Annual | 2021

Ambient Air Monitoring Report

Goldcorp Canada Ltd.

Operating as Newmont Porcupine

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Newmont Porcupine (Newmont) is situated in Timmins, Ontario.

In order to monitor potential air quality effects and ensure mitigation efforts are effective, Newmont has established an ambient air monitoring network. The data generated are used to assess the air quality where people live, measure compliance with provincial standards, compare changes to air quality over time, provide information about regional background levels of monitored pollutants, inform the public and raise awareness of local air quality.

The ambient air monitoring network has been approved by the Ministry of the Environment, Conservation and Parks (MECP) and will continue to operate throughout the life of the mining operations. This is the Annual Ambient Air Monitoring Report for 2021.

Conclusions:

During 2021 there were:

a) 35 exceedances of the continuous PM_{10} 24 hour running average Interim AAQC, 11 at STN72135, 10 at STN72139, 3 at STN72140 and 11 at STN72141.

b) no exceedances of the continuous NO_2 24 hour and 1 hour running average AAQCs or of the ½ hour running average O.Reg 419/05 standard.

c) no exceedances of the non-continuous TSP 24 hour clock AAQC.

d) 1 exceedance of the non-continuous PM10 24 hour clock Interim AAQC, at STN72135.

e) no exceedances of the non-continuous 24 hour clock TSP or PM_{10} Suspended Metals AAQCs, standards or guidelines.

f) no exceedances of the non-continuous annual TSP or PM_{10} Suspended Metals AAQCs or standards.

g) 14 exceedances of the non-continuous 30 day standard for Total Dustfall, 2 at STN72137, 2 at STN72141 and 10 at STN72143.

h) 2 exceedances of the non-continuous annual standard for Total Dustfall, 1 at STN72137 and 1 at STN72143.

i) A summary of exceedances potentially associated with the Hollinger Open Pit (HOP) operations can be found in Table 24.

j) Network annual PM_{10} averages were 15 µg/m^3 at STN72135, 16 µg/m^3 at STN72139, 11 µg/m^3 at STN72140, and 11 µg/m^3 at STN72141.

k) 36 calibrations were conducted on continuous samplers, all of which met criteria.

l) The percentage of continuous valid pollutant data recovery was 98.2% for 2021, exceeding the Ministry's minimum target of 90% and desirable target of 95%. The overall percentage of non-continuous valid pollutant data recovery was 99.8%.

1.0 Introduction

Newmont Porcupine (Newmont) is situated in Timmins, Ontario.

In order to monitor potential air quality effects and ensure mitigation efforts are effective, Newmont has established an ambient air monitoring network. The network reports continuous and non-continuous measurements of air quality data at various sites located around Newmont's Porcupine mining operations. The data generated are used to assess the air quality where people live, measure compliance with provincial standards, compare changes to air quality over time, provide information about regional background levels of monitored pollutants, inform the public and raise awareness of local air quality.

The ambient air monitoring network has been approved by the Ministry of the Environment, Conservation and Parks (MECP) and will continue to operate throughout the life of the mining operations. This is the Annual Ambient Air Monitoring Report for 2021.

2.0 Ambient Air Monitoring Network

The ambient air monitoring network consists of a meteorological station and 4 continuous stations that report data for Total Suspended Particulate (TSP), Inhalable Particulate (PM_{10}) and Nitrogen Oxides (NO_X). There are 3 stations that collect non-continuous data for TSP, PM_{10} and metals, 6 stations that collect Total Dustfall and 3 stations that collect passive Sulphur Dioxide (SO_2) and Nitrogen Dioxide (NO_2).

2.1 Parameters Monitored

2.1.1 Particulate Matter (PM)

Particulate Matter (PM) consists of airborne particles in solid or liquid form, except pure water, that are microscopic in size. Particulate matter is classified according to its size. The MECP identifies the following sizes of PM:

1) **Settleable Particulate Matter (Total Dustfall)** - Dustfall consists of very coarse particulate matter fractions that settle quickly under the influence of gravity.

2) **Suspended Particulate Matter (SP or TSP)** - airborne particulate matter with an upper size limit of approximately 44 micro metres (µm) in aerodynamic equivalent diameter.

3) **Particulate Matter < 10 microns (PM_{10})** - airborne particulate matter with a mass median diameter less than 10 µm.

4) **Particulate Matter < 2.5 microns ($PM_{2.5}$)** - airborne particulate matter with a mass median diameter less than 2.5 µm.

2.1.2 Metals

A number of trace metals which can cause human health impacts are present in airborne particulate matter. Concentrations of trace metals can be determined in a laboratory by analyzing the particulate matter collected on filters.

2.1.3 Nitrogen Oxides (NO, NO_2, NO_X)

Nitrogen Oxides (NO_X) are usually defined as the sum of Nitric Oxide (NO) and Nitrogen Dioxide (NO_2). NO_2 is a reddish-brown gas with a pungent and irritating odour. It transforms in the air to form gaseous nitric acid and organic nitrates. NO_2 also plays a major role in atmospheric reactions that produce ground-level ozone, a major component of smog.

In the case of air quality assessments, e.g. air quality reports such as the current report, NO_2, not NO_X, is the reference contaminant. NO_X Ambient Air Quality Criteria (AAQC) with 1 hour and 24 hour averaging times should only be compared to monitored NO_2 data.

2.1.4 Sulphur Dioxide (SO_2)

Sulphur Dioxide (SO_2) is a colourless gas that smells like burnt matches. SO_2 belongs to the family of sulphur oxide (SO_X) gases and these gases dissolve easily in water. Sulphur is prevalent in many raw materials. SO_X gases are formed when fuels containing sulphur are burned, when gasoline is extracted from oil or when metals are processed from sulphide ores.

2.2 Sampling Program Methodology

The Newmont ambient air monitoring network utilizes various types of sampling equipment. AirPointer® samplers measure continuous TSP, PM_{10} and Nitrogen Oxides. High-volume, Dustfall and passive samplers are used to measure non-continuous TSP, PM_{10}, metals, Total Dustfall, SO_2 and NO_2 data. Station locations are illustrated in Figure 1. The parameters monitored are listed in Table 1 and station Universal Transverse Mercator (UTM) data are tabulated in Table 2.

- **AirPointer® - Continuous TSP**

  TSP data are continuously monitored throughout the year by an Airpointer® system utilizing a Thermo Scientific model ADR1500 Dust Monitor. The ADR1500 utilizes light scattering photometer (nephelometer) technology to measure airborne particulate. The intensity of the light scattered by airborne particles passing through the sensing chamber is linearly proportional to their concentration. AirPointer® TSP measurements cannot be used to report exceedances because the measurement method is not officially designated. The collected TSP data are considered as “indicative” and should be used only for information purposes.

- **AirPointer® - Continuous PM_{10}**

  PM_{10} data are continuously monitored throughout the year by an AirPointer® system utilizing a Thermo Scientific model 5030 SHARP. The 5030 SHARP automatically measures and records airborne particulate concentration levels in micrograms per cubic metre ($\mu g/m^3$) using a combination of beta attenuation and light scattering technology.

- **AirPointer® - Continuous Nitrogen Oxides**

  NO, NO_2 and NO_X are continuously monitored throughout the year by an AirPointer® system utilizing a Thermo Scientific model 42i. The model 42i uses chemiluminescence technology to measure the amount of Nitrogen Oxides in the air.

- **High-volume - Non-continuous TSP and PM_{10}**

  Non-continuous TSP and PM_{10} samples are collected every 6 days according to the National Air Pollutant Surveillance (NAPS) schedule. Samples are collected on filter media for a 24 hour period from midnight to midnight. TSP samples are collected with a Tisch model 5170 High-volume sampler. PM_{10} samples are collected with a Tisch model 6070 High-volume sampler.

  High-volume samplers draw ambient air at a constant flow rate in order to collect suspended particulate matter onto a filter. Each filter is weighed before and after exposure to determine the total loading due to collected particulate.

  Non-continuous TSP and PM_{10} High-volume samplers meet US EPA and International Particulate Monitoring Regulations.

- **High-volume - Non-continuous Metals**

  TSP High-volume filters are analyzed every 18 days (NAPS schedule) by an accredited laboratory for a specified list of metals. PM_{10} High-volume filters are analyzed every 30 days. Metal concentrations are determined using Inductively Coupled Plasma Mass Spectrometry (ICP-MS). Results are reported in $\mu g/m^3$, analyses include; Arsenic (As), Cadmium (Cd), Chromium (Cr), Cobalt (Co), Copper (Cu), Iron (Fe, as Fe_2O_3), Lead (Pb), Magnesium (Mg, as MgO), Manganese (Mn), Nickel (Ni), Selenium (Se), Sulphur (S), Vanadium (V), Zinc (Zn) and Sulphate (SO_4).

- **Non-continuous Total Dustfall**

  Containers (Dustfall jars) of a standard size and shape are set up at selected sampling sites so that particulate matter can settle into them for periods of about 30 days. The collected samples are then sent to an accredited laboratory for analyses of both soluble and insoluble portions which are combined to calculate the Total Dustfall. Results are reported as grams per square metre per 30 days ($g/m^2/30d$).

- **Non-continuous Passive SO_2 / NO_2**

  Passive sampling utilizes laboratory prepared filter cartridges which are installed at selected sampling sites for exposure to ambient air for periods of about 30 days. After exposure the cartridges are removed and submitted to an accredited laboratory for analysis. The analysis provides an estimate of monthly average spatial concentrations for SO_2 and NO_2. SO_2 analysis is determined by ion chromatography and NO_2 analysis is determined by spectrophotometry.

- **Meteorological Data**

  Meteorological data are monitored continuously throughout the year by a 5 metre meteorological station. Parameters monitored include; Wind Speed (WS), Wind Direction (WD), Ambient Temperature (AT), Relative Humidity (RH), Barometric Pressure (BP) and Precipitation (PRECP).

Figure 1: Newmont Porcupine Air Monitoring Network Overview

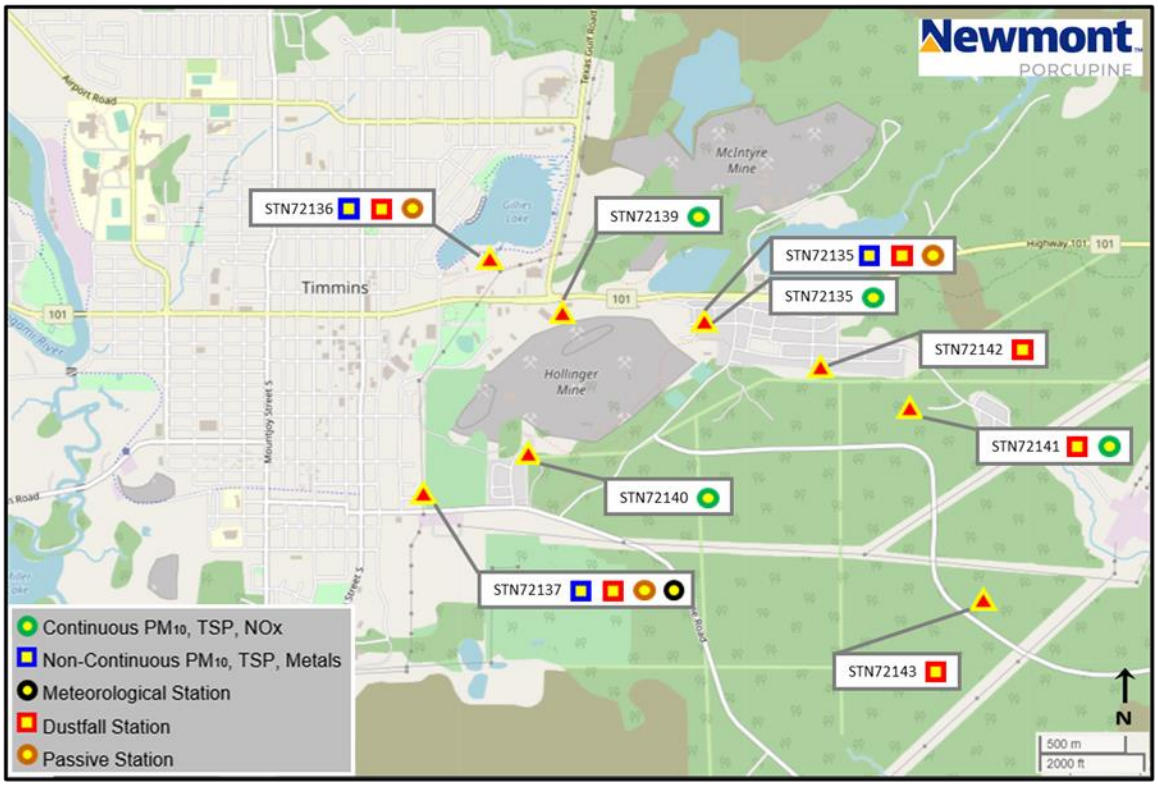


Table 1: Parameters Monitored at Each Station

Station Identifier	TSP	High Volume TSP	PM_{10}	High Volume PM_{10}	NO_x	Metals	Passive SO_2	Passive NO_2	Total Dustfall	MET
STN72135 - Hollinger Ext.	✓		✓		✓					
STN72139 - Hollinger Office	✓		✓		✓					
STN72140 - Goldmine Tour	✓		✓		✓					
STN72141 - Claimpost Trail	✓		✓		✓				✓	
STN72135 - Extendicare		✓		✓		✓	✓	✓	✓	
STN72136 - MRCA		✓		✓		✓	✓	✓	✓	
STN72137 - Shania Twain		✓		✓		✓	✓	✓	✓	✓
STN72142 - Aura Lake									✓	
STN72143 - Snowmobile Crossing									✓	

Table 2: UTM Station Coordinates

UTM Coordinate Data				
Station Identifier	**Zone**	**Easting**	**Northing**	**Elevation**
STN72135 - Hollinger Ext.	17 U	477690.00	5369095.00	327 metres
STN72139 - Hollinger Office	17 U	476860.57	5369232.07	326 metres
STN72140 - Goldmine Tour	17 U	476626.00	5368461.41	324 metres
STN72141 - Claimpost Trail	17 U	478831.56	5368717.43	319 metres
STN72135 - Extendicare	17 U	477683.00	5369104.00	327 metres
STN72136 - MRCA	17 U	476416.81	5369518.75	312 metres
STN72137 - Shania Twain	17 U	476064.20	5368291.07	314 metres
STN72142 - Aura Lake	17 U	478337.11	5368893.25	333 metres
STN72143 - Snowmobile Crossing	17 U	479158.24	5367586.26	323 metres

2.3 Summary of Network Operations

Air quality data and instrument performance are evaluated daily. Site visits to the non-continuous samplers are conducted weekly and continuous monitoring sites are visited as needed. Service logs, data and edit records are retained in a historical database.

During 2021 there were 36 calibrations on the continuous samplers, all of which met criteria. Details are found in Appendix C.

2.3.1 Continuous Data

Data loggers are programmed to continuously scan the outputs from each of the continuous analyzers and process both five minute and hourly data averages. The data loggers have the capability to store several years' worth of data.

An Envitech Envista Air Resource Manager (ARM) application is used to poll the station data loggers and retrieve the collected data on an hourly basis. The data are then verified, quality assured and archived in a central database. The central database is backed up daily for contingency.

2.3.2 Non-continuous Data

TSP and PM_{10} samples are collected on filter media on a 6 day NAPS schedule. Gravimetric results (total loading) are calculated and reported for each filter. Metal analyses are conducted on every third TSP filter and every fifth PM_{10} filter. Filters are removed as soon as possible after exposure and submitted to an accredited laboratory for analysis. Laboratory reports are quality assured and submitted to the MECP.

Dustfall data is collected using Dustfall jars on a monthly schedule. At the end of each month the exposed jars are retrieved and submitted for analyses.

Passive SO_2 and NO_2 data are collected on passive filter cartridges on a monthly schedule. At the end of each month, exposed cartridges are retrieved and submitted for analyses.

2.3.3 Quality Assurance

Quality assurance measures are implemented to ensure data integrity. The operation, service and maintenance of the stations and sampling equipment are in accordance with the manufacturers' operations manuals and protocols as outlined in the Ministry's 'Operations Manual for Air Quality Monitoring in Ontario', (last update: July 2019).

3.0 MECP - AAQCs, Standards and Guidelines

The MECP's AAQCs, standards and guidelines are based on the best scientific information available and are set at a level that safeguards human health and the natural environment. The effects considered may be based on health, odour, vegetation, soiling, visibility, corrosion or other effects. The relevant continuous PM_{10} and Nitrogen Oxides (as NO_2), AAQC and O. Reg. 419/05 standards are summarized in Table 3. Non-continuous TSP, PM_{10}, Metals and Total Dustfall AAQCs, standards and guidelines are summarized in Tables 4, 5 and 6. There are no listed AAQCs, standards or guidelines for passive SO_2 / NO_2 monitoring.

Table 3: Continuous Ambient Air Quality Criteria and Standards

Contaminant Name	Criterion Type	Average Period	Average Type	Value	Units
Particulate Matter < 10µm – PM_{10}	Interim AAQC	24 Hr	Running	50	µg/m^3
Nitrogen Dioxide – NO_2	AAQC	24 Hr	Running	100	ppb
Nitrogen Dioxide – NO_2	AAQC	1 Hr	Running	200	ppb
Nitrogen Dioxide – NO_2	Standard	½ Hr	Running	250	ppb

Table 4: Non-continuous TSP Ambient Air Quality Criteria and Standards

Contaminant Name	Criterion Type	Average Period	Average Type	Value	Units
TSP	AAQC	24 Hr	Clock	120	µg/m^3
Arsenic (As)	AAQC	24 Hr	Clock	0.3	µg/m^3
Cadmium (Cd)	AAQC	24 Hr	Clock	0.025	µg/m^3
Cadmium (Cd)	AAQC	Annual	Clock	0.005	µg/m^3
Chromium (Cr)	AAQC	24 Hr	Clock	0.5	µg/m^3
Cobalt (Co)	AAQC	24 Hr	Clock	0.1	µg/m^3
Copper (Cu)	AAQC	24 Hr	Clock	50	µg/m^3
Iron (Fe)	AAQC	24 Hr	Clock	25	µg/m^3
Lead (Pb)	AAQC	24 Hr	Clock	0.5	µg/m^3
Magnesium (Mg)	AAQC	24 Hr	Clock	120	µg/m^3
Manganese (Mn)	AAQC	24 Hr	Clock	0.4	µg/m^3
Nickel (Ni)	AAQC	24 Hr	Clock	0.2	µg/m^3
Nickel (Ni)	AAQC	Annual	Clock	0.04	µg/m^3
Selenium (Se)	AAQC	24 Hr	Clock	10	µg/m^3
Vanadium (V)	AAQC	24 Hr	Clock	2	µg/m^3
Zinc (Zn)	AAQC	24 Hr	Clock	120	µg/m^3
Chromium (Cr)	Standard	24 Hr	Clock	0.5	µg/m^3
Copper (Cu)	Standard	24 Hr	Clock	50	µg/m^3
Iron (Fe)	Standard	24 Hr	Clock	25	µg/m^3
Lead (Pb)	Standard	24 Hr	Clock	0.5	µg/m^3
Magnesium (Mg)	Standard	24 Hr	Clock	120	µg/m^3
Manganese (Mn)	Standard	24 Hr	Clock	0.4	µg/m^3
Nickel (Ni)	Standard	24 Hr	Clock	2	µg/m^3
Vanadium (V)	Standard	24 Hr	Clock	2	µg/m^3
Zinc (Zn)	Standard	24 Hr	Clock	120	µg/m^3
Arsenic (As)	Guideline	24 Hr	Clock	0.3	µg/m^3
Cobalt (Co)	Guideline	24 Hr	Clock	0.1	µg/m^3
Selenium (Se)	Guideline	24 Hr	Clock	10	µg/m^3

Table 5: Non-continuous PM_{10} Ambient Air Quality Criteria

Contaminant Name	Criterion Type	Average Period	Average Type	Value	Units
PM_{10}	Interim AAQC	24 Hr	Clock	50	µg/m^3
Manganese (Mn)	AAQC	24 Hr	Clock	0.2	µg/m^3
Nickel (Ni)	AAQC	24 Hr	Clock	0.1	µg/m^3
Nickel (Ni)	AAQC	Annual	Clock	0.02	µg/m^3

Table 6: Non-continuous Total Dustfall Standard and AAQC

Contaminant Name	Criterion Type	Average Period	Average Type	Value	Units
Total Dustfall	Standard	30 days	Clock	7.0	g/m^2
Total Dustfall	AAQC	Annual	Clock	4.6	g/m^2

4.0 Continuous Data Statistics

The continuous data statistics have been summarized in the accompanying tables and include:

- Maximum 24 hour running averages
- Number of exceedances > 24 hour running average
- Number of valid clock hours
- Monthly and annual arithmetic means
- Overall percent valid data
- Maximum ½ hour running averages (NO_2 only)
- Maximum 1 hour running averages (NO_2 only)
- Number of exceedances > ½ hour running average (NO_2 only)
- Number of exceedances > 1 hour running average (NO_2 only)

Table 7: STN72135 PM_{10} Data Statistics Summary

STN72135	Max 24 Hr Running Avg	Events > 24 Hr AAQC	Valid Clock Hours	Monthly Mean	Percent Valid Data
Month	**PM_{10}**	**PM_{10}**	**PM_{10}**	**PM_{10}**	**PM_{10}**
	µg/m^3	No.	Hrs	µg/m^3	%
January	16	0	744	7	100.0
February	52	1	663	15	98.7
March	86	4	744	22	100.0
April	77	1	715	19	99.3
May	33	0	737	16	99.1
June	41	0	644	16	89.4
July	109	2	744	21	100.0
August	67	2	676	21	90.9
September	33	0	715	10	99.3
October	32	0	734	13	98.7
November	56	1	717	14	99.6
December	19	0	744	8	100.0
Annual Total		11	8577		
Annual Mean				15	97.9

Table 8: STN72139 PM_{10} Data Statistics Summary

STN72139	Max 24 Hr Running Avg	Events > 24 Hr AAQC	Valid Clock Hours	Monthly Mean	Percent Valid Data
Month	**PM_{10}**	**PM_{10}**	**PM_{10}**	**PM_{10}**	**PM_{10}**
	µg/m^3	No.	Hrs	µg/m^3	%
January	30	0	576	8	77.4
February	59	1	473	ins*	70.4
March	46	0	731	17	98.3
April	41	0	682	18	94.7
May	34	0	684	15	91.9
June	35	0	640	15	88.9
July	116	2	566	18	76.1
August	63	2	582	22	78.2
September	105	3	652	15	90.6
October	33	0	663	12	89.1
November	65	1	718	14	99.7
December	75	1	738	17	99.2
Annual Total		10	7705		
Annual Mean				16	87.9

ins* - insufficient data to calculate mean.

Table 9: STN72140 PM_{10} Data Statistics Summary

STN72140	Max 24 Hr Running Avg	Events > 24 Hr AAQC	Valid Clock Hours	Monthly Mean	Percent Valid Data
Month	**PM_{10}**	**PM_{10}**	**PM_{10}**	**PM_{10}**	**PM_{10}**
	µg/m^3	No.	Hrs	µg/m^3	%
January	14	0	744	7	100.0
February	27	0	672	12	100.0
March	33	0	744	12	100.0
April	72	1	717	14	99.6
May	38	0	622	14	83.6
June	45	0	720	12	100.0
July	79	1	744	16	100.0
August	53	1	744	15	100.0
September	19	0	714	7	99.2
October	19	0	736	9	98.9
November	24	0	720	8	100.0
December	12	0	664	5	89.2
Annual Total		3	8541		
Annual Mean				11	97.5

Table 10: STN72141 PM_{10} Data Statistics Summary

STN72141	Max 24 Hr Running Avg	Events > 24 Hr AAQC	Valid Clock Hours	Monthly Mean	Percent Valid Data
Month	**PM_{10}**	**PM_{10}**	**PM_{10}**	**PM_{10}**	**PM_{10}**
	µg/m^3	No.	Hrs	µg/m^3	%
January	14	0	743	6	99.9
February	76	1	672	13	100.0
March	204	5	744	25	100.0
April	88	3	715	15	99.3
May	25	0	633	10	85.1
June	20	0	635	9	88.2
July	76	1	744	16	100.0
August	46	0	744	12	100.0
September	17	0	717	6	99.6
October	23	0	734	9	98.7
November	68	1	719	10	99.9
December	12	0	744	5	100.0
Annual Total		11	8544		
Annual Mean				11	97.6

Table 11: STN72135 NO_2 Data Statistics Summary

STN72135	Max 24 Hr Running Avg	Max 1 Hr Running Avg	Max ½ Hr Running Avg	Events > 24 Hr AAQC	Events > 1 Hr AAQC	Events > ½ Hr O. Reg 419/05	Valid Clock Hours	Monthly Mean	Percent Valid Data
Month	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2
	ppb	ppb	ppb	No.	No.	No.	Hrs	ppb	%
January	18	31	31	0	0	0	743	4	99.9
February	30	48	50	0	0	0	661	7	98.4
March	14	36	38	0	0	0	743	4	99.9
April	10	35	39	0	0	0	719	4	99.9
May	10	30	37	0	0	0	740	4	99.5
June	8	28	29	0	0	0	641	3	89.0
July	8	26	27	0	0	0	743	3	99.9
August	8	25	34	0	0	0	666	3	89.5
September	6	17	17	0	0	0	717	2	99.6
October	10	20	23	0	0	0	738	3	99.2
November	13	24	26	0	0	0	717	7	99.6
December	13	27	37	0	0	0	744	6	99.7
Annual Total				0	0	0	8572		
Annual Mean								4	97.8

Table 12: STN72139 NO_2 Data Statistics Summary

STN72139	Max 24 Hr Running Avg	Max 1 Hr Running Avg	Max ½ Hr Running Avg	Events > 24 Hr AAQC	Events > 1 Hr AAQC	Events > ½ Hr O. Reg 419/05	Valid Clock Hours	Monthly Mean	Percent Valid Data
Month	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2
	ppb	ppb	ppb	No.	No.	No.	Hrs	ppb	%
January	24	37	41	0	0	0	732	6	98.4
February	29	53	54	0	0	0	662	9	98.5
March	11	36	38	0	0	0	662	5	89.0
April	14	53	59	0	0	0	717	5	99.6
May	11	42	46	0	0	0	741	4	99.6
June	10	39	40	0	0	0	715	4	99.3
July	10	29	31	0	0	0	743	4	99.9
August	11	30	31	0	0	0	742	4	99.7
September	12	22	24	0	0	0	714	6	99.2
October	19	30	35	0	0	0	744	8	100.0
November	18	33	35	0	0	0	716	10	99.4
December	19	35	39	0	0	0	744	11	100.0
Annual Total				0	0	0	8632		
Annual Mean								6	98.6

Table 13: STN72140 NO_2 Data Statistics Summary

STN72140	Max 24 Hr Running Avg	Max 1 Hr Running Avg	Max ½ Hr Running Avg	Events > 24 Hr AAQC	Events > 1 Hr AAQC	Events > ½ Hr O. Reg 419/05	Valid Clock Hours	Monthly Mean	Percent Valid Data
Month	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2
	ppb	ppb	ppb	No.	No.	No.	Hrs	ppb	%
January	14	33	34	0	0	0	743	5	99.9
February	28	55	60	0	0	0	671	8	99.9
March	13	34	36	0	0	0	743	4	99.9
April	14	42	45	0	0	0	717	5	99.6
May	12	41	44	0	0	0	732	4	98.4
June	10	27	34	0	0	0	708	4	98.3
July	8	26	26	0	0	0	742	3	99.7
August	9	22	25	0	0	0	719	2	96.6
September	7	16	19	0	0	0	719	2	99.9
October	12	34	43	0	0	0	741	3	99.6
November	5	24	25	0	0	0	717	2	99.6
December	11	36	41	0	0	0	743	4	99.9
Annual Total				0	0	0	8695		
Annual Mean								4	99.3

Table 14: STN72141 NO_2 Data Statistics Summary

STN72141	Max 24 Hr Running Avg	Max 1 Hr Running Avg	Max ½ Hr Running Avg	Events > 24 Hr AAQC	Events > 1 Hr AAQC	Events > ½ Hr O. Reg 419/05	Valid Clock Hours	Monthly Mean	Percent Valid Data
Month	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2
	ppb	ppb	ppb	No.	No.	No.	Hrs	ppb	%
January	16	32	32	0	0	0	742	3	99.7
February	27	45	46	0	0	0	671	7	99.9
March	13	47	51	0	0	0	743	3	99.9
April	15	42	43	0	0	0	719	4	99.9
May	10	38	43	0	0	0	733	4	98.5
June	7	27	29	0	0	0	716	2	99.4
July	8	30	31	0	0	0	743	3	99.9
August	6	18	19	0	0	0	743	3	99.9
September	4	13	14	0	0	0	718	2	99.7
October	8	20	23	0	0	0	741	3	99.6
November	11	28	29	0	0	0	718	3	99.7
December	12	27	28	0	0	0	743	3	99.9
Annual Total				0	0	0	8730		
Annual Mean								3	99.7

4.1 Year to Year Data Comparison Statistics

Table 15 shows the five year trend of the network annual mean concentrations of PM_{10} and NO_2.

Table 15: Year to Year Data Comparison Statistics

Station	Pollutant	Units	2017 Annual Mean	2018 Annual Mean	2019 Annual Mean	2020 Annual Mean	2021 Annual Mean
STN72135	PM_{10}	µg/m³	9	12	11	11	15
STN72139	PM_{10}	µg/m³	16	19	15	13	16
STN72140	PM_{10}	µg/m³	11	12	10	9	11
STN72141	PM_{10}	µg/m³	8	9	7	7	11
STN72135	NO_2	ppb	4	4	4	3	4
STN72139	NO_2	ppb	7	6	6	5	6
STN72140	NO_2	ppb	5	5	4	3	4
STN72141	NO_2	ppb	4	4	3	3	3

Figures 2 through 5 graphically illustrate annual trends for both PM_{10} and NO_2.

Figure 2: STN72135 PM_{10} and NO_2 Five Year Annual Average Trend

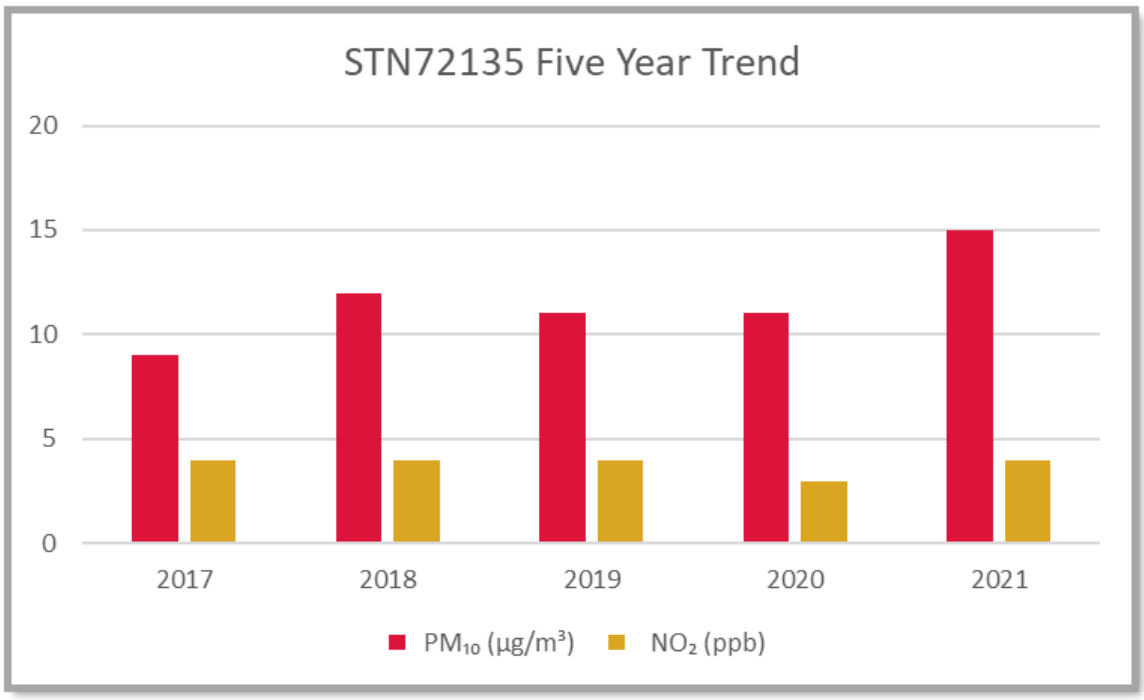


Figure 3: STN72139 PM_{10} and NO_2 Five Year Annual Average Trend

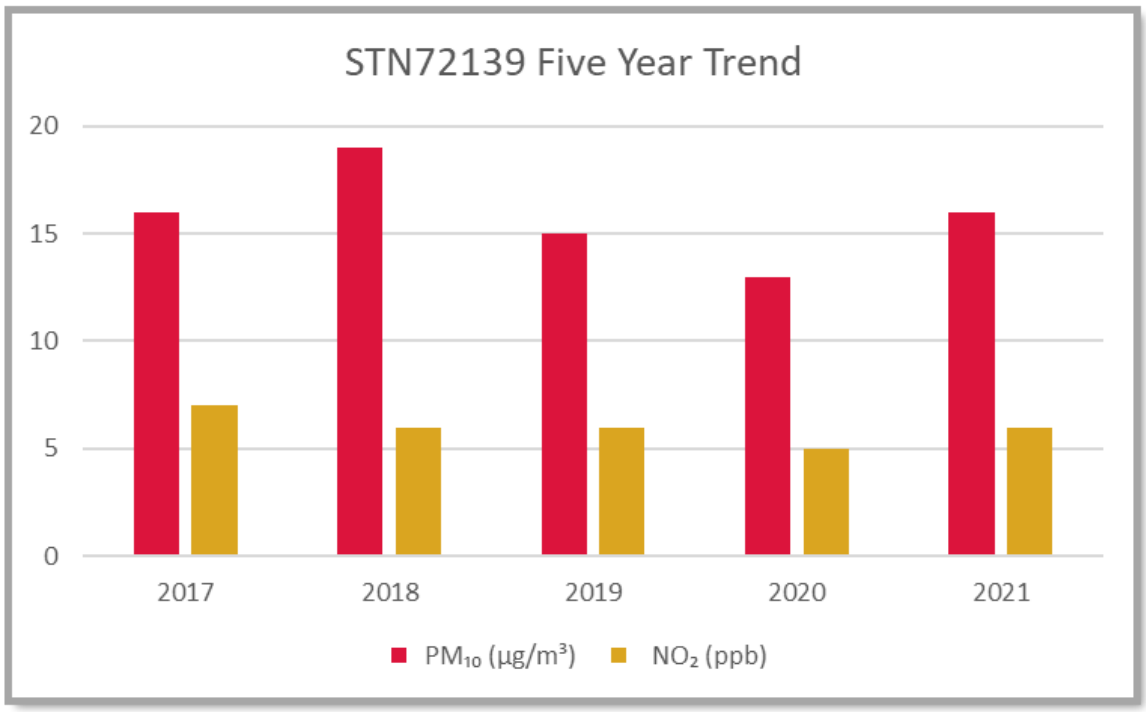


Figure 4: STN72140 PM_{10} and NO_2 Five Year Annual Average Trend

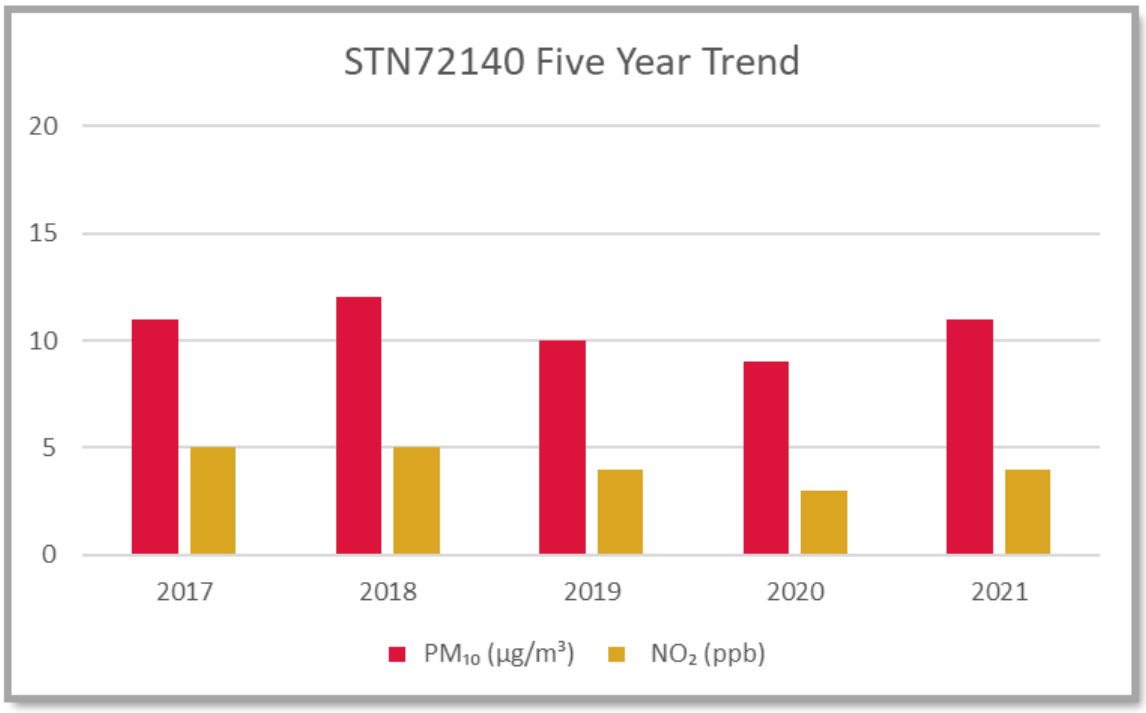
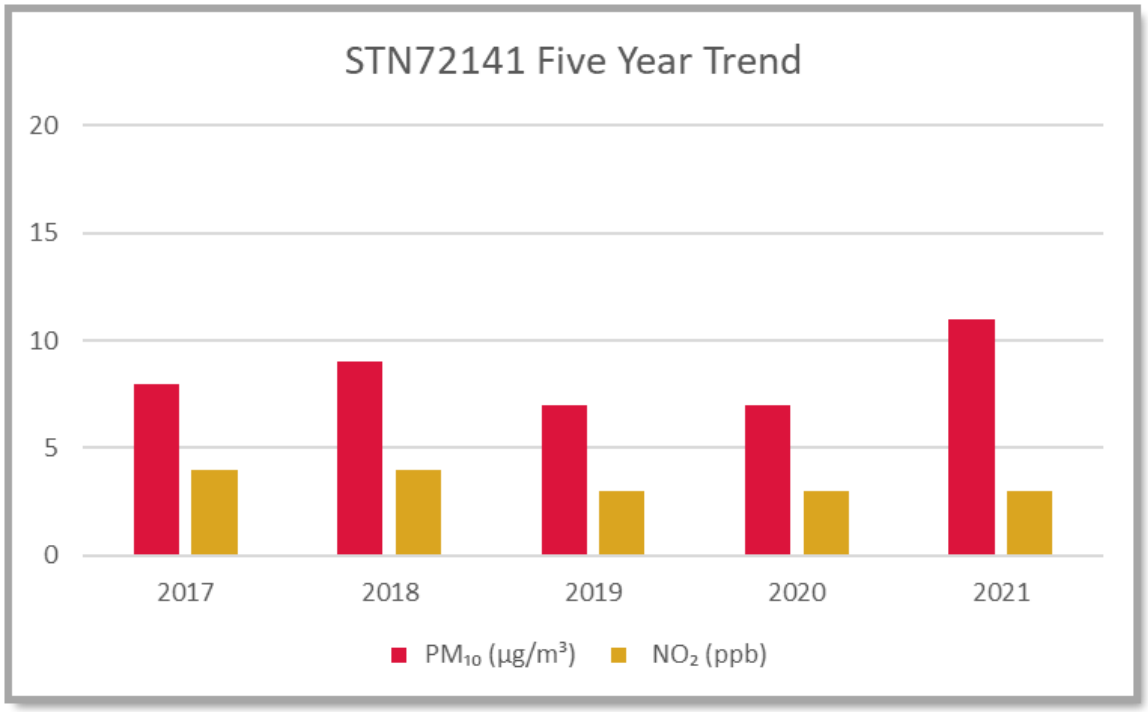


Figure 5: STN72141 PM_{10} and NO_2 Five Year Annual Average Trend



4.2 Continuous PM_{10} 24 Hr Running Average Trends

Figures 6 through 9 illustrate annual 24 hour running average trends for PM_{10}.

Figure 6: STN72135 PM_{10} 24 Hr Running Average Trend

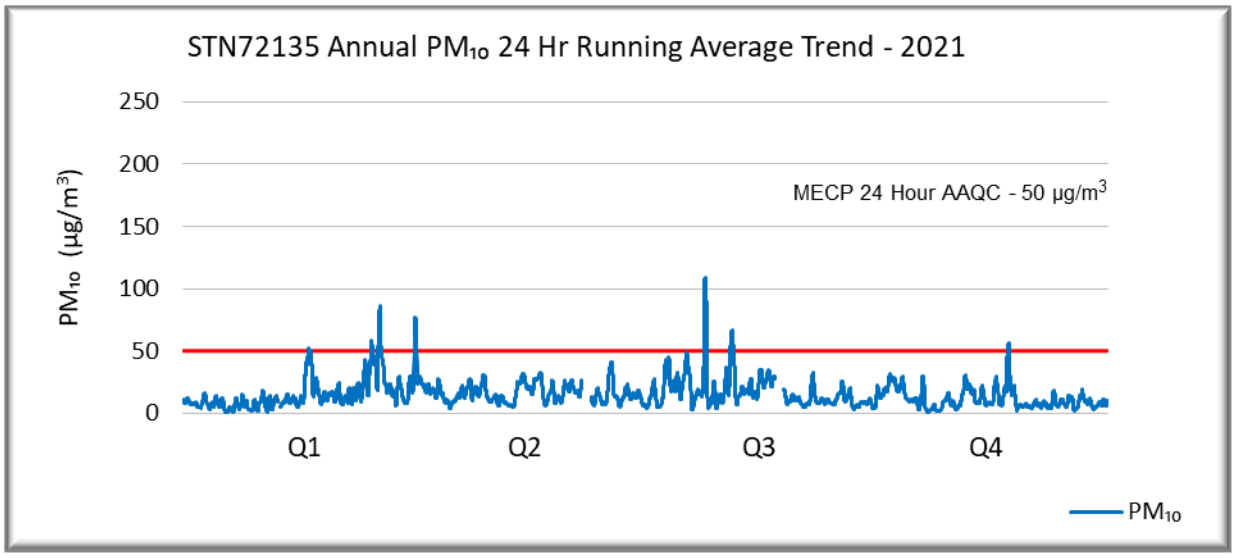


Figure 7: STN72139 PM_{10} 24 Hr Running Average Trend

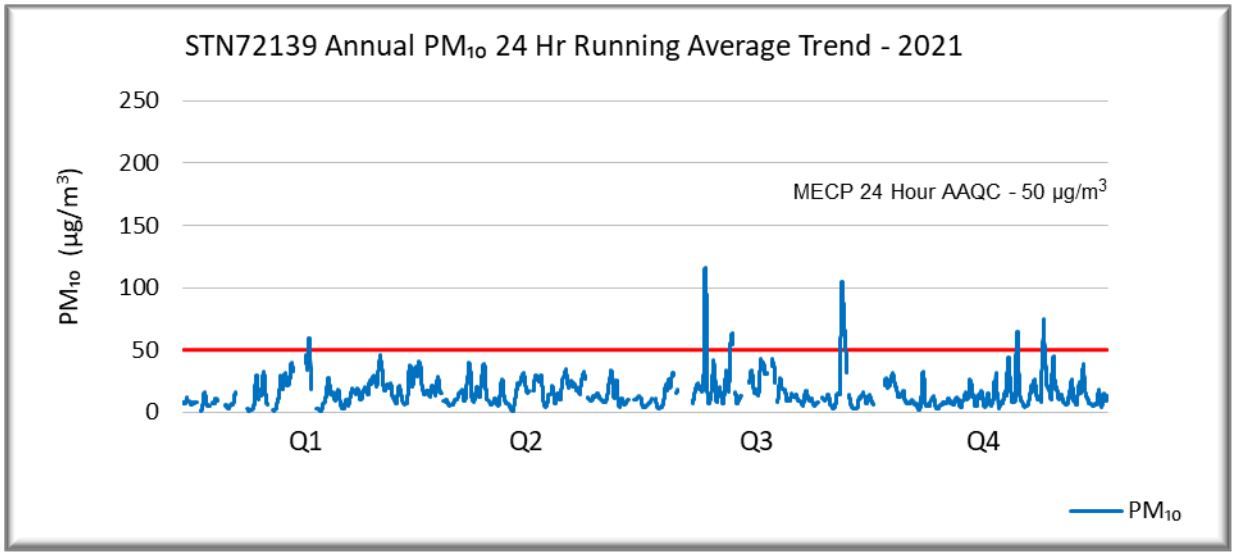


Figure 8: STN72140 PM_{10} 24 Hr Running Average Trend

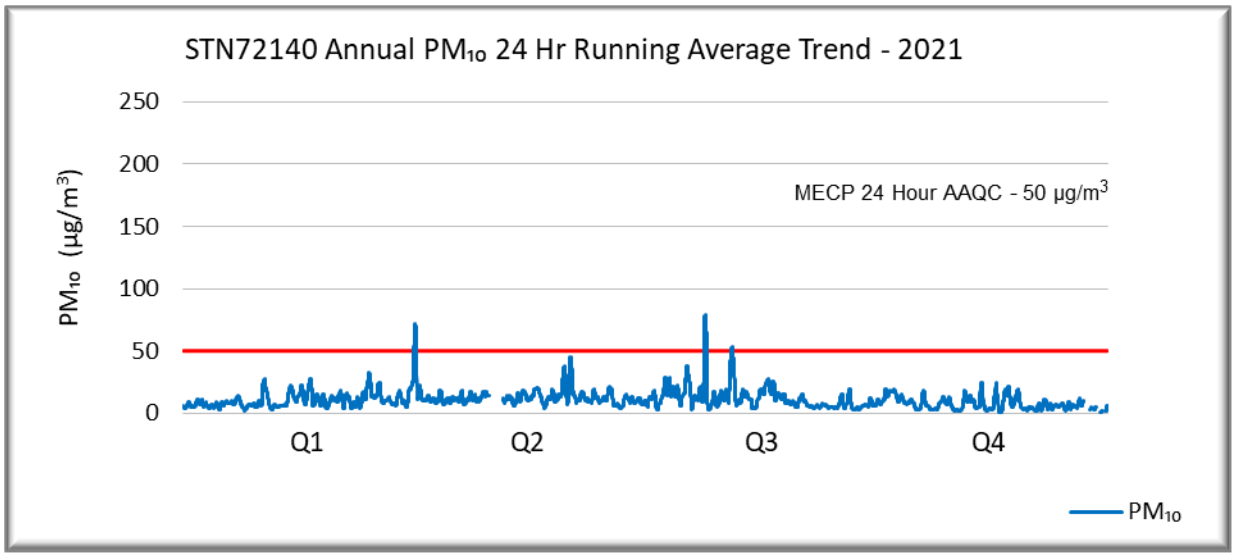
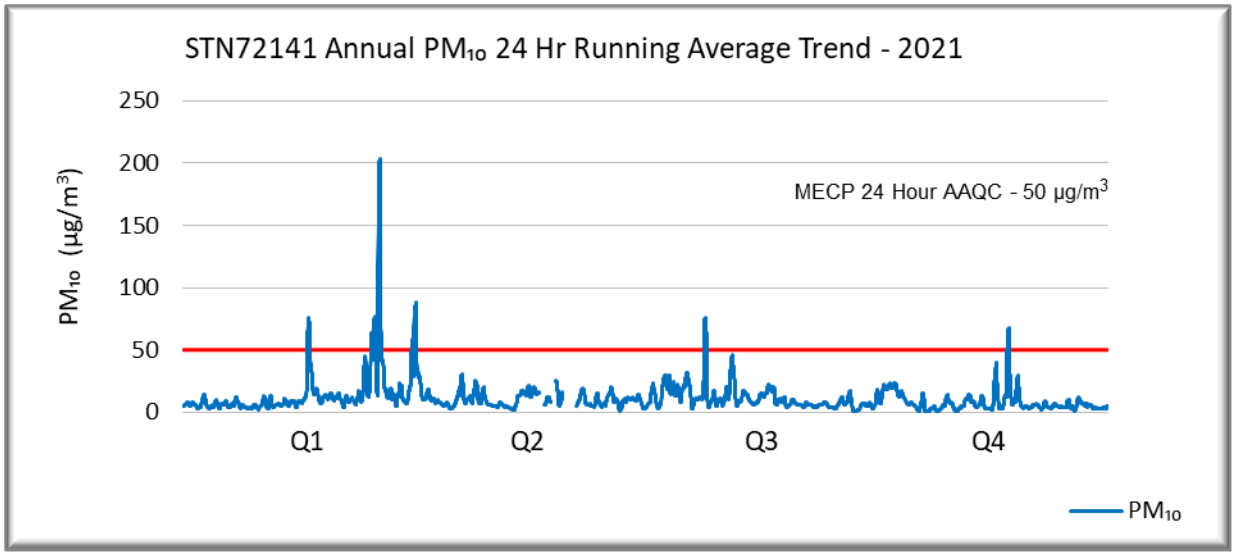


Figure 9: STN72141 PM_{10} 24 Hr Running Average Trend



4.3 Continuous NO_2 24 Hr Running Average Trends

Figures 10 through 13 illustrate annual 24 hour running average trends for NO_2.

Figure 10: STN72135 NO_2 24 Hr Running Average Trend

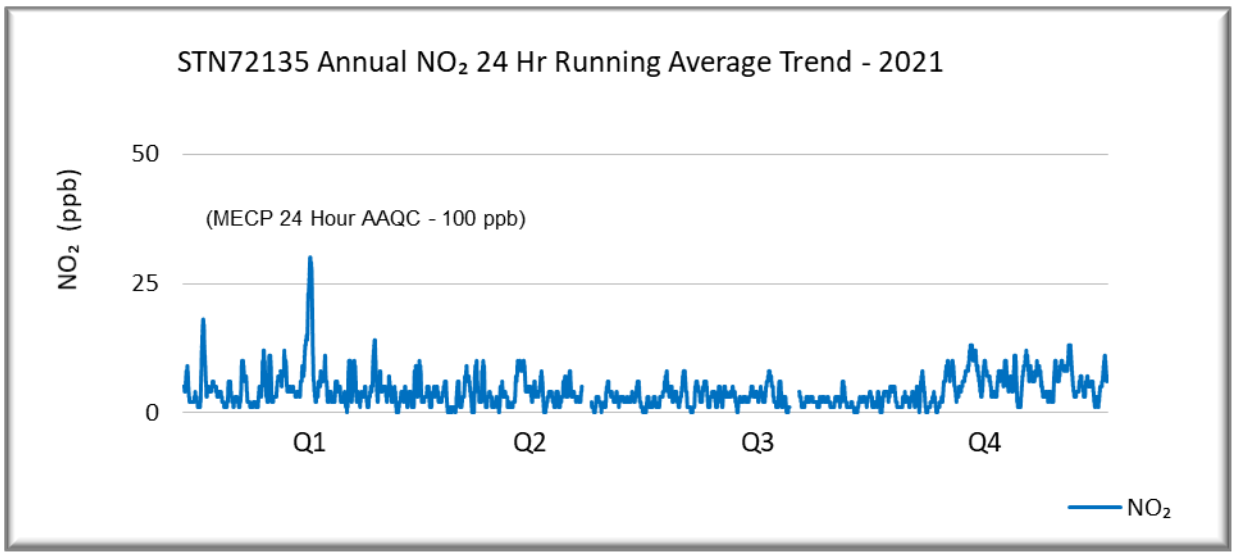


Figure 11: STN72139 NO_2 24 Hr Running Average Trend

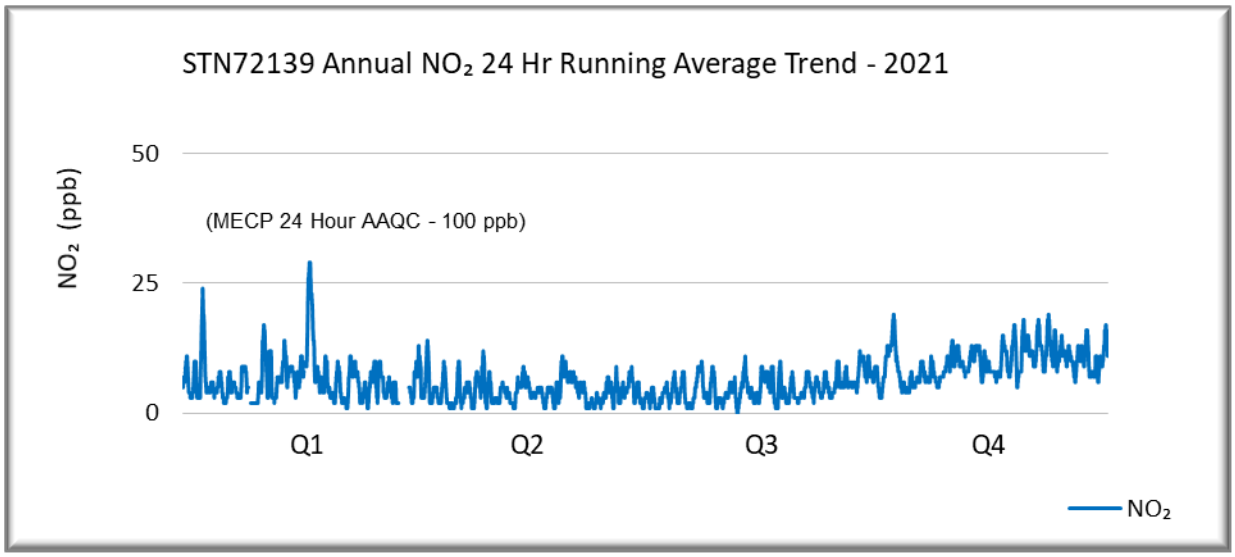


Figure 12: STN72140 NO_2 24 Hr Running Average Trend

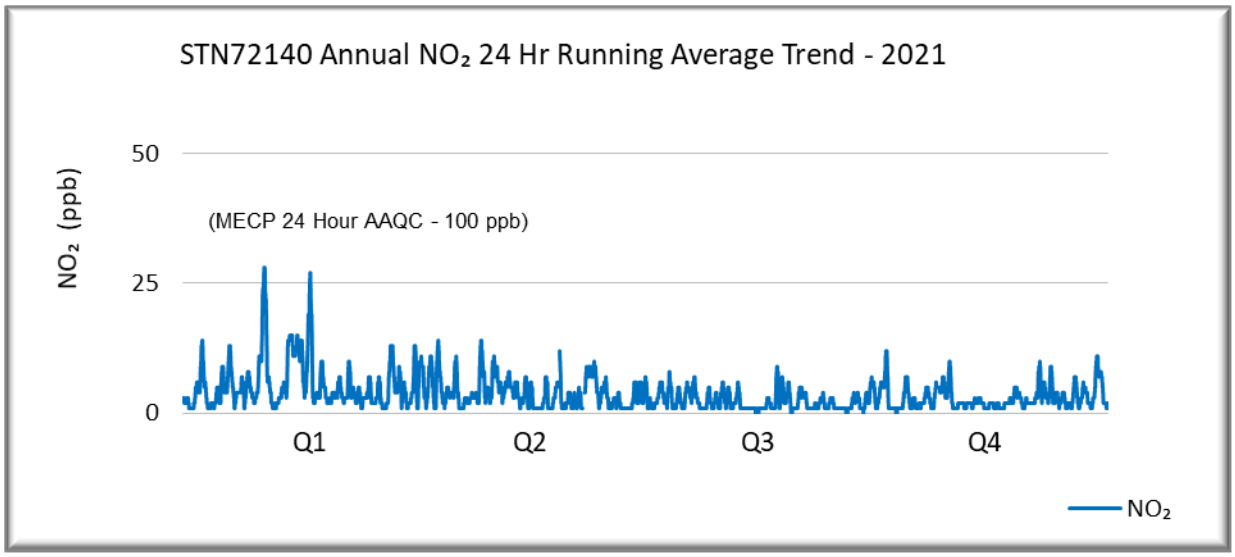
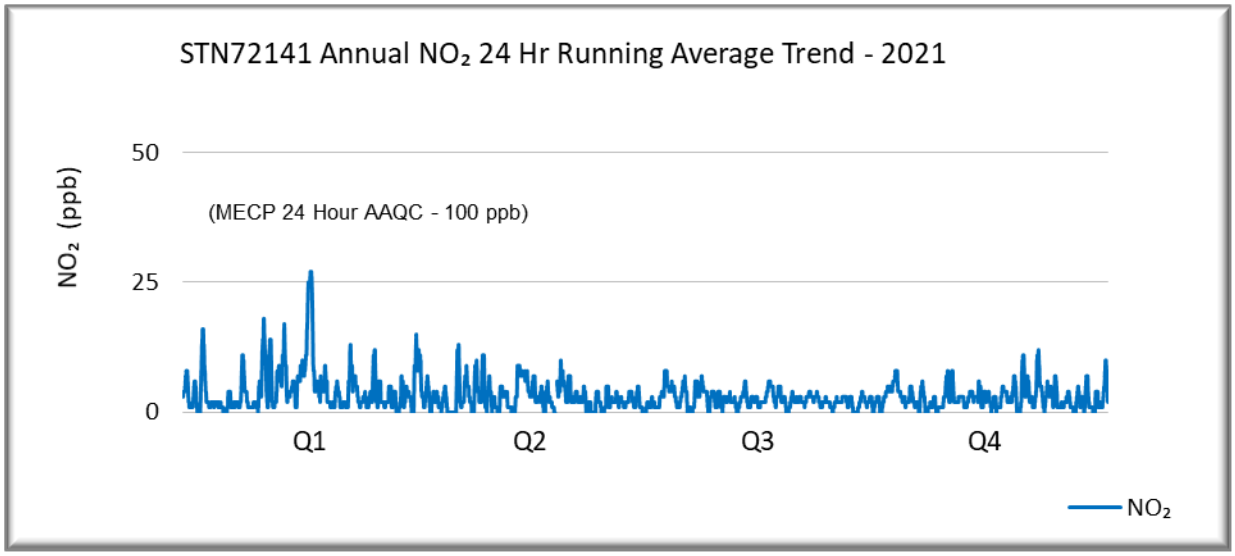


Figure 13: STN72141 NO_2 24 Hr Running Average Trend



5.0 Non-continuous Data Statistics

Non-continuous TSP, PM_{10} and suspended metal data statistics have been summarized in Tables 16 and 17 and include:

- Reportable Detection Limit (RDL)
- Maximum 24 hour clock value
- Average 24 hour clock arithmetic mean

Geometric means and additional information on non-continuous data can be found in Appendix B.

For statistic trending and as per MECP guidelines, non-detect parameters are reported as half of the Reportable Detection Limit for all non-continuous parameters.

Table 16: Non-continuous TSP Data Summary

Station		STN72135 Extendicare		STN72136 MRCA		STN72137 Shania Twain	
Parameter	RDL µg/m³	Annual Max µg/m³	Annual Avg µg/m³	Annual Max µg/m³	Annual Avg µg/m³	Annual Max µg/m³	Annual Avg µg/m³
TSP	3	104	21	78	23	84	26
Arsenic	0.0037	0.0019	0.0019	0.0019	0.0019	0.0038	0.0019
Cadmium	0.0012	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006
Chromium	0.0031	0.0045	0.0023	0.0060	0.0028	0.0090	0.0030
Cobalt	0.0012	0.0024	0.0007	0.0018	0.0007	0.0021	0.0007
Copper	0.0031	0.1980	0.0781	0.1380	0.0668	0.1060	0.0619
Iron	0.0310	1.3500	0.5729	1.7300	0.5179	2.9500	0.7845
Lead	0.0018	0.0042	0.0015	0.0032	0.0016	0.0305	0.0069
Magnesium	0.0310	0.6380	0.2573	0.9410	0.2660	1.2700	0.3491
Manganese	0.0006	0.0310	0.0129	0.0401	0.0111	0.0618	0.0173
Nickel	0.0018	0.0035	0.0013	0.0047	0.0016	0.0069	0.0019
Selenium	0.0061	0.0031	0.0031	0.0031	0.0031	0.0031	0.0031
Sulphur	0.0150	0.4300	0.1860	0.4640	0.1771	0.5000	0.1972
Vanadium	0.0031	0.0016	0.0016	0.0016	0.0016	0.0043	0.0017
Zinc	0.0031	0.0684	0.0150	0.0332	0.0134	0.0366	0.0147
Sulphate	0.0500	1.2900	0.5574	1.3900	0.5307	1.5000	0.5907

Table 17: Non-continuous PM_{10} Data Summary

Station		STN72135 Extendicare		STN72136 MRCA		STN72137 Shania Twain	
Parameter	RDL µg/m³	Annual Max µg/m³	Annual Avg µg/m³	Annual Max µg/m³	Annual Avg µg/m³	Annual Max µg/m³	Annual Avg µg/m³
PM_{10}	3	52	11	48	11	38	11
Arsenic	0.0037	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019
Cadmium	0.0012	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006
Chromium	0.0031	0.0036	0.0018	0.0016	0.0016	0.0039	0.0018
Cobalt	0.0012	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006
Copper	0.0031	0.1040	0.0385	0.0875	0.0294	0.0389	0.0210
Iron	0.0310	0.8690	0.2665	0.7720	0.2545	1.1000	0.3088
Lead	0.0018	0.0037	0.0014	0.0034	0.0011	0.0172	0.0046
Magnesium	0.0310	0.3510	0.1076	0.4180	0.1241	0.4450	0.1318
Manganese	0.0006	0.0172	0.0057	0.0146	0.0054	0.0226	0.0064
Nickel	0.0018	0.0009	0.0009	0.0027	0.0011	0.0021	0.0011
Selenium	0.0061	0.0031	0.0031	0.0031	0.0031	0.0031	0.0031
Sulphur	0.0150	0.2660	0.1539	0.2940	0.1461	0.2510	0.1325
Vanadium	0.0031	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016
Zinc	0.0031	0.0697	0.0124	0.0131	0.0086	0.0338	0.0099
Sulphate	0.0500	0.8000	0.4610	0.8800	0.4382	0.7500	0.3964

Non-continuous Total Dustfall and Passive SO_2 / NO_2 data statistics are summarized in Tables 18 and 19.

Table 18: Non-continuous Total Dustfall Data Summary

Month	STN72135 Extendicare	STN72136 MRCA	STN72137 Shania Twain	STN72141 Claimpost	STN72142 Aura Lake	STN72143 Snowmobile Crossing
	$g/m^2/30d$	$g/m^2/30d$	$g/m^2/30d$	$g/m^2/30d$	$g/m^2/30d$	$g/m^2/30d$
January	0.81	0.68	0.69	0.89	0.71	6.30
February	1.70	0.69	2.10	1.20	0.98	16.00
March	2.90	1.30	1.40	9.80	3.30	36.00
April	1.90	1.80	2.30	7.40	2.00	25.00
May	2.80	1.40	2.70	6.20	2.40	33.00
June	3.10	2.00	45.00	6.30	5.40	34.00
July	6.70	2.90	2.50	3.70	3.10	33.00
August	2.80	1.40	14.00	3.60	2.60	32.00
September	1.10	0.96	0.53	2.20	1.20	28.00
October	0.69	0.93	1.60	1.40	0.98	14.00
November	2.10	0.82	0.77	2.50	1.30	25.00
December	0.48	0.48	0.36	0.01	0.46	1.60
Annual	2.26	1.28	6.16	3.77	2.04	23.66

Table 19: Non-continuous Passive SO_2 / NO_2 Data Summary

Month	STN72135 Extendicare	STN72136 MRCA	STN72137 Shania Twain	STN72135 Extendicare	STN72136 MRCA	STN72137 Shania Twain
	SO_2	SO_2	SO_2	NO_2	NO_2	NO_2
	ppb	ppb	ppb	ppb	ppb	ppb
January	0.05	0.05	0.05	3.50	2.90	3.00
February	0.10	0.30	0.20	3.60	2.90	4.10
March	0.10	0.20	0.20	1.90	1.30	1.70
April	0.10	0.10	0.10	1.70	1.60	2.10
May	0.30	0.30	0.30	1.80	0.70	1.40
June	0.05	0.05	0.10	1.40	0.50	1.30
July	0.20	0.30	0.20	1.90	1.00	1.70
August	0.05	0.20	0.10	1.60	0.70	1.00
September	0.05	0.10	0.10	2.10	1.00	1.10
October	0.10	0.10	0.05	2.30	3.60	2.60
November	0.10	0.20	0.20	2.60	1.90	1.90
December	0.05	0.20	0.20	3.00	2.70	2.60

6.0 Wind Frequency Distribution

To illustrate wind frequency distribution information, distributions of wind speeds, and the frequency of the varying wind directions, we have included a wind rose graphic superimposed on an aerial view of the Newmont mine property.

Wind roses summarize the occurrence of winds at a location, showing their strength, direction and frequency. Each branch of the rose represents wind coming from that direction, with north to the top of the graphic. The branches are divided into segments of different colours, which represent wind speed ranges from that direction. The length of each segment within a branch is proportional to the frequency of winds blowing within the corresponding range of speeds from that direction.

The majority and magnitude of branches in the 2021 wind rose below indicate predominant wind directions from southeast to southwest and from northwest to north. The highest wind speed (28.3 km/hr) was reported from the south. Table 20 summarizes the wind frequency distribution in tabular format.

Figure 14: Wind Frequency Distribution – Wind Rose

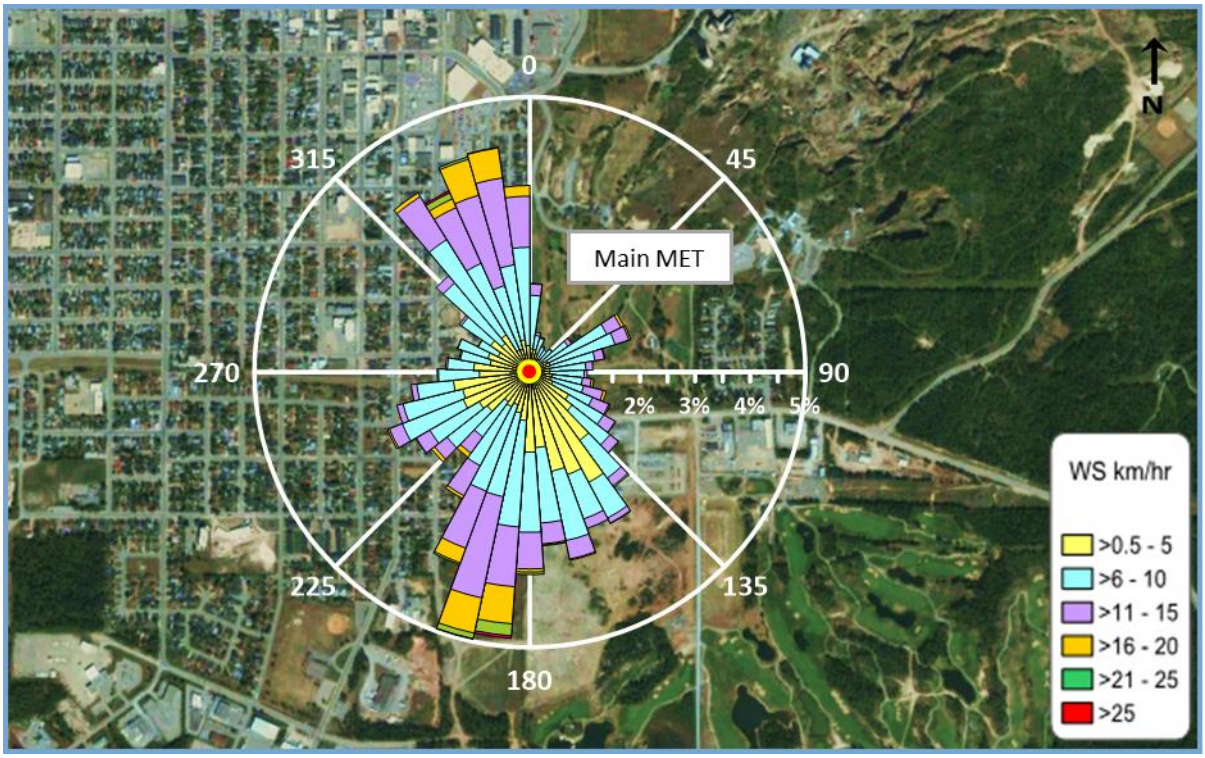


Table 20: Wind Frequency Distribution

Wind Speed Class	0.5 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	> 30	All
	km/hr	km/hr	km/hr	km/hr	km/hr	km/hr	km/hr	
Wind Direction	%	%	%	%	%	%	%	%
N	2.58	5.54	4.26	1.34	0.05	0.00	0.00	13.76
NE	1.67	2.99	0.55	0.10	0.00	0.00	0.00	5.32
E	2.12	4.05	1.05	0.13	0.00	0.00	0.00	7.35
SE	7.43	4.60	1.04	0.03	0.06	0.00	0.00	13.16
S	7.00	8.40	4.82	1.51	0.39	0.06	0.00	22.19
SW	5.20	6.21	2.57	0.46	0.02	0.00	0.00	14.46
W	5.86	3.84	0.31	0.01	0.00	0.00	0.00	10.02
NW	3.84	6.90	2.51	0.34	0.13	0.03	0.00	13.75
All	35.70	42.52	17.12	3.93	0.64	0.09	0.00	100.00

7.0 Valid Data Percentages

Overall, the percentage of continuous valid pollutant data recovery was 98.2% for 2021, exceeding the Ministry's minimum target of 90% and desirable target of 95%. The percent valid data recovery for non-continuous TSP, PM_{10} and Total Dustfall was 99.8%.

7.1 Missing / Invalid Data Summary

Notwithstanding the minimum 90% valid data performance measure, emitters are to notify (as soon as practical) the MECP of any system or equipment failures resulting in missing or invalid data of 24 hours or more in length and of the plans and schedule for repairing the failed system or equipment. Tables 21 and 22 detail problems that resulted in significant data losses along with remedial actions.

Table 21: Invalid Non-continuous Data Summary

Station	Parameter	Start Date	Start Time	End Date	End Time	Description	Corrective Action
			EST		EST		
STN72137	PM_{10}	Jan 22	00:00	Jan 22	23:59	Instrument Malfunction	Non-recoverable
STN72135	TSP	Jun 09	00:00	Jun 09	23:59	Power Failure	Restored Power
STN72135	PM_{10}	Jun 09	00:00	Jun 09	23:59	Power Failure	Restored Power

Table 22: Invalid Continuous Data Summary

Station	Parameter	Start Date	Start Time EST	End Date	End Time EST	Description	Corrective Action
STN72135	TSP	Feb 07	07:00	Feb 08	11:00	Instrument Malfunction	Instrument Repaired
STN72135	PM_{10}	Jun 07	05:00	Jun 10	10:00	Power Failure	Restored Power
STN72135	TSP	Jun 07	05:00	Jun 10	10:00	Power Failure	Restored Power
STN72135	NO, NO_2, NO_X	Jun 07	05:00	Jun 10	10:00	Power Failure	Restored Power
STN72135	PM_{10}	Aug 23	09:00	Aug 25	13:00	Instrument Malfunction	Instrument Reset
STN72135	NO, NO_2, NO_X	Aug 28	04:00	Aug 31	07:00	Temperature Issue	Serviced Sensor
STN72139	PM_{10}	Jan 21	11:00	Jan 25	12:00	Instrument Malfunction	Instrument Replaced
STN72139	PM_{10}	Feb 03	00:00	Feb 04	16:00	Tape Error	Error Cleared
STN72139	PM_{10}	Feb 13	00:00	Feb 17	14:00	Tape Error	Error Cleared
STN72139	PM_{10}	Feb 20	08:00	Feb 22	00:00	Tape Error	Error Cleared
STN72139	NO, NO_2, NO_X	Mar 27	19:00	Mar 30	08:00	Flow Issue	Instrument Repaired
STN72139	PM_{10}	Jul 15	00:00	Jul 20	09:00	Tape Ran Out	Tape Replaced
STN72139	PM_{10}	Oct 01	00:00	Oct 04	08:00	Instrument Malfunction	Instrument Reset
STN72140	TSP	Apr 10	21:00	Apr 12	08:00	Instrument Malfunction	Instrument Reset
STN72140	PM_{10}	May 01	09:00	May 06	09:00	Tape Ran Out	Tape Replaced
STN72140	PM_{10}	Dec 27	08:00	Dec 28	15:00	Instrument Malfunction	Instrument Reset
STN72141	PM_{10}	May 21	09:00	May 22	23:00	Instrument Malfunction	Instrument Reset
STN72141	PM_{10}	May 26	00:00	May 27	13:00	Instrument Malfunction	Instrument Reset
STN72141	PM_{10}	May 30	16:00	Jun 04	12:00	Instrument Malfunction	Removed for Service

8.0 Data Editing

A data validation process to filter out erroneous data is critical to maximize data integrity. Validation can be done using automated or manual procedures. Regardless of the process followed, judgment to accept or reject suspicious or unusual data is required. Many factors need to be considered in this process, which requires regular inspection of all data by experienced staff that have an understanding of local pollutant and climatic conditions as well as knowledge of air monitoring principles and analyzer behaviour.

Data edit logs are submitted with each quarterly report and are retained in a historical data base at Rotek Environmental Inc.

9.0 Exceedance Summary

This report summarizes the continuous and non-continuous monitoring results according to MECP reporting requirements. The continuous and non-continuous data sets are provided in separate appendices to this report.

Continuous 24 hour running averages are calculated from consecutive 1 hour clock averages. When reporting the number of PM_{10} exceedances, there may be multiple consecutive running averages that exceed the AAQC limit of 50 µg/m^3. The Ministry requires that the first hour of the non-conformance period is the reported exceedance value, a second non-conformance cannot occur until 24 hours later. If the non-conformance period lasts more than 24 hours, additional exceedances are reported. In addition to the exceedance value, a minimum and maximum concentration for the non-conformance range are to be reported (Table 23).

A 24 hour clock average is defined as the midnight to midnight average. A 24 hour running average is the average of the current hour and the preceding 23 hours.

During, 2021 there were:

a) 35 exceedances of the continuous PM_{10} 24 hour running average Interim AAQC, 11 at STN72135, 10 at STN72139, 3 at STN72140 and 11 at STN72141.

b) no exceedances of the continuous NO_2 24 hour and 1 hour running average AAQCs or of the ½ hour running average O.Reg 419/05 standard.

c) no exceedances of the non-continuous TSP 24 hour clock AAQC.

d) 1 exceedance of the non-continuous PM_{10} 24 hour clock Interim AAQC, at STN72135.

e) no exceedances of the non-continuous 24 hour clock TSP or PM_{10} Suspended Metals AAQCs, standards or guidelines.

f) no exceedances of the non-continuous annual TSP or PM_{10} Suspended Metals AAQCs or standards.

g) 14 exceedances of the non-continuous 30 day standard for Total Dustfall, 2 at STN72137, 2 at STN72141 and 10 at STN72143.

h) 2 exceedances of the non-continuous annual standard for Total Dustfall, 1 at STN72137 and 1 at STN72143.

Non-continuous exceedances are summarized in Table 23. Continuous exceedance dates, times and values are summarized in Table 24. Exceedances potentially associated with Hollinger Open Pit (HOP) operations are listed in Table 25.

Table 23: Non-continuous Parameter Exceedance Summary

Station	Parameter	Criterion Exceeded	Exceedance Count	Start Date	Start Time	End Date	End Time	Exceedance Value
STN72143	Dustfall	30 Day Standard	1	Feb 01	00:00	Feb 28	23:00	16.00 g/m^2/30d
STN72141	Dustfall	30 Day Standard	1	Mar 01	00:00	Mar 31	23:00	9.80 g/m^2/30d
STN72143	Dustfall	30 Day Standard	1	Mar 01	00:00	Mar 31	23:00	36.00 g/m^2/30d
STN72135	PM_{10}	24 Hr Interim AAQC	1	Mar 17	00:00	Mar 17	23:00	52 µg/m^3
STN72141	Dustfall	30 Day Standard	1	Apr 01	00:00	Apr 30	23:00	7.40 g/m^2/30d
STN72143	Dustfall	30 Day Standard	1	Apr 01	00:00	Apr 30	23:00	25.00 g/m^2/30d
STN72143	Dustfall	30 Day Standard	1	May 01	00:00	May 31	23:00	33.00 g/m^2/30d
STN72137	Dustfall	30 Day Standard	1	Jun 01	00:00	Jun 30	23:00	45.00 g/m^2/30d
STN72143	Dustfall	30 Day Standard	1	Jun 01	00:00	Jun 30	23:00	34.00 g/m^2/30d
STN72143	Dustfall	30 Day Standard	1	Jul 01	00:00	Jul 31	23:00	33.00 g/m^2/30d
STN72137	Dustfall	30 Day Standard	1	Aug 01	00:00	Aug 31	23:00	14.00 g/m^2/30d
STN72143	Dustfall	30 Day Standard	1	Aug 01	00:00	Aug 31	23:00	32.00 g/m^2/30d
STN72143	Dustfall	30 Day Standard	1	Sep 01	00:00	Sep 30	23:00	28.00 g/m^2/30d
STN72143	Dustfall	30 Day Standard	1	Oct 01	00:00	Oct 31	23:00	14.00 g/m^2/30d
STN72143	Dustfall	30 Day Standard	1	Nov 01	00:00	Nov 30	23:00	25.00 g/m^2/30d
STN72137	Dustfall	Annual Standard	1	Jan 01	00:00	Dec 31	23:00	6.16 g/m^2/yr
STN72143	Dustfall	Annual Standard	1	Jan 01	00:00	Dec 31	23:00	23.66 g/m^2/yr

Table 24: Continuous Parameter Exceedance Summary

Station	Parameter	Criterion Exceeded	Start Date	Start Time	End Date	End Time	Exceedance (µg/m³)			Figure Reference
							Value	Min	Max	
STN72141	PM_{10}	24 Hr Interim AAQC	Feb 19	02:00	Feb 20	01:00	54	52	76	15
STN72139	PM_{10}	24 Hr Interim AAQC	Feb 19	07:00	Feb 20	03:00	52	35	59	16
STN72135	PM_{10}	24 Hr Interim AAQC	Feb 19	09:00	Feb 19	10:00	52	44	52	17
STN72135	PM_{10}	24 Hr Interim AAQC	Mar 16	04:00	Mar 16	22:00	53	44	58	18
STN72141	PM_{10}	24 Hr Interim AAQC	Mar 16	04:00	Mar 16	23:00	54	42	64	19
STN72141	PM_{10}	24 Hr Interim AAQC	Mar 17	03:00	Mar 18	02:00	51	51	77	20
STN72141	PM_{10}	24 Hr Interim AAQC	Mar 18	03:00	Mar 18	03:00	57	13	57	20
STN72141	PM_{10}	24 Hr Interim AAQC	Mar 18	23:00	Mar 19	22:00	70	70	204	21
STN72141	PM_{10}	24 Hr Interim AAQC	Mar 19	23:00	Mar 20	04:00	147	41	147	21
STN72135	PM_{10}	24 Hr Interim AAQC	Mar 19	00:00	Mar 19	23:00	53	53	86	22
STN72135	PM_{10}	24 Hr Interim AAQC	Mar 20	00:00	Mar 20	00:00	52	42	52	22
STN72135	PM_{10}	24 Hr Interim AAQC	Mar 20	04:00	Mar 20	07:00	51	35	53	22

Table 25: Continuous Parameter Exceedance Summary – Continued

Station	Parameter	Criterion Exceeded	Start Date	Start Time	End Date	End Time	Exceedance (µg/m³)			Figure Reference
							Value	Min	Max	
STN72141	PM_{10}	24 Hr Interim AAQC	Apr 01	07:00	Apr 01	20:00	51	28	82	23
STN72141	PM_{10}	24 Hr Interim AAQC	Apr 02	03:00	Apr 03	02:00	63	63	88	24
STN72141	PM_{10}	24 Hr Interim AAQC	Apr 03	03:00	Apr 03	03:00	55	29	55	24
STN72140	PM_{10}	24 Hr Interim AAQC	Apr 02	03:00	Apr 03	00:00	51	40	72	25
STN72135	PM_{10}	24 Hr Interim AAQC	Apr 02	06:00	Apr 03	04:00	61	50	77	26
STN72135	PM_{10}	24 Hr Interim AAQC	Jul 25	17:00	Jul 26	16:00	57	57	109	27
STN72135	PM_{10}	24 Hr Interim AAQC	Jul 26	17:00	Jul 26	18:00	70	4	70	27
STN72139	PM_{10}	24 Hr Interim AAQC	Jul 25	17:00	Jul 26	16:00	52	52	116	28
STN72139	PM_{10}	24 Hr Interim AAQC	Jul 26	17:00	Jul 26	18:00	76	7	76	28
STN72140	PM_{10}	24 Hr Interim AAQC	Jul 25	18:00	Jul 26	16:00	51	48	79	29
STN72141	PM_{10}	24 Hr Interim AAQC	Jul 25	19:00	Jul 26	17:00	55	41	76	30
STN72139	PM_{10}	24 Hr Interim AAQC	Aug 05	02:00	Aug 06	01:00	51	51	63	31
STN72139	PM_{10}	24 Hr Interim AAQC	Aug 06	02:00	Aug 06	02:00	54	Invalid	Invalid	31
STN72135	PM_{10}	24 Hr Interim AAQC	Aug 05	03:00	Aug 06	02:00	51	51	67	32
STN72135	PM_{10}	24 Hr Interim AAQC	Aug 06	03:00	Aug 06	09:00	56	18	56	32
STN72140	PM_{10}	24 Hr Interim AAQC	Aug 05	15:00	Aug 05	21:00	51	33	53	33
STN72139	PM_{10}	24 Hr Interim AAQC	Sep 17	15:00	Sep 18	14:00	53	53	105	34
STN72139	PM_{10}	24 Hr Interim AAQC	Sep 18	15:00	Sep 19	14:00	79	57	87	34
STN72139	PM_{10}	24 Hr Interim AAQC	Sep 19	15:00	Sep 19	16:00	53	53	56	34
STN72141	PM_{10}	24 Hr Interim AAQC	Nov 22	12:00	Nov 23	04:00	52	31	68	35
STN72135	PM_{10}	24 Hr Interim AAQC	Nov 22	20:00	Nov 23	02:00	52	24	56	36
STN72139	PM_{10}	24 Hr Interim AAQC	Nov 26	02:00	Nov 26	18:00	51	30	65	37
STN72139	PM_{10}	24 Hr Interim AAQC	Dec 06	12:00	Dec 07	05:00	51	43	75	38

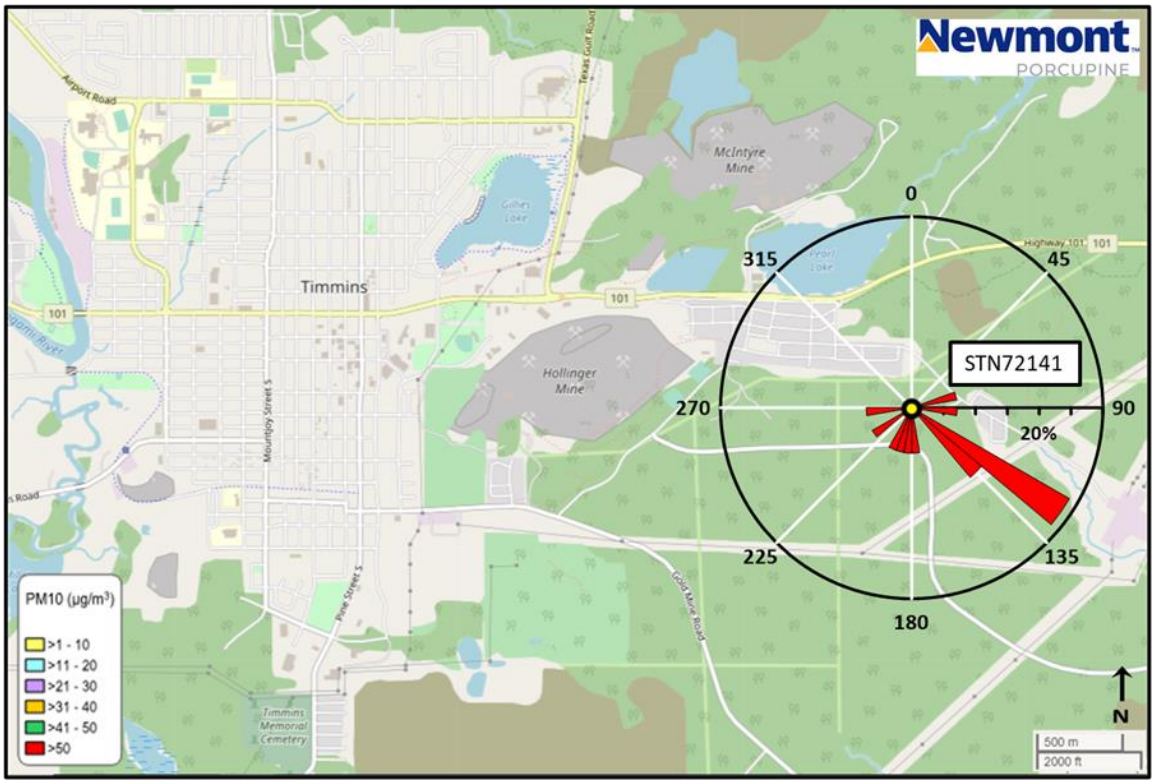
Table 26: Source Contribution Assessment of Exceedances

Station	Parameter	Criterion Exceeded	Date	Exceedance Value	Potential Cause / Comments
STN72141	PM_{10}	24 Hr Interim AAQC	Feb 19	54 µg/m^3	Offsite roads and possible haul road operations.
STN72139	PM_{10}	24 Hr Interim AAQC	Feb 19	52 µg/m^3	Offsite roads and possible HOP operations.
STN72135	PM_{10}	24 Hr Interim AAQC	Feb 19	52 µg/m^3	Offsite roads and possible HOP operations.
STN72135	PM_{10}	24 Hr Interim AAQC	Mar 16	53 µg/m^3	Offsite roads and possible HOP operations.

Table 27: Source Contribution Assessment of Exceedances - Continued

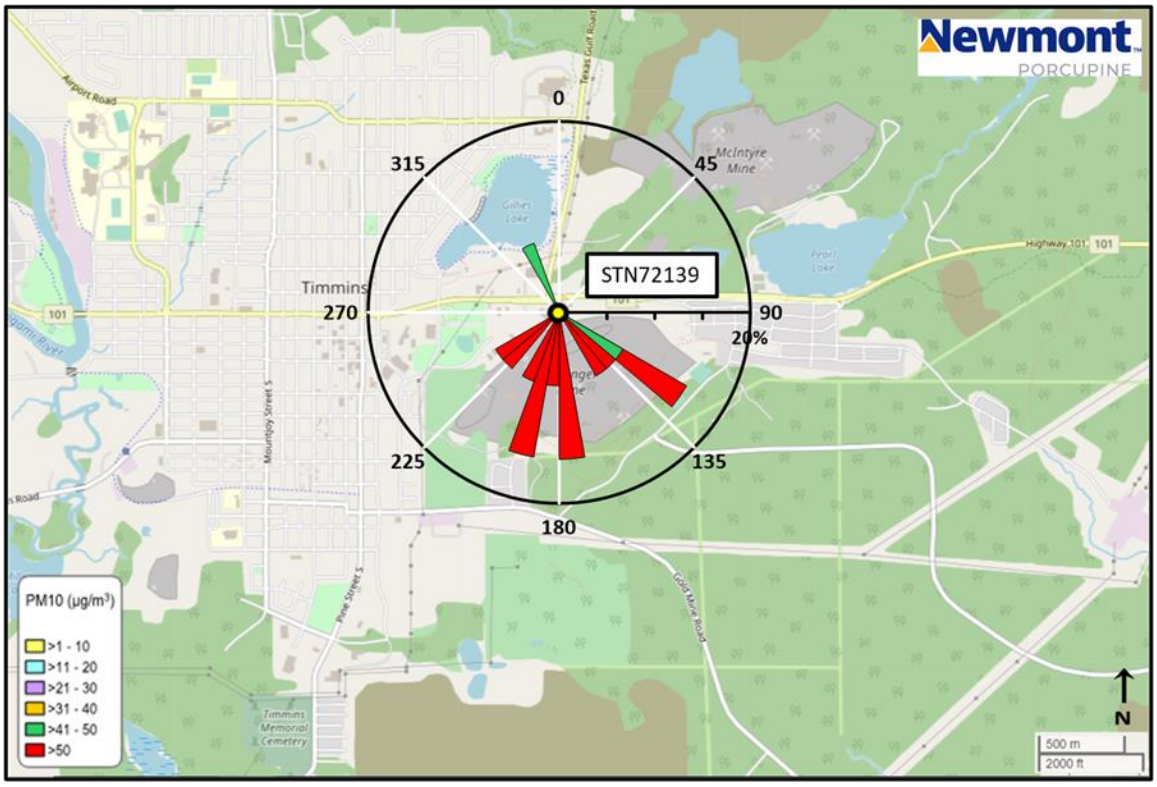
Station	Parameter	Criterion Exceeded	Date	Exceedance Value	Potential Cause / Comments
STN72141	PM_{10}	24 Hr Interim AAQC	Mar 16	54 µg/m^3	Offsite roads and possible haul road operations.
STN72141	PM_{10}	24 Hr Interim AAQC	Mar 17	51 µg/m^3	Offsite roads and possible haul road operations.
STN72141	PM_{10}	24 Hr Interim AAQC	Mar 18	57 µg/m^3	Offsite roads and possible haul road operations.
STN72141	PM_{10}	24 Hr Interim AAQC	Mar 18	70 µg/m^3	Offsite roads and possible haul road operations.
STN72141	PM_{10}	24 Hr Interim AAQC	Mar 19	147 µg/m^3	Offsite roads and possible haul road operations.
STN72135	PM_{10}	24 Hr Interim AAQC	Mar 19	53 µg/m^3	Offsite roads and possible HOP operations.
STN72135	PM_{10}	24 Hr Interim AAQC	Mar 20	52 µg/m^3	Offsite roads and possible HOP operations.
STN72135	PM_{10}	24 Hr Interim AAQC	Mar 20	51 µg/m^3	Offsite roads and possible HOP operations.
STN72141	PM_{10}	24 Hr Interim AAQC	Apr 01	51 µg/m^3	Offsite roads and possible haul road operations.
STN72141	PM_{10}	24 Hr Interim AAQC	Apr 02	63 µg/m^3	Offsite roads and possible haul road operations.
STN72141	PM_{10}	24 Hr Interim AAQC	Apr 03	55 µg/m^3	Offsite roads and possible haul road operations.
STN72140	PM_{10}	24 Hr Interim AAQC	Apr 02	51 µg/m^3	Offsite roads and possible HOP operations.
STN72135	PM_{10}	24 Hr Interim AAQC	Apr 02	61 µg/m^3	Offsite roads and possible HOP operations.
STN72135	PM_{10}	24 Hr Interim AAQC	Jul 25	57 µg/m³	HOP operations, offsite roads, possible wildfire activity.
STN72139	PM_{10}	24 Hr Interim AAQC	Jul 25	52 µg/m³	Offsite roads, possible HOP operations, possible wildfire activity.
STN72140	PM_{10}	24 Hr Interim AAQC	Jul 25	51 µg/m³	Offsite roads, possible HOP operations, possible wildfire activity.
STN72141	PM_{10}	24 Hr Interim AAQC	Jul 25	55 µg/m³	Offsite roads, haul roads, possible HOP operations, possible wildfire activity.
STN72139	PM_{10}	24 Hr Interim AAQC	Aug 05	51 µg/m³	HOP operations, possible wildfire activity.
STN72135	PM_{10}	24 Hr Interim AAQC	Aug 05	51 µg/m³	Haul roads, possible HOP operations, possible wildfire activity.
STN72140	PM_{10}	24 Hr Interim AAQC	Aug 05	51 µg/m³	Haul roads, offsite roads, possible wildfire activity.
STN72139	PM_{10}	24 Hr Interim AAQC	Sep 17	53 µg/m³	HOP operations, offsite roads, possible wildfire activity.
STN72141	PM_{10}	24 Hr Interim AAQC	Nov 22	52 µg/m³	HOP operations, haul roads.
STN72135	PM_{10}	24 Hr Interim AAQC	Nov 22	52 µg/m³	HOP operations, offsite roads.
STN72139	PM_{10}	24 Hr Interim AAQC	Nov 26	51 µg/m³	Offsite roads.
STN72139	PM_{10}	24 Hr Interim AAQC	Dec 06	51 µg/m³	Offsite roads, possible HOP operations.

Figure 15: PM_{10} Pollution Rose - STN72141 February 19th – 20th



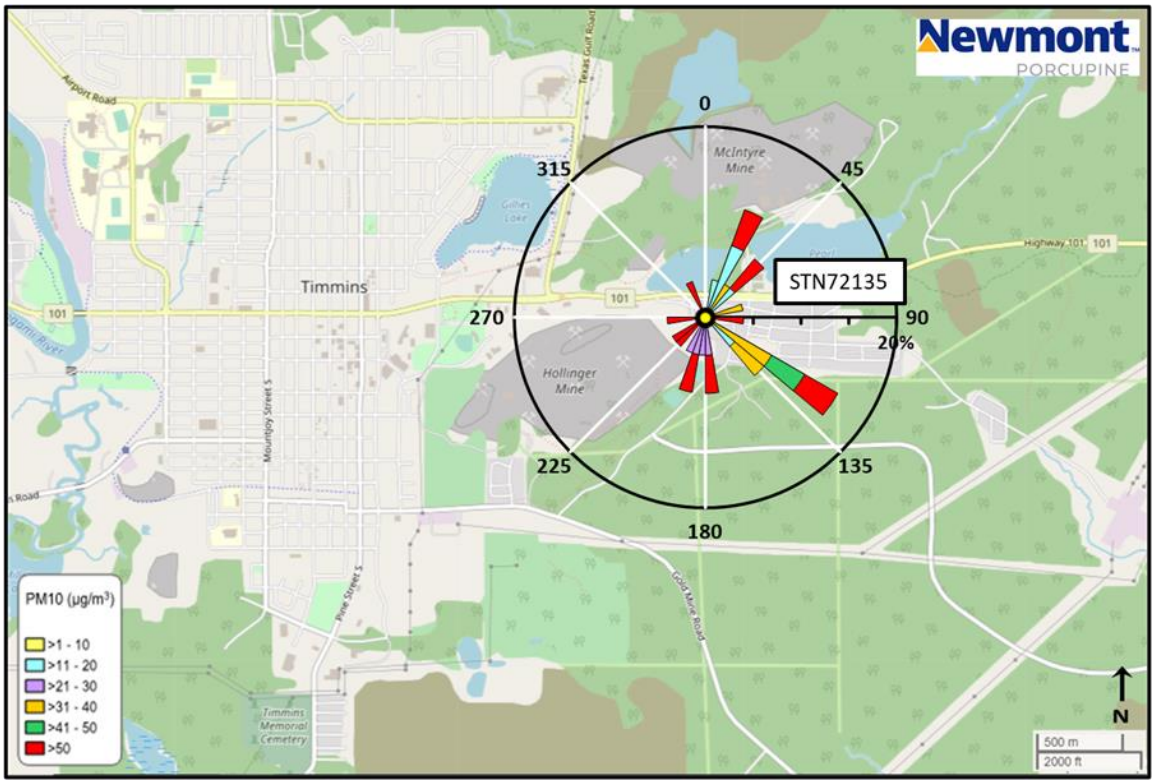
Exceedance is due to inhalable particulate (PM_{10}) levels from off-site roads and possible haul road operations. Wind speeds ranged from 1.4 to 2.0 km/h.

Figure 16: PM_{10} Pollution Rose - STN72139 February 19th – 20th



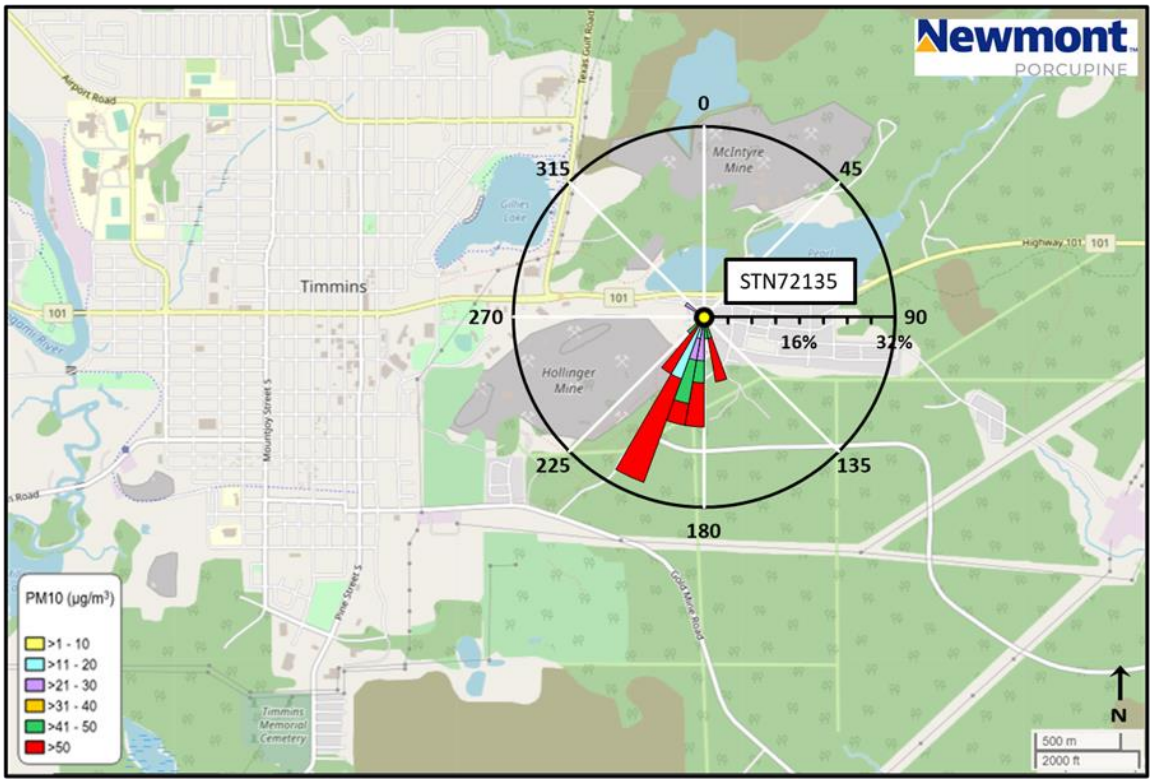
Exceedance is due to inhalable particulate (PM_{10}) levels from off-site roads and possible HOP operations. Wind speeds ranged from 1.4 to 2.4 km/h.

Figure 17: PM_{10} Pollution Rose - STN72135 February 19th



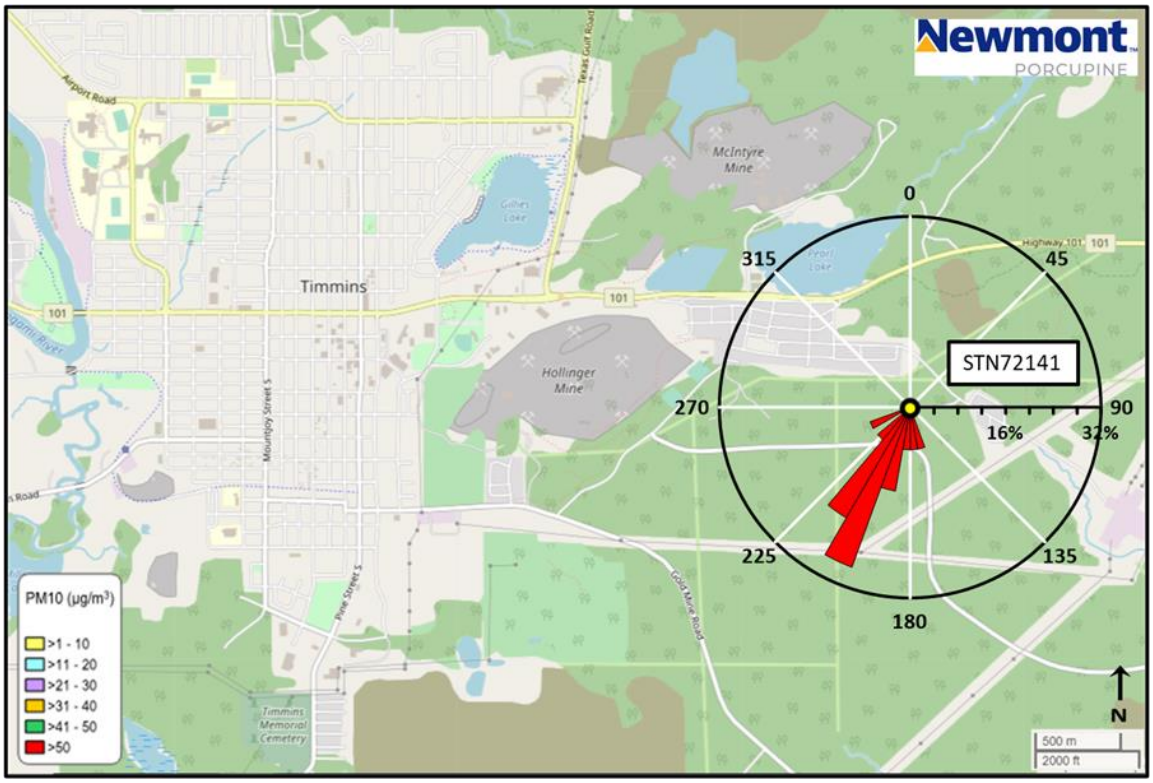
Exceedance is due to inhalable particulate (PM_{10}) levels from off-site roads and possible HOP operations. Wind speeds ranged from 1.4 to 4.4 km/h.

Figure 18: PM_{10} Pollution Rose - STN72135 March 16th



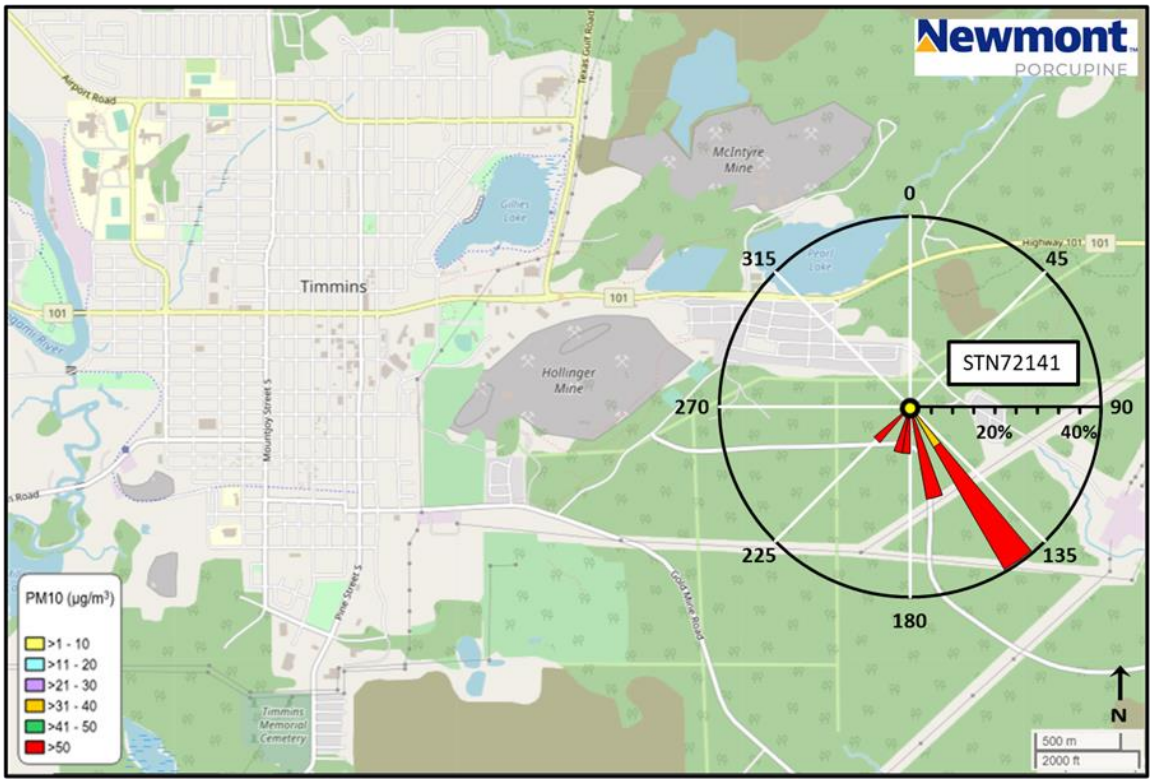
Exceedance is due to inhalable particulate (PM_{10}) levels from off-site roads and possible HOP operations. Wind speeds ranged from 2.3 to 9.5 km/h.

Figure 19: PM_{10} Pollution Rose - STN72141 March 16th



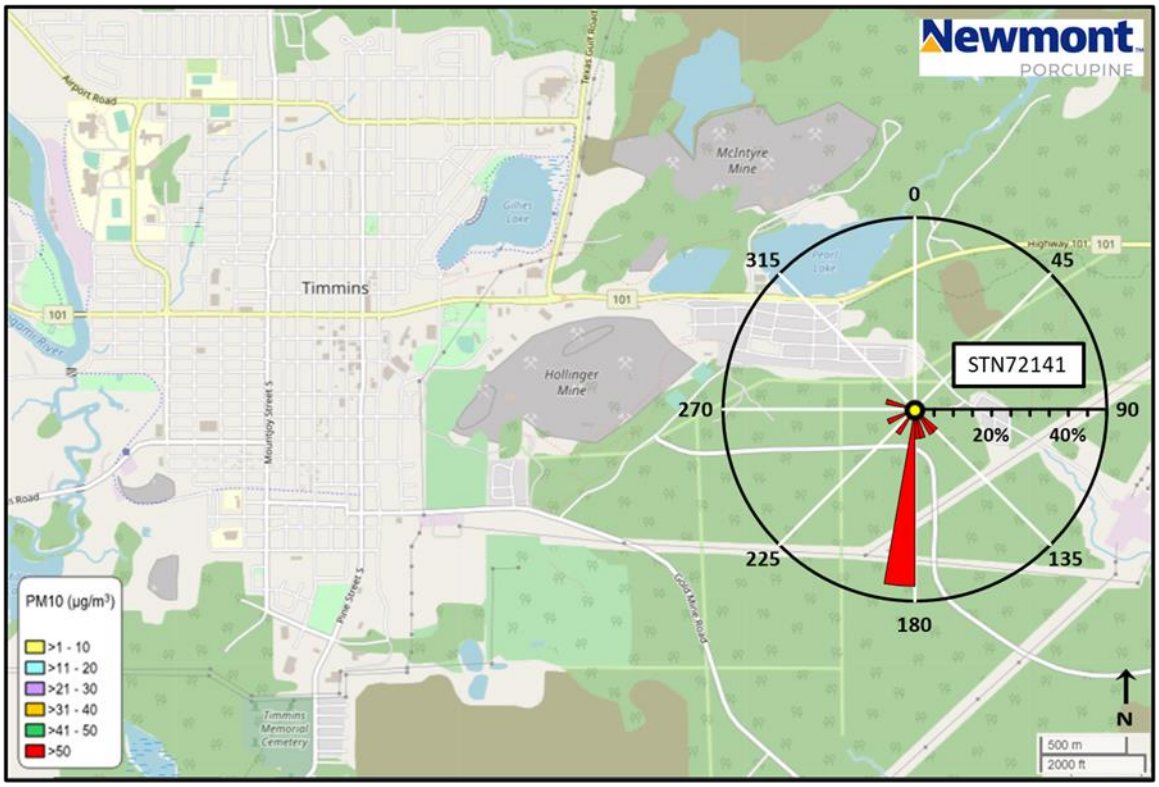
Exceedance is due to inhalable particulate (PM_{10}) levels from off-site roads and possible haul road operations. Wind speeds ranged from 3.9 to 9.5 km/h.

Figure 20: PM_{10} Pollution Rose - STN72141 March 17th – 18th



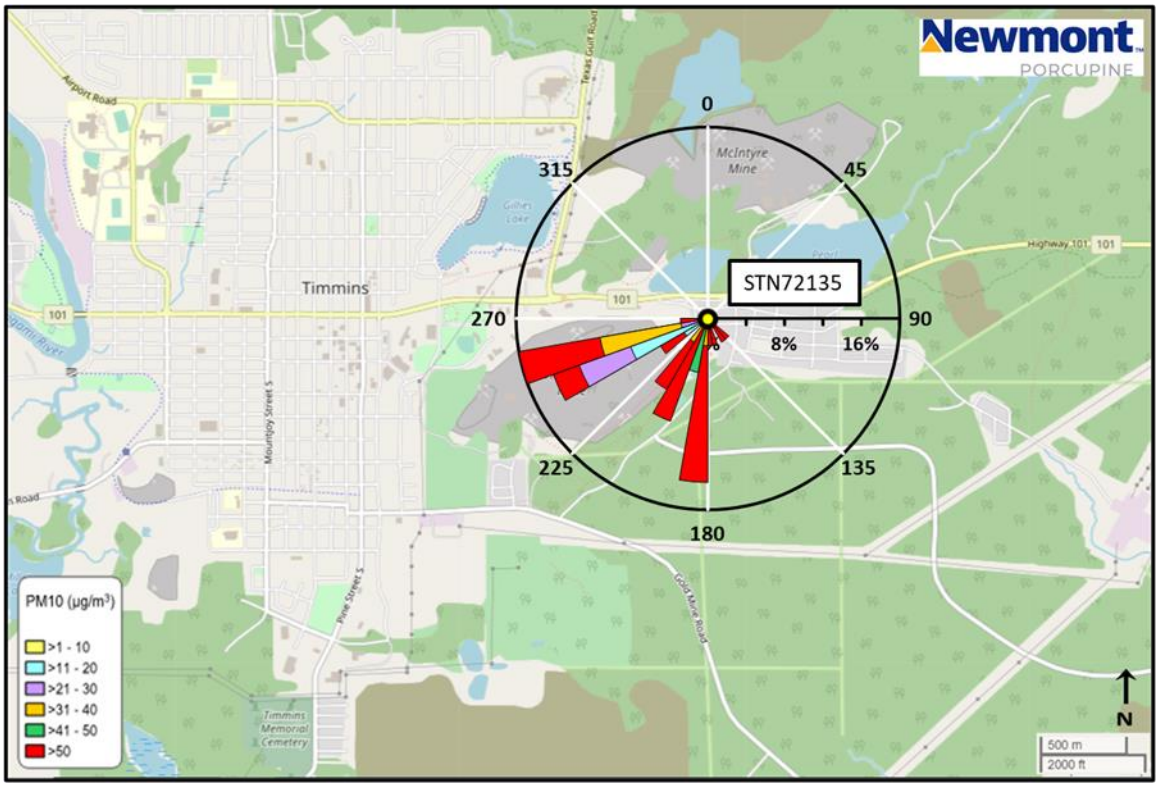
Exceedance is due to inhalable particulate (PM_{10}) levels from off-site roads and possible haul road operations. Wind speeds ranged from 1.7 to 4.5 km/h.

Figure 21: PM_{10} Pollution Rose - STN72141 March 18th – 20th



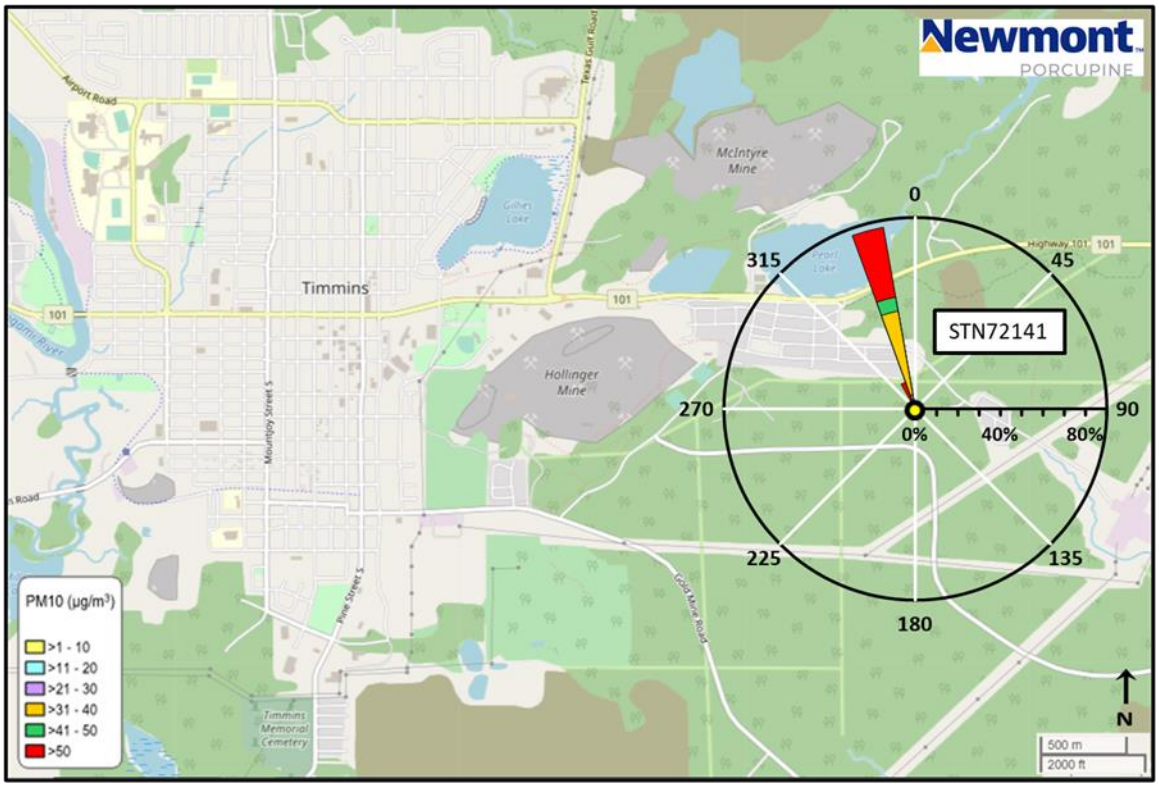
Exceedance is due to inhalable particulate (PM_{10}) levels from off-site roads and possible haul road operations. Wind speeds ranged from 1.5 to 9.2 km/h.

Figure 22: PM_{10} Pollution Rose - STN72135 March 19th – 20th



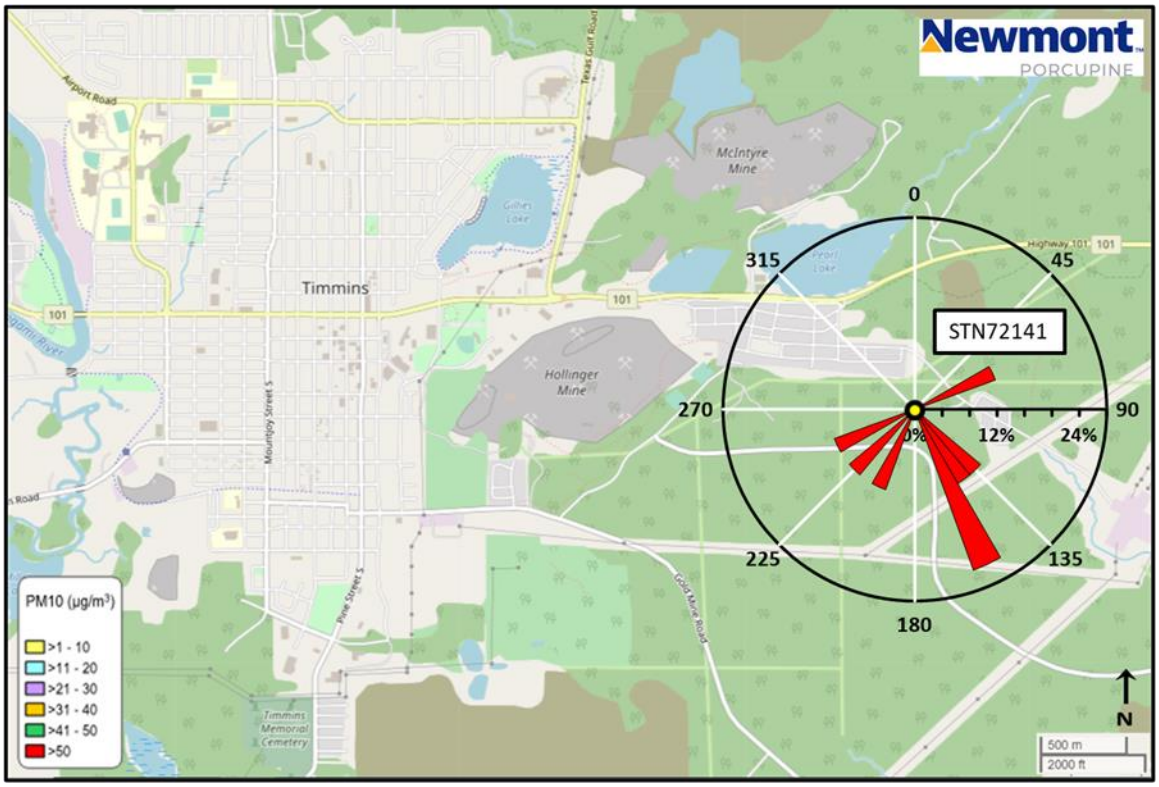
Exceedance is due to inhalable particulate (PM_{10}) levels from off-site roads and possible HOP operations. Wind speeds ranged from 2.0 to 11.3 km/h.

Figure 23: PM_{10} Pollution Rose - STN72141 April 1st



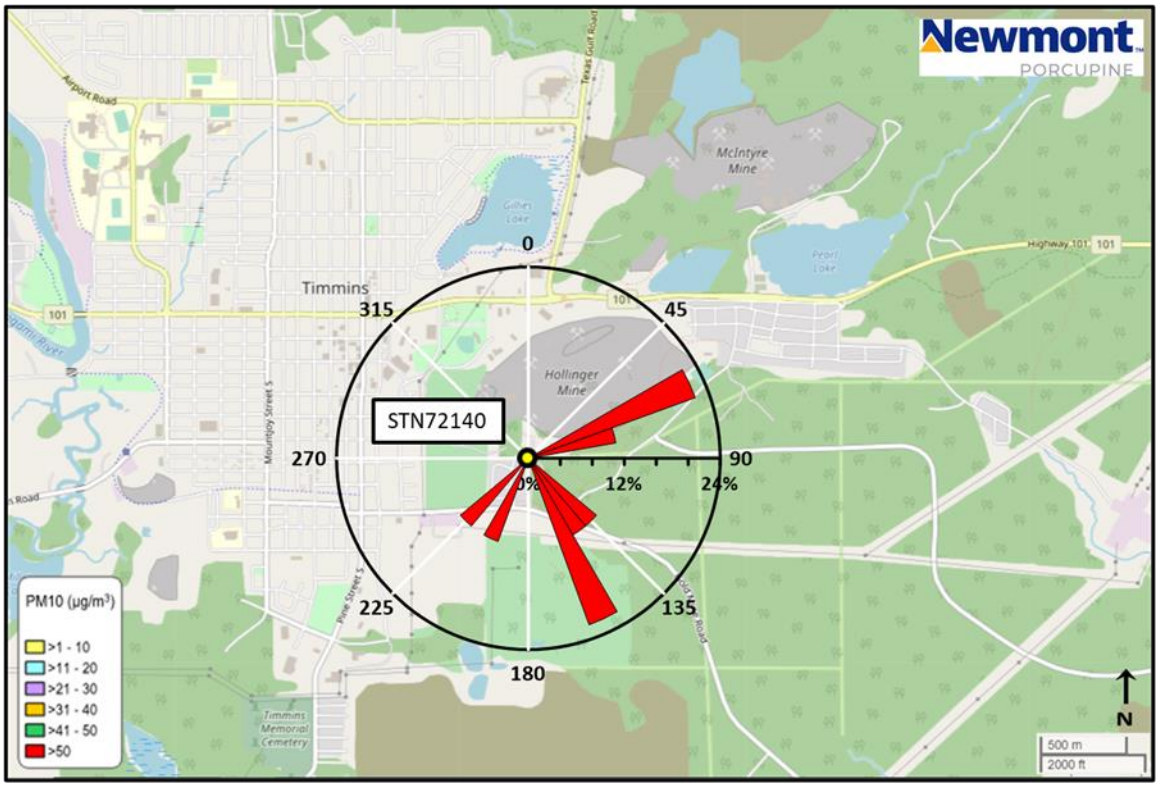
Exceedance is due to inhalable particulate (PM_{10}) levels from off-site roads and possible haul road operations. Wind speeds ranged from 10.4 to 19.5 km/h.

Figure 24: PM_{10} Pollution Rose - STN72141 April 2nd – April 3rd



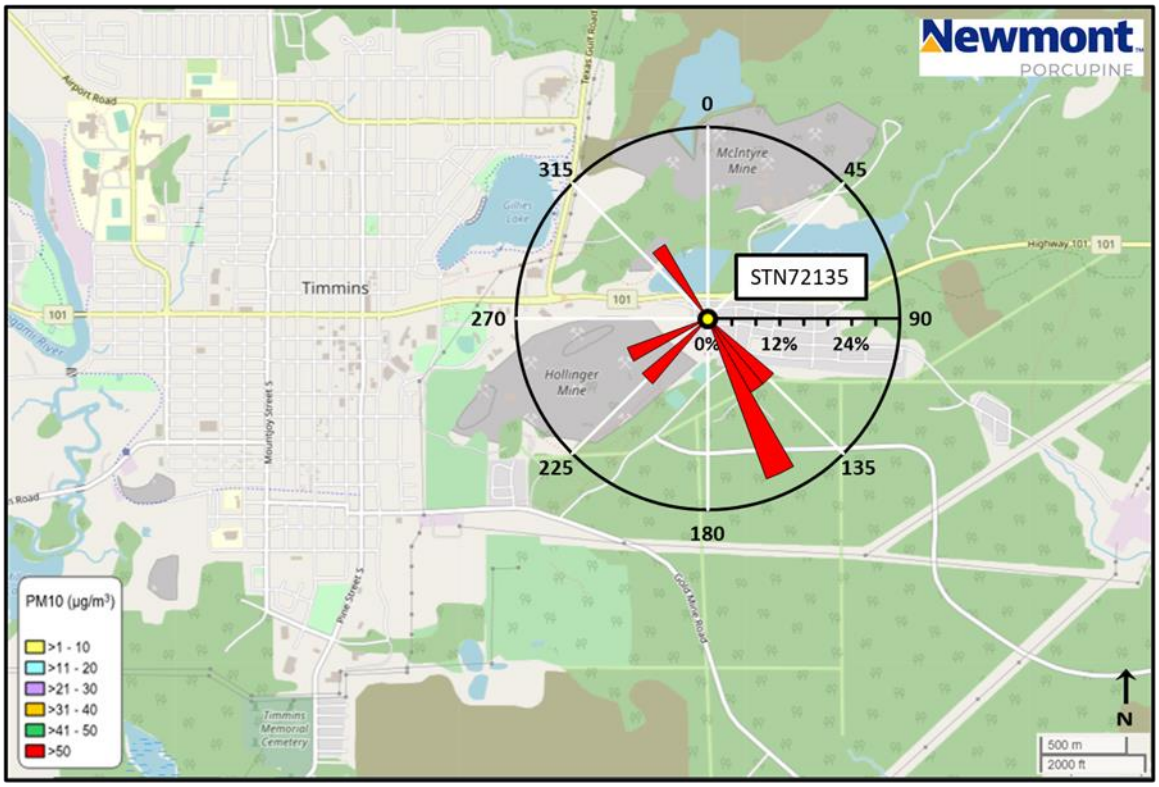
Exceedance is due to inhalable particulate (PM_{10}) levels from off-site roads and possible haul road operations. Wind speeds ranged from 1.0 to 3.1 km/h.

Figure 25: PM_{10} Pollution Rose - STN72140 April 2nd



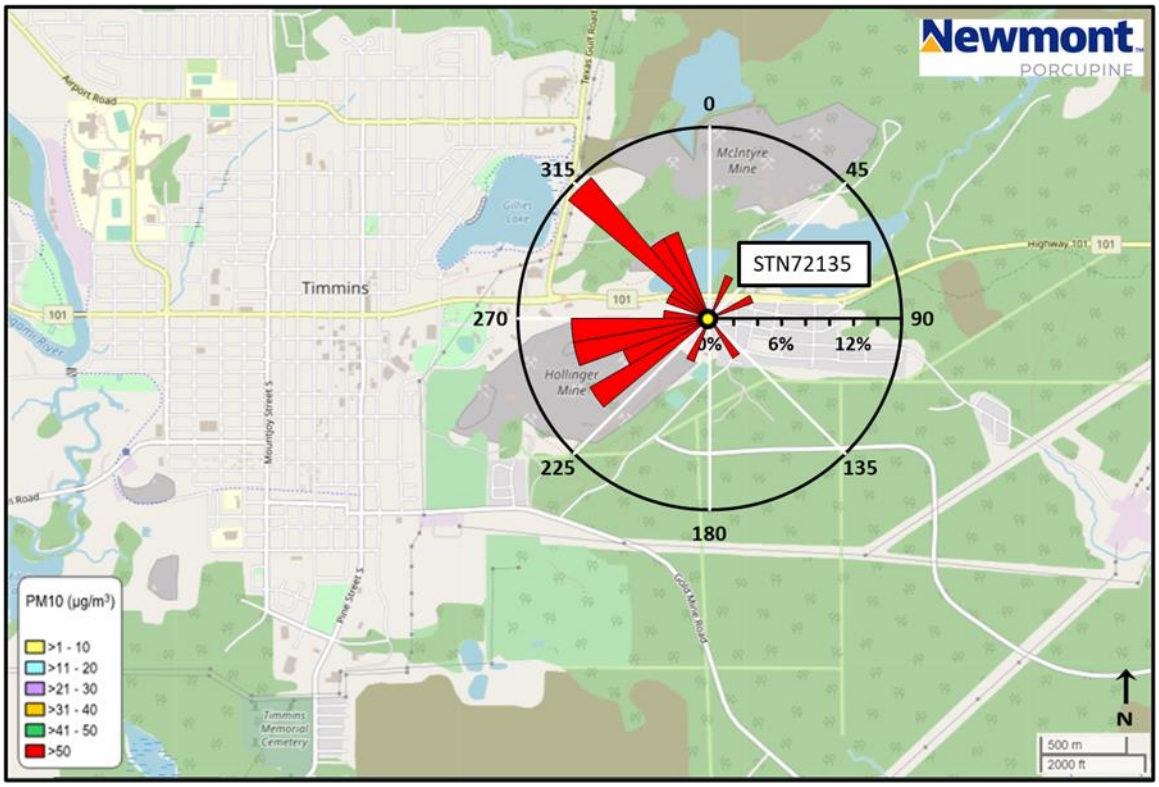
Exceedance is due to inhalable particulate (PM_{10}) levels from off-site roads and possible HOP operations. Wind speeds ranged from 1.0 to 6.6 km/h.

Figure 26: PM_{10} Pollution Rose - STN72135 April 2nd



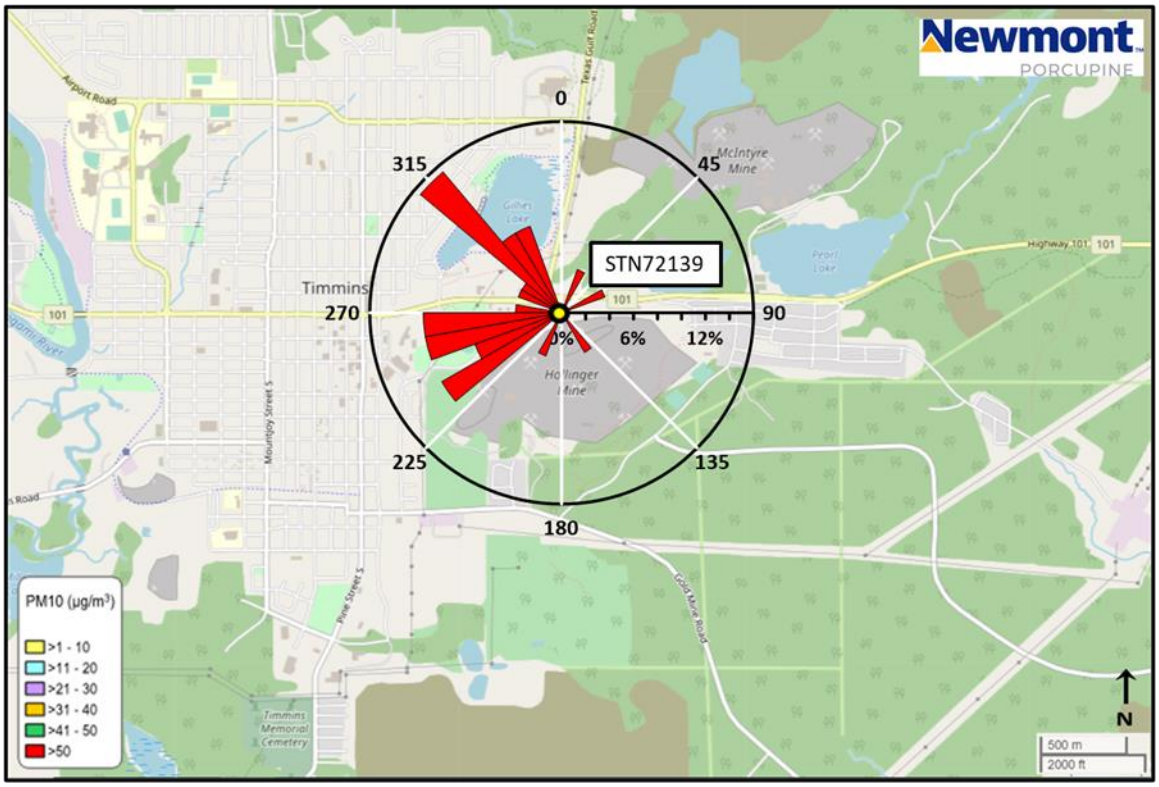
Exceedance is due to inhalable particulate (PM_{10}) levels from off-site roads and possible HOP operations. Wind speeds ranged from 1.0 to 4.3 km/h.

Figure 27: PM_{10} Pollution Rose - STN72135 July 25th – July 26th



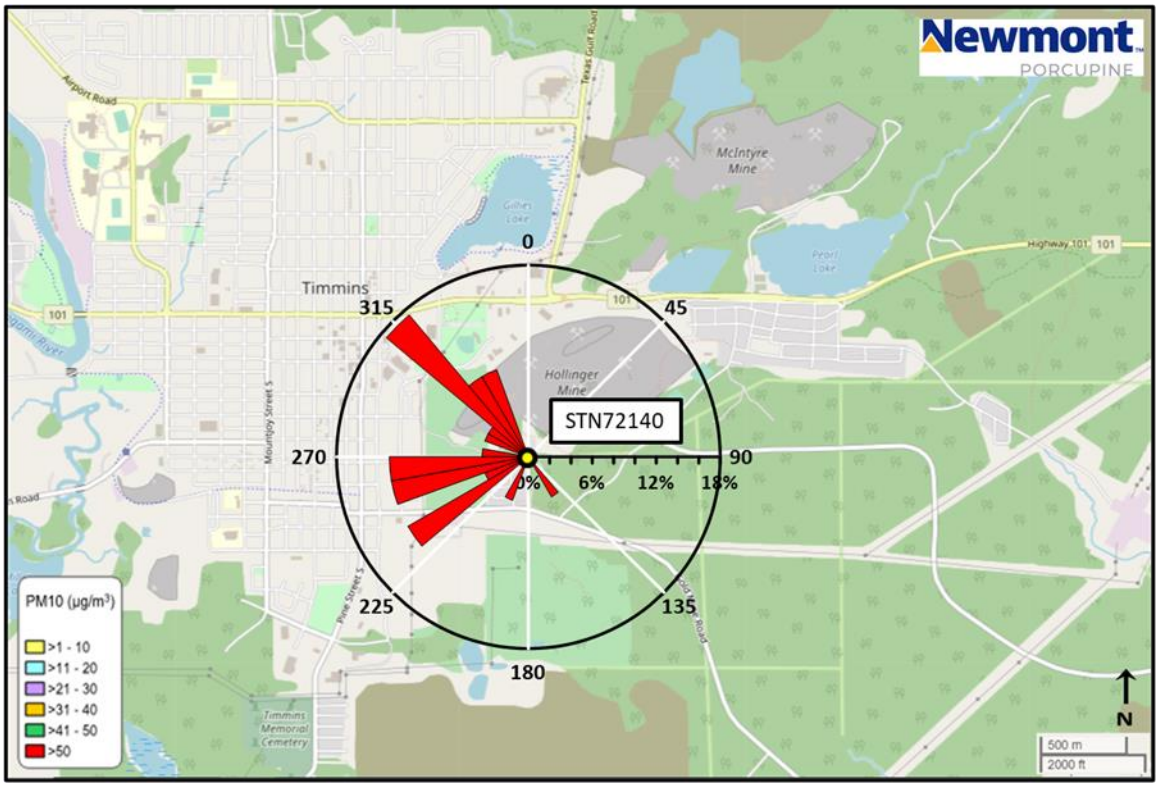
Exceedance is due to inhalable particulate (PM_{10}) levels from HOP operations, off-site roads. Contributions from wildfire activity in northwestern Ontario, Manitoba and northern Saskatchewan cannot be ruled out. Wind speeds ranged from 1.9 to 9.4 km/h.

Figure 28: PM_{10} Pollution Rose - STN72139 July 25th – July 26th



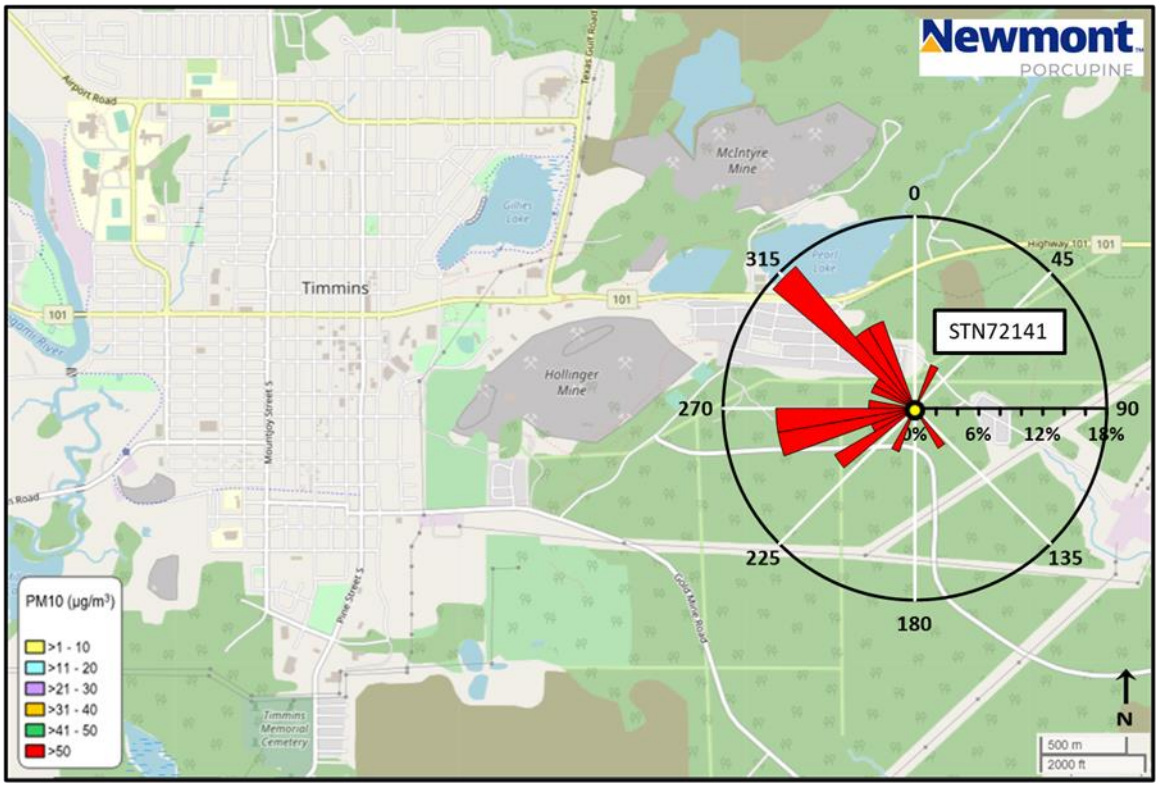
Exceedance is due to inhalable particulate (PM_{10}) levels from off-site roads and possible HOP operations. Contributions from wildfire activity in northwestern Ontario, Manitoba and northern Saskatchewan cannot be ruled out. Wind speeds ranged from 1.9 to 9.4 km/h.

Figure 29: PM_{10} Pollution Rose - STN72140 July 25th – July 26th



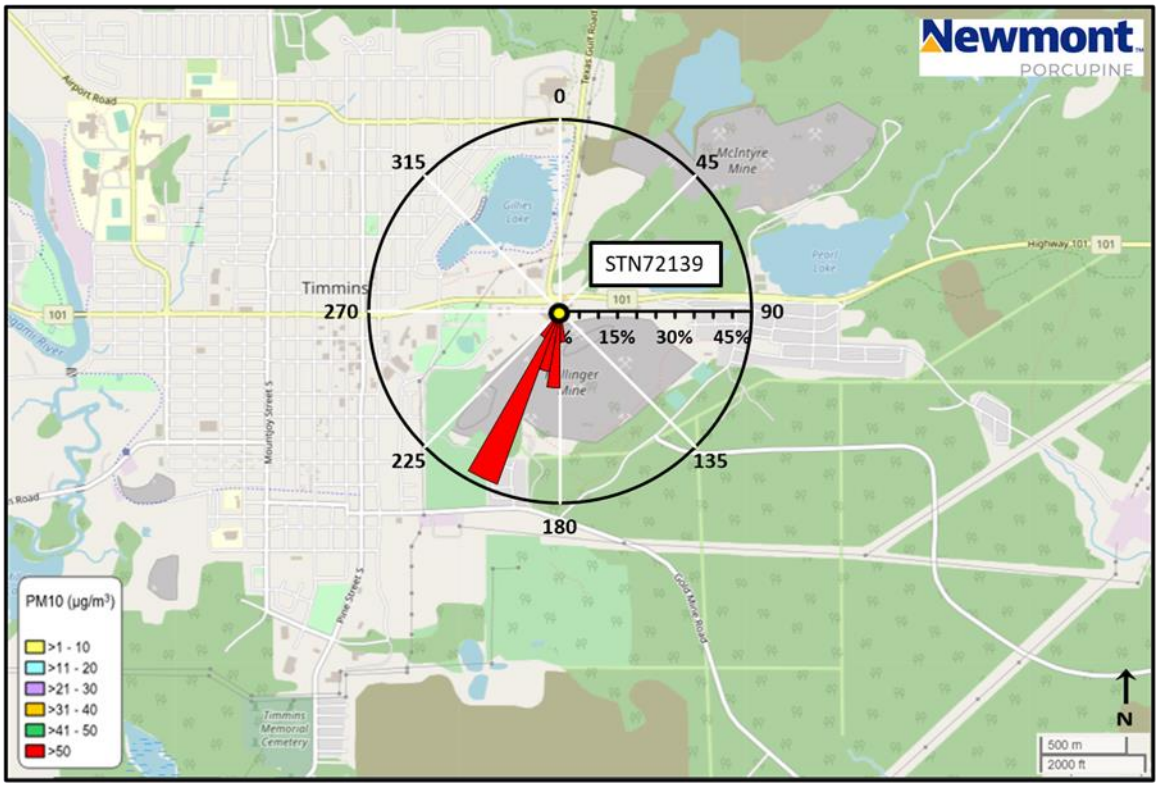
Exceedance is due to inhalable particulate (PM_{10}) levels from off-site roads and possible HOP operations. Contributions from wildfire activity in northwestern Ontario, Manitoba and northern Saskatchewan cannot be ruled out. Wind speeds ranged from 1.9 to 9.4 km/h.

Figure 30: PM_{10} Pollution Rose - STN72141 July 25th – July 26th



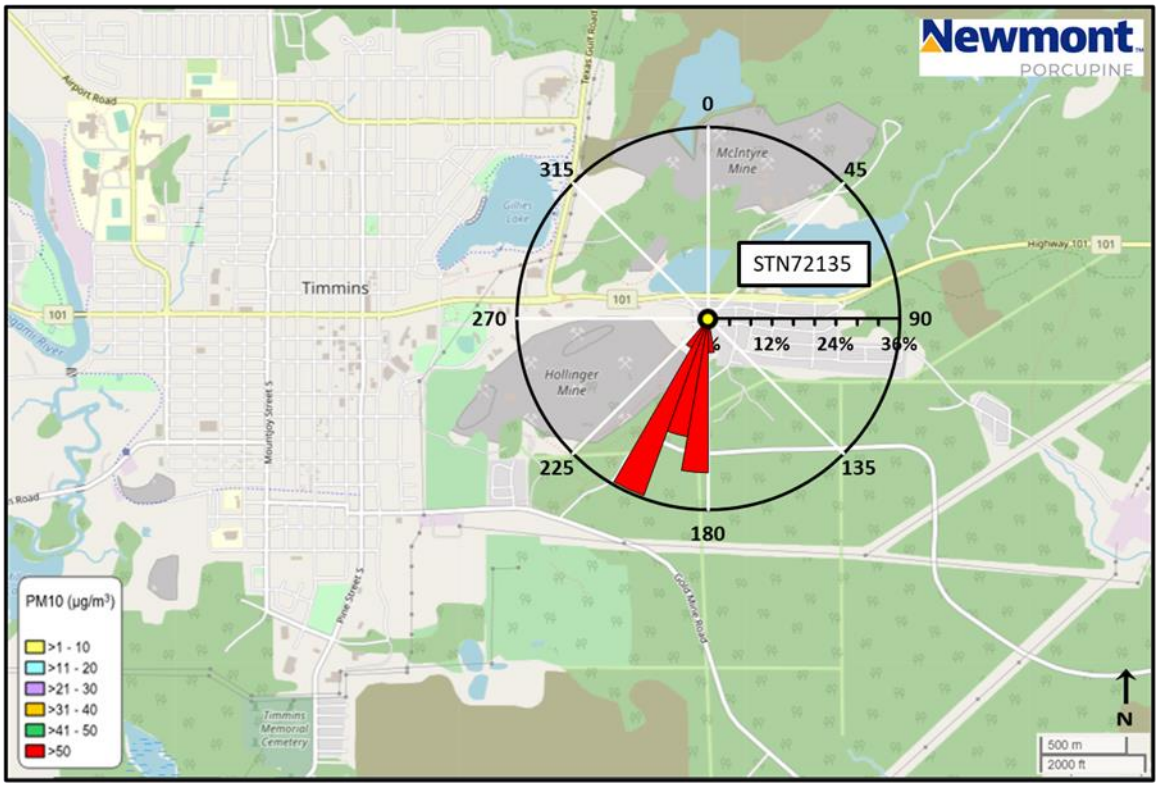
Exceedance is due to inhalable particulate (PM_{10}) levels from off-site roads, haul roads and possible HOP operations. Contributions from wildfire activity in northwestern Ontario, Manitoba and northern Saskatchewan cannot be ruled out. Wind speeds ranged from 1.9 to 9.4 km/h.

Figure 31: PM_{10} Pollution Rose - STN72139 August 5th – August 6th



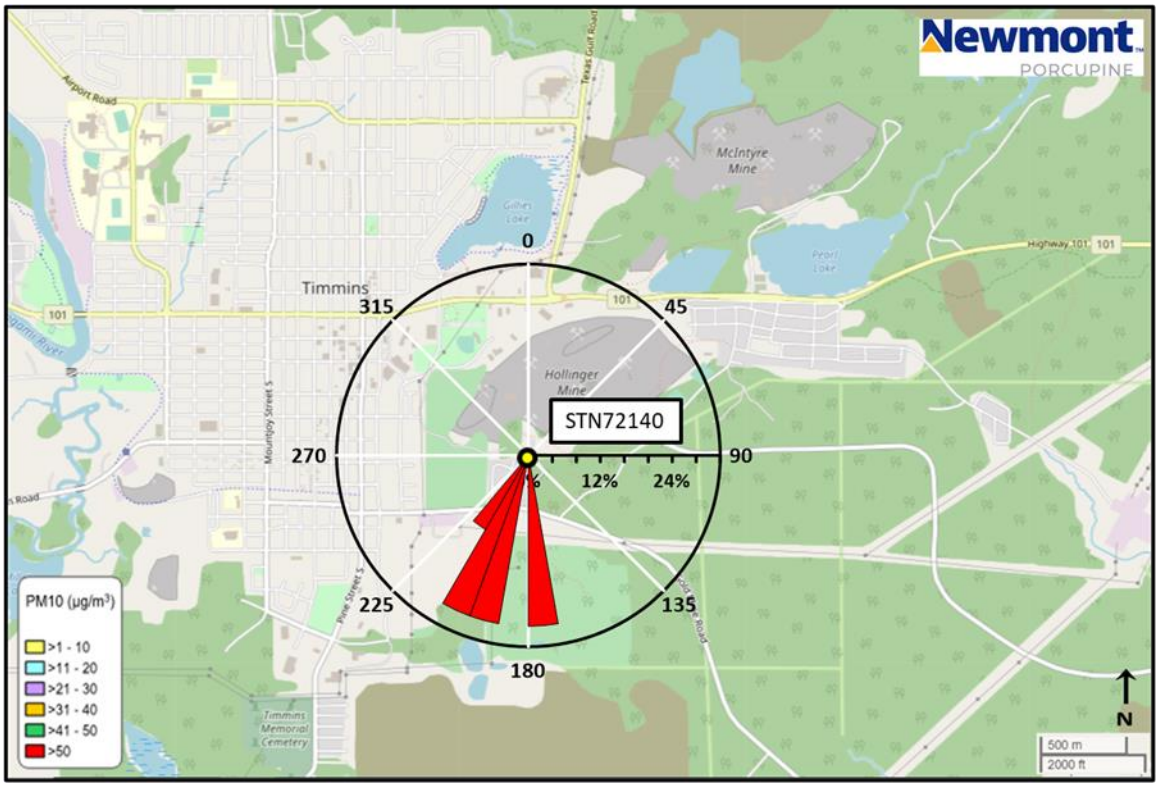
Exceedance is due to inhalable particulate (PM_{10}) levels from HOP operations. Contributions from wildfire activity in western Ontario, Manitoba and Saskatchewan cannot be ruled out. Wind speeds ranged from 2.9 to 11.5 km/h.

Figure 32: PM_{10} Pollution Rose - STN72135 August 5th – August 6th



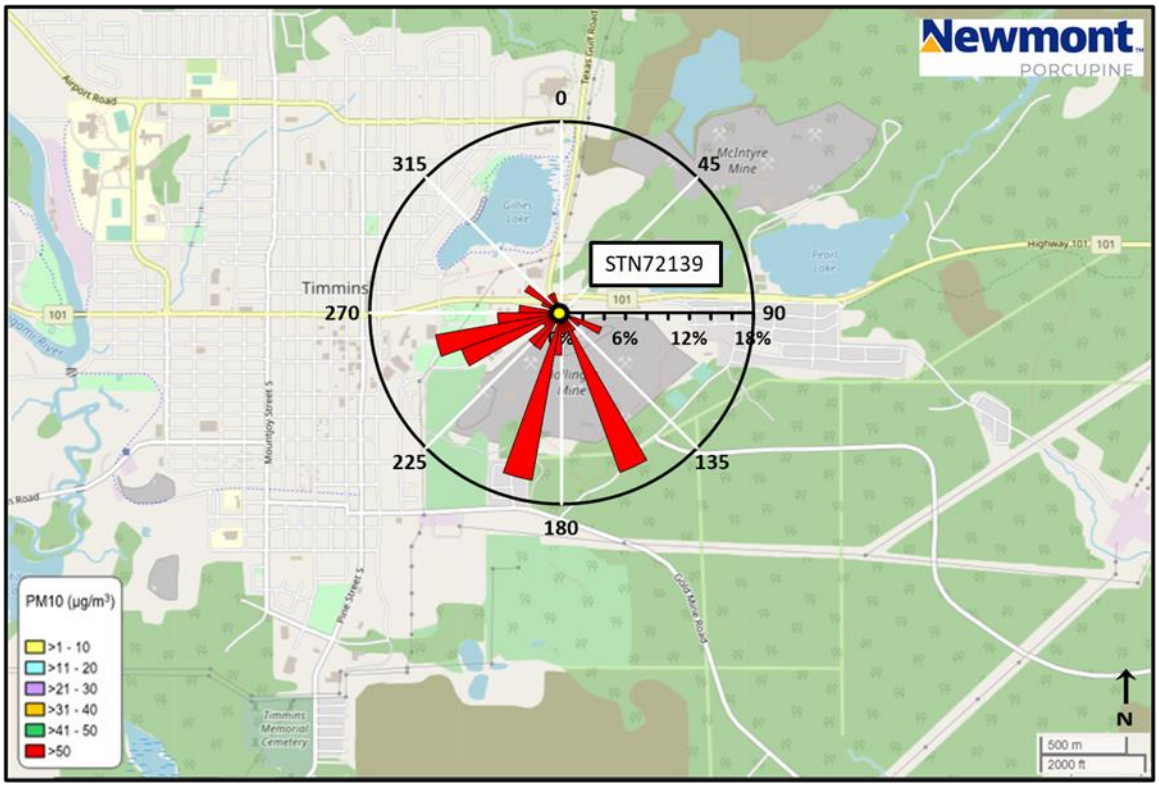
Exceedance is due to inhalable particulate (PM_{10}) levels from haul roads and possible HOP operations. Contributions from wildfire activity in western Ontario, Manitoba and Saskatchewan cannot be ruled out. Wind speeds ranged from 2.9 to 13.7 km/h.

Figure 33: PM_{10} Pollution Rose - STN72140 August 5th



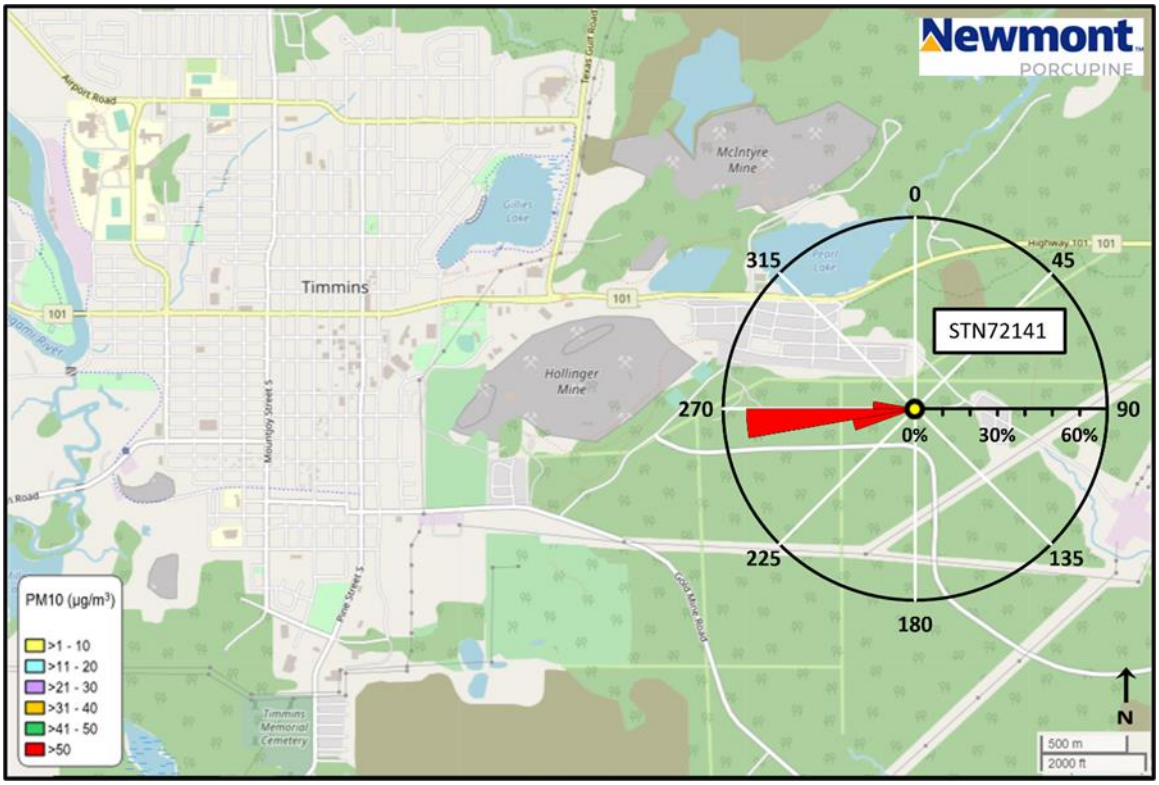
Exceedance is due to inhalable particulate (PM_{10}) levels from haul roads and possible offsite roads. Contributions from wildfire activity in western Ontario, Manitoba and Saskatchewan cannot be ruled out. Wind speeds ranged from 2.9 to 10.6 km/h.

Figure 34: PM_{10} Pollution Rose - STN72139 September 17th – September 19th



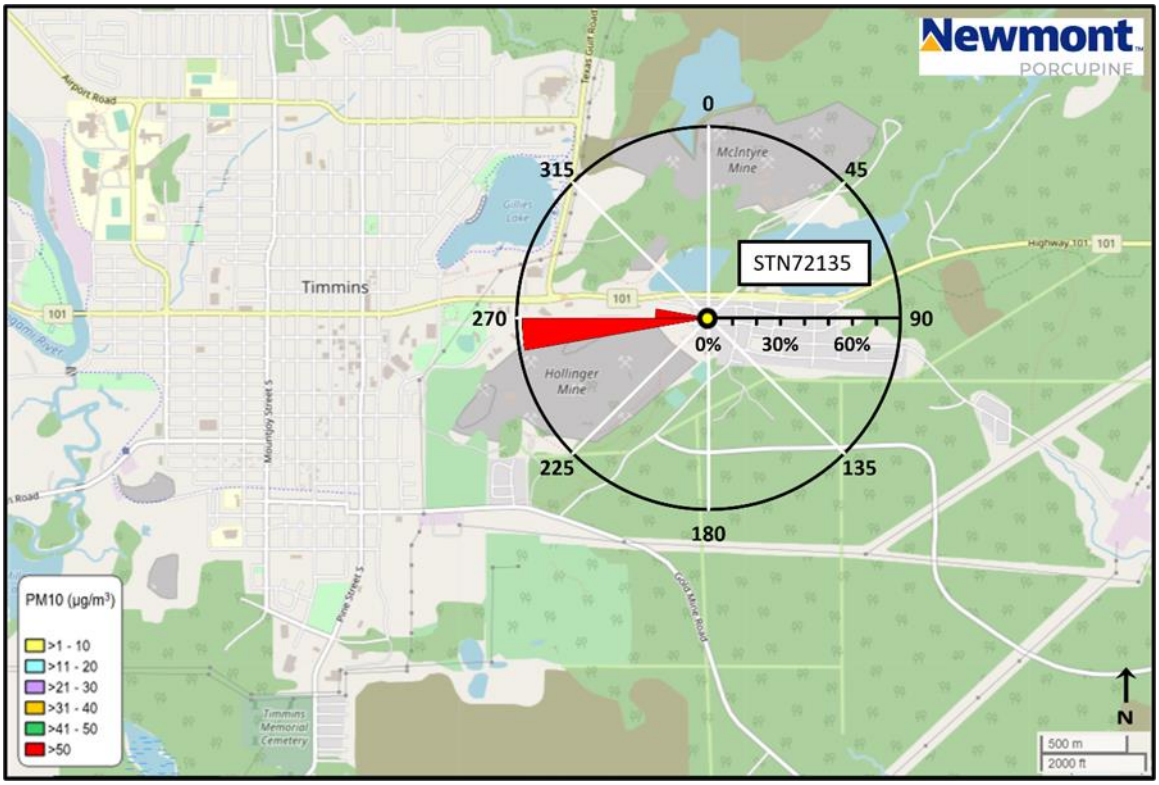
Exceedance is due to inhalable particulate (PM_{10}) levels from HOP operations and possible offsite roads. Contributions from wildfire activity along the entire U.S. west coast cannot be ruled out. Wind speeds ranged from 1.5 to 17.7 km/h.

Figure 35: PM_{10} Pollution Rose - STN72141 November 22nd – November 23rd



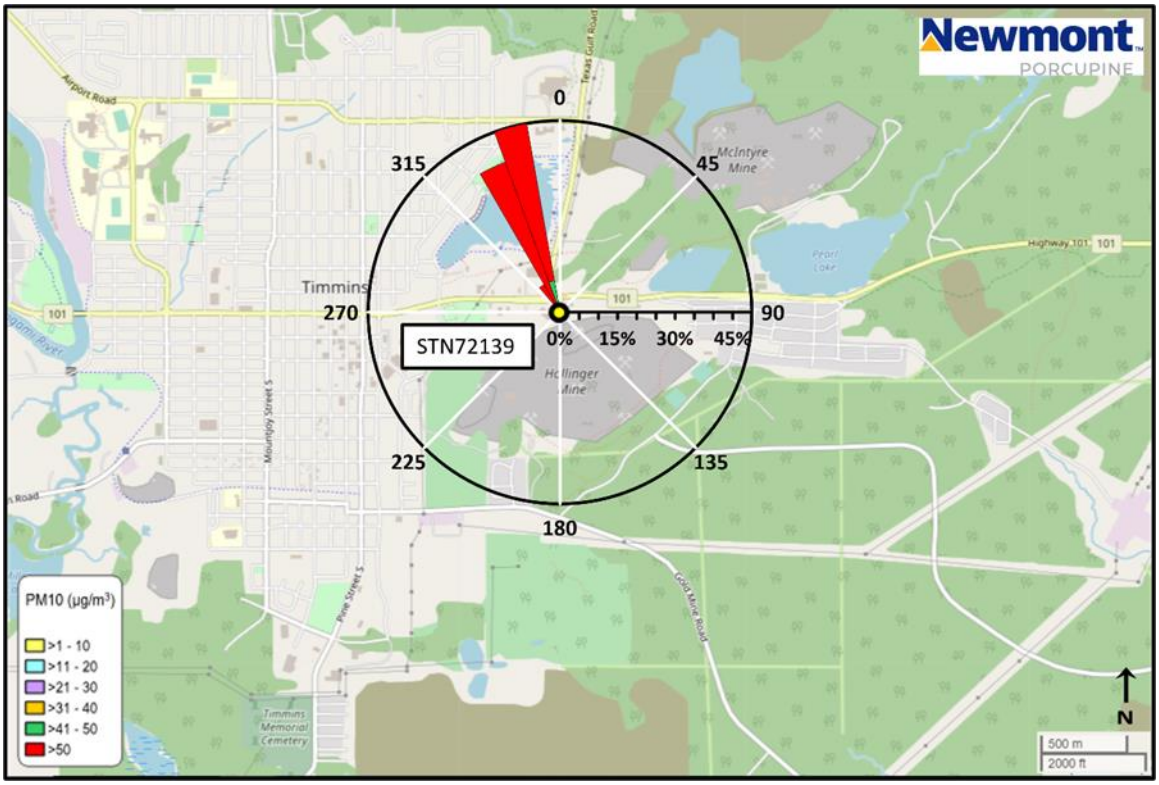
Exceedance is due to inhalable particulate (PM_{10}) levels from HOP operations. Wind speeds ranged from 7.9 to 10.6 km/h.

Figure 36: PM_{10} Pollution Rose - STN72135 November 22nd – November 23rd



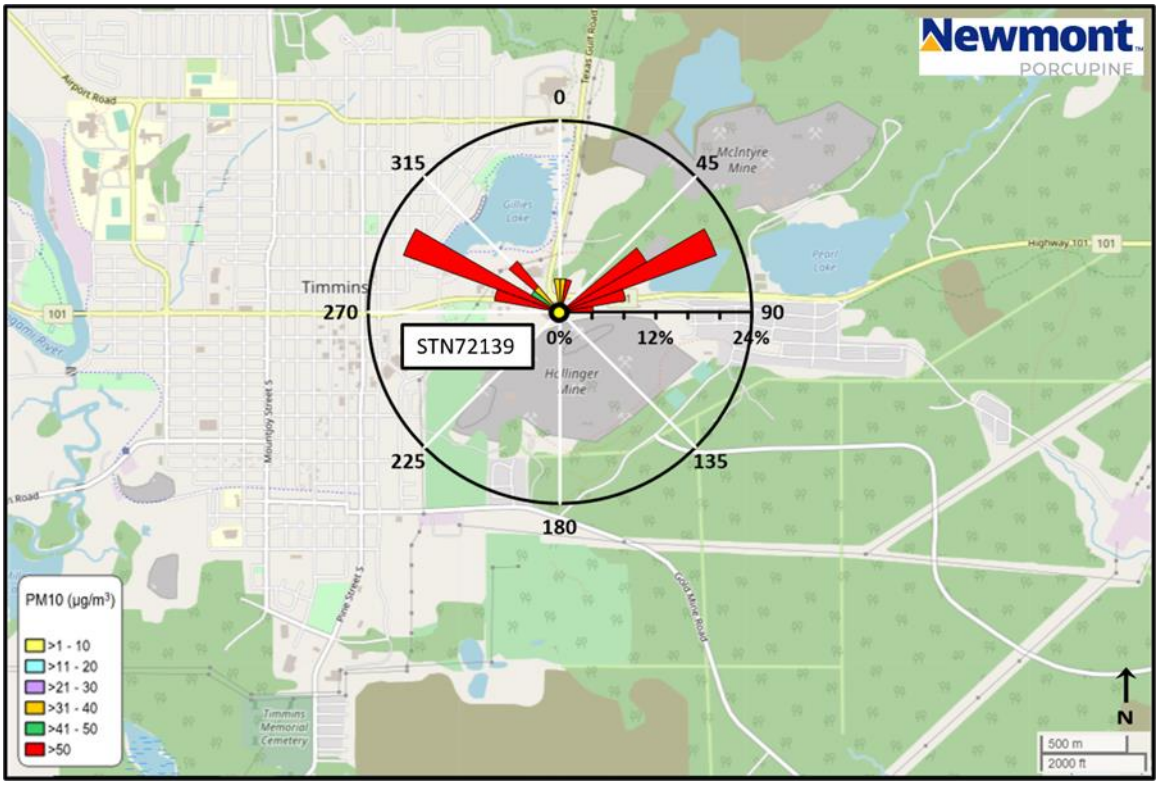
Exceedance is due to inhalable particulate (PM_{10}) levels from HOP operations. Wind speeds ranged from 7.9 to 10.6 km/h.

Figure 37: PM_{10} Pollution Rose - STN72139 November 26th



Exceedance is due to inhalable particulate (PM_{10}) levels from off-site roads. Wind speeds ranged from 11.8 to 16.0 km/h.

Figure 38: PM_{10} Pollution Rose - STN72139 December 6th – December 7th



Exceedance is due to inhalable particulate (PM_{10}) levels from off-site roads and possible HOP operations. Wind speeds ranged from 5.9 to 14.3 km/h.

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Ambient Air Monitoring Report

Appendix A
Continuous Data Statistics

Newmont™
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2021 Data Statistics		Maximum 24 Hr Running Average			Maximum 1 Hr Running Average	Maximum ½ Hr Running Average	Maximum 24 Hr Clock Average		Maximum 1 Hr Clock Average		Monthly Mean					Percent Valid Data				
Station	**Month**	**NO2**	**PM10**	**TSP**	**NO2**	**NO2**	**PM10**	**TSP**	**PM10**	**TSP**	**NO**	**NO2**	**NOX**	**PM10**	**TSP**	**NO**	**NO2**	**NOX**	**PM10**	**TSP**
		ppb	µg/m^3	µg/m^3	ppb	ppb	µg/m^3	µg/m^3	µg/m^3	µg/m^3	ppb	ppb	ppb	µg/m^3	µg/m^3	%	%	%	%	%
STN72135	January	18	16	29	31	31	14	26	69	71	1	4	5	7	12	99.9	99.9	99.9	100.0	99.9
	February	30	52	58	48	50	47	50	166	238	4	7	11	15	20	98.4	98.4	98.4	98.7	95.5
	March	14	86	86	36	38	58	53	473	516	1	4	5	22	23	99.9	99.9	99.9	100.0	99.9
	April	10	77	71	35	39	74	67	404	380	1	4	5	19	21	99.9	99.9	99.9	99.3	99.9
	May	10	33	34	30	37	32	33	78	73	1	4	5	16	14	99.5	99.5	99.5	99.1	99.5
	June	8	41	38	28	29	40	37	92	89	1	3	4	16	21	89.0	89.0	89.0	89.4	89.2
	July	8	109	373	26	27	104	343	376	1282	2	3	5	21	50	99.9	99.9	99.9	100.0	99.9
	August	8	67	206	25	34	61	190	100	273	1	3	4	21	37	89.5	89.5	89.5	90.9	99.9
	September	6	33	23	17	17	27	18	54	32	1	2	3	10	9	99.6	99.6	99.6	99.3	99.6
	October	10	32	46	20	23	29	43	61	60	1	3	5	13	15	99.2	99.2	99.2	98.7	99.2
	November	13	56	27	24	26	55	27	138	50	1	7	7	14	13	99.6	99.6	99.6	99.6	99.6
	December	13	19	18	27	37	19	17	50	62	1	6	7	8	10	99.7	99.7	99.7	100.0	99.7
	Q1 Arithmetic Mean										2	5	7	15	19	99.4	99.4	99.4	99.6	98.4
	Q2 Arithmetic Mean										1	3	5	17	19	96.1	96.1	96.1	95.9	96.2
	Q3 Arithmetic Mean										1	3	4	17	32	96.3	96.3	96.3	96.7	99.8
	Q4 Arithmetic Mean										1	5	6	12	12	99.5	99.5	99.5	99.4	99.5
	Annual Arithmetic Mean										1	4	6	15	21	97.8	97.8	97.8	97.9	98.5

Exceedance Summary STN72135																		
Parameter		**Type**	**Averaging Type**	**Limit**	**Q1**			**Q2**			**Q3**			**Q4**			**Total**
					J	F	M	A	M	J	J	A	S	O	N	D	
Particulate Matter < 10 µm	**PM10**	AAQC	24 Hr Running	50 µg/m^3	0	1	4	1	0	0	2	2	0	0	1	0	11
Nitrogen Dioxide	**NO2**	AAQC	24 Hr Running	100 ppb	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrogen Dioxide	**NO2**	AAQC	1 Hr Running	200 ppb	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrogen Dioxide	**NO2**	O. Reg 419/05	½ Hr Running	250 ppb	0	0	0	0	0	0	0	0	0	0	0	0	0

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2021 Data Statistics		Maximum 24 Hr Running Average			Maximum 1 Hr Running Average	Maximum ½ Hr Running Average	Maximum 24 Hr Clock Average		Maximum 1 Hr Clock Average		Monthly Mean					Percent Valid Data				
Station	**Month**	**NO2**	**PM10**	**TSP**	**NO2**	**NO2**	**PM10**	**TSP**	**PM10**	**TSP**	**NO**	**NO2**	**NOX**	**PM10**	**TSP**	**NO**	**NO2**	**NOX**	**PM10**	**TSP**
		ppb	µg/m³	µg/m³	ppb	ppb	µg/m³	µg/m³	µg/m³	µg/m³	ppb	ppb	ppb	µg/m³	µg/m³	%	%	%	%	%
STN72139	January	24	30	30	37	41	29	30	65	89	2	6	8	8	15	98.4	98.4	98.4	77.4	98.5
	February	29	59	85	53	54	56	82	207	233	6	9	15	ins*	27	98.5	98.5	98.5	70.4	98.7
	March	11	46	62	36	38	44	55	89	152	2	5	7	17	26	89.0	89.0	89.0	98.3	99.5
	April	14	41	61	53	59	40	59	115	191	2	5	7	18	29	99.6	99.6	99.6	94.7	99.9
	May	11	34	43	42	46	34	42	50	109	1	4	6	15	19	99.6	99.6	99.6	91.9	99.6
	June	10	35	51	39	40	33	49	55	113	2	4	6	15	26	99.3	99.3	99.3	88.9	99.6
	July	10	116	414	29	31	109	383	400	1391	3	4	7	18	65	99.9	99.9	99.9	76.1	99.9
	August	11	63	225	30	31	57	208	87	293	2	4	6	22	48	99.7	99.7	99.7	78.2	99.7
	September	12	105	33	22	24	83	29	241	67	2	6	8	15	14	99.2	99.2	99.2	90.6	99.2
	October	19	33	50	30	35	30	47	85	95	3	8	11	12	20	100.0	100.0	100.0	89.1	100.0
	November	18	65	41	33	35	44	40	186	94	1	10	12	14	15	99.4	99.4	99.4	99.7	99.4
	December	19	75	25	35	39	71	22	199	74	1	11	13	17	13	100.0	100.0	100.0	99.2	100.0
	Q1 Arithmetic Mean										3	7	10	13	22	95.3	95.3	95.3	82.0	98.9
	Q2 Arithmetic Mean										2	4	6	16	25	99.5	99.5	99.5	91.8	99.7
	Q3 Arithmetic Mean										2	5	7	18	42	99.6	99.6	99.6	81.6	99.6
	Q4 Arithmetic Mean										2	10	12	14	16	99.8	99.8	99.8	96.0	99.8
	Annual Arithmetic Mean										2	6	9	16	26	98.5	98.5	98.5	87.9	99.5

Exceedance Summary STN72139																		
Parameter		**Type**	**Averaging Type**	**Limit**	**Q1**			**Q2**			**Q3**			**Q4**			**Total**
					J	F	M	A	M	J	J	A	S	O	N	D	
Particulate Matter < 10 µm	**PM10**	AAQC	24 Hr Running	50 µg/m³	0	1	0	0	0	0	2	2	3	0	1	1	10
Nitrogen Dioxide	**NO2**	AAQC	24 Hr Running	100 ppb	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrogen Dioxide	**NO2**	AAQC	1 Hr Running	200 ppb	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrogen Dioxide	**NO2**	O. Reg 419/05	½ Hr Running	250 ppb	0	0	0	0	0	0	0	0	0	0	0	0	0

ins* - insufficient data to calculate mean.

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2021 Data Statistics		Maximum 24 Hr Running Average			Maximum 1 Hr Running Average	Maximum ½ Hr Running Average	Maximum 24 Hr Clock Average		Maximum 1 Hr Clock Average		Monthly Mean					Percent Valid Data				
Station	**Month**	**NO2**	**PM10**	**TSP**	**NO2**	**NO2**	**PM10**	**TSP**	**PM10**	**TSP**	**NO**	**NO2**	**NOX**	**PM10**	**TSP**	**NO**	**NO2**	**NOX**	**PM10**	**TSP**
		ppb	µg/m^3	µg/m^3	ppb	ppb	µg/m^3	µg/m^3	µg/m^3	µg/m^3	ppb	ppb	ppb	µg/m^3	µg/m^3	%	%	%	%	%
STN72140	January	14	14	18	33	34	13	17	42	33	2	5	7	7	10	99.9	99.9	99.9	100.0	99.9
	February	28	27	41	55	60	26	40	81	205	6	8	15	12	16	99.9	99.9	99.9	100.0	99.9
	March	13	33	32	34	36	26	25	116	105	2	4	6	12	14	99.9	99.9	99.9	100.0	99.9
	April	14	72	72	42	45	65	62	308	329	3	5	8	14	23	99.6	99.6	99.6	99.6	94.7
	May	12	38	37	41	44	31	33	101	94	2	4	6	14	14	98.4	98.4	98.4	83.6	98.4
	June	10	45	48	27	34	44	45	98	88	2	4	6	12	21	98.3	98.3	98.3	100.0	99.6
	July	8	79	290	26	26	75	268	271	1000	2	3	5	16	40	99.7	99.7	99.7	100.0	99.9
	August	9	53	167	22	25	49	155	82	221	1	2	4	15	33	96.6	96.6	96.6	100.0	99.9
	September	7	19	23	16	19	18	21	47	37	1	2	3	7	10	99.9	99.9	99.9	99.2	99.9
	October	12	19	41	34	43	18	38	40	51	3	3	7	9	15	99.6	99.6	99.6	98.9	99.6
	November	5	24	20	24	25	22	17	110	73	0	2	2	8	8	99.6	99.6	99.6	100.0	99.6
	December	11	12	15	36	41	12	14	29	49	2	4	5	5	7	99.9	99.9	99.9	89.2	100.0
	Q1 Arithmetic Mean										3	6	9	10	13	99.9	99.9	99.9	100.0	99.9
	Q2 Arithmetic Mean										2	4	7	13	20	98.8	98.8	98.8	94.4	97.6
	Q3 Arithmetic Mean										2	2	4	12	28	98.7	98.7	98.7	99.7	99.9
	Q4 Arithmetic Mean										2	3	5	8	10	99.7	99.7	99.7	96.1	99.7
	Annual Arithmetic Mean										2	4	6	11	18	99.3	99.3	99.3	97.5	99.3

Exceedance Summary STN72140																	
Parameter		**Type**	**Averaging Type**	**Limit**	**Q1**			**Q2**			**Q3**			**Q4**			**Total**
					J	F	M	A	M	J	J	A	S	O	N	D	
Particulate Matter < 10 µm	**PM10**	AAQC	24 Hr Running	50 µg/m^3	0	0	0	1	0	0	1	1	0	0	0	0	3
Nitrogen Dioxide	**NO2**	AAQC	24 Hr Running	100 ppb	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrogen Dioxide	**NO2**	AAQC	1 Hr Running	200 ppb	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrogen Dioxide	**NO2**	O. Reg 419/05	½ Hr Running	250 ppb	0	0	0	0	0	0	0	0	0	0	0	0	0

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2021 Data Statistics		Maximum 24 Hr Running Average			Maximum 1 Hr Running Average	Maximum ½ Hr Running Average	Maximum 24 Hr Clock Average		Maximum 1 Hr Clock Average		Monthly Mean					Percent Valid Data				
Station	**Month**	**NO2**	**PM10**	**TSP**	**NO2**	**NO2**	**PM10**	**TSP**	**PM10**	**TSP**	**NO**	**NO2**	**NOX**	**PM10**	**TSP**	**NO**	**NO2**	**NOX**	**PM10**	**TSP**
		ppb	µg/m^3	µg/m^3	ppb	ppb	µg/m^3	µg/m^3	µg/m^3	µg/m^3	ppb	ppb	ppb	µg/m^3	µg/m^3	%	%	%	%	%
STN72141	January	16	14	13	32	32	14	13	33	40	2	3	5	6	5	99.7	99.7	99.7	99.9	99.7
	February	27	76	47	45	46	59	33	134	89	6	7	14	13	9	99.9	99.9	99.9	100.0	99.9
	March	13	204	116	47	51	147	76	1218	632	2	3	5	25	16	99.9	99.9	99.9	100.0	99.9
	April	15	88	52	42	43	87	50	359	304	3	4	7	15	15	99.9	99.9	99.9	99.3	99.9
	May	10	25	45	38	43	19	41	99	88	3	4	7	10	17	98.5	98.5	98.5	85.1	98.5
	June	7	20	50	27	29	19	49	43	101	2	2	5	9	26	99.4	99.4	99.4	88.2	99.4
	July	8	76	186	30	31	72	174	259	612	5	3	8	16	30	99.9	99.9	99.9	100.0	99.9
	August	6	46	116	18	19	42	109	61	145	2	3	4	12	26	99.9	99.9	99.9	100.0	99.9
	September	4	17	26	13	14	15	18	27	32	2	2	4	6	7	99.7	99.7	99.7	99.6	99.7
	October	8	23	38	20	23	23	36	42	47	5	3	8	9	12	99.6	99.6	99.6	98.7	99.6
	November	11	68	16	28	29	67	16	162	43	2	3	5	10	7	99.7	99.7	99.7	99.9	99.7
	December	12	12	13	27	28	11	12	31	33	2	3	5	5	5	99.9	99.9	99.9	100.0	99.9
	Q1 Arithmetic Mean										3	5	8	14	10	99.8	99.8	99.8	100.0	99.8
	Q2 Arithmetic Mean										3	3	6	11	20	99.3	99.3	99.3	90.9	99.3
	Q3 Arithmetic Mean										3	3	5	11	21	99.8	99.8	99.8	99.9	99.8
	Q4 Arithmetic Mean										3	3	6	8	8	99.7	99.7	99.7	99.5	99.7
	Annual Arithmetic Mean										3	3	6	11	15	99.7	99.7	99.7	97.5	99.7

Exceedance Summary STN72141																	
Parameter		**Type**	**Averaging Type**	**Limit**	**Q1**			**Q2**			**Q3**			**Q4**			**Total**
					J	F	M	A	M	J	J	A	S	O	N	D	
Particulate Matter < 10 µm	**PM10**	AAQC	24 Hr Running	50 µg/m^3	0	1	5	3	0	0	1	0	0	0	1	0	11
Nitrogen Dioxide	**NO2**	AAQC	24 Hr Running	100 ppb	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrogen Dioxide	**NO2**	AAQC	1 Hr Running	200 ppb	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrogen Dioxide	**NO2**	O. Reg 419/05	½ Hr Running	250 ppb	0	0	0	0	0	0	0	0	0	0	0	0	0

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Ambient Air Monitoring Report

Appendix B
Non-continuous Data Statistics

Newmont PORCUPINE

Newmont Porcupine - TSP / Metals Report

Station : STN72135 TSP
Location : Extendicare
Reporting Period : 01 January to 31 December, 2021
Sample Matrix : Teflon Coated Filter
Method : IO-3.1
Valid Samples - Number / % : 60 / 98.4%

Parameter	TSP	As	Cd	Cr	Co	Cu	Fe	Pb	Mg	Mn	Ni	Se	S	V	Zn	SO_4
Name		Arsenic	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Nickel	Selenium	Sulphur	Vanadium	Zinc	Sulphate
Units	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
AAQC	120	0.3	0.025	0.5	0.1	50	25	0.5	120	0.4	0.2	10	n/a	2	120	n/a
Standard	n/a	n/a	n/a	0.5	n/a	50	25	0.5	120	0.4	n/a	n/a	n/a	2	120	n/a
Guideline	n/a	0.3	n/a	n/a	0.1	n/a	n/a	n/a	n/a	n/a	n/a	10	n/a	n/a	n/a	n/a
RDL	3	0.0037	0.0012	0.0031	0.0012	0.0031	0.0310	0.0018	0.0310	0.0006	0.0018	0.0061	0.0150	0.0031	0.0031	0.0500
Date																
04-Jan-21	5															
10-Jan-21	9	0.0019	0.0006	0.0016	0.0006	0.0695	0.3880	0.0009	0.1840	0.0095	0.0009	0.0031	0.1430	0.0016	0.0071	0.4300
16-Jan-21	7															
22-Jan-21	7															
28-Jan-21	13	0.0019	0.0006	0.0016	0.0006	0.0539	0.7290	0.0009	0.2700	0.0146	0.0009	0.0031	0.0670	0.0016	0.0064	0.2000
03-Feb-21	27															
09-Feb-21	17															
15-Feb-21	18	0.0019	0.0006	0.0016	0.0006	0.0564	0.7430	0.0009	0.3680	0.0166	0.0021	0.0031	0.1810	0.0016	0.0201	0.5400
21-Feb-21	30															
27-Feb-21	27															
05-Mar-21	24	0.0019	0.0006	0.0016	0.0006	0.0420	0.6200	0.0009	0.2930	0.0127	0.0009	0.0031	0.1660	0.0016	0.0067	0.5000
11-Mar-21	16															
17-Mar-21	104															
23-Mar-21	25	0.0019	0.0006	0.0042	0.0006	0.0765	0.8670	0.0042	0.4170	0.0219	0.0019	0.0031	0.3630	0.0016	0.0307	1.0900
29-Mar-21	16															
04-Apr-21	41															
10-Apr-21	27	0.0019	0.0006	0.0016	0.0006	0.0899	0.5320	0.0026	0.2570	0.0115	0.0009	0.0031	0.2940	0.0016	0.0091	0.8800
16-Apr-21	18															
22-Apr-21	38															
28-Apr-21	43	0.0019	0.0006	0.0045	0.0024	0.1060	1.1400	0.0023	0.6380	0.0236	0.0035	0.0031	0.3210	0.0016	0.0168	0.9600
04-May-21	25															
10-May-21	2	0.0019	0.0006	0.0016	0.0006	0.1980	0.0820	0.0009	0.0450	0.0018	0.0009	0.0031	0.0340	0.0016	0.0048	0.1000
16-May-21	41	0.0019	0.0006	0.0044	0.0006	0.1070	1.3500	0.0019	0.5810	0.0310	0.0022	0.0031	0.4300	0.0016	0.0141	1.2900
22-May-21	38															
28-May-21	32															
03-Jun-21	35	0.0019	0.0006	0.0016	0.0006	0.1260	1.0400	0.0009	0.4290	0.0235	0.0021	0.0031	0.4200	0.0016	0.0557	1.2600
09-Jun-21	---															
15-Jun-21	20															
21-Jun-21	17	0.0019	0.0006	0.0016	0.0006	0.1120	0.5260	0.0009	0.2340	0.0138	0.0009	0.0031	0.1260	0.0016	0.0075	0.3800
27-Jun-21	20															

03-Jul-21	17															
09-Jul-21	38	0.0019	0.0006	0.0036	0.0006	0.1040	1.1300	0.0022	0.4660	0.0235	0.0021	0.0031	0.1880	0.0016	0.0684	0.5600
15-Jul-21	19															
21-Jul-21	17															
27-Jul-21	12	0.0019	0.0006	0.0016	0.0006	0.0620	0.2510	0.0020	0.1120	0.0066	0.0009	0.0031	0.1190	0.0016	0.0067	0.3600
02-Aug-21	47															
08-Aug-21	18															
14-Aug-21	26	0.0019	0.0006	0.0016	0.0006	0.0830	0.6380	0.0009	0.2870	0.0172	0.0009	0.0031	0.1220	0.0016	0.0070	0.3700
20-Aug-21	39															
26-Aug-21	23															
01-Sep-21	13	0.0019	0.0006	0.0016	0.0006	0.0945	0.2760	0.0009	0.1300	0.0056	0.0009	0.0031	0.1300	0.0016	0.0080	0.3900
07-Sep-21	7															
13-Sep-21	9															
19-Sep-21	14	0.0019	0.0006	0.0016	0.0006	0.0527	0.3260	0.0009	0.1470	0.0084	0.0009	0.0031	0.1380	0.0016	0.0074	0.4100
25-Sep-21	11															
01-Oct-21	13															
07-Oct-21	26	0.0019	0.0006	0.0036	0.0006	0.1250	0.5570	0.0009	0.1850	0.0111	0.0009	0.0031	0.2680	0.0016	0.0121	0.8000
13-Oct-21	13															
19-Oct-21	43															
25-Oct-21	4	0.0019	0.0006	0.0016	0.0006	0.0215	0.1230	0.0031	0.0520	0.0027	0.0009	0.0031	0.0580	0.0016	0.0074	0.1700
31-Oct-21	14															
06-Nov-21	23															
12-Nov-21	9	0.0019	0.0006	0.0037	0.0006	0.0400	0.2640	0.0009	0.1050	0.0072	0.0009	0.0031	0.2000	0.0016	0.0068	0.6000
18-Nov-21	12															
24-Nov-21	6															
30-Nov-21	4	0.0019	0.0006	0.0016	0.0006	0.0096	0.0155	0.0009	0.0155	0.0003	0.0009	0.0031	0.0075	0.0016	0.0016	0.0250
06-Dec-21	1.5															
12-Dec-21	9															
18-Dec-21	9	0.0019	0.0006	0.0016	0.0006	0.0097	0.4340	0.0009	0.1880	0.0087	0.0009	0.0031	0.1310	0.0016	0.0099	0.3900
24-Dec-21	4															
30-Dec-21	13															

Arithmetic Mean	21	0.0019	0.0006	0.0023	0.0007	0.0781	0.5729	0.0015	0.2573	0.0129	0.0013	0.0031	0.1860	0.0016	0.0150	0.5574
Geometric Mean	16	0.0019	0.0006	0.0020	0.0006	0.0625	0.4121	0.0013	0.1911	0.0093	0.0012	0.0031	0.1398	0.0016	0.0102	0.4205
Max	104	0.0019	0.0006	0.0045	0.0024	0.1980	1.3500	0.0042	0.6380	0.0310	0.0035	0.0031	0.4300	0.0016	0.0684	1.2900
Min	2	0.0019	0.0006	0.0016	0.0006	0.0096	0.0155	0.0009	0.0155	0.0003	0.0009	0.0031	0.0075	0.0016	0.0016	0.0250
No. of Samples	60	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
No. > AAQC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	n/a
No. > Standard	n/a	n/a	n/a	n/a	n/a	0	0	0	0	0	0	n/a	n/a	0	0	n/a
No. > Guideline	n/a	0	n/a	0	0	n/a	n/a	n/a	n/a	0	n/a	0	n/a	n/a	n/a	n/a

Note: All non detectable results reported as ½ the Reportable Detection Limit (RDL).

Newmont PORCUPINE

Newmont Porcupine - TSP / Metals Report

Station : STN72136 TSP
Location : MRCA
Reporting Period : 01 January to 31 December, 2021
Sample Matrix : Teflon Coated Filter
Method : IO-3.1
Valid Samples - Number / % : 61 / 100.0%

Parameter	TSP	As	Cd	Cr	Co	Cu	Fe	Pb	Mg	Mn	Ni	Se	S	V	Zn	SO_4
Name		Arsenic	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Nickel	Selenium	Sulphur	Vanadium	Zinc	Sulphate
Units	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
AAQC	120	0.3	0.025	0.5	0.1	50	25	0.5	120	0.4	0.2	10	n/a	2	120	n/a
Standard	n/a	n/a	n/a	0.5	n/a	50	25	0.5	120	0.4	n/a	n/a	n/a	2	120	n/a
Guideline	n/a	0.3	n/a	n/a	0.1	n/a	n/a	n/a	n/a	n/a	n/a	10	n/a	n/a	n/a	n/a
RDL	3	0.0037	0.0012	0.0031	0.0012	0.0031	0.0310	0.0018	0.0310	0.0006	0.0018	0.0061	0.0150	0.0031	0.0031	0.0500
Date																
04-Jan-21	9															
10-Jan-21	3	0.0019	0.0006	0.0016	0.0006	0.1040	0.0540	0.0009	0.0155	0.0010	0.0009	0.0031	0.1330	0.0016	0.0041	0.4000
16-Jan-21	2															
22-Jan-21	4															
28-Jan-21	2	0.0019	0.0006	0.0016	0.0006	0.0435	0.0430	0.0009	0.0155	0.0009	0.0009	0.0031	0.0370	0.0016	0.0042	0.1100
03-Feb-21	30															
09-Feb-21	27															
15-Feb-21	5	0.0019	0.0006	0.0016	0.0006	0.1380	0.1360	0.0009	0.0840	0.0020	0.0009	0.0031	0.1640	0.0016	0.0332	0.4900
21-Feb-21	12															
27-Feb-21	8															
05-Mar-21	5	0.0019	0.0006	0.0016	0.0006	0.0688	0.0770	0.0009	0.0510	0.0019	0.0009	0.0031	0.1520	0.0016	0.0057	0.4500
11-Mar-21	9															
17-Mar-21	62															
23-Mar-21	33	0.0019	0.0006	0.0040	0.0006	0.1240	0.6420	0.0024	0.3790	0.0128	0.0009	0.0031	0.3570	0.0016	0.0232	1.0700
29-Mar-21	31															
04-Apr-21	41															
10-Apr-21	78	0.0019	0.0006	0.0060	0.0006	0.1020	1.7000	0.0019	0.9410	0.0348	0.0047	0.0031	0.3840	0.0016	0.0244	1.1500
16-Apr-21	12															
22-Apr-21	41															
28-Apr-21	44	0.0019	0.0006	0.0058	0.0018	0.1020	1.4900	0.0026	0.7360	0.0299	0.0041	0.0031	0.3340	0.0016	0.0231	1.0000
04-May-21	23															
10-May-21	2	0.0019	0.0006	0.0016	0.0006	0.0371	0.0440	0.0009	0.0155	0.0008	0.0009	0.0031	0.0290	0.0016	0.0036	0.0900
16-May-21	61	0.0019	0.0006	0.0055	0.0006	0.0740	1.7300	0.0028	0.8390	0.0401	0.0033	0.0031	0.4640	0.0016	0.0209	1.3900
22-May-21	38															
28-May-21	29															
03-Jun-21	59	0.0019	0.0006	0.0040	0.0006	0.0702	1.2800	0.0031	0.6860	0.0261	0.0033	0.0031	0.4110	0.0016	0.0230	1.2300
09-Jun-21	31															
15-Jun-21	10															
21-Jun-21	16	0.0019	0.0006	0.0016	0.0006	0.0679	0.3010	0.0009	0.1670	0.0068	0.0009	0.0031	0.0970	0.0016	0.0088	0.2900
27-Jun-21	20															

03-Jul-21	14															
09-Jul-21	37	0.0019	0.0006	0.0039	0.0006	0.0982	0.8700	0.0032	0.3870	0.0171	0.0019	0.0031	0.1830	0.0016	0.0221	0.5500
15-Jul-21	23															
21-Jul-21	16															
27-Jul-21	19	0.0019	0.0006	0.0016	0.0006	0.0838	0.3920	0.0009	0.1760	0.0097	0.0009	0.0031	0.1350	0.0016	0.0119	0.4100
02-Aug-21	14															
08-Aug-21	29															
14-Aug-21	20	0.0019	0.0006	0.0045	0.0006	0.0799	0.4080	0.0028	0.1880	0.0092	0.0009	0.0031	0.1030	0.0016	0.0115	0.3100
20-Aug-21	69															
26-Aug-21	17															
01-Sep-21	8	0.0019	0.0006	0.0016	0.0006	0.0724	0.1290	0.0009	0.0810	0.0026	0.0009	0.0031	0.1220	0.0016	0.0084	0.3700
07-Sep-21	24															
13-Sep-21	8															
19-Sep-21	26	0.0019	0.0006	0.0016	0.0006	0.0724	0.6150	0.0009	0.2920	0.0139	0.0009	0.0031	0.1500	0.0016	0.0126	0.4500
25-Sep-21	36															
01-Oct-21	43															
07-Oct-21	2	0.0019	0.0006	0.0016	0.0006	0.0038	0.0155	0.0009	0.0155	0.0008	0.0009	0.0031	0.0280	0.0016	0.0047	0.0800
13-Oct-21	13															
19-Oct-21	44															
25-Oct-21	2	0.0019	0.0006	0.0016	0.0006	0.0064	0.0155	0.0021	0.0155	0.0003	0.0009	0.0031	0.0540	0.0016	0.0058	0.1600
31-Oct-21	15															
06-Nov-21	21															
12-Nov-21	27	0.0019	0.0006	0.0055	0.0006	0.0443	0.8040	0.0009	0.3860	0.0190	0.0022	0.0031	0.2610	0.0016	0.0244	0.7800
18-Nov-21	4															
24-Nov-21	22															
30-Nov-21	9	0.0019	0.0006	0.0016	0.0006	0.0040	0.0155	0.0009	0.0155	0.0003	0.0009	0.0031	0.0075	0.0016	0.0016	0.0250
06-Dec-21	2															
12-Dec-21	5															
18-Dec-21	9	0.0019	0.0006	0.0016	0.0006	0.0054	0.1140	0.0009	0.0990	0.0025	0.0019	0.0031	0.1140	0.0016	0.0050	0.3400
24-Dec-21	7															
30-Dec-21	44															

Arithmetic Mean	23	0.0019	0.0006	0.0028	0.0007	0.0668	0.5179	0.0016	0.2660	0.0111	0.0016	0.0031	0.1771	0.0016	0.0134	0.5307
Geometric Mean	15	0.0019	0.0006	0.0024	0.0006	0.0452	0.2071	0.0013	0.1146	0.0045	0.0013	0.0031	0.1202	0.0016	0.0100	0.3615
Max	78	0.0019	0.0006	0.0060	0.0018	0.1380	1.7300	0.0032	0.9410	0.0401	0.0047	0.0031	0.4640	0.0016	0.0332	1.3900
Min	2	0.0019	0.0006	0.0016	0.0006	0.0038	0.0155	0.0009	0.0155	0.0003	0.0009	0.0031	0.0075	0.0016	0.0016	0.0250
No. of Samples	61	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
No. > AAQC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	n/a
No. > Standard	n/a	n/a	n/a	n/a	n/a	0	0	0	0	0	0	n/a	n/a	0	0	n/a
No. > Guideline	n/a	0	n/a	0	0	n/a	n/a	n/a	n/a	0	n/a	0	n/a	n/a	n/a	n/a

Note: All non detectable results reported as ½ the Reportable Detection Limit (RDL).

Newmont PORCUPINE

Newmont Porcupine - TSP / Metals Report

Station : STN72137 TSP
Location : Shania Twain Centre
Reporting Period : 01 January to 31 December, 2021
Sample Matrix : Teflon Coated Filter
Method : IO-3.1
Valid Samples - Number / % : 61 / 100.0%

Parameter	TSP	As	Cd	Cr	Co	Cu	Fe	Pb	Mg	Mn	Ni	Se	S	V	Zn	SO_4
Name		Arsenic	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Nickel	Selenium	Sulphur	Vanadium	Zinc	Sulphate
Units	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
AAQC	120	0.3	0.025	0.5	0.1	50	25	0.5	120	0.4	0.2	10	n/a	2	120	n/a
Standard	n/a	n/a	n/a	0.5	n/a	50	25	0.5	120	0.4	n/a	n/a	n/a	2	120	n/a
Guideline	n/a	0.3	n/a	n/a	0.1	n/a	n/a	n/a	n/a	n/a	n/a	10	n/a	n/a	n/a	n/a
RDL	3	0.0037	0.0012	0.0031	0.0012	0.0031	0.0310	0.0018	0.0310	0.0006	0.0018	0.0061	0.0150	0.0031	0.0031	0.0500
Date																
04-Jan-21	2															
10-Jan-21	3	0.0019	0.0006	0.0016	0.0006	0.0455	0.0730	0.0009	0.0440	0.0020	0.0009	0.0031	0.1360	0.0016	0.0067	0.4100
16-Jan-21	36															
22-Jan-21	4															
28-Jan-21	9	0.0019	0.0006	0.0016	0.0006	0.0565	0.2550	0.0009	0.1100	0.0107	0.0009	0.0031	0.0950	0.0016	0.0075	0.2800
03-Feb-21	12															
09-Feb-21	17															
15-Feb-21	35	0.0019	0.0006	0.0079	0.0012	0.0319	1.4700	0.0009	0.6930	0.0390	0.0050	0.0031	0.2350	0.0016	0.0174	0.7000
21-Feb-21	15															
27-Feb-21	15															
05-Mar-21	7	0.0019	0.0006	0.0016	0.0006	0.0695	0.1230	0.0009	0.0660	0.0028	0.0009	0.0031	0.1530	0.0016	0.0078	0.4600
11-Mar-21	11															
17-Mar-21	79															
23-Mar-21	24	0.0019	0.0006	0.0044	0.0006	0.0857	0.7880	0.0058	0.3790	0.0183	0.0024	0.0031	0.3100	0.0016	0.0263	0.9300
29-Mar-21	14															
04-Apr-21	50															
10-Apr-21	47	0.0019	0.0006	0.0033	0.0006	0.0729	1.1800	0.0210	0.5680	0.0264	0.0030	0.0031	0.3370	0.0016	0.0193	1.0100
16-Apr-21	27															
22-Apr-21	43															
28-Apr-21	84	0.0038	0.0006	0.0090	0.0021	0.1060	2.9500	0.0144	1.2700	0.0618	0.0069	0.0031	0.3720	0.0043	0.0366	1.1100
04-May-21	54															
10-May-21	6	0.0019	0.0006	0.0016	0.0006	0.0970	0.1570	0.0009	0.0760	0.0032	0.0009	0.0031	0.0470	0.0016	0.0184	0.1400
16-May-21	32	0.0019	0.0006	0.0016	0.0006	0.0838	0.6680	0.0113	0.3770	0.0168	0.0009	0.0031	0.3950	0.0016	0.0116	1.1900
22-May-21	39															
28-May-21	73															
03-Jun-21	51	0.0019	0.0006	0.0037	0.0006	0.0605	1.1400	0.0102	0.5600	0.0242	0.0026	0.0031	0.5000	0.0016	0.0158	1.5000
09-Jun-21	73															
15-Jun-21	40															
21-Jun-21	14	0.0019	0.0006	0.0016	0.0006	0.0797	0.3620	0.0009	0.1390	0.0074	0.0009	0.0031	0.0910	0.0016	0.0098	0.2700
27-Jun-21	22															

03-Jul-21	25															
09-Jul-21	47	0.0019	0.0006	0.0061	0.0006	0.0754	1.5400	0.0182	0.6720	0.0302	0.0031	0.0031	0.2150	0.0016	0.0213	0.6400
15-Jul-21	29															
21-Jul-21	33															
27-Jul-21	25	0.0019	0.0006	0.0016	0.0006	0.0513	0.6480	0.0129	0.2630	0.0140	0.0009	0.0031	0.1330	0.0016	0.0124	0.4000
02-Aug-21	26															
08-Aug-21	18															
14-Aug-21	23	0.0019	0.0006	0.0016	0.0006	0.0740	0.5580	0.0305	0.2500	0.0115	0.0009	0.0031	0.1160	0.0016	0.0104	0.3500
20-Aug-21	68															
26-Aug-21	45															
01-Sep-21	39	0.0019	0.0006	0.0043	0.0006	0.0575	1.4200	0.0030	0.5960	0.0312	0.0027	0.0031	0.1680	0.0016	0.0173	0.5000
07-Sep-21	9															
13-Sep-21	19															
19-Sep-21	17	0.0019	0.0006	0.0016	0.0006	0.0234	0.3990	0.0009	0.1930	0.0090	0.0009	0.0031	0.1340	0.0016	0.0080	0.4000
25-Sep-21	12															
01-Oct-21	14															
07-Oct-21	50	0.0019	0.0006	0.0037	0.0006	0.0841	1.3700	0.0060	0.5270	0.0252	0.0029	0.0031	0.2760	0.0016	0.0287	0.8300
13-Oct-21	21															
19-Oct-21	39															
25-Oct-21	29	0.0019	0.0006	0.0016	0.0006	0.0461	0.9640	0.0019	0.3560	0.0194	0.0009	0.0031	0.0880	0.0016	0.0073	0.2600
31-Oct-21	18															
06-Nov-21	16															
12-Nov-21	13	0.0019	0.0006	0.0016	0.0006	0.0208	0.3460	0.0009	0.1410	0.0084	0.0009	0.0031	0.2140	0.0016	0.0143	0.6400
18-Nov-21	1.5															
24-Nov-21	5															
30-Nov-21	5	0.0019	0.0006	0.0016	0.0006	0.0035	0.0155	0.0009	0.0155	0.0003	0.0009	0.0031	0.0075	0.0016	0.0016	0.0250
06-Dec-21	5															
12-Dec-21	7															
18-Dec-21	1.5	0.0019	0.0006	0.0016	0.0006	0.0741	0.0490	0.0009	0.0350	0.0011	0.0009	0.0031	0.1190	0.0016	0.0096	0.3600
24-Dec-21	4															
30-Dec-21	2															

Arithmetic Mean	26	0.0019	0.0006	0.0030	0.0007	0.0619	0.7845	0.0069	0.3491	0.0173	0.0019	0.0031	0.1972	0.0017	0.0147	0.5907
Geometric Mean	17	0.0019	0.0006	0.0024	0.0007	0.0522	0.4462	0.0031	0.2153	0.0101	0.0015	0.0031	0.1504	0.0016	0.0123	0.4522
Max	84	0.0038	0.0006	0.0090	0.0021	0.1060	2.9500	0.0305	1.2700	0.0618	0.0069	0.0031	0.5000	0.0043	0.0366	1.5000
Min	2	0.0019	0.0006	0.0016	0.0006	0.0035	0.0155	0.0009	0.0155	0.0003	0.0009	0.0031	0.0075	0.0016	0.0016	0.0250
No. of Samples	61	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
No. > AAQC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	n/a
No. > Standard	n/a	n/a	n/a	n/a	n/a	0	0	0	0	0	0	n/a	n/a	0	0	n/a
No. > Guideline	n/a	0	n/a	0	0	n/a	n/a	n/a	n/a	0	n/a	0	n/a	n/a	n/a	n/a

Note: All non detectable results reported as ½ the Reportable Detection Limit (RDL).

Newmont PORCUPINE

Newmont Porcupine - PM10 / Metals Report

Station : STN72135 PM10
Location : Extendicare
Reporting Period : 01 January to 31 December, 2021
Sample Matrix : Teflon Coated Filter
Method : IO-3.1
Valid Samples - Number / % : 60 / 98.4%

Parameter	PM10	As	Cd	Cr	Co	Cu	Fe	Pb	Mg	Mn	Ni	Se	S	V	Zn	SO_4
Name		Arsenic	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Nickel	Selenium	Sulphur	Vanadium	Zinc	Sulphate
Units	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
AAQC	50	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.2	0.1	n/a	n/a	n/a	n/a	n/a
RDL	3	0.0037	0.0012	0.0031	0.0012	0.0031	0.0310	0.0018	0.0310	0.0006	0.0018	0.0061	0.0150	0.0031	0.0031	0.0500
Date																
04-Jan-21	3															
10-Jan-21	2	0.0019	0.0006	0.0016	0.0006	0.0397	0.1310	0.0009	0.0700	0.0029	0.0009	0.0031	0.1410	0.0016	0.0043	0.4200
16-Jan-21	2															
22-Jan-21	2															
28-Jan-21	8															
03-Feb-21	13															
09-Feb-21	8	0.0019	0.0006	0.0016	0.0006	0.0235	0.3490	0.0009	0.1350	0.0088	0.0009	0.0031	0.2130	0.0016	0.0077	0.6400
15-Feb-21	9															
21-Feb-21	13															
27-Feb-21	13															
05-Mar-21	12															
11-Mar-21	7	0.0019	0.0006	0.0016	0.0006	0.0205	0.3370	0.0009	0.1400	0.0067	0.0009	0.0031	0.1350	0.0016	0.0046	0.4000
17-Mar-21	52															
23-Mar-21	7															
29-Mar-21	6															
04-Apr-21	23															
10-Apr-21	13	0.0019	0.0006	0.0016	0.0006	0.0325	0.2610	0.0020	0.1220	0.0053	0.0009	0.0031	0.2540	0.0016	0.0071	0.7600
16-Apr-21	7															
22-Apr-21	21															
28-Apr-21	26															
04-May-21	9															
10-May-21	2															
16-May-21	21															
22-May-21	16															
28-May-21	15															
03-Jun-21	18															
09-Jun-21	---															
15-Jun-21	12															
21-Jun-21	8															
27-Jun-21	13															

03-Jul-21	12															
09-Jul-21	25	0.0019	0.0006	0.0036	0.0006	0.0689	0.8690	0.0021	0.3510	0.0172	0.0009	0.0031	0.1690	0.0016	0.0697	0.5100
15-Jul-21	13															
21-Jul-21	12															
27-Jul-21	9															
02-Aug-21	27															
08-Aug-21	5	0.0019	0.0006	0.0016	0.0006	0.0016	0.0800	0.0009	0.0320	0.0024	0.0009	0.0031	0.0710	0.0016	0.0039	0.2100
14-Aug-21	14															
20-Aug-21	26															
26-Aug-21	11															
01-Sep-21	8															
07-Sep-21	7	0.0019	0.0006	0.0016	0.0006	0.0592	0.0630	0.0009	0.0155	0.0014	0.0009	0.0031	0.1060	0.0016	0.0051	0.3200
13-Sep-21	2															
19-Sep-21	8															
25-Sep-21	7															
01-Oct-21	7															
07-Oct-21	19	0.0019	0.0006	0.0016	0.0006	0.0309	0.3290	0.0009	0.1060	0.0067	0.0009	0.0031	0.2660	0.0016	0.0118	0.8000
13-Oct-21	8															
19-Oct-21	25															
25-Oct-21	2															
31-Oct-21	9															
06-Nov-21	15	0.0019	0.0006	0.0016	0.0006	0.0045	0.0850	0.0009	0.0350	0.0021	0.0009	0.0031	0.0600	0.0016	0.0016	0.1800
12-Nov-21	5															
18-Nov-21	3															
24-Nov-21	2															
30-Nov-21	2															
06-Dec-21	2	0.0019	0.0006	0.0016	0.0006	0.1040	0.1610	0.0037	0.0690	0.0037	0.0009	0.0031	0.1240	0.0016	0.0080	0.3700
12-Dec-21	2															
18-Dec-21	9															
24-Dec-21	2															
30-Dec-21	5															
Arithmetic Mean	11	0.0019	0.0006	0.0018	0.0006	0.0385	0.2665	0.0014	0.1076	0.0057	0.0009	0.0031	0.1539	0.0016	0.0124	0.4610
Geometric Mean	8	0.0019	0.0006	0.0017	0.0006	0.0237	0.1950	0.0012	0.0769	0.0044	0.0009	0.0031	0.1385	0.0016	0.0068	0.4144
Max	52	0.0019	0.0006	0.0036	0.0006	0.1040	0.8690	0.0037	0.3510	0.0172	0.0009	0.0031	0.2660	0.0016	0.0697	0.8000
Min	2	0.0019	0.0006	0.0016	0.0006	0.0016	0.0630	0.0009	0.0155	0.0014	0.0009	0.0031	0.0600	0.0016	0.0016	0.1800
No. of Samples	60	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
No. > AAQC	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0	0	n/a	n/a	n/a	n/a	n/a

Note: All non detectable results reported as ½ the Reportable Detection Limit (RDL).

Newmont™ PORCUPINE

Newmont Porcupine - PM10 / Metals Report

Station : STN72136 PM10
Location : MRCA
Reporting Period : 01 January to 31 December, 2021
Sample Matrix : Teflon Coated Filter
Method : IO-3.1
Valid Samples - Number / % : 61 / 100.0%

Parameter	PM10	As	Cd	Cr	Co	Cu	Fe	Pb	Mg	Mn	Ni	Se	S	V	Zn	SO_4
Name		Arsenic	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Nickel	Selenium	Sulphur	Vanadium	Zinc	Sulphate
Units	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
AAQC	50	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.2	0.1	n/a	n/a	n/a	n/a	n/a
RDL	3	0.0037	0.0012	0.0031	0.0012	0.0031	0.0310	0.0018	0.0310	0.0006	0.0018	0.0061	0.0150	0.0031	0.0031	0.0500
Date																
04-Jan-21	4															
10-Jan-21	2	0.0019	0.0006	0.0016	0.0006	0.0155	0.0155	0.0009	0.0155	0.0003	0.0009	0.0031	0.1200	0.0016	0.0034	0.3600
16-Jan-21	2															
22-Jan-21	2															
28-Jan-21	2															
03-Feb-21	8															
09-Feb-21	7	0.0019	0.0006	0.0016	0.0006	0.0386	0.2080	0.0009	0.0870	0.0049	0.0009	0.0031	0.1750	0.0016	0.0101	0.5200
15-Feb-21	4															
21-Feb-21	9															
27-Feb-21	6															
05-Mar-21	9															
11-Mar-21	3	0.0019	0.0006	0.0016	0.0006	0.0101	0.0740	0.0009	0.0570	0.0017	0.0009	0.0031	0.1450	0.0016	0.0058	0.4400
17-Mar-21	41															
23-Mar-21	6															
29-Mar-21	10															
04-Apr-21	19															
10-Apr-21	33	0.0019	0.0006	0.0016	0.0006	0.0147	0.7720	0.0009	0.4180	0.0146	0.0027	0.0031	0.2940	0.0016	0.0131	0.8800
16-Apr-21	2															
22-Apr-21	18															
28-Apr-21	23															
04-May-21	2															
10-May-21	2															
16-May-21	43															
22-May-21	9															
28-May-21	10															
03-Jun-21	24															
09-Jun-21	10	0.0019	0.0006	0.0016	0.0006	0.0188	0.3750	0.0009	0.1590	0.0080	0.0009	0.0031	0.0990	0.0016	0.0111	0.3000
15-Jun-21	4															
21-Jun-21	4															
27-Jun-21	12															

03-Jul-21	8															
09-Jul-21	17	0.0019	0.0006	0.0016	0.0006	0.0461	0.4510	0.0009	0.2040	0.0087	0.0009	0.0031	0.1390	0.0016	0.0131	0.4200
15-Jul-21	15															
21-Jul-21	10															
27-Jul-21	8															
02-Aug-21	9															
08-Aug-21	19	0.0019	0.0006	0.0016	0.0006	0.0538	0.2360	0.0009	0.1090	0.0077	0.0009	0.0031	0.1690	0.0016	0.0088	0.5100
14-Aug-21	8															
20-Aug-21	28															
26-Aug-21	7															
01-Sep-21	6															
07-Sep-21	14	0.0019	0.0006	0.0016	0.0006	0.0208	0.1440	0.0009	0.0980	0.0025	0.0009	0.0031	0.1040	0.0016	0.0058	0.3100
13-Sep-21	2															
19-Sep-21	10															
25-Sep-21	35															
01-Oct-21	4															
07-Oct-21	21	0.0019	0.0006	0.0016	0.0006	0.0158	0.3470	0.0034	0.1370	0.0065	0.0009	0.0031	0.2280	0.0016	0.0117	0.6800
13-Oct-21	5															
19-Oct-21	21															
25-Oct-21	4															
31-Oct-21	5															
06-Nov-21	9	0.0019	0.0006	0.0016	0.0006	0.0016	0.0155	0.0009	0.0155	0.0003	0.0009	0.0031	0.0530	0.0016	0.0016	0.1600
12-Nov-21	6															
18-Nov-21	2															
24-Nov-21	11															
30-Nov-21	2															
06-Dec-21	2	0.0019	0.0006	0.0016	0.0006	0.0875	0.1610	0.0009	0.0650	0.0038	0.0009	0.0031	0.0810	0.0016	0.0096	0.2400
12-Dec-21	2															
18-Dec-21	5															
24-Dec-21	2															
30-Dec-21	48															
Arithmetic Mean	11	0.0019	0.0006	0.0016	0.0006	0.0294	0.2545	0.0011	0.1241	0.0054	0.0011	0.0031	0.1461	0.0016	0.0086	0.4382
Geometric Mean	7	0.0019	0.0006	0.0016	0.0006	0.0198	0.1508	0.0010	0.0843	0.0032	0.0010	0.0031	0.1320	0.0016	0.0073	0.3961
Max	48	0.0019	0.0006	0.0016	0.0006	0.0875	0.7720	0.0034	0.4180	0.0146	0.0027	0.0031	0.2940	0.0016	0.0131	0.8800
Min	2	0.0019	0.0006	0.0016	0.0006	0.0016	0.0155	0.0009	0.0155	0.0003	0.0009	0.0031	0.0530	0.0016	0.0016	0.1600
No. of Samples	61	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
No. > AAQC	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0	0	n/a	n/a	n/a	n/a	n/a

Note: All non detectable results reported as ½ the Reportable Detection Limit (RDL).

Newmont PORCUPINE

Newmont Porcupine - PM10 / Metals Report

Station : STN72137 PM10
Location : Shania Twain Centre
Reporting Period : 01 January to 31 December, 2021
Sample Matrix : Teflon Coated Filter
Method : IO-3.1
Valid Samples - Number / % : 60 / 98.4%

Parameter	PM10	As	Cd	Cr	Co	Cu	Fe	Pb	Mg	Mn	Ni	Se	S	V	Zn	SO_4
Name		Arsenic	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Nickel	Selenium	Sulphur	Vanadium	Zinc	Sulphate
Units	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
AAQC	50	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.2	0.1	n/a	n/a	n/a	n/a	n/a
RDL	3	0.0037	0.0012	0.0031	0.0012	0.0031	0.0310	0.0018	0.0310	0.0006	0.0018	0.0061	0.0150	0.0031	0.0031	0.0500
Date																
04-Jan-21	2															
10-Jan-21	2	0.0019	0.0006	0.0016	0.0006	0.0262	0.0155	0.0009	0.0155	0.0003	0.0009	0.0031	0.1320	0.0016	0.0045	0.4000
16-Jan-21	21															
22-Jan-21	---															
28-Jan-21	5															
03-Feb-21	2															
09-Feb-21	4	0.0019	0.0006	0.0016	0.0006	0.0100	0.1360	0.0073	0.0530	0.0036	0.0009	0.0031	0.1370	0.0016	0.0338	0.4100
15-Feb-21	10															
21-Feb-21	11															
27-Feb-21	13															
05-Mar-21	14															
11-Mar-21	5	0.0019	0.0006	0.0016	0.0006	0.0167	0.1580	0.0022	0.0930	0.0039	0.0009	0.0031	0.1410	0.0016	0.0055	0.4200
17-Mar-21	29															
23-Mar-21	7															
29-Mar-21	4															
04-Apr-21	20															
10-Apr-21	17	0.0019	0.0006	0.0016	0.0006	0.0192	0.3980	0.0172	0.1850	0.0082	0.0009	0.0031	0.2510	0.0016	0.0118	0.7500
16-Apr-21	9															
22-Apr-21	7															
28-Apr-21	38															
04-May-21	14															
10-May-21	2															
16-May-21	12															
22-May-21	9															
28-May-21	21															
03-Jun-21	20															
09-Jun-21	22	0.0019	0.0006	0.0016	0.0006	0.0183	1.1000	0.0009	0.4450	0.0226	0.0021	0.0031	0.1160	0.0016	0.0099	0.3500
15-Jun-21	16															
21-Jun-21	4															
27-Jun-21	13															

03-Jul-21	8															
09-Jul-21	27	0.0019	0.0006	0.0039	0.0006	0.0325	0.8160	0.0155	0.3480	0.0147	0.0020	0.0031	0.1710	0.0016	0.0142	0.5100
15-Jul-21	17															
21-Jul-21	15															
27-Jul-21	12															
02-Aug-21	10															
08-Aug-21	12	0.0019	0.0006	0.0016	0.0006	0.0152	0.1310	0.0009	0.0550	0.0033	0.0009	0.0031	0.1470	0.0016	0.0054	0.4400
14-Aug-21	11															
20-Aug-21	35															
26-Aug-21	17															
01-Sep-21	16															
07-Sep-21	4	0.0019	0.0006	0.0016	0.0006	0.0389	0.1140	0.0009	0.0155	0.0019	0.0009	0.0031	0.0810	0.0016	0.0082	0.2400
13-Sep-21	6															
19-Sep-21	6															
25-Sep-21	6															
01-Oct-21	7															
07-Oct-21	4	0.0019	0.0006	0.0016	0.0006	0.0359	0.1230	0.0009	0.0550	0.0027	0.0009	0.0031	0.0770	0.0016	0.0051	0.2300
13-Oct-21	2															
19-Oct-21	19															
25-Oct-21	8															
31-Oct-21	5															
06-Nov-21	6	0.0019	0.0006	0.0016	0.0006	0.0016	0.0155	0.0009	0.0155	0.0003	0.0009	0.0031	0.0510	0.0016	0.0016	0.1500
12-Nov-21	4															
18-Nov-21	2															
24-Nov-21	4															
30-Nov-21	7															
06-Dec-21	7	0.0019	0.0006	0.0016	0.0006	0.0164	0.3900	0.0025	0.1690	0.0092	0.0009	0.0031	0.1540	0.0016	0.0090	0.4600
12-Dec-21	3															
18-Dec-21	2															
24-Dec-21	4															
30-Dec-21	14															

Arithmetic Mean	11	0.0019	0.0006	0.0018	0.0006	0.0210	0.3088	0.0046	0.1318	0.0064	0.0011	0.0031	0.1325	0.0016	0.0099	0.3964
Geometric Mean	8	0.0019	0.0006	0.0017	0.0006	0.0166	0.1559	0.0022	0.0720	0.0033	0.0010	0.0031	0.1223	0.0016	0.0075	0.3653
Max	38	0.0019	0.0006	0.0039	0.0006	0.0389	1.1000	0.0172	0.4450	0.0226	0.0021	0.0031	0.2510	0.0016	0.0338	0.7500
Min	2	0.0019	0.0006	0.0016	0.0006	0.0016	0.0155	0.0009	0.0155	0.0003	0.0009	0.0031	0.0510	0.0016	0.0016	0.1500
No. of Samples	60	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
No. > AAQC	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0	0	n/a	n/a	n/a	n/a	n/a

Note: All non detectable results reported as ½ the Reportable Detection Limit (RDL).

Newmont
PORCUPINE

Newmont Porcupine - Dustfall Summary Report

Reporting Period : 01 January to 31 December, 2021

Sampling Method : BRL SOP-00121

Standard : 7.0 g/m^2/30d

	STN72135 Extendicare			STN72136 MRCA			STN72137 Shania Twain Centre		
Units	g/m²/30d			g/m²/30d			g/m²/30d		
RDL	0.01			0.01			0.01		
Month	Insoluble	Soluble	**Total Dustfall**	Insoluble	Soluble	**Total Dustfall**	Insoluble	Soluble	**Total Dustfall**
January	0.40	0.41	0.81	0.28	0.40	0.68	0.37	0.32	0.69
February	1.10	0.61	1.70	0.34	0.35	0.69	1.70	0.39	2.10
March	2.10	0.80	2.90	0.90	0.44	1.30	0.90	0.50	1.40
April	1.10	0.75	1.90	1.30	0.49	1.80	1.60	0.70	2.30
May	2.10	0.78	2.80	0.94	0.45	1.40	2.00	0.70	2.70
June	2.30	0.78	3.10	1.30	0.69	2.00	37.00	8.40	45.00
July	3.90	2.80	6.70	1.60	1.30	2.90	1.50	1.00	2.50
August	1.80	1.00	2.80	0.72	0.64	1.40	12.00	2.50	14.00
September	0.58	0.53	1.10	0.64	0.32	0.96	0.16	0.37	0.53
October	0.24	0.45	0.69	0.46	0.47	0.93	0.53	1.00	1.60
November	1.40	0.68	2.10	0.47	0.35	0.82	0.43	0.34	0.77
December	0.21	0.26	0.48	0.18	0.31	0.48	0.08	0.27	0.36
Annual Average	1.44	0.82	2.26	0.76	0.52	1.28	4.86	1.37	6.16
Annual Max	3.90	2.80	6.70	1.60	1.30	2.90	37.00	8.40	45.00
No. of Valid Samples	12	12	12	12	12	12	12	12	12
% Valid Data	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Samples > Standard	n/a	n/a	0	n/a	n/a	0	n/a	n/a	2

Note: All non detectable results reported as ½ the Reportable Detection Limit (RDL).

Newmont PORCUPINE

Newmont Porcupine - Dustfall Summary Report

Reporting Period : 01 January to 31 December, 2021

Sampling Method : BRL SOP-00121

Standard : 7.0 g/m^2/30d

	STN72141 Claimpost Trail			STN72142 Aura Lake			STN72143 Snowmobile Crossing		
Units	g/m²/30d			g/m²/30d			g/m²/30d		
RDL	0.01			0.01			0.01		
Month	Insoluble	Soluble	**Total Dustfall**	Insoluble	Soluble	**Total Dustfall**	Insoluble	Soluble	**Total Dustfall**
January	0.48	0.41	0.89	0.31	0.40	0.71	5.60	0.67	6.30
February	0.73	0.48	1.20	0.60	0.38	0.98	15.00	0.83	16.00
March	8.50	1.30	9.80	2.50	0.78	3.30	35.00	1.30	36.00
April	6.10	1.30	7.40	1.30	0.74	2.00	24.00	1.60	25.00
May	4.80	1.40	6.20	1.80	0.59	2.40	30.00	2.60	33.00
June	4.80	1.40	6.30	4.00	1.40	5.40	30.00	3.10	34.00
July	2.30	1.40	3.70	1.90	1.20	3.10	28.00	4.80	33.00
August	2.60	0.94	3.60	2.00	0.61	2.60	28.00	3.50	32.00
September	1.60	0.60	2.20	0.73	0.44	1.20	24.00	3.60	28.00
October	0.88	0.56	1.40	0.48	0.51	0.98	12.00	1.40	14.00
November	2.00	0.50	2.50	0.84	0.48	1.30	23.00	1.80	25.00
December	0.01	0.01	0.01	0.17	0.29	0.46	1.30	0.37	1.60
Annual Average	2.90	0.86	3.77	1.39	0.65	2.04	21.33	2.13	23.66
Annual Max	8.50	1.40	9.80	4.00	1.40	5.40	35.00	4.80	36.00
No. of Valid Samples	12	12	12	12	12	12	12	12	12
% Valid Data	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Samples > Standard	n/a	n/a	2	n/a	n/a	0	n/a	n/a	10

Note: All non detectable results reported as ½ the Reportable Detection Limit (RDL).

Newmont
PORCUPINE

Newmont Porcupine - Passive Sampling Report

Reporting Period : 01 January to 31 December 2021
Sampling Methods : Radiello F1 / APHA 4110

	STN72135 EXTENDICARE		STN72136 MRCA		STN72137 SHANIA TWAIN	
Parameter	**SO_2**	**NO_2**	**SO_2**	**NO_2**	**SO_2**	**NO_2**
Units	ppb	ppb	ppb	ppb	ppb	ppb
RDL	0.10	0.10	0.10	0.10	0.10	0.10
Month						
January	0.05	3.50	0.05	2.90	0.05	3.00
February	0.10	3.60	0.30	2.90	0.20	4.10
March	0.10	1.90	0.20	1.30	0.20	1.70
April	0.10	1.70	0.10	1.60	0.10	2.10
May	0.30	1.80	0.30	0.70	0.30	1.40
June	0.05	1.40	0.05	0.50	0.10	1.30
July	0.20	1.90	0.30	1.00	0.20	1.70
August	0.05	1.60	0.20	0.70	0.10	1.00
September	0.05	2.10	0.10	1.00	0.10	1.10
October	0.10	2.30	0.10	3.60	0.05	2.60
November	0.10	2.60	0.20	1.90	0.20	1.90
December	0.05	3.00	0.20	2.70	0.20	2.60
Annual Average	0.10	2.28	0.18	1.73	0.15	2.04
Annual Maximum	0.30	3.60	0.30	3.60	0.30	4.10
No. of Valid Samples	12	12	12	12	12	12
% Valid Data	100.0	100.0	100.0	100.0	100.0	100.0

Note: All non detectable results reported as ½ the Reportable Detection Limit (RDL).

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Ambient Air Monitoring Report

Appendix C
Calibration Summary

NEWMONT PORCUPINE CALIBRATION SUMMARY JUNE 2021

Station Identifier	**STN72135**	**STN72139**	**STN72140**	**STN72141**
GC Serial Number	**380**	**381**	**382**	**453**
Station Name	**Extendicare**	**Hollinger Office**	**Goldmine Tour**	**Claimpost Trail**
Date	Jun-23	Jun-23	Jun-23	Jun-23
Time (EST)	12:00	9:30	16:00	18:30
SHARP Neph Zero response	2.3	10.2	3.5	3.8
SHARP Conc. Zero response	3.6	7.7	3.2	1.7
SHARP Zero reset	Yes	Yes	Yes	Yes
Flow rate response	Pass	Pass	Pass	Pass
Monitor calibration criteria	Pass	Pass	Pass	Pass
Date	Jun-23	Jun-23	Jun-23	Jun-23
Time (EST)	12:00	9:00	15:30	18:00
TSP Zero response	7.5	3.1	6.6	16.0
TSP Zero reset	Yes	Yes	Yes	Yes
Flow rate response	Pass	Pass	Pass	Pass
Monitor calibration criteria	Pass	Pass	Pass	Pass
Date	Jun-23	Jun-23	Jun-23	Jun-23
Time (EST)	12:00	8:00	15:30	18:00
NO / NOX Zero response	0.2 / 1.2	0.3 / 2.7	0.0 / 0.2	0.2 / 0.5
NO / NOX Zero reset	Yes	Yes	No	No
NO / NOX Span input	663 / 664	663 / 664	663 / 664	663 / 664
NO / NOX Span response	607 / 609	689 / 690	679 / 677	658 / 659
NO / NOX Span tolerance	-8.4 / -8.3	3.9 / 3.9	2.4 / 2.0	-0.8 / -0.8
NO / NOX Span reset	Yes	Yes	Yes	Yes
Monitor calibration criteria	Pass	Pass	Pass	Pass

NEWMONT PORCUPINE CALIBRATION SUMMARY SEPTEMBER 2021

Station Identifier	**STN72135**	**STN72139**	**STN72140**	**STN72141**
GC Serial Number	**380**	**381**	**382**	**453**
Station Name	**Extendicare**	**Hollinger Office**	**Goldmine Tour**	**Claimpost Trail**
Date	Sep-16	Sep-15	Sep-15	Sep-15
Time (EST)	10:00	10:00	16:00	14:00
SHARP Neph Zero response	0.6	9.8	1.6	Jan-04
SHARP Conc. Zero response	1.1	3.3	1.5	Jan-03
SHARP Zero reset	Yes	Yes	Yes	Yes
Flow rate response	Pass	Pass	Pass	Pass
Monitor calibration criteria	Pass	Pass	Pass	Pass
Date	Sep-16	Sep-15	Sep-15	Sep-15
Time (EST)	9:30	9:00	15:00	13:00
TSP Zero response	-1.0	0.3	-1.0	0.4
TSP Zero reset	Yes	No	Yes	No
Flow rate response	Pass	Pass	Pass	Pass
Monitor calibration criteria	Pass	Pass	Pass	Pass
Date	Sep-16	Sep-15	Sep-15	Sep-15
Time (EST)	9:00	8:00	14:30	12:00
NO / NOX Zero response	0.0 / 0.1	-0.4 / -0.7	0.1 / 0.2	0.2 / 0.5
NO / NOX Zero reset	No	Yes	No	No
NO / NOX Span input	755 / 756	755 / 756	755 / 756	755 / 756
NO / NOX Span response	698 / 700	732 / 733	722 / 723	733 / 733
NO / NOX Span tolerance	-7.5 / -7.4	-3.0 / -3.0	-4.4 / -4.4	-2.9 / -3.0
NO / NOX Span reset	Yes	No	No	No
Monitor calibration criteria	Pass	Pass	Pass	Pass

NEWMONT PORCUPINE CALIBRATION SUMMARY NOVEMBER 2021

Station Identifier	**STN72135**	**STN72139**	**STN72140**	**STN72141**
GC Serial Number	**380**	**381**	**382**	**453**
Station Name	**Extendicare**	**Hollinger Office**	**Goldmine Tour**	**Claimpost Trail**
Date	Nov-03	Nov-03	Nov-04	Nov-03
Time (EST)	16:00	10:00	11:00	14:00
SHARP Neph Zero response	-1.2	12.7	1.3	-0.8
SHARP Conc. Zero response	-6.3	3.9	0.9	-1.7
SHARP Zero reset	Yes	Yes	Yes	Yes
Flow rate response	Pass	Pass	Pass	Pass
Monitor calibration criteria	Pass	Pass	Pass	Pass
Date	Nov-03	Nov-03	Nov-04	Nov-03
Time (EST)	15:30	9:30	10:00	13:00
TSP Zero response	-1.0	-2.5	-1.0	1.4
TSP Zero reset	Yes	No	Yes	Yes
Flow rate response	Pass	Pass	Pass	Pass
Monitor calibration criteria	Pass	Pass	Pass	Pass
Date	Nov-03	Nov-03	Nov-04	Nov-03
Time (EST)	15:00	9:00	9:00	12:00
NO / NOX Zero response	0.0 / 0.1	0.2 / 0.7	0.3 / 0.3	0.1 / 0.7
NO / NOX Zero reset	No	Yes	No	No
NO / NOX Span input	860 / 861	860 / 861	860 / 861	860 / 861
NO / NOX Span response	780 / 781	837 / 838	814 / 815	830 / 831
NO / NOX Span tolerance	-9.3 / -9.3	-2.7 / -2.7	-5.3 / -5.3	-3.5 / -3.5
NO / NOX Span reset	Yes	No	Yes	Yes
Monitor calibration criteria	Pass	Pass	Pass	Pass