ARTEMIS GOLD INC | Blackwater Mine

Blackwater Gold Mine Annual DS Follow-Up Report

April 1, 2023 – March 31, 2024

Executive Summary

The Blackwater Gold Mine (the Mine) is a gold and silver open pit mine currently under construction in central British Columbia (BC), approximately 112 kilometers (km) southwest of Vanderhoof, 160 km southwest of Prince George, and 446 km northeast of Vancouver. It is situated within the traditional territories of Lhoosk'uz Dené Nation, Ulkatcho First Nation, Skin Tyee Nation and Tsilhqot'in Nation. The Kluskus and Kluskus-Ootsa FSRs and Project transmission line cross the traditional territories of Nadleh Whut'en First Nation, Saik'uz First Nation, and Stellat'en First Nation (collectively, the Nechako First Nations) as well as the traditional territories of the Nazko First Nation, Nee-Tahi-Buhn Band, Cheslatta Carrier Nation and Yekooche First Nation.

Major mine components will 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. Limited early works construction activities to develop these components began in October 2022 and continued through December. Prior to this (January – September), the Project was in the pre-construction phase.

Development of the Mine is facilitated by a number of approvals, including a Decision Statement (DS) issued under the *Canadian Environmental Assessment Act, 2012* in April 2019. Condition 2.11 of the DS requires the development of an Annual Follow-up Program Report (FUP), including a summary of follow-up activities and monitoring results from a number of key monitoring programs required by the DS, including the:

- Air Quality and Fugitive Dust Management Plan;
- Federal Decision Statement Condition 3.15 - Memo
- Caribou Mitigation and Monitoring Plan.
- Country Foods and Socio-economic Follow-up Program;
- Country Foods Monitoring Plan.
- Follow-up Program for Condition 3.14 of the Blackwater Gold Project.
- Follow-up Program for Condition 3.16 of the Blackwater Gold Project.
- Mine Site Water and Discharge Monitoring and Management Plan.
- Wetland Management and Offsetting Plan;
- Whitebark Pine Management Plan; and,
- Wildlife Mitigation and Monitoring Plan.

Construction during this reporting period occurred with a focus on logging and clearing, soil salvage, development of the plant site, initiating the development of TSF Dam C, the Lake 15/16 Connector Channel Fish Habitat Offset, development of water management structures, and other necessary works. No operations of the open pit, processing plant, waste rock stockpiles, or tailings storage facility occurred. This FUP the summarizes the results of those monitoring programs relative to this phase, including a summary of adaptive management and recommendations.

Résumé Exécutif

La Mine Blackwater Gold (la Mine) est une mine à ciel ouvert d'or et d'argent en construction dans le centre de la Colombie-Britannique (C.-B.), à environ 112 kilomètres (km) au sud-ouest de Vanderhoof, 160 km au sud-ouest de Prince George et 446 km au nord-est de Vancouver. La mine est situé sur les territoires traditionnels de la Nation Lhoosk'uz Dené, de la Première Nation Ulkatcho, de la Nation Skin Tyee et de la Nation Tsilhqot'in. Le chemin forestier (FSR) de Kluskus et Kluskus-Ootsa et la ligne de transmission du projet traversent les territoires traditionnels de la Première Nation Nadleh Whut'en, de la Première Nation Saik'uz et de la Première Nation Stellat'en (collectivement, les Premières Nations du Nechako) ainsi que les territoires traditionnels de la Première Nation Nazko, de la bande Nee-Tahi-Buhn, de la Nation Cheslatta Carrier et de la Première Nation Yekooche.

Les composantes majeures de la mine comprendront une installation de stockage des résidus (TSF), des installations de stations d'épuration, des stocks de stériles, de morts-terrains et de sols, des zones d'emprunt et des carrières, des infrastructures de gestion de l'eau, des usines de traitement des eaux, des camps d'hébergement et des installations auxiliaires. Les premières activités de construction limitées pour développer ces composants ont commencé en Octobre 2022 et se sont poursuivies jusqu'en Décembre. Avant cela (Janvier – Septembre), le projet était en phase de pré-construction.

Le développement de cette opération est facilité par un certain nombre d'approbations, y compris une déclaration de decision fédéral (DS) émise en vertu de la Loi canadienne sur l'évaluation environnementale (2012) en avril 2019. La condition 2.11 de la DS exige l'élaboration d'un rapport annuel sur le programme de suivi (FUP), résumant les activités de suivi et les résultats de surveillance d'un certain nombre de programmes de surveillance clés requis par le DS, notamment:

- Plan de gestion de la qualité de l'air et des poussières diffuses;
- Plan d'atténuation et de surveillance du caribou;
- Programme d'aliments traditionnels et de suivi socio-économique;
- Plan de surveillance des aliments traditionnels;
- Programmes de suivi pour la condition 3.14 du projet Blackwater Gold;
- Programmes de suivi pour la condition 3.15 du projet Blackwater Gold;
- Programmes de suivi pour la condition 3.16 du projet Blackwater Gold;
- Plan de surveillance et de gestion des eaux de contact avec la mine et des rejets du site minier;
- Plan pour les zones humides et la compensation;
- Plan de gestion du pin à écorce blanche; et,
- Plan d'atténuation et de surveillance de la faune.

Construction pendant cette période incluse exploitation du bois

Construction during this reporting period occurred with a focus on logging and clearing, récupération des sols, construction du site de l'usine, construction duTSF, construction du Lac 15/16 canal de connecteur compensation de l'habitat du poisson, construction du infrastructures de gestion de l'eau, et plus. Aucune opération de la mine à ciel ouvert, de l'usine de traitement, TSF n'a eu lieu. Ce FUP résume les résultats de ces programmes de surveillance, y compris un résumé de la gestion adaptative et des recommandations.

Table of Contents

List of Figures

List of Tables

Acronyms and Abbreviations

Aboriginal Groups or Indigenous Nations	Aboriginal Groups include: 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 the EAC)
AEMP	Aquatic Effects Monitoring Program
AQDMP	Air Quality and Fugitive Dust Management Plan
Artemis	Artemis Gold Inc.
ARU	Autonomous Recording Unit
BC	British Columbia
Blackwater, Project, or Mine	Blackwater Mine or Blackwater Gold Project
BW Gold	BW Gold LTD.
CEMP	Construction Environmental Management Plan
CFMP	Country Foods Monitoring Plan
CMMP	Caribou Mitigation and Monitoring Plan
CPB	Call Playback
DFO	Fisheries and Oceans Canada
DS	Decision Statement
EAC	Environmental Assessment Certificate
EAO	BC Environmental Assessment Office
ECCC	Environment and Climate Change Canada
EMLI	Ministry of Energy, Mines and Low Carbon Innovation
ENV	Ministry of Environment and Climate Change Strategy
ESC	Erosion and Sediment Control
FLNRORD	Ministry of Forests, Lands, Natural Resource Operations, and Rural Development
FMSCP	Fuel Management and Spill Control Plan
FSR	Forest Service Road
FUP	Annual Follow-up Program Report
FWR	Freshwater Reservoir
IECD	Interim Environmental Control Dam
Indigenous groups or Aboriginal Peoples	Lhoosk'uz Dené Nation, Ulkatcho First Nation, Nadleh Whut'en First Nation, Saik'uz First Nation, Stellat'en First Nation, Nazko First Nation, Skin Tyee Nation, Tŝilhqot'in Nation, Métis Nation British Columbia, and Nee-Tahi-Buhn Band (as defined in the Federal Decision Statement)
JAIR or Joint MA/EMA Application	Joint Application Information Requirements for Mines Act and Environmental Management Act Permits
km	Kilometer
kV	Kilovolt
LDN	Lhoosk'uz Dené Nation
LPU	Local Population Unit
LSA	Local Study Area
m	Meter
M-246	Mines Act Permit M-246
MAR	Mine Access Road
MASL	Meters above sea level
MNBC	Métis Nation British Columbia
MSDP	Mine Site Water and Discharge Monitoring and Management Plan
MSTCP	Mine Site Traffic Control Plan
Mtpa	Million tonnes per annum
New Gold	New Gold Inc.
NFN	Nazko First Nation
NFNs	Nechako First Nations
NTBIB	Nee-Tahi-Buhn Band
NTU	Nephelometric turbidity unit
NVMP	Noise and Vibration Effects Monitoring and Mitigation Plan
PASS	Passive Air Sampling System

PE-110650	Environmental Management Act Permit 110650
PE-110652	Environmental Management Act Permit 110652
PCR	Project Completion Report
PPE	Personal Protective Equipment
QA/QC	Quality assurance/quality control
QP	Qualified Professional
RCP	Reclamation and Closure Plan
RMA	Riparian Management Area
RoW	Right-of-Way
SCP	Sediment Control Pond
SEPSCP	Surface Erosion Prevention and Sediment Control Plan
SMP	Soil Management Plan
SOP	Standard Operating Procedure
STN	Skin Tyee Nation
t/d	Tonnes/day
TNG	Tsilhqot'in Nation
TSF	Tailings Storage Facility
TSS	Total suspended solids
UFN	Ulkatcho First Nation
VMP	Vegetation Monitoring Plan
WMMP	Wildlife Mitigation and Monitoring Plan
WMOP	Wetland Management and Offsetting Plan
WMP	Waste (Refuse and Emissions) Management Plan
WPMP	Whitebark Pine Management Plan

1 Introduction

The Blackwater Gold Mine (the Mine) is a gold and silver open pit mine currently under construction in central British Columbia (BC), approximately 112 kilometers (km) southwest of Vanderhoof, 160 km southwest of Prince George, and 446 km northeast of Vancouver (Figure 1-1).

The Mine 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. The Kluskus FSR joins Highway 16 approximately 10 km west of Vanderhoof. A new, approximately 13.8 km road (Mine Access Road; MAR) will be built to replace the existing exploration access road, which will be decommissioned. The planned new access is at km 124.5 km on the Kluskus FSR. Driving time from Vanderhoof to the mine site takes roughly 2.5 to 3 hours depending on traffic and road conditions.

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 (Figure 1-2). The gold and silver will be recovered into a gold-silver doré product and shipped by air and/or transported by road. Electrical power will be supplied by a new approximately 135 km, 230 kilovolt (kV) 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 Blackwater mine site is located within the traditional territories of Lhoosk'uz Dené Nation (LDN), Ulkatcho First Nation (UFN), Skin Tyee Nation (STN) and Tsilhqot'in Nation (TNG). The Kluskus and Kluskus-Ootsa FSRs and Mine transmission line cross the traditional territories of 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 (NFN), Nee-Tahi-Buhn Band (NTBIB), Cheslatta Carrier Nation and Yekooche First Nation (BC EAO, 2019a) (BC EAO, 2019b).

Mine construction is anticipated to take two years. 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 from Year +24 to approximately Year +45, ending when the Open Pit has filled to the target closure level and the TSF is allowed to passively discharge to Davidson Creek via a closure spillway. Post-closure phase begins in Year +46.

New Gold Inc. (New Gold) received Environmental Assessment Certificate #M19-01 (EAC) 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 Gold Inc. (Artemis) acquired the mineral tenures, assets and rights in the Blackwater Mine that were previously held by New Gold Inc. On August 7, 2020, the Certificate was transferred to BW Gold LTD. (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.

This is the Blackwater Gold Mine annual follow-up program (FUP) report for the April 1, 2023 – March 31, 2024, reporting period (reporting period), provided pursuant to the federal Environmental Assessment (EA) process.

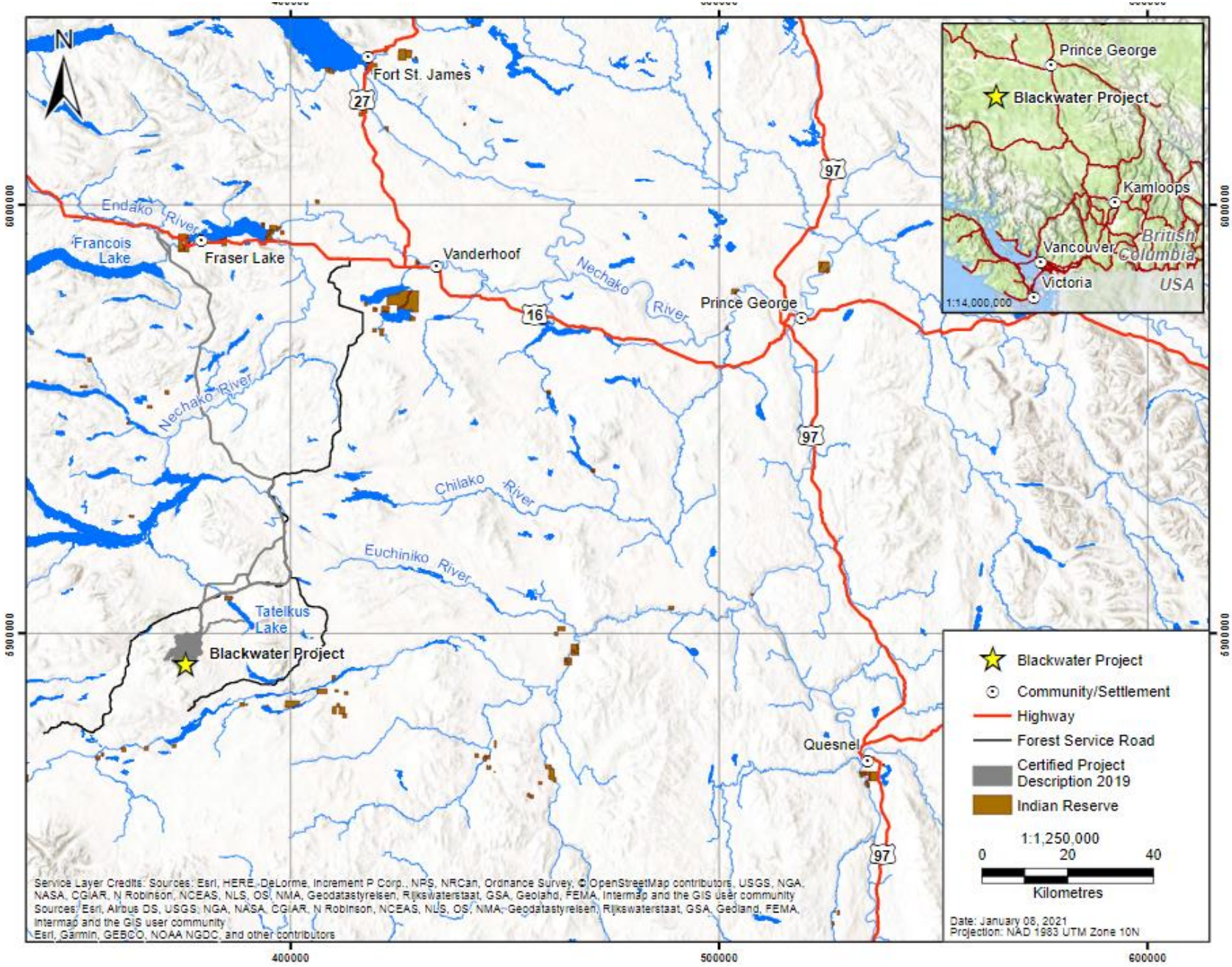

Figure 1-1: Project location

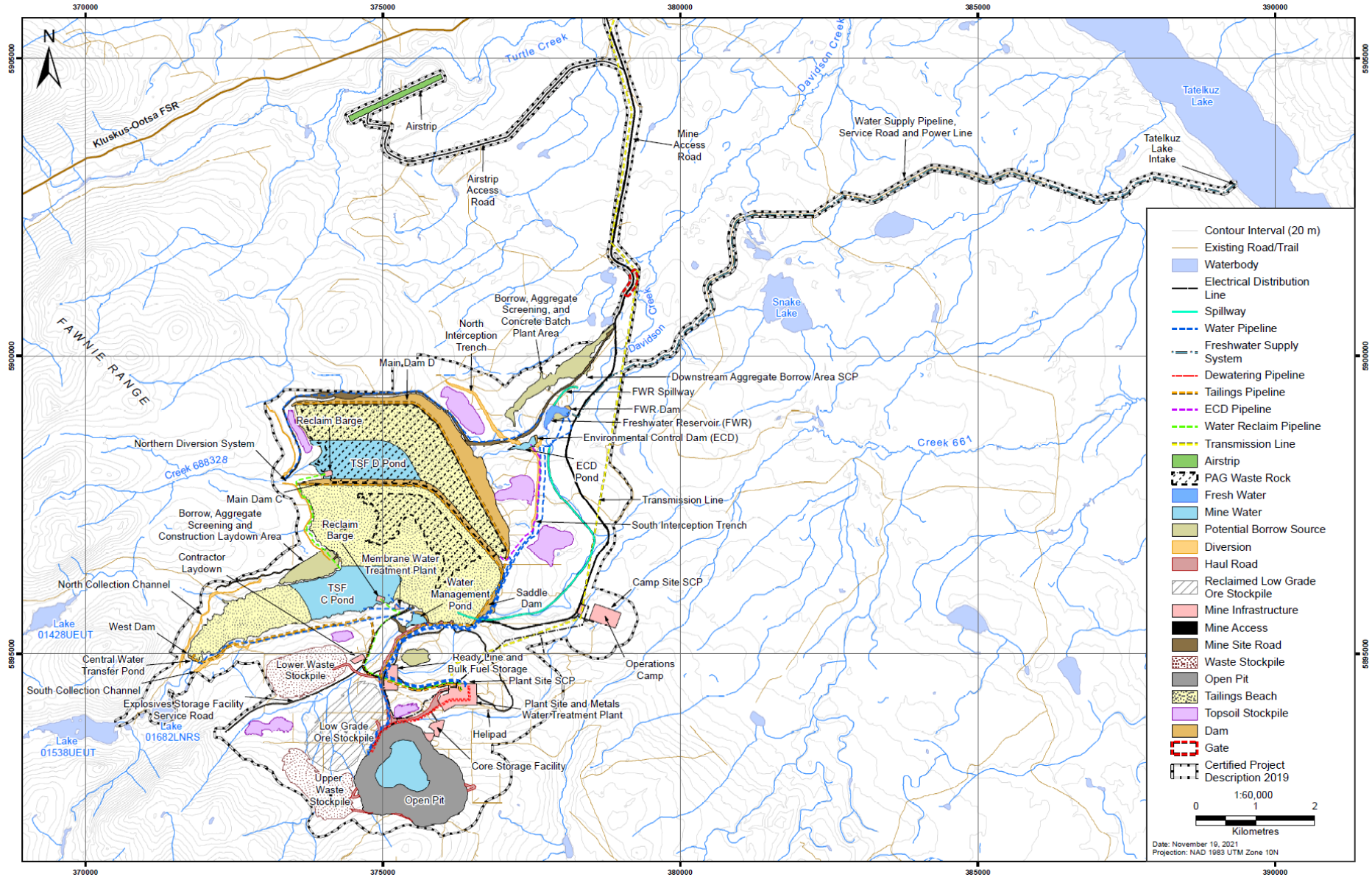

Figure 1-2: Overview of planned Mine works

1.1 Mine Activities

During the reporting period, major works permits pursued through the provincial Joint Mines Act/Environmental Management Act Permit process were issued to the BW Gold Mine. These included approval through the Mines Act was received on March 9th, 2023, while Environmental Management Act (EMA) permits for release of mine effluent and authorizing air emissions were received from the BC Ministry of Environment (ENV) on May 3rd, 2023. In addition to this, Fisheries Act Authorization (FAA) 21-HPAC-01447 was issued by the Department of Fisheries and Oceans (DFO) on June 30, 2023.

Construction occurred with a focus on logging and clearing, soil salvage, development of the plant site, initiating the development of TSF Dam C, the Lake 15/16 Connector Channel Fish Habitat Offset, development of water management structures, and other necessary works. No operations of the open pit, processing plant, waste rock stockpiles, or tailings storage facility occurred.

Construction of TSF Dam C was supported through the operation of the Davidson Creek Diversion System, which diverts non-contact water into Davidson Creek around the construction area.

Table 1-1 summarizes those construction activities that occurred during the reporting period.

At this phase of construction, no point source emissions to air occurred as those facilities were not constructed or operational. Activities that could have resulted in emissions of fugitive dust (non-point source emissions) included:

- Land clearing and earthworks for the construction camp and plant site;
- Construction and use of unpaved access and mine roads;
- Material handling/re-handling at aggregate and topsoil stockpiles;
- Parking lot and road grading;
- Construction of water management structures (e.g., diversion channels);
- Aggregate extraction from borrow pits;
- Borrow and aggregate crushing and screening; and
- Concrete Batch Plant.

Effluent discharge began in Q1 2024 through those sediment control ponds described below:

- Tailings Storage Facility Stage 1 Sediment Control Pond (TSF-SCP-D)
    - This is a temporary pond that began discharge to Davidson Creek. It is intended to support construction activities by capturing contact water from the upper Davidson Creek watershed.
- Plant Site Sediment Control Pond (PS-SCP-D)
    - This is a temporary pond that began discharge to ground. It is intended to support construction activities by capturing contact water from the Plant Site area.

A summary of specific activities undertaken to satisfy conditions of the DS conditions is presented in Appendix 2.

Table 1-1: Summary of construction activities during the reporting period.

<table>
<tr><th>Component/Activity</th><th>Description</th><th>Activities Completed
January 1, 2023, to March 31, 2024</th></tr>
<tr><td>Mine Access Road</td><td>• Kluskus-Ootsa Forest Service Road (FSR) km 124.5 to Plant Site
• Kluskus-Ootsa FSR to mine site boundary to be permitted under Special Use Permit
• Mine site boundary to mine site terminus to be permitted under Mines Act
• 16 km single lane
• Balanced cut and fill; no bedrock excavation/blasting
• Located on mineral tenure held by BW Gold
• Approximately 100 ha of disturbance; partially cleared</td><td>• No work completed</td></tr>
<tr><td>Mine Access Road Bridges</td><td>
<table>
<tr><th>Bridge</th><th>Length (m)</th><th>Location (from the Kluskus-Ootsa FSR)</th><th>Description</th></tr>
<tr><td>Bridge 1
(off mine site)</td><td>18.3</td><td>0.490 km</td><td>Steel concrete composite on precast spread footing</td></tr>
<tr><td>Bridge 2
(off mine site)</td><td>13.0</td><td>5.190 km</td><td>Slab girder bridge on precast spread footing</td></tr>
<tr><td>Bridge 3
(on mine site)</td><td>18.3</td><td>6.7015 km</td><td>Skewed precast composite concrete deck panel. Steel Superstructure. Precast concrete spread footings.</td></tr>
<tr><td>Bridge 4
(on mine site)</td><td>14.0</td><td>10.320 km</td><td>Skewed precast concrete slab bridge. Precast concrete spread footings.</td></tr>
<tr><td>Bridge 5
(on mine site)</td><td>12.0</td><td>13.790 km</td><td>Skewed precast concrete slab bridge. Precast concrete spread footings.</td></tr>
</table>
</td><td>• No work completed</td></tr>
<tr><td>Mine Site Roads
(includes mine haul roads, mine site service roads, exploration road upgrade within mine site)</td><td>• Clearing, grubbing and construction of roads to proposed Early Works on mine site
• Approximately 178.9 ha of disturbance
• Estimated 7 clear-span bridges for fish-stream crossings
• No bedrock excavation/blasting</td><td>• TS2 Haul Road and Orica Laydown Access Road logging/clearing completed. 7 Ha
• LV/Pipe Corridor from 15.5km on access to Plant Site earthworks started on area logged in 2023.
• Ops Camp Road – logging/clearing and earthworks completed. 30.2 Ha of disturbance</td></tr>
<tr><td>Borrow Sources</td><td>Clearing of trees for two borrow sources:
• Within footprint of the future Environmental Control Dam area – approximately 13.7 ha of disturbance
• Southern borrow in TSF – approximately 7.5 ha of disturbance</td><td>• 15Ha logged/cleared in borrow area south of TSF.
• Ongoing development.</td></tr>
<tr><td>Tailings Storage Facility</td><td>Clearing of trees in 3 areas:
• TSF Site C starter dam footprint: 109.8 ha
• Aggregate screening site: 9.3 ha</td><td>• 110 Ha logged and cleared in 2023 for TSF. 24.7 Ha logged and cleared for the aggregate screening site.
• Ongoing development/construction of TSF.
• Ongoing development of the aggregate screening site.</td></tr>
<tr><td>Water Management Structures</td><td>• Clearing of trees along water diversion channel route northeast of Site C starter dam: 47.1 ha of surface disturbance</td><td>• WMP – 10.7 Ha logged and cleared
• WMP earthworks/civil works completed.</td></tr>
</table>

Component/Activity	Description	Activities Completed January 1, 2023, to March 31, 2024
Ore Stockpile Sites	• Adjacent to Open Pit and Plant Site • Clearing of trees • Future LGO stockpile base 4.5 ha of surface disturbance • Future high-grade ore stockpile base 3.1 ha of surface disturbance	• No work completed. • LGO stockpile and water management logging/clearing completed – approx. 40Ha
Open Pit and Overburden Dump Site	• Clearing of trees • Open pit stripping of overburden on 20.5 ha • Stockpile pit stripping overburden on 11.1 ha of surface disturbance	• No work completed • Logging clearing completed for Open Pit initial development and diversion systems. 42Ha
Water Supply	• Groundwater well east of camp provides sufficient water for portable water treatment plant for potable water • If necessary, a second groundwater well will be drilled in this location • No additional site clearing required	• TW13-01 pipeline to camp
Ancillary Building Sites	Clearing at multiple sites: • Explosives magazine site: 3.1 ha of surface disturbance • Truck shop and mine offices: 18.6 ha of surface disturbance • Operational camp area: 33.9 ha of surface disturbance • Existing 250-person camp: 0 ha	• Explosives Mag – complete logging/clearing 5.4 Ha • Truck shop and mine offices – complete 6 Ha • Ops camp – no work completed. • Ops camp logging/clearing completed as well as earthworks, 16.9 Ha
Plant Site	Clearing, grubbing, site levelling, soil, overburden salvage. No bedrock excavation/blasting: • Plant Site: 24.4 ha of surface disturbance	• Work completed – site was logged cleared and partially levelled in 2022, remaining work was completed in 2023. 29 Ha. • Ongoing construction of the Plant Site.

1.1.1 2023 Davidson Creek Wildfire

An on-site wildfire started on July 10th, Davidson Creek (File Number: G41493), and grew to 4,879 hectares in size, burning approximately 60% of the mine site. BWG evacuated all employees on July 9th with a gradual return to site starting the week of July 24th. Construction activities fully recommenced on August 3rd.

On July 13, 2023, BW Gold Mine provided notifications to regulators, including IAAC, and Indigenous groups to highlight the potential for missed sampling events during this time. These impacts are summarized in the reports included in the appendices of this document

The events of the 2023 Davidson Creek Wildfire are anticipated to have an impact on future ambient monitoring associated with this permit. As monitoring occurs through future years, trends that may be associated with the 2023 Davidson Creek Wildfire will be noted.

1.2 Report Scope and Navigation

On April 15, 2019, the Mine was issued the DS (CEA Agency, 2019). Condition 2.11 of this document requires the development of an annual report, Table 1-2 summarizes the requirements of this conditions and where each component has been addressed, while Table 1-3Table 1-2 summarizes where information related to those follow-up programs is presented..

Table 1-2: Summary of condition 2.11

Condition	Section
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;	Appendix 1
2.11.2 how the Proponent complied with condition 2.1;	Section 1.4 Implementation (2.1)
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;	Appendix 2 Section 1.3.2 Follow-Up Program Updates
2.11.4 The information referred to in conditions 2.5 and 2.6 for each follow-up program;	Appendix 2 Section 1.3.2 Follow-Up Program Updates
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;	Table 1-3

2.11.6 Any update made to any follow-up program in the reporting year;	Section 1.3.2 Federal Follow-Up Program Updates (2.6)
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	Table 1-3
2.11.8 Any change(s) to the Designated Project in the reporting year.	Section 1.3.1 Designated Project (2.17)

Table 1-3: DS condition navigation summary

Condition No.	Condition	Section (DS 2.11.5, 2.11.7, 2.11.8)	Appendix
3.14	The Proponent shall develop, prior to construction and in consultation with Indigenous groups, Fisheries and Oceans Canada, and other relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and determine the effectiveness of the mitigation measures as it pertains to adverse environmental effects of the Designated Project on fish and fish habitat. 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. Designated Project and shall apply conditions 2.9 and 2.10 when implementing the follow-up program. As part of the follow-up program, the Proponent shall…	2 Fish and Fish Habitat (3.14)	Appendix 3-1: FINAL REPORT Blackwater Gold Project Condition 3.14 Follow-up Program 2023 Results Report Appendix 3-2: Condition 3.14 Follow-Up Program - March 2024 Results
3.15	The Proponent shall develop, in consultation with Indigenous groups and other relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and determine the effectiveness of the mitigation measures as it pertains to adverse environmental effects of the Designated Project on fish habitat in Davidson Creek, Creek 661 and Chedakuz Creek. The Proponent shall develop the follow-up program prior to construction and shall implement the follow-up program during all phases of the Designated Project. The Proponent shall apply conditions 2.9 and 2.10 when implementing the follow-up program. As part of the follow-up program, the Proponent shall…	3 Water Quality and Quantity (3.15)	Appendix 4: 2023 Follow-up Programs for Condition 3.15 of the Blackwater Gold Project Decision Statement issued under Section 54 of the Canadian Environmental Assessment Act, 2012
3.16	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 and determine the effectiveness of the mitigation measures as it pertains to fish habitat in Tatelkuz Lake and Chedakuz Creek. The Proponent shall implement the follow-up program from construction through decommissioning and shall apply conditions 2.9 and 2.10 when implementing the follow-up program. As part of the follow-up program, the Proponent shall:	4 Fish Habitat (3.16)	Appendix 5-1: FINAL REPORT Blackwater Gold Project Condition 3.16 Follow-up Program 2023 Results Report Appendix 5-2: Condition 3.16 Follow-Up Program – March 2024 Results
4.5	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 and determine the effectiveness of all mitigation measures to avoid harm to migratory birds, including migratory birds that are listed species at risk, their eggs and nests. The follow-up program shall include the mitigation measures used to comply with condition 4.1 to 4.4. 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.	5 Migratory Birds (4.5)	Appendix 6-1: 2023 Wildlife Mitigation and Monitoring Program Compliance Report Appendix 6-2: Blackwater 2024 Q1 Wildlife Monitoring Activity
5.5	The Proponent shall develop, prior to construction and in consultation with Indigenous groups, Environment and Climate Change Canada and other relevant authorities, a follow-up program to verify the predictions of the environmental assessment as it pertains to the adverse environmental effects of the Designated Project on wetland functions and to determine the effectiveness of the mitigation measures as it pertain to wetlands. The Proponent shall implement the follow-up program during from construction through decommissioning and shall apply conditions 2.9 and 2.10 when implementing the follow-up program. As part of the follow-up program, the Proponent shall…	6 Wetlands (5.5)	Appendix 7: 2023 Wetland Annual Reclamation Report
6.11	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 caused by changes in concentrations of contaminants of potential concern in water, soil, vegetation and wildlife, including fish, and determine the effectiveness of mitigation measures. As part of the development of the follow-up program, the Proponent shall identify the vegetation and wildlife species that shall be monitored, the locations where the monitoring will be conducted, the contaminants to be monitored and the frequency of the monitoring. 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. In doing so, the Proponent shall…	7 Country Foods (6.11) (6.13)	Appendix 8: 2023 Country Foods Monitoring Plan Annual Report
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 (NO2), sulfur dioxide (SO2), fine particulate matter (PM2.5), 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	8 Air Quality (6.12)	Appendix 9-1: Air Quality and Fugitive Dust Management Annual Report 2023 Appendix 9-2: Additional January 1 – April 1, 2024 Air Quality Data

Condition No.	Condition	Section (DS 2.11.5, 2.11.7, 2.11.8)	Appendix
	conditions 2.9 and 2.10 when implementing the follow-up program.		
6.13	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 socio-economic conditions of Indigenous Peoples as a result of changes to access, availability and quality of country foods. The Proponent shall implement the follow-up program from construction through decommissioning and shall apply conditions 2.9 and 2.10 when implementing the follow-up program.	7 Country Foods (6.11) (6.13)	Appendix 8: 2023 Country Foods Monitoring Program
6.14	The Proponent shall, prior to construction and in consultation with Indigenous groups and relevant authorities, develop a follow-up program to verify the accuracy of the environmental assessment as it pertains to adverse effects from the Designated Project on moose (*Alces alces*) and determine the effectiveness of mitigation measures. As part of the implementation of the follow-up program, the Proponent shall conduct winter distribution and density surveys for moose (*Alces alces*) starting prior to construction and until the end of operation. The Proponent shall implement the follow-up program from construction through decommissioning and shall apply conditions 2.9 and 2.10 when implementing the follow-up program.	9 Effects on Moose (6.14)	Appendix 6-1: 2023 Wildlife Mitigation and Monitoring Program Compliance Report Appendix 6-2: Blackwater 2024 Q1 Wildlife Monitoring Activity
8.18.6	A description of the follow-up program the Proponent shall implement to determine the effectiveness of the mitigation measures included in the compensation plan. As part of the development of the follow-up program, the Proponent shall determine, in consultation with Indigenous groups, the methods, timing and frequency for conducting winter surveys for caribou abundance and distribution within the Designated Project area. The Proponent shall apply conditions 2.9 and 2.10 when implementing the follow-up program.	10 Effects on Caribou (8.18.6)	Appendix 6-1: 2023 Wildlife Mitigation and Monitoring Program Compliance Report Appendix 6-2: Blackwater 2024 Q1 Wildlife Monitoring Activity
8.20.5	Develop and implement a follow-up program in consultation with Indigenous groups to determine the effectiveness of the mitigation measures included in the whitebark pine management plan. The Proponent shall apply conditions 2.9 and 2.10 when implementing the follow-up program. The follow-up program shall include…	11 Whitebark Pine (8.20.5)	Appendix 10: BW Gold Whitebark Pine
8.21	The Proponent shall develop, in consultation with Indigenous groups, Environment and Climate Change Canada and other relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and determine the effectiveness of the mitigation measures as it pertains to the effects of changes caused by the Designated Project on western toad (*Anaxyrus boreas*). The Proponent shall implement the follow-up program from construction through decommissioning and shall apply conditions 2.9 and 2.10 when implementing the follow-up program. As part of the follow-up program, the Proponent shall…	12 Effects on Western Toad (8.21)	Appendix 6-1: 2023 Wildlife Mitigation and Monitoring Program Compliance Report
8.22	The Proponent shall develop, in consultation with Indigenous groups, and implement a follow-up program to monitor little brown myotis (*Myotis lucifugus*) and northern myotis (*Myotis septentrionalis*) usage of buffer zones established pursuant to condition 8.14 and roosting structures installed and maintained by the proponent pursuant to condition 8.15 to determine the effectiveness of the mitigation measures. The Proponent shall implement the follow-up program during construction and operation and shall apply conditions 2.9 and 2.10 when implementing the follow-up program.	13 Effects on Bats (8.22)	Appendix 6-1: 2023 Wildlife Mitigation and Monitoring Program Compliance Report

1.3 Federal Decision Statement Administration

Details regarding the administration of the federal DS during the reporting period are provided below.

1.3.1 Designated Project (2.17)

No changes to the Designated Project have been made.

1.3.2 Follow-Up Program Updates (2.6)

Table 1-4 summarizes those follow-up programs that were updated during the reporting period. Each submission included a change log outlining where updates had been made. Many of these programs have been updated to satisfy conditions in provincial approvals issued in 2023 (PE-110650, PE-110652, and M-246), based on communications with EAO, and to address commitments made during the Joint Mines Act/Environmental Management Act Permitting process.

Appendix 2 provides details regarding the consultation of these plans. including the change logs provided with each submission.

Table 1-4 Follow-Up Programs Updated during the reporting period

Follow-Up Program	Description
Air Quality and Fugitive Dust Management Plan (AQFDMP)	An updated AQFDMP was provided on June 30, 2023. Changes were made to: • Reflect requirements of EMA PE-110650 • Address commitments made in during the Joint Mines Act/Environmental Management Act Permitting process An update AQFDMP was provided on October 20, 2023. Changes were made to: • Incorporate Transmission Line Air Quality and Fugitive Dust Management Plan as an appendix based on communications with EAO • Address commitments made during the Joint Mines Act/Environmental Management Act Permitting process
Country Foods Monitoring Plan (CFMP)	The Country Foods Monitoring Plan (CFMP) was not updated in 2023, however the: • Small Mammal Sampling Framework (March 2023) was updated based on comments received from LDN and UFN • Human Health Triggers for Adaptive Management (May 2023) was developed to align with commitments made in the CFMP relative to conditions of EAC M19-01Table 1-2
Weland Management Offsetting Plan (WMOP)	An updated WMOP was provided on March 28, 2023. Changes were made to reflect additional engagement with LDN and UFN as required by EAO.
Wildlife Mitigation and Monitoring Plan (WMMP)	The updated WMMP was provided on November 3, 2023. Changes were made to: • Incorporate the Transmission Line Vegetation and Access Plan as an appendix based on communications with EAO • Address commitments made during the Joint Mines Act/Environmental Management Act Permitting process

Additional management plans in place to support compliance with conditions of the FDS that were updated during the reporting period are summarized below in Table 1-5.

Table 1-5: Management plans supporting implementation of FDS conditions updated during the reporting period

Follow-Up Program	Description
Aquatic Effects Monitoring Plan	An updated AEMP was provided on July 4, 2023. Changes were made to: • Reflect requirements of EMA PE-110652 • Address commitments made during the Joint Mines Act/Environmental Management Act Permitting process
Construction and Environmental Management Plan	An update CEMP was provided on May 16, 2023. Changes were made to: • Reflect the Mines Act M-246 permit • Address commitments made during the Joint Mines Act/Environmental Management Act Permitting process An updated CEMP was provided on October 19. Changes were made to: • Incorporate the Transmission Line Management Plans as an appendix based on communications with EAO • Address commitments made during the Joint Mines Act/Environmental Management Act Permitting process
Cultural and Spiritual Resources Management Plan (CSMP)	The updated CSMP was provided October 10, 2023. Changes were made to: • Incorporate the Transmission Line Archaeological and Cultural Heritage Resource Management Plan as an appendix based on communications with EAO • Address commitments made during the Joint Mines Act/Environmental Management Act Permitting process
Invasive Plant Management Plan (IPMP)	The updated IPMP was provided June 26, 2023. Changes were made to: • Reflect requirements of the Mines Act M-246 permit • Address commitments made during the Joint Mines Act/Environmental Management Act Permitting process
Noise and Vibration Effects Monitoring and Mitigation Plan (NVMP)	The updated NVMP was provided on October 19, 2023, Changes were made to incorporate the Transmission Line Noise and Vibration Management Plan as an appendix based on communications with EAO.
Surface Erosion Prevention and Sediment Control Plan (ESCP)	The updated ESCP was provided on June 2, 2023. Changes were made to: • Reflect requirements of EMA PE-110652 • Address commitments made during the Joint Mines Act/Environmental Management Act Permitting process

The Environmental life of Mine Committee (ELoMC) is a committee that meets monthly. It is required by M19-02, M-246, and PE-110652, and includes representatives from BW Gold, provincial regulators, and LDN, UFN, NFNs, and Nazko First Nations. The scope of this committee includes reviews of changes made to applicable management plans, and during the July 20, 2023 meeting an overview of changes to the programs that would be made in response to those issued approvals (PE-110650, PE-110652, and M-246) was provided. Overviews of those changes made to applicable plans were also discussed:

- AEMP on August 17, 2023.
- AQFDMP on August 17, 2023.
- CEMP on August 17, 2023.
- IPMP on August 17, 2023.
- AQFDMP on September 21, 2023.

- CEMP on September 21, 2023.
- NVMP on September 21, 2023.
- WMMP on September 21, 2023.

1.3.3 Reporting Period Alignment

Development of the initial Blackwater Gold Mine Annual DS Follow-Up Report had initially included information collected between January 1 – December 31, 2022. However, following submission of the report to IAAC, they noted that the reporting period for the Federal DS is April 1 – March 31. The Federal DS was updated to align with the reporting period in 2023 to meet the requirements, however it was noted that the federal and provincial (January 1 – December 31) reporting periods were not aligned. Several discussions with IAAC on this misalignment have occurred through the reporting period.

Many follow-up programs, and supporting management plans, have been developed to support compliance with both federal and provincial conditions. As a result of the current reporting misalignment, reporting on these documents is to occur twice, covering much of the same time. With the provincial reports including January 1 – December 31, with submission due March 31, and FDS reporting including April 1 – March 31, with draft submission to Indigenous Groups due June 30.

1.4 Implementation (2.1)

As required by DS condition 2.1 BW Gold has continued to design, permit, and construct the Mine in a manner that considers and incorporates corporate standards and policies, the expertise of the selected consulting firms, continued involvement of a team of QPs, and ongoing engagement with Indigenous groups.

> **2.1.** *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.*

QPs have developed and supported in the implementation of those programs that make up the basis of this document. Signatures have been provided on those finalized documents and reflect the requirements of this condition.

1.5 Consultation (2.12)

As per condition 2.12 (shown below), a draft, annual report was provided to the LDN, UFN, STN, TNG, NFNs, NFN, NTBIB, Métis Nation British Columbia (MNBC), Cheslatta Carrier Nation, and Yekooche First Nation on June 29, 2024.

> ***2.12*** *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.*

LDN, UFN, and NFNs provided comments on the draft annual report. The comments could be categorized into four types, based on the appropriate follow-up actions identified by BW Gold:

1. Edit the 2023 annual report;
2. Address the comment in the future annual reports, starting with the 2024 annual report;
3. Discuss the comment, with the aim to resolve it, prior to implementing field programs in 2025, as applicable; and
4. Discuss the comment with the aim to clarify BW Gold's position on the comment.

1.5.1 Lhoosk'uz Dené Nation and Ulkatcho First Nation

Comments from LDN and UFN touched on the programs listed below.

- Air Quality and Fugitive Dust Management Plan;
- Federal Decision Statement Condition 3.15 - Memo
- Caribou Mitigation and Monitoring Plan.
- Follow-up Program for Condition 3.14 of the Blackwater Gold Project.
- Wetland Management and Offsetting Plan;
- Whitebark Pine Management Plan; and,
- Wildlife Mitigation and Monitoring Plan.

On August 23, 2024 in a meeting with BW Gold and UFN, LDN indicated that, through their review the draft report, they will be raising information to form the basis of discussions that will improve the relationship. Further, it was suggested that these discussions could lead to goals for BW Gold, LDN and UFN, who work very closely together.

On September 13, 2024, following BW Gold's detailed review of the comments provided by LDN and UFN, BW Gold indicated that while there would be some report updates it agreed with the August 23, 2024 suggestion that the report review could lead to goals. As a result, the group agreed to sequentially discuss concerns and recommendations on environmental management plans and programs, with the aim to resolve concerns. The next discussions will occur on October 4 and 18, 2024.

1.5.2 Nechako First Nations

Comments from the NFNs focused on the sections of the annual report listed in the bulleted list below.

- Federal Decision Statement Condition 3.15 - Memo
- Follow-up Program for Condition 3.14 of the Blackwater Gold Project.
- Follow-up Program for Condition 3.16 of the Blackwater Gold Project.

On September 19, 2024, BW Gold and the NFNs, along with subject matter experts that prepared and reviewed the applicable sections of the annual report. BWG presented responses to comments categorized as 1, 2 and 4. As the majority of the NFNs comments related to recommendations to the field and/or analytical methods (category 3) used in primarily the Follow-up Program for Condition 3.14 of the Blackwater Gold Project, BW Gold and the NFNs agreed to discuss the recommendations for decision prior to implementing field programs in 2025. It is important to note that significant consultation on the Follow-up Program for Condition 3.14 of the Blackwater Gold Project occurred between February and July 2024 and the BW Gold is committed to continuing discussions.

2 Fish and Fish Habitat (3.14)

The fish and fish habitat *Follow-up Program for Condition 3.14 of the Blackwater Gold Project* (Palmer, 2023a) was developed to address the conditions outlined in condition 3.14 of the DS. It was designed to first characterize baseline conditions for each of the indicators listed in the condition, and then monitor

those indicators during all phases of the Mine to determine, to the extent possible, if:

- Variation from baseline conditions is occurring;
- Mitigation measures are effective;
- If the environmental assessment was accurate in terms of anticipated effects on the indicators; and,
- Determine if additional mitigations should be taken pursuant to Condition 2.9.

Based on the progress of the Mine to date (Section 1.1), the field programs summarized in this report collected information intended to represent a pre-construction updated baseline for fish and fish habitat to inform long-term monitoring under this condition. The programs and their results are presented in those documents listed below:

- *FINAL REPORT Blackwater Gold Project: Condition 3.14 Follow-up Program 2023 Results Report* (Appendix 3-1), which summarizes the monitoring and results of the program for 2023.
- *Condition 3.14 Follow-Up Program – March 2024 Results* (Appendix 3-2), which summarizes the methods and results of the program for March 2024.

This section provides an overview of monitoring, results, and adaptive management that occurred during the reporting period to support compliance with DS 3.14. Full details can be reviewed in the documents listed above. Table 2-1 below summarizes this condition of the DS and where the full details can be found in the associated appendix of this document.

Table 2-1: DS condition 3.14 follow-up monitoring

Condition No.	Condition	Appendix	Section
3.14.	The Proponent shall develop, prior to construction and in consultation with Indigenous groups, Fisheries and Oceans Canada, and other relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and determine the effectiveness of the mitigation measures as it pertains to adverse environmental effects of the Designated Project on fish and fish habitat. 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. As part of the follow-up program, the Proponent shall:	Described in the *Follow-up Programs for Condition 3.14 of the Blackwater Gold Project Decision Statement issued under Section 54 of the Canadian Environmental Assessment Act, 2012* (Palmer, 2023a)	
3.14.1.	Conduct parasite and pathogen inventories in Lake 01538UEUT and Lake 01682LNRS prior to enlarging Lake 01682LNRS and connecting it to Lake 01538UEUT pursuant to condition 3.13 and compare the results of the parasite and pathogen inventories for the two lakes;	Described in the *Follow-up Programs for Condition 3.14 of the Blackwater Gold Project Decision Statement issued under Section 54 of the Canadian Environmental Assessment Act, 2012* (Palmer, 2023a)	Complete in 2021 (Palmer, 2023a).
3.14.2.	Monitor, starting when the Proponent starts to pump water into Davidson Creek and continuing through until the freshwater supply system has been decommissioned, rainbow trout (*Oncorhynchus mykiss*) and Kokanee (*Oncorhynchus nerka*) populations in Davidson Creek, including	Appendix 3-1: *FINAL REPORT Blackwater Gold Project: Condition 3.14 Follow-up Program 2023 Results Report* Appendix 3-2: *Condition 3.14 Follow-Up Program – March 2024 Results*	
3.14.2.1.	Community composition of rainbow trout (*Oncorhynchus mykiss*) and Kokanee (*Oncorhynchus nerka*), their absolute abundance, genetic structure and diversity;		3.2 Young-of-the-year and Juvenile Rainbow Trout Summer Abundance (Appendix 3-1) 3.7 Rainbow Trout and Kokanee Genetic Structure and Diversity (Appendix 3-1)
3.14.2.2.	Absolute abundance of overwintering rainbow trout juveniles; and		3.1 Results (Appendix 3-2)
3.14.2.3.	Characteristics of spawner populations through surrogate monitoring metrics including size at 50% maturity, redd counts and spawner distribution.		3.4 Rainbow Trout Spring Spawner and Redd Abundance (Appendix 3-1) 3.5 Kokanee Summer Spawner and Redd Abundance (Appendix 3-1) 3.3 Kokanee Fry Spring Outmigration Abundance (Appendix 3-1) 3.6 Dissolved Free Amino Acids Sampling (Appendix 3-1)

2.1 Monitoring and Analysis

As outlined in Table 2-1 above, detailed regarding the reporting period monitoring activities done in support of condition 3.14 are provided in Appendix 3-1 and Appendix 3-2. These programs were implemented and developed by QPs, and include detailed summaries of methodologies, study locations, results and recommendations. Table 2-2 below summarizes the monitoring results and recommendations for work done in Davidson Creek, it also specifies where further information on each item can be found in the Appendices.

Monitoring for parasites and pathogens in Lake 15 and 16, as required by DS condition 3.14.1. is occurred in September 2021 and is summarized in the *Follow-up Program for Condition 3.14 of the Blackwater Gold Project* (Palmer, 2023a). The study concluded that parasites and pathogens causing disease in fish are not present in Lake 15 or 16, and that no additional monitoring is required (Palmer, 2023a).

No adaptive management was required. Monitoring will continue as described in the *Follow-up Programs for Condition 3.14 of the Blackwater Gold Project* (Palmer, 2023a), with a few changes in the approach to monitoring. These changes are summarized in Table 2-1.

Table 2-2: Summary of DS condition 3.14 follow-up monitoring

Monitoring	Survey /Methodology	Dates	Results Summary	Adaptive Management/Recommendations
Overwintering Rainbow Trout Abundance	**Appendix 3-2, Section 2.2.2.1**	March 2024 (Triton, 2024a)	**Appendix 3-2, Section 3.0** Fish were observed from camera footage at three sites (DC-4-OW, DC-8-OW, DC-9-OW); MaxN value at these sites was one. (Triton, 2024a)	
Juvenile Rainbow Trout Overwintering Abundance Survey	**Appendix 3-1, Section 2.1**	May 1 and 7, 2023 (Palmer, 2024a)	**Appendix 3-1, Section 3.1** Sampling during the 2023 spring (post-winter) relative abundance survey was limited to two sites due to high freshet flows that precluded safe and effective electrofishing at the remaining sites with fish only captured at one site (density of 0.065 fish per square metre [fish/m^2]). Fall (pre-winter) 2023 triple-pass electrofishing resulted in densities of Rainbow Trout that ranged from 0.200 to 0.456 fish/m^2.	**Appendix 3-1, Section 5** Shift start date of the post-overwintering (spring) assessment to earlier in the year to conduct sampling after ice-off, but prior to freshet conditions that may preclude effective and safe electrofishing. Exact timing and water levels from spring snowmelt will likely vary each year, depending on weather conditions.
Young -of-the-year and juvenile Rainbow Trout Summer Abundance	**Appendix 3-1, Section 2.2**	August 22 – 29, 2023 (Palmer, 2024a)	**Appendix 3-1, Section 3.2** Community composition of young-of-year and juvenile Rainbow Trout in Davidson Creek was assessed with three-pass depletion electrofishing during low flow summer conditions. Fish habitat was assessed at each site using Fish Habitat Assessment Procedure (FHAP) methods. Electrofishing could not be completed at four sites in lower Davidson Creek due to wildfire activities causing site access delays. Once safe to access Davidson Creek, the presence of spawning kokanee and in-gravel embryos preventing electrofishing in accordance with provincial Fish Collection Permit conditions Rainbow Trout densities at the sites sampled in 2023 ranged from 0.188 to 0.769 fish/m^2.	
Kokanee Fry Spring Outmigration Survey	**Appendix 3-1, Section 2.3**	May 5 and June 16, 2023 (Palmer, 2024a)	**Appendix 3-1, Section 3.3** Kokanee fry outmigration was estimated in Davidson Creek using a funnel net sampling program. The survey was completed over a six-week period, with overnight sampling conducted at least once every seven days. Fry abundance was calculated using an area-based estimation that related net area to cross-sectional channel area and was adjusted for the time interval (targeting 19:00 to 02:00 hours) where the majority (>90 percent) of fry were expected to move. During the sampling period from May 5 to June 16, 2023, a total of 14,258 kokanee fry were estimated to have outmigrated by the site.	**Appendix 3-1, Section 5** Shift start date of kokanee fry outmigration sampling to earlier in the year to better capture the entire outmigration period. Exact outmigration timing and the start of sampling may vary each year, depending on egg deposition timing, stream temperature regimes, and flow conditions. Continue to use area-based abundance estimates, related to net area and cross-sectional channel area, if mark-recapture events to calculate trap efficiency are unsuccessful.
Rainbow Trout Spring Spawner and Redd Abundance Survey	**Appendix 3-1, Section 2.4**	May 30 – June 23, 2023 (Palmer, 2024a)	**Appendix 3-1, Section 3.4** Adult Rainbow Trout spawner abundance and their distribution in Davidson Creek was assessed by two methods: capture of migrating spawners using bi-directional box traps and visual bank walk surveys for spawners and their redds. Ageing samples were also collected to determine fish age at maturity. Visual bank walks completed from May 30 to June 21, 2023 recorded Rainbow Trout spawner areal densities that ranged from 0 to 0.0246 fish/m^2 with peak counts observed in early June. Trap nets deployed at two sites from May 22 to June 23, 2023 captured a total of 219 adult Rainbow Trout. Upstream movement for both sites peaked in late May with the number of downstream migrants peaking in early June at DC-1 and mid-June at DC-8. Definitive redds were not observed during the visual surveys.	**Appendix 3-1, Section 5** Eliminate Rainbow Trout visual spawner surveys as a monitoring metric for spawner abundance due to challenges posed by water clarity and high flow conditions during the height of the spawning run as this limit's observer efficiency. Instead, quantify spawning Rainbow Trout and their distribution in Davidson Creek using a passive fish counting system, such as a PIT tag array. Modify ridged trap nets (e.g., enlarge flow deflector and optimize trap orientation) to minimize fish impingement and exhaustion from flow through the downstream trap.
Kokanee Summer Spawner and Redd Abundance	**Appendix 3-1, Section 2.5**	August 16 – September 28, 2023 (Palmer, 2024a)	**Appendix 3-1, Section 3.5** Visual bank walks completed between August 16 and September 28, 2023 recorded kokanee spawner areal densities that ranged from 0 to 0.228 fish/m^2 with peak live counts observed in mid-August. The peak redd areal density (0.024 redds/m^2) was recorded in early September. The 2023 Davidson Creek kokanee escapement was estimated as 7,950 (3,848 – 12,052), using Gaussian area-under-the-curve with live counts. Underwater camera video footage resulted in observations of 3,030 upstream migrating kokanee and 49 downstream migrating kokanee during the 31-day period.	**Appendix 3-1, Section 5** Adjust bank walk site lengths in future sampling to account for barriers (e.g., beaver dams, cascades) and changes in kokanee distributions. Some 2023 survey sections were shorter than the targeted 1000 m length due to discrepancies between GIS-derived stream lengths and on-the-ground conditions.

Monitoring	Survey /Methodology	Dates	Results Summary	Adaptive Management/Recommendations
Dissolved Free Amino Acids	**Appendix 3-1, Section 2.6**	May 28 and August 22, 2023 (Palmer, 2024a)	**Appendix 3-1, Section 3.6** Surface water sampling was completed twice in 2023 to collect data on dissolved free amino acid (DFAA) profiles in Davidson Creek during the kokanee fry outmigration and spawning windows. DFAA are used by salmonids for olfactory imprinting and homing back to natal streams. Laboratory results for the mean concentrations for 22 different amino acids will contribute to the characterization of spawner populations and data will be used to determine if levels in Davidson Creek are altered by the operation of the FWSS.	
Rainbow Trout and Kokanee Genetics Structure and Diversity	**Appendix 3-1, Section**	June 13 and September 12, 2022 (Palmer, 2024a)	**Appendix 3-1, Section 3.7** To monitor genetic structure and diversity, tissue samples were collected from kokanee and Rainbow Trout in Davidson Creek in 2022. The results of the analysis were not available in time for inclusion in the previous report, and therefore are included in this report. Genetic analysis aims to determine whether a deviation from equilibrium occurs as a result of the Mine. Laboratory results showed one distinct genetic group for Rainbow Trout and two for kokanee. Similar genetic groups were identified in baseline studies (2012 and 2013) indicating no deviation from population equilibrium.	

3 Water Quality and Quantity (3.15)

Compliance with condition 3.15 of the DS is met through implementation of the *Aquatic Effects Monitoring Plan* (AEMP) (ERM, 2023a) and the memo regarding *Federal Decision Statement Condition 3.15* (Artemis Gold Inc., 2022). The AEMP addresses conditions 3.15.1 and 3.15.2, related to surface water quality/quantity monitoring in the receiving environment, this program was specifically designed to meet the following objectives:

- Detect Mine related effects on the aquatic ecosystem components (including water quality);
- Confirm water quality predictions and effects assessments;
- Meet permit and regulatory requirements for effluent and receiving environment quality;
- Assess the performance of mitigation and management measures; and,
- Provide the necessary feedback and information for the adaptive management of potential Mine-related effects.

While condition 3.15.3 is addressed through groundwater monitoring included in the MSDP.

A summary of the activities undertaken through these programs as they relate to condition 3.15 have been compiled in the *2023 Follow-up Programs for Condition 3.15 of the Blackwater Gold Project Decision Statement issued under Section 54 of the Canadian Environmental Assessment Act, 2012* (Appendix 4).

This section provides an overview of monitoring, results, and adaptive management that occurred during the reporting period to support compliance with DS 3.15. Full details can be reviewed in Appendix 4. Table 3-1 below summarizes this condition of the DS and where the full details can be found in the associated appendix of this document.

Table 3-1: DS condition 3.15 follow-up monitoring

Condition No.	Condition	Appendix	Section
3.15.	The Proponent shall develop, in consultation with Indigenous groups and other relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and determine the effectiveness of the mitigation measures as it pertains to adverse environmental effects of the Designated Project on fish habitat in Davidson Creek, Creek 661 and Chedakuz Creek. The Proponent shall develop the follow-up program prior to construction and shall implement the follow-up program during all phases of the Designated Project. The Proponent shall apply conditions 2.9 and 2.10 when implementing the follow-up program. As part of the follow-up program, the Proponent shall:	Described in the memo regarding *Federal Decision Statement Condition 3.15* (Artemis Gold Inc., 2022)	
3.15.1.	Monitor water flows in Davidson Creek during the open water season from construction until decommissioning, and temperature continuously from construction until decommissioning;	Appendix 4: 2023 Follow-up Programs for Condition 3.15 of the Blackwater Gold Project Decision Statement issued under Section 54 of the Canadian Environmental Assessment Act, 2012	2.0 Monitoring Flows and Temperature in Davidson Creek
3.15.2.	Monitor water quality in Davidson Creek, Creek 661 and Chedakuz Creek for contaminants of potential concern, including those identified in Table 5 of the environmental assessment report, during all phases of the Designated Project; and		3.0 Monitoring Water Quality in Davidson Creek, Creek 661, and Chedakuz Creek for Contaminants of Potential Concern
3.15.3.	Monitor, during all phases of the Designated Project, groundwater quality and quantity downstream of the tailings storage facility site D, open pit, west waste rock dump and low-grade ore stockpile to confirm that groundwater quantity and quality parameters are at or below the values identified by the Proponent in the modelled predictions in Section 5 of Blackwater Gold Project: Additional Water Quality Model Sensitivity Scenario (July 20, 2017) and Section 3 of Blackwater Gold Project: Water Treatment Responses for Comments 1266, 1270, 1271, 1272, and 1273 (February 15, 2017) for nitrite and contaminants of potential concern, and to verify the effectiveness of water management measures.		4.0 Monitoring Groundwater Quality and Quantity

3.1 Monitoring and Analysis

As outlined in Table 3-1 above, detailed regarding the reporting period monitoring activities done in support of condition 3.15 are provided in Appendix 4. These programs were implemented and developed by QPs, and include detailed summaries of methodologies, study locations, results and recommendations. Table 3-2 below summarizes the monitoring, results, and recommendations for work done in those areas required by condition 3.15, it also specifies where further information on each item can be found in the Appendices.

Table 3-2: Summary of DS condition 3.15 follow-up monitoring

Monitoring	Survey/Methodology	Timing	Results	Adaptive Management/Recommendation
Davidson Creek Flows – Comparison to Environmental Assessment	**Appendix 4, Section 2.3.3**	**Appendix 4 Section 2.3.3**	**Appendix 4 Section 2.3.3** Observations of flows below the applicable Construction Instream Flow Needs (CIFN) occurred in December, January, February, and March of the reporting period. Those instances were reviewed, mitigative actions taken, and learnings adopted to prevent re-occurrence where possible. These events were not the result of water usage, or storage, to support construction or operations, but the result of conditions (i.e.: low water level, malfunction of the pump operating system, and freezing conditions) encountered while operating the DCDS.	**Appendix 4 Section 2.3.3** Actions taken to address those conditions proved to be effective, as they resulted in flows meeting CIFN. Those included: • Setting the DCDS pumping system to better match pumping rates to system inflows to avoid low water levels; and • Establishing a heating system along the pumping system to limit the potential for freezing In addition to those actions listed above, BWG now has in-house flow monitoring equipment to collect flows more frequently, as needed.
Davidson Creek Temperature – Comparison to Environmental Assessment	**Appendix 4, Section 2.3.4**	**Appendix 4 Section 2.3.4**	**Appendix 4 Section 2.3.4** For 6 days in October, temperatures exceeded the upper limit (+1°C). The high temperatures seen during this period is likely attributed to an unseasonably warm fall in combination with a large area of lost riparian due to the recent fires along Davidson Creek (Section 1.2). No water was actively held back during this time, and no reservoirs were established.	
Monitoring Water Quality for Contaminants of Potential Concern – Chedakuz Creek	**Appendix 4, Section 3.2**	**Appendix 4, Section 3.4.1**	**Appendix 4, Section 3.4.1** Chedakuz Creek is a larger watercourse (when compared to Davidson Creek) and influenced by several anthropogenic sources along its length (e.g. forest harvesting activities, road/trail networks, cattle grazing). Given the downstream distance from the construction activities and surface water discharge limited to Q1 2024, Mine related effects were not anticipated in Chedakuz Creek. No WQG-AL guideline exceedances were observed in the Chedakuz Creek watershed during the reporting period, however the YDWL standards were exceeded for dissolved manganese at site CC-15 (see Section 3.4.2). Generally, sites on the section of Chedakuz Creek upstream of Tatelkuz Lake (i.e., CC-03 and CC-05) had higher metal concentrations though there were exceptions for some parameters (e.g. copper, iron, lead, selenium, titanium, and zinc). The monthly metal concentration and seasonal trends during the reporting period at Chedakuz Creek sites were generally similar to that observed during the baseline period. Exceptions to this were total aluminum, total and dissolved iron, total molybdenum, total strontium, and total uranium. Greater concentrations of total molybdenum, total and dissolved iron, and total uranium were observed during the	

Monitoring	Survey/Methodology	Timing	Results	Adaptive Management/Recommendation
			reporting period at the lower Chedakuz Creek sites (CC-10, CC-15, CC-20, CC-30, and CC-40) when compared to the baseline period. Greater concentrations of total aluminum, and total strontium were observed during the reporting period at the middle Chedakuz Creek sites (CC-03 and CC-05) when compared to the baseline period. Like the other monitored watersheds, total and dissolved aluminum concentrations followed a similar temporal pattern to TSS, unlike other metals which were dominated by the dissolved fraction. Total beryllium at all Chedakuz Creek sites was generally less than detection through the baseline period. In 2023, the total beryllium concentration at sites was also less than the detection limit for all months; however, the detection limit was lower than in baseline years	
Monitoring Water Quality for Contaminants of Potential Concern – Davidson Creek	**Appendix 4, Section 3.4.3**	**Appendix 4, Section 3.4.3**	**Appendix 4, Section 3.4.1** Davidson Creek is a small headwater stream directly downgradient of Mine-related activities and downstream of the wildfire extent. Water quality parameters with significant class-period interactions indicating a change from baseline conditions were observed at Davidson Creek sites for TDS, sulphate, total phosphorus, total aluminum, total arsenic, total barium, total manganese, total strontium, total uranium, and dissolved manganese. For all other parameters analyzed the observed greater concentrations during the early works construction period was observed at both control and impact sites; therefore, the change was not as a result of Mine activities. Graphical analysis suggested that the observed increase in TDS, and sulphate concentrations is likely a result of the July 2023 Davidson Creek fire and not Mine-related effects. Similarly, the significant increase in total and dissolved manganese observed at DC-20 (a mid-field site) and not the near-field sites is likely the result of non-Mine activities (e.g., forestry or agricultural activities downstream of the Mine and upstream of DC-20). The significant increase in total strontium and uranium at Davidson Creek sites may be related to the construction activities however elevated total uranium and total strontium concentrations were also observed at other far-field sites (e.g., 661-20). The significant increase in total phosphorus, aluminum, arsenic, barium, and manganese concentrations at DC-05 in February and March 2024 was likely associated with the authorized discharge from TSF Stage 1 SCP. Surface water quality was also assessed against the water	**Appendix 4, Section 3.4.3** Continued monitoring of total aluminum in both TSF Stage 1 SCP discharge and downstream environment is expected to confirm if the effect continues to persist through will discharge occurs in 2024 (i.e., it is possible that the observed exceedances were related to the low flow conditions during the winter discharge). Mitigations applicable to the TSF Stage 1 SCP include the use of a flocculant product to reduce sediment loading to the receiving environment. The evaluation of effectiveness of mitigation measures for the remainder of 2024 and if additional responses other than continued monitoring are required will be documented in the 2024 AEMP Interpretive Report. The TSF Stage 1 SCP will be decommissioned in the fall of 2024, therefore no additional mitigations are required. No additional sampling or analyses other than that described in the AEMP Plan, Version 2.0 (ERM 2024b) is recommended.

Monitoring	Survey/Methodology	Timing	Results	Adaptive Management/Recommendation
			quality Response Framework. Based on the results of the comparison to Numeric performance metrics (NPM) concentrations (WQG-AL, water quality predictions, baseline water quality) for the reporting period and results of the BACI analysis, the action level in the adaptive management framework of the AEMP is “none” at Davidson Creek sites DC-05, DC-10, and DC-15 for evaluated parameters dissolved oxygen, pH, fluoride, total beryllium, total boron, total selenium and dissolved aluminum, cadmium, copper, iron, manganese, and zinc. All other parameters were either at “low” or “medium” (TDS, sulphate, total aluminum, arsenic, barium, chromium, manganese, strontium and uranium, and dissolved manganese) indicating that concentrations are greater than predicted or baseline concentrations but have not increased to a level of concern. Concentrations were generally well below WQG-AL for all parameters with the exception of total aluminum. Total aluminum concentrations observed in February and March 2024 at DC-05 were greater than WQG-AL. This is likely as a result of the TSF Stage 1 SCP discharge to Davidson Creek. No effects to aquatic life are expected given discharge criteria were met, acute toxicity thresholds were met, and the magnitude of the long-term WQG-AL exceedance was low (range from 1.12 to 8.95).	
Monitoring Water Quality for Contaminants of Potential Concern – Creek 661	**Appendix 4, Section 3.4.3**	**Appendix 4, Section 3.4.3**	**Appendix 4, Section 3.4.3** Creek 661 and its tributaries does not receive effluent discharge but is downgradient of Mine-related activities including the Plant Site SCP discharge to ground and downstream of the wildfire extent. Water quality parameters with significant class-period interactions were observed at Creek 661 sites for pH, TDS, total aluminum, total strontium, total uranium, and dissolved iron. For all other parameters analyzed the observed greater concentrations during the construction period was observed at both control and impact sites; therefore, it is not as a result of Mine activities. Graphical analysis suggested that the observed increase in pH, TDS, total phosphorus, and dissolved iron concentrations was not as a result of Mine activities. However the significant increase in total chromium at 661-05 during the reporting period may be attributable to the discharge to ground from the Plant Site RIBs or other associated road construction activities. Significant increases in total aluminum at 661-01 was associated with construction activities and exceedances of WQG-AL were similar to Davidson Creek sites, significantly greater concentrations of total strontium and total uranium were observed during construction activities at Creek 661 sites when compared to baseline.	**Appendix 4, Section 3.4.3** Monitoring of the RIBs during discharge to ground and at the groundwater wells immediately downstream will confirm if the effect continues to persist. The Plant Site SCP will be decommissioned in the fall of 2024 thus long-term effects related to the discharge to ground are not anticipated. No additional sampling or analyses other than that described in the AEMP Plan, Version 2.0 (ERM 2024b) is recommended.

Monitoring	Survey/Methodology	Timing	Results	Adaptive Management/Recommendation
			Based on the results of the comparison to NPM concentrations (WQG-AL, water quality predictions, baseline water quality) for the reporting period and results of the BACI analysis, the action level in the adaptive management framework of the AEMP is “none” at Creek 661 sites 661-05 and 661-10 for evaluated parameters dissolved oxygen, total beryllium, total copper, total silver, and dissolved cadmium, and manganese. All other evaluated parameters were either at “low” or “medium” (pH, TDS, total chromium, strontium, and uranium, and dissolved iron) level indicating that concentrations are greater than predicted or baseline concentrations but have not increased to a level of concern. An increase in total aluminum that exceeded WQG-AL at site 661-05 was observed in March 2024 and was likely associated with road construction activities upstream of site 661-05. The observed guideline exceedance was of low magnitude (5.81) therefore negligible effects to aquatic life are expected. Continued erosion and sediment control mitigation measures during road construction are expected to address continued potential Mine-related effects to Creek 661. Graphical analysis of total chromium at site 661-05 suggests that increase observed in March 2024 may be related discharge to ground from the Plant Site SCP and upstream road construction activities. Exceedances of the most conservative chromium WQG-AL (i.e., Cr [VI]) were observed at 661-05, at a similar frequency and magnitude when compared to baseline years therefore no adverse effects to aquatic life are expected.	
Monitoring Groundwater Quality and Quantity	**Appendix 4, Section 4.2**	**Appendix 4, Section 4.2**	**Appendix 4, Section 4.4** Construction activities at the Mine were not identified to have an impact on groundwater levels or groundwater quality at monitoring locations in the groundwater monitoring program. Groundwater levels at monitoring locations during the construction period generally fluctuated within the range of historic measurements at the sites, although they were at the lower end of that range at many sites. Groundwater quality results measured during the construction period were compared to mean results during the baseline period, model predictions, and water quality standards. A change in concentration between baseline and the construction period was assessed using graphical analysis and by comparing the mean concentrations of parameters during the two periods. No increases in parameter concentrations greater than 20% relative to baseline concentrations was observed for monitoring wells in the TSF area. An increase in mean concentration greater than 20% was identified for nitrate and dissolved uranium at one monitoring well in each of the stockpile and the Operations camp site areas; however, neither	

Monitoring	Survey/Methodology	Timing	Results	Adaptive Management/Recommendation
			of the increases were attributed to project related activities. Increases in mean annual concentration greater than 20% were also observed for ammonia, nitrate, dissolved aluminum, and dissolved uranium concentrations at background monitoring wells. Water quality at monitoring wells adjacent to the Plant Site was compared against predicted concentrations of seepage included in the 2022 modelling presented in the Joint MA/EMA Application. Parameters identified as POPCs that reported concentrations greater than the predicted Plant Site seepage concentrations included dissolved aluminum, chromium, and iron. The elevated concentrations of aluminum and iron at MW23-02S are anticipated to be unrelated to project activity and due to material ingress into the well. The mean concentrations of dissolved chromium measured in groundwater samples at Plant Site monitoring wells (MW23-01 and MW23-02S) during the construction period were greater than the 2022 model prediction for Plant Site seepage (Lorax 2021). Although exceedances of model predicted concentrations occurred during all sampling events, they were generally of low magnitude, therefore no effects to aquatic life are expected. Exceedances of BC WQGs in surface water were observed for dissolved aluminum and iron at downstream surface monitoring station 661-05 as discussed in Section 3.4.3. No effects to aquatic life were expected given the magnitude of the exceedance during construction and previous exceedances observed during the baseline period. Additional development is recommended at MW23-02S to remove the sand at the bottom of the well. Water quality at MW23-02S will be re-assessed following the additional development activity and subsequent sampling of MW23-02SNo trends in groundwater quality were observed from baseline conditions at any of the groundwater sampling locations attributed to Mine related activity. No sample exceedances of Environmental Management Act, Contaminated Sites Regulation (CSR) Aquatic Life standards – Schedule 3.2 were reported at any of the monitoring wells. Water quality at monitoring wells downgradient of the TSF construction area were compared against predicted concentrations of TSF seepage in Year -1 included in the 2022 modelling presented in the Joint MA/EMA Application (BW Gold 2022). Measured groundwater sample results for all POPCs were close to (maximum exceedance factor of 1.5) or less than model predicted concentrations for TSF C seepage in Year -1.	

4 Fish Habitat (3.16)

The fish and fish habitat *Follow-up Programs for Condition 3.16 of the Blackwater Mine Project Decision Statement Issued under Section 54 of the Canadian Environmental Assessment Act, 2012* (Palmer, 2023b) was developed to address the conditions outlined in condition 3.16 of the DS. It was designed to first characterize baseline conditions for each of the indicators listed in the condition, and then monitor those indicators during all phases of the Mine to:

a) Conduct, prior to the commissioning of the freshwater supply system (FWSS) as the main mitigation measure for loss of water in Davidson Creek, fish habitat and quality surveys in the Tatelkuz Lake littoral zone

b) Monitor Tatelkuz Lake littoral zone for the commissioning of the freshwater supply system until decommissioning.

c) Monitor water flows in lower Chedakuz Creek between Tatelkuz Lake and the confluence with Davidson Creek during the open water season from Construction until Decommissioning.

Based on the progress of the Mine to date (Section 1.1), the reporting period field programs collected information intended to represent an updated baseline for fish and fish habitat to inform long-term monitoring under this condition. The programs and their results are presented in those documents listed below:

- *FINAL REPORT Blackwater Gold Project Condition 3.16 Follow-up Program 2023 Results Report* (Palmer, 2024b) (Appendix 5-1).
- *Condition 3.16 Follow-Up Program – March 2024 Results* (Appendix 5-2)

This section provides an overview of monitoring, results, and adaptive management that occurred during the reporting period to support compliance with DS 3.16. Full details can be reviewed in the documents listed above. Table 4-1 below summarizes this condition of the DS and where the full details can be found in the associated appendix of this document.

Table 4-1: DS condition 3.16 follow-up monitoring

Condition No.	Condition	Appendix	Section
3.16.	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 and determine the effectiveness of the mitigation measures as it pertains to fish habitat in Tatelkuz Lake and Chedakuz Creek. The Proponent shall implement the follow-up program from construction through decommissioning and shall apply conditions 2.9 and 2.10 when implementing the follow-up program. As part of the follow-up program, the Proponent shall:	Described in the *Follow-up Programs for Condition 3.16 of the Blackwater Mine Project Decision Statement Issued under Section 54 of the Canadian Environmental Assessment Act, 2012* (Palmer, 2023b)	
3.16.1	Conduct, prior to the commissioning of the freshwater supply system, fish habitat quantity and quality surveys in the Tatelkuz Lake littoral zone;	Appendix 5-1: *FINAL REPORT Blackwater Gold Project Condition 3.16 Follow-up Program 2023 Results Report* Appendix 5-2: *Condition 3.16 Follow-Up Program – March 2024 Results*	3.1 Tatelkuz Lake (Appendix 5-1) 3.2 Lower Chedakuz Creek (Appendix 5-1) 3.1 Tatelkuz Lake (Appendix 5-2) 3.2 Lower Chedakuz Creek (Appendix 5-2)
3.16.2	Monitor the Tatelkuz Lake littoral zone from the commissioning of the freshwater supply system until decommissioning; and		
3.16.3	Monitor water flows in Chedakuz Creek between Tatelkuz Lake and the confluence with Davidson Creek during the open water season from construction until decommissioning.		

4.1 Monitoring and Analysis

As outlined in Table 4-1 above, detailed regarding the reporting period monitoring activities done in support of condition 3.16 are provided in Appendix 5-1 and Appendix 5-2. These programs were implemented and developed by QPs, and include detailed summaries of methodologies, study locations, results and recommendations. Table 4-2 below summarizes the monitoring results and recommendations for work done in Tatelkuz Lake and Lower Chedakuz Creek, it also specifies where further information on each item can be found in the Appendices.

The results of these field programs provide a basis for long-term monitoring to determine changes in fish abundance and habitat during the Mine.

No adaptive management was required. Monitoring will continue as described in the *Follow-up Programs for Condition 3.16 of the Blackwater Gold Project* (Palmer, 2023b), with a few changes in the approach to monitoring. These changes are summarized in Table 4-2.

Table 4-2: Summary of DS condition 3.16 follow-up monitoring

Monitoring	Survey/Methodology	Timing	Results	Adaptive Management/Recommendations
Chedakuz Creek Fish and Fish Habitat Monitoring	**Appendix 5-2, Section 2.2** Overwintering Fish Habitat	March 12, 2024	**Appendix 5-2, Section 3.2** Lower Chedakuz Creek was ice free at the time of assessment on March 12, 2024; consequently, measurements of snowpack and ice thickness depths were nil. Maximum water depth (m) and i*n-Situ* water quality measurements are shown in Table 4. Water temperatures ranged from 1.8 °C to 3.0 °C, pH from 7.71 to 7.84, and conductivity from 114.5 to 115.9 µS/cm. Dissolved oxygen levels were generally high, ranging from 12.28 mg/L to 13.40 mg/L, and above the minimum BC Approved Water Quality Guidelines for aquatic life	
	Appendix 5-1, Section 2.2.2 Summer Fish Habitat	August 28, 2023 (Fish Habitat Assessment) September 16 – 17, 2023 (Water Quality) October 2023 (UAV Mapping)	**Appendix 5-1, Section 3.2.2** Surveys to assess fish habitat in lower Chedakuz Creek included Fish Habitat Assessment Procedures (FHAP), in situ water quality, and the collection of UAV-based mapping to create updated imagery of stream conditions. **Fish Habitat Assessment Procedures** The 910 m portion of lower Chedakuz Creek between Tatelkuz Lake and Davidson Creek was assessed as having seven distinct habitat units, including 4 glides, 2 pools, and 1 riffle mesohabitat types. Lower Chedakuz Creek was dominated by glide habitat (87%) with smaller amounts of riffle (8%) and pool (5%) habitats. Data collected ranged between: - Channel widths: o 13.87 m – 19.83 m in glide habitat o 20.50 m – 24.00 m for pool habitat o 17.43 m in riffle habitat - Water depth: o 0.28 to 0.52 m in glide habitats o 1.03 to 1.12 m for pool habitats o 0.12 m for the riffle habitat. The dominant bed material was fines for glide and pool habitats, and gravel for riffle habitat. The dominant cover type varied between and within habitats, and included instream vegetation, small woody debris, and deep pools. **Water Quality** Water Quality was collected at CC_MT1, CC_MT2, CC_MT3, CC_MT4, CC_MT5, CC_MT6, CC_MT7, CC_MT8, CC_MT9, and CC_MT10. Data collected ranged between - Temperature: 14.2 – 15.2ºC - pH: 8.78 – 9.03 - Specific Conductivity: 103.3 – 106.3 µS/cm - Dissolved Oxygen: 10.41 – 11.84 mg/L **UAV Mapping** Survey imagery from the UAV mapping was successfully compiled. Riparian vegetation, predominantly comprised of grasses and shrubs, is present along both banks of lower Chedakuz Creek. Dark pool areas can be seen near the outlet of Tateluz Lake.	
	Appendix 5-1, Section 2.2.3 Fish Community and Abundance	September 14 – 17, 2023	**Appendix 5-1, Section 3.2.3** Abundance and distribution of immature and small-bodied fish within lower Chedakuz Creek were assessed by minnow trapping. A total of 38 fish were captured during minnow trapping with catch per unit effort (CPUE) ranging from 0 to 0.34 fish/trap hour. The planned closed-site backpack electrofishing was not completed in 2023 due to a wildfire evacuation order. Once safe to access the	

			site, the presence of spawning kokanee (Oncorhynchus nerka) and in-gravel embryos prevented electrofishing in accordance with provincial Fish Collection Permit conditions.	
	Appendix 5-1, Section 2.2.4 Kokanee Summer Spawner and Redd Abundance	August 17 – September 24, 2023	**Appendix 5-1, Section 3.2.4** Visual spawner surveys were completed in 2023 to determine abundance of mature kokanee entering lower Chedakuz Creek. Carcass measurements were also collected to determine fish age at maturity. Due to the wildfire site evacuation in July, only the latter half of the kokanee spawning period was assessed. Visual bank walks completed between August 17 and September 24, 2023 recorded 28 holding/migrating and 2 dead kokanee spawners. The peak live spawner count was observed in late-August. No redds were observed during any of the surveys.	**Appendix 5-1, Section 4** Discontinue kokanee spawner surveys for the section of lower Chedakuz Creek, between the outlet of Tatelkuz Lake and the confluence with Davidson Creek (CC_3.16-KO). In 2022 and 2023, no active spawning or redds were observed in this section and a relatively small number of holding/migrating kokanee were counted (293 kokanee in 2022 and 28 kokanee in 2023). Those results would indicate that this section is predominantly used by kokanee for holding and migrating, not spawning. Considering this in combination with the coverage of kokanee spawner surveys from other compliance fisheries monitoring programs (i.e., Condition 3.14 Follow-up Program and the AEMP) in lower Chedakuz Creek, middle Chedakuz Creek, and an adjacent tributary (Davidson Creek), the value of completing surveys in this section is relatively limited.
Tatelkuz Lake Fish and Fish Habitat Monitoring	**Appendid 5-2, Section 2.1** Overwintering Fish Habitat	March 14, 2024 (Ice thickness) March 12, 2024 (Water quality)	**Appendix 5-2, Section 3.1** Limnological sampling at the mid-lake on Tatelkuz Lake (TLLim3) showed a temperature gradient warming at depth, and dissolved oxygen levels decreasing with depth but the absence of any hypolimnion and evidence of stratification. Dissolved oxygen levels were above the minimum BC Approved Water Quality Guidelines for aquatic life in the uppermost 24 m. Surface samples for total phosphorus and total nitrogen were also collected; total phosphorus levels exceeded the BC Approved Water Quality Guidelines for aquatic life.	
	Appendix 5-1, Section 2.1.1 Limnology and Winter Ice Conditions	January 24, 2023 (Ice thickness) January 24, 2023, June 27, 2023, September 14, 2023, November 7, 2023 (Water Quality)	**Appendix 5-1, Section 3.1.1** Seasonal assessments of physical limnology were completed at one site near the centre of Tatelkuz Lake (TLLim3) to characterize seasonal variability. Quarterly sampling included vertical profiles for water quality variables, epilimnetic (i.e., surface layer of the lake) total phosphorus and total nitrogen, and Secchi depths to measure water clarity. Additionally, ice thickness was measured during the winter trip. Vertical profiles for water quality variables at TLLim3 resulted in an average temperature in January of 3.17°C. In June, September, and November, average water temperatures ranged from 5.89°C to 9.29°C. Average conductivity, for which there is no guideline, ranged from 81.21 µs/cm in January to 130.29 µs/cm in November. The average pH ranged from 6.57 in June to 7.77 in both January and September, within BC WQG FAL guidelines (6.5 to 9 pH) to support fish of all life stages. The average dissolved oxygen concentration ranged from 5.73 mg/L in November to 8.40 mg/L in January, above the optimum minimum BC WQG FAL threshold (5 mg/L) to support fish of all life stages. Tatelkuz Lake at site TLLim3 was thermally stratified in June and September 2023. The thermocline (i.e., transition layer between warmer near surface water and cooler deeper water) ranged between 19.0 to 5.7°C in June, and between 14.7 and 5.5°C in September. Water temperatures ranged from 3.9 to 0.3°C in January, from 19.0 to 4.4°C in June, from 15.9 to 5.0°C in September, and from 5.9	

			to 5.8°C in November. A vertical profile of dissolved oxygen at TLLim3 ranged from 11.51 to 3.25 mg/L in January, from 4.41 to 10.21 mg/L in June, from 9.86 to 1.41 mg/L in September, and from 7.62 to 7.14 mg/L in November Total phosphorus in surface water at TLLim3 ranged from 0.0088 mg/L in June to 0.027 mg/L in January 2023. Total phosphorus measured in January and November 2023, was above the approved BC WQG for FAL range for total phosphorus (0.0050 to 0.015 mg/L). Total nitrogen, for which there is no guideline, in surface water at TLLim3 ranged from 0.309 mg/L in June to 0.414 mg/L in January 2023.	
	Appendix 5-1, Section 2.1.2 Littoral Fish Habitat	October 2023 (UAV mapping) September 9 - 12, 2023 (In-situ water quality measurements)	**Appendix 5-1, Section 3.1.2** Summer fish habitat was assessed at 11 sites in Tatelkuz Lake to characterize littoral fish habitat quantity and quality. Littoral habitat transects measured water depth, distances relative to benchmark pin, shoreline gradient, dominant and sub-dominant substrate, littoral plant community characteristics, and in situ water quality. Unmanned aerial vehicle (UAV) imagery was collected for each littoral fish habitat site to provide updated imagery of the littoral and riparian habitat (Appendices B-4 and B-5). Littoral habitat suitability will continue to be monitored based on the littoral-dwelling Brassy Minnow (*Hybognathus hankinsoni*). **Water Quality** Water quality variables were measured at the littoral habitat transect sites between September 9 and 12, 2023, at a depth of 0.5 m. Water temperature across sites ranged from 15.4 at site TLLit4 to 16.9ºC at TLLit6. The pH ranged from 8.74 (TLLit3) to 9.22 (TLLit2), within or slightly above guidelines (6.5 to 9 pH). Values for conductivity and specific conductivity (no guidelines) varied little between sites. Conductivity ranged from 119.80 (TLLit11) to 146.40 (TLLit8) µS/cm and specific conductivity ranged from 146.10 (TLLit9) to 149.20 µS/cm (TLLit6). Dissolved oxygen ranged from 5.63 to 9.99 mg/L, above the minimum BC WQG FAL threshold (5 mg/L) to support fish of all life stages.	**Appendix 5-1, Section 4** Alter the habitat metrics used in littoral fish habitat assessments to better align with the Standard Methods Guide for the Classification/Quantification of Lacustrine Habitat in Newfoundland and Labrador (Bradbury 2001). Discontinue pre-construction littoral habitat assessments. Three years (2021 to 2023) of baseline habitat have been collected to characterize baseline conditions. Sampling for this program should not be required until FWSS construction/operation as no changes or impacts to the lake littoral habitat are expected until then.
	Appendix 5-1, Section 2.1.3 Littoral Fish Community and Abundance	September 12 – 14, 2023	**Appendix 5-1, Section 3.1.3** Two assessments for littoral fish community and abundance were planned to characterize fish in Tatelkuz Lake: an early summer sampling event (i.e., late June to early July) to target the larval life-stage of Brassy Minnow, and a late summer (i.e., September) sampling event to target the adult life-stage of the same species. Early summer sampling for the larval life-stage was not completed in 2023 as the mine site was under a wildfire evacuation order during the planned sampling period. Catch per unit area (CPUA) during the late summer sampling event ranged from 0.01 to 1.70 fish per square metres (fish/m^2).	**Appendix 5-1, Section 4** Discontinue larval life stage sampling for Brassy Minnow or delay sampling to a time when most spawning is expected to have occurred and larval fish hatched, based on literature review. Due to inter-annual variation in lake temperatures and water level, the timing and duration of Brassy Minnow spawning and hatching can be highly variable. This variability makes timing for annual sampling that targets larval Brassy Minnow at the same life stage with a similar number of fish spawned and hatched challenging. Sacrifice a subset of fish captured during larval life-stage sampling for laboratory taxonomic identification. Identification of fish in early life stages can be difficult given the lack of available literature for some species and the challenge of maintaining fish health when confirming key identification features.

5 Migratory Birds (4.5)

The purpose of the *Wildlife Mitigation and Monitoring Plan* (WMMP) (ERM, 2023b) is to manage impacts on wildlife in the Blackwater Mine area during Construction, Operations, Closure, and Post-closure.

The *2023 Wildlife Mitigation and Monitoring Program Compliance Report* (Blackwater Gold Ltd., 2023b) (Appendix 6-1) summarizes and presents the results of the follow up programs and monitoring of mitigation measures during 2023. Pre-clearing surveys occurred in March 2023 (Appendix 6-2). This follow-up program includes monitoring for migratory bird species required by condition 4.5 of the DS is sections 3.6 (raptors), 3.7 (waterbirds), and 3.8 (upland birds):

> **4.5** 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 and determine the effectiveness of all mitigation measures to avoid harm to migratory birds, including migratory birds that are listed species at risk, their eggs and nests. The follow-up program shall include the mitigation measures used to comply with condition 4.1 to 4.4. 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.

5.1 Monitoring and Analysis

As outlined above, details regarding the monitoring activities done in support of condition 4.5 are provided in Appendix 6-1 and Appendix 6-2. These programs were implemented and developed by QPs, and include detailed summaries of methodologies, study locations, results, and recommendations. Table 5-1 below summarizes the monitoring results and recommendations and identifies where further information on each item can be found in the Appendices.

No adaptive management actions were required, and future monitoring will occur as described in the *Wildlife Mitigation and Monitoring Plan* (ERM, 2023b). This will include formal analysis during the operations phase of the Mine, once data have been recorded for a sufficient number of years to conduct statistical modelling.

Table 5-1: Summary of DS condition 4.5 follow-up monitoring

Monitoring	Survey/Methodology	Timing	Results	Adaptive Management/Recommendations
Pre-clearing Surveys	**Appendix 6-1, Section 2.1.2** **Appendix 6-2, Section 2.2**	January 2023 - March 31, 2024.	**Appendix 6-1, Appendix B-3** Pre-clearing surveys for breeding birds and stick nests were carried out March 8 – 10, March 13 – 17, March 27 – 31, April 10 – 14, April 24 – 28, and July 31 – August 11, 2023. None were identified during these surveys. **Appendix 6-2, Section 2.3, Appendix A** Pre-clearing surveys for nests on the mine site were carried out February 14 – April 23, 2024. None were identified. Pre-clearing surveys conducted for the transmission line right of way between January 4 - March 31, 2024. In 2024, three potential pileated woodpecker nest sites were identified within the Blackwater Gold Transmission Line Right-of-Way (ROW) by a construction crew. On February 27, 2024 all three potential nest sites were assessed to determine whether they were viable pileated woodpecker nest cavities. Of the three identified potential nest sites, two sites were confirmed to contain suitable pileated woodpecker nest cavities (TH-1205-003 - Pole 231 and MR-1512-2 - Pole 554) while the third site was deemed unsuitable for nesting activity due to the amount of decay within the cavity (JBL-1205-001 - Pole 234) and was cleared after March 15, 2024 following QP assessment and advice. Site MR-1512-2 - Pole 554 was assessed for windthrow by a qualified forestry technician and determined as at inherently higher risk of windthrow damage. However, it was also determined that the 10 m buffer would be sufficient in protection of the tree from windthrow and that cabling or bracing the tree would increase the risk of damage to the tree near the cavity. The surrounding forest was cleared to the 10 m buffer on March 30, 2024. Site TH-1205-003 - Pole 231 was not reached by March 31, 2024 and will be completed in the continuing 2024 season.	**Appendix 6-1, Section 4** Implement consistent methods and follow-up surveys for pre-clearing surveys.
Raptors	**Appendix 6-1, Section 2.2.2** Habitat loss (Blackwater Gold Ltd., 2023b)	January 2023 – March 2024	**Appendix 6-2, Section 3.3** There is no overlap between the reporting period clearing limits and short eared owl suitable habitat.	
	Appendix 6-1, Section 2.3.3.1 Incidental observations (Blackwater Gold Ltd., 2023b)	N/A (Blackwater Gold Ltd., 2023b)	**Appendix 6-1, Section 3.7.3.1** In total, 38 individuals from nine raptor species were incidentally recorded. Two of the individuals were associated with unspecified species, including a raptor and owl. Approximately 60% of the incidentally detected individuals were recorded during the fall waterbird surveys, which included 11 osprey, seven bald eagle, one golden eagle, two red-tailed hawk, one sharp-shinned hawk, and one unspecified raptor species. The remaining individuals recorded during 2023, included four bald eagle, three common raven, one red-tailed hawk, two northern goshawks, two northern harrier, one osprey, one rough legged hawk, and one unspecified owl species. (Blackwater Gold Ltd., 2023b)	
Waterbirds	**Appendix 6-1, Section 2.2.2**	N/A	**Appendix 6-2, Section 3.3**	

Monitoring	Survey/Methodology	Timing	Results	Adaptive Management/Recommendations
	Habitat loss (Blackwater Gold Ltd., 2023b)		Between January and March 2024, habitat loss for Greater Yellowlegs (*Tringa melanoleuca*) was 98.8 ha within the LSA, and 118.7 ha withing the RSA. During the same period habitat loss for the Wilson's Snipe (*Gallinago delicata*) was 50.2 ha within the LSA and 76.6 ha within the RSA.	
	Appendix 6-1, Section 2.4 Facility waterbody monitoring (Blackwater Gold Ltd., 2023b)	N/A	**Appendix 6-1, Section 2.4** Construction of four facility water structures were initiated in the second half of 2023. Three water management structures were completed through the third and fourth quarters of 2023. Additionally, construction of the Water Management Pond was initiated in 2023 but is anticipated to be completed in spring of 2024. (Blackwater Gold Ltd., 2023b)	**Appendix 6-1, Section 4** Conduct assessment to identify site ponds which may require mitigation measures to limit access by wildlife.
	Appendix 6-1, Section 3.8.2.1 Waterbird population monitoring (Blackwater Gold Ltd., 2023b)	May 17 – 19, 2023 (Spring pair) (Blackwater Gold Ltd., 2023b) September 9 – 11, 2023 (Fall migration) (Blackwater Gold Ltd., 2023b)	**Appendix 6-1, Section 3.8.3.1** Surveys identified a total of 25 species and 1,636 individuals from 7 waterbird groups: dabbling ducks (species =6; individuals - 515), diving ducks (species = 9; individuals = 860), geese and swans (species = 3; individuals = 104), gulls and terns (species =1; individuals = 26), loons and grebes (species = 4; individuals = 85), riverine birds (species = 1; individuals = 3), and shorebirds (individuals = 31), and other birds (species = 1; individuals = 12). Nine groups of unspecified species were also recorded during surveys . Two species of conservation concern, surf scoter (n = 55) and horned grebe (n = 3), were identified during the spring surveys. The most commonly observed species were mallard (n = 305), ring-necked duck (n = 226), lesser scaup (n = 194), and bufflehead (n = 172). Waterbird groups were detected in varied habitat types including pond, lake, wetland, river, creek, sedge meadow, and other. Waterbirds were detected primarily in lakes (58%) followed by wetlands (17%) and ponds (17%). (Blackwater Gold Ltd., 2023b)	
	Appendix 6-1, Section 2.3.3.1 Incidental observations (Blackwater Gold Ltd., 2023b)	N/A	**Appendix 6-1, Section 3.9.3.5** In 2023, 326 individual waterbirds from five species were incidentally observed. The most commonly observed incidental waterbird species was sandhill crane (n = 320). Wilson's snipe was the only incidentally observed species that was not observed during waterbird surveys. **Appendix 6-2, Section 4.3.1** Blackwater site staff sited an American dipper (*Cinclus maxicanus;* n = 1) on January 28, 2024.	
Upland Birds	**Appendix 6-1, Section 2.2.2** Habitat loss (Blackwater Gold Ltd., 2023b)	January – March 2024	**Appendix 6-2, Section 3.3** Between January and March 2024, habitat loss for interior forest birds was 155.2 ha within the LSA, and 215.8 ha withing the RSA.	
	Appendix 6-1, Section 3.9.2.1	June 2023	**Appendix 6-1, Section 3.9.3.1**	

Monitoring	Survey/Methodology	Timing	Results	Adaptive Management/Recommendations
	Upland bird population monitoring		During point count surveys, a total of 255 individual upland birds were recorded across 26 species and one unknown species. The most commonly observed species were;, dark-eyed junco (n = 55), yellow-rumped warbler (n = 27), American robin (n = 25), Swainson's thrush (n = 22) and varied thrush (n = 18). Olive-sided flycatcher (n = 4) was the only upland bird species at risk recorded. (Blackwater Gold Ltd., 2023b)	
	Appendix 6-1, Section 3.9.2.2 Common nighthawk monitoring	June 12 – July 9 2023	**Appendix 6-1, Section 3.9.3.2** A total of 10 ARUs were deployed within suitable breeding habitat to detect the presence of common nighthawk at three control and seven impact sites. Seven units were collected in July, while the two remaining units were left out until September 13, 2023 due to field access complications from the July wildfire; one unit was lost due to the area being cleaned by forestry. A total of 198 recordings were confirmed as common nighthawk detections after cluster analysis and manual vetting. Unit CONI ARU 07, located within the impact zone, comprised 98.9% of detections (n = 187) while the remaining were from unit CONI ARU 10 (n = 2), located just outside the impact ozone. Detections occurred over a two-day period. (Blackwater Gold Ltd., 2023b)	
	Appendix 6-1, Section 3.9.2.4 Clark's nutcracker monitoring (Blackwater Gold Ltd., 2023b)	June 11, 14 – 18, 2023	**Appendix 6-1, Section 3.9.3.4** Call playback (CPB) surveys were completed in conjunction with the 2023 upland bird population monitoring. A total of 15 call playbacks were completed along 11 upland bird point count transects, with call playback completed at a minimum of one survey per transect, except for two transects. Call playbacks were completed for each survey site along transect UB06 because it is located in whitebark pine critical habitat. Call playback surveys detected a total of four Clark's nutcrackers from three survey sites. Individuals were detected called (n = 2) and visually (n = 2). (Blackwater Gold Ltd., 2023b)	**Appendix 6-1, Section 4** Establish control transects in whitebark pine habitat in high elevation areas, such as Capoose.
	Appendix 6-1, Section 3.9.2.3 Swift and swallow monitoring (Blackwater Gold Ltd., 2023b)	June 11 – 18, and July 7, 2023	**Appendix 6-1, Section 3.9.3.3** Surveys for barn swallows were completed around the mine site infrastructure. No other suitable nesting buildings were found in the LSA or in accessible areas of the RSA. Three species of swallow were observed, including barn swallow (n = 30), tree swallow (n = 5), and violet-green swallow (n= 2). Activity was primarily associated with or near building with vaulted roof covers supported by wooden beams. (Blackwater Gold Ltd., 2023b)	
	Appendix 6-1, Section 2.3.3.1 Incidental observations (Blackwater Gold Ltd., 2023b)	N/A	**Appendix 6-1, Section 3.9.3.5** An additional 60 individual upland birds from 21 species were incidentally observed during the 2023 field season. Nearly all of the incidental observations were made outside of the survey time during the upland bird population monitoring (91%) and during the swift and swallow surveys (9%). The most commonly observed bird species were varied thrush (n = 8), dark-eyed junco (n = 7), Clark's nutcracker (n = 6), and yellow-rumped warbler (n = 5). The only upland bird species of conservation concern that was incidentally observed was the olive-sided flycatcher.	

Monitoring	Survey/Methodology	Timing	Results	Adaptive Management/Recommendations
			10 unspecified bird species were incidentally detected by wildlife cameras in the site and baseline caribou offsetting wildlife use camera monitoring programs in 2021 and 2022. Four unspecified upland bird species were incidentally recorded by Blackater on-site personnel in the Blackwater Wildlife Sighting Log in June 2023. (Blackwater Gold Ltd., 2023b)	

6 Wetlands (5.5)

The *Wetland Management and Offsetting Plan* (WMOP) (ERM, 2024d) was developed to address a number of conditions, including those outlined in condition 5.5 of the DS. It was designed to monitor the aquatic receiving environment to provide the information needed to achieve the following objectives:

- Protect all wetlands until additional baseline studies can be complete;
- Avoid all potential wetland areas as mapped by Terrestrial Ecosystem Mapped (TEM) during early works and up until the necessary baseline information has been collected and reported out on;
- Provide pre-construction surveys to identify the extent and flag 30 m buffers around all TEM wetlands during early works and up until the necessary baseline information has been collected by a QP. Work with the IEM to schedule site visits when tree clearing is taking place in proximity to flagged wetland areas. Aboriginal Group Monitors on rotation at the time of the surveys will be invited to participate in surveys;
- Establish workplan objectives for baseline fieldwork to be conducted in the summer of 2022; and,
- Identify and establish a wetland offsetting program at Mathews Creek Ranch and other areas as required to meet offsetting objectives.

The *2023 Wetland Annual Reclamation Report* (ERM, 2024e) (Appendix 7) has been developed to summarize activities undertaken with this follow-up program.

This section provides an overview of monitoring, results, and adaptive management that occurred during the reporting period support compliance with DS 5.5. Full details can be reviewed in Appendix 7. Table 6-1 below summarizes this condition of the DS and where the full details can be found in the associated appendix of this document.

Table 6-1: DS condition 5.5 follow-up monitoring

Condition No.	Condition	Appendix	Section
5.5.	The Proponent shall develop, prior to construction and in consultation with Indigenous groups, Environment and Climate Change Canada and other relevant authorities, a follow-up program to verify the predictions of the environmental assessment as it pertains to the adverse environmental effects of the Designated Project on wetland functions and to determine the effectiveness of the mitigation measures as it pertain to wetlands. The Proponent shall implement the follow-up program during from construction through decommissioning and shall apply conditions 2.9 and 2.10 when implementing the follow-up program. As part of the follow-up program, the Proponent shall:	Described in the WMOP (ERM, 2024d)	
5.5.1.	Conduct pre-construction surveys within the mine site to confirm the absence of red or blue-listed wetlands. The Proponent shall provide the results of the survey to the Agency and to Indigenous groups prior to the start of construction. If the results of the survey demonstrate the presence of red or blue-listed wetlands within the mine site, the Proponent shall develop, prior to construction, and implement additional mitigation measures;	Appendix 7: 2023 Wetland Annual Reclamation Report	1.2 Regulatory Requirements, Appendix B
5.5.2.	Monitor changes to wetland functions of wetlands located within the mine site and remaining after vegetation clearing required to construct project components during all phases of the Designated Project; and		3.7.2 Wetland Function Assessment
5.5.3.	Monitor all compensatory wetland sites at a minimum annually, to ensure they meet or exceed performance standards for wetland functions established pursuant to condition 5.4 from the start of compensation until wetland functions are attained.		6.0 Annual Offsetting Gains

6.1 Monitoring and Analysis

As outlined in Table 6-1 above, detailed regarding the monitoring activities done in support of condition 5.5 are provided in Appendix 7. These programs were implemented and developed by QPs, and include detailed summaries of methodologies, study locations, results and recommendations. Table 6-2 below summarizes the monitoring, results, and recommendations for work done in those areas required by condition 5.5, it also specifies where further information on each item can be found in the Appendixes.

No wetland offsetting was constructed in the reporting period.

No adaptive management actions were required, and future monitoring will occur as described in the WMOP (ERM, 2024d).

Table 6-2: Summary of DS condition 5.5 follow-up monitoring

Monitoring	Survey/Methodology	Dates	Results Summary
Offsetting Sites	**Appendix 7, Section 1.2.1** Matthews Creek Ranch	N/A	**Appendix 7, Section 1.2.1** The Mathews Creek Ranch wetland complex was selected as a compensation site because of its proximity to watersheds and waterbodies impacted by the Project, also occurring within the Nechako River watershed, the same watershed as the Project Area, and location within the territories of the LDN and UFN where the majority of impacts to wetlands are occurring. In 2013, BW Gold purchased two sections of private land at the Mathews Creek Ranch offsetting site. A large natural wetland complex exists at this site; however, it has been substantially degraded through years of agricultural use. The property is overlapped by a Range Tenure (RAN075042, retired in 2012), and displays evidence of past use of agronomic production and cattle grazing. Examples of degradation across the Mathews Creek Ranch site include cattle trails, presence of agronomic species and invasive species, creek crossings, fencing and built structures, and unstable and degraded banks along the creek. (ERM, 2024e)
	Appendix 7, Section 1.2.2 Dykam Ranch	N/A	**Appendix 7, Section 1.2.2.** The Dykam Ranch wetland complex was selected as an offsetting site because of the extremely high wetland values it provides in the region and the risk posed to it by agricultural and ranching activities. The long-term conservation of this wetland complex will support the preservation of ecosystem values for the life of the mine. In 2022, BW Gold initiated conversations with the private landowner of Dykam Ranch to secure opportunities for conversation and enhancement of the Dykam Ranch wetland complex. Dykam Ranch is located along Chedakuz Creek, northwest and downstream of Tatelkuz Lake. The site contains a portion of an extensive wetland complex that is bisected by the Kluskus FSR. The Dykam Ranch portion of the wetland complex is located on the north side of the FSR and is generally intact and functional. The portion of the wetland complex located on the south side of the FSR has been cleared, drained, and is currently being used for agricultural practices. In addition, the riparian area around Chedakuz Creek has also been cleared. Dykam Ranch has been secured as an offsetting site and restoration activities will be discussed further with Indigenous groups. (ERM, 2024e)
	Appendix 7, Section 1.2.3 Capoose	N/A	**Appendix 7, Section 1.2.3** In 2022, a Caribou Monitoring and Management Plan (CMMP) was developed to present mitigation and monitoring measures that will be implemented to avoid, reduce, and offset the Project's adverse effects on caribou and critical habitat. One of the objectives of the CMMP was securement of the approximately 11,000 ha Capoose offset area and reclamation of forestry roads within. The road rehabilitation activities are expected to also restore wetland function to an estimated 6.3 ha of wetlands currently impacted by roads. The area associated with these restoration activities will directly improve wetland ecosystems in the region and provide additional unofficial (i.e., noncredited) offsetting of the Mine-impacted wetlands. These restoration sites have not yet been surveyed because they remain in the planning phase. (ERM, 2024e)
	Appendix 7, Section 1.2.4 Other Potential Offsetting Sites	N/A	**Appendix 7, Section 1.2.4** In 2023, an additional six potential offsetting areas were identified and assessed for potential as wetland offsets in collaboration with LDN and UFN, including sites along Creek 661, Van Tyne Creek, around Jonny Lake and Fawnie Creek, Laidman Lake, Tatscha Lake and a group of sites along the south shore of Tatelkuz Lake. These included six potential sites that could provide opportunities for fish habitat and/or wetland restoration. These sites were investigated in the 2024 EcoLogic Blackwater Offset Alternative Proposal. (ERM, 2024e)
Results	**Appendix 7, Section 4.2** Project area	N/A	**Appendix 7, Section 4.2.1** During 2022 wetland surveys in the Project Area, a total of 82 full plots were sampled across 81 of the 681 wetland polygons, in addition to 562 visual checks completed across 283 vegetation polygons to delineate wetland boundaries and collect baseline information. Since wetlands along the Freshwater Supply Line were not mapped in 2022, wetland mapping as presented in the EA was used for this area. Wetlands intersecting Project infrastructure, based on the Year 23 Full Build-out footprint, are summarized in Figure 4-1 and Figure 4-2 by wetland class. Project component was attributed to the wetland polygon based on the intersecting feature within the Year 23 Full Build-out footprint. (ERM, 2024e)
Annual Wetland Losses	**Appendix 7, Section 5.1**	Summer 2023	**Appendix 7, Section 5.2** No Project infrastructure was mapped in 2023 for the mine site. However, clearing and logging disturbances occurred throughout the Project footprint. This section will be updated annually to reflect as-built changes to the Project Area throughout the life of the mine. A total of 66 individual wetlands were impacted to some degree by the Year -2 as-built footprint, 31 of which are assumed to be fully lost with complete loss of wetland function (≥50% overlap; high impact) and 35 with only direct overlap considered in functional losses (moderate and low impact). Swamps experience the largest area of direct loss (ha) and Functional Area lost, followed by bog, marsh, fen, and shallow open water.

Two blue-listed ecosystems were impacted by clearing activities in 2023. No red-listed wetland site associations were observed within the mine site. Clearing activities resulted in 12.37 ha of direct loss of the blue-listed swamp, Ws07 Spruce – Common horsetail – Leafy moss, and 0.09 ha of the blue-listed fen, Wf13 Narrow-leaved cotton-grass- Shore Sedge.

No work or activities for safety reasons occurred within the 30 m buffer of undisturbed vegetation surrounding wetlands at the mine site in 2023.

7 Country Foods (6.11) (6.13)

The *Country Foods Monitoring Plan* (CFMP) (Entia Environmental Consultants Ltd., 2022) was developed to address a number of conditions, including those outlined in condition 6.11 of the DS. It was designed to identify and mitigate potential adverse effects on the health of Indigenous Peoples and other land users as a result of the Mine.

The *2023 Country Foods Monitoring Plan Annual Report* (Entia Environmental Consultants Ltd., 2024) (Appendix 8) has been developed to summarize activities under the CFMP.

Supplementary to the CFMP is the *Country Foods and Scio-economic Conditions Follow-Up Program* (ERM, 2022c), which was developed to address condition 6.13 of the DS. This program is intended to monitor and adaptively manage potential adverse effects on the socio-economic conditions of Indigenous groups as a result of changes to access, availability, and quality of country foods due to the Mine components and activities. The *2022 Country Foods and Socio-economic Conditions Follow-up Program: Current Conditions Report* (ERM, 2023c) has been developed to understand baseline conditions and provide context for identifying change following future monitoring.

This section provides an overview of monitoring, results, and adaptive management that occurred during the reporting period to support compliance with DS 6.11. Further details can be reviewed in Appendix 8. Table 7-1 below summarizes this condition of the DS and where the full details can be found in the associated appendix of this document.

Table 7-1: DS condition 6.11 follow-up monitoring

Condition No.	Condition	Appendix	Section
6.11.	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 caused by changes in concentrations of contaminants of potential concern in water, soil, vegetation and wildlife, including fish, and determine the effectiveness of mitigation measures. As part of the development of the follow-up program, the Proponent shall identify the vegetation and wildlife species that shall be monitored, the locations where the monitoring will be conducted, the contaminants to be monitored and the frequency of the monitoring. 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. In doing so, the Proponent shall:	Country Foods Monitoring Plan (Entia Environmental Consultants Ltd., 2022)	
6.11.1	Monitor, prior to construction, contaminants of potential concern in soil, vegetation, wildlife, including fish and water. The Proponent shall also co-locate soil sampling with vegetation samples and water sampling with fish samples;	Appendix 8: 2023 Country Foods Monitoring Plan Annual Report	1.1 Background
6.11.2	Monitor, during all phases of the Designated Project, contaminants of potential concern in water, soil, vegetation, and wildlife species;		3.0 Sampling under the CFMP in 2023-2024
6.11.3	If the sampling and monitoring results referred to in condition 6.11.1 and 6.11.2 exceed the predictions made during the environmental assessment, implement any modified or additional mitigation measures pursuant to condition 2.9 based on the results of the follow-up program and update the human health risk assessment identified by the Proponent in Appendix 9.2.2A of the Environmental Impact Statement using the results of the sampling and monitoring. The Proponent shall integrate the current and predicted consumption patterns of each Indigenous group identified during the environmental assessment in the updated human health risk assessment and any updated consumption pattern information provided by Indigenous groups as part of the follow-up program.		3. Data Analysis and Interpretation
6.13	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 socio-economic conditions of Indigenous Peoples as a result of changes to access, availability and quality of country foods. The Proponent shall implement the follow-up program from construction through decommissioning and shall apply conditions 2.9 and 2.10 when implementing the follow-up program.	2022 Country Foods and Socio-economic Conditions Follow-up Program: Current Conditions Report (ERM, 2023c)	

7.1 Monitoring and Analysis

As outlined in Table 7-1 above, detailed regarding the reporting period monitoring activities done in support of condition 6.11 is provided in Appendix 8. This program was implemented and developed by a QP, and includes detailed summaries of methodologies, study locations, results, and recommendations. Table 7-2 below summarizes the monitoring results and recommendations for work, it also specifies where further information on each item can be found in Appendix 8.

No adaptive management actions were required, and future monitoring will occur as described in the CFMP.

Table 7-2: Summary of DS condition 6.11 follow-up monitoring

Monitoring	Survey/Methodology	Dates	Results Summary
Surface Water Quality	**Appendix 8, Section 3.4**	January – March 2024	**Appendix 8, Section 4.5** Surface water quality was monitored between January and December 2023 at Davidson Creek, Creek 661, Turtle Creek, Chedakuz Creek, Creek 705, Fawnie Creek, Tatelkuz Lake and Kuyakuz Lake. Parameters analyzed in surface water quality included 18 COPCs as well as additional physical parameters, general chemistry parameters (e.g., hardness), ions, and a full suite of total and dissolved metals. Average concentrations of metals in surface water were below Guideline NPMs for water quality. Except for total aluminum and iron, average concentrations of metals were below the Baseline and Predicted NPMs. Based on statistical Before-After Control-Impact (BACI) analysis, the change in aluminum and iron concentrations at impact sites was significantly different to changes at control sites. Changes in the mean concentration were likely driven by a few samples with high concentrations in Davidson Creek and Creek 661. It is unlikely that these infrequent high concentrations are indicative of Mine-related changes to water quality because they occurred in Creek 661, which did not receive Mine-related discharge or seepage during the monitoring period, and because higher concentrations in Davidson Creek started occurring prior to commencement of discharge from TSF Stage 1 SCP in Q1 2024.
Air Quality Monitoring	**Appendix 8, Section 3.1**	May – March 2024	**Appendix 8, Section 4.2** For metals in air (based on dustfall metal results combined with PM10 results), average concentrations of all parameters in 2023 were lower than the air quality Guideline NPMs. However, manganese and lead concentrations were found to be higher than the Baseline and Predicted NPMs. Statistical analysis found that changes in manganese concentrations were significantly higher at control sites (away from the mine site) than at impact sites near the mine site and changes in lead concentrations were not significantly different. Based on results of 2023-2024 monitoring, the trigger level in the adaptive management framework for air quality is “Low”. However, no specific action is recommended based on 2023 dustfall monitoring results because concentrations higher than the Predicted NPMs are likely an artefact of the methods used to estimate metal concentrations in predictive modelling for air and because changes in concentration of manganese was higher at control sites, not impact sites, which is not a Mine effect.
Plant and Berry Quality	**Appendix 8, Section 3.3**	2023	**Appendix 8, Section 4.4** Analytical data for plant and berry samples analyzed in 2023. For berries, interpretation of the results is difficult as only two samples were obtained in 2023 because there were not many berries available for sampling (hot, dry summer). Other than arsenic in one berry sample, all metals were below the Baseline, Predicted, and Guideline NPMs for berries. The arsenic concentration in one huckleberry sample that was higher than the NPMs appears to be an outlier (an unusual result), as it is higher than any arsenic concentration measured previously and significant changes in arsenic concentrations were not found in air (dustfall), soil, or plants. Thus, based on 2023 monitoring results, the trigger level in the adaptive management framework for soil, plants, and berries is “None”.
Fish Tissue Quality	**Appendix 8, Section 3.5**	Sampling commenced in mid-August and ended in late September 2023.	**Appendix 8, Section 4.6** For fish tissue, average concentrations were lower than Baseline, Predicted, and CF Guideline NPMs for fish tissue. Thus, based on 2023 monitoring results, the trigger level in the adaptive management framework for fish tissue is “None”.
Small Mammal Tissue Quality	**Appendix 8, Section 3.6**	September 2023	**Appendix 8, Section 4.7** Sampling of small mammals in 2023 was completed to provide baseline or pre-Operations phase data on tissue concentrations of COPCs, as a foundation for future monitoring. There are no human health-based NPMs based on rodent tissue sampling.

8 Air Quality (6.12)

The *Air Quality and Fugitive Dust Management Plan* (AQDMP, (Blackwater Gold Ltd, 2023a) was developed to address several conditions relating to air quality and fugitive dust, including 6.12 of the DS. It was designed to identify the Mine's fugitive dust-emitting sources and mitigation and contingency measures if primary control measures are not effectively controlling dust emissions.

> **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 (NO2), sulfur dioxide (SO2), fine particulate matter (PM2.5), 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 *Air Quality and Fugitive Dust Management Annual Report 2023* (Blackwater Gold Ltd., 2024a) (Appendix 9-1) presents the results of the 2023 monitoring program, while the results of those monitoring activities driven by the DS between January 1 – March 31, 2024 are presented in *Additional January 1 – April 1, 2024 Air Quality Data* (Blackwater Gold Ltd., 2024b) (Appendix 9-2).

This section provides an overview of monitoring, results, and adaptive management that occurred during the reporting period to support compliance with DS 6.12. Full details can be reviewed in Appendix 9-1 and Appendix 9-2.

8.1 Monitoring and Analysis

As outlined above, details regarding the monitoring activities done in support of condition 6.12 are provided in Appendix 9-1 and Appendix 9-2. These programs were implemented and developed by QPs, and include detailed summaries of methodologies, study locations, results and recommendations. Table 8-1 below summarizes the monitoring results and recommendations for work done, it also specifies where further information on each item can be found in the Appendices.

Table 8-1: Summary of DS condition 6.12 follow-up monitoring

Monitoring	Survey/Methodology	Dates	Results Summary	Adaptive Management/Recommendations
Dustfall Monitoring	**Appendix 9-1, Section 6.3**	September 2023	**Appendix 9-1, Section 6.3** Dustfall samples were collected from eight locations for baseline data for the baseline CFMP (September 2023). Results are presented in Appendix C. Mean total dustfall amount at impact sites was 4.34 mg, whereas total dustfall was not detectable at any of the control sites. Only alum8inun, iron, lead, and manganese were detectable in dustfall. Three out of four impact sites had detectable levels of iron and lead, whereas lead was not detectable at control sites and iron was only detectable in one of the four control sites. Zinc was detectable at one impact site and concentrations of COPCs overall were low.	**Appendix 9-1, Section 8.0** The results from the CFMP Dustfall monitoring program should be used in conjunction with visual dust monitoring.
Particulate Matter Monitoring	**Appendix 9-1, Section 6.4.1** **Appendix 9-2, Section 1.0**	May – March 2024	**Appendix 9-1, Section 6.4.2** The May to December average 24-hour concentration for PM_{10} was 37.0 ug/m^3) and was $PM_{2.5}$ (15.4 ug/m^3). $PM_{2.5}$ exceeded the value of the BCAAQO 9 times between May and December 2023. A true $PM_{2.5}$ exceedance of the BCAAQO is based on the 98th percentile of 24-hour measurements. This metric cannot be calculated in 2023 as there was not a 75% data completeness for $PM_{2.5}$ in 2023. PM_{10} exceeded the BCAAQO 12 times between May and December 2023. The highest concentration of $PM_{2.5}$ (192 ug/m^3) and PM_{10} (278 ug/m^3) were both observed on August 28, 2023. Elevated PM concentrations were attributable to the maintenance shop wood burning furnace, exploration camp expansion construction, as well as local and regional wildfires during the summer months and strong wind gusts with entrained wind. **Appendix 9-2, Section 1.0** In total 13 particulate matter samples ($PM_{2.5}$ and PM_{10}) were collected from January to March 2024. Based on the analytical results no samples exceed the applicable provincial or federal objectives or standards. The greatest $PM_{2.5}$ concentration 19.9 µg/m^3 and the greatest PM_{10} concentration was 10.2 µg/m^3 were observed on February 18, 2024. **Appendix 9-2, Section 1.1** During the review of Blackwater Gold Ltd. (BW Gold) "2023 BW Gold Annual PE-110650 Report", it was identified a non-compliance report for the 2023 $PM_{2.5}$ annual average exceeding BCAAQO was not provided to British Columbia Ministry of Environment and Climate Change Strategy (ENV). BW Gold $PM_{2.5}$ annual average for 2023 was 15.4 ug/m^3 and the BCAAQ objective was 8 ug/m^3.	**Appendix 9-1, Section 9 and 5.1.3** Align the fugitive dust trigger response plan (TRP) with the AQFDMP. Adjust the TRP so that it allows for air quality exceedances caused by mine activities to be differentiated from exceedances caused by regional effects such as wildfires. In November 2023 BWG Environment employees received training on the operation of the Partisol unit from a QP.
Nitrogen dioxide and Sulfur Dioxide Monitoring	**Appendix 9-1, Section 6.5** **Appendix 9-2, Section 2.0**	May – March 2024	**Appendix 9-1, Section 6.5.1** The passive air sampling system (PASS) apparatus was installed in 2023 at the same location as the Partisol sampler. In total 23 radiello samples were collected in 2023, with the highest SO_2 concentration of 0.23 ppb (June 18, 2023) and the highest NO_2 concentration of 4.9 ppb (Dec 19, 2023). The annual average concentration of NO_2 and SO_2 were below the BACAAQO and CAAQS average annual standards. **Appendix 9-2, Section 2.0** The greatest SO_2 and NO_2 concentration 0.37ppbv and 6.0ppbv, respectively, were observed on March 5, 2024. As radiello samples are collected over a 7-day period, comparison to the CAAQS hourly NO_2 and SO_2 concentrations is not comparable, and the annual average is used for comparison. (Blackwater Gold Ltd., 2024b)	**Appendix 9-2, Section 6.5** The deployment duration of the Radiello was in general accordance with BC ENV Standard Operating Procedure 7 Passive Sampling (2018) between 24-hours and 30 days. It is recommended in the User Manual 2019 Radiello provided by ALS that 15-days or less was most ideal, as long as relative humidity was less than 70% for the entire sampling duration or advisable to sample up to 7 days if humidity is over 70%. It was decided that Radiello would be deployed for roughly 7-days to avoid any possibility of high humidity samples.

Carbon monoxide	**Appendix 9-1, Section 6.6** **Appendix 9-2, Section 3.0**	May – March 2024	**Appendix 9-1, Section 6.6.1** BWG staff conducted CO monitoring once a week using a handheld MSA Altair 4XR gas monitoring. On average, at least 3 locations that appeared to be susceptible to high CO emissions were monitored with the handheld away from running trucks or other gas exhausts. These locations were chosen instead of collecting CO measurements at the PASS location due to equipment unavailability. The handheld monitor used completes an auto calibration before ever use to ensure accurate readings. The Environmental Monitor at each location will stand for 45 – 60 seconds or until the reading stabilizes prior to recording the measurement. Although not directly comparable to the BCAAQO which require either 1-hour or 8-hour averages, none of the CO Monitoring events exceeded the value of the 1-hour BCAAQO in 2023. The highest CO concentration of 9 ppm was observed on May 13, 2023, at the Maintenance Shop. The annual average of all CO monitoring events was 0.18 ppm. No CO monitoring was conducted between July 9 to August 2, 2023, as the Mine was evacuated due to the Davidson Creek Wildfire. **Appendix 9-2, Section 3.0** BW Gold personnel conduct Carbon Monoxide (CO) monitoring using an MSA Altair 4XR gas monitor, which undergoes auto calibration before each use. BW Gold monitors at least 3 locations susceptible to high CO emissions, waiting 45-60 seconds for readings to stabilize before recording measurements. Locations are chosen away from running trucks or gas exhausts to ensure accuracy. Although not directly comparable to the BCAAQO which require either 1-hour or 8-hour averages, none of the CO monitoring events exceeded the value of the 1-hour BCAAQO in 2024. The greatest CO concentration was 1 ppm observed at Main Camp by Old Fueling Station on January 19, 2024.

9 Effects on Moose (6.14)

The purpose of the *Wildlife Mitigation and Monitoring Plan* (WMMP) (ERM, 2023b) is to manage impacts on wildlife in the Blackwater Mine area during Construction, Operations, Closure, and Post-closure.

The *2023 Wildlife Mitigation and Monitoring Program Compliance Report* (Blackwater Gold Ltd., 2023b), (Appendix 6-1) summarizes and presents the results of the follow up programs and monitoring of mitigation measures during 2023, while the results of January – March 31, 2024 monitoring is presented in *Blackwater 2024 Q1 Wildlife Monitoring Activity* (ERM, 2024b) (Appendix 6-2). This follow-up program includes monitoring for moose required by condition 6.14 of the DS in Section 3.1.

> **6.14** The Proponent shall, prior to construction and in consultation with Indigenous groups and relevant authorities, develop a follow-up program to verify the accuracy of the environmental assessment as it pertains to adverse effects from the Designated Project on moose (*Alces alces*) and determine the effectiveness of mitigation measures. As part of the implementation of the follow-up program, the Proponent shall conduct winter distribution and density surveys for moose (*Alces alces*) starting prior to construction and until the end of operation. The Proponent shall implement the follow-up program from construction through decommissioning and shall apply conditions 2.9 and 2.10 when implementing the follow-up program.

9.1 Monitoring and Analysis

As outlined above, details regarding monitoring activities done in support of condition 6.14 are provided in Appendix 6-1 and Appendix 6-2. These programs were implemented and developed by QPs, and include detailed summaries of methodologies, study locations, results and recommendations. Table 9-1 below summarizes the monitoring results and recommendations and identifies where further information on each item can be found in the Appendices.

No adaptive management actions were required, and future monitoring will occur as described in the *Wildlife Mitigation and Monitoring Plan* (ERM, 2023b). This will include additional analysis of ungulate distribution and density when additional years of monitoring are completed, and snow track surveys in 2024.

Table 9-1: Summary of DS condition 6.14 follow-up monitoring

Monitoring	Survey/Methodology	Timing	Results	Adaptive Management/Recommendations

Moose	**Appendix 6-1, Section 2.2.2**
	Habitat Loss
	
	Appendix 6-2, Section 3.2
	Habitat Loss
		January 2023 – March 2024	**Appendix 6-2, Section 3.3**
			Between January 2023 and March 2024, the following moose habitat loss occurred:
			- Growing:
			  o LSA: 405.7 ha
			  o RSA: 408.6 ha
			- Winter:
			  o LSA: 374.0 ha
			  o RSA: 376.3 ha	

	Appendix 6-1, Section 2.3.3 Moose-vehicle collision monitoring (Blackwater Gold Ltd., 2023b) **Appendix 6-2, Section 4.2** Moose-vehicle collision monitoring (ERM, 2024b)	N/A	**Appendix 6-1, Section 2.3.4** No interactions, incidents, mortalities, or vehicle collisions of moose were recorded during 2023. (Blackwater Gold Ltd., 2023b) **Appendix 6-2, Section 4.3.2.1** One vehicle collision occurred on March 10, 2024, when a truck driver hit a cow moose at KM19.5 of the Kluskus FSR. The collision resulted in the fatality of the cow moose and minor damage to the truck. Mitigations in place to reduce the risk of vehicle-wildlife collisions include speed limits, signage at potential crossings, and reporting of incidental sightings.	
	Appendix 6-1, Section 3.1.2.1 Ungulate pellet counts (Blackwater Gold Ltd., 2023b)	June 2023 (Blackwater Gold Ltd., 2023b)	**Appendix 6-1, Section 3.1.3.1** In total, 26 ungulate pellet count transects were surveyed at varying distances from the proposed Mine footprint from June 11 to 19, 2023. Ten sample points were completed along each transect, with a total of 260 sample points completed. Moose pellets were detected at over half of the transects surveyed (n = 14 transects) and were mostly winter pellets (n = 32 pellet groups), with some spring pellets (n = 3 pellet groups) and summer pellets (n = 6 pellet groups). Deer pellets were detected at 31% of transects (n = 8 transects). No caribou pellets were observed. Moose pellets were present at half of the of 24 transects completed within the impact zones, and at both of the transects completed within the control zone, although the control sample size is small. In comparison, deer pellets were present at 25% of transects in the < 500 m impact zone, half of the transects in the 500 m–1 km impact zone, and 30% of transects in the 3–5 km impact zone. No deer pellets were found in the 1–3 km impact zone and deer pellets were only present in one of the two transects in the control zone. No fresh pellets (< 1 year old) were recorded at any of the new transects established in 2023. Although all pellet groups recorded along the transects established in 2022 were removed per the SOP, estimates from the 2023 surveys show that half of the recorded pellet groups were potentially more than one year old. The centre of each sample point was not physically marked in 2022, with GPS accuracy error likely causing slight variations in the locations surveyed in 2022 compared to 2023. (Blackwater Gold Ltd., 2023b)	**Appendix 6-1, Section 4** Place physical markers at the center of each sample point.

	Appendix 6-1, Section 3.1.2.2 Snow Track Surveys (Ground surveys) (Blackwater Gold Ltd., 2023b)	March 3 and 4, 2023 (Blackwater Gold Ltd., 2023b)	**Appendix 6-1, Section 3.1.3.2** Ground snow track surveys were completed on March 3 and 4, 2023 along nine transects and included 101 km of survey effort by a combination of snowmobile (n = 8 transects) and truck (n = 1 transect). Ungulate tracks were detected along seven transects and included 21 locations with moose tracks and one location with unknown deer tracks. No caribou tracks were observed. (Blackwater Gold Ltd., 2023b)	**Appendix 6-1, Section 4** Conduct aerial surveys only, discontinue ground surveys.
	Appendix 6-1, Section 3.1.2.2 Arial Surveys (Ground surveys) (Blackwater Gold Ltd., 2023b)	March 5, 2023 (Blackwater Gold Ltd., 2023b)	Aerial surveys were completed on March 5, 2023, along 100% transects and included 555 km of survey effort. Moose signs recorded during the aerial surveys included 377 moose tracks, and 13 moose beds. Moose tracks were detected along 87% transects. Additionally, surveys recorded 12 moose across eight detection events. No caribou tracks were observed. (Blackwater Gold Ltd., 2023b)	
	Appendix 6-2, Section 5.2 Ungulate Snow Track Surveys (ERM, 2024b)	March 7, 2024 (ERM, 2024b)	**Appendix 6-2, Section 5.3** Aerial-based ungulate snow track surveys were conducted on March 7, 2024. In total, 30 aerial transects totalling 555 km of survey effort were completed. In total, 337 ungulate tracks were recorded, including 298 moose tracks, 8 mountain goat tracks, and 31 unspecified deer species tracks. Additionally, seven individual moose and two moose beds were observed. No caribou tracks were observed. (ERM, 2024b)	

10 Effects on Caribou (8.18.6)

The *Caribou Mitigation and Monitoring Plan* (CMMP) (ERM, 2022b) is intended to describe the mitigation and monitoring measures that will be implemented to avoid, reduce and offset the Mines adverse effects on caribou and their critical habitat as defined in the recover Strategy for the Woodland Caribou, Southern Mountain Population (*Rangifer tarandus caribou*) (Environment Canada 2014, or as updated from time to time). The caribou monitoring programs include adaptive management and details of the follow-up programs to address regulatory requirements, including DS condition 8.18.6:

> **8.18.6** For any offsetting required pursuant to condition 8.17, the Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, and to the satisfaction of Environment and Climate Change Canada, a compensation plan for southern mountain caribou (*Rangifer tarandus caribou*). When developing the compensation plan, the Proponent shall take into account habitat needs for migratory birds and listed species at risk. The Proponent shall implement the compensation plan from the beginning of construction. The compensation plan shall include… a description of the follow-up program the Proponent shall implement to determine the effectiveness of the mitigation measures included in the compensation plan. As part of the development of the follow-up program, the Proponent shall determine, in consultation with Indigenous groups, the methods, timing and frequency for conducting winter surveys for caribou abundance and distribution within the Designated Project area. The Proponent shall apply conditions 2.9 and 2.10 when implementing the follow-up program.

Section 6.2.2.2 of the CMMP specifically describes the methods, timing, and frequency for conducting winter surveys for caribou abundance and distribution in the Designated Project area.

The *2023 Wildlife Mitigation and Monitoring Program Compliance Report* (Blackwater Gold Ltd., 2023b), (Appendix 6-1) summarizes and presents the results of the follow up programs and monitoring of mitigation measures during 2023, while the results of January – March 31, 2024 monitoring is presented in *Blackwater 2024 Q1 Wildlife Monitoring Activity* (ERM, 2024b) (Appendix 6-2). This follow-up program includes monitoring for caribou required by condition 8.18.6 of the DS in Section 3.2.

10.1 Monitoring and Analysis

As outlined above, details regarding the 2023 monitoring activities done in support of condition 8.16.8 are provided in Appendix 6-1 and Appendix 6-2. These programs were implemented and developed by QPs, and include detailed summaries of methodologies, study locations, results and recommendations. Table 10-1 below summarizes the monitoring results and recommendations and identifies where further information on each item can be found in the Appendices.

No adaptive management actions were required, and future monitoring will occur as described in the *Wildlife Mitigation and Monitoring Plan* (ERM, 2023b). This will include additional analysis of ungulate distribution and density when additional years of monitoring are completed, and snow track surveys in 2024.

Table 10-1: Summary of DS condition 8.18.6 follow-up monitoring

Monitoring	Survey/Methodology	Timing	Results

Caribou	**Appendix 6-2, Section 3.2**
	Habitat Loss
		January 2023 – March 2024	**Appendix 6-2, Section 3.3**
			Between January 2023 and March 2024, the following moose habitat loss occurred:
			- Spring:
			  o LSA: 313.0 ha
			  o RSA: 313.0 ha
			- Summer/Fall:
			  o LSA: 348.9 ha
			  o RSA: 348.9 ha
			- Winter:
			  o LSA: 319.9 ha
			  o RSA: 319.9 ha

	Appendix 6-1, Section 3.1.2.1 Ungulate pellet counts (Blackwater Gold Ltd., 2023b)	June 2023 (Blackwater Gold Ltd., 2023b)	**Appendix 6-1, Section 3.1.3.1** In total, 26 ungulate pellet count transects were surveyed at varying distances from the proposed Mine footprint from June 11 to 19, 2023. Ten sample points were completed along each transect, with a total of 260 sample points completed. No caribou pellets were observed. Although all pellet groups recorded along the transects established in 2022 were removed per the SOP, estimates from the 2023 surveys show that half of the recorded pellet groups were potentially more than one year old. The centre of each sample point was not physically marked in 2022, with GPS accuracy error likely causing slight variations in the locations surveyed in 2022 compared to 2023. (Blackwater Gold Ltd., 2023b)
	Appendix 6-1, Section 3.1.2.2 Snow Track Surveys (Ground surveys) (Blackwater Gold Ltd., 2023b)	March 3 and 4, 2023 (Blackwater Gold Ltd., 2023b)	**Appendix 6-1, Section 3.1.3.2** Ground snow track surveys were completed on March 3 and 4, 2023 along nine transects and included 101 km of survey effort by a combination of snowmobile (n = 8 transects) and truck (n = 1 transect). Ungulate tracks were detected along seven transects and included 21 locations with moose tracks and one location with unknown deer tracks. No caribou tracks were observed. (Blackwater Gold Ltd., 2023b)
	Appendix 6-1, Section 3.1.2.2 Arial Surveys (Ground surveys) (Blackwater Gold Ltd., 2023b)	March 5, 2023 (Blackwater Gold Ltd., 2023b)	Aerial surveys were completed on March 5, 2023, along 100% transects and included 555 km of survey effort. No caribou tracks were observed. (Blackwater Gold Ltd., 2023b)
	Appendix 6-2, Section 5.2 Ungulate Snow Track Surveys (ERM, 2024b)	March 7, 2024 (ERM, 2024b)	**Appendix 6-2, Section 5.3** Aerial-based ungulate snow track surveys were conducted on March 7, 2024. In total, 30 aerial transects totalling 555 km of survey effort were completed. No caribou tracks were observed. (ERM, 2024b)
	Appendix 6-1, Section 3.2.2 Caribou offset monitoring program (Blackwater Gold Ltd., 2023b)	N/A	**Appendix 6-1, Section 3.2.2** The caribou offset monitoring program consists of four separate monitoring programs: road restoration monitoring, access monitoring, sight lines monitoring, and wildlife use monitoring. The caribou offset monitoring program had not yet begun in 2023. However, baseline camera monitoring in the two proposed caribou offset areas (Johnny Lake and Capoose) started in October 2021 to provide baseline data on wildlife use is presented in this report. Monitoring sites were chosen based on sign and habitat for focal mammals (caribou, moose, bear, and wolf) and do not align with the final monitoring locations required for the caribou habitat wildlife use monitoring program. (Blackwater Gold Ltd., 2023b)

	Appendix 6-1, Section 2.3.3.1 Incidental Observations (Blackwater Gold Ltd., 2023b)	N/A	**Appendix 6-1, Section 3.2.3.2** No incidental caribou observations or signs were recorded in 2023. (Blackwater Gold Ltd., 2023b)

11 Whitebark Pine (8.20.5)

The *Whitebark Pine Management Plan* (WPMP) (ERM, 2022f) was developed to address a number of conditions, including 8.20 and 8.20.5 of the DS. It was designed to mitigate the effects from the Mine on whitebark pine (*Pinus albicaulis*); however, given that whitebark pine operates as a keystone and foundation species crucial to ecosystem function and that it faces existential threats, goals and objectives beyond the scope of direct impact mitigation were required.

The overall goals of the WPMP are to:

- Mitigate impacts to whitebark pine caused by mine development;
- Mitigate potential impacts to regional Clark's nutcracker populations;
- Contribute to the knowledge base of deploying whitebark pine in mine reclamation;
- Contribute to the overall recovery of whitebark pine; and
- Understand baseline conditions and inform mitigation strategies implemented for whitebark pine and Clark's nutcracker.

Although reclamation has not began at site (Section 1.1), the *BW Gold Whitebark Pine 2023 Update* (Blackwater Gold Ltd., 2024c) (Appendix 10) summarizes implementation of the WPMP, while the *2023 Wildlife Mitigation and Monitoring Program Compliance Report* (Blackwater Gold Ltd., 2023b) (Appendix 6-1) presents results relating to monitoring the baseline presence of the Clark's nutcracker. No additional monitoring occurred between January 1 and March 31, 2024. The results of these programs will be used to inform the analysis of future monitoring during reclamation activities.

Table 11-1 summarizes this condition of the DS and where the full details can be found in the associated appendix of this document

Table 11-1: DS condition 8.20.5 follow-up monitoring

Condition No.	Condition	Appendix	Section
8.20.5	The Proponent shall develop, prior to construction and in consultation with Indigenous groups, Environment and Climate Change Canada and other relevant authorities, a whitebark pine management plan to mitigate effects from the Designated Project on whitebark pine (*Pinus albicaulis*) and its critical habitat. The Proponent shall implement the plan during all phases of the Designated Project consistent with any applicable recovery strategy related to whitebark pine (*Pinus albicaulis*). As part of the whitebark pine management plan, the Proponent shall… develop and implement a follow-up program in consultation with Indigenous groups to determine the effectiveness of the mitigation measures included in the whitebark pine management plan. The Proponent shall apply conditions 2.9 and 2.10 when implementing the follow-up program. The follow-up program shall include:	Described in the WPMP (ERM, 2022f)	
8.20.5.1	Visual monitoring of populations of whitebark pine (*Pinus albicaulis*), including their health, within reclaimed areas at a minimum every five years; and	Appendix 10: BW Gold Whitebark Pine Update 2023	
8.20.5.2	Monitoring of use of the reclaimed areas by Clark's nutcracker (*Nucifraga columbiana*) for the purpose of whitebark pine regeneration. Should the results of monitoring demonstrate that use of the reclaimed areas by Clark's nutcracker (*Nucifraga columbiana*) is not adequate, the Proponent shall implement additional mitigation measures.	Appendix 10: BW Gold Whitebark Pine Update 2023 Appendix 6-1: 2023 Wildlife Mitigation and Monitoring Program Compliance Report	Section 3.8.3.3 Clark's Nutcracker Monitoring

11.1 Monitoring and Analysis

As outlined above in Table 11-1, details regarding the monitoring activities done in support of condition 8.20.5 are provided in Appendix 10. These programs were implemented and developed by QPs, and include detailed summaries of methodologies, study locations, results and recommendations. Table 11-2 below summarizes the monitoring results and recommendations and identifies where further information on each item can be found in the Appendices. For context, Table 11-1 summarizes all monitoring done through the WPMP in 2023, which addresses requirements outside of DS condition 8.20.5. However, the information collected through this program will be used to inform future reclamation activities that relate to condition 8.20.5.

No adaptive management actions were required relative to condition 8.20.5, and future monitoring will occur as described in the WPMP (ERM, 2022f). However, through monitoring associated with the other conditions associated with the WPMP future recommendations were made, these are summarised in Table 11-1 for reference.

Table 11-2: Summary of DS condition 8.20.5 follow-up monitoring

Monitoring	Survey/Methodology	Timing	Results	Adaptive Management/Recommendations
Whitebark Pine	**Appendix 10, Stand Enhancement Activities**	2023	**Appendix 10, Stand Enhancement Activities** DS Condition 8.20.(d) Stands suited to thinning and brushing work were identified. Thinning sampling plots should be completed across both treatment polygons to better understand restoration gains and labour requirements. Verbenone should be deployed on size appropriate trees between 1600-1700 m ASL Verbenone application should be responsive to beetle population surveys.	**Appendix 10, 2024 Workplan** Apply verbenone to plus trees to minimize losses of reproductive trees to mountain pine beetle following First Nation consultation to deploy treatment. Develop restoration prescriptions. Daylight whitebark pine to reduce competition levels and support current and future cone production.
	Appendix 10, Seedling Transplants	2023	**Appendix 10, Seedling Transplants** DS Condition 8.20.(a) In 2023 much of the forested habitat with trees suited to transplant were burned in a local wildfire. A small area to the southeast may contain some seedlings suited to transplant. The wildfire created additional habitat that may be suitable for transplanting. Guidelines for transplanting were developed.	**Appendix 10, 2024 Workplan** Transplant whitebark only within confirmed development areas. Follow transplant methods. Transplant recipient location identified on south side of mountain and/or within burned stands identified for planting surplus stock.
	Appendix 10, Stand Enhancement Activities	2023	**Appendix 10, Stand Enhancement Activities** DS Condition 8.20.(b) No cone collections were conducted in 2023 Seed was sent to the Surrey Tree Seed Centre for storage. Seedlings are in production from 49 parents for the production of 8400 seedlings to be planted in fall 2024. A number of field planting sites for rust screening, climate change trials, and potential Five trees are in the provincial rust screening program.	**Appendix 10, 2024 Workplan** Plant, map, and collect data from white pine blister rust field trials. Report on any updated provided by government program (none anticipated for several years) Identify additional trees to collect seed from to increase the study size from 49 parents. Confirm field trial design, area required, and prepare field sites for trials.
	Appendix 10, Planting Trial Development	2023	**Appendix 10, Planting Trial Development** DS Condition 8.20.(c) The wildfire in 2023 created numerous new planting areas within the burned forest; Replanting in the burned forest may be a priority above planting seedlings in occupied habitat; Surveys confirmed climate change, rust monitoring and transplant donor sites for planting on undisturbed areas..	Establish planting trials for climate change and blister rust on undisturbed sites and disturbed sites where consistent within the study design.

	Appendix 10, Planting Trial Development	2023	**Appendix 10, Planting Trial Development** DS Condition 8.19. Trial locations were identified for rust monitoring, climate change adaptation, and translocation recipient sites. The lake mitigation site may be planted as progressive reclamation.	**Appendix 10, 2024 Workplan** Confirm lower elevation trial sites with Ministry of Forests or Licensees as required. Secure appropriate planting permits as required. Confirm trial locations against mine construction plans. Confirm planting trial layout once seedling sowing and production reports are produced. Confirm the suitability of lake area for progressive reclamation.
	Appendix 6-1, Section 3.9.2.4 Clark's nutcracker monitoring	June 11, 14 – 18, 2023	**Appendix 6-1, Section 3.9.3.4** Call playback (CPB) surveys were completed in conjunction with the 2023 upland bird population monitoring. A total of 15 call playbacks were completed along 11 upland bird point count transects, with call playback completed at a minimum of one survey per transect, except for two transects. Call playbacks were completed for each survey site along transect UB06 because it is located in whitebark pine critical habitat. Call playback surveys detected a total of four Clark's nutcrackers from three survey sites. Individuals were detected called (n = 2) and visually (n = 2).	**Appendix 6-1, Section 4** Establish control transects in whitebark pine habitat in high elevation areas, such as Capoose.

12 Effects on Western Toad (8.21)

The purpose of the *Wildlife Mitigation and Monitoring Plan* (WMMP) (ERM, 2023b) is to manage impacts on wildlife in the Blackwater Mine area during Construction, Operations, Closure, and Post-closure.

The 2023 *Wildlife Mitigation and Monitoring Program Compliance Report* (Blackwater Gold Ltd., 2023b) (Appendix 6-1) summarizes and presents the results of the follow up programs and monitoring of mitigation measures during 2023. No additional monitoring occurred between January 1 and March 31, 2024. This follow-up program includes monitoring for western toad required by condition 8.21 of the DS in Section 3.9.

Table 12-1 summarizes this condition of the DS and where the full details can be found in the associated appendix of this document.

Table 12-1: DS condition 8.21 follow-up monitoring

Condition No.	Condition	Appendix	Section
8.21.	The Proponent shall develop, in consultation with Indigenous groups, Environment and Climate Change Canada and other relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and determine the effectiveness of the mitigation measures as it pertains to the effects of changes caused by the Designated Project on western toad (*Anaxyrus boreas*). The Proponent shall implement the follow-up program from construction through decommissioning and shall apply conditions 2.9 and 2.10 when implementing the follow-up program. As part of the follow-up program, the Proponent shall:	Described in the WMMP (ERM, 2023b)	
8.21.1	Conduct western toad surveys annually in breeding habitat identified pursuant to condition 8.10 from the start of construction until the end of decommissioning;	Appendix 6-1: 2023 Wildlife Mitigation and Monitoring Program Compliance Report	3.10.2.2 Monitoring toad breeding ponds
8.21.2	Monitor western toad (*Anaxyrus boreas)* in relocation areas for western toad (*Anaxyrus boreas*) salvage conducted pursuant to condition 8.11; and	Appendix 6-1: 2023 Wildlife Mitigation and Monitoring Program Compliance Report	3.10.2.2 Monitoring toad breeding ponds
8.21.3	Monitor western toad (*Anaxyrus boreas*) mortality on project roads from the start of construction until the end of decommissioning.	Appendix 6-1: 2023 Wildlife Mitigation and Monitoring Program Compliance Report	3.10.2.1 Monitoring toad mortality on roads

12.1 Monitoring and Analysis

As outlined in Table 12-1 above, detailed regarding the monitoring activities done in support of condition 8.21 are provided in Appendix 6-1. These programs were implemented and developed by QPs, and include detailed summaries of methodologies, study locations, results and recommendations. Table 12-2 below summarizes the monitoring results and recommendations for work done, it also specifies where further information on each item can be found in the Appendices.

No adaptive management actions were required, and future monitoring will occur as described in the *Wildlife Mitigation and Monitoring Plan* (ERM, 2023b).

Table 12-2: Summary of DS condition 8.21 follow-up monitoring

Monitoring	Survey/Methodology	Timing	Results	Adaptive Management/Recommendations
Western Toad	**Appendix 6-1, Section 3.10.2.1** Monitoring for Toad Mortalities on Road	May 21, 2023	**Appendix 6-1, Section 3.10.3.1** Monitoring of toad mortality on roads were completed along three road transects in 2023. Surveys occurred during the spring egg laying period, when adult western toads move to and from breeding ponds and may be crossing roads in high number. No amphibian mortalities were recorded during the surveys completed in 2023. Surveys targeted for toadlets during their dispersal from breeding ponds were unable to be completed due to the July wildfire. Surveys will resume in 2024.	**Appendix 6-1, Section 4** Establish a new transect at KM16
	Appendix 6-1, Section 3.10.2.2 Monitoring Toad Breeding Ponds	September 22 – 27, 2023, (Blackwater Gold Ltd., 2023b)	**Appendix 6-1, Section 3.10.3.2** Surveys for western toad habitat and breeding sites were scheduled to be completed in July, but due to the July wildfire, only a subset of sites could be surveys near the end of the amphibian sensitive breeding period. Surveys were completed at 20 sites, with 17 within the mine site LSA, one within the TL LSA, and two in the RSA. Western toads were recorded at one confirmed breeding site. Breeding was also confirmed at three sites for Columbia spotted frog. Findings from this survey have been incorporated into the Amphibian Pre-Clearing and Salvage SOP.	
	Appendix 6-1, Section 3.10.3.3 Incidental Observations	N/A	**Appendix 6-1, Section 3.10.3.3** Amphibians, specifically Columbia spotted frog and western toad, were incidentally found during the 2023 WMMP wildlife compliance monitoring field season. Additionally, two western toads were incidentally recorded by Blackwater on-site personnel in the Blackwater Wildlife Sighting Log.	

13 Effects on Bats (8.22)

The purpose of the *Wildlife Mitigation and Monitoring Plan* (WMMP) (ERM, 2023b) is to manage impacts on wildlife in the Blackwater Mine area during Construction, Operations, Closure, and Post-closure.

The *2023 Wildlife Mitigation and Monitoring Program Compliance Report* (Blackwater Gold Ltd., 2023b) (Appendix 6-1) summarizes and presents the results of the follow up programs and monitoring of mitigation measures during 2023. Additional pre-clearing monitoring activity that occurred January – March 2024 is presented in *Blackwater 2024 Q1 Wildlife Monitoring Activity* (ERM, 2024b) (Appendix 6-2). This follow-up program includes monitoring for bats required by condition 8.22 of the DS in Section 3.5.

> **8.22** The Proponent shall develop, in consultation with Indigenous groups, and implement a follow-up program to monitor little brown myotis (Myotis lucifugus) and northern myotis (Myotis septentrionalis) usage of buffer zones established pursuant to condition 8.14 and roosting structures installed and maintained by the proponent pursuant to condition 8.15 to determine the effectiveness of the mitigation measures. The Proponent shall implement the follow-up program during construction and operation and shall apply conditions 2.9 and 2.10 when implementing the follow-up program.

13.1 Monitoring and Analysis

As outlined above, details regarding the monitoring activities done in support of condition 8.22 are provided in Appendix 6-1 and Appendix 6-2. These programs were implemented and developed by QPs, and include detailed summaries of methodologies, study locations, results and recommendations. Table 13-1 below summarizes the monitoring results and recommendations and identifies where further information on each item can be found in the Appendices.

No adaptive management actions were required, and future monitoring will occur as described in the *Wildlife Mitigation and Monitoring Plan* (ERM, 2023b).

Table 13-1: Summary of DS condition 8.22 follow-up monitoring

Monitoring	Survey/Methodology	Timing	Results	Adaptive Management/Recommendations
Bats	**Appendix 6-1, Appendix B** Pre-clearing surveys **Appendix 6-2, Appendix B** Pre-clearing surveys	March 2023 (Blackwater Gold Ltd., 2023b) February – April 2024 (ERM, 2024b)	**Appendix 6-1, Appendix B-3** Pre-clearing surveys bat hibernacula were carried out March 8 – 10, March 13 – 17, March 27 – 31, April 10 – 14, April 24 – 28, and July 31 – August 11, 2023. None were identified during these surveys. **Appendix 6-2, Section 2.3** Pre-clearing surveys for bat hibernacula were carried out February 14 – April 23, 2024. None were identified.	**Appendix 6-1, Section 4** Implement consistent methods and follow-up surveys for pre-clearing surveys.
	Appendix 6-1, Section 3.6.2.1 Bat Distribution Monitoring (Blackwater Gold Ltd., 2023b)	September 12 and 13, 2023, (Blackwater Gold Ltd., 2023b)	**Appendix 6-1, Section 3.6.3.1** Surveys were conducted using Autonomous Recording Units (ARUs) for the second year in 2023 to evaluate bat species composition and distribution within the LSA and improve baseline data quality.. A total of 9 ARUs were deployed in suitable unburnt bat foraging habitats near 2023 disturbance areas aimed at monitoring potential disturbance effects on neighbouring bat presence and distribution throughout the Construction phase. 8 ARUs were retrieved from September 23 to 27, 2023. After analysis of ARU files using the Kaleidoscope Pro auto-ID function and manual vetting, four species were detected with high or moderately high confidence (i.e., had many clear diagnostic calls recorded) in the mine site area: little brown myotis, silver-haired bat, western long-eared myotis, and western small-footed myotis. (Blackwater Gold Ltd., 2023b)	
	Appendix 6-1, Section 3.6.2.3 Bat Roosting Structures (Blackwater Gold Ltd., 2023b)	December 19, 2023, (Blackwater Gold Ltd., 2023b)	**Appendix 6-1, Section 3.6.3.2** Installation of three bat roosting structures (BrandenBark) were installed at Lake 15/16 in December 2023 and three were placed in semi-open and closed habitat types within the Matthews Creek Wetland Offset Area boundary in September 2022. All bat-roosting structures were installed in open, semi-open, and closed habitat types. Each structure was attached to a tree approximately 3.5 m from the ground. (Blackwater Gold Ltd., 2023b)	
	Appendix 6-1, Section 3.6.2.4 NABAT Monitoring (Blackwater Gold Ltd., 2023b)	N/A	**Appendix 6-1, Section 3.6.2.4** The NABAT monitoring program at the Mine was delayed due to disruption from the July wildfire in 2023. The design and implementation of the NABAT monitoring program will be included with the first year of monitoring in the 2024 WMMP Compliance Report. (Blackwater Gold Ltd., 2023b)	
	Appendix 6-1, Section 3.6.3.3 Incidental Observations (Blackwater Gold Ltd., 2023b)	N/A	**Appendix 6-1, Section 3.6.3.3** No incidental observations or detections of bats were made in 2023. (Blackwater Gold Ltd., 2023b)	

14 References

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Appendix 1: Summary of DS Condition Activities (2.11.1)

Appendix 2: 2023 BW Gold Consultation Report

Appendix 3: 3.14 Results Reports

Appendix 3-1: FINAL REPORT Blackwater Gold Project Condition 3.14 Follow-up Program 2023 Results Report

Appendix 3-2: Condition 3.14 Follow-Up Program - March 2024 Results

Appendix 4: 3.15 Results Report

Appendix 5: 3.16 Results Reports

Appendix 5-1: FINAL REPORT Blackwater Gold Project Condition 3.16 Follow-up Program 2023 Results Report

Appendix 5-2: Condition 3.16 Follow-Up Program – March 2024 Results

Appendix 6: 2023 Wildlife Mitigation and Monitoring Program Compliance Report

Appendix 6-1: 2023 Wildlife Mitigation and Monitoring Program Compliance Report

Appendix 6- 2: Q1 2024 Wildlife Report

Appendix 7: 2023 Wetland Loss Annual Report

Appendix 8: 2023 Country Foods Monitoring Plan Annual Report

Appendix 9: 2023 Air Quality and Fugitive Dust Management Annual Report

Appendix 9-1: 2023 Air Quality and Fugitive Dust Management Annual Report

Appendix 9-2: Air Quality Q1 2024

Appendix 10: BW Gold Whitebark Pine 2023 Annual Report