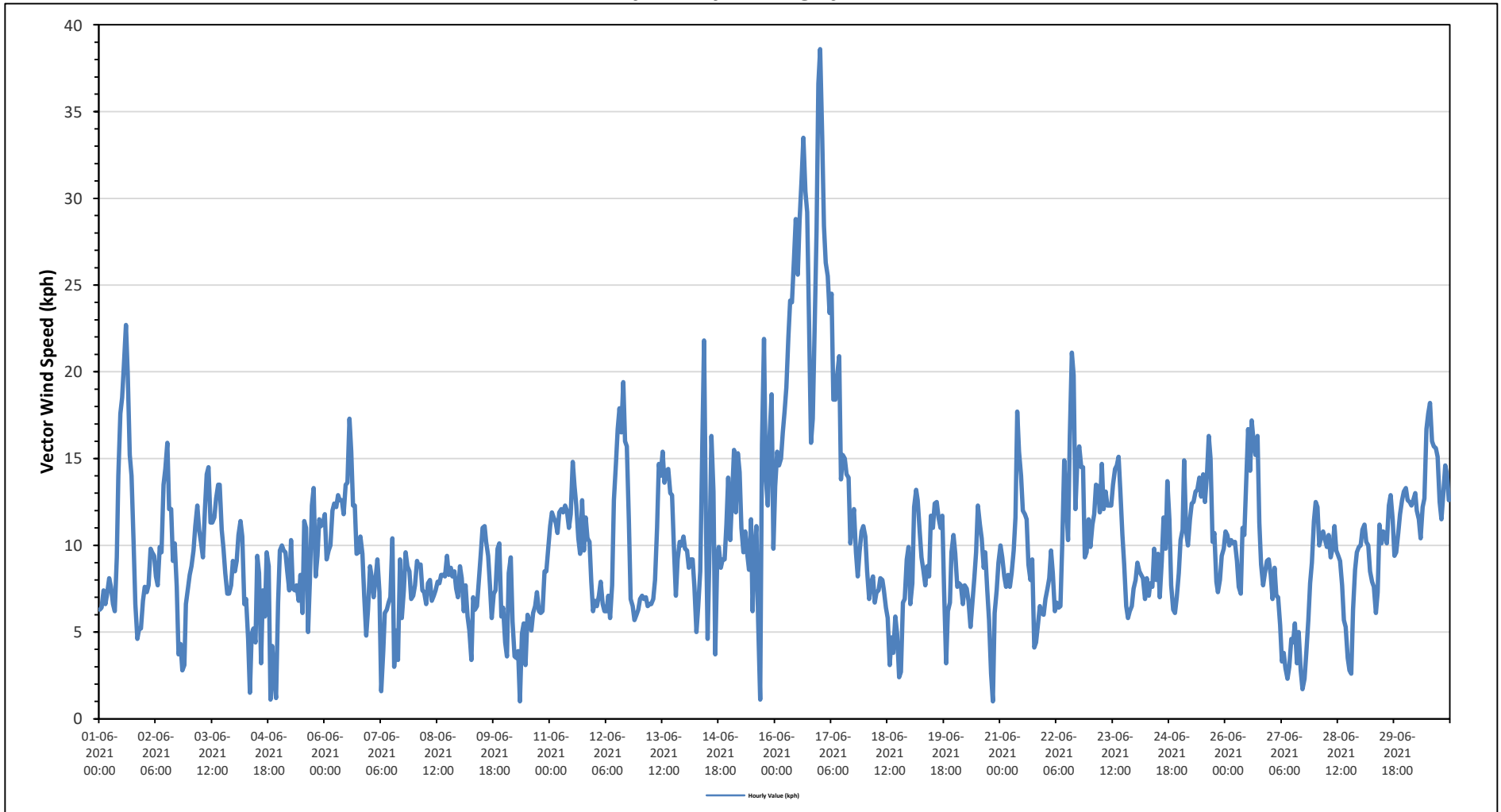
Maximum Hourly Value: 38.6 kph on June 17 at hour 0	Hours in Service: 720
Maximum Daily Value: 23.1 kph on June 16	Hours of Data: 720
Minimum Hourly Value: 1.0 kph on June 10 at hour 8	Hours of Missing Data: 0
Minimum Daily Value: 1.7 kph on June 27	Hours of Calibration: 0
Monthly Average: 4.5 kph	Operational 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
Jun 1	6.3	6.4	7.4	6.6	7.2	8.1	7.6	6.6	6.2	9.3	14.0	17.6	18.5	20.4	22.7	19.9	15.2	14.0	10.2	6.6	4.6	5.2	5.2	6.8	4.6	22.7	9.9
Jun 2	7.6	7.3	7.7	9.8	9.6	9.4	8.2	7.7	9.9	9.6	13.5	14.4	15.9	12.1	12.1	9.1	10.1	7.6	3.7	4.3	2.8	3.1	6.6	7.5	2.8	15.9	7.7
Jun 3	8.3	8.8	9.7	11.1	12.3	10.9	10.1	9.3	12.1	14.1	14.5	11.3	11.3	11.6	12.7	13.5	13.5	10.9	9.8	8.4	7.2	7.2	7.7	9.1	7.2	14.5	6.2
Jun 4	8.5	9.1	10.6	11.4	10.5	6.6	6.9	4.6	1.5	4.9	5.2	4.4	9.4	8.4	3.2	7.4	5.9	9.6	8.8	1.1	4.2	2.2	1.2	6.7	1.1	11.4	2.0
Jun 5	9.7	10.0	9.7	9.6	8.5	7.4	10.3	7.5	7.4	7.7	6.8	8.3	6.1	11.4	11.0	5.0	7.9	12.3	13.3	8.2	9.4	11.5	11.1	11.3	5.0	13.3	8.3
Jun 6	11.8	9.2	9.7	10.0	12.0	12.4	12.2	12.9	12.6	12.6	11.8	13.5	13.6	17.3	15.4	12.3	12.3	9.5	9.6	10.5	9.5	7.1	4.8	6.3	4.8	17.3	9.3
Jun 7	8.8	8.1	7.0	8.1	9.2	7.3	1.6	3.9	6.1	6.3	6.7	7.0	10.4	3.0	5.1	3.4	9.2	5.8	7.4	9.6	8.8	8.5	6.9	7.1	1.6	10.4	5.2
Jun 8	7.7	9.1	8.8	8.9	7.4	7.3	6.6	7.8	8.0	6.8	7.1	7.4	7.9	7.8	8.3	8.3	8.2	9.4	8.3	8.7	8.2	8.5	7.5	7.0	6.6	9.4	7.6
Jun 9	8.8	8.1	6.2	7.7	5.9	5.1	3.4	7.0	6.3	6.5	7.9	9.5	11.0	11.1	10.2	9.4	7.7	5.8	7.2	7.4	9.8	10.1	5.9	6.4	3.4	11.1	7.1
Jun 10	4.4	3.6	8.4	9.3	5.6	3.6	3.5	3.9	1.0	4.9	5.5	3.1	6.0	5.7	5.1	6.1	6.5	7.3	6.2	6.1	6.2	8.5	8.5	9.9	1.0	9.9	3.4
Jun 11	11.1	11.9	11.6	11.3	10.7	11.9	12.1	11.9	12.3	12.0	11.0	11.8	14.8	13.4	12.3	10.4	9.5	12.6	9.7	11.6	10.4	10.2	7.9	6.2	6.2	14.8	10.4
Jun 12	6.8	6.5	7.1	7.9	6.6	6.2	6.2	7.1	5.8	7.7	12.6	14.7	16.7	17.9	16.5	19.4	16.0	15.7	11.4	6.9	6.5	5.7	6.0	6.3	5.7	19.4	9.1
Jun 13	6.9	7.1	6.9	7.0	6.5	6.6	6.6	6.9	8.0	11.0	14.7	14.0	15.4	13.6	14.3	14.4	13.0	12.9	10.0	7.1	9.2	10.2	10.0	10.5	6.5	15.4	9.0
Jun 14	9.8	9.7	8.7	9.2	9.2	7.6	5.0	6.5	8.5	14.8	21.8	11.8	4.6	10.1	16.3	13.1	3.7	9.3	9.9	8.7	9.2	9.2	11.2	13.9	3.7	21.8	6.9
Jun 15	10.3	12.7	15.5	11.9	15.3	14.2	11.0	9.6	10.8	9.5	8.6	11.5	6.2	9.8	11.1	5.6	1.1	15.8	21.9	13.9	12.3	16.3	18.7	9.8	1.1	21.9	2.4
Jun 16	13.4	15.4	14.6	15.0	16.5	17.7	19.1	22.0	24.1	24.0	26.5	28.8	25.6	28.7	31.1	33.5	30.4	29.2	23.1	15.9	17.3	23.0	28.2	36.6	13.4	36.6	23.1
Jun 17	38.6	33.6	28.4	26.3	25.5	23.4	24.5	18.4	18.4	19.8	20.9	13.8	15.2	15.0	14.1	13.9	10.1	11.2	12.1	9.6	8.2	9.6	10.8	11.1	8.2	38.6	17.4
Jun 18	10.5	8.5	6.9	7.8	8.2	6.7	7.3	7.4	8.1	8.0	7.4	6.4	5.8	3.1	4.7	3.8	5.9	4.9	2.4	2.7	6.7	6.9	9.2	9.9	2.4	10.5	5.8
Jun 19	6.6	7.8	12.2	13.2	12.6	10.8	9.3	8.5	7.7	8.8	8.2	11.7	11.0	12.4	12.5	11.6	11.0	11.7	7.4	3.2	6.2	6.7	9.6	10.6	3.2	13.2	7.3
Jun 20	9.5	7.6	7.8	7.7	6.6	7.7	7.5	6.8	5.3	6.6	8.1	9.6	12.3	11.2	10.4	8.7	9.6	7.4	5.7	2.6	1.0	6.1	7.4	9.0	1.0	12.3	4.7
Jun 21	10.0	9.3	8.2	7.6	8.3	7.6	8.4	9.7	11.6	17.7	15.4	14.0	12.0	11.8	11.5	8.9	8.0	9.2	4.1	4.4	5.5	6.5	6.1	6.0	4.1	17.7	8.8
Jun 22	6.9	7.5	8.1	9.7	8.4	6.2	6.7	6.4	6.5	10.0	14.9	12.6	10.3	16.3	21.1	19.8	12.1	15.0	15.7	14.5	14.5	9.3	9.6	11.5	6.2	21.1	9.1
Jun 23	9.9	11.2	11.8	13.5	13.4	11.9	14.7	12.1	13.1	12.3	12.3	12.3	13.5	14.4	14.6	15.1	13.1	10.6	8.9	6.5	5.8	6.2	6.5	7.5	5.8	15.1	11.2
Jun 24	8.0	9.0	8.5	8.3	8.1	6.9	8.1	7.1	7.8	7.6	9.8	8.0	9.5	7.0	9.1	11.6	9.8	13.7	11.5	7.7	6.3	6.1	7.0	8.4	6.1	13.7	7.5
Jun 25	10.3	10.9	14.9	10.8	10.0	11.5	12.4	12.5	13.1	13.2	13.9	12.8	14.1	12.5	14.1	16.3	15.0	10.2	10.7	7.9	7.3	8.0	9.4	9.8	7.3	16.3	10.4
Jun 26	10.8	10.6	10.0	10.3	10.1	10.2	9.1	7.6	7.2	11.0	10.6	13.9	16.7	14.3	17.2	15.9	15.2	16.3	11.3	8.9	7.7	8.4	9.1	9.2	7.2	17.2	10.3
Jun 27	8.3	6.9	8.7	7.1	7.0	5.4	3.3	3.8	2.9	2.3	3.0	4.6	4.4	5.5	3.2	5.0	2.8	1.7	2.3	3.8	5.7	7.8	9.0	11.4	1.7	11.4	1.7
Jun 28	12.5	12.2	10.0	10.5	10.8	10.3	9.9	10.6	9.3	9.8	11.1	9.7	9.4	9.1	7.7	5.7	5.3	3.5	2.8	2.6	6.3	8.6	9.6	9.9	2.6	12.5	7.7
Jun 29	10.0	10.9	11.2	10.2	10.0	8.5	7.9	7.6	6.1	7.3	11.2	10.1	10.8	10.6	10.1	12.3	12.9	11.5	9.4	9.6	10.7	11.8	12.6	13.1	6.1	13.1	10.1
Jun 30	13.3	12.6	12.5	12.3	12.6	13.0	12.0	11.5	10.4	12.2	12.7	16.7	17.6	18.2	16.0	15.7	15.6	15.1	12.5	11.5	12.9	14.6	14.1	12.6	10.4	18.2	13.2
Diurnal Maximum	39	34	28	26	26	23	25	22	24	24	27	29	26	29	31	34	30	29	23	16	17	23	28	37			
Diurnal Average	10.2	10.1	10.3	10.3	10.2	9.4	9.1	8.8	8.9	10.3	11.6	11.5	11.9	12.1	12.5	11.8	10.6	11.0	9.6	7.7	8.0	8.8	9.2	10.0			

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

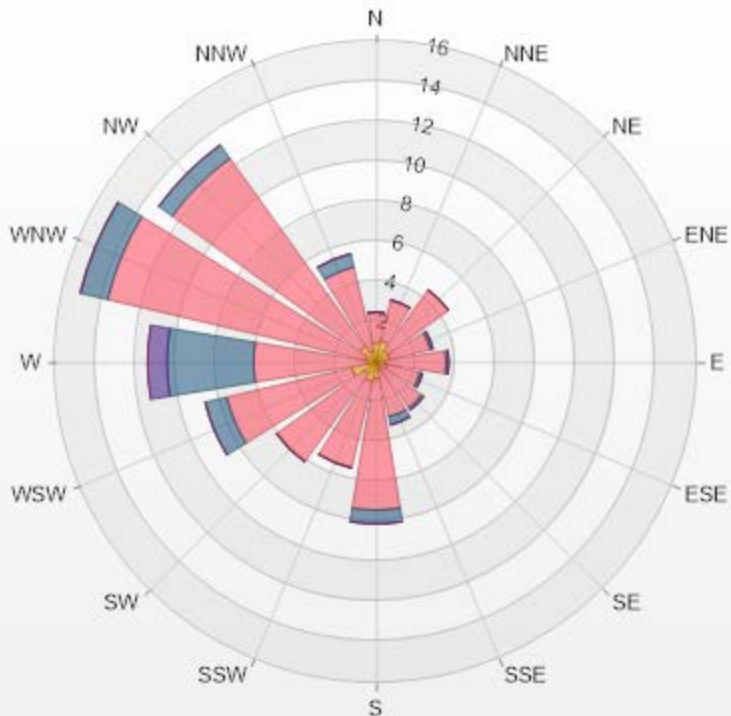
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

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



Wind: St. Lina Monitor: WDS [kph] Monthly: 06-2021 Type: WindRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 1.11% 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	0.97	1.53	0	0	0	2.5
NNE	1.11	2.08	0	0	0	3.19
NE	0.69	3.75	0	0	0	4.44
ENE	0.69	2.08	0.14	0	0	2.91
E	0.42	3.06	0.14	0	0	3.62
ESE	0.56	1.67	0.14	0	0	2.37
SE	0.14	2.64	0.14	0	0	2.92
SSE	0.42	2.36	0.42	0	0	3.2
S	0.83	6.53	0.69	0	0	8.05
SSW	0.97	4.44	0	0	0	5.41
SW	0.69	5.42	0	0	0	6.11
WSW	1.25	6.39	1.11	0	0	8.75
W	0.42	5.69	4.31	0.97	0	11.39
WNW	0.56	13.19	1.39	0	0	15.14
NW	0.97	11.53	0.83	0	0	13.33
NNW	0.56	4.31	0.69	0	0	5.56
Summary	11.25	76.67	10	0.97	0	98.89



LICA-202106



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - June 2021

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average:	274 (W) degree	Hours in Service:	720
		Hours of Data:	720
		Hours of Missing Data:	0
		Hours of Calibration:	0
		Operational Uptime:	100.0

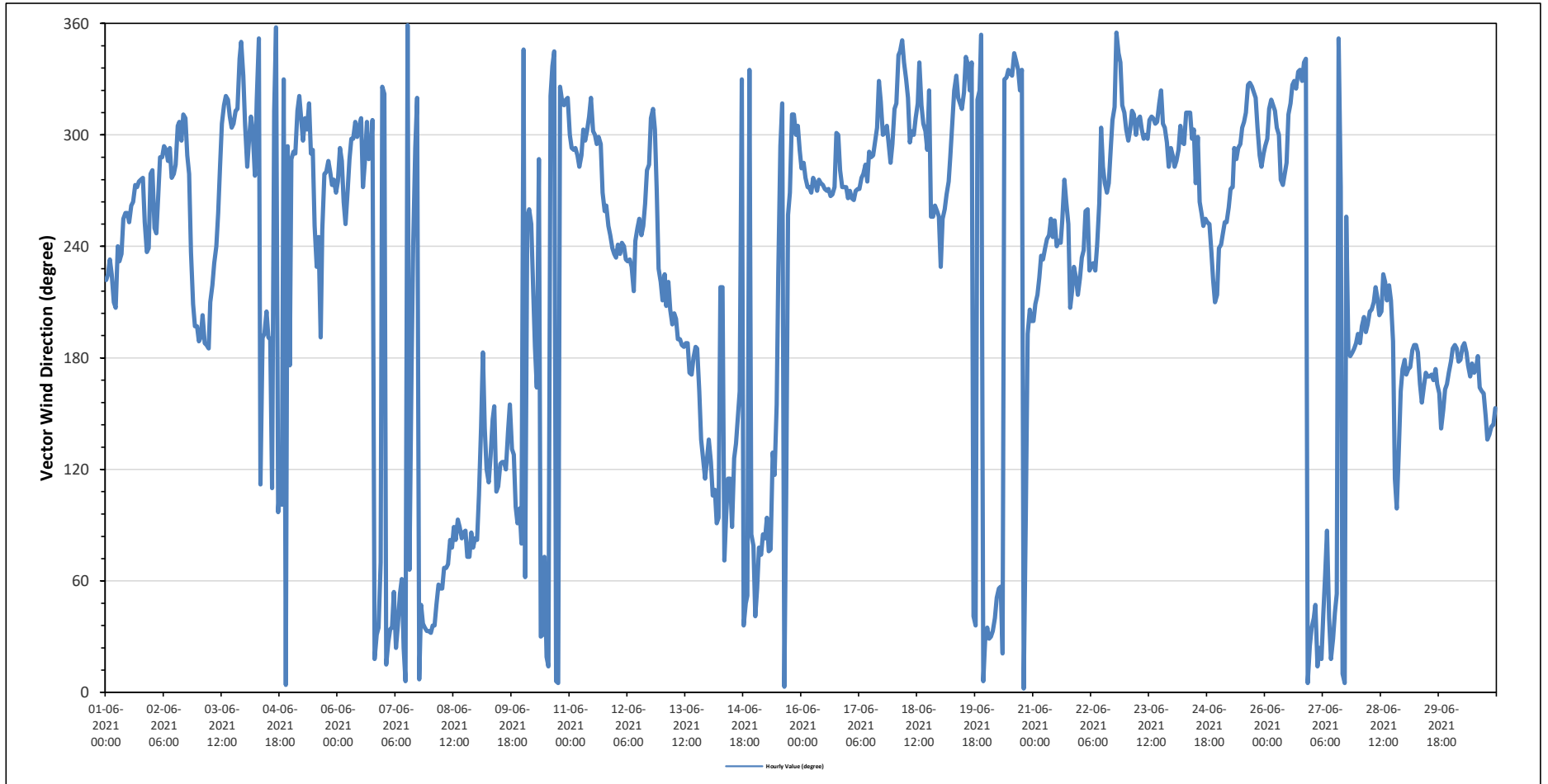
Day	Hourly Period Starting at (MST)																							Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant
Jun 1	SW	SW	SW	SW	SSW	SSW	WSW	SW	SW	WSW	WSW	WSW	WSW	W	W	W	W	W	W	WSW	SW	WSW	W	254	WSW	
Jun 2	W	WSW	WSW	W	WNW	WNW	WNW	WNW	WNW	WNW	W	W	WNW	WNW	NW	WNW	NW	NW	WNW	W	SW	SSW	SSW	SSW	281	W
Jun 3	S	S	SSW	S	S	S	SSW	SW	SW	WSW	WSW	W	NW	NW	NW	NW	NW	WNW	NW	NW	NNW	N	NNW	269	W	
Jun 4	WNW	W	WNW	NW	WNW	W	NW	N	ESE	S	S	SSW	S	S	ESE	NW	N	E	ESE	E	NNW	N	WNW	S	280	W
Jun 5	WNW	WNW	WNW	NW	NW	NW	WNW	NW	WNW	NW	WNW	WSW	SW	WSW	S	WSW	W	W	WNW	W	W	W	W	282	W	
Jun 6	W	WNW	WNW	W	WSW	W	WNW	WNW	WNW	NW	WNW	NW	W	WNW	NW	WNW	WNW	NW	NNE	NNE	NE	ENE	NW	298	WNW	
Jun 7	NW	NNE	NNE	NE	NE	NE	NNE	NE	ENE	NNE	N	N	ENE	S	WSW	WNW	NW	N	NE	NE	NE	NNE	NNE	22	NNE	
Jun 8	NNE	NE	NE	NE	ENE	NE	NE	ENE	ENE	ENE	E	ENE	E	E	E	E	E	E	E	ENE	ENE	E	ENE	E	70	ENE
Jun 9	E	ESE	SE	S	SE	ESE	ESE	SE	SE	SSE	ESE	ESE	ESE	ESE	ESE	ESE	SE	SSE	SE	SE	E	E	E	121	ESE	
Jun 10	NNW	ENE	WSW	WSW	WSW	SW	S	SSE	WNW	NNE	NNE	ENE	NNE	NNE	NW	NNW	NNW	N	N	NW	NW	NW	NW	NW	329	NNW
Jun 11	WNW	WNW	WNW	WNW	WNW	W	WNW	WNW	WNW	WNW	NW	NW	WNW	WNW	WNW	WNW	WNW	W	WSW	W	WSW	WSW	WSW	SW	287	WNW
Jun 12	SW	WSW	SW	WSW	WSW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	W	W	WNW	NW	NW	WNW	W	SW	SW	255	WSW
Jun 13	SSW	SW	SSW	SW	SSW	SSW	SSW	SSW	S	S	S	S	S	S	S	S	S	S	SSE	SE	SE	ESE	SE	180	S	
Jun 14	SE	ESE	ESE	ESE	E	E	SW	SW	ENE	E	ESE	ESE	E	SE	SE	SE	SSE	NNW	NE	NE	NE	NNW	E	ENE	102	E
Jun 15	NE	NE	ENE	ENE	E	E	E	ENE	ENE	SE	ESE	SSE	SW	WNW	NW	N	ESE	WSW	W	NW	NW	WNW	WNW	9	N	
Jun 16	W	WNW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	WNW	WNW	W	W	W	275	W	
Jun 17	W	W	W	W	W	W	W	W	W	WNW	W	WNW	WNW	WNW	WNW	NNW	NW	WNW	WNW	WNW	WNW	WNW	WNW	281	W	
Jun 18	NW	NW	NNW	NNW	N	NNW	NNW	NW	WNW	WNW	WNW	NW	NW	NNW	NW	NW	WNW	WNW	NW	WSW	WSW	W	WSW	306	NW	
Jun 19	SW	WSW	WSW	W	W	WNW	NW	NNW	NW	NW	NW	NW	NNW	NNW	NW	NNW	NE	NE	NW	NW	N	N	NNE	321	NW	
Jun 20	NE	NNE	NNE	NNE	NE	NE	NE	ENE	NNE	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NW	NNW	N	E	S	SSW	SSW	358	N
Jun 21	SSW	SSW	SSW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	WSW	SSW	SW	SW	SSW	239	WSW	
Jun 22	SW	SW	SW	WSW	WSW	SW	SW	SW	SW	WSW	W	WNW	W	W	W	W	WNW	NW	NW	N	NNW	NNW	NW	283	W	
Jun 23	WNW	WNW	WNW	NW	NW	WNW	NW	NW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	WNW	W	WNW	305	WNW
Jun 24	WNW	W	WNW	WNW	WNW	WNW	NW	NW	NW	WNW	W	WNW	W	WNW	W	WSW	WSW	WSW	WSW	WSW	SW	SW	SSW	274	W	
Jun 25	WSW	WSW	WSW	WSW	WSW	W	W	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NNW	NW	NW	NW	NW	WNW	WNW	W	WNW	289	WNW
Jun 26	WNW	WNW	NW	NW	NW	NW	WNW	WNW	W	W	W	WNW	NW	NW	NW	NNW	NW	NNW	NNW	NNW	NNW	NNW	N	NNE	317	NW
Jun 27	NE	NE	NE	NNE	NNE	NNE	NE	ENE	E	NE	NNE	NNE	NE	NE	N	W	N	N	WSW	S	S	S	S	51	NE	
Jun 28	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSE	S	ESE	E	SE	SSE	196	SSW
Jun 29	S	S	S	S	S	S	S	S	SSE	SSE	SSE	S	SSE	SSE	S	SSE	S	SSE	SSE	SE	SSE	SSE	SSE	170	SSE	
Jun 30	S	S	S	S	S	S	S	S	S	S	SSE	S	S	S	S	SSE	SSE	SE	SE	SE	SE	SE	SE	169	SSE	

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 VWD - St. Lina Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - June 2021

Summary of Hourly Averages

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

WIND SPEED																												
Maximum Hourly Value:		38.6 kph on June 17 at hour 0														Hours in Service:		720										
Maximum Daily Value:		23.1 kph on June 16														Hours of Data:		720										
Minimum Hourly Value:		1.0 kph on June 10 at hour 8														Hours of Missing Data:		0										
Minimum Daily Value:		1.7 kph on June 27														Hours of Calibration:		0										
Monthly Average:		4.5 kph														Operational Uptime:		100										
WIND DIRECTION																												
Monthly Average:		274 (W) 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				
Jun 1	6.3	6.4	7.4	6.6	7.2	8.1	7.6	6.6	6.2	9.3	14.0	17.6	18.5	20.4	22.7	19.9	15.2	14.0	10.2	6.6	4.6	5.2	5.2	6.8	4.6	22.7	9.9	
	SW	SW	SW	SW	SSW	SSW	WSW	SW	SW	WSW	WSW	WSW	WSW	W	W	W	W	W	W	WSW	SW	WSW	W					
Jun 2	7.6	7.3	7.7	9.8	9.6	9.4	8.2	7.7	9.9	9.6	13.5	14.4	15.9	12.1	12.1	9.1	10.1	7.6	3.7	4.3	2.8	3.1	6.6	7.5	2.8	15.9	7.7	
	W	WSW	WSW	W	WNW	WNW	WNW	WNW	WNW	W	W	WNW	WNW	NW	WNW	NW	NW	WNW	W	SW	SSW	SSW	SSW					
Jun 3	8.3	8.8	9.7	11.1	12.3	10.9	10.1	9.3	12.1	14.1	14.5	11.3	11.3	11.6	12.7	13.5	13.5	10.9	9.8	8.4	7.2	7.2	7.7	9.1	7.2	14.5	6.2	
	S	S	SSW	S	S	S	SSW	SW	SW	WSW	WSW	W	NW	NW	NW	NW	NW	WNW	NW	NW	NNW	N	NNW					
Jun 4	8.5	9.1	10.6	11.4	10.5	6.6	6.9	4.6	1.5	4.9	5.2	4.4	9.4	8.4	3.2	7.4	5.9	9.6	8.8	1.1	4.2	2.2	1.2	6.7	1.1	11.4	2.0	
	WNW	W	WNW	NW	WNW	W	NW	N	ESE	S	SSW	S	S	ESE	NW	N	E	ESE	E	NNW	N	WNW	S					
Jun 5	9.7	10.0	9.7	9.6	8.5	7.4	10.3	7.5	7.4	7.7	6.8	8.3	6.1	11.4	11.0	5.0	7.9	12.3	13.3	8.2	9.4	11.5	11.1	11.3	5.0	13.3	8.3	
	WNW	WNW	WNW	NW	NW	WNW	NW	WNW	NW	WNW	NW	WNW	WSW	SW	WSW	S	WSW	W	W	WNW	W	W	W	W				
Jun 6	11.8	9.2	9.7	10.0	12.0	12.4	12.2	12.9	12.6	12.6	11.8	13.5	13.6	17.3	15.4	12.3	12.3	9.5	9.6	10.5	9.5	7.1	4.8	6.3	4.8	17.3	9.3	
	W	WNW	WNW	W	WSW	W	WNW	WNW	WNW	WNW	NW	WNW	WNW	NW	W	WNW	NW	WNW	WNW	NW	NNE	NE	ENE	NW				
Jun 7	8.8	8.1	7.0	8.1	9.2	7.3	1.6	3.9	6.1	6.3	6.7	7.0	10.4	3.0	5.1	3.4	9.2	5.8	7.4	9.6	8.8	8.5	6.9	7.1	1.6	10.4	5.2	
	NW	NNE	NNE	NE	NE	NE	NNE	NE	NE	ENE	NNE	N	ENE	S	WSW	WNW	NW	N	NE	NE	NE	NNE	NNE					
Jun 8	7.7	9.1	8.8	8.9	7.4	7.3	6.6	7.8	8.0	6.8	7.1	7.4	7.9	7.8	8.3	8.3	8.2	9.4	8.3	8.7	8.2	8.5	7.5	7.0	6.6	9.4	7.6	
	NNE	NE	NE	NE	ENE	NE	NE	ENE	ENE	ENE	E	ENE	E	E	E	E	E	E	E	ENE	ENE	E	ENE	E				
Jun 9	8.8	8.1	6.2	7.7	5.9	5.1	3.4	7.0	6.3	6.5	7.9	9.5	11.0	11.1	10.2	9.4	7.7	5.8	7.2	7.4	9.8	10.1	5.9	6.4	3.4	11.1	7.1	
	E	ESE	SE	S	SE	ESE	ESE	SE	SSE	ESE	ESE	ESE	ESE	ESE	ESE	SE	SSE	SE	SE	E	E	E	E	E				
Jun 10	4.4	3.6	8.4	9.3	5.6	3.6	3.5	3.9	1.0	4.9	5.5	3.1	6.0	5.7	5.1	6.1	6.5	7.3	6.2	6.1	6.2	8.5	8.5	9.9	1.0	9.9	3.4	
	NNW	ENE	WSW	WSW	WSW	SW	S	SSE	WNW	NNE	ENE	ENE	NNE	NNE	NW	NNW	NNW	N	N	NW	NW	NW	NW	NW				
Jun 11	11.1	11.9	11.6	11.3	10.7	11.9	12.1	11.9	12.3	12.0	11.0	11.8	14.8	13.4	12.3	10.4	9.5	12.6	9.7	11.6	10.4	10.2	7.9	6.2	6.2	14.8	10.4	
	WNW	WNW	WNW	WNW	WNW	W	WNW	WNW	WNW	NW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	WSW	W	WSW	WSW	WSW	WSW				
Jun 12	6.8	6.5	7.1	7.9	6.6	6.2	6.2	7.1	5.8	7.7	12.6	14.7	16.7	17.9	16.5	19.4	16.0	15.7	11.4	6.9	6.5	5.7	6.0	6.3	5.7	19.4	9.1	
	SW	WSW	SW	WSW	WSW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	WNW	NW	NW	WNW	W	SW	SW				
Jun 13	6.9	7.1	6.9	7.0	6.5	6.6	6.6	6.9	8.0	11.0	14.7	14.0	15.4	13.6	14.3	14.4	13.0	12.9	10.0	7.1	9.2	10.2	10.0	10.5	6.5	15.4	9.0	
	SSW	SW	SSW	SW	SSW	SSW	SSW	S	S	S	S	S	S	S	S	S	S	S	SSE	SE	SE	ESE	SE	SE				
Jun 14	9.8	9.7	8.7	9.2	9.2	7.6	5.0	6.5	8.5	14.8	21.8	11.8	4.6	10.1	16.3	13.1	3.7	9.3	9.9	8.7	9.2	9.2	11.2	13.9	3.7	21.8	6.9	
	SE	ESE	ESE	ESE	E	E	SW	SW	ENE	E	ESE	ESE	E	SE	SE	SE	SSE	NNW	NE	NE	NE	NNW	E	ENE				
Jun 15	10.3	12.7	15.5	11.9	15.3	14.2	11.0	9.6	10.8	9.5	8.6	11.5	6.2	9.8	11.1	5.6	1.1	15.8	21.9	13.9	12.3	16.3	18.7	9.8	1.1	21.9	2.4	
	NE	NE	ENE	ENE	E	E	E	ENE	ENE	SE	ESE	SSE	SW	WNW	NW	N	ESE	WSW	W	NW	NW	WNW	WNW	WNW				
Jun 16	13.4	15.4	14.6	15.0	16.5	17.7	19.1	22.0	24.1	24.0	26.5	28.8	25.6	28.7	31.1	33.5	30.4	29.2	23.1	15.9	17.3	23.0	28.2	36.6	13.4	36.6	23.1	
	W	WNW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	WNW	WNW	W	W	W				
Jun 17	38.6	33.6	28.4	26.3	25.5	23.4	24.5	18.4	18.4	19.8	20.9	13.8	15.2	15.0	14.1	13.9	10.1	11.2	12.1	9.6	8.2	9.6	10.8	11.1	8.2	38.6	17.4	
	W	W	W	W	W	W	W	W	W	W	WNW	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW				
Jun 18	10.5	8.5	6.9	7.8	8.2	6.7	7.3	7.4	8.1	8.0	7.4	6.4	5.8	3.1	4.7	3.8	5.9	4.9	2.4	2.7	6.7	6.9	9.2	9.9	2.4	10.5	5.8	
	NW	NW	NNW	NNW	N	NNW	NNW	NW	WNW	WNW	WNW	NW	NW	NNW	NW	NNW	NNW	NNW	NNW	NNW	WSW	WSW	W	WSW	WSW			
Jun 19	6.6	7.8	12.2	13.2	12.6	10.8	9.3	8.5	7.7	8.8	8.2	11.7	11.0	12.4	12.5	11.6	11.0	11.7	7.4	3.2	6.2	6.7	9.6	10.6	3.2	13.2	7.3	
	SW	WSW	WSW	W	W	WNW	NW	NNW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	NE	NE	NW	NW	N	N	NNE				
Jun 20	9.5	7.6	7.8	7.7	6.6	7.7	7.5	6.8	5.3	6.6	8.1	9.6	12.3	11.2	10.4	8.7	9.6	7.4	5.7	2.6	1.0	6.1	7.4	9.0	1.0	12.3	4.7	
	NE	NNE	NNE	NNE	NE	NE	NE	ENE	NNE	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NW	NNW	N	E	S	SSW	SSW			



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - June 2021

Summary of Hourly Averages

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

WIND SPEED																															
Maximum Hourly Value:	38.6	kph	on June 17 at hour 0	Hours in Service:	720																										
Maximum Daily Value:	23.1	kph	on June 16	Hours of Data:	720																										
Minimum Hourly Value:	1.0	kph	on June 10 at hour 8	Hours of Missing Data:	0																										
Minimum Daily Value:	1.7	kph	on June 27	Hours of Calibration:	0																										
Monthly Average:	4.5	kph		Operational Uptime:	100																										
WIND DIRECTION																															
Monthly Average:	274	(W)	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							
Jun 21	10.0	9.3	8.2	7.6	8.3	7.6	8.4	9.7	11.6	17.7	15.4	14.0	12.0	11.8	11.5	8.9	8.0	9.2	4.1	4.4	5.5	6.5	6.1	6.0	4.1	17.7	8.8				
	SSW	SSW	SSW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	WSW	SSW	SW	SW	SW	SSW								
Jun 22	6.9	7.5	8.1	9.7	8.4	6.2	6.7	6.4	6.5	10.0	14.9	12.6	10.3	16.3	21.1	19.8	12.1	15.0	15.7	14.5	14.5	9.3	9.6	11.5	6.2	21.1	9.1				
	SW	SW	SW	WSW	WSW	SW	SW	SW	SW	WSW	W	WNW	W	W	W	W	WNW	NW	NW	N	NNW	NNW	NW	NW							
Jun 23	9.9	11.2	11.8	13.5	13.4	11.9	14.7	12.1	13.1	12.3	12.3	12.3	13.5	14.4	14.6	15.1	13.1	10.6	8.9	6.5	5.8	6.2	6.5	7.5	5.8	15.1	11.2				
	WNW	WNW	WNW	NW	NW	WNW	NW	NW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	WNW	WNW	W	WNW							
Jun 24	8.0	9.0	8.5	8.3	8.1	6.9	8.1	7.1	7.8	7.6	9.8	8.0	9.5	7.0	9.1	11.6	9.8	13.7	11.5	7.7	6.3	6.1	7.0	8.4	6.1	13.7	7.5				
	WNW	W	WNW	WNW	WNW	WNW	NW	NW	NW	WNW	WNW	W	WNW	W	WNW	WSW	WSW	WSW	WSW	WSW	SW	SW	SSW	SSW							
Jun 25	10.3	10.9	14.9	10.8	10.0	11.5	12.4	12.5	13.1	13.2	13.9	12.8	14.1	12.5	14.1	16.3	15.0	10.2	10.7	7.9	7.3	8.0	9.4	9.8	7.3	16.3	10.4				
	WSW	WSW	WSW	WSW	WSW	W	W	W	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NNW	NW	NW	NW	WNW	WNW	W	WNW							
Jun 26	10.8	10.6	10.0	10.3	10.1	10.2	9.1	7.6	7.2	11.0	10.6	13.9	16.7	14.3	17.2	15.9	15.2	16.3	11.3	8.9	7.7	8.4	9.1	9.2	7.2	17.2	10.3				
	WNW	WNW	NW	NW	NW	WNW	WNW	W	W	WNW	NW	NW	NW	NW	NNW	NW	NNW	NNW	NNW	NNW	NNW	NNW	N	NNE							
Jun 27	8.3	6.9	8.7	7.1	7.0	5.4	3.3	3.8	2.9	2.3	3.0	4.6	4.4	5.5	3.2	5.0	2.8	1.7	2.3	3.8	5.7	7.8	9.0	11.4	1.7	11.4	1.7				
	NE	NE	NE	NNE	NNE	NNE	NE	ENE	E	NE	NNE	NNE	NE	NE	N	W	N	N	WSW	S	S	S	S	S							
Jun 28	12.5	12.2	10.0	10.5	10.8	10.3	9.9	10.6	9.3	9.8	11.1	9.7	9.4	9.1	7.7	5.7	5.3	2.8	2.6	6.3	8.6	9.6	9.9	9.9	2.6	12.5	7.7				
	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	ESE	E	SE	SSE	S							
Jun 29	10.0	10.9	11.2	10.2	10.0	8.5	7.9	7.6	6.1	7.3	11.2	10.1	10.8	10.6	10.1	12.3	12.9	11.5	9.4	9.6	10.7	11.8	12.6	13.1	6.1	13.1	10.1				
	S	S	S	S	S	S	S	S	SSE	SSE	SSE	S	SSE	SSE	S	SSE	S	SSE	SSE	SE	SE	SE	SE	SE							
Jun 30	13.3	12.6	12.5	12.3	12.6	13.0	12.0	11.5	10.4	12.2	12.7	16.7	17.6	18.2	16.0	15.7	15.6	15.1	12.5	11.5	12.9	14.6	14.1	12.6	10.4	18.2	13.2				
	S	S	S	S	S	S	S	S	S	S	SSE	S	S	S	SSE	SSE	SE	SE	SE	SE	SE	SE	SE	SSE							
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 - June 2021

Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

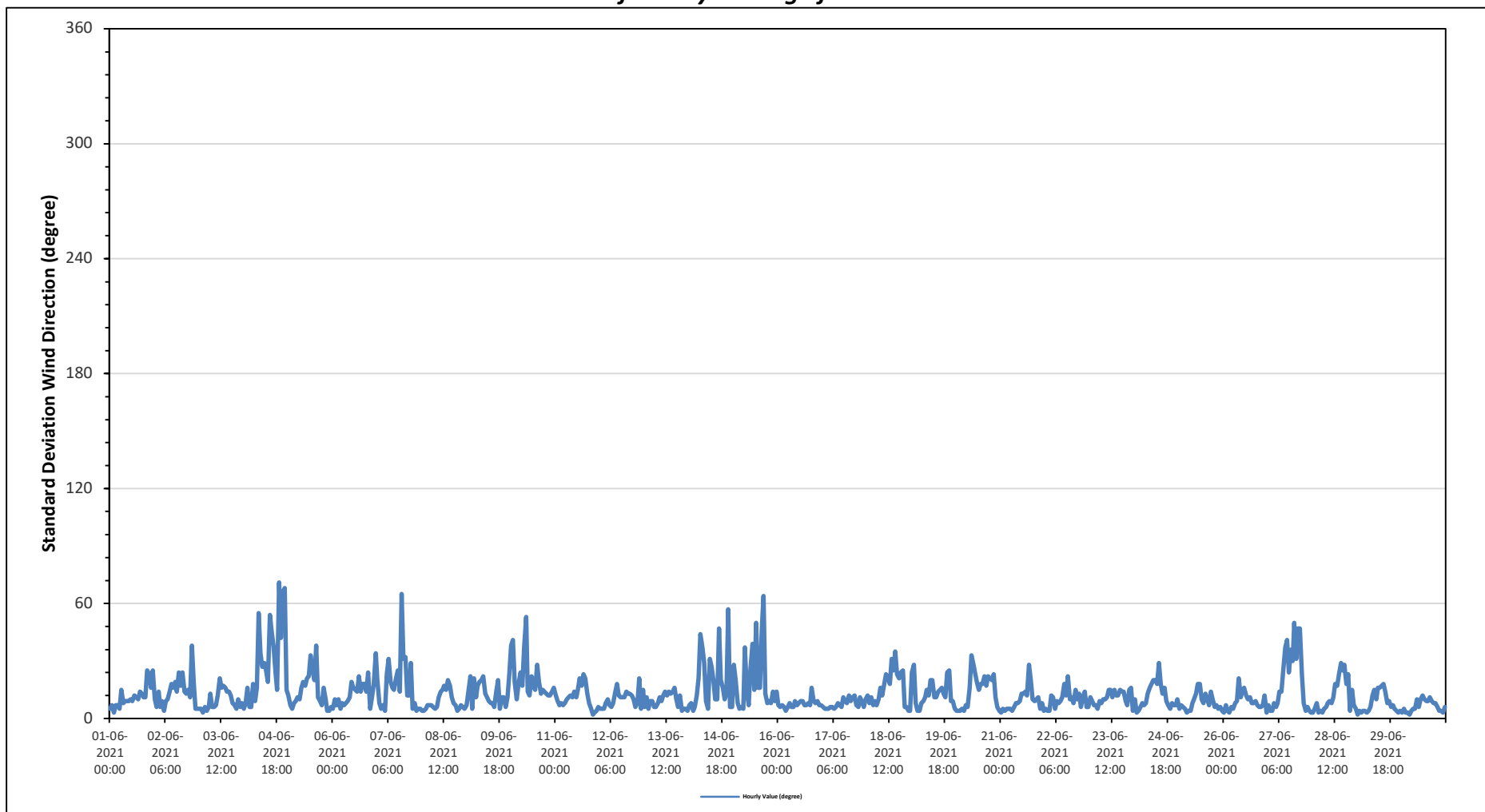
Maximum Hourly Value: 71 degree on June 4 at hour 19	Hours in Service: 720
	Hours of Data: 720
Minimum Hourly Value: 2 degree on June 11 at hour 20	Hours of Missing Data: 0
	Hours of Calibration: 0
	Operational Uptime: 100.0

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jun 1	5	7	3	7	7	5	15	8	9	9	9	10	9	12	11	10	14	13	11	11	25	23	16	25	3	25	
Jun 2	10	6	14	6	9	4	9	10	14	18	16	19	14	24	17	24	14	13	15	11	38	19	5	5	4	38	
Jun 3	5	5	3	6	4	6	13	6	7	12	21	16	17	16	14	14	12	8	7	5	10	6	8	3	21		
Jun 4	5	8	16	6	6	18	9	16	55	34	27	29	25	19	54	45	38	24	15	71	42	66	68	15	5	71	
Jun 5	12	7	5	8	9	11	10	16	19	17	21	22	33	26	20	38	11	9	7	16	10	4	4	6	4	38	
Jun 6	5	10	7	10	5	8	7	8	9	11	19	16	15	14	22	14	18	18	14	24	5	11	18	34	5	34	
Jun 7	20	8	5	7	4	23	31	19	16	15	21	25	14	65	31	32	12	12	29	5	8	4	5	5	4	65	
Jun 8	4	4	5	7	7	7	6	5	6	11	14	15	17	15	20	17	11	8	7	4	5	7	6	5	4	20	
Jun 9	7	14	22	5	21	11	17	19	20	22	13	11	9	8	8	6	14	20	5	11	11	6	11	23	5	23	
Jun 10	38	41	19	10	18	24	17	37	53	14	12	22	17	15	28	19	13	15	14	13	12	12	14	16	10	53	
Jun 11	12	9	7	8	7	8	10	11	12	11	14	11	15	21	17	23	21	13	8	5	2	3	4	6	2	23	
Jun 12	5	5	5	8	10	7	6	8	13	18	12	11	11	11	14	13	13	12	10	6	8	21	5	15	5	21	
Jun 13	6	11	5	9	9	6	6	8	11	9	12	14	12	14	13	14	16	10	6	12	4	5	5	4	4	16	
Jun 14	7	8	4	6	12	21	44	37	29	9	5	31	27	20	10	10	47	20	16	10	13	57	6	6	4	57	
Jun 15	28	20	8	5	6	5	37	14	7	26	39	15	50	16	16	46	64	13	8	9	8	14	9	14	5	64	
Jun 16	7	6	7	6	4	6	8	6	6	9	7	8	9	9	7	7	8	7	16	9	8	9	7	7	4	16	
Jun 17	6	5	5	5	6	6	5	6	8	7	6	11	9	8	12	9	11	12	7	6	11	9	6	10	5	12	
Jun 18	12	8	11	7	9	7	10	16	12	18	23	21	18	31	25	35	23	21	24	25	6	6	4	4	4	35	
Jun 19	24	28	8	4	4	8	9	11	15	12	20	20	11	11	14	15	16	13	11	24	25	9	9	5	4	28	
Jun 20	4	4	4	5	4	7	6	16	33	28	23	19	15	18	18	22	17	22	21	20	23	11	6	4	4	33	
Jun 21	3	5	4	5	5	5	4	6	8	8	9	13	13	14	12	28	20	10	9	10	11	5	8	4	3	28	
Jun 22	5	4	4	4	12	11	5	9	8	9	11	18	12	22	10	11	8	15	10	13	6	11	14	6	6	4	22
Jun 23	11	9	7	7	5	9	8	10	10	11	15	15	11	15	12	12	15	14	14	9	7	15	16	4	4	16	
Jun 24	10	3	4	6	8	7	8	13	16	18	20	20	18	29	18	13	16	9	7	5	8	7	7	10	3	29	
Jun 25	5	7	6	5	3	4	4	8	10	13	18	18	10	8	13	10	7	14	10	6	7	5	6	4	3	18	
Jun 26	3	7	4	3	6	5	8	9	21	11	15	16	12	10	11	8	8	9	7	6	6	7	12	3	3	21	
Jun 27	7	4	4	8	6	8	14	14	25	37	41	24	36	30	50	31	47	47	23	8	4	6	4	3	3	50	
Jun 28	3	5	8	3	4	3	5	6	8	9	8	11	18	17	23	29	25	28	18	23	4	15	7	5	3	29	
Jun 29	2	4	3	4	4	3	4	6	12	15	10	16	16	17	18	14	8	9	6	7	5	4	3	4	2	18	
Jun 30	3	5	3	3	2	4	5	5	10	6	10	12	10	9	9	11	9	8	8	6	4	4	3	6	2	12	
Diurnal Minimum	2	3	3	3	2	3	4	5	6	6	5	8	9	8	7	6	7	7	5	4	2	3	3	3			
Diurnal Maximum	38	41	22	12	21	24	44	37	55	37	41	31	50	65	54	46	64	47	29	71	42	66	68	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, 236 of 236, ends the June 2021 Monthly Ambient Air Quality Monitoring Report.



Lakeland Industry & Community Association

JUNE 2021

Ambient Air Monitoring Calibration Report

- COLD LAKE SOUTH STATION-

CAL-LICA-202106-01174

Station Operation and Maintenance:

Bureau Veritas Canada

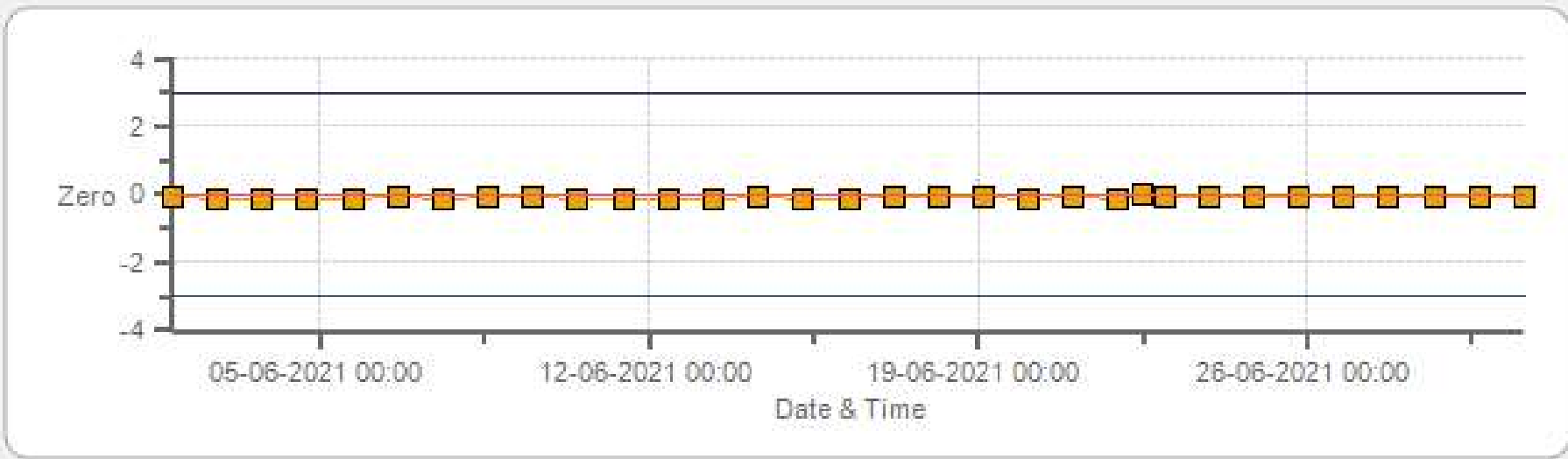
Data Validation and Report:

LICA / Bureau Veritas Canada

July 13, 2021

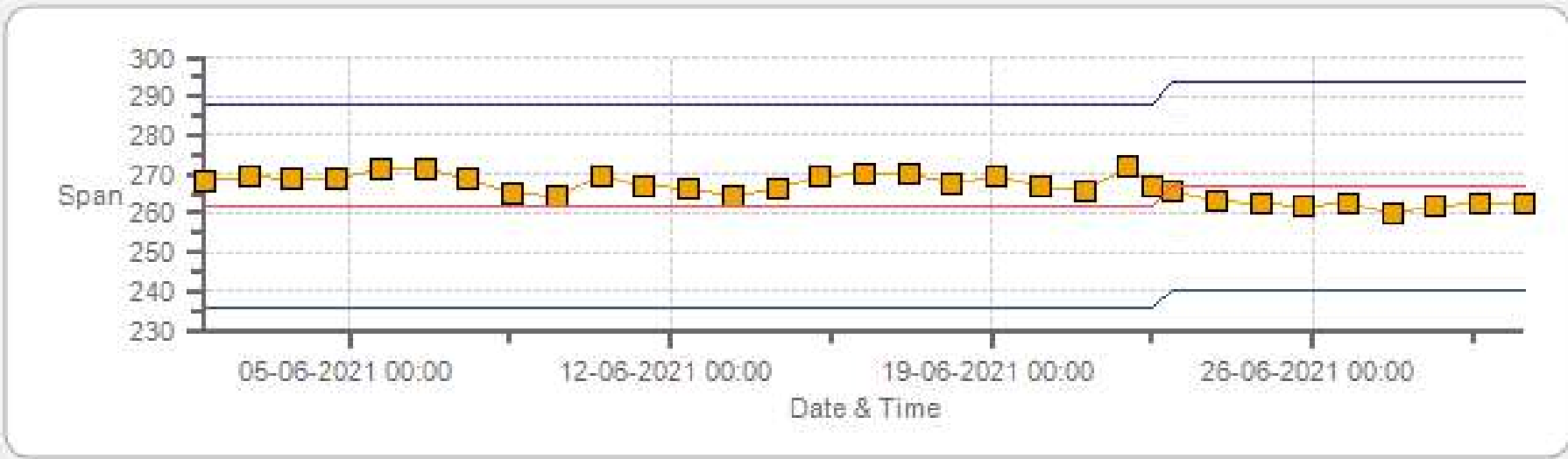
DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: Cold Lake South Monthly: 06-2021 Type: SpanAndZero - Zero



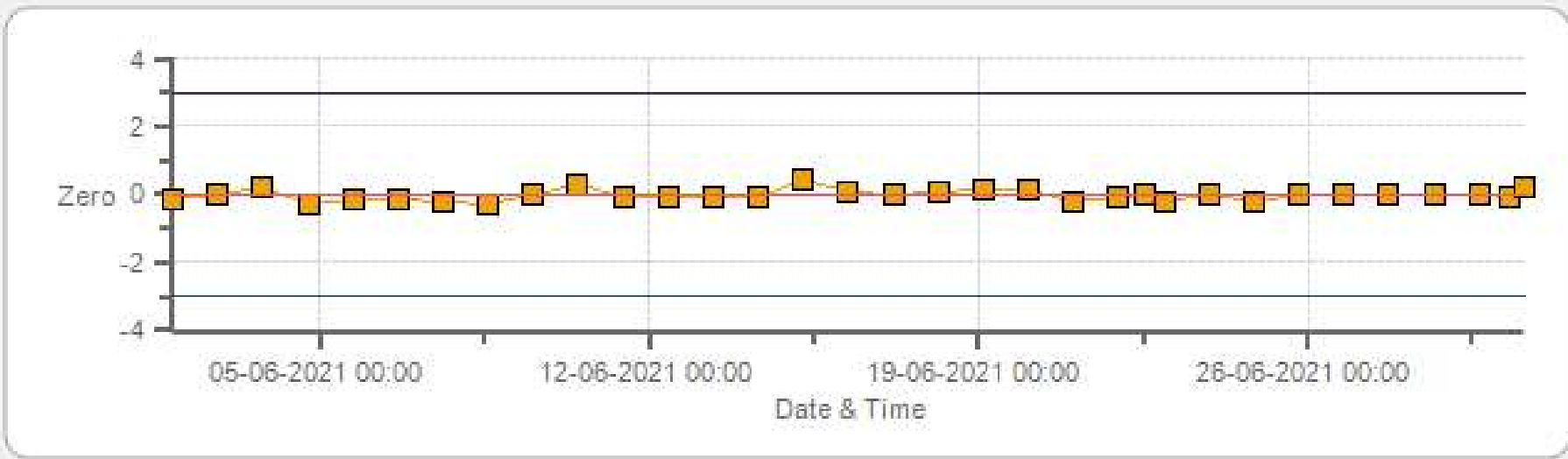
Zero Zero Ref Zero Low Zero High

SO2[ppb] Calibration: Cold Lake South Monthly: 06-2021 Type: SpanAndZero - Span

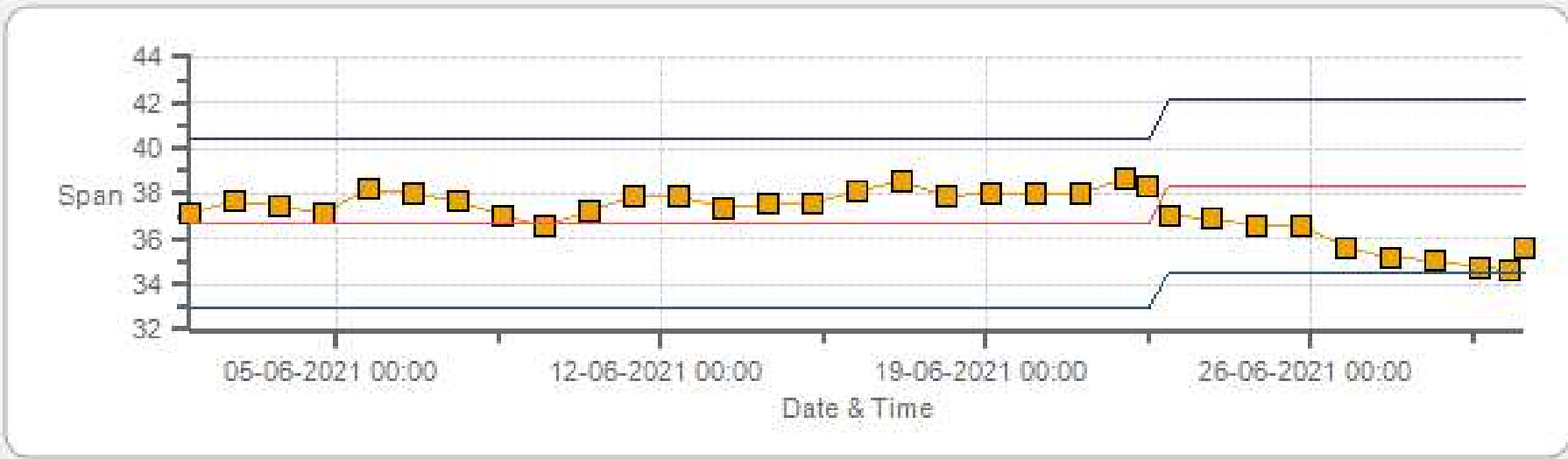


Span SpanRef Span Low Span High

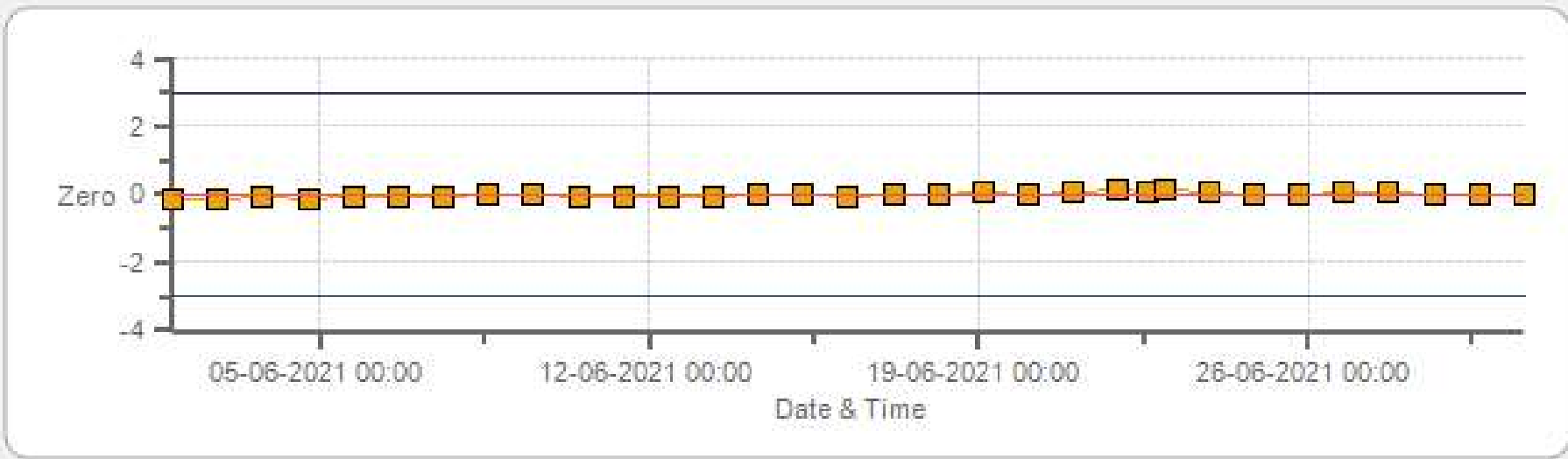
TRS[ppb] Calibration: Cold Lake South Monthly: 06-2021 Type: SpanAndZero - Zero



TRS[ppb] Calibration: Cold Lake South Monthly: 06-2021 Type: SpanAndZero - Span

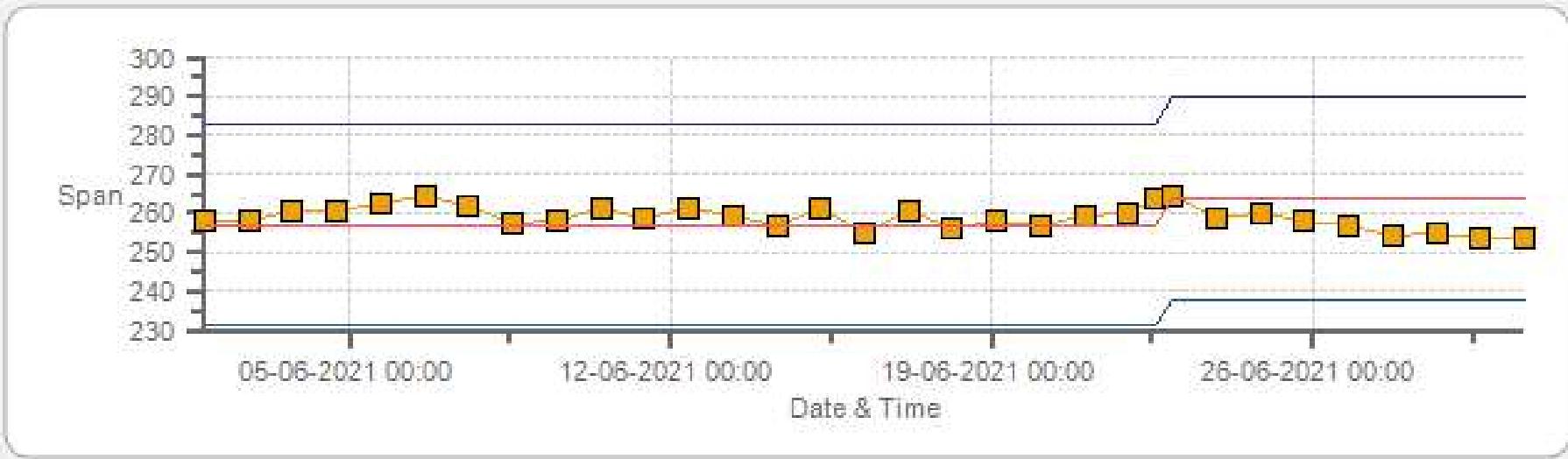


NOX[ppb] Calibration: Cold Lake South Monthly: 06-2021 Type: SpanAndZero - Zero



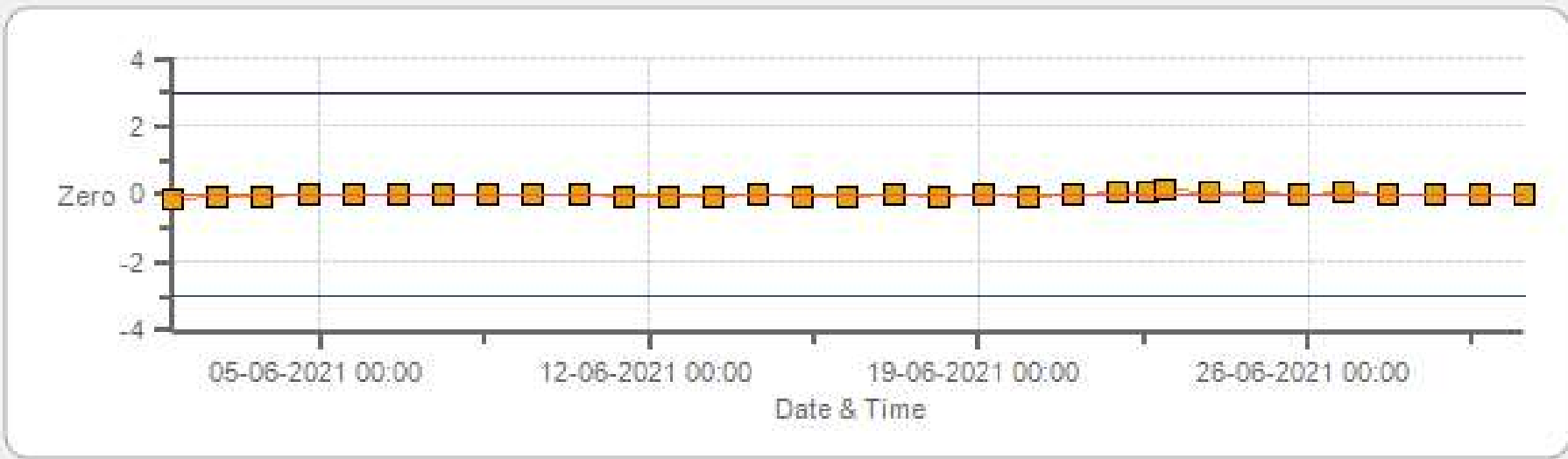
Zero Zero Ref Zero Low Zero High

NOX[ppb] Calibration: Cold Lake South Monthly: 06-2021 Type: SpanAndZero - Span



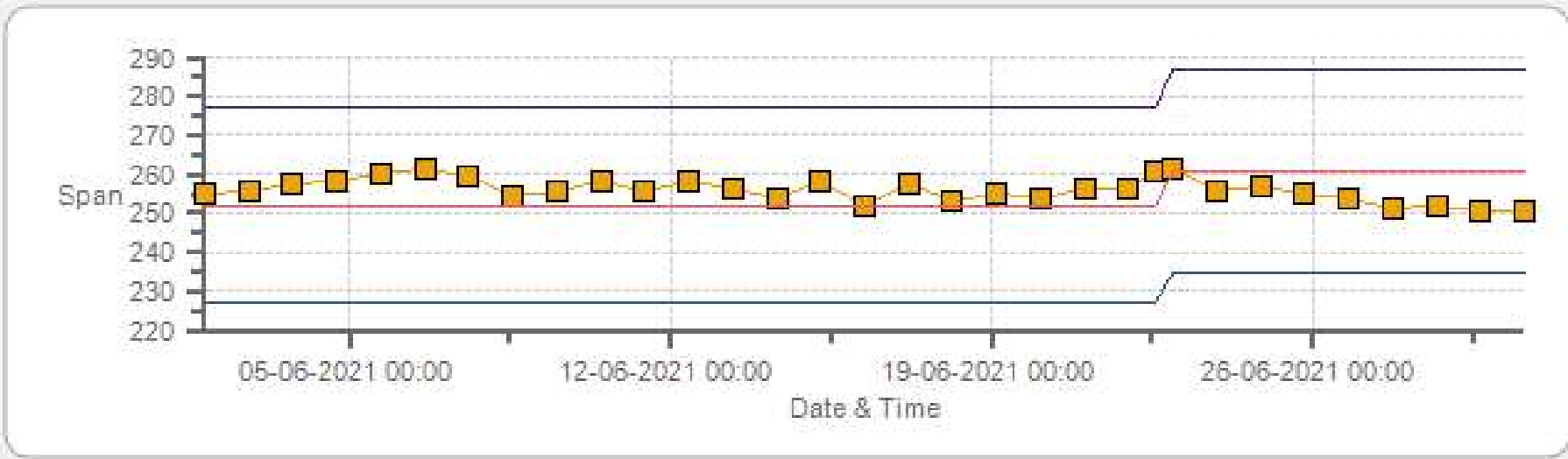
Span SpanRef Span Low Span High

NO2[ppb] Calibration: Cold Lake South Monthly: 06-2021 Type: SpanAndZero - Zero



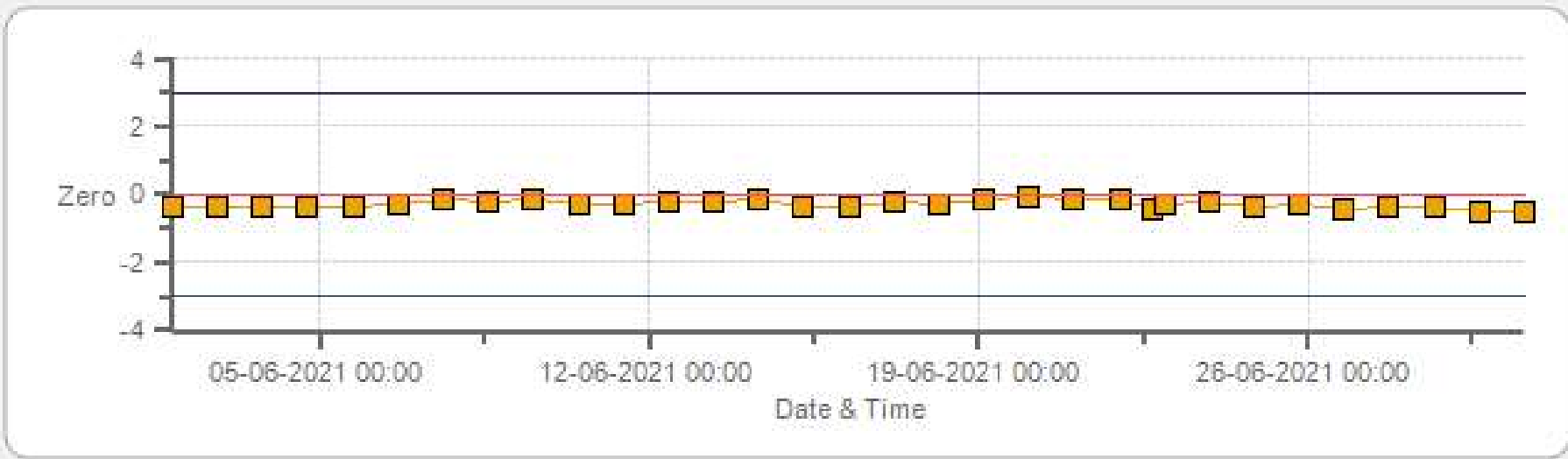
Zero Zero Ref Zero Low Zero High

NO2[ppb] Calibration: Cold Lake South Monthly: 06-2021 Type: SpanAndZero - Span



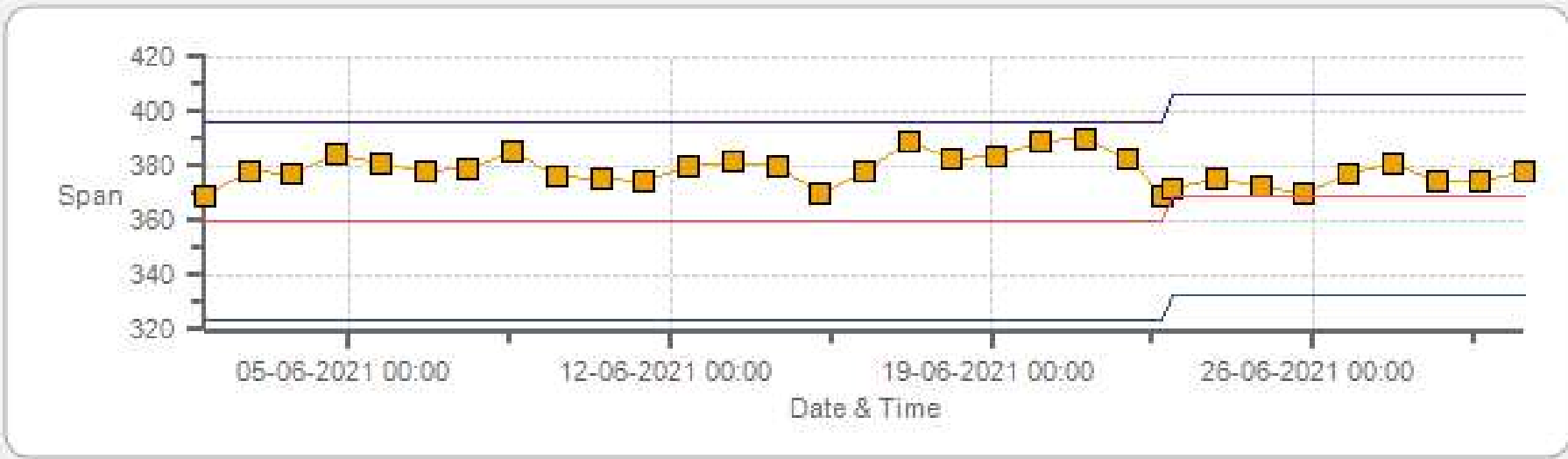
Span Span Ref Span Low Span High

O3[ppb] Calibration: Cold Lake South Monthly: 06-2021 Type: SpanAndZero - Zero



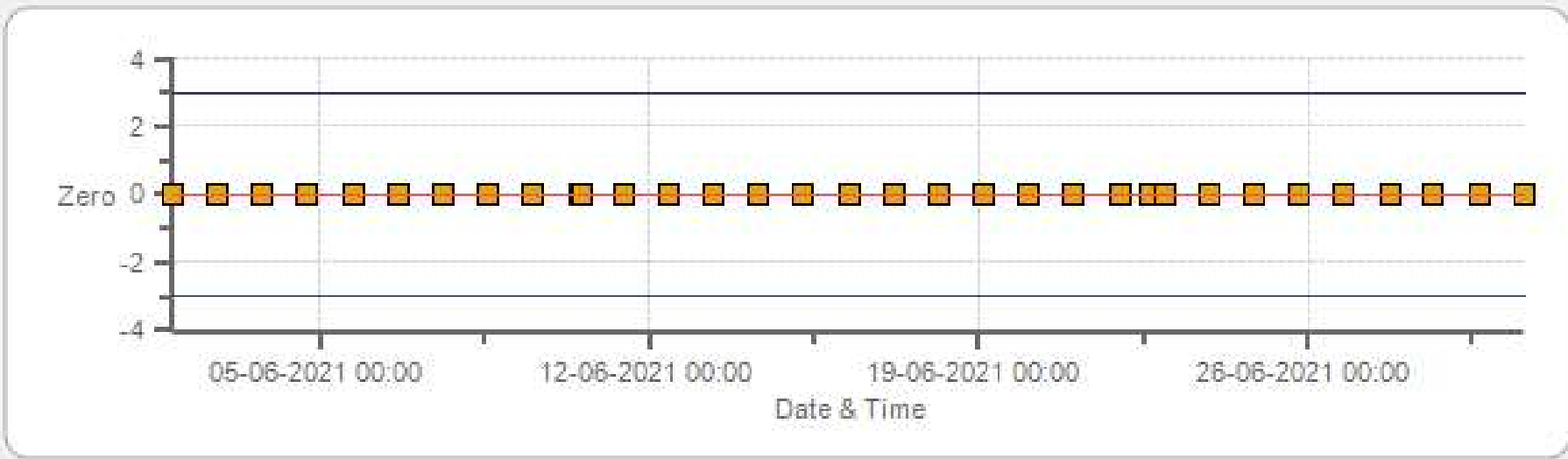
Zero Zero Ref Zero Low Zero High

O3[ppb] Calibration: Cold Lake South Monthly: 06-2021 Type: SpanAndZero - Span



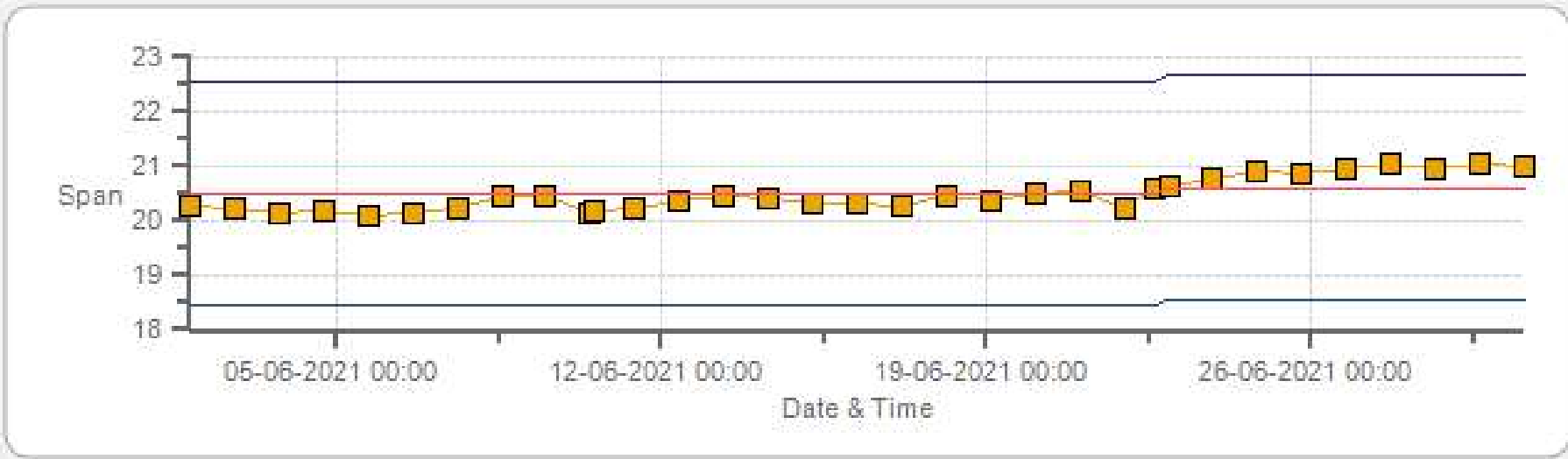
Span SpanRef Span Low Span High

THC55[ppm] Calibration: Cold Lake South Monthly: 06-2021 Type: SpanAndZero - Zero



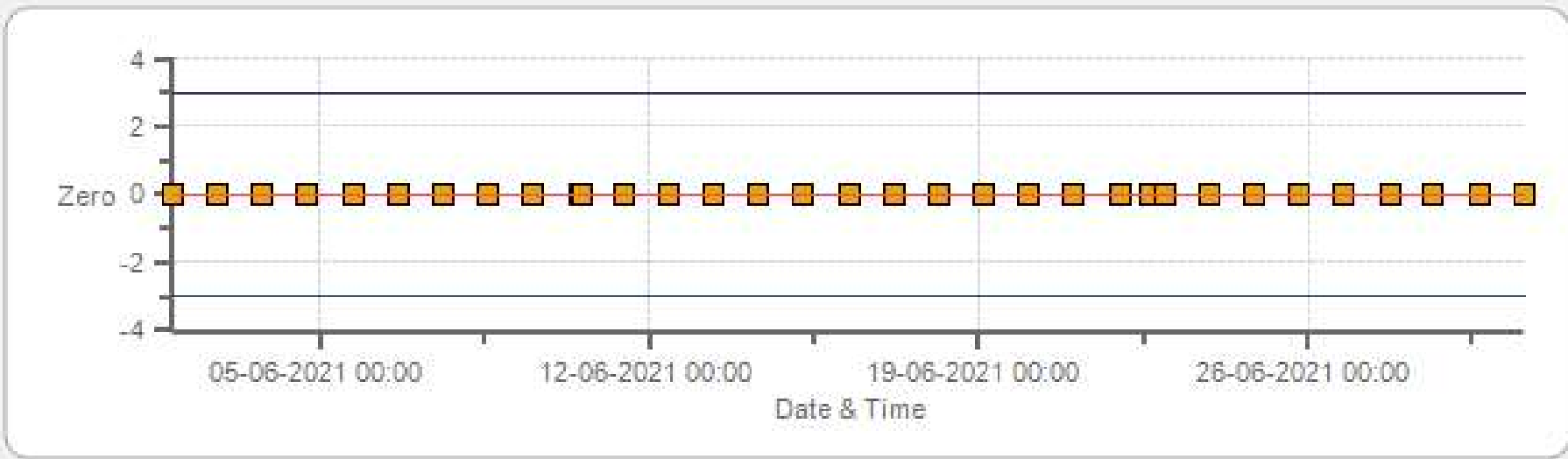
Zero Zero Ref Zero Low Zero High

THC55[ppm] Calibration: Cold Lake South Monthly: 06-2021 Type: SpanAndZero - Span



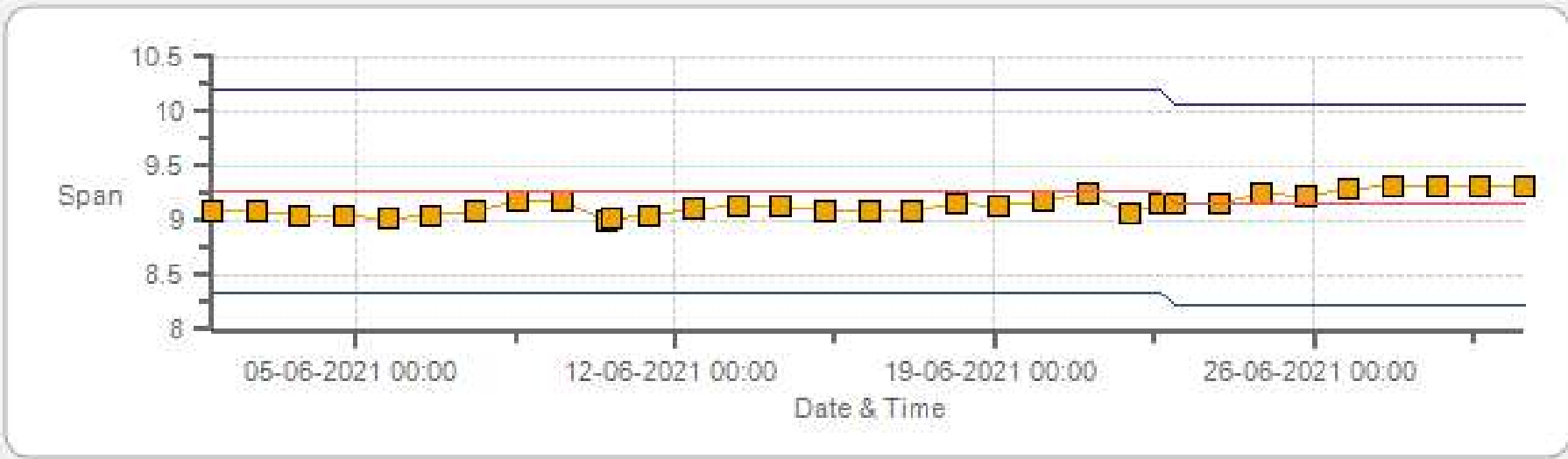
Span SpanRef Span Low Span High

CH4[ppm] Calibration: Cold Lake South Monthly: 06-2021 Type: SpanAndZero - Zero



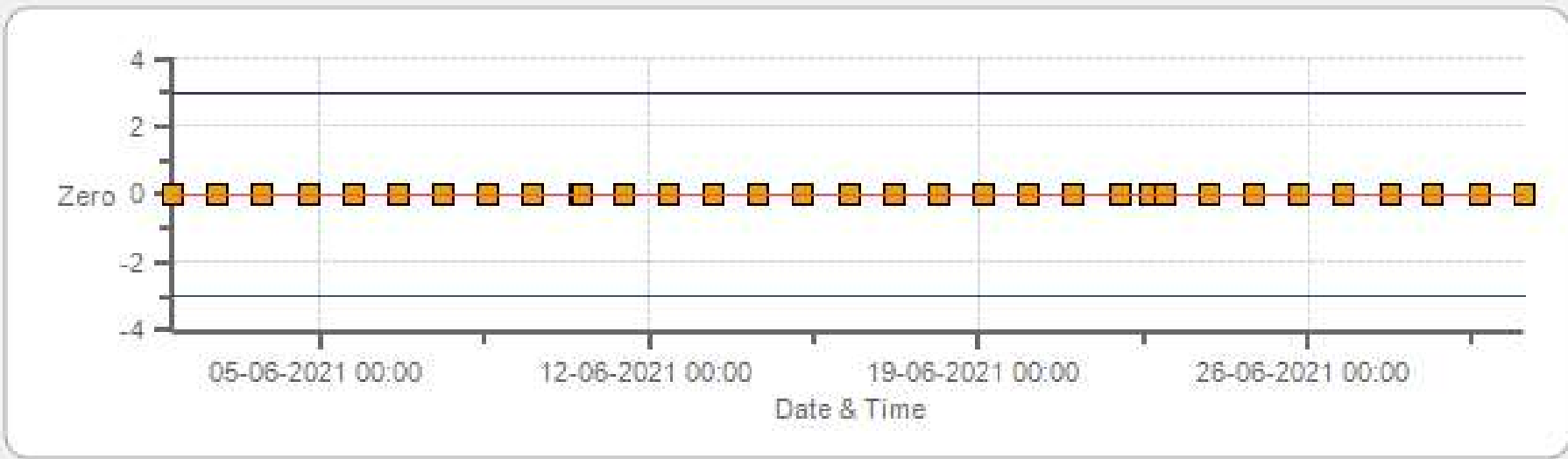
Zero Zero Ref Zero Low Zero High

CH4[ppm] Calibration: Cold Lake South Monthly: 06-2021 Type: SpanAndZero - Span



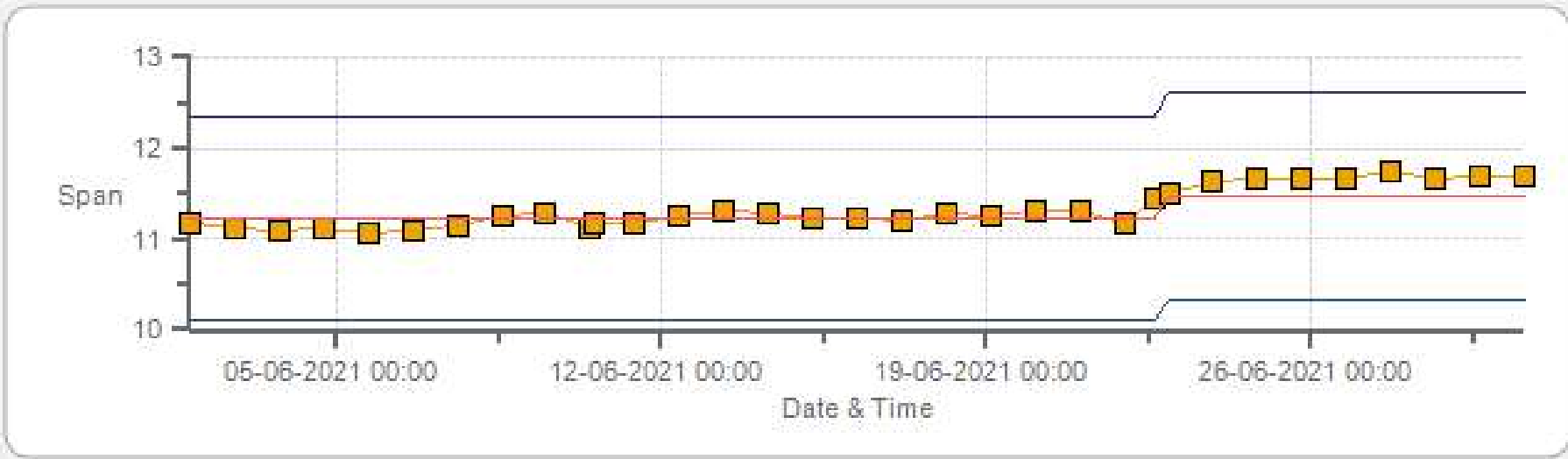
Span SpanRef Span Low Span High

NMHC[ppm] Calibration: Cold Lake South Monthly: 06-2021 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

NMHC[ppm] Calibration: Cold Lake South Monthly: 06-2021 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution



DATE:	22-Jun-2021	PREVIOUS CALIBRATION DATE:	14-May-2021
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.993
CLIENT:	LICA	TEMPERATURE (°C):	22.5
LOCATION:	CLS	BAROMETRIC (mBar):	938
PURPOSE:	Routine	START TIME (MST):	07:35
PERFORMED BY:	Limin Li	END TIME (MST):	11:49

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180260018	FLOW (mL/min)	445
INITIAL		FINAL	
BKG/OFFSET	2.06	BKG/OFFSET	1.92
COEF/SLOPE	0.976	COEF/SLOPE	0.944
Expected (reference) Value	262	Expected (reference) Value	267

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	Teledyne
MODEL:	2010	MODEL:	701
ID:	17200415	ID:	1105
MFC CALIBRATION DATE:	16-Mar-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0000647	HIGH ID	n/a
CONC (ppm):	51.60	EXPIRY DATE	n/a
CYLINDER (psi):	1800	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		
6000	46.00	6000	0.00	-0.1	0	0.967	0.999
5954	46.00	6000	395.60	409	396	0.967	0.999
5979	21.20	6000	182.32	n/a	182.9	n/a	0.997
5989	10.60	6000	91.16	n/a	90.8	n/a	1.004

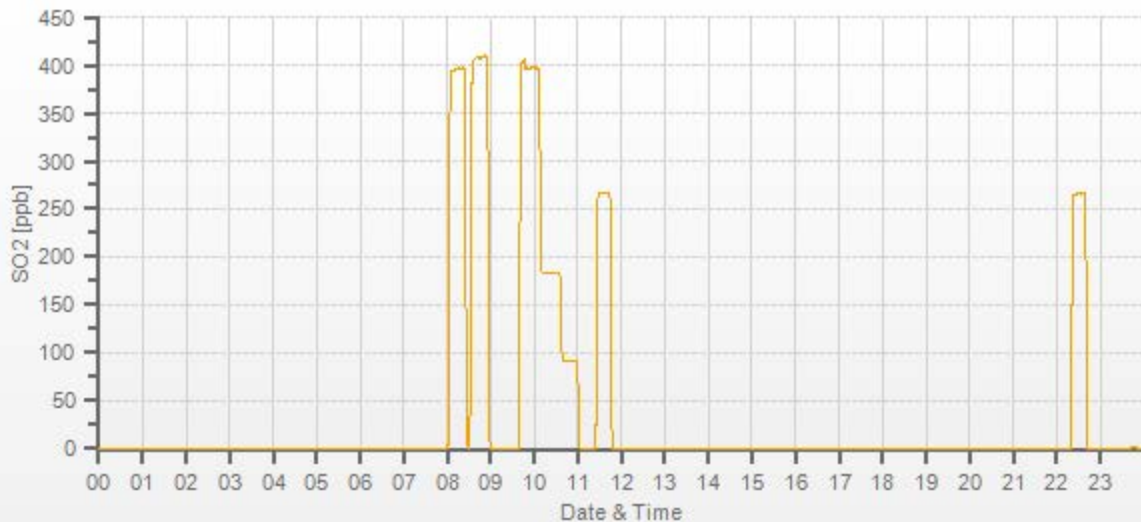
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	0.0%

COMMENTS:

Sample inlet filter was changed.
Operator error 08:02-08:25 (as-found high). Incorrect calibrator setting. Point repeated.

SO2[ppb] Station: Cold Lake South Daily: 22-06-2021 Type: AVG 1 Min. [1 Min.]



CAL-LICA-202106-01174

TRS Analyzer Calibration by Dilution



DATE:	22-Jun-2021	PREVIOUS CALIBRATION DATE:	14-May-2021
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	0.995
CLIENT:	LICA	TEMPERATURE (°C):	22.5
LOCATION:	CLS	BAROMETRIC (mBar):	938
PURPOSE:	Routine	START TIME (MST):	07:35
PERFORMED BY:	Limin Li	END TIME (MST):	12:27

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	812728560	FLOW (mL/min)	485
INITIAL		FINAL	
BKG/OFFSET	21.9	BKG/OFFSET	21
COEF/SLOPE	1.06	COEF/SLOPE	1.02
Expected (reference) Value	36.7	Expected (reference) Value	38.3

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	EnviroNics	MAKE:	Teledyne
MODEL:	6100	MODEL:	701
ID:	5212	ID:	1105
MFC CALIBRATION DATE:	18-Mar-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY0001074	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	1100	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:	08:02	SO2 Conc (ppb)	380
END TIME:	08:28	Analyzer Response (ppb)	0.0

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7500	7500	7500	0.00	0	0	0.995	1.000
7442	58.50	7500	78.00	79.8	78	0.977	1.000
7472	28.50	7500	38.00	n/a	38.1	n/a	0.997
7486	14.25	7500	19.00	n/a	19	n/a	1.000

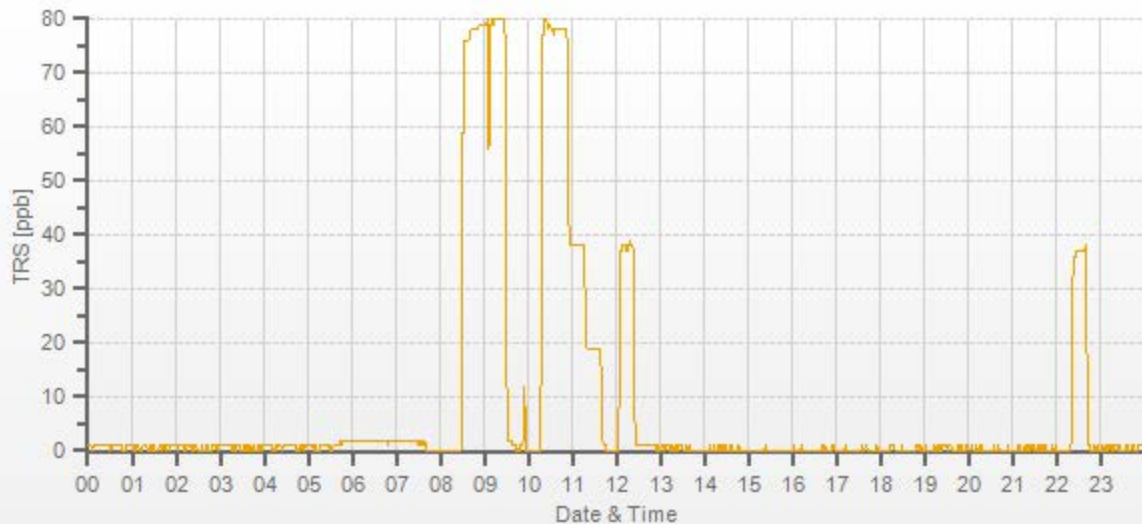
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	0.0%

COMMENTS:

Sample inlet filter was changed.
Flush regulator @ 09:05am.

TRS[ppb] Station: Cold Lake South Daily: 22-06-2021 Type: AVG 1 Min. [1 Min.]



CAL-LICA-202106-01174

NOx Calibration by Dilution/Gas-Phase Titration



CALIBRATION:				ANALYZER:			
DATE:	22-Jun-2021	PREVIOUS CALIBRATION DATE:	14-May-2021	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	22.5	SERIAL #:	1505664393	NOx	0.997
LOCATION:	CLS	BAROMETRIC (mBar):	938	FLOW (mL/min)	771	NO	0.998
PURPOSE:	Routine	START TIME (MST):	07:35	RANGE (ppb)	500	NO2	1.000
PERFORMED BY:	Limin Li	END TIME (MST):	13:43	GPT FOR O3?		Yes	

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	EY 0000647	HIGH ID:	n/a
MODEL:	2010	MODEL:	701	NO/NOx (PPM):	50.9 51.1	HIGH EXPIRY:	n/a
ID:	17200415	ID:	1105	CYLINDER (psi):	1800	LOW ID:	n/a
MFC CALIBRATION DATE:	16-Mar-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:	4.3	4.1	n/a	BKG/OFFSET:	4.3	4.2	n/a
SLOPE/COEF/CE:	1.003	0.958	0.998	SLOPE/COEF/CE:	1.004	0.969	0.998

EXPECTED (REFERENCE) VALUE:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	257.0	252.0	4.3		263.7	260.7	3.1

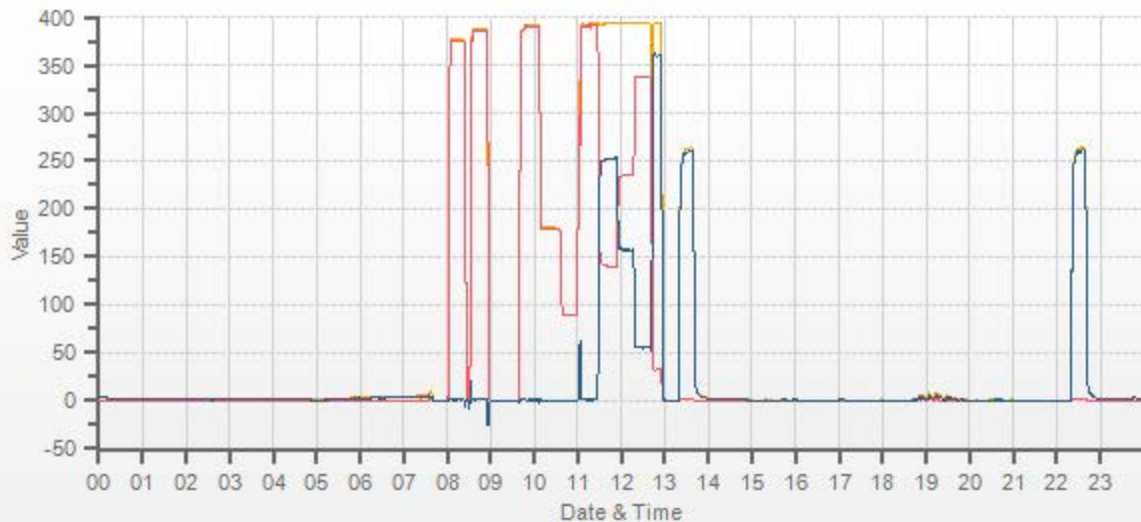
CALIBRATION PARAMETERS:				
POINT	NO TARGET (PPB)	NO2 TARGET (PPB)	NO2 RANGE	O3 POINT
HIGH	395	250	240-275	n/a
MID	180	154	150-157	Mid
LOW	90	54	50-58	Low
EXTRA 1	n/a	340	300-370	High

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
6000	6000	6000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.013	1.011	1.001	1.001	1.000	1.005
5954	46.00	6000	390.2	391.8	1.5	385.4	387.4	2.0	390.0	392.0	2.0	1.013	1.011	1.001	0.999		
5979	21.20	6000	179.8	180.6	0.7	n/a	n/a	n/a	179.6	180.5	0.7	n/a	n/a	1.001	1.000		
5989	10.60	6000	89.9	90.3	0.4	n/a	n/a	n/a	89.3	89.8	0.5	n/a	n/a	1.007	1.005		

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	38.30	5000	0	391.0	393.0	2.0	251	251	1.000	100.00%
AS-FOUND HIGH	38.30	5000	240	140.0	393.0	253.0	251	251	1.000	100.00%
ADJUSTED HIGH	n/a	5000	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MID	38.30	5000	148	235.0	393.0	158.0	156	156	1.000	100.00%
LOW	38.30	5000	50	337.0	393.0	56.0	54	54	1.000	100.00%
NO2 adjustment not required.									AVERAGE:	100.00%

LINEAR REGRESSION ANALYSIS:				COMMENTS:
	CORRELATION	SLOPE	INTERCEPT	
NO	1.000	1.000	-0.05%	
NOx	1.000	1.001	-0.05%	
NO2	1.000	1.000	0.00%	

Operator error 08:02-08:25 (as-found high). Incorrect calibrator setting (was 380, needs to be 390) Point repeated.



CAL-LICA-202106-01174

Ozone Calibration by Direct GPT



DATE:	22-Jun-2021	PREVIOUS CALIBRATION DATE:	13-May-2021
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.005
CLIENT:	LICA	TEMPERATURE (°C):	22.7
LOCATION:	CLS	BAROMETRIC (mBar):	937
PURPOSE:	Routine	START TIME (MST):	12:56
PERFORMED BY:	Limin Li	END TIME (MST):	17:23

ANALYZER:

MAKE/MODEL	Thermo 49i	RANGE	500 ppb
SERIAL #	700419951	FLOW (mL/min)	1453
INITIAL		FINAL	
BKG/OFFSET	0	BKG/OFFSET	0
COEF/SLOPE	1.043	COEF/SLOPE	1.022
Expected (reference) Value	360	Expected (reference) Value	369.3

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	701
ID:	17200415	ID:	1105
MFC CALIBRATION DATE:	16-Mar-2021	OXIDIZER ID:	n/a
CALIBRATION METHOD:		Direct GPT	
GPT DATE:	22-Jun-2021	GPT END TIME:	13:45

CALIBRATION PARAMETERS:

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

CALIBRATION:

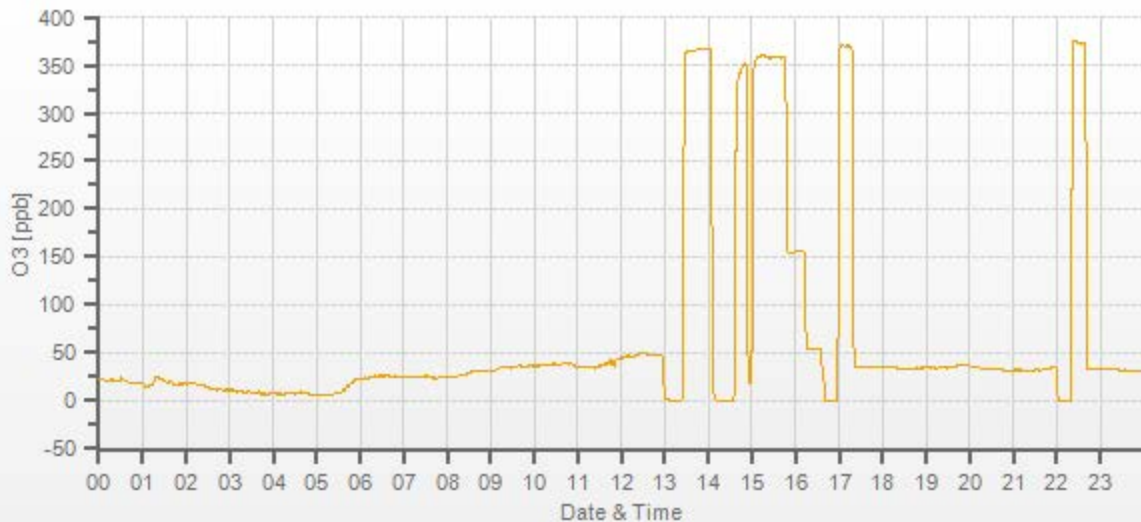
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	5000	5000	0.0	0.0	0.0	0.974	1.000
5000	5000	5000	357.0	366.5	357.0	0.974	1.000
5000	5000	5000	156.0	n/a	155.0	n/a	1.006
5000	5000	5000	54.0	n/a	53.4	n/a	1.011

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	-0.1%

COMMENTS:

Sample inlet filter was changed.



Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	22-Jun-2021	PREVIOUS CALIBRATION DATE:	13-May-2021	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	LICA	TEMPERATURE (°C):	22.7		Thermo 55i	1180030034	965
LOCATION:	CLS	BAROMETRIC (mBar):	937	PARAMETER:	CH4	NMHC	THC
PURPOSE	Routine	START TIME (MST):	11:43	RANGE (ppm):	20	20	40
PERFORMED BY:	Limin Li	END TIME (MST):	15:22	PREVIOUS CF:	0.989	1.002	0.995

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 70331	HIGH ID:	n/a
MODEL:	2010	MODEL:	701	CH ₄ /C ₃ H ₈ (ppm):	909.0 308.0	HIGH EXPIRY:	n/a
ID:	17200415	ID:	1105	CYLINDER (psi):	1700	LOW ID:	n/a
MFC CALIBRATION DATE:	16-Mar-2021	OXIDIZER ID:	111	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	847.0
RANGE	12 - 16	6 - 8	2 - 4	THC as CH ₄	1756.0

EXPECTED (REFERENCE) VALUE:

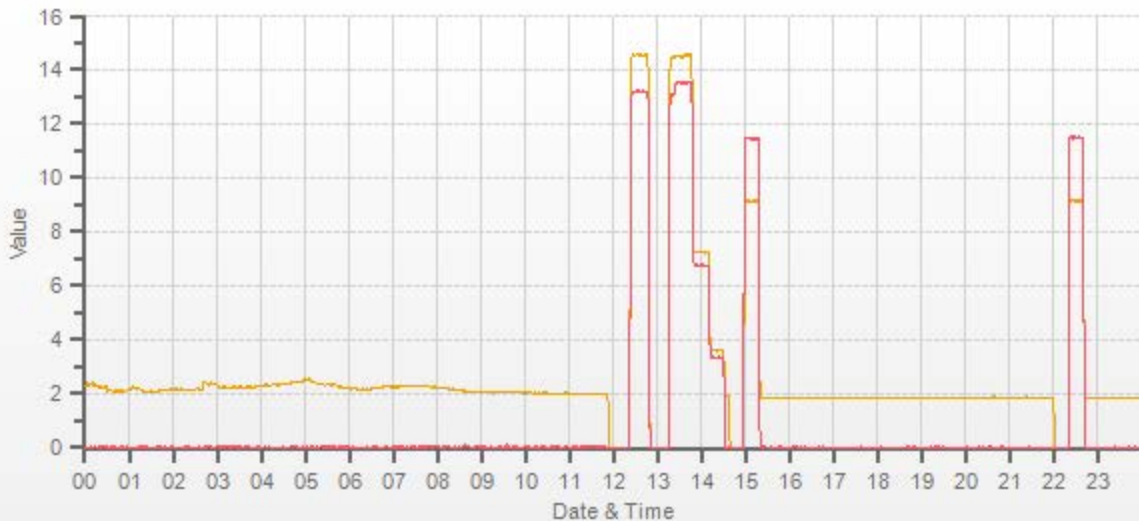
INITIAL	CH ₄	NMHC	THC	FINAL	CH ₄	NMHC	THC
	9.28	11.22	20.50		9.15	11.46	20.61

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
3500	X	3500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	X	X	X	X	X	X
3444	55.80	3500	14.49	13.50	28.00	14.55	13.20	27.75	14.52	13.53	28.05	0.996	1.023	1.009	0.998	0.998	0.998
3472	27.90	3500	7.25	6.75	14.00	n/a	n/a	n/a	7.25	6.76	14.01	n/a	n/a	n/a	0.999	0.999	0.999
3486	13.95	3500	3.62	3.38	7.00	n/a	n/a	n/a	3.60	3.35	6.95	n/a	n/a	n/a	1.006	1.008	1.007

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT	Comments:	
CH ₄	1.000	1.003	-0.1%	Sample inlet filter was changed.	
NMHC	1.000	1.003	-0.1%		
THC	1.000	1.003	-0.1%		
				Use Zero Chrom?	Yes



CAL-LICA-202106-01174



Teledyne T640 Audit/Calibration

Date/Previous Audit Date:	June 10, 2021	May 27, 2021	Weather Conditions:	Rain fall heavy at times	
Company:	LICA		Start Time (mst):	11:54	
Station:	Cold Lake South		End Time (mst):	12:23	
Parameter:	PM 2.5		Performed By/Reviewer:	Chris Wesson	Ferdinand Roy
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: F.S. 181341226 expires June 10, 2021		
Digital Manometer: Dwyer 475 Mark III id# 2 expires Feb 17, 2022			Pressure: Brunton #05535 expires Feb 17, 2022		
DIAGNOSTICS:					
Ambient Pressure (mmHg)	709.0	Ambient Temp (°C)	15.2	ASC Heater Duty (%)	0.0
Box Temp (°C)	30.0	Current PMT HV (V)	1442	LED Temp (°C)	40.21
P3 Value	48	PMT Setting (V)	1442	Pump PWM (%)	36
Sample Flow (L/min)	4.99	Sample RH (%RH)	35.0	Sample Temp (°C)	30.7
Item:	As-found		As-left		Tolerance
	Reference	T640	Reference	T640	
Zero Test (Leak Check)	PM10	0.0	0	0.0	0.0 to 0.2
	PM2.5	0.0	0	0.0	
Ambient Pressure (mmHg)	709.5	709.0	n/a	n/a	+/- 10 mm Hg
Ambient Temperature (°C)	14.53	15.1	n/a		+/- 2°C
Sample Flow (L/min)	5.02	4.99	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 issues.					



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.



Meteorological Sensor Audit/Calibration

Location Information

Company:	LICA	Performed By:	Chris Wesson
Audit Location:	CLS	Reviewed By:	Limin Li
Audit Date:	June 10, 2021	Start/End Time (mst):	10:47 / 11:40
Calibration Purpose:	installation	Weather Conditions:	Cloudy/Overcast

Wind Sensor Information

Sensor ID Data:		Sensor Outputs:	
Sensor Make:	RM Young	Velocity Voltage Output Range:	0 - 1 V
Sensor Model:	05305VK	Velocity Unit Output Range:	0-200 KPH
Serial #:	92412	Direction Voltage Output Range:	0 - 1 V
Previous Cal/Audit Date:	n/a	Direction Unit Output Range:	0-360 °

Wind Calibrator Information

Calibrator I.D. and Expiry Date: RM Young 18802A sn/id# R9133 expires Aug06, 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	18.4	18.5	0.999
2000	36.9	36.9	36.8	1.000
3000	55.3	55.3	55.2	1.001
4000	73.7	73.7	73.7	1.000
5000	92.2	92.1	92.0	1.001
6000	110.6	110.5	110.6	1.000
7000	129.0	128.9	129.0	1.000
8000	147.4	147.4	147.2	1.001
9000	165.9	165.7	165.7	1.001
10000	184.3	184.2	184.9	0.999
The audit meets AMD requirements.			Average Correction Factor=	1.000

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	353	0.0	1.8	0.9
30	330	30	328	0.5	2.0	1.3
60	300	59	298	0.9	2.2	1.5
90	270	91	269	-0.6	1.4	1.0
120	240	121	238	-1.0	2.2	1.6
150	210	151	209	-0.7	1.2	0.9
180	180	181	180	-1.0	0.3	0.7
210	150	211	150	-0.6	0.0	0.3
240	120	239	121	0.7	-1.1	0.9
270	90	270	91	0.3	-1.1	0.7
300	60	298	61	1.8	-0.5	1.2
330	30	328	31	1.8	-1.3	1.6
355	0	354	0	1.3	0.1	0.7
The audit meets AMD requirements.			Average Absolute Degrees Difference=		1.0	

Comments:

Mounted in parallel to station system for troubleshooting purposes.

End of Report



Lakeland Industry & Community Association

JUNE 2021

Ambient Air Monitoring Calibration Report

- TAMARACK STATION-

(Formerly Maskwa Station)

CAL-LICA-202106-01248

Station Operation and Maintenance:

Bureau Veritas Canada

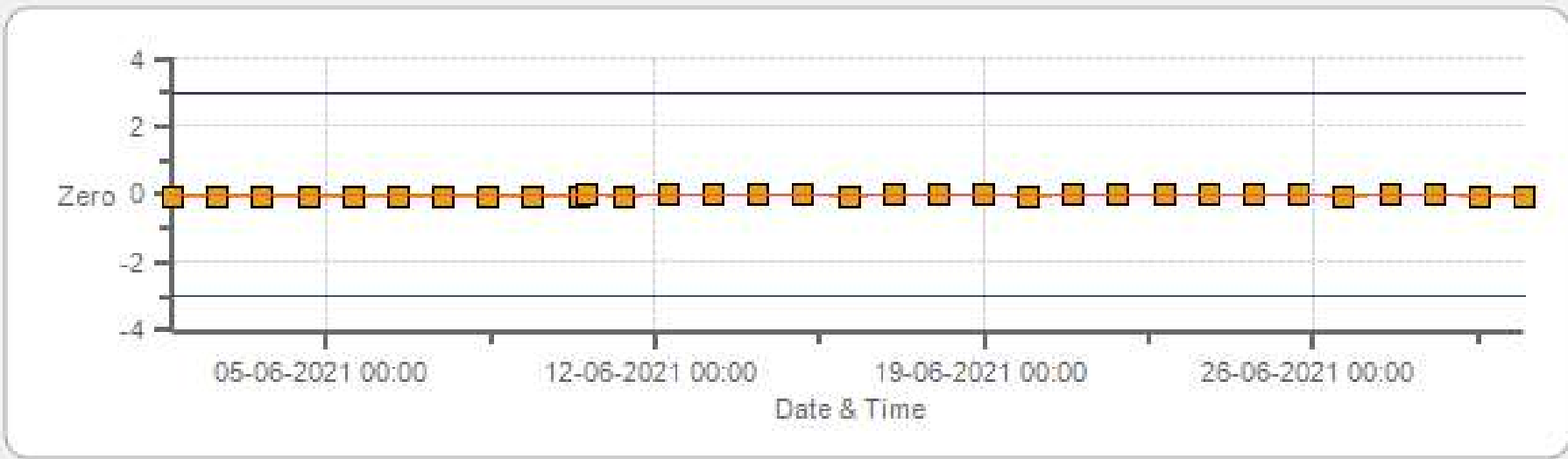
Data Validation and Report:

LICA / Bureau Veritas Canada

July 13, 2021

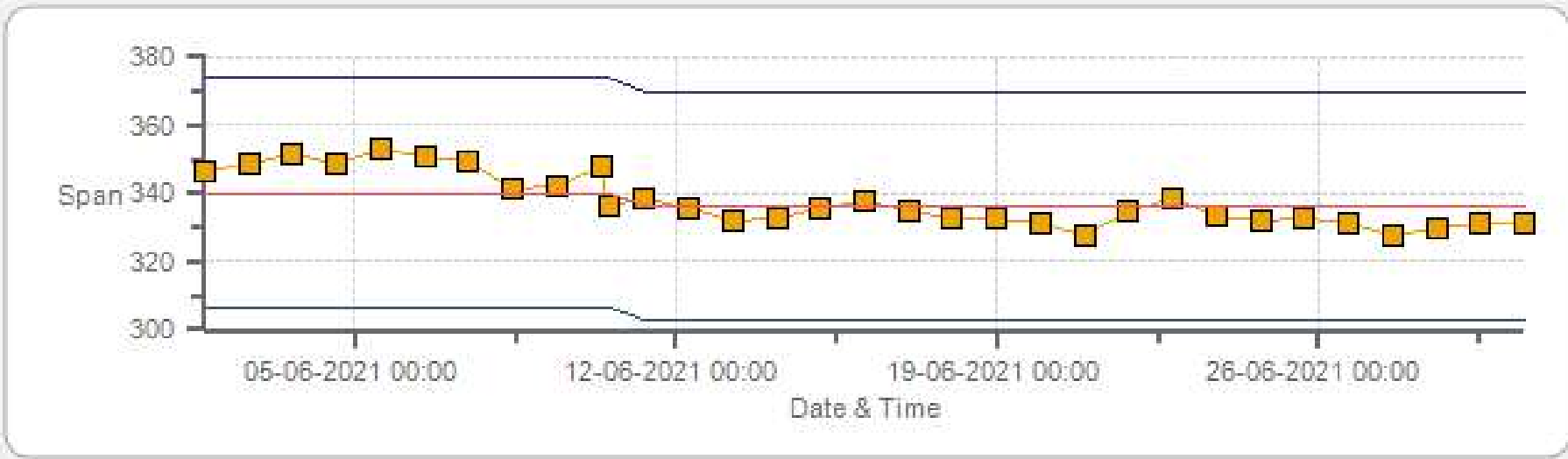
DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: Tamarack Monthly: 06-2021 Type: SpanAndZero - Zero



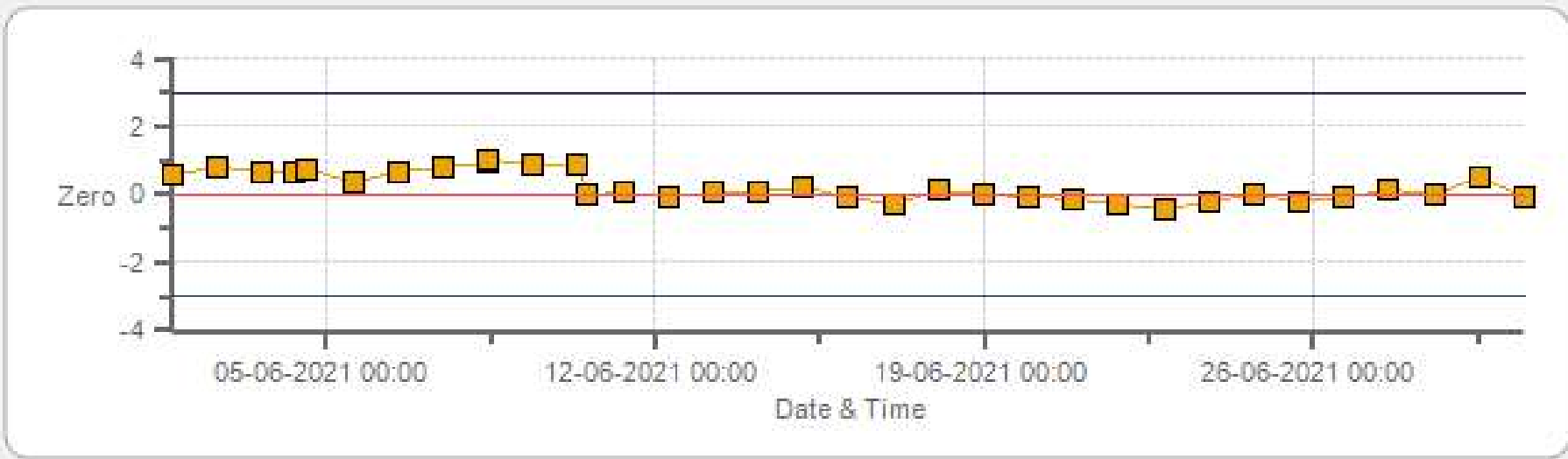
Zero Zero Ref Zero Low Zero High

SO2[ppb] Calibration: Tamarack Monthly: 06-2021 Type: SpanAndZero - Span



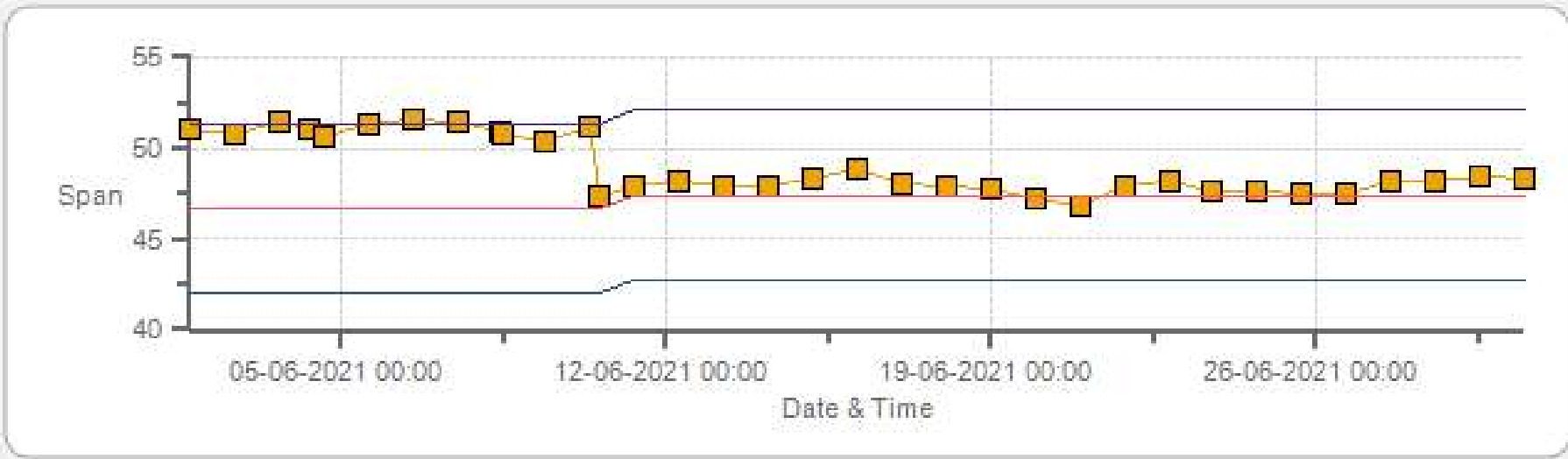
Span Span Ref Span Low Span High

H2S[ppb] Calibration: Tamarack Monthly: 06-2021 Type: SpanAndZero - Zero



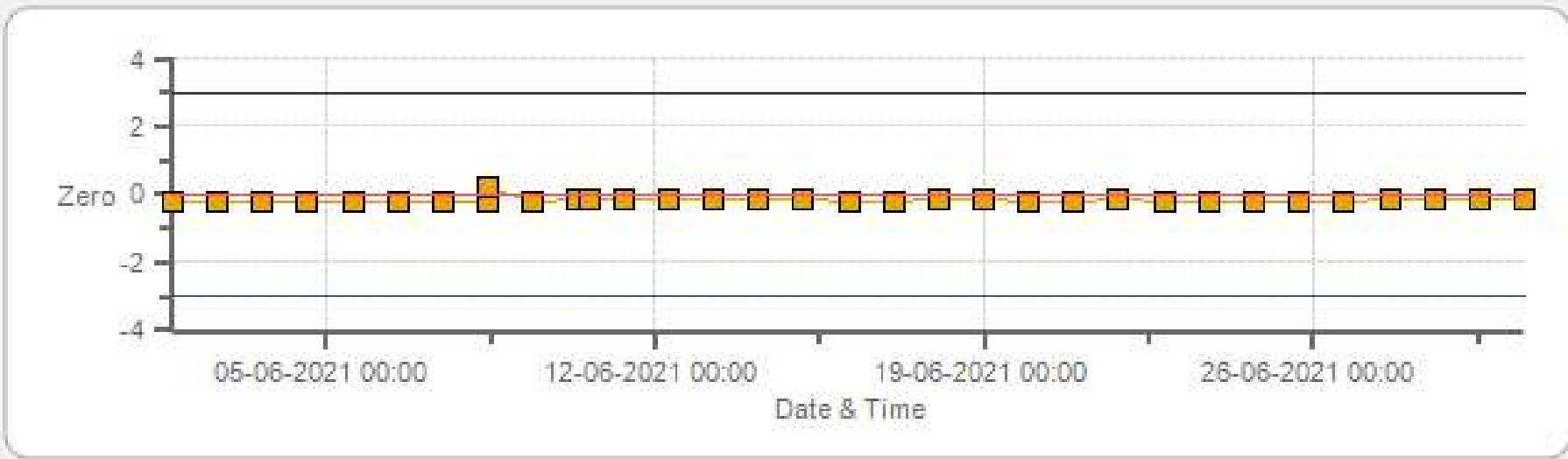
Zero Zero Ref Zero Low Zero High

H2S[ppb] Calibration: Tamarack Monthly: 06-2021 Type: SpanAndZero - Span



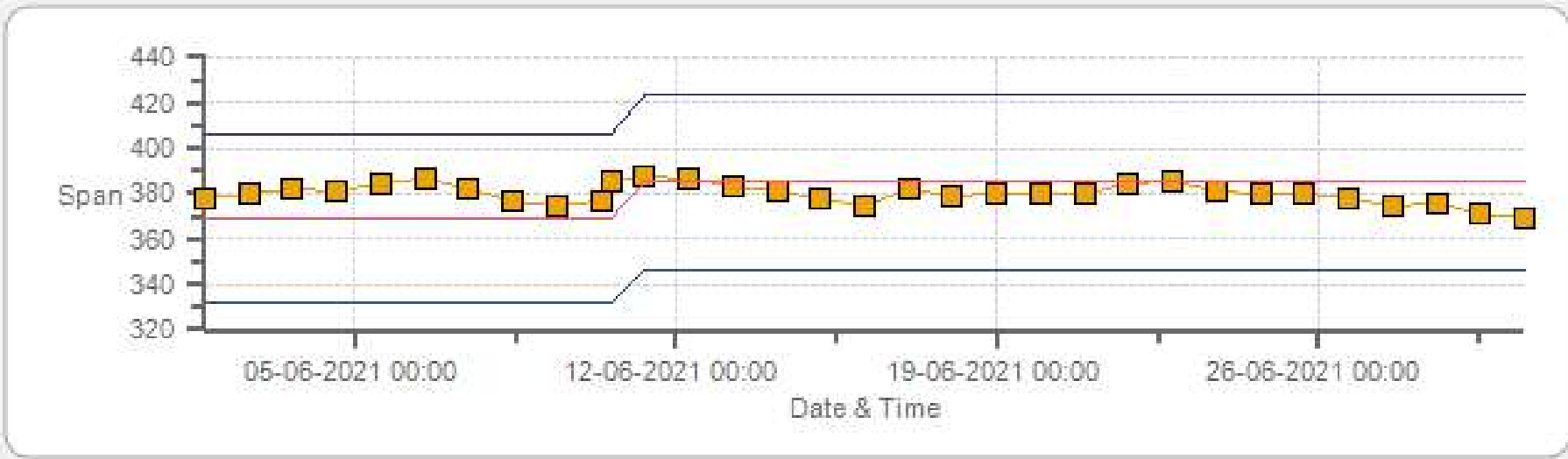
Span SpanRef Span Low Span High

NOX[ppb] Calibration: Tamarack Monthly: 06-2021 Type: SpanAndZero - Zero



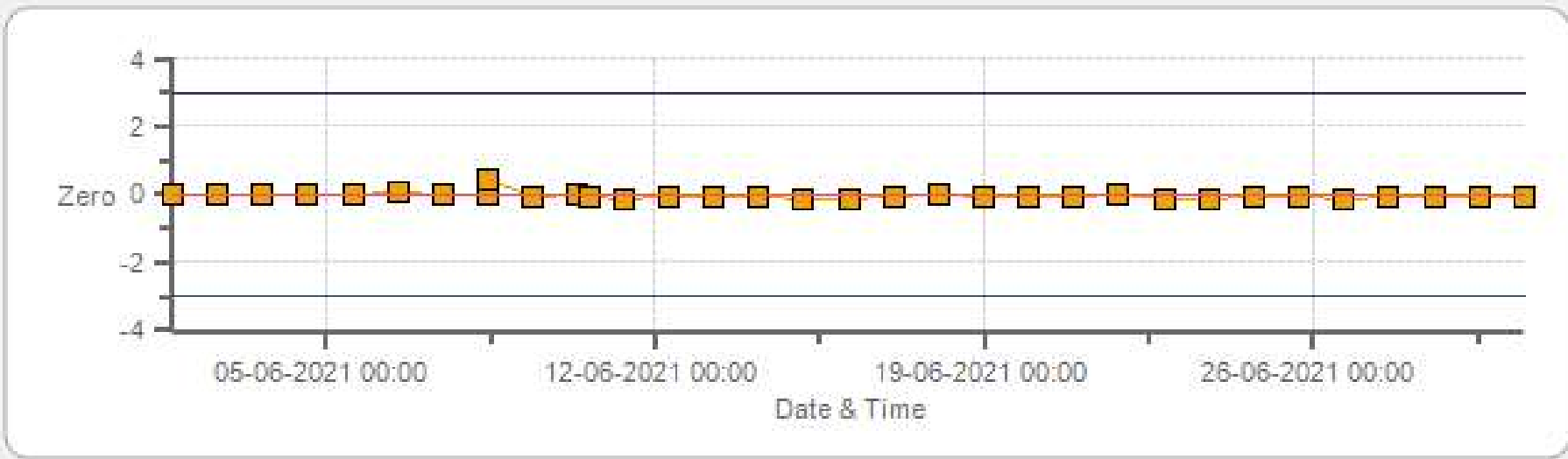
Zero Zero Ref Zero Low Zero High

NOX[ppb] Calibration: Tamarack Monthly: 06-2021 Type: SpanAndZero - Span



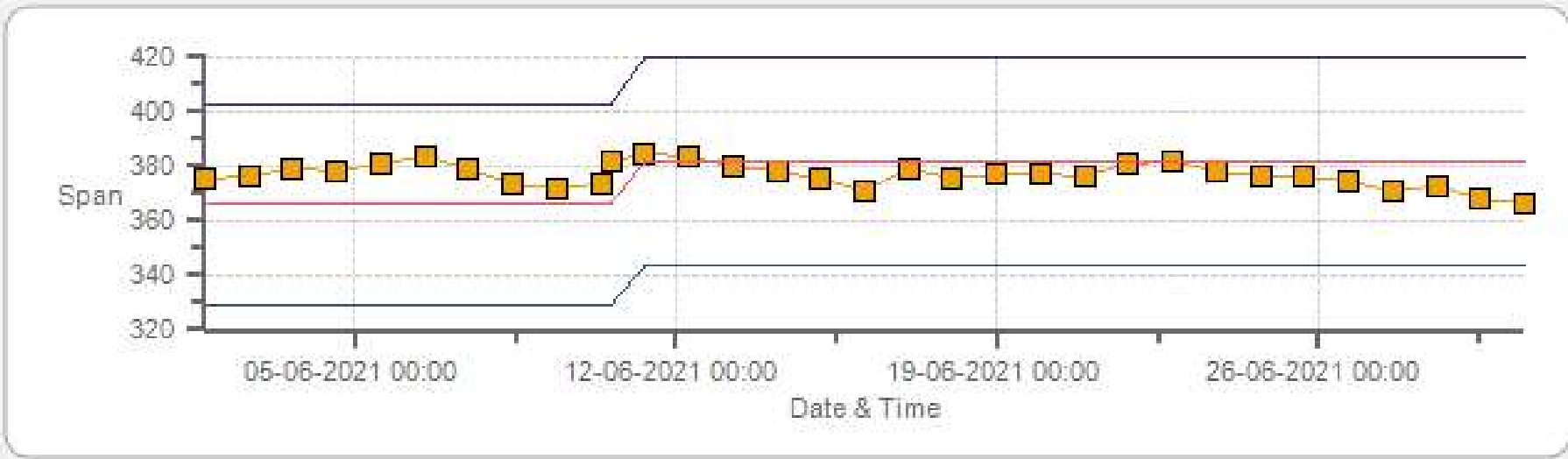
Span Span Ref Span Low Span High

NO2[ppb] Calibration: Tamarack Monthly: 06-2021 Type: SpanAndZero - Zero



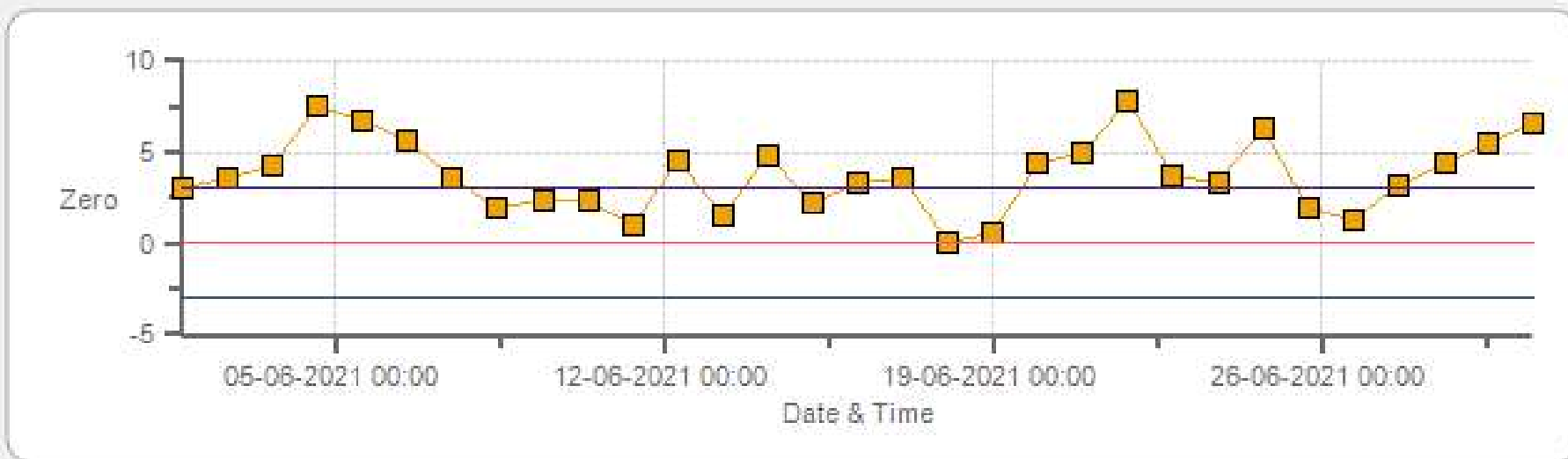
Zero Zero Ref Zero Low Zero High

NO2[ppb] Calibration: Tamarack Monthly: 06-2021 Type: SpanAndZero - Span



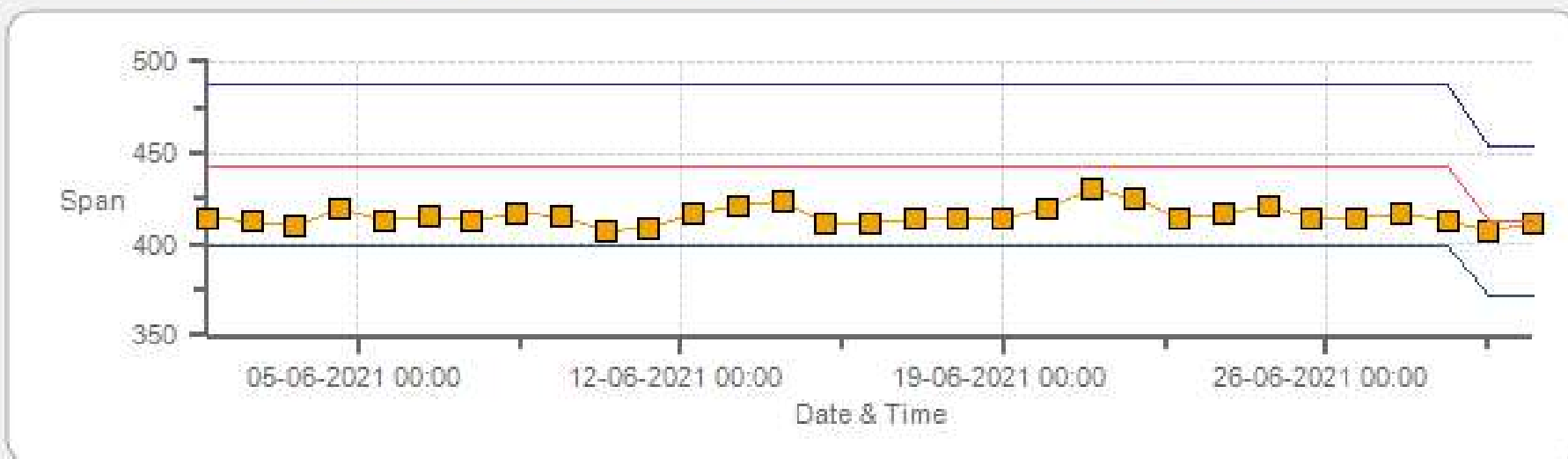
Span SpanRef Span Low Span High

O3[ppb] Calibration: Tamarack Monthly: 06-2021 Type: SpanAndZero - Zero



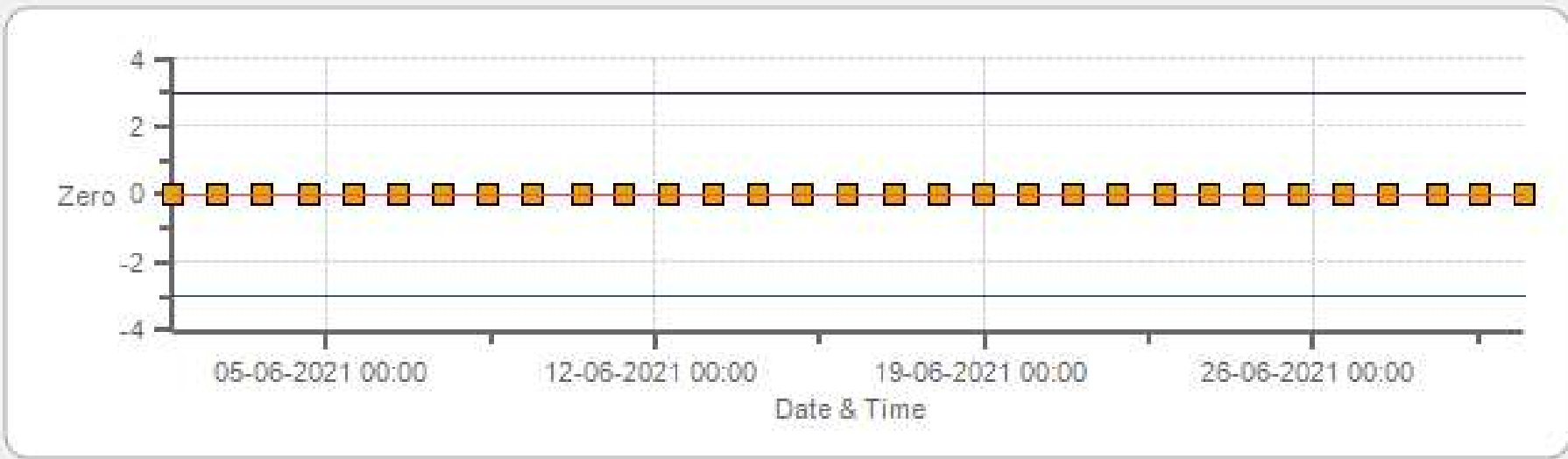
Zero Zero Ref Zero Low Zero High

O3[ppb] Calibration: Tamarack Monthly: 06-2021 Type: SpanAndZero - Span



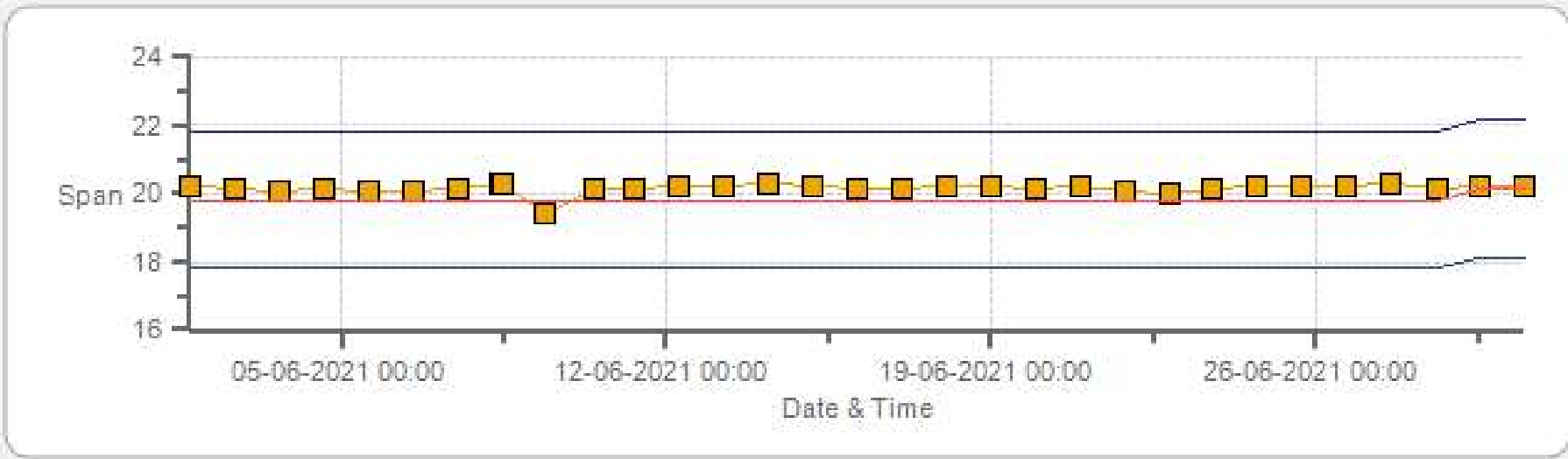
Span Span Ref Span Low Span High

THC55[ppm] Calibration: Tamarack Monthly: 06-2021 Type: SpanAndZero - Zero



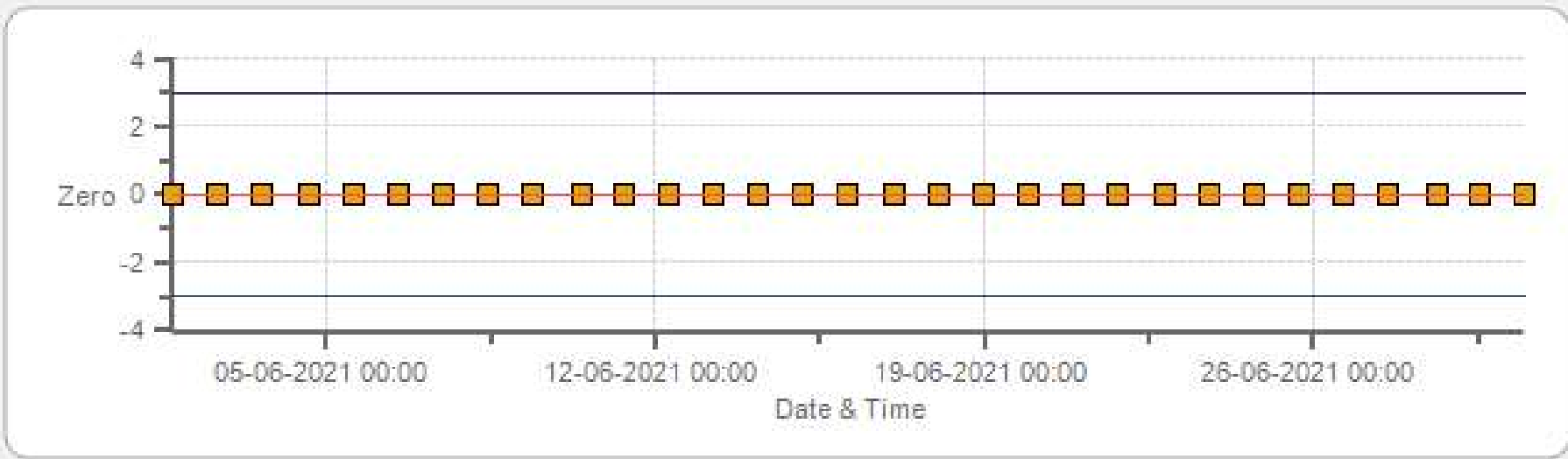
Zero Zero Ref Zero Low Zero High

THC55[ppm] Calibration: Tamarack Monthly: 06-2021 Type: SpanAndZero - Span



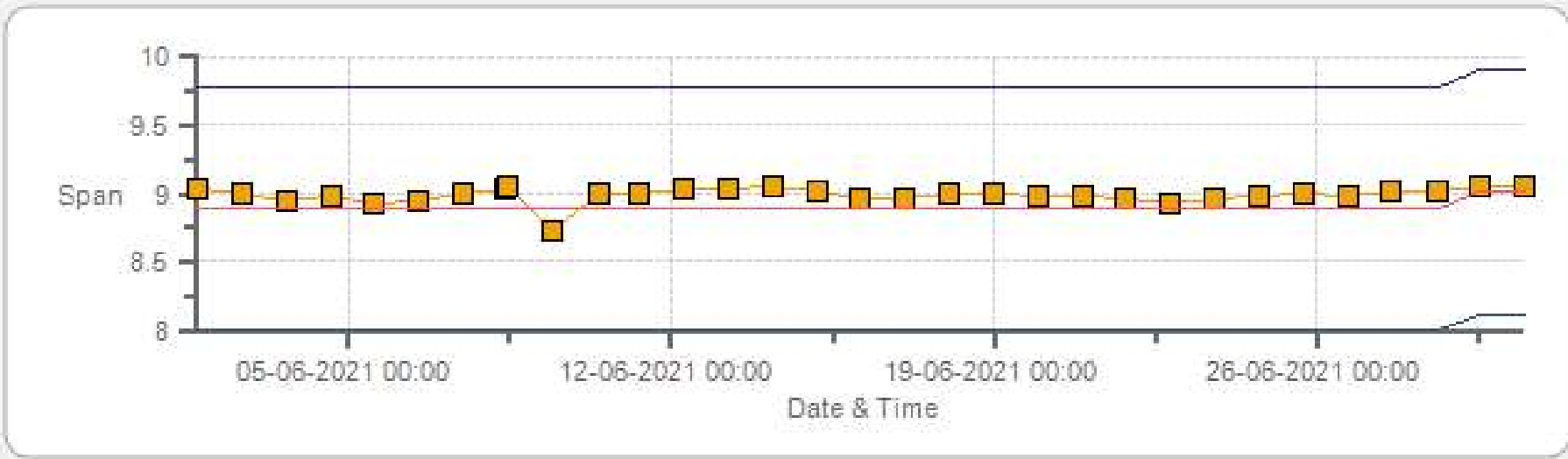
Span Span Ref Span Low Span High

CH4[ppm] Calibration: Tamarack Monthly: 06-2021 Type: SpanAndZero - Zero



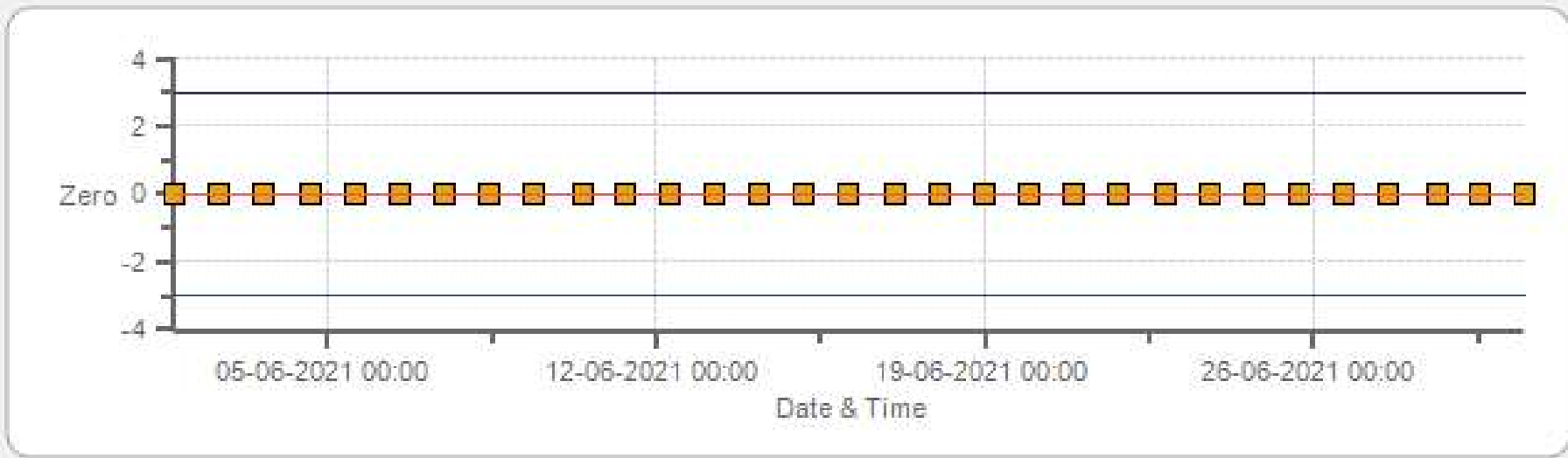
Zero Zero Ref Zero Low Zero High

CH4[ppm] Calibration: Tamarack Monthly: 06-2021 Type: SpanAndZero - Span



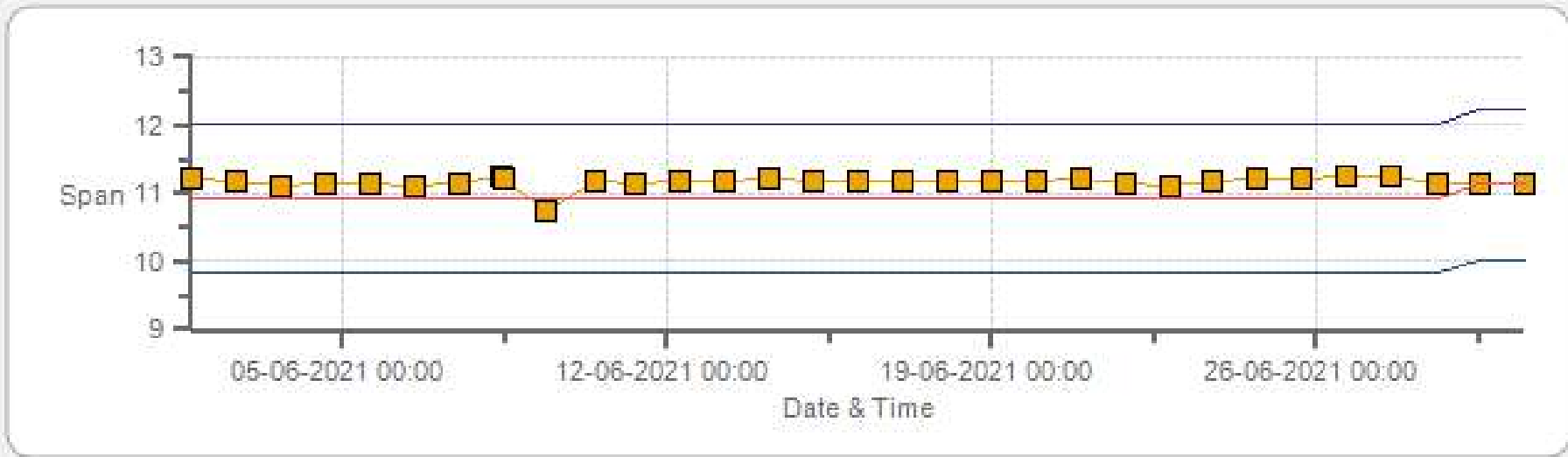
Span SpanRef Span Low Span High

NMHC[ppm] Calibration: Tamarack Monthly: 06-2021 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

NMHC[ppm] Calibration: Tamarack Monthly: 06-2021 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution



DATE:	10-Jun-2021	PREVIOUS CALIBRATION DATE:	04-May-2021
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.996
CLIENT:	LICA	TEMPERATURE (°C):	21.4
LOCATION:	Tamarack	BAROMETRIC (mBar):	939
PURPOSE:	Routine	START TIME (MST):	09:21
PERFORMED BY:	Limin Li	END TIME (MST):	12:34

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180930031	FLOW (mL/min)	450
INITIAL		FINAL	
BKG/OFFSET	2.47	BKG/OFFSET	2.34
COEF/SLOPE	0.96	COEF/SLOPE	0.928
Expected (reference) Value	340.3	Expected (reference) Value	336.5

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	701
ID:	17200415	ID:	1105
MFC CALIBRATION DATE:	16-Mar-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0000647	HIGH ID	n/a
CONC (ppm):	51.60	EXPIRY DATE	n/a
CYLINDER (psi):	1800	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		
6000	44.80	6000	0.00	-0.1	0	0.968	1.001
5955	44.80	6000	385.28	398	385	0.968	1.001
5979	21.20	6000	182.32	n/a	181.5	n/a	1.005
5989	10.60	6000	91.16	n/a	90.6	n/a	1.006

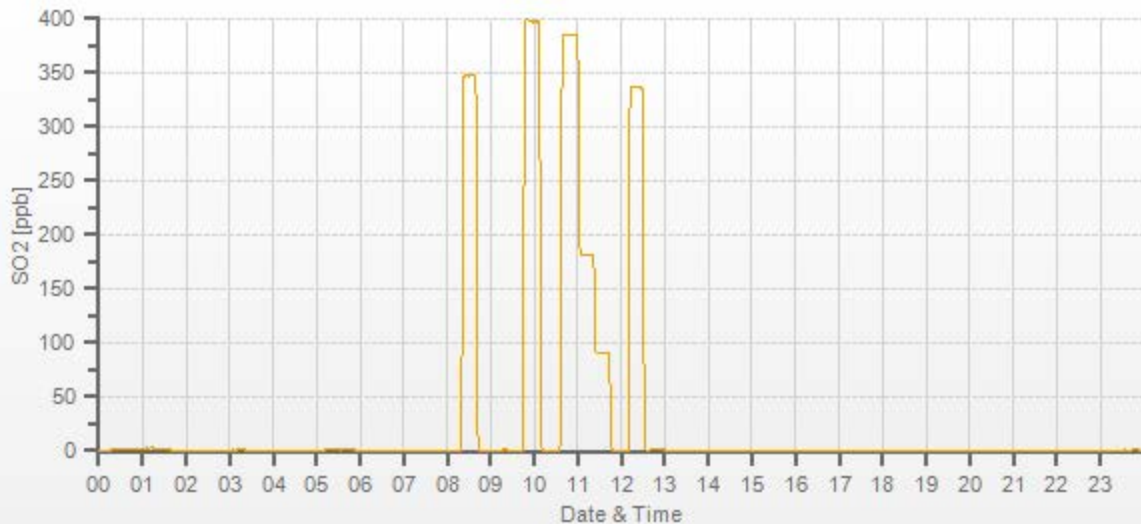
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	-0.1%

COMMENTS:

Sample inlet filter was changed.

SO2[ppb] Station: Tamarack Daily: 10-06-2021 Type: AVG 1 Min. [1 Min.]



CAL-LICA-202106-01248

H2S Analyzer Calibration by Dilution



DATE:	10-Jun-2021	PREVIOUS CALIBRATION DATE:	04-May-2021
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	1.001
CLIENT:	LICA	TEMPERATURE (°C):	21.4
LOCATION:	Tamarack	BAROMETRIC (mBar):	939
PURPOSE:	Routine	START TIME (MST):	09:21
PERFORMED BY:	Limin Li	END TIME (MST):	13:32

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM 17360005	FLOW (mL/min)	865
INITIAL		FINAL	
BKG/OFFSET	27.2	BKG/OFFSET	26.8
COEF/SLOPE	0.819	COEF/SLOPE	0.778
Expected (reference) Value	46.7	Expected (reference) Value	47.4

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	EnviroNics	MAKE:	Teledyne
MODEL:	6100	MODEL:	701
ID:	5212	ID:	1105
MFC CALIBRATION DATE:	18-Mar-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY0001074	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	1100	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:	09:46	SO2 Conc (ppb)	380
END TIME:	10:06	Analyzer Response (ppb)	0.0

CALIBRATION:

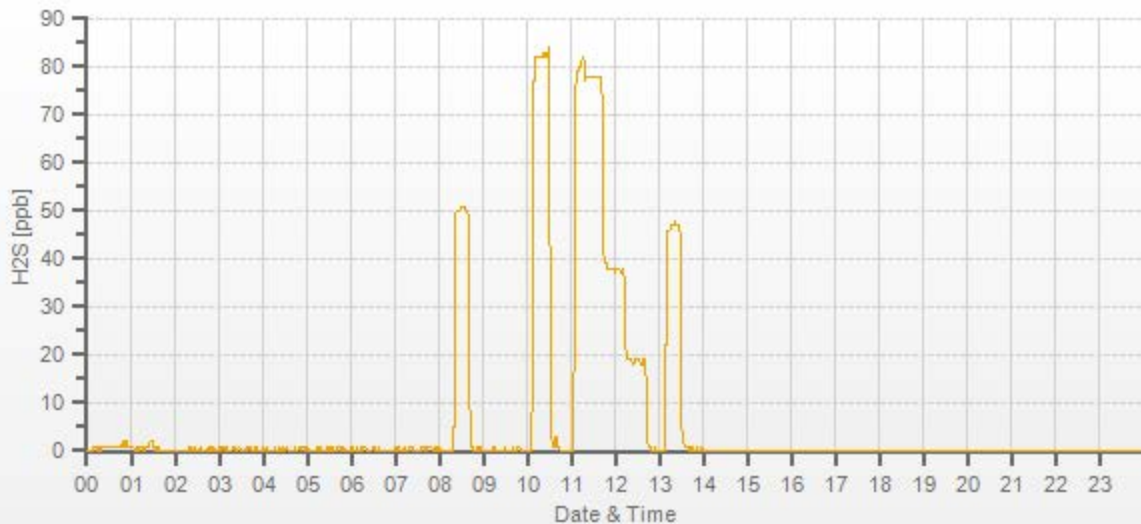
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7500	7500	7500	0.00	0.8	0	0.947	1.000
7442	58.50	7500	78.00	83.2	78	0.947	1.000
7472	28.50	7500	38.00	n/a	37.9	n/a	1.003
7486	14.25	7500	19.00	n/a	18.6	n/a	1.022

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.002	-0.2%

COMMENTS:

Sample inlet filter was changed.



NOx Calibration by Dilution/Gas-Phase Titration



CALIBRATION:				ANALYZER:			
DATE:	10-Jun-2021	PREVIOUS CALIBRATION DATE:	04-May-2021	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	21.4	SERIAL #:	1180930028	NOx	0.997
LOCATION:	Tamarack	BAROMETRIC (mBar):	939	FLOW (mL/min)	487	NO	0.999
PURPOSE:	Routine	START TIME (MST):	09:21	RANGE (ppb)	500	NO2	1.001
PERFORMED BY:	Limin Li	END TIME (MST):	14:03	GPT FOR O3?		No	

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	EY 0000647	HIGH ID:	n/a
MODEL:	2010	MODEL:	701	NO/NOx (PPM):	50.9 51.1	HIGH EXPIRY:	n/a
ID:	17200415	ID:	1105	CYLINDER (psi):	1800	LOW ID:	n/a
MFC CALIBRATION DATE:	16-Mar-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	3	n/a	BKG/OFFSET:	3.1	2.9	n/a
SLOPE/COEF/CE:	1.005	1.007	1	SLOPE/COEF/CE:	1.006	1.032	1

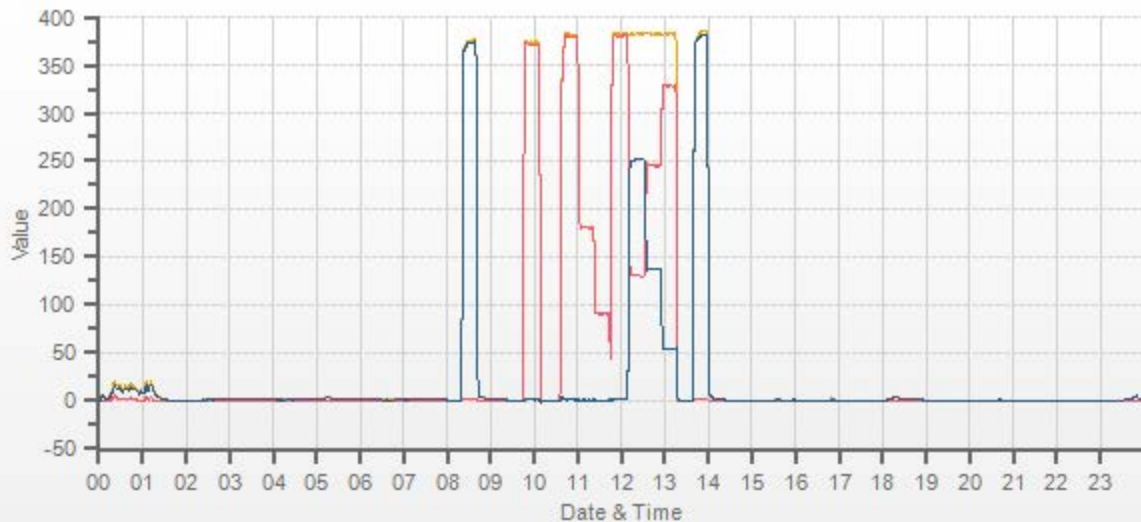
EXPECTED (REFERENCE) VALUE:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	369.0	366.0	2.8		385.0	3.2	381.8

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

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
6000	6000	6000	0.0	0.0	0.0	-0.2	-0.1	0.1	0.0	0.0	0.0	1.024	1.023	0.999	1.000	0.999	0.994
5955	44.80	6000	380.1	381.5	1.5	371.0	373.0	2.0	380.0	382.0	2.0	1.024	1.023	0.999	1.000	0.999	0.994
5979	21.20	6000	179.8	180.6	0.7	n/a	n/a	n/a	180.3	181.6	1.3	n/a	n/a	0.997	0.997	0.994	0.994
5989	10.60	6000	89.9	90.3	0.4	n/a	n/a	n/a	90.5	90.9	0.4	n/a	n/a	0.994	0.994	0.993	0.993

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	37.30	5000	0	381.0	383.0	2.0	251	251	1.000	100.00%
AS-FOUND HIGH	37.30	5000	240	130.0	383.0	253.0	251	251	1.000	100.00%
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MID	37.30	5000	130	245.0	383.0	138.0	136	136	1.000	100.00%
LOW	37.30	5000	48	329.0	383.0	54.0	52	52	1.000	100.00%
NO2 adjustment not required.									AVERAGE:	100.00%

LINEAR REGRESSION ANALYSIS:				COMMENTS:
	CORRELATION	SLOPE	INTERCEPT	
NO	1.000	0.999	0.07%	
NOx	1.000	1.001	0.08%	
NO2	1.000	1.000	0.00%	



CAL-LICA-202106-01248

Ozone Calibration by Photometer (Varying UV Lamp)



DATE:	28-Jun-2021	PREVIOUS CALIBRATION DATE:	05-May-2021
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.002
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	943
PURPOSE:	Routine	START TIME (MST):	11:10
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:15

ANALYZER:

MAKE/MODEL	Thermo 49iQ	RANGE	500 ppb
SERIAL #	1202068570	FLOW (mL/min)	1360
INITIAL		FINAL	
BKG/OFFSET	3.2	BKG/OFFSET	3.2
COEF/SLOPE	1.038	COEF/SLOPE	1.034
Expected (reference) Value	443	Expected (reference) Value	413

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:

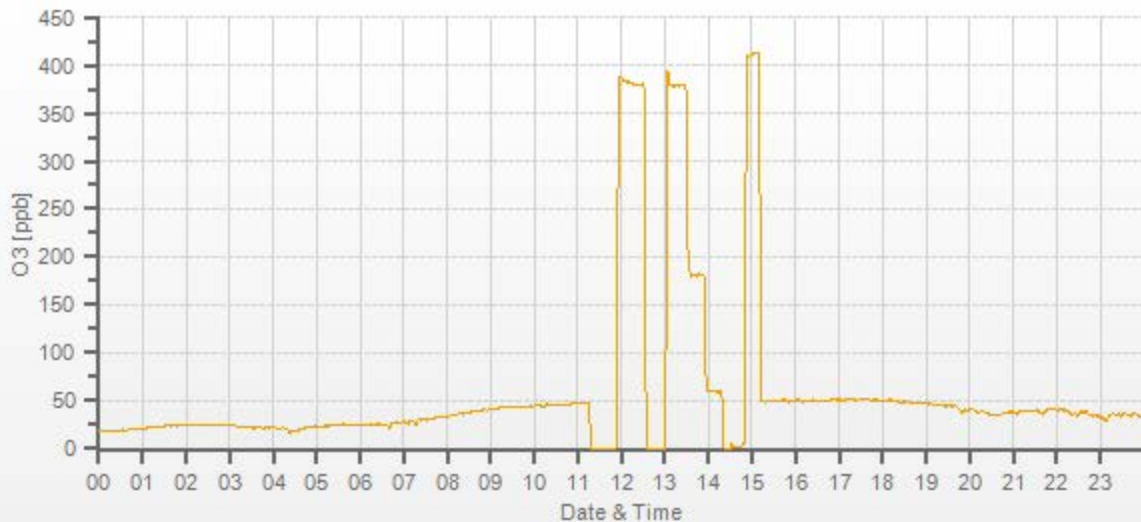
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	 	5000	0.0	-0.6	-0.4	 	
5000	 	5000	378.0	379.7	379.0	0.994	0.996
5000	 	5000	180.0	n/a	181.5	n/a	0.990
5000	 	5000	60.0	n/a	59.6	n/a	1.000

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.004	0.0%

COMMENTS:

Sample inlet filter was changed.



Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	28-Jun-2021	PREVIOUS CALIBRATION DATE:	05-May-2021	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	LICA	TEMPERATURE (°C):	22.0		Thermo 55i	1314057759	1015
LOCATION:	Tamarack	BAROMETRIC (mBar):	943	PARAMETER:	CH4	NMHC	THC
PURPOSE	Routine	START TIME (MST):	11:12	RANGE (ppm):	20	20	40
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:15	PREVIOUS CF:	1.000	1.000	1.000

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):	1100	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:

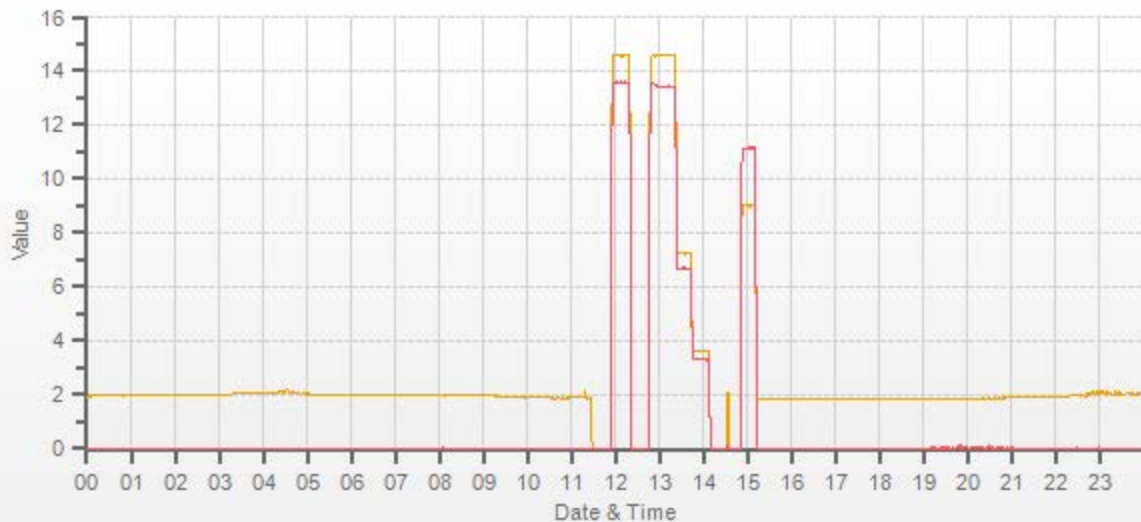
INITIAL	CH ₄	NMHC	THC	FINAL	CH ₄	NMHC	THC
	8.89	10.92	19.81		9.01	11.14	20.15

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	14.57	13.57	28.14	14.58	13.40	27.98	1.000	0.991	0.996	0.999	1.004	1.001
3075	24.70	3100	7.28	6.73	14.01	n/a	n/a	n/a	7.27	6.67	13.94	n/a	n/a	n/a	1.002	1.009	1.005
3088	12.40	3100	3.66	3.38	7.03	n/a	n/a	n/a	3.63	3.31	6.93	n/a	n/a	n/a	1.007	1.020	1.015

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT	Comments:	
CH ₄	1.000	1.002	-0.1%	Sample inlet filter was changed.	
NMHC	1.000	0.997	-0.1%		
THC	1.000	1.000	-0.1%		
				Use Zero Chrom?	Yes



CAL-LICA-202106-01248



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

JUNE 2021

Ambient Air Monitoring Calibration Report

- ST. LINA STATION-

CAL-LICA-202106-01250

Station Operation and Maintenance:

Bureau Veritas Canada

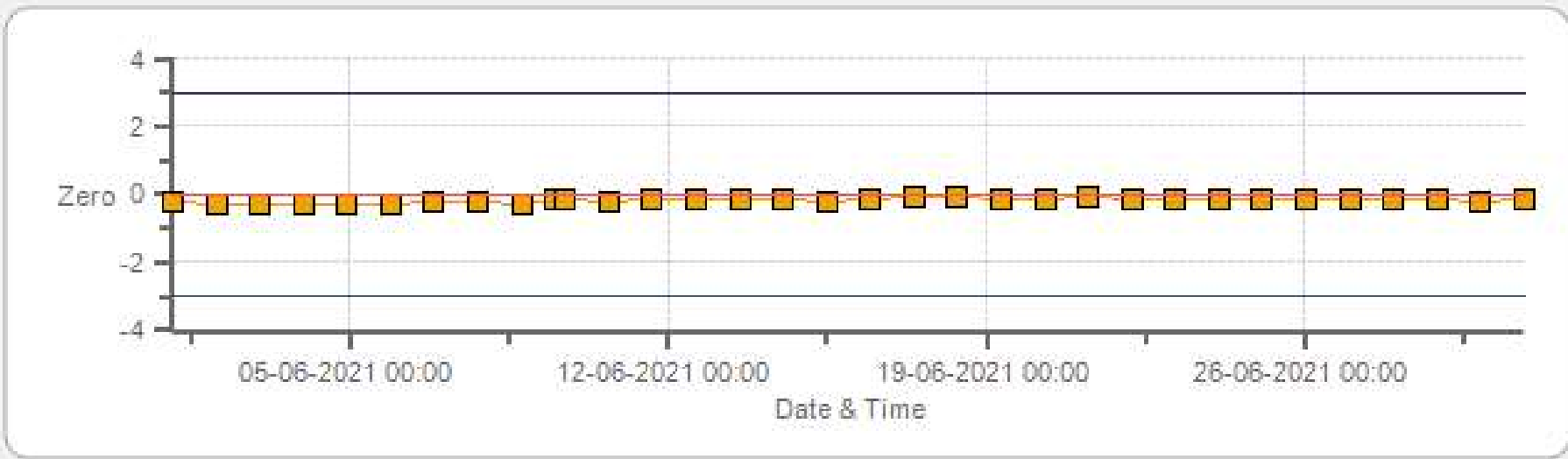
Data Validation and Report:

LICA / Bureau Veritas Canada

July 13, 2021

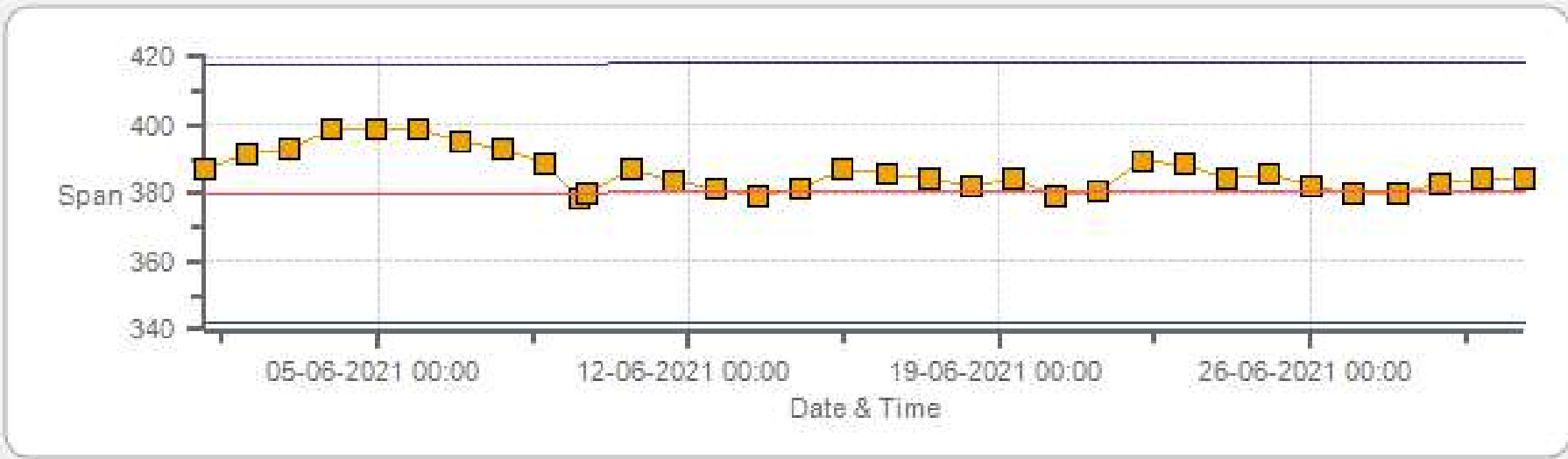
DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: St. Lina Monthly: 06-2021 Type: SpanAndZero - Zero



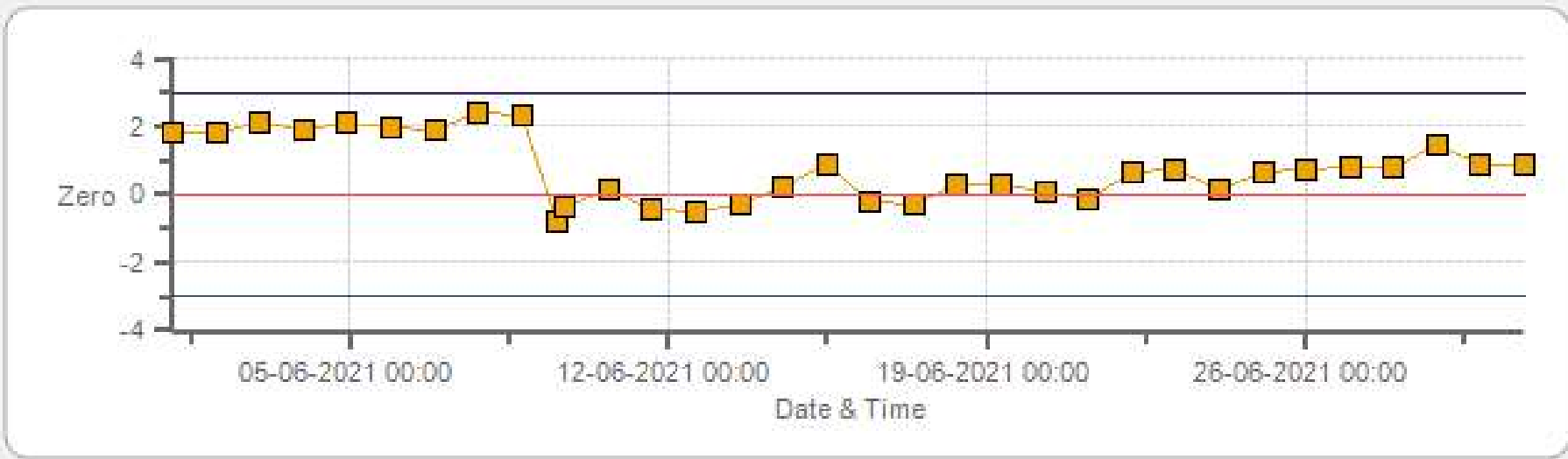
Zero Zero Ref Zero Low Zero High

SO2[ppb] Calibration: St. Lina Monthly: 06-2021 Type: SpanAndZero - Span



Span Span Ref Span Low Span High

H2S[ppb] Calibration: St. Lina Monthly: 06-2021 Type: SpanAndZero - Zero



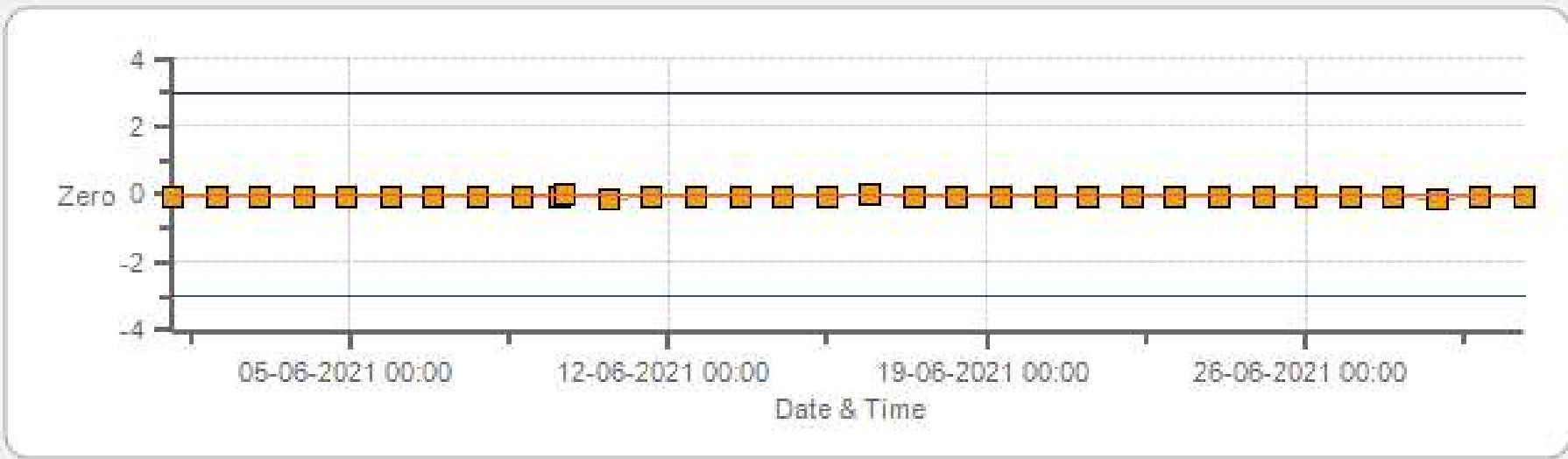
Zero Zero Ref Zero Low Zero High

H2S[ppb] Calibration: St. Lina Monthly: 06-2021 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

NO2[ppb] Calibration: St. Lina Monthly: 06-2021 Type: SpanAndZero - Zero



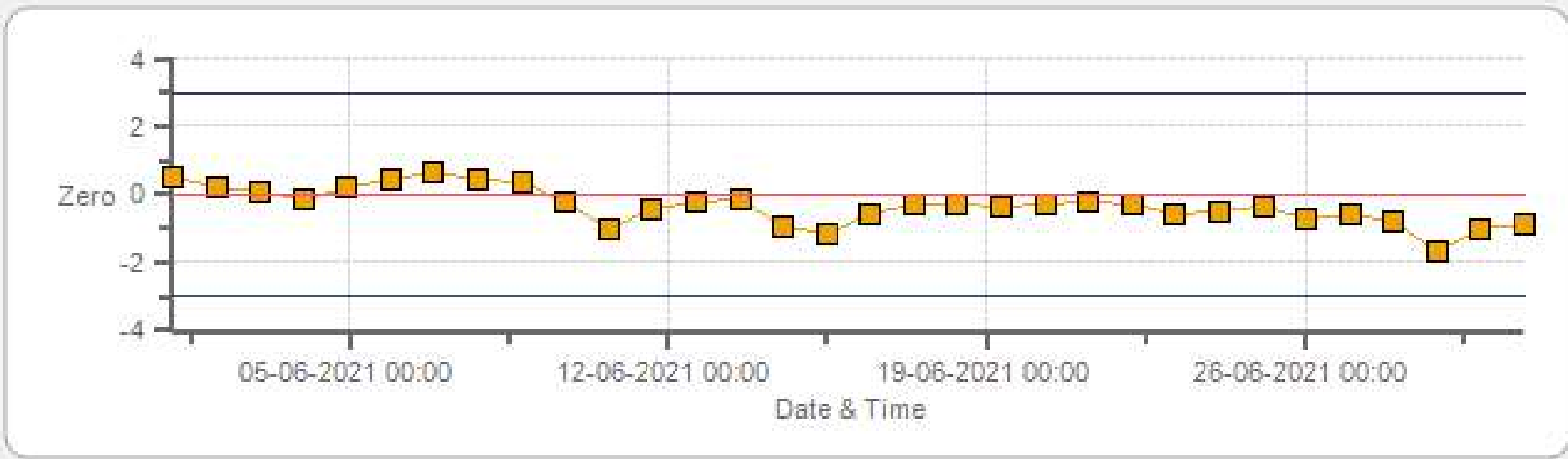
Zero Zero Ref Zero Low Zero High

NO2[ppb] Calibration: St. Lina Monthly: 06-2021 Type: SpanAndZero - Span



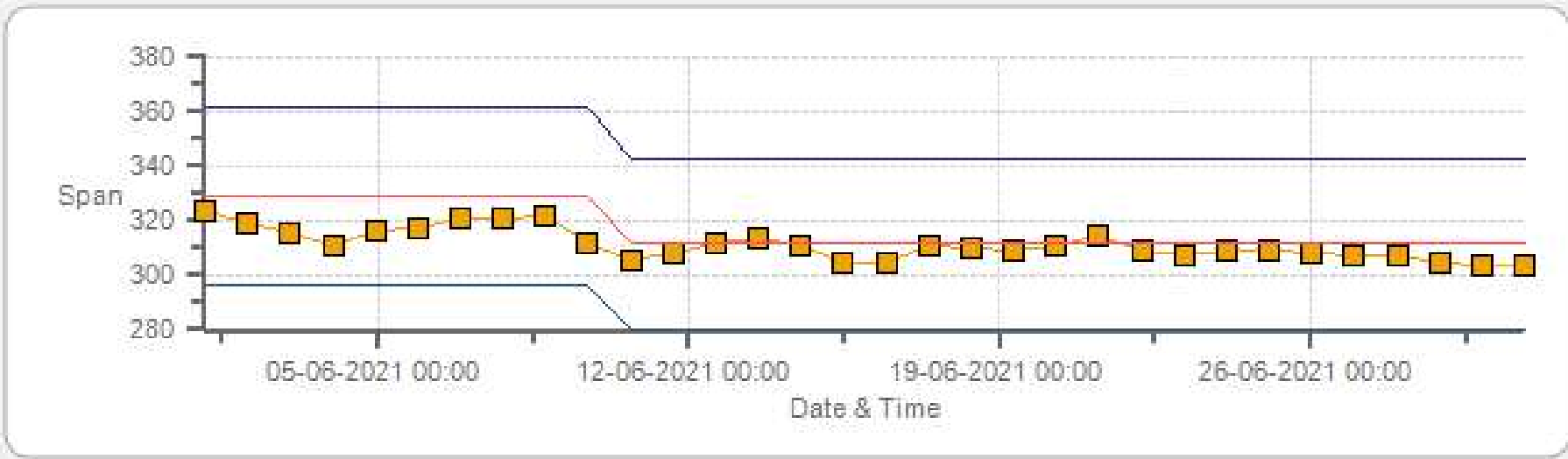
Span SpanRef Span Low Span High

O3[ppb] Calibration: St. Lina Monthly: 06-2021 Type: SpanAndZero - Zero



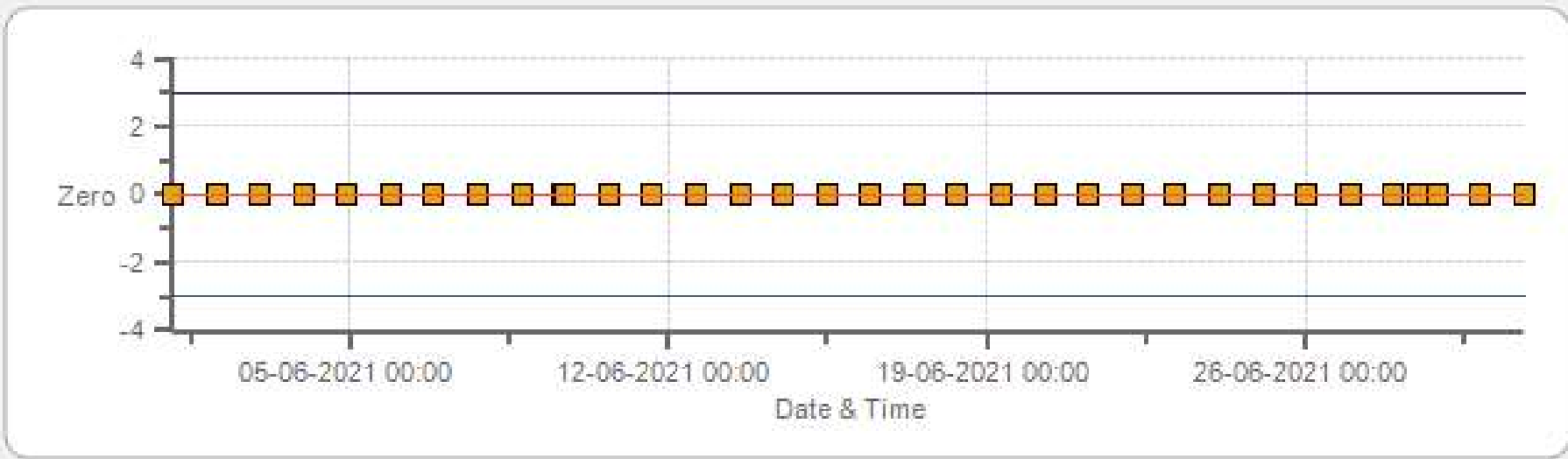
Zero Zero Ref Zero Low Zero High

O3[ppb] Calibration: St. Lina Monthly: 06-2021 Type: SpanAndZero - Span



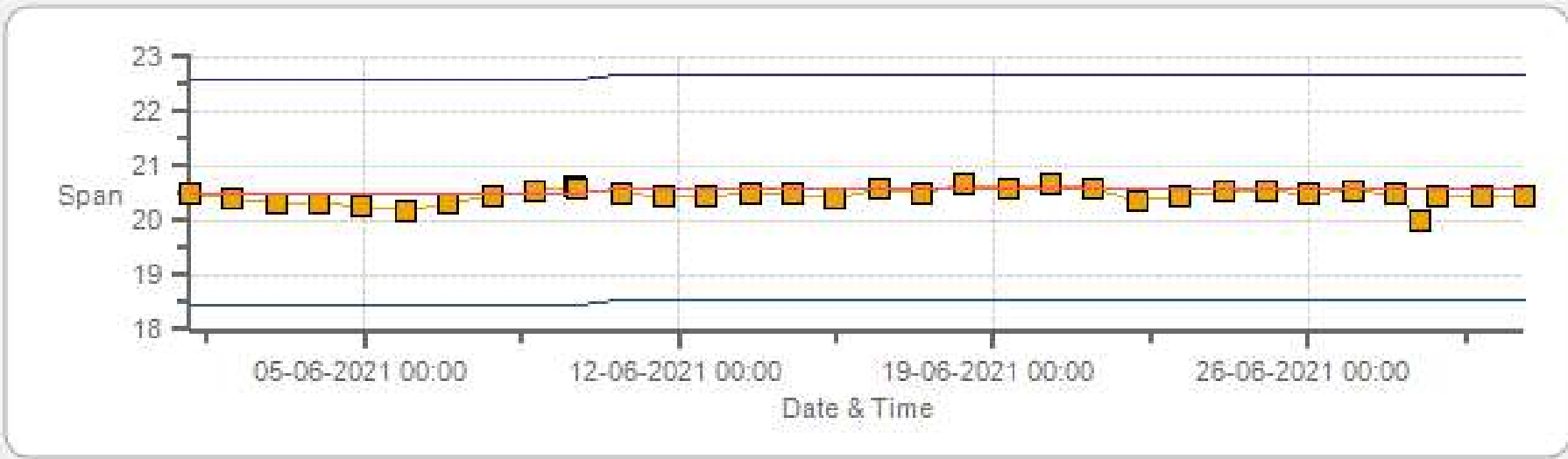
Span SpanRef Span Low Span High

THC55[ppm] Calibration: St. Lina Monthly: 06-2021 Type: SpanAndZero - Zero



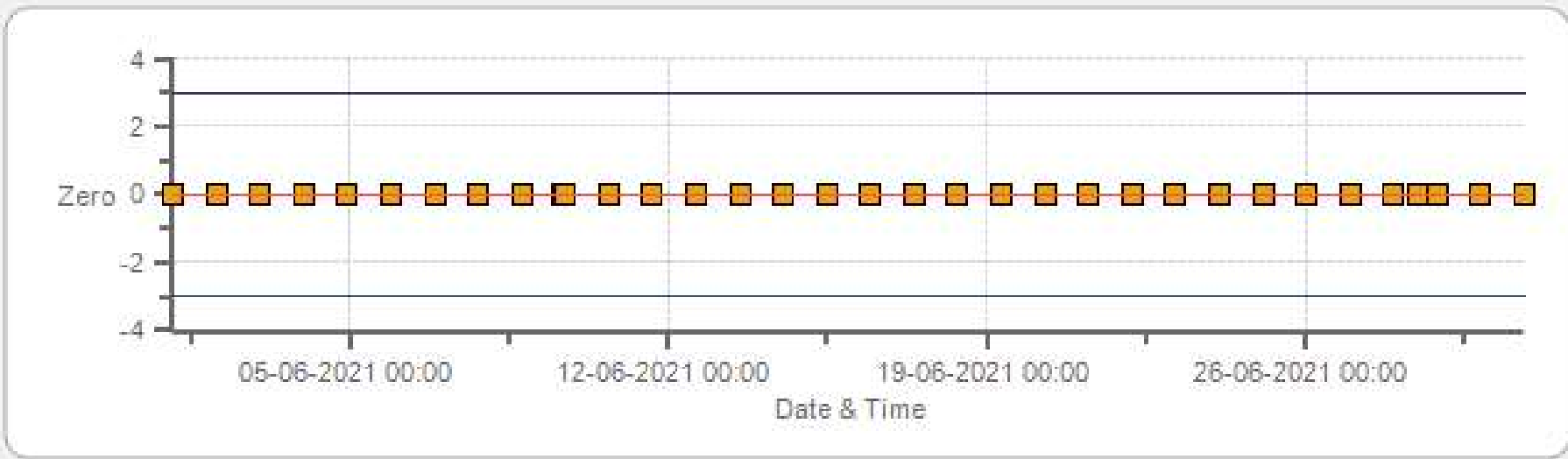
Zero Zero Ref Zero Low Zero High

THC55[ppm] Calibration: St. Lina Monthly: 06-2021 Type: SpanAndZero - Span



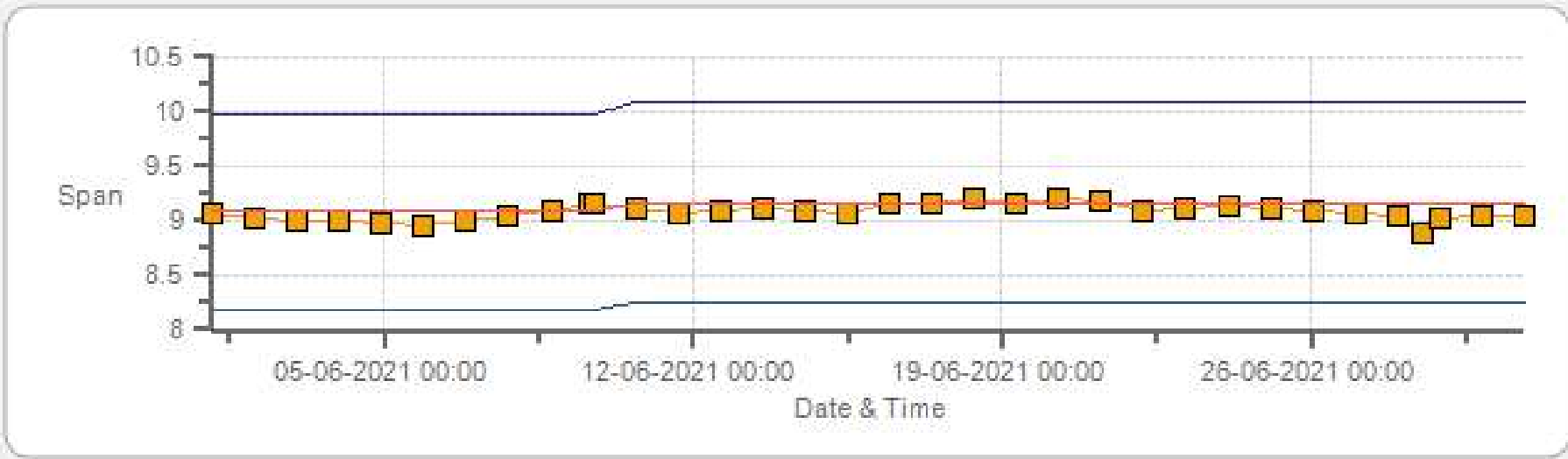
Span SpanRef Span Low Span High

CH4[ppm] Calibration: St. Lina Monthly: 06-2021 Type: SpanAndZero - Zero



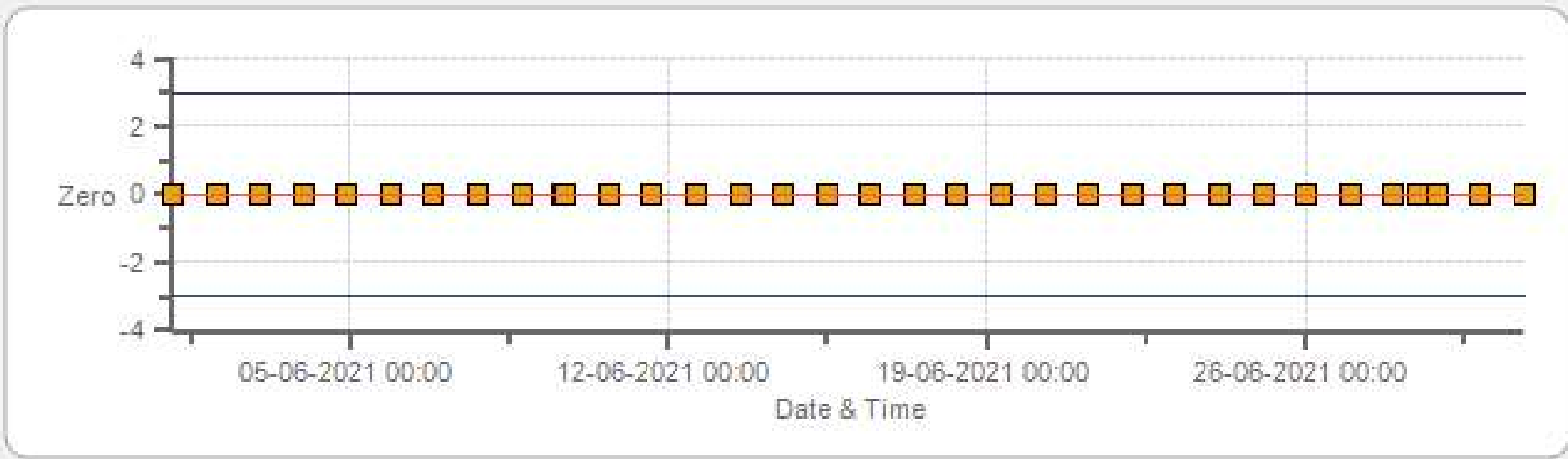
Zero Zero Ref Zero Low Zero High

CH4[ppm] Calibration: St. Lina Monthly: 06-2021 Type: SpanAndZero - Span



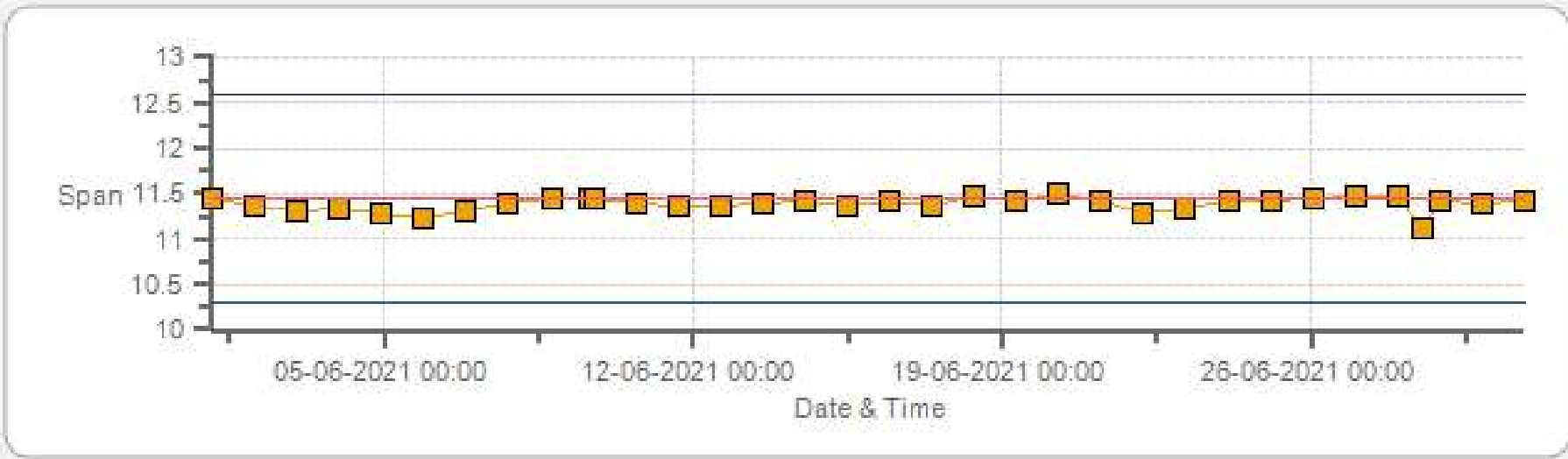
Span Span Ref Span Low Span High

NMHC[ppm] Calibration: St. Lina Monthly: 06-2021 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

NMHC[ppm] Calibration: St. Lina Monthly: 06-2021 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution



DATE:	09-Jun-2021	PREVIOUS CALIBRATION DATE:	11-May-2021
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.997
CLIENT:	LICA	TEMPERATURE (°C):	23.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	938
PURPOSE:	Routine	START TIME (MST):	09:16
PERFORMED BY:	Limin Li	END TIME (MST):	12:31

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180930030	FLOW (mL/min)	428
INITIAL		FINAL	
BKG/OFFSET	4.41	BKG/OFFSET	4.17
COEF/SLOPE	1.137	COEF/SLOPE	1.109
Expected (reference) Value	380	Expected (reference) Value	380.4

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	Teledyne
MODEL:	2010	MODEL:	701
ID:	17200415	ID:	1105
MFC CALIBRATION DATE:	16-Mar-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY 0000647	HIGH ID	n/a
CONC (ppm):	51.60	EXPIRY DATE	n/a
CYLINDER (psi):	1800	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:

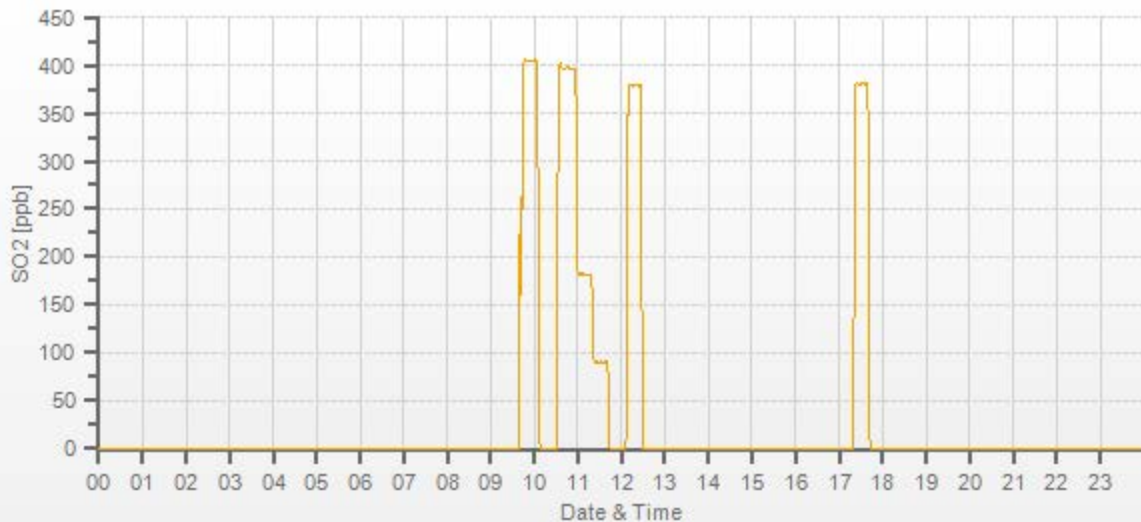
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
6000	46.00	6000	0.00	-0.2	0	0.976	0.999
5954	46.00	6000	395.60	405	396	0.976	0.999
5979	21.20	6000	182.32	n/a	182	n/a	1.002
5989	10.60	6000	91.16	n/a	90.3	n/a	1.010

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.002	-0.1%

COMMENTS:

Sample inlet filter was changed.



H2S Analyzer Calibration by Dilution



DATE:	09-Jun-2021	PREVIOUS CALIBRATION DATE:	11-May-2021
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	1.001
CLIENT:	LICA	TEMPERATURE (°C):	23.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	938
PURPOSE:	Routine	START TIME (MST):	09:16
PERFORMED BY:	Limin Li	END TIME (MST):	13:32

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM 18010058	FLOW (mL/min)	820
INITIAL		FINAL	
BKG/OFFSET	52.9	BKG/OFFSET	53.4
COEF/SLOPE	0.86	COEF/SLOPE	0.83
Expected (reference) Value	54.1	Expected (reference) Value	50

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	EnviroNics	MAKE:	Teledyne
MODEL:	6100	MODEL:	701
ID:	5212	ID:	1105
MFC CALIBRATION DATE:	18-Mar-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY0001074	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	1100	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:	09:44	SO2 Conc (ppb)	380
END TIME:	10:08	Analyzer Response (ppb)	0.0

CALIBRATION:

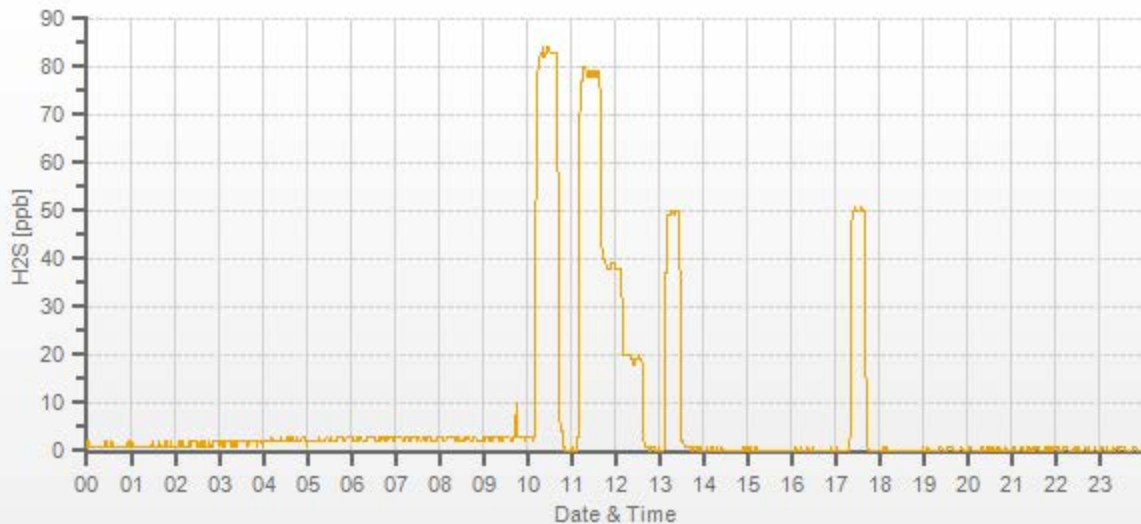
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7500	7500	7500	0.00	2.6	0	0.973	1.000
7442	58.50	7500	78.00	82.8	78	0.973	1.000
7472	28.50	7500	38.00	n/a	37.7	n/a	1.008
7486	14.25	7500	19.00	n/a	18.6	n/a	1.022

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	-0.2%

COMMENTS:

Sample inlet filter was changed.



NOx Calibration by Dilution/Gas-Phase Titration



CALIBRATION:				ANALYZER:			
DATE:	09-Jun-2021	PREVIOUS CALIBRATION DATE:	22-May-2021	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	23.0	SERIAL #:	1180930029	NOx	0.998
LOCATION:	St. Lina	BAROMETRIC (mBar):	938	FLOW (mL/min)	832	NO	1.000
PURPOSE:	Routine	START TIME (MST):	09:16	RANGE (ppb)	500	NO2	1.001
PERFORMED BY:	Limin Li	END TIME (MST):	14:44	GPT FOR O3?		Yes	

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	EY 0000647	HIGH ID:	n/a
MODEL:	2010	MODEL:	701	NO/NOx (PPM):	50.9 51.1	HIGH EXPIRY:	n/a
ID:	17200415	ID:	1105	CYLINDER (psi):	1800	LOW ID:	n/a
MFC CALIBRATION DATE:	16-Mar-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:	4	3.8	n/a	BKG/OFFSET:	4	3.8	n/a
SLOPE/COEF/CE:	1.005	0.837	1.005	SLOPE/COEF/CE:	1.005	0.836	1.002

EXPECTED (REFERENCE) VALUE:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	306.0	1.9	304.0		311.1	2.0	309.0

CALIBRATION PARAMETERS:				
POINT	NO TARGET (PPB)	NO2 TARGET (PPB)	NO2 RANGE	O3 POINT
HIGH	395	250	240-275	n/a
MID	180	154	150-157	Mid
LOW	90	54	50-58	Low
EXTRA 1	n/a	340	300-370	High

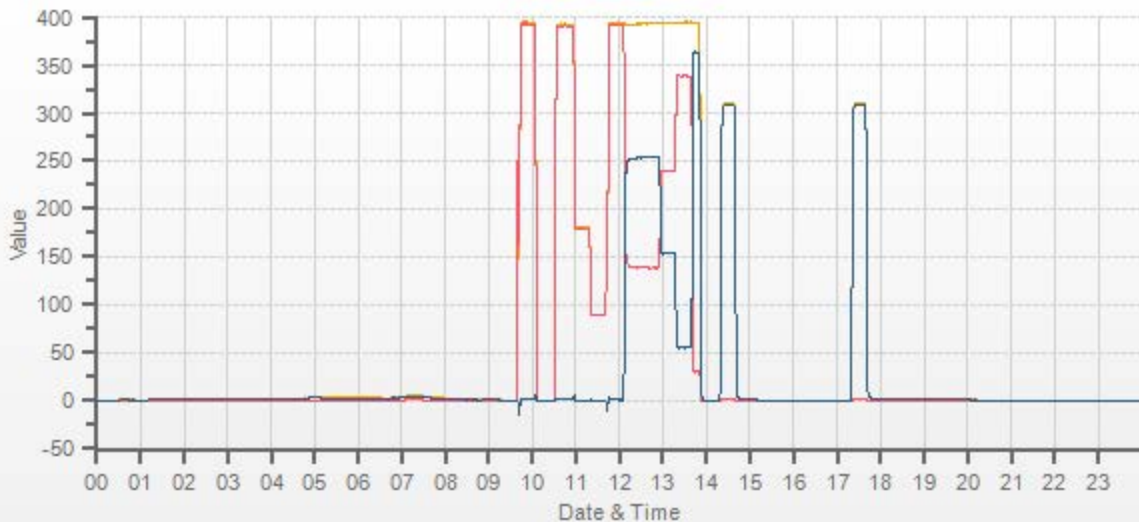
FLOW RATE			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2
6000	6000	6000	0.0	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0	0.995	0.994	1.001	0.999	0.998	1.003
5954	46.00	6000	390.2	391.8	1.5	392.0	394.0	2.0	390.0	392.0	2.0	0.995	0.994	1.001	0.999	0.998	1.003
5979	21.20	6000	179.8	180.6	0.7	n/a	n/a	n/a	180.0	181.0	1.0	n/a	n/a	1.001	0.999	0.998	1.003
5989	10.60	6000	89.9	90.3	0.4	n/a	n/a	n/a	89.5	90.0	0.5	n/a	n/a	1.005	1.003	1.003	1.003

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	38.30	5000	0	391.0	393.0	2.0	252	251	1.004	99.60%
AS-FOUND HIGH	38.30	5000	240	139.0	392.0	253.0	252	251	1.004	99.60%
ADJUSTED HIGH	38.30	5000	240	138.0	393.0	255.0	253	253	1.000	100.00%
MID	38.30	5000	145	240.0	394.0	154.0	151	152	0.993	100.66%
LOW	38.30	5000	50	338.0	394.0	56.0	53	54	0.981	101.89%
NO2 COEF/CONVERTER EFFICIENCY ADJUSTED									AVERAGE:	100.85%

LINEAR REGRESSION ANALYSIS:				COMMENTS:
	CORRELATION	SLOPE	INTERCEPT	
NO	1.000	1.000	-0.02%	
NOx	1.000	1.001	-0.01%	
NO2	1.000	0.995	0.29%	

Sample inlet filter was changed.

Station: St. Lina Daily: 09-06-2021 Type: AVG 1 Min. [1 Min.]



CAL-LICA-202106-01250

NOX [ppb] NO [ppb] NO2 [ppb]

Ozone Calibration by Direct GPT



DATE:	09-Jun-2021	PREVIOUS CALIBRATION DATE:	10-May-2021
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	0.999
CLIENT:	LICA	TEMPERATURE (°C):	23.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	936
PURPOSE:	Routine	START TIME (MST):	13:50
PERFORMED BY:	Limin Li	END TIME (MST):	17:44

ANALYZER:

MAKE/MODEL	Thermo 49i	RANGE	500 ppb
SERIAL #	1002240371	FLOW (mL/min)	1487
INITIAL		FINAL	
BKG/OFFSET	-0.7	BKG/OFFSET	0.1
COEF/SLOPE	1.011	COEF/SLOPE	0.983
Expected (reference) Value	329	Expected (reference) Value	311.4

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	701
ID:	17200415	ID:	1105
MFC CALIBRATION DATE:	16-Mar-2021	OXIDIZER ID:	n/a
CALIBRATION METHOD:		Direct GPT	
GPT DATE:	09-Jun-2021	GPT END TIME:	13:50

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	0.0	XXXX	XXXX
5000	XXXX	5000	359.0	368.6	359.0	0.976	1.000
5000	XXXX	5000	151.0	n/a	152.3	n/a	0.991
5000	XXXX	5000	53.0	n/a	54.0	n/a	0.981

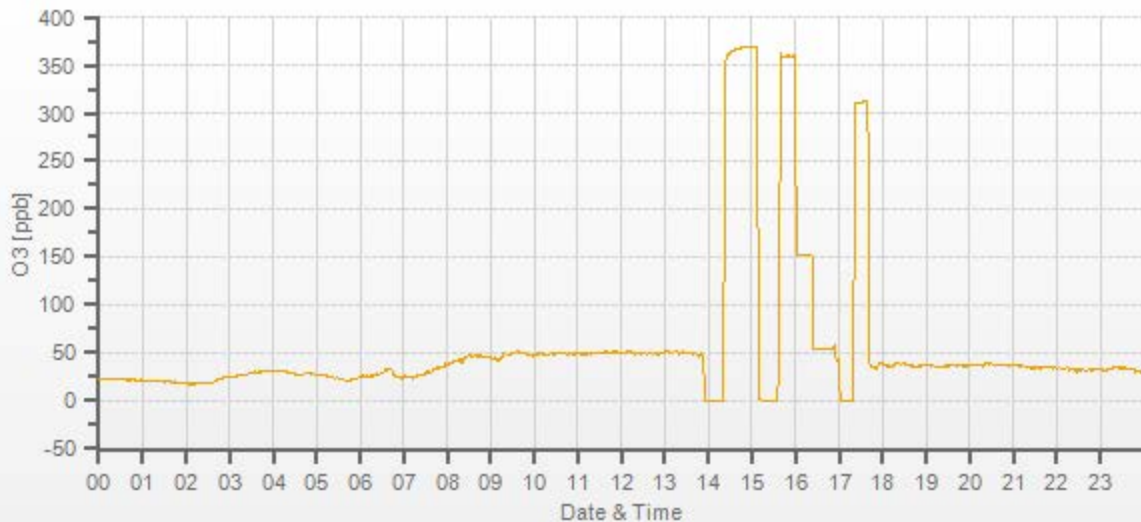
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.999	0.1%

COMMENTS:

Sample inlet filter was changed.

O3[ppb] Station: St. Lina Daily: 09-06-2021 Type: AVG 1 Min. [1 Min.]



CAL-LICA-202106-01250

Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	09-Jun-2021	PREVIOUS CALIBRATION DATE:	11-May-2021	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	LICA	TEMPERATURE (°C):	23.9		Thermo 55i	1236656107	1201
LOCATION:	St. Lina	BAROMETRIC (mBar):	937	PARAMETER:	CH4	NMHC	THC
PURPOSE	Routine	START TIME (MST):	12:41	RANGE (ppm):	20	20	40
PERFORMED BY:	Limin Li	END TIME (MST):	15:58	PREVIOUS CF:	1.000	1.000	1.000

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 70331	HIGH ID:	n/a
MODEL:	2010	MODEL:	701	CH ₄ /C ₃ H ₈ (ppm):	909.0 308.0	HIGH EXPIRY:	n/a
ID:	17200415	ID:	1105	CYLINDER (psi):	1700	LOW ID:	n/a
MFC CALIBRATION DATE:	16-Mar-2021	OXIDIZER ID:	111	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	847.0
RANGE	12 - 16	6 - 8	2 - 4	THC as CH ₄	1756.0

EXPECTED (REFERENCE) VALUE:

INITIAL	CH ₄	NMHC	THC	FINAL	CH ₄	NMHC	THC
	9.08	11.44	20.52		9.17	11.45	20.61

CALIBRATION:

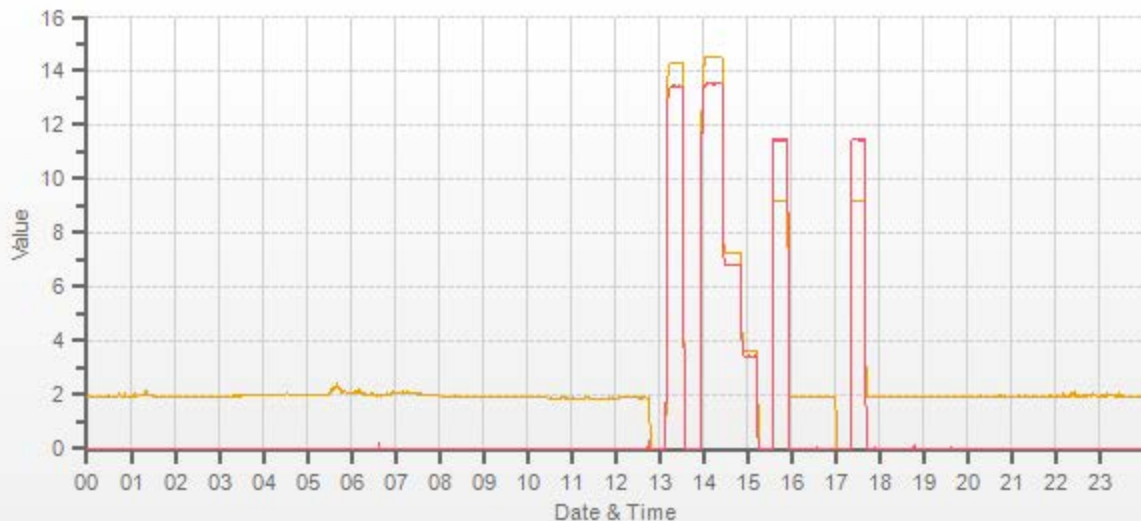
FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC
3500	55.80	3500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.014	1.005	1.010	0.999	0.998	0.998
3444	55.80	3500	14.49	13.50	28.00	14.29	13.43	27.72	14.51	13.53	28.04	1.014	1.005	1.010	0.999	0.998	0.998
3472	27.90	3500	7.25	6.75	14.00	n/a	n/a	n/a	7.28	6.82	14.10	n/a	n/a	n/a	0.995	0.990	0.993
3486	13.95	3500	3.62	3.38	7.00	n/a	n/a	n/a	3.64	3.41	7.05	n/a	n/a	n/a	0.995	0.990	0.993

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
CH ₄	1.000	1.001	0.1%
NMHC	1.000	1.002	0.1%
THC	1.000	1.001	0.1%

Comments:

Sample inlet filter was changed.	
Use Zero Chrom?	Yes



CAL-LICA-202106-01250

Thermo 5030i SHARP Monitor Monthly Check

Date: June 29, 2021
Company: LICA
Station Name/Location: St. Lina
Previous Audit Date: May 7, 2021
Parameter: PM 2.5

Performed By/Reviewer: Alex Yakupov | Chris Wesson
Start Time (mst): 17:03
End Time (mst): 17:35
Calibration Purpose: routine monthly
Weather Conditions: Sunny

SHARP 5030i Information and Status:

Serial Number: CM 17461021 **Filter Tape Counter:** 161

Reference Standards:

		Air Flow			
	Manometer	Orifice	Pressure:	Temp / RH:	
Make:	Dwyer	Chinook Eng.	Fisher Scientific	VAISALA	
Model:	475-0-FM	FTS Flow Cell	FB61291	HMP76B	
Serial Number:	BV #3	BV#4/ 170101	130168457	T1640130	
Calibration Expiration Date:	February 17, 2022	May 12, 2022	February 17, 2022	April 22, 2022	

Ambient Temperature (°C)

				Range	Action
				< ± 2°C	OK
Reference	SHARP	Difference			
#1	33.10	33.0	0.1	2-3 °C	Recalibrate
				> 3°C	Fail

Ambient Relative Humidity (%RH)

				Range	Action
As Found:				< ± 2 %RH	OK
Reference	SHARP	Difference			
#1	32.11	32.5	-0.4	2-5 %RH	Recalibrate
				> 5 %RH	Fail

Barometric Pressure (mmHg)

				Range	Action
As Found:				< ± 10 mmHg	OK
Reference	SHARP	Difference			
#1	699.0	698.1	0.9	10-12 mmHg	Recalibrate
				> 12 mmHg	Fail

Flow Audit (L/min)

				Range	Action
As Found:				< ± 4%	OK
Reference	SHARP				
#1	16.64	16.66	% Difference	0.12%	Recalibrate
#2	16.64	16.66			
#3	16.62	16.64			
Average	16.63	16.65			
				4-5%	Recalibrate
				>5%	Fail

Leak Check (L/min)

Without Leak Check Adapter			With leak Check Adapter				
Reference	SHARP	Difference	Reference	SHARP	Difference		
#1	16.63	16.65	-0.02	16.59	16.62	-0.03	<i>Leak Limit: 0.80 L/min</i>
LEAK RATE:						-0.01	

Total Flow Calcs:

Enter Barometric Pressure in. Hg 27.52
 Barometric Pressure atm 0.920
 Enter Ambient Temperature °C 33.1
 Enter "m" variable 0.4094
 Enter "b" variable -0.544
 Enter Δp in. H₂O 5.26
Actual Flow lpm= 16.59



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

Meteorological System Checklist



Date:	2021/06/09 @ 14:20
Technician:	Limin Li
Station:	St. Lina

Unit:	Make:	Model:	Serial #:
Precipitation Sampler:	Met One	387D	A23775
Temperature Sensor:	VAISALA	HMP 155A	R2640785 2019
Barometric Pressure Sensor:	Met One	090D	F4498
Relative Humidity Sensor:	VAISALA	HMP 155A	R2640785 2019
Anemometer:	RM Young	05305VK	161466

AMBIENT TEMPERATURE SENSOR CHECK

Previous check date:	February 2, 2021
Parameter:	Temperature @ 2 metres
Reference Thermometer ID:	FS 160459244 expires June 10, 2021
Reference Temperature (°C):	18.8
Station - Ambient Temperature (°C):	18.0
Temperature Difference (°C):	0.8

BAROMETRIC PRESSURE SENSOR CHECK

Previous check date:	February 2, 2021		
Reference Barometer ID:	BRUNTON 5490, expire date: Jan 12, 2022.		
Reference Pressure - Units/Reading:	millibar		936.3
Station Pressure - Units/Reading:	millibar		921.3
Pressure Tolerance +/- 15% of error:	796 - 1077		1.60%

RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK

Previous check date:	February 2, 2021		
Reference Hygrometer ID:	FS 160459244 expires June 10, 2021		
Reference Hygrometer % RH- Reading:	52.00		
Station Hygrometer % RH- Reading:	57.00		
RH Tolerance +/- 15% of difference:	44.20 - 59.80		-9.6%

ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK

WIND SPEED		WIND DIRECTION	
Previous check date:	March 16, 2021	Previous check date:	March 16, 2021
Wind Speed Observed (kph):	5~15	Wind Direction Observed:	SE
Wind speed on Data Logger (kph):	12.8	Wind Direction on Data Logger:	SE
		Wind Direction Pass/Fail?:	Pass

Comments

End of Report