GOLDCORP
PORCUPINE GOLD MINES

Annual Ambient Air Monitoring Report

YEAR 2015

Porcupine Gold Mines
4315 Gold Mine Road
P.O. Box 70
South Porcupine, ON
P0N 1H0

May 15th, 2016

The following Ambient Air Monitoring Report is written in compliance with the section 2.5.3 of the Operations Manual for Air Quality Monitoring (MOE, 2008) and covers all applicable operations under Goldcorp Canada Ltd, Porcupine Gold Mines operation, Hollinger Open Pit.

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4315 Gold Mine Road
South Porcupine, ON
P0N 1H0

Stephanie Thibeault
Senior Environmental Coordinator

TEL: 705-235-6581
CELL: 705-465-3228
FAX: 705-267-0452
EMAIL: stephanie.thibeault@goldcorp.com

May 15th, 2016

RE: Goldcorp Canada Ltd., Porcupine Gold Mines
Annual Ambient Air Monitoring Report for 2015

To Whom It May Concern:

As per Section 2.5.3 of the *Operations Manual for Air Quality Monitoring* (MOE, 2008), please find a signed hard copy of the *Annual Ambient Air Monitoring Report* for the year 2015 for Goldcorp Canada Ltd., Porcupine Gold Mines, Hollinger Open Pit operations.

The report includes analysis for the continuous monitoring for oxides of nitrogen, TSP, PM10 as well as analysis for the non-continuous monitoring for PM10, metal, and dustfall.

If you require further information and/or clarification on the information included in this report, please do not hesitate to contact me by telephone at (707) 235-6581 or by e-mail at stephanie.thibeault@goldcorp.com.

Sincerely,

Stephanie Thibeault, M.Sc., QEP
Senior Environmental Coordinator
Goldcorp – Porcupine Gold Mines

Enc. Annual Ambient Air Monitoring Report for 2015

cc. Bryan Neeley, Sustainability Manager, Goldcorp Canada Ltd., PGM

Annual | 2015

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Ambient Air Monitoring Report

Patrick Dzijacky
Goldcorp
Porcupine Gold Mines
4315 Gold Mine Road
South Porcupine, Ontario
P0N 1H0
705 235 3221 ext 2039
patrick.dzijacky@goldcorp.com

Report prepared by Rotek Environmental Inc., 15 Keefer Court, Hamilton Ontario, L8E 4V4, 905 573 9533

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Executive Summary

Porcupine Gold Mines is a subsidiary of Goldcorp Canada Ltd., situated in Timmins, Ontario.

In order to monitor potential air quality effects and ensure mitigation efforts are effective, Goldcorp 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 and Climate Change (MOECC) and will continue to operate throughout the life of the mining operations. In accordance with MOECC`s reporting requirements, this is the Annual Ambient Air Monitoring Report for 2015.

Conclusions:

During 2015 there were:

a) 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.

b) 22 exceedances of the continuous PM_{10} 24 hour running average AAQC, 3 at STN72135 (Extendicare), 5 at STN72138 (Hollinger Park), 13 at STN72139 (Hollinger Office) and 1 at STN72140 (Goldmine Tour).

c) 1 exceedance of the non-continuous 24 hour clock TSP AAQC at STN72136 (MRCA).

d) 2 exceedances of the non-continuous 24 hour clock PM_{10} AAQC, 1 at STN72136 (MRCA) and 1 at STN72137 (Shania Twain).

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

f) 11 exceedances of the non-continuous 30 day standard for Total Dustfall, 2 exceedances at STN72135 (Extendicare), 1 at STN72141 (Claimpost Trail), 1 at STN72142 (Aura Lake) and 7 at STN72143 (Snowmobile Crossing).

g) Annual PM_{10} averages of 10 $\mu g/m^3$ at STN72135 (Hollinger Ext.), 14 $\mu g/m^3$ at STN72138 (Hollinger Park), 16 $\mu g/m^3$ at STN72139 (Hollinger Office), 11 $\mu g/m^3$ at STN72140 (Goldmine Tour) and 7 $\mu g/m^3$ at STN72141 (Claimpost Trail).

h) 45 calibrations were conducted on continuous samplers, all of which met criteria.

i) Overall, the percentage of continuous valid pollutant data recovery was 98.2% for 2015, 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 99.3%.

1.0 Introduction

Porcupine Gold Mines is a subsidiary of Goldcorp Canada Ltd., situated in Timmins, Ontario.

In order to monitor potential air quality effects and ensure mitigation efforts are effective, Goldcorp has established an ambient air monitoring network. The network reports continuous and non-continuous measurements of air quality data at various sites located around Goldcorp'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 and Climate Change (MOECC) and will continue to operate throughout the life of the mining operations. In accordance with MOECC`s reporting requirements, this is the Annual Ambient Air Monitoring Report for 2015.

2.0 Goldcorp - Ambient Air Monitoring Network

The ambient air monitoring network consists of a meteorological station and 5 continuous stations that report data for Total Suspended Particulate (TSP), Inhalable Particulate (PM_{10}) and Nitrogen Oxides (NO_X). In addition, there are 6 stations that collect non-continuous data for TSP, PM_{10}, metals, Total Dustfall, passive Sulphur Dioxide (SO_2) and passive 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 can be classified depending on its size, the MOECC 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, 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 Goldcorp ambient air monitoring network utilizes various types of sampling equipment. AirPointer® samplers measure continuous TSP, PM_{10} and Nitrogen Oxides. Hivol, 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 is 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 is considered as "indicative" and should be used only for information purposes.

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

  PM_{10} data is 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. This monitor meets U.S. EPA and International Particulate Monitoring Regulations.

- **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.

- **Hivol - 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 Hivol sampler. PM_{10} samples are collected with a Tisch model 6070 Hivol sampler.

  Hivol 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} Hivol samplers meet US EPA and International Particulate Monitoring Regulations.

- **Hivol - Non-continuous Metals**

  TSP Hivol filters are analyzed every 18 days (NAPS schedule) by an accredited laboratory for a specified list of metals. PM_{10} Hivol 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 ($g/m^2/30d$).

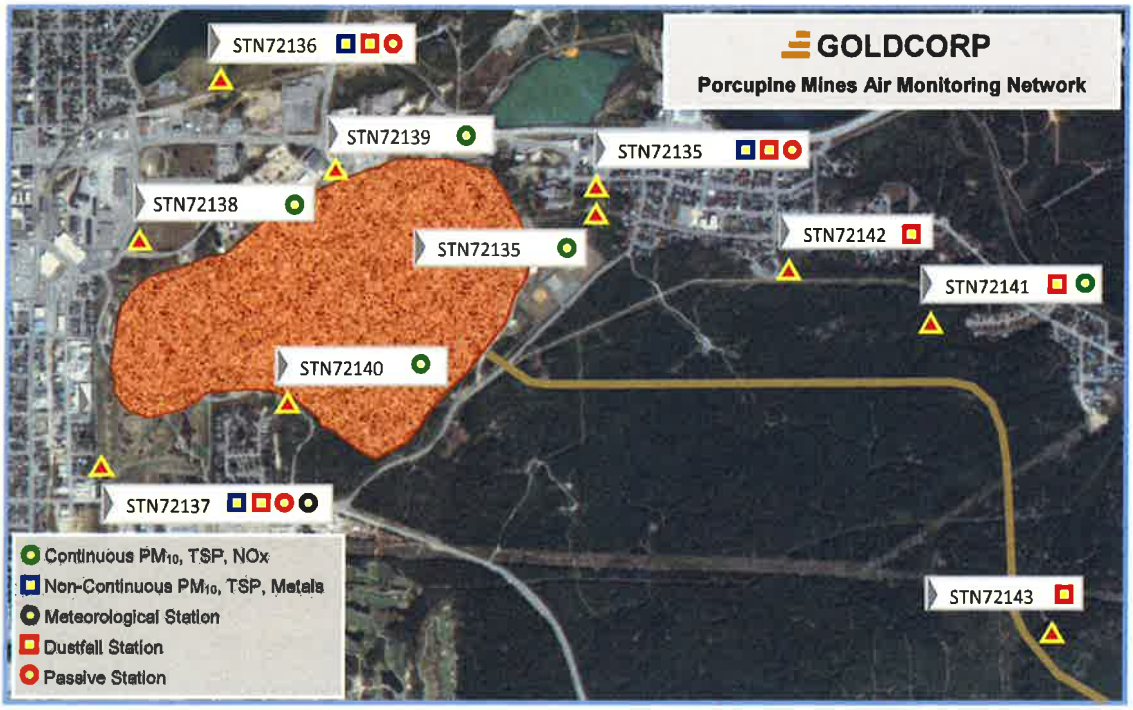
- **Non-continuous Passive SO_2 / NO_2**

  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 is monitored continuously throughout the year by a 10 metre meteorological station. Parameters monitored include; Wind Speed (WS), Wind Direction (WD), Ambient Temperature (AT), Relative Humidity (RH), Barometric Pressure (BP) and Precipitation (PRECP).

Goldcorp Air Monitoring Network Overview - Figure 1



Porcupine Gold Mines Ambient Air Monitoring Network		By : DC	**Figure 1**
	True North	Approx. Scale :	1:14000
Goldcorp - Porcupine Gold Mines - Timmins, Ontario		Date Revised :	01 March, 2016

ROTEK

Parameters Monitored at Each Station - Table 1

Station Identifier	TSP	HiVol TSP	PM_{10}	HiVol PM_{10}	NO_x	Metals	Passive SO_2	Passive NO_2	Total Dustfall	MET
STN72135 - Hollinger Ext.	✓		✓		✓					
STN72138 - Hollinger Park	✓		✓		✓					
STN72139 - Hollinger Office	✓		✓		✓					
STN72140 - Goldmine Tour	✓		✓		✓					
STN72141 - Claimpost Trail	✓		✓		✓				✓	
STN72135 - Extendicare		✓		✓		✓	✓	✓	✓	
STN72136 - MRCA		✓		✓		✓	✓	✓	✓	
STN72137 - Shania Twain		✓		✓		✓	✓	✓	✓	✓
STN72142 - Aura Lake									✓	
STN72143 - Snowmobile Crossing									✓	

UTM Station Coordinates - Table 2

UTM Coordinate Datum

Station Identifier	UTM Zone	Easting	Northing	Elevation
STN72135 - Hollinger Ext.	17 U	477685.60	5369116.12	329 metres
STN72138 - Hollinger Park	17 U	476172.60	5368991.69	318 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	477689.82	5369180.90	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. Monthly data matrices, columnar data, station service logs and data edit records are retained in a historical database.

During 2015 there were 45 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 MOECC.

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 MOECC's 'Operations Manual for Air Quality Monitoring in Ontario', March 2008.

3.0 MOECC - AAQCs, Standards and Guidelines

The MOECC'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.

Continuous Ambient Air Quality Criteria and Standards - Table 3

Contaminant Name	Criterion Type	Average Period	Average Type	Value	Units
Particulate Matter < 10µm – PM_{10}	Interim AAQC	24 Hr	Running	50	µg/m³
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

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

Contaminant Name	Criterion Type	Average Period	Average Type	Value	Units
TSP	AAQC	24 Hr	Clock	120	µg/m³
Arsenic (As)	AAQC	24 Hr	Clock	0.3	µg/m³
Cadmium (Cd)	AAQC	24 Hr	Clock	0.025	µg/m³
Chromium (Cr)	AAQC	24 Hr	Clock	0.5	µg/m³
Cobalt (Co)	AAQC	24 Hr	Clock	0.1	µg/m³
Copper (Cu)	AAQC	24 Hr	Clock	50	µg/m³
Iron (Fe)	AAQC	24 Hr	Clock	25	µg/m³
Lead (Pb)	AAQC	24 Hr	Clock	0.5	µg/m³
Magnesium (Mg)	AAQC	24 Hr	Clock	120	µg/m³
Manganese (Mn)	AAQC	24 Hr	Clock	0.4	µg/m³
Nickel (Ni)	AAQC	24 Hr	Clock	0.2	µg/m³
Selenium (Se)	AAQC	24 Hr	Clock	10	µg/m³
Vanadium (V)	AAQC	24 Hr	Clock	2	µg/m³
Zinc (Zn)	AAQC	24 Hr	Clock	120	µg/m³

Non-continuous TSP Ambient Air Quality Criteria and Standards - Table 4 (cont.)

Contaminant Name	Criterion Type	Average Period	Average Type	Value	Units
Arsenic (As)	Standard	24 Hr	Clock	0.025	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
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
Chromium (Cr)	Guideline	24 Hr	Clock	1.5	µg/m^3
Cobalt (Co)	Guideline	24 Hr	Clock	0.1	µg/m^3
Manganese (Mn)	Guideline	24 Hr	Clock	2.5	µg/m^3
Selenium (Se)	Guideline	24 Hr	Clock	10	µg/m^3

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

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

Non-continuous Total Dustfall Standard - Table 6

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

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)

STN72135 PM_{10} Data Statistics Summary - Table 7

STN72135	Max 24 Hr Running Avg	Events > 24 Hr AAQC	Valid Clock Hours	Monthly Mean	Percent Valid Data
Month	**PM_{10}** $\mu g/m^3$	**PM_{10}** No.	**PM_{10}** Hrs	**PM_{10}** $\mu g/m^3$	**PM_{10}** %
January	13	0	741	6	99.6
February	18	0	670	9	99.7
March	24	0	743	9	99.9
April	26	0	713	10	99.0
May	57	2	735	15	98.8
June	27	0	719	11	99.9
July	53	1	741	17	99.6
August	25	0	742	9	99.7
September	27	0	718	11	99.7
October	19	0	739	5	99.3
November	31	0	715	10	99.3
December	23	0	736	7	98.9
Totals		3	8712		
Annual Mean				10	99.5

STN72138 PM_{10} Data Statistics Summary - Table 8

STN72138	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}
	$\mu g/m^3$	No.	Hrs	$\mu g/m^3$	%
January	19	0	744	7	100.0
February	24	0	671	9	99.9
March	45	0	744	12	100.0
April	66	3	705	21	97.9
May	66	2	744	23	100.0
June	35	0	719	16	99.9
July	46	0	742	19	99.7
August	41	0	743	13	99.9
September	34	0	717	15	99.6
October	45	0	737	10	99.1
November	27	0	697	10	96.8
December	36	0	744	7	100.0
Totals		5	8707		
Annual Mean				14	99.4

STN72139 PM_{10} Data Statistics Summary - Table 9

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}
	$\mu g/m^3$	No.	Hrs	$\mu g/m^3$	%
January	29	0	743	8	99.9
February	19	0	661	9	98.4
March	46	0	744	15	100.0
April	38	0	712	18	98.9
May	59	1	744	20	100.0
June	58	1	718	18	99.7
July	88	7	729	29	98.0
August	61	2	741	17	99.6
September	63	2	714	19	99.2
October	27	0	741	10	99.6
November	37	0	681	14	94.6
December	48	0	738	12	99.2
Totals		13	8666		
Annual Mean				16	98.9

STN72140 PM_{10} Data Statistics Summary - Table 10

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/m³	No.	Hrs	µg/m³	%
January	23	0	744	7	100.0
February	24	0	672	10	100.0
March	38	0	744	10	100.0
April	30	0	714	12	99.2
May	34	0	744	15	100.0
June	26	0	717	12	99.6
July	34	0	741	15	99.6
August	23	0	742	9	99.7
September	26	0	717	14	99.6
October	61	1	742	10	99.7
November	26	0	704	8	97.8
December	31	0	734	8	98.7
Totals		1	8715		
Annual Mean				11	99.5

STN72141 PM_{10} Data Statistics Summary - Table 11

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/m³	No.	Hrs	µg/m³	%
January	8	0	744	4	100.0
February	12	0	672	6	100.0
March	11	0	744	6	100.0
April	25	0	711	7	98.8
May	19	0	744	8	100.0
June	15	0	718	8	99.7
July	30	0	728	11	97.8
August	20	0	742	8	99.7
September	22	0	718	9	99.7
October	25	0	743	5	99.9
November	29	0	711	8	98.8
December	22	0	734	5	98.7
Totals		0	8709		
Annual Mean				7	99.4

STN72135 NO_2 Data Statistics Summary - Table 12

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	16	41	42	0	0	0	744	6	100.0
February	15	43	46	0	0	0	670	5	99.7
March	7	47	52	0	0	0	743	3	99.9
April	7	30	42	0	0	0	720	2	100.0
May	6	24	30	0	0	0	744	2	100.0
June	5	21	23	0	0	0	719	2	99.9
July	5	15	18	0	0	0	741	2	99.6
August	5	18	20	0	0	0	742	1	99.7
September	5	19	21	0	0	0	720	1	100.0
October	6	16	17	0	0	0	742	2	99.7
November	9	28	28	0	0	0	715	4	99.3
December	10	25	27	0	0	0	740	4	99.5
Totals				0	0	0	8740		
Annual Mean								3	99.8

STN72138 NO_2 Data Statistics Summary - Table 13

STN72138	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	48	51	0	0	0	744	8	100.0
February	26	48	49	0	0	0	672	8	100.0
March	17	49	53	0	0	0	744	6	100.0
April	18	47	49	0	0	0	379	ins*	52.6
May	6	27	35	0	0	0	744	2	100.0
June	5	15	19	0	0	0	719	2	99.9
July	8	27	29	0	0	0	742	2	99.7
August	5	14	17	0	0	0	742	2	99.7
September	7	21	22	0	0	0	720	2	100.0
October	10	26	27	0	0	0	744	3	100.0
November	8	20	21	0	0	0	718	3	99.7
December	7	17	20	0	0	0	744	3	100.0
Totals				0	0	0	8412		
Annual Mean								4	96.0

ins* - insufficient data to calculate mean.

STN72139 NO_2 Data Statistics Summary - Table 14

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	20	53	56	0	0	0	743	7	99.9
February	21	49	57	0	0	0	661	8	98.4
March	15	47	49	0	0	0	744	6	100.0
April	16	44	49	0	0	0	719	4	99.9
May	8	25	31	0	0	0	744	3	100.0
June	7	24	29	0	0	0	718	3	99.7
July	9	27	34	0	0	0	729	4	98.0
August	9	21	26	0	0	0	742	3	99.7
September	8	25	29	0	0	0	720	4	100.0
October	12	27	30	0	0	0	744	5	100.0
November	19	42	46	0	0	0	717	5	99.6
December	11	28	31	0	0	0	744	5	100.0
Totals				0	0	0	8725		
Annual Mean								5	99.6

STN72140 NO_2 Data Statistics Summary - Table 15

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	13	55	59	0	0	0	744	5	100.0
February	16	46	48	0	0	0	672	6	100.0
March	10	57	67	0	0	0	744	4	100.0
April	15	56	59	0	0	0	720	3	100.0
May	8	40	48	0	0	0	744	3	100.0
June	5	26	30	0	0	0	717	2	99.6
July	5	14	17	0	0	0	741	2	99.6
August	4	14	18	0	0	0	741	1	99.6
September	7	20	22	0	0	0	720	2	100.0
October	9	29	31	0	0	0	744	3	100.0
November	6	19	22	0	0	0	717	2	99.6
December	13	31	32	0	0	0	739	4	99.3
Totals				0	0	0	8743		
Annual Mean								3	99.8

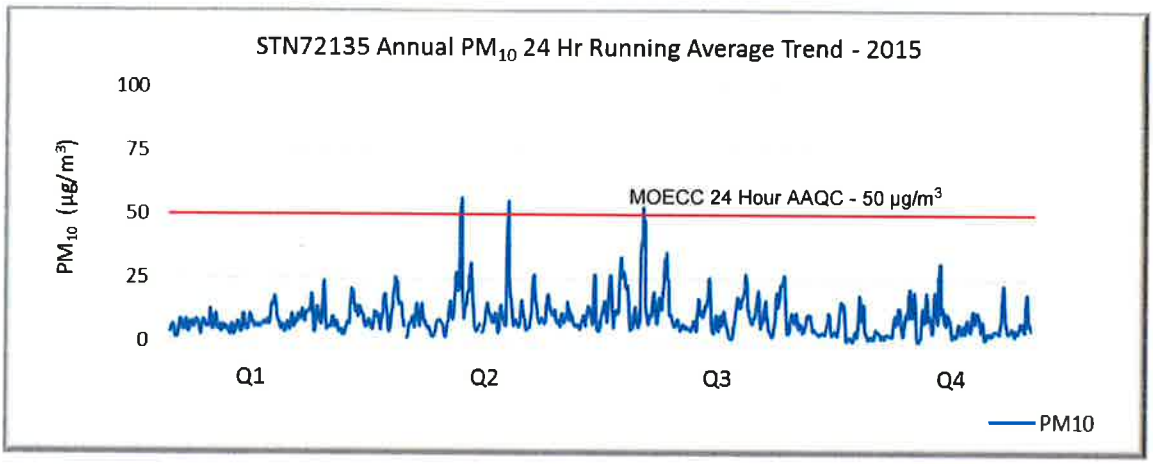
STN72141 NO_2 Data Statistics Summary - Table 16

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	4	13	14	0	0	0	744	1	100.0
February	4	16	18	0	0	0	672	1	100.0
March	1	9	10	0	0	0	495	ins*	66.5
April	2	8	9	0	0	0	700	1	97.2
May	2	12	14	0	0	0	744	1	100.0
June	2	14	18	0	0	0	718	1	99.7
July	2	16	19	0	0	0	728	1	97.8
August	2	10	14	0	0	0	742	1	99.7
September	2	10	12	0	0	0	720	1	100.0
October	7	23	26	0	0	0	744	3	100.0
November	8	23	24	0	0	0	718	3	99.7
December	9	18	21	0	0	0	738	3	99.2
Totals				0	0	0	8463		
Annual Mean								2	96.7

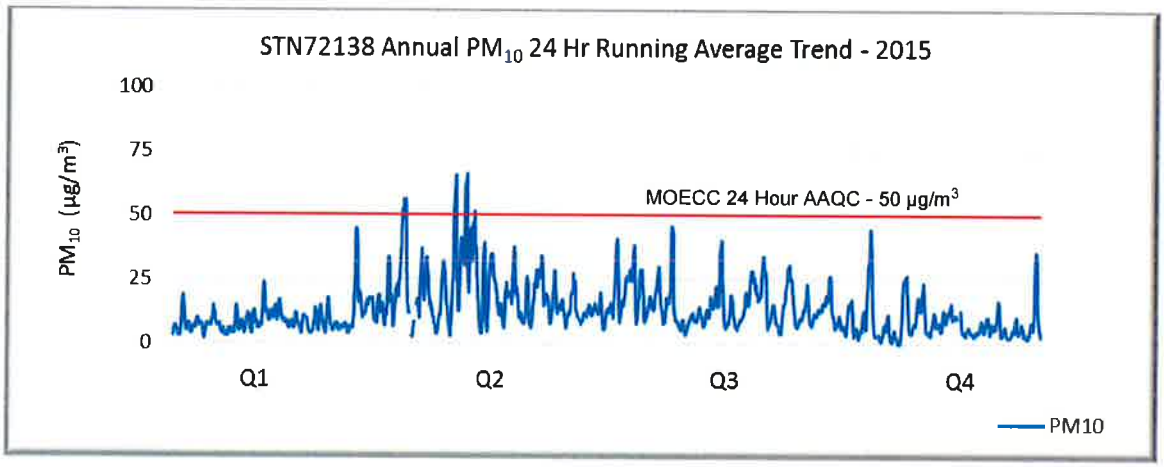
ins* - insufficient data to calculate mean.

4.1 Continuous PM_{10} 24 Hr Running Average Trends

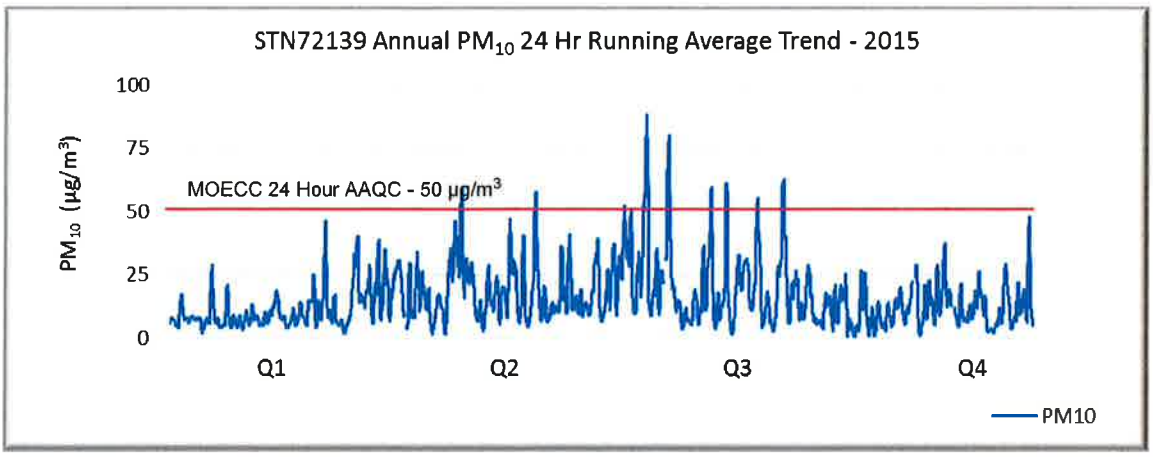
STN72135 PM_{10} 24 Hr Running Average Trend - Figure 2



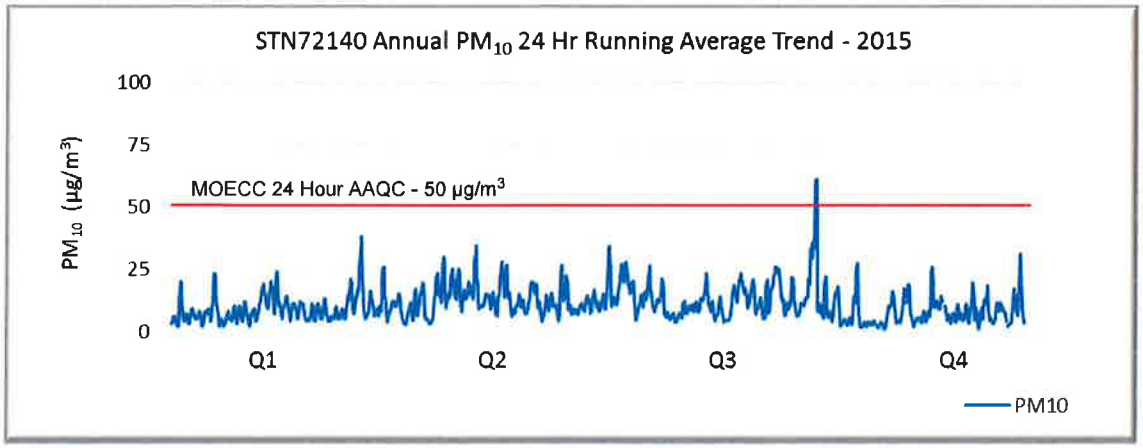
STN72138 PM_{10} 24 Hr Running Average Trend - Figure 3



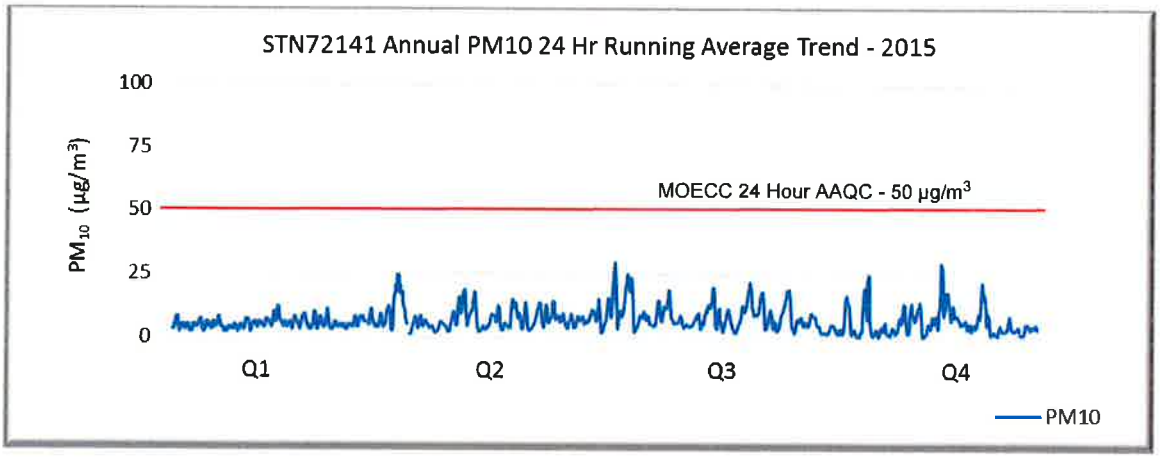
STN72139 PM_{10} 24 Hr Running Average Trend - Figure 4



STN72140 PM_{10} 24 Hr Running Average Trend - Figure 5

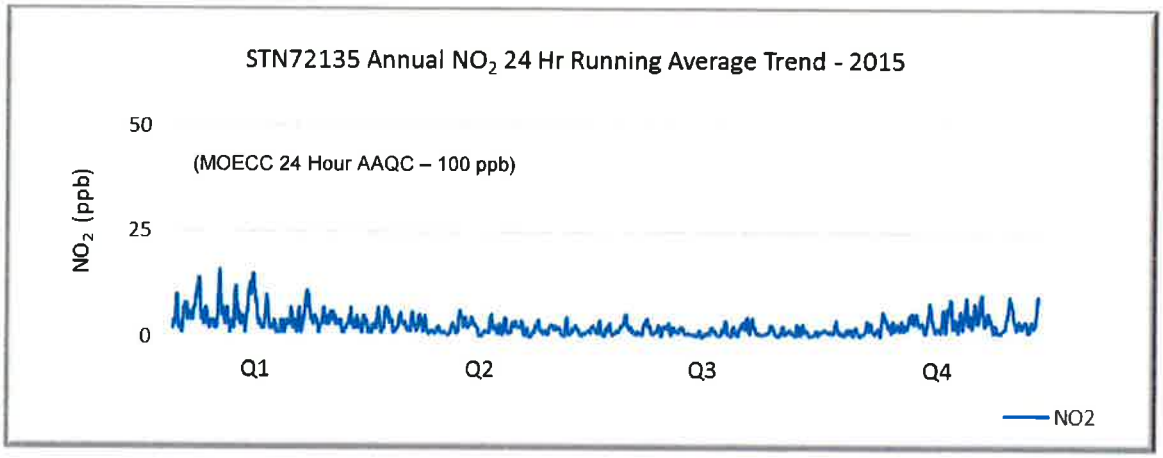


STN72141 PM_{10} 24 Hr Running Average Trend - Figure 6

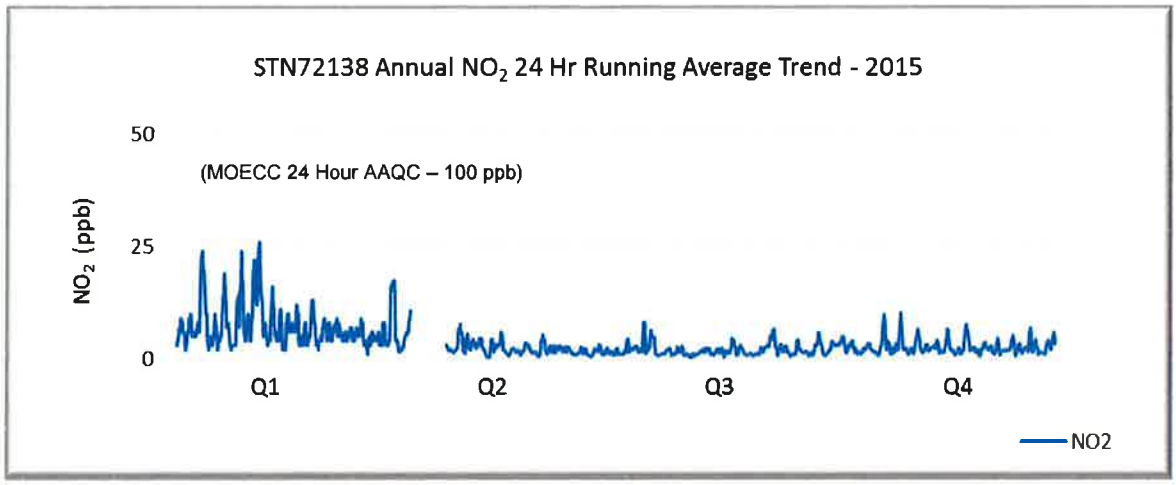


4.2 Continuous NO_2 24 Hr Running Average Trends

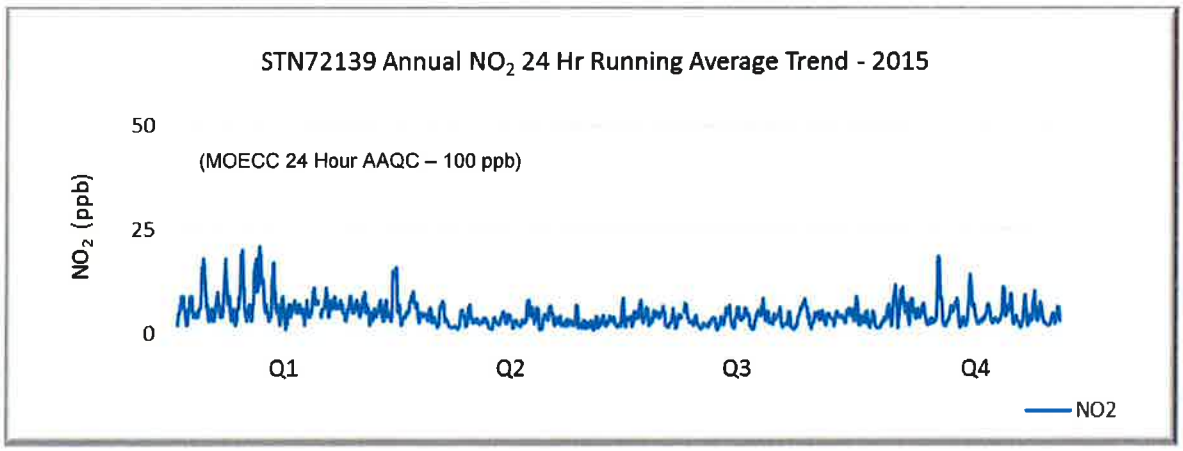
STN72135 NO_2 24 Hr Running Average Trend - Figure 7



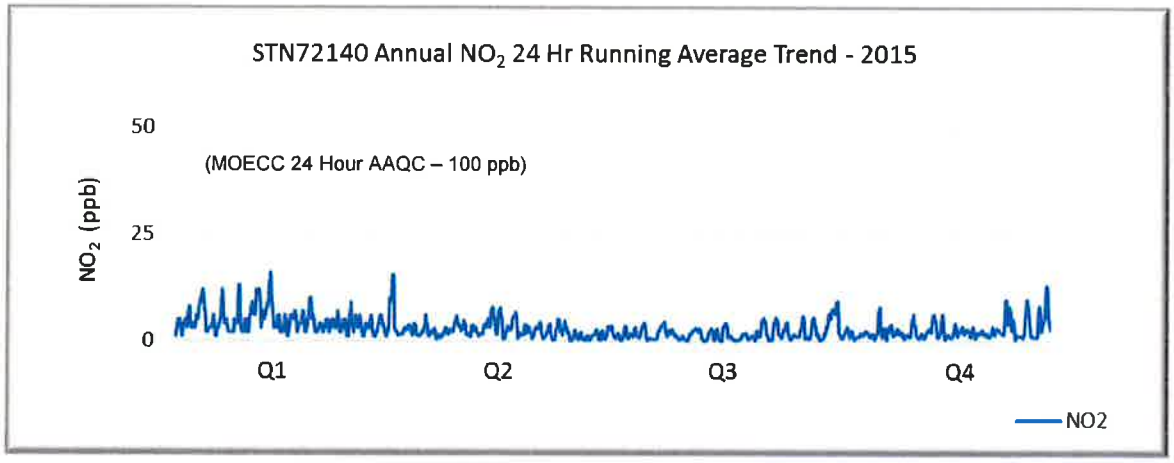
STN72138 NO_2 24 Hr Running Average Trend - Figure 8



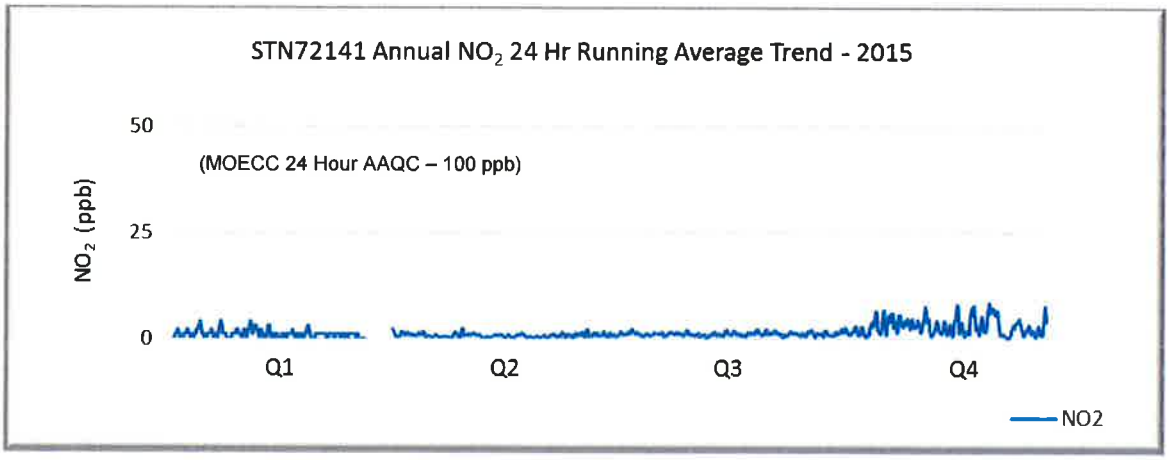
STN72139 NO_2 24 Hr Running Average Trend - Figure 9



STN72140 NO_2 24 Hr Running Average Trend - Figure 10



STN72141 NO_2 24 Hr Running Average Trend - Figure 11



5.0 Non-continuous Data Statistics

Non-continuous TSP, PM_{10} and suspended metal data statistics have been summarized in Tables 17 and 18 and include:

- Reportable Detection Limit (RDL)
- Annual Maximum 24 hour clock value
- Annual 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 MOECC guidelines, non-detect parameters are reported as half of the Reportable Detection Limit for all non-continuous parameters.

Non-continuous TSP Data Summary - Table 17

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	35	133	37	98	31
Arsenic	0.0037	0.0047	0.0020	0.0019	0.0019	0.0038	0.0020
Cadmium	0.0012	0.0006	0.0006	0.0019	0.0008	0.0006	0.0006
Chromium	0.0031	0.0127	0.0031	0.0126	0.0030	0.0103	0.0029
Cobalt	0.0012	0.0029	0.0008	0.0019	0.0007	0.0016	0.0007
Copper	0.0031	0.1570	0.0768	0.0950	0.0436	0.0637	0.0397
Iron	0.0310	5.3800	1.3213	3.7300	0.9093	3.0100	0.7445
Lead	0.0018	0.0031	0.0014	0.0044	0.0018	0.0098	0.0027
Magnesium	0.0310	1.6600	0.4540	1.7500	0.4087	1.3000	0.3272
Manganese	0.00061	0.1230	0.0319	0.0722	0.0205	0.0553	0.0160
Nickel	0.0018	0.0080	0.0026	0.0169	0.0031	0.0065	0.0022
Selenium	0.0061	0.0031	0.0031	0.0031	0.0031	0.0031	0.0031
Sulphur	0.0150	0.8680	0.3835	0.8680	0.3746	0.8920	0.3558
Vanadium	0.0031	0.0083	0.0024	0.0058	0.0019	0.0046	0.0018
Zinc	0.0031	0.0446	0.0177	0.0544	0.0203	0.0342	0.0169
Sulphate	0.05	2.6000	1.1495	2.6000	1.1210	2.6700	1.0665

Non-continuous PM_{10} Data Summary - Table 18

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	42	16	85	20	53	16
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	0.0073	0.0022	0.0062	0.0021	0.0062	0.0022
Cobalt	0.0012	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006
Copper	0.0031	0.0601	0.0264	0.1120	0.0314	0.0263	0.0163
Iron	0.0310	2.2200	0.5193	1.6200	0.5498	1.7400	0.4958
Lead	0.0018	0.0058	0.0014	0.0066	0.0015	0.0074	0.0019
Magnesium	0.0310	0.7350	0.2024	0.6320	0.2469	0.6990	0.2233
Manganese	0.00061	0.0444	0.0119	0.0316	0.0119	0.0294	0.0100
Nickel	0.0018	0.0038	0.0013	0.0045	0.0016	0.0040	0.0017
Selenium	0.0061	0.0031	0.0031	0.0031	0.0031	0.0031	0.0031
Sulphur	0.0150	0.5190	0.2596	0.5520	0.2838	0.4820	0.2627
Vanadium	0.0031	0.0040	0.0018	0.0033	0.0017	0.0016	0.0016
Zinc	0.0031	0.0170	0.0097	0.0223	0.0133	0.205	0.0127
Sulphate	0.05	1.5600	0.7792	1.6500	0.8500	1.4500	0.7883

Non-continuous Total Dustfall and Passive SO_2 / NO_2 data statistics have been summarized in Tables 19 and 20.

Non-continuous Total Dustfall Data Summary - Table 19

Month	STN72135 Extendicare	STN72136 MRCA	STN72137 Shania Twain	STN72141 Claimpost	STN72142 Aura Lake	STN72143 Snowmobile Crossing
	g/m²/30d	g/m²/30d	g/m²/30d	g/m²/30d	g/m²/30d	g/m²/30d
January	0.82	0.54	0.42	0.79	0.50	0.61
February	1.60	0.71	0.75	1.50	1.10	0.89
March	2.00	1.40	0.90	3.50	0.94	1.80
April	1.60	1.80	0.99	6.90	1.50	4.30
May	6.20	2.50	2.90	7.40	57.00	7.50
June	9.40	2.50	2.20	3.10	2.80	0.01
July	8.10	4.20	2.70	3.70	3.20	10.00
August	1.80	1.40	1.50	3.10	1.90	15.00
September	1.70	1.50	2.00	2.50	1.20	11.00
October	2.60	1.50	1.80	Invalid	1.80	15.00
November	2.00	1.50	0.75	5.30	2.10	45.00
December	0.63	0.83	0.77	0.97	0.95	13.00

Non-continuous Passive SO_2 / NO_2 Data Summary - Table 20

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	0.11	1.90	2.47	2.20
February	0.05	0.05	0.05	1.55	1.81	1.65
March	0.05	0.05	0.05	2.23	1.86	2.35
April	0.14	0.05	0.05	3.09	2.69	2.14
May	0.05	0.05	0.05	2.48	2.66	1.38
June	0.15	0.05	0.05	1.76	0.68	2.57
July	0.05	0.05	0.05	2.51	1.55	0.75
August	0.05	0.05	0.05	2.09	0.92	0.67
September	0.31	0.05	0.05	1.18	1.31	0.50
October	0.12	0.10	0.05	1.51	1.80	2.00
November	0.11	0.05	0.05	1.69	2.20	1.37
December	0.05	0.05	0.05	1.60	1.92	1.27

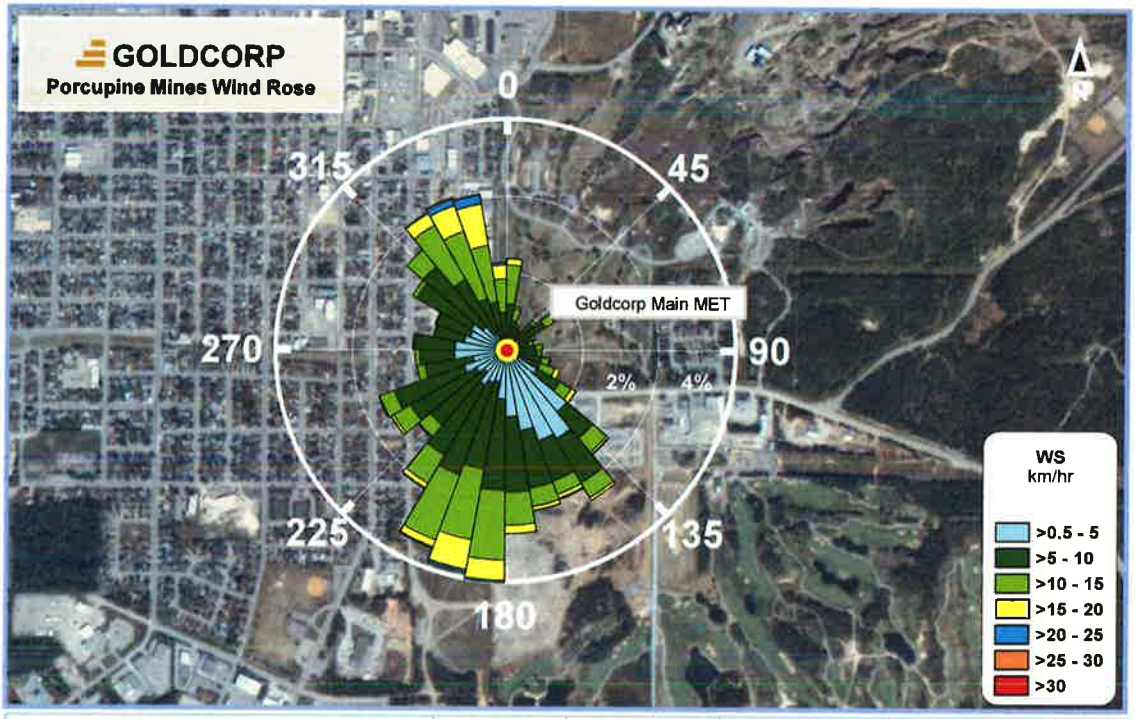
6.0 Wind Frequency Distribution

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 Goldcorp 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 2015 wind rose below indicate predominant wind directions out of the south (these branches represent the plot data when the wind was blowing from this vector). A wind frequency distribution table has been included for 2015 which summarizes wind frequency distribution in tabular format (Table 21).

Wind Frequency Distribution - Wind Rose - Figure 12



Wind Rose – Annual, 2015 Meteorological Station		By : BB	**Figure 12**
	True North	Approx. Scale :	1:14000
Goldcorp - Porcupine Gold Mines - Timmins, Ontario		Date Revised :	29 Apr, 2016

ROTEK

Wind Frequency Distribution Table - Table 21

Wind Speed Class	0.5 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	> 30	All
	km/hr	km/hr	km/hr	km/hr	km/hr	km/hr	km/hr	
Wind Direction	%	%	%	%	%	%	%	%
N	1.33	3.35	4.23	1.94	0.40	0.03	0.00	11.28
NE	1.31	2.33	0.53	0.03	0.00	0.00	0.00	4.20
E	1.16	2.36	0.78	0.05	0.00	0.00	0.00	4.35
SE	7.44	4.12	1.85	0.41	0.06	0.00	0.00	13.88
S	7.00	9.06	5.47	1.77	0.18	0.00	0.01	23.49
SW	3.97	9.47	3.64	0.45	0.06	0.01	0.00	17.60
W	4.98	4.75	0.47	0.02	0.00	0.00	0.00	10.22
NW	3.16	7.03	3.67	0.94	0.13	0.02	0.00	14.95
All	30.35	42.47	20.64	5.61	0.83	0.06	0.01	100.00

7.0 Valid Data Percentages

Overall, the percentage of continuous valid pollutant data recovery was 98.2% for 2015, 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 99.3%.

7.1 Missing / Invalid Data Summary

Notwithstanding the minimum 90% valid data performance measure, emitters are to notify (as soon as practical) the MOECC of any system or equipment failures resulting in missing data of 24 hours or more in length and of the plans and schedule for repairing the failed system or equipment. Tables 22 and 23 detail problems that resulted in significant data losses along with remedial actions.

Missing / Invalid Non-continuous Data Summary - Table 22

Station	Parameter	Start Date	Start Time EST	End Date	End Time EST	Description	Corrective Action
STN72135	PM_{10}	Jan 06	00:00	Jan 06	24:00	Power Failure	Restored Power
STN72135	TSP	May 12	00:00	May 12	24:00	Power Failure	Restored Power
STN72141	Dustfall	Oct 01	00:00	Oct 31	24:00	Sample Leaked	Invalidated Data

Missing / Invalid Continuous Data Summary - Table 23

Station	Parameter	Start Date	Start Time EST	End Date	End Time EST	Description	Corrective Action
STN72141	TSP	Mar 21	15:00	Mar 31	23:00	Pump Failure	Replaced Pump
STN72141	NO, NO_2, NO_X	Mar 21	15:00	Mar 31	23:00	Pump Failure	Replaced Pump
STN72138	TSP	Apr 08	08:00	Apr 22	12:00	Pump Failure	Replaced Pump
STN72138	NO, NO_2, NO_X	Apr 08	08:00	Apr 22	12:00	Pump Failure	Replaced Pump
STN72135	TSP	Aug 07	06:00	Aug 14	11:00	Sensor Failure	Repaired Sensor
STN72140	TSP	Aug 03	07:00	Aug 11	10:00	Sensor Failure	Repaired Sensor
STN72135	TSP	Oct 09	21:00	Oct 14	09:00	Sensor Failure	Repaired Sensor
STN72141	TSP	Oct 09	09:00	Oct 10	09:00	Sensor Failure	Invalidated Data
STN72141	TSP	Nov 04	21:00	Nov 09	12:00	Sensor Failure	Repaired Sensor

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.

9.0 Exceedance Summary

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

When reporting the number of continuous exceedances, there may be multiple consecutive running averages that exceed the AAQC or standard. If the consecutive averages occur within a single clock-based averaging period, they are to be reported as a single exceedance. If they are spread across 2 clock-based averaging periods and greater than 24 consecutive hours, they are to be reported as 2 exceedances. The exceedance value reported is the highest recorded value during the exceedance episode.

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 2015 there were:

a) 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.

b) 22 exceedances of the continuous PM_{10} 24 hour running average AAQC, 3 at STN72135, 5 at STN72138, 13 at STN72139 and 1 at STN72140.

c) 1 exceedance of the non-continuous 24 hour clock TSP AAQC at STN72136.

d) 2 exceedances of the non-continuous 24 hour clock PM_{10} AAQC, 1 at STN72136 and 1 at STN72137.

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

f) 11 exceedances of the non-continuous 30 day standard for Total Dustfall, 2 exceedances at STN72135, 1 at STN72141, 1 at STN72142 and 7 at STN72143.

Non-continuous exceedances are summarized in Table 24. Continuous exceedance dates, times and averages are summarized in Table 25.

Non-continuous Parameter Exceedance Summary - Table 24

Station	Parameter	Criterion Exceeded	Exceedance Count	Start Date	Start Time	End Date	End Time	Exceedance Value
STN72141	Total Dustfall	30 day standard	1	May 01	00:00	May 31	24:00	7.4 g/m²/30d
STN72142	Total Dustfall	30 day standard	1	May 01	00:00	May 31	24:00	57.0 g/m²/30d
STN72143	Total Dustfall	30 day standard	1	May 01	00:00	May 31	24:00	7.5 g/m²/30d
STN72135	Total Dustfall	30 day standard	1	Jun 01	00:00	Jun 30	24:00	9.4 g/m²/30d
STN72136	TSP	24 Hr Clock AAQC	1	Jul 11	00:00	Jul 11	24:00	133 µg/m³
STN72135	Total Dustfall	30 day standard	1	Jul 01	00:00	Jul 31	24:00	8.1 g/m²/30d
STN72143	Total Dustfall	30 day standard	1	Jul 01	00:00	Jul 31	24:00	10.0 g/m²/30d
STN72136	PM_{10}	24 Hr Clock AAQC	1	Jul 29	00:00	Jul 29	24:00	85 µg/m³
STN72137	PM_{10}	24 Hr Clock AAQC	1	Jul 29	00:00	Jul 29	24:00	53 µg/m³
STN72143	Total Dustfall	30 day standard	1	Aug 01	00:00	Aug 31	24:00	15.0 g/m²/30d
STN72143	Total Dustfall	30 day standard	1	Sep 01	00:00	Sep 30	24:00	11.0 g/m²/30d
STN72143	Total Dustfall	30 day standard	1	Oct 01	00:00	Oct 31	24:00	15.0 g/m²/30d
STN72143	Total Dustfall	30 day standard	1	Nov 01	00:00	Nov 30	24:00	45.0 g/m²/30d
STN72143	Total Dustfall	30 day standard	1	Dec 01	00:00	Dec 31	24:00	13.0 g/m²/30d

Continuous Parameter Exceedance Summary - Table 25

Station	Parameter	Criterion Exceeded	Exceedance Count	Start Date	Start Time	End Date	End Time	Exceedance Value
STN72135	PM_{10}	24 Hr Interim AAQC	1	May 03	20:00	May 04	12:00	57 µg/m³
STN72135	PM_{10}	24 Hr Interim AAQC	1	May 24	04:00	May 24	11:00	55 µg/m³
STN72135	PM_{10}	24 Hr Interim AAQC	1	Jul 20	14:00	Jul 20	16:00	53 µg/m³
STN72138	PM_{10}	24 Hr Interim AAQC	1	Apr 07	06:00	Apr 07	16:00	52 µg/m³
STN72138	PM_{10}	24 Hr Interim AAQC	1	Apr 07	21:00	Apr 08	19:00	57 µg/m³
STN72138	PM_{10}	24 Hr Interim AAQC	1	Apr 28	23:00	Apr 29	20:00	66 µg/m³
STN72138	PM_{10}	24 Hr Interim AAQC	1	May 03	14:00	May 04	13:00	66 µg/m³
STN72138	PM_{10}	24 Hr Interim AAQC	1	May 07	15:00	May 07	17:00	52 µg/m³
STN72139	PM_{10}	24 Hr Interim AAQC	1	May 03	16:00	May 04	12:00	59 µg/m³
STN72139	PM_{10}	24 Hr Interim AAQC	1	Jun 03	19:00	Jun 04	10:00	58 µg/m³
STN72139	PM_{10}	24 Hr Interim AAQC	1	Jul 11	07:00	Jul 11	14:00	52 µg/m³
STN72139	PM_{10}	24 Hr Interim AAQC	1	Jul 19	13:00	Jul 19	15:00	56 µg/m³
STN72139	PM_{10}	24 Hr Interim AAQC	3	Jul 19	17:00	Jul 21	10:00	88 µg/m³
STN72139	PM_{10}	24 Hr Interim AAQC	2	Jul 29	13:00	Jul 30	16:00	80 µg/m³
STN72139	PM_{10}	24 Hr Interim AAQC	1	Aug 17	03:00	Aug 17	14:00	60 µg/m³
STN72139	PM_{10}	24 Hr Interim AAQC	1	Aug 23	14:00	Aug 24	11:00	61 µg/m³
STN72139	PM_{10}	24 Hr Interim AAQC	1	Sep 06	01:00	Sep 06	11:00	55 µg/m³
STN72139	PM_{10}	24 Hr Interim AAQC	1	Sep 16	14:00	Sep 17	12:00	63 µg/m³
STN72140	PM_{10}	24 Hr Interim AAQC	1	Oct 03	15:00	Oct 04	09:00	61 µg/m³

10.0 Continuous PM_{10} Exceedance Episode Pollution Roses

The following PM_{10} pollution roses graphically illustrate the PM_{10} exceedance episodes.

The rose branches show the percentage of time pollutants come from a particular direction. Branches should therefore point to the source of PM_{10}. The branches are divided into segments of different colours, with the colours representing PM_{10} concentration ranges. The length of each segment within a branch is proportional to the frequency of PM_{10} concentration ranges from that direction.

PM_{10} Pollution Rose – STN72135 May 03rd to May 04th - Figure 13

STN72135 PM_{10} Pollution Rose
May 03rd - 04th, 2015

Goldcorp Porcupine Mines Timmins Ontario

True North

By : JP

Approx. Scale : 1:8525

Date Revised : 10 Nov, 2015

Figure 13

ROTEK

Exceedance is due to inhalable particulate (PM_{10}) levels from construction activities on the Hollinger Project Environmental Control Berm.

PM_{10} Pollution Rose – STN72135 May 24th - Figure 14

STN72135 PM_{10} Pollution Rose May 24th, 2015

Goldcorp Porcupine Mines Timmins Ontario

True North

By : JP

Approx. Scale : 1:8525

Date Revised : 10 Nov, 2015

Figure 14

ROTEK

Exceedance is due to inhalable particulate (PM_{10}) levels from construction activities on the Hollinger Project Environmental Control Berm and traffic on Vipond Road.

PM_{10} Pollution Rose – STN72135 July 20th – Figure 15

STN72135 PM_{10} Pollution Rose
July 20th, 2015

Goldcorp Porcupine Mines Timmins Ontario

True North

By : JP

Approx. Scale : 1:8525

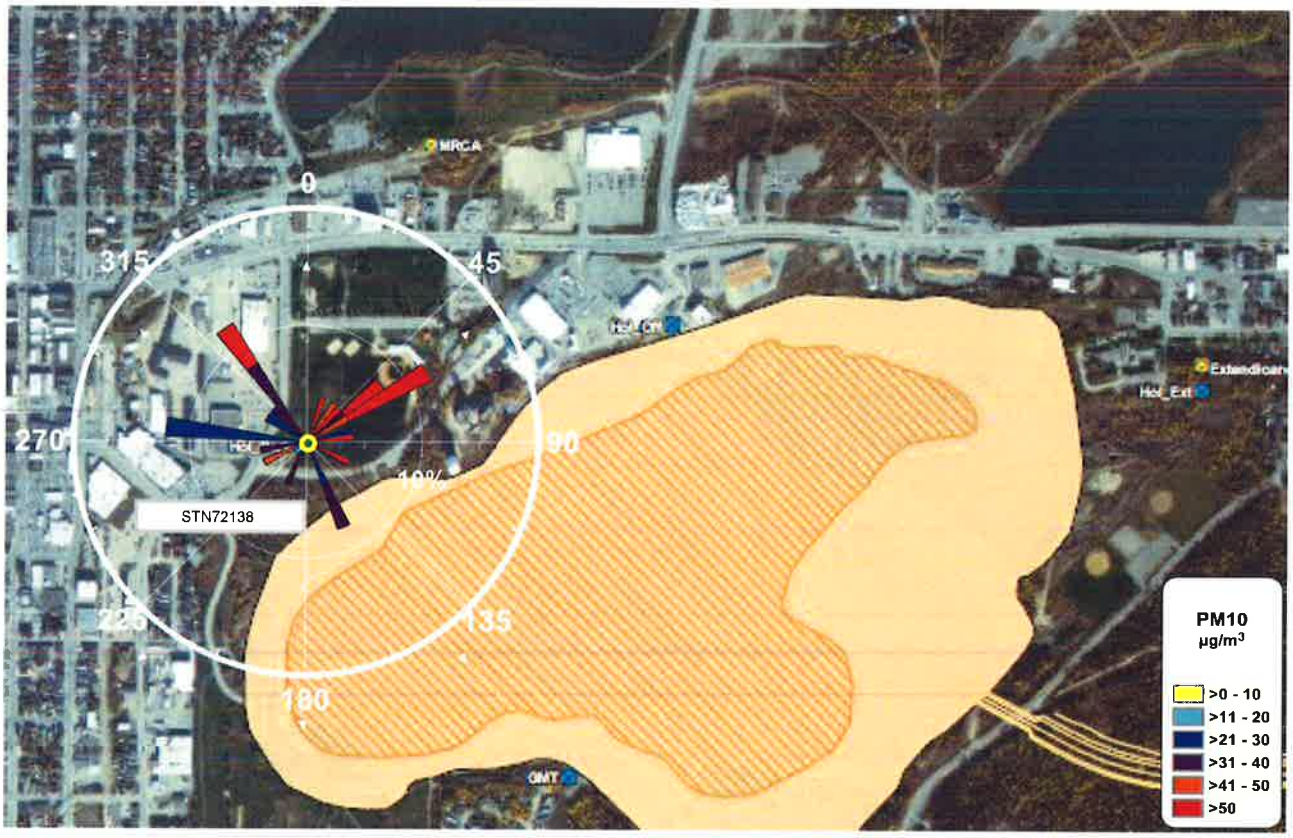
Date Revised : 10 Nov, 2015

Figure 15

ROTEK

Exceedance is due to inhalable particulate (PM_{10}) levels from construction activities on the Hollinger Project Environmental Control Berm.

PM_{10} Pollution Rose – STN72138 April 07th – Figure 16



STN72138 PM_{10} Pollution Rose
April 07th, 2015

Goldcorp Porcupine Mines Timmins Ontario

True North

By : JP

Approx. Scale : 1:8525

Date Revised : 14 Aug, 2015

Figure 16

ROTEK

Exceedance is due to inhalable particulate (PM_{10}) levels from offsite parking lots and Brunette Road.

PM_{10} Pollution Rose – STN72138 April 07th to April 08th - Figure 17

STN72138 PM_{10} Pollution Rose April 07th - 08th, 2015

Goldcorp Porcupine Mines Timmins Ontario

True North

By : JP

Approx. Scale : 1:8525

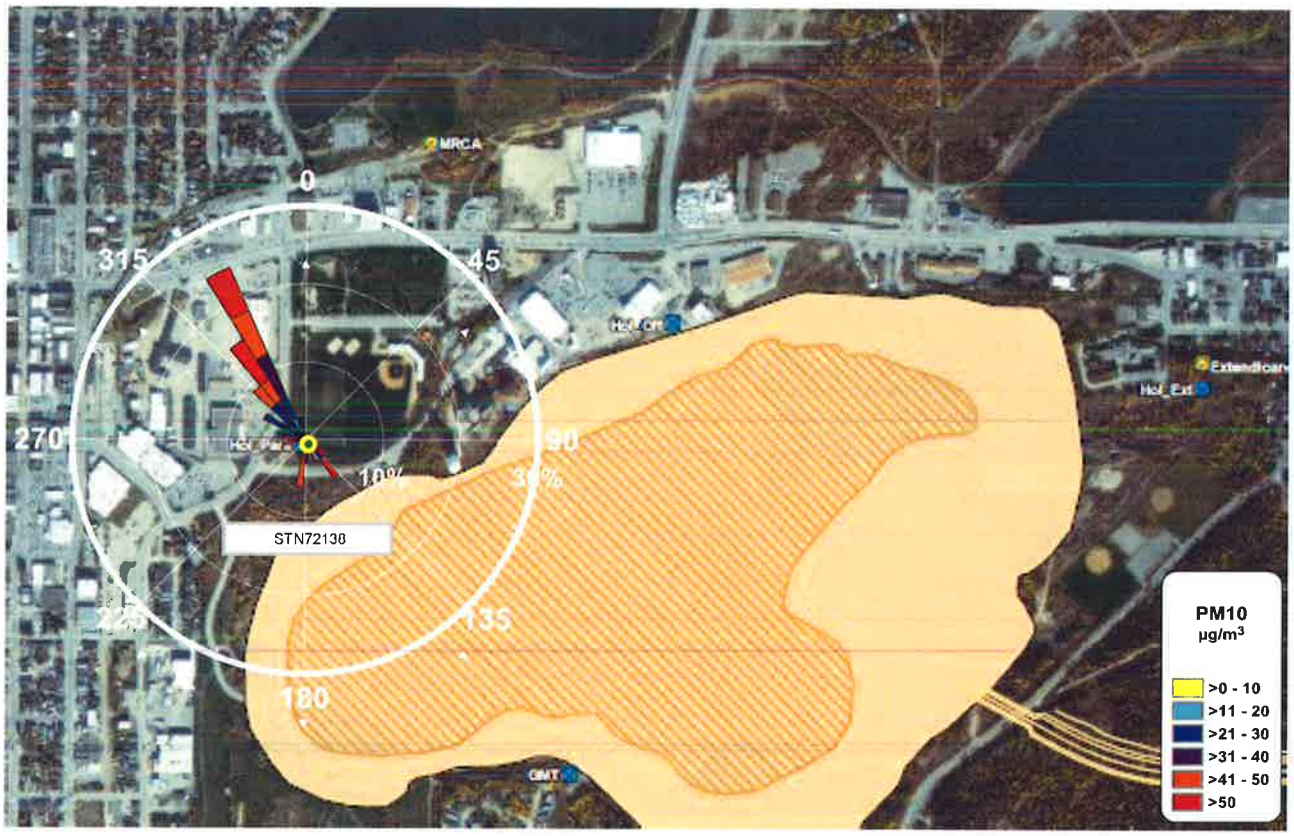
Date Revised : 14 Aug, 2015

Figure 17

ROTEK

Exceedance is due to inhalable particulate (PM_{10}) levels from construction activities on the Hollinger Project Environmental Control Berm.

PM_{10} Pollution Rose – STN72138 April 28th to April 29th - Figure 18



STN72138 PM_{10} Pollution Rose
April 28th - 29th, 2015

Goldcorp Porcupine Mines Timmins Ontario

True North

By : JP

Approx. Scale : 1:8525

Date Revised : 14 Aug, 2015

Figure 18

ROTEK

Exceedance is due to inhalable particulate (PM_{10}) levels from offsite parking lots and Brunette Road.

PM_{10} Pollution Rose – STN72138 May 03rd to May 04th - Figure 19

STN72138 PM_{10} Pollution Rose
May 03rd - 04th, 2015

Goldcorp Porcupine Mines Timmins Ontario

True North

By : JP

Approx. Scale : 1:8525

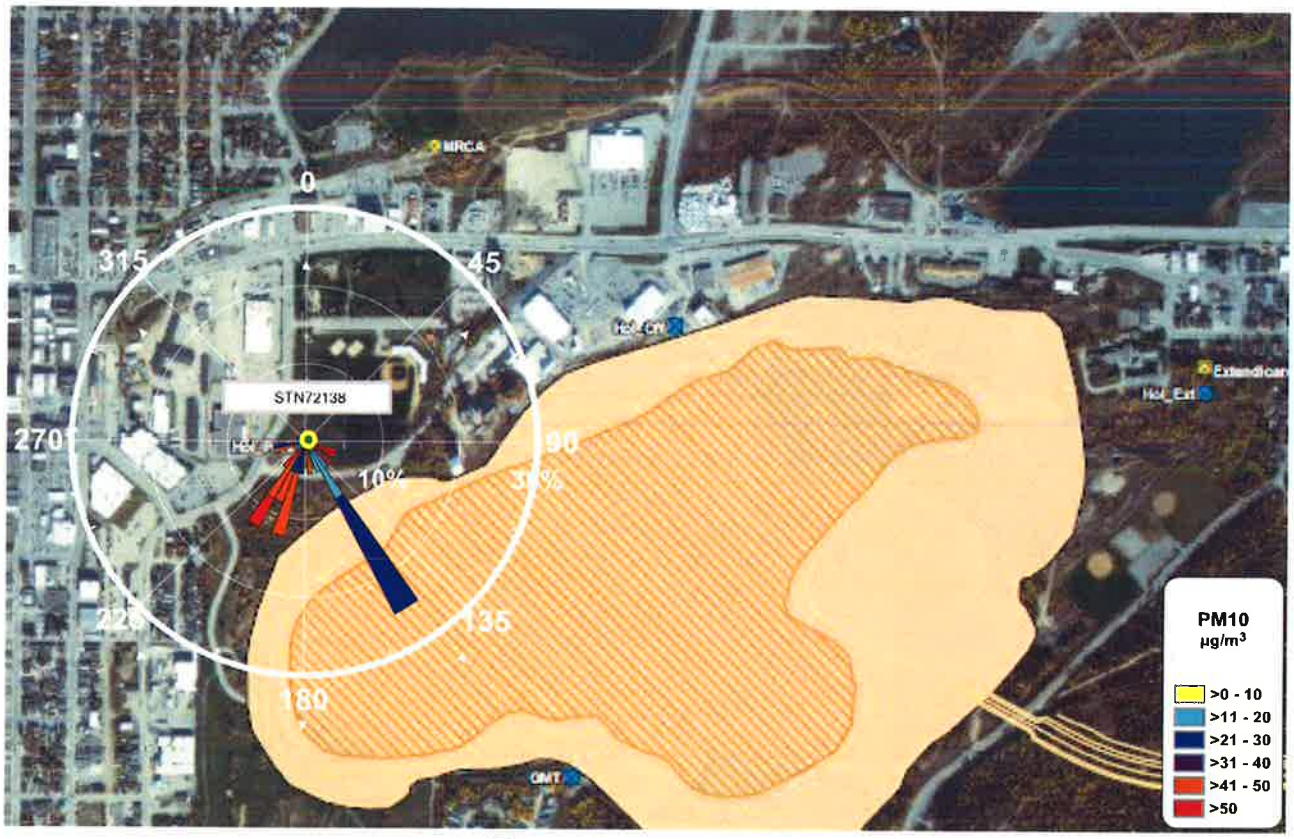
Date Revised : 14 Aug, 2015

Figure 19

ROTEK

Exceedance is due to inhalable particulate (PM_{10}) levels from offsite parking lots and Brunette Road.

PM_{10} Pollution Rose – STN72138 May 07th - Figure 20



STN72138 PM_{10} Pollution Rose
May 07th, 2015

Goldcorp Porcupine Mines Timmins Ontario

True North

By : JP

Approx. Scale : 1:8525

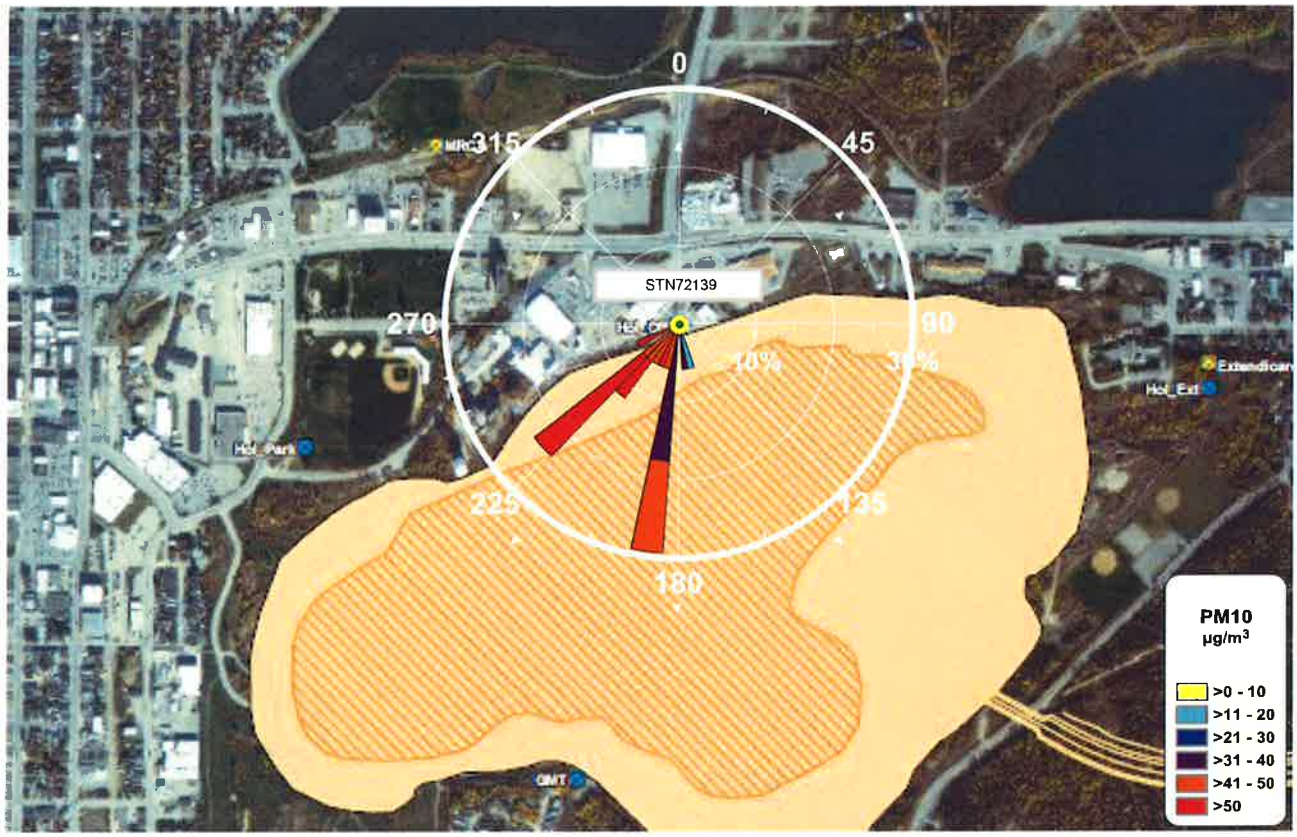
Date Revised : 14 Aug, 2015

Figure 20

ROTEK

Exceedance is due to inhalable particulate (PM_{10}) levels from offsite roads and construction activities on the Hollinger Project Environmental Control Berm.

PM_{10} Pollution Rose – STN72139 May 03rd to May 04th – Figure 21



STN72139 PM_{10} Pollution Rose
May 03rd - 04th, 2015

Goldcorp Porcupine Mines Timmins Ontario

True North

By : JP

Approx. Scale : 1:8525

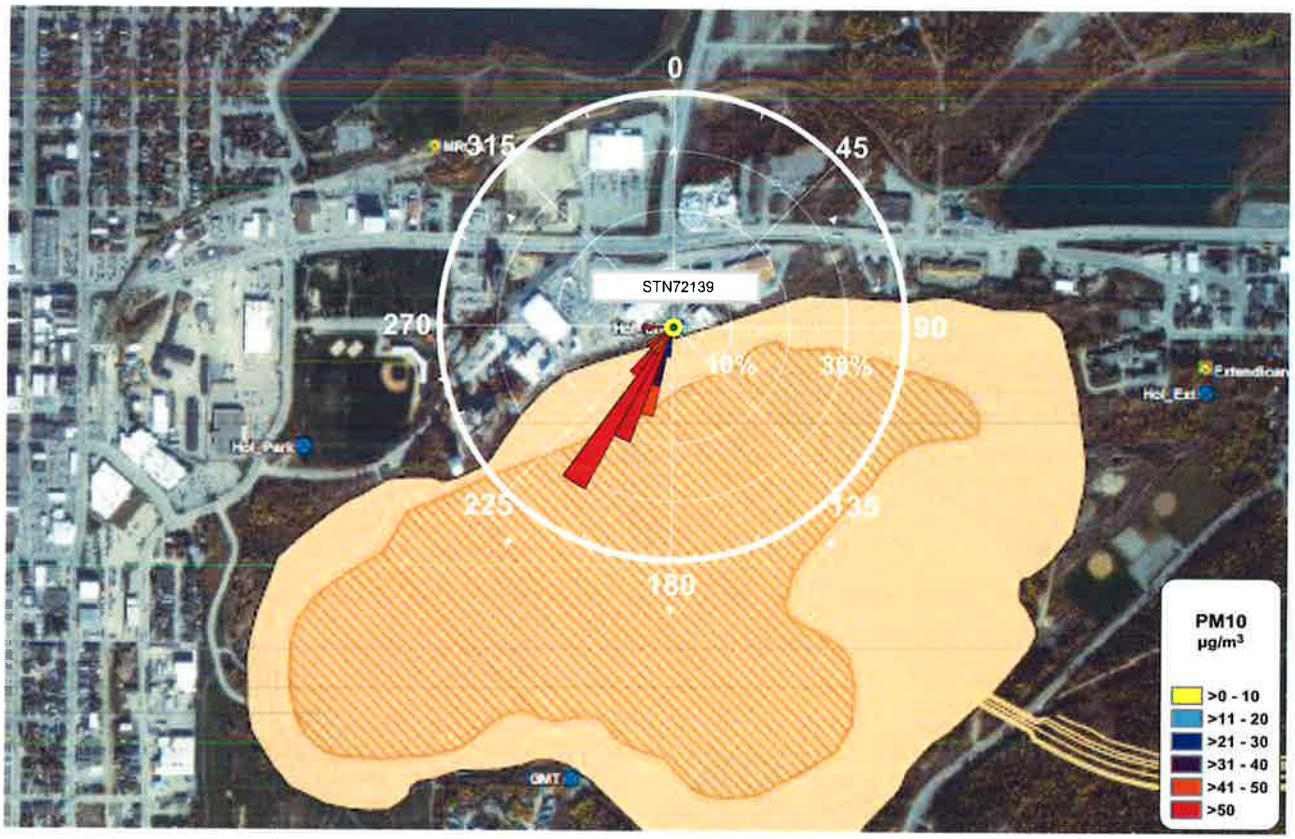
Date Revised : 14 Aug, 2015

Figure 21

ROTEK

Exceedance is due to inhalable particulate (PM_{10}) levels from construction activities on the Hollinger Project Environmental Control Berm.

PM_{10} Pollution Rose – STN72139 June 03rd to June 04th – Figure 22



STN72139 PM_{10} Pollution Rose
June 03rd - 04th, 2015

Goldcorp Porcupine Mines Timmins Ontario

True North

By : JP

Approx. Scale : 1:8525

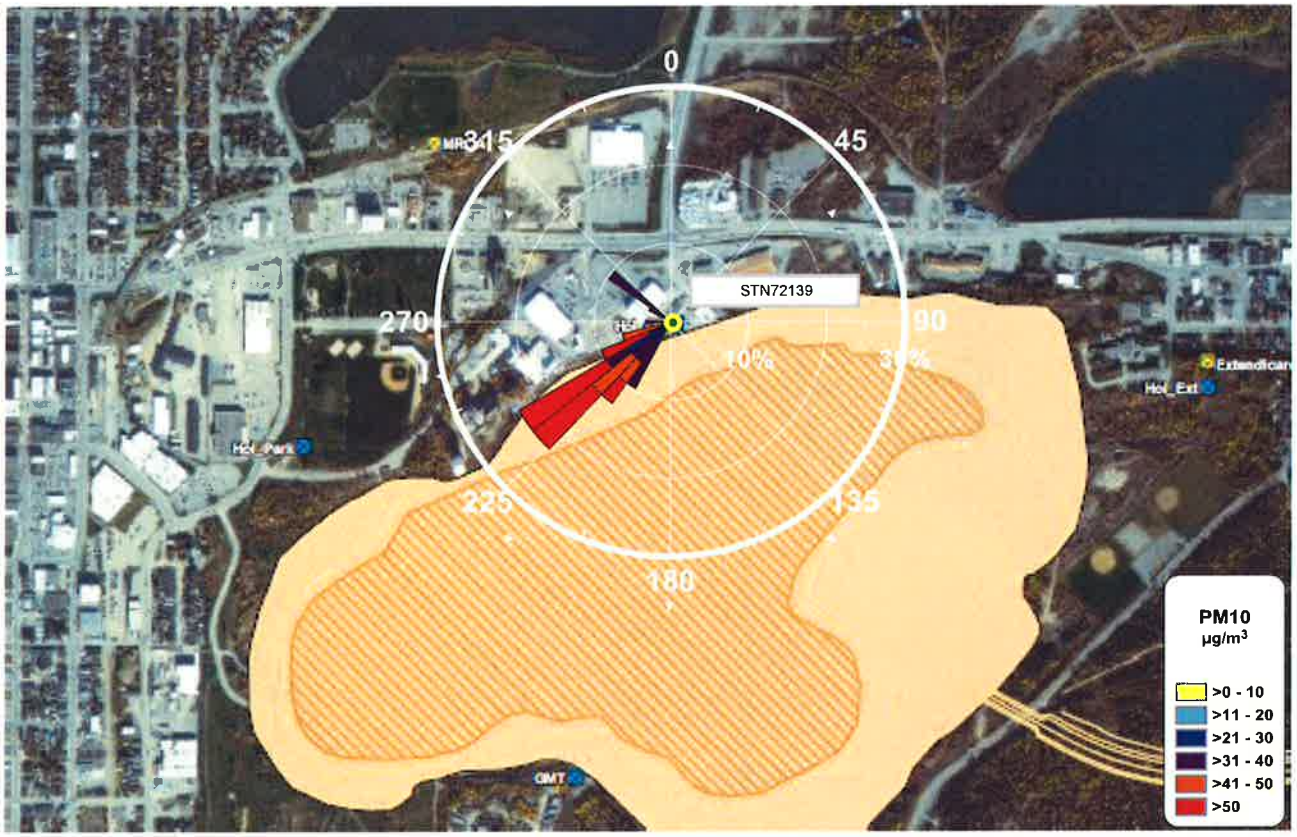
Date Revised : 14 Aug, 2015

Figure 22

ROTEK

Exceedance is due to inhalable particulate (PM_{10}) levels from construction activities on the Hollinger Project Environmental Control Berm.

PM_{10} Pollution Rose – STN72139 July 11th – Figure 23



STN72139 PM_{10} Pollution Rose
July 11th, 2015

Goldcorp Porcupine Mines Timmins Ontario

True North

By : JP

Approx. Scale : 1:8525

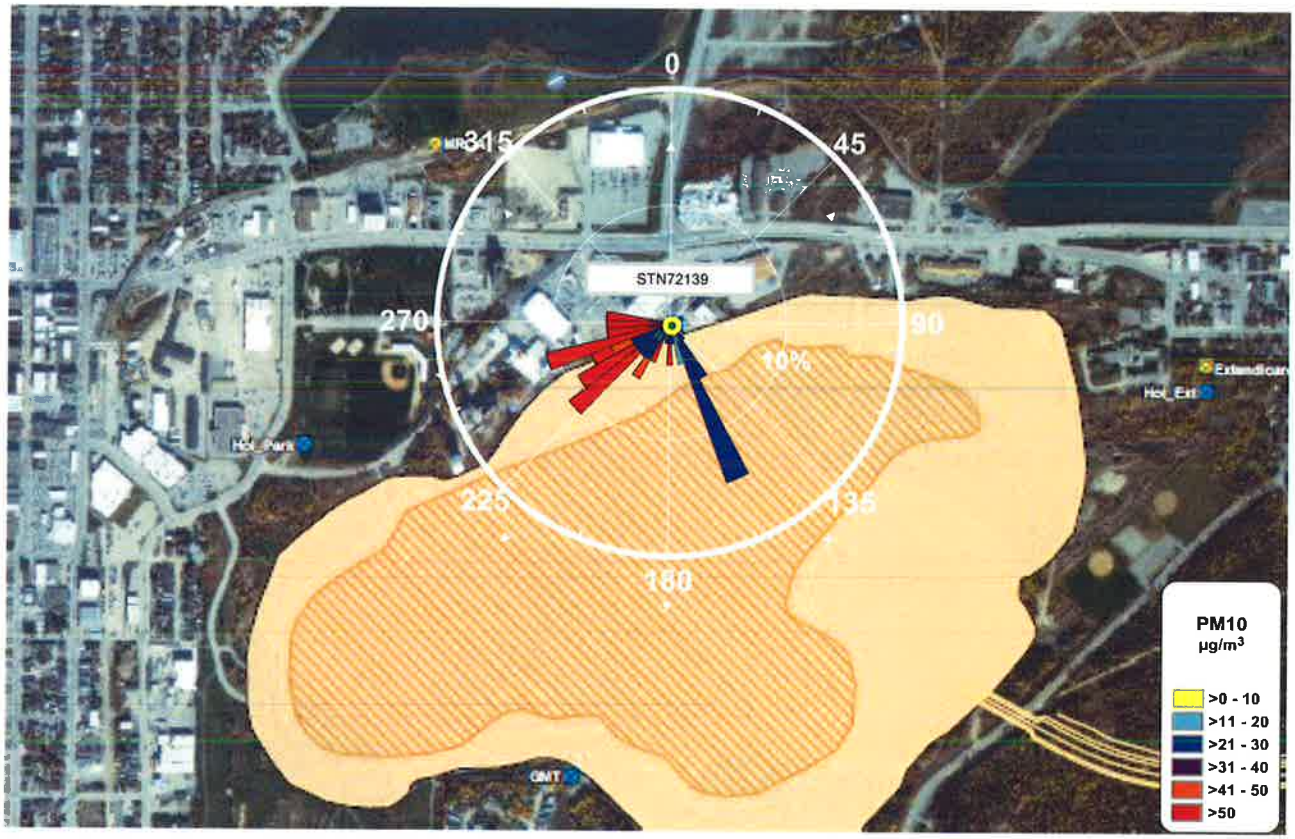
Date Revised : 14 Aug, 2015

Figure 23

ROTEK

Exceedance is due to inhalable particulate (PM_{10}) levels from construction activities on the Hollinger Project Environmental Control Berm and offsite industrial areas/parking lots.

PM_{10} Pollution Rose – STN72139 July 19th to July 21st - Figure 24



STN72139 PM_{10} Pollution Rose
July 19th - 21st, 2015

Goldcorp Porcupine Mines Timmins Ontario

True North

By : JP

Approx. Scale : 1:8525

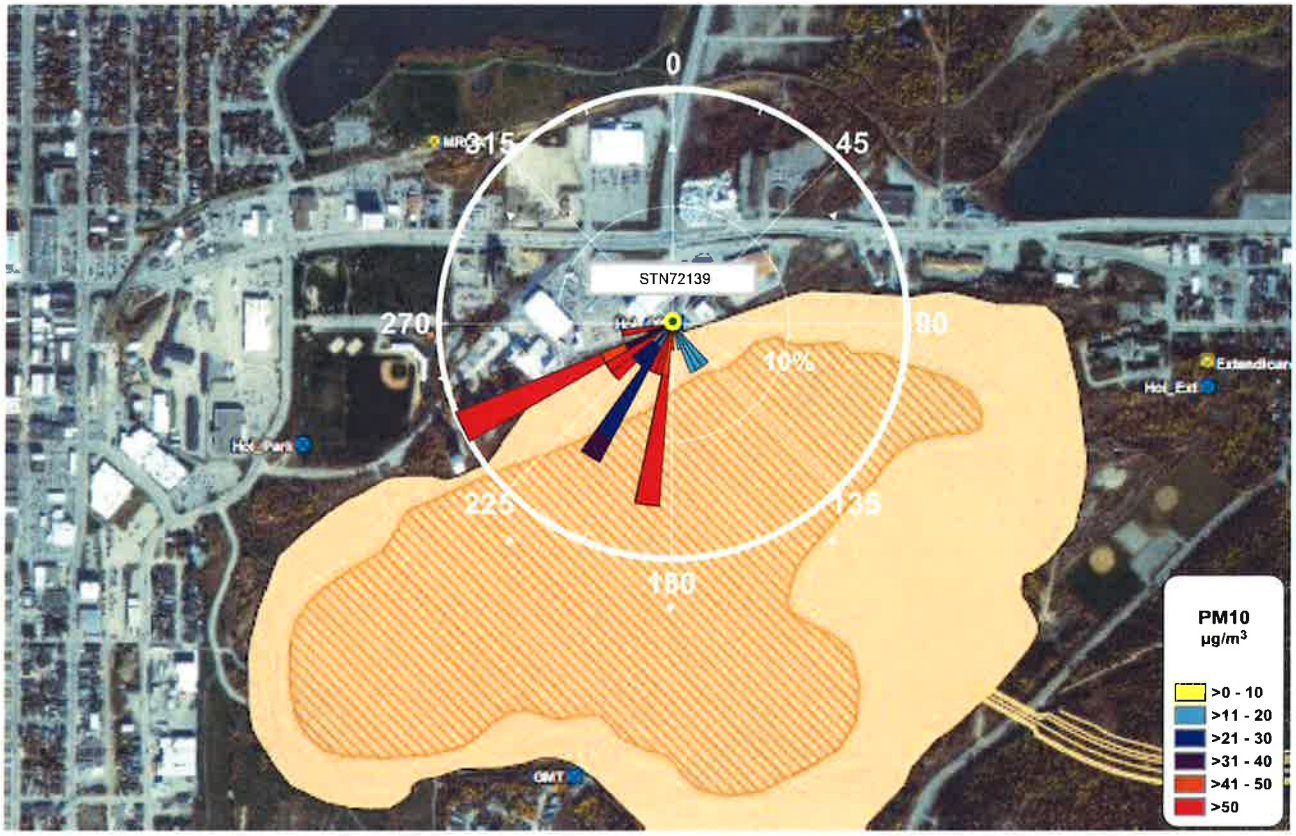
Date Revised : 14 Aug, 2015

Figure 24

ROTEK

This pollution rose represents 4 exceedances which occurred between July 19th and July 21st. Exceedances are due to inhalable particulate (PM_{10}) levels from construction activities on the Hollinger Project Environmental Control Berm and offsite industrial areas/parking lots.

PM_{10} Pollution Rose – STN72139 July 29th to July 30th - Figure 25



STN72139 PM_{10} Pollution Rose
July 29th - 30th, 2015

Goldcorp Porcupine Mines Timmins Ontario

True North

By : JP

Approx. Scale : 1:8525

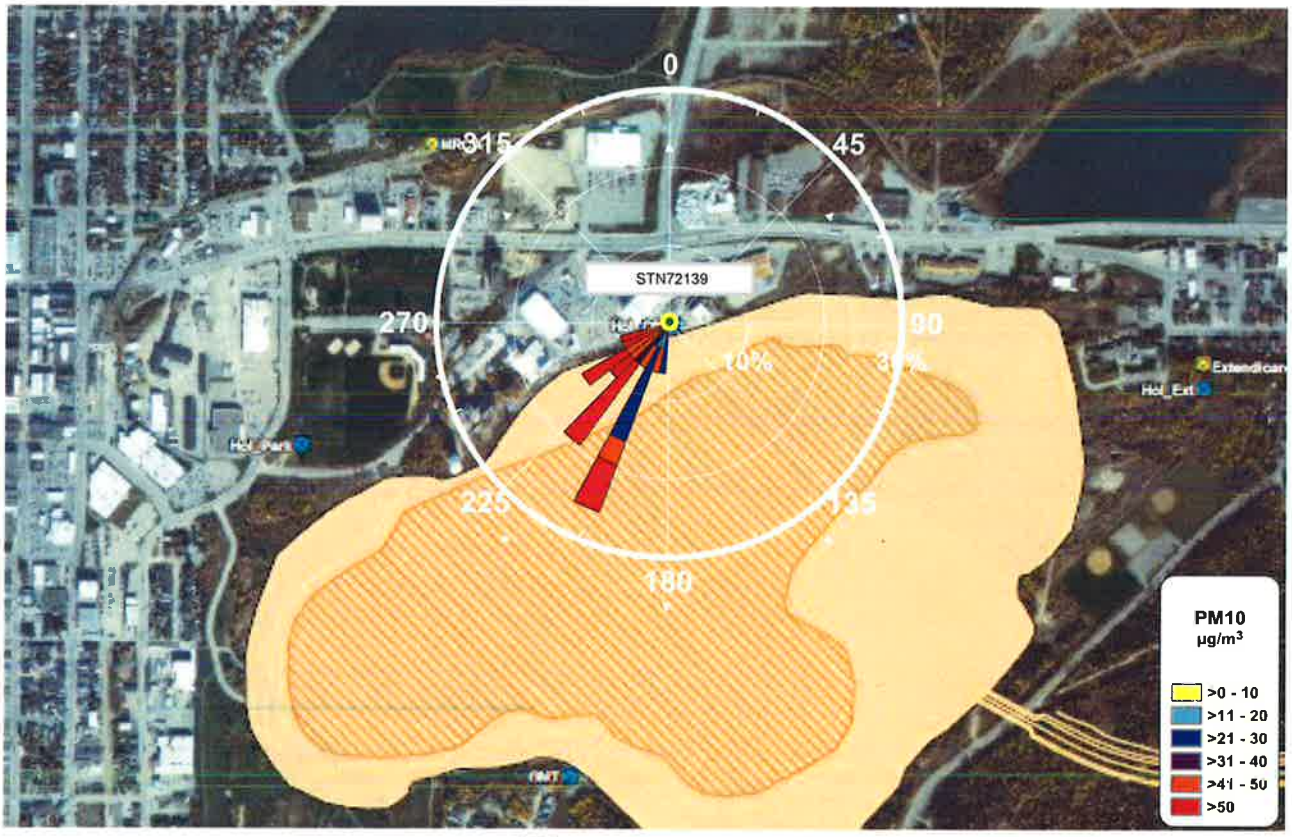
Date Revised : 14 Aug, 2015

Figure 25

ROTEK

This pollution rose represents 2 exceedances which occurred between July 29th and July 30th. Exceedances are due to inhalable particulate (PM_{10}) levels from construction activities on the Hollinger Project Environmental Control Berm and offsite industrial areas/parking lots.

PM_{10} Pollution Rose – STN72139 August 17th - Figure 26



STN72139 PM_{10} Pollution Rose August 17th, 2015

Goldcorp Porcupine Mines Timmins Ontario

True North

By : JP

Approx. Scale : 1:8525

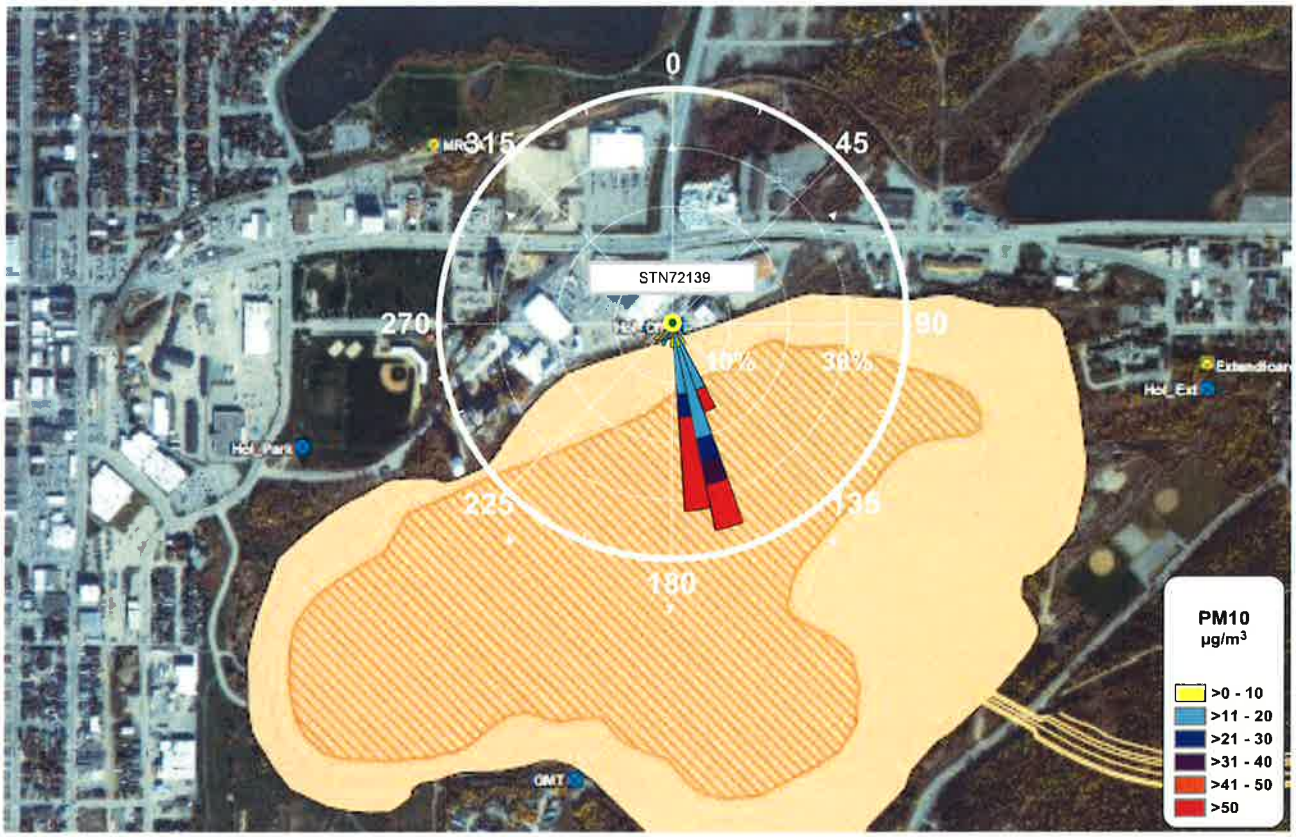
Date Revised : 14 Aug, 2015

Figure 26

ROTEK

Exceedance is due to inhalable particulate (PM_{10}) levels from construction activities on the Hollinger Project Environmental Control Berm.

PM_{10} Pollution Rose – STN72139 August 23rd to August 24th - Figure 27



STN72139 PM_{10} Pollution Rose
August 23rd - 24th, 2015

Goldcorp Porcupine Mines Timmins Ontario

True North

By : JP

Approx. Scale : 1:8525

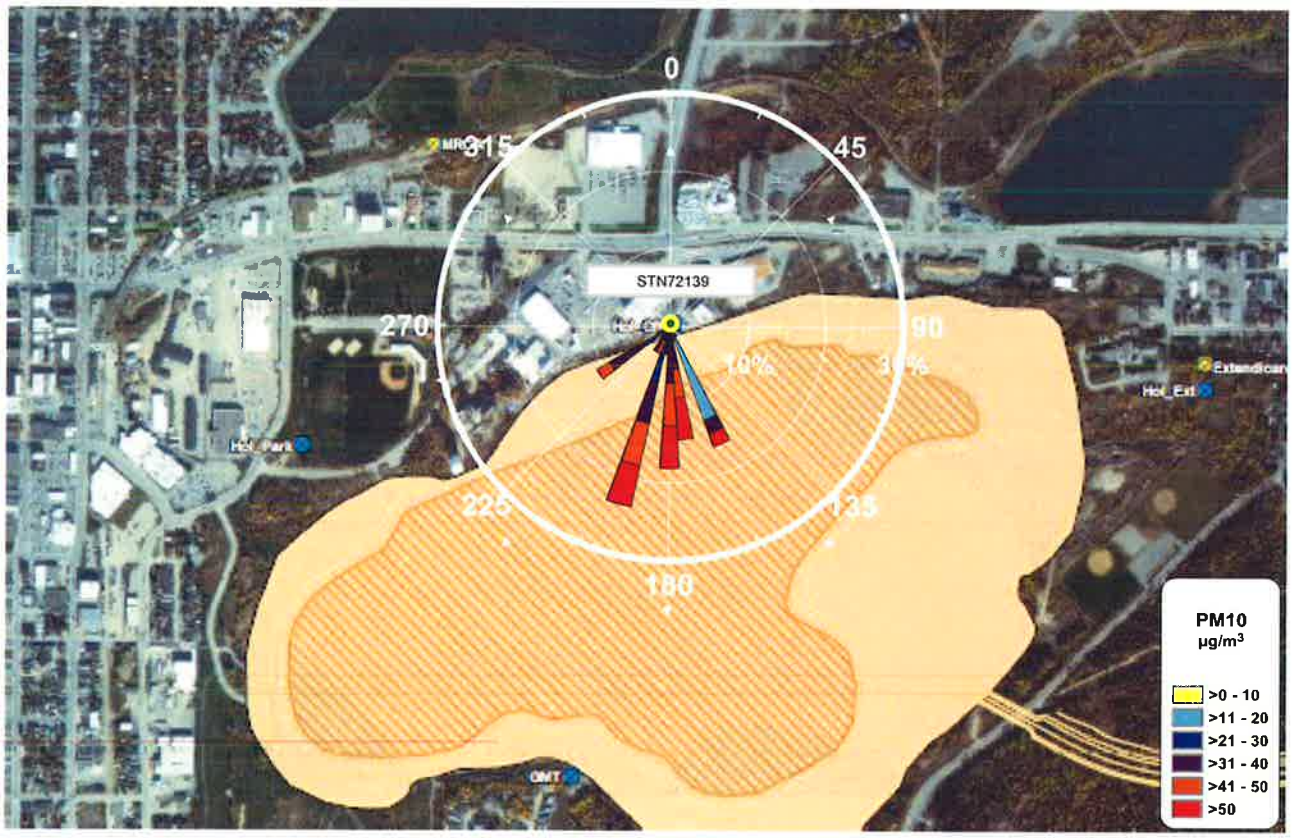
Date Revised : 14 Aug, 2015

Figure 27

ROTEK

Exceedance is due to inhalable particulate (PM_{10}) levels from construction activities on the Hollinger Project Environmental Control Berm.

PM_{10} Pollution Rose – STN72139 September 06th - Figure 28



STN72139 PM_{10} Pollution Rose
September 06th, 2015

Goldcorp Porcupine Mines Timmins Ontario

True North

By : JP

Approx. Scale : 1:8525

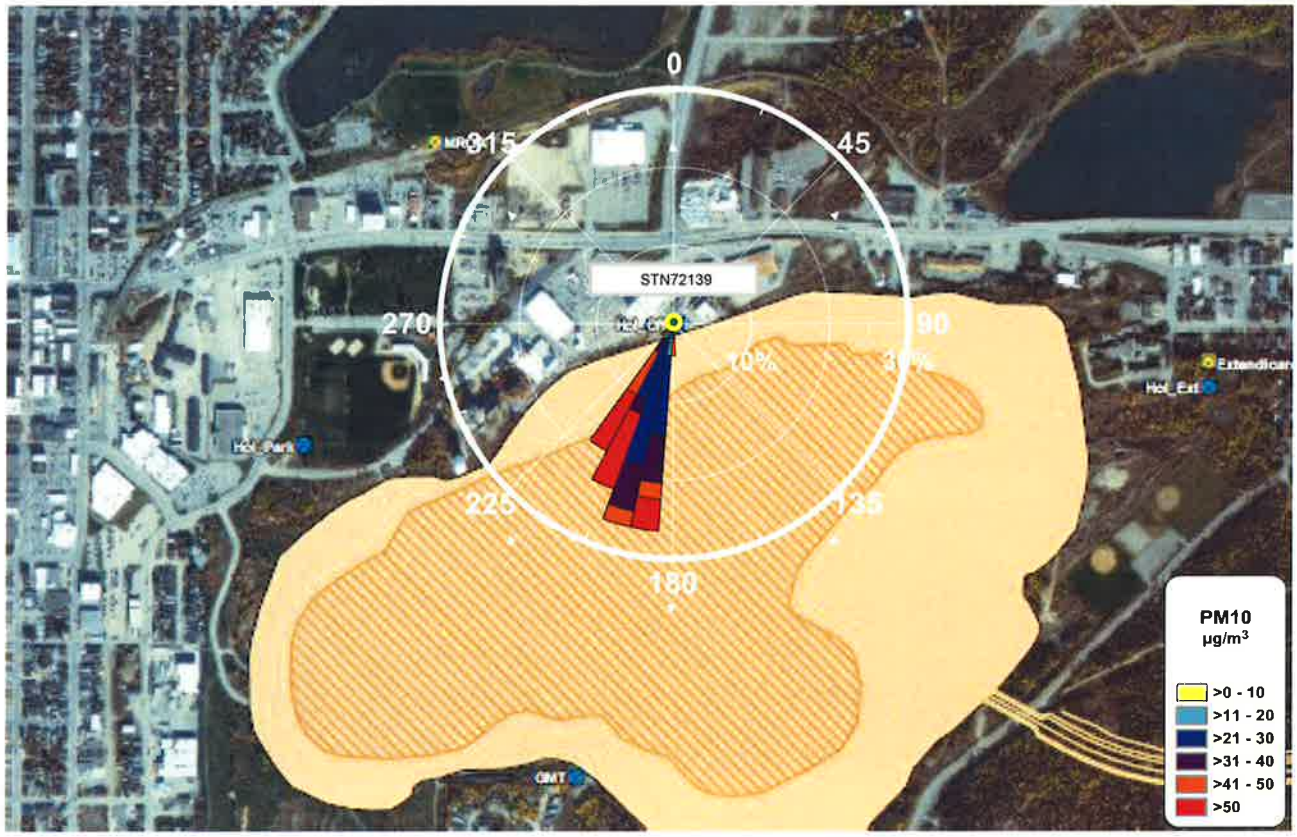
Date Revised : 14 Aug, 2015

Figure 28

ROTEK

Exceedance is due to inhalable particulate (PM_{10}) levels from construction activities on the Hollinger Project Environmental Control Berm.

PM_{10} Pollution Rose – STN72139 September 16th to September 17th - Figure 29



STN72139 PM_{10} Pollution Rose
September 16th - 17th, 2015

Goldcorp Porcupine Mines Timmins Ontario

True North

By : JP

Approx. Scale : 1:8525

Date Revised : 14 Aug, 2015

Figure 29

ROTEK

Exceedance is due to inhalable particulate (PM_{10}) levels from construction activities on the Hollinger Project Environmental Control Berm.

PM_{10} Pollution Rose – STN72140 October 03rd to October 04th – Figure 30

STN72140 PM_{10} Pollution Rose October 03rd - 04th, 2015

Goldcorp Porcupine Mines Timmins Ontario

True North

By : JP

Approx. Scale : 1:8525

Date Revised : 25 Jan, 2016

Figure 30

ROTEK

Exceedance is due to inhalable particulate (PM_{10}) levels from the Hollinger Project Environmental Control Berm overburden application.

11.0 Conclusions

During 2015 there were:

a) 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.

b) 22 exceedances of the continuous PM_{10} 24 hour running average AAQC, 3 at STN72135 (Extendicare), 5 at STN72138 (Hollinger Park), 13 at STN72139 (Hollinger Office) and 1 at STN72140 (Goldmine Tour).

c) 1 exceedance of the non-continuous 24 hour clock TSP AAQC at STN72136 (MRCA).

d) 2 exceedances of the non-continuous 24 hour clock PM_{10} AAQC, 1 at STN72136 (MRCA) and 1 at STN72137 (Shania Twain).

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

f) 11 exceedances of the non-continuous 30 day standard for Total Dustfall, 2 exceedances at STN72135 (Extendicare), 1 at STN72141 (Claimpost Trail), 1 at STN72142 (Aura Lake) and 7 at STN72143 (Snowmobile Crossing).

g) Annual PM_{10} averages of 10 $\mu g/m^3$ at STN72135 (Hollinger Ext.), 14 $\mu g/m^3$ at STN72138 (Hollinger Park), 16 $\mu g/m^3$ at STN72139 (Hollinger Office), 11 $\mu g/m^3$ at STN72140 (Goldmine Tour) and 7 $\mu g/m^3$ at STN72141 (Claimpost Trail).

h) 45 calibrations were conducted on continuous samplers, all of which met criteria.

i) Overall, the percentage of continuous valid pollutant data recovery was 98.2% for 2015, 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 99.3%.

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Ambient Air Monitoring Report

Appendix A
Continuous Data Statistics

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2015 Data Statistics

Station	Month	Maximum 24 Hr Running Average NO2 ppb	Maximum 24 Hr Running Average PM10 µg/m³	Maximum 24 Hr Running Average TSP µg/m³	Maximum 1 Hr Running Average NO2 ppb	Maximum ½ Hr Running Average NO2 ppb	Maximum 24 Hr Clock Average PM10 µg/m³	Maximum 24 Hr Clock Average TSP µg/m³	Maximum 1 Hr Clock Average PM10 µg/m³	Maximum 1 Hr Clock Average TSP µg/m³	Monthly Mean NO ppb	Monthly Mean NO2 ppb	Monthly Mean NOX ppb	Monthly Mean PM10 µg/m³	Monthly Mean TSP µg/m³	Percent Valid Data NO %	Percent Valid Data NO2 %	Percent Valid Data NOX %	Percent Valid Data PM10 %	Percent Valid Data TSP %
STN72135	January	16	13	25	41	42	11	23	31	57	3	6	8	6	11	100.0	100.0	100.0	99.6	98.1
	February	15	18	29	43	46	16	23	33	65	2	5	7	9	17	99.7	99.7	99.7	99.7	99.7
	March	7	24	32	47	52	21	28	53	120	2	3	5	9	16	99.9	99.9	99.9	99.9	99.9
	April	7	26	31	30	42	22	28	104	209	1	2	4	10	14	100.0	100.0	100.0	99.0	100.0
	May	6	57	58	24	30	53	57	220	223	1	2	4	15	20	100.0	100.0	100.0	98.8	100.0
	June	5	27	43	21	23	25	40	72	106	1	2	3	11	19	99.9	99.9	99.9	99.9	99.7
	July	5	53	110	15	18	48	108	320	309	1	2	3	17	36	99.6	99.6	99.6	99.6	99.6
	August	5	25	70	18	20	19	70	89	104	1	1	3	9	23	99.7	99.7	99.7	99.7	76.5
	September	5	27	100	19	21	26	99	53	145	1	1	2	11	22	100.0	100.0	100.0	99.7	100.0
	October	6	19	30	16	17	18	26	54	100	1	2	3	5	8	99.7	99.7	99.7	99.3	84.7
	November	9	31	40	28	28	27	32	138	151	2	4	6	10	16	99.3	99.3	99.3	99.3	99.3
	December	10	23	33	25	27	21	32	42	59	2	4	6	7	10	99.5	99.5	99.5	98.9	99.5
	Q1 Arithmetic Mean										2	5	7	8	15	99.9	99.9	99.9	99.7	99.2
	Q2 Arithmetic Mean										1	2	3	12	17	100.0	100.0	100.0	99.2	99.9
	Q3 Arithmetic Mean										1	2	3	12	27	99.8	99.8	99.8	99.7	92.0
	Q4 Arithmetic Mean										2	3	5	7	11	99.5	99.5	99.5	99.2	94.5
	Annual Arithmetic Mean										2	3	5	10	18	99.8	99.8	99.8	99.5	96.4

Exceedance Summary STN72135

Parameter		Type	Averaging Type	Limit	Q1 J	Q1 F	Q1 M	Q2 A	Q2 M	Q2 J	Q3 J	Q3 A	Q3 S	Q4 O	Q4 N	Q4 D	Total
Particulate Matter < 10 µm	**PM10**	AAQC	24 Hr Running	50 µg/m³	0	0	0	0	2	0	1	0	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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2015 Data Statistics

Station	Month	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				
		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	%	%	%	%	%
STN72138	January	24	19	25	48	51	14	23	48	93	5	8	13	7	11	100.0	100.0	100.0	100.0	100.0
	February	26	24	31	48	49	21	29	54	85	5	8	13	9	17	100.0	100.0	100.0	99.9	100.0
	March	17	45	56	49	53	45	56	131	144	3	6	9	12	18	100.0	100.0	100.0	100.0	100.0
	April	18	66	69	47	49	55	61	226	219	ins*	ins*	ins*	21	ins*	52.6	52.6	52.6	97.9	52.6
	May	6	66	67	27	35	63	65	257	281	1	2	4	23	29	100.0	100.0	100.0	100.0	100.0
	June	5	35	43	15	19	33	39	187	154	1	2	3	16	23	99.9	99.9	99.9	99.9	99.7
	July	8	46	119	27	29	45	117	155	228	2	2	4	19	37	99.7	99.7	99.7	99.7	99.5
	August	5	41	66	14	17	30	66	79	99	2	2	3	13	22	99.7	99.7	99.7	99.9	99.9
	September	7	34	78	21	22	31	76	78	119	2	2	4	15	24	100.0	100.0	100.0	99.6	100.0
	October	10	45	59	26	27	35	41	94	142	2	3	5	10	13	100.0	100.0	100.0	99.1	99.9
	November	8	27	45	20	21	24	32	54	77	2	3	4	10	15	99.7	99.7	99.7	96.8	99.7
	December	7	36	31	17	20	36	29	72	54	1	3	4	7	10	100.0	100.0	100.0	100.0	100.0
	Q1 Arithmetic Mean										4	7	12	9	15	100.0	100.0	100.0	100.0	100.0
	Q2 Arithmetic Mean										1	2	3	20	26	84.2	84.2	84.2	99.3	84.1
	Q3 Arithmetic Mean										2	2	4	16	27	99.8	99.8	99.8	99.7	99.8
	Q4 Arithmetic Mean										2	3	4	9	13	99.9	99.9	99.9	98.6	99.9
	Annual Arithmetic Mean										2	4	6	14	20	96.0	96.0	96.0	99.4	95.9

Exceedance Summary STN72138

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	0	0	3	2	0	0	0	0	0	0	0	5
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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2015 Data Statistics

Station	Month	Maximum 24 Hr Running Average NO2 ppb	Maximum 24 Hr Running Average PM10 µg/m³	Maximum 24 Hr Running Average TSP µg/m³	Maximum 1 Hr Running Average NO2 ppb	Maximum ½ Hr Running Average NO2 ppb	Maximum 24 Hr Clock Average PM10 µg/m³	Maximum 24 Hr Clock Average TSP µg/m³	Maximum 1 Hr Clock Average PM10 µg/m³	Maximum 1 Hr Clock Average TSP µg/m³	Monthly Mean NO ppb	Monthly Mean NO2 ppb	Monthly Mean NOX ppb	Monthly Mean PM10 µg/m³	Monthly Mean TSP µg/m³	Percent Valid Data NO %	Percent Valid Data NO2 %	Percent Valid Data NOX %	Percent Valid Data PM10 %	Percent Valid Data TSP %
STN72139	January	20	29	32	53	56	21	22	90	110	4	7	11	8	12	99.9	99.9	99.9	99.9	99.9
	February	21	19	31	49	57	17	28	53	105	5	8	12	9	16	98.4	98.4	98.4	98.4	98.2
	March	15	46	43	47	49	39	38	148	129	4	6	10	15	19	100.0	100.0	100.0	100.0	99.9
	April	16	38	44	44	49	38	41	120	163	3	4	7	18	21	99.9	99.9	99.9	98.9	99.9
	May	8	59	56	25	31	57	55	199	197	2	3	6	20	24	100.0	100.0	100.0	100.0	100.0
	June	7	58	49	24	29	56	49	142	117	3	3	6	18	20	99.7	99.7	99.7	99.7	99.6
	July	9	88	100	27	34	79	99	420	321	4	4	8	29	40	98.0	98.0	98.0	98.0	98.0
	August	9	61	69	21	26	59	64	351	254	4	3	7	17	25	99.7	99.7	99.7	99.6	99.7
	September	8	63	77	25	29	60	76	199	149	3	4	7	19	28	100.0	100.0	100.0	99.2	100.0
	October	12	27	29	27	30	25	28	113	77	5	5	10	10	10	100.0	100.0	100.0	99.6	100.0
	November	19	37	39	42	46	33	35	82	95	4	5	10	14	14	99.6	99.6	99.6	94.6	99.6
	December	11	48	37	28	31	45	36	112	69	4	5	9	12	12	100.0	100.0	100.0	99.2	99.9
	Q1 Arithmetic Mean										4	7	11	11	15	99.4	99.4	99.4	99.4	99.3
	Q2 Arithmetic Mean										3	4	6	19	22	99.9	99.9	99.9	99.5	99.8
	Q3 Arithmetic Mean										4	4	7	22	31	99.2	99.2	99.2	98.9	99.2
	Q4 Arithmetic Mean										5	5	9	12	12	99.9	99.9	99.9	97.8	99.8
	Annual Arithmetic Mean										4	5	9	16	20	99.6	99.6	99.6	98.9	99.5

Exceedance Summary STN72139

Parameter		Type	Averaging Type	Limit	Q1 J	Q1 F	Q1 M	Q2 A	Q2 M	Q2 J	Q3 J	Q3 A	Q3 S	Q4 O	Q4 N	Q4 D	Total
Particulate Matter < 10 µm	**PM10**	AAQC	24 Hr Running	50 µg/m³	0	0	0	0	1	1	7	2	2	0	0	0	13
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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2015 Data Statistics

Station	Month	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				
		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	%	%	%	%	%
STN72140	January	13	23	44	55	59	21	44	47	67	2	5	7	7	11	100.0	100.0	100.0	100.0	100.0
	February	16	24	41	46	48	22	41	37	93	3	6	9	10	19	100.0	100.0	100.0	100.0	99.9
	March	10	38	49	57	67	30	41	62	115	2	4	6	10	17	100.0	100.0	100.0	100.0	100.0
	April	15	30	47	56	59	26	46	133	318	2	3	5	12	17	100.0	100.0	100.0	99.2	100.0
	May	8	34	42	40	48	30	40	144	162	5	3	8	15	27	100.0	100.0	100.0	100.0	100.0
	June	5	26	50	26	30	26	45	74	134	2	2	4	12	21	99.6	99.6	99.6	99.6	99.6
	July	5	34	127	14	17	34	126	66	172	2	2	4	15	38	99.6	99.6	99.6	99.6	99.6
	August	4	23	53	14	18	21	53	47	77	3	1	4	9	ns	99.6	99.6	99.6	99.7	73.4
	September	7	26	70	20	22	25	65	84	119	4	2	6	14	28	100.0	100.0	100.0	99.6	100.0
	October	9	61	55	29	31	61	55	246	220	3	3	6	10	10	100.0	100.0	100.0	99.7	100.0
	November	6	26	29	19	22	17	23	95	81	1	2	4	8	9	99.6	99.6	99.6	97.8	99.6
	December	13	31	25	31	32	26	23	83	74	2	4	6	8	8	99.3	99.3	99.3	98.7	99.2
	Q1 Arithmetic Mean										2	5	7	9	15	100.0	100.0	100.0	100.0	100.0
	Q2 Arithmetic Mean										3	3	5	13	22	99.9	99.9	99.9	99.6	99.9
	Q3 Arithmetic Mean										3	2	5	13	33	99.7	99.7	99.7	99.6	91.0
	Q4 Arithmetic Mean										2	3	5	9	9	99.6	99.6	99.6	98.7	99.6
	Annual Arithmetic Mean										3	3	6	11	19	99.8	99.8	99.8	99.5	97.6

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/m³	0	0	0	0	0	0	0	0	0	1	0	0	1
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 caluculate mean.

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2015 Data Statistics

Station	Month	Maximum 24 Hr Running Average NO2 ppb	Maximum 24 Hr Running Average PM10 µg/m³	Maximum 24 Hr Running Average TSP µg/m³	Maximum 1 Hr Running Average NO2 ppb	Maximum ½ Hr Running Average NO2 ppb	Maximum 24 Hr Clock Average PM10 µg/m³	Maximum 24 Hr Clock Average TSP µg/m³	Maximum 1 Hr Clock Average PM10 µg/m³	Maximum 1 Hr Clock Average TSP µg/m³	Monthly Mean NO ppb	Monthly Mean NO2 ppb	Monthly Mean NOX ppb	Monthly Mean PM10 µg/m³	Monthly Mean TSP µg/m³	Percent Valid Data NO %	Percent Valid Data NO2 %	Percent Valid Data NOX %	Percent Valid Data PM10 %	Percent Valid Data TSP %
STN72141	January	4	8	18	13	14	8	18	23	41	0	1	1	4	9	100.0	100.0	100.0	100.0	100.0
	February	4	12	22	16	18	12	18	23	33	0	1	2	6	13	100.0	100.0	100.0	100.0	100.0
	March	1	11	20	9	10	11	17	32	26	ins*	ins*	ins*	6	ins*	66.5	66.5	66.5	100.0	66.5
	April	2	25	26	8	9	24	26	89	118	0	1	1	7	12	97.2	97.2	97.2	98.8	98.2
	May	2	19	25	12	14	18	24	43	66	0	1	1	8	15	100.0	100.0	100.0	100.0	100.0
	June	2	15	27	14	18	14	24	50	66	0	1	1	8	14	99.7	99.7	99.7	99.7	99.0
	July	2	30	77	16	19	28	76	45	96	0	1	1	11	24	97.8	97.8	97.8	97.8	97.8
	August	2	20	39	10	14	17	39	40	62	0	1	2	8	11	99.7	99.7	99.7	99.7	99.7
	September	2	22	49	10	12	21	48	32	60	0	1	2	9	17	100.0	100.0	100.0	99.7	100.0
	October	7	25	33	23	26	24	30	132	184	2	3	4	5	8	100.0	100.0	100.0	99.9	96.5
	November	8	29	25	23	24	25	21	88	86	2	3	5	8	10	99.7	99.7	99.7	98.8	84.3
	December	9	22	23	18	21	20	20	41	46	1	3	4	5	6	99.2	99.2	99.2	98.7	99.2
	Q1 Arithmetic Mean										0	1	2	5	11	88.8	88.8	88.8	100.0	88.8
	Q2 Arithmetic Mean										0	1	1	8	13	99.0	99.0	99.0	99.5	99.1
	Q3 Arithmetic Mean										0	1	2	9	17	99.2	99.2	99.2	99.1	99.2
	Q4 Arithmetic Mean										2	3	5	6	8	99.6	99.6	99.6	99.1	93.3
	Annual Arithmetic Mean										1	2	2	7	13	96.7	96.7	96.7	99.4	95.1

Exceedance Summary STN72141

Parameter		Type	Averaging Type	Limit	Q1 J	Q1 F	Q1 M	Q2 A	Q2 M	Q2 J	Q3 J	Q3 A	Q3 S	Q4 O	Q4 N	Q4 D	Total
Particulate Matter < 10 µm	**PM10**	AAQC	24 Hr Running	50 µg/m³	0	0	0	0	0	0	0	0	0	0	0	0	0
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

GOLDCORP

Goldcorp - TSP / Metals Report

Station : STN72135 TSP
Location : Extendicare
Reporting Period : 01 January to 29 June, 2015
Sample Matrix : Teflon Coated Filter
Method : IO-3.1
Valid Samples - Number / % : 59 / 98.3 %

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	0.025	n/a	n/a	n/a	50	25	0.5	120	n/a	2	n/a	n/a	2	120	n/a
Guideline	n/a	0.3	n/a	1.5	0.1	n/a	n/a	n/a	n/a	2.5	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	0.00061	0.0018	0.0061	0.0150	0.0031	0.0031	0.0500
Date																
06-Jan-15	1.5															
12-Jan-15	6															
18-Jan-15	9	0.00185	0.0006	0.00155	0.0006	0.0651	0.1330	0.0009	0.0570	0.00380	0.0009	0.00305	0.7080	0.00155	0.0151	2.1200
24-Jan-15	10															
30-Jan-15	11															
05-Feb-15	13	0.00185	0.0006	0.00155	0.0006	0.0667	0.5100	0.0009	0.2230	0.01620	0.0009	0.00305	0.3140	0.00155	0.0135	0.9400
11-Feb-15	7															
17-Feb-15	11															
23-Feb-15	34	0.00185	0.0006	0.00155	0.0006	0.0930	1.6600	0.0022	0.5100	0.03690	0.0019	0.00305	0.4880	0.00330	0.0149	1.4600
01-Mar-15	49															
07-Mar-15	23															
13-Mar-15	7	0.00185	0.0006	0.00155	0.0006	0.0262	0.1360	0.0009	0.0510	0.00689	0.0037	0.00305	0.5450	0.00155	0.0072	1.6300
19-Mar-15	63															
25-Mar-15	12															
31-Mar-15	42	0.00185	0.0006	0.00155	0.0006	0.0671	1.8700	0.0031	0.5870	0.04410	0.0027	0.00305	0.3560	0.00155	0.0178	1.0700
06-Apr-15	75															
12-Apr-15	24															
18-Apr-15	29	0.00185	0.0006	0.00155	0.0006	0.0243	0.7090	0.0009	0.3490	0.01610	0.0023	0.00305	0.1500	0.00155	0.0119	0.4500
24-Apr-15	15															
30-Apr-15	59															
06-May-15	64	0.00185	0.0006	0.00610	0.0013	0.0402	2.7400	0.0009	0.8540	0.06890	0.0041	0.00305	0.3400	0.00390	0.0222	1.0200
12-May-15	Invalid															
18-May-15	45															
24-May-15	53	0.00185	0.0006	0.00350	0.0006	0.1340	1.6400	0.0009	0.6080	0.04410	0.0022	0.00305	0.3560	0.00155	0.0187	1.0700
30-May-15	21															
05-Jun-15	44															
11-Jun-15	43	0.00185	0.0006	0.00155	0.0006	0.1410	0.9030	0.0009	0.4400	0.02340	0.0027	0.00305	0.2750	0.00155	0.0202	0.8200
17-Jun-15	39															
23-Jun-15	21															
29-Jun-15	104	0.00470	0.0006	0.01270	0.0029	0.1570	5.3800	0.0031	1.6600	0.12300	0.0080	0.00305	0.5560	0.00830	0.0295	1.6700

Station : STN72135 TSP (Extendicare)
Reporting Period : 05 July to 31 December, 2015

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
Date																
05-Jul-15	37															
11-Jul-15	51															
17-Jul-15	46	0.00185	0.0006	0.00155	0.0006	0.1190	1.2700	0.0009	0.4690	0.03560	0.0028	0.00305	0.4610	0.00155	0.0157	1.3800
23-Jul-15	27															
29-Jul-15	101															
04-Aug-15	23	0.00185	0.0006	0.00155	0.0006	0.1380	0.3630	0.0009	0.1460	0.00943	0.0009	0.00305	0.0630	0.00155	0.0086	0.1900
10-Aug-15	39															
16-Aug-15	75															
22-Aug-15	29	0.00185	0.0006	0.00155	0.0006	0.1160	0.5720	0.0009	0.2390	0.01530	0.0009	0.00305	0.3130	0.00155	0.0116	0.9400
28-Aug-15	53															
03-Sep-15	68															
09-Sep-15	35	0.00185	0.0006	0.00155	0.0006	0.0866	0.8080	0.0022	0.3170	0.01710	0.0019	0.00305	0.2000	0.00155	0.0232	0.6000
15-Sep-15	40															
21-Sep-15	29															
27-Sep-15	42	0.00185	0.0006	0.00155	0.0006	0.0512	1.6800	0.0025	0.4930	0.04100	0.0028	0.00305	0.6370	0.00155	0.0194	1.9100
03-Oct-15	67															
09-Oct-15	11															
15-Oct-15	8	0.00185	0.0006	0.00155	0.0006	0.0689	0.3270	0.0009	0.1150	0.01050	0.0009	0.00305	0.1200	0.00155	0.0090	0.3600
21-Oct-15	47															
27-Oct-15	16															
02-Nov-15	9	0.00185	0.0006	0.00155	0.0006	0.0185	0.0900	0.0009	0.0330	0.00232	0.0021	0.00305	0.1260	0.00155	0.0090	0.3800
08-Nov-15	63															
14-Nov-15	20															
20-Nov-15	88	0.00185	0.0006	0.01130	0.0021	0.0639	4.2800	0.0009	1.3900	0.09000	0.0064	0.00305	0.2460	0.00730	0.0225	0.7400
26-Nov-15	15															
02-Dec-15	19															
08-Dec-15	27	0.00185	0.0006	0.00490	0.0006	0.0320	0.9620	0.0030	0.3980	0.02390	0.0034	0.00305	0.8680	0.00155	0.0184	2.6000
14-Dec-15	5															
20-Dec-15	18															
26-Dec-15	17	0.00185	0.0006	0.00155	0.0006	0.0273	0.3920	0.0009	0.1410	0.00958	0.0009	0.00305	0.5480	0.00155	0.0446	1.6400
Arithmetic Mean	35	0.00199	0.0006	0.00309	0.0008	0.0768	1.3213	0.0014	0.4540	0.03191	0.0026	0.00305	0.3835	0.00238	0.0177	1.1495
Geometric Mean	26	0.00194	0.0006	0.00225	0.0007	0.0638	0.7832	0.0012	0.2914	0.02052	0.0021	0.00305	0.3191	0.00198	0.0160	0.9571
Annual Max	104	0.00470	0.0006	0.01270	0.0029	0.1570	5.3800	0.0031	1.6600	0.12300	0.0080	0.00305	0.8680	0.00830	0.0446	2.6000
Annual Min	2	0.00185	0.0006	0.00155	0.0006	0.0185	0.0900	0.0009	0.0330	0.00232	0.0009	0.00305	0.0630	0.00155	0.0072	0.1900
No. of Samples	59	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	n/a	0	0	n/a
No. > Standard	n/a	0	n/a	n/a	n/a	0	0	0	0	n/a	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).

GOLDCORP

Goldcorp - TSP / Metals Report

Station : STN72136 TSP
Location : MRCA
Reporting Period : 01 January to 29 June, 2015
Sample Matrix : Teflon Coated Filter
Method : IO-3.1
Valid Samples - Number / % : 60 / 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	0.025	n/a	n/a	n/a	50	25	0.5	120	n/a	2	n/a	n/a	2	120	n/a
Guideline	n/a	0.3	n/a	1.5	0.1	n/a	n/a	n/a	n/a	2.5	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	0.00061	0.0018	0.0061	0.0150	0.0031	0.0031	0.0500
Date																
06-Jan-15	4.0															
12-Jan-15	5															
18-Jan-15	13	0.00185	0.0006	0.00155	0.0006	0.0206	0.0910	0.0020	0.0550	0.00278	0.0009	0.00305	0.7550	0.00155	0.0157	2.2600
24-Jan-15	8															
30-Jan-15	7															
05-Feb-15	22	0.00185	0.0006	0.00155	0.0006	0.0187	0.4130	0.0009	0.2860	0.01160	0.0009	0.00305	0.4280	0.00155	0.0148	1.2800
11-Feb-15	10															
17-Feb-15	13															
23-Feb-15	11	0.00185	0.0006	0.00155	0.0006	0.0185	0.1370	0.0025	0.1240	0.00647	0.0009	0.00305	0.4970	0.00155	0.0156	1.4900
01-Mar-15	17															
07-Mar-15	15															
13-Mar-15	25	0.00185	0.0006	0.00155	0.0006	0.0299	0.3630	0.0009	0.2320	0.01110	0.0050	0.00305	0.6700	0.00155	0.0150	2.0100
19-Mar-15	88															
25-Mar-15	74															
31-Mar-15	34	0.00185	0.0006	0.00340	0.0006	0.0479	0.8850	0.0023	0.3350	0.01920	0.0020	0.00305	0.4040	0.00155	0.0165	1.2100
06-Apr-15	69															
12-Apr-15	101															
18-Apr-15	34	0.00185	0.0006	0.00155	0.0006	0.0331	0.7630	0.0023	0.3940	0.01590	0.0019	0.00305	0.1740	0.00155	0.0138	0.5200
24-Apr-15	22															
30-Apr-15	33															
06-May-15	107	0.00185	0.0006	0.01260	0.0019	0.0496	3.7300	0.0044	1.7500	0.07220	0.0086	0.00305	0.4180	0.00580	0.0544	1.2500
12-May-15	13															
18-May-15	50															
24-May-15	42	0.00185	0.0006	0.00155	0.0006	0.0437	0.8600	0.0009	0.4500	0.02360	0.0019	0.00305	0.3560	0.00155	0.0242	1.0700
30-May-15	15															
05-Jun-15	26															
11-Jun-15	30	0.00185	0.0006	0.00155	0.0006	0.0449	0.7380	0.0009	0.2810	0.01990	0.0009	0.00305	0.2610	0.00155	0.0156	0.7800
17-Jun-15	67															
23-Jun-15	19															
29-Jun-15	42	0.00185	0.0006	0.00350	0.0006	0.0394	1.0900	0.0009	0.4600	0.02160	0.0025	0.00305	0.2570	0.00155	0.0208	0.7700

Station : STN72136 TSP (MRCA)
Reporting Period : 05 July to 31 December, 2015

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
Date																
05-Jul-15	107															
11-Jul-15	133															
17-Jul-15	77	0.00185	0.0006	0.00500	0.0017	0.0950	2.2400	0.0022	1.0000	0.05100	0.0169	0.00305	0.5320	0.00370	0.0328	1.5900
23-Jul-15	29															
29-Jul-15	118															
04-Aug-15	20	0.00185	0.0006	0.00155	0.0006	0.0604	0.1830	0.0009	0.0890	0.00415	0.0009	0.00305	0.0840	0.00155	0.0084	0.2500
10-Aug-15	54															
16-Aug-15	54															
22-Aug-15	51	0.00185	0.0006	0.00530	0.0006	0.0479	1.6200	0.0009	0.6650	0.03780	0.0035	0.00305	0.3380	0.00155	0.0224	1.0100
28-Aug-15	42															
03-Sep-15	30															
09-Sep-15	43	0.00185	0.0006	0.00390	0.0006	0.0816	1.3400	0.0020	0.5210	0.02760	0.0032	0.00305	0.2350	0.00155	0.0307	0.7000
15-Sep-15	65															
21-Sep-15	48															
27-Sep-15	41	0.00185	0.0006	0.00155	0.0006	0.0318	1.0700	0.0033	0.4170	0.02310	0.0027	0.00305	0.6140	0.00155	0.0283	1.8400
03-Oct-15	15															
09-Oct-15	13															
15-Oct-15	8	0.00185	0.0006	0.00155	0.0006	0.0356	0.1880	0.0009	0.0690	0.00702	0.0009	0.00305	0.1080	0.00155	0.0118	0.3200
21-Oct-15	63															
27-Oct-15	30															
02-Nov-15	34	0.00185	0.0006	0.00360	0.0006	0.0697	1.0800	0.0035	0.4620	0.02120	0.0043	0.00305	0.2010	0.00155	0.0246	0.6000
08-Nov-15	24															
14-Nov-15	11															
20-Nov-15	38	0.00185	0.0019	0.00340	0.0006	0.0385	1.0300	0.0009	0.4320	0.02160	0.0026	0.00305	0.2000	0.00155	0.0191	0.6000
26-Nov-15	10															
02-Dec-15	9															
08-Dec-15	16	0.00185	0.0019	0.00155	0.0006	0.0375	0.2860	0.0020	0.1060	0.00951	0.0009	0.00305	0.8680	0.00155	0.0151	2.6000
14-Dec-15	3															
20-Dec-15	23															
26-Dec-15	9	0.00185	0.0019	0.00155	0.0006	0.0276	0.0780	0.0009	0.0460	0.00179	0.0009	0.00305	0.0920	0.00155	0.0071	0.2700
Arithmetic Mean	37	0.00185	0.0008	0.00297	0.0007	0.0436	0.9093	0.0018	0.4087	0.02046	0.0031	0.00305	0.3746	0.00187	0.0203	1.1210
Geometric Mean	26	0.00185	0.0007	0.00239	0.0007	0.0396	0.5728	0.0015	0.2729	0.01439	0.0021	0.00305	0.3075	0.00173	0.0183	0.9186
Annual Max	133	0.00185	0.0019	0.01260	0.0019	0.0950	3.7300	0.0044	1.7500	0.07220	0.0169	0.00305	0.8680	0.00580	0.0544	2.6000
Annual Min	3	0.00185	0.0006	0.00155	0.0006	0.0185	0.0780	0.0009	0.0460	0.00179	0.0009	0.00305	0.0840	0.00155	0.0071	0.2500
No. of Samples	60	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
No. > AAQC	1	0	0	0	0	0	0	0	0	0	0	0	n/a	0	0	n/a
No. > Standard	n/a	0	n/a	n/a	n/a	0	0	0	0	n/a	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).

GOLDCORP

Goldcorp - TSP / Metals Report

Station : STN72137 TSP
Location : Shania Twain Centre
Reporting Period : 01 January to 29 June, 2015
Sample Matrix : Teflon Coated Filter
Method : IO-3.1
Valid Samples - Number / % : 60 / 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	0.025	n/a	n/a	n/a	50	25	0.5	120	n/a	2	n/a	n/a	2	120	n/a
Guideline	n/a	0.3	n/a	1.5	0.1	n/a	n/a	n/a	n/a	2.5	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	0.00061	0.0018	0.0061	0.0150	0.0031	0.0031	0.0500
Date																
06-Jan-15	5.0															
12-Jan-15	6															
18-Jan-15	9	0.00185	0.0006	0.00155	0.0006	0.0183	0.0680	0.0022	0.0460	0.00194	0.0019	0.00305	0.7040	0.00155	0.0138	2.1100
24-Jan-15	8															
30-Jan-15	9															
05-Feb-15	13	0.00185	0.0006	0.00155	0.0006	0.0289	0.4080	0.0028	0.1900	0.01340	0.0009	0.00305	0.3580	0.00155	0.0242	1.0700
11-Feb-15	7															
17-Feb-15	11															
23-Feb-15	8	0.00185	0.0006	0.00155	0.0006	0.0319	0.1110	0.0038	0.1030	0.00554	0.0009	0.00305	0.4830	0.00155	0.014	1.4500
01-Mar-15	9															
07-Mar-15	21															
13-Mar-15	6	0.00185	0.0006	0.00155	0.0006	0.0100	0.0700	0.0019	0.0370	0.00483	0.0023	0.00305	0.5830	0.00155	0.0114	1.7500
19-Mar-15	49															
25-Mar-15	15															
31-Mar-15	11	0.00185	0.0006	0.00155	0.0006	0.0369	0.2580	0.0068	0.1310	0.00602	0.0009	0.00305	0.3150	0.00155	0.0159	0.9500
06-Apr-15	55															
12-Apr-15	48															
18-Apr-15	35	0.00185	0.0006	0.00155	0.0006	0.0257	0.8190	0.0027	0.4150	0.01660	0.0021	0.00305	0.1620	0.00155	0.0157	0.4900
24-Apr-15	64															
30-Apr-15	46															
06-May-15	77	0.00380	0.0006	0.01030	0.0016	0.0565	3.0100	0.0050	1.3000	0.05530	0.0065	0.00305	0.3760	0.00460	0.0342	1.1300
12-May-15	16															
18-May-15	36															
24-May-15	36	0.00185	0.0006	0.00310	0.0006	0.0461	0.6830	0.0033	0.3530	0.01880	0.0009	0.00305	0.3150	0.00155	0.0167	0.9400
30-May-15	20															
05-Jun-15	49															
11-Jun-15	40	0.00185	0.0006	0.00155	0.0006	0.0588	0.9600	0.0009	0.4110	0.02220	0.0025	0.00305	0.2680	0.00155	0.0182	0.8000
17-Jun-15	80															
23-Jun-15	34															
29-Jun-15	51	0.00185	0.0006	0.00470	0.0006	0.0497	1.2600	0.0098	0.5500	0.02360	0.0034	0.00305	0.4130	0.00155	0.0216	1.2400

Station : STN72137 TSP (Shania Twain Center)
Reporting Period : 05 July to 31 December, 2015

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
Date																
05-Jul-15	41															
11-Jul-15	41															
17-Jul-15	33	0.00185	0.0006	0.00155	0.0006	0.0242	0.7960	0.0020	0.3680	0.01760	0.0023	0.00305	0.4340	0.00155	0.0149	1.3000
23-Jul-15	87															
29-Jul-15	98															
04-Aug-15	22	0.00185	0.0006	0.00155	0.0006	0.0518	0.3060	0.0009	0.1290	0.00635	0.0009	0.00305	0.0480	0.00155	0.0080	0.1400
10-Aug-15	48															
16-Aug-15	51															
22-Aug-15	29	0.00185	0.0006	0.00155	0.0006	0.0290	0.4760	0.0009	0.2480	0.01090	0.0009	0.00305	0.3010	0.00155	0.0116	0.9000
28-Aug-15	49															
03-Sep-15	35															
09-Sep-15	63	0.00185	0.0006	0.00790	0.0013	0.0637	2.3800	0.0027	0.8770	0.04740	0.0046	0.00305	0.3040	0.00340	0.0305	0.9100
15-Sep-15	66															
21-Sep-15	53															
27-Sep-15	54	0.00185	0.0006	0.00350	0.0006	0.0241	1.2300	0.0029	0.5690	0.02310	0.0036	0.00305	0.6500	0.00155	0.0267	1.9500
03-Oct-15	10															
09-Oct-15	15															
15-Oct-15	10	0.00185	0.0006	0.00155	0.0006	0.0352	0.2610	0.0009	0.0990	0.00848	0.0009	0.00305	0.0930	0.00155	0.0078	0.2800
21-Oct-15	48															
27-Oct-15	33															
02-Nov-15	15	0.00185	0.0006	0.00360	0.0006	0.0561	0.5000	0.0009	0.1700	0.00945	0.0029	0.00305	0.1490	0.00155	0.0126	0.4500
08-Nov-15	11															
14-Nov-15	6															
20-Nov-15	38	0.00185	0.0006	0.00410	0.0006	0.0591	1.0900	0.0009	0.4640	0.02020	0.0027	0.00305	0.1840	0.00155	0.0180	0.5500
26-Nov-15	12															
02-Dec-15	7															
08-Dec-15	10	0.00185	0.0006	0.00155	0.0006	0.0447	0.0920	0.0026	0.0410	0.00541	0.0009	0.00305	0.8920	0.00155	0.0123	2.6700
14-Dec-15	12															
20-Dec-15	8															
26-Dec-15	8	0.00185	0.0006	0.00155	0.0006	0.0425	0.1110	0.0009	0.0420	0.00290	0.0019	0.00305	0.0830	0.00155	0.0104	0.2500
Arithmetic Mean	31	0.00195	0.0006	0.00287	0.0007	0.0397	0.7445	0.0027	0.3272	0.01600	0.0022	0.00305	0.3558	0.00180	0.0169	1.0665
Geometric Mean	23	0.00192	0.0006	0.00231	0.0007	0.0362	0.4339	0.0021	0.2035	0.01136	0.0018	0.00305	0.2833	0.00170	0.0156	0.8489
Annual Max	98	0.00380	0.0006	0.01030	0.0016	0.0637	3.0100	0.0098	1.3000	0.05530	0.0065	0.00305	0.8920	0.00460	0.0342	2.6700
Annual Min	5	0.00185	0.0006	0.00155	0.0006	0.0100	0.0680	0.0009	0.0370	0.00194	0.0009	0.00305	0.0480	0.00155	0.0078	0.1400
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	n/a	0	0	n/a
No. > Standard	n/a	0	n/a	n/a	n/a	0	0	0	0	n/a	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).

GOLDCORP

Goldcorp - PM10 / Metals Report

Station : STN72135 PM10
Location : Extendicare
Reporting Period : 01 January to 29 June, 2015
Sample Matrix : Teflon Coated Filter
Method : IO-3.1
Valid Samples - Number / % : 59 / 98.3 %

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	0.00061	0.0018	0.0061	0.0150	0.0031	0.0031	0.0500
Date																
06-Jan-15	InVld															
12-Jan-15	4															
18-Jan-15	9															
24-Jan-15	7	0.00185	0.0006	0.00155	0.0006	0.0601	0.0530	0.0009	0.0550	0.00123	0.0009	0.00305	0.2970	0.00155	0.0138	0.8900
30-Jan-15	8															
05-Feb-15	10															
11-Feb-15	14															
17-Feb-15	10															
23-Feb-15	22	0.00185	0.0006	0.00155	0.0006	0.0461	0.8690	0.0025	0.3170	0.02120	0.0009	0.00305	0.5190	0.00155	0.0119	1.5600
01-Mar-15	26															
07-Mar-15	9															
13-Mar-15	6															
19-Mar-15	22															
25-Mar-15	10	0.00185	0.0006	0.00155	0.0006	0.0179	0.2830	0.0009	0.1520	0.00901	0.0033	0.00305	0.4840	0.00155	0.0087	1.4500
31-Mar-15	9															
06-Apr-15	22															
12-Apr-15	10															
18-Apr-15	13															
24-Apr-15	14	0.00185	0.0006	0.00155	0.0006	0.0081	0.4090	0.0009	0.1850	0.00849	0.0009	0.00305	0.1330	0.00155	0.0076	0.4000
30-Apr-15	17															
06-May-15	22															
12-May-15	6															
18-May-15	21															
24-May-15	18	0.00185	0.0006	0.00155	0.0006	0.0364	0.4530	0.0009	0.1890	0.01390	0.0009	0.00305	0.2890	0.00155	0.0104	0.8700
30-May-15	6															
05-Jun-15	14															
11-Jun-15	22															
17-Jun-15	16															
23-Jun-15	14	0.00185	0.0006	0.00155	0.0006	0.0337	0.1290	0.0009	0.0510	0.00328	0.0009	0.00305	0.1610	0.00155	0.0061	0.4800
29-Jun-15	41															

Station : STN72135 PM10 (Extendicare)
Reporting Period : 05 July to 31 December, 2015

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
Date																
05-Jul-15	28															
11-Jul-15	33															
17-Jul-15	12															
23-Jul-15	16	0.00185	0.0006	0.00155	0.0006	0.0213	0.4400	0.0009	0.1610	0.01260	0.0009	0.00305	0.0720	0.00155	0.0078	0.2200
29-Jul-15	42															
04-Aug-15	14															
10-Aug-15	21															
16-Aug-15	36															
22-Aug-15	19	0.00185	0.0006	0.00155	0.0006	0.0235	0.1900	0.0009	0.0930	0.00514	0.0009	0.00305	0.2620	0.00155	0.0062	0.7900
28-Aug-15	26															
03-Sep-15	31															
09-Sep-15	21															
15-Sep-15	23															
21-Sep-15	14	0.00185	0.0006	0.00155	0.0006	0.0129	0.2720	0.0009	0.0870	0.00633	0.0009	0.00305	0.3160	0.00155	0.0060	0.9500
27-Sep-15	20															
03-Oct-15	20															
09-Oct-15	5															
15-Oct-15	2															
21-Oct-15	19	0.00185	0.0006	0.00360	0.0006	0.0192	0.7390	0.0058	0.3270	0.01350	0.0009	0.00305	0.1850	0.00155	0.0120	0.5500
27-Oct-15	9															
02-Nov-15	6															
08-Nov-15	21															
14-Nov-15	7															
20-Nov-15	37	0.00185	0.0006	0.00730	0.0006	0.0211	2.2200	0.0009	0.7350	0.04440	0.0038	0.00305	0.1950	0.00400	0.0170	0.5800
26-Nov-15	7															
02-Dec-15	7															
08-Dec-15	11															
14-Dec-15	2															
20-Dec-15	10	0.00185	0.0006	0.00155	0.0006	0.0162	0.1740	0.0009	0.0770	0.00425	0.0009	0.00305	0.2020	0.00155	0.0085	0.6100
26-Dec-15	10															
Arithmetic Mean	16	0.00185	0.0006	0.00220	0.0006	0.0264	0.5193	0.0014	0.2024	0.01194	0.0013	0.00305	0.2596	0.00175	0.0097	0.7792
Geometric Mean	13	0.00185	0.0006	0.00189	0.0006	0.0229	0.3353	0.0011	0.1484	0.00822	0.0011	0.00305	0.2283	0.00168	0.0092	0.6857
Annual Max	42	0.00185	0.0006	0.00730	0.0006	0.0601	2.2200	0.0058	0.7350	0.04440	0.0038	0.00305	0.5190	0.00400	0.0170	1.5600
Annual Min	2	0.00185	0.0006	0.00155	0.0006	0.0081	0.0530	0.0009	0.0510	0.00123	0.0009	0.00305	0.0720	0.00155	0.0060	0.2200
No. of Samples	59	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
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).

GOLDCORP

Goldcorp - PM10 / Metals Report

Station : STN72136 PM10
Location : MRCA
Reporting Period : 01 January to 29 June, 2015
Sample Matrix : Teflon Coated Filter
Method : IO-3.1
Valid Samples - Number / % : 60 / 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	0.00061	0.0018	0.0061	0.0150	0.0031	0.0031	0.0500
Date																
06-Jan-15	5															
12-Jan-15	4															
18-Jan-15	9															
24-Jan-15	6	0.00185	0.0006	0.00155	0.0006	0.0016	0.0550	0.0009	0.0550	0.00123	0.0009	0.00305	0.2940	0.00155	0.0051	0.8800
30-Jan-15	5															
05-Feb-15	10															
11-Feb-15	11															
17-Feb-15	9															
23-Feb-15	11	0.00185	0.0006	0.00155	0.0006	0.0077	0.2290	0.0022	0.1400	0.00849	0.0009	0.00305	0.5520	0.00155	0.0147	1.6500
01-Mar-15	14															
07-Mar-15	9															
13-Mar-15	16															
19-Mar-15	32															
25-Mar-15	32	0.00185	0.0006	0.00320	0.0006	0.0121	0.9180	0.0009	0.4450	0.01900	0.0045	0.00305	0.5130	0.00155	0.0176	1.5400
31-Mar-15	16															
06-Apr-15	31															
12-Apr-15	36															
18-Apr-15	11															
24-Apr-15	11	0.00185	0.0006	0.00155	0.0006	0.0016	0.2340	0.0009	0.1360	0.00506	0.0009	0.00305	0.1680	0.00155	0.0056	0.5000
30-Apr-15	6															
06-May-15	46															
12-May-15	4															
18-May-15	18															
24-May-15	23	0.00185	0.0006	0.00155	0.0006	0.0306	0.5100	0.0009	0.2530	0.01520	0.0009	0.00305	0.3440	0.00155	0.0223	1.0300
30-May-15	8															
05-Jun-15	12															
11-Jun-15	21															
17-Jun-15	40															
23-Jun-15	13	0.00185	0.0006	0.00155	0.0006	0.0299	0.2130	0.0009	0.0910	0.00490	0.0009	0.00305	0.1770	0.00155	0.0078	0.5300
29-Jun-15	36															

Station : STN72136 PM10 (MRCA)
Reporting Period : 05 July to 31 December, 2015

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
Date																
05-Jul-15	41															
11-Jul-15	36															
17-Jul-15	49															
23-Jul-15	25	0.00185	0.0006	0.00155	0.0006	0.0349	0.6420	0.0009	0.2750	0.01130	0.0009	0.00305	0.0970	0.00155	0.0120	0.2900
29-Jul-15	85															
04-Aug-15	14															
10-Aug-15	36															
16-Aug-15	31															
22-Aug-15	33	0.00185	0.0006	0.00155	0.0006	0.0670	0.8330	0.0009	0.3440	0.01910	0.0020	0.00305	0.3120	0.00155	0.0168	0.9300
28-Aug-15	42															
03-Sep-15	22															
09-Sep-15	27															
15-Sep-15	43															
21-Sep-15	28	0.00185	0.0006	0.00155	0.0006	0.0513	0.8160	0.0009	0.3000	0.01600	0.0021	0.00305	0.3400	0.00155	0.0187	1.0200
27-Sep-15	29															
03-Oct-15	9															
09-Oct-15	9															
15-Oct-15	2															
21-Oct-15	37	0.00185	0.0006	0.00620	0.0006	0.1120	1.6200	0.0066	0.6320	0.03160	0.0033	0.00305	0.2470	0.00330	0.0223	0.7400
27-Oct-15	18															
02-Nov-15	20															
08-Nov-15	11															
14-Nov-15	3															
20-Nov-15	15	0.00185	0.0006	0.00155	0.0006	0.0062	0.3750	0.0009	0.1650	0.00758	0.0009	0.00305	0.1590	0.00155	0.0086	0.4800
26-Nov-15	8															
02-Dec-15	4															
08-Dec-15	10															
14-Dec-15	2															
20-Dec-15	16	0.00185	0.0006	0.00155	0.0006	0.0221	0.1530	0.0009	0.1270	0.00330	0.0009	0.00305	0.2030	0.00155	0.0081	0.6100
26-Dec-15	6															
Arithmetic Mean	20	0.00185	0.0006	0.00208	0.0006	0.0314	0.5498	0.0015	0.2469	0.01190	0.0016	0.00305	0.2838	0.00170	0.0133	0.8500
Geometric Mean	15	0.00185	0.0006	0.00185	0.0006	0.0164	0.3888	0.0011	0.1997	0.00876	0.0013	0.00305	0.2533	0.00165	0.0118	0.7587
Annual Max	85	0.00185	0.0006	0.00620	0.0006	0.1120	1.6200	0.0066	0.6320	0.03160	0.0045	0.00305	0.5520	0.00330	0.0223	1.6500
Annual Min	2	0.00185	0.0006	0.00155	0.0006	0.0016	0.0550	0.0009	0.0550	0.00123	0.0009	0.00305	0.0970	0.00155	0.0051	0.2900
No. of Samples	60	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
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).

GOLDCORP

Goldcorp - PM10 / Metals Report

Station : STN72137 PM10
Location : Shania Twain Centre
Reporting Period : 01 January to 29 June, 2015
Sample Matrix : Teflon Coated Filter
Method : IO-3.1
Valid Samples - Number / % : 60 / 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	0.00061	0.0018	0.0061	0.0150	0.0031	0.0031	0.0500
Date																
06-Jan-15	5															
12-Jan-15	5															
18-Jan-15	10															
24-Jan-15	6	0.00185	0.0006	0.00155	0.0006	0.0103	0.0680	0.0009	0.0640	0.00159	0.0009	0.00305	0.3140	0.00155	0.0048	0.9400
30-Jan-15	7															
05-Feb-15	10															
11-Feb-15	15															
17-Feb-15	8															
23-Feb-15	7	0.00185	0.0006	0.00155	0.0006	0.0121	0.1510	0.0039	0.1160	0.00660	0.0009	0.00305	0.4820	0.00155	0.0099	1.4500
01-Mar-15	8															
07-Mar-15	13															
13-Mar-15	5															
19-Mar-15	22															
25-Mar-15	13	0.00185	0.0006	0.00155	0.0006	0.0185	0.3740	0.0025	0.1950	0.00776	0.0034	0.00305	0.4390	0.00155	0.0127	1.3200
31-Mar-15	8															
06-Apr-15	29															
12-Apr-15	20															
18-Apr-15	13															
24-Apr-15	24	0.00185	0.0006	0.00320	0.0006	0.0094	0.7790	0.0009	0.3620	0.01390	0.0025	0.00305	0.1690	0.00155	0.0121	0.5100
30-Apr-15	15															
06-May-15	38															
12-May-15	6															
18-May-15	20															
24-May-15	17	0.00185	0.0006	0.00155	0.0006	0.0141	0.3470	0.0009	0.1700	0.01060	0.0009	0.00305	0.2720	0.00155	0.0105	0.8200
30-May-15	6															
05-Jun-15	16															
11-Jun-15	18															
17-Jun-15	29															
23-Jun-15	14	0.00185	0.0006	0.00155	0.0006	0.0115	0.3140	0.0009	0.1230	0.00629	0.0009	0.00305	0.1610	0.00155	0.0096	0.4800
29-Jun-15	26															

Station : STN72137 PM10 (Shania twain Centre)
Reporting Period : 05 July to 31 December, 2015

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
Date																
05-Jul-15	23															
11-Jul-15	27															
17-Jul-15	16															
23-Jul-15	43	0.00185	0.0006	0.00620	0.0006	0.0178	1.7400	0.0022	0.6990	0.02940	0.0040	0.00305	0.1920	0.00155	0.0205	0.5800
29-Jul-15	53															
04-Aug-15	13															
10-Aug-15	20															
16-Aug-15	29															
22-Aug-15	19	0.00185	0.0006	0.00155	0.0006	0.0178	0.2080	0.0009	0.1080	0.00498	0.0009	0.00305	0.2530	0.00155	0.0094	0.7600
28-Aug-15	26															
03-Sep-15	20															
09-Sep-15	31															
15-Sep-15	32															
21-Sep-15	20	0.00185	0.0006	0.00155	0.0006	0.0115	0.4320	0.0009	0.1890	0.00809	0.0009	0.00305	0.3080	0.00155	0.0119	0.9200
27-Sep-15	24															
03-Oct-15	5															
09-Oct-15	5															
15-Oct-15	2															
21-Oct-15	20	0.00185	0.0006	0.00350	0.0006	0.0260	0.7670	0.0074	0.3020	0.01400	0.0023	0.00305	0.1750	0.00155	0.0201	0.5200
27-Oct-15	16															
02-Nov-15	7															
08-Nov-15	25															
14-Nov-15	6															
20-Nov-15	21	0.00185	0.0006	0.00155	0.0006	0.0263	0.6250	0.0009	0.2690	0.01270	0.0019	0.00305	0.1830	0.00155	0.0192	0.5500
26-Nov-15	10															
02-Dec-15	5															
08-Dec-15	10															
14-Dec-15	4															
20-Dec-15	10	0.00185	0.0006	0.00155	0.0006	0.0202	0.1450	0.0009	0.0820	0.00374	0.0009	0.00305	0.2040	0.00155	0.0111	0.6100
26-Dec-15	8															
Arithmetic Mean	16	0.00185	0.0006	0.00224	0.0006	0.0163	0.4958	0.0019	0.2233	0.00997	0.0017	0.00305	0.2627	0.00155	0.0127	0.7883
Geometric Mean	13	0.00185	0.0006	0.00198	0.0006	0.0154	0.3514	0.0014	0.1784	0.00790	0.0014	0.00305	0.2456	0.00155	0.0118	0.7367
Annual Max	53	0.00185	0.0006	0.00620	0.0006	0.0263	1.7400	0.0074	0.6990	0.02940	0.0040	0.00305	0.4820	0.00155	0.0205	1.4500
Annual Min	2	0.00185	0.0006	0.00155	0.0006	0.0094	0.0680	0.0009	0.0640	0.00159	0.0009	0.00305	0.1610	0.00155	0.0048	0.4800
No. of Samples	60	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
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).

GOLDCORP

Goldcorp - Dustfall Summary Report

Reporting Period : 01 January to 31 December, 2015

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	0.44	0.39	0.82	0.19	0.35	0.54	0.18	0.24	0.42
February	0.81	0.78	1.60	0.21	0.51	0.71	0.28	0.47	0.75
March	1.20	0.76	2.00	0.75	0.65	1.40	0.41	0.49	0.90
April	1.10	0.50	1.60	1.30	0.51	1.80	0.57	0.42	0.99
May	4.00	2.20	6.20	1.50	0.94	2.50	1.80	1.10	2.90
June	5.90	3.50	9.40	1.60	0.93	2.50	1.30	0.91	2.20
July	4.20	3.80	8.10	2.00	2.20	4.20	0.80	1.90	2.70
August	1.10	0.78	1.80	0.67	0.70	1.40	0.55	0.92	1.50
September	1.20	0.50	1.70	1.10	0.45	1.50	1.30	0.68	2.00
October	0.84	1.70	2.60	0.75	0.77	1.50	0.68	1.10	1.80
November	1.40	0.63	2.00	0.83	0.67	1.50	0.44	0.31	0.75
December	0.42	0.22	0.63	0.26	0.57	0.83	0.31	0.46	0.77
Annual Average	1.88	1.31	3.20	0.93	0.77	1.70	0.72	0.75	1.47
Annual Max	5.90	3.80	9.40	2.00	2.20	4.20	1.80	1.90	2.90
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	0

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

GOLDCORP

Goldcorp - Dustfall Summary Report

Reporting Period : 01 January to 31 December, 2015
Standard : 7.0 g/m^2/30d

Sampling Method : BRL SOP-00121

	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	0.30	0.49	0.79	0.24	0.26	0.50	0.31	0.30	0.61
February	0.47	1.00	1.50	0.61	0.45	1.10	0.26	0.63	0.89
March	2.60	0.89	3.50	0.47	0.47	0.94	1.20	0.61	1.80
April	6.10	0.77	6.90	1.10	0.44	1.50	3.70	0.64	4.30
May	5.90	1.50	7.40	55.00	1.50	57.00	6.00	1.40	7.50
June	2.20	0.86	3.10	2.00	0.85	2.80	0.01	0.01	0.01
July	1.60	2.10	3.70	1.30	1.90	3.20	9.00	1.00	10.00
August	2.20	0.92	3.10	0.74	1.20	1.90	12.00	3.00	15.00
September	1.80	0.69	2.50	0.72	0.47	1.20	9.80	1.10	11.00
October	Invalid	Invalid	Invalid	0.94	0.90	1.80	14.00	1.30	15.00
November	4.60	0.73	5.30	1.60	0.48	2.10	43.00	2.00	45.00
December	0.63	0.34	0.97	0.50	0.44	0.95	11.00	1.60	13.00
Annual Average	2.58	0.94	3.52	5.44	0.78	6.25	9.19	1.13	10.34
Annual Max	6.10	2.10	7.40	55.00	1.90	57.00	43.00	3.00	45.00
No. of Valid Samples	11	11	11	12	12	12	12	12	12
% Valid Data	91.7	91.7	91.7	100.0	100.0	100.0	100.0	100.0	100.0
No. of Samples > Standard	n/a	n/a	1	n/a	n/a	1	n/a	n/a	7

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

GOLDCORP

Goldcorp - Passive Sampling Report

Reporting Period : 01 January to 31 December 2015
Sampling Methods : Radiello F1 / APHA 4110

	STN72135		STN72136		STN72137	
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	1.90	0.05	2.47	0.11	2.20
February	0.05	1.55	0.05	1.81	0.05	1.65
March	0.05	2.23	0.05	1.86	0.05	2.35
April	0.14	3.09	0.05	2.69	0.05	2.14
May	0.05	2.48	0.05	2.66	0.05	1.38
June	0.15	1.76	0.05	0.68	0.05	2.57
July	0.05	2.51	0.05	1.55	0.05	0.75
August	0.05	2.09	0.05	0.92	0.05	0.67
September	0.31	1.18	0.05	1.31	0.05	0.50
October	0.12	1.51	0.10	1.80	0.05	2.00
November	0.11	1.69	0.05	2.20	0.05	1.37
December	0.05	1.60	0.05	1.92	0.05	1.27
Annual Average	0.10	1.97	0.05	1.82	0.06	1.57
Annual Max	0.31	3.09	0.10	2.69	0.11	2.57
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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GOLDCORP

Ambient Air Monitoring Report

Appendix C
Calibration Summary

GOLDCORP CALIBRATION SUMMARY JUNE 2015

Station Identifier Station Name	STN72135 Extendicare	STN72138 Hollinger Park	STN72139 Hollinger Office	STN72140 Goldmine Tour	STN72141 Claimpost Trail
Date	Jun-11	Jun-11	Jun-12	Jun-12	Jun-11
Time (EST)	9:30	12:25	9:00	12:00	15:30
SHARP Neph Zero response	8.0	4.0	8.7	2.5	6.8
SHARP Conc. Zero response	4.7	2.6	6.0	2.1	7.5
SHARP Zero reset	Yes	Yes	Yes	Yes	Yes
Flow rate response	Pass	Pass	Pass	Pass	Pass
Monitor calibration criteria	Pass	Pass	Pass	Pass	Pass
Date	Jun-11	Jun-11	Jun-12	Jun-12	Jun-11
Time (EST)	8:45	11:45	8:30	11:30	15:00
TSP Zero response	-1.0	0.7	0.1	-1.0	1.0
TSP Zero reset	Yes	No	No	Yes	Yes
Flow rate response	Pass	Pass	Pass	Pass	Pass
Monitor calibration criteria	Pass	Pass	Pass	Pass	Pass
Date	Jun-11	Jun-11	Jun-12	Jun-12	Jun-11
Time (EST)	8:30	11:45	8:00	11:15	14:15
NO / NOX Zero response	0.4 / 0.4	0.0 / 0.0	0.2 / 0.4	0.0 / 0.0	0.2 / 0.2
NO / NOX Zero reset	No	No	No	No	No
NO / NOX Span input	750 / 751	750 / 751	750 / 751	750 / 751	750 / 751
NO / NOX Span response	704 / 705	759 / 760	721 / 722	785 / 786	679 / 680
NO / NOX Span tolerance	-6.1 / -6.1	1.2 / 1.2	-3.9 / -3.9	4.7 / 4.7	-9.5 / -9.5
NO / NOX Span reset	Yes	No	No	Yes	Yes
Monitor calibration criteria	Pass	Pass	Pass	Pass	Pass

GOLDCORP CALIBRATION SUMMARY AUGUST 2015

Station Identifier Station Name	STN72135 Extendicare	STN72138 Hollinger Park	STN72139 Hollinger Office	STN72140 Goldmine Tour	STN72141 Claimpost Trail
Date	Aug-20	Aug-19	Aug-19	Aug-19	Aug-20
Time (EST)	13:30	10:30	15:45	13:00	11:00
SHARP Neph Zero response	4.7	1.4	9.1	0.2	1.6
SHARP Conc. Zero response	2.1	1.3	4.8	0.1	0.7
SHARP Zero reset	Yes	Yes	Yes	No	Yes
Flow rate response	Pass	Pass	Pass	Pass	Pass
Monitor calibration criteria	Pass	Pass	Pass	Pass	Pass
Date	Aug-20	Aug-19	Aug-19	Aug-19	Aug-20
Time (EST)	13:00	10:00	15:00	12:30	10:45
TSP Zero response	0.5	0.5	1.6	0.5	2.7
TSP Zero reset	No	No	Yes	No	Yes
Flow rate response	Pass	Pass	Pass	Pass	Pass
Monitor calibration criteria	Pass	Pass	Pass	Pass	Pass
Date	Aug-20	Aug-19	Aug-19	Aug-19	Aug-20
Time (EST)	12:30	9:00	14:45	12:00	10:00
NO / NOX Zero response	0.2 / 0.4	0.0 / 0.0	0.1 / 0.3	0.1 / 0.1	0.2 / 0.2
NO / NOX Zero reset	No	No	No	No	No
NO / NOX Span input	780 / 781	780 / 781	780 / 781	780 / 781	780 / 781
NO / NOX Span response	712 / 714	728 / 729	830 / 831	704 / 705	770 / 770
NO / NOX Span tolerance	-8.7 / -8.6	-6.6 / -6.7	6.4 / 6.4	-9.7 / -9.7	-1.3 / -1.4
NO / NOX Span reset	Yes	Yes	Yes	Yes	Yes
Monitor calibration criteria	Pass	Pass	Pass	Pass	Pass

GOLDCORP CALIBRATION SUMMARY NOVEMBER 2015

Station Identifier Station Name	STN72135 Extendicare	STN72138 Hollinger Park	STN72139 Hollinger Office	STN72140 Goldmine Tour	STN72141 Claimpost Trail
Date	Nov-11	Nov-11	Nov-11	Nov-12	Nov-13
Time (EST)	16:45	10:45	14:30	14:45	11:00
SHARP Neph Zero response	3.0	9.2	0.0	3.7	1.5
SHARP Conc. Zero response	2.3	3.2	0.0	1.2	0.6
SHARP Zero reset	Yes	Yes	No	Yes	Yes
Flow rate response	Pass	Pass	Pass	Pass	Pass
Monitor calibration criteria	Pass	Pass	Pass	Pass	Pass
Date	Nov-11	Nov-11	Nov-11	Nov-12	Nov-13
Time (EST)	16:30	10:00	14:00	14:30	10:30
TSP Zero response	0.3	-2.0	-1.2	0.3	-0.5
TSP Zero reset	No	Yes	Yes	No	No
Flow rate response	Pass	Pass	Pass	Pass	Pass
Monitor calibration criteria	Pass	Pass	Pass	Pass	Pass
Date	Nov-11	Nov-11	Nov-11	Nov-12	Nov-13
Time (EST)	16:00	9:00	13:30	14:00	10:00
NO / NOX Zero response	0.0 / 0.0	0.0 / 0.0	0.1 / 0.1	0.2 / 0.2	0.4 / 0.4
NO / NOX Zero reset	No	No	No	No	No
NO / NOX Span input	800 / 801	800 / 801	800 / 801	800 / 801	800 / 801
NO / NOX Span response	760 / 761	750 / 751	846 / 847	790 / 791	869 / 870
NO / NOX Span tolerance	-5.0 / -5.0	-6.3 / -6.2	5.8 / 5.7	-1.3 / -1.1	8.6 / 8.6
NO / NOX Span reset	Yes	Yes	Yes	No	Yes
Monitor calibration criteria	Pass	Pass	Pass	Pass	Pass