Wood Buffalo Environmental Association

Ambient Air Monitoring Station Site Documentation

Mackay River

LAST UPDATED: MARCH 28, 2024

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Tables and Figures

General Site Information

Revision Date: March 28, 2024

Station

Station ID	AMS 20
Station name	Mackay River
Date station established	January 7, 2016

Location

Station street address	NA
Legal land description	10-01-090-14 W4
Airshed Zone	Wood Buffalo Environmental Association
Latitude	56.7797279768
Longitude	-112.0890203
UTM East	433455.57
UTM North	6293395.78
Nearest community	Fort McMurray
Community population	75186
Census Year	2021

Owner/Operator/Approval Holder

Operating Agency	Wood Buffalo Environmental Association
Address of Operating Agency	Unit 3, 805 Memorial Drive, Fort McMurray, Alberta T9K 0K4
Name of Approval Holder	PetroChina Canada Ltd.
Approval number	254465-01-00
Contact Name	Blakney Hopkins
Address	NA
Phone number	403-880-1836
Email address	Blakney.hopkins@petrochinacanada.com

Site Description

Land use by sector	0 – 90 degrees	Forest and SAGD project
	91 – 180 degrees	Forest and SAGD project
	181 – 270 degrees	Forest
	271 – 360 degrees	Forest
Site elevation (m) (above sea level)	498	
Angle of elevation to nearby buildings	Greatest angle	0 degree
	Building direction	None
Airflow restrictions	North	None
	East	None

	South	None
	West	Yes
Distance to nearest trees (m)	North	30
	East	20
	West	30
	South	50
Sample manifold	Type	All glass
	Inlet height above roof	1 metre
Wind Sensors	Type	Cup and vane
	Height above ground (m)	10
	Distance from station (m)	Attached to the North end of the station

Site Influences

Localized Sources (within 20 metres of station)

Type	Distance (m)	Description
None	n/a	n/a

Roadway Influences

Type	Traffic Volume	Distance (m)	Description
Gravel Road	Low	30	Access Road

Major Point Sources

Facility Name	Source Type	Distance from site (km)	Compass direction from site
PetroChina Canada Ltd.	Oil and Gas industry	5	North

Station Equipment

Equipment Owner: PetroChina

Analytical Equipment

Parameter	Make	Model	Serial Number	Date Instrument Installed	WBEA Data Start Date
SO_2	Thermo Scientific	43i	1501301450	March, 2016	February, 2016
H_2S	Thermo Scientific	43i-LTE	1236656117	2023	February, 2016
$NO/NO_x/NO_2$	Thermo Scientific	42i	1505164379	November, 2018	February, 2016
THC	Thermo Scientific	51i	1501663727	March, 2016	February, 2016

Meteorological Equipment

Parameter	Make	Model	Serial Number	WMO Site Class	Date Sensor Installed	WBEA Data Start Date
AT/RH	Vaisala	HMP155	F5010002	3	September, 2018	February, 2016
WS	Met One	010C-1	Y18363	3	June, 2020	January, 2016
WD	Met One	020C-1	N9937	3	March, 2016	January, 2016
PC	OTT	OTT-Pluvio2	363524	3	May, 2016	December, 2016

Support Equipment

Name	Description	Make	Model	Serial Number
Datalogger	Datalogger	Campbell Scientific	CR3000	9627
Gas Dilution Calibrator	Dynamic dilution calibrator	Teledyne/API	T700	1220
Zero air generator	Zero Air Generator	Teledyne/API	701	4522
Shelter / Building	Air monitoring portable	ITB	8 x 16 trailer	ITB-15-16552
Meteorological Tower	Telescoping 10 metre tower	Aluma Tower Co.	T-135	AT-215036-AA-5-2
Datalogger	Datalogger	Campbell Scientific	CR310	6239
H2S Converter	Thermal Oxidizer	Global Analyzer Systems	G150	2022-226

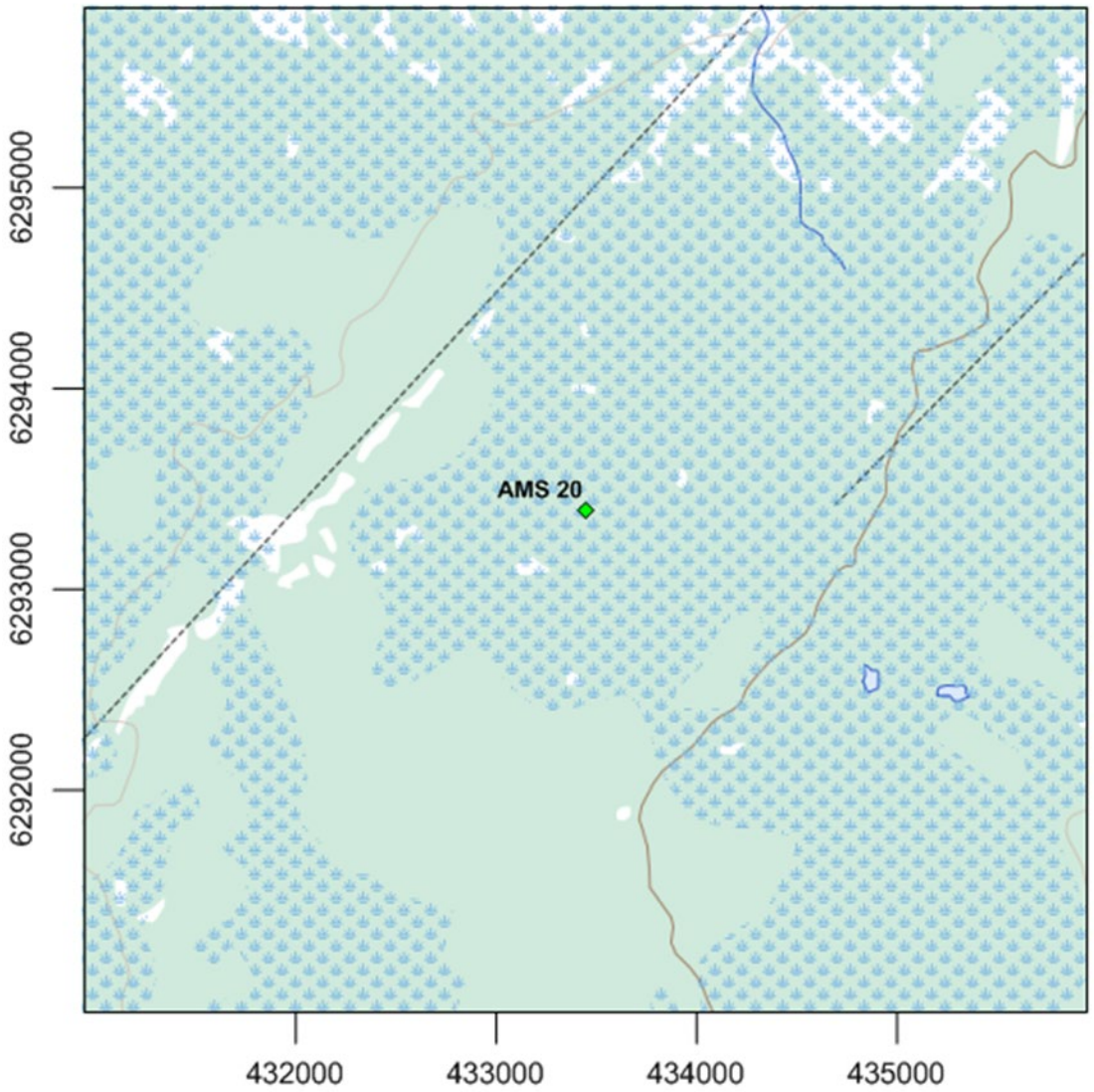

Figure 1 – Area topographic map showing AMS 20

Figure 2 – Aerial image showing AMS 20

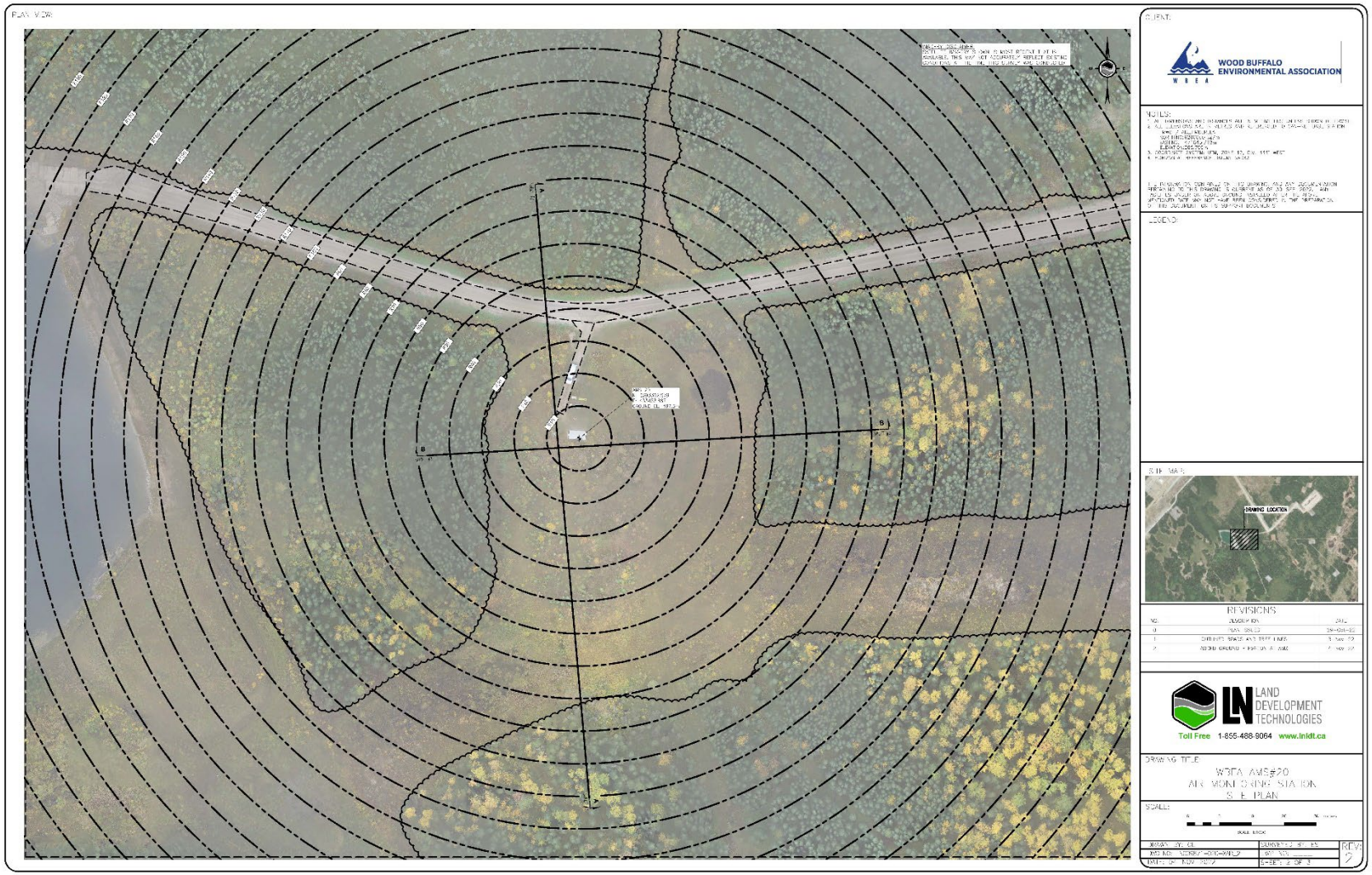

Figure 3 – Plan view image for AMS 20 site

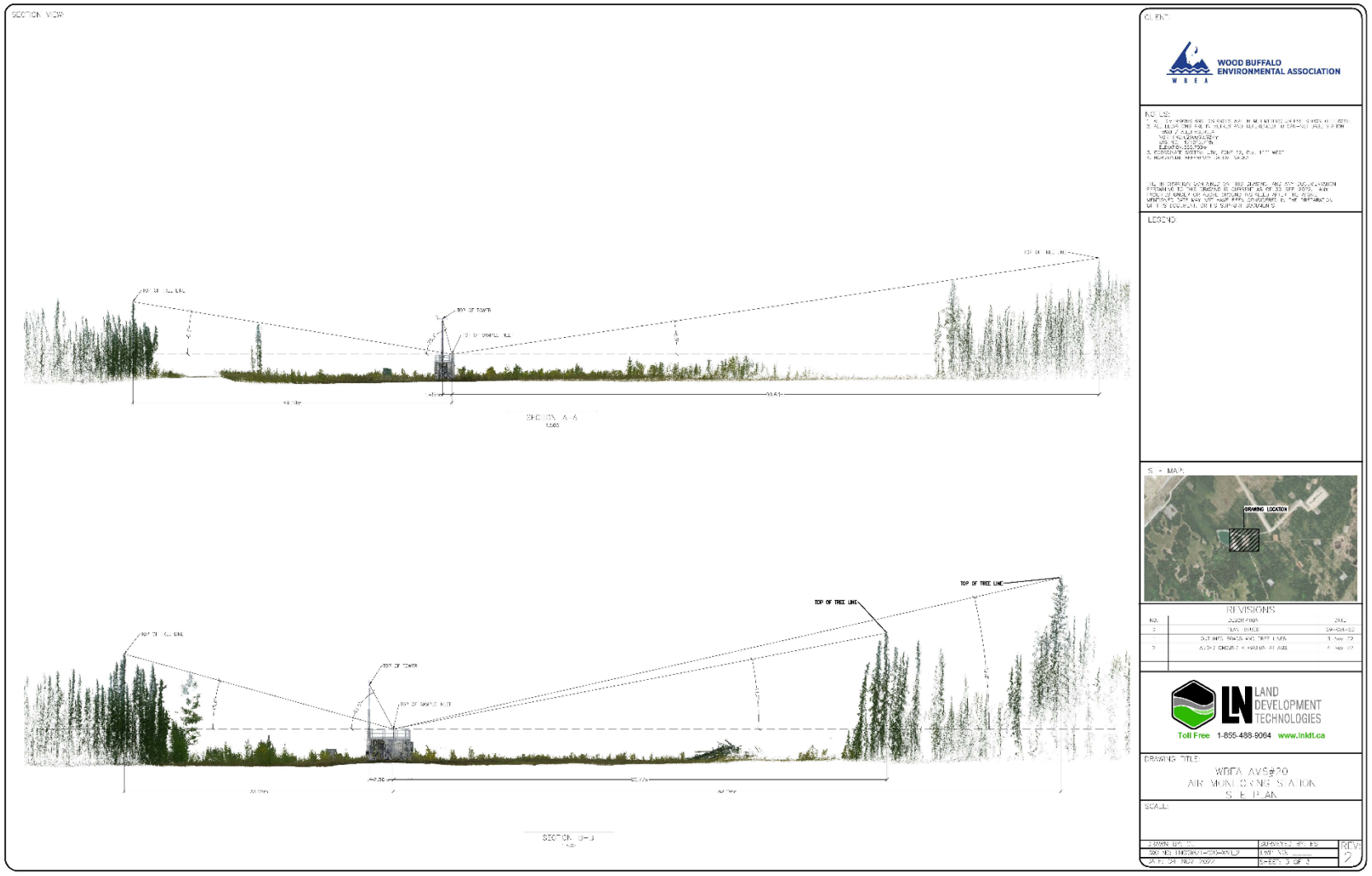

Figure 4 – Elevation view image for AMS 20 site

Site photos

The following photos show the environment surrounding the monitoring station.

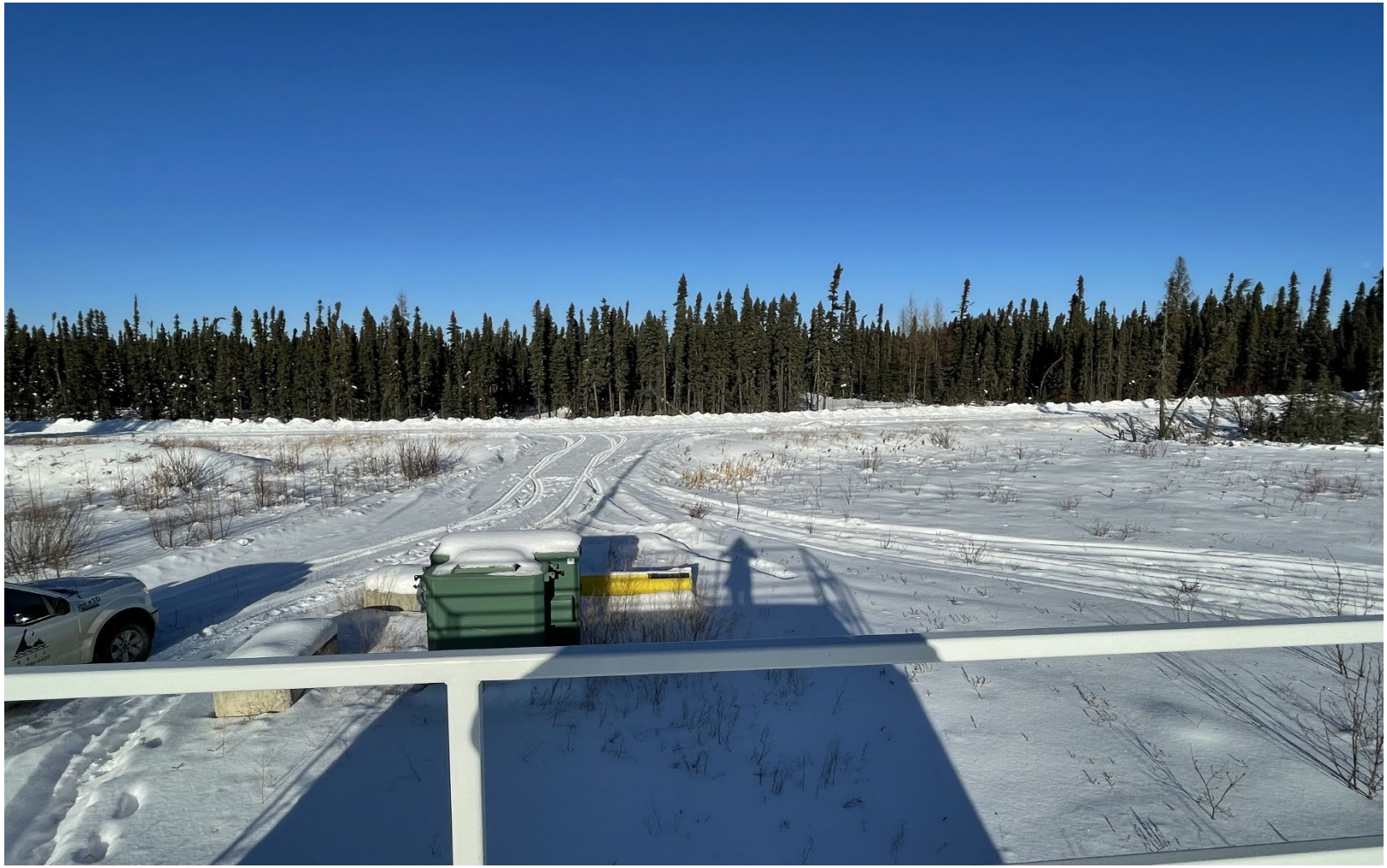

Figure 5 – Environment looking North

Figure 6 – Environment looking East

Figure 7 – Environment looking South

Figure 8 – Environment looking West

Figure 9 – Meteorological Tower

Station Photos

The following photos show the monitoring station and instrumentation.

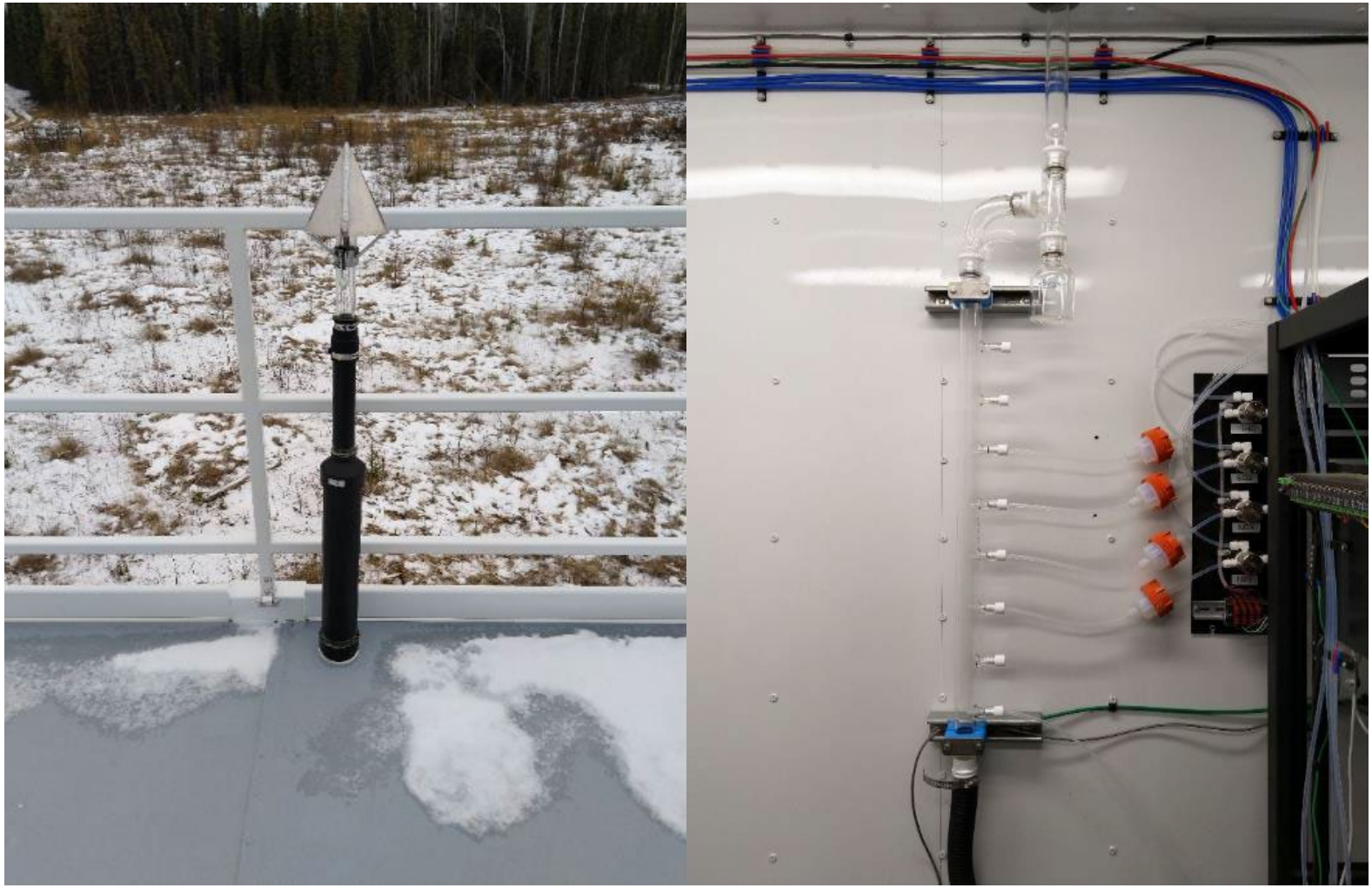

Figure 10 – Photo showing the inlet and sample manifold

Figure 11 – Curb shot of the monitoring station

Figure 12 –Photo of the front and the back of instrument rack

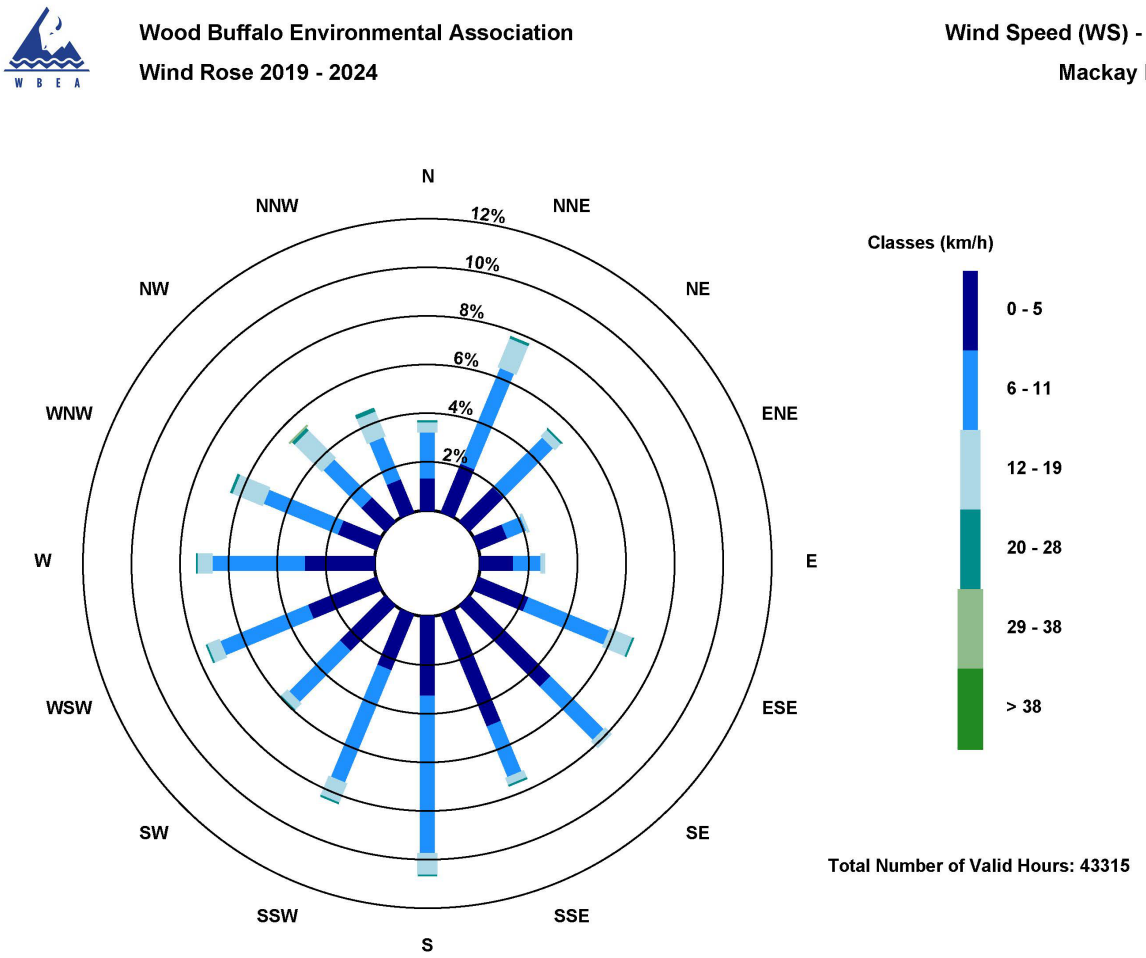

Figure 13 – Windrose (2019-2024)