



Blackwater
Mine



Air Quality and Fugitive Dust Management Plan

April 2025

Table of Contents

Work Instructions	3
Acronyms and Abbreviations	4
1.0 Purpose and Scope	7
1.1 Company Information	7
1.2 Existing Permits	8
1.3 Exclusions	8
1.4 Related Documents.....	8
2.0 Mine Overview	9
3.0 Roles and Responsibilities	11
4.0 Adaptive Management Framework	14
5.0 Facility Description and Setting.....	15
5.1 Physical Location and Access.....	15
5.2 Environmental Setting	15
5.3 Facility and Process Description	15
6.0 Identification of Potential Air Emission Sources.....	26
7.0 Identification of Potential Effects of Fugitive Dust	30
7.1 Air Quality Objectives and Parameters of Concern.....	30
7.2 Air Dispersion Modelling Results and Effects	31
8.0 Implementation	35
8.1 Training and Awareness	35
8.2 Mitigation Measures	35
8.3 Monitoring	40
8.4 Community Feedback Mechanism	46
9.0 Adaptive Management and Follow-up Program.....	47
9.1 Air Quality Trigger Response Framework	48
9.2 Follow-up Program.....	53
10.0 Reporting and Record Keeping.....	55
10.1 Reporting.....	55
10.2 Emergency Reporting and Process Modification Procedures	56
10.3 Record Keeping	56
11.0 Plan Revisions	58
12.0 Authorship and Declaration.....	59
13.0 References.....	60

Appendix A	Concordance with Environmental Assessment Certificate #M19-01 (June 21, 2019)
Appendix B	Concordance with Canadian Environmental Assessment Agency Decision Statement (April 2019)
Appendix C	Concordance Table with Developing a Fugitive Dust Management Plan for Mines in BC (BC EMLI & ENV 2023)
Appendix D	Blackwater Mine: Air Quality Trigger Response Plan (TRP) for Fugitive Dust Non-Point Source Discharges to Air (April 2025 Version)
Appendix E	Transmission Line Air Quality and Fugitive Dust Management Plan
Appendix F	BC ENV Conflict of Interest and Declaration of Competency Forms

List of Tables

Table 3-1: Blackwater Gold Roles and Responsibilities	11
Table 6-1: Activities Resulting in Fugitive Dust by Mine Phase	26
Table 6-2: Fugitive Dust Emission Sources by Mine Component.....	27
Table 6-3: Operations Emission Sources and Predicted Emissions.....	28
Table 7.1-1: Federal and BC Ambient Air Quality Objectives	30
Table 7.2-1: Baseline Case and Mine Case Concentrations for Criteria Air Contaminants for All Off-site Receptor Locations	33
Table 7.2-2: Baseline Case and Mine Case Concentrations for Criteria Air Contaminants at the Operations Camp.....	33
Table 8.2-1: Air Quality Mitigation Measures, Best Management Practices, and Contingency	35
Table 8.3-1: Blackwater Mine Meteorological Stations	40
Table 8.3-2: Purple Air Monitoring Locations in 2024	44
Table 8.3-3: Blackwater Mine Point Sources	45
Table 9.1-1: Trigger Action Response	49

List of Figures

Figure 5.1-1: Blackwater Project Location	16
Figure 5.1-2: Blackwater Mineral Tenures within Proposed <i>Mines Act</i> Permit Boundary	17
Figure 5.2-1: Blackwater Low Station Wind Roses.....	18
Figure 5.2-2: Blackwater High Station Wind Roses	19
Figure 5.3-1: Mine Site General Arrangement (Year +23)	20
Figure 5.3-2: Blackwater Process Site Plan.....	22
Figure 5.3-3: Ore Process Flow Diagram	23
Figure 6-1: Project Components with Potential to Generate Fugitive Dust.....	29
Figure 7.1-1: Air Quality Human Receptors	32
Figure 8.3-1: Air Quality Monitoring Locations in 2024	41

Work Instructions

Air Quality and Fugitive Dust Management Plan

Version:	J.1
Replaces:	I.1
Creation Date:	04/30/2025
Scheduled Review Date:	
Review Date:	
Document Team Members:	
Document Owner:	
Document Approver:	
Related Documents:	
Key Contacts:	
Change Requests:	

Acronyms and Abbreviations

µm	Microns
AAQO	Ambient Air Quality Objective
Application or Joint MA/EMA Application	Joint <i>Mines Act / Environmental Management Act</i> Permits Application
AQFDMP	Air Quality and Fugitive Dust Management Plan
AQO	Air Quality Objective
Artemis	Artemis Gold Inc.
BC	British Columbia
BW Gold or Proponent	BW Gold LTD.
CAAQs	Canadian Ambient Air Quality Standards
CCME	Canadian Council of Ministers of the Environment
CEA Agency	Canadian Environmental Assessment Agency
CEO	Chief Executive Officer
CFMP	Country Foods Monitoring Plan
CM	Construction Manager
CO	Carbon monoxide
COO	Chief Operating Officer
COO	Chief Operating Officer
DS	Decision Statement
EAC or Certificate	Environmental Assessment Certificate
EC	Environment Canada
ECCC	Environment and Climate Change Canada
ECD	Environmental Control Dam
ELoMC	Environmental Life of Mine Committee
EM	Environmental Manager
EMLI	Ministry of Energy, Mines and Low Carbon Innovation
EMP	Environmental Management Plan
EMPR	Ministry of Energy, Mines and Petroleum Resources
ENV	Ministry of Environment and Climate Change Strategy
EPCM	Engineering, Procurement and Construction Management

FLNRORD	Ministry of Forests, Lands, Natural Resource Operations and Rural Development
FSR	Forest Service Road
FUP	Follow-up Program
GM	General Manager
h	Hour
ha	Hectares
HHRA	Human Health Risk Assessment
HQ	Hazard quotient
HVAC	Heating, ventilation and air conditioning
Indigenous groups or Aboriginal Peoples	Ulkatcho First Nation, Lhoosk'uz Dené Nation, Nadleh Whut'en First Nation, Stellat'en First Nation, Saik'uz First Nation, Nazko First Nation, Skin Tyee Nation, Tsilhqot'in Nation, Métis Nation British Columbia, and Nee-Tahi-Buhn Band (as defined in the Project's federal Decision Statement)
Indigenous nations	Lhoosk'uz Dené Nation, Ulkatcho First Nation, Nadleh Whut'en First Nation, Stellat'en First Nation, Saik'uz First Nation, and Nazko First Nation (as defined in the Blackwater Mine's Environmental Assessment Certificate #M19-01)
km	Kilometre
KP	Knight Piésold Ltd.
LGO	Low grade ore
MAR	Mine Access Road
masl	Metres above sea level
MOE	Ministry of Environment
MOH	Ministry of Health
MP	Management plan
Mtpa	Million tonnes per annum
New Gold	New Gold Inc.
NOx	Nitrogen oxides
OVB	Overburden
PASS	Passive Air Sampling System
PM	Particulate matter
POC	Parameter of concern
POPC	Parameter of potential concern

Project	Blackwater Gold Project
QA/QC	Quality control/quality assurance
QRP	Qualified Registered Professional
SO₂	Sulphur dioxide
SOP	Standard operating procedure
t	Tonne
Tatelkus Lake 28	Tatelkus Lake Indian Reserve 28
the Mine	The Blackwater Mine
TSF	Tailings Storage Facility
VP	Vice President
WMMP	Wildlife Management and Monitoring Plan

1.0 Purpose and Scope

The purpose of the Air Quality and Fugitive Dust Management Plan (AQFDMP) is to identify measures to minimize the effects of the Blackwater Mine's (the Mine's) air emissions on human health and the natural environment. The AQFDMP identifies the Mine's fugitive dust-emitting sources and mitigation and contingency measures aimed at effectively controlling dust emissions.

Pursuant to Part 2, Section 14 of the *Environmental Management Act*, BW Gold LTD. (herein referred to as BW Gold or Proponent) has received a Permit (#110650) on May 2, 2023 for air discharges during the Construction and Operation phases of the Mine as follows:

- Discharge of fugitive dust generated at the mine site during the Construction and Operations phases; and
- Discharge of air emissions from the processing plant and assay lab during the Operations phase.

Permit #110650 was last amended on September 9, 2024.

The AQFDMP was developed to meet the Joint Application Information Requirements for *Mines Act/Environmental Management Act* Permits (BC EMPR & ENV 2019). It also addresses the requirements of Environmental Assessment Certificate (EAC) #M19-01 Condition 20 and federal Decision Statement (DS) Conditions 6.1, 6.3, 6.12 and 6.15. The AQFDMP also includes the information requested in *Developing a Fugitive Dust Management Plan for Mines in BC* (Guidance; BC EMLI & ENV 2023).

Concordance tables identify where the requirements in EAC Condition 20 and DS conditions are met and are provided in Appendix A and Appendix B respectively. A concordance table identifying where the requirements in the Guidance (BC EMLI & ENV 2023) are met is provided in Appendix C. The concordance tables have been developed for the purposes of compliance determination for each agency (e.g., ENV, EMLI, IAAC, and EAO) understanding where the specific authorization requirements are documented. For example, BW expects that Impact Assessment Agency of Canada (IAAC) would determine BW's compliance with NO_x and SO_x monitoring and not BC ENV.

The Air Quality Trigger Response Plan (TRP) for Fugitive Dust Non-Point Source Discharges to Air is included in Appendix D and the AQDMP for the Transmission Line is provided in Appendix E.

1.1 Company Information

BW Gold is a wholly owned subsidiary of Artemis Gold Inc. (Artemis), a publicly traded company listed on the TSX Venture Exchange (TSX-V: ARTG; <https://www.artemisgoldinc.com>). Artemis and BW Gold are incorporated in BC (#71616 9511 and #73237 6876 respectively).

The BW Gold corporate office is in Vancouver, BC:

Physical Mailing Address: Suite 3083 – 595 Burrard Street, Vancouver BC V7L 1L3
Telephone: (604) 558-1107
General Email: info@artemisgoldinc.com

The Blackwater Mine community office is in Vanderhoof, BC:

Physical Mailing Address: 139 – 1st Street, P.O. Box 440
Mailing Address: P.O. Box 440, Vanderhoof BC V0J 3A0
Telephone: (250) 567-3276
General Email: office.blackwater@artemisgoldinc.com

1.2 Existing Permits

BW Gold has a permitted diesel-fired putrescible waste incinerator (*Environmental Management Act* Permit #106530), which is located near the exploration camp. The permit allows a maximum discharge rate of 110 m³/minute and maximum waste feed of 1.1 tonnes/day. Authorized waste for incineration includes putrescible camp waste, paper, cardboard and lumber scraps that cannot be recycled. Condition 2.1.3 of Permit #106530 requires that every effort be made to minimize incineration of plastics.

BW Gold has an air discharge permit (*Environmental Management Act* Permit #110650) that authorizes discharges from 12 sources. The permit also requires the development of an incinerator operating plan and this AQFDMP that includes a trigger response plan. The Plan also details the monitoring and reporting requirements. Permit #110650 was last amended on September 9, 2024.

1.3 Exclusions

Consistent with the Guidance (BC EMLI & ENV 2023), the AQFDMP does not address occupational health and safety requirements pertaining to workplace exposures to dust. Worker health and safety at mine sites is regulated by the Health, Safety and Reclamation Code for Mines in British Columbia (EMLI 2024). The Mine's Occupational Health and Safety Program is provided under a separate cover.

Offsite infrastructure such as the Forest Service Road (FSR) and Transmission Line are also excluded from the AQFDMP.

1.4 Related Documents

EAC M#19-01 Condition 20 requires the AQFDMP to indicate how this plan informs the Country Foods Monitoring Plan (CFMP) and the Wildlife Mitigation and Monitoring Plan (WMMP).

The CFMP and WMMP will be evaluated for updates and revisions if corrective actions to reduce contaminant concentrations to avoid adverse health effects to receptors are implemented, based on exceedances of contaminants of potential concern (COPC) and corresponding concentrations (triggers) based on monitoring data from implementing the AQFDMP, when compared to BC objectives (Entia 2021).

Fugitive dust deposition monitoring is not recommended by the Ministry of Environment and Climate Change Strategy (ENV) for the purposes of wildlife and human health protection (ENV 2020) and is not included in the AQFDMP. However, as required by EAC Condition 41, analysis of dust for metal concentrations will be included in the CFMP and data collected under the CFMP can be used to inform the WMMP.

Monitoring of trace element (metals) uptake in vegetation and soils is considered in the Reclamation and Closure Plan and the CFMP. Plant tissue can be affected by the deposition of dust (particulate matter) containing metals generated by Mine activities. Plants can also accumulate metals from the soil through uptake of metals through the root. Monitoring under the CFMP will determine whether concentrations of metals have changed in soil or in vegetation tissue because of Mine activities. The results of trace metals monitoring and potential implications for wildlife based on results from monitoring under the CFMP will be addressed in the WMMP.

Results of the AQFDMP for monitoring of particulate matter (Section 8.3.3) will inform the CFMP, as this monitoring is required by EAC Condition 41 for the CFMP.

2.0 Mine Overview

The Mine is a gold and silver open pit mine located in central British Columbia (BC), approximately 112 kilometres (km) southwest of Vanderhoof, 160 km southwest of Prince George, and 446 km northeast of Vancouver.

The Mine is presently accessed via the Kluskus FSR, the Kluskus-Ootsa FSR and a new mine access road which connects to the Kluskus-Ootsa FSR at km 142. The Kluskus FSR joins Highway 16 approximately 10 km west of Vanderhoof. The new, approximately 13.8 km road (Mine Access Road) was built to replace the existing exploration access road, which will be decommissioned. The new mine access road is at km 124.5. Driving time from Vanderhoof to the mine site is about 2.5 hours.

Major mine components include a tailings storage facility (TSF), ore processing facilities, waste rock, overburden and soil stockpiles, borrow areas and quarries, water management infrastructure, water treatment plants, accommodation camps and ancillary facilities. The gold and silver will be recovered into a gold-silver doré product and shipped by air and/or transported by road. Electrical power is supplied by a new approximately 135 km, 230 kilovolt overland transmission line that will connect to the BC Hydro grid at the Glenannan substation located near the Endako mine, 65 km west of Vanderhoof.

The Mine site is located within the traditional territories of Lhoosk'uz Dené Nation (LDN), Ulkatcho First Nation (UFN), Skin Tyee Nation, and Tsilhqot'in Nation. The Kluskus and Kluskus-Ootsa FSRs and Mine transmission line cross the traditional territories Nadleh Whut'en First Nation, Saik'uz First Nation, and Stellat'en First Nation (collectively, the Nechako First Nations, NFNs) as well as the traditional territories of the Nazko First Nation, Nee-Tahi-Buhn Band, Cheslatta Carrier Nation, and Yekooche First Nation. (BC EAO 2019a, 2019b).

Project construction took approximately two years. In Q4 2024 Mine operations commenced in the open pit and first ore was fed through the crushing circuit. The 225 kV power line connecting to the provincial grid is now electrified. The TSF construction is complete and ready for mine production as planned. Mine development will be phased with an initial milling capacity of 15,000 tonnes per day (t/d) or 5.5 million tonnes per annum (Mtpa) for the first five years of operation. After the first five years, the milling capacity will increase to 33,000 t/d or 12 Mtpa for the next five years, and to 55,000 t/d or 20 Mtpa in Year 11 until the end of the 23-year mine life. The Closure phase is Year +24 to approximately Year +36 and is defined by the duration required to fill the Open Pit with water to the target closure level, and the TSF is allowed to passively discharge to Davidson Creek via a closure spillway. The Post-closure phase is estimated to begin in Year +37.

New Gold Inc. received EAC #M19-01 on June 21, 2019 under the 2002 *Environmental Assessment Act* (BC EAO 2019c) and a Decision Statement (DS) on April 15, 2019 under the Canadian *Environmental Assessment Act*, 2012 (CEA Agency 2019). In August 2020, Artemis acquired the mineral tenures, assets, and rights in the Blackwater Project that were previously held by New Gold Inc. On August 7, 2020, the Certificate was transferred to BW Gold, a wholly owned subsidiary of Artemis, under the 2018 *Environmental Assessment Act*. The Impact Assessment Agency of Canada notified BW Gold on September 25, 2020 to verify that written notice had been provided within 30 days of the change of proponent as required in Condition 2.16 of the DS, and that a process had been initiated to amend the DS.

BW Gold received *Mines Act* Permit M-246 on June 22, 2021, and *Environmental Management Act* Permit #110602 on June 24, 2021, authorizing early construction works for the Mine. These works include clearing, grubbing ditching, and site levelling at the plant site location and sediment and erosion controls, including construction of ditches, diversions, and a sediment control pond (SCP). *Mines Act*

Permit M-246 was amended on March 8, 2023, and most recently on October 30, 2024, superseding the previous versions of the permit. BW Gold received *Environmental Management Act* Permit #110650 on May 2, 2023 (most recent amendment on September 9, 2024) authorizing the discharge of air contaminants to the atmosphere from the Mine.

3.0 Roles and Responsibilities

BW Gold has the obligation of ensuring that all commitments are met and that all relevant obligations are made known to mine personnel and site contractors during all phases of the mine life. A clear understanding of the roles, responsibilities, and level of authority that employees and contractors have when working at the mine site is essential to meet Environmental Management System (EMS) objectives.

Table 3-1 provides an overview of general environmental management responsibilities during all phases of the mine life for key positions that will be involved in environmental management. Other positions not specifically listed in Table 3-1 but that will provide supporting roles include independent environmental monitors, an Engineer of Record for tailings storage facilities and dams as required, an Independent Tailings Review Board, TSF qualified person, geochemistry Qualified Registered Professional (QRP), and other qualified persons and QRPs as required.

Table 3-1: Blackwater Gold Roles and Responsibilities

Position	Responsibility
Chief Executive Officer (CEO)	The CEO is responsible for overall Mine governance. Reports to the Board.
Chief Operating Officer (COO)	The COO is responsible for engineering and Mine development and coordinates with the Mine Manager to ensure overall Mine objectives are being managed. Reports to the CEO.
Vice President (VP) Environment & Social Responsibility	The VP is responsible for championing the Environmental Policy Statement and EMS, establishing environmental performance targets and overseeing permitting. Reports to the COO.
General Manager (GM) Development	The GM Development is responsible for managing project permitting, the Mine's administration services and external entities, and delivering systems and programs that ensure Artemis's values are embraced and supported: Putting People First, Outstanding Corporate Citizenship, High Performance Culture, Rigorous Project Management and Financial Discipline. Reports to the COO.
Mine Manager	The Mine Manager, as defined in the <i>Mines Act</i> , has overall responsibility for mine operations, including the health and safety of workers and the public, EMS implementation, overall environmental performance and protection, and permit compliance. The Mine Manager may delegate some of their responsibilities to other qualified personnel. Reports to the GM.
Construction Manager (CM)	The CM is accountable for ensuring environmental and regulatory commitments/ and obligations are being met during the construction phase and Operations phase construction projects. Reports to the GM.

Position	Responsibility
Environmental Manager (EM)	The EM is responsible for the day-to-day management of the Mine's environmental programs and compliance with environmental permits, updating EMS and Management Plans. The EM or designate will be responsible for reporting non-compliance to the CM, and Engineering, Procurement and Construction Management (EPCM) contractor, other contractors, the Company and regulatory agencies, where required. The EM informs the Environmental Monitors of current site conditions that may influence monitoring programs. Supports the CM and reports to the Mine Manager.
Departmental Managers	Departmental Managers are responsible for implementation of the EMS relevant to their areas. Report to the Mine Manager.
Indigenous Relations Manager	Indigenous Relations Manager is responsible for Indigenous engagement throughout the life of mine. Also responsible for day-to-day management and communications with Indigenous groups. Reports to the VP Environment & Social Responsibility.
Community Relations Advisor	Community Relations Advisor is responsible for managing the Community Liaison Committee and Community Feedback Mechanism. Reports to the Indigenous Relations Manager.
Aboriginal Monitors	Aboriginal Monitors are required under EAC #M19-01 Condition 17 and will be responsible for monitoring for potential effects from the Mine on the Indigenous interests. Aboriginal Monitors will be involved in the environmental monitoring, adaptive management and follow-up monitoring programs. Report to the EM.
Employees and Contractors	Employees and contractors are responsible for being aware of permit requirements specific to their roles and responsibilities. Report to Departmental Managers.
Qualified Registered Professionals or Qualified Persons	Qualified registered professionals and qualified persons will be retained to review objectives and conduct various aspects of environmental and social monitoring as specified in Environmental and Social Management Plans.

BW Gold will employ a qualified person as an EM who will ensure that the EMS requirements are established, implemented and maintained, and that environmental performance is reported to management for review and action. The EM is responsible for retaining the services of qualified persons or QRPs with specific scientific or engineering expertise to provide direction and management advice in their areas of specialization. The EM will be supported by a team of Environmental Monitors that will include Environmental Coordinators and Technicians and by a consulting team of subject matter experts in the fields of environmental science and engineering.

BW Gold maintains overall responsibility for management of the completion of construction and operation of the mine and is responsible for establishing employment and contract agreements, communicating environmental requirements, and conducting periodic reviews of performance against stated requirements.

The CM is accountable for ensuring that environmental and regulatory commitments/obligations are being met during the completion of the construction phase.

Environmental management during Operation will be integrated under the direction of the EM, who will liaise closely with Departmental Managers and will report directly to the Mine Manager. The EM will be supported by the VP of Environment and Social adhere adherence to corporate environmental standards. The EM will be accountable for implementing the approved management plans and reviewing them periodically for effectiveness. Departmental area managers (e.g., mining, milling, and plant/site services) will be directly responsible for implementation of the EMS, management plans, and standard operating procedures relevant to their areas. All employees and contractors are responsible for daily implementation of the practices and policies contained in the EMS.

During closure and post-closure staffing levels will be reduced to align with the level of activity associated with these phases. Prior to initiating closure activities, BW Gold will revisit environmental and health and safety roles and responsibilities to determine resources needed to meet permit monitoring and reporting requirements. The Mine Manager will maintain overall responsibility for management of Closure and Post-closure activities.

Pursuant to Condition 19 of the EAC #M19-01, Conditions A(10)(a-c) of the M-246 *Mines Act* Permit, Condition 3.7 of *Environmental Management Act* Permit #110652, BW Gold has established an Environmental Life of Mine Committee (ELoMC) to facilitate information sharing and provide advice on the development and operation of the Mine, and the implementation of ELoMC conditions, in a coordinated and collaborative manner. Committee members include representatives of the BC EAO, UFN, LDN, NWFN, StFN, SFN, NFN, BC EMLI, BC ENV, and BC MOF/WLRS.

Pursuant to Condition 17 of the EAC #M19-01, Aboriginal Group Monitor and Monitoring Plan, BW Gold will retain or provide funding to retain a monitor for each Indigenous nations defined in the EAC #M19-01 prior to commencing construction and through all phases of the mine life. The general scope of the monitor's activities will be related to monitoring for potential effects from the Mine on Indigenous nations' interests.

Pursuant to Part A. General, Section 10 of the *Mines Act* Permit M-246, BW Gold will establish a "Life of Mine Committee" by May 31, 2023. BW Gold will offer membership annually in the Life of Mine Committee to the Indigenous Communities referred to Condition A.8 and to Provincial Agencies, including but not limited to the Ministry of Energy, Mines and Low Carbon Innovation, Ministry of Environment and Climate Change Strategy, and the Ministry of Forests. Condition 10(b) states that the Permittee must ensure that the Life of Mine Committee scope of work includes: (i) review of existing and proposed environmental management activities; (ii) review of existing and proposed environmental monitoring activities; (iii) review of implemented and proposed reclamation and closure activities, in addition to other conditions.

4.0 Adaptive Management Framework

The AQFDMP is a living document that will evolve over time in response to monitoring results and regulatory changes. The AQFDMP incorporates adaptive management as follows:

- **Plan**
 - Identify and characterize fugitive dust sources;
 - Identify composition and size distribution of particulate emissions;
 - Identify contributing factors to dust generation;
 - Identify areas with potential air quality and dustfall impacts;
 - Describe fugitive dust control for each source; and
 - Prepare schedule for implementation and operation of control measures.
- **Do**
 - Implement mitigation measures;
 - Identify maintenance and record keeping procedures for control and monitoring equipment; and
 - Develop training procedures.
- **Monitor**
 - Conduct inspections and maintenance; and
 - Complete and maintain monitoring records.
- **Adjust**
 - Follow up on the evaluation of monitoring results;
 - Review of the monitoring program in terms of effectiveness in detecting effects;
 - Recommendations provided by a qualified professional for changes to the monitoring plan, objectives, frequency, methods, or timing;
 - Engagement tracking to record input from Indigenous groups and regulators such as the EAO, ENV and Canada Impact Assessment Agency; and
 - Revise the AQFDMP as new and/or altered measures are introduced.

5.0 Facility Description and Setting

5.1 Physical Location and Access

The Mine is an open pit gold and silver mine located approximately 112 kilometres (km) southwest of Vanderhoof and 160 km southwest of Prince George, BC. The Mine falls within NTS map sheet 93F/02, centred at 5893000 N and 375400 E (UTM Zone 10 NAD83). The mine site is centred at 53°11'22.872" N and 124°52'0.437" W. The Mine is accessed via the Kluskus FSR, the Kluskus-Ootsa FSR and a mine access road, which will connect to the Kluskus-Ootsa FSR at km 124.5.

Figure 5.1-1 and Figure 5.1-2 identifies the Mine location and the access route from Vanderhoof in relation to nearby communities. The mine site is located within the traditional territories of LDN and UFN and downstream of the traditional territories of NWFN, SFN, and StFN (collectively, the Carrier Sekani First Nations).

BW Gold holds a 100% recorded interest in 328 mineral claims covering an area of 148,688 hectares (ha) distributed among the Blackwater, Capoose, Auro, Key, Parlane, and RJK claim blocks (Artemis 2020). The Mine site is located within the Blackwater claim block. Figure 5.1-2 identifies the mineral tenures within the proposed *Mines Act* permit boundary.

5.2 Environmental Setting

The Mine is located on the Nechako Plateau, a region of flat to gently rolling terrain on the northern slope of Mount Davidson. The Mine maintains two meteorological stations referred to as the Blackwater Low, and Blackwater High (discussed in Section 8.3.1). The mean annual wind speed at the Blackwater low elevation (1,050 masl) meteorological station (Blackwater Low) is approximately 2.2 m/s (7.9 km/h), with the wind direction being predominantly from the west and southwest. Strong southeast winds were also evident in the fall and winter at the Blackwater Low station (Figure 5.2-1). At the Blackwater high elevation (1,470 masl) station (Blackwater High) the wind direction is predominately from the west with strong southwest gusts during the fall and winter (Figure 5.2-2). The mean annual wind speed at the Blackwater High station is approximately 3.0 m/s (10.8 km/h). Meteorological baseline reports are provided in KP (2021a and 2021b).

5.3 Facility and Process Description

The Mine includes an open pit, plant site and processing plant, waste and topsoil stockpiles, borrow areas and TSF. The general arrangement of the proposed mine site at Year +23 (full mine buildout) is shown in Figure 5.3-1. Section 6 (Table 6-1) provides a list of site activities that could result in the generation of fugitive dust.

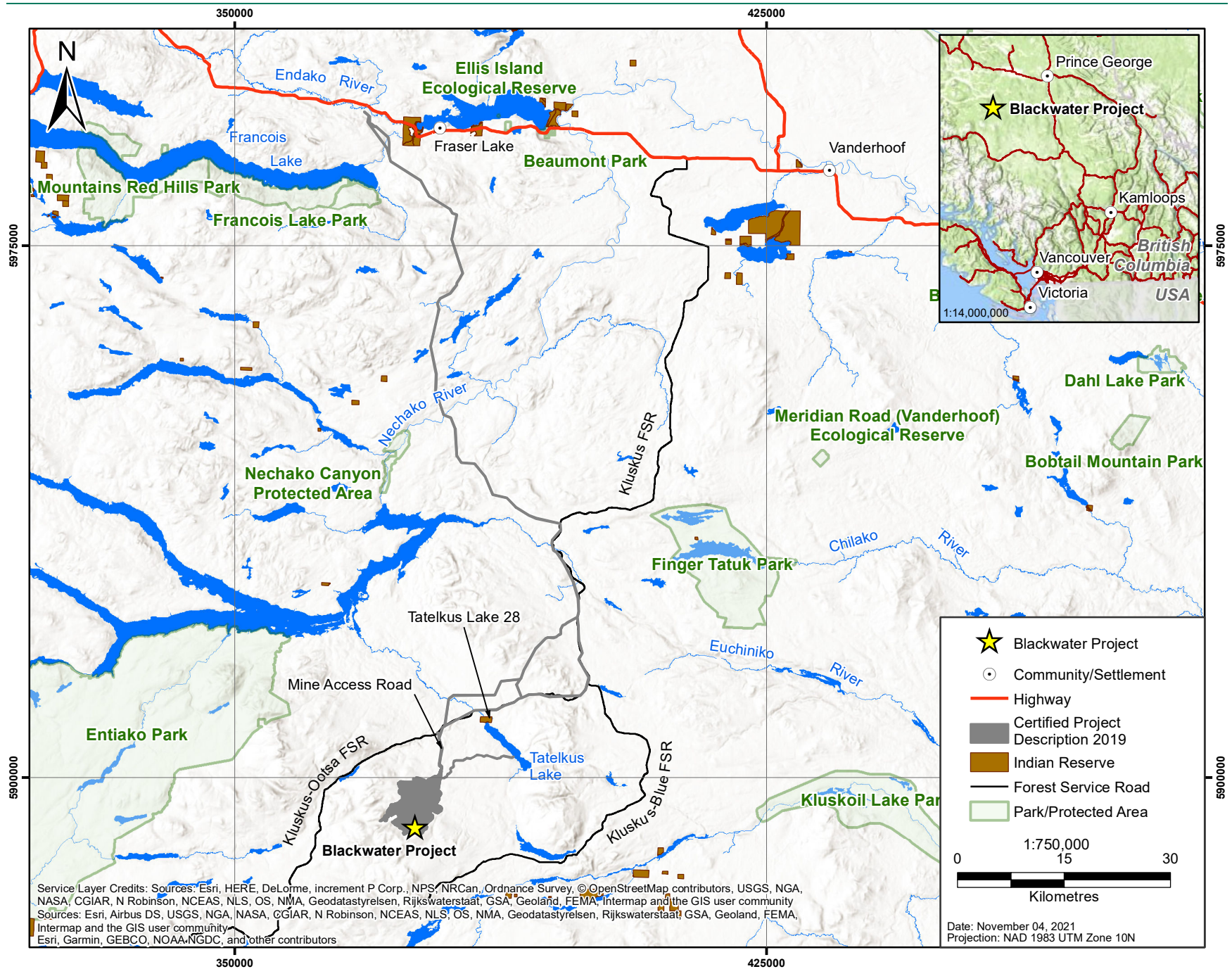


Figure 5.1-1: Blackwater Project Location

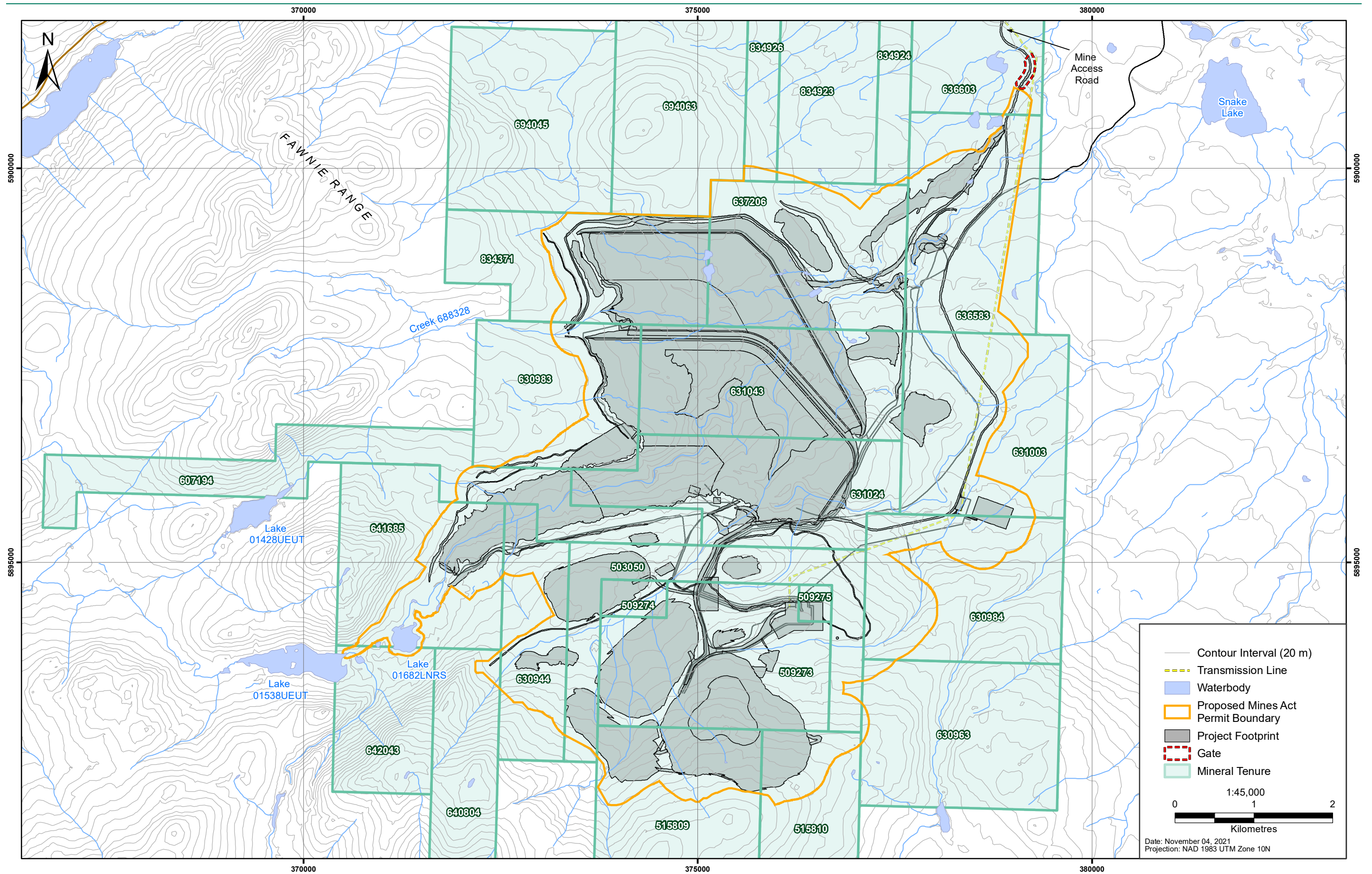
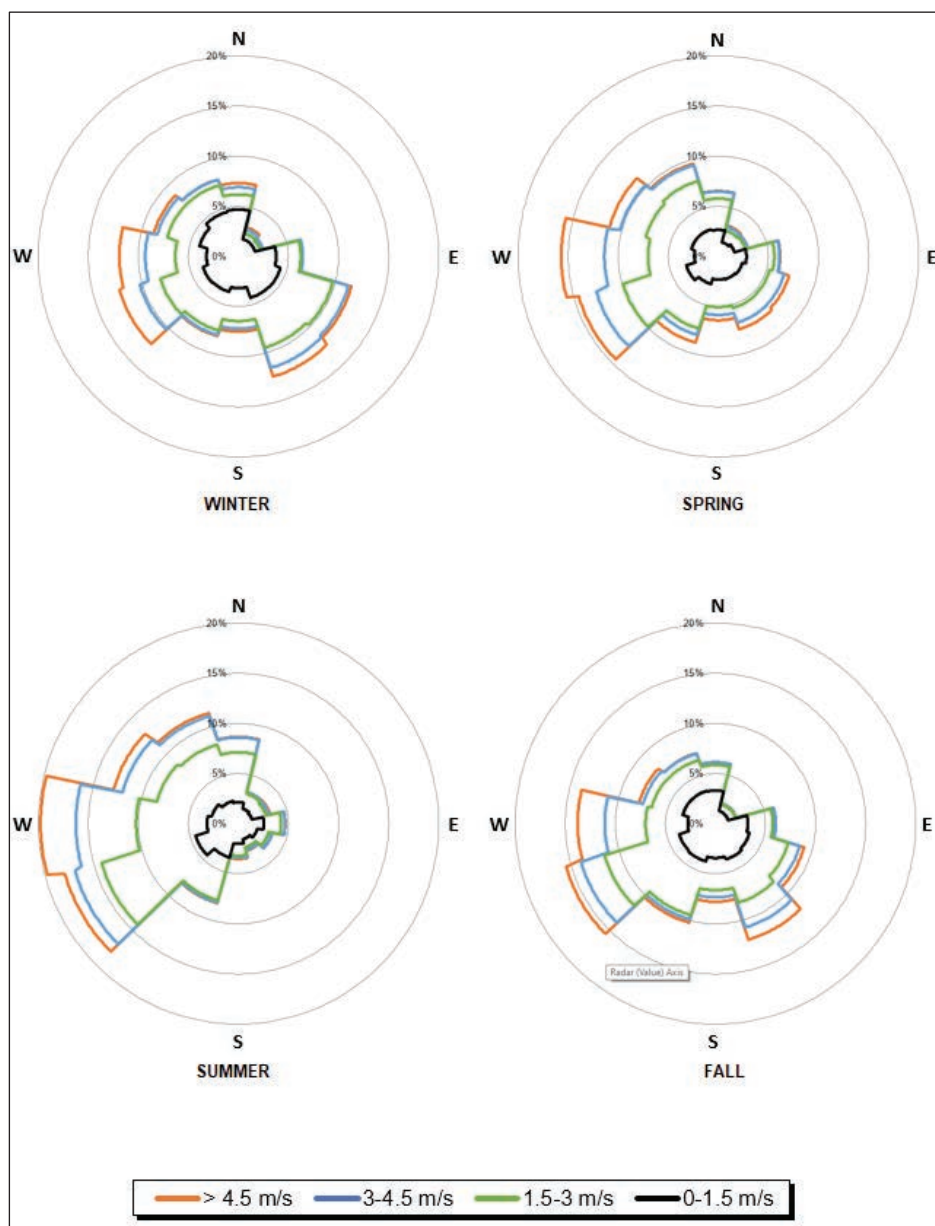


Figure 5.1-2: Blackwater Mineral Tenures within Proposed Mines Act Permit Boundary

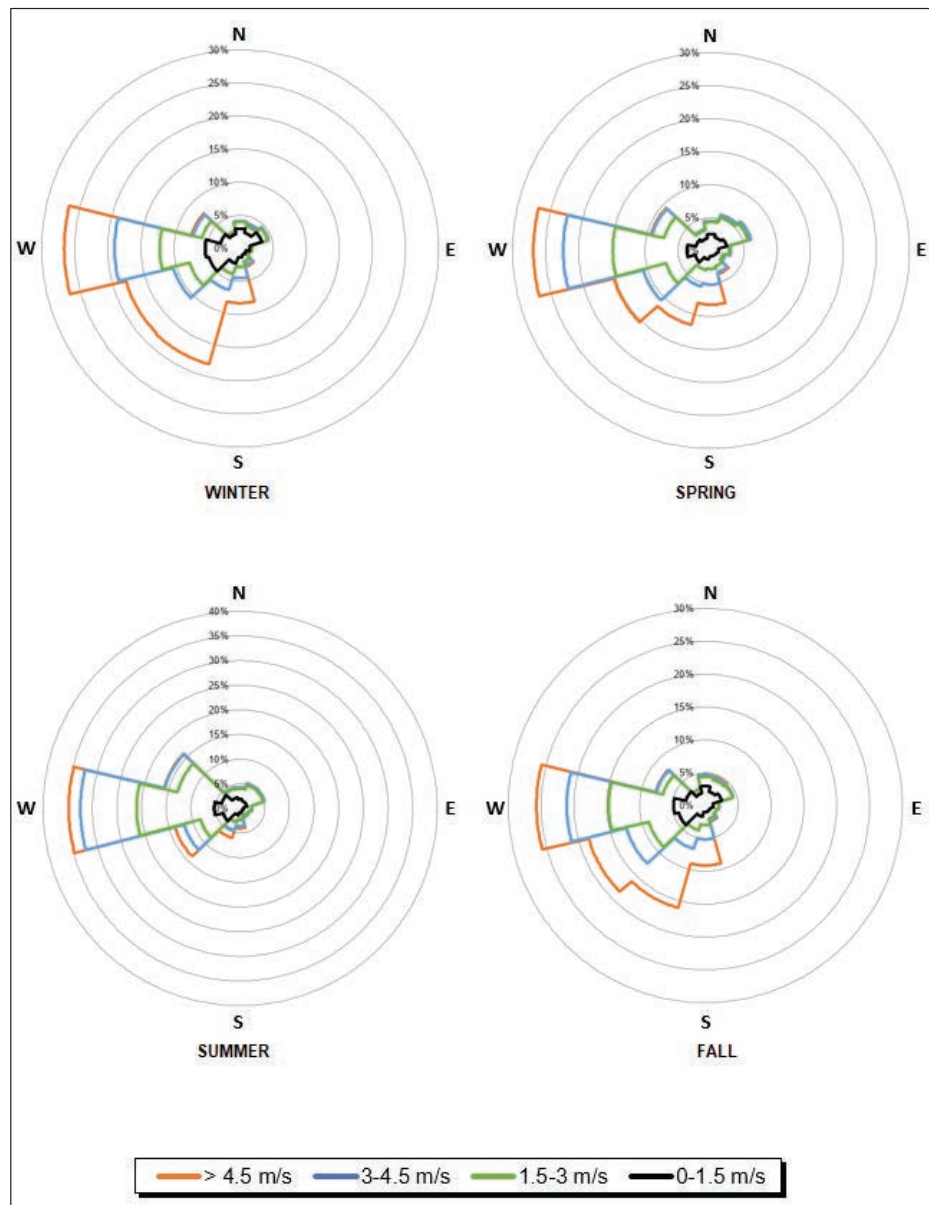


NOTES:

1. WINTER CONSISTS OF DECEMBER TO FEBRUARY, SPRING CONSISTS OF MARCH TO MAY, SUMMER CONSISTS OF JUNE TO AUGUST, AND FALL CONSISTS OF SEPTEMBER TO NOVEMBER.
2. THE PREVAILING WIND DIRECTION IS THE ONE WITH THE LONGEST SPOKE (HIGHEST PERCENTAGE).

Figure 5.2-1: Blackwater Low Station Wind Roses

Source: Knight Piésold Consulting (2021).



NOTES:

1. WINTER CONSISTS OF DECEMBER TO FEBRUARY, SPRING CONSISTS OF MARCH TO MAY, SUMMER CONSISTS OF JUNE TO AUGUST, AND FALL CONSISTS OF SEPTEMBER TO NOVEMBER.
2. THE PREVAILING WIND DIRECTION IS THE ONE WITH THE LONGEST SPOKE (HIGHEST PERCENTAGE).

Figure 5.2-2: Blackwater High Station Wind Roses

Source: Knight Piésold Consulting (2021).

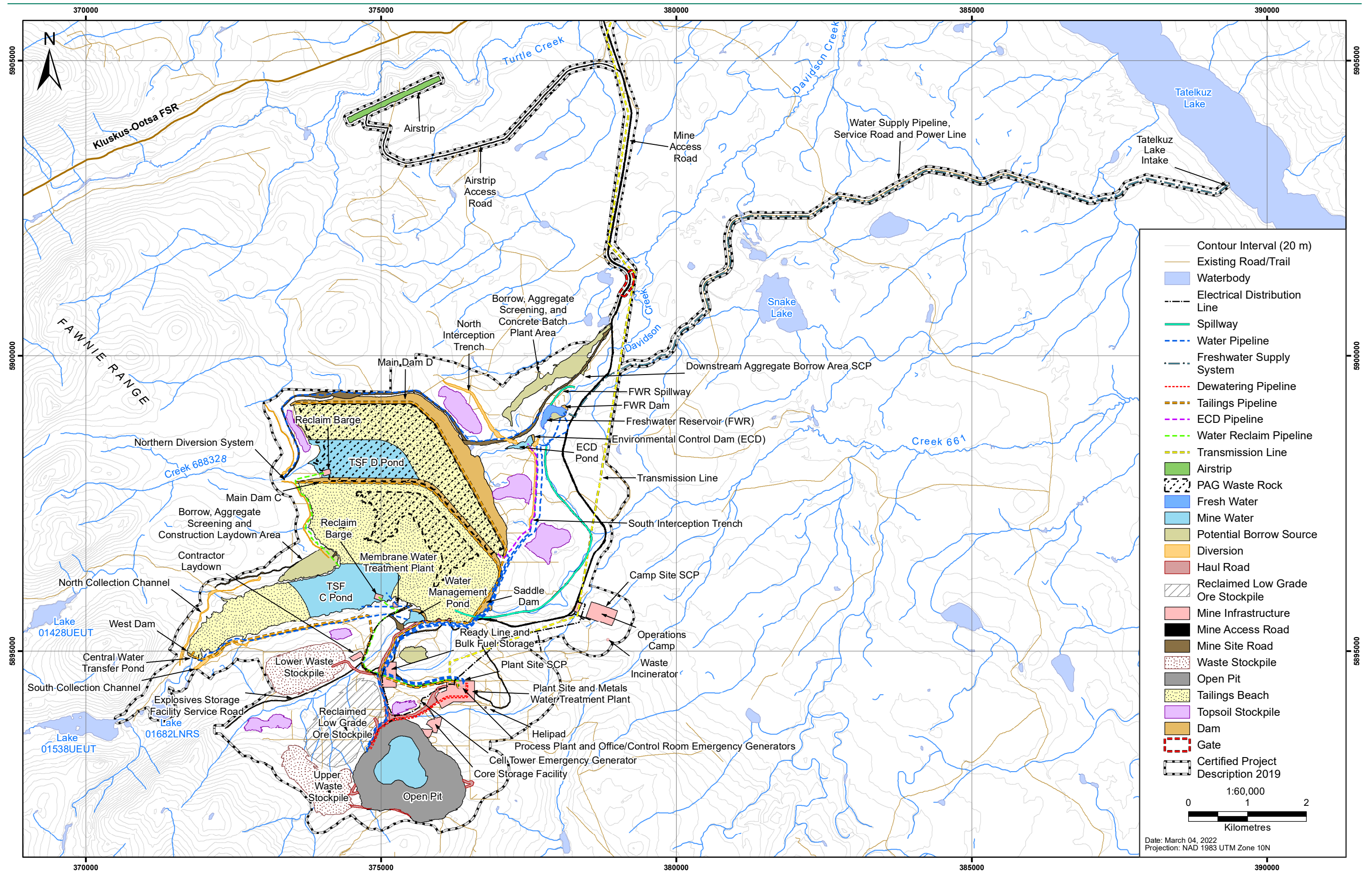


Figure 5.3-1: Mine Site General Arrangement (Year +23)

5.3.1 Open Pit

Ore will be extracted using drilling and blasting from the open pit located in the southern portion of the proposed mine site. At its greatest extent, the open pit will be 228 ha, approximately 2.0 km long on the east to west axis and 1.8 km long on the north to south axis. When fully developed, the anticipated depth of the pit will range between 350 m to 550 m below the surrounding ground surface. The initial production ramp up (Year +1 to Year +5) will be undertaken using 400 t class hydraulic shovels and 190 t payload class haul trucks. As production increases, the load and haul fleet will be expanded with 550 t class hydraulic shovels and 220 t payload class haul trucks. The initial drill and loading fleets are planned to be diesel drive, with expansion of the fleet to include electric drills and shovels after Year +5.

5.3.2 Processing Plant

The processing plant, located north of the open pit, will utilize a carbon in leach gold recovery process, with gold doré produced on-site. The plant will operate on a 5.5 Mtpa throughput from Year +1 to Year +5, 12 Mtpa throughput from Year +6 to Year +10, and a 20 Mtpa throughput from Year +11 to Year +23, the end of operations. The general arrangement for the processing plant at Year +1 is shown in Figure 5.3-2. An ore process flow diagram is presented in Figure 5.3-3.

BW Gold has integrated engineering controls to mitigate fugitive dust emissions from the processing plant, which includes active dust collection, wet grinding, enclosures, and stack emissions. These controls are outlined below.

Active Dust Collection

Active dust collection systems will be installed in the following areas:

- Primary crusher – baghouse collector including blower and ducting with pickups at jaw crusher feeder and vibrating grizzly discharge;
- Secondary and tertiary crusher – baghouse collector including fan and ducting with pickups at screen feed and discharge chutes and cone crusher feeder head;
- Reclaim tunnel – cartridge style collector including fan and ducting with pickups at each reclaim feeder discharge;
- Fire Assay Main Lab – cartridge style dust collector – dust collection system services the electric cupellation and diesel-fired fusion furnace;
- Fire Assay Lab Sample Preparation – cartridge style sample preparation dust collector; and
- Lime Silo – cartridge style dust collector baghouse exhaust will contain lime dust and ambient air.

Wet Grinding

Wet grinding will be utilized for the grinding circuit. This medium is more energy efficient than dry grinding and eliminates dust associated with the ore grinding process.

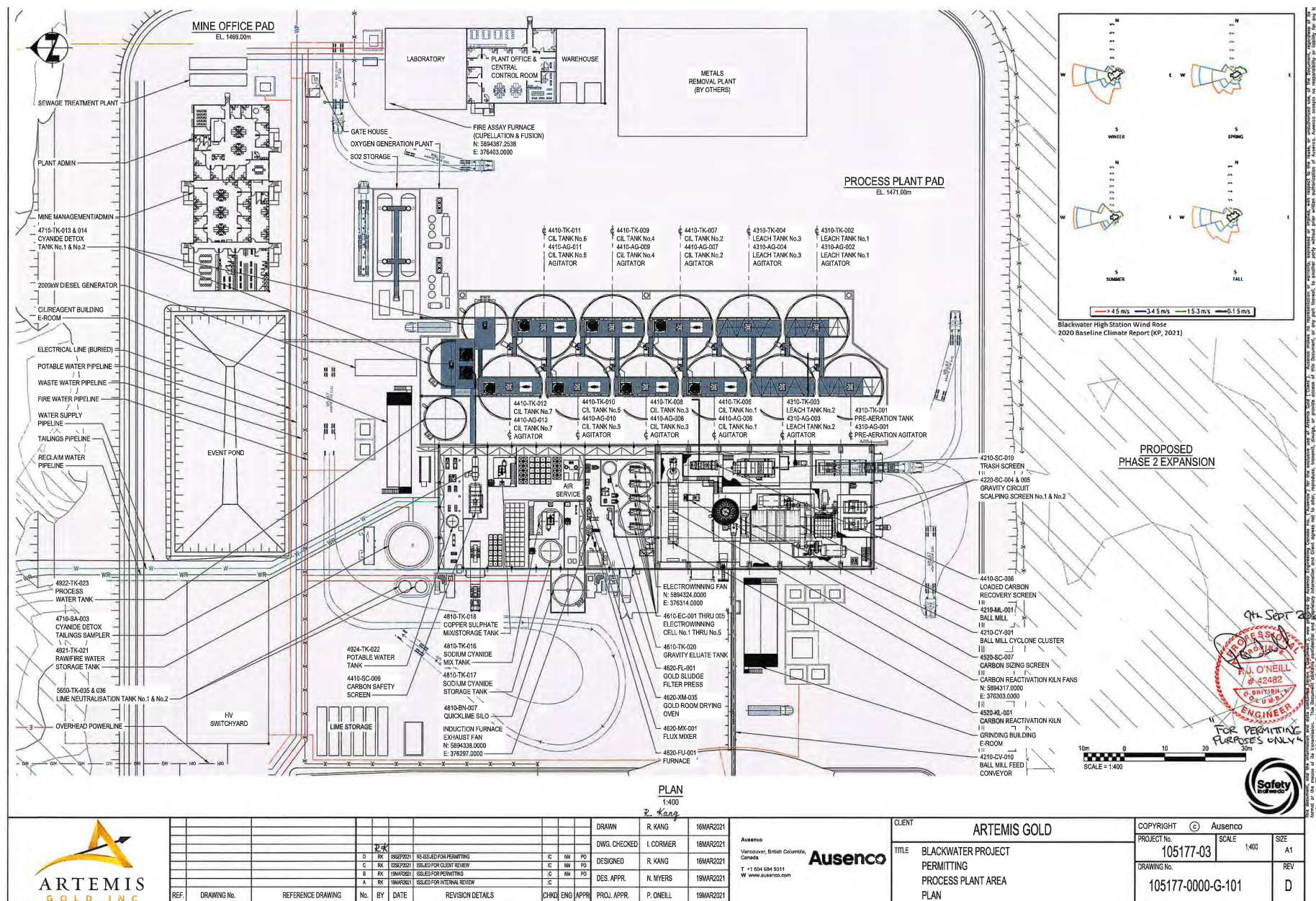


Figure 5.3-2: Blackwater Process Plant Area Site Plan

Source: Ausenco (2021; Appendix 3-F)

Enclosures

Most handling and processing equipment at the plant site will be contained in enclosures to limit fugitive dust emissions. These enclosures and associated heating, ventilation and air conditioning (HVAC) considerations include:

- Primary crusher (parts of the building will be enclosed, cladded, insulated and heated);
- Secondary and tertiary crusher (building will be enclosed, cladded, insulated, and heated);
- Reclaim tunnel (will be enclosed, without insulation or heating [HVAC – ventilation only]); and
- Mill building/ wet process plant (will be enclosed, cladded and insulated [HVAC – heated to 10 °C minimum and ventilated]).

5.3.3 Tailings Storage Facility

The TSF comprises two adjacent sites, TSF Site C and TSF Site D and four embankments (Site C Main Dam, Site D Main Dam, Site C Saddle Dam, and Site C West Main Dam). The TSF is designed to permanently store tailings and potentially acid generating waste rock, provide water for processing, and support mine site water balance management. During operations, tailings will be delivered by gravity via a pipeline from the processing plant to either TSF Site C or TSF Site D.

Tailings beaches will be developed and maintained if and as required at the direction of the EoR throughout the life of mine for each dam. Tailings beaches prevent direct contact of the pond supernatant with dam embankments and limits the infiltration of seepage into the embankment. The particle size distribution of the tailings samples were approximately 44% fine sand, 46% silt, and 10% clay. The tailings are fairly coarse with good packing density and low rheology.

5.3.4 Stockpiles

Upper and Lower Waste Stockpiles

Two stockpiles will store NAG overburden (OVB) and NAG waste rock from stripping and open pit mining. The Upper Waste Stockpile will be located west of the open pit and has a planned maximum capacity of 31 Mt. The Lower Waste Stockpile will be located between the TSF and explosives storage road and has a planned maximum capacity of 29 Mt.

Low Grade Ore Stockpile

The Low Grade Ore (LGO) Stockpile will store ore prior to processing. The stockpile will be located northwest of the open pit with a planned maximum capacity of approximately 111 Mt. The LGO will be completely processed by Y +23.

Topsoil Stockpiles

During the mine life, reclamation materials (i.e., topsoil with subsoil, organic soil, woody debris) will be salvaged and stored for use in progressive or final reclamation. The total estimated volume of potentially salvageable soil is 8.46 Mm³. There will be seven soil stockpiles on the proposed mine site. Final stockpiles will be seeded as surfaces are graded to final repose angles and become available for seeding with non-propagating grass species, native grasses and forbs, and tree and shrub species to reduce erosion and invasive-species establishment and to control fugitive dust dispersal.

5.3.5 Borrow and Aggregate Crushing and Screening Areas

Eight borrow areas will be developed in Year -2 in order to produce aggregate to construct mine infrastructure and include:

- Mine site borrow areas;
- Borrow, aggregate screening, and construction laydown areas;
- TSF C additional borrow area;
- TSF C North borrow area;
- TSF C South borrow area;
- TSF D borrow areas;
- Freshwater Reservoir borrow area; and
- Borrow, aggregate screening and concrete plant areas.

Crushing and screening plants will produce concrete aggregates, structural fills, road general fills, sub-base and base coarse fills.

5.3.6 Concrete Batch Plants

Concrete batch plants will be mobilized in Year -2. A high volume plant will operate during construction with additional plants available during peak pouring periods and as a backup to the high volume plant. All dry mix concrete batch plants will be winterized.

5.3.7 Refuse Incinerator

A putrescible refuse incinerator is located on site. The incinerator will be utilized during all Mine phases. The incinerator is authorized to burn a maximum of 1.1 tonnes/day of the following:

- Putrescible camp waste;
- Paper;
- Cardboard, and
- Lumber scraps that cannot be recycled.

BW Gold plans to use the incinerator as permitted. Incinerator ash is disposed of in accordance with existing approval for the facility, *Environmental Management Act* Permit #106530. Ash is deposited in an off-site landfill. When operational conditions require that a landfill is brought online, a landfill will be located, permitted and constructed. Any excess waste above and beyond what the permitted incinerator can process will be disposed of in an alternate manner, for example taken off-site for disposal. As the site develops and head count increases, consideration will be given to expanding site incineration capacity if the waste generated exceeds the permitted capacity of the existing incinerator.

6.0 Identification of Potential Air Emission Sources

Fugitive dust is the primary source of air emissions. Potential dust sources include material handling/re-handling, construction and use of unpaved roads, blasting, compaction, drilling, grading, material (including ore) loading and unloading, and ore processing. Erodible surface areas such as stockpiles and the TSF beach are also sources of fugitive dust.

Table 6-1 provides an overview of the Mine activities anticipated to emit fugitive dust by Mine phase. Table 6-2 provides further detail on dust emissions by Mine component, further illustrated by Figure 6-1. Table 6-3 identifies emission sources and predicted emissions of total suspended particulate (TSP), particulate matter less than 10 µm (microns) in diameter (PM₁₀), particulate matter less than 2.5 µm in diameter (PM_{2.5}), carbon monoxide (CO), nitrogen oxides (NO_x); and sulphur dioxide (SO₂).

Non-dust air emission sources include, but may not be limited to, mine fleet exhaust (multiple), backup diesel generators (x6), NO_x and SO₂ from blasting and the existing diesel-fired putrescible waste incinerator.

Table 6-1: Activities Resulting in Fugitive Dust by Mine Phase

Construction	Operations	Closure	Post-closure
<ul style="list-style-type: none"> Land clearing and earthworks for all on-site and off-site Mine components Construction and use of unpaved access and mine site roads Surface blasting, drilling, and material handling for starter pits Construction of Mine-owned roads Construction of the transmission line Construction of the freshwater supply system Construction of TSF dams, and interim environmental control dam (ECD) Material handling/re-handling at Lower and Upper Waste stockpiles, LGO and topsoil stockpiles, borrow areas, and laydown areas Construction of water management structures (e.g., diversion channels) Aggregate extraction from borrow pits Borrow and aggregate screening areas Concrete batch plants Parking lot and road grading 	<ul style="list-style-type: none"> Pit slopes Surface blasting and mining activities during open pit operations Ore extraction in the open pit Ore transport to the processing plant Ore processing Construction of TSF Main Dam D and Final ECD Wind erosion from exposed TSF beach and stockpiles Land clearing and earthworks associated with production ramp ups Use of unpaved surfaces including the mine site haul roads Material handling/re-handling at Lower and Upper Waste stockpiles, LGO and topsoil stockpiles, borrow areas, and laydown areas Borrow and aggregate screening areas Parking lot and road grading 	<ul style="list-style-type: none"> Pit slopes Earthworks, land forming and soil stockpile rehandling Use of unpaved mine site roads Wind erosion from exposed TSF beach Parking lot and road grading 	<ul style="list-style-type: none"> Pit slopes above inundation level Use of unpaved mine site roads Parking lot and road grading Final decommissioning and closure of all remaining infrastructure

Table 6-2: Fugitive Dust Emission Sources by Mine Component

Component	Location	Potential Source	Dust-generating Material	Generating Conditions	Additional Comments
Open pit	Figure 6-1	OVB and waste rock removal, blasting, drilling, material handling/re-handling, vehicle traffic	OVB, waste rock, ore, aggregate, waste rock	Any conditions	Pit will become deeper and wetter as it is developed, mitigating fugitive dust
TSF, Site C and Site D Main dams, Site C Saddle and West dams	Figure 6-1	Excavation (drilling and blasting), compaction, material placement and handling, vehicle traffic	Waste rock, tailings	Windy, dry, hot days or extremely cold weather	TSF will expand and begin to inundate upstream dam faces as it is developed, mitigating dust
TSF beach	Figure 6-1	Wind erosion, blasting, drilling, vehicle traffic	OVB, waste rock, aggregate, tailings	Windy, dry, hot days or extremely cold weather	
Concrete batch plants	Figure 6-1	Material handling	Cement, aggregate	Any conditions	Active during Construction phase and intermittent use thereafter; Plants will conform to Code of Conduct for Concrete Batch plants (BC Reg. 329/2007)
Aggregate screening areas	Figure 6-1	Material handling/re-handling, vehicle traffic	aggregate	Windy, dry, hot days or extremely cold weather	
Borrow areas	Figure 6-1	Material handling/re-handling, vehicle traffic	OVB, waste rock and aggregate	Windy, dry, hot days or extremely cold weather	
Processing plant (located at plant site)	Figures 5.3-2, 5.3-3, 6-1	Conveyor drop, primary crusher building, Secondary and tertiary crusher building, reclaim tunnel, rotary kiln, propane smelting, fire assay furnace	Ore	Windy, dry, hot days or extremely cold weather	Covered conveyors; baghouse collector systems
Upper and Lower Waste stockpiles	Figure 6-1	Wind erosion, material handling, vehicle traffic	OVB and waste rock	Windy, dry, hot days or extremely cold weather	

Component	Location	Potential Source	Dust-generating Material	Generating Conditions	Additional Comments
LGO stockpile	Figure 6-1	Wind erosion, material handling/ re-handling, vehicle traffic	Ore	Windy, dry, hot days or extremely cold weather	Until stockpile is fully processed by Y+23
Topsoil stockpiles	Figure 6-1	Wind erosion, material handling, vehicle traffic	Topsoil	Wind, dry, hot days or extremely cold weather	Until stockpiles are vegetated
Freshwater Reservoir and dam	Figure 6-1	Excavation (drilling and blasting), compaction, material placement and handling, vehicle traffic	Cement, aggregate	Windy, dry, hot days or extremely cold weather	
Interim, and final Environmental Control dams	Figure 6-1	Excavation (drilling and blasting), compaction, material placement and handling, vehicle traffic	Cement, aggregate	Windy, dry, hot days or extremely cold weather	
TSF, mine site haul and service roads	Figure 6-1	Vehicle traffic, grading	Aggregate	Any conditions	
MAR	Figure 6-1	Vehicle traffic, grading	Aggregate	Windy, dry, hot days or extremely cold weather	

Table 6-3: Operations Emission Sources and Predicted Emissions

Emission Source	Maximum Emissions (tonnes/day)					
	TSP	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO
Material Handling	4.40	1.63	0.34	-	-	-
Unpaved Road (Haul Roads)	3.29	0.72	0.089	0.0015	2.17	0.091
Unpaved Roads (FSR+MAR)	0.57	0.14	0.014	1.1E-04	0.018	0.0056
Dump/Storage Areas	6.02	3.01	0.45	-	-	-
Incinerator	0.041	0.041	0.038	0.0022	0.0054	0.065
Processing Plant	0.0051	0.0022	6.0E-04	-	-	-
Refinery System	1.8E-04	1.8E-04	1.5E-04	3.7E-05	0.048	0.028
Fired Sources	0.049	0.049	0.047	0.026	0.38	0.12
Total Emissions	14.38	5.59	0.98	0.03	2.62	0.31

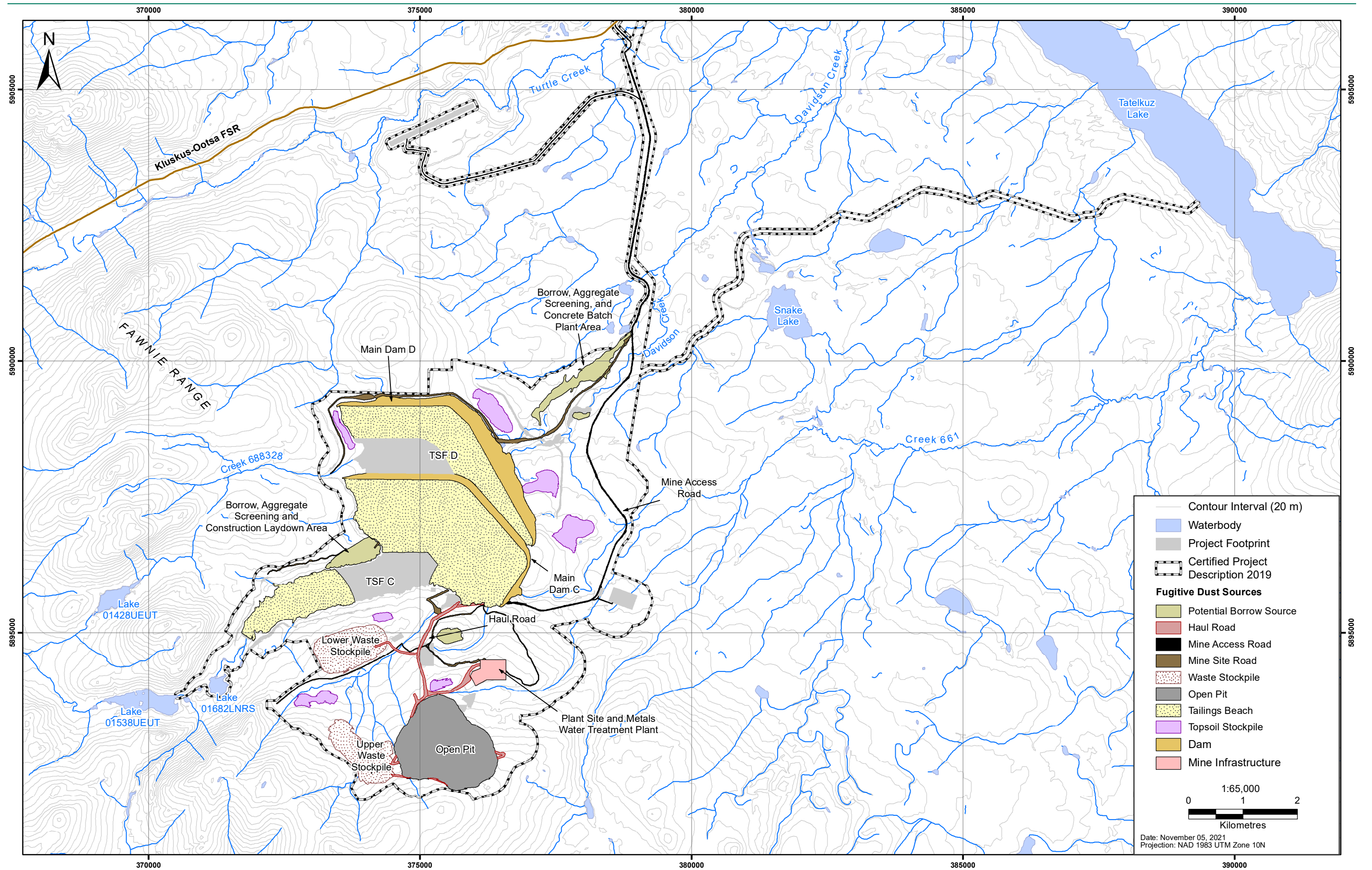


Figure 6-1: Project Components with Potential to Generate Fugitive Dust

7.0 Identification of Potential Effects of Fugitive Dust

7.1 Air Quality Objectives and Parameters of Concern

The *Canadian Environmental Protection Act, 1999* establishes National Ambient Air Quality Objectives (NAAQOs) and Canadian Ambient Air Quality Standards (CAAQS) to protect human health and the environment. BC has established Ambient Air Quality Objectives (AAQOs) pursuant to the *Environmental Management Act*. Federal and BC air quality objectives are provided in Table 7.1-1 and are non-legally binding limits. As even low levels of air pollution can affect some individuals, air quality objectives should not be viewed as levels that can be ‘polluted up to’, but levels to stay well below. Additionally, Permit #110650 includes limits on the discharge of contaminants from point sources.

Table 7.1-1 includes the new 2025 CAAQS values that came into effect in 2025 (CCME 2025).

Table 7.1-1: Federal and BC Ambient Air Quality Objectives

Contaminant	Units	Averaging Period	Objectives/Standards			
			Federal and CAAQS ^(a,b,e)			British Columbia AAQO ^(c,d)
			Maximum Desirable	Maximum Acceptable	Maximum Tolerable	
TSP	µg/m ³	24-hour	-	120	400	120
		Annual	60	70	-	60 ^(f)
PM ₁₀	µg/m ³	24-hour	-			50
PM _{2.5}	µg/m ³	24-hour	27 ^(g)			25 ^(h)
		Annual	8.8 ⁽ⁱ⁾			8 ^(j)
SO ₂	ppb	1-hour	65 ^(k)			75 ^(l)
		Annual	4.0 ^(m)			-
NO ₂	ppb	1-hour	42 ⁽ⁿ⁾			60 ^(o)
		Annual	12.0 ^(p)			17 ^(q)
CO	ppb	1-hour	13,000	31,000	-	13,000
		8-hour	5,000	13,000	17,000	5,000

Sources:

(a) Health Canada (2016), (b) CCME (2025) and (c) BC ENV (2021)

Notes:

“-” signifies that no air quality objective is available.

(d) BC Ambient Air Quality Objectives

(e) Canadian Ambient Air Quality Standards

(f) Based on geometric mean.

(g) Achievement based on the 3-year average of the annual 98th percentile of the daily 24-hour average concentrations.

(h) Achievement based on annual 98th percentile of daily average, over one year.

- (i) Achievement based on the 3-year average of the annual average of the daily 24-hour average concentrations.*
- (j) Achievement based on annual average, over one year. There is also a planning goal of 6 µg/m³.*
- (k) Achievement based on the 3-year average of the annual 99th percentile of the daily maximum 1-hour average concentrations.*
- (l) Achievement based on annual 97th percentile of D1HM averaged over 2015-2017, annual 97.5th percentile of D1HM averaged over 2016-2018 and annual 98th percentile of D1HM averaged over 2017-2019, with one allowable excursion above 75 ppb to a maximum of 85 ppb over a three-year period prior to 2020.*
- (m) Achievement based on the average over a single calendar year of all 1-hour average concentrations.*
- (n) Achievement based on the 3-year average of the annual 98th percentile of the daily maximum 1-hour average concentrations.*
- (o) Achievement based on the annual 98th percentile of D1HM, averaged over three consecutive years.*
- (p) Achievement based on the annual average over a single calendar year of all 1-hour average concentrations.*
- (q) Achievement based on the annual average of 1-hour average concentrations, over one year.*

Particulate matter (PM_{2.5} and PM₁₀) is the main parameters of concern for mining operations as they relate to human health. For the Mine's human health risk assessment (HHRA), emissions of nitrogen oxides, SO₂, CO and PM (PM_{2.5} and PM₁₀) were modelled to estimate concentrations at each human receptor location (including full-time residents, temporary land users and off-duty workers) for comparison with BC objectives (Entia 2021). The HHRA considered estimated metal concentrations in dust that is predicted to be deposited at soils and vegetation sampling locations.

Figure 7.1-1 identifies sensitive receptors in relation to the Mine. The closest on-site receptor is the operations camp which will house off-duty workers (Figure 7.1-1). The closest off-site receptor is Tatelukus Lake Indian Reserve 28 (Tatelkus Lake 28; Figure 5.1-1 and 7.1-1), located approximately 5.8 km northeast of the Mine site.

To minimize air emission impacts from the Mine to human health and the environment mitigations and monitoring will be implemented as described in Section 8. Visual monitoring of dust will be completed onsite at active earthworks, haul roads, and stockpiles.

Air dispersion modelling was conducted to predict concentrations of parameters of concern.

7.2 Air Dispersion Modelling Results and Effects

Modelling results represent a Level 3 assessment using the CALPUFF modelling system. The CALPUFF modeling system was used to prepare meteorological data, model concentrations and deposition, and to post-process results for specific pollutants and applicable averaging periods. CALPUFF was run using 2011 meteorology data. The results presented below represent predicted concentrations during the Phase 1 of the Mine.

Table 7.2-1 summarizes the results of air dispersion modelling for all off-site human receptor locations, and Table 7.2-2 summarizes the results of air dispersion modelling for the operations camp. The results at all off-site receptor locations indicate there are no exceedances of applicable ambient air quality objectives, with all results being less than 80% of the objectives and hence are not considered parameters of potential concern (POPC).

FIGURE 7.1-1 AIR QUALITY HUMAN RECEPTORS

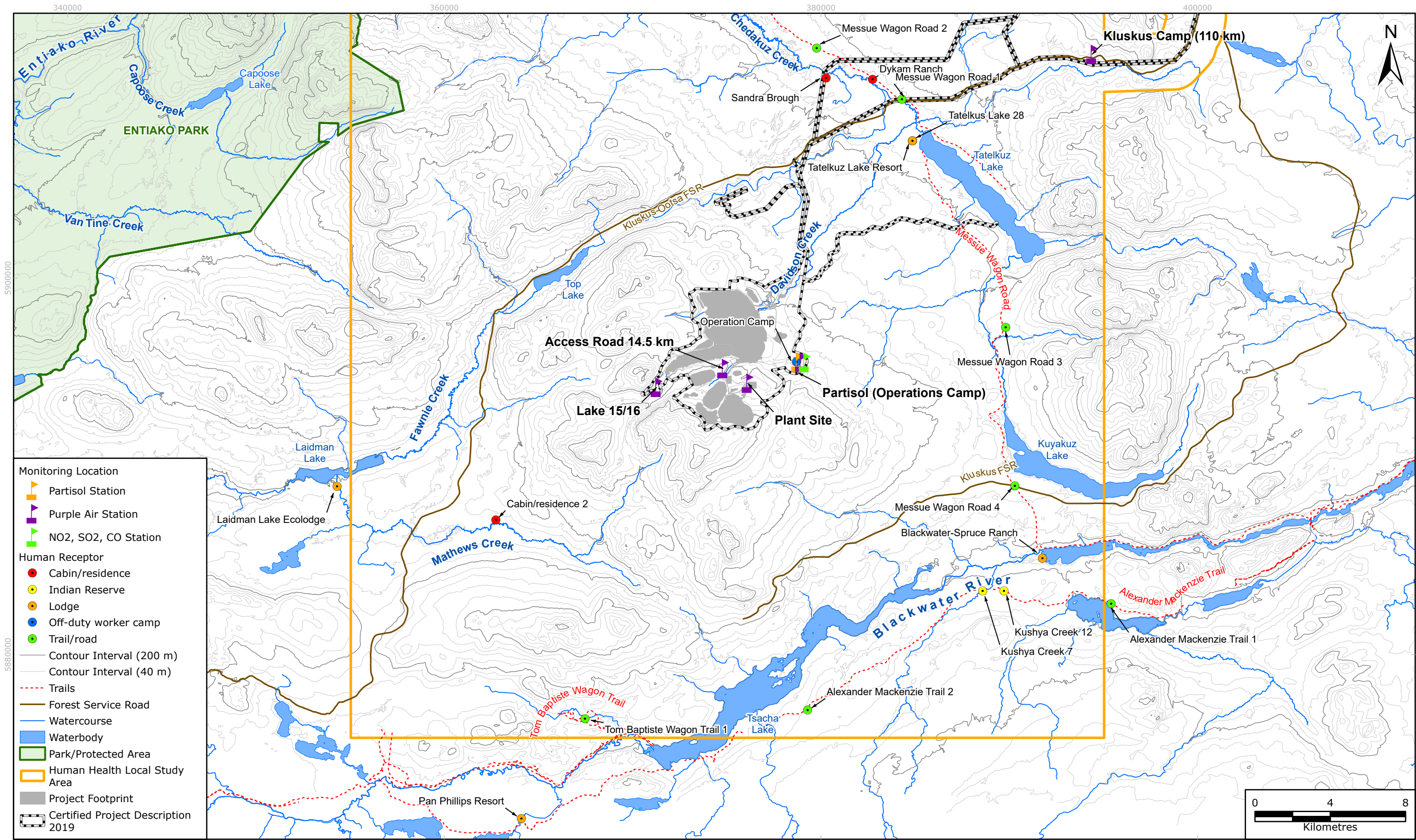


Table 7.2-1: Baseline Case and Mine Case Concentrations for Criteria Air Contaminants for All Off-site Receptor Locations

Parameter	Averaging Period	Concentration (µg/m³)			AAQO (µg/m³)	POPC?	POC?
		Baseline Case	Mine Only	Mine Case			
PM _{2.5}	24-hour	4	0.4	4.4	25	No	No
	Annual		0.1	4.1	8	No	No
PM ₁₀	24-hour	9	2	11	50	No	No
NO ₂	1-hour	8	5	13	79	No	No
	Annual		0.3	8.3	23	No	No
SO ₂	1-hour	2	1.0	3.0	170	No	No
	Annual		0.03	2.0	10	No	No
CO	1-hour	120	30	150	14,300	No	No
	8-hour		12	132	5,500	No	No

Table 7.2-2: Baseline Case and Mine Case Concentrations for Criteria Air Contaminants at the Operations Camp

Parameter	Averaging Period	Concentration (µg/m³)			AAQO (µg/m³)	POPC?	POC?
		Baseline Case	Mine Only	Mine Case			
PM _{2.5}	24-hour	4	3.6	7.6	25	No	No
	Annual		1.0	5.0	8	No	No
PM ₁₀	24-hour	9	17.9	26.9	50	No	No
NO ₂	1-hour	8	29.1	37.1	79	No	No
	Annual		1.8	9.8	23	No	No
SO ₂	1-hour	2	6.6	8.6	170	No	No
	Annual		0.2	2.2	10	No	No
CO	1-hour	120	197.5	317.5	14,300	No	No
	8-hour		85.0	205.0	5,500	No	No

Notes:

PM_{2.5} = particulate matter less than 2.5 µm in diameter; PM₁₀ = particulate matter less than 10 µm in diameter

NO₂ = nitrogen dioxide; SO₂ = sulfur dioxide; CO = carbon monoxide

AAQO = Ambient Air Quality Objective, based on the most conservative BC AAQO or CAAQS (including standards anticipated for 2025)

POPC = Parameter of Potential Concern, identified if the parameter concentration is higher than 80% of the AAQO.

POC = Parameter of Concern, identified if the parameter concentration is higher than the AAQO.

Baseline Case concentrations are from Table 2.2-4 in Chapter 2 of the Application.

Mine Case concentrations include both background and Mine contributions.

The HHRA (Entia 2021) found that predicted 24-hour ground-level $PM_{2.5}$ and PM_{10} concentrations do not result in any acute short-term exposure hazard quotient (HQ) values above 1.0 for any of the offsite sensitive receptor locations. The highest HQ values for 24-hour $PM_{2.5}$ and PM_{10} are 0.176 and 0.225 respectively, at Tatelkuz Lake Resort and Tatelkus Lake 28. The contributions of Mine emissions to the total HQ for 24-hour $PM_{2.5}$ and PM_{10} are 0.016 and 0.045 respectively, based on the effects assessment. At the operations camp, the highest HQ values for 24-hour $PM_{2.5}$ and PM_{10} are 0.304 and 0.539, respectively. The contributions of Mine emissions to the total operations camp HQ for 24-hour $PM_{2.5}$ and PM_{10} are 0.144 and 0.359 respectively, based on the effects assessment. Adverse health effects for human receptors are unlikely to occur following acute short-term exposures to $PM_{2.5}$ and PM_{10} .

Predicted annual ground-level $PM_{2.5}$ concentrations do not result in any chronic HQ values above 1.0 for any of the receptor locations. The highest HQ value for annual chronic exposure to $PM_{2.5}$ at any offsite sensitive receptor is 0.512 at Tatelkuz Lake Resort and Tatelkus Lake 28. The contribution of Mine emissions to the total HQ for annual chronic exposure is 0.012 based on the effects assessment. At the operations camp, the HQ value for annual chronic exposure to $PM_{2.5}$ is 0.629 with a contribution from Mine emissions of 0.129. These values show that the contribution of Mine emissions to the total HQ is small – maximum of 2% for offsite receptors, 21% at the operations camp. Since the total HQ values for the baseline condition and effects assessment remain less than 1.0, adverse health effects for human receptors are unlikely to occur following chronic exposure to $PM_{2.5}$.

Particulate emissions can have effects on aquatic resources and fish, vegetation, wildlife, and human health. Potential effects on the aquatic environment from dust include increase in turbidity levels which could affect habitat quality and organism health. Deposition of dust can lead to contamination of soils with metals, which may adversely affect vegetation abundance, composition, nutritional value, and toxicity. Fugitive dust can cause physical injuries to vegetation, including the alteration of photosynthetic receptors, respiration, and transpiration. Potential effects to wildlife and people include health effects from ingestion of plants and/or animals that have been exposed to chemicals contained within the dust. The amount of dust generated by haul trucks and mining equipment depend on a variety of factors including road material, waste rock moisture content, chemical composition, and the amounts of particulates ready to be emitted, known as silt content. The distance the particles will travel depends on particle size distribution (bigger particles are deposited to the ground closer to the source) and meteorological conditions. With higher winds, the higher mass concentration of larger size particles increases faster than smaller sized particles. (Haller et al. 1999).

Naturally occurring small particulates produced by forest fires can elevate $PM_{2.5}$ and PM_{10} levels above guidelines.

8.0 Implementation

The following sections present the mitigation measures, training, and monitoring that will be implemented to manage fugitive dust and confirm mitigation measures are working.

8.1 Training and Awareness

Employees and contractors will receive awareness-level training in fugitive dust management and air quality on their arrival on site through an environmental on-boarding training session and prior to the start of work as part of the Site Orientation. The purpose of this training is to provide all site personnel with a basic level of environmental awareness and an understanding of their obligations regarding compliance with regulatory requirements, commitments, and best practices. A refresher training will be provided to employees and contractors on an annual basis. Refresher training may take the form of periodic re-training through tailgate and safety meetings.

Site supervisors will be responsible for understanding and implementing the AQDMP and operational SOPs with respect to their individual work areas. The EM will ensure additional training and advice is provided as needed. Targeted training related to dust management will be provided to individuals and/or groups of workers assuming a specific authority or responsibility related to air quality. This training will be delivered by means of classroom instruction, toolbox/tailgate meetings or other means as appropriate.

BW Gold will regularly review and update the training and awareness plan based on changes in training needs and regulatory requirements.

8.2 Mitigation Measures

Site-specific mitigation measures, including best management practices, will be applied to all dust sources as listed in Table 8.2-1. If measures are ineffective, contingency measures are also proposed, where relevant. Visual monitoring of dust onsite will be carried out in source areas of dust generation, where dust has potential of leaving the site.

Table 8.2-1: Air Quality Mitigation Measures, Best Management Practices, and Contingency

Emission Source	Best Management Practices and Mitigation Measures	Contingency
Open pit	<ul style="list-style-type: none">Employees involved in material handling or management will receive instruction by a qualified person on the importance of minimizing material drop height (from excavator to truck, conveyor to stockpile, etc.) to reduce fugitive dust, noise, and vibration.Utilize available fleet of water trucks, weather depending.Use weather forecasts to inform blasting plan (e.g., wind forecast, lightning and thunder warnings).	n/a
Production drilling	<ul style="list-style-type: none">Use wet drilling during very dry conditions (less than 0.25 mm/day of precipitation in the previous week).	n/a

Emission Source	Best Management Practices and Mitigation Measures	Contingency
Production blasting	<ul style="list-style-type: none"> • Immediately prior to blasting, the “Drill and Blast Engineer / Blast Coordinator” will check weather conditions to determine if the blast is likely to cause any dust or fume impacts on the surrounding environment. • Blasting may be postponed until wind direction is not forecast to disperse emissions towards employees or local sensitive receptors when dust or fume impacts on employees and environment cannot be avoided. The Mine Drill and Blast Superintendent and Mine manager will ultimately decide when to postpone blasting (the H&S Manager and The Mine Occupational Health and Safety Program can inform this decision). 	n/a
Concrete batch plants	<ul style="list-style-type: none"> • When unloading material, piles should form low piles (target height of approximately 10 m) that extend horizontally, where practical. • Employees involved in material handling or management will receive instruction by a qualified person on the importance of minimizing material drop height (from excavator to truck, conveyor to stockpile, etc.) to reduce fugitive dust, noise, and vibration. 	n/a
Aggregate crushing and screening areas	<ul style="list-style-type: none"> • Equip the crusher and/or screener circuits with onboard water dosing during times of the year above freezing temperatures or other dust suppression measures (e.g., reagents) systems. • Apply water when temperatures are above freezing and there are very dry conditions (less than 0.25 mm/day of precipitation in the previous week). • Stockpiles should form low piles (target height of approximately 10 m) that extend horizontally as determined by the Construction Manager, where practical. • Use screener and crusher covers. • Check cover for tears, holes and cracks on a monthly basis. Repair as soon as possible. 	n/a
TSF, Site C and Site D Main dams, Site C Saddle and West dams	<ul style="list-style-type: none"> • Advance planning of weekly workload activities. • Apply water in non-freezing, very dry conditions (less than 0.25 mm/day of precipitation in the previous week). 	<ul style="list-style-type: none"> • Maintain higher water levels • Application of calcium chloride, magnesium chloride or other approved dust suppressants during freezing conditions¹

Emission Source	Best Management Practices and Mitigation Measures	Contingency
Freshwater Reservoir and dam	<ul style="list-style-type: none"> • Advance planning of weekly workload activities. • Apply water in non-freezing, very dry conditions (less than 0.25 mm/day of precipitation in the previous week). 	<ul style="list-style-type: none"> • Application of calcium chloride or magnesium chloride during freezing conditions¹
Borrow areas	<ul style="list-style-type: none"> • Apply water when temperatures are above freezing and there are very dry conditions (less than 0.25 mm/day of precipitation in the previous week). • Employees involved in material handling or management will receive instruction by a qualified person on the importance of minimizing material drop height (from excavator to truck, conveyor to stockpile, etc.) to reduce fugitive dust, noise, and vibration. • Develop new borrow areas only when and as required (to be determined by the Mine Manager). • Once suitable materials have been salvaged, place topsoil on disturbed areas and seed once they are sloped to final grade and at an appropriate time of year for seeding using a native seed mix to re-establish vegetative cover as soon as reasonably possible. • When unloading material, piles should form low piles (target height of approximately 10 m) that extend horizontally. • Minimize drop height from loaders and excavators (shovels) to the truck. 	n/a
Processing Plant	<ul style="list-style-type: none"> • Apply water when temperatures are above freezing and there are very dry conditions (less than 0.25 mm/day of precipitation in the previous week). • Use screener and crusher covers. • Employees involved in material handling or management will receive instruction by a qualified person on the importance of minimizing material drop height (from excavator to truck, conveyor to stockpile, etc.) to reduce fugitive dust, noise, and vibration. • Baghouse, control emissions from fully enclosed conveyor. • Enclose conveyors. • Check cover for tears, holes and cracks on approved inspection and maintenance schedule. Repair or replace as soon as possible. 	n/a
Low Grade Ore Stockpile	<ul style="list-style-type: none"> • When unloading material, stockpile lifts should form low piles (target height of approximately 10 m) that extends horizontally and conform to the stockpile design report (MMTS 2021). 	n/a

Emission Source	Best Management Practices and Mitigation Measures	Contingency
Topsoil stockpiles	<ul style="list-style-type: none"> When unloading material, the piles should form low piles (target height of approximately 10 m) that extend horizontally (MMTS 2021). Seed stockpiles once they are sloped to final grade and at an appropriate time of year for seeding to reduce erosion and establishment of invasive species. 	n/a
Mine Access Road	<ul style="list-style-type: none"> Speed limits will be established based on road design class, with the maximum speed limit of 50 km/h on all Mine roads. Reduce speed limits on the mine access road if weather conditions cause fugitive dust emissions and dust cannot be controlled by watering. Speed limits are clearly marked through signage and enforced by site security. Personnel caught speeding may face disciplinary measures, and if violators are encountered they will be provided with constructive instruction on the importance of adhering to speed limits to limit dust generation. Manage dust emissions from roadways in accordance with the Fugitive Dust Management SOP². Water roads in accordance with Section 5.1.1 (Watering) of the Fugitive Dust Management SOP. Apply dust suppressant reagents after spring melt (e.g., calcium chloride, magnesium chloride or other equivalent) as approved by the Mine Manager. Grader maintenance with road crush as required. Regular compaction. Use coarse aggregate on roads with low silt content to reduce silt loading on roads. 	n/a
TSF and mine haulage and service roads	<ul style="list-style-type: none"> Speed limits will be established based on road design class, with the maximum speed limit of 50 km/h on all Mine roads. Reduce speed limits on Mine-owned roads if weather conditions cause fugitive dust emissions and dust cannot be controlled by watering. Speed limits are clearly marked through signage and enforced by site security. Personnel caught speeding may face disciplinary measures, and if violators are encountered they will be provided with constructive instruction on the importance of adhering to speed limits to limit dust generation. Manage dust emissions from roadways in accordance with the Fugitive Dust Management SOP². Visual inspection for dust emissions from roadways and active stockpiles – mine and Infrastructure supervisors, or designate, as well as the mine dispatch office who have a number of real-time stationary but rotating cameras with multiple angles of the open pit and haul roads will monitor for visible emissions from the trucks equipment, and active stockpiles on the site 	<ul style="list-style-type: none"> Trial installation of a fog/sprinkler system that releases small droplets of water on roadways to suppress airborne dust and not cause water seepage on high traffic haul roads (e.g., primary crusher ramp, stockpile access roads).

Emission Source	Best Management Practices and Mitigation Measures	Contingency
	<p>during moderate weather conditions. A hot, dry day is defined as a day with less than 0.25 mm of rainfall for the preceding 24 hours and a temperature greater than 20 °C.</p> <ul style="list-style-type: none"> Utilize available fleet of water trucks, weather depending (non-freezing conditions). Apply dust suppressant reagents after spring melt (e.g., calcium chloride, magnesium chloride or other equivalent) as approved by the Mine Manager. Use coarse aggregate on roads with low silt content to reduce silt loading on roads. Grader maintenance with road crush as required. Regular compaction. 	
Primary and secondary crusher circuits, conveyors and stockpile drop points	<ul style="list-style-type: none"> Install spray bar sprinklers at material transfer points to limit dust emissions. During periods of air temperatures below 0 °C, reagents can be used to limit the formation of frost balls. 	n/a
Loads in transit in open beds.	<ul style="list-style-type: none"> Install removable tarps to cover truck loads of fine material if possible. Use tackifiers, if necessary, to limit fugitive dust from loads of fine material. 	n/a
Vehicles	<ul style="list-style-type: none"> Maintain equipment in good working condition according to manufacturer's recommendations. Restrict speeds and reducing idling (no-idling policy will be implemented, except for situations such as extenuating circumstances during the winter where cold starts and stopping could wear on mining equipment or the vehicle is being used as refuge for lunch or breaks on hot summer days). Use Tier IV engines for mine fleet. 	n/a

Notes:

n/a – not applicable.

¹ BW Gold will follow guidance from the BC best practice manual on fugitive dust management, (https://www2.gov.bc.ca/assets/gov/environment/waste-management/industrial-waste/industrial-waste/mining-smelt-energy/guidance-documents/dust_management_plan_guidance.pdf), which refers to the best management practice manual from the NWT: (<https://www.enr.gov.nt.ca/sites/enr/files/guidelines/dustsupression.pdf>).

The application rate of dust suppressant will be carefully monitored to provide adequate coverage without pooling or runoff of products. The amount of dust suppressant applied will not exceed the minimum amount required to effectively suppress dust. Dust suppressant will be bladed or incorporated into the road immediately upon application, to limit the potential of product migrating off the roadway. There will be no evidence of excess product on the roadway. The dust suppressant will not migrate or run off the traveled portion of the roadway.

² BW Gold will maintain the most current version of the Fugitive Dust Management Plan SOP at the mine site.

8.3 Monitoring

The air quality monitoring program will be initiated prior to the start of construction and remain in place during all phases of the Mine. Figure 8.3-1 illustrates the existing and planned monitoring sites, with further details provided in the following sections.

8.3.1 Meteorological Stations

There are two existing, automated meteorological stations (Figure 8.3-1). Table 8.3-1 provides information on the locations, parameters measured, and the available period of data. Prevailing winds have historically been observed to come from the west (see Section 5.2), which can cause fugitive dust events.

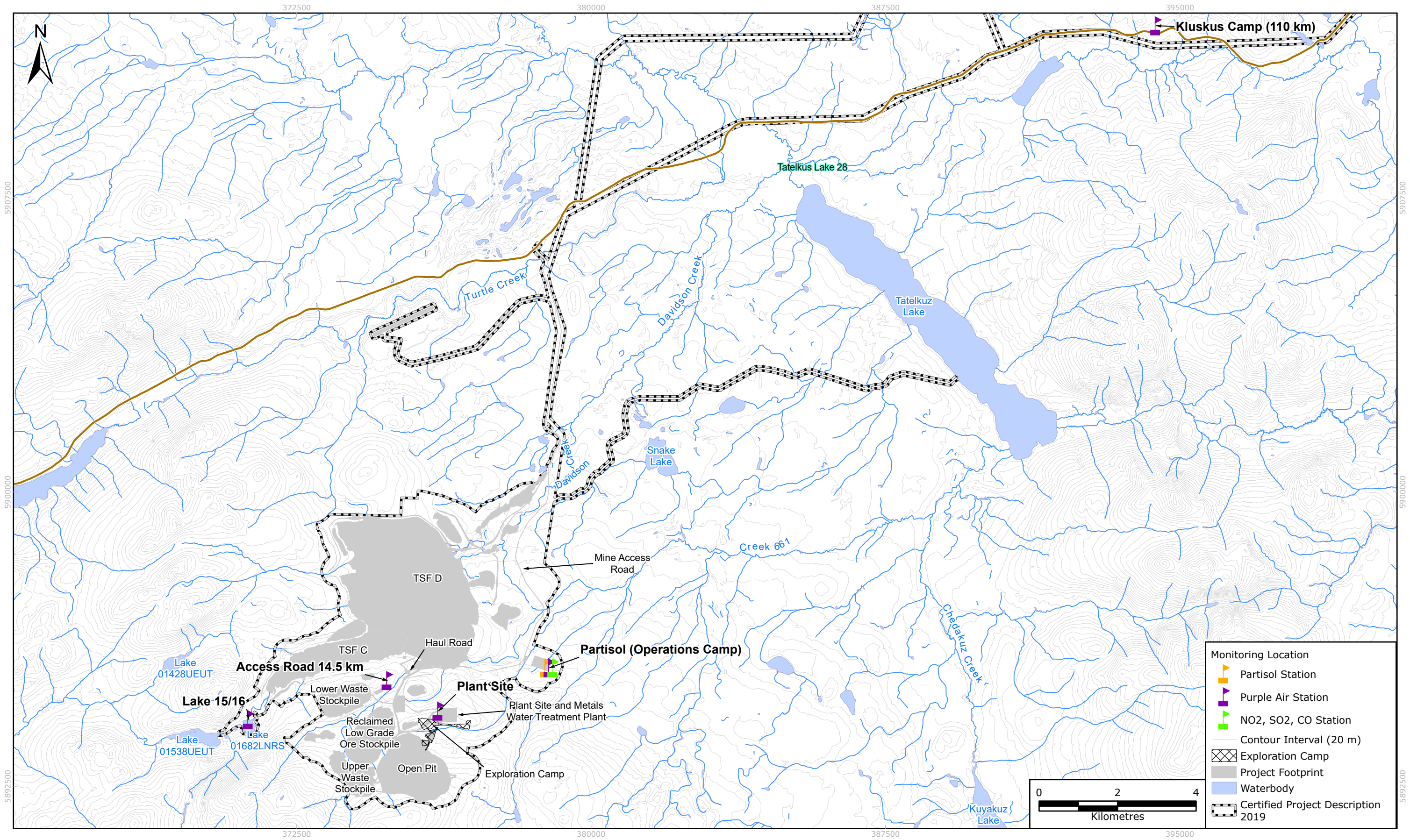
The parameters identified in Table 8.3-1 will be monitored over all phases of the Mine. Data, continuously collected by the units, will be downloaded following procedures in the Climate Station Operational and Quality Assurance Plan and reviewed by BW Gold employees overseen by the Environmental Manager at a minimum of a monthly basis. Data will be reviewed according to guidance in Water and Air Baseline Guidance Document for Mine Proponents and Operators (BC MOE 2016b).

Table 8.3-1: Blackwater Mine Meteorological Stations

Station Name (EMS No.)	Station Height	Latitude (deg N)	Longitude (deg W)	Elevation (masl)	Meteorological Parameters Monitored	Data Period Available
Low (E331132)	10 m	53.29979	124.80025	1,050	Air temperature, relative humidity, precipitation, wind speed and direction, barometric pressure, snow depth, net radiation, solar radiation	August 2011 to present
High (E331133)	10 m	53.18113	124.84620	1,470	Air temperature, relative humidity, precipitation, wind speed and direction, barometric pressure, snow depth, net radiation, solar radiation	July 2012 to present

The meteorological stations will follow the Station Operational and Quality Assurance Plan as required by air discharge permit #110650, and the other conditions of the permit.

FIGURE 8.3-1 AIR QUALITY MONITORING LOCATIONS IN 2024



8.3.2 Dustfall Monitoring

According to ENV (2020), dustfall monitoring and the dustfall Pollution Control Objectives have outdated methodology and criteria and are no longer recommended by BC ENV. Instead, BC ENV recommends monitoring airborne particulates (such as PM₁₀ or PM_{2.5}) as a more appropriate method for protecting human health. To protect soil, water and vegetation, sampling specific media such as metal concentrations from particulate matter from air or metals in water from the surface water management and metal concentration sampling from vegetation in vegetation management is more appropriate. Therefore, air quality and fugitive dust monitoring will include both particulate sampling and analysis of particulate matter metal concentrations as detailed in the Country Foods Monitoring Program. In addition, visual monitoring of dust will be undertaken.

Mine personnel will be trained to be observant for dust related concerns which may arise. These observations, together with meteorological conditions and mitigation efforts taken to deal with an issue, will be recorded and included in annual reports. Dust visual monitoring will focus on areas where there are active surface earthworks, haul roads and overburden, and soil stockpiles.

Visual monitoring will occur at all locations where fugitive dust generation is occurring.

The visual dust monitoring program is intended to contribute to:

- visual identification and recording of fugitive dust events;
- assessment of the effectiveness of mitigation and management measures;
- identification of effects requiring further mitigation efforts; and
- compliance with permit, approvals, and regulatory requirements.

The visual monitoring program will consist of visual observations and documentation of fugitive dust by mine personnel. During periods of wind greater than 11 m/s measured by the High meteorological station and when the ground is not covered under snow, Departmental Managers (or designate) responsible for the areas listed will perform visual monitoring for dust at the following locations:

- locations of active surface earthworks;
- active haul roads; and
- overburden and soil stockpiles.

In addition to these regular visual dust inspections mine personnel will be directed to inform Departmental Managers if persistent dust plumes are visible.

Visual dust inspections will not be recorded under level “none” described in the Trigger Action Response table (see Table 9.1-1). For Level “Medium” or “High” Alert events in the Trigger Action Response Table, after inspections are complete, a log of the findings will be filled out by the Departmental Manager referenced above. The log will contain information on the location where dust plumes were visible, their approximate size and temporal persistence, activities occurring that may have caused the dust plume, meteorological conditions at the time and any actions taken.

Monitoring will be conducted by competent personnel as designated by the Environment Manager. Data will be reported in compliance with Permit #110650 requirements and are kept and made available to others for review upon request.

8.3.3 Particulate Matter Monitoring

8.3.3.1 Partisol Monitor

A Thermo Scientific Partisol-FRM Model 2025i-D PM sampler operated at UTM Zone 10, 375894 Easting and 5894019 Northing from May 9, 2023, until June 25, 2024, when it was moved to its final location at the Operations Camp centered at UTM Zone 10, 378940 Easting and 5895516 Northing. Air discharge permit #110650 was amended on September 9, 2024 to align the coordinates of the Partisol's final location, as the location of the Operations camp was moved.

Ambient air is sucked in by the Partisol and passes through a PM₁₀ filtering head, and then the resulting PM₁₀ air stream is split into a PM_{2.5} stream and the remaining PM_{coarse} air stream (PM₁₀ airflow with PM_{2.5} removed, equivalent to particulate matter between 2.5 to 10 microns). The dichotomous sequential Partisol then samples PM_{2.5} and PM_{coarse} and collects these PM size fractions onto 47-millimetre (mm) filter discs. The PM_{coarse} term is specifically used by dichotomous sequential Partisol samplers, due to the way a dichotomous sequential Partisol operates. Using the sampled PM_{2.5} and PM_{coarse} mass components, the PM₁₀ mass can then be calculated from the sampled mass components of PM_{coarse} plus PM_{2.5} (Thermo Scientific 2015).

BW Gold personnel collects PM samples in general accordance with *The British Columbia Field Sampling Manual: Part B Air and Air Emissions Testing* (BC ENV 2020).

PM_{2.5} and PM_{coarse} particulate are collected onto qualified laboratory pre-dried and pre-weighed filters that are then post-dried and post-weighed in a qualified laboratory to determine the mass of PM_{2.5} and PM_{coarse} deposited on the filters. ALS Environment Laboratories (ALS) are used for the supplying and analyzing the pre-weighed and post-weight filters.

The PM₁₀ inlet flow rate has a target of 1 m³/hr (16.7 L/minute), and then the separated air flow streams have a target flow rate of 15.0 L/minute for the PM_{2.5} sample and 1.67 L/minute for the PM_{coarse} sample. Total air flow volumes are measured and recorded by the Partisol and the air volumes for each sample are provided to ALS for calculation of the resulting PM_{2.5} and PM₁₀ concentrations.

Following the sampling schedule specified in air discharge Permit #110650 (amended September 9, 2024), during the months of May to October, PM sampling occurs every three days, simultaneously for collecting PM_{2.5} and PM_{coarse} (and calculating PM₁₀). During November to April, sampling occurs every six days simultaneously for collecting PM_{2.5} and PM_{coarse} (and calculating PM₁₀). Samples are collected over a 24-hour period on the 3-day or 6-day scheduled dates following the National Air Pollution Surveillance Program (NAPS) sampling schedule.

8.3.3.2 Purple Air Monitor

Based on feedback from Indigenous groups, starting in 2024, during the summer months when elevated PM concentrations were observed at the Mine site, Purple Air monitors were positioned around the Mine to measure background concentrations. The Purple Air sensors are capable of detecting PM_{2.5} and PM₁₀ concentrations. Note that these sensors are not approved for use to meet the air discharge Permit #110650 conditions and are not approved air monitoring sensors in the *British Columbia Field Sample Manual* due to their accuracy limitations. They can be used to provide supplemental data, but the evaluation of ambient PM concentrations as they relate to the Permit conditions and thresholds are determined by the Partisol monitoring station.

Three Purple Air monitors were located around the Mine site (at the Partisol station, Mine Access Road offices at 14.5km and the plant site) and two Purple Air monitors at background locations (Lake 15/16

and 110 km Camp), of which the latter is approximately 26 km away. The locations of the Purple Air monitors used in 2024 are presented in Table 8.3-2.

Table 8.3-2: Purple Air Monitoring Locations in 2024

Monitoring Area	Monitoring Location Description	UTM Coordinates, Zone 10	
		Easting (m)	Northing (m)
Mine Site	Plant Site	376111	5894414
	Partisol (Operations Camp)	378940	5895516
	Access Road 14.5km	374814	5895193
Background Location	Lake 15/16	371279	5894195
	Kluskus Camp (110 km)	394395	5911879

8.3.3.3 Regional Data

Regional air quality data from BC ENV operated air quality monitoring stations Vanderhoof Court House and Quesnel Johnson Avenue will be used to further inform the assessment of onsite and offsite air quality influences.

In addition, PM_{2.5} concentrations due to wildfire smoke will be informed by using the wildfire smoke modelling data from firesmoke.ca. Both current modelled data and historically modelled data for historical dates can be obtained from firesmoke.ca.

8.3.4 Nitrogen Dioxide and Sulfur Dioxide Monitoring

Nitrogen dioxide (NO₂) and SO₂ monitoring uses Radiello samplers provided by ALS for passive monitoring. BWG personnel operate the Radiello samples in general accordance with *The British Columbia Field Sampling Manual: Part B Air and Air Emissions Testing* (BC ENV 2020). Radiello samplers are located at the Partisol monitoring station (UTM Zone 10, 378940 Easting and 5895516 Northing).

The Radiello samplers (NO₂ and SO₂) are deployed in accordance with BC ENV's *Standard Operating Procedure for the Passive/ Diffusive Method of Air Sampling Collection* (SOP-07 dated May 5, 2020), found within *The British Columbia Field Sampling Manual: Part B Air and Air Emissions Testing* appendix (BC ENV 2020). The user manual provided by ALS recommends a sampling period of 15 days or less, provided the relative humidity stays below 70% throughout the sampling period. If relative humidity exceeds 70%, it suggests limiting the sampling to 7-days (Istituti Clinici Scientifici Maugeri 2019). To avoid potential bias from high humidity, the Radiello (NO₂ and SO₂) samples are deployed on average for 7-days and then exchanged with new ones. NO₂ and SO₂ sampling occurs year-round and samples are analyzed by ALS.

Laboratory results are reviewed for sample integrity issues and erroneous data. Field notes, chains of custody, comments from the laboratory, and professional judgement will also be considered during the review process. Invalid data will be omitted from final analyzed datasets. Because Radiello sampling is passive, hourly NO₂ and SO₂ concentrations cannot be sampled using this method and therefore will not be compared against the hourly CAAQS.

8.3.5 Carbon Monoxide

Based on the air dispersion modelling results, predicted CO levels are below BC air quality objectives at the human receptor locations (i.e., less than 5% of the objective). The maximum 1-h CO concentration at any human receptor is 317 ug/m³ while the objective is 14,300 ug/m³. The maximum 8-h CO concentration is 205 ug/m³ while the objective is 5,500 ug/m³.

CO monitoring is normally not recommended for these low levels; however, CO monitoring is a requirement of the DS Condition #6.12.

BW Gold conducted an extensive search for alternative methods to collect passive CO samples and based on recommendations from our Air Quality Qualified Professional (QP), Passam Ag Laboratory was identified as a suitable source (Passam AG 2022). North American laboratories were found to only analyze active CO samples. Passam Ag is an accredited laboratory with the Swiss Confederation.

The Passive CO field sampling follows a methodology like the passive SO₂ and NO₂, as outlined in the ENV's Standard Operating Procedure for the Passive/ Diffusive Method of Air Sampling Collection (SOP-07 dated May 5, 2020), found within the BCFSM Part B1 appendix (BC ENV 2020). The passive sampler collects pollutants over the entire exposure period (2-weeks) in a housing unit positioned 2 meters above the ground level, away from any obstructions such as trees and buildings.

CO is monitored near the Partisol location outlined in Section 8.3.3.1, along side the passive NO₂ and SO₂ monitors. The CO samples are deployed for a 2-week period and then swapped out with new samples. Passive CO concentrations are monitored continuously throughout the year.

8.3.6 Point Source Discharge Monitoring

The following point source monitoring will be undertaken as per Table 8.3-3, and the results thereof submitted to ENV as part of annual reporting requirements under the air emissions permit. As described in Permit #110650, point source monitoring must be conducted by a certified stack sampler following the *British Columbia Field Sampling Manual Part B*. The sampling and analyses must be conducted once in the first six months of operation, and then once every five years, under normal operating conditions. A minimum of five days prior to each event, the EM will notify ENV that sampling is scheduled.

Table 8.3-3: Blackwater Mine Point Sources

Source	EMS No.	Parameters
Primary Crusher	E328676	Total particulate matter concentration, flow rate and mass emission rate
Secondary Crusher	E328677	
Tertiary Crusher	E328679	
Reclaim Tunnel	E328680	
Fire Assay Lab	E328687	
Fire Assay Sample Prep Area	E328686	
Cyanide Prep Area	E328683	
Copper Sulphate Mix Tank	E328684	
Incinerator	E328685	

The baghouses and dust suppression systems will be operated and maintained in accordance with the manufacturer's specifications.

The operating pressure drop for the baghouses will be maintained within the design conditions specified by the manufacturer's performance warranty. The baghouses will be equipped with a gauge or meter, which indicates the pressure drop across the control device. If the manufacturer's specifications are unavailable then the pressure drop will not be less than 1.0 inches of water column or more than 10.0 inches of water column.

BW Gold will comply with the manufacturers recommended schedule for inspecting and maintaining control equipment. If the inspection frequency is not specified by the manufacturer, recommended inspection and maintenance activities will be conducted at least once per quarter.

8.3.7 Quality Assurance / Quality Control

The quality assurance/quality control (QA/QC) program for air quality will include:

- Use of standard field data sheets and SOPs (e.g., for calibration of the Partisol and PASS sampling equipment) for field sampling and data collection;
- Review of data once transferred to a database to minimize the potential for transcription errors;
- Appropriate training for field personnel responsible for collecting samples;
- Use of chain of custody (COC) forms and CALA-accredited laboratory for analysis of samples; and
- Appropriate laboratory-based QA/QC programs, consistent with the requirements of the British Columbia Environmental Laboratory Manual (BC ENV 2024).

8.4 Community Feedback Mechanism

Pursuant to DS Condition 6.3, BW Gold will establish a feedback mechanism to manage input and complaints related to exposure to dust from the Mine during construction, operation and decommissioning. Complaints may arise from Mine-related use of the FSRs between Vanderhoof and the Mine site. Monitoring activities will include a review of any complaints received from the public related to fugitive dust and air quality and an initial response within 48 hours. Complaints will be carefully investigated, tracked and logged, contributing factors that may have resulted in the complaint, and any actions that were undertaken and follow-up to address the complaint. Complaints may require a more in-depth root cause analysis and result in modification of the Plan.

In the event that COPC limits and corresponding concentration triggers identified in Section 9 (Adaptive Management Trigger Action Response) of the AQFDMP are exceeded, BW Gold will notify the EAO, ENV, EMLI, Northern Health and Aboriginal Groups and Independent Environmental Monitor. As required by EAC Condition 20, the notification will include both a technical report and a plain language summary of the technical report. The report will be public by posting it to the Blackwater Mine website.

9.0 Adaptive Management and Follow-up Program

The AQFDMP is a living document that will evolve over time in response to the results of the monitoring program, changing conditions or development at the Mine, updates to scientific methods, and through consultation and discussions with Indigenous Nations, regulators, or other stakeholders. This process of continuous improvement with changing conditions is referred to as adaptive management.

Condition 6.12 of the DS requires BW Gold to develop an air quality follow-up program as follows:

The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental pertains to adverse environmental effects of the Designated Project on the health of Indigenous Peoples as a result of changes to air quality and determine the effectiveness of mitigation measures. As part of the implementation of the follow-up program, the Proponent shall monitor nitrogen dioxide (NO₂), sulfur dioxide (SO₂), fine particulate matter (PM_{2.5}), particulate matter (PM₁₀), dust, and carbon monoxide (CO) in air. The Proponent shall implement the follow-up program during all phases of the Designated Project and shall apply conditions 2.9 and 2.10 when implementing the follow-up program.

The federal DS requirements related to follow-up and adaptive management are:

“2.5 The Proponent shall, where a follow-up program is a requirement of a condition set out in this Decision Statement, have a Qualified Professional, where such a qualification exists for the subject matter of the follow-up program, determine, as part of the development of each follow-up program and in consultation with the party or parties being consulted during the development, the following information:

2.5.1 the follow-up activities that must be undertaken by a qualified individual;

2.5.2 the methodology, location, frequency, timing and duration of monitoring associated with the follow-up program;

2.5.3 the scope, content, format and frequency of reporting of the results of the follow-up program;

2.5.4 the levels of environmental change relative to baseline conditions that would require the Proponent to implement modified or additional mitigation measure(s), including instances where the Proponent may require Designated Project activities to be stopped; and

2.5.5 the technically and economically feasible mitigation measures to be implemented by the Proponent if monitoring conducted as part of the follow-up program shows that the levels of environmental change referred to in condition 2.5.4 have been reached or exceeded.

2.6 The Proponent shall update and maintain the follow-up and adaptive management information referred to in condition 2.5 during the implementation of each follow-up program in consultation with the party or parties being consulted during the development of each follow-up program.”

Condition 3 of the EAC requires an adaptive management plan to provide a framework for identifying triggers to determine effectiveness of mitigation and whether additional mitigation is required to address air quality effects. The adaptive management plan, as defined in Condition 3(d) to 3(l) of the EAC, must include at least the following:

“3(d) the monitoring program that will be used including methods, location, frequency, timing and duration of the monitoring;

- 3(e) *the baseline information that will be used, or collected where existing baseline information is insufficient, to support the monitoring program;*
- 3(f) *the scope, content and frequency of reporting of the monitoring results;*
- 3(g) *the identification of qualitative and quantitative triggers, which, when observed through monitoring required under paragraph d), will require the Holder to alter existing, or develop new, mitigation measures to avoid, reduce, and/or remediate effects;*
- 3(h) *methods that will be applied to detect when a numeric trigger, or type or level of change referred to in paragraph g) occurs;*
- 3(i) *a description of the process for and timing to alter existing mitigation measures or develop new mitigation measures to reduce or avoid effects;*
- 3(j) *identification of the new and/or altered mitigation measures that will be applied when any of the changes identified in paragraphs a) to c) occur, or the process by which those will be established and updated over the relevant timeframe for the specific condition;*
- 3(k) *the monitoring program that will be used to determine if the altered or new mitigation measures and/or remediation activities are effectively mitigating or remediating the effects and or avoiding potential effects; and*
- 3(l) *The scope, content and frequency of reporting on the implementation of altered or new mitigation measures.”*

9.1 Air Quality Trigger Response Framework

Triggers are provided for the following action levels of the adaptive management framework: none, and low, medium; and high. The framework is intended to provide an early-warning system such that when defined action levels are triggered there is sufficient time to prevent irreversible adverse environmental effects to health of Indigenous Peoples.

The air quality adaptive management triggers and responses are provided in Table 9.1-1. The actions that will be taken are based on visual inspections of fugitive dust on the MAR and mine site roads, dustfall monitoring, PM, PM₁₀, and PM_{2.5}, metals, SO₂ and NO₂ measurements at the operations camp. An appropriate action level will be developed based on guidance in the adaptive management framework: British Columbia Ambient Air Quality Objectives (BC ENV 2021) for particulate matter and gases such as nitrogen dioxide and sulfur dioxide.

It is important to note that appropriate action responses resulting from dust observations are quite different than appropriate action responses resulting from fine PM measurements. When visible dust is observed, typically the source of the dust will be evident, and the mitigation measures are well-defined as shown in Table 9.1-1.

The PM₁₀ and PM_{2.5} concentrations will be measured on 24-hour basis every three days during summer and every six days during winter and there will be a delay between the measurement date and reporting results after weighing the filter for the 24-hour period. Additionally, unlike a visible dust observation, the source of the elevated PM₁₀ and PM_{2.5} concentrations may or may not be immediately apparent. Some analysis may be required to determine the cause and specify appropriate corrective action(s). This analysis will involve determining the operational and/or meteorological conditions that were present during the elevated PM event and determining if operational changes should be implemented to limit emissions.

Table 9.1-1: Trigger Action Response

Component	Location	Permit Limit	Level	Trigger	Management Response	Documentation, and People and Parties to Notify
Fugitive Dust (TSP)	Unpaved Roads	Indeterminant ¹	None	Dust plume less than half the height of a haul truck tire.	No action. Continue work in accordance with site management procedures.	No action.
			Level 1, Low	Dust plume less than half the size of a haul truck for any period of time up to 30 minutes.	Limited watering of high traffic areas. Repeat visual inspection every 2 hours depending on weather.	Immediately report to Departmental Manager.
			Level 2, Medium	Dust plume same size as a haul truck extending beyond local area for periods longer than half a day.	Continuous watering of high traffic areas until dust plume subsides. Speed limit restrictions in high traffic areas.	Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional. Immediately provide email notification and supporting information to the BC ENV Director ² : envauthorizationsreporting@gov.bc.ca . After inspections are complete, a log of the findings will be filled out by the Departmental Manager.
			Level 3, High	Dust plume greater than the size of a haul truck for periods longer than 1 day, or when dust plumes extend beyond the active mine area/infrastructure.	Increase frequency of watering and if not successful examine longer use of alternative dust suppressants (e.g., calcium or magnesium chloride, lignin compounds, environmentally friendly oils or clay additives). Speed limit restrictions may be required if dust cannot be controlled by watering. Closure of certain routes may be required if dust cannot be controlled by watering or speed restrictions.	Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional. Immediately provide email notification and supporting information to the BC ENV Director ² : envauthorizationsreporting@gov.bc.ca . Notify Indigenous Nations. After inspections are complete, a log of the findings will be filled out by the Departmental Manager.
	Surface Earthworks	Indeterminant ¹	None	Minor localized dust (dust plumes that are less than 2 m in height) during construction and normal mine operations.	No action. Continue work in accordance with site management procedures.	No action.
			Level 1, Low	Visible dust plumes rising over 2 m above the active construction area for longer than 30 minutes.	Minimize material movement in areas with active construction or operation and heavy equipment use.	Immediately report to Departmental Manager.
			Level 2, Medium	Triggers per level 1 but with dust plume extending beyond local area for periods longer than half a day.	Application of water to exposed construction area (if this is a source).	Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional. Immediately provide email notification and supporting information to the BC ENV Director ² : envauthorizationsreporting@gov.bc.ca . After inspections are complete, a log of the findings will be filled out by the Departmental Manager.
			Level 3, High	Extensive areas of dust generation with large dust plumes for periods longer than 1 day or when dust plumes extend beyond the active mine area/infrastructure.	Increase frequency of watering and if not successful apply gravel to exposed construction area (if this is a source). Investigate long term solutions if dust plumes persist.	Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional. Immediately provide email notification and supporting information to the BC ENV Director ² : envauthorizationsreporting@gov.bc.ca . Notify Indigenous Nations After inspections are complete, a log of the findings will be filled out by the Departmental Manager.

Component	Location	Permit Limit	Level	Trigger	Management Response	Documentation, and People and Parties to Notify
Fugitive Dust (TSP; <i>cont'd</i>)	Stockpiles	Indeterminant ¹	None	Minor localized dust (dust plumes that are less than 2 m in height) during construction and normal mine operations.	No action. Continue work in accordance with site management procedures.	No action.
			Level 1, Low	Visible dust plumes rising over 2 m above the ground for longer than 30 minutes.	Turn on spray bar sprinklers ⁵ . During periods where temperatures are below freezing add reagents to control dust.	Immediately report to Departmental Manager.
			Level 2, Medium	Triggers per level 1 but with dust plume extending beyond local area for periods longer than half a day.	Increase the rate of water application using spray bar sprinklers ⁵ . During periods where temperatures are consistently below freezing, add reagents to control dust.	Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional. Immediately provide email notification and supporting information to the BC ENV Director ² : envauthorizationsreporting@gov.bc.ca . After inspections are complete, a log of the findings will be filled out by the Departmental Manager.
			Level 3, High	Extensive areas of dust generation with large dust plumes for periods longer than 1 day or when dust plumes extend beyond the active mine area/infrastructure.	Examine the possibility of re engineering the spray bar sprinklers ⁵ to provide more effective water coverage of transfer points.	Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional. Immediately provide email notification and supporting information to the BC ENV Director ² : envauthorizationsreporting@gov.bc.ca . Notify Indigenous Nations. After inspections are complete, a log of the findings will be filled out by the Departmental Manager.
	Material handling transfer locations	Indeterminant ¹	None	Minor localized dust (dust plumes that are less than 2 m in height) during construction and normal mine operations.	No action. Continue work in accordance with site management procedures.	No action.
			Level 1, Low	Visible dust plumes rising over 2 m above the ground for longer than 30 minutes.	Turn on spray bar sprinklers ⁵ . During periods where temperature are below freezing add reagents to control dust.	Immediately report to Departmental Manager.
			Level 2, Medium	Triggers per level 1 but with dust plume extending beyond local area for periods longer than half a day.	Increase the rate of water application using spray bar sprinklers. During periods where temperature are below freezing, add reagents to control dust.	Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional. Immediately provide email notification and supporting information to the BC ENV Director ² : envauthorizationsreporting@gov.bc.ca . After inspections are complete, a log of the findings will be filled out by the Departmental Manager.
			Level 3, High	Extensive areas of dust generation with large dust plumes for periods longer than 1 day or when dust plumes extend beyond the active mine area/infrastructure.	Examine the possibility of re engineering the spray bar sprinklers to provide more effective water coverage of transfer points.	Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional. Immediately provide email notification and supporting information to the BC ENV Director ² : envauthorizationsreporting@gov.bc.ca . Notify Indigenous Nations. After inspections are complete, a log of the findings will be filled out by the Departmental Manager.

Component	Location	Permit Limit	Level	Trigger	Management Response	Documentation, and People and Parties to Notify
PM ₁₀ and PM _{2.5}	Operations Camp	PM ₁₀ (24-hour average): 50 µg/m ³ PM _{2.5} (24-hour average): 25 µg/m ³ PM _{2.5} (annual average): 8 µg/m ³	None	The PM ₁₀ and PM _{2.5} concentration at the Operations Camp is less than or equal to 50% of the Ambient Air Quality Objective ⁴ , or less than or equal to the baseline value. PM ₁₀ (24-hour average): ≤25 µg/m ³ PM _{2.5} (24-hour average): ≤12.5 µg/m ³ PM _{2.5} (annual average): ≤4 µg/m ³	No action. Continue monitoring.	No action.
			Level 1, Low	The PM ₁₀ and PM _{2.5} concentration at the Operations Camp is greater than 50% but less than or equal to 80% of the Ambient Air Quality Objective ⁴ , and is above the baseline value, and the site air quality is not influenced by wildfire smoke ⁶ . PM ₁₀ (24-hour average): >34 and ≤40 µg/m ³ PM _{2.5} (24-hour average): >12.5 and ≤20 µg/m ³ PM _{2.5} (annual average): >4 and ≤6.4 µg/m ³	Continue monitoring. Develop causal analysis and associated mitigations in addition to a schedule for implementation.	Immediately report to Departmental Manager.
			Level 2, Medium	The PM ₁₀ and PM _{2.5} concentration is greater than 80% but less than or equal to 100% of the Ambient Air Quality Objective ⁴ , and the site air quality is not influenced by wildfire smoke ⁶ . PM ₁₀ (24-hour average): >40 and ≤50 µg/m ³ PM _{2.5} (24-hour average): >20 and ≤25 µg/m ³ PM _{2.5} (annual average): >6.4 and ≤8 µg/m ³	Continue monitoring. Develop causal analysis and associated mitigations in addition to a schedule for implementation. Implement mitigations developed at the low action level.	Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional. Immediately provide email notification and supporting information to the BC ENV Director ² : envauthorizationsreporting@gov.bc.ca . After inspections are complete, a log of the findings will be filled out by the Departmental Manager.
			Level 3, High	The PM ₁₀ and PM _{2.5} concentration is greater than the Ambient Air Quality Objective ⁴ , and the site air quality is not influenced by wildfire smoke ⁶ . PM ₁₀ (24-hour average): >50 µg/m ³ PM _{2.5} (24-hour average): >25 µg/m ³ PM _{2.5} (annual average): >8 µg/m ³	Continue monitoring. Implement mitigations developed at the medium action level.	Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional. Immediately provide email notification and supporting information to the BC ENV Director ² : envauthorizationsreporting@gov.bc.ca . Notify Indigenous Nations After inspections are complete, a log ³ of the findings will be filled out by the Departmental Manager.
SO ₂ and NO ₂	Operations Camp	Not specified in the Permit for gaseous parameters.	None	The annual average SO ₂ and/or NO ₂ concentration is less than or equal to 50% of the Ambient Air Quality Objective.	No action. Continue monitoring.	No action.
			Level 1, Low	The annual average SO ₂ and/or NO ₂ concentration is greater than 50% but less than or equal to 80% of the Ambient Air Quality Objective.	Continue monitoring. Develop causal analysis and associated mitigations in addition to a schedule for implementation based on the exceedance level.	Immediately report to Departmental Manager.

Component	Location	Permit Limit	Level	Trigger	Management Response	Documentation, and People and Parties to Notify
			Level 2, Medium	The annual average SO ₂ and/or NO ₂ concentration is greater than 80% but less than or equal to 100% of the Ambient Air Quality Objective.	Develop causal analysis and associated mitigations in addition to a schedule for implementation.	Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional. Immediately provide email notification and supporting information to the BC ENV Director ² : envauthorizationsreporting@gov.bc.ca . After inspections are complete, a log of the findings will be filled out by the Departmental Manager.
			Level 3, High	The annual average SO ₂ and/or NO ₂ concentration is greater than the Ambient Air Quality Objective.	Implement mitigations developed at the medium action level.	Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional. Immediately provide email notification and supporting information to the BC ENV Director ² : envauthorizationsreporting@gov.bc.ca . Notify Indigenous Nations After inspections are complete, a log of the findings will be filled out by the Departmental Manager.

Notes:

¹ The air discharge Permit 110650 states the maximum authorized rate of discharge for fugitive dust is indeterminant.

² The air discharge Permit 110650 states: “4.2.5 If any medium or high triggers listed in the TRP are exceeded, the permittee must immediately provide notification to the director via email to envauthorizationsreporting@gov.bc.ca. This notification must include the following information: a) Any supporting data confirming the exceedance of the trigger, and b) A summary of the actions taken and/or planned in response to the trigger exceedance.”

³ The log will contain information on the location where dust plumes were visible, their approximate size and temporal persistence, activities occurring that may have caused the dust plume, meteorological conditions at the time and any actions taken. See Section 3 for more information.

⁴ The most recent BC Ambient Air Quality Objectives are to be used: BC ENV 2022a. These values will be updated by the government over time.

⁵ Spray bar sprinklers will be installed once trialing is complete.

⁶ The influence of regional and mine site wildfire smoke will be determined by comparing contemporaneous measured concentrations of PM₁₀ and PM_{2.5} at the Operations Camp to Vanderhoof Court House (ENV) and Quesnel Johnson Avenue (ENV), by using data from Purple Air monitors, and by examining PM_{2.5} concentrations due to wildfires as modelled by firesmoke.ca.

For these reasons, the action/response associated with each level of alert is expressed in terms of how quickly the analysis and response is to be carried out. It is possible that fugitive dust will contribute to PM₁₀/ PM_{2.5} concentrations, and thus actions taken in response to visual observations may be part of the response for elevated PM₁₀/ PM_{2.5}. The actions/responses for PM₁₀/ PM_{2.5} listed in Table 9.1-1 are triggered based on 24-hour measurements since annual averages will only be known on an annual basis. As part of the adaptive management process the frequency of elevated 24-hour PM₁₀/ PM_{2.5} concentrations and the trend analyses of PM₁₀/ PM_{2.5} concentrations will be tracked and evaluated to provide assurance that the standards and objectives are achieved.

As forest fire smoke can significantly affect regional PM₁₀ and PM_{2.5} concentrations it is an important condition to identify if monitoring level are elevated to avoid progressing with management responses. To determine if a Level 2 or 3 trigger for PM_{2.5} and PM₁₀ is a result of non-Mine related activity BW Gold will review data from regional air quality stations at Vanderhoof Court House and Quesnel Johnson Avenue, operated by ENV, and from wildfire related PM_{2.5} modelling at firesmoke.ca. By looking at the data listed above and from onsite meteorology it will be determined if a true Level 2 or Level 3 trigger did occur.

The EM or a qualified person will be responsible for calculating the 3-month trend analyses PM_{2.5} concentration and will evaluate the frequency of occurrence of elevated 24-hour PM₁₀ and PM_{2.5} concentrations. Based on the findings, the EM may propose modifications to emissions control equipment and/or to dust management and amend the AQFDMP. In addition, the EM will compare measurements to predictions from the effects assessment and make recommendations regarding modifications to mitigation measures if warranted.

If there is an air quality advisory issued by ENV that affects the region where the mine is located, the EM will determine if an adjustment to a higher alert level described in Table 9.1-1 is required to further mitigate dust emissions.

Passive sampling for SO₂ and NO₂ and low-flow particulate sampling with Partisols or similar units to monitor fine particulates at Tatelkuz Lake Resort and Tatelkus Lake 28 will be established to monitor air quality impacts offsite in the case that air quality monitoring on-site indicates it is required.

A copy of the *Blackwater Mine: Air Quality Trigger Response Plan (TRP) for Fugitive Dust Non-Point Source Discharges to Air* is included in Appendix D.

9.2 Follow-up Program

A Follow-up Program (FUP) will be conducted through all phases of the Mine as defined by the federal DS Condition 6.12. The FUP has been developed and will continue to be updated in consultation with Indigenous groups (see Sections 8.4, 10.1.2, and 11). The main objective of the FUP will be to compare results of the air quality monitoring program with predictions made in the Environmental Assessment and determine the effectiveness of mitigation measures. Monitoring components will include NO₂, SO₂, PM_{2.5}, PM₁₀, dust, and CO.

To determine if modified or additional mitigation measures are required the results of the monitoring program will be compared to the predicted concentrations of criteria air contaminants shown in Tables 7.2-1 and 7.2-2. The predicted concentrations are considered to be baseline concentrations for the purposes of the FUP. None of the baseline concentrations reported in Tables 7.2-1 and 7.2-2 exceeded ambient air quality standards.

If the monitoring program as described in Section 8.3 exceeds the criteria air contaminant standards provided in Table 7.1-1 then additional mitigation measures including contingency measures described

in Table 8.2-1 will be considered and implemented where required. The final determination of which additional mitigation will be required will be based on an analysis of the causes of the exceedances. The FUP will, over time, inform the monitoring program and adaptive management to improve mitigations, and result in closer tracking of predicted results with monitored results:

- Low = exceed baseline – continue monitoring;
- Medium = exceed baseline and predicted – continue monitoring, develop casual analysis (if observed concentrations are approaching the guidelines); and
- High = exceed baseline, predicted, and guideline – implement mitigations plan, increase sampling frequency, etc.

The FUP will be conducted on an annual basis as part of the annual reporting as described in Section 11.

10.0 Reporting and Record Keeping

10.1 Reporting

10.1.1 *Environmental Management Act* Annual Reporting

Environmental Management Act Permit #110650 requires annual reports to be prepared by a qualified professional and be submitted to ENV. Annual reports are public documents and include a summary of environmental incidents and complaints, all monitoring under permits, an assessment of the data, and recommendations as appropriate. The reporting must also conform to the requirements outlined in *Developing a Fugitive Dust Management Plan for Mines in BC* (BC EMLI & ENV 2023) which require that adaptive management be used to evaluate the effectiveness and direct continual improvement of the AQDMP.

BW Gold will follow reporting requirements in Technical Guidance 4 (BC MOE 2016a) and any amendments or updates thereto. Permit #110650 annual reporting must be submitted by March 31 of each year.

10.1.2 Decision Statement Annual Reporting

Annual reporting and information sharing requirements in the federal DS applicable to this plan are identified below. Conditions 2.11, 2.12, 2.13 and 2.14 identify annual reporting and information sharing requirements as follows:

- Condition 2.11 requires “The proponent [BW Gold] shall, commencing in the reporting year during which the proponent begins the implementation of the conditions set out in the DS, prepare an annual report that describes the activities undertaken by the proponent [BW Gold] in the reporting year to comply with each condition in the DS” as well as other matters identified in the Condition.
- Condition 2.12 requires “The proponent [BW Gold] shall provide a draft annual report in condition 11 to Indigenous groups, no later than June 30 following the reporting year to which the annual report applies. BW Gold shall consult the Indigenous groups on the content and findings in the draft annual report”.
- Condition 2.13 requires “The proponent [BW Gold] in consideration of any comments received from Indigenous groups pursuant to condition 2.12, shall revise and submit to the Agency [Impact Assessment Agency of Canada] and Indigenous groups a final annual report, including an executive summary in both official languages, no later than September 30 following the reporting year to which the annual report applies”.
- Conditions 2.14 requires:
 - “The Proponent [BW Gold] shall publish on the Internet, or any medium which is publicly available, the annual reports and the executive summaries...”. Names and contact information will be removed from the annual reports to protect confidentiality.
 - “The Proponent [BW Gold] shall keep these documents publicly available for 25 years following the decommissioning of the Designated Project”.
 - “The Proponent [BW Gold] shall notify the Agency and Indigenous groups of the availability of these documents within 48 hours of their publication”.

In addition, the DS Condition 6.15 requires that a plan to communicate the results of the FUP (Section 9.2) in plain language to Indigenous Groups and the relevant authorities as discussed in Section 10. This will be satisfied through the Annual Report.

10.1.3 Environmental Assessment Certificate #M19-01 Annual Reporting

Condition 5 of the EAC sets out reporting requirements. BW Gold will submit a report to the attention of the Environmental Assessment Office and Aboriginal Groups on the status of compliance with EAC #M19-01 at the following times:

- a. at least 30 days prior to the start of Construction;
- b. on or before March 31 in each year after the start of Construction;
- c. at least 30 days prior to the start of Operations;
- d. on or before March 31 in each year after the start of Operations;
- e. at least 30 days prior to the start of Closure;
- f. on or before March 31 in each year after the start of Closure until the end of Closure;
- g. at least 30 days prior to the start of Post-Closure; and
- h. on or before March 31 in each year after the start of Post-Closure until the end of Post-Closure.

10.2 Emergency Reporting and Process Modification Procedures

In the event of an emergency or other condition which prevents normal operation of the air pollution control systems described in Section 5.3 or leads to an unauthorized discharge, BW Gold will take immediate action to restore the normal operation and to prevent any unauthorized discharges. The emergency or other condition along with the remedial action taken and planned, will be reported to the EnvironmentalCompliance@gov.bc.ca email address or as otherwise instructed by ENV.

If a spill (including airborne spills such as a gaseous leak) or the risk of a spill occurs, BW Gold will report it immediately by calling 1-800-663-3456 in accordance with the Spill Reporting Regulation.

Should BW Gold wish to modify a process that may increase the generation of fugitive dust and/or adversely affect the quality and/or quantity of the discharge to the receiving environment, ENV will be notified before implementing changes to any process. The notification must include details of any mitigation measures to be implemented as a result of the process modification. In addition, BW Gold will request written approval should there be a need to bypass processes authorized by ENV.

10.3 Record Keeping

The EM will be responsible for ensuring dust events are logged, including details of the on-site activities, meteorological conditions, and the management actions taken. The EM will also be responsible for ensuring that analysis and mitigation for any fine PM event is completed in a timely manner. Records will be maintained for:

- Public complaints;
- Meteorological stations;
- Dust visual observations;

- Particulate matter monitoring; and
- NO₂, SO₂ and CO monitoring.

Monitoring data will be entered into an electronic database and have quality control checks completed upon receipt of results. Data will be entered into a standard format that allows for data reporting and analyses. Data and data comparisons will be stored in a single file format for each type of survey or monitoring activity. Monitoring records will be maintained and retained in accordance with Conditions 12.1 and 12.2 of the federal DS respectively. The records will be made available upon request.

11.0 Plan Revisions

The AQFDMP will be reviewed annually by a qualified professional per ELoMC annual schedule to: review the monitoring program; confirm that the measures in the plan are being implemented; and identify any improvements to improve the effectiveness of fugitive dust best management practices. AQFDMP revisions will be required:



- If the monitoring program shows that the effects of the Mine are not mitigated to the extent contemplated or predicted in the Application/EIS (New Gold 2015) or exceed adaptive management triggers;
- There are new and /or changes to emission sources; and
- There are changes to other relevant management plans and regulatory requirements; and
- There are amendments to the operating permit conditions.

Proposed changes are documented in a change log document including rationale for changes, which will be provided concurrently with (where possible) or following resubmission of the AQDMP.

As required by EAC #M19-01 Condition 20, the plan and any amendments will be implemented to the satisfaction of a qualified professional throughout construction, operations, and closure and to the satisfaction of the EAO. Revised versions of the AQFDMP will be provided to EAO, ELoMC, and Northern Health through the Condition 42 public website. Upon submission of updated Management plans, reviewers will be invited to share and direct any comments, questions or concerns on the AQDMP updates through the ELoMC. Regular presentations on the implementation of management plans including the AQDMP will also be provided to reviewers per the ELoMC annual schedule of topics/development of monthly meeting agendas.

12.0 Authorship and Declaration

This management plan has been prepared and reviewed by the following professionals:

Reviewer Role	Name	Signature	Date
Prepared by:	Daniel Casanova, B.Sc., EP (Air Quality) Principal Consultant, Atmospheric Scientist Air quality Qualified Professional ¹	 <small>Daniel Casanova, signed 2025-04-30 Blackwater Air Quality and Fugitive Dust Management Plan Document version J.1, dated 2025-04-30</small>	04/30/2025
Reviewed by:	Patty Vadnais, M.Sc. Principal Consultant, Project Management		04/30/2025

Notes:

ERM Permit to Practice No.: 1001271

¹ Qualified Professional as defined by Permit 110650 (amended September 9, 2024; BC ENV 2024)

As required by air discharge Permit #110650 condition 6.8.2 (September 9, 2024 amendment; BC ENV 2024), this document has been prepared in accordance with the professional standards governing the Qualified Professional. Any statements of fact included in the document are, to the best of the knowledge and belief of the Qualified Professional true, based on appropriate review and investigation. Any opinions expressed in the document are, based on professional judgement and review of available information, fair and reasonable. BC ENV Conflict of Interest and Declaration of Competency forms required for Qualified Professionals by Permit #110650 condition 6.8 are included in Appendix F.

13.0 References

Definitions of the acronyms and abbreviations used in this reference list can be found in the Acronyms and Abbreviations section.

Legislation

Canadian Environmental Protection Act, 1999, SC 1999, c. 33.

Code of Practice for the Concrete and Concrete Products Industry, BC Reg. 329/2007.

Declaration on the Rights of Indigenous Peoples Act, SBC 2019, c. 44.

Environmental Assessment Act, SBC 2018, c. 51.

Environmental Management Act, SBC 2003, c. 53.

Impact Assessment Act, RSC 2019, c. 28.

Mines Act, RSBC 1996, c. 293.

Open Burning Smoke Control Regulation, BC Reg. 145/93.

Sulphur in Diesel Fuel Regulation, SOR/2002-254.

United Nations Declaration on the Rights of Indigenous Peoples Act, SC 2021, c. 14.

Waste Discharge Regulation, BC Reg. 320/2004.

Secondary

BC EAO. 2019a. *Assessment Report for Blackwater Gold Mine Project (Blackwater) With respect to the Application by New Gold Inc. for an Environmental Assessment Certificate pursuant to the Environmental Assessment Act*, S.B.C. 2002, c.43. Prepared by the Environmental Assessment Office. May 17, 2019.

BC EAO. 2019b. *Summary Assessment Report for Blackwater Gold Mine Project (Blackwater) With respect to the application by New Gold Inc. for an Environmental Assessment Certificate pursuant to the Environmental Assessment Act*, S.B.C. 2002, c. 43.

BC EAO. 2019c. *In the matter of the ENVIRONMENTAL ASSESSMENT ACT S.B.C. 2002, c. 43 (the Act) and in the matter of an Application for an Environmental Assessment Certificate (Application) by New Gold Inc. (Proponent) for the Blackwater Gold Project Environmental Assessment Certificate #M19-01.*

BC EMLI. 2024. *Health, Safety and Reclamation Code for Mines in British Columbia*. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/mineral-exploration-mining/documents/health-and-safety/code-review/minescode_april_2024_web.pdf (accessed April 2025).

BC EMLI & ENV. 2023. *Developing a Fugitive Dust Management Plan for Mines in BC* (November 2023, Version 01.00). https://www2.gov.bc.ca/assets/gov/environment/waste-management/industrial-waste/industrial-waste/mining-smelt-energy/guidance-documents/dust_management_plan_guidance.pdf (accessed April 2025).

BC EMPR & ENV. 2019. *Joint Application Information Requirements for Mines Act and Environmental Management Act Permits*. Government of BC. Victoria, BC. September. Victoria.

- BC ENV. 2020. *The British Columbia Field Sampling Manual: Part B Air and Air Emissions Testing*. https://www2.gov.bc.ca/assets/gov/environment/research-monitoring-and-reporting/monitoring/emre/manuals/field-sampling-manual/bc_field_sampling_manual_part_b.pdf (accessed April 2025).
- BC ENV. 2021. *British Columbia Ambient Air Quality Objectives*. British Columbia Ministry of Environment and Climate Change Strategy. https://www2.gov.bc.ca/assets/gov/environment/air-land-water/air/reports-pub/prov_air_qual_objectives_fact_sheet.pdf (accessed April 2025).
- BC ENV. 2024. *B.C. Environmental Laboratory Manual*. <https://www2.gov.bc.ca/gov/content/environment/research-monitoring-reporting/monitoring/laboratory-standards-quality-assurance/bc-environmental-laboratory-manual> (accessed April 2025).
- BC MOE. 2016a. *Technical Guidance 4. Environmental Management Act Authorizations. Annual Reporting Under the Environmental Management Act. A Guide for Mines in British Columbia*. Version 1.3.
- BC MOE. 2016b. *Water and Air Baseline Guidance Document for Mine Proponents and Operators*. Version 2.
- CCME. 2025. *Air Quality*. Canadian Council of Ministers of the Environment. <https://ccme.ca/en/air-quality-report#slide-7> (accessed April 2025).
- CEA Agency. 2019. *Decision Statement Issued under Section 54 of the Canadian Environmental Assessment Act, 2012 to New Gold Inc. c/o Ryan Todd, Director, Blackwater Project Sunlife Plaza Suite 610, 1100 Melville Street Vancouver, British Columbia V6E 4A6 for the Blackwater Gold Project*.
- ENV. 2020. *Technical Guidance. Dustfall Monitoring and Pollution Control Objectives*. https://www2.gov.bc.ca/assets/gov/environment/waste-management/waste-discharge-authorization/guides/templates/gui-tec-041_dustfall_monitoring.pdf?bcgovtm=20200319GCPE_AM_COVID_4_NOTIFICATION_BCGOV_BCGOV_EN_BC_NOTIFICATION (accessed April 2025).
- ERM. 2024. *Memo: EMA Permit 110650 – Air Quality and Fugitive Dust Management Plan Review* (December 19, 2024). Prepared for Artemis Gold Inc. by ERM Consultants Canada Ltd.: Vancouver, BC.
- Entia. 2021. *Blackwater Gold Project: Human Health Risk Assessment Update*. Prepared for BW Gold LTD. by Entia Environmental Consultants Ltd.: Campbell River, BC. November 2021.
- Haller, L. C. Claiborn, T. Larson, J. Koenig, G. Norris and R. Edgar (1999). *Airborne Particulate Matter Size Distributions in an Arid Urban Area*. *J. Air & Waste Manage. Assoc.* 49:161 168.
- Health Canada. 2016. *Guidance for Evaluating Human Health Impacts in Environmental Assessment: Air Quality*. https://publications.gc.ca/collections/collection_2017/sc-hc/H129-54-1-2017-eng.pdf (accessed April 2025).
- Istituti Clinici Scientifici Maugeri. *Radiello User Manual 2019*. Edition 01/2019.
- KP. 2021a. *Blackwater Gold Project: 2020 Baseline Climate Report*. Prepared by Knight Piésold Ltd. for BW Gold Ltd. VA101-457/33-4. January 2021.
- KP. 2021b. *Blackwater Gold Project: 2020 Hydrometeorology Report*. Prepared by Knight Piésold Ltd. for BW Gold Ltd. VA101-457/33-4. May 2021.

- MMTS. 2021. *Blackwater Gold Project: Open Pit and Stockpile Design Report*. Prepared by Moose Mountain Technical Services for Artemis Gold Inc. Cranbrook, BC.
- New Gold. 2015. *Blackwater Gold Project Environmental Assessment Application/Environmental Impact Statement*. Prepared by AMEC Environment & Infrastructure for New Gold Inc.: Vancouver, BC.
- Passam AG. 2022. Product Sheet: *Diffusive Sampler for Carbon Monoxide*. https://www.passam.ch/wp-content/uploads/2022/02/SP23_CO_Product-Sheet_2022_EN.pdf (accessed April 2025).
- Thermo Scientific. 2015. Partisol 2025i Sequential Air Sampler / Partisol 2025i-D Dichotomous Sequential Air Sampler Instruction Manual. <https://assets.thermofisher.com/TFS-Assets/LSG/manuals/EPM-manual-Partisol-2025i-2025iD.pdf> (accessed April 2025).

Appendix A Concordance with Environmental Assessment Certificate #M19-01 (June 21, 2019)

Appendix A Concordance with Environmental Assessment Certificate #M19-01 (June 21, 2019)

Condition #	Description	Action/Location in the Plan
1.	<p>Document Review and Implementation</p> <p>Where a condition of this Certificate requires the Holder to provide a plan, program or other document, the Holder must provide the plan, program or other document to the EAO and Aboriginal Groups in the timeframe referenced in such condition, unless otherwise approved by the EAO. The EAO may, within 60 days of receiving a copy of such plan, program or other document, advise that:</p> <ol style="list-style-type: none"> 1. the Holder may proceed to implement the plan, program or other document with or without revisions; or 2. a revised plan, program, or other document must be provided for approval of the EAO prior to a specified activity or milestone. <p>If the EAO advises pursuant to paragraphs (a) or (b) that changes are required to a plan, program, or other document, then the Holder must follow the instructions of the EAO in that regard.</p> <p>If the EAO does not advise on paragraphs (a) or (b) within 60 days of the EAO receiving a plan, program, or other document, the Holder may proceed to implement the plan, program or other document.</p> <p>The Holder may, or the EAO may require the Holder to, revise any plan, program or other document if the Holder or the EAO determines that the implementation of the plan, program or other document is not:</p> <ol style="list-style-type: none"> 1. meeting one or more objectives of the plan, program or other document set out in the relevant condition of this Certificate; 2. having the effects contemplated or intended, as set out in the plan, program or other document itself; 3. consistent with the Certificate; or 4. consistent with changes in industry best practices or technology. 	<p>Draft AQFDMP provided to Aboriginal Groups in August 2021 for review and comment.</p>
2.	<p>Plan Development</p> <p>Where a condition of this Certificate requires the Holder to develop a plan, program or other document, any such plan, program or other document must, at a minimum, include the following information:</p>	

Condition #	Description	Action/Location in the Plan
	a. purpose and objectives of the plan, program or other document;	Section 1
	b. roles and responsibilities of the Holder and Employees;	Section 3, Table 3-1
	c. names and, if applicable, professional certifications and professional stamps/seals, of those responsible for the preparation of the plan, program, or other document;	Signed by qualified professional
	d. schedule for implementing the plan, program or other document throughout the relevant Project phases;	Section 1 – the AQFDMP will be implemented during construction, operations and closure
	e. means by which the effectiveness of the mitigation measures will be evaluated including the schedule for evaluating effectiveness;	Section 8.3, Section 9.2
	f. schedules and methods for the submission of reporting to specific agencies, Aboriginal Groups and the public and the required form and content of those reports; and	Section 10
	g. process and timing for updating and revising the plan, program or other document, including any consultation with agencies and Aboriginal Groups that would occur in connection with such updates and revisions.	Section 11
3.	<p>Adaptive Management</p> <p>Where a condition of this Certificate requires the Holder to develop a plan, program or other document that includes monitoring, including monitoring of mitigation measures or monitoring to determine the effectiveness of the mitigation measures, the Holder must include adaptive management in that plan. The objective of the adaptive management is to address the circumstances that will require the Holder to implement alternate or additional mitigation measures to address effects of the Project if the monitoring shows that those effects:</p> <ul style="list-style-type: none"> a. are not mitigated to the extent contemplated in the Application; b. are not predicted in the Application; or c. have exceeded the triggers identified in paragraph g) of this condition. <p>The adaptive management in the plan must include at least the following:</p> <ul style="list-style-type: none"> a. the monitoring program that will be used including methods, location, frequency, timing and duration of the monitoring; 	Section 4, Section 8

Condition #	Description	Action/Location in the Plan
	b. the baseline information that will be used, or collected where existing baseline information is insufficient, to support the monitoring program;	n/a (the baseline information is sufficient and monitoring data will continue to be collected over the LoM)
	c. the scope, content and frequency of reporting of the monitoring results;	Section 10.1
	d. the identification of qualitative and quantitative triggers, which, when observed through monitoring required under paragraph d), will require the Holder to alter existing, or develop new, mitigation measures to avoid, reduce, and/or remediate effects;	Section 9.1, Table 9.1-1
	e. the methods that will be applied to detect when a numeric trigger, or type or level of change referred to in paragraph g), has occurred.	Section 9.1, Table 9.1-1
	f. a description of the process for and timing to alter existing mitigation measures or develop new mitigation measures to reduce or avoid effects;	Section 9.2
	g. identification of the new and/or altered mitigation measures that will be applied when any of the changes identified in paragraphs a) to c) occur, or the process by which those will be established and updated over the relevant timeframe for the specific condition;	Identification of new or altered mitigation measures will be determined based on monitoring results.
	h. the monitoring program that will be used to determine if the altered or new mitigation measures and/or remediation activities are effectively mitigating or remediating the effects and or avoiding potential effects; and	Monitoring results and will be used to determine if mitigation measures are effective or need to be modified. The monitoring program is described in Section 8.3.
	i. the scope, content and frequency of reporting on the implementation of altered or new mitigation measures.	Section 10.1
	If there are any requirements or mitigation measures required in the plan, program or other document for which adaptive management, or elements of adaptive management listed in paragraphs d) to l) are assessed to be not appropriate or applicable, the plan must include identification of those requirements and measures, and the rationale for that assessment.	This will be assessed in future plan updates.

Condition #	Description	Action/Location in the Plan
4.	<p>Consultation</p> <p>Where a condition of this Certificate requires the Holder consult a particular party or parties regarding the content of a plan, program or other document, the Holder must, to the satisfaction of the EAO:</p> <ol style="list-style-type: none"> 1. provide written notice to each such party that: i) includes a copy of the plan, program or other document; ii) invites the party to provide its views on the content of such plan, program or other document; and iii) indicates: <ol style="list-style-type: none"> 1.1 if a timeframe for providing such views to the Holder is specified in the relevant condition of this Certificate, that the party may provide such views to the Holder within such time frame; or 1.2 if a timeframe for providing such views to the Holder is not specified in the relevant condition of this Certificate, specifies a reasonable period during which the party may submit such views to the Holder; 	<p>Draft AQFDMP provided to Aboriginal Groups in August 2021 for review and comment. While BW Gold sets general timeframes for review and comments via written notice, BW Gold and Aboriginal Groups engage in ongoing communication to establish flexible timeframes agreed to by all parties.</p>
	<ol style="list-style-type: none"> 2. undertake a full and impartial consideration of any views and other information provided by a party in accordance with the timelines specified in a notice given pursuant to paragraph (a); 	<p>Comments from Aboriginal Groups and corresponding BW Gold responses are maintained in a tracking table. BW Gold comprehensively and impartially reviews received comments received within agreed upon timeframes on a regular basis.</p>
	<ol style="list-style-type: none"> 3. provide a written explanation to each such party that provided comments in accordance with a notice given pursuant to paragraph (a) as to: <ol style="list-style-type: none"> 3.1 how the views and information provided by such party to the Holder have been considered and addressed in a revised version of the plan, program or other document; or 3.2 why such views and information have not been addressed in a revised version of the plan, program or other document; 	<p>Responses BW Gold provides in the tracking table include explanations on how comments from Aboriginal Groups have been addressed in a revised version of the AQMP. In cases where such comments have not been addressed in the revised version, BW Gold similarly explains its rationale for doing so.</p>

Condition #	Description	Action/Location in the Plan
	4. maintain a record of consultation with each such party regarding the plan, program or other document; and	BW Gold is maintaining consultation records
	5. provide a copy of such consultation record to the EAO, the relevant party, or both, promptly upon the written request of the EAO or such party. The copy of such consultation record must be provided to the EAO, relevant party, or both, no later than 15 days after the Holder receives the request for a copy of the consultation record, unless otherwise authorized by the EAO.	Potential future requirement.
20.	The Holder must retain a Qualified Professional to develop an Air Quality and Dust Management Plan. The plan must be developed in consultation with ENV, EMPR, NHA and Aboriginal Groups. The plan must include at least the following:	Section 8.2
	a. the means by which the mitigation measures identified in the Mitigations Table required under Condition 43 for the valued component Air Quality will be implemented;	
	b. the means by which guidance contained in EMPR's and ENV's guidance: Developing a Fugitive Dust Management Plan for Industrial Projects (May 2018, or as updated or replaced from time to time) is addressed;	Appendix C
	c. the identification and detailed descriptions of dust-emitting sources from the Project;	Section 6
	d. the identification of environmental receptors to be monitored;	Section 8.3
	e. a compliance monitoring program, including the locations of monitoring stations and equipment that will be used to conduct the monitoring;	Section 8.3
	f. the contaminants of potential concern (COPC) and corresponding concentrations (triggers) that would cause the Holder to take corrective action to reduce contaminant concentrations to avoid adverse health effects to receptors identified in paragraph d);	Section 7.1
	g. how this plan will inform the Wildlife Management and Monitoring Plan (Condition 23), and Country Foods Monitoring Plan (Condition 41); and	Section 1.4
	h. how the Holder will notify the EAO, ENV, EMPR, NHA, Aboriginal Groups, IEM, and the public in the event that contaminant concentration triggers identified in paragraph f) are exceeded. The notification must include both a technical report and a plain language summary of the technical report.	Section 8.4

Condition #	Description	Action/Location in the Plan
	The Holder must provide the draft plan that was developed in consultation with ENV, EMPR, NHA, and Aboriginal Groups to ENV, EMPR, NHA, Aboriginal Groups and the EAO for review a minimum of 60 days prior to the planned commencement of Construction or as listed in the Document Submission Plan required by Condition 10 of this Certificate.	To be submitted 60 days prior to planned commencement.
	The plan and any amendments thereto, must be implemented to the satisfaction of a Qualified Professional throughout Construction, Operations, and Closure and to the satisfaction of the EAO.	Future requirement.

Appendix B Concordance with Canadian Environmental Assessment Agency Decision Statement (April 2019)

Appendix B Concordance with Canadian Environmental Assessment Agency Decision Statement (April 2019)

Condition #	Description	Location in Plan
2.1 (General Conditions)	The Proponent shall ensure that its actions in meeting the conditions set out in this Decision Statement during all phases of the Designated Project are considered in a careful and precautionary manner, promote sustainable development, are informed by the best information and knowledge available at the time the Proponent takes action (including community and Indigenous traditional knowledge), are based on methods and models that are recognized by standard-setting bodies, are undertaken by qualified individuals, and have applied the best available economically and technically feasible technologies.	Section 5; Section 7; Section 8; Section 12
2.2 (General Conditions)	The Proponent shall, when mitigation is a requirement of a condition set out in this Decision Statement, give preference to avoiding the adverse environmental effect of the Designated Project over minimizing the adverse environmental effect of the Designated Project. If unable to avoid the adverse environmental effect, the Proponent shall give preference to minimizing the adverse environmental effect of the Designated Project over compensating for the adverse environmental effect of the Designated Project. If unable to minimize the adverse environmental effect, the Proponent shall compensate for the adverse environmental effect of the Designated Project.	Section 8.2; Section 8.3
2.3 (General Conditions)	<p>The Proponent shall, where consultation is a requirement of a condition set out in this Decision Statement:</p> <p>2.3.1 provide a written notice of the opportunity for the party or parties being consulted to present their views and information on the subject of the consultation;</p> <p>2.3.2 provide all information available and relevant on the scope and the subject matter of the consultation and a period of time agreed upon with the party or parties being consulted, not less than 15 days, to prepare their views and information;</p> <p>2.3.3 undertake a full and impartial consideration of all views and information presented by the party or parties being consulted on the subject matter of the consultation;</p> <p>2.3.4 strive to reach consensus with Indigenous groups; and</p> <p>2.3.5 advise the party or parties being consulted on how the views and information received have been considered by the Proponent including a rationale for why the views have, or have not, been integrated. The Proponent shall advise the party or parties in a time period that does not exceed the period of time taken in 2.3.2.</p>	In Progress; Section 11

Condition #	Description	Location in Plan
2.4 (Consultation)	<p>The Proponent shall, where consultation with Indigenous groups is a requirement of a condition set out in this Decision Statement, determine and strive to reach consensus with each Indigenous group regarding the manner by which to satisfy the consultation requirements referred to in condition 2.3, including:</p> <p>2.4.1 the methods of notification;</p> <p>2.4.2 the type of information and the period of time to be provided when seeking input;</p> <p>2.4.3 the process to be used by the Proponent to undertake impartial consideration of all views and information presented on the subject of the consultation; and</p> <p>2.4.4 the period of time and the means by which to advise Indigenous groups of how their views and information were considered by the Proponent.</p>	In Progress
2.11 (Annual Reporting)	<p>The Proponent shall, commencing in the reporting year during which the Proponent begins the implementation of the conditions set out in this Decision Statement, prepare an annual report that sets out:</p> <p>2.11.1 the activities undertaken by the Proponent in the reporting year to comply with each of the conditions set out in this Decision Statement;</p> <p>2.11.2 how the Proponent complied with condition 2.1;</p> <p>2.11.3 for conditions set out in this Decision Statement for which consultation is a requirement, how the Proponent considered any views and information that the Proponent received during or as a result of the consultation, including a rationale for how the views have, or have not, been integrated;</p> <p>2.11.4 the information referred to in conditions 2.5 and 2.6 for each follow-up program;</p> <p>2.11.5 the results of the follow-up program requirements identified in conditions 3.14, 3.15, 3.16, 4.5, 5.5, 6.11, 6.12, 6.13, 6.14, 8.18.6, 8.20.5, 8.21, and 8.22 if required;</p> <p>2.11.4 any update made to any follow-up program in the reporting year;</p> <p>2.11.7 any modified or additional mitigation measures implemented or proposed to be implemented by the Proponent, as determined under condition 2.9 and rationale for why mitigation measures were selected pursuant to condition 2.5.4; and</p> <p>2.11.8 any change(s) to the Designated Project in the reporting year.</p>	Section 10.1.2
2.12 (Annual Reporting)	<p>The Proponent shall provide a draft annual report referred to in condition 2.11 to Indigenous groups, no later than June 30 following the reporting year to which the annual report applies. The Proponent shall consult Indigenous groups on the content and findings in the draft annual report.</p>	Section 10.1.2

Condition #	Description	Location in Plan
2.13 (Annual Reporting)	The Proponent, in consideration of any comments received from Indigenous groups pursuant to condition, 2.12 shall revise and submit to the Agency and Indigenous groups a final annual report, including an executive summary in both official languages, no later than September 30 following the reporting year to which the annual report applies.	Section 10.1.2
2.15 (Information Sharing)	When the development of any plan is a requirement of a condition set out in this Decision Statement, the Proponent shall submit the plan to the Agency and to Indigenous groups prior to construction, unless otherwise required through the condition.	In Progress
6.1	The Proponent shall mitigate, during all phases of the Designated Project, emissions of fugitive dust from the Designated Project, including dust associated with vehicles on project roads.	Section 8.2, Table 8.2-1
6.3	The Proponent shall develop, prior to construction and in consultation with Indigenous groups, a protocol for receiving complaints related to the exposure to noise and dust from the Designated Project. The Proponent shall respond to any noise or dust complaint(s) within 48 hours of the complaint being received and shall implement corrective actions to reduce exposure to noise or dust in a timely manner. The Proponent shall implement the protocol during construction, operation and decommissioning.	Section 8.4
6.12	The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment as it pertains to adverse environmental effects of the Designated Project on the health of Indigenous Peoples as a result of changes to air quality and determine the effectiveness of mitigation measures. As part of the implementation of the follow-up program, the Proponent shall monitor nitrogen dioxide (NO ₂), sulfur dioxide (SO ₂), fine particulate matter (PM _{2.5}), particulate matter (PM ₁₀), dust, and carbon monoxide (CO) in air. The Proponent shall implement the follow-up program during all phases of the Designated Project and shall apply conditions 2.9 and 2.10 when implementing the follow-up program.	Section 9
6.15	The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, and implement, during all phases of the Designated Project, a plan to communicate the results of the follow-up program referred to in conditions 6.11, 6.12, 6.13 and 6.14 in plain language to Indigenous groups and relevant authorities. The communication plan shall include the procedures to communicate, including the frequency of communication.	Section 10.1.2

Appendix C Concordance Table with Developing a Fugitive Dust Management Plan for Mines in BC (BC EMLI & ENV 2023)

Appendix C Concordance Table with Developing a Fugitive Dust Management Plan for Mines in BC (BC EMLI & ENV 2023)

Section	Description	Location in the Plan
1. Introduction	This section provides contextual background information on the project, project overview, and regulatory framework.	Section 1 Section 2
1.1 Proponent Information	Provide an overview including the name, organization and structure of the operating company.	Section 1.1
1.2 Permitting	Identify the permit for which this document is being developed and other relevant licences, authorizations and regulations which impact on this document.	Section 1
1.3 Purpose, Objectives and Scope	Describe the purpose and/or objectives that this plan will address.	Section 1
1.4 Authorship and Submission Record	A record of the development and submission of the plan should be included.	Section 11 and 12
2. Facility Description and Setting [<i>general overview</i>] and 2.1 Site Ownership and Physical Location	Provide information on the site ownership, all relevant tenures/permit boundaries, and the project location in relation to local communities and other sensitive receptors.	Section 5.1 and 5.2
2.2 Descriptive Overview of the Facility	Provide a brief overview of the site and activities that could result in fugitive dust.	Section 5.3
2.3 Process Flow Diagram or Description of the Facility	Provide a process flow diagram and/or use descriptions to indicate the process, operations and equipment that have the potential to emit fugitive dust.	Section 5.3 and Figure 5.3-3
3. Facility Description and Setting [<i>for dust</i>]	List and characterize potential sources and/or activities which may generate fugitive dust. This includes climatic conditions which cause dust.	Section 6
3.1 Source List Review	The FDMP must include a procedure to ensure the source list is reviewed on a regular schedule to reflect current conditions.	Section 11

Section	Description	Location in the Plan
3.2 Source List Update Procedure	Outline the procedure to take when updating or removing existing sources or adding new sources to the list.	Section 11
3.3 Fugitive Dust Source List	<p>The fugitive dust source list must include the following:</p> <ul style="list-style-type: none"> • unique identification number or designation for each source; • location of the source within the facility (or reference ID on the included site map); • potential source of fugitive dust; • factors influencing generation of dust (e.g., wind, operational activities); and • identification of the dust-generating material (e.g., aggregate, clean coal, road dust). 	Section 6 and Table 6-2
4. Identification of Potential Effects of Fugitive Dust	The potential effects of dust both on and off the site should be identified, including risk assessment.	Section 7
5. Fugitive Dust Management	The FDMP must contain a description of how fugitive dust will be managed onsite.	Section 8.2
5.1 Site Specific Mitigation Measures	The FDMP is most effective when it is developed to be a site-specific, operational plan. In order to achieve this objective, site specific mitigation measures (including best management practices) must be prescribed to address activities that have been identified.	Section 8.2
5.2 Site Maps	The site map will clearly identify the locations of all fugitive dust emission sources and site features discussed in the facility description.	Figure 6-1
6. Plan Implementation	This section should include descriptions of how the site-specific mitigation measures will be implemented, a procedure that describes how implementation of the plan is monitored and assessed, details of personnel responsible for monitoring relevant scheduling of activities, trigger action response planning, and record keeping.	Section 8
6.1 Roles and Responsibilities	Describe the roles and responsibilities for implementation of, and compliance with, the plan. The plan must clearly identify all site personnel roles and responsibilities including contractors and Qualified Professionals.	Section 3
6.2 Training	The plan should identify training and frequency of training of site personnel identified in the 'Roles and Responsibilities' section to ensure that they are aware of their responsibilities under the plan.	Section 8.1

Section	Description	Location in the Plan
6.3 Monitoring and Maintenance	Monitoring activities may include tracking of public complaints, visual inspection of facilities by site personnel, and quantitative monitoring of the environment, such as passive particulate deposition (dustfall) or active suspended particulate (TSP, PM ₁₀ or PM _{2.5}) sampling on and off site, to evaluate the effectiveness of dust control practices and to quantify levels of fugitive dust and its composition leaving the site.	Section 8.3
6.4 Monitoring and Maintenance [sic] <i>Note that there is an error in the source document and the Section heading based on the previous version of the guidance document should be:</i> Trigger Action Response Plan (TARP)	Provide a response plan including specific triggers, actions to be taken, and reporting protocols. The trigger action response plan (TARP) should include: <ul style="list-style-type: none"> • identify the frequency of visual, qualitative, and quantitative monitoring, the monitoring methods to be used, and where monitoring will occur; • identify how and by whom it is determined that a response is necessary; • identify specific measurable and reportable triggers linked to a response/ implementation of the mitigation measures identified in Section 6; and, • identify what information/condition/situation prompts maintenance of current mitigation strategies, when it is considered “appropriate” to use alternative means of mitigation and what forms of alternative mitigation strategies will be used. 	Section 9
6.5 Schedule	Provide a schedule identifying commitments such as training, implementation of site-specific mitigation measures, monitoring, inspections, and reporting will be conducted.	Section 8 and 10
6.6 Record Keeping	Include information on record keeping, including a complaint tracking tool and a record of dust events and responses.	Section 10
7. Adaptive Management	The management plan is a living document that should be reviewed as site conditions change and following evaluation of monitoring and sampling data. An adaptive management approach should be used to evaluate the effectiveness and direct continual improvement of the plan. This section should include a commitment to have a QP regularly (at least annually) review the fugitive dust management methods being employed on site and to assess whether they are being undertaken in accordance with the most recent management plan.	Section 9 and 11

Section	Description	Location in the Plan
9. Reporting	<p>Outline the structure and timing of reporting, taking into account the annual reporting requirements of regulatory agencies, updates to indigenous groups and the public, and reporting related to the TARP. Describe the reporting process, who will complete the reporting, how often, what will be included in the report, and who the reports will be submitted to.</p> <p>Annual Reports should include information pertaining to:</p> <ul style="list-style-type: none"> • confirmation that the FDMP is being implemented as written; • the monitoring results; • the effectiveness of mitigation measures; • the number of dusting events that occurred; • any complaints received and the actions taken to address complaints and; • any deficiencies identified in the FDMP and corrective actions taken. <p>Reports are to be prepared and signed by a Qualified Professional(s).</p>	Section 10

Appendix D Blackwater Mine: Air Quality Trigger Response Plan (TRP) for Fugitive Dust Non-Point Source Discharges to Air (April 2025 Version)



Blackwater Mine



Air Quality Trigger Response Plan (TRP) for Fugitive Dust Non-Point Source Discharges to Air

April 2025

Air Quality Trigger Response Plan (TRP) for Fugitive Dust Non-Point Source Discharges to Air

Table of Contents

Work Instructions	2
Acronyms and Abbreviations	3
1.0 Purpose and Introduction	4
2.0 Air Quality Triggers and Responses	5
3.0 Monitoring Plan	10
3.1 TSP	10
3.2 PM ₁₀ and PM _{2.5}	11
4.0 Trigger Exceedances	13
5.0 Mitigation Measures	14
6.0 Reporting and Notification Process	15
7.0 TRP Review and Revisions	16
7.1 TRP Annual Review by ELoMC	16
7.2 TRP 3-year Review Report for BC ENV	16
7.3 TRP Revisions	17
7.4 Modifications Requested by BC ENV	17
8.0 Authorship and Declaration	18
9.0 References	19
Appendix A BC ENV Conflict of Interest and Declaration of Competency Forms	

List of Tables

Table 2-1: Fugitive Dust Trigger Action Response	6
--	---

Work Instructions

Air Quality Trigger Response Plan (TRP) for Fugitive Dust Non-Point Source Discharges to Air

Version:	D.1
Replaces:	C.1
Creation Date:	04/30/2025
Scheduled Review Date:	
Review Date:	
Document Team Members:	
Document Owner:	
Document Approver:	
Related Documents:	
Key Contacts:	
Change Requests:	

Acronyms and Abbreviations

µm	Microns or micrometres
AQFDMP	Air Quality and Fugitive Dust Management Plan
Artemis	Artemis Gold Inc.
BC	British Columbia
BC ENV	British Columbia Ministry of Environment and Climate Change Strategy, or British Columbia Ministry of Environment and Parks
BC EMLI	British Columbia Ministry of Energy, Mines and Low Carbon Innovation
BW Gold	BW Gold LTD.
EAO	Environmental Assessment Office
ELoMC	Environmental Life of Mine Committee
EMC	Environmental Monitoring Committee
Indigenous nations	Ulkatcho First Nation, Lhoosk'uz Dené Nation, Nadleh Whut'en First Nation, Stellat'en First Nation, Saik'uz First Nation, Nazko First Nation, Skin Tyee Nation, Tšilhqot'in Nation, Métis Nation British Columbia, and Nee-Tahi- Buhn Band (as defined in the Project's federal Decision Statement)
m³	Cubic metres
PM	Particulate matter
PM₁₀	Particulate matter less than 10 micrometres in diameter
PM_{2.5}	Particulate matter less than 2.5 micrometres in diameter
SOP	Standard operating procedure
Tatelkus Lake 28	Tatelkus Lake Indian Reserve 28
the Mine	The Blackwater Mine
TSP	Total suspended particulate

1.0 Purpose and Introduction

This document is the Air Quality Trigger Response Plan (TRP) for Fugitive Dust Non-Point Source Discharges for BW Gold Ltd.'s (BW Gold's) Blackwater Mine (the Mine). BW Gold is a wholly owned subsidiary of Artemis Gold Inc. Fugitive dust is defined as dust that is not emitted from definable point sources, such as industrial stacks. A TRP is a proactive tool that can help facility operators manage and respond to changing conditions or situations before the situation becomes problematic or results in harm to the environment, human health, or damage to infrastructure (BC ENV 2022b; BC EMLI & ENV 2023).

Non-point source fugitive dust discharge for the purpose of this plan is defined as dust that is not emitted from definable point sources, such as industrial stacks.

This TRP is a requirement of the Mine's air discharge permit number 110650 issued under the *Environmental Management Act* (issued May 2, 2023 and last amended September 9, 2024; BC ENV 2024):

4.2.1 The permittee must cause a Qualified Professional to develop a Trigger Response Plan (TRP) for authorized non-point source discharge relating to fugitive dust. The permittee must submit the TRP for approval to the director within 60 days after the issuance of this authorization.

This TRP is used in conjunction with the Mine's Air Quality and Fugitive Dust Management Plan (AQFDMP; ERM 2025). Much of the information in this TRP is related to the AQFDMP. Background information about the Project, facility descriptions and descriptions of air emission sources (both point-sources and non-point sources) are described in the AQFDMP (ERM 2025).

This TRP is specific to fugitive dust, including total suspended particulate (TSP), particulate matter < 10 micrometres (μm) in diameter (PM_{10}) and particulate matter < 2.5 μm in diameter ($\text{PM}_{2.5}$). Non-fugitive dust air contaminants are not included in this TRP (BC ENV 2024) and are included in the AQFDMP.

This TRP will be implemented during construction, operations and closure, in conjunction with the AQFDMP. The latest version of this TRP must be implemented and the most recent version must be onsite at the mine for inspection by a BC ENV Officer (BC ENV 2024).

2.0 Air Quality Triggers and Responses

Fugitive dust triggers, locations and response actions are summarized in Table 2-1.

For reference, the background/baseline concentrations of TSP, PM₁₀ and PM_{2.5} in the Blackwater Gold Project Air Quality Modelling Technical Data Report were 18, 9 and 4 µg/m³, respectively (AMEC 2014), and applied to all averaging periods.

Table 2-1: Fugitive Dust Trigger Action Response

Component	Location	Permit Limit	Level	Trigger	Management Response	Documentation, and People and Parties to Notify
Fugitive Dust (TSP)	Unpaved Roads	Indeterminant ¹	None	<ul style="list-style-type: none">Dust plume less than half the height of a haul truck tire.	<ul style="list-style-type: none">No action. Continue work in accordance with site management procedures.	<ul style="list-style-type: none">No action.
			Level 1, Low	<ul style="list-style-type: none">Dust plume less than half the size of a haul truck for any period of time up to 30 minutes.	<ul style="list-style-type: none">Limited watering of high traffic areas.Repeat visual inspection every 2 hours depending on weather.	<ul style="list-style-type: none">Immediately report to Departmental Manager.
			Level 2, Medium	<ul style="list-style-type: none">Dust plume same size as a haul truck extending beyond local area for periods longer than half a day.	<ul style="list-style-type: none">Continuous watering of high traffic areas until dust plume subsides.Speed limit restrictions in high traffic areas.	<ul style="list-style-type: none">Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional.Immediately provide email notification and supporting information to the BC ENV Director²: envauthorizationsreporting@gov.bc.ca.After inspections are complete, a log of the findings will be filled out by the Departmental Manager.
			Level 3, High	<ul style="list-style-type: none">Dust plume greater than the size of a haul truck for periods longer than 1 day, or when dust plumes extend beyond the active mine area/ infrastructure.	<ul style="list-style-type: none">Increase frequency of watering and if not successful examine longer use of alternative dust suppressants (e.g., calcium or magnesium chloride, lignin compounds, environmentally friendly oils or clay additives).Speed limit restrictions may be required if dust cannot be controlled by watering.Closure of certain routes may be required if dust cannot be controlled by watering or speed restrictions.	<ul style="list-style-type: none">Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional.Immediately provide email notification and supporting information to the BC ENV Director²: envauthorizationsreporting@gov.bc.ca.Notify Indigenous Nations.After inspections are complete, a log of the findings will be filled out by the Departmental Manager.
	Surface Earthworks	Indeterminant ¹	None	<ul style="list-style-type: none">Minor localized dust (dust plumes that are less than 2 m in height) during construction and normal mine operations.	<ul style="list-style-type: none">No action. Continue work in accordance with site management procedures.	<ul style="list-style-type: none">No action.
			Level 1, Low	<ul style="list-style-type: none">Visible dust plumes rising over 2 m above the active construction area for longer than 30 minutes.	<ul style="list-style-type: none">Minimize material movement in areas with active construction or operation and heavy equipment use.	<ul style="list-style-type: none">Immediately report to Departmental Manager.
			Level 2, Medium	<ul style="list-style-type: none">Triggers per level 1 but with dust plume extending beyond local area for periods longer than half a day.	<ul style="list-style-type: none">Application of water to exposed construction area (if this is a source).	<ul style="list-style-type: none">Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional.Immediately provide email notification and supporting information to the BC ENV Director²: envauthorizationsreporting@gov.bc.ca.After inspections are complete, a log of the findings will be filled out by the Departmental Manager.

Component	Location	Permit Limit	Level	Trigger	Management Response	Documentation, and People and Parties to Notify
Fugitive Dust (TSP; <i>cont'd</i>)	Surface Earthworks (<i>cont'd</i>)		Level 3, High	<ul style="list-style-type: none"> Extensive areas of dust generation with large dust plumes for periods longer than 1 day or when dust plumes extend beyond the active mine area/infrastructure. 	<ul style="list-style-type: none"> Increase frequency of watering and if not successful apply gravel to exposed construction area (if this is a source). Investigate long term solutions if dust plumes persist. 	<ul style="list-style-type: none"> Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional. Immediately provide email notification and supporting information to the BC ENV Director²: envauthorizationsreporting@gov.bc.ca. Notify Indigenous Nations. After inspections are complete, a log of the findings will be filled out by the Departmental Manager.
	Stockpiles	Indeterminant ¹	None	<ul style="list-style-type: none"> Minor localized dust (dust plumes that are less than 2 m in height) during construction and normal mine operations. 	<ul style="list-style-type: none"> No action. Continue work in accordance with site management procedures. 	<ul style="list-style-type: none"> No action.
			Level 1, Low	<ul style="list-style-type: none"> Visible dust plumes rising over 2 m above the ground for longer than 30 minutes. 	<ul style="list-style-type: none"> Turn on spray bar sprinklers⁵. During periods where temperatures are below freezing add reagents to control dust. 	<ul style="list-style-type: none"> Immediately report to Departmental Manager.
			Level 2, Medium	<ul style="list-style-type: none"> Triggers per level 1 but with dust plume extending beyond local area for periods longer than half a day. 	<ul style="list-style-type: none"> Increase the rate of water application using spray bar sprinklers⁵. During periods where temperatures are consistently below freezing, add reagents to control dust. 	<ul style="list-style-type: none"> Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional. Immediately provide email notification and supporting information to the BC ENV Director²: envauthorizationsreporting@gov.bc.ca. After inspections are complete, a log of the findings will be filled out by the Departmental Manager.
			Level 3, High	<ul style="list-style-type: none"> Extensive areas of dust generation with large dust plumes for periods longer than 1 day or when dust plumes extend beyond the active mine area/infrastructure. 	<ul style="list-style-type: none"> Examine the possibility of re engineering the spray bar sprinklers⁵ to provide more effective water coverage of transfer points. 	<ul style="list-style-type: none"> Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional. Immediately provide email notification and supporting information to the BC ENV Director²: envauthorizationsreporting@gov.bc.ca. Notify Indigenous Nations. After inspections are complete, a log of the findings will be filled out by the Departmental Manager.

Component	Location	Permit Limit	Level	Trigger	Management Response	Documentation, and People and Parties to Notify
Fugitive Dust (TSP; <i>cont'd</i>)	Material handling transfer locations	Indeterminant ¹	None	<ul style="list-style-type: none"> Minor localized dust (dust plumes that are less than 2 m in height) during construction and normal mine operations. 	<ul style="list-style-type: none"> No action. Continue work in accordance with site management procedures. 	<ul style="list-style-type: none"> No action.
			Level 1, Low	<ul style="list-style-type: none"> Visible dust plumes rising over 2 m above the ground for longer than 30 minutes. 	<ul style="list-style-type: none"> Turn on spray bar sprinklers⁵. During periods where temperature are below freezing add reagents to control dust. 	<ul style="list-style-type: none"> Immediately report to Departmental Manager.
			Level 2, Medium	<ul style="list-style-type: none"> Triggers per level 1 but with dust plume extending beyond local area for periods longer than half a day. 	<ul style="list-style-type: none"> Increase the rate of water application using spray bar sprinklers. During periods where temperature are below freezing, add reagents to control dust. 	<ul style="list-style-type: none"> Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional. Immediately provide email notification and supporting information to the BC ENV Director²: envauthorizationsreporting@gov.bc.ca. After inspections are complete, a log of the findings will be filled out by the Departmental Manager.
			Level 3, High	<ul style="list-style-type: none"> Extensive areas of dust generation with large dust plumes for periods longer than 1 day or when dust plumes extend beyond the active mine area/infrastructure. 	<ul style="list-style-type: none"> Examine the possibility of re engineering the spray bar sprinklers to provide more effective water coverage of transfer points. 	<ul style="list-style-type: none"> Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional. Immediately provide email notification and supporting information to the BC ENV Director²: envauthorizationsreporting@gov.bc.ca. Notify Indigenous Nations. After inspections are complete, a log of the findings will be filled out by the Departmental Manager.
PM ₁₀ and PM _{2.5}	Operations Camp	PM ₁₀ (24-hour average): 50 µg/m ³ PM _{2.5} (24-hour average): 25 µg/m ³ PM _{2.5} (annual average): 8 µg/m ³	None	<ul style="list-style-type: none"> The PM₁₀ and PM_{2.5} concentration at the Operations Camp is less than or equal to 50% of the Ambient Air Quality Objective⁴, or less than or equal to the baseline value. PM₁₀ (24-hour average): ≤25 µg/m³. PM_{2.5} (24-hour average): ≤12.5 µg/m³. PM_{2.5} (annual average): ≤4 µg/m³. 	<ul style="list-style-type: none"> No action. Continue monitoring. 	<ul style="list-style-type: none"> No action.
			Level 1, Low	<ul style="list-style-type: none"> The PM₁₀ and PM_{2.5} concentration at the Operations Camp is greater than 50% but less than or equal to 80% of the Ambient Air Quality Objective⁴, and is above the baseline value, and the site air quality is not influenced by wildfire smoke⁶. PM₁₀ (24-hour average): >34 and ≤40 µg/m³. PM_{2.5} (24-hour average): >12.5 and ≤20 µg/m³. PM_{2.5} (annual average): >4 and ≤6.4 µg/m³. 	<ul style="list-style-type: none"> Continue monitoring. Develop causal analysis and associated mitigations in addition to a schedule for implementation. 	<ul style="list-style-type: none"> Immediately report to Departmental Manager.

Component	Location	Permit Limit	Level	Trigger	Management Response	Documentation, and People and Parties to Notify
PM ₁₀ and PM _{2.5} (cont'd)	Operations Camp (cont'd)		Level 2, Medium	<ul style="list-style-type: none">The PM₁₀ and PM_{2.5} concentration is greater than 80% but less than or equal to 100% of the Ambient Air Quality Objective⁴, and the site air quality is not influenced by wildfire smoke⁶.PM₁₀ (24-hour average): >40 and ≤50 µg/m³.PM_{2.5} (24-hour average): >20 and ≤25 µg/m³.PM_{2.5} (annual average): >6.4 and ≤8 µg/m³.	<ul style="list-style-type: none">Continue monitoring.Develop causal analysis and associated mitigations in addition to a schedule for implementation. Implement mitigations developed at the low action level.	<ul style="list-style-type: none">Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional.Immediately provide email notification and supporting information to the BC ENV Director²: envauthorizationsreporting@gov.bc.ca.After inspections are complete, a log of the findings will be filled out by the Departmental Manager.
			Level 3, High	<ul style="list-style-type: none">The PM₁₀ and PM_{2.5} concentration is greater than the Ambient Air Quality Objective⁴, and the site air quality is not influenced by wildfire smoke⁶.PM₁₀ (24-hour average): >50 µg/m³.PM_{2.5} (24-hour average): >25 µg/m³.PM_{2.5} (annual average): >8 µg/m³.	<ul style="list-style-type: none">Continue monitoring.Implement mitigations developed at the medium action level.	<ul style="list-style-type: none">Immediately report to Departmental Manager, Environmental Manager, Mine Manager and Qualified Professional.Immediately provide email notification and supporting information to the BC ENV Director²: envauthorizationsreporting@gov.bc.ca.Notify Indigenous Nations.After inspections are complete, a log³ of the findings will be filled out by the Departmental Manager.

Notes:

¹ The air discharge Permit 110650 states the maximum authorized rate of discharge for fugitive dust is indeterminant (BC ENV 2024).

² The air discharge Permit 110650 states: “4.2.5 If any medium or high triggers listed in the TRP are exceeded, the permittee must immediately provide notification to the director via email to envauthorizationsreporting@gov.bc.ca. This notification must include the following information: a) Any supporting data confirming the exceedance of the trigger, and b) A summary of the actions taken and/or planned in response to the trigger exceedance.” (BC ENV 2024)

³ The log will contain information on the location where dust plumes were visible, their approximate size and temporal persistence, activities occurring that may have caused the dust plume, meteorological conditions at the time and any actions taken. See Section 3.0 for more information.

⁴ The most recent BC Ambient Air Quality Objectives are to be used: BC ENV 2022a. These values will be updated by the government over time.

⁵ Spray bar sprinklers will be installed once trialing is complete.

⁶ The influence of regional and mine site wildfire smoke will be determined by comparing contemporaneous measured concentrations of PM₁₀ and PM_{2.5} at the Operations Camp to Vanderhoof Court House (ENV) and Quesnel Johnson Avenue (ENV), by using data from Purple Air monitors, and by examining PM_{2.5} concentrations due to wildfires as modelled by firesmoke.ca.

3.0 Monitoring Plan

3.1 TSP

TSP fugitive dust monitoring involves the visual identification of dust plumes as described in Table 2-1. Fugitive dust monitoring is described in the AQFDMP, along with monitoring methods for other pollutants. The AQFDMP text specific to fugitive dust monitoring is provided in the paragraphs below.

Mine personnel will be trained to be observant for dust related concerns which may arise. These observations, together with meteorological conditions and mitigation efforts taken to deal with an issue, will be recorded and included in annual reports. Dust visual monitoring will focus on areas where there are active surface earthworks, haul roads and overburden, and soil stockpiles.

Visual monitoring will occur at all locations where fugitive dust generation is occurring.

The visual dust monitoring program is intended to contribute to:

- visual identification and recording of fugitive dust events;
- assessment of the effectiveness of mitigation and management measures;
- identification of effects requiring further mitigation efforts; and
- compliance with permit, approvals, and regulatory requirements.

The visual monitoring program will consist of visual observations and documentation of fugitive dust by mine personnel. During periods of wind greater than 11 m/s measured by the Blackwater High meteorological station and when the ground is not covered under snow, Departmental Managers (or designate) responsible for the areas listed will perform visual monitoring for dust at the following locations:

- locations of active surface earthworks;
- active haul roads; and
- overburden and soil stockpiles.

In addition to these regular visual dust inspections mine personnel will be directed to inform Departmental Managers if persistent dust plumes are visible.

Visual dust inspections will not be recorded under level “none” described in the Trigger Action Response Table (Table 2-1). For Level “Medium” or “High” Alert events in the Table 2-1, after inspections are complete, a log of the findings will be filled out by the Departmental Manager referenced above. The log will contain information on the location where dust plumes were visible, their approximate size and temporal persistence, activities occurring that may have caused the dust plume, meteorological conditions at the time and any actions taken.

Monitoring will be conducted by competent personnel as designated by the Environment Manager. Data will be reported in compliance with Permit #110650 requirements (BC ENV 2024) and will be kept and made available to others for review upon request.

Employees and contractors will receive awareness-level training in fugitive dust management and air quality on their arrival on site through an environmental on-boarding training session and prior to the start of work as part of the Site Orientation. The purpose of this training is to provide all site personnel with a basic level of environmental awareness and an understanding of their obligations regarding compliance with regulatory requirements, commitments, and best practices.

Site supervisors will be provided with a copy of the AQFDMP and the TRP and will be responsible for understanding and implementing the AQFDMP, TRP, and operational SOPs with respect to their individual work areas. The EM will ensure additional training and advice is provided as needed.

3.2 PM₁₀ and PM_{2.5}

The AQFDMP text specific to PM₁₀ and PM_{2.5} monitoring is provided in the paragraphs below.

A Thermo Scientific Partisol-FRM Model 2025i-D PM sampler operated at UTM Zone 10, 375894 Easting and 5894019 Northing from May 9, 2023, until June 25, 2024, when it was moved to its final location at the Operations Camp centered at UTM Zone 10, 378940 Easting and 5895516 Northing. Air discharge permit #110650 was amended on September 9, 2024 to align the coordinates of the Partisol's final location, as the location of the Operations camp was moved.

Ambient air is sucked in by the Partisol and passes through a PM₁₀ filtering head, and then the resulting PM₁₀ air stream is split into a PM_{2.5} stream and the remaining PM_{coarse} air stream (PM₁₀ airflow with PM_{2.5} removed, equivalent to particulate matter between 2.5 to 10 microns). The dichotomous sequential Partisol then samples PM_{2.5} and PM_{coarse} and collects these PM size fractions onto 47-millimetre (mm) filter discs. The PM_{coarse} term is specifically used by dichotomous sequential Partisol samplers, due to the way a dichotomous sequential Partisol operates. Using the sampled PM_{2.5} and PM_{coarse} mass components, the PM₁₀ mass can then be calculated from the sampled mass components of PM_{coarse} plus PM_{2.5} (Thermo Scientific 2015).

BWG personnel collects PM samples in general accordance with *The British Columbia Field Sampling Manual: Part B Air and Air Emissions Testing* (BC ENV 2020).

PM_{2.5} and PM_{coarse} particulate are collected onto qualified laboratory pre-dried and pre-weighed filters that are then post-dried and post-weighed in a qualified laboratory to determine the mass of PM_{2.5} and PM_{coarse} deposited on the filters. ALS Environment Laboratories (ALS) are used for the supplying and analyzing the pre-weighed and post-weight filters.

The PM₁₀ inlet flow rate has a target of 1 m³/hr (16.7 L/minute), and then the separated air flow streams have a target flow rate of 15.0 L/minute for the PM_{2.5} sample and 1.67 L/minute for the PM_{coarse} sample. Total air flow volumes are measured and recorded by the Partisol and the air volumes for each sample are provided to ALS for calculation of the resulting PM_{2.5} and PM₁₀ concentrations.

Following the sampling schedule specified in air discharge Permit #110650 (amended September 9, 2024), during the months of May to October, PM sampling occurs every three days, simultaneously for collecting PM_{2.5} and PM_{coarse} (and calculating PM₁₀). During November to April, sampling occurs every six days simultaneously for collecting PM_{2.5} and PM_{coarse} (and calculating PM₁₀). Samples are collected over a 24-hour period on the 3-day or 6-day scheduled dates following the National Air Pollution Surveillance Program (NAPS) sampling schedule.

For Level "Medium" or "High" Alert events in the Table 2-1, after inspections are complete, a log of the findings will be filled out by the Departmental Manager referenced above. The log will contain information on the location where dust plumes were visible, their approximate size and temporal persistence, activities occurring that may have caused the dust plume, meteorological conditions at the time and any actions taken.

Based on feedback from Indigenous groups, starting in 2024, during the summer months when elevated PM concentrations were observed at the Mine site, Purple Air monitors were positioned around the Mine to measure background concentrations. The Purple Air sensors are capable of detecting PM_{2.5} and PM₁₀ concentrations. Note that these sensors are not approved for use to meet

the air discharge Permit #110650 conditions and are not approved air monitoring sensors in the *British Columbia Field Sample Manual* due to their accuracy limitations. They can be used to provide supplemental data, but the evaluation of ambient PM concentrations as they relate to the Permit conditions and thresholds are determined by the Partisol monitoring station.

4.0 Trigger Exceedances

Trigger exceedances of Medium and High Levels (Table 2-1) will be documented in a log, as described in Section 3.0. The log will contain information on the location where dust plumes were visible, their approximate size and temporal persistence, activities occurring that may have caused the dust plume, PM₁₀ and PM_{2.5} concentrations, meteorological conditions at the time and any actions taken.

When wildfires occur in the region, the air quality can deteriorate at the mine. When PM₁₀ and PM_{2.5} monitoring are conducted on days when wildfire smoke is impacting the mine, the resulting concentrations of PM₁₀ and PM_{2.5} can increase due to the wildfire smoke, and potentially cause trigger level exceedances. On days with visible wildfire smoke present at the mine, this should be documented in a log to help determine if PM₁₀ and PM_{2.5} trigger exceedances were related to wildfire smoke. PM₁₀ and PM_{2.5} data can also be compared against BC ENV air quality community monitoring stations Vanderhoof Court House and Quesnel Johnson Avenue on these same days. FireSmoke Canada (<https://firesmoke.ca/>) can also be used to estimate the ground-level PM_{2.5} concentrations that will impact the mine (select daily average forecast data to compare against the daily average PM_{2.5} monitoring results). Data used from these sources should be documented in the log.

Each time a trigger level is exceeded, the log should be reviewed to see if there has been a persistent trigger exceedance trend over time. If persistent trigger exceedances are confirmed, a qualified professional will need to evaluate if an impact assessment for environmental and human health risks is needed, depending on the severity and duration of the exceedance and the receptors involved.

5.0 Mitigation Measures

Mitigation measures for each fugitive dust trigger level are presented in Table 2-1. Mitigation measures for other air emission pollutants are described in the AQFDMP.

6.0 Reporting and Notification Process

The reporting and notification process for each fugitive dust trigger level are presented in Table 2-1 and summarized below:

- **Level 1, Low**
 - Immediately report to Departmental Manager.
- **Level 2, Medium**
 - Immediately report to Departmental Manager.
 - Immediately report to Environmental Manager, Mine Manager and Qualified Professional.
 - Immediately provide email notification and supporting information to the BC ENV Director: envauthorizationsreporting@gov.bc.ca.
 - After inspections are complete, a log of the findings will be filled out by the Departmental Manager.
- **Level 3, High**
 - Immediately report to Departmental Manager.
 - Immediately report to Environmental Manager, Mine Manager and Qualified Professional.
 - Immediately provide email notification and supporting information to the BC ENV Director: envauthorizationsreporting@gov.bc.ca.
 - The Environment Manager or their designate will notify Indigenous Nations.
 - After inspections are complete, a log of the findings will be filled out by the Departmental Manager.

7.0 TRP Review and Revisions

7.1 TRP Annual Review by ELoMC

The TRP will be reviewed and revised in conjunction with the AQFDMP. The review and revisions of the AQFDMP are described below:

The AQFDMP will be reviewed annually by a qualified professional per BW Gold's Environmental Life of Mine Committee (ELoMC) annual schedule to: review the monitoring program; confirm that the measures in the plan are being implemented; and identify any improvements to improve the effectiveness of fugitive dust best management practices. AQFDMP revisions will be required:

- if the monitoring program shows that the effects of the Mine are not mitigated to the extent contemplated or predicted in the Application/EIS or exceed adaptive management triggers;
- there are new and /or changes to emission sources;
- there are changes to other relevant management plans and regulatory requirements; and
- there are amendments to the operating permit conditions.

Proposed changes will be documented via the provision of a change log document including rationale for changes, which will be provided at the same time (where possible) or following resubmission of the AQFDMP. As required by EAC #M19-01 Condition 20, the plan and any amendments thereto, will be implemented to the satisfaction of a qualified professional throughout construction, operations, and closure and to the satisfaction of the EAO. Revised draft and final versions of the AQFDMP will be provided to Environmental Assessment Office (EAO), Environmental Monitoring Committee (EMC), and Northern Health through the Condition 42 public website. Upon submissions of updated Management plans, reviewers will be invited to share and direct any comments, questions, or concerns on the AQFDMP updates through the ELoMC. Regular presentations of implementation of management plans including the AQFDMP will also be provided to reviewers per the ELoMC annual schedule of topics/development of monthly meeting agendas.

7.2 TRP 3-year Review Report for BC ENV

The air discharge permit requires that this TRP will be reviewed every three years by a qualified professional, with the first review conducted in 2026. A qualified professional will develop a TRP Review Report based on the findings of the TRP review. The TRP Review Report will be submitted to the BC ENV as part of the Annual Report for Permit No. 110650 for the year in which the TRP review was conducted (BC ENV 2024).

The TRP Review Report will include:

- an assessment of the effectiveness of the TRP in ensuring that the provincial air quality objectives (BC ENV 2022a) are not exceeded;
- a summary of all the exceedances of trigger levels (Table 2-1) over the last three years;
- a summary of the likely causes of exceedances;
- a summary of all the actions planned or taken in accordance with the responses listed in the TRP;
- an assessment of the efficacy of mitigation included in Table 2-1; and
- recommendations for updates to the TRP.

7.3 TRP Revisions

Based on the outcomes of the annual TRP review by the ELoMC (Section 7.1) or the 3-year Review Report (Section 7.2), a qualified professional will revise the TRP based on the recommended updates. The revised TRP will be submitted to the BC ENV director within 30 days of the submission of the Annual Report. If any recommendations from the 3-year Review Report are not included in the revised TRP, justification will be provided to the BC ENV director (BC ENV 2024). The revised TRP document version and version date will be noted on the QP authenticated version.

7.4 Modifications Requested by BC ENV

The air discharge permit requires that a qualified professional modify this TRP when required by the BC ENV director. The modified TRP will be submitted to the director within the timeframe specified by the director.

8.0 Authorship and Declaration

This management plan has been prepared and reviewed by the following professionals:

Reviewer Role	Name	Signature	Date
Prepared by:	Daniel Casanova, B.Sc., EP (Air Quality) Principal Consultant, Atmospheric Scientist Air Quality Qualified Professional ¹	 <small>Daniel Casanova, signed 2025-04-30 Elkwater Trigger Response Plan Document version D.1, dated 2025-04-30</small>	04/30/2025
Reviewed by:	Patty Vadnais, M.Sc. Principal Consultant, Project Management		04/30/2025

Notes:

ERM Permit to Practice No.: 1001271

¹ Qualified Professional as defined by Permit 110650 (amended September 9, 2024; BC ENV 2024).

As required by Permit 110650 condition 6.8.2 (BC ENV 2024), this document has been prepared in accordance with the professional standards governing the Qualified Professional. Any statements of fact included in the document are, to the best of the knowledge and belief of the Qualified Professional true, based on appropriate review and investigation. Any opinions expressed in the document are, based on professional judgement and review of available information, fair and reasonable. BC ENV Conflict of Interest and Declaration of Competency forms required for Qualified Professionals by Permit 110650 condition 6.8 are included in Appendix A.

9.0 References

Definitions of the acronyms and abbreviations used in this reference list can be found in the Acronyms and Abbreviations section.

AMEC. 2014. *Blackwater Gold Project Air Quality Modelling Technical Data Report*. Prepared for New Gold Inc. by AMEC Environment & Infrastructure.

BC EMLI & ENV. 2023. Developing a Fugitive Dust Management Plan for Mines in BC (November 2023, Version 01.00). https://www2.gov.bc.ca/assets/gov/environment/waste-management/industrial-waste/industrial-waste/mining-smelt-energy/guidance-documents/dust_management_plan_guidance.pdf.

BC ENV. 2020. *The British Columbia Field Sampling Manual: Part B Air and Air Emissions Testing*. https://www2.gov.bc.ca/assets/gov/environment/research-monitoring-and-reporting/monitoring/emre/manuals/field-sampling-manual/bc_field_sampling_manual_part_b.pdf (accessed April 2025).

BC ENV. 2022a. *Air Quality Objectives and Standards*. <https://www2.gov.bc.ca/gov/content/environment/air-land-water/air/air-quality-management/regulatory-framework/objectives-standards> (accessed June 2023).

BC ENV. 2022b. *Development and Use of Trigger Response Plans*. https://www2.gov.bc.ca/assets/gov/environment/waste-management/industrial-waste/industrial-waste/mining-smelt-energy/guidance-documents/tg12_trigger_response_plans.pdf (accessed June 2023).

BC ENV. 2024. *Permit 110650*. (Air discharge permit for the Blackwater mine, amended September 9, 2024.) British Columbia Ministry of Environment and Parks. <https://j200.gov.bc.ca/pub/ams/download.aspx?PosseObjectId=177019187> (accessed April 2025).

ERM. 2025. *Blackwater Mine: Air Quality and Fugitive Dust Management Plan* (April 2025 version). Prepared for Artemis Gold Inc. by ERM Consultants Canada Ltd.: Vancouver, BC.

Appendix A BC ENV Conflict of Interest and Declaration of Competency Forms

Conflict of Interest Disclosure Statement

A qualified professional ¹ providing services to either the Ministry of Environment and Climate Change Strategy ("ministry"), or to a regulated person for the purpose of obtaining an authorization from the ministry, or pursuant to a requirement imposed under the *Environmental Management Act*, the *Integrated Pest Management Act* or the *Park Act* has a real or perceived conflict of interest when the qualified professional, or their relatives, close associates or personal friends have a financial or other interest in the outcome of the work being performed.

A real or perceived conflict of interest occurs when a qualified professional has

- a) an ownership interest in the regulated person's business;
- b) an opportunity to influence a decision that leads to financial benefits from the regulated person or their business other than a standard fee for service (e.g. bonuses, stock options, other profit sharing arrangements);
- c) a personal or professional interest in a specific outcome;
- d) the promise of a long term or ongoing business relationship with the regulated person, that is contingent upon a specific outcome of work;
- e) a spouse or other family member who will benefit from a specific outcome; or
- f) any other interest that could be perceived as a threat to the independence or objectivity of the qualified professional in performing a duty or function.

Qualified professionals who work under ministry legislation must take care in the conduct of their work that potential conflicts of interest within their control are avoided or mitigated. Precise rules in conflict of interest are not possible and professionals must rely on guidance of their professional associations, their common sense, conscience and sense of personal integrity.

Declaration

I, Daniel Casanova Print Name ECO Canada Professional Association, as a member of ECO Canada Professional Association, declare

Select one of the following:

☒ Absence from conflict of interest

Other than the standard fee I will receive for my professional services, I have no financial or other interest in the outcome of this Blackwater Mine, Air Quality TRP document. I further declare that should a conflict of interest arise in the future during the course of this work, I will fully disclose the circumstances in writing and without delay to Breanne Hill Insert Ministry Contact Name, erring on the side of caution.

☐ Real or perceived conflict of interest

Description and nature of conflict(s):

I will maintain my objectivity, conducting my work in accordance with my Code of Ethics and standards of practice.

In addition, I will take the following steps to mitigate the real or perceived conflict(s) I have disclosed, to ensure the public interest remains paramount:

Further, I acknowledge that this disclosure may be interpreted as a threat to my independence and will be considered by the statutory decision maker accordingly.

This conflict of interest disclosure statement is collected under section 26(c) of the *Freedom of Information and Protection of Privacy Act* for the purposes of increasing government transparency and ensuring professional ethics and accountability. By signing and submitting this statement you consent to its publication and its disclosure outside of Canada. This consent is valid from the date submitted and cannot be revoked. If you have any questions about the collection, use or disclosure of your personal information please contact the Ministry of Environment and Climate Change Strategy Headquarters Office at 1-800-663-7867.

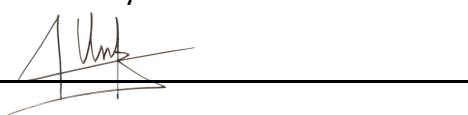
Signature:

X  Daniel Casanova, signed 2025-04-30
Blackwater Trigger Response Plan
Document version D.1, dated 2025-04-30

Print name: Daniel Casanova

Date: April 30, 2025

Witnessed by:

X 

Print name: Agnès Untz

¹Qualified Professional, in relation to a duty or function under ministry legislation, means an individual who

- a) is registered in British Columbia with a professional association, is acting under that organization's code of ethics, and is subject to disciplinary action by that association, and
- b) through suitable education, experience, accreditation and knowledge, may reasonably be relied on to provide advice within his or her area of expertise, which area of expertise is applicable to the duty or function.

Declaration of Competency

The Ministry of Environment and Climate Change Strategy relies on the work, advice, recommendations and in some cases decision making of qualified professionals¹, under government's professional reliance regime. With this comes an assumption that professionals who undertake work in relation to ministry legislation, regulations and codes of practice have the knowledge, experience and objectivity necessary to fulfill this role.

1. Name of Qualified Professional Daniel Casanova
Title Principle Consultant, Atmospheric Scientist
2. Are you a registered member of a professional association in B.C.? ☒ Yes ☐ No
Name of Association: ECO Canada Registration # 20990
3. Brief description of professional services:
Air quality and meteorological consulting services

This declaration of competency is collected under section 26(c) of the *Freedom of Information and Protection of Privacy Act* for the purposes of increasing government transparency and ensuring professional ethics and accountability. By signing and submitting this statement you consent to its publication and its disclosure outside of Canada. This consent is valid from the date submitted and cannot be revoked. If you have any questions about the collection, use or disclosure of your personal information please contact the Ministry of Environment and Climate Change Strategy Headquarters Office at 1-800-663-7867.

Declaration

I am a qualified professional with the knowledge, skills and experience to provide expert information, advice and/or recommendations in relation to the specific work described above.

Signature:

X 
Daniel Casanova, signed 2025-04-30
Alsekwater Trigger Response Plan
Document version D.1, dated 2023-04-30

Print Name: Daniel Casanova

Witnessed by:

X 

Print Name: Agnès Untz

Date signed: 2025-04-30

¹Qualified Professional, in relation to a duty or function under ministry legislation, means an individual who

- a) is registered in British Columbia with a professional association, is acting under that organization's code of ethics, and is subject to disciplinary action by that association, and
- b) through suitable education, experience, accreditation and knowledge, may reasonably be relied on to provide advice within his or her area of expertise, which area of expertise is applicable to the duty or function.

Appendix E Transmission Line Air Quality and Fugitive Dust Management Plan



Blackwater Mine



Transmission Line Air Quality and Fugitive Dust Management Plan

Table of Contents

Work Instructions	2
Context Statement	3
Acronyms and Abbreviations	4
1.0 Project Overview	7
1.1 Permitting	8
1.2 Purpose and Objectives	9
1.3 Scope	10
2.0 Roles and Responsibilities	10
3.0 Project Setting.....	14
3.1 Emissions and Physical Location Overview	14
4.0 Identification of Potential Sources or Activities which Generate Fugitive Dust.....	15
4.1 Source List Review	15
4.2 Source List Update Procedure.....	16
4.3 Fugitive Dust Source List.....	16
5.0 Identification of Potential Effects of Fugitive Dust.....	20
6.0 Air Quality and Fugitive Dust Management	21
6.1 Best Management Practices (BMP).....	21
6.2 Site Specific Mitigation Measures	21
7.0 Plan Implementation	24
7.1 Training	24
7.2 Monitoring and Maintenance	25
7.3 Trigger Action Response Plan (TARP)	26
7.4 Record Keeping.....	30
8.0 Adaptive Management	30
9.0 Reporting	31
10.0 Qualified Professionals	32
11.0 References.....	33
Approval Signature Record	34

Work Instructions

Name of SOP

Version	E.1
Replaces	D.2
Creation Date	04/05/2023
Scheduled Review Date	
Review Date	
Document Team Members	
Document Owner:	
Document Approver:	
Related Documents:	
Key Contacts:	
Change Requests:	

Context Statement

The Blackwater Gold Project (Project) received an Environmental Assessment Certificate #M19-01 (EAC) on June 21, 2019, under the 2002 *Environmental Assessment Act*, and received a Decision Statement (DS) on April 15, 2019, under the *Canadian Environmental Assessment Act, 2012*, approving the Project with conditions. Blackwater is an open pit gold and silver mine with associated ore processing facilities located 110 km southwest of Vanderhoof in central British Columbia. The EAC and DS includes activities associated with the construction and operation of an electrical transmission line (TL) that is required to provide the energy requirements for the Project. A number of provincial permits and authorizations will be required to construct and operate the TL. The primary permits include the following: Statutory Right-of-Way (StROW) and interim Licence of Occupation (LOO) for Crown Land, an Occupant Licence to Cut (OLTC), Road and Special Use Permits (for Roads), and Junction Permits for critical road intersections.

This Transmission Line Air Quality and Fugitive Dust Management Plan (TL AQDMP) supports applications for Crown land tenure (i.e., ROW, LOO) under the Land Act and is also required under the *Forest and Range Practices Act* (FRPA), and the Occupational Health and Safety (OHS) Regulation.

The BW Gold is providing this draft version of the Transmission Line Air Quality and Fugitive Dust Management Plan for review and comment. BW Gold welcomes comments on the draft plan.

Acronyms and Abbreviations

Artemis	Artemis Gold Inc.
BC	British Columbia
Blackwater	Blackwater Gold Project
BMP	Best Management Practices
BW Gold	BW Gold Ltd.
CEO	Chief Executive Officer
CCME	Canadian Council of Ministers of the Environment
CCN	Cheslatta Carrier Nation
Code	Health, Safety and Reclamation Code for Mines in British Columbia
COO	Chief Operating Officer
CSFN	Carrier Sekani First Nations
CO	Carbon Monoxide
COPC	Contaminants of Potential Concern
DFO	Fisheries and Oceans Canada
DS	Decision Statement
EAC	Environmental Assessment Certificate
EAO	Environmental Assessment Office
ECCC	Environment and Climate Change Canada
EC	Environmental Certificate
EM	Environmental Manager
EMBC	Emergency Management British Columbia
EMLI	Ministry of Energy, Mines and Low Carbon Innovation
EMP	Environmental Management Plan
EMPR	Ministry of Energy Mines and Petroleum Resources
EMS	Environmental Management System
ENV	Ministry of Environment and Climate Change Strategy
EPC	Engineering, Procurement, and Construction

FSR	Forest Service Road
GM	General Manager
JAIR or Joint MA/EMA Application	Joint Application Information Requirements for <i>Mines Act and Environmental Management Act</i> Permits
ha	hectares
Indigenous nations	Lhoosk'uz Dené Nation, Ulkatcho First Nation, Nadleh Whut'en First Nation, Stellat'en First Nation, Saik'uz First Nation, and Nazko First Nation as defined by EAC M#19-01
km	Kilometre
L	Litre
LDN	Lhoosk'uz Dené Nation
m	Metre
MOE	Ministry of Environment
MT	Mitigation Table
NFN	Nazko First Nation
NHA	Northern Health Authority
NO_x	Nitrogen Oxides
NWFN	Nadleh Whut'en First Nation
OBSCR	Open Burning Smoke Control Regulation
PAHs	Polycyclic aromatic hydrocarbons
Plan	Transmission Line Air Quality and Fugitive Dust Management Plan
PM	Particulate Matter
PM₁₀	Particulate Matter <10 µm
PM_{2.5}	Particulate Matter <2.5 µm
Project	Blackwater Gold Project
QA/QC	Quality assurance/quality control
QP	Qualified Professional
ROW	Right of Way
SAO	Safe Act Observations
SFN	Saik'uz First Nation

SOW	Standard Operating Procedure
StFN	Stellat'en First Nation
SO₂	Sulphur Dioxide
t	tonnes
TARP	Trigger Action Response Plan
TK	Traditional Knowledge
TL	Transmission Line
TL AQDMP	Transmission Line Air Quality and Dust Management Plan
TL CEMP	Transmission Line Construction Environmental Management Plan
TL IPMP	Transmission Line Integrated Vegetation Management Plan
TL IVMP	Transmission Line Integrated Vegetation Management Plan
TL RCP	Transmission Line Reclamation and Closure Plan
TL SEPSCP	Transmission Line Surface Erosion Prevention and Sediment Control Plan
TL WMP	Transmission Line Wildfire Management Plan
WMMP	Wildlife Mitigation and Management Plan
TN	T̓silhqot'in Nation
UFN	Ulkatcho First Nation
TSP	Total Suspended Particulates
UFN	Ulkatcho First Nation
US EPA	United States Environmental Protection Agency
VC	Valued Component
VOCs	Volatile Organic Compounds
VP	Vice President
WHMIS	Workplace Hazardous Materials Information System

1.0 Project Overview

The Blackwater Gold Project (the Project) is a gold and silver open pit mine located in central British Columbia (BC), approximately 112 kilometres (km) southwest of Vanderhoof, 160 km southwest of Prince George, and 446 km northeast of Vancouver. The Project site is presently accessed via the Kluskus Forest Service Road (FSR), the Kluskus-Ootsa FSR and an exploration access road, which connects to the Kluskus-Ootsa FSR at km 142. Electrical power for the Project will be supplied by a new approximately 135 km, 230 kilovolt overland transmission line (TL) that will connect to the BC Hydro grid at the Glenannan substation located near the Endako mine, 65 km west of Vanderhoof. A brief description of the proposed TL is as follows:

- From the Glenannan substation to the mine site permit area, the transmission line will be permitted by way of Licence of Occupation (statutory right-of-way; ROW);
- The TL will be constructed within a cleared right of way (ROW) of 40 metre (m) width for standard spans, but up to 50 m width for longer spans in select areas. The TL ROW area is approximately 515 ha;
- Existing permitted and non-status roads will be used for the purpose of accessing the ROW. New access trails and stream crossings will be located only within the TL cleared ROW;
- Equipment and material laydown areas will also lie within the cleared ROW; and
- The construction workforce will be housed at the Project camp or other independent commercial accommodations in the area.

Overall Project construction is anticipated to take two years. The TL is anticipated to take approximately 14 months to construct.

Post-construction, most of the temporary access trails used for construction on the TL ROW will be deactivated and/or decommissioned within 3 years with the exception of those required for maintenance. During operation of the TL there will be periodic inspections and maintenance as well as occasional unscheduled power supply interruptions that will require inspection and maintenance/repair activities.

Once commissioned, the TL will be required to support mine development throughout the Project's 23-year mine life. There may be some ongoing requirements for the TL following mine closure and into post-closure, pending post-closure electrical load evaluation. The TL will be decommissioned 46 years (or more) after construction, during the Project's post-closure phase.

The Blackwater mine site is located within the traditional territories of Lhoosk'uz Dené Nation (LDN), Ulkatcho First Nation (UFN), Skin Tyee Nation and Tsilhqot'in Nation. The Kluskus and Kluskus-Ootsa Forest Service Roads (FSR) and Project TL cross the traditional territories of Nadleh Whut'en First Nation (NWFN), Saik'uz First Nation (SFN), and Stellat'en First Nation (StFN; collectively, the Carrier Sekani First Nations) as well as the traditional territories of the Nazko First Nation (NFN), Nee Tahi Buhn Band, Cheslatta Carrier Nation and Yekooche First Nation (EAO 2019a and 2019b).

Additional details on transmission line components and activities are presented in Section 3.2 of the Transmission Line Initial Project Description (TL IPD; BW Gold 2022).

1.1 Permitting

A number of provincial permits and authorizations will be required to construct and operate the TL. The primary permits include the following: Statutory Right-of-Way (ROW) and interim Licence of Occupation (LOO) for Crown Land, an Occupancy Licence to Cut (OLTC), Road and Special Use Permits (for Roads) Road Use Permits, and Junction Permits for critical road intersections. This management plan is provided in support of the LOO permit application.

Parameters selected for the TL AQDMP includes some of the same parameters included in the mining assessment:

- Fugitive dust including Total Suspended Particulates (TSP), particulate matter (PM)₁₀, fine particulate matter (PM_{2.5}); and
- Criteria air contaminants including sulphur dioxide (SO₂) nitrogen dioxide (NO_x) and carbon monoxide (CO).

Federal and provincial legislation that may be relevant to air quality and dust control include:

- *Canadian Environmental Protection Act, 1999*;
- *Forest & Range Practices Act*;
- Environmental Emergency Regulations;
- *Transportation of Dangerous Goods Act*;
- Transportation of Dangerous Goods Regulations;
- *Environmental Management Act 2003*;
- Environmental Code of Practice for Metal Mines 2009;
- *Hazardous Products Act* and Hazardous Products Regulations;
- *Hazardous Materials Information Review Act*;
- *Mines Act*;
- Health, Safety and Reclamation Code for Mines in British Columbia (2021);
- Chief Inspector's Directive – Hydrocarbon Spills, May 15, 2015;
- Workplace Hazardous Materials Information System (WHMIS) Regulation (Mines); and
- Environmental Code of Practice for Aboveground Storage Tank Systems Containing Petroleum Products.

The TL AQDMP and any amendments thereto, must be implemented to the satisfaction of a QP throughout Construction, Operations, and Closure and to the satisfaction of the EAO. Guidance documents related to air quality and fugitive dust management include:

- The Guideline for the Selection of Valued Components and Assessment of Potential Effects (BC EAO, 2013);
- British Columbia Ambient Air Quality Objectives (2021);
- Canadian Ambient Air Quality Standards (2020);
- *Developing a Fugitive Dust Management Plan for Industrial Projects* (May 2018);
- Implementation Guidelines for the Environmental Emergency Regulations (2011);

- On-Road Vehicle and Engine Emission Regulations (SOR/2003-2), Canada Gazette Part II, Vol. 137, No. 1;
- Off-Road Compression-Ignition Engine Emission Regulations (SOR/2005-32);
- US EPA; 40 CFR Part 9, 86 and 89 Control of Emissions of Air Pollution from Non-road Diesel Engines; Final Rule;
- Heavy-duty Vehicle and Engine Greenhouse Gas Emission Regulations (SOR/2013-24);
- British Columbia Field Sampling Manual: 2020 – Part B Air and Air Emissions Testing; and
- BC MOE 2016. Water and Air Baseline Monitoring Guidance Document for Mine Proponents and Operators.

Consistent with the Guidance (EMPR & ENV, 2018), the TL AQDMP does not address occupational health and safety requirements pertaining to workplace exposures to dust. Worker health and safety at Project sites is regulated by the Health, Safety and Reclamation Code for Mines in BC (EMLI, 2021).

1.2 Purpose and Objectives

The purpose of the TL AQDMP is to minimize the effects of the TL project's air emissions on human health and the natural environment. The TL AQDMP has adopted an air quality and emissions management system that recognizes and responds to the issue of gaseous and particulate emissions at all stages of the TL project, from planning, construction, operations, and to closure. The TL AQDMP outlines mitigation measures and best management practices (BMPs), monitoring, adaptive management, and a follow-up monitoring program. The Plan identifies dust-emitting sources, dust mitigation measures, and contingency measures in the event that primary control measures are not effectively controlling dust emissions.

The objectives of the TL AQDMP are to:

- Identify TL project activities which may impact emissions;
- Establish measurable goals and targets to air quality and emissions management;
- Protect the air quality through the development of environmental mitigation measures associated with construction and operations activities;
- Address air quality related environmental aspects in the planning, design, and execution phases of the TL project;
- Implement BMPs for air emissions;
- Describe the management practices expected for all employees, contractors, and subcontractors related to the air quality and emissions management; and
- Identify the process for recording, reporting, and correcting non-compliance related to the TL AQDMP.

The TL AQDMP is linked to the Transmission Line Integrated Vegetation Management Plan (TLIVMP); Transmission Line Reclamation and Closure Plan (TLRCP); Transmission Line Surface Erosion Prevention and Sediment Control Plan (TLSEPSCP); Transmission Line Construction Environmental Management Plan (TL CEMP); Transmission Line Wildfire Management Plan (TL WMP); and the Wildlife Mitigation and Management Plan (WMMP).

1.3 Scope

The scope of this TL AQDMP includes all TL construction activities and is a standalone document. The scope of the TL AQDMP is to enhance existing policies and procedures for all relevant stakeholders. The TL AQDMP is supplementary to, and does not replace or override, any existing Government legislation, and associated Regulations.

2.0 Roles and Responsibilities

BW Gold has the obligation of ensuring that all commitments are met and that all relevant obligations are made known to mine personnel and site contractors during all phases of the mine life. A clear understanding of the roles, responsibilities, and level of authority that employees and contractors have when working at the mine site is essential to meet Environmental Management System (EMS) objectives. The BW Gold Construction Manager (CM) and Environmental Manager (EM) is responsible for communicating with EMBC, and for notifying the Ministry of Environment and Climate Change Strategy (ENV) depending on the environmental impact.

Table 2-1 provides an overview of general environmental management responsibilities during all phases of the mine life for key positions that will be involved in environmental management. This table also includes roles and responsibilities for the TL AQDMP. Other positions not specifically listed in Table 2-1 but who will provide supporting roles include independent environmental monitors, Independent Tailings Review Board, TSF qualified person, and other qualified persons and qualified professionals.

Table 2-1: Blackwater Roles and Responsibilities

Position	Responsibility
Chief Executive Officer (CEO)	The CEO is responsible for overall Project governance. Reports to the Board.
Chief Operating Officer (COO)	The COO is responsible for engineering and Project development and coordinates with the Mine Manager to ensure overall Project objectives are being managed. Reports to CEO.
Vice President (VP) Environment & Social Responsibility	The VP is responsible for championing the Environmental Policy Statement and EMS, establishing environmental performance targets, and overseeing permitting. Reports to COO.
General Manager (GM) – Development	The GM is responsible for managing project permitting, the Project's administration services and external entities, and delivering systems and programs that ensure Artemis's values are embraced and supported: Putting People First, Outstanding Corporate Citizenship, High Performance Culture, Rigorous Project Management and Financial Discipline. Reports to COO.
Mine Manager	The Mine Manager, as defined in the Mines Act, has overall responsibility for mine operations, including the health and safety of workers and the public, Environmental Management System (EMS) implementation, overall environmental performance and protection, and permit compliance. The Mine Manager may delegate their responsibilities to qualified personnel. Reports to GM.
Construction Manager (CM)	The CM is accountable for ensuring environmental and regulatory commitments and obligations are being met during the construction phase, including TL AQDMP implementation and compliance. Reports to GM.

Position	Responsibility
Environmental Manager (EM)	The EM is responsible for the day-to-day management of the Project's environmental programs, compliance with environmental permits, and updating EMS and MPs. The EM or designate will be responsible for reporting non-compliance to the CM, and Engineering, Procurement, and Construction contractor (EPC), other contractors, the Company, and regulatory agencies, where required. If TARP triggers are observed, the EM is responsible for notifying the EAO, EMPR, NHA, Indigenous Groups, and the public. The notification will include both a technical report and a plain language summary of the technical report. Supports the CM with TL AQDMP implementation and compliance, and reports to Mine Manager.
Departmental Managers	Departmental Managers are responsible for implementation of the EMS relevant to their areas. Reports to Mine Manager.
Indigenous Relations Manager	Indigenous Relations Manager is responsible for Indigenous engagement throughout the life of mine. Also responsible for day-to-day management and communications with Indigenous groups. Reports to EM.
Community Relations Advisor	Community Relations Advisor is responsible for managing the Community Liaison Committee and Community Feedback Mechanism. Reports to Mine Manager.
Environmental Monitors	Environmental Monitors (includes Environmental Specialists and Technicians) are responsible for tracking and reporting on environmental permit obligations through field-based monitoring programs. Report to EM.
Aboriginal Monitors	Aboriginal Monitors are required by EAC #M19-01 Condition 17 and will be responsible for monitoring the Project's potential effects on Aboriginal interests. Aboriginal Monitors will be involved in adaptive management and follow-up monitoring programs.
Employees and Contractors	Employees and Contractors are trained and responsible for being aware of permit requirements specific to their roles and responsibilities, including the TL AQDMP. If fugitive dust concerns are raised in concern with the TL AQDMP, they shall report to their site supervisor who will relay to the EM and/or CM. Report to departmental managers.
Qualified Professionals and Qualified Persons	Qualified professionals and qualified persons will be retained to review objectives and conduct various aspects of environmental and social monitoring as specified in EMPs and social MPs.

BW Gold will employ a qualified person as an Environmental Manager (EM) who will ensure that throughout the Construction phase (including the construction of the TL), the EMS requirements are established, implemented, maintained, and that environmental performance is reported to management for review and action. The EM is responsible for retaining the services of qualified persons or qualified professionals with specific scientific or engineering expertise to provide direction and management advice in their areas of specialization. The EM will be supported by a staff of Environmental Monitors that will include Environmental Specialists and Technicians and a consulting team of subject matter experts in the fields of environmental science and engineering.

During the Construction phase, the Engineering, Procurement, and Construction (EPC) contractor and subcontractors, will report to the Construction Manager (CM). The EPC contractor will be responsible for ensuring that impacts are minimized, and environmental obligations are met during the Construction phase. For non- EPC contractors, who will perform some of the minor works on site, the same reporting structure, requirements, and responsibilities will be established as outlined above. BW Gold will maintain overall responsibility for management of the construction and operation of the mine site and will therefore be responsible for establishing employment and contract agreements, communicating environmental requirements, and conducting periodic reviews of performance against stated requirements.

The CM is accountable for ensuring that environmental and regulatory commitments/obligations are being met during the construction phase on site, including the TL AQDMP. The EM will be responsible for ensuring that construction activities are proceeding in accordance with the objectives of the EMS, associated MPs, and TL AQDMP. The EM or designate will be responsible for reporting non-compliance to the CM, EPC contractor, other contractors, the Company, and regulatory agencies, where required. The EM or designate will have the authority to stop any construction activity that is deemed to pose a risk to the environment; work will only proceed when the identified risk has been addressed and concerns rectified.

Environmental management during operation of the TL project will be integrated under the direction of the EM, who will liaise closely with Departmental Managers and will report directly to the Mine Manager. The EM will be supported by the VP of Environment and Social Responsibility in order to provide an effective and integrated approach to environmental management and ensure adherence to corporate environmental standards. The EM will be accountable for implementing the approved MPs (including TL AQDMP) and reviewing them periodically for effectiveness. Departmental Managers will be directly responsible for implementation of the EMS and MPs/standard operating procedures) relevant to their areas. It is expected that during operations of the TL project that the operations, inspection, and maintenance/repair of the TL will fall under the Mine Site Services Department, with some of the services being assigned to qualified consultants and contractors. All employees and contractors are responsible for daily implementation of the practices and policies contained in the EMS and TL AQDMP.

During closure and post-closure staffing levels will be reduced to align with the level of activity associated with these phases. Prior to initiating closure activities, BW Gold will revisit environmental and health and safety roles and responsibilities to ensure the site is adequately resourced to meet permit monitoring and reporting requirements. The Mine Manager will have overall responsibility for Closure and Post-closure activities.

Pursuant to Condition 19 of the EAC, BW Gold has established an Environmental Monitoring Committee (EMC) to facilitate information sharing and provide advice on the development and operation of the Project, and the implementation of EAC conditions, in a coordinated and collaborative manner. Committee members include representatives of the EAO, Uikatcho First Nation (UFN), Lhoosk'uz Dene Nation (LDN), Nadleh Whut'en First Nation (NWFN), Stellat'en First Nation (StFN), Saik'uz First Nation (SFN), Nazko First Nation (NFN), Ministry of Energy, Mines and Low Carbon Innovation (EMLI), ENV, and Ministry of Forests, Lands, Natural Resource Operations and Rural Development.

Pursuant to Condition 17 of the EAC, Aboriginal Group Monitor and Monitoring Plan, BW Gold will retain or provide funding to retain a monitor for each Aboriginal Group prior to commencing construction and through all phases of the mine life. The general scope of the monitor's activities will be related to monitoring for potential effects from the Project on the Aboriginal Group's Aboriginal interests.

The TL Engineering Procurement and Construction Management or Engineering, Procurement, and Construction contractor roles and responsibilities relating to environmental management, industrial and domestic waste management, and environmental protection are identified below in Table 2-2.

Table 2-2: Transmission Line Construction Contractor Roles and Responsibilities

Role	Responsibility
Contractor Construction Manager (CCM)	<p>The Contractor Construction Manager (CCM) has ultimate responsibility for construction proceedings, including worker and public health and safety and environmental protection. The CCM will ensure the implementation of training programs as well as support the Blackwater Gold Environmental Policy. The CCM will ensure that adequate support and resources are made available for the implementation and maintenance of the Environmental Management System (EMS), including the TL AQDMP implementation and review. The CCM may, as needed, delegate their duties to Qualified Professional (QPs). Report to the BW Gold Construction Manager.</p>
Contractor Construction Superintendents	<p>The Contractor Construction Superintendents have an administrative responsibility and requirement to act upon the directions, guidance, and support of the Construction Manager. They are resources to the CCM, and have the following responsibilities:</p> <ul style="list-style-type: none"> • Learning and following the TL AQDMP in relation to their work; • Support the implementation of the Blackwater Gold Environmental Policy; • Ensure that environmental matters are given consideration in pre-planning of construction activities, budgets, training, and operations; and • Ensure that workers under their supervision are made aware of known, or reasonably foreseeable, environmental aspects where they work.
Construction Employees, Contractors, and Subcontractors	<ul style="list-style-type: none"> • Employees have general responsibilities for environmental protection, which include: <ul style="list-style-type: none"> – Learning and following the TL AQDMP in relation to their work; – Supporting the Blackwater Gold Environmental Policy; – Supporting implementation of EMPs; – Cooperating with the Blackwater Environment Committee representative(s); – Learning and following environmental best practices and procedures relevant to their work; – Following instructions and directives given by supervisors; – Operating equipment in an environmentally responsible manner to avoid environmental impacts; – If training another worker, ensuring that they are properly completing all required tasks and responsibilities in accordance with environmental best practices procedures; – Reporting all environmental incidents immediately to their supervisor, who will expedite a response to address the incident; – Participating in mitigating or minimizing harm to the environment should an environmental incident occur; and – Asking for help or information when unsure how to perform a task without compromising social, cultural, archaeological, or environmental values.

3.0 Project Setting

3.1 Emissions and Physical Location Overview

The TL AQDMP addresses the new approximately 135 km overland transmission line (TL) that will connect the mine to the BC Hydro grid, as described in the Project Overview. There is an absence of heavy industrial air emission sources within the local and regional project areas that could add to the TL emissions aside from the mine itself. The TL activities determined to contribute to cumulative air quality effects are those associated with combustion emissions, unpaved roads, and material handling as these activities may generate air emission such as TPM, PM₁₀, PM_{2.5}, NO_x, and CO.

Of the listed general land uses below, mining exploration and forestry resource use are the activities that may have the largest non-TL cumulative effects contribution to air quality during TL construction. The other activities listed are not expected to create measurable changes in the air quality. Known general land uses within the region include:

- Protected areas and parks;
- Recreation/tourism use (e.g., all-terrain vehicle use);
- Forestry and timber resource use;
- Hunting/trapping/guide outfitting;
- Fishing and aquaculture;
- Agriculture and grazing;
- Range use;
- Mining, exploration, and mineral tenures;
- Land ownership and tenures;
- Recreational and commercial use of waterways;
- Groundwater resource use; and
- Surface water resource use.

Local residents and Indigenous groups and their members have expressed interest in the potential effects on air quality during TL construction and operations. These groups' comments during the engagement and consultation process have provided insights into traditional, ecological, and community knowledge, which is defined as a body of knowledge built up by a group of people through generations of living in close contact with nature. This includes unique knowledge about the local environment, how it functions, and its characteristic ecological relationships. No specific sensitive environmental receptors specific to the TL are identified at this time to be monitored. Mine sensitive receptors include the Project operations camp, and Tatelkus Lake Indian Reserve 28 (tatelkus Lake 28), as indicated in the Project Air Quality and Fugitive Dust Management Plan (AQDMP)

During a meeting with the Nazko First Nation (NFN), members emphasized that clean air, including being free of dust, is important to ensure medicinal plants and waters are clean to eat and drink. Lhoosk'uz Dene Nation (LDN) and Saikuz First Nation (SFN) elders also noted their concerns about the potential effects of the Project, such as the impact of dust and emissions on air quality.

4.0 Identification of Potential Sources or Activities which Generate Fugitive Dust

4.1 Source List Review

Fugitive dust will be generated from construction activities including material handling and resuspended road dust. Other particulate sources include diesel emissions and industrial burning.

TL project construction is anticipated to start in late 2022. Air quality and fugitive dust management is critical for safety, and for preventing potential effects to local and regional wildlife populations and habitats. The Project has adopted an air quality and emissions management system that recognizes and responds to the issue of gaseous and particulate emissions at all stages of the Project, from planning, construction, operation, closure, and post closure. This includes systematically identifying sources, predicting contaminants levels, evaluating potential effects on human health and the environment, and incorporating prediction and control measures.

During construction and operations phases of the TL, many of the emissions will result from diesel fuelled internal combustion engines, industrial burning, and fugitive dust. Emitted substances will be dispersed into the surrounding air and concentration levels will depend on emission rates, release characteristics, meteorological parameters, and topography. Due to the physical length of the TL, meteorological parameters and topography are expected to vary. Diesel emission levels depend on engine design parameters, emissions controls, equipment maintenance, and the power rating, and do not depend on TL project phase or activity. Industrial burning of debris piles is addressed in the TL WMP, along with inspections and maintenance of fire equipment. Timing and duration of burning activities depends on local burning bans and ventilation index as per Open Burning Smoke Control Regulation (OBSCR). Fugitive dust is the primary source of TL project air emissions. Potential dust sources include material handling/rehandling, construction and use of unpaved roads, blasting, compaction, drilling, grading, material loading and unloading.

Air quality and emissions management defines the programs and procedures that have been, or will be, developed for ensuring that all air quality risks are adequately addressed, prevented, and controlled for all phases of the TL project including design, construction, operations, and decommissioning/closure. This includes the following activities:

- Timber harvesting;
- Road construction, including bridges;
- Material handling;
- Equipment selection (vehicles, drilling and process equipment, etc.);
- Site clearing;
- Vehicle traffic and use of heavy equipment (paved and unpaved roads); and
- Blasting.

In order to quantify cumulative air quality effects, it is necessary to obtain spatially and temporally specific activity information so that emissions can be estimated and assigned to a specific geographic area. By their nature, forestry resource use and mining exploration are activities that move continuously and have a relatively low level of activity in any specific location over a significant period of time. This would be the same case for TL construction. Therefore, the TL project air quality effects are expected to be lower than an activity that remains in one location for a longer period of time.

4.2 Source List Update Procedure

The TL AQDMP's source list shall be reviewed as needed to reflect current site conditions. If fugitive dust sources are removed or new sources are added/observed on site by employees, contractors, EM, or CM, the TL AQDMP will be updated by the EM. At minimum, the source list will be reviewed annually by the EM.

4.3 Fugitive Dust Source List

Table 4-1 below will be updated to list and identify fugitive dust sources during all phases of TL construction.

Table 4-2 provides an overview of the TL project activities anticipated to emit fugitive dust by TL project phase.

Table 4-1: TL Fugitive Dust Source List

Unique ID	Location	Potential Source	Dust Generating Material	Generation Conditions	Additional Comments
Stockpile Area 1 (SP-001)	Designated stockpile area	Wind erosion, material handling	Fine aggregate 0.05mm – 1mm, 1mm – 2 mm	Windy, dry, or hot days, material handling operations	Location will change as TL construction moves along 135 km stretch.
Unpaved Road 1 (UR-001)	Main activity area for transport vehicles	Vehicle traffic	Road dust, aggregate, diesel emissions	Windy, dry, or hot days, material handling operations, vehicle equipment condition, number of vehicle passes, vehicle weight	Location will change as TL construction moves along 135 km stretch.
Blasting Zone 1 (BZ-001)	Blasting zones (if required)	Blasting	Soil/rock composition of blast site	Windy, dry, or hot days, blast size, material handling operations	Location will change as TL construction moves along 135 km stretch.
Staging Area 1 (ST-001)	Staging area	Vehicle traffic	Road dust, aggregate, diesel emissions	Windy, dry, or hot days, vehicle traffic, vehicle equipment condition, number of vehicle passes, vehicle weight	Location will change as TL construction moves along 135 km stretch.
Drilling Area 1 (DR-001)	Drilling area	Drilling	Soil/rock composition of drilling site	Windy, dry, or hot days, drilling duration, material handling operations	Location will change as TL construction moves along 135 km stretch.

Unique ID	Location	Potential Source	Dust Generating Material	Generation Conditions	Additional Comments
Road Construction 1 (RC-001)	Incomplete road construction area	Road construction operations, material handling	Road dust, aggregate, diesel emissions	Windy, dry, or hot days, material handling operations, vehicle equipment condition, number of vehicle passes, vehicle weight	Location will change as TL construction moves along 135 km stretch.
Borrow Pit 1 (BP-001)	Designated borrow pit area	Material handling	Aggregates, soil	Windy, dry, or hot days, vehicle equipment condition, material handling operations	Location will change as TL construction moves along 135 km stretch.
Screening Area 1 (SC-001)	Designated screening area	Screening, material handling	Aggregate	Windy, dry, or hot days, material handling operations	Location will change as TL construction moves along 135 km stretch.
Clearing Area 1 (CL-001)	Clearing area	Clearing Equipment, material handling	Sawdust, upturned soil	Windy, dry, or hot days, clearing duration, vehicle equipment condition, material handling operations	Location will change as TL construction moves along 135 km stretch.
Transmission Line Construction 1 (TL001)	Incomplete transmission line construction area	Material Handling	Aggregate, soil	Windy, dry, or hot days, vehicle equipment condition, material handling operations	Location will change as TL construction moves along 135 km stretch.
Industrial Burning Area (IB-001)	Designated pile burning area	Material candling, burn piles	Wood combustion	Refer to TL WMP. Schedule varies on conditions.	Location will change as TL construction moves along 135 km stretch.

Table 4-2: TL Activities Resulting in Fugitive Dust by Phase

Construction	Operations	Closure	Post-closure
<ul style="list-style-type: none">• Land clearing and earthworks for all on-site components• Construction and use of unpaved access roads• Surface blasting and drilling• Construction of TL project roads• Construction of the transmission line• stockpiles, borrow areas, and laydown areas• Aggregate extraction from borrow pits• Borrow and aggregate screening areas• Industrial burning	<ul style="list-style-type: none">• Use of unpaved surfaces including roads• Road maintenance• Progressive reclamation, restoration activities	<ul style="list-style-type: none">• Use of unpaved roads• Road maintenance• Progressive reclamation, restoration activities	<ul style="list-style-type: none">• Use of unpaved roads• Road maintenance

5.0 Identification of Potential Effects of Fugitive Dust

The greatest fugitive dust generation will occur during the TL project construction phase. Fugitive dust emitted from construction operations may have potential adverse effects on human health and pose environmental risks both on and off site.

The United States Environmental Protection Agency (US EPA, 2021) states that “the size of particles is directly linked to their potential for causing health problems. Small particles less than 10 micrometers in diameter pose the greatest problems, because they can get deep into your lungs, and some may even get into your bloodstream.” Potential environmental effects include visibility impairment, environmental damage, and materials damage (US EPA, 2021). Potential effects listed by the US EPA are summarized in the Table 5-1. The impact depends on fugitive dust concentration, particulate sizes, and location of operations and receptors.

Table 5-1: Potential Health and Environmental Effects of Particulate Matter

Potential Health Effects	Potential Environmental Effects
<ul style="list-style-type: none">• premature death in people with heart or lung disease• nonfatal heart attacks• irregular heartbeat• aggravated asthma• decreased lung function• increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing.	<ul style="list-style-type: none">• reduced visibility (haze) from fine particulates• making lakes and streams acidic• changing the nutrient balance in coastal waters and large river basins• depleting the nutrients in soil• damaging sensitive forests and farm crops• affecting the diversity of ecosystems• contributing to acid rain effects• staining and damaging stone and other materials, including culturally important objects such as statues and monuments

(US EPA, 2021)

6.0 Air Quality and Fugitive Dust Management

Particulate and gaseous contaminant emissions management will be applied throughout all phases of the TL project lifecycle, including construction, operations, and decommissioning/closure. Most fugitive dust emissions occur from vehicle travel on unpaved roadways (e.g., access roads) resuspending particulate matter (PM) into the air, and from materials handling equipment (e.g., bulldozers, graders, trucking). Other mitigation measures for PM_{2.5}, SO₂, NO₂, and CO from diesel fuelled equipment relate to engine emission controls, as those substances are generated as combustion by-products.

6.1 Best Management Practices (BMP)

The following procedures for dust management will apply to all phases of the TL project. These mitigation and preventative measures will be monitored and reviewed for continuous improvement opportunities as the TL project progresses. These procedures may include, but are not limited to, the following:

- Minimize clearing of vegetation for construction areas to limit surface disturbance;
- Minimize drop heights for material handling, loading, and unloading;
- Progressive reclamation of disturbed areas will occur as soon as feasible;
- Maintenance of unpaved roads which will be regularly compacted and kept in good repair;
- Use of coarse aggregate for road surfaces with low silt content;
- Vehicles will be driven at designated speeds on project roads;
- Roadways and stockpiles will be wetted as needed to minimize dust from grading, vehicle traffic, and wind erosion when ambient air temperatures permit;
- Water or spray quantities used will be documented;
- Reporting incidents involving excessive dust on site;
- Weather preparedness; and
- Employee training.

6.2 Site Specific Mitigation Measures

To minimize gaseous emissions from diesel combustion on site, the EM will ensure that all equipment and vehicles will be maintained to ensure that they are operating as per manufacturers specifications. This may include equipment and vehicles with Canadian Tier emissions standards. All off-road vehicles will use ultra-low sulphur diesel (15 parts per million [ppm] maximum), as required under Canadian emissions regulations. Smoke emissions from industrial burning are also expected to occur. The EM will ensure that the TL WMP is followed and that burning times and emissions follow OBSCR requirements to minimize impacts.

Most TL project fugitive dust emissions are expected to occur from vehicle travel on unpaved roads (e.g., access roads) and from material handling (bulldozers, graders, trucking). This will be mitigated using a combination of preventative strategies and mitigation controls shown in Table 6-1. The EM and CM will be responsible to ensure that strategies and controls are implemented and followed as required. Contractors and employees will require training to identify when additional mitigation measures are required.

Table 6-1: Fugitive Dust Mitigation Measures

Unique ID	Mitigation Measures
Stockpile Area 1 (SP-001)	<ul style="list-style-type: none"> Minimize stockpile area as much as possible. Locate stockpile areas where wind speed is minimal or blocked. When practicable in an active work zone, water stockpiles on dry windy (average wind speed above 10 m/s) days above freezing temperatures. Minimize material drop heights where possible when adding material to stockpiles. Cover stockpiles if abandoned for a long period of time. When unloading material, piles should form low piles that extend horizontally, where practical. Employees involved in material handling or management will receive training by a qualified person on the importance of minimizing material drop height (from excavator to truck, conveyor to stockpile, etc.) to reduce fugitive dust. Ensure a supply of water and available transportation vehicles, weather depending.
Unpaved Road 1 (UR-001)	<ul style="list-style-type: none"> Limit vehicle speed on site to a maximum of 50 km/hr. Minimize unpaved road distances for vehicle travel where possible. Road surfaces will be constructed of coarse aggregate with low silt content where additional road surfacing material is required. Water or apply calcium chloride to suppress resuspension of particulates on dry and/or high activity days. Further reduce speed limits on Project-owned roads if weather conditions cause fugitive dust emissions and dust cannot be controlled by watering. Ensure a supply of water and available transportation vehicles, weather depending (non-freezing conditions).
Blasting Zone 1 (BZ-001)	<ul style="list-style-type: none"> Schedule blasting for favourable moist conditions where possible Use blasting mats, when possible, where high particulate suspension is expected Use weather forecasts to inform blasting plan (e.g., wind forecast, lightning and thunder warnings). Immediately prior to blasting, the “Blast Engineer / Blast Coordinator” must check weather conditions to determine if the blast is likely to cause any dust or fume impacts on the surrounding environment. Where dust or fume impacts on employees and environment cannot be avoided, blasting must be postponed until weather conditions improve. The CM will decide when to postpone blasting.
Staging Area 1 (ST-001)	<ul style="list-style-type: none"> Minimize staging area as much as possible Locating staging areas where wind speed is minimal or blocked
Drilling Area 1 (DR-001)	<ul style="list-style-type: none"> Schedule drilling for favourable moist conditions where possible Use wet drilling during very dry conditions (less than 0.25 mm/day of precipitation in the previous week)

Unique ID	Mitigation Measures
Road Construction 1 (RC-001)	<ul style="list-style-type: none"> • Limit vehicle speed on site to a maximum of 50 km/hr. • Minimize unpaved road distances for vehicle travel where possible. • Watering or application of calcium chloride to suppress resuspension of particulates on dry and/or high activity days. • Minimize material drop heights where possible. • Road surfaces will be constructed of coarse aggregate with low silt content where additional road surfacing material is required.
Borrow Pit 1 (BP-001)	<ul style="list-style-type: none"> • Minimize pit area as much as possible. • Apply water when temperatures are above freezing and there are very dry conditions (less than 0.25 mm/day of precipitation in the previous week). • Employees involved in material handling or management will receive training by a qualified person on the importance of minimizing material drop height (from excavator to truck, conveyor to stockpile, etc.) to reduce fugitive dust. • Develop new borrow areas only when and as required (to be determined by the Construction Manager). • Once suitable materials have been salvaged, place topsoil on disturbed areas and seed using a native seed mix to re-establish vegetative cover as soon as reasonably possible. • When unloading material, piles should form low piles that extend horizontally. • Minimize drop height from loaders and excavators (shovels) to the truck.
Screening Area 1 (SC-001)	<ul style="list-style-type: none"> • Minimize material drop heights where possible. • Equip the screener circuits with onboard water dosing during times of the year above freezing temperatures or other dust suppression measures (e.g., reagents) systems. • Apply water when temperatures are above freezing and there are very dry conditions (less than 0.25 mm/day of precipitation in the previous week). • Check cover for tears, holes, and cracks on a monthly basis. Repair as soon as possible.
Clearing Area 1 (CL-001)	<ul style="list-style-type: none"> • Minimize clearing area as much as possible. • Limit vehicle speed on site to a maximum of 50 km/hr. • Minimize material drop heights where possible.
Transmission Line Construction 1 (TL001)	<ul style="list-style-type: none"> • Minimize material drop heights where possible.
Industrial Burning Area (IB-001)	<ul style="list-style-type: none"> • Refer to TL WMP for combustion schedule and mitigation requirements.

7.0 Plan Implementation

The TL AQDMP is a living document that will evolve over time in response to monitoring results and regulatory changes. The plan incorporates adaptive management as follows:

- **Plan**

- Source identification and characterization;
- Qualitative visual assessment of particulate emissions;
- Identification of contributing factors that favour dust generation; and
- Description of fugitive dust control for each source.

- **Do**

- Schedule for implementation and operation of control measures;
- Description of maintenance and record keeping procedures for control and monitoring equipment; and
- Training procedures.

- **Monitor**

- Inspection and maintenance procedures; and
- Record keeping to verify ongoing implementation of plan.

- **Adjust**

- Review of effectiveness of control measures; and
- Update the plan as required.

7.1 Training

Employees and contractors will receive training in fugitive dust management and air quality awareness on their arrival on site through an environmental on-boarding training session and prior to the start of work as part of the Site Orientation. The purpose of this training is to provide all site personnel with a basic level of environmental awareness and an understanding of their obligations regarding compliance with regulatory requirements, commitments, and best practices.

All those responsible for the management, implementation, and operation of any aspect of this plan will be competent for their role. All staff will attend site orientation where the contents, requirements and commitments made in this plan will be communicated. Staff will be adequately trained for their roles to implement this plan and will be aware of BW Gold's commitments to uphold this plan. Training will cover safety and measures to mitigate effects on ecosystems, soils, and vegetation and to emphasize the importance of following and implementing the TL AQDMP. Targeted training related to dust management will be provided to individuals and/or groups of workers assuming a specific authority or responsibility related to air quality. BW Gold will regularly review and update the training and awareness plan based on changes in training needs and regulatory requirements.

Employee education and outreach on access management will be supported by:

- Development and delivery of educational material to site personnel; and
- Maintaining updated information related to access management at Blackwater in a location available to employees.

Prior to the commencement of work on the TL project, all personnel will:

- Review and be aware of the requirements of the TL AQDMP;
- Be aware of their legislative requirements, specifically including but not limited to:
 - WHMIS, Safety Data Sheets, Transportation of Dangerous Goods, Occupational Health and Safety, and relevant British Columbia Air Quality Objectives;
- Be trained in and be aware of:
 - Safety and emergency response procedures; and
 - Evacuation procedures.

Contractors and subcontractors are required to hold regular documented safety meetings at a frequency agreed to by Proponent project management. Safety meetings must focus discussion on hazards and risks specific to the work being performed and recent incidents within the workplace. Additionally, as a minimum, discussions will include past meeting concerns, findings from workplace inspections, and reported near misses. These meetings must also include air quality and fugitive dust risks and incidents. If a potential dust concern is observed, it shall be reported to the EM.

Proponent management will attend Contractor's safety meeting to reinforce their commitment to safety, provide opportunities for direct contact with site personnel, and monitor that the quality of meetings is adequate.

These meetings include but are not limited to:

- Daily Crew Talks;
- Daily Safe Act Observations (SAOs) by Supervisors;
- Daily Risk Assessment Inspection of Work Area;
- Weekly Management Meetings; and
- Monthly Management Meetings.

7.2 Monitoring and Maintenance

The purpose of this monitoring component is to document the efficacy of the mitigation measures implemented and to meet regulatory requirements at the TL project site. The Plan will ensure that project activities are conducted according to applicable legislation and the conditions of all project approvals. Monitoring will be carried out in order to meet permit and reporting requirements. It will also be used as a tool to determine the efficacy of the mitigation measures implemented.

The TL AQDMP monitoring program largely relies on qualitative visible observations on site, while paying attention to weather conditions as shown in the Trigger Action Response Plan (TARP). Depending on observed conditions, TARP may trigger reporting of on-site emissions for mitigative actions and/or review of the TL AQDMP. TL personnel will be trained to be observant for dust related concerns which may arise. These observations, together with meteorological conditions and mitigation efforts taken to deal with a problem, will be recorded and included in monthly and annual reports. Visual monitoring will focus on areas where there are active surface earthworks, unpaved roads and overburden and soil stockpiles. Visual monitoring will occur on a daily basis at all locations where fugitive dust generation is occurring. At minimum, monitoring report summaries will be reviewed annually to determine any emissions trends and to revise operating practices or monitoring protocols as required.

The Proponent will collaborate as required with other government-sponsored monitoring programs as required to measure the effects of air quality occurring in the TL project area during the construction and operations phases of the TL project. The monitoring program will be submitted by the EM for review to the appropriate regulatory authorities for comment before construction/operations begins.

7.3 Trigger Action Response Plan (TARP)

The Trigger Action Response Plan (TARP) is intended to provide an early-warning system such that when defined action levels are triggered there is sufficient time to prevent irreversible adverse environmental and health effects. Workers on site shall assess daily weather conditions and make continuous visual observations on-site to determine which TARP triggers and actions/responses are required (Table 7-1). Site conditions and TARP level of alert shall be recorded by site supervisors in an observation logbook daily. The CM will summarize the recorded observations and report monthly to BW Gold. The EM and CM are responsible for ensuring that TARP is implemented, followed, and up to date. If there is an air quality advisory issued by ENV that affects the region where the mine is located, the EM will determine if an adjustment to a higher alert level described in Table 7-1 is required to further mitigate dust emissions.

Table 7-1: On-site Trigger Action Response Plan (TARP)

Component	Location	Level	Trigger	Management Response
Fugitive Dust	Unpaved Roads	None	<ul style="list-style-type: none"> Dust plume less than half the height of a truck tire. 	<ul style="list-style-type: none"> No action. Continue work in accordance with site management procedures.
		Low	<ul style="list-style-type: none"> Dust plume less than half the size of a truck for any period of time up to 30 minutes. 	<ul style="list-style-type: none"> Limited watering of high traffic areas. Repeat visual inspection every 2 hours depending on weather.
		Medium	<ul style="list-style-type: none"> Dust plume same size as a truck extending beyond local areas for periods longer than half a day. 	<ul style="list-style-type: none"> Continuous watering of high traffic areas until dust plume subsides. Speed limit restrictions in high traffic areas.
		High	<ul style="list-style-type: none"> Dust plume greater than the size of a truck for periods longer than 1 day, or when dust plumes extend beyond the active construction area. 	<ul style="list-style-type: none"> Increase frequency of watering and if not successful examine longer use of alternative dust suppressants (e.g., calcium or magnesium chloride, lignin compounds, environmentally friendly oils, or clay additives). Speed limit restrictions may be required if dust cannot be controlled by watering. Closure of certain routes may be required if dust cannot be controlled by watering or speed restrictions. Reassessment TL AQDMP may be required.
	Surface earthworks, staging, clearing, blasting, drilling	None	<ul style="list-style-type: none"> Minor localized dust during construction and normal operations. 	<ul style="list-style-type: none"> No action. Continue work in accordance with site management procedures.
		Low	<ul style="list-style-type: none"> Visible dust plumes rising over 2 m above the active construction area for longer than 30 minutes. 	<ul style="list-style-type: none"> Minimize material movement in areas with active construction or operation and heavy equipment use. Limit timing of blasting/drilling so not concurrent with other high dust generating activities. Minimize drop heights for material handling.

Component	Location	Level	Trigger	Management Response
		Medium	<ul style="list-style-type: none"> Triggers per level 1 but with dust plume extending beyond local area for periods longer than half a day. 	<ul style="list-style-type: none"> Application of water to exposed construction area (if this is a source). Limit timing of blasting/drilling for more favourable weather conditions.
		High	<ul style="list-style-type: none"> Extensive areas of dust generation with large dust plumes for periods longer than 1 day or when dust plumes extend beyond the active construction area. 	<ul style="list-style-type: none"> Increase frequency of watering and if not successful apply gravel to exposed construction area (if this is a source). Investigate long term solutions if dust plumes persist. Reassessment TL AQDMP may be required.
	Stockpiles	None	<ul style="list-style-type: none"> Minor localized dust during construction and normal operations. 	<ul style="list-style-type: none"> No action. Continue work in accordance with site management procedures.
		Low	<ul style="list-style-type: none"> Visible dust plumes rising over 2 m above the ground for longer than 30 minutes. 	<ul style="list-style-type: none"> Turn on spray bar sprinklers or apply other water application where applicable. During periods where temperatures are below freezing add reagents to control dust.
		Medium	<ul style="list-style-type: none"> Triggers per level 1 but with dust plume extending beyond local area for periods longer than half a day. 	<ul style="list-style-type: none"> Increase the rate of water application using spray bar sprinklers. During periods where temperatures are below freezing, add reagents to control dust.
		High	<ul style="list-style-type: none"> Extensive areas of dust generation with large dust plumes for periods longer than 1 day or when dust plumes extend beyond the active construction area. 	<ul style="list-style-type: none"> Examine the possibility of re-engineering the spray bar sprinklers, or reassessment of water application to provide more effective water coverage. Reassessment TL AQDMP may be required.
	Material handling,	None	<ul style="list-style-type: none"> Minor localized dust during construction and normal operations. 	<ul style="list-style-type: none"> No action. Continue work in accordance with site management procedures.

Component	Location	Level	Trigger	Management Response
	transfer locations, screening	Low	<ul style="list-style-type: none"> Visible dust plumes rising over 2 m above the ground for longer than 30 minutes. 	<ul style="list-style-type: none"> Turn on spray bar sprinklers or apply other water application where applicable. During periods where temperatures are below freezing add reagents to control dust.
		Medium	<ul style="list-style-type: none"> Triggers per level 1 but with dust plume extending beyond local area for periods longer than half a day. 	<ul style="list-style-type: none"> Increase the rate of water application. During periods where temperatures are below freezing, add reagents to control dust.
		High	<ul style="list-style-type: none"> Extensive areas of dust generation with large dust plumes for periods longer than 1 day or when dust plumes extend beyond the active construction area. 	<ul style="list-style-type: none"> Examine the possibility of re-engineering the spray bar sprinklers, or reassessment of water application to provide more effective water coverage. Reassessment TL AQDMP may be required.

7.4 Record Keeping

A copy of the following documents will be kept on hand and available on site:

- Transmission Line Air Quality and Fugitive Dust Management Plan;
- Transmission Line Industrial and Domestic Waste Management Plan;
- Transmission Line Fuel Management and Spill Control Management Plan; and
- Transmission Line Emergency Response Plan.

Records of all updates to these plans and audits performed to determine the adequacy of the plan must be stored with the plan for the entirety of the Transmission Line construction. If a Level 3 Alert is triggered by TARP, a record of the incident submitted to the CM and EM must include:

- Date, time, and location of dust event;
- Managers or people involved/reported to;
- Triggers observed and potential activity/activities contributing to the event; and
- Record of any immediate actions taken.

For a Level 3 Alert the CM and EM shall keep a record of:

- Dates and times of received and distributed documents;
- Responses and actions taken to address submitted incidents; and
- Records of the EM or CM follow ups with individuals involved to find out where improvements to the plan or training are required.

The EM will be responsible for ensuring dust events are logged, including details of the on-site activities, meteorological conditions, and the management actions taken. Records will be maintained for public complaints and dust visual observations.

8.0 Adaptive Management

The TL AQDMP is a “living” document and will be reviewed at the mid point of the TL construction schedule, or if initiated by TARP, the CM, EM, or delegated QP. The review will evaluate the effectiveness of the TL air quality and fugitive dust management. Performance metrics that will result in adaptive management are:

- Non-compliance with this plan;
- Measure of mitigation success;
- Response time;
- Number of un-reported events;
- Number of reported events;
- Timely completion of maintenance and inspections;
- Completion of required training; and
- Regulatory non-compliance orders associated with plan.

Proposed revisions will be reviewed and discussed with the Joint Occupational Health and Safety Committee, Blackwater Environment Committee, and EMC prior to implementation. Revised versions of the TL AQDMP will be filed with the BW Gold EM and, if required, the Chief Inspector of Mines. Summaries of the results of reviews including recommended updates shall be submitted as part of annual reporting requirements.

9.0 Reporting

Observations related to air quality and fugitive dust management will be:

- Reported by construction staff to their supervisors;
- Documented in an Observation Logbook; and
- Reported monthly by the Construction Manager to BW Gold on the content of the Observation Logbook.

All incidents of concern with air quality, fugitive dust emissions, along with spills, accidents, or observed instances of odour and/or petroleum product sheen in a watercourse will immediately be reported to the Construction Manager and the BW Gold EM regardless of quantity or location. The BW Gold EM is responsible for any required reporting to outside agencies. If TARP triggers are observed, the EM is responsible for notifying the EAO, EMPR, NHA, Indigenous Groups, and the public. The notifications to the EAO, EMPR, NHA, Indigenous Groups, and the public will include both a technical report and a plain language summary of the technical report.

Incidents related to air quality will be reported. Incidents reported on will also include any air quality complaints. Significant events will trigger an incident investigation (including a root cause analysis). Investigations will be done by senior staff from relevant Managers. Remedial action may involve:

- Additional training for personnel;
- Enhanced equipment maintenance or inspection program;
- Additional preventative infrastructure (containment berms, oil/water separators), etc.; and
- Review and/or revision of the TL AQDMP.

Annual reports generated for submission to regulatory agencies, First Nations, the public, and TARP reporting will include:

- Confirmation that the TL AQDMP is being implemented as written;
- The monitoring results;
- The effectiveness of mitigation measures;
- The number of dusting events that occurred;
- Any complaints received and the actions taken to address complaints; and,
- Any deficiencies identified in the TL AQDMP and corrective actions taken.

10.0 Qualified Professionals

This management plan has been prepared and reviewed by the following qualified professionals:

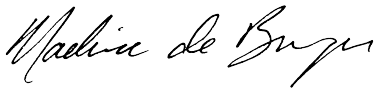
Prepared by:



Craig Vatcher, CET, B. Tech., EP
Triton Environmental Consultants

Reviewed by:

David Watt, R.P.F.
Project Development Manager
Allnorth



Nadine de Bruyn, M.A.Sc., EPt
Triton Environmental Consultants

11.0 References

- BC Environmental Assessment Office [EAO]. 2013. *The Guideline for the Selection of Valued Components and Assessment of Potential Effects*. <https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/environmental-assessments/guidance-documents/eao-guidance-selection-of-valued-components.pdf> (accessed March 2022).
- BC Ministry of Energy, Mines and Low Carbon Innovation [EMLI]. 2021. *Health, Safety and Reclamation Code for Mines in British Columbia*: Victoria, BC. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/mineral-exploration-mining/documents/health-and-safety/code-review/feb2021_health_safety_reclamation_code_2021_rev.pdf (accessed April 2021).
- BC Ministry of Energy, Mines and Petroleum Resources & Ministry of Environment and Climate Change Strategy [EMPR & ENV]. 2018. *Developing a Fugitive Dust Management Plan for Industrial Projects*. https://www2.gov.bc.ca/assets/gov/environment/waste-management/industrial-waste/industrial-waste/mining-smelt-energy/guidance-documents/dust_management_plan_guidance.pdf (accessed March 2022).
- United States Environmental Protection Agency (US EPA). 2021. *Health and Environmental Effects of Particulate Matter (PM)*. <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm> (accessed March 2022).

Appendix F BC ENV Conflict of Interest and Declaration of Competency Forms

Conflict of Interest Disclosure Statement

A qualified professional ¹ providing services to either the Ministry of Environment and Climate Change Strategy ("ministry"), or to a regulated person for the purpose of obtaining an authorization from the ministry, or pursuant to a requirement imposed under the *Environmental Management Act*, the *Integrated Pest Management Act* or the *Park Act* has a real or perceived conflict of interest when the qualified professional, or their relatives, close associates or personal friends have a financial or other interest in the outcome of the work being performed.

A real or perceived conflict of interest occurs when a qualified professional has

- a) an ownership interest in the regulated person's business;
- b) an opportunity to influence a decision that leads to financial benefits from the regulated person or their business other than a standard fee for service (e.g. bonuses, stock options, other profit sharing arrangements);
- c) a personal or professional interest in a specific outcome;
- d) the promise of a long term or ongoing business relationship with the regulated person, that is contingent upon a specific outcome of work;
- e) a spouse or other family member who will benefit from a specific outcome; or
- f) any other interest that could be perceived as a threat to the independence or objectivity of the qualified professional in performing a duty or function.

Qualified professionals who work under ministry legislation must take care in the conduct of their work that potential conflicts of interest within their control are avoided or mitigated. Precise rules in conflict of interest are not possible and professionals must rely on guidance of their professional associations, their common sense, conscience and sense of personal integrity.

Declaration

I, Daniel Casanova Print Name and Last Name, as a member of ECO Canada Print Name of Professional Association
declare

Select one of the following:

☒ Absence from conflict of interest

Other than the standard fee I will receive for my professional services, I have no financial or other interest in the outcome of this Blackwater Mine, Air Quality and Fugitive Dust Management Plan.

I further declare that should a conflict of interest arise in the future during the course of this work, I will fully disclose the circumstances in writing and without delay to

Breanne Hill Insert Ministry Contact Name, erring on the side of caution.

☐ Real or perceived conflict of interest

Description and nature of conflict(s):

I will maintain my objectivity, conducting my work in accordance with my Code of Ethics and standards of practice.

In addition, I will take the following steps to mitigate the real or perceived conflict(s) I have disclosed, to ensure the public interest remains paramount:

Further, I acknowledge that this disclosure may be interpreted as a threat to my independence and will be considered by the statutory decision maker accordingly.

This conflict of interest disclosure statement is collected under section 26(c) of the *Freedom of Information and Protection of Privacy Act* for the purposes of increasing government transparency and ensuring professional ethics and accountability. By signing and submitting this statement you consent to its publication and its disclosure outside of Canada. This consent is valid from the date submitted and cannot be revoked. If you have any questions about the collection, use or disclosure of your personal information please contact the Ministry of Environment and Climate Change Strategy Headquarters Office at 1-800-663-7867.

Signature:

X  Daniel Casanova, signed 2025-04-30
Blackwater Air Quality and Fugitive Dust Management Plan
Document version J.1, dated 2025-04-30

Print name: Daniel Casanova

Date: April 30, 2025

Witnessed by:

X 

Print name: Agnès Untz

¹Qualified Professional, in relation to a duty or function under ministry legislation, means an individual who

- a) is registered in British Columbia with a professional association, is acting under that organization's code of ethics, and is subject to disciplinary action by that association, and
- b) through suitable education, experience, accreditation and knowledge, may reasonably be relied on to provide advice within his or her area of expertise, which area of expertise is applicable to the duty or function.

Declaration of Competency

The Ministry of Environment and Climate Change Strategy relies on the work, advice, recommendations and in some cases decision making of qualified professionals¹, under government's professional reliance regime. With this comes an assumption that professionals who undertake work in relation to ministry legislation, regulations and codes of practice have the knowledge, experience and objectivity necessary to fulfill this role.

1. Name of Qualified Professional Daniel Casanova
Title Principle Consultant, Atmospheric Scientist
2. Are you a registered member of a professional association in B.C.? ☒ Yes ☐ No
Name of Association: ECO Canada Registration # 20990
3. Brief description of professional services:
Air quality and meteorological consulting services

This declaration of competency is collected under section 26(c) of the *Freedom of Information and Protection of Privacy Act* for the purposes of increasing government transparency and ensuring professional ethics and accountability. By signing and submitting this statement you consent to its publication and its disclosure outside of Canada. This consent is valid from the date submitted and cannot be revoked. If you have any questions about the collection, use or disclosure of your personal information please contact the Ministry of Environment and Climate Change Strategy Headquarters Office at 1-800-663-7867.

Declaration

I am a qualified professional with the knowledge, skills and experience to provide expert information, advice and/or recommendations in relation to the specific work described above.

Signature:

X 
Daniel Casanova, signed 2025-04-30
Blackwater Air Quality and Fugitive Dust Management Plan
Document version J.1, dated 2025-04-30

Print Name: Daniel Casanova

Date signed: 2025-04-30

Witnessed by:

X 

Print Name: Agnès Untz

¹Qualified Professional, in relation to a duty or function under ministry legislation, means an individual who

- a) is registered in British Columbia with a professional association, is acting under that organization's code of ethics, and is subject to disciplinary action by that association, and
- b) through suitable education, experience, accreditation and knowledge, may reasonably be relied on to provide advice within his or her area of expertise, which area of expertise is applicable to the duty or function.