

Site Documentation: LICA Portable Air Monitoring System (Lac La Biche Station)

General Site Information

Item	Description
Site ID (ETS Station ID)	41 (01690)
Station Name	Portable Air Monitoring System (PAMS)
General Description	The PAMS monitoring station is located in the Portage College in the town of Lac La Biche.
Community	Town of Lac La Biche
Station Address	N/A
Coordinates	54.765160° Lat, -111.9714490° Long
Station Type	Rural Regional, Light Industry
Area Land Use	Residential, Agricultural, School
Angle of elevation to nearby building in area	N/A
Airflow Restrictions (yes/no)	North: No East: No South: Yes West: No
Nearest Tree	Tree stands 30 meters away in the north, 25 meters away from East, and 75 meters away from South
Sample Manifold Type	Glass
Meteorological Tower Information	Height: 10 meters Type: Crank Position: Attached to west side of monitoring shelter
Station Install Date	Original installation: May 2022
Station Origin	LICA owned and operated
Site Preparation	Gravel and sand parking area

Site Influences

Localized Sources (within 20 meters of station)

Type	Distance	Description
Campus parking lot	Right on the parking lot	The station is located on the Portage College parking lot. HC and PM emission.

Road Way Sources

Name	Type	Traffic Volume	Distance (m)	Description
Road (94 Ave)	Local Street	Low	17 meters	Paved street
Road (Lane East 100 St)	Local Street	Low	10 meters	Paved street
Reginal Highway 55	Highway	Unknown – High Peak Hour Volume	60 meters	Paved Rural Highway

Major Point/Area Sources

Name	Type	Major Emissions	Distance (m)	Direction
Lac La Biche	Lake	H2S, SO2	1 km	North - Northwest
Town of Lac La Biche	City	NOx, PM, HC	670 m to City center	Northwest
Portage College	School	NOx, PM, HC	200 m to main Campus	East -Southeast

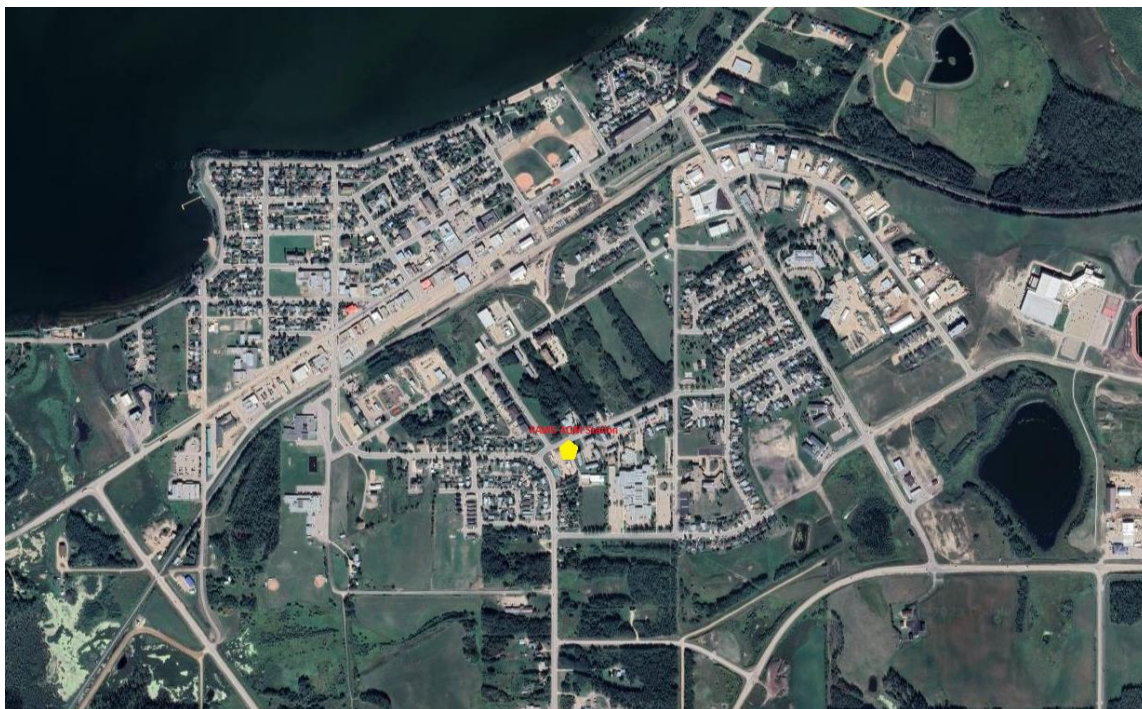


Figure 1: Satellite image showing PAMS Monitoring Station Location

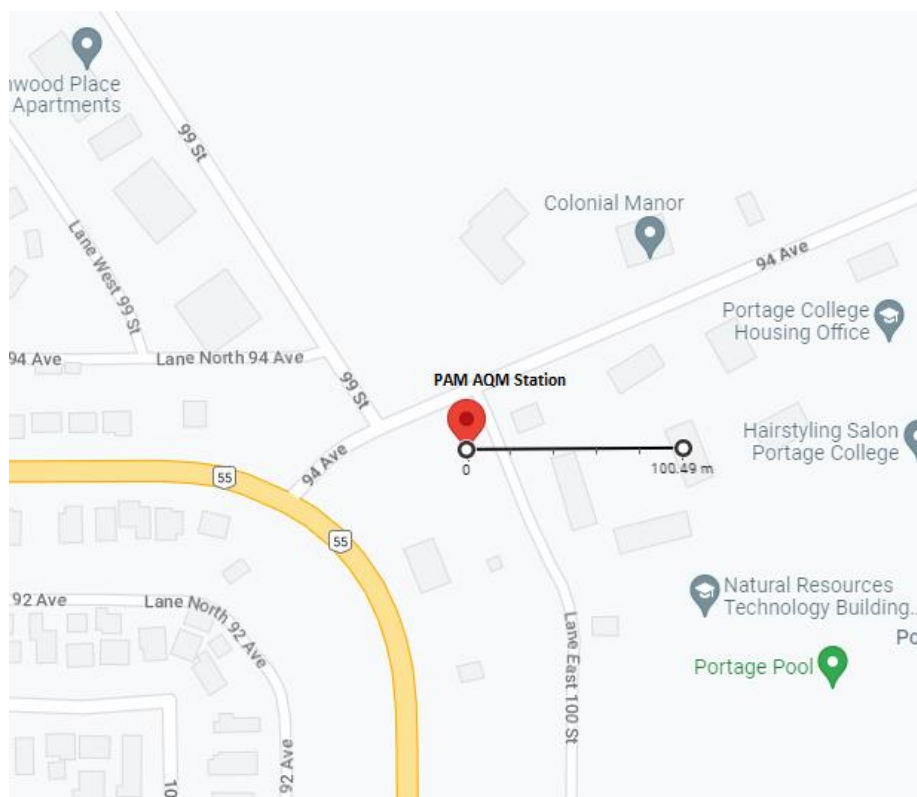


Figure 2: Area Map showing PAMS Monitoring Station Location

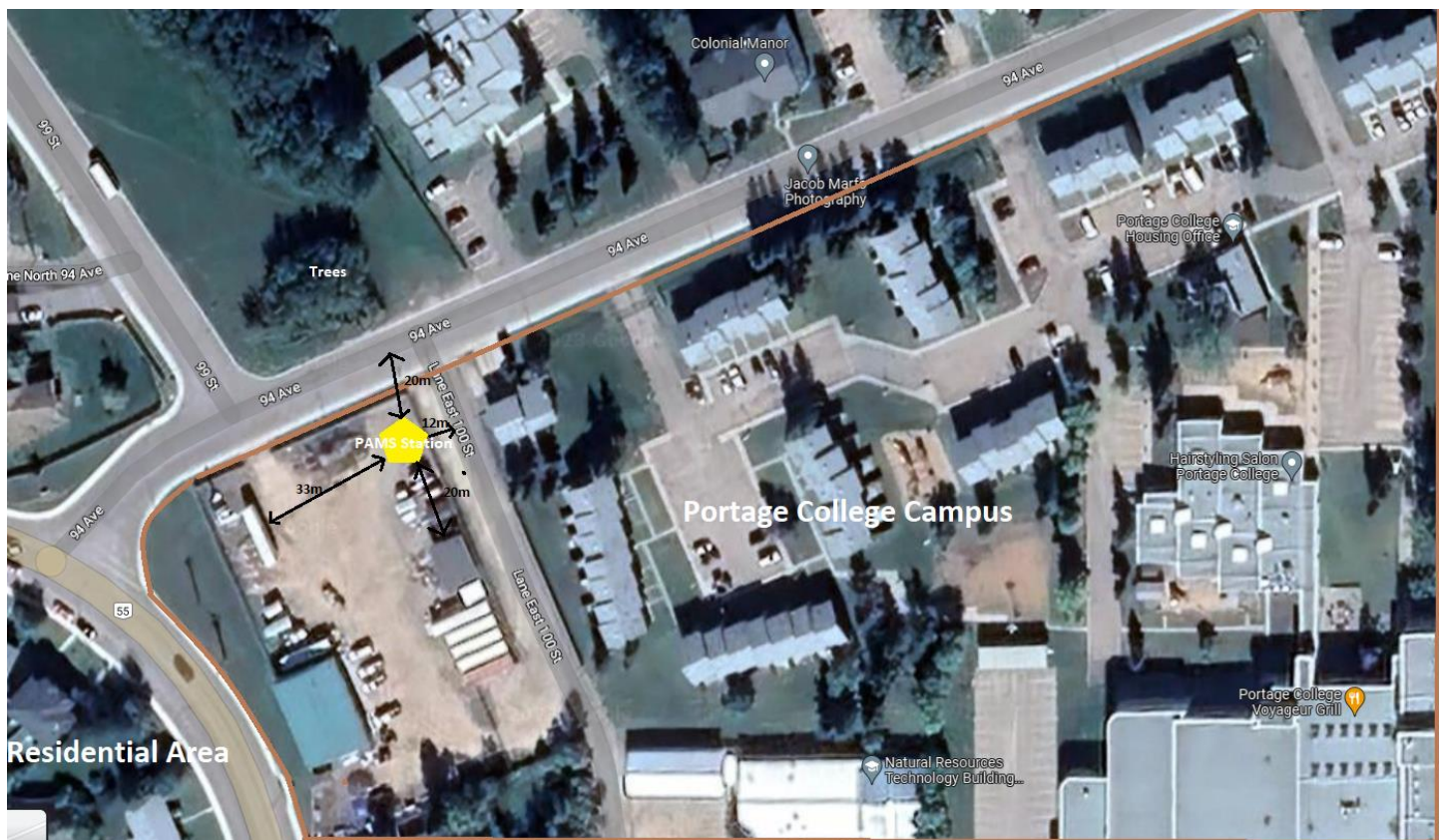
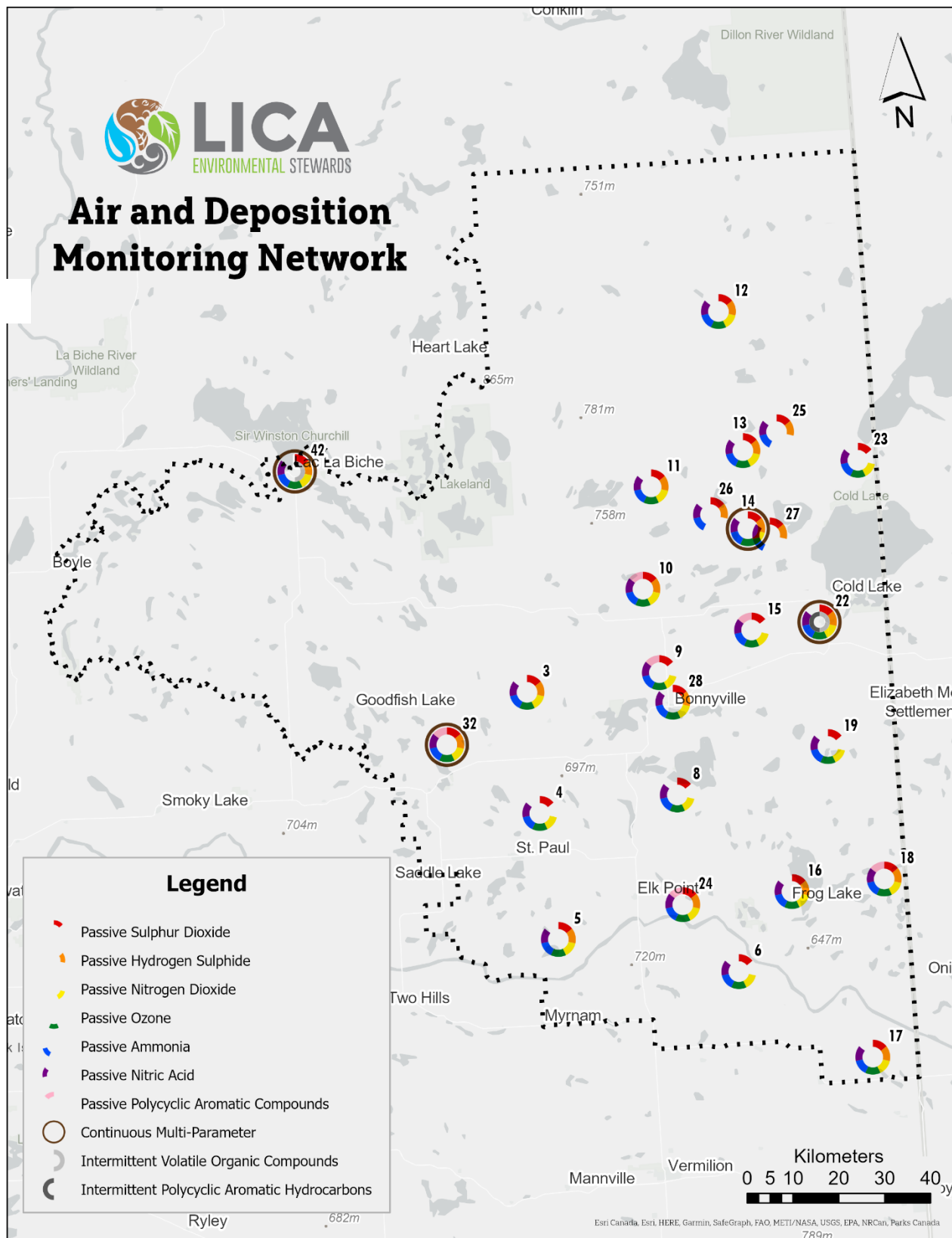
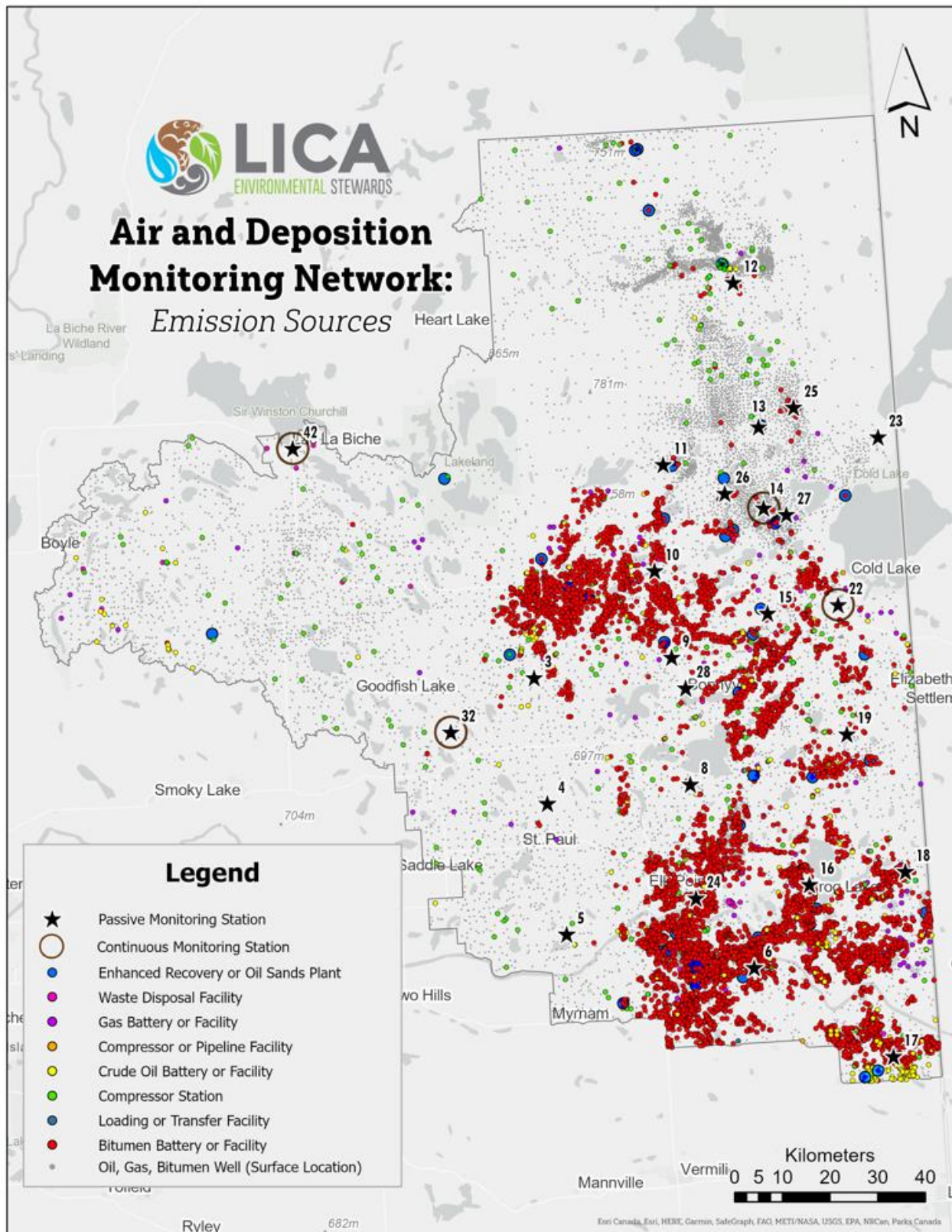


Figure 3: Schematic showing PAMS Monitoring Station and surrounding features





LICA Network Map



LICA Network Map – Emission Sources



Site Photographs – Cardinal Directions

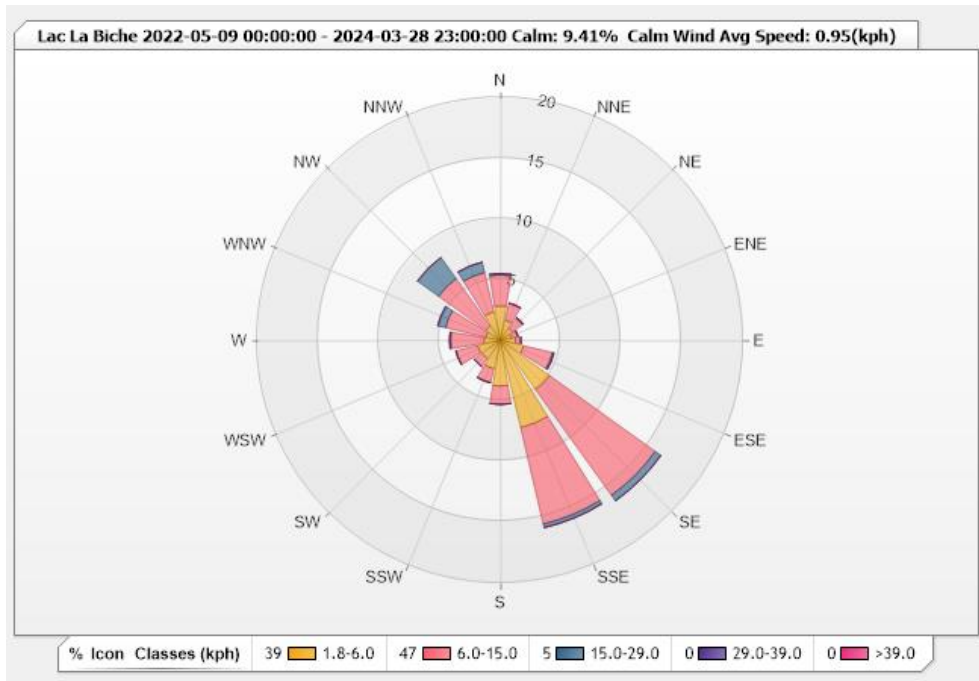
North	East
 A photograph showing a snow-covered area with a fence in the foreground. In the background, there are several buildings, utility poles, and trees under a cloudy sky.	 A photograph of a yellow building with a snow-covered roof. To the right, there are several tall evergreen trees covered in snow. A fence is visible in the foreground.
South	West
 A photograph showing a snow-covered roof in the foreground. In the background, there are buildings, trees, and a cloudy sky.	 A photograph of a snow-covered area with several buildings and utility poles in the background. The sky is overcast.

Site Photographs – Monitoring Station

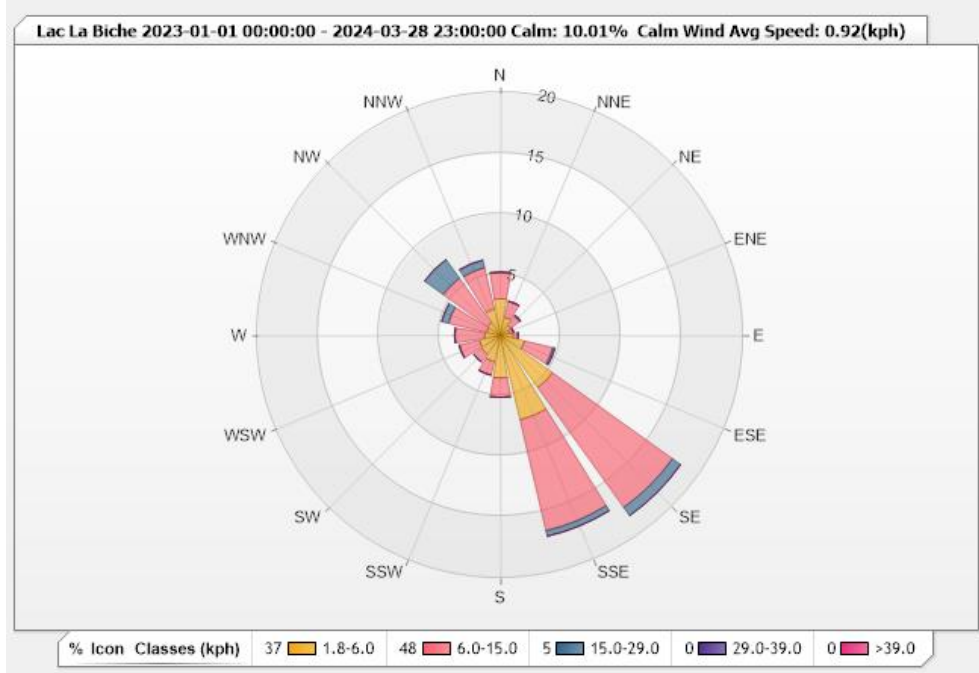
Exterior (Trailer & Wind system, PUF Sampler)	Interior (Instrument Rack)	Interior (Intake Manifold)
		
Interior (Gas Bottle Rack)	Interior (VOC Canister Sampler)	
		

Wind Rose Diagram

Wind Speed / Direction Frequency Distribution



Data range: May 9, 2022 – March 28, 2024



Data range: January 01, 2023 – March 28, 2024

LICA Portable Air Monitoring System (Lac La Biche Station) Equipment Inventory

Air Quality

Parameter	Make/Model	Serial Number	Sampling Height (m)	Equipment Owner
Analytical Systems				
Hydrogen Sulphide	Thermo 450i	CM17360002	4	LICA
Sulphur Dioxide	Thermo 43i-TLE	1180320043	4	LICA
Oxides of Nitrogen	Thermo 42i	1180930027	4	LICA
Hydrocarbons	Thermo Electron 55i	1180320044	4	LICA
Ozone	Thermo 49iQ	1202068510	4	LICA
PM 2.5	Thermo 5030i	CM17071016	6	LICA
Meteorological Systems				
Wind Speed	RM Young 5103VK	56778	10	LICA
Wind Direction	RM Young 5103VK	56778	10	LICA
Ambient Temperature	Rotronic HC2A-S3	20357518	4	LICA
Relative Humidity	Rotronic HC2A-S3	20357518	4	LICA
Barometric Pressure	MetOne 092	Y23360	4	LICA
Support Systems				
Datalogger	Ultimate IPC-510	KMA3518749	N/A	LICA
Trailer Temperature	COMET	N/A	N/A	LICA
Zero Air Supply	Teledyne API/701	1110	N/A	LICA
HVAC	BARD WA121-A05EPXXXJ	158C092611933-01	N/A	LICA
Hydrogen Generator	AMA HG300		N/A	LICA
Air Monitoring Trailer				
Monitoring Trailer	VIN #: 2C9DBACC692044016	Plate #: 5CU098	N/A	LICA

Owner/Approval Holder

Item	Description
Name of owner/approval holder	LICA
Address	5107W-50th Street P.O. Box 8237 Bonnyville, AB Canada T9N 2J5
Contact name	Mike Bisaga
Phone number	(780) 266-7068
Email address	mbisaga@otonabee.ca
Approval number	N/A

Operator

Item	Description
Name of operating agency	Bureau Veritas Canada
Address	#1 2080 39th Ave NE Calgary, AB T2E 6P7
Contact name	Alexander Yakupov
Title	Field technician, Emission Services
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Email address	Alexander.yakupov@bvlabs.com
Contact name	Chris Wesson
Title	Senior Project Manager, Emission Services / Oil & Gas Division
Phone number	(780) 446-2724
Email address	Christopher.wesson@bvlabs.com

Revisions

Document Revision History

Revision No.	Date	Reason for Revision	Prepared By	Reviewed By
0	May 2022	Original Issue	L. Lin, Data & reporting Specialist	L. Lin, Data & reporting Specialist
1	March 2023	Update instrument list and wind rose chart	L. Lin, Data & reporting Specialist	Michael Bisaga, Airshed Program Manager
2	March 202	Update instrument list and wind rose chart	L. Lin, Data & reporting Specialist	Michael Bisaga, Airshed Program Manager