



BC EAO EAC Application – Tenas Project

Section 13.0 Management Plans

Chapter 2 Air Quality Management Plan

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VERSION 1.0

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Submitted by:	Telkwa Coal Limited Suite 1410 – 409 Granville Street Vancouver, BC V6C 1T2

Tenas Project

Section 13.0 Management Plans Chapter 2 Air Quality Management Plan

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ABBREVIATIONS AND ACRONYMS

Abbreviation or Acronym	Long Form of Abbreviation or Acronym
AQMP	Air Quality Management Plan (S13.0-C2)
ASTM	American Society for Testing and Materials
BC	British Columbia
BC MEMLI	British Columbia Ministry of Energy, Mines and Low Carbon Innovation
BC MEMPR	British Columbia Ministry of Energy, Mines and Petroleum Resources
BC MECCS	British Columbia Ministry of Environment and Climate Change Strategy
BC OGC	British Columbia Oil and Gas Commission
BMPs	best management practices
C	Chapter
CAC	criteria air contaminants
CEPA	<i>Canadian Environmental Protection Act</i> , 1999, SC 1999, c 33
CNR	Canadian National Rail
Code	British Columbia Health, Safety and Reclamation Code for Mines in British Columbia (British Columbia Ministry of Energy, Mines and Low Carbon Innovation [BC MEMLI] 2021)
CPP	Coal Processing Plant
EAC	Environmental Assessment Certificate
ECCC	Environment and Climate Change Canada
EMP	Explosives Management Plan (S13.0-C6)
EMS	Environmental Management System (S13.0-C1)
FCM-RAC	Federation of Canadian Municipalities and Railway Association of Canada
GHG	greenhouse gas
GovBC	Government of British Columbia
GovCan	Government of Canada
JAIR	Joint Application Information Requirements for <i>Mines Act</i> and <i>Environmental Management Act</i> Permits (British Columbia Ministry of Energy, Mines and Petroleum Resources [BC MEMPR] and British Columbia Ministry of Environment and Climate Change Strategy [BC MECCS] 2019).
LSA	Local Study Area
MA/EMA	<i>Mines Act</i> , RSBC 1996, c 293 and <i>Environmental Management Act</i> , SBC 2003, c 53
MERP	Mine Emergency Response Plan (S13.0-C9)
MIC	Mine Infrastructure Complex
MOC	Management of Change
NPRI	National Pollutant Release Inventory
OHSP	Occupational Health and Safety Program (S13.0-C13)

Abbreviation or Acronym	Long Form of Abbreviation or Acronym
NO ₂	nitrogen dioxide
NO _x	oxides of nitrogen
PAG	potentially acid generating
PM	particulate matter
PM _{2.5}	particulate matter less than 2.5 microns in diameter
PM ₁₀	particulate matter less than 10 microns in diameter
PPR	Private Property Receptor
Project	Tenas Project
RC	Recreation Camp
ROM	run-of-mine
ROW	right-of-way
RSA	Regional Study Area
S	Section
SEMP	Socio-economic Management Plan (S13.0-C16)
SO ₂	sulphur dioxide
SPP	Standard Practices and Procedures
TAC	Tenas Access Corridor
TARP	Trigger Action Response Plan
TCL	Telkwa Coal Limited
TCRC	Telkwa Coal Recreation Camp
TSP	total suspended particulate
VC	Valued Component
WMPRE	Waste Management Plan for Refuse and Emissions (S13.0-C20)

UNITS OF MEASURE

Abbreviation or Acronym	Long Form of Abbreviation or Acronym
%	percent
dBA	A-weighted decibel
km	kilometre
km/h	kilometres per hour
m	metre
mg/dm ² -d	milligram per square decimeter per day
mm	millimetre
mm/second	millimetre per second

Abbreviation or Acronym	Long Form of Abbreviation or Acronym
t CO ₂ e/kt	tonnes of carbon dioxide equivalent per kilotonne
µg/m ³	micrograms per cubic metre

EXECUTIVE SUMMARY

Activities during the Construction, Operation, Decommissioning and Reclamation, and Post-closure phases of the Tenas Project (Project) may be a source of air emissions. Sources of air emissions during these phases include:

- ▶ fugitive dust associated with land clearing and earthworks; and
- ▶ criteria air contaminants (CACs) and greenhouse gases (GHGs) associated with the use of equipment and vehicles.

This Air Quality Management Plan (AQMP) provides direction on how the management of emissions such as CACs, dust, GHGs, noise, and vibration are to be handled by Telkwa Coal Limited (TCL). The AQMP defines the roles and responsibilities of employees and provides a specific Trigger Action Response Plan (TARP) to manage air emissions. The Project will adopt best management practices (BMPs) into its operating procedures to manage emissions and associated potential effects.

Management of air emissions, dust, noise, and vibration at the Project is important to TCL. Through implementation of the AQMP and relevant Standard Practices and Procedures (SPP), TCL will minimize air emissions, dust, noise, and vibration from the Project, and thus potential exposure to employees, residents, the public, and the environment.

1. INTRODUCTION

The Air Quality Management Plan (AQMP) describes the management processes and procedures in place to protect air quality, including minimizing air emissions, dust, noise, and vibration at the Tenas Project (Project).

This AQMP provides direction on how the management of criteria air contaminants (CACs), greenhouse gases (GHGs), dust, as well as noise, and vibration are to be handled by Telkwa Coal Limited (TCL). The AQMP defines the roles and responsibilities of employees and provides a specific Trigger Action Response Plan (TARP) to manage air emissions, dust, noise, and vibration.

2. PURPOSE AND OBJECTIVES

The objectives of the AQMP are to:

- ▶ implement specific mitigation measures for emissions occurring at the Project;
- ▶ reduce potential exposure to residents, the public, and the environment; and
- ▶ minimize the potential for community concerns and nuisance issues such as dust, noise, and vibration.

This AQMP is just one (1) component of the overarching **Environmental Management System (EMS)** (Section [S] 13.0-Chapter [C] 1) for the Project Minesite.

3. SCOPE AND SCALE

The scope of the AQMP is defined within the Atmospheric Resources Local Study Area (LSA), and includes all activities in all Project phases, as well as any operation and/or construction activities that are directly associated with the Project and exist outside of the Project Area.

This AQMP considers potential effects of emissions associated with all activities within this boundary, including:

- ▶ CACs, including particulate matter (PM) (total suspended particulate [TSP], particulate matter less than 10 microns in diameter [PM₁₀], particulate matter less than 2.5 microns in diameter [PM_{2.5}]), nitrogen dioxide (NO₂), and sulphur dioxide (SO₂);
- ▶ GHGs;
- ▶ noise; and
- ▶ vibration

The AQMP is in effect during the activities associated with the Construction, Operation, Decommissioning and Reclamation, and Post-closure phases and ceases to be in force at the final closure of the Project as approved by regulatory authorities.

4. COMPLIANCE OBLIGATIONS

4.1 Regulatory Requirements

Several legislative requirements and guidance documents are applicable to air quality, dust, noise, and vibration. A short list of these requirements and their major applicable components are provided in **Table 4.1-1** below.

Table 4.1-1: Legislation and Guidelines Relevant to the Air Quality Management Plan (AQMP)

Legislation, Regulations, and Guidelines	Applicable Information
<i>Canada Transportation Act</i> , SC 1996, c. 10 (Government of Canada (GovCan) 1996)	Vibration regulations pertaining to the operation of the 2.5 kilometre (km) Rail Loop connected to the Canadian National Railway (CNR) rail line. Under Section 95.1 of the Act the operation of a railway shall cause only such vibration as is reasonable taking into account its location, operational requirements, and other obligations under the Act.
<i>Canadian Environmental Protection Act</i> , 1999, SC 1999, c 33 (GovCan 1999) (<i>CEPA</i>)	Regulates the protection of the environment including pollution protection and related fines for non-compliance with applicable regulations. Mandates annual reporting to the National Pollutant Release Inventory (NPRI) for applicable facilities.
Developing a Fugitive Dust Management Plan for Industrial Projects (British Columbia Ministry of Energy, Mines and Petroleum Resources [BC MEMPR] and British Columbia Ministry of Environment and Climate Change Strategy [BC MECCS] 2018)	Provides guidance to proponents of industrial projects to inform development of a fugitive dust management plan
<i>Environmental Management Act</i> , SBC 2003, c 53 (Government of British Columbia [GovBC] 2003)	Regulates permitting of facilities to discharge air emissions and authorizes the province to manage air quality in British Columbia (BC)
Federation of Canadian Municipalities and the Railway Association of Canada (FCM-RAC) Guidelines (FCM-RAC 2013)	There are no directly applicable regulations regarding vibration from mining facilities such as the Project. However, the FCM-RAC guidelines provide a recommended vibration influence area of 75 metres (m) from a railway corridor or rail yard, within which a vibration impact assessment should be conducted.
<i>Mines Act</i> , RSBC 1996, c 293 (GovBC 1996)	Regulates specific dust levels, vibrations, and noise levels to comply with British Columbia (BC) occupational health and safety requirements for employees, contractors, and visitors.
Off-road Compression-Ignition (Mobile and Stationary) and Large Spark-Ignition Engine Emission Regulations, SOR/2020-258 (GovCan 2020)	Provides emission standards

Legislation, Regulations, and Guidelines	Applicable Information
Sulphur in Diesel Fuel Regulations, SOR/2002-254 (GovCan 2002)	Mandates the use of low-sulphur diesel
Waste Discharge Regulation, BC Reg. 320/2004 (GovBC 2004)	Provides guidance to authorize in a permit, prescribes parameters for industries to discharge emissions

Activities will be guided by the Environmental Assessment Certificate (EAC), and *Mines Act*, RSBC 1996, c 293 and *Environmental Management Act*, SBC 2003, c 53 (*MA/EMA*) permit conditions. For more information, see **8. Reporting**.

Per the Joint Application Information Requirements for *Mines Act* and *Environmental Management Act* Permits (British Columbia Ministry of Energy, Mines and Petroleum Resources [BC MEMPR] and British Columbia Ministry of Environment and Climate Change Strategy [BC MECCS] 2019) (JAIR) objectives for air contaminants in Sections 9.15 and 9.17 of the JAIR are addressed in this AQMP.

The AQMP provides management strategies to be followed during Construction, Operation, Decommissioning and Reclamation, and Post-closure phases. The AQMP outlines discharges to air through the various Construction and Operation phases of the Project, including the following:

- ▶ air contaminants; and
- ▶ potential sources, including spills, dust, emissions from all processes (including cooling), ponds and yards, vehicle and equipment use, and electrical generation, as appropriate.

In addition, the **Waste Management Plan for Refuse and Emissions (S13.0-C20) (WMPRE)** provides further guidance and direction on air quality management.

4.2 Standard Practices and Procedures (SPPs)

All TCL Standard Practices and Procedures (SPPs) will conform to the British Columbia Health, Safety and Reclamation Code for Mines in British Columbia (British Columbia Ministry of Energy, Mines and Low Carbon Innovation [BC MEMLI] 2021) (Code).

In addition to regulatory requirements, the Project will implement SPPs that meet or exceed the required laws and regulations.

5. RELATIONSHIP TO OTHER MANAGEMENT PLANS

The Project is governed by an **EMS**, an overarching management plan strategy comprising a set of processes and practices which enable TCL to manage its environmental and safety performance in a holistic way, within an integrated framework. While the management plans are part of the **EMS**, the **EMS** is not just a collection of management plans.

In addition to the overall guidance of the **EMS**, this AQMP has a relationship with other management plans that also present mitigation measures. Those management plans and their relationship to this AQMP are listed in **Table 5-1**.

Table 5-1: Management Plans with Relationship to the Air Quality Management Plan (AQMP)

Management Plans	Nature of Relationship
Environmental Management System (S13.0-C1) (EMS)	All management plans are part of the EMS.
Explosives Management Plan (S13.0-C6) (EMP)	Air emissions and dust associated with blasting and the use of explosives are addressed in the EMP.
Mine Emergency Response Plan (S13.0-C9) (MERP)	The Air Quality Management Plan (AQMP) addresses normal activities associated with the Project. Potential effects associated with emergencies are addressed in the MERP.
Occupational Health and Safety Program (S13.0-C13) (OHSP)	The AQMP addresses offsite effects associated with air emissions and dust. Potential onsite effects to employees and contractors are addressed in the OHSP.
Waste Management Plan for Refuse and Emissions (S13.0-C20) (WMPRE)	Air emissions and dust are also discussed in the WMPRE. The WMPRE refers to the AQMP for mitigation measures.

6. DETAILS OF AIR QUALITY MANAGEMENT PLAN (AQMP)

6.1 Site Overview and Location

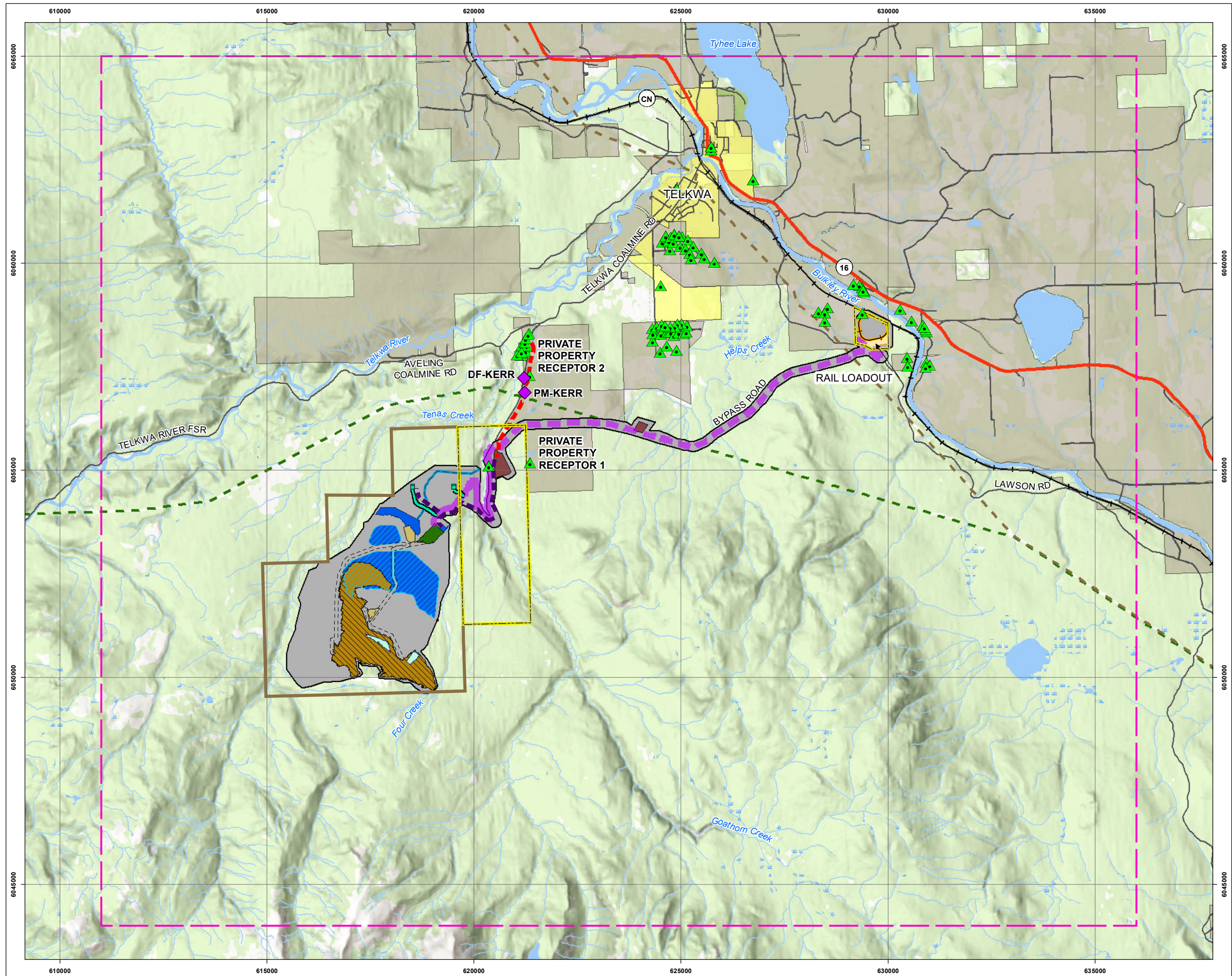
The Project is a conventional shovel and truck surface coal mine with a production capacity of 750,000 to 825,000 tonnes of clean metallurgical coal per year. Run-of-mine (ROM) coal will be hauled by truck to the Coal Processing Plant (CPP) where it will be stockpiled. The ROM coal will then be fed into a crushing station and conveyed to one (1) of two (2) processing circuits: heavy media cyclones for larger-sized coal and froth flotation for smaller-sized coal. The processed coal will then be dewatered mechanically to avoid the need for thermal dryers. The processed coal will be stockpiled at the CPP before being hauled by super B-train trucks along the Tenas Access Corridor (TAC) to the Rail Infrastructure. Gravel for road maintenance purposes will be obtained from two (2) quarries located along the TAC.

As assessed in **S4.0-C1 Atmospheric Environment Valued Component (VC)**, these processes have the potential to affect the air quality in the Project Area.

Receptors located in the LSA include schools and childcare centres in Telkwa; private residences in Western Telkwa, the Cotton Subdivision, and residences near the Rail Infrastructure; as well as the Telkwa Coal Recreation Camp (TCRC). Private Properties 1 and 2 represent the nearest human receptors to the Minesite and CPP located outside the Project Area (see **Figure 6.1-1**).

A map of Project components, receptors, and monitoring stations in the area is provided on **Figure 6.1-1**.

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Tenas Project

Project components and air quality receptors

Legend

- | | |
|---------------------------------|--------------------------------------|
| Air Quality Monitoring Station | Tenas Access Corridor |
| Sensitive Receptor | Backfill Area |
| Air Quality Local Study Area | Control and Plant Sedimentation Pond |
| Air Quality Regional Study Area | Explosive Infrastructure |
| Rail Line | Management Pond |
| Highway | Mine Infrastructure Complex |
| Road | Open Pit |
| Watercourse | Pit Lake |
| Wetland | Quarry |
| Waterbody | Rail Infrastructure |
| Municipal Area | Topsoil Stockpile |
| General Private Property | Tenas Coal Licenses |
| 138 kV Transmission Line | Telkwa Coal Limited Private Property |
| 500 kV Transmission Line | Project Area |

Project Features

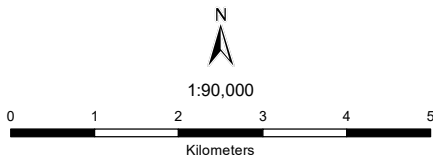
- Existing 25 kV Power Line
- 25 kV Power Line
- Haul Road
- Rail Loop
- Discharge Path

Notes

1. All mapped features are approximate and should be used for discussion purposes only.
2. This map is not intended to be a "stand-alone" document, but a visual aid of the information contained within the referenced Report. It is intended to be used in conjunction with the scope of services and limitations described therein.
3. Project line features are for display only.

Sources

- Project Features: Allegiance Coal, April 21, 2021.
- Basedata: Government of British Columbia
- Basemap: World Topo Base



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Figure 6.1-1

TELKWA COAL
LIMITED

Hemmera
An Ausenco Company

6.2 Summary and Criteria for Air Emissions Source Identification

Activities during the Construction, Operation, Decommissioning and Reclamation, and Post-closure phases of the Project may be a source of air emissions.

Potential sources of air emissions during these phases include:

- ▶ fugitive dust associated with land clearing and earthworks;
- ▶ CACs (including PM, NO₂, and SO₂ associated with the use of equipment and vehicles;
- ▶ GHGs associated with the use of equipment and vehicles;
- ▶ noise associated with blasting and rail activity; and
- ▶ vibration associated with blasting and rail activity.

An air emission summary for CACs and GHGs for a peak operating year during the Operation Phase is provided in **Table 6.2-1**. The Operation Phase was selected versus other Project phases (Construction, Decommissioning and Reclamation, and Post-closure phases) as it is expected to have the highest emission levels as it has the greatest amount of activity occurring in terms of material movement and equipment operating. The largest source of PM emissions is the re-entrainment of dust from Minesite haul roads and the TAC. For all other contaminants, the largest source of emissions is the use of diesel equipment during the mining process.

Maximum predicted concentrations of selected air quality parameters (CACs, GHGs, dust, noise, vibration) due to Project activities, including the background contribution from existing activity levels, at Private Property Receptor (PPR) 1 and 2 are summarized in **Table 6.2-2**. Also shown in **Table 6.2-2** are the cumulative (i.e., Project plus background) concentrations at the upper end of modelling uncertainty, typically ± 40 percent (%) of predicted values. Cumulative concentrations at even the upper end of modelling uncertainty remain well below ambient air quality criteria for all contaminants and averaging periods.

Table 6.2-1: Air Emissions Summary - Operation Phase

Source		Annual Emissions (t/y)					
		TSP	PM ₁₀	PM _{2.5}	NO _x	SO ₂	GHG
Coal Extraction Activities	Scraping	5.8	2.7	0.42	-	-	-
	Drilling	4.7	2.2	0.34	-	-	-
	Blasting	40.3	20.9	1.2	12.5	-	-
	Bulldozing	241	63.3	4.6	-	-	-
Material Handling and Processing	Open Pit	10.7	5.1	0.77	-	-	-
	Coal Processing Plant (CPP)	2.8	1.1	0.16	-	-	-
	Rail Loadout	0.47	0.19	0.04	-	-	-
Stockpile Wind Erosion		52.1	26.1	3.9	-	-	-
Diesel Equipment		1.8	1.8	1.8	119	0.29	45,300
Train Idling		0.01	0.01	0.01	0.40	0.0009	113
On-road Vehicles		0.08	0.08	0.02	0.41	0.003	395
Road Dust Re-entrainment		546	142	14.2	-	-	-
Road Grading		42.5	13.5	1.3	-	-	-
Space Heating (i.e., used oil boiler)		0.05	0.04	0.02	0.13	0.002	157
Fugitive Methane (from coal extraction)		-	-	-	-	-	22,418
Quarry Activities	Drilling	0.19	0.09	0.01	-	-	-
	Blasting	0.02	0.008	0.0005	0.07	-	-
	Material Handling and Processing	1.1	0.48	0.07	-	-	-
	Diesel Equipment	0.007	0.007	0.007	0.13	0.007	590
Total All Sources		950	279	28.8	133	0.30	68,973

Notes: GHG=greenhouse gas; NO_x=oxides of nitrogen; PM_{2.5}=particulate matter less than 2.5 microns in diameter; PM₁₀=particulate matter less than 10 microns in diameter; SO₂=sulphur dioxide; t/y=tonnes per year; TSP=total suspended particulate

Table 6.2-2: Maximum Predicted Air Quality Parameters at Private Property Receptors (PPR) 1 and 2

Air Quality Parameter	Averaging Period	Maximum Predicted Concentration of Project Activities		Maximum Predicted Concentration of Project Activities with an Additional 40%		Ambient Air Quality Criteria
		PPR 1	PPR 2	PPR 1	PPR 2	
TSP ($\mu\text{g}/\text{m}^3$)	24-hour	47.9	48.7	53.5	54.7	120
	Annual	11.0	11.8	11.6	12.8	60 (a)
PM ₁₀ ($\mu\text{g}/\text{m}^3$)	24-hour	25.6	25.4	29.8	29.5	50
PM _{2.5} ($\mu\text{g}/\text{m}^3$)	24-hour	11.8	12.1	12.5	12.8	25 (b)
	Annual	3.0	3.0	3.0	3.1	8 (c)
NO ₂ ($\mu\text{g}/\text{m}^3$)	1-hour	90.6	93.5	96.7	100.0	113 (d)
	Annual	13.4	13.8	14.3	14.8	32
SO ₂ ($\mu\text{g}/\text{m}^3$)	1-hour	13.8	13.9	13.9	14.0	183 (e)
	Annual	1.0	1.0	1.0	1.0	13
Dustfall ($\text{mg}/\text{dm}^2\text{-d}$) ^f	30-day	0.84	0.84	0.86	0.85	1.7 (residential) 2.9 (industrial)
Noise (dBA)	Daytime	43.0	35.8	47.6	37.1	50
	Nighttime	26.6	24.1	31.3	27.8	40
Vibration at 75 m distance (mm/second)	Maximum	0	0	0	0	5

Source: British Columbia Ministry of Environment and Climate Change Strategy (BC MECCS) 2020, British Columbia Oil and Gas Commission (BC OGC) 2018, Federation of Canadian Municipalities and Railway Association of Canada (FCM-RAC) 2013

Notes: %=percent; dBA=A-weighted decibel; $\mu\text{g}/\text{m}^3$ =microgram per cubic metre; m=metre; $\text{mg}/\text{dm}^2\text{-d}$ =milligram per square decimeter per day; mm/second =millimetre per second; TSP=total suspended particulate; PM₁₀=particulate matter less than 10 micron in diameter; PM_{2.5}=particulate matter less than 2.5 micron in diameter; PPR=Private Property Receptor; NO₂=nitrogen dioxide; SO₂=sulphur dioxide

(a) Based on geometric mean.

(b) Based on 98th percentile of daily average.

(c) There is also a longer-term aspirational target of 6 $\mu\text{g}/\text{m}^3$ to support continuous improvement.

(d) Based on annual 98th percentile of daily 1-hour maximum, averaged over three consecutive years.

(e) Based on annual 99th percentile of daily 1-hour maximum, averaged over three consecutive years.

(f) Ambient air quality criteria have been rescinded since 2006 but are included here for reference.

6.3 Air Quality

The assessment of Air Quality as a subcomponent of the Atmospheric Environment VC included PM, CACs including SO₂, NO₂, and dust, and is presented in **S4.0-C1 Atmospheric Environment VC** of the **EAC Application**.

6.3.1 Particulate Matter (PM)

Project contribution to maximum predicted concentrations of PM may exceed the relevant ambient air quality criteria in a small area surrounding the Minesite and CPP, out to approximately 3 kilometres (km) southeast of the Project Area. In the populated area of Telkwa, maximum predicted concentrations of PM₁₀

and PM_{2.5} may exceed the ambient air quality criteria due to high background concentrations; however, the Project contribution is very low, less than 3% of background PM₁₀ and PM_{2.5} concentrations.

The primary mitigation measure for PM will be proper material handling, which includes load management, the application of water and chemical agents to loads, and drop-height reductions.

Additional mitigation the Project has adopted to reduce PM include:

- ▶ provide a funding program to assist employees to convert inefficient home wood- or oil-burning heating systems.

6.3.2 Dust

Most dust and other air quality emissions will be generated from vehicle use of the TAC, service, and haul roads within the Project Area.

The primary mitigation measure for dust will be the use of watering systems and chemical agents to limit the generation of this dust during the Project's Construction, Operation, and Decommissioning and Reclamation phases. Additional mitigations the Project has adopted to reduce air emissions are:

- ▶ bussing of employees and majority of contractors.

Figure 6.3-1 provides the predicted contours for dustfall deposition from Project's activities in the peak operating year.

6.3.3 Criteria Air Contaminants (CACs) Including Sulphur Dioxide (SO₂) and Nitrogen Dioxide (NO₂)

The majority of Project SO₂ and NO₂ emissions are generated by Minesite vehicles and equipment that burn gasoline and diesel fuel. The Project has too small of a production rate to adopt electrically powered excavators and drills. Some mitigations the Project has adopted to reduce these emissions are:

- ▶ bussing of employees and majority of contractors;
- ▶ adopting a "No Idling" policy for equipment operated by employees;
- ▶ investigate opportunities where commercially available, and economically neutral, to use electric vehicles for personnel transfer vans/busses, light vehicles, coal haul vehicles;
- ▶ provide funds to assist employees purchase electric vehicles and/or related charging equipment; and
- ▶ provide funds to assist employees to convert inefficient home wood- or oil-burning heating systems to more efficient heating systems.

6.4 Greenhouse Gases (GHGs)

The majority of Project GHG emissions are generated by Minesite vehicles and equipment that burn gasoline and diesel fuel and emit CO₂ and other gases. The Project production rate is too small to adopt electric excavators and drills. Some mitigations the Project has adopted to reduce GHG emissions are:

- ▶ bussing of employees and majority of contractors;
- ▶ adopting a "No Idling" policy for equipment operated by employees;
- ▶ investigate the use of electric vehicles, if practical;
- ▶ provide funds to assist employees to purchase electric vehicles or related charging equipment; and
- ▶ provide funds to assist employees to convert inefficient home wood- or oil-burning heating systems.

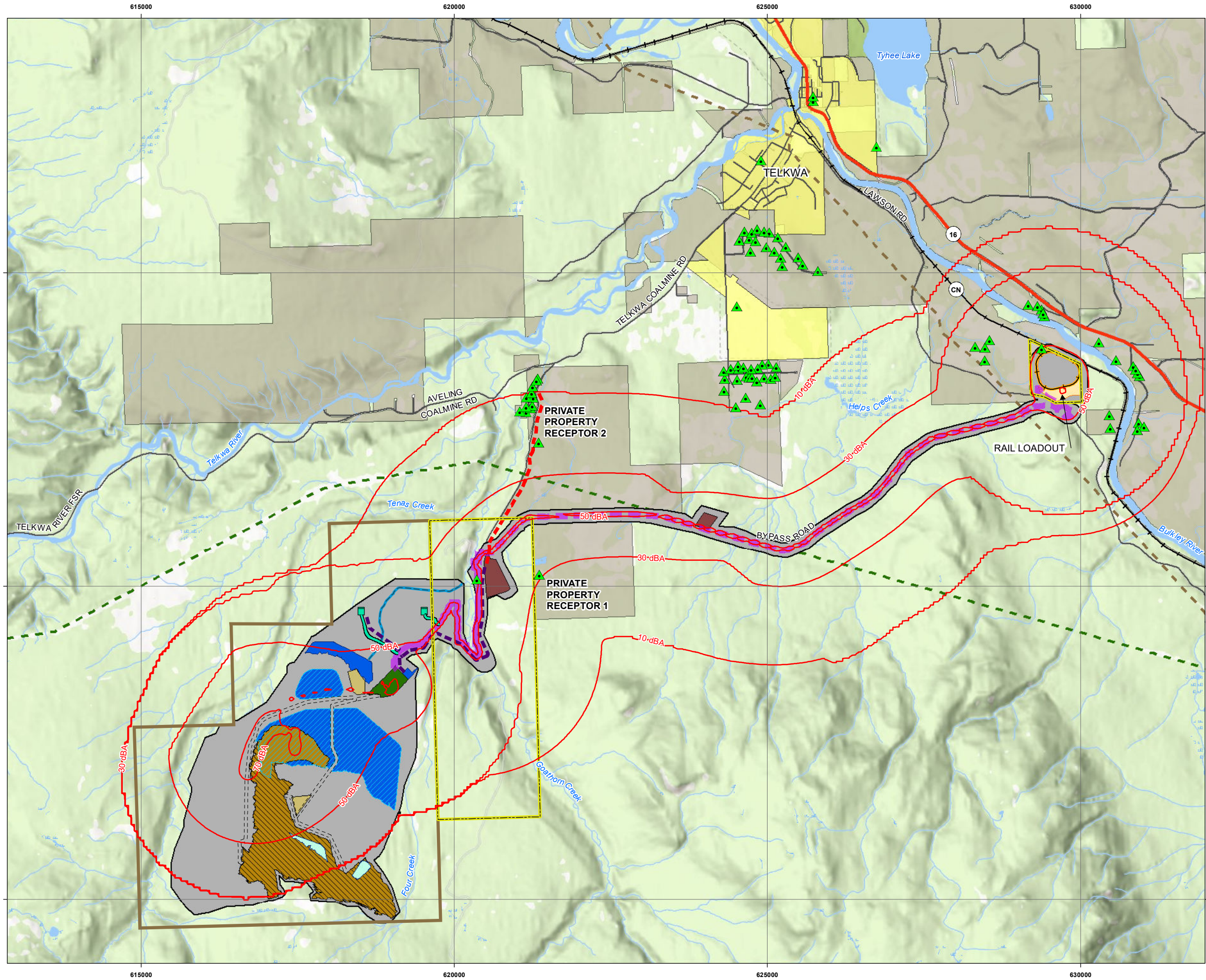
6.5 Noise

Noise will be generated at the Project by way of blasting and general equipment use of haul trucks, trains, and excavators. **Figures 6.5-1** and **6.5-2** below provide the expected noise contours due to the Project in the peak activity year for daytime and nighttime levels with receptors, respectively. Blasting practices have the following mitigations incorporated into them to reduce possible noise levels:

- ▶ Use best management stemming techniques (type of material, method, and thickness) that will minimize effects of noise and fugitive dust from blast patterns;
- ▶ Correctly time blasts to minimize effects of noise, vibration, and fugitive dust from blast patterns;
- ▶ Keep blast patterns smaller to minimize effects of noise, vibration, and fugitive dust;
- ▶ Monitor actual blast results and implement improvements as required;
- ▶ Use electronic detonators to minimize effects of noise, vibration, and fugitive dust from blast patterns, and limit the number of misfires to reduce introduction of nitrogen species into the surrounding environment; and
- ▶ Use noiseless lead lines on the surface to minimize effects of noise from blast patterns.

Refer to the **Explosives Management Plan (S13.0-C6) (EMP)** for further details about blasting and explosives.

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Tensas Project

Site map with designated receptors and predicted nighttime noise level contours

Legend

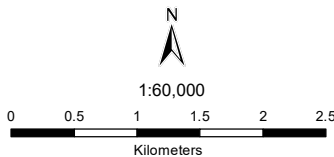
- | | |
|-----------------------------------|--------------------------------------|
| Sensitive Receptor | Tensas Access Corridor |
| Project Daytime Noise Level (dBA) | Backfill Area |
| Rail Line | Control and Plant Sedimentation Pond |
| Highway | Explosive Infrastructure |
| Road | Management Pond |
| Watercourse | Mine Infrastructure Complex |
| Wetland | Open Pit |
| Waterbody | Pit Lake |
| Municipal Area | Quarry |
| General Private Property | Rail Infrastructure |
| 138 kV Transmission Line | Topsoil Stockpile |
| 500 kV Transmission Line | Tensas Coal Licenses |
| Project Features | |
| Existing 25 kV Power Line | Telkwa Coal Limited Private Property |
| 25 kV Power Line | Project Area |
| Haul Road | |
| Rail Loop | |
| Discharge Path | |

Notes

1. All mapped features are approximate and should be used for discussion purposes only.
2. This map is not intended to be a "stand-alone" document, but a visual aid of the information contained within the referenced Report. It is intended to be used in conjunction with the scope of services and limitations described therein.
3. Project line features are for display only.

Sources

- Project Features: Allegiance Coal, April 21, 2021.
- Basedata: Government of British Columbia
- Basemap: World Topo Base



NAD 1983 UTM Zone 9N

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Production Date: Jul 02, 2021

Figure 6.5-2

TELKWA COAL
LIMITED

Hemmera
An Ausenco Company

To assist with mitigation of Minesite equipment noise, TCL has decided to use a visual system versus audible backup alarms to reduce noise levels from the Project. Furthermore, as much as possible equipment will be configured in a manner that will allow a drive-through system to avoid horn usage, and a simplified horn indication will be adopted for vehicle movement that will apply outside of normal operations. This will involve one (1) horn blast for reverse and no other horn blasts for start up and/or moving forward. Furthermore, this procedure will not be required on the TAC and/or at the Rail Infrastructure.

6.6 Vibration

While vibration was screened out as a subcomponent in the Valued Components Scoping Document (TCL 2019) a qualitative discussion on vibration was included in the EAC Application as a matter of community interest.

Vibration is an oscillatory motion that propagates as waves through the ground and into nearby buildings, creating ground-borne vibration effects such as movement of floors, shaking of items on shelves, rattling of windows, and interference with sensitive equipment.

Vibration through the ground could be transmitted at the Project by way of blasting, trains loading at the Rail Infrastructure, and/or traffic on access, service, and haul roads. This occurs through ground vibrations and should not be confused with vibrations occurring due to noise being transmitted through the air.

The proposed blasting practices have mitigations incorporated into them to reduce possible vibration levels including:

- ▶ individually delayed holes;
- ▶ electronic detonators to avoid multiple hole detonations;
- ▶ limits on the size of blast; and
- ▶ low powder factor.

Vibration levels near the Rail Loadout due to existing rail activity are not expected to increase with the Project given the low railcar speeds used for the loading process at the Rail Infrastructure. It is estimated that there will be an increase of approximately 1% in railcar activity on the mainline due to this Project, but no increase in maximum and/or average vibration levels.

The Federation of Canadian Municipalities and the Railway Association of Canada (FCM-RAC) Guidelines (FCM-RAC 2013) provide a recommended vibration influence area of 75 metres (m) from a railway corridor or rail yard. Receptors are located more than 75 m from the railway right-of-way (ROW) and Rail Infrastructure for the Project, and vibration measurements are not required given that vibration levels drop to background typically within 50 m of the component generating the vibration. The nearest receptors to the Rail Infrastructure are 500 m across the Bulkley River and 800 m on the same side of the Bulkley River. Both receptors are far beyond the 50 m cut off for vibration effects to be measured.

Existing vibration is mostly due to mainline activity and as noted, existing vibration levels because of mainline activity will not increase and the frequency in which vibration occurs is expected to increase by approximately 1%. The small increase in rail mainline activity is expected to have a limited effect on receptors within proximity of the mainline.

Vibration from railway operations is strongly dependent on factors such as train speed, the smoothness of the wheel/rail interface, distance between the source and the receiver, as well as geological conditions. The Project is expected to result in a total of 66 trains per year (approximately one (1) train every five (5)

days), which represents less than 1% of existing rail activity on the Canadian National Rail (CNR) rail line. Apart from one (1) potential TCL employee residence (private property owned by TCL) located within the Project Area, the nearest residences to the Rail Loop are over 500 m away. This is well beyond the recommended vibration influence area from the FCM-RAC Guidelines. Therefore, Project-related vibration effects from rail operations are expected to be limited, well below perception thresholds.

Management practices in relation to vibration from Rail Infrastructure will include:

- ▶ Train speeds within the Rail Infrastructure will be low; at a maximum speed of approximately 10 kilometres per hour (km/hr) and up to 20 km/hr while entering and exiting the Rail Infrastructure; and
- ▶ The production rate will be limited to reduce the number of weekly trains required.

TCL will follow best management practices (BMPs) to limit vibration from blasting and mitigation measures developed to mitigate potential adverse effects on the Atmospheric Environment. These BMPs were incorporated into this AQMP, and other management plans such as the **EMP**.

The management plans provide further direction on sequencing, monitoring, and adaptive management and the mitigation measures outlined in each plan are expected to be timely and effective following implementation.

Blasting will primarily occur at the open pit and to a lesser extent at the eastern quarry. The nearest residences are over 4 km away from the open pit and over 1.5 km from the eastern quarry. Given the BMPs and the distances between source and receiver, Project-related vibration effects from blasting are expected to be limited; well below perception thresholds and potential for building damage.

Vibration generated by Minesite activities, haul road traffic and the Rail Loop are expected to have low and limited effects at residential areas as receptors are well outside of the 50 m cut off. As such, no additional mitigations and/or monitoring outside of what is already contemplated is required.

6.7 Mitigation Using Operational and Administrative Control Measures

The Project will adopt BMPs into its operating procedures to mitigate potential effects on air quality including CACs, dust, GHGs, noise, and vibration. Mitigation includes operational and administrative controls as outlined in **Table 6.8-1**.

Table 6.8-1: Summary of Operational and Administrative Controls

Phase	Activity	Control Measure
Construction	Earthworks	- Water will be applied to major earthworks during dry and windy conditions. - If this is found not to be suitable, effective chemical agents can be added to the water to further enhance water effectiveness and ensure runoff does not affect waterways. - Temporary vegetation methods will be used to limit exposure time. - Landforms will be constructed in final reclamation configuration to promote reclamation as soon as practical.
Construction, Operation, Decommissioning and Reclamation	Material handling	- Drop heights will be kept to a minimum when dropping material to open stockpiles and haul trucks. - Drop chutes will be incorporated into conveyors to further reduce drop heights and dust generation. - Conveyors will have ability to change drop height with stockpile configuration. - Material loading/unloading at open stockpiles will be conducted on the downwind side of the pile. - Loading of super B-train trucks and railcars will be conducted in a manner to avoid overfilling. - Super B-train trucks will be covered during transport. - Loaded railcars will be sprayed with a latex coating prior to departure. - Rail Loadout operations will be governed by wind conditions with operations temporarily pausing if wind conditions require.
	Equipment	TCL will institute a "No Idling" policy for equipment which will be monitored and reported on annually
	Rail Loadout - vibration	- Vibration will be reduced at the Rail Loadout by keeping the railcar speeds onsite to a maximum speed of 20 kilometres per hour (km/hr) while entering and exiting the Rail Infrastructure and a maximum speed approximately speed of 10 km/hr within the Rail Infrastructure. - Vibration will be reduced by aligning the number of trains to match production levels as closely as practical
	Blasting activity - noise	- Vibration from blasting will be mitigated by best management practices (BMPs) for blasting. - The blasting process has several practices incorporated into it to reduce possible noise levels. - Blasting will only occur in daylight hours.
	Rail Infrastructure - noise	No train whistles will be required at the Rail Infrastructure for the arrival, departure, and loading of trains.
	Rail Infrastructure - dust	Chemical agents and water will be used on the stockpiles if required to control fugitive dust emissions.

Phase	Activity	Control Measure
	Stockpile wind erosion	- Water will be applied to open coal stockpiles during dry and windy conditions. - Water will be applied to overburden and soil stockpiles until vegetation is self-sustaining. - If water is insufficient, chemical agents can be incorporated for both coal and overburden and soil stockpiles. - Overburden and topsoil stockpiles will be revegetated via progressive reclamation.
	Tenas Access Corridor (TAC), service and haul road dust re-entrainment	- A maximum speed limit of 50 km/h will be imposed on the TAC. - A maximum speed limit of 70 km/h will be imposed on Minesite haul roads, and an operating speed of 30 km/h on service roads will be implemented, with the exception of haul trucks. - A maximum speed limit of 30 km/h will be imposed for haul trucks on the Minesite. - Water will be applied to onsite service and haul roads as required during dry and windy weather conditions. - Calcium chloride or other dust chemical agent will be applied to the TAC and graded to retain surface agent on a yearly basis with additional water additions if required. Frequency of application will be increased during dry and windy weather conditions for a 500-metre (m) area in front of the Telkwa Coal Recreation Camp (TCRC) if dust conditions require.
Construction, Operation, Decommissioning and Reclamation	Wood burning other air emissions	- Burning of wood and debris will not be conducted at the Minesite. - Used oil will be burned in a boiler at the Maintenance Facility to provide in-floor heating versus directing this material to an offsite landfill. - TCL will institute a program whereby all employees will be eligible for a one-time grant to assist with the cost of converting existing wood- or oil-fired heating systems to more efficient and cleaner burning alternatives.
Decommissioning and Reclamation	Building demobilization	To reduce noise and dust emissions, buildings will be mechanically demolished and removed versus implosion blasting.
All	Vehicle GHG emissions and other air emissions	- TCL will require all employees and majority of contractors to use bus/van services for employee transport to reduce vehicle emissions. - TCL will investigate the use of electric powered vehicles for the transport vans, light vehicles, and coal haul vehicles. - TCL will provide a one-time grant to all employees to assist with the purchase of an electric car and/or electrical charging equipment. - A fleet maintenance program will be implemented to ensure all vehicles/equipment are operating optimally. Deficiencies will be corrected, and all worn parts replaced as quickly as practicable. - The Project will purchase new vehicles/equipment that meet the latest emission requirements in the Environment and Climate Change Canada (ECCC)'s Off-road Compression-Ignition (Mobile and Stationary) and Large Spark-Ignition Engine Emission Regulations, SOR/2020-258 (Government of Canada [GovCan 2020]).

Phase	Activity	Control Measure
		▪ The Project will use low-sulphur diesel as mandated by ECCC's Sulphur in Diesel Fuel Regulations, SOR/2002-254 (GovCan 2002). ▪ A "No Idling" policy will be implemented to limit idling of vehicles/equipment unless necessary.
All	General	▪ Facility grounds will be cleaned regularly to minimize track-out from the permit boundary. ▪ All vehicles leaving the Project Area will need to go through the equipment wash bay onsite to reduce dust and material tracking into Telkwa. ▪ A portable wheel wash may be installed at the Rail Infrastructure if vehicles are shown to still be tracking in unwanted material into Telkwa. ▪ Personnel will be trained to identify abnormal dust, noise, vibration, and other emissions. Such events will be reported and investigated promptly. Actions will be taken, as necessary. ▪ Dust, noise, and vibration complaints from the public will be tracked, investigated, and responded to, and if required, follow-up actions will be taken as necessary.
All	Rail - noise	▪ TCL will work with Canadian National Rail (CNR) and the Village of Telkwa, including assisting with public consultation and infrastructure funding to eliminate the requirement for train whistles at the crossing near the Village office in Telkwa within five (5) years of the Project achieving commercial production rates.

7. MONITORING

7.1 Air Quality Monitoring

7.1.1 Dust and Criteria Air Contaminants (CACs)

At least one (1) continuous air quality monitoring station will be located at PPR 2 to measure ambient concentrations of PM₁₀ and PM_{2.5}. PPR 2 represents one (1) of the closest human receptors to the Minesite, TAC, and CPP located outside of the Project Area (see **Figure 6.1-1**). A Thermo Scientific Partisol 2025i-D dichotomous sequential air sampler will be operated and maintained in accordance with manufacturer specifications and the most recent edition of the British Columbia Field Sampling Manual (BC MECCS 2020).

A second continuous air quality monitoring station may be located at the Rail Infrastructure depending on results of canister dust monitoring.

This monitoring data will be augmented by data collected by the BC MECCS through their air quality monitoring stations in Smithers and Telkwa, which collect measurements of PM₁₀, PM_{2.5}, and NO₂.

There are currently no air quality monitoring stations with SO₂ in the Air Quality LSA or Regional Study Area (RSA). Therefore, SO₂ estimations will continue to be developed based on measurements from Terrace as recommended by the BC MECCS during baseline studies.

As mandated by the *Canadian Environmental Protection Act*, 1999, SC 1999, c 33 (Government of Canada [GovCan] 1999) (*CEPA*), TCL will also report CAC emissions data annually to the National Pollutant Release Inventory (NPRI) (Environment and Climate Change Canada [ECCC] 2020).

Dustfall monitoring will be conducted at PPR 2 in accordance with American Society for Testing and Materials (ASTM) D1739-98 standard test method (ASTM 2017). Dustfall canisters will be set up at this site and others as required and will be collected seasonally for laboratory analysis.

Minesite employees and contractors will be trained to continually observe site conditions (visual monitoring) for potential dust concerns during their regular activities. If visible dust is observed at any material handling points, or if the surface material of open stockpiles is observed to be dry, additional watering will be conducted manually. If visible re-entrainment of road dust is observed, additional water or calcium chloride will be applied. This monitoring includes the TAC and Rail Infrastructure to measure the effectiveness of dust control measures. Other air quality and dust concerns will be reported to the Mine Manager to determine the appropriate course of action.

7.1.2 Climate Monitoring

Air quality monitoring will be supported by a meteorological weather station that will be installed at the Mine Infrastructure Complex (MIC) or Explosive Facility to measure temperature, precipitation, snow amounts, wind speed, and direction. The meteorological station will consist of an instrument such as a RM Young 05305 wind sensor, installed at a height of 10 m above the ground, and programmed to automatically log data at hourly intervals. This will be supported by obtaining data from government weather stations in Smithers and Telkwa.

7.2 Greenhouse Gas (GHG) Monitoring

TCL will monitor GHG emissions indirectly through recording the amount of hydrocarbons and chemicals consumed by the Project. The "No Idling" policy for equipment will also be monitored for compliance. TCL will calculate the tonnes of carbon dioxide equivalent per kilotonne (t CO₂e/kt) processed coal to compare it to the industry profile and other comparable mining operations (49 to 95 t CO₂e/kt of processed coal).

TCL will also calculate and monitor GHG data generated from reporting to the annual NPRI, which is mandated by the *CEPA*.

7.3 Noise Monitoring

TCL will monitor the noise levels (in A-weighted decibel [dBA]) generated from proposed Project activities, including blasting practices, mining activities, and rail activities to determine if further mitigations are required. An industry standard portable instrument will be used to collect data on noise. See **EMP**.

7.4 Vibration Monitoring

With respect to monitoring, TCL will measure the vibrations generated from blasting practices, rail, and mining activities to determine if further mitigations, beyond the following, are required. An industry standard portable instrument will be used to collect data on vibrations. See **EMP**.

7.5 Trigger Action Response Plan (TARP)

A TARP is a tool that assists the management of conditions above the expected predicted levels in the EAC by providing a set of known procedures that are used to respond to these conditions. A TARP for the Air Quality Monitoring Program is provided in **Table 7.5-1**.

Table 7.5-1: Trigger Action Response Plan (TARP)

Activity		Normal		Alert	
		Trigger	Action	Trigger	Action
Air Quality Monitoring	PM	PM ₁₀ , PM _{2.5} concentrations are below predicted air quality concentration provided in the EAC.	No action necessary	Measured values are 40% above Project predicted air quality concentrations provided in this EAC.	Investigate cause of exceedance, revisit administrative and operational controls in Table 6.8-1 and this AQMP to resolve and update mitigation measures and plan as necessary and frequency of monitoring to confirm impact of changes.
	NO ₂ and SO ₂	NO ₂ and SO ₂ concentrations are below predicted air quality concentration provided in the EAC.	No action necessary	Measured values are 40% above Project predicted air quality concentrations provided in this EAC.	Investigate cause of exceedance, revisit administrative and operational controls in Table 6.8-1 and this AQMP to resolve and update mitigation measures and plan as necessary and frequency of monitoring to confirm impact of changes.
	Dust	Surface of open stockpiles is moist	No action necessary	Surface of open stockpiles is dry	Apply water and/or chemical agents.
		No visible dust at material handling points	No action necessary	Visible dust at material handling points	Apply water and/or chemical agents.
		No visible re-entrainment of road dust	No action necessary	Visible re-entrainment of road dust	Apply water and/or calcium chloride and/or other chemical agents.
		Dustfall deposition rates measured at Kerr farm are below predicted air quality concentration provided in the EAC	No action necessary	Measured values are 40% above Project predicted air quality concentrations provided in this EAC.	Investigate cause of exceedance, revisit administrative and operational controls in Table 6.8-1 and the AQMP to resolve and update mitigation measures and plan as necessary and frequency of monitoring to confirm impact of changes.
	Greenhouse Gas (GHG) Monitoring	GHG concentrations are below predicted air quality concentration provided in the EAC.	No action necessary	Measured values are 40% above Project predicted air quality concentrations provided in this EAC.	Investigate cause of exceedance, revisit administrative and operational controls in Table 6.8-1 and the AQMP to resolve and update mitigation measures and plan as necessary and frequency of monitoring to confirm impact of changes.
Noise Monitoring		Noise levels are below predicted noise levels provided in the EAC.	No action necessary	Measured values are 40% above Project predicted noise levels provided in this EAC.	Investigate cause of exceedance, revisit administrative and operational controls in Table 6.8-1 and the AQMP to resolve and update mitigation measures and plan as necessary and frequency of monitoring to confirm impact of changes.

Activity	Normal		Alert	
	Trigger	Action	Trigger	Action
				necessary and frequency of monitoring to confirm impact of changes.
Vibration Monitoring (via portable seismographs)	Vibration levels are below predicted levels provided in the EAC.	No action necessary	Measured values are 40% above Project predicted vibration levels of 0 at 75 m provided in this EAC.	Investigate cause of exceedance, revisit administrative and operational controls in Table 6.8-1 and the AQMP to resolve and update mitigation measures and plan as necessary and frequency of monitoring to confirm impact of changes.

Notes: %=percent; AQMP=Air Quality Management Plan; BC=British Columbia; EAC=Environmental Assessment Certificate; m=metre; PM_{2.5}=particulate matter less than 2.5 microns in diameter; PM₁₀=particulate matter less than 10 microns in diameter

7.6 Performance Objectives

In addition to extensive inspections and monitoring to ensure the objectives of the AQMP are met, performance objectives and targets are set to guide the proper implementation of the AQMP. They are shown in **Table 7.6-1**:

Table 7.6-1: Performance Objectives

Objective	Target
Monitoring for PM levels	Not to exceed ambient air quality criteria
Monitoring for CACs including NO ₂ , SO ₂ , and GHGs	Not to exceed ambient air quality criteria
Monitoring for CACs including NO ₂ , SO ₂ , and GHGs	Tracking annually of initiatives reviewed and results of these
Monitoring for dust levels and contaminant constituents	Not to exceed upper dustfall objective of 2.90 mg/dm ² /d at PPR 2 and constituent parameters
Amount of t CO ₂ e/kt processed coal compared to the industry profile and other comparable mining operations	Within or less than industry profile of 49 to 95 t CO ₂ e/kt of processed coal
The "No Idling" policy for vehicles and equipment is followed by all employees	Not to exceed 30% idling and continuous improvement to reduce idling to 10% over a period of five (5) years
National Pollutant Release Inventory (NPRI) reporting	Completed annual mandated NPRI reports
Noise mitigations, such as BMPs for blasting, low speeds at Rail Loop and use of visual systems versus audible backup alarms	Zero complaints from community, continual improvement
Noise mitigations reviewed	Investigate all complaints from the community and report on results and actions implemented
Dust control measures for Earthworks and Material Handling implemented for best air quality	Zero complaints from the community, continual improvement
Dust mitigations reviewed	Investigate all complaints from the community and report on results and actions implemented
Vibration mitigations at Rail Loadout and blasting BMPs reduce vibrations well below predicted	Measured values are 40% below Project predicted vibration levels provided in this EAC
Vibration mitigations employed	Zero complaints from community, continual improvement
Vibration reduced by speed reduction at Rail Infrastructure	Train speeds at the Rail Infrastructure were kept low, at 10 km/h within the Rail Loop, and up to 20 km/h when entering and exiting the Rail Infrastructure
Wood and Oil Heating conversions offered as a one-time grant to assist with the cost of converting to more efficient and cleaner burning alternatives	Tracking annually on numbers based on TCL employees, goal is to get 75% of all employees that have one (1) of these heating devices to convert
Electric Vehicle Funding offered to employees as a one-time grant to assist with the purchase of an electric car and/or electrical charging equipment	Tracking annually on numbers based on TCL employees, goal is to get 25% of all employees to take advantage of the electric vehicle funding to convert to an electric vehicle

Objective	Target
Bus and/or Van usage required by all employees and majority of contractors	Tracking annually of number of riders, goal is to get as close to 100% of eligible groups to use this transportation method
Mine Light Vehicle usage by fleet size and km driven are reduced over time	Tracking annually number of vehicles licensed and km travelled. Goal is to reduce the number of licensed vehicles to as close as zero as possible, and to reduce the number of km driven annually

Notes: %=percent; CACs=Criteria Air Contaminants; EAC=Environmental Assessment Certificate; km=kilometres; km/hr=kilometres per hour; NPRI=National Pollutant Release Inventory; mg/dm²/d=milligrams per square decimeter per day; NO₂=nitrogen dioxide; PM=particulate matter; PPR=Private Property Receptor; SO₂=sulphur dioxide; t CO₂e/kt=tonnes of carbon dioxide equivalent per kilotonne

8. REPORTING

8.1 General Reporting

Reporting completed by TCL will confirm consistent implementation of the AQMP. Summary reports of monitoring activities and results will be compiled and reviewed annually.

8.2 Compliance Reporting

Compliance reporting will be subject to the EAC and *MA/EMA* permit conditions. The information gathered during monitoring practices will be summarized with information from other management plans into an Annual Environmental Management Summary Report and upon permitting completion, the Annual Environmental Reports as required by *MA/EMA* permits. Community engagement activities will be an aspect of the **Socio-economic Management Plan (S13.0-C16) (SEMP)**. The **SEMP** will have requirements related to reporting on community engagement programs.

As mandated by the *CEPA*, TCL will also report CAC, GHG, and other required emissions data annually to the NPRI.

8.3 Internal Reporting

Details of the monitoring program will be reported internally on an annual basis according to the adaptive management framework of the **EMS**. The report will provide results of monitoring, assessment of performance objectives where applicable, and any other pertinent information.

TCL staff or contractors will be strongly encouraged to report any inefficiencies to management for evaluation consideration.

9. ROLES AND RESPONSIBILITIES

Primary responsibilities have been assigned to the following roles or groups:

9.1 Mine Manager

The Mine Manager bears overall responsibility for all phases of the Project, and responsibility for onsite environmental monitoring and compliance relating to Construction, Operation Decommissioning and Reclamation, and Post-Closure phase activities. The Mine Manager reports to the executive steering committee for TCL and will coordinate with this group to ensure that Project objectives are being met.

The Mine Manager will:

- ▶ support the Mine Superintendent to implement the AQMP;
- ▶ facilitate training of Minesite employees and contractors on the contents of the AQMP upon onboarding;
- ▶ report any incident which results in dusting, and/or non-compliance incident, to regulators as required;
- ▶ investigate improvements in any trend and assess whether the practices responsible for the improvements can be applied to other areas of the Project; and
- ▶ facilitate the annual review of the AQMP.

9.2 Mine Superintendent

The Mine Superintendent reports to the Mine Manager and is responsible for successful implementation of the AQMP by employees and contractors.

The Mine Superintendent will:

- ▶ ensure all employees follow the BMPs related to the AQMP;
- ▶ report to the Mine Manager any incident which results in dusting, public complaint, and/or non-compliance with the AQMP; and
- ▶ on an annual basis, facilitate review of the AQMP for continued effectiveness.

9.3 Coal Processing Plant (CPP) Superintendent

The CPP Superintendent reports to the Mine Manager and is responsible for successful implementation of the AQMP by employees and contractors.

The CPP Superintendent will ensure:

- ▶ TAC dust control measures are put in place, and monitored;
- ▶ Rail Infrastructure dust control measures are put in place and monitored; and
- ▶ all employees follow the AQMP.

9.4 Environmental Coordinator

The Environmental Coordinator is responsible for the day-to-day management of Project environmental programs and permits. The Environmental Coordinator reports to the Mine Superintendent.

The Environmental Coordinator will:

- ▶ act as a resource to the construction, operation, and closure teams by providing guidance relating to permit conditions, AQMP BMPs, commitments, regulations, acts, and interpretation of legislation;
- ▶ report on air quality monitoring as per EAC conditions, MA/EMA permits and applicable regulations;
- ▶ coordinate the completion and submission of the annual NPRI report;
- ▶ report internally on dust monitoring, performance objectives, and NPRI results;
- ▶ be the liaison for government agencies for permitting and non-compliance environmental incidents;
- ▶ be the liaison for Indigenous groups, through their designated representatives;
- ▶ be the liaison for permitting on air quality issues;
- ▶ ensure all employees follow the BMPs related to the AQMP;
- ▶ report to the Mine Superintendent any Incident which results in dusting, public complaint, and/or non-compliance with the AQMP; and
- ▶ on an annual basis, assist in the review of the AQMP for continued effectiveness.

9.5 Supervisors

Supervisors will be responsible for communicating the AQMP, ensuring employees understand their obligations, and to carry out required tasks to complete the AQMP. Supervisors will:

- ▶ communicate specific requirements to employees;
- ▶ ensure required tasks are completed; and
- ▶ provide feedback to employees and superintendents.

9.6 Employees and Contractors

Employees and contractors are responsible for:

- ▶ understanding and following the AQMP; and
- ▶ reporting issues related to dust, noise, and/or vibration due to operational activities.

10. COMMUNICATION

Communication of the AQMP at TCL will be based on internal requirements and will primarily take place through this AQMP and relevant SPPs. Any significant change to the AQMP will be communicated to Minesite employees and contractors through a site-wide email, announcements over all radio channels by Minesite supervision and bulletins posted around the Minesite. When effective to do so, maps will be marked with changes.

10.1 Training and Awareness

Operating a vehicle or other Project equipment requires training and understanding of the AQMP. All personnel using Project Area roads or working in operational areas such as the open pit, and Rail Infrastructure should be aware of TCLs policies and procedures regarding air emissions.

10.2 Employee Training

Employees are required to review all relevant management plans and/or SPP and their associated training modules at the start of employment and on annual basis. Employee training is tracked by the Health, Safety, and Human Resources Department using an industry standard software application.

10.3 Contractor and Visitor Training

Contractors will review the relevant management plans and/or SPP at the start of their contract and on an annual basis if contracts are longer than 13 months in duration to ensure their compliance with these requirements. Visitors will receive an overview of the relevant SPPs during their visitor induction session prior to accessing the Minesite or from their Contract Manager. Visitors are generally restricted to being under the direction of TCL employees and are unlikely to need to be familiar with the details of the AQMP.

11. EVALUATION AND ADAPTIVE MANAGEMENT

11.1 Evaluation

A review of the AQMP will be completed by the Environmental Coordinator on an annual basis to ensure that emission sources identified in the AQMP reflect current conditions and to compare data, trends, and implementation of the AQMP and its objectives. This process will include a review of the management plan deliverables and input received from Indigenous groups and community members through the community engagement programs which are a part of the **SEMP**.

11.2 Adaptive Management

A philosophy of adaptive management will be adopted to make sure that management plans and mitigation measures are consistently meeting or exceeding performance objectives. This will be achieved through periodic reviews of the AQMP and the results of monitoring programs.

11.3 Continual Improvement

TCL will work towards continual improvement at the Project. The Mine Manager or their delegate will investigate improvements in any trend and assess whether the practices responsible for the improvements can be applied to other areas of the Project. Deteriorating trends will be studied to determine the root cause. When the cause is identified, the Mine Manager or their delegate will implement a suitable corrective action. Examples of corrective actions could include:

- ▶ finding alternate or additional mitigation measures to further minimize air emissions;
- ▶ additional training of employees and contractors on procedures;
- ▶ enhancement of maintenance or monitoring measures; and/or
- ▶ additional supervisory oversight.

TCL will amend the AQMP as required based on annual evaluations, ambient air monitoring, and feedback from stakeholders and Indigenous groups.

12. CHANGE MANAGEMENT

Changing any part of the AQMP requires the use of a formalized process. If significant changes are being planned to objectives, management plan structure, operational milestones, communication and/or information management, it is required that the **EMS** Management of Change (MOC) procedure be followed. All edits and/or updates to this AQMP will be controlled through version control and content approval functions.

13. CONCLUSION

Management of air quality (including CACs and dust), GHGs, noise, and vibration at the Project is important. Through implementation of the AQMP and relevant SPP, TCL will minimize air emissions (including dust), noise, and vibration from the Project, and thus potential exposure to employees, residents, the public, and the environment.

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