Blackwater Gold Mine
IEM Site Visit Report 026
January 27 – 28, 2025

Prepared By
EDI Environmental Dynamics Inc.
3810 18th Ave
Prince George BC V2N 4V5

EDI Contacts
Graeme Paterson, PAg, CPESC
Leslie Chamberlist, PAg, CPESC
Independent Environmental Monitor Leads

EDI Project
21P0403
January 2025

mPRO

EDI
ENVIRONMENTAL DYNAMICS INC.
Down to Earth Biology

This page is intentionally blank.

1 PROJECT OVERVIEW

The Blackwater Mine Project is being developed by Blackwater Gold Limited (BWG), a subsidiary of Artemis Gold Inc. (Artemis). The Environmental Assessment Certificate (EAC) M19-01 was issued on 21 June 2019 and Condition 12 of the EAC requires the Holder to retain the services of an Independent Environmental Monitor (IEM) to observe, record for, and report to the BC Environmental Assessment Office (EAO) and Aboriginal Groups on compliance with the Certificate; and provide information to the EAO and Aboriginal Groups, BC Ministry of Energy, Mines and Low Carbon Innovation (EMLI) , BC Ministry of Environment (ENV), and BC Ministry of Forests (MOF) as directed by EAO.

A Decision Statement issued under Section 54 of the Canadian Environmental Assessment Act (CEAA 2012) for the Project was issued on 15 April 2019. Condition 9 of this Decision Statement requires the Proponent to retain an IEM who shall advise the Proponent, the Agency, and Indigenous groups if, in their view, the activities do not comply with the conditions set out in the Decision Statement. The IEM shall also advise the Proponent, the Agency, and Indigenous groups whether measures should be taken in respect to these activities. IEM reports are prepared to satisfy both EAC and CEAA conditions.

1.1 SITE VISIT SUMMARY

The IEM team completed a site visit on January 27 – 28, 2025, with representatives from the Stellat'en and Saik'uz First Nations, and the BWG Environmental team.

Summaries of the site locations visited, and subsequent activities, observations and ongoing matters, are described in the tables below.

Site Visit Summary

Date (dd/mm/yyyy)	IEM Team On-site Personnel	Monitoring Sites/Activities
27/01/2025	Graeme Paterson, Matthew Van Osch	Plant Site. Inspections focused on hydrocarbon management, waste management, hazardous material management, tailings management, and construction progress.
28/01/2025		Ore Body, Low Grade Ore stockpile and pond, Tailings Storage Facility, Davidson Creek Diversion Structure, Water Management Pond, Interim Environmental Control Dam, North Diversion Channel and the Worker's Accommodation (construction camp). Inspections focused on hydrocarbon management, waste management, potentially acid generating (PAG) material management, mine waste management, water management, and erosion and sediment control.

Activities/Observations (Record ID #s included in this table correspond to the Environmental Issue Tracking Log record ID #s)	Non-Compliance Observed?
Mine Pit (Ore Body)	
Upon arrival to the Mine Site during the previous site visit in December 2024 (IEM Report 025), the IEM and Stellat'en First Nation representative observed a blast within the ore body from the security gate. The blast cloud was noted to be orange in colour and was observed to remain in the air as it passed over the plant site and towards the valley where the operations camp is located. Following onsite discussions with BWG, it was understood an investigation would be taking place following this blast to determine what (if anything) went wrong. It was also understood BWG submitted a sample from its continuous passive air sampling instrumentation for this time period to the laboratory to confirm whether there were any exceedances for Nitrogen Oxides (NOx) and that results would be available in January. The IEM requested summaries of both the incident report, and any potential NOx exceedances once the information became available. **This item is held over from the previous reporting period (IEM Report 025).** **Update on this matter for IEM Report 026:** BWG provided a copy of the incident report which included summaries of the incident, contributing factors, and corrective actions to the IEM and First Nations representatives on January 11, 2025. Additionally, BWG confirmed (within the incident report) that sample results from passive air sampling instrumentation at the mine site did not identify an exceedance of NOx when the identified blast occurred. Additional detail on this matter can be found in the BWG incident report which has been attached to this IEM Report.	No
Blasting and excavation of various grades of material continues within the ore body/pit (Photo 112957-2). This includes: high grade ore (currently being placed at the run of mine (ROM) pad to be run through the crusher/plant site), zone S material (till material being used to construct the low permeability base of the LGO stockpile pad), and 'waste' potentially acid generating (PAG) material (hauled and placed in 'the PAG' dump on the upstream side of the Tailings Storage Facility dam).	No
Ditch lines have recently been installed along the sides of the ore body haul road to collect any potential runoff and direct it to collection basins constructed at the bases of the ditches. The IEM understands any water collected within these basins will be temporarily trucked to the tailings storage facility (TSF) where PAG material is being placed or, the 'event pond' located adjacent to the leach circuit at the plant site until such a time that the ditches can be connected to the LGO stockpile pond following completion of its construction.	No
Low Grade Ore Stockpile	
During the previous site visit in December 2024 (IEM Report 025), a representative from BWGs engineering department accompanied the IEM to the Low Grade Ore Stockpile (LGO) construction site and provided additional details on the construction of the LGO stockpile and pond area. Following onsite discussions, the IEM understands the LGO pond and associated ditches will be constructed over a low permeability foundation with a geosynthetic liner as described in the Metal Leachate Acid Rock Drainage Management Plan (ML/ARD MP). The IEM understands the pad beneath the future LGO stockpile area, however, will be constructed with a liner that differs from the description within the ML/ARD MP. The liner installed beneath the LGO stockpile will be composed of a low permeability foundation (compacted till material) but will not include a geosynthetic liner component. BWG indicated it would soon be receiving a memorandum from its engineer of record (Knight Piésold) that would provide a summary of the changes and testing that was completed on the modified liner design for the LGO stockpile. The IEM requested a copy of this memorandum be provided once available. As the design BWG plans to implement differs from the description within the ML/ARD MP, the IEM submitted additional information requests inquiring whether BWG planned to update the document and what the timelines for such an update would be. In addition, the IEM inquired about details related to the procedures around updating the plan including which parties would be involved in the process and to what extent. **This item is held over from the previous reporting period (IEM Report 025).** **Updates on this matter for IEM Report 026**: <u>Memorandum on LGO Stockpile Liner</u>: BWG provided a copy of the memorandum from its engineer of record (Knight Piésold) detailing the hydraulic conductivity testing completed at a trial site for the till liner to be implemented beneath the LGO stockpile area to the IEM and First Nations representatives on January 11, 2025. Following a review of the document, the IEM submitted additional requests to have BWG confirm that the proposed till material liner (without any synthetic component) would not be a reduction in standard for preventing infiltration beneath the pad, that it would perform in the same manner as the originally described design included in the ML/ARD MP, and, confirmation the implemented design meets the *Mines Act* Permit requirements for liners at this location. BWG provided confirmation on February 4, 2025, that the till liner meets the *Mines Act* Permit requirements and that it would produce equivalent performance characteristics. BWG additionally indicated a geosynthetic liner was never envisaged to be utilized to line the foundation of the LGO stockpile and was only ever planned for the LGO foundation collection ditches and pond due to geotechnical risks associated with installation of a geosynthetic liner over such a large area. <u>Updates to ML/ARD MP</u>: The IEM received a notification that the ML/ARD MP had been updated from Revision H.1 to Revision I.2 from a notification from Artemis' website on January 9, 2025. Upon review, it was noted Section 6.3 of the document was updated to reflect the design of the liner beneath the LGO stockpile that was detailed within the KP memorandum (till based liner only without a geosynthetic component).	No
Construction of the LGO stockpile pad continues. During the site visit, crews were observed placing and compacting the 'Zone S' till material that forms the base of the LGO stockpile pad (Photo 112953-7). Crews have also recently commenced with the excavation of the future drainage channels to be installed within the base of the pad that will collect water and send it to the LGO stockpile pond (Photo 112953-5).	No
Lining of the LGO stockpile pond was observed to be nearing completion (Photo 112954-4).	No
Plant Site	
Crews continue with commissioning of the plant site (Photo 112941-4), and leach circuit (Photo 112941-9). Both components have been operating (as part of commissioning activities) in the past few weeks and BWG announced it had completed its first pours of gold and silver in a media release on January 29, 2025.	No
Stockpiles of high-grade ore have begun to be stored on the run of mine (ROM) pad near the hopper for the crusher (conveyor) circuit (Photo 112951-2). Material that has been passed through the crusher circuit and is ready to be brought into the plant site was also observed at the terminus of the conveyor/crusher circuit (Photo 112941-3).	No

Following onsite discussions, it is understood remaining portions of the former exploration camp will be required to be removed to accommodate the eventual expansion of the ROM pad/road at the plant site. A request for information was submitted inquiring whether BWG planned to demolish buildings on site, and if so, whether the buildings would be subject to hazardous material testing (asbestos, lead, etc.). A response was provided on February 5, 2025 which indicated the buildings would be removed from site (as opposed to being demolished).	No
Mine Site Water Management	
Construction of the decant tower (and accompanying buildings) at the Water Management Pond (WMP) is nearing completion. As water is currently required from the WMP for plant commissioning, crews have laid out a temporary 12" hose between the pond and the plant to deliver water until the permanent water pipeline can be put into operation (Photo 112947-4).	No
A visit was completed to the terminus of the North Diversion Channel (at the connection to watercourse 668 which connects to Davidson Creek) to discuss potential erosion and sediment control measures to be implemented in the area (prior to freshet) to prevent turbid water releases from the channel. BWG has confirmed (in a response to an RFI on February 5, 2025) this area will be assessed by a certified professional in erosion and sediment control (CPESC) and that plans/prescriptions that are developed following that assessment can be provided to the IEM when available.	No
Tailings Storage Facility	
With commissioning activities now underway at the plant site, the Project has started to generate tailings (waste) from the leach circuit. Transport of tailings between the leach circuit and tailings storage facility is accomplished via gravity fed pipeline. The tailings storage facility is located in the former Davidson Creek channel (fully isolated from downstream flows) between the Central Water Transfer Pond (CWTP), and the tailings storage facility (TSF) dam (including the Davidson Creek Diversion Structure which will eventually be overtopped by design). During the site visit, the discharge point at the terminus of the pipeline (currently located downstream of the CWTP) was observed (Photo 112943-1).	No
Placement of 'waste' PAG material generated from the ore body/open pit excavation has begun in the area located immediately upstream of the TSF dam known locally as the 'PAG dump' (Photo 112944-4). This material will eventually become submerged beneath water (as a mitigation against the acid generation process) as the tailings and water volumes upstream of the TSF dam accumulate over time.	No
Interim Environmental Control Dam	
Crews have recently installed pumps and pipelines to enable the periodic movement of water pooling on the upstream side of the Interim Environmental Control Dam (IECD) to the area upstream of the TSF dam (Photo 112946-6).	No
The water collection point (foundation drain) located immediately downstream of the IECD that was installed to help manage and capture groundwater during construction of the structure, remains in place and continues to capture seepage water that travels beneath the IECD (Photo 112946-1). Following onsite discussions with BWG staff, with construction of the IECD (and associated upstream structures that manage water) now complete, the IEM understands this water is now classified as Project related 'contact water' and as a result, will no longer be pumped and discharged to Davidson Creek (as was previously being carried out when it was classified as non-project related groundwater). Water from this foundation drain is now being managed by pumping it back to the upstream side of the IECD.	No
General Mine Site	
During a visit to a heavy equipment laydown known locally as 'Andrew's Hill,' numerous hydrocarbon spills were observed at various locations across the laydown area (Photos 112948-1 and 112948-4; Record ID-112948). Confirmation crews had completed a clean up of the laydown and that all equipment had been removed from the area was provided on February 5, 2025.	Closed
A haul truck (Unit 306) which appeared to be in the midst of being repaired at the 'Andrew's Hill' laydown, was observed with totes nearby being utilized to capture (and store) hydrocarbons drained from the truck (one observed beneath the truck acting as a drip tray, and one full tote immediately adjacent to the truck) (Photo 112949-1). As this appeared to be an active ongoing repair (due to the presence of tools and replacement parts nearby), a non-compliance was not issued, however, a request to confirm the tote of waste hazardous material next to the truck had been removed, or, if it was planned to be left at this location for some time, that it had been placed into appropriate secondary containment was submitted. A response was provided on February 5, 2025 which indicated the truck, and tote, had been removed from the laydown, and the tote containing hydrocarbons had been placed into appropriate secondary containment.	No
A spill to ground (of what appeared to be coolant) was observed beneath a low bed truck staged at the 'Andrew's Hill' laydown (Photo 112950-1; Record ID-112950). Confirmation the spill had been cleaned up and truck had been removed from the laydown was provided on February 5, 2025.	Closed
Hydrocarbon staining was observed on the ground in the parking area of the 'U dorm' office spaces (located adjacent to the ROM pad) (Record ID-112952). A response was provided on February 5, 2025 which indicated (since the time of the site visit) the area had become snow covered which meant BWG were unable to confirm whether identified stains had been cleaned up. BWG have indicated following snow melt, the area will be inspected and any identified hydrocarbon staining would be cleaned up.	Closed
Domestic waste (food and numerous cigarette butts) were observed on the ground around and beneath the exterior steps leading into Bunks 2 through 4 at the construction camp (Record ID-112960). Confirmation that waste had been cleaned up was provided on February 5, 2025.	Closed

Notable Environmental Incidents

<table>
<tr><th>Record ID No(s).</th><th>Date (dd/mm/yyyy)</th><th>Location</th><th>Description of Event
For additional details see attached Environmental Incident Reports (EIR)</th></tr>
<tr><td>112793</td><td>21/12/2024</td><td>Ore Body/Open Pit</td><td>On January 10, 2025, BWG reported (that on December 26, 2024) a spill of approximately 130L of coolant to ground occurred following a hose failure on the rear of excavator unit EX3402 working in the open pit. As the volume of coolant spilled exceeded the thresholds requiring regulatory external reporting requirements outlined in Section 10.1 of the CEMP, EMBC was notified. The spill was cleaned up on the same day (December 26, 2024).</td></tr>
<tr><td>112322</td><td>03/09/2024</td><td>IECD/Davidson Creek</td><td>On September 19, 2024, mention was made within a summary of onsite incidents provided by BWG for the period between August 1 and September 18, 2024, that on September 3, 2024 turbid construction water had been pumped into Davidson Creek at the interim environmental control dam (IECD) instead of following the environmental work plan in place which detailed water be pumped to a collection sump and then into the sediment control pond. The IEM submitted several follow up requests to BWG for additional information on this matter (on September 23, 26, and October 1 and 21, 2024) and to provide confirmation that this event differed from the turbid water discharge to Davidson Creek that occurred on August 25, 2024 (as reported in IEM report 022). A response from BWG was not received prior to the submittal of IEM Report 023.

BWG provided an additional summary of incidents (for the period of September 2024) on October 10, 2024, which again included the mention of a turbid water discharge to Davidson Creek from the IECD worksite on September 3, 2024, so this matter was included within IEM Reports 023, 024 and 025 while awaiting responses and additional information relating to this matter.

This matter is held over from the previous three IEM Reports (IEM Reports 023, 024 and 025).

Update on this matter for IEM Report 026: On December 28, 2024, BWG provided a response confirming that there had been two separate occasions of turbid water discharge to Davidson Creek, on August 25, 2024, and September 3, 2024. Brief descriptions of the two events were provided in BWGs response, which the IEM team have summarized below to aid in clarification of this matter.

On August 25, 2024, daily effluent discharge sampling from the Tailings Storage Facility ‘C’ Sediment Control Pond (TSFC-SCP) measured elevated levels of turbidity. Discharge was immediately stopped and BWG collected a bottle sample which was sent to a laboratory and analyzed for total suspended solids (TSS). As a follow up to the incident, a plug was put in place at the TSFC-SCP discharge point and adjustments were made to the water treatement system to recirculate water and allow time for sediment to settle. As summarized in IEM Report 022, this matter was reported externally to the Ministry of Environment and Climate Change Strategy, BC Environmental Assessment Office, Impact Assessment Agency of Canada and First Nations.

On September 3, 2024, during overnight work at the interim environmental control dam (IECD) worksite, encroachment near a previously installed foundation drain where water was being collected and discharged to Davidson Creek occurred which resulted in temporary increases in the turbidity of the water being discharged. Upon discovery of the elevated turbidity, discharge was immediately ceased, and a series of water samples were collected at the downstream Davidson Creek compliance sampling point (DC-05) and analyzed for total suspended solids (TSS); results detailed below.

<table>
<tr><td>Sample Date</td><td>September 2, 2024</td><td>September 3, 2024</td><td>September 3, 2024</td><td>September 4, 2024</td></tr>
<tr><td>Sample Time</td><td>09:00</td><td>10:08</td><td>16:43</td><td>08:06</td></tr>
<tr><td>TSS (mg/L)</td><td>4.3</td><td>37.7</td><td><3.0</td><td>3.0</td></tr>
</table>

BWG indicated that as the TSS samples collected at DC-05 showed that BC Water Quality Guidelines had not been exceeded for over a duration of 24 hours, that external compliance notification was not required (in accordance with Table 15.6-1 of the CEMP).</td></tr>
</table>

Environmental Issue Tracking Log – Open Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)
-	-	-	-	-

Environmental Issue Tracking Log – Closed Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)	Follow-up	Completed Date (dd/mm/yyyy)
112948	28/01/2025	Numerous hydrocarbon spills to ground at the heavy equipment laydown known locally as 'Andrew's Hill'.	Clean up and dispose of contaminated material in accordance with Section 9.2 of the Fuel Management and Spill Control Plan	08/02/2025	Confirmation that spills within the laydown had been cleaned up and that all machinery had been removed from the area was provided on February 5, 2025.	05/02/2025
112950	28/01/2025	Spill to ground beneath a low bed truck staged at the 'Andrew's Hill' laydown	Clean up and dispose of contaminated material in accordance with Section 9.2 of the Fuel Management and Spill Control Plan	08/02/2025	Confirmation spill had been cleaned up was provided on February 5, 2025.	05/02/2025
112960	28/01/2025	Domestic waste (food and numerous cigarette butts) observed on the ground around and beneath the exterior steps leading into Bunks 2 through 4 at the construction camp.	Store domestic wastes in sealed, wildlife resistant containers for disposal in accordance with CEMP Section 9.1, table 9.1.1 (General Mitigation Measures)	08/02/2025	Confirmation waste had been cleaned up was provided on February 5, 2025.	05/02/2025
112952	28/01/2025	Hydrocarbon staining on the ground at the office area at former 'U dorm' of Exploration Camp near the ROM pad.	Clean up and dispose of contaminated material in accordance with Section 9.2 of the Fuel Management and Spill Control Plan	08/02/2025	A response was provided on February 5, 2025 which indicated (since the time of the site visit) the area had become snow covered which meant BWG were unable to confirm whether identified stains had been cleaned up. BWG have indicated following snow melt, the area will be inspected, and any identified hydrocarbon staining would be cleaned up. In addition, the IEM team will complete a follow up during a future site visit (in snow free conditions).	05/02/2025

Upcoming Construction Activities

Summary of Activities	Anticipated Start Date
-	-

Key Communications

Date (dd/mm/yy)	Communication Type	Personnel	Communication Summary
-	-	-	-

Yours truly,

EDI ENVIRONMENTAL DYNAMICS INC.

Graeme Paterson, P.Ag, CPESC
Independent Environmental Monitor Lead

ATTACHMENTS:

- Photos
- Site Overview map
- Additional Site Overview Map (provided by BWG) – note that map is provided as a general reference for onsite activities and is a proposed construction map which does not yet include final design infrastructure.
- BWG Incident Investigation Findings Document – Blast Plume Event on December 11, 2024.

Distribution List:

Blackwater Gold (Artemis): Mark Warbanski, Ryan Todd, Sam Lynch, Norm Fraser, Quain Sulin, Randall Hennigar, Linda Siwallace

Ulkatcho First Nation: Alyisha Knapp

Lhoosk'uz Dene Nation: Laurie Vaughn

Stellat'en First Nation: Doug Casimel, Deane Carlson, Taneesha Raymond

Saik'uz First Nation: Kasandra Turbide, Howard Alexis

Nadleh Whut'en First Nation: Kristen Chapman, Pam Ketlo

Nazko First Nation: Stephanie Deneault, Terrance Paul, Florian Bergoin

Source Environmental Associates Inc: Martin Shin, Georgina Farah, Fraser Riddolls

Skin Tyree Nation: Ryan Tom, Shirley Wilson

Tsilhqot'in National Government: Trina Setah

Metis Nation of BC: Danielle Courcelles

Nee-Tahi-Buhn Band: Kieran Broderick

Environmental Dynamics Inc (EDI): Graeme Paterson, Leslie Chamberlist, Matthew Van Osch

Impact Assessment Agency of Canada: Mathieu Trudelle, Shannon Wallace, Carl Johansson

Environmental Assessment Office: Clayton Smith, Chris Parks, Warren Fekete

Photo 112957-2. Ongoing excavation within the open pit/ore body.

Photo 112953-7. Overview of preparation of the compacted till liner under construction at the LGO stockpile pad.

Photo 112953-5. Ongoing construction of the drainage channels beneath the future LGO stockpile pad.

Photo 112954-4. Crews nearing completion of liner placement within the LGO stockpile pond.

Photo 112941-4. Overview of components inside of plant site building currently undergoing commissioning.

Photo 112941-9. Overview of leach circuit components currently undergoing commissioning.

Photo 112951-2. High-grade ore stockpiled on the ROM pad adjacent to the hopper for the conveyor/crusher circuit.

Photo 112941-3. Stockpile of high-grade ore at terminus of crusher/conveyor ready to be brought into plant site.

Photo 112947-4. Status of decant tower at the water management pond. Water temporarily being pumped to plant site via hose until permanent pipelines can be implemented.

Photo 112943-1. Discharge point from pipeline delivering tailings from the Plant site into the Tailings Storage Facility (located downstream of the Central Water Transfer Pond).

Photo 112944-4. Overview of 'PAG dump' immediately upstream of the TSF dam.

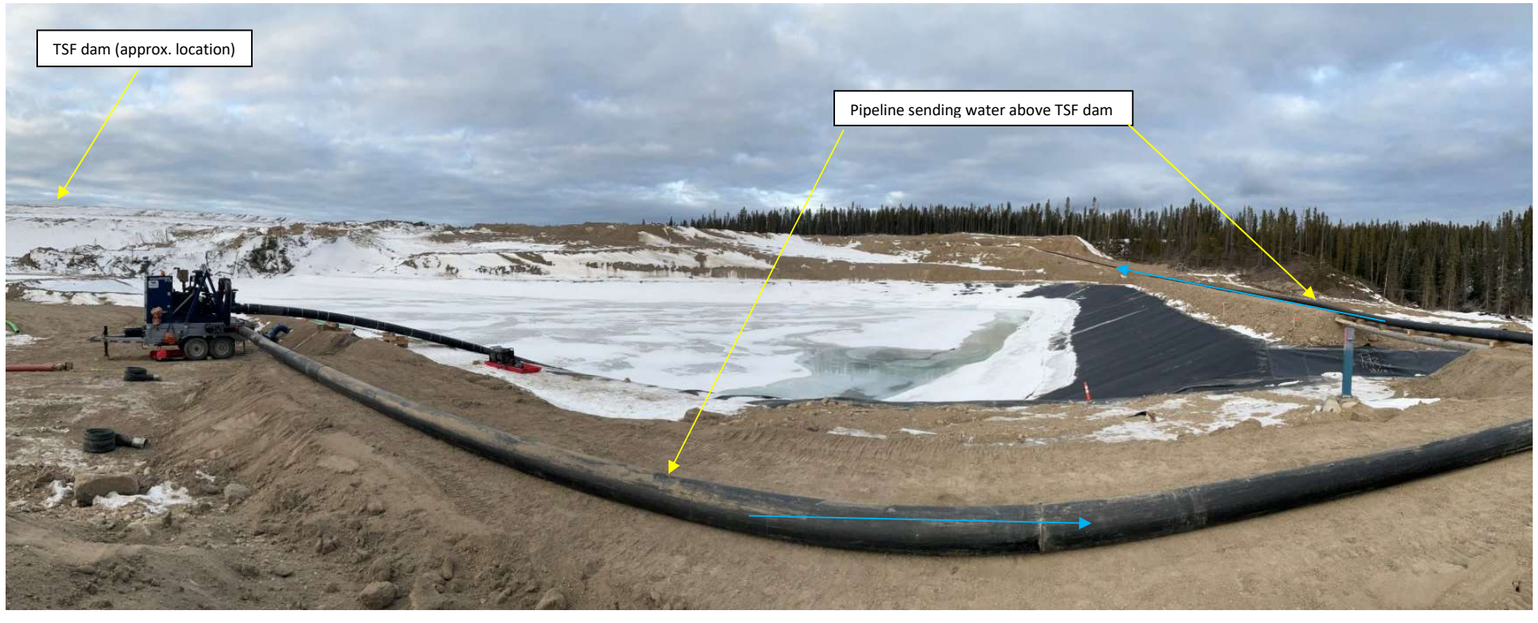


Photo 112946-4. Overview of water pooling on the upstream side of the Interim Environmental Control Dam (IECD). Water is being pumped (via pipeline) to the area upstream of the TSF dam.

Photo 112946-1. Foundation drain (former groundwater collection point) downstream of the IECD that was previously discharging water to Davidson Creek, now has water pumped and discharged upstream of the IECD.

Photo 112948-1. Example of multiple hydrocarbon spills (dark staining) observed at the 'Andrew's Hill' laydown. BWG has confirmed area has since been cleaned up.

Photo 112948-4. Additional example of multiple hydrocarbon spills (dark staining) observed at the 'Andrew's Hill' laydown. BWG has confirmed area has since been cleaned up.

Photo 112949-1. Tote containing hydrocarbons drained from haul truck 306 at the 'Andrew's Hill' laydown. BWG confirmed tote has been removed and placed into appropriate secondary containment.

Photo 112948-4. Spill to ground observed beneath a low-bed truck staged at the 'Andrew's Hill' laydown.

Photo 112960-2. Example of domestic waste (food/cigarette butts) observed outside of entrance to bunk at the Construction Camp. BWG has confirmed the area was cleaned up.

Work Space Locations

Legend

- Mine Access Road
- Watercourse
- Waterbody
- 1, Security Gate
- 2, Central Water Transfer Pond
- 5, Sediment Control Pond
- 6, Operations Camp
- 7, Water Management Pond
- 8, Mobile Maintenance Yard
- 9, Plant Site
- 11, Heavy Equipment Assembly Pad
- 13, Lake 15/16 Fish Compensation Channel
- 14, Explosives Magazine
- 15, Low Grade and High Grade Ore Stockpile (approx. location)
- 16, Run of Mine Pad
- 17, North Diversion Channel
- 18, Interim Environmental Control Dam
- 3, Davidson Creek Diversion Structure
- 4, Tailings Storage Facility Dam
- 12, Future Open Pit

0 0.5 1 1.5 2
Kilometres

Map Scale = 1:30,000 (printed on 11 x 17)
Map Projection: NAD 1983 UTM Zone 10N

Data Sources
• Workspaces. EDI Environmental Dynamics Inc. December 9, 2024.
• Main Basemap. CanVec 1:50,000: Government of Canada; Sentinel-2 Level 2A RGB T09UYV September 4, 2024. Contains modified Copernicus Sentinel data 2024 processed by Sentinel Hub.

Disclaimer
EDI Environmental Dynamics Inc. has made every effort to verify this map is free of errors. Data have been derived from a variety of digital sources and, as such, EDI does not warrant the accuracy, completeness, or reliability of this map or its data.

Drawn:	Checked:		
CT/OL	GP	Map 1	Date: 2024-12-09

EDI

Path: L:\PROJECTS\2021\NBC\21P0403_BlackwaterMine\21P0403_BlackwaterMine.aprx\21P0403_Blackwater_IEM_20241209

NOTES:

1. DCDS Pump Station is included for reference. System will be decommissioned and relocated prior to day 0.

372 000 E
373 000 E
374 000 E
375 000 E
376 000 E
377 000 E
378 000 E
379 000 E
5 901 000 N
5 900 000 N
5 899 000 N
5 898 000 N
5 897 000 N
5 896 000 N
5 895 000 N
5 894 000 N
5 893 000 N

DOWNSTREAM ESKER
DOWNSTREAM ESKER ACCESS TRAIL
FWR ACCESS TRAIL
FRESH WATER RESERVOIR
INTERIM ENVIRONMENTAL CONTROL DAM
TS-6
DAM C ESKER
TS-4B
TAILINGS STORAGE FACILITY - STAGE 1
BORROW PIT 2
NORTH DIVERSION CHANNEL
DCDS PUMP STATION Ref. Note 1
IECD ACCESS ROAD
E-TRAIL
BORROW PIT 4
TF
C-TRAIL
EXPLORATION ACCESS ROAD
NORTH COLLECTION CHANNEL
BORROW PIT 3
MINOR DIVERSION CHANNELS
A-TRAIL
BORROW PIT 1
WATER MANAGEMENT POND DISCHARGE PIPELINE
TW 13-02
TW 13-03
CHOKE STN 1
CENTRAL WATER TRANSFER POND
CHOKE STN 1
Km 15 WELL
WATER MANAGEMENT POND
TS-3
SOUTH COLLECTION CHANNEL
MOBILE MAINTENANCE & WAREHOUSING LAYDOWN
OPERATIONS CAMP
Km 15 WELL
CHOKE STN 3
WASTE ROCK STOCKPILE
RUN OF MINE PAD
METAL TREATMENT COLLECTION POND
TW 13-01
TS-2 ACCESS
ACCESS ROAD
EXPLOSIVES MAGAZINE ACCESS ROAD
METALS WTP
TW 13-04
RCH071
PROCESS PLANT
EXPLORATION CAMP
WW 10-01
WW 11-01
TS-2
EXPLOSIVES MAGAZINE
CONSTRUCTION CAMP
PW 13-1
LOW GRADE & HIGH GRADE ORE STOCKPILE
MINING FLEET ASSEMBLY AREA
PIT AREA
PW 13-3
N
W
E
S

Reference Drawing Name	Drawing Code
Gold Processing Plant	BWST1-0200-GEN-GAD-0001_01
Blackwater Project Exploration Camp Construction	BWST1-1100-GEN-GAD-0001
Construction Camp - Layout	BWST1-1200-ARC-GAD-0001
Blackwater Gold Wastewater Treatment Plant - General Arrangement	BWST1-1340-MEC-GAD-0001
Erosion & Sediment Control Plan - Plant Site - General Arrangement	BWST1-2310-CIV-DWG-3810
Tailings Storage Facility - Main Dam C - Stage 1 General Arrangement	BWST1-2800-CIV-DWG-1002
Tailings Storage Facility Water Management Pond - General Arrangement	BWST1-2700-CIV-DWG-1130
Water Management Central Diversion System Water Transfer Pond Plan	BWST1-2550-CIV-DWG-3140
Fresh Water Reservoir Site Overview Plan - General Arrangement	BWST1-2900-CIV-DWG-4001
Taillings Storage Facility Davidson Creek Diversion System - Pump Station Layout	BWST1-2110-MEC-DWG-1160
Tailings Storage Facility Main Dam C Diversion Berm - Plan and Profiles	BWST1-2110-CIV-DWG-1105
Tailings Storage Facility - Main Dam C - Interim Environmental Control Dam - Plan And Profile	BWST1-2600-CIV-DWG-1410
Tailings Storage Facility Main Dam C Sediment Control Pond Inlet Channels - Plan and Profiles	BWST1-2820-CIV-DWG-1402
Water Managment Central Diversion System North Collection Channel - Plan and Profile	BWST1-2510-CIV-DWG-3110
Water Management Central Diversion System North Diversion Channel - Plan and Profile	BWST1-2520-CIV-DWG-3120
Water Management Central Diversion System South Diversion Channel - Plan and Profile	BWST1-2530-CIV-DWG-3130
Water Management Topsoil Stockpiles TS-2 Collection Channel - Plan, Profile and Sections	BWST1-7220-CIV-DWG-3755
Water Management Topsoil Stockpiles TS-2 Diversion Channel - Plan, Profile and Sections	BWST1-7220-CIV-DWG-3756
Water Management Topsoil Stockpiles TS-4B Collection Channels - Plan, Profile and Sections	BWST1-7250-CIV-DWG-3765
Water Management Topsoil Stockpiles TS-6 Collection Channel - Plan, Profile and Sections	BWST1-7270-CIV-DWG-3781
Water Management Topsoil Stockpiles TS-6 Diversion Channel - Plan, Profile and Sections	BWST1-7270-CIV-DWG-3787
WMS Access Trails	BWST1-1400-CIV-DWG-0050-0088
Roads and Pipelines, Overview and Details	BWST1-0000-CIV-GAD-0002-0009
Blackwater Gold Project Site Power Distribution 25kV Overhead Power Line Proposed Route Layout Plan	BWST1-6410-ELE-GAD-0001

Lakes:
Rivers & Streams:
Light Vehicle Access Roads:
Exploration Trails:
CPD:
OH 25 kV: O/H
OH 230 kV: O/H
Pipelines:
Major interval: 25m,
Minor interval: 5m: 25

Revision #	Revision Note	Date
M	Updated R-Pad, Fuel Bay, Roads, and Pipelines	07/27/2023
L	Removed Natural Pond & Diversion Channel	07/14/2023
K	Permanent Camp Access, Pipeline Updates	06/16/2023
J	Addressed Markups, Updated TF's & kV Lines	05/27/2023
I	Addressed Markups	05/19/2023
H	Addressed Markups, Updated Various Items	05/15/2023
G	Added Potable Water Treatment Plant	05/05/2023
F	Revised Process Plant and Access Road	04/21/2023
E	Addressed Markups	03/14/2023

Client Approval By:

ARTEMIS GOLD INC

Blackwater Mine — General Overview Day 0

McElhanney

McElhanney Ltd.
100, 402 - 11th Avenue SE
Calgary, AB
T(403)245-4711 F(403)229-9160

Drawing Number: BWST1-0000-CIV-GAD-0001_02

Acad File: Blackwater GAD_RevM.dwg | Drafted by: KAK | Checked by:SAB

Scale: 1:10,000

100 0 100 200 300 400 500

DATE: 2023-07-31 - 09:19 FILE: X:\2241\21295-03 Blackwater - Site General Arrangement\10.0 Drawings\10.1 Engineering\10.1.3 Models\Blackwater GAD_RevM.dwg

2024-12-11 Initial Blast Fume Event	
Contractor Involved: JDS Energy & Mining Inc.	**Date of Observation:** December 11, 2024

Background (Observation from IEM Report 025)

Upon arrival to the Mine Site, the IEM and Stellat'en First Nation representative observed a blast within the ore body from the security gate. The blast cloud was noted to be orange in colour and was observed to remain in the air as it passed over the plant site and towards the valley where the operations camp is located (Photo 112734-1). Following onsite discussions with BWG, it is understood that an investigation is taking place following this blast to determine what (if anything) went wrong. It is also understood BWG submitted a sample from its continuous passive air sampling instrumentation for this time period to the laboratory to confirm whether there were any exceedances for Nitrogen Oxides (NOx) and that results will be available in January.

Summary

Following two sequential blasts in high-grade ore in the Blackwater Open Pit, visible fume, noted as Nitrogen Dioxide was visibly noted in high concentrations within the blast. The blast fumes were observed to be Yellow to Dark Orange in color. The fumes, in both cases were carried by prevailing winds from the blast pattern, North East toward the Mill Site and Construction Camp locations.
JDS notes that no direct interactions of personnel in these locations with respect to the fumes were noted during these events, and no injuries or loss of process were incurred as a result of the fume events. The fumes did dissipate without any intervention in both cases.

Contributing Factors

- Top Loading
- Product Discharge Quality (assumed)
- Data recording processes for all aspects of blasting on site

Corrective Actions

- Reduce and control top loading practices by;
  - Improving pattern access for MMU
  - Addition of 1" hand operated discharge hose to MMU to use in areas with access constraints
  - Specific recording and approvals by the Supervisor for any top loading
- Increase QAQC processes associated with product delivery
  - Recording of all discharge density values
  - Storage of discharge density samples for a minimum period of time (when shop is complete)
  - Create database associating delivery of emulsion products with dates and blasts, complete with delivery quality checks for ease of reference
  - Record all calibrations completed on MMU.

NOx Monitoring Data Results

Client Sample ID			Interim Provincial AQO 1-Hour	Interim Provincial AQO Annual	CAAQS 1-Hour	CAAQS Annual	RAD1	RAD1-DUP
Date Sampled							December 10 to 17, 2024	December 10 to 17, 2024
Time Sampled							10:30	10:30
ALS Sample ID							VA24D4292-001	VA24D4292-002
Analyte	Lowest Detection Limit	Units					Sub-Matrix: Air	Sub-Matrix: Air
Inorganics (Matrix: Air)								
Nitrogen dioxide (as NO2)	1	ppbv	100	32	60	17	1.0	1.0

The sample analysis results from passive air sampling for the time period when the identified blast occurred did not result in an exceedance of NOx.

Blackwater Gold Mine
IEM Site Visit Report 027
February 19 – 20, 2025

Prepared By
EDI Environmental Dynamics Inc.
3810 18th Ave
Prince George BC V2N 4V5

EDI Contacts
Graeme Paterson, PAg, CPESC
Leslie Chamberlist, PAg, CPESC
Independent Environmental Monitor Leads

EDI Project
21P0403
February 2025

mPRO

EDI
ENVIRONMENTAL DYNAMICS INC.
Down to Earth Biology

This page is intentionally blank.

1 PROJECT OVERVIEW

The Blackwater Mine Project is being developed by Blackwater Gold Limited (BWG), a subsidiary of Artemis Gold Inc. (Artemis). The Environmental Assessment Certificate (EAC) M19-01 was issued on 21 June 2019 and Condition 12 of the EAC requires the Holder to retain the services of an Independent Environmental Monitor (IEM) to observe, record for, and report to the BC Environmental Assessment Office (EAO) and Aboriginal Groups on compliance with the Certificate; and provide information to the EAO and Aboriginal Groups, BC Ministry of Energy, Mines and Low Carbon Innovation (EMLI) , BC Ministry of Environment (ENV), and BC Ministry of Forests (MOF) as directed by EAO.

A Decision Statement issued under Section 54 of the Canadian Environmental Assessment Act (CEAA 2012) for the Project was issued on 15 April 2019. Condition 9 of this Decision Statement requires the Proponent to retain an IEM who shall advise the Proponent, the Agency, and Indigenous groups if, in their view, the activities do not comply with the conditions set out in the Decision Statement. The IEM shall also advise the Proponent, the Agency, and Indigenous groups whether measures should be taken in respect to these activities. IEM reports are prepared to satisfy both EAC and CEAA conditions.

1.1 SITE VISIT SUMMARY

The IEM team completed a site visit on February 19 – 20, 2025, with representatives from the Stellat'en First Nations, and the BWG Environmental team.

Summaries of the site locations visited, and subsequent activities, observations and ongoing matters, are described in the tables below.

Site Visit Summary

Date (dd/mm/yyyy)	IEM Team On-site Personnel	Monitoring Sites/Activities
19/02/2025	Matthew Van Osch	Plant site, Construction and Operations camps, Mobile Maintenance Yard and various equipment laydowns. Inspections focused on waste management, hydrocarbon management, hazardous material storage, and construction progress.
20/02/2025		Tailings Storage Facility, Davidson Creek Diversion Structure, Water Management Pond, Central Water Transfer Pond, Water Management Pond, and the Low-Grade Ore Stockpile Pad and Pond. Inspections focused on waste management, hydrocarbon and hazardous waste management, water management, potentially acid generating (PAG) material management, mine waste management and construction progress.

Activities/Observations (Record ID #s included in this table correspond to the Environmental Issue Tracking Log record ID #s)	Non-Compliance Observed?
Mine Pit (Ore Body)	
Blasting and excavation of various grades of material continues within the ore body/pit. This includes: high grade ore (currently being placed at the run of mine (ROM) pad to be run through the crusher/plant site), zone S material (till material being used to construct the low permeability base of the LGO stockpile pad), and 'waste' potentially acid generating (PAG) material (hauled and placed in 'the PAG' dump on the upstream side of the Tailings Storage Facility dam).	No
Low Grade Ore Stockpile	
Construction of the LGO stockpile pad continues which includes the placement of the compacted 'Zone S' till material that forms the base of the LGO stockpile pad (Photo 113125-2). Works also continue on the development of the drainage channels along the base of the pad that will collect and direct PAG contact water to the LGO stockpile pond.	No
The installation of the geotextile liner within the base of the LGO stockpile pond has recently been completed (Photo 113124-2). Crews have now begun to install liner within the base of the western drainage ditch from the LGO stockpile pad to the LGO pond. The liner that has been installed within the pond and drainage ditch was noted to be the 'textured liner' that BWG has begun to utilize on site to provide grip for wildlife escape from water collection features (Photo 113124-3).	No
Plant Site	
Commissioning of the crusher circuit, plant site and leach circuit continues. Crews were observed feeding the plant site with material that had been passed through the crusher circuit during the recent site visit (Photo 113115-1).	No
Mine Site Water Management	
Construction of the decant tower (and accompanying buildings) at the Water Management Pond (WMP) continues and is nearing completion. The IEM team understands one of the pumps has recently been commissioned and is being used to send water between the WMP and the plant site through a water pipeline (Photo 113126-3).	No
During the IEM team's visit to site, the WMP outfall structure (which discharges to Davidson Creek) was visited. At the time of the visit, the IEM team did not observe flows from the structure into Davidson Creek which BWG indicated was due to freezing temperatures impacting the ability to utilize pumps (Photo 113127-1). Following onsite discussions, despite the WMP outfall not discharging water to the Davidson Creek system, BWG indicated downstream flows to Davidson Creek continued to be fed from Watercourse 668 and ground infiltration. BWG indicated they were working towards getting the pumps back online and anticipated this would be completed shortly.	No
Originally, it was planned that during the site visit, the IEM and First Nations representatives would join BWGs environmental staff during the collection of one of the monthly surface water collection points located near the operations camp (known as sample location 661-04). However, due to weather conditions present during the time of the visit (heavy snowfall), the site was not able to be visited. As sample collection point 661-04 is a sample location that is to be collected monthly, the IEM submitted a request for information (RFI) inquiring whether the sample would be collected prior to months end. BWG provided a response on February 21, 2025 which confirmed the sample would be collected and submitted to the lab for analysis prior to months end.	No
Tailings Storage Facility	
During the site visit, the discharge point at the terminus of the tailings discharge pipeline (currently located downstream of the Central Water Transfer Pond) was observed to be operational and discharging tailings into the Tailings Storage Facility (TSF) (Photo 113133-1).	No
Water levels continue to rise upstream of the Davidson Creek Diversion Structure (DCDS) within the TSF (Photo 113132-5). Following onsite discussions with BWG, it is understood water collecting within the TSF area is being pumped back to the plant site (to be utilized as process water) through a barge pump station located upstream of the DCDS.	No
Placement of 'waste' potentially acid generating (PAG) material generated from the ore body/open pit excavation continues in the area located immediately upstream of the TSF dam known locally as the 'PAG dump' (Photo 113132-1).	No
General Mine Site	
During the visit to an equipment laydown known locally as 'Andrew's Hill', an open top bag containing used (hydrocarbon contaminated) spill pads was observed (Photo 113122-4; Record ID-113122). The bag containing used spill pads was removed at the time of the visit by BWG staff. This matter was issued as an open/close non-compliance.	Closed
Coolant spills to ground were observed beneath a haul truck (Photo 113120-5) and a flat deck truck staged within the Mobile Maintenance Yard (Record ID-113120). Photograph confirmation showing that both spills had been cleaned up was provided on February 21, 2025 (Photo 12).	Closed
Workers Accommodation	
A bag containing recyclable waste (cans/juice boxes) was observed within a domestic waste bin at the operation camp (Record ID-113117). The bag containing recyclables was removed from the bin and placed into an appropriate receptacle by BWG staff at the time of the visit. This matter was issued as an open/closed non-compliance.	Closed
Domestic waste including cigarette butts and coffee cups were observed below the stairs leading into bunks 5 and 6 at the construction camp (Record ID-113118). Confirmation waste had been cleaned up was provided on February 21, 2025.	Closed

Notable Environmental Incidents

Record ID No(s).	Date (dd/mm/yyyy)	Location	Description of Event For additional details see attached Environmental Incident Reports (EIR)
113109	10/02/2025	Plant Site	On February 10, 2025, it was reported that on January 17, 2025, a spill of approximately 200kg of ammonia nitrate emulsion had occurred at the plant site. The spill was reported externally to Emergency Management BC (EMBC) and cleaned up promptly. Additional detail can be found in the attached incident report.

Environmental Issue Tracking Log – Open Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)
-	-	-	-	-

Environmental Issue Tracking Log – Closed Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)	Follow-up	Completed Date (dd/mm/yyyy)
113117	20/02/2025	Recyclable waste was observed within a domestic waste bin at the operation camp.	Segregate and dispose of recyclable materials in accordance with Section 7.1 of the Waste Management Plan.	01/03/2025	Recyclables were removed by BWG staff at the time of site visit. Issued as an open/closed non-compliance.	20/02/2025
113118	20/02/2025	Domestic waste including cigarette butts and coffee cups were observed on the ground beneath the stairs leading into bunks 5 and 6 at the construction camp.	Store domestic wastes in sealed, wildlife resistant containers for disposal in accordance with CEMP Section 9.1, table 9.1.1 (General Mitigation Measures)	01/03/2025	Confirmation all waste had been cleaned up was provided on February 21, 2025.	21/02/2025
113120	20/02/2025	Coolant spills to ground were observed beneath a haul truck and a flat deck truck staged within the Mobile Maintenance Yard.	Clean up and dispose of contaminated material in accordance with Section 9.2 of the Fuel Management and Spill Control Plan	01/03/2025	Confirmation spills had been cleaned up and that drip containment had been placed beneath the trucks was provided on February 21, 2025.	21/02/2025
113122	20/02/2025	Bag containing used (hydrocarbon contaminated) spill pads found at Andrew's Hill laydown.	Clean up and dispose of contaminated material in accordance with Section 9.2 of the Fuel Management and Spill Control Plan	01/03/2025	Used spill clean up materials removed and disposed of by BWG staff during visit. This matter was issued as an open/close non-compliance.	20/02/2025

Upcoming Construction Activities

Summary of Activities	Anticipated Start Date
-	-

Key Communications

Date (dd/mm/yy)	Communication Type	Personnel	Communication Summary
-	-	-	-

Yours truly,

EDI ENVIRONMENTAL DYNAMICS INC.

Graeme Paterson, P.Ag, CPESC
Independent Environmental Monitor Lead

ATTACHMENTS:

- Photos
- Site Overview map
- Additional Site Overview Map (provided by BWG) – note that map is provided as a general reference for onsite activities and is a proposed construction map which does not yet include final design infrastructure.
- Incident Report for Record ID-113109 – Spill of 200kg of ammonia nitrate emulsion at Plant Site

Distribution List:

Blackwater Gold (Artemis): Tim Donnelly, Adam Gyorffy, Mark Warbanski, Ryan Todd, Sam Lynch, Steven Hayward, Norm Fraser, Jessica Saunders, Quain Sulin, Randall Hennigar, Linda Siwallace

Ulkatcho First Nation: Alyisha Knapp

Lhoosk'uz Dene Nation: Laurie Vaughn

Stellat'en First Nation: Doug Casimel, Deane Carlson, Taneesha Raymond

Saik'uz First Nation: Kasandra Turbide, Howard Alexis

Nadleh Whut'en First Nation: Kristen Chapman, Pam Ketlo

Nazko First Nation: Stephanie Deneault, Terrance Paul, Florian Bergoin

Source Environmental Associates Inc: Martin Shin, Georgina Farah, Fraser Riddolls

Skin Tyree Nation: Ryan Tom, Shirley Wilson

Tsilhqot'in National Government: Trina Setah

Metis Nation of BC: Danielle Courcelles

Environmental Dynamics Inc (EDI): Graeme Paterson, Leslie Chamberlist, Matthew Van Osch

Impact Assessment Agency of Canada (IAAC): Mathieu Trudelle, Shannon Wallace, Carl Johansson

Environmental Assessment Office (EAO): Clayton Smith, Chris Parks, Warren Fekete

Ministry of Mining and Critical Metals (MCM): Rachel Taylor

Ministry of Environment and Climate Change Strategy (ENV): Breanne Hill

Ministry of Water, Land and Resource Stewardship (WLRS): Duncan McColl

Photo 113125-2. Crews continue placement of 'zone s' till liner along the base of the LGO stockpile pad.

Photo 113124-2. Overview of the LGO stockpile pond following completion of liner installation.

Photo 113124-3. Textured liner installed within the LGO stockpile pond.

Photo 113115-1. High grade ore stockpile being worked and fed to plant site at the terminus of the crusher circuit.

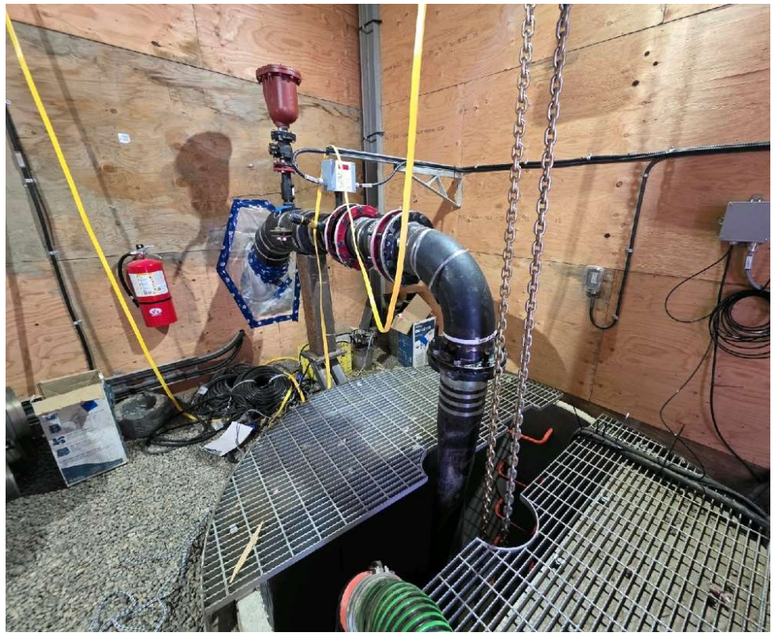


Photo 113126-3. Pump within the WMP decant tower, in operation and pumping water to the plant site.

Photo 113127-1. WMP outfall structure (which discharges to Davidson Creek). Observed to not be operating at time of visit due to frozen pumps.

Photo 113133-1. Tailings pipeline discharge point into the upstream end of the TSF.

Photo 113132-5. Water accumulation upstream of the DCDS. Barge pump in place sending water to plant site upstream of photo (out of frame and unable to be observed due to access constraints).

Photo 113132-1. Crews placing material at the 'PAG dump' immediately upstream of the TSF dam.

Photo 113122-4. Used spill clean up materials (hydrocarbon contaminated) in open top bag at equipment laydown known locally as 'Andrews Hill.' Bag removed and disposed of by BWG staff during site visit.

Photo 113120-5. Coolant spills observed beneath a haul truck staged at the Mobile Maintenance Yard.

Photo 12. Photo showing coolant spill clean up beneath haul truck at Mobile Maintenance Yard (provided by BWG on February 21, 2025). Note a photo was also provided by BWG confirming clean up of spill beneath flat deck truck referenced in Record ID-113120.

Work Space Locations

Legend

- Mine Access Road
- Watercourse
- Waterbody
- 1, Security Gate
- 2, Central Water Transfer Pond
- 5, Sediment Control Pond
- 6, Operations Camp
- 7, Water Management Pond
- 8, Mobile Maintenance Yard
- 9, Plant Site
- 11, Heavy Equipment Assembly Pad
- 13, Lake 15/16 Fish Compensation Channel
- 14, Explosives Magazine
- 15, Low Grade and High Grade Ore Stockpile (approx. location)
- 16, Run of Mine Pad
- 17, North Diversion Channel
- 18, Interim Environmental Control Dam
- 3, Davidson Creek Diversion Structure
- 4, Tailings Storage Facility Dam
- 12, Future Open Pit

0 0.5 1 1.5 2
Kilometres

Map Scale = 1:30,000 (printed on 11 x 17)
Map Projection: NAD 1983 UTM Zone 10N

Data Sources
• Workspaces. EDI Environmental Dynamics Inc. December 9, 2024.
• Main Basemap. CanVec 1:50,000: Government of Canada; Sentinel-2 Level 2A RGB T09UYV September 4, 2024. Contains modified Copernicus Sentinel data 2024 processed by Sentinel Hub.

Disclaimer
EDI Environmental Dynamics Inc. has made every effort to verify this map is free of errors. Data have been derived from a variety of digital sources and, as such, EDI does not warrant the accuracy, completeness, or reliability of this map or its data.

Drawn:	Checked:		
CT/OL	GP	Map 1	Date: 2024-12-09

EDI

Path: L:\PROJECTS\2021\NBC\21P0403_BlackwaterMine\21P0403_BlackwaterMine.aprx\21P0403_Blackwater_IEM_20241209

NOTES:

1. DCDS Pump Station is included for reference. System will be decommissioned and relocated prior to day 0.

372 000 E
373 000 E
374 000 E
375 000 E
376 000 E
377 000 E
378 000 E
379 000 E
5 901 000 N
5 900 000 N
5 899 000 N
5 898 000 N
5 897 000 N
5 896 000 N
5 895 000 N
5 894 000 N
5 893 000 N

DOWNSTREAM ESKER
DOWNSTREAM ESKER ACCESS TRAIL
FWR ACCESS TRAIL
FRESH WATER RESERVOIR
INTERIM ENVIRONMENTAL CONTROL DAM
TS-6
DAM C ESKER
TS-4B
TAILINGS STORAGE FACILITY - STAGE 1
BORROW PIT 2
NORTH DIVERSION CHANNEL
DCDS PUMP STATION Ref. Note 1
IECD ACCESS ROAD
E-TRAIL
BORROW PIT 4
TF
C-TRAIL
EXPLORATION ACCESS ROAD
NORTH COLLECTION CHANNEL
BORROW PIT 3
MINOR DIVERSION CHANNELS
A-TRAIL
BORROW PIT 1
WATER MANAGEMENT POND DISCHARGE PIPELINE
TW 13-02
TW 13-03
CHOKE STN 1
CENTRAL WATER TRANSFER POND
CHOKE STN 1
Km 15 WELL
WATER MANAGEMENT POND
TS-3
SOUTH COLLECTION CHANNEL
MOBILE MAINTENANCE & WAREHOUSING LAYDOWN
OPERATIONS CAMP
Km 15 WELL
CHOKE STN 3
WASTE ROCK STOCKPILE
RUN OF MINE PAD
METAL TREATMENT COLLECTION POND
TW 13-01
TS-2 ACCESS
ACCESS ROAD
EXPLOSIVES MAGAZINE ACCESS ROAD
METALS WTP
TW 13-04
RCH071
PROCESS PLANT
EXPLORATION CAMP
WW 10-01
WW 11-01
TS-2
EXPLOSIVES MAGAZINE
CONSTRUCTION CAMP
PW 13-1
LOW GRADE & HIGH GRADE ORE STOCKPILE
MINING FLEET ASSEMBLY AREA
PIT AREA
PW 13-3
N
W
E
S

Reference Drawing Name	Drawing Code
Gold Processing Plant	BWST1-0200-GEN-GAD-0001_01
Blackwater Project Exploration Camp Construction	BWST1-1100-GEN-GAD-0001
Construction Camp - Layout	BWST1-1200-ARC-GAD-0001
Blackwater Gold Wastewater Treatment Plant - General Arrangement	BWST1-1340-MEC-GAD-0001
Erosion & Sediment Control Plan - Plant Site - General Arrangement	BWST1-2310-CIV-DWG-3810
Tailings Storage Facility - Main Dam C - Stage 1 General Arrangement	BWST1-2800-CIV-DWG-1002
Tailings Storage Facility Water Management Pond - General Arrangement	BWST1-2700-CIV-DWG-1130
Water Management Central Diversion System Water Transfer Pond Plan	BWST1-2550-CIV-DWG-3140
Fresh Water Reservoir Site Overview Plan - General Arrangement	BWST1-2900-CIV-DWG-4001
Taillings Storage Facility Davidson Creek Diversion System - Pump Station Layout	BWST1-2110-MEC-DWG-1160
Tailings Storage Facility Main Dam C Diversion Berm - Plan and Profiles	BWST1-2110-CIV-DWG-1105
Tailings Storage Facility - Main Dam C - Interim Environmental Control Dam - Plan And Profile	BWST1-2600-CIV-DWG-1410
Tailings Storage Facility Main Dam C Sediment Control Pond Inlet Channels - Plan and Profiles	BWST1-2820-CIV-DWG-1402
Water Managment Central Diversion System North Collection Channel - Plan and Profile	BWST1-2510-CIV-DWG-3110
Water Management Central Diversion System North Diversion Channel - Plan and Profile	BWST1-2520-CIV-DWG-3120
Water Management Central Diversion System South Diversion Channel - Plan and Profile	BWST1-2530-CIV-DWG-3130
Water Management Topsoil Stockpiles TS-2 Collection Channel - Plan, Profile and Sections	BWST1-7220-CIV-DWG-3755
Water Management Topsoil Stockpiles TS-2 Diversion Channel - Plan, Profile and Sections	BWST1-7220-CIV-DWG-3756
Water Management Topsoil Stockpiles TS-4B Collection Channels - Plan, Profile and Sections	BWST1-7250-CIV-DWG-3765
Water Management Topsoil Stockpiles TS-6 Collection Channel - Plan, Profile and Sections	BWST1-7270-CIV-DWG-3781
Water Management Topsoil Stockpiles TS-6 Diversion Channel - Plan, Profile and Sections	BWST1-7270-CIV-DWG-3787
WMS Access Trails	BWST1-1400-CIV-DWG-0050-0088
Roads and Pipelines, Overview and Details	BWST1-0000-CIV-GAD-0002-0009
Blackwater Gold Project Site Power Distribution 25kV Overhead Power Line Proposed Route Layout Plan	BWST1-6410-ELE-GAD-0001

Lakes:
Rivers & Streams:
Light Vehicle Access Roads:
Exploration Trails:
CPD:
OH 25 kV: O/H
OH 230 kV: O/H
Pipelines:
Major interval: 25m,
Minor interval: 5m: 25

Revision #	Revision Note	Date
M	Updated R-Pad, Fuel Bay, Roads, and Pipelines	07/27/2023
L	Removed Natural Pond & Diversion Channel	07/14/2023
K	Permanent Camp Access, Pipeline Updates	06/16/2023
J	Addressed Markups, Updated TF's & kV Lines	05/27/2023
I	Addressed Markups	05/19/2023
H	Addressed Markups, Updated Various Items	05/15/2023
G	Added Potable Water Treatment Plant	05/05/2023
F	Revised Process Plant and Access Road	04/21/2023
E	Addressed Markups	03/14/2023

Client Approval By:

ARTEMIS GOLD INC

Blackwater Mine — General Overview Day 0

McElhanney

McElhanney Ltd.
100, 402 - 11th Avenue SE
Calgary, AB
T(403)245-4711 F(403)229-9160

Drawing Number: BWST1-0000-CIV-GAD-0001_02

Acad File: Blackwater GAD_RevM.dwg | Drafted by: KAK | Checked by:SAB

Scale: 1:10,000

100 0 100 200 300 400 500

DATE: 2023-07-31 - 09:19 FILE: X:\2241\21295-03 Blackwater - Site General Arrangement\10.0 Drawings\10.1 Engineering\10.1.3 Models\Blackwater GAD_RevM.dwg

2024-01-17 MMU Overflow ANE Spill	
Contractor Involved: Orica	**Date of Observation:** January 17, 2025

Summary

- MMU was being loaded at the ISO tanks on Friday the 17th mid-day.
- Statement indicates it normally took 30-45 minutes to load the truck, in this case it was an hour.
- Worker decided to climb down from the MMU to check the pump speed, as he was concerned another employee may have adjusted the pump speed.
- During what he said felt like 5 mins, workers heard emulsion hitting the ground.
- Pump immediately shut down after ~200kg of ANE was spilled.
- Supervisor arrived at site ~1:30pm and was approached by workers informing about the spill.
- Workers were instructed to start cleanup, recovering the ANE off the ground with a spill tray and loader bucket.
- Workers were instructed to take photos and contact mine superintendent.
- Superintendent not immediately reachable, environmental team was contacted.
- Enviro provided Orica an 'initial spill report' that was filled out and returned.
- Enviro came to site and assessed the spill, instructing the site team to continue cleanup and to gather a more accurate weight of spill. (To be determined)
- At present all emulsion is contained in totes, from which it will be bagged for disposal within blast holes on bench.

Contributing Factors

- Operator Hazard Awareness / Procedural violation – Operator misjudged the time to fill the MMU and left the filling task unattended. The operator violated the written procedure requiring pumping to be monitored at all times on top of MMU. (Individual Action)
- Pump Controls – Operator not in direct physical control of pump switch. Requiring use of second operator to relay stop / start instructions. No indicator of flow or flow rate. (Failed Defense)
- Procedures – Procedure did not have specific wording to ensure pump is shut off before leaving the hatch. No wording to indicate filling procedure using two persons. Procedure is written if a single operator is using a remote control stop/start switch. (Failed Defense)
- Operator has had several years of experience within Orica and MMU operations, including loading/unloading MMU's. As well referenced training documentation.

Corrective Actions

- Install remote start/stop controls to use from top of MMU
- Install an indicator light to indicate pump is in operation
- Update work procedure to include: "communicate if using two operators or if not remote is available."
- Post new pump procedures at pumping station
- Review revised procedure with all operators. Conduct Job Cycle Check (JCC) to verify
- Management & SHES to follow up and ensure all critical actions are completed and verified.
- Review of supervision and personnel updates

Blackwater Gold Mine
IEM Site Visit Report 028
March 18 – 19, 2025

Prepared By
EDI Environmental Dynamics Inc.
3810 18th Ave
Prince George BC V2N 4V5

EDI Contacts
Graeme Paterson, PAg, CPESC
Leslie Chamberlist, PAg, CPESC
Independent Environmental Monitor Leads

EDI Project
21P0403
March 2025

mPRO

EDI
ENVIRONMENTAL DYNAMICS INC.
Down to Earth Biology

This page is intentionally blank.

1 PROJECT OVERVIEW

The Blackwater Mine Project is being developed by Blackwater Gold Limited (BWG), a subsidiary of Artemis Gold Inc. (Artemis). The Environmental Assessment Certificate (EAC) M19-01 was issued on 21 June 2019 and Condition 12 of the EAC requires the Holder to retain the services of an Independent Environmental Monitor (IEM) to observe, record for, and report to the BC Environmental Assessment Office (EAO) and Aboriginal Groups on compliance with the Certificate; and provide information to the EAO and Aboriginal Groups, BC Ministry of Energy, Mines and Low Carbon Innovation (EMLI) , BC Ministry of Environment (ENV), and BC Ministry of Forests (MOF) as directed by EAO.

A Decision Statement issued under Section 54 of the Canadian Environmental Assessment Act (CEAA 2012) for the Project was issued on 15 April 2019. Condition 9 of this Decision Statement requires the Proponent to retain an IEM who shall advise the Proponent, the Agency, and Indigenous groups if, in their view, the activities do not comply with the conditions set out in the Decision Statement. The IEM shall also advise the Proponent, the Agency, and Indigenous groups whether measures should be taken in respect to these activities. IEM reports are prepared to satisfy both EAC and CEAA conditions.

1.1 SITE VISIT SUMMARY

The IEM team completed a site visit on March 18 – 19, 2025, with representatives from the Stellat'en and Saik'uz First Nations, and the BWG Environmental team.

Summaries of the site locations visited, and subsequent activities, observations and ongoing matters, are described in the tables below.

Site Visit Summary

Date (dd/mm/yyyy)	IEM Team On-site Personnel	Monitoring Sites/Activities
18/03/2025	Graeme Paterson	Plant site, ore body, low grade ore stockpile, tailings storage facility and the workers accommodation. Inspections focused on PAG management, air quality management, hydrocarbon management, water management and erosion and sediment control.
19/03/2025		Central water transfer pond, tailings discharge, mobile maintenance yard, interim environmental control dam, north diversion ditch, and water quality sampling points along the Kluskus Forest Service Road (km's 141.5 and 119). Inspections focused on water management, hydrocarbon management, and water quality management.

Activities/Observations (Record ID #s included in this table correspond to the Environmental Issue Tracking Log record ID #s)	Non-Compliance Observed?
Mine Pit (Ore Body)	
Blasting and excavation of various grades of material continues within the ore body/pit (Photo 113325-5).	No
Low Grade Ore Stockpile	
Construction of a portion of the low-grade ore (LGO) stockpile pad has been completed and placement of LGO is now ongoing. During the visit, a portion of the lined ditch that transports any potentially acid generating (PAG) contact water to the LGO stockpile pond was observed along the pad's perimeter (Photo 113327-3).	No
Crews have recently completed the clearing of an area northeast of the LGO stockpile pad that will soon be developed into 'Borrow Pit 4' (Photo 113324-2). The IEM understands this borrow pit will provide a supply of additional 'zone s' till material for further LGO pad expansion.	No
Plant Site	
Commissioning of the crusher circuit, plant site, and leach circuit continues as the project progresses towards commercial operations.	No
High grade ore continues to be stockpiled on the run-of-mine (ROM) pad and fed through the crusher circuit (Photo 113344-3).	No
During the site visit, the area surrounding the Plant Site building (and related infastructure) and slopes along the access road towards the operations camp (northwest of the plant site) were observed to be coated in a layer of dust (overtop snow). The dust was observed to be generated from material falling from the drop point of the plant sites conveyor circuit to the stockpile below, before being dispersed by wind through the area (Photos 113363-5, 113338-5, 113340-6 and 113363-3). Following onsite discussions with BWG staff, the IEM understands options are being reviewed to mitigate dust. The IEM submitted a request for information (RFI) requesting details on what is being considered as well as the approximate timelines to implement measures.	No
Following the observation of dust generation and deposition from the drop point on the conveyor, an RFI inquiring whether spray bar sprinklers (as described in Section 8.2 of the Air Quality and Fugitive Dust Management Plan) were being utilized at the material transfer points on the primary and secondary crusher circuits, conveyors, and stockpile drop points.	No
Dust generated and transported by wind from the Plant Site to nearby slopes, roadways, and laydowns is sourced from high-grade ore material, which is designated as PAG material. As described within Section 6.3 of the Metal Leaching and Acid Rock Drainage (ML/ARD) Management Plan, high grade ore at the mine site can lead to acidic drainage with elevated concentrations of metals and sulphates. As the dust generated is composed of PAG material and has deposited around the Plant Site and surrounding area, the IEM submitted a request to have a qualified professional in acid rock drainage (QP-ARD) review (and comment on) the potential that the observed deposition of PAG material dust across large areas of the site may cause impacts to the soil or downstream watercourses once the material becomes mobile following snow melt, rain events, or continued wind transport and deposition.	No
A sack containing calcium hydroxide (a hazardous substance) was observed stored outside of secondary containment at the Plant Site (Photo 113342-1; Record ID-113342). Confirmation that the bag had been placed into secondary containment was provided on March 22, 2025.	Closed
Pallets with hydrocarbon products (oil) on top were observed stored outside of secondary containment at the Plant Site (Record ID-113332). Confirmation that these products had been placed into secondary containment was provided on March 22, 2025.	Closed
A spill of hydrocarbon was observed on the ground at the fueling station located in proximity to the plant site. As the location where the spill was observed was within a lined containment cell, the IEM shared the observation with BWG as an opportunity for improvement to prevent hydrocarbons from being tracked out of this area and onto road surfaces. BWG provided confirmation on March 22, 2025, that the spill had been cleaned up.	No
During the site visit, a worker was observed fueling a pickup truck at the fuel station near the plant site. The crew member was observed using a drip tray beneath the truck while completing fueling in accordance with the Fuel Management and Spill Control Plan.	No
A bin containing an unknown solution was observed adjacent to the lime silo at the Plant Site (Photo 113331-3). Following a conversation with the Stellat'en First Nations representative present during the site visit, it was indicated to the IEM that a community member had raised a concern about a potential spill from the lime silo. The IEM submitted an RFI inquiring whether there had been any recent spills from the lime silo and to detail what solution was observed within the nearby bin. A response was provided on March 22, 2025, which indicated the contents of the bin near the lime silo were water and grit/rock pieces that were sourced from a screen within the silo designed to catch and remove these components. It was further indicated that there have been no reported or known spills from the lime silo as confirmed by the Plant Site team.	No
Mobile Maintenance Yard	
Multiple hydrocarbon spills to ground were observed at the fuel and lube truck staging area (Photo 113349-5; Record ID-113349). A response provided by BWG on March 22, 2025, indicated the area had been scraped clean and any contaminated snow/soil was disposed of appropriately.	Closed
Workers Accommodation	
Decommissioning of portions of the former exploration camp remains ongoing with trailers (bunks) being removed from site.	No
A series of sumps were observed along the access road to the operations camp at the roadway crossing point of Watercourse 146, a watercourse that has been fish salvaged, but that has ultimate connectivity to non-fish salvaged systems downstream. One of the sumps was filled close to capacity and as a result, the IEM recommended water levels in this sump be monitored to prevent any potential turbid water releases downstream (Photo 113343-1). BWG dispatched a hydrovac truck to remove the turbid water accumulation from the sump the following morning (observed during the site visit) and disposed of the water into the tailings storage facility (Photo 113345-3).	No

Tailings Storage Facility	
Water levels continue to accumulate upstream of the Tailings Storage Facility (TSF) dam and have recently inundated the former Davidson Creek Diversion Structure (Photo 113330-1 and 113323-2). BWG continues to draw water from the TSF (utilizing the reclaim barge) and send it to the Plant Site to be utilized as process water.	No
Placement of 'waste' potentially acid generating (PAG) material generated from the ore body/open pit excavation continues in the area located immediately upstream of the TSF dam known locally as the 'PAG dump'.	No
Water Management Infastructure	
During the site visit, the pump at the Central Water Transfer Pond (CWTP) was observed to not be in operation. This pump is used to divert water to the Davidson Creek discharge point as part of the maintenance of permitted downstream flow levels. Following onsite discussions, the IEM understands the pump had mechanical issues that required repair and that this would be completed shortly. BWG staff indicated that under normal circumstances, if water could not be pumped from the CWTP to Davidson Creek then water from the Water Management Pond (WMP) would be directed to supplement downstream flows. The IEM understands that at the time of the site visit BWG was not discharging water from the WMP to the Davidson Creek system due to concerns with elevated turbidity of the water within the pond. The IEM submitted an RFI inquiring if the project remains in compliance with Section 3.8 of the Federal Decision Statement (FDS) and the *Fisheries Act* Authorization (which detail that the Project shall maintain in-stream flow needs in Davidson Creek during all phases of the project) during periods of time where no water is being discharged from the CWTP or the WMP to Davidson Creek.	No
The area surrounding the North Diversion Ditch remains snow covered (Photo 113351-2). During the visit, the terminus of the ditch line was not able to be accessed as roads to the area were yet to be plowed following a recent snowfall event. BWG staff indicated the access road into the area would be plowed shortly to allow them to monitor the area as above freezing temperatures move into the region.	No
Kluskus Forest Service Road (Water Sampling Locations)	
The IEM accompanied BWG staff to two offsite water quality sampling locations along the Kluskus access road at KM markers 141.5 (Fawnie Creek) and 119 (Turtle Creek). A water quality sample was collected from the Fawnie Creek location (Photo 113364-8), however, the sample location at Turtle Creek was frozen to the streambed and a sample could not be collected (Photo 113365-2).	No

Notable Environmental Incidents

Record ID No(s).	Date (dd/mm/yyyy)	Location	Description of Event For additional details see attached Environmental Incident Reports (EIR)
-	-	-	-

Environmental Issue Tracking Log – Open Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)
-	-	-	-	-

Environmental Issue Tracking Log – Closed Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)	Follow-up	Completed Date (dd/mm/yyyy)
113342	18/03/2025	A sack containing calcium hydroxide (a hazardous substance) observed stored outside of secondary containment at the plant site.	Store hazardous materials in secondary containment to restrict the spread of any spilled product in accordance with Section 10.5 of the CEMP.	05/04/2025	Confirmation the sack had been placed into secondary containment was provided on March 22, 2025.	22/03/2025
113332	18/03/2025	Pallets with hydrocarbon products (oil) observed stored outside of secondary containment at the plant site.	Store hazardous materials in secondary containment to restrict the spread of any spilled product in accordance with Section 10.5 of the CEMP.	05/04/2025	Confirmation hydrocarbon products had been placed into secondary containment was provided on March 22, 2025.	22/03/2025
113349	19/03/2025	Multiple hydrocarbon spills to the ground at the fuel and lube truck staging area at the Mobile Maintenance Yard.	Clean up and dispose of contaminated material in accordance with Section 9.2 of the Fuel Management and Spill Control Plan.	05/04/2025	Response provided on March 22, 2025, indicated the area had been scraped clean and contaminated soil/snow disposed of in appropriate hazardous waste bins.	22/03/2025

Upcoming Construction Activities

Summary of Activities	Anticipated Start Date
-	-

Key Communications

Date (dd/mm/yy)	Communication Type	Personnel	Communication Summary
-	-	-	-

Yours truly,

EDI ENVIRONMENTAL DYNAMICS INC.

Graeme Paterson, P.Ag, CPESC
Independent Environmental Monitor Lead

ATTACHMENTS:

- Photos
- Site Overview map
- Additional Site Overview Map (provided by BWG) – note that map is provided as a general reference for onsite activities and is a proposed construction map which does not yet include final design infrastructure.
- Summary of Previous Month (February 2025) Environmental Incidents (provided by BWG)

Distribution List:

Blackwater Gold (Artemis): Tim Donnelly, Adam Gyorffy, Mark Warbanski, Ryan Todd, Sam Lynch, Steven Hayward, Norm Fraser, Jessica Saunders, Quain Sulin, Randall Hennigar, Linda Siwallace

Ulkatcho First Nation: Alyisha Knapp

Lhoosk'uz Dene Nation: Laurie Vaughn

Stellat'en First Nation: Doug Casimel, Deane Carlson, Taneesha Raymond

Saik'uz First Nation: Kasandra Turbide, Howard Alexis

Nadleh Whut'en First Nation: Kristen Chapman, Pam Ketlo

Nazko First Nation: Stephanie Deneault, Terrance Paul, Florian Bergoin

Source Environmental Associates Inc: Martin Shin, Georgina Farah, Fraser Riddolls, Rina Freed, Anna Everett

Skin Tyree Nation: Bea Paton

Tsilhqot'in National Government: Trina Setah

Metis Nation of BC: Danielle Courcelles

Environmental Dynamics Inc (EDI): Graeme Paterson, Leslie Chamberlist, Matthew Van Osch

Impact Assessment Agency of Canada (IAAC): Mathieu Trudelle, Shannon Wallace, Carl Johansson

Environmental Assessment Office (EAO): Clayton Smith, Chris Parks, Warren Fekete

Ministry of Mining and Critical Metals (MCM): Rachel Taylor

Ministry of Environment and Climate Change Strategy (ENV): Breanne Hill

Ministry of Water, Land and Resource Stewardship (WLRS): Duncan McColl

Photo 113325-5. Excavation ongoing within the ore body/open pit.

Photo 113327-3. Overview of completed portion of LGO stockpile pad.

Photo 113324-2. Area recently cleared to accommodate development of Borrow Pit 4 as a source of additional 'zone s' till material to be utilized for further expansion of the LGO stockpile pad.

Photo 113344-3. High-grade ore stockpiled on the ROM pad being fed into the conveyor/crusher system.

Photo 113363-5. Overview of high-grade ore dust generation from conveyor drop point at the Plant Site on March 19, 2025.

Photo 113338-5. Example of high-grade ore dust accumulation ontop of snow at the Plant Site on March 18, 2025.

Photo 113340-6. Example of high-grade ore dust accumulation on top of snow northeast of plant along roadway towards operations camp on March 18, 2025. Plant Site location on top of hill in photo.

Photo 113363-3. Overview of high-grade ore dust (brown staining on snow) at Plant Site from vantage point at KM 126.5 on the Kluskus access road on March 19, 2025. Photograph provided by Stellat'en First Nations representative to IEM team on March 19, 2025.

Photo 113342-1. Sack of calcium hydroxide (hazardous material) observed stored outside of secondary containment at the Plant Site.

Photo 113331-3. Bin holding an unknown liquid adjacent to the lime silo at the Plant Site. Confirmed by BWG on March 22, 2025, to be water and grit/rock pieces from screen within silo.

Photo 113349-5. Hydrocarbon stains (dark spots) on ground at the fuel and lube truck staging area at the Mobile Maintenance Yard.

Photo 113343-1. Turbid water accumulated within the sump installed adjacent to Watercourse 146 on the access road to the Operations Camp. Approximate pathway of watercourse indicated on photo.

Photo 113345-3. Crews removing turbid water accumulation in sump adjacent to Watercourse 146 (as seen in photo 113343-1) to prevent overtopping.

Photo 113330-1. PAG material being placed at the PAG Dump. Approximate centerline of former Davidson Creek Diversion Structure (now under water) indicated on photo.

Photo 113323-2. Overview of lower portion of the Tailings Storage Facility. Water levels continue to increase and back up into the former Davidson Creek valley (left side of photo).

Photo 113351-2. Overview of snow filled north diversion ditch. Plowed access not available at time of visit due to recent snowfall, however BWG plan to re-establish access imminently.

Photo 113364-8. Observing BWG staff collect a surface water sample at Fawnie Creek located at approximately 141.5km on the Kluskus Forest Service Road.

Photo 113365-2. BWG staff attempting to collect a surface water sample at Turtle Creek (located at km marker 119 on the Kluskus Forest Service Road), however, stream is frozen to bed and sample unable to be collected.

Work Space Locations

Legend

- Mine Access Road
- Watercourse
- Waterbody
- 1, Security Gate
- 2, Central Water Transfer Pond
- 5, Sediment Control Pond
- 6, Operations Camp
- 7, Water Management Pond
- 8, Mobile Maintenance Yard
- 9, Plant Site
- 11, Heavy Equipment Assembly Pad
- 13, Lake 15/16 Fish Compensation Channel
- 14, Explosives Magazine
- 15, Low Grade and High Grade Ore Stockpile (approx. location)
- 16, Run of Mine Pad
- 17, North Diversion Channel
- 18, Interim Environmental Control Dam
- 3, Davidson Creek Diversion Structure
- 4, Tailings Storage Facility Dam
- 12, Future Open Pit

0 0.5 1 1.5 2
Kilometres

Map Scale = 1:30,000 (printed on 11 x 17)
Map Projection: NAD 1983 UTM Zone 10N

Data Sources
• Workspaces. EDI Environmental Dynamics Inc. December 9, 2024.
• Main Basemap. CanVec 1:50,000: Government of Canada; Sentinel-2 Level 2A RGB T09UYV September 4, 2024. Contains modified Copernicus Sentinel data 2024 processed by Sentinel Hub.

Disclaimer
EDI Environmental Dynamics Inc. has made every effort to verify this map is free of errors. Data have been derived from a variety of digital sources and, as such, EDI does not warrant the accuracy, completeness, or reliability of this map or its data.

Drawn:	Checked:		
CT/OL	GP	Map 1	Date: 2024-12-09

EDI

Path: L:\PROJECTS\2021\NBC\21P0403_BlackwaterMine\21P0403_BlackwaterMine.aprx\21P0403_Blackwater_IEM_20241209

NOTES:

1. DCDS Pump Station is included for reference. System will be decommissioned and relocated prior to day 0.

372 000 E
373 000 E
374 000 E
375 000 E
376 000 E
377 000 E
378 000 E
379 000 E
5 901 000 N
5 900 000 N
5 899 000 N
5 898 000 N
5 897 000 N
5 896 000 N
5 895 000 N
5 894 000 N
5 893 000 N

DOWNSTREAM ESKER
DOWNSTREAM ESKER ACCESS TRAIL
FWR ACCESS TRAIL
FRESH WATER RESERVOIR
INTERIM ENVIRONMENTAL CONTROL DAM
TS-6
DAM C ESKER
TS-4B
TAILINGS STORAGE FACILITY - STAGE 1
BORROW PIT 2
NORTH DIVERSION CHANNEL
DCDS PUMP STATION Ref. Note 1
IECD ACCESS ROAD
E-TRAIL
BORROW PIT 4
TF
C-TRAIL
EXPLORATION ACCESS ROAD
NORTH COLLECTION CHANNEL
BORROW PIT 3
MINOR DIVERSION CHANNELS
A-TRAIL
BORROW PIT 1
WATER MANAGEMENT POND DISCHARGE PIPELINE
TW 13-02
TW 13-03
CHOKE STN 1
CENTRAL WATER TRANSFER POND
CHOKE STN 1
Km 15 WELL
WATER MANAGEMENT POND
TS-3
SOUTH COLLECTION CHANNEL
MOBILE MAINTENANCE & WAREHOUSING LAYDOWN
OPERATIONS CAMP
Km 15 WELL
CHOKE STN 3
WASTE ROCK STOCKPILE
RUN OF MINE PAD
METAL TREATMENT COLLECTION POND
TW 13-01
TS-2 ACCESS
ACCESS ROAD
EXPLOSIVES MAGAZINE ACCESS ROAD
METALS WTP
TW 13-04
RCH071
PROCESS PLANT
EXPLORATION CAMP
WW 10-01
WW 11-01
TS-2
EXPLOSIVES MAGAZINE
CONSTRUCTION CAMP
PW 13-1
LOW GRADE & HIGH GRADE ORE STOCKPILE
MINING FLEET ASSEMBLY AREA
PIT AREA
PW 13-3
N
W
E
S

Reference Drawing Name	Drawing Code
Gold Processing Plant	BWST1-0200-GEN-GAD-0001_01
Blackwater Project Exploration Camp Construction	BWST1-1100-GEN-GAD-0001
Construction Camp - Layout	BWST1-1200-ARC-GAD-0001
Blackwater Gold Wastewater Treatment Plant - General Arrangement	BWST1-1340-MEC-GAD-0001
Erosion & Sediment Control Plan - Plant Site - General Arrangement	BWST1-2310-CIV-DWG-3810
Tailings Storage Facility - Main Dam C - Stage 1 General Arrangement	BWST1-2800-CIV-DWG-1002
Tailings Storage Facility Water Management Pond - General Arrangement	BWST1-2700-CIV-DWG-1130
Water Management Central Diversion System Water Transfer Pond Plan	BWST1-2550-CIV-DWG-3140
Fresh Water Reservoir Site Overview Plan - General Arrangement	BWST1-2900-CIV-DWG-4001
Taillings Storage Facility Davidson Creek Diversion System - Pump Station Layout	BWST1-2110-MEC-DWG-1160
Tailings Storage Facility Main Dam C Diversion Berm - Plan and Profiles	BWST1-2110-CIV-DWG-1105
Tailings Storage Facility - Main Dam C - Interim Environmental Control Dam - Plan And Profile	BWST1-2600-CIV-DWG-1410
Tailings Storage Facility Main Dam C Sediment Control Pond Inlet Channels - Plan and Profiles	BWST1-2820-CIV-DWG-1402
Water Managment Central Diversion System North Collection Channel - Plan and Profile	BWST1-2510-CIV-DWG-3110
Water Management Central Diversion System North Diversion Channel - Plan and Profile	BWST1-2520-CIV-DWG-3120
Water Management Central Diversion System South Diversion Channel - Plan and Profile	BWST1-2530-CIV-DWG-3130
Water Management Topsoil Stockpiles TS-2 Collection Channel - Plan, Profile and Sections	BWST1-7220-CIV-DWG-3755
Water Management Topsoil Stockpiles TS-2 Diversion Channel - Plan, Profile and Sections	BWST1-7220-CIV-DWG-3756
Water Management Topsoil Stockpiles TS-4B Collection Channels - Plan, Profile and Sections	BWST1-7250-CIV-DWG-3765
Water Management Topsoil Stockpiles TS-6 Collection Channel - Plan, Profile and Sections	BWST1-7270-CIV-DWG-3781
Water Management Topsoil Stockpiles TS-6 Diversion Channel - Plan, Profile and Sections	BWST1-7270-CIV-DWG-3787
WMS Access Trails	BWST1-1400-CIV-DWG-0050-0088
Roads and Pipelines, Overview and Details	BWST1-0000-CIV-GAD-0002-0009
Blackwater Gold Project Site Power Distribution 25kV Overhead Power Line Proposed Route Layout Plan	BWST1-6410-ELE-GAD-0001

Lakes:
Rivers & Streams:
Light Vehicle Access Roads:
Exploration Trails:
CPD:
OH 25 kV: O/H
OH 230 kV: O/H
Pipelines:
Major interval: 25m,
Minor interval: 5m: 25

Revision #	Revision Note	Date
M	Updated R-Pad, Fuel Bay, Roads, and Pipelines	07/27/2023
L	Removed Natural Pond & Diversion Channel	07/14/2023
K	Permanent Camp Access, Pipeline Updates	06/16/2023
J	Addressed Markups, Updated TF's & kV Lines	05/27/2023
I	Addressed Markups	05/19/2023
H	Addressed Markups, Updated Various Items	05/15/2023
G	Added Potable Water Treatment Plant	05/05/2023
F	Revised Process Plant and Access Road	04/21/2023
E	Addressed Markups	03/14/2023

Client Approval By:

ARTEMIS GOLD INC

Blackwater Mine — General Overview Day 0

McElhanney

McElhanney Ltd.
100, 402 - 11th Avenue SE
Calgary, AB
T(403)245-4711 F(403)229-9160

Drawing Number: BWST1-0000-CIV-GAD-0001_02

Acad File: Blackwater GAD_RevM.dwg | Drafted by: KAK | Checked by:SAB

Scale: 1:10,000

100 0 100 200 300 400 500

DATE: 2023-07-31 - 09:19 FILE: X:\2241\21295-03 Blackwater - Site General Arrangement\10.0 Drawings\10.1 Engineering\10.1.3 Models\Blackwater GAD_RevM.dwg

ID	Hazard/ Incident Date Time	Brief Description	Location	Department	Select the immediate actions taken?	Initial Hazard or Incident details	Spilled Fluid Details	Is the spill near a creek or water body if applicable?	Regulatory Reporting Status	Material Disposal Site	Media Affected by spill	Spill Cause	Spill Clean Up Date	Spill Source	Spilled Fluid Quantity (Liters)
2547	2/23/2025 11:00	Wind caused spill tray to flip over spilling roughly 2 litres of oil on ground. Spill will be cleaned up and disposed of within the hour	Back of MSA yard by cat rentals	Marmac	Spill pads and clean up	Hazard/Incident Date: 2025-02-23 11:00 AM; Reported by -	Employed by: , Hazards	Incident Details: ; Wind caused spill tray to flip over spilling roughly 2 litres of oil on ground. Spill will be cleaned up and disposed of within the hour Immediate Actions Taken - Spill pads and clean up ,	Engine oil	No	Not Required	Scraped oil off of ground and put in contaminated soil bin	Snow and soil	Wind	2/23/2025	Semi truck	2 litres
2533	2/21/2025 11:30	Operator notice small drip coming from machine stopped	LG stock boil pad, 3701 Operator notice small leak dripping, parked machine put spill pad down, called it into dispatch	Earthworks	Contain spill, reported it to dispatch and supervisor, waiting for mechanic to come repair. Spill pads were disposed of in appropriate bin	Hazard/Incident Date: 2025-02-21 11:30 AM; Reported by	Employed by: , Hazards	Incident Details: Operator notice small drip 3701 part to put spill pads down, called it into dispatch. Let a supervisor know.; Immediate Actions Taken - Contain spill, reported it to dispatch and supervisor, waiting for mechanic to come repair,	Hydraulic oil one litre	No	Not Required	Mechanic take pads to bin	Spill pads	Hydraulic fitting	2/21/2025	Hydraulic line	One litre
2545	2/20/2025 15:10	Approximately 20 liters of coolant was spilled, it was all shoveled up into a bucket and disposed of correctly.	Back of the msa	Heavy Metal Equipment	spill tray went down immediately, and shoveled up off the ground.	Hazard/Incident Date: 2025-02-20 15:10 PM; Reported by - Employed by: , Hazards	Incident Details: engine was being removed and some coolant spilt when engine was coming out, they put a spill tray down immediately and then shoveled all the contaminated snow into a bucket and disposed of it in the proper waste bin.; Immediate Actions Taken - spill tray went down immediately, and shoveled up off the ground. , Recommended Action - before removing a engine we will be laying tarps down under the work area.	coolant	No	Not Required	all contaminated snow went into the contaminated waste bin	snow	engine removal	2/20/2025	radiator	20 liters
2537	2/19/2025 0:00	0.4 Litre Coolant Spill Under Fuel Wagon	Mobile Maitenance	Environmental	Contaminated snow and material was cleaned up and disposed of in appropriate bins. Spill tray was deployed.	0.4 L Coolant Spill noted during IEM inspection under parked fuel wagon.	Coolant	No	Not Required	Hydrocarbon impacted bin	snow	human error	2/19/2025	parked fuel wagon	0.4 litres
2538	2/19/2025 0:00	0.2 L coolant spill under flat deck truck	Mobile Maitenance	Environmental	Contaminated soil and snow were cleaned up and disposed of in appropriate hazardous waste bins. Spill tray was deployed.	0.2 L coolant spill under flat deck truck observed during IEM inspection	Coolant	No	Not Required	Hydrocarbon impacted bin	snow	human error	2/19/2025	Flat deck truck	0.2 litres
2523	2/14/2025 6:40	I was filling the grease keg on ex316 when the end of the grease hose broke and grease went over the ground	In the ore body	Big Country Equipment Repair	Clean up spill with rags	Hazard/Incident Date: 2025-02-14 06:40 AM; Reported by -	Employed by: , Hazards	Incident Details: , fuel and lube ; Immediate Actions Taken - Clean up spill with rags, Recommended Action - No	Grease	No	Not Required	Hydrocarbon impacted bin	Ground	Hose broke	2/13/2025	Fuel truck	5 liters
2518	2/8/2025 6:50	Minor Spill (1L) of coolant at the drill.	FTE Drill Pattern (Grade Control)	Mine Geosciences	Cleaned up and disposed of spill pad materials	Hazard/Incident Date: 2025-02-08 06:50 AM; Reported by -	Employed by: , Hazards	Incident Details: Upon the morning inspection of the drill, the geologist noticed that there was a minor leak at the back of the drill. He notified the supervisor and they immediately cleaned the spill.; Immediate Actions Taken - Cleaned up and disposed of spill pad materials, Recommended Action - N/A	Coolant	No	Not Required	Environmental bin	Unconsolidated rock	Hose was loose	2/8/2025	Coolant tank on back of drill	~1L
2511	2/6/2025 20:40	Small spill while filling dozer CR397	Lgo	Mobile Maintenance	Spill cleaned up and reported to supervisor	Hazard/Incide	Employed by: , Hazards	Incident Details: Marking saying top fill only was faded, so I bottom filled the dozer and the auto shut off did not work ; Immediate Actions Taken - Spill cleaned up and reported to supervisor , Recommended Action - Repair auto shut off on machine. So the next time the marker fades the auto shut is working.	Diesel	No	Not Required	GFL contaminated soils bin	Small amount of soil	Auto shutoff system not functioning	2/6/2025	Fuel tank	5L
2509	2/5/2025 12:50	At around 12:50pm drill 13 was drilling on the 1610-005 pattern, operator lost feed function and noticed a leaking hydraulic line leaking. Operator shut off drill and put spill pads underneath to catch the dripping oil.	1600-005 Pattern	JDS Drilling	Drill shut off immediately, contacted supervisor, placed spill pads under the drill	Hazard/Incident Date: 2025-02-05 12:50 PM; Reported by -	Employed by: , Hazards	Incident Details: While drilling on the 1600-005 pattern with drill 13 the operator lost up feed function , noticed a leak on one of the hydraulic lines behind the mast. Stopped the drill and put spill pads underneath the drill to catch any oil leaking to the ground.; Immediate Actions Taken - Drill shut off immediately, contacted supervisor, placed spill pads under the drill.,	Hydraulic oil	No	Not Required	Spill pads placed under drill 13, pads disposed of in oil containment bin	Bench in pit	hose failure	5-Feb-25	Hydraulic line	40L

Blackwater Gold Mine
IEM Site Visit Report 030
May 12 – 13, 2025

Prepared By
EDI Environmental Dynamics Inc.
3810 18th Ave
Prince George BC V2N 4V5

EDI Contacts
Graeme Paterson, PAg, CPESC
Leslie Chamberlist, PAg, CPESC
Independent Environmental Monitor Leads

EDI Project
21P0403
May 2025

mPRO

EDI
ENVIRONMENTAL DYNAMICS INC.
Down to Earth Biology

This page is intentionally blank.

1 PROJECT OVERVIEW

The Blackwater Mine Project is being developed by Blackwater Gold Limited (BWG), a subsidiary of Artemis Gold Inc. (Artemis). The Environmental Assessment Certificate (EAC) M19-01 was issued on 21 June 2019 and Condition 12 of the EAC requires the Holder to retain the services of an Independent Environmental Monitor (IEM) to observe, record for, and report to the BC Environmental Assessment Office (EAO) and Aboriginal Groups on compliance with the Certificate; and provide information to the EAO and Aboriginal Groups, BC Ministry of Energy, Mines and Low Carbon Innovation (EMLI) , BC Ministry of Environment (ENV), and BC Ministry of Forests (MOF) as directed by EAO.

A Decision Statement issued under Section 54 of the Canadian Environmental Assessment Act (CEAA 2012) for the Project was issued on 15 April 2019. Condition 9 of this Decision Statement requires the Proponent to retain an IEM who shall advise the Proponent, the Agency, and Indigenous groups if, in their view, the activities do not comply with the conditions set out in the Decision Statement. The IEM shall also advise the Proponent, the Agency, and Indigenous groups whether measures should be taken in respect to these activities. IEM reports are prepared to satisfy both EAC and CEAA conditions.

1.1 SITE VISIT SUMMARY

The IEM team completed a site visit on May 12 – 13, 2025, with representatives from the Stellat'en First Nation and the BWG Environmental team.

Summaries of the site locations visited, and subsequent activities, observations, and ongoing matters are described in the tables below.

Site Visit Summary

Date (dd/mm/yyyy)	IEM Team On-site Personnel	Monitoring Sites/Inspection Focus
12/05/2025	Leslie Chamberlist	Ore body, North Diversion Channel, Water Management Pond, Interim Environmental Control Dam, C-Trail Access Road, Plant Site, Tailings Storage Facility, and the Central Water Transfer Pond. Inspections focused on water management, and erosion and sediment control.
13/05/2025		Workers Accommodation, Mine Access Roads, and the Plant Site. Inspections focused on waste management, erosion and sediment control, water management, PAG management, and air quality management.

Activities/Observations (Record ID #s included in this table correspond to the Environmental Issue Tracking Log record ID #s)	Non-Compliance Observed?
Open Pit/Ore Body	
The IEM team completed a visit to the ore body/open pit and observed the excavation and benching of slopes (Photo 113686-1).	No
Plant Site	
On May 5, 2025, the IEM team noted a press release on the Artemis website (dated May 2, 2025), announcing the Mine had entered 'commercial production.' The IEM reached out to BWG to confirm this meant the project had entered its 'Operation Phase' as defined in the Project's Environmental Assessment Certificate (EAC). On May 5, 2025, BWG provided confirmation the Project was now in the Operations Phase. The IEM team continues to discuss notification requirements associated with the transition between Project phases internally and with BC EAO and IAAC.	No
Following the observation of dust generation and deposition from the drop point on the conveyor during the site visit in March 2025 (as detailed in IEM Report 028), a request for information (RFI) inquiring whether spray bar sprinklers (as described in Section 8.2 of the Air Quality and Fugitive Dust Management Plan) were being used at the material transfer points on the primary and secondary crusher circuits, conveyors, and stockpile drop points. In a response provided on April 19, 2025, BWG indicated spray bar dosing stations are currently installed on the conveyor (at both crusher screen discharge chutes) and that a cold temperature reagent (known as 'IPAC') is being added for dust suppression during periods of cold temperatures. In addition, it was detailed that water trucks have been used at the primary crusher to apply water to material prior to processing when above freezing temperatures permit. Section 8.2 of the Air Quality and Fugitive Dust Management Plan details that spray bar sprinklers will be installed as a mitigation measure at material transfer points to limit dust emissions and identifies stockpile drop points as a location where this will be applied. As stockpile drop points are described as a location where spray bar sprinklers will be installed, the IEM submitted a follow up RFI to inquire if sprayers are currently present at the stockpile drop point at the terminus of the plant site conveyor. **This item is held over from the two previous reporting periods (IEM Reports 028 and 029).** **Update on this matter for IEM Report 030**: On April 26, 2025, BWG provided a response which indicated there are no spray bars present at the end of the conveyor and that currently they are only installed at the discharge chutes onto the conveyor. BWG further advised that additional spray bar locations are being reviewed as seasonal temperatures have increased. The IEM team continues to discuss this matter both internally and with BC EAO.	No
Dust generated and transported by wind from the Plant Site to nearby slopes, roadways, and laydowns that was observed during the March 2025 site visit (as detailed in IEM Report 028) is sourced from high-grade ore material, which is designated as potentially acid generating (PAG) material (per Section 6.3 of the Metal Leaching and Acid Rock Drainage (ML/ARD) Management Plan) and can lead to acidic drainage with elevated concentrations of metals and sulphates. As the dust generated is composed of PAG material and has deposited around the Plant Site and surrounding area, the IEM submitted a request to have BWG's qualified professional in acid rock drainage (QP-ARD) review and comment on the potential that the observed deposition of PAG material dust across large areas of the site may cause impacts to the soil or downstream watercourses once the material becomes mobile following snow melt, rain events, or continued wind transport and deposition. On April 19, 2025, BWG indicated a QP-ARD had been engaged to review the dust accumulation at the plant site and surrounding area and that samples of snow/dust had been collected for lab analysis. BWG indicated that results of the QP-ARD review and analysis of the sample collection would be incorporated into a technical memorandum from the QP-ARD. In the meantime, BWG indicated dust deposition (and any mobilization from melt water) within the plant site would be contained by the perimeter ditching which directs it to the Plant Sediment Control Pond (PSCP). Water within the PSCP will be pumped back into the plant to be used for processing and will not be discharged to the environment. Additionally, BWG indicated downstream sampling frequency would be increased in the coming months. **This item is held over from the two previous reporting periods (IEM Reports 028 and 029).** **Update on this matter for IEM Report 030**: BWG provided a technical memorandum authored by their QP-ARD (Lorax) to the IEM team on May 5, 2025. The document detailed an estimated total of 1.2 tonnes of dust, covering an area estimated at approximately 1.3km^2, had been distributed during the period between January 1 and April 30, 2025. Of the estimated dust impacted area, approximately 0.13 km^2 is within the Plant Site area where (as detailed within the memo) any potentially impacted drainage will be captured by catchment ditches and collection ponds (Plant Site sediment control pond, and Event Pond). The remaining estimated 1.2 km^2 of area impacted by dust is located outside of the plant site with drainage reporting to a tributary of Creek 661 (known locally as 'Stream 505'). Creek 661 ultimately flows off the Mine site and into Tatelkuz Lake. The memo detailed results of the samples of snow/dust collected around the plant site that show pH values consistent with rainwater (pH 5.6). Metal concentrations within the samples were reported to be high (though still within ranges reported for ore samples within the baseline data set for the site) and as a result, the memo indicated that undiluted snowmelt from the area near the Plant Site will have elevated metal concentrations. It was noted the most impacted areas (near the Plant Site) would be captured within the catchment ditches and collection ponds immediately surrounding the area. The QP-ARD indicated that some impacts from the dust may be observed in headwater drainages, however the load from the dust is anticipated to not be detectable further downstream with concentrations returning to near baseline at sample location 661-10 located within the Creek 661 watercourse. The memo advised the existing BWG sediment and water sampling programs in place are expected to capture any potential impacts downstream of the Project site, however, a recommendation was made to complete additional water quality and surface soil sampling to further investigate the potential impact of the dust within the site water. BWG have notified the IEM team the additional sampling recommended by the QP-ARD will be implemented. The IEM team has attached the QP-ARD memorandum to this report and will defer to BC EAO and IAAC (or any other appropriate regulatory authority) for any follow up related to the compliance of the approach being undertaken by BWG related to the management of PAG material dust at the Plant Site.	No
The IEM team completed a visit to the Plant Site sediment pond where BWG confirmed water is being used in the Plant for process water and is not being discharged to the environment (Photo 113700-1).	No

The IEM team completed a visit to the crusher conveyor circuit where the dust suppression (water sprayers) was being applied to material at the base of the conveyor (Photo 113701-1). In addition, and similar to the previous site visit in April (detailed in IEM Report 029), a low drop height between the end of the conveyor and the stockpile of high-grade ore was observed to aid in minimizing dust generation (Photo 113701-2).	No
Mobile Maintenance Yard	
During the previous site visit in April 2025 (as detailed in IEM Report 029), a hydrocarbon spill to ground was observed beneath a pump unit staged within the laydown (Record ID-113522). **This item is held over from the previous reporting period (as detailed in IEM Report 029).** **Update on this matter for IEM Report 030:** Confirmation the spill had been cleaned up was provided on May 1, 2025.	Closed
Water Management Infastructure	
During the previous site visit in March 2025 (as detailed in IEM Report 028), the pump at the Central Water Transfer Pond (CWTP) was observed to not be in operation. This pump is used to divert water to the Davidson Creek discharge point as part of the maintenance of permitted downstream flow levels. Following onsite discussions, the IEM understands the pump had mechanical issues that required repair and that this would be completed shortly. BWG staff indicated that under normal circumstances, if water could not be pumped from the CWTP to Davidson Creek then water from the Water Management Pond (WMP) would be directed to supplement downstream flows. The IEM understands that at the time of the site visit BWG was not discharging water from the WMP to the Davidson Creek system due to concerns with elevated turbidity of the water within the pond. As a follow up measure, the IEM submitted an RFI inquiring if the project remains in compliance with Section 3.8 of the Federal Decision Statement (FDS) and the *Fisheries Act* Authorization (which detail that the Project shall maintain in-stream flow needs in Davidson Creek during all phases of the project) during periods of time where no water is being discharged from the CWTP or the WMP to Davidson Creek. BWG provided a response on April 2, 2025, which detailed that in February 2025, flow levels within Davidson Creek had been documented below the in-stream flow requirements detailed in the project's *Fisheries Act* Authorization (FAA) and that these instances had been reported to Fisheries and Oceans Canada (DFO) in accordance with the projects FAA reporting schedule. As the response from BWG received on April 2, 2025 indicated the project had not been in compliance with the FAA, and, because the Project's FAA is associated with the FDS (within the IEMs purview), a follow up RFI was submitted on April 2, 2025, inquiring whether the non compliance had been reported to the Impact Assessment Agency of Canada (IAAC) and accompanying nations detailed under the FDS. Additionally, the IEM requested details about which days the project has not met the FAA/FDS requirements for discharge to Davidson Creek, how often flow rates are sampled/monitored (for example, continual flow data or spot check), and confirmation water discharges are now back within compliant ranges. **This item is held over from the two previous reporting periods (IEM Reports 028 and 029).** **Update on this matter for IEM Report 030**: Responses from BWG were provided to the IEM team on May 14, 2025, which provided additonal details related to this matter. The dates identified where instream flow needs (IFN) within Davidson Creek were unable to be met were confirmed to be on February 6, 7, 9 and March 14 and 15, 2025. BWG confirmed since March 15, 2025 there have been no instances of flow data below the IFN requirements. BWG detailed continuous flow data is recorded in Davidson Creek during open water seasons. During winter conditions, due to ice build up and the rating curve between stream levels and flow rates becoming inapplicable, handheld flow measurements are taken weekly. In response to the IEM inquiries relating to the notification requirements to IAAC (and accompanying First Nations), BWG detailed they are required to report annually to IAAC, including during scenarios when flow measurements fall below IFN within Davidson Creek and that the reporting requirements under which IAAC must be notified are detailed within Table 7-1 of the Accidents and Malfunctions Administration and Communication Plan (AMACP). Upon consulting Section 7, Table 7-1, and Table 2.2-3 of the AMACP (which are all portions of the document that work in concert to form the external reporting requirements referenced in BWGs response), the IEM team noted an example of a water supply system (pump failure) specifically detailed within Table 2.2-3, which was classified as being an incident with a 'moderate' level of consequence. Accidents/malfunctions classified as 'moderate,' are, in accordance with Table 7-1 of the AMACP, required to be reported within 24 hours to Indigenous Monitors, EMC Members, Health Emergency Management BC, IAAC, and BC EAO. As it is the understanding of the IEM team that IAAC (and potentially other required parties) were not reported to within 24 hours of events related to IFNs within Davidson Creek being out of compliance on February 6, 7, 9 and March 14, and 15, 2025, (as required for 'moderate' level events in Table 7-1), a non-compliance was issued for failure to notify external parties in accordance with Table 7-1 of the AMACP. This item will remain open until the IEM team has received confirmation from BWG that all parties requiring 24-hour notice in Table 7-1 have been notified of this series of incidents.	Yes
BWG have recently completed the installation of electric powered pumps at the central water transfer pond (CWTP) to facilitate discharge of water into the Davidson Creek system to meet IFN (Photo 113688-2.). Following onsite discussions, the IEM team understands BWG is anticipating fewer problems with pump freeze up (as was seen during periods this spring) following the installation of the more robust system of pumps.	No
Water flow was observed within the southern collection channel, which has connectivity to the CWTP. BWG advised that when elevated turbidity levels are observed in the channel, flows are pumped from behind a dam structure within the ditch line to the tailings storage facility to prevent turbid water from flowing into the CWTP and potentially impacting the quality of water being utilized to maintain downstream flows in Davidson Creek (Photo 113688-1).	No
The IEM team visited the water treatment plant (clarifier) which has been installed adjacent to the Water Management Pond (WMP) (Photo 113697-2). The treatement plant was not operating during the visit, and following onsite discussions, the IEM understands the plant is used only in circumstances when discharge of water directly to Davidson Creek (to maintain IFNs) is required.	No

The IEM team completed a visit to the North Diversion Channel (NDC) to observe the erosion and sediment control (ESC) measures implemented by BWG since the previous visit in April 2025 which included: contouring of exposed soils and the previously observed large stockpiles in the area away from the ditch line on the low side (Photo 113690-1), applying a rough and loose surface application to the slope adjacent to the lower extents of the ditch (at its discharge point to Watercourse 668) including top soil and seed applications (Photo 113691-3), installation of ESC blanket along portions of the upstream side of the ditch (Photo 113691-4), and runoff capture on the low side of the road running adjacent to the ditch line to keep construction contact water away from the NDC. At the time of the visit, water was observed to be running clear within the NDC, and following conversations with BWG, the IEM understands to date, there have been no turbid water releases from the NDC into Watercourse 668.	No
Tailings Storage Facility	
Crews have commenced with clearing on the eastern end of the tailings storage facility (TSF) dam in preparation for expanding the structure. BWG confirmed it had completed pre-clearing surveys (bird and wildlife feature sweeps) in advance of works commencing.	No
Mine Site Access Roads	
Upon arrival to the security gate during the site visit conducted in April 2025 (as detailed in IEM Report 029), BWG staff advised they had identified (earlier that morning) a location where turbid runoff in the ditch lines along the road to the Operations Camp was discharging into the fish salvaged portion of Watercourse 146, which passes beneath the roadway and ultimately reports to the fish bearing Chedakuz Creek downstream (Photos 113513-9 and 113513-10). It was determined the source of the water was from an area of snow melt along the upper portion of the roadway. Upon discovery, BWG actioned the installation of temporary ESC measures within the ditch line (including straw wattles and sandbags), arranged an excavator to be brought to the area to help with water management, and collected a downstream water quality sample. An excavator arrived onsite in the late afternoon (approximately 5pm) on April 15, 2025, and worked into the evening to complete the installation of a ditch block and cutoff ditch to direct the melt water into a nearby vegetated area (Photos 113513-3 and 113513-4). During a visit to Watercourse 146 the following morning, flows were observed to be less turbid (Photo 113513-5). BWG indicated a follow up water sample would be collected later that morning to confirm whether they remained within BC Water Quality Guidelines (BCWQG) for turbidity (in accordance with Table 15.6-1 of the Construction Environmental Management Plan) and indicated the ditch line would continue to be monitored through the spring melt period. Additionally, BWG indicated that their qualified professional in erosion and sediment control (QP-ESC) would inspect the measures installed in this area during a future site visit to confirm whether they were sufficient, or if additonal measures were required. The IEM submitted a follow up RFI on April 22, 2025, to have BWG confirm the follow up water quality sample was collected, and detail whether exceedances of BCWQG for turbidity had occurred as a result of this event. The IEM team continues to await a response from BWG. **This item is held over from the previous reporting period (IEM Report 029).** **Update on this matter for IEM Report 030:** BWG provided a response on May 14, 2025, which confirmed samples taken after the implemented mitigations (and within 24 hours) had shown there had been no exceedance related to BCWQG as detailed in Table 9-1 of the Surface Erosion Prevention and Sediment Control Plan. The IEM team also completed a follow up visit to this location and noted flows within the watercourse continue to be at low turbidity levels (visual inspection). In addition, BWG have recently completed the installation of some additional ESC measures adjacent to the watercourse on the upstream side of the road crossing (Photo 113699-1).	No
The IEM team completed a follow up visit to kilometer (km) 9.5 along the C-Trail access road to the bridge over Watercourse 686 where it was noted in the previous IEM Report (IEM Report 029) that repair to the slope and some previously installed ESC measures upstream would likely soon be required. During the visit the IEM noted a number of repairs and improvements to the area had been made including implementing grading above the slope to keep water from running down its surface (Photo 113696-2), installation of additonal ESC blankets on the slope (Photo 113696-3), and replacing the previously installed (and sediment loaded) sediment fencing (Photo 113696-3).	No

Notable Environmental Incidents

Record ID No(s).	Date (dd/mm/yyyy)	Location	Description of Event
113752	14/05/2025	Partisol Air Monitoring Instrument (near Operations Camp)	On May 14, 2025, it was reported that the Q1 Partisol (air quality instrumentation for particulate matter samples) minimum sampling frequency was not met. BWG reported the incident to the Ministry of Environment and Climate Change Strategy (ENV). Additional information on this matter can be found in the attached copy of the Environmental Incident table provided by BWG (see record ID 2638).
113571	19/04/2025	DC-05 compliance sample location within Davidson Creek	On April 19, 2025, it was reported that total suspended solids (TSS) exceedances had occurred at the DC-05 compliance point within Davidson Creek for the period between March 12-15, 2025. BWG indicated the incident was reported externally. The IEM requested additional information related to this incident. **This item is held over from the previous IEM Report for April 2025 (IEM Report 029).** **Update for IEM Report 030**: BWG provided a response on May 4, 2025, that provided additional detail relating to this incident. BWG advised that a volume of approximately 17,000 m^3 of turbid water had been discharged from the Water Management Pond to Davidson Creek during the period between March 12-15, 2025 due to issues with the water treatement system associated with the pond. This matter was reported to the Ministry of Mining and Critical Minerals (MCM) (in accordance with Permit M-246), the L'hoosk'uz Dene Nation, Ulkatcho First Nation, and Nechako First Nations on April 4, 2025. The follow up report detailing the incident can be found attached to this report.

Environmental Issue Tracking Log – Open Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)
113346	14/05/2025	Failure to notify external parties of a 'moderate level' incident (as detailed and described in Tables 2.2-3 and Table 7-1 of the AMACP) within 24 hours related to the instances on February 6, 7, 9 and March 14 and 15, 2025 when the instream flow needs (IFN) within Davidson Creek were unable to be accommodated as a result of pump failure (freezing).	Provide confirmation all parties (including Indigenous Monitors, EMC Members, Health Emergency Management BC, IAAC and BC EAO) have been notified of instances when IFN within Davidson Creek were out of compliance on February 6, 7, 9 and March 14 and 15 in accordance with Section 7 of the AMACP.	31/05/2025

Environmental Issue Tracking Log – Closed Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)	Follow-up	Completed Date (dd/mm/yyyy)
113522	15/04/2025	Hydrocarbon spill to ground beneath a pump unit staged at the Mobile Maintenance Yard.	Clean up and dispose of contaminated material in accordance with Section 9.2 of the Fuel Management and Spill Control Plan.	26/04/2025	Confirmation the spill had been cleaned up was provided on May 1, 2025.	01/05/2025

Upcoming Construction Activities

Summary of Activities	Anticipated Start Date
-	-

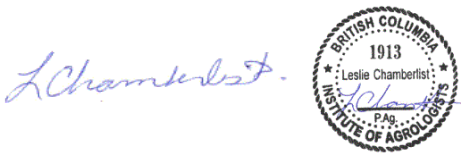
Key Communications

Date (dd/mm/yy)	Communication Type	Personnel	Communication Summary
-	-	-	-

Yours truly,

EDI ENVIRONMENTAL DYNAMICS INC.

Graeme Paterson, P.Ag, CPESC
Independent Environmental Monitor Lead



Leslie Chamberlist, P.Ag, CPESC
Independent Environmental Monitor Lead

ATTACHMENTS:

- Photos
- Site Overview map
- Summary of Previous Month (April 2025) Environmental Incidents (provided by BWG)
- TSS Exceedance to Davidson Creek – follow up report
- QP-ARD Technical Memo – PAG dust at Plant Site

Distribution List:

Blackwater Gold (Artemis): Tim Donnelly, Adam Gyorffy, Mark Warbanski, Ryan Todd, Sam Lynch, Steven Hayward, Norm Fraser, Jessica Saunders, Quain Sulin, Randall Hennigar, Linda Siwallace

Ulkatcho First Nation: Alyisha Knapp

Lhoosk'uz Dene Nation: Laurie Vaughn

Stellat'en First Nation: Doug Casimel, Deane Carlson, Taneesha Raymond

Saik'uz First Nation: Kasandra Turbide, Howard Alexis

Nadleh Whut'en First Nation: Kristen Chapman, Pam Ketlo

Nazko First Nation: Stephanie Deneault, Terrance Paul, Florian Bergoin

Source Environmental Associates Inc: Martin Shin, Georgina Farah, Fraser Riddolls, Rina Freed, Anna Everett

Skin Tyree Nation: Bea Paton

Tsilhqot'in National Government: Trina Setah

Metis Nation of BC: Danielle Courcelles

Environmental Dynamics Inc (EDI): Graeme Paterson, Leslie Chamberlist, Matthew Van Osch

Impact Assessment Agency of Canada (IAAC): Mathieu Trudelle, Shannon Wallace, Carl Johansson

Environmental Assessment Office (EAO): Chris Parks, Warren Fekete, Christie Lombardi

Ministry of Mining and Critical Metals (MCM): Rachel Taylor

Ministry of Environment and Climate Change Strategy (ENV): Breanne Hill

Ministry of Water, Land and Resource Stewardship (WLRS): Duncan McColl

Photo 113686-1. Excavation and benching of slopes ongoing within the ore body/open pit.

Photo 113700-1. Plant Site sediment control pond. The IEM team understands water being captured within this pond (impacted by PAG dust material at the Plant Site) is being used as process water and not being discharged to the environment.

Photo 113701-1. Location on the crusher conveyor system where water is sprayed onto high grade ore prior to being stockpiled at the Plant Site.

Photo 113701-2. Overview of the drop point to the stockpile at the terminus of the crusher conveyor circuit at the Plant Site.

Photo 113688-2. Electric pump units installed at the CWTP to discharge water to Davidson Creek.

Photo 113688-1. Water flow within the south collection ditch which passively discharges into the CWTP. When turbidity levels become elevated, water can be pumped directly to the tailing's storage facility (via the pump line in place in photo).

Photo 113697-2. Water treatment plant (clarifier) at the WMP to be utilized in the event water is required to be pumped to Davidson Creek.

Photo 113690-1. Overview of area adjacent to the NDC following contouring to prevent water from running into ditch line. Direction of grading indicated on photo.

Photo 113691-3. Overview of the terminus of the NDC following application of topsoil and rough and loose surface application.

Photo 113691-4. Erosion control blankets installed along portion of high side of the NDC.

Photo 113699-1. Overview of Watercourse 146 crossing (on access road to Operations Camp). Water observed to be running clear at time of visit. Recently installed ESC measures (sediment fencing and erosion control blankets) also noted.

Photo 113696-2. Grading to direct water away from the slope adjacent to the C-Trail Access road crossing of watercourse 686 (km 9.5 bridge).

Photo 113696-5. Overview of additional erosion and sediment control blankets placed on slope along the C-Trail Access Road on approach to Watercourse 686 crossing.

Photo 113696-3. Replacement sediment fencing installed on the slope along the C-Trail Access Road on approach to Watercourse 686 crossing.

Work Space Locations

Legend

- Mine Access Road
- Watercourse
- Waterbody
- 1, Security Gate
- 2, Central Water Transfer Pond
- 5, Sediment Control Pond
- 6, Operations Camp
- 7, Water Management Pond
- 8, Mobile Maintenance Yard
- 9, Plant Site
- 11, Heavy Equipment Assembly Pad
- 13, Lake 15/16 Fish Compensation Channel
- 14, Explosives Magazine
- 15, Low Grade and High Grade Ore Stockpile (approx. location)
- 16, Run of Mine Pad
- 17, North Diversion Channel
- 18, Interim Environmental Control Dam
- 3, Davidson Creek Diversion Structure
- 4, Tailings Storage Facility Dam
- 12, Future Open Pit

0 0.5 1 1.5 2
Kilometres

Map Scale = 1:30,000 (printed on 11 x 17)
Map Projection: NAD 1983 UTM Zone 10N

Data Sources
• Workspaces. EDI Environmental Dynamics Inc. December 9, 2024.
• Main Basemap. CanVec 1:50,000: Government of Canada; Sentinel-2 Level 2A RGB T09UYV September 4, 2024. Contains modified Copernicus Sentinel data 2024 processed by Sentinel Hub.

Disclaimer
EDI Environmental Dynamics Inc. has made every effort to verify this map is free of errors. Data have been derived from a variety of digital sources and, as such, EDI does not warrant the accuracy, completeness, or reliability of this map or its data.

Drawn:	Checked:		
CT/OL	GP	Map 1	Date: 2024-12-09

EDI

Path: L:\PROJECTS\2021\NBC\21P0403_BlackwaterMine\21P0403_BlackwaterMine.aprx\21P0403_Blackwater_IEM_20241209

SUMMARY OF PREVIOUS MONTH (APRIL 2025) ENVIRONMENTAL INCIDENTS (PROVIDED BY BWG)

ID	Hazard/ Incident Date Time	Brief Description	Location	Department	Select the immediate actions taken?	Initial Hazard or Incident details	Spilled Fluid Details	Is the spill near a creek or water body if applicable?	Regulatory Reporting Status	Material Disposal Site	Media Affected by spill	Spill Cause	Spill Clean Up Date	Spill Source	Spilled Fluid Quantity (Liters)
2693	2025-04-26 4:20	Line on v mac on truck.35 leaked approximately 5l of oil out of v mac and onto ground	Maintenence lay down	Big Country Equipment Repair	Spill pads and drip trays, contaminated soil disposed of in GFL labeled bin	Hazard/Incident Date: 2025-04-26 04:20 AM; Reported by - Hazards | Incident Details: Was running vmac compressor , I shut it off and moved truck back to office when I noticed oil on side of truck , I put down a spill tray and spill pads to minimize spill; Immediate Actions Taken - Spill pads and drip trays, Recommended Action -	Hydraulic fluid	No	Not Required	Contaminated soil	Soil	Hose	2025-04-26	Pto supply oil to vmac	5 liters
2687	2025-04-22 18:00	Fuel bay non contained spill	Andrews hill fuel day	Infrastructure / SS	Spill pads were placed to absorb diesel sitting on top of muddy ground, scooped up contaminated soil and disposed of dirt and used spill pads in the proper green bin. Big country working on fixing the issue as we clean.	Hazard/Incident Date: 2025-04-22 18:00 PM; Reported by - Hazards | Incident Details: Unknown on who was involved or who saw it happen. My supervisor instructed us to clean up the spill.; Immediate Actions Taken - Spill pads were placed to absorb diesel sitting on top of muddy ground, scooped up contaminated soil and disposed of dirt and used spill pads in the proper green bin. Big country working on fixing the issue as we clean., Recommended Action - The incident seems to be a mechanical error. Having the proper spill tray under the grate would help reduce a spill on the environment if an issue arises again.	Diesel	No	Not Required	Oily contaminated green bin	Muddy ground/puddle	Mechanical error with the fuel filter.	2025-04-22	Fuel tank	1 L
2686	2025-04-22 17:00	Minor fuel spill / operator sprayed in the legs with fuel at Kode Hill Fuel Bay	Kode Hill Fuel Bay	Orica	Power turned off - spill tray placed under the area - spill pads placed in the area where fuel was visible - BWG management notified.	Hazard/Incident Date: 2025-04-22 17:00 PM; Reported by - Hazards | Incident Details: Orica MMU operator went to the Kode Hill fuel bay to fuel up the powder truck. Once the power switch was turned on fuel started to spray out from the filter housing. Operator was sprayed in the legs with fuel. Minor fuel spill occurred. Spill pads where placed on the area where the leak occurred. ; Immediate Actions Taken - Power turned off - spill tray placed under the area - spill pads placed in the area where fuel was visible - BWG management notified. , Recommended Action - The filter bolts were not secured properly as some where only on hand tight.	Diesel Fuel	No	Not Required	N/A	Ground and Soil	Failed filter seals / Filter housing not properly secured	2025-04-22	Fuel Tank	3 liters
2685	2025-04-22 3:30	Leaking O-ring on JD 470	WMP	Frost Lake	Contained spill will proper spill pads	Hazard/Incident Date: 2025-04-22 03:30 AM; Reported by - Hazards | Incident Details: At 3:20 pm the operator noticed a small drop of oil coming from the boom of the excavator. He stopped to investigate and found an O-ring failure. He then grounded the attachment shut the machine off and put spill pads under the leak. ; Immediate Actions Taken - Contained spill will proper spill pads , Recommended Action -	Hydraulic oil	Not Applicable	Not Required	hydrocarbon impacted bin	Ground	O-ring failure	2025-04-22	Hydraulic tank	0.01
2677	2025-04-18 14:00	Pails of backing compound (full and empty) left on ground around construction waste bins	Waste Bins near South Laydown	Fixed Plant Maintenance	Cleaned up and disposed of into proper hazardous waste bin, labeled bin and placed bin in haz waste storage area.	Was doing bin inspections and noticed garbage bags full of metal pails of crusher backing compound, all either containing residue or still full, laying on ground near construction waste and wood bins.	-	-	-	-	-	-	-	-	-
2678	2025-04-15 0:00	Engine oil spill to ground under haul truck	Mobile Maitenance	Environmental	Mechanics crawled under haul truck and cleaned up contaminated soil into GFL bin.	Engine oil spill to ground under haul truck 305	Engine oil	No	Not Required	hydrocarbon impacted bin	Engine Oil	Maintenance of equipment	2025-04-17	HT305	12
2679	2025-04-15 0:00	1 litre fuel spill to ground under frostfighter	Andrews Hill - Finning Rentals	Environmental	Contaminated material was cleaned up and disposed of in bin.	Fuel spill to ground under frostfighter 133348. Found in Finning Rentals area at Andrews HIll	Fuel	No	Not Required	hydrocarbon impacted bin	Fuel	Lack of secondary containment	2025-04-17	Fuelling of equipment overflow	1
2680	2025-04-15 0:00	Hydrocarbon Spill to Ground at Finning Rental Laydown	Andrews Hill - Finning Rental Laydown	Environmental		25 litre hydrocarbon spill at Whitewater pump in Finning Rental laydown due to faulty seal	hydrocarbon	No	Not Required	hydrocarbon impacted bin	unknown hydrocarbon	Broken Seal	15-Apr-25	Whitewater pump	25
2665	2025-04-14 0:00	Engine oil on ground in Environment parking lot	Environment parking lot	Environmental		Safety staff notified Enviro staff that there was oil on the ground. Soaked up with spill pads, shoveled affected dirt into bag, disposed of in hydrocarbon waste bins.	Engine oil	No	Not Required	hydrocarbon impacted bin	ground	Equipment Damage	2025-04-14	LV - unsure which one. Checked oil in all enviro LVs and there are no	2
2659	2025-04-12 8:00	We were transporting a AWP from exp camp to plant site when the operator noticed a leak started during transport.	In front of OPS control room at plant site	Summit Electric	Spill kit was applied right away upon notice. affected dirt was scraped and dirt's was disposed of in contaminated waste bins.	Hazard/Incident Date: 2025-04-12 08:00 AM; Reported by -Hazards | Incident Details: two workers where transporting a lift when the equipment failed after it had passed pre trip inspection. ; Immediate Actions Taken - Spill kit was applied right away upon notice. affected dirt was scraped and dirt's was disposed of in contaminated waste bins. , Recommended Action - No.	Hydraulic Oil	No	Not Required	disposed of in contaminated waste bin.	Dirt	fitting/hose failed during transport.	2025-04-12	AWP solenoid valve	7

2657	2025-04-10 8:30	SH3601 Travel Motor Leak	1600 Bench West End	Mine Operations	The machine was shut down, spill pads placed. The leak was reported to maintenance and fixed. The spill was cleaned up after the shovel moved.	Hazard/Incident Date: 2025-04-10 08:30 AM; Reported by Hazards | Incident Details: A leak was reported at approximately 8:30 a.m. on EX3601. The operator put down spill kits upon noticing the leak, and dispatch and maintenance were informed to fix it. Cleanup began when the machine was moved from the area.; Immediate Actions Taken - The machine was shut down, spill pads placed. The leak was reported to maintenance and fixed. The spill was cleaned up after the shovel moved., Recommended Action - Very small spill and the operator reacted quickly to the leak.	Hydraulic Oil	No	Not Required	The Oil on the surface was captured by appropriate spill pads and disposed of at Maintenece yard Waste oil bin. The remainder of the oil was scrapped up by a loader and brought to the TSF PAG contaminated Storage area.	Soil/Rock Mix	Leaking Fitting.	2025-04-10	Travel Motor	10L
2656	2025-04-09 21:00	20250409 - ENV - Hydraulic oil spilled from DRL011 due to failed fitting on hydraulic pump	1590-003 drill pattern	JDS Drilling	spill pads were placed and machine shut down, connecting hoses were capped	Hazard/Incident Date: 2025-04-09 21:00 PM; Reported by - Jaime Abels 4038617308 | Employed by: , Hazards | Incident Details: Operator noticed spray of oil from cab and shut down drill. They began spill response with spill pads and contacted supervisor and mechanics. Mechanics came up to replace fitting and assist with spill clean up. Attached hose was capped. ; Immediate Actions Taken - spill pads were placed and machine shut down, connecting hoses were capped. Amount of spill determined by refill of 172 litres Recommended Action -	hydraulic oil - 66 Powerdrive A/S Syn TO4 5W30	No	Not Required	in progress - spill pads and contaminated soil will be disposed of in proper waste disposal bins	dirt/rock	failed fitting on hydraulic pump	2025-04-09	hydraulic tank/pump	172
2649	2025-04-08 8:40	Under 1 Litre of Diesel was noticed on ground beneath PSE truck at construction camp. It was immediately cleaned up	Construction Camp Parking Lot	Priority Steel	Spill was cleaned up immediately	Hazard/Incident Date: 2025-04-08 08:40 AM; Reported by Hazards | Incident Details: Diesel was noticed on ground beneath PSE truck in parking lot at construction camp. PSE immediately informed Artemis and PSE cleaned up the spill.; Immediate Actions Taken - Spill was cleaned up immediately, Recommended Action -	Diesel	No	Not Required	Spill pads disposed of in correct bin	Soil	Leak in Fuel Tank	2025-04-08	Fuel Tank Leak	Under 1litre
2651	2025-04-08 6:00	Hydrocarbon sheen found in puddle in parking lot around operation camp. Immediately deployed spill pads and removed hydrocarbon impacted dirt into buckets. Waste was placed into hydrocarbon impacted waste bins.	Operations Camp parking lot	Environmental	Cleaned up the spill.	Found a puddle with hydrocarbons (gasoline) that likely leaked from a truck while parked overnight at operations camp. Spill cleaned up and disposed of hydrocarbon impacted waste into appropriate bins.	Gasoline	No	Not Required	hydrocarbon impacted bin	ground	unknown	08-Apr-25	Light vehicle	1
2648	2025-04-07 21:00	Engine oil spill LV 58	Plant site	Mine Operations	Vehicle was shut off, spill pads placed underneath to contain the spill, spill was reported, oil filter was replaced, vehicle was moved and the area of the spill was loaded out and brought to contaminated soils dump	Hazard/Incident Date: 2025-04-07 21:00 PM; Reported by - Hazards | Incident Details: Engine oil filter was knocked off on LV 58 operator noticed oil on the ground and called it into dispatch; Immediate Actions Taken - Vehicle was shut off, spill pads placed underneath to contain the spill, spill was reported, oil filter was replaced, vehicle was moved and the area of the spill was loaded out and brought to contaminated soils dump, Recommended Action - No	Engine oil	No	Not Required	Contaminated soils dump	Ground	Engine oil filter	2025-04-07	Engine	10 liters
2646	2025-04-06 12:40	Fuel spill	Ron fuel bay	Big Country Equipment Repair	Stopped contained the spill froze the sceen reported to supervisors then cleaned up	Hazard/Incident Date: 2025-04-06 12:40 PM; Reported by - Hazards | Incident Details: Filling haul truck 1302 fast fill breather failed to work as intended and fuel over flowed while filling ; Immediate Actions Taken - Stopped contained the spill froze the sceen reported to supervisors then cleaned up , Recommended Action - No	Fuel	No	Not Required	Spill pads into hydro carbon bin	Ground	Fast fill breather failed to function as intended	2025-04-06	Fuel	15l
2644	2025-04-06 0:00	Waste Oil Barrel tipped over causing spill on road way, ditch and ground	Waste Laydown	Warehouse & Logistics	Spill cleanup was initiated immediately - ERT was dispatched to the scene with the spill response trailer, the area was closed to traffic, and 15-20 personnel contributed to the cleanup. The source of the spill was ceased. Run off water was prevented from entering the contaminated area. Spill booms were placed in the ditch line to contain the spill and prevent hydrocarbons from leaving site. Spill pads were placed on the ground where waste oil and sheen were visible. A hydrovac was utilized to remove contaminated water and snow from the ditch line. A backhoe was used to remove contaminated soil from the road.	As ERT crew was going to lunch, they noticed a large stick of oil running on roadway, ditch and ground. A waste oil barrel had tipped over causing a spill on the roadway, ditch and ground.	Waste Oil	No	Concluded, all corrective actions implemented	Off site	Snow, ditch water, soil	Barel placed on pallet on snow pile, pile melted causing pallet to tip over causing barrel to spill, barrel fill hole not sealed.	2025-04-06	Waste Oil barrel	170 L

2642	2025-04-05 17:10	Zoom boom oil leak	Dry plant area	Fixed Plant Maintenance	Stopped machine Cleaned up spill Out containment under area	Hazard/Incident Date: 2025-04-05 17:10 PM; Reported b Hazards | Incident Details: Zoom boom spotter noticed dripping oil. Stopped machine and tagged out. Cleaned up spill with white spill pads and put containment under machine; Immediate Actions Taken - Stopped machine Cleaned up spill Out containment under area, Recommended Action - No	Hydraulic fluid	No	Not Required	Oil disposal bin	Ground	Small leak from hydraulic hose	2025-04-05	TH01	250ml
2640	2025-04-04 15:10	Fuel discovered in water/melting snow beside fuel station generators. Potential spill while fuelling area generators	Fuel station generator area.	Fixed Plant Maintenance	Placed spill pads and barrier socks in area of spill. Contact Env Supt Sam Lynch	Hazard/Incident Date: 2025-04-04 15:10 PM; Reported by Hazards | Incident Details: Approx 3:10pm April 4 Instrument Tech was in the fuel station area when she noticed a rainbow effect on the ground near the area generators. called her supervisor to notify. Supervisor and Suptattended the scene immediately and placed spill pads and barrier socks across the area that showed a rainbow effect from fuel mixing with water. notified Env Supt immediately. Upon reviewing the area it appears that potentially the fuel truck that had at an unknown time filled the generators tank, may have had a spill. Immediate Actions Taken - Placed spill pads and barrier socks in area of visible rainbow effect in water Recommended Action -	Unsure-Noticed post incident	Unsure	Not Required	Hydrocarbon Impacted Bin	Fuel on ground caused a rainbow effect in the melting snow and localized puddles	Unsure-Noticed post incident. Potentially fuel truck that fueled up gensets	2025-04-04	Unsure-Noticed post incident. Potentially fuel truck that fueled up gensets	1 L
2638	2025-04-04 0:00	Q1 Partisol Minimum Sampling Frequency Missed		Environmental	Partisol connected to permanent power. Notification sent.	Date Rationale January 1, 2025 Machine was not placed into Sampling Mode. January 7, 2025 Machine was not placed into Sampling Mode. Was set and sampled January 8th to capture a sample. January 13, 2025 No filter error message. Sampled January 14th instead. February 6, 2025 Power Failure March 2, 2025 Power Failure This caused the partisol sampling schedule to not be met (min 75%) for Q1	-	-	Final Report Issued to the regulator	-	-	-	-	-	-
2635	2025-04-03 18:30	20250403 - ENV - ~10L spill of coolant from DRL013 found during pre inspection from leaking heater hose	1600-022 drill pattern	JDS Drilling	Spill pads immediately placed to contain spill, hose clamp used to stop leaking hose. Coolant on rock was cleaned using spill pads.	Hazard/Incident Date: 2025-04-03 18:30 PM; Reported by Hazards | Incident Details: During pre inspection of DRL013, operator noticed a dripping hose. They immediately grabbed the spill kit and placed spill pads underneath. Approx 10L had hit the ground before spill pads were placed. Hose was clamped to prevent any more spillage and coolant on ground was cleaned up using spill pads. Hose replacement to be completed to prevent future leaks. Spill pads were used to clean up remaining coolant on drill surface. ; Immediate Actions Taken - Spill pads immediately placed to contain spill, hose clamp used to stop leaking hose. Coolant on rock was cleaned using spill pads. , Recommended Action - Hose to be replaced, post-op inspections to be reviewed in toolbox.	coolant - Delo ELC Afreeze 50/50	No	Not Required	spill pads disposed in proper waste container	rock	cracked hose	2025-04-03	heater hose	10
2636	2025-04-01 15:20	20250401 - ENV ~60L hydraulic oil misted out of broken fitting on DRL013	1590-002 pattern	JDS Drilling	Drill was shut off to stop leak, and spill pads and containment were immediately placed. Contaminated soil was removed and disposed of in proper waste bins.	Hazard/Incident Date: 2025-04-01 15:20 PM; Reported by - Hazards | Incident Details: While drilling on DRL013, the operator noticed a mist coming from behind the mast. Operator stopped work and called supervisor and mechanic. Spill pads were immediately placed to contain spill. Contaminated soil was then cleaned up and disposed of in proper bins. Spill was reported to pit shifter and mining superintendent immediately. ; Immediate Actions Taken - Drill was shut off to stop leak, and spill pads and containment were immediately placed. Contaminated soil was removed and disposed of in proper waste bins. , Recommended Action - ongoing drill maintenance and inspections. Other drills inspected for similar failures.	66 Powerdrive A/S Syn TO4 5W30	No	Not Required	contaminated soil was disposed in proper waste bins	soil/rock	broken fitting	2025-04-01	broken fitting on hydraulic line	60

ARTEMIS GOLD INC | Blackwater Mine

May 4, 2025

Authorization: M-246 Section C11 Erosion Control and Sediment Control

Dear Sir or Madam:

As per Section C11 of Permit M-246, Blackwater Gold Mine has provided an initial notification of an unauthorized discharge to the receiving environment to the Ministry of Mining and Critical Minerals (MCM) on April 4, 2025. This document acts as a follow up report.

Water quality samples collected from March 12 – March 15, 2025 exceeded the BC Water Quality Guidelines of Total Suspended Solids (TSS) with a change from background of 25 mg/L for over 24 hours in Davidson Creek (DC-05; 10U 378205 5899299). Subsequent sampling on March 16, 2025 confirmed TSS returned to a value below 25 mg/L (9.3 mg/L).

Date	11-Mar	12-Mar	13-Mar	14-Mar	15-Mar	16-Mar
TSS (mg/L)	21.6	29.4	47.1	57.1	83.7	9.3

BWG had implemented a water treatment system to reduce total suspended solids and allow discharge to the receiving environment from the Water Management Pond. The water treatment system demonstrated inconsistencies with water treatment which resulted in degraded water quality discharged to Davidson Creek. While the water treatment system was operational, adjustments were made to heighten the pump intake location in the water column, reducing inflow rates and increase dosing rate to improve success of the system and treated water quality parameters. However, the adjustments made to the system did not produce expected water quality results and the operation of the treatment system ceased on March 15, 2025. BWG has mobilized three clarifiers, multiple in-line sand filters, and filter pots on site to support the treatment of Water Management Pond water. These systems will be trialed in isolation showing improvement in water quality parameters within BC Water Quality Guidelines for Aquatic Life before discharge is initiated.

If you require additional information, please do not hesitate to contact the undersigned.

Sincerely,

Mark Warbanski

Mark Warbanski

Environmental Manager

BW Gold Ltd. | 101 – 139 1st Street East, Vanderhoof, BC V0J 3A0
Phone: 250.567.3276 office.blackwater@artemisgoldinc.com www.artemisgoldinc.com

MEMORANDUM

To:	**BW Gold Ltd.**	**Date: May 5, 2025**
From:	**Lorax Environmental Services Ltd.**	**Project #: A599-4**
Subject:	**Response to Dustfall Information Request**	

1. Introduction

This memorandum has been generated by Lorax Environmental Services Ltd. (Lorax) for BW Gold Ltd. in response to an information request from an independent environmental monitor.

2. Comment

In March 2025, an independent environmental monitor submitted the following comment following a site inspection.

"The area surrounding the plant site building and leach circuit, as well as northeast of the plant site along the access road towards the operations camp, was observed to be coated in a layer of dust present ontop of the accumulated snow. The source of the dust appears to be from the end of the primary and secondary crusher circuits at the plant site.

Detail whether there is any potential that the observed deposition of PAG dust across large areas of the site will cause any impacts to the soil or downstream watercourses once this material becomes mobile following snow melt or continued/further wind deposition?"

3. Response

The area covered by dust was estimated as 1,323,000 m^2 from satellite imagery on February 26, 2025 (personal communication, K. Baker, April 4, 2025). Of this area, 125,400 m^2 is within the plant site area where drainage will be captured by catchment ditches and collection ponds and the remaining 1,197,600 m^2 is outside of the plant site area with drainage reporting to Stream 505 (personal communication, K. Baker, April 4, 2025) (Figure 1). ERM provided an estimate for the dust produced between January 1 and April 30 using the AP42 methodology, which uses wind speed, moisture content, and material drop rates. They estimated a total of approximately 1.2 tonnes of dust was emitted from the material stockpile drop operation over this period (personal communication, D. Cassanova, April 30, 2025).

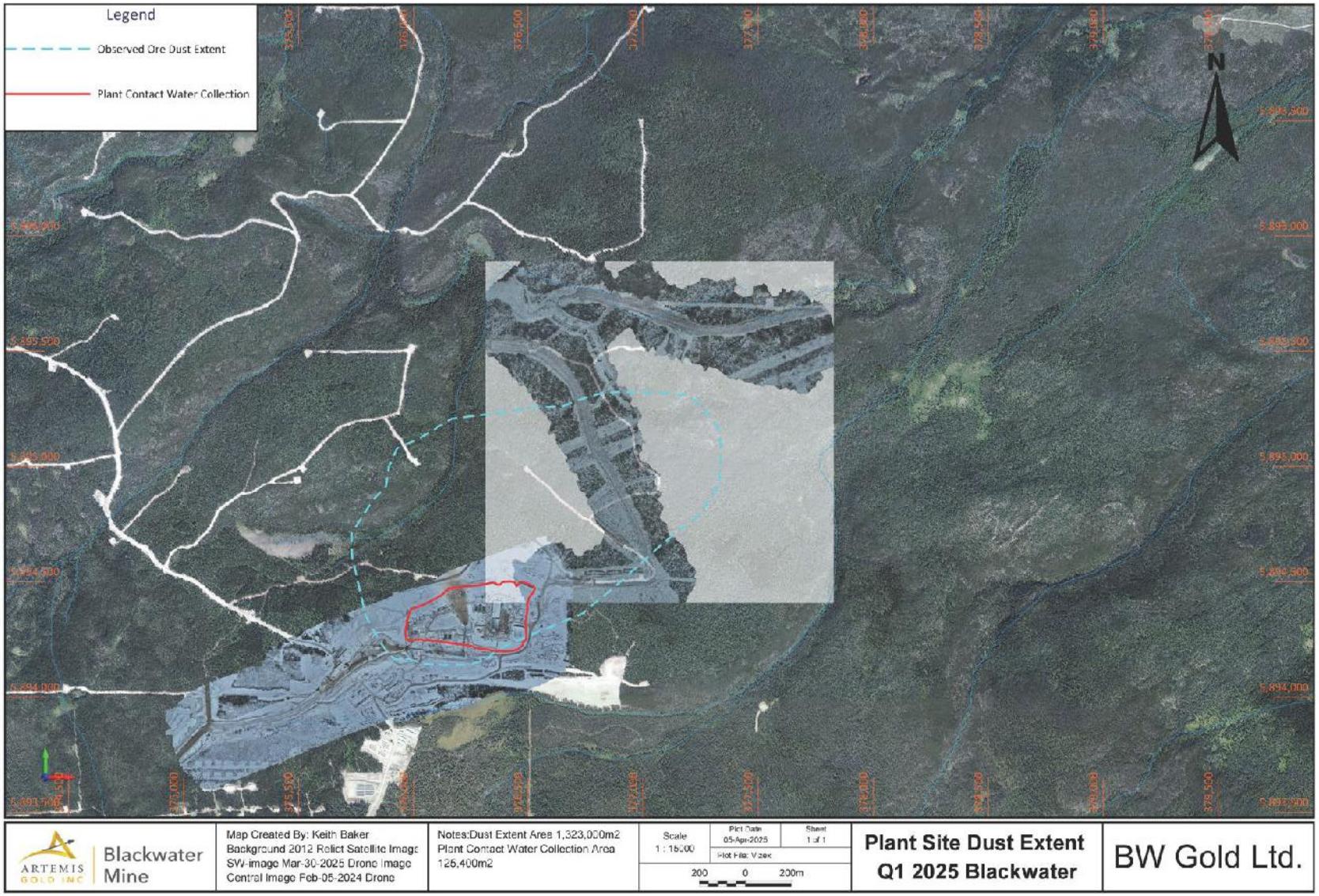


Figure 1: Map showing area impacted by dustfall around the mill site.

A dust sample collected from near the plant site indicated that the dust is ore dust (personal communication, K. Baker, April 1, 2025). The geochemical results available for high-grade ore samples collected in 2024 (n = 8) show the following characteristics:

- Paste pH from 4.85 to 7.63
- Total S from 0.038 to 2.82%
- ICP-Ca from 0.005 to 0.97%
- Zn from 44 to 4,882 ppm

Overall, these results indicate that the high-grade ore is classified as PAG1 material with variable Zn content. These results are within the ranges reported for ore samples in the baseline dataset (AMEC, 2014). A subset of the baseline ore samples was also submitted for SFE (n = 8) which can be used to provide an indication of leachate chemistry from the ore dust. The ore SFE results were used to calculate a water-soluble load from the ore material, which is in turn used to estimate a load from the estimated fugitive dust fall.

The modelled water volumes for Creek 661 (Station WQ5, now referred to as 661-10) during May were compiled from the average climate water quality/water balance model submitted with the Joint Permit Application (KP, 2021a; Lorax, 2021). The analysis is limited to the month of May, as this is when peak snow melt is expected to occur and the geochemical load of dust accumulated in the snowpack will be released. This volume (521,821 m^3) was used to calculate concentrations produced by the estimated water-soluble metal load from the dust. The calculated concentrations for selected parameters are provided in Table 1 and show that the concentrations calculated from the soluble load from dust are significantly less than the background concentrations in Creek 661 and BC Water Quality Guidelines.

Four dust-covered snow samples were collected from areas surrounding the plant site in April 2025 (Figure 2; Appendix A). These samples are believed to represent an upper end-member of concentrations that may be achieved from ore-dust influenced snowmelt owing to the proximity to the primary and secondary crusher. These samples were collected by snowcore through multiple layers of dust, melting the snow, and collecting the melted snow and dust mixture. The samples were submitted to ALS Laboratory for analysis for analysis of pH, acidity, alkalinity, nutrients, total dissolved solids (TDS), total suspended solids (TSS), sulphate, total metals, and dissolved metals (Table 2). The pH of these samples is consistent with rainwater pH (approximately 5.6) and does not indicate ARD. Metal concentrations in these samples are high and indicate that undiluted snowmelt from the area near the plant site will have elevated metal concentrations. The most impacted areas will be captured within the catchment ditches and collection ponds immediately around the plant site area (Figure 1). Some impact from the dust may be observed in headwater drainages; however, the load from the dust is anticipated to not be detectable further downstream, with concentrations returning to near baseline at 661-10.

Table 1:
Summary of estimated concentrations in Creek 661 based on calculated dustfall load and modelled water volumes in comparison to baseline concentrations at Station 661-10 (formerly station WQ5).

Parameter	Units	BC Water Quality Guidelines		Dust Fall Contribution to 661-10 at Freshet (P75 SFE)	Baseline 661-10 (median)
		Long-term	Short-term		
pH	-	6.5 - 9.0	none	-	7.4
Sulphate	mg/L	128	none	0.00059	1.2
Al[a]	mg/L	0.2754	none	0.000024	0.104
Sb	mg/L	0.074	0.25	0.00000019	0.0001
As	mg/L	0.005	none	0.00000062	0.00059
Ba	mg/L	1	none	0.00000028	0.00427
Be	mg/L	0.00013	none	0.000000014	0.0001
B	mg/L	1.2	none	0.00000018	0.01
Cd[b]	mg/L	0.000071	0.000128	0.00000052	0.0000136
Ca	mg/L	-	-	0.000046	6.1
Cr	mg/L	0.0025	none	0.000000018	0.0004
Co	mg/L	0.004	0.11	0.00000046	0.0001
Cu[a]	mg/L	0.001807	0.010744	0.00000058	0.0004
Fe	mg/L	none	0.35	0.000018	0.191
Pb[c]	mg/L	0.0045	none	0.00000070	0.00005
Li	mg/L	-	-	0.00000012	0.001
Mg	mg/L	-	-	0.000019	1.69
Mn[b]	mg/L	0.7	0.79	0.000038	0.0108
Hg	mg/L	0.00002	none	0.00000000035	0.000005
Mo	mg/L	7.6	46	0.000000021	0.000229
Ni[d]	mg/L	0.0019	0.0264	0.00000050	0.0005
P	mg/L	-	-	0.0000021	0.05
K	mg/L	-	-	0.00022	0.478
Se	mg/L	0.002	none	0.000000010	0.000074
Si	mg/L	-	-	0.000063	5.58
Ag	mg/L	0.00012	-	0.000000012	0.000014
Na	mg/L	-	-	0.000011	2.5
Sr	mg/L	1.25	none	0.00000029	0.0421
Tl	mg/L	0.00003	none	0.0000000057	0.00001
U	mg/L	0.0075	0.0165	0.000000069	0.000088
V	mg/L	0.06	none	0.000000031	0.00068
Zn[a]	mg/L	0.00566	0.019	0.000071	0.0021

Notes:
BC WQG: British Columbia Water Quality Guideline for the Protection of Aquatic Life (BC MoWLRS, 2025)
Guidelines apply to total metals except for Cd, Cu, Fe, Pb, Ni, Sr, and Zn which apply to dissolved metals
Guidelines that are dependent on other parameters are calculated using the median values from the WQ5 baseline dataset (2011 to July 2022). DOC 8.4 mg/L, Hardness 22.7 mg/L, pH 7.40
Temperature for Ni WQG was assumed to be 15°C
a: Hardness, pH, and DOC dependent; b: Hardness dependent; c: pH and DOC dependent; d: Temperature, hardness, pH, and DOC dependent.

Figure 2: Location of dust-covered snow samples (provided by BW Gold)

Table 2:
Comparison of snowcore pH, sulphate, and dissolved metals concentrations to BC water quality guidelines for the protection of aquatic life

Parameter	Units	BC WQG		PS-Snow-01	PS-Snow-02	PS-Snow-03	PS-Snow-04
		Long-term	Short-term				
pH	-	6.5 – 9.0	-	5.60	6.38	5.94	6.63
Sulphate	mg/L	128	-	3.12	<0.30	1.36	0.72
Al	mg/L	0.2754	-	0.0026	0.0255	0.0072	0.0112
Sb	mg/L	0.074	0.25	0.00147	0.00014	0.00086	0.00056
As	mg/L	0.005	-	0.00222	0.00058	0.00173	0.00125
Ba	mg/L	1	-	0.00283	0.00093	0.00125	0.00138
Be	mg/L	0.00013	-	0.00002	0.00002	0.00002	0.00002
B	mg/L	1.2	-	0.01	0.01	0.01	0.01
Cd	mg/L	0.000071	0.000128	***0.0124***	***0.000842***	***0.00813***	***0.0042***
Ca	mg/L	-	-	0.614	0.403	0.366	0.932
Cr	mg/L	0.0025	-	0.0005	0.0005	0.0005	0.0005
Co	mg/L	0.004	0.11	0.00354	0.00046	0.00185	0.00076
Cu	mg/L	0.001807	0.010744	0.00174	0.00026	0.00142	0.0005
Fe	mg/L	-	0.35	0.01	0.019	0.01	0.01
Pb	mg/L	0.0045	-	0.000138	0.000183	0.000378	0.000215
Li	mg/L	-	-	0.001	0.001	0.001	0.001
Mg	mg/L	-	-	0.1	0.1	0.1	0.1
Mn	mg/L	0.7	0.79	0.0714	0.0518	0.0512	0.0275
Hg	mg/L	0.00002	-	0	0	0	0
Mo	mg/L	7.6	46	0.00005	0.000169	0.000072	0.00012
Ni	mg/L	0.0019	0.0264	0.00274	0.0005	0.00154	0.00071
P	mg/L	-	-	0.05	0.05	0.05	0.05
K	mg/L	-	-	0.845	0.312	0.35	0.201
Se	mg/L	0.002	-	0.00005	0.00005	0.00005	0.00005
Si	mg/L	-	-	0.341	0.207	0.178	0.205
Ag	mg/L	0.00012	-	0.00001	0.00001	0.00001	0.00001
Na	mg/L	-	-	0.064	0.082	0.053	0.05
Sr	mg/L	1.25	-	0.0067	0.00347	0.00377	0.00428
Tl	mg/L	0.00003	-	0.000063	0.00001	0.000046	0.000019
U	mg/L	0.0075	0.0165	0.00001	0.00001	0.000011	0.00001
V	mg/L	0.06	-	0.0005	0.0005	0.0005	0.0005
Zn	mg/L	0.00566	0.019	***0.253***	0.0154	***0.138***	***0.055***

Notes:
BC WQG: British Columbia Water Quality Guideline for the Protection of Aquatic Life (BC MoWLRS, 2025)
Guidelines apply to total metals except for Cd, Cu, Fe, Pb, Ni, Sr, and Zn which apply to dissolved metals
Guidelines that are dependent on other parameters are calculated using the median values from the WQ5 baseline dataset (2011 to July 2022). DOC 8.4 mg/L, Hardness 22.7 mg/L, pH 7.40
Temperature for Ni WQG was assumed to be 15°C
a: Hardness, pH, and DOC dependent; b: Hardness dependent; c: pH and DOC dependent; d: Temperature, hardness, pH, and DOC dependent

The existing sampling program is expected to monitor potential impacts downstream of the project site. Permit 110652 requires the following relevant sampling:

- Sediment sampling at Station 661-05 in Creek 505659 and further downstream at Station 661-10 in Creek 661 (Figure 3). Water quality, periphyton, and benthic invertetrate sampling occurs at the same time, which is in late August or early September. Sediment samples are sumbitted for pH, moisture, particle size, total organic carbon, and total metals.
- Water quality sampling at Stations 661-04, 661-05, 661-03, and 661-10 (Figure 3). Monthly water quality sampling is required at these stations. In addition, collection of 5 water quality samples in 30 days is required twice annually at Station 661-10 (once during freshet and once during fall high flow periods). Water quality samples are analyzed for physical parameters, dissolved anions (sulphate, Br, Cl, F), nutrients, cyanides, total and dissolved organic carbon, and total and dissolved metals.

Additional monitoring recommended to further investigate the impact of the dust on the site water quality includes:

- Collection of water quality samples at a frequency of 3 water quality samples in 30 days at Station 661-05, 661-01 and 661-10 during freshet (May).
- Collection of surface soil samples following snowmelt. These would be analyzed for the same suite of parameters as the sediment sampling.

BW Gold is currently planning to implement wind fencing to minimize the extent of dust fall. At the time of this memo, engineers evaluating the structure completed a site inspection in April. In addition, BW Gold is conducting a review of the spray bar dosing locations along the crusher conveyor circuit to determine if additional dosing locations would provide a practical benefit to reducing dust.

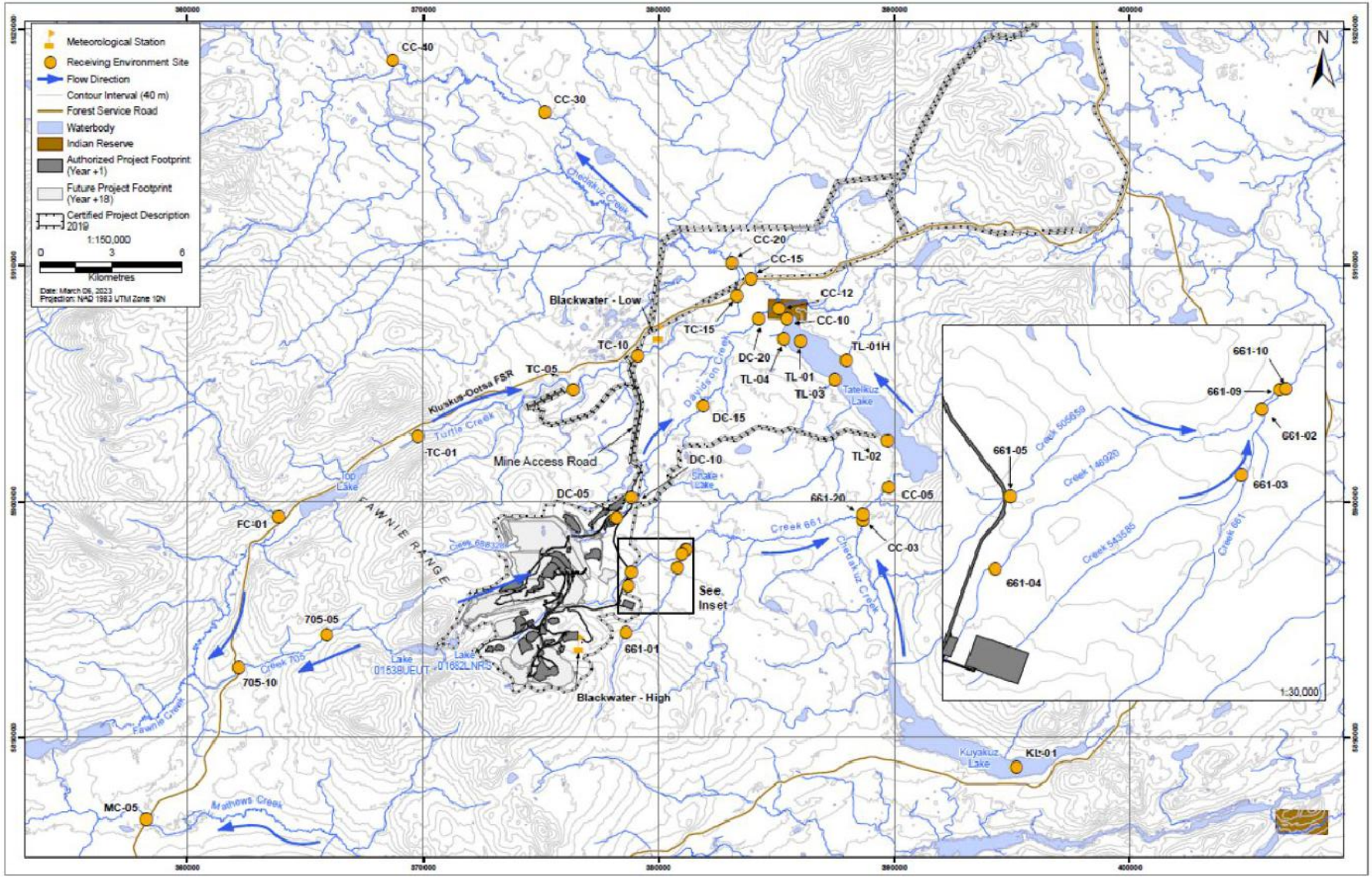


Figure 3: Monitoring Locations (from Permit 110652)

4. Closure

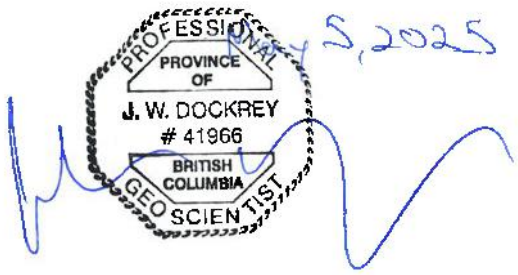
This memorandum was prepared by Lorax for BW Gold Ltd. in response to the information request from the independent environmental monitor.

Sincerely,
LORAX ENVIRONMENTAL SERVICES LTD.

Prepared by:

Jennifer Stevenson, M.Sc., P.Geo.
Environmental Geoscientist

Reviewed by:



John Dockrey, M.Sc., P.Geo.
Senior Geochemist

References

AMEC, 2014. 2013 Geochemical Characterization Report, Version B, Prepared for New Gold Inc., September 2014.

British Columbia Ministry of Water, Land, and Resource Stewardship (BC MoWLRS). 2025. British Columbia Approved Water Quality Guidelines: Aquatic Life, Wildlife & Agriculture - Guideline Summary. Water Quality Guideline Series, WQG-20. Prov. B.C., Victoria B.C.

Environmental Management Act Permit 110652, dated May 2, 2023.

Knight Piésold (KP), 2021a. Blackwater Gold Project Life of Mine Water Balance Model Report. Rev. A. June 25, 2021.

Knight Piésold (KP), 2021b. Blackwater Gold Project 2020 Hydrometeorology Report – Draft. Rev A. February 3, 2021.

Lorax Environmental Services (Lorax), 2021. Blackwater Gold Project: Water Balance and Water Quality Model Report. November 24, 2021.

Appendix A: Snowcore Results

ARTEMIS GOLD INC | Blackwater Mine

May 5, 2025

John Dockrey
Lorax Environmental - 305-1770 W 7th Avenue
Vancouver, BC
V6J 4Y6

Dear John:

Blackwater Gold Mine Environment department has taken 4 (four) snow samples on April 13th, 2025 from the surrounding area around the Plant Site. Snow pits were dug through multiple layers of dust, collected and brought indoors to melt. Melted snow and dust mixture were then transferred into sampling bottles and sent to ALS Laboratory for analysis for the following parameters. Laboratory water quality results will be shared when available.

- pH/Alkalinity/Acidity
- Total Nutrients (Nitrates/Phosphates)
- Total & Dissolved Metals

Table One: Sample names and GPS locations.

Sample Name	UTM Location
PS-Snow-1	10U 376311 5894540
PS-Snow-2	10U 376581 5894682
PS-Snow-3	10U 376647 5894475
PS-Snow-4	10U 376642 5894181

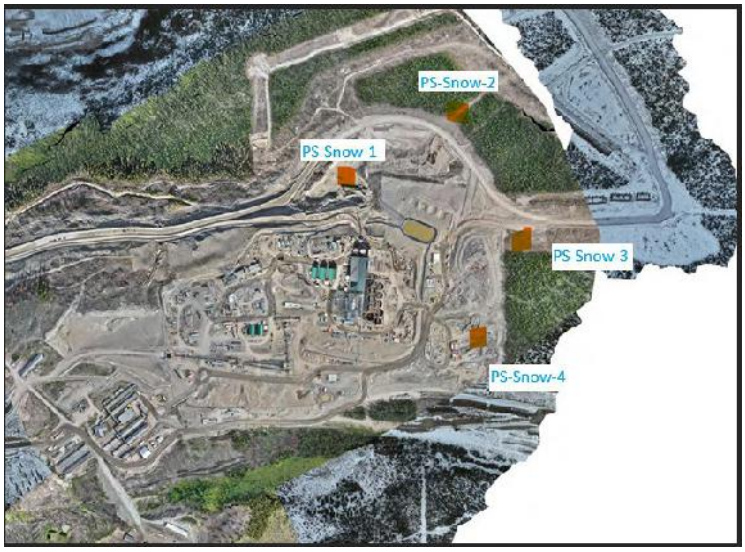


Photo One: Overview map of sampling locations

Photo Two: Snow sample pit

Sincerely,

Steven Hayward

Environment Superintendent

CERTIFICATE OF ANALYSIS

Work Order	:	**VA25A8449**		
Client	:	**BW Gold Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact	:	Mark Warbanski	Account Manager	: Amber Springer
Address	:	3083-595 Burrard St Vancouver British Columbia Canada V7X 1L3	Address	: 8081 Lougheed Highway Burnaby BC Canada V5A 1W9
Telephone	:	----	Telephone	: +1 604 253 4188
Project	:	----	Date Samples Received	: 16-Apr-2025 09:40
PO	:	15180	Date Analysis Commenced	: 16-Apr-2025
C-O-C number	:	CoC_25-120	Issue Date	: 25-Apr-2025 09:20
Sampler	:	BWG		
Site	:	----		
Quote number	:	VA24-BWGL100-011 (Surface Water)		
No. of samples received	:	4		
No. of samples analysed	:	4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Daniel Shabestani	Lab Assistant	Metals, Burnaby, British Columbia
Kate Dimitrova	Supervisor - Inorganic	Inorganics, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Rebecca Sit	Supervisor - Organics Extractions	Inorganics, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	no units
mg/L	milligrams per litre
pH units	pH units

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Sample Comments

Sample	*Client Id*	*Comment*
VA25A8449-001	PS-Snow-01	Water sample(s) for total mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.
VA25A8449-002	PS-Snow-02	Water sample(s) for total mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.
VA25A8449-003	PS-Snow-03	Water sample(s) for total mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.
VA25A8449-004	PS-Snow-04	Water sample(s) for total mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.

Qualifiers

Qualifier	Description
DLA	Detection Limit adjusted for required dilution.

Analytical Results

Sub-Matrix: Surface Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	PS-Snow-01	PS-Snow-02	PS-Snow-03	PS-Snow-04	---
					Client sampling date / time	13-Apr-2025 09:36	13-Apr-2025 09:43	13-Apr-2025 09:50	13-Apr-2025 10:01	----
						VA25A8449-001	VA25A8449-002	VA25A8449-003	VA25A8449-004	---
						Result	Result	Result	Result	----
Physical Tests										
Acidity (as CaCO3)	---	E283/VA	2.0	mg/L		3.9	2.7	3.1	2.4	---
Alkalinity, total (as CaCO3)	---	E290/VA	1.0	mg/L		<1.0	1.3	<1.0	2.3	---
Hardness (as CaCO3), dissolved	---	EC100/VA	0.60	mg/L		1.53	1.01	0.91	2.33	---
Hardness (as CaCO3), from total Ca/Mg	---	EC100A/VA	0.60	mg/L		99.3	43.0	38.6	24.2	---
pH	---	E108/VA	0.10	pH units		5.60	6.38	5.94	6.63	---
Solids, total dissolved [TDS]	---	E162/VA	10	mg/L		148	104	70	56	---
Solids, total suspended [TSS]	---	E160/VA	3.0	mg/L		4970	1140	2770	1720	---
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L		0.150	0.0148	0.0956	0.0515	---
Kjeldahl nitrogen, total [TKN]	---	E318/VA	0.050	mg/L		0.703	0.214	0.389	0.293	---
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L		0.0722	0.0231	0.0380	0.0304	---
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	---
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L		1.66	0.299	0.516	0.607	---
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		3.12	<0.30	1.36	0.72	---
Organic / Inorganic Carbon										
Carbon, total organic [TOC]	---	E355-L/VA	0.50	mg/L		3.73	4.78	3.81	3.09	---
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L		71.1	23.9	32.0	16.6	---
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		0.0162	0.00187	0.0108	0.00952	---
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.686	0.0525	0.400	0.206	---
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.675	0.190	0.342	0.216	---

Analytical Results

Sub-Matrix: Surface Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	PS-Snow-01	PS-Snow-02	PS-Snow-03	PS-Snow-04	---
					Client sampling date / time	13-Apr-2025 09:36	13-Apr-2025 09:43	13-Apr-2025 09:50	13-Apr-2025 10:01	---
						VA25A8449-001	VA25A8449-002	VA25A8449-003	VA25A8449-004	---
						Result	Result	Result	Result	---
Total Metals										
Beryllium, total	7440-41-7	E420/VA	0.000020	mg/L		0.00199	0.000825	0.00101	0.000645	---
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L		0.0311	0.00168	0.0166	0.00946	---
Boron, total	7440-42-8	E420/VA	0.010	mg/L		<0.050 DLA	<0.020 DLA	<0.020 DLA	<0.020 DLA	---
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L		0.179	0.0103	0.122	0.0553	---
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		6.96	6.64	4.27	3.88	---
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		0.0374	0.0131	0.0230	0.0107	---
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.721	0.0518	0.453	0.306	---
Iron, total	7439-89-6	E420/VA	0.010	mg/L		146	25.3	50.8	28.9	---
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		3.10	0.131	1.26	0.650	---
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		0.0662	0.0165	0.0263	0.0132	---
Magnesium, total	7439-95-4	E420/VA	0.100	mg/L		19.9	6.43	6.79	3.52	---
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		6.21	1.16	2.11	1.19	---
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L		0.000303	0.0000355	0.000251	0.0000759	---
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L		0.00377	0.000962	0.00188	0.00146	---
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		0.0505	0.0187	0.0284	0.0148	---
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		4.79	1.12	1.68	0.980	---
Potassium, total	7440-09-7	E420/VA	0.100	mg/L		32.7	5.73	12.1	6.75	---
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		0.000322	<0.000100 DLA	0.000125	<0.000100 DLA	---
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		78.2	32.4	37.0	24.6	---
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		0.0383	0.00129	0.0176	0.00923	---
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		1.25	2.68	1.13	0.923	---

Analytical Results

Sub-Matrix: Surface Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	PS-Snow-01	PS-Snow-02	PS-Snow-03	PS-Snow-04	---
					Client sampling date / time	13-Apr-2025 09:36	13-Apr-2025 09:43	13-Apr-2025 09:50	13-Apr-2025 10:01	---
						VA25A8449-001	VA25A8449-002	VA25A8449-003	VA25A8449-004	---
						Result	Result	Result	Result	---
Total Metals										
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.189	0.0962	0.106	0.0579	---
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		15.4	<1.00 DLA	6.03	2.57	---
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L		0.00506	0.000660	0.00210	0.00103	---
Tin, total	7440-31-5	E420/VA	0.00010	mg/L		0.00084	0.00034	0.00049	0.00114	---
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L		2.96	0.926	1.07	0.713	---
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		0.00689	0.00124	0.00491	0.00316	---
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		0.138	0.0503	0.0574	0.0320	---
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		7.16	0.399	4.50	2.34	---
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		0.0767	0.0252	0.0312	0.0165	---
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		0.0026	0.0255	0.0072	0.0112	---
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		0.00147	0.00014	0.00086	0.00056	---
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00222	0.00058	0.00173	0.00125	---
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00283	0.00093	0.00125	0.00138	---
Beryllium, dissolved	7440-41-7	E421/VA	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	---
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	---
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	---
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L		0.0124	0.000842	0.00813	0.00420	---
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		0.614	0.403	0.366	0.932	---
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	---
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L		0.00354	0.00046	0.00185	0.00076	---

Analytical Results

Sub-Matrix: Surface Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	PS-Snow-01	PS-Snow-02	PS-Snow-03	PS-Snow-04	---
					Client sampling date / time	13-Apr-2025 09:36	13-Apr-2025 09:43	13-Apr-2025 09:50	13-Apr-2025 10:01	---
						VA25A8449-001	VA25A8449-002	VA25A8449-003	VA25A8449-004	---
						Result	Result	Result	Result	---
Dissolved Metals										
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L		0.00174	0.00026	0.00142	0.00050	---
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		<0.010	0.019	<0.010	<0.010	---
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		0.000138	0.000183	0.000378	0.000215	---
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	---
Magnesium, dissolved	7439-95-4	E421/VA	0.100	mg/L		<0.100	<0.100	<0.100	<0.100	---
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.0714	0.0518	0.0512	0.0275	---
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	---
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		<0.000050	0.000169	0.000072	0.000120	---
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		0.00274	<0.00050	0.00154	0.00071	---
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	---
Potassium, dissolved	7440-09-7	E421/VA	0.100	mg/L		0.845	0.312	0.350	0.201	---
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	---
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		0.341	0.207	0.178	0.205	---
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	---
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L		0.064	0.082	0.053	<0.050	---
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.00670	0.00347	0.00377	0.00428	---
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		1.13	<0.50	<0.50	<0.50	---
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		0.000063	<0.000010	0.000046	0.000019	---
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	---
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		<0.00030	0.00079	<0.00030	<0.00030	---
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		<0.000010	<0.000010	0.000011	<0.000010	---

Analytical Results

Sub-Matrix: Surface Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	PS-Snow-01	PS-Snow-02	PS-Snow-03	PS-Snow-04	---
					Client sampling date / time	13-Apr-2025 09:36	13-Apr-2025 09:43	13-Apr-2025 09:50	13-Apr-2025 10:01	----
						VA25A8449-001	VA25A8449-002	VA25A8449-003	VA25A8449-004	---
						Result	Result	Result	Result	----
Dissolved Metals										
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	---
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		0.253	0.0154	0.138	0.0550	---
Dissolved mercury filtration location	---	EP509/VA	-	-		Laboratory	Laboratory	Laboratory	Laboratory	---
Dissolved metals filtration location	---	EP421/VA	-	-		Laboratory	Laboratory	Laboratory	Laboratory	---

Please refer to the General Comments section for an explanation of any result qualifiers detected.

QUALITY CONTROL REPORT

Work Order	: **VA25A8449**	Page	: 1 of 14
Client	: BW Gold Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact	: Mark Warbanski	Account Manager	: Amber Springer
Address	: 3083-595 Burrard St Vancouver BC Canada V7X 1L3	Address	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
Telephone	: ----	Telephone	: +1 604 253 4188
Project	: ----	Date Samples Received	: 16-Apr-2025 09:40
PO	: 15180	Date Analysis Commenced	: 16-Apr-2025
C-O-C number	: CoC_25-120	Issue Date	: 25-Apr-2025 09:19
Sampler	: BWG		
Site	: ----		
Quote number	: VA24-BWGL100-011 (Surface Water)		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Daniel Shabestani	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Kate Dimitrova	Supervisor - Inorganic	Vancouver Inorganics, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
Owen Cheng		Vancouver Metals, Burnaby, British Columbia
Rebecca Sit	Supervisor - Organics Extractions	Vancouver Inorganics, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "––" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1957365)											
KS2501349-001	Anonymous	pH	----	E108	0.10	pH units	8.66	8.65	0.116%	4%	----
Physical Tests (QC Lot: 1957367)											
KS2501349-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	364	365	0.388%	20%	----
Physical Tests (QC Lot: 1957368)											
VA25A8449-002	PS-Snow-02	Acidity (as CaCO3)	----	E283	2.0	mg/L	2.7	2.6	0.1	Diff <2x LOR	----
Physical Tests (QC Lot: 1964996)											
VA25A8811-001	Anonymous	Solids, total suspended [TSS]	----	E160	7.5	mg/L	237	238	0.421%	20%	----
Physical Tests (QC Lot: 1964999)											
KS2501413-001	Anonymous	Solids, total dissolved [TDS]	----	E162	13	mg/L	73	70	2	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1954544)											
VA25A8401-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.319	0.312	0.008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1954546)											
VA25A8401-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.242	0.242	0.255%	20%	----
Anions and Nutrients (QC Lot: 1954547)											
VA25A8401-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0796	0.0810	1.82%	20%	----
Anions and Nutrients (QC Lot: 1958566)											
FJ2501075-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0084	0.0073	0.0011	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1958572)											
FJ2501083-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0012	0.0016	0.0004	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1954545)											
VA25A8449-001	PS-Snow-01	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	3.73	4.48	0.74	Diff <2x LOR	----
Total Metals (QC Lot: 1955510)											
VA25A8082-004	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0078	0.0081	0.0003	Diff <2x LOR	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	0.00064	0.00065	0.00001	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.0394	0.0400	1.66%	20%	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.233	0.228	2.09%	20%	----
		Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000243	0.0000215	0.0000028	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 1955510) - continued											
VA25A8082-004	Anonymous	Calcium, total	7440-70-2	E420	0.050	mg/L	99.8	99.5	0.292%	20%	---
		Chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	---
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	1.33	1.36	2.38%	20%	---
		Copper, total	7440-50-8	E420	0.00050	mg/L	0.00481	0.00483	0.00002	Diff <2x LOR	---
		Iron, total	7439-89-6	E420	0.010	mg/L	4.24	4.26	0.252%	20%	---
		Lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0186	0.0188	0.660%	20%	---
		Magnesium, total	7439-95-4	E420	0.100	mg/L	51.2	50.9	0.520%	20%	---
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.893	0.896	0.366%	20%	---
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00161	0.00166	2.94%	20%	---
		Nickel, total	7440-02-0	E420	0.00050	mg/L	0.212	0.212	0.0388%	20%	---
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	---
		Potassium, total	7440-09-7	E420	0.100	mg/L	3.54	3.52	0.437%	20%	---
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.0153	0.0156	1.77%	20%	---
		Silicon, total	7440-21-3	E420	0.10	mg/L	5.14	5.13	0.163%	20%	---
		Silver, total	7440-22-4	E420	0.000010	mg/L	0.00297	0.00300	0.938%	20%	---
		Sodium, total	7440-23-5	E420	0.050	mg/L	31.5	32.2	2.18%	20%	---
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.594	0.596	0.505%	20%	---
		Sulfur, total	7704-34-9	E420	0.50	mg/L	118	117	0.537%	20%	---
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	---
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.00937	0.00982	4.76%	20%	---
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	---
		Zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	---
Total Metals (QC Lot: 1963366)											
VA25A8449-001	PS-Snow-01	Mercury, total	7439-97-6	E508	0.000100	mg/L	0.000303	0.000315	0.0000126	Diff <2x LOR	---
Dissolved Metals (QC Lot: 1954470)											
VA25A8361-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0113	0.0115	1.72%	20%	---
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00045	0.00046	0.00002	Diff <2x LOR	---
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0254	0.0264	3.76%	20%	---
		Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	---
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 1954470) - continued											
VA25A8361-001	Anonymous	Boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	0.010	0.0003	Diff <2x LOR	---
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	---
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	31.9	34.0	6.54%	20%	---
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	---
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00081	0.00082	0.000003	Diff <2x LOR	---
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.020	0.020	0.0002	Diff <2x LOR	---
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0032	0.0035	0.0002	Diff <2x LOR	---
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	9.24	9.70	4.84%	20%	---
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00195	0.00192	1.84%	20%	---
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00286	0.00289	1.15%	20%	---
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	---
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	---
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.51	2.65	5.59%	20%	---
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000349	0.000276	0.000072	Diff <2x LOR	---
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.40	3.42	0.378%	20%	---
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	11.2	11.5	2.30%	20%	---
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.306	0.322	4.88%	20%	---
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	8.93	8.60	3.78%	20%	---
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	---
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00261	0.00264	1.03%	20%	---
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00066	0.00066	0.000001	Diff <2x LOR	---
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	---
Dissolved Metals (QC Lot: 1963428)											
FJ2501075-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	---

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1957367)						
Alkalinity, total (as CaCO3)	---	E290	1	mg/L	<1.0	---
Physical Tests (QCLot: 1957368)						
Acidity (as CaCO3)	---	E283	2	mg/L	2.1	---
Physical Tests (QCLot: 1964996)						
Solids, total suspended [TSS]	---	E160	3	mg/L	<3.0	---
Physical Tests (QCLot: 1964999)						
Solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Anions and Nutrients (QCLot: 1954544)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 1954546)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---
Anions and Nutrients (QCLot: 1954547)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 1958566)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 1958572)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 1964730)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Organic / Inorganic Carbon (QCLot: 1954545)						
Carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 1955510)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	---

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1955510) - continued						
Cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	––
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	––
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	––
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	––
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	––
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	––
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	––
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	––
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	––
Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	––
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	––
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	––
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	––
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	––
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	––
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	––
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	––
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	––
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	––
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	––
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	––
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	––
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	––
Total Metals (QCLot: 1963366)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	––
Dissolved Metals (QCLot: 1954470)						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	––
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	––
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	––
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	––
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	––
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	––
Boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	––
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	––
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	––

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1954470) - continued						
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	---
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
Iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	---
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	---
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	---
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	---
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	---
Dissolved Metals (QCLot: 1963428)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	---

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1957365)									
pH	---	E108	---	pH units	7 pH units	100	98.0	102	---
Physical Tests (QCLot: 1957367)									
Alkalinity, total (as CaCO3)	---	E290	1	mg/L	500 mg/L	104	85.0	115	---
Physical Tests (QCLot: 1957368)									
Acidity (as CaCO3)	---	E283	2	mg/L	50 mg/L	100	85.0	115	---
Physical Tests (QCLot: 1964996)									
Solids, total suspended [TSS]	---	E160	3	mg/L	150 mg/L	108	85.0	115	---
Physical Tests (QCLot: 1964999)									
Solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	104	85.0	115	---
Anions and Nutrients (QCLot: 1954544)									
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	4 mg/L	99.6	75.0	125	---
Anions and Nutrients (QCLot: 1954546)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	102	80.0	120	---
Anions and Nutrients (QCLot: 1954547)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	94.5	85.0	115	---
Anions and Nutrients (QCLot: 1958566)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	---
Anions and Nutrients (QCLot: 1958572)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	96.2	80.0	120	---
Anions and Nutrients (QCLot: 1964730)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	104	90.0	110	---
Organic / Inorganic Carbon (QCLot: 1954545)									
Carbon, total organic [TOC]	---	E355-L	0.5	mg/L	8.57 mg/L	99.6	80.0	120	---
Total Metals (QCLot: 1955510)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	102	80.0	120	---
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	98.1	80.0	120	---
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	107	80.0	120	---
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	---
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	96.9	80.0	120	---

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1955510) - continued									
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	95.6	80.0	120	---
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	96.2	80.0	120	---
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	100	80.0	120	---
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	96.0	80.0	120	---
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	102	80.0	120	---
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	---
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	101	80.0	120	---
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	99.9	80.0	120	---
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	99.2	80.0	120	---
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	92.0	80.0	120	---
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	103	80.0	120	---
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	103	80.0	120	---
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	103	80.0	120	---
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	98.9	80.0	120	---
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	108	80.0	120	---
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	99.8	80.0	120	---
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	98.9	80.0	120	---
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	107	80.0	120	---
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	93.2	80.0	120	---
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	106	80.0	120	---
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	101	80.0	120	---
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	89.7	80.0	120	---
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	99.0	80.0	120	---
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	104	80.0	120	---
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	100	80.0	120	---
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	101	80.0	120	---
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	103	80.0	120	---
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	95.0	80.0	120	---
Total Metals (QCLot: 1963366)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	99.5	80.0	120	---
Dissolved Metals (QCLot: 1954470)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	100	80.0	120	---
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	104	80.0	120	---
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	104	80.0	120	---
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	104	80.0	120	---

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1954470) - continued									
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	100	80.0	120	---
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	100	80.0	120	---
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	94.6	80.0	120	---
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	98.9	80.0	120	---
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	99.7	80.0	120	---
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	101	80.0	120	---
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	99.6	80.0	120	---
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	98.9	80.0	120	---
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	102	80.0	120	---
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	103	80.0	120	---
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	102	80.0	120	---
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	104	80.0	120	---
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	---
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	104	80.0	120	---
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	99.2	80.0	120	---
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	96.7	80.0	120	---
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	102	80.0	120	---
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	96.1	80.0	120	---
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	108	80.0	120	---
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	89.9	80.0	120	---
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	103	80.0	120	---
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	104	80.0	120	---
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	101	80.0	120	---
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	99.8	80.0	120	---
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	101	80.0	120	---
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	102	80.0	120	---
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	102	80.0	120	---
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	---
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	101	80.0	120	---
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	98.2	80.0	120	---

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1954544)										
VA25A8401-002	Anonymous	Kjeldahl nitrogen, total [TKN]	---	E318	2.51 mg/L	2.5 mg/L	100	70.0	130	---
Anions and Nutrients (QCLot: 1954546)										
VA25A8401-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	ND mg/L	---	ND	70.0	130	---
Anions and Nutrients (QCLot: 1954547)										
VA25A8401-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0951 mg/L	0.1 mg/L	95.1	75.0	125	---
Anions and Nutrients (QCLot: 1958566)										
FJ2501083-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	26.0 mg/L	25 mg/L	104	75.0	125	---
Anions and Nutrients (QCLot: 1958572)										
FJ2501083-002	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0314 mg/L	0.03 mg/L	105	70.0	130	---
Organic / Inorganic Carbon (QCLot: 1954545)										
VA25A8449-002	PS-Snow-02	Carbon, total organic [TOC]	---	E355-L	4.79 mg/L	5 mg/L	95.9	70.0	130	---
Total Metals (QCLot: 1955510)										
VA25A8082-005	Anonymous	Aluminum, total	7429-90-5	E420	ND mg/L	---	ND	70.0	130	---
		Antimony, total	7440-36-0	E420	0.0197 mg/L	0.02 mg/L	98.5	70.0	130	---
		Arsenic, total	7440-38-2	E420	ND mg/L	---	ND	70.0	130	---
		Barium, total	7440-39-3	E420	ND mg/L	---	ND	70.0	130	---
		Beryllium, total	7440-41-7	E420	0.0388 mg/L	0.04 mg/L	97.1	70.0	130	---
		Bismuth, total	7440-69-9	E420	0.00945 mg/L	0.01 mg/L	94.5	70.0	130	---
		Boron, total	7440-42-8	E420	0.093 mg/L	0.1 mg/L	93.2	70.0	130	---
		Cadmium, total	7440-43-9	E420	0.00414 mg/L	0.004 mg/L	104	70.0	130	---
		Calcium, total	7440-70-2	E420	ND mg/L	---	ND	70.0	130	---
		Chromium, total	7440-47-3	E420	0.0399 mg/L	0.04 mg/L	99.8	70.0	130	---
		Cobalt, total	7440-48-4	E420	ND mg/L	---	ND	70.0	130	---
		Copper, total	7440-50-8	E420	ND mg/L	---	ND	70.0	130	---
		Iron, total	7439-89-6	E420	ND mg/L	---	ND	70.0	130	---
		Lead, total	7439-92-1	E420	ND mg/L	---	ND	70.0	130	---
		Lithium, total	7439-93-2	E420	0.0906 mg/L	0.1 mg/L	90.6	70.0	130	---
		Magnesium, total	7439-95-4	E420	ND mg/L	---	ND	70.0	130	---
		Manganese, total	7439-96-5	E420	ND mg/L	---	ND	70.0	130	---
		Molybdenum, total	7439-98-7	E420	0.0199 mg/L	0.02 mg/L	99.5	70.0	130	---
		Nickel, total	7440-02-0	E420	ND mg/L	---	ND	70.0	130	---
		Phosphorus, total	7723-14-0	E420	10.7 mg/L	10 mg/L	107	70.0	130	---
		Potassium, total	7440-09-7	E420	ND mg/L	---	ND	70.0	130	---
		Selenium, total	7782-49-2	E420	0.0422 mg/L	0.04 mg/L	106	70.0	130	---
		Silicon, total	7440-21-3	E420	ND mg/L	---	ND	70.0	130	---
		Silver, total	7440-22-4	E420	0.00402 mg/L	0.004 mg/L	101	70.0	130	---

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 1955510) - continued										
VA25A8082-005	Anonymous	Sodium, total	7440-23-5	E420	ND mg/L	----	ND	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	ND mg/L	----	ND	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00378 mg/L	0.004 mg/L	94.6	70.0	130	----
		Tin, total	7440-31-5	E420	0.0205 mg/L	0.02 mg/L	102	70.0	130	----
		Titanium, total	7440-32-6	E420	ND mg/L	----	ND	70.0	130	----
		Uranium, total	7440-61-1	E420	ND mg/L	----	ND	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		Zinc, total	7440-66-6	E420	0.375 mg/L	0.4 mg/L	93.8	70.0	130	----
Total Metals (QCLot: 1963366)										
VA25A8449-002	PS-Snow-02	Mercury, total	7439-97-6	E508	0.000189 mg/L	0 mg/L	94.7	70.0	130	----
Dissolved Metals (QCLot: 1954470)										
VA25A8378-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.188 mg/L	0.2 mg/L	94.2	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0199 mg/L	0.02 mg/L	99.6	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00872 mg/L	0.01 mg/L	87.2	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.095 mg/L	0.1 mg/L	95.1	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00374 mg/L	0.004 mg/L	93.4	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0374 mg/L	0.04 mg/L	93.4	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0184 mg/L	0.02 mg/L	92.0	70.0	130	----
		Copper, dissolved	7440-50-8	E421	ND mg/L	----	ND	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.92 mg/L	2 mg/L	95.8	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0186 mg/L	0.02 mg/L	93.1	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0948 mg/L	0.1 mg/L	94.8	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	ND mg/L	----	ND	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0198 mg/L	0.02 mg/L	98.8	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0361 mg/L	0.04 mg/L	90.2	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	9.83 mg/L	10 mg/L	98.3	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0386 mg/L	0.04 mg/L	96.4	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.20 mg/L	10 mg/L	92.0	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00370 mg/L	0.004 mg/L	92.6	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	19.7 mg/L	20 mg/L	98.6	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00360 mg/L	0.004 mg/L	89.9	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0193 mg/L	0.02 mg/L	96.6	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0396 mg/L	0.04 mg/L	99.1	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00387 mg/L	0.004 mg/L	96.8	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1954470) - continued										
VA25A8378-001	Anonymous	Vanadium, dissolved	7440-62-2	E421	0.0949 mg/L	0.1 mg/L	94.9	70.0	130	---
		Zinc, dissolved	7440-66-6	E421	0.385 mg/L	0.4 mg/L	96.2	70.0	130	---
Dissolved Metals (QCLot: 1963428)										
VA25A8449-001	PS-Snow-01	Mercury, dissolved	7439-97-6	E509	0.000101 mg/L	0 mg/L	101	70.0	130	---

ALS Canada Ltd.

right solutions.
right partner.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA25A8449**	Page	: 1 of 15
Client	: **BW Gold Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact	: Mark Warbanski	Account Manager	: Amber Springer
Address	: 3083-595 Burrard St Vancouver BC Canada V7X 1L3	Address	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
Telephone	: ---	Telephone	: +1 604 253 4188
Project	: ---	Date Samples Received	: 16-Apr-2025 09:40
PO	: 15180	Issue Date	: 25-Apr-2025 09:20
C-O-C number	: CoC_25-120		
Sampler	: BWG		
Site	: ---		
Quote number	: VA24-BWGL100-011 (Surface Water)		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (lab preserved) PS-Snow-01	E298	13-Apr-2025	16-Apr-2025	3 days	3 days	✓	20-Apr-2025	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (lab preserved) PS-Snow-02	E298	13-Apr-2025	16-Apr-2025	3 days	3 days	✓	20-Apr-2025	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (lab preserved) PS-Snow-03	E298	13-Apr-2025	16-Apr-2025	3 days	3 days	✓	21-Apr-2025	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (lab preserved) PS-Snow-04	E298	13-Apr-2025	16-Apr-2025	3 days	3 days	✓	21-Apr-2025	28 days	4 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE PS-Snow-01	E378-U	13-Apr-2025	21-Apr-2025	3 days	8 days	× EHTL	21-Apr-2025	3 days	8 days	× EHTL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE PS-Snow-02	E378-U	13-Apr-2025	21-Apr-2025	3 days	8 days	× EHTL	21-Apr-2025	3 days	8 days	× EHTL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE PS-Snow-03	E378-U	13-Apr-2025	21-Apr-2025	3 days	8 days	× EHTL	21-Apr-2025	3 days	8 days	× EHTL

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE PS-Snow-04	E378-U	13-Apr-2025	21-Apr-2025	3 days	8 days	✖ EHTL	21-Apr-2025	3 days	8 days	✖ EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE PS-Snow-01	E235.NO3-L	13-Apr-2025	21-Apr-2025	3 days	8 days	✖ EHTL	21-Apr-2025	3 days	8 days	✖ EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE PS-Snow-02	E235.NO3-L	13-Apr-2025	21-Apr-2025	3 days	8 days	✖ EHTL	21-Apr-2025	3 days	8 days	✖ EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE PS-Snow-03	E235.NO3-L	13-Apr-2025	21-Apr-2025	3 days	8 days	✖ EHTL	21-Apr-2025	3 days	8 days	✖ EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE PS-Snow-04	E235.NO3-L	13-Apr-2025	21-Apr-2025	3 days	8 days	✖ EHTL	21-Apr-2025	3 days	8 days	✖ EHTL
Anions and Nutrients : Sulfate in Water by IC										
HDPE PS-Snow-01	E235.SO4	13-Apr-2025	21-Apr-2025	28 days	8 days	✓	21-Apr-2025	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE PS-Snow-02	E235.SO4	13-Apr-2025	21-Apr-2025	28 days	8 days	✓	21-Apr-2025	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE PS-Snow-03	E235.SO4	13-Apr-2025	21-Apr-2025	28 days	8 days	✓	21-Apr-2025	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE PS-Snow-04	E235.SO4	13-Apr-2025	21-Apr-2025	28 days	8 days	✓	21-Apr-2025	28 days	8 days	✓

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (lab preserved) PS-Snow-01	E318	13-Apr-2025	16-Apr-2025	3 days	3 days	✓	19-Apr-2025	28 days	3 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (lab preserved) PS-Snow-02	E318	13-Apr-2025	16-Apr-2025	3 days	3 days	✓	19-Apr-2025	28 days	3 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (lab preserved) PS-Snow-03	E318	13-Apr-2025	16-Apr-2025	3 days	3 days	✓	19-Apr-2025	28 days	3 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (lab preserved) PS-Snow-04	E318	13-Apr-2025	16-Apr-2025	3 days	3 days	✓	19-Apr-2025	28 days	3 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (lab preserved) PS-Snow-01	E372-U	13-Apr-2025	16-Apr-2025	3 days	3 days	✓	16-Apr-2025	28 days	0 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (lab preserved) PS-Snow-02	E372-U	13-Apr-2025	16-Apr-2025	3 days	3 days	✓	16-Apr-2025	28 days	0 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (lab preserved) PS-Snow-03	E372-U	13-Apr-2025	16-Apr-2025	3 days	3 days	✓	16-Apr-2025	28 days	0 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (lab preserved) PS-Snow-04	E372-U	13-Apr-2025	16-Apr-2025	3 days	3 days	✓	16-Apr-2025	28 days	0 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
HDPE - dissolved (lab preserved) PS-Snow-01	E509	13-Apr-2025	24-Apr-2025	0 hrs	257 hrs	✖ UCP	24-Apr-2025	0 hrs	257 hrs	✖ UCP

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
HDPE - dissolved (lab preserved) PS-Snow-02	E509	13-Apr-2025	24-Apr-2025	0 hrs	257 hrs	✖ UCP	24-Apr-2025	0 hrs	257 hrs	✖ UCP
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
HDPE - dissolved (lab preserved) PS-Snow-03	E509	13-Apr-2025	24-Apr-2025	0 hrs	257 hrs	✖ UCP	24-Apr-2025	0 hrs	257 hrs	✖ UCP
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
HDPE - dissolved (lab preserved) PS-Snow-04	E509	13-Apr-2025	24-Apr-2025	0 hrs	257 hrs	✖ UCP	24-Apr-2025	0 hrs	257 hrs	✖ UCP
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) PS-Snow-04	E421	13-Apr-2025	16-Apr-2025	180 days	3 days	✓	19-Apr-2025	180 days	3 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) PS-Snow-01	E421	13-Apr-2025	16-Apr-2025	180 days	4 days	✓	19-Apr-2025	180 days	4 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) PS-Snow-02	E421	13-Apr-2025	16-Apr-2025	180 days	4 days	✓	19-Apr-2025	180 days	4 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) PS-Snow-03	E421	13-Apr-2025	16-Apr-2025	180 days	4 days	✓	19-Apr-2025	180 days	4 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (lab preserved) PS-Snow-01	E355-L	13-Apr-2025	16-Apr-2025	3 days	3 days	✓	16-Apr-2025	28 days	0 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (lab preserved) PS-Snow-02	E355-L	13-Apr-2025	16-Apr-2025	3 days	3 days	✓	16-Apr-2025	28 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (lab preserved)										
PS-Snow-03	E355-L	13-Apr-2025	16-Apr-2025	3 days	3 days	✓	16-Apr-2025	28 days	0 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (lab preserved)										
PS-Snow-04	E355-L	13-Apr-2025	16-Apr-2025	3 days	3 days	✓	16-Apr-2025	28 days	0 days	✓
Physical Tests : Acidity by Titration										
HDPE										
PS-Snow-01	E283	13-Apr-2025	19-Apr-2025	14 days	6 days	✓	20-Apr-2025	14 days	6 days	✓
Physical Tests : Acidity by Titration										
HDPE										
PS-Snow-02	E283	13-Apr-2025	19-Apr-2025	14 days	6 days	✓	20-Apr-2025	14 days	6 days	✓
Physical Tests : Acidity by Titration										
HDPE										
PS-Snow-03	E283	13-Apr-2025	19-Apr-2025	14 days	6 days	✓	20-Apr-2025	14 days	6 days	✓
Physical Tests : Acidity by Titration										
HDPE										
PS-Snow-04	E283	13-Apr-2025	19-Apr-2025	14 days	6 days	✓	20-Apr-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
PS-Snow-01	E290	13-Apr-2025	19-Apr-2025	14 days	6 days	✓	20-Apr-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
PS-Snow-02	E290	13-Apr-2025	19-Apr-2025	14 days	6 days	✓	20-Apr-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
PS-Snow-03	E290	13-Apr-2025	19-Apr-2025	14 days	6 days	✓	20-Apr-2025	14 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE PS-Snow-04	E290	13-Apr-2025	19-Apr-2025	14 days	6 days	✓	20-Apr-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE PS-Snow-01	E108	13-Apr-2025	19-Apr-2025	0.25 hrs	145 hrs	× EHTR-FM	20-Apr-2025	0.25 hrs	145 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE PS-Snow-02	E108	13-Apr-2025	19-Apr-2025	0.25 hrs	145 hrs	× EHTR-FM	20-Apr-2025	0.25 hrs	145 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE PS-Snow-03	E108	13-Apr-2025	19-Apr-2025	0.25 hrs	145 hrs	× EHTR-FM	20-Apr-2025	0.25 hrs	145 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE PS-Snow-04	E108	13-Apr-2025	19-Apr-2025	0.25 hrs	145 hrs	× EHTR-FM	20-Apr-2025	0.25 hrs	145 hrs	× EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE PS-Snow-01	E162	13-Apr-2025	---	---	---		24-Apr-2025	7 days	11 days	× EHT
Physical Tests : TDS by Gravimetry										
HDPE PS-Snow-02	E162	13-Apr-2025	---	---	---		24-Apr-2025	7 days	11 days	× EHT
Physical Tests : TDS by Gravimetry										
HDPE PS-Snow-03	E162	13-Apr-2025	---	---	---		24-Apr-2025	7 days	11 days	× EHT
Physical Tests : TDS by Gravimetry										
HDPE PS-Snow-04	E162	13-Apr-2025	---	---	---		24-Apr-2025	7 days	11 days	× EHT

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE PS-Snow-01	E160	13-Apr-2025	---	---	---		24-Apr-2025	7 days	11 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE PS-Snow-02	E160	13-Apr-2025	---	---	---		24-Apr-2025	7 days	11 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE PS-Snow-03	E160	13-Apr-2025	---	---	---		24-Apr-2025	7 days	11 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE PS-Snow-04	E160	13-Apr-2025	---	---	---		24-Apr-2025	7 days	11 days	✖ EHT
Total Metals : Total Mercury in Water by CVAAS										
HDPE - total (lab preserved) PS-Snow-01	E508	13-Apr-2025	24-Apr-2025	0 hrs	255 hrs	✖ UCP	24-Apr-2025	0 hrs	255 hrs	✖ UCP
Total Metals : Total Mercury in Water by CVAAS										
HDPE - total (lab preserved) PS-Snow-02	E508	13-Apr-2025	24-Apr-2025	0 hrs	255 hrs	✖ UCP	24-Apr-2025	0 hrs	255 hrs	✖ UCP
Total Metals : Total Mercury in Water by CVAAS										
HDPE - total (lab preserved) PS-Snow-03	E508	13-Apr-2025	24-Apr-2025	0 hrs	255 hrs	✖ UCP	24-Apr-2025	0 hrs	255 hrs	✖ UCP
Total Metals : Total Mercury in Water by CVAAS										
HDPE - total (lab preserved) PS-Snow-04	E508	13-Apr-2025	24-Apr-2025	0 hrs	255 hrs	✖ UCP	24-Apr-2025	0 hrs	255 hrs	✖ UCP
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved) PS-Snow-01	E420	13-Apr-2025	17-Apr-2025	180 days	4 days	✓	21-Apr-2025	180 days	4 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times*		*Eval*	*Analysis Date*	*Holding Times*		*Eval*
				Rec	*Actual*			*Rec*	*Actual*	
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved) PS-Snow-02	E420	13-Apr-2025	17-Apr-2025	180 days	4 days	✓	21-Apr-2025	180 days	4 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved) PS-Snow-03	E420	13-Apr-2025	17-Apr-2025	180 days	4 days	✓	21-Apr-2025	180 days	4 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved) PS-Snow-04	E420	13-Apr-2025	17-Apr-2025	180 days	4 days	✓	21-Apr-2025	180 days	4 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

UCP: Unsuitable Container and/or Preservative used (invalidates standard hold time). Maximum hold time of zero applied. Test results may be biased low / unreliable, and may not meet regulatory requirements.

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
pH by Meter	E108	1957365	1	14	7.1	5.0	✓
TSS by Gravimetry	E160	1964996	1	12	8.3	5.0	✓
TDS by Gravimetry	E162	1964999	1	6	16.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1958566	1	12	8.3	5.0	✓
Sulfate in Water by IC	E235.SO4	1964730	0	4	0.0	5.0	×
Acidity by Titration	E283	1957368	1	12	8.3	5.0	✓
Alkalinity Species by Titration	E290	1957367	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1954547	1	19	5.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1954544	1	14	7.1	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1954545	1	8	12.5	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1954546	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1958572	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1955510	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1954470	1	16	6.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1963366	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1963428	1	8	12.5	5.0	✓
Laboratory Control Samples (LCS)							
pH by Meter	E108	1957365	1	14	7.1	5.0	✓
TSS by Gravimetry	E160	1964996	1	12	8.3	5.0	✓
TDS by Gravimetry	E162	1964999	1	6	16.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1958566	1	12	8.3	5.0	✓
Sulfate in Water by IC	E235.SO4	1964730	1	4	25.0	5.0	✓
Acidity by Titration	E283	1957368	1	12	8.3	5.0	✓
Alkalinity Species by Titration	E290	1957367	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1954547	1	19	5.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1954544	1	14	7.1	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1954545	1	8	12.5	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1954546	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1958572	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1955510	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1954470	1	16	6.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1963366	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1963428	1	8	12.5	5.0	✓
Method Blanks (MB)							
TSS by Gravimetry	E160	1964996	1	12	8.3	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Method Blanks (MB) - Continued							
TDS by Gravimetry	E162	1964999	1	6	16.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1958566	1	12	8.3	5.0	✓
Sulfate in Water by IC	E235.SO4	1964730	1	4	25.0	5.0	✓
Acidity by Titration	E283	1957368	1	12	8.3	5.0	✓
Alkalinity Species by Titration	E290	1957367	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1954547	1	19	5.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1954544	1	14	7.1	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1954545	1	8	12.5	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1954546	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1958572	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1955510	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1954470	1	16	6.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1963366	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1963428	1	8	12.5	5.0	✓
Matrix Spikes (MS)							
Nitrate in Water by IC (Low Level)	E235.NO3-L	1958566	1	12	8.3	5.0	✓
Sulfate in Water by IC	E235.SO4	1964730	0	4	0.0	5.0	×
Ammonia by Fluorescence	E298	1954547	1	19	5.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1954544	1	14	7.1	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1954545	1	8	12.5	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1954546	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1958572	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1955510	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1954470	1	16	6.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1963366	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1963428	1	8	12.5	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 ALS Environmental - Vancouver	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove carbonate-based Inorganic Carbon (IC). Analysis is by high temperature combustion with infrared detection of CO2. Forms of carbon associated with inorganic or organic molecules (e.g. SCN and CN) are included in NPOC if they are not removed by purging under acidic conditions. Notably, NPOC excludes most volatile organic compounds and free cyanide. For samples where the majority of Total Carbon is inorganic, this method provides greater accuracy and reliability versus the TOC by subtraction method (TC minus TIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Vancouver	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	“Hardness (as CaCO3), dissolved” is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. “Total Hardness” refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Hardness (Calculated) from Total Ca/Mg	EC100A ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed as CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because hardness is a property of water due to dissolved divalent cations. In non-turbid waters, Hardness from total Ca/Mg is normally comparable to Dissolved Hardness, but may be biased high if particulate forms of Ca or Mg are present.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Vancouver	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Vancouver	Water		Preparation for Total Organic Carbon by Combustion
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

ALS Environmental

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Affix ALS barcode label here
(lab use only)

COC Number: CoC_25-120
BOL: 4760062

###
Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Blackwater Gold Mine
Contact:	Mark Warbanski
Phone:	778-818-0327
	Company address below will appear on the final report
Street:	101-139 1st Street East
City/Province:	Vanderhoof, BC
Postal Code:	V0J 3A0
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Artemis Gold Ltd, Blackwater
Contact:	Mark Warbanski

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	mwarbanski@artemisgoldinc.com
Email 2	ktanaka@artemisgoldinc.com
Email 3	

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	mwarbanski@artemisgoldinc.com
Email 2	accounts@artemisgoldinc.com

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:	15180	Requisitioner:	
LSD:		Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: A. Springer Sampler: BWG

Select Service Level Below - Please confirm all E&P

Regular [R] ☑ Standard TAT

PRIORITY (Business Days)
- 4 day [P4] ☐
- 3 day [P3] ☐
- 2 day [P2] ☐

Date and Time Required for all E&P T

For tests that can not be performed according to t

A

Indicate Filtered (F), Preserved (P)

Environmental Division
Vancouver
Work Order Reference
VA25A8449

Telephone : +1 604 253 4188

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	pH/Total Alkalinity/Acidity	Ammonia/Nutrients	DOC	T-CN, WAD-CN	Total Metals	Dissolved Metals	Total Mercury	Dissolved Mercury	Thiocyanate	DOC	Dissolved Metals	Dissolved Mercury		Number of Contain.
	PS-Snow-01	13-Apr-25	9:36	Surface Water	R	R			R	R								4
	PS-Snow-02	13-Apr-25	9:43	Surface Water	R	R			R	R								4
	PS-Snow-03	13-Apr-25	9:50	Surface Water	R	R			R	R								4
	PS-Snow-04	13-Apr-25	10:01	Surface Water	R	R			R	R								4

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?
☐ YES ☑ NO

Are samples for human drinking water use?
☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please also email reports to Envirogeneral@artemisgoldinc.com
Dissolved parameters NOT field-filtered. Metals & nutrients NOT preserved.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☑ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

n/a

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
			7	4	

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT R		
Released by: Marco Haust	15-Apr-25	Time: 10:00	Received by:	Date:	Time:	Received by: JC	Rcvd 16Apr2025	Time: 940am

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

Blackwater Gold Mine
IEM Site Visit Report 029
April 15 – 16, 2025

Prepared By
EDI Environmental Dynamics Inc.
3810 18th Ave
Prince George BC V2N 4V5

EDI Contacts
Graeme Paterson, PAg, CPESC
Leslie Chamberlist, PAg, CPESC
Independent Environmental Monitor Leads

EDI Project
21P0403
April 2025

mPRO

EDI
ENVIRONMENTAL DYNAMICS INC.
Down to Earth Biology

This page is intentionally blank.

1 PROJECT OVERVIEW

The Blackwater Mine Project is being developed by Blackwater Gold Limited (BWG), a subsidiary of Artemis Gold Inc. (Artemis). The Environmental Assessment Certificate (EAC) M19-01 was issued on 21 June 2019 and Condition 12 of the EAC requires the Holder to retain the services of an Independent Environmental Monitor (IEM) to observe, record for, and report to the BC Environmental Assessment Office (EAO) and Aboriginal Groups on compliance with the Certificate; and provide information to the EAO and Aboriginal Groups, BC Ministry of Energy, Mines and Low Carbon Innovation (EMLI) , BC Ministry of Environment (ENV), and BC Ministry of Forests (MOF) as directed by EAO.

A Decision Statement issued under Section 54 of the Canadian Environmental Assessment Act (CEAA 2012) for the Project was issued on 15 April 2019. Condition 9 of this Decision Statement requires the Proponent to retain an IEM who shall advise the Proponent, the Agency, and Indigenous groups if, in their view, the activities do not comply with the conditions set out in the Decision Statement. The IEM shall also advise the Proponent, the Agency, and Indigenous groups whether measures should be taken in respect to these activities. IEM reports are prepared to satisfy both EAC and CEAA conditions.

1.1 SITE VISIT SUMMARY

The IEM team completed a site visit on April 15 – 16, 2025, with representatives from the Saik'uz First Nations and the BWG Environmental team.

Summaries of the site locations visited, and subsequent activities, observations, and ongoing matters are described in the tables below.

Site Visit Summary

Date (dd/mm/yyyy)	IEM Team On-site Personnel	Monitoring Sites/Activities
15/04/2025	Matthew Van Osch	Workers Accommodation, Mobile Maintenance Yard, Plant Site, North Diversion Channel, and the Central Water Transfer Pond. Inspections focused on erosion and sediment control, air quality, hydrocarbon management, hazardous material management, waste management, and water management.
16/04/2025		Water Management Pond, Tailings Storage Facility, Interim Environmental Control Dam and the C-Trail access road (crossing over 636 watercourse). Inspections focused on Water Management, PAG management, and erosion and sediment control.

Activities/Observations (Record ID #s included in this table correspond to the Environmental Issue Tracking Log record ID #s)	Non-Compliance Observed?
Low Grade Ore Stockpile	
Placement of low-grade ore (LGO) continues at the LGO stockpile pad. Crews have commenced with the construction of a secondary ditch line between the LGO pad and pond.	No
Runoff accumulation has begun within the LGO pond (Photo 113556-1). This water is considered potentially acid generating (PAG) contact water, and the IEM understands (from previous discussions with BWG) will be used in the Plant Site as process water.	No
Excavation of 'zone s' till material from 'Borrow Pit 4' in the area northeast of the LGO stockpile pad continues (Photo 113556-7).	No
Plant Site	
Commissioning of the crusher circuit, plant site, and leach circuit continues as the project progresses towards commercial operations.	No
The top of the stockpile of high-grade ore at the terminus of the crusher circuit conveyor was observed to be much closer to the drop point than during the previous site visit (Photo 113515-1). BWG indicated maintaining the height of the pile to reduce the drop height of material, in addition to installation of additional sprayers on the conveyor, and the wetting of material prior to placing it through the crusher circuit are all measures being undertaken to help minimize dust generation at the plant site.	No
Construction waste bins (i.e., no food/domestic waste) at the infrastructure laydown adjacent to the plant site were observed with waste overtopping and spilling to the ground (Photo 113517-2). The IEM provided an opportunity for improvement and recommended the bins be emptied to prevent the accumulation of construction debris on the ground. A response was provided by BWG on April 23, 2025 which confirmed the waste in the area had been transferred into additonal bins and full bins had been removed from site (Photo 5).	No
A tote of sodium hydroxide (a hazardous material) was observed stored outside of secondary containment (Record ID-113516). Confirmation the tote had been placed into secondary containment was provided by BWG on April 23, 2025,	Closed
During the previous site visit in March 2025 (as detailed in IEM Report 028), the area surrounding the Plant Site building (and related infastructure) and slopes along the access road towards the operations camp (northwest of the plant site) were observed to be coated in a layer of dust (overtop snow). The dust was observed to be generated from material falling from the drop point of the plant sites conveyor circuit to the stockpile below, before being dispersed by wind through the area. Following onsite discussions with BWG staff, the IEM understood options were being reviewed to mitigate dust. The IEM submitted a request for information (RFI) requesting details on what is being considered as well as the approximate timelines to implement measures. **This item is held over from the previous reporting period (IEM Report 028).** **Update on this matter for IEM Report 029:** BWG provided a response on April 19, 2025, which indicated a consultant has been engaged to complete wind modeling for a custom-built wind fence. The status of this measure currently remains within the proposal and design phase. In addition, BWG indicated a consultant has been brought to site to review the need for additional spray bar dust suppressant stations along the crusher conveyor system. BWG indicated an approximate timeline relating to implementation of the mitigation measures will be provided once final decisions are made on which measures will be put in place.	No
Following the observation of dust generation and deposition from the drop point on the conveyor during the site visit in March 2025 (as detailed in IEM Report 028), an RFI inquiring whether spray bar sprinklers (as described in Section 8.2 of the Air Quality and Fugitive Dust Management Plan) were being utilized at the material transfer points on the primary and secondary crusher circuits, conveyors, and stockpile drop points. **This item is held over from the previous reporting period (IEM Report 028).** **Update on this matter for IEM Report 029:** In a response provided on April 19, 2025, BWG indicated spray bar dosing stations are currently installed on the conveyor (at both crusher screen discharge chutes) and that a cold temperature reagent (known as 'IPAC') is being utilized for dust suppression during periods of cold temperatures. In addition, it was detailed that water trucks have been used at the primary crusher to apply water to material prior to processing when above freezing temperatures permit. Section 8.2 of the Air Quality and Fugitive Dust Management Plan details that spray bar sprinklers will be installed as a mitigation measure at material transfer points to limit dust emissions and identifies stockpile drop points as a location where this will be applied. As stockpile drop points are described as a location where spray bar sprinklers will be installed, the IEM submitted a follow up RFI to inquire if sprayers are currently present at the stockpile drop point at the terminus of the plant site conveyor and are currently awaiting a response from BWG.	No
Dust generated and transported by wind from the Plant Site to nearby slopes, roadways, and laydowns that was observed during the March 2025 site visit (as detailed in IEM Report 028) is sourced from high-grade ore material, which is designated as PAG material (per Section 6.3 of the Metal Leaching and Acid Rock Drainage (ML/ARD) Management Plan) and can lead to acidic drainage with elevated concentrations of metals and sulphates. As the dust generated is composed of PAG material and has deposited around the Plant Site and surrounding area, the IEM submitted a request to have a qualified professional in acid rock drainage (QP-ARD) review and comment on the potential that the observed deposition of PAG material dust across large areas of the site may cause impacts to the soil or downstream watercourses once the material becomes mobile following snow melt, rain events, or continued wind transport and deposition. **This item is held over from the previous reporting period (IEM Report 028).** **Update on this matter for IEM Report 029:** On April 19, 2025, BWG indicated a QP-ARD has been engaged to review the dust accumulation at the plant site and surrounding area and that samples of snow/dust have been collected for lab analysis. BWG indicated that results of the QP-ARD review and analysis of the sample collection will be incorporated into a technical memorandum from the QP-ARD. In the meantime, BWG indicated dust deposition (and any mobilization from melt water) within the plant site will be contained by the perimeter ditching which directs it to the Plant Sediment Control Pond (PSCP). Water within the PSCP will be pumped back into the plant to be utilized for processing and not discharged to the environment. Additionally, BWG indicated downstream sampling frequency will be increased in the coming months. The IEM team will continue to discuss this matter with BWG and will review the QP-ARD technical memorandum once available.	No

Mobile Maintenance Yard	
A hydrocarbon spill to ground was observed beneath a haul truck (unit 305) staged within the laydown (Record ID-113519). Confirmation the spill beneath haul truck had been cleaned up was provided by BWG on April 23, 2025.	Closed
A hydrocarbon spill to ground was observed beneath a pump unit staged within the laydown (Record ID-113522).	Yes
Several containers being utilized as spill trays beneath haul trucks were observed with hydrocarbon solution and fuel filters/spill pads present within (Photo 113521-5). As these containers were being utilized as drip trays and no spills to ground were observed beneath them, a recommendation the contaminated material inside be disposed of appropriately to prevent any potential spills was provided as an opportunity for improvement. BWG provided a response on April 23, 2025, which detailed that the totes had been emptied and waste within the totes (waste oil and used spill pads/filters) had been appropriately disposed of.	No
Andrew's Hill Laydown	
A spill to ground was observed beneath a frost fighter staged at the equipment/machine laydown known locally as 'Andrew's Hill' (Record ID-113523). Confirmation the spill had been cleaned up was provided by BWG on April 23, 2025.	Closed
Workers Accommodation	
Decommissioning of portions of the former exploration camp remains ongoing with trailers (bunks) being removed from site.	No
Water Management Infastructure	
During the previous site visit in March 2025 (as detailed in IEM Report 028), the pump at the Central Water Transfer Pond (CWTP) was observed to not be in operation. This pump is used to divert water to the Davidson Creek discharge point as part of the maintenance of permitted downstream flow levels. Following onsite discussions, the IEM understands the pump had mechanical issues that required repair and that this would be completed shortly. BWG staff indicated that under normal circumstances, if water could not be pumped from the CWTP to Davidson Creek then water from the Water Management Pond (WMP) would be directed to supplement downstream flows. The IEM understands that at the time of the site visit BWG was not discharging water from the WMP to the Davidson Creek system due to concerns with elevated turbidity of the water within the pond. The IEM submitted an RFI inquiring if the project remains in compliance with Section 3.8 of the Federal Decision Statement (FDS) and the *Fisheries Act* Authorization (which detail that the Project shall maintain in-stream flow needs in Davidson Creek during all phases of the project) during periods of time where no water is being discharged from the CWTP or the WMP to Davidson Creek. **This item is held over from the previous reporting period (IEM Report 028).** **Update on this matter for IEM Report 029:** BWG provided a response on April 2, 2025 which detailed that in February 2025, flow levels within Davidson Creek had occurred at levels below the in-stream flow requirements detailed in the project's *Fisheries Act* Authorization (FAA) and that these instances had been reported to Fisheries and Oceans Canada (DFO) in accordance with the projects FAA reporting schedule. As the response from BWG received on April 2, 2025 indicated the project had not been in compliance with the FAA and because the Project's FAA is associated with the Federal Decision Statement (FDS) (within the IEMs purview), a follow up RFI was submitted on April 2, 2025, inquiring whether the non compliance had been reported to the Impact Assessment Agency of Canada (IAAC) and accompanying nations detailed under the FDS. Additionally, the IEM requested details about which days the project has not met the FAA/FDS requirements for discharge to Davidson Creek, how often flow rates are sampled/monitored (for example, continual flow data or spot check), and confirmation water discharges are now back within compliant ranges. The IEM continues to await a response from BWG related to this matter.	No
Snow accumulation was present with in the North Diversion Channel at the time of the visit, and runoff along the adjacent roadway was observed (Photo 113518-1). BWG indicated snow melt is being monitored before starting the installation of erosion and sediment control (ESC) works to prevent the mixing of snow and topsoil and prevent the potential sluffing of the installed ESC measures.	No
Following onsite discussions with BWG, the IEM team understands turbidity of water within the Water Management Pond continues to be an issue and that BWG continues to review options for treatement of the water (Photo 113550-1).	No
Mine Site Access Roads	
The IEM team completed a visit to kilometer (km) 9.5 along the C-Trail access road to the bridge over Watercourse 686 where ESC measures had been installed in response to a non-compliance issued by the IEM team in relation to sediment deposition into the watercourse (additional detail can be found in IEM Report 23 for October 2024). In general, the installed ESC measures appeared to function to design to prevent sediment from entering the watercourse below (Photo 113555-10) and the IEM team understands BWG has been utilizing vacuum trucks to collect water from the sumps at the base of the slope through the melt period. BWG staff also indicated the area would soon be hydroseeded. During the visit, the IEM team observed that maintenance and repair to the slope and some previously installed ESC measures upstream will likely soon be required (Photo 113555-9). The IEM team will complete a follow up visit to this location during a future visit to confirm sediment deposition to the watercourse below is not occuring.	No
Upon arrival to the security gate, BWG staff advised they had identified (earlier that morning) a location where turbid runoff in the ditch lines along the road to the Operations Camp was discharging into the fish salvaged portion of Watercourse 146, which passes beneath the roadway and ultimately reports to the fish bearing Chedakuz Creek downstream (Photos 113513-9 and 113513-10). It was determined the source of the water was from an area of snow melt along the upper portion of the roadway. Upon discovery, BWG actioned the installation of temporary ESC measures within the ditch line (including straw wattles and sandbags), arranged an excavator to be brought to the area to help with water management, and collected a downstream water quality sample. An excavator arrived onsite in the late afternoon (approximately 5pm) on April 15, 2025, and worked into the evening to complete the installation of a ditch block and cutoff ditch to direct the melt water into a nearby vegetated area (Photos 113513-3 and 113513-4). During a visit to Watercourse 146 the following morning, flows were observed to be less turbid (Photo 113513-5). BWG indicated a follow up water sample would be collected later that morning to confirm whether they remained within BC Water Quality Guidelines (BCWQG) for turbidity (in accordance with Table 15.6-1 of the Construction Environmental Management Plan) and indicated the ditch line would continue to be monitored through the spring melt period. Additionally, BWG indicated that their qualified professional in erosion and sediment control (QP-ESC) would inspect the measures installed in this area during a future site visit to confirm whether they were sufficient, or if additonal measures were required. The IEM submitted a follow up RFI on April 22, 2025, to have BWG confirm the follow up water quality sample was collected, and detail whether exceedances of BCWQG for turbidity had occurred as a result of this event. The IEM team continues to await a response from BWG.	No

Notable Environmental Incidents

Record ID No(s).	Date (dd/mm/yyyy)	Location	Description of Event
113571	19/04/2025	DC-05 compliance sample location within Davidson Creek	On April 19, 2025, it was reported that total suspended solids (TSS) exceedances had occurred at the DC-05 compliance point within Davidson Creek for the period between March 12-15, 2025. BWG indicated the incident was reported externally. The IEM has requested additional information related to this incident and are currently awaiting a response from BWG. Additional detail can be found in the attached summary of March 2025 environmental incidents (BWG incident report number 2639) and the IEM team will update the next report with information received as a result of the latest information request relating to this matter.

Environmental Issue Tracking Log – Open Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)
113522	15/04/2025	Hydrocarbon spill to ground beneath a pump unit staged at the Mobile Maintenance Yard.	Clean up and dispose of contaminated material in accordance with Section 9.2 of the Fuel Management and Spill Control Plan.	26/04/2025

Environmental Issue Tracking Log – Closed Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)	Follow-up	Completed Date (dd/mm/yyyy)
113516	15/04/2025	Tote of sodium hydroxide (hazardous material) stored outside of secondary containment near the office trailers at the Plant Site.	Store hazardous materials in secondary containment to restrict the spread of any spilled product in accordance with Section 10.5 of the CEMP.	26/04/2025	Confirmation tote had been placed into secondary containment was provided on April 23, 2025,	23/04/2025
113519	15/04/2025	Hydrocarbon spills to ground beneath haul truck unit 305, staged at the Mobile Maintenance Yard.	Clean up and dispose of contaminated material in accordance with Section 9.2 of the Fuel Management and Spill Control Plan.	26/04/2025	Confirmation spill had been cleaned up was provided on April 23, 2025.	23/04/2025
113523	15/04/2025	Spill to ground beneath a frost fighter staged at the 'Andrew's Hill' laydown.	Clean up and dispose of contaminated material in accordance with Section 9.2 of the Fuel Management and Spill Control Plan.	26/04/2025	Confirmation spill had been cleaned up was provided on April 23, 2025.	23/04/205

Upcoming Construction Activities

Summary of Activities	Anticipated Start Date
-	-

Key Communications

Date (dd/mm/yy)	Communication Type	Personnel	Communication Summary
-	-	-	-

Yours truly,

EDI ENVIRONMENTAL DYNAMICS INC.

Graeme Paterson, P.Ag, CPESC
Independent Environmental Monitor Lead

ATTACHMENTS:

- Photos
- Site Overview map
- Additional Site Overview Map (provided by BWG) – note that map is provided as a general reference for onsite activities and is a proposed construction map which does not yet include final design infrastructure.
- Summary of Previous Month (March 2025) Environmental Incidents (provided by BWG)

Distribution List:

Blackwater Gold (Artemis): Tim Donnelly, Adam Gyorffy, Mark Warbanski, Ryan Todd, Sam Lynch, Steven Hayward, Norm Fraser, Jessica Saunders, Quain Sulin, Randall Hennigar, Linda Siwallace

Ulkatcho First Nation: Alyisha Knapp

Lhoosk'uz Dene Nation: Laurie Vaughn

Stellat'en First Nation: Doug Casimel, Deane Carlson, Taneesha Raymond

Saik'uz First Nation: Kasandra Turbide, Howard Alexis

Nadleh Whut'en First Nation: Kristen Chapman, Pam Ketlo

Nazko First Nation: Stephanie Deneault, Terrance Paul, Florian Bergoin

Source Environmental Associates Inc: Martin Shin, Georgina Farah, Fraser Riddolls, Rina Freed, Anna Everett

Skin Tyree Nation: Bea Paton

Tsilhqot'in National Government: Trina Setah

Metis Nation of BC: Danielle Courcelles

Environmental Dynamics Inc (EDI): Graeme Paterson, Leslie Chamberlist, Matthew Van Osch

Impact Assessment Agency of Canada (IAAC): Mathieu Trudelle, Shannon Wallace, Carl Johansson

Environmental Assessment Office (EAO): Clayton Smith, Chris Parks, Warren Fekete, Christie Lombardi

Ministry of Mining and Critical Metals (MCM): Rachel Taylor

Ministry of Environment and Climate Change Strategy (ENV): Breanne Hill

Ministry of Water, Land and Resource Stewardship (WLRS): Duncan McColl

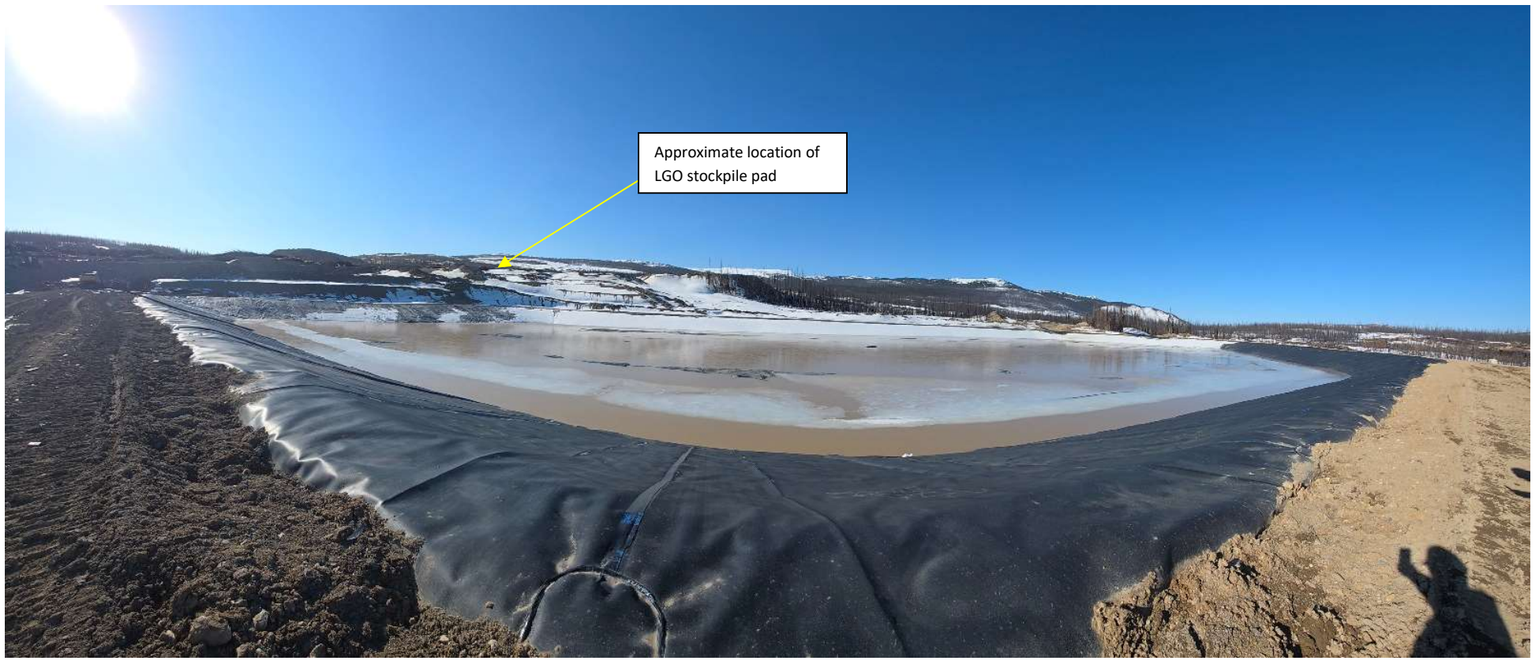


Photo 113556-1. Overview of the LGO stockpile pond (downstream of the LGO stockpile pad) which has started to capture water from the pad and surrounding area. This water is considered 'PAG contact water' and it is understood will be utilized in the plant site for process water.

Photo 113556-7. Development of Borrow Pit 4 (source of zone s till material) adjacent to the LGO stockpile pad.

Photo 113515-1. Stockpile of high-grade ore at the drop point of the till conveyor. Stockpile height noted to be elevated in comparison to previous site visits, reducing drop height from conveyor.

Photo 113517-2. Construction waste bins (no food/domestic waste present) overtopped at the Plant site. Issued as an opportunity for improvement.

Photo 5. Construction waste bins at the Plant Site following clean up by BWG. Photograph provided by BWG on April 23, 2025.

Photo 113521-5. Example of former storage tote being utilized as a drip tray containing used oil and oil filters at the mobile maintenance yard.

Photo 113518-1. Overview of a portion of the North Diversion Channel which remains snow filled. Melt water movement observed on adjacent roadway.

Photo 113550-1. Overview of a portion of the WMP. The IEM understands BWG continue to have issues with the turbidity of the water within the pond and are currently reviewing options for treatement.

Photo 113555-10. Overview of base of C-trail access road drainage ditch adjacent to Watercourse 636 after spring melt period. Sediment transport into watercourse observed to be minor at time of visit.

Photo 113555-9. Overview of slope above Watercourse 636 crossing where ESC measures will likely soon require maintenance/repair in order to minimize sediment transport to Watercourse 636. IEM will complete a follow up visit to this location to observe area in a future visit.

Photo 113513-9. Turbid water flowing in ditch line along road to Operations Camp. Water from ditch flowing into Watercourse 146 located downstream of this image (see photo 113513-10). Photo taken morning of April 15, 2025.

Photo 113513-10. Turbid flow in Watercourse 146 (fish salvaged) sourced from roadside ditches (see Photo 113513-9). Photo taken morning of April 15, 2025.

Photo 113513-3. Ditch block and cutoff ditch leading to vegetated area to prevent turbid water from draining into Watercourse 146. Photo taken morning of April 16, 2025.

Photo 113513-4. Terminus of cutoff ditch (see photo 113513-3) installed to prevent turbid water from draining into Watercourse 146 along the access road to Operations Camp. Photo taken morning of April 16, 2025.

Photo 113513-5. Overview of flow in Watercourse 146 following the installation of upstream ditch block to divert turbid water flow. Photo taken morning of April 16, 2025.

Work Space Locations

Legend

- Mine Access Road
- Watercourse
- Waterbody
- 1, Security Gate
- 2, Central Water Transfer Pond
- 5, Sediment Control Pond
- 6, Operations Camp
- 7, Water Management Pond
- 8, Mobile Maintenance Yard
- 9, Plant Site
- 11, Heavy Equipment Assembly Pad
- 13, Lake 15/16 Fish Compensation Channel
- 14, Explosives Magazine
- 15, Low Grade and High Grade Ore Stockpile (approx. location)
- 16, Run of Mine Pad
- 17, North Diversion Channel
- 18, Interim Environmental Control Dam
- 3, Davidson Creek Diversion Structure
- 4, Tailings Storage Facility Dam
- 12, Future Open Pit

0 0.5 1 1.5 2
Kilometres

Map Scale = 1:30,000 (printed on 11 x 17)
Map Projection: NAD 1983 UTM Zone 10N

Data Sources
• Workspaces. EDI Environmental Dynamics Inc. December 9, 2024.
• Main Basemap. CanVec 1:50,000: Government of Canada; Sentinel-2 Level 2A RGB T09UYV September 4, 2024. Contains modified Copernicus Sentinel data 2024 processed by Sentinel Hub.

Disclaimer
EDI Environmental Dynamics Inc. has made every effort to verify this map is free of errors. Data have been derived from a variety of digital sources and, as such, EDI does not warrant the accuracy, completeness, or reliability of this map or its data.

Drawn:	Checked:		
CT/OL	GP	Map 1	Date: 2024-12-09

EDI

Path: L:\PROJECTS\2021\NBC\21P0403_BlackwaterMine\21P0403_BlackwaterMine.aprx\21P0403_Blackwater_IEM_20241209

NOTES:

1. DCDS Pump Station is included for reference. System will be decommissioned and relocated prior to day 0.

372 000 E
373 000 E
374 000 E
375 000 E
376 000 E
377 000 E
378 000 E
379 000 E
5 901 000 N
5 900 000 N
5 899 000 N
5 898 000 N
5 897 000 N
5 896 000 N
5 895 000 N
5 894 000 N
5 893 000 N

DOWNSTREAM ESKER
DOWNSTREAM ESKER ACCESS TRAIL
FWR ACCESS TRAIL
FRESH WATER RESERVOIR
INTERIM ENVIRONMENTAL CONTROL DAM
TS-6
DAM C ESKER
TS-4B
TAILINGS STORAGE FACILITY - STAGE 1
BORROW PIT 2
NORTH DIVERSION CHANNEL
DCDS PUMP STATION Ref. Note 1
IECD ACCESS ROAD
E-TRAIL
BORROW PIT 4
TF
C-TRAIL
EXPLORATION ACCESS ROAD
NORTH COLLECTION CHANNEL
BORROW PIT 3
MINOR DIVERSION CHANNELS
A-TRAIL
BORROW PIT 1
WATER MANAGEMENT POND DISCHARGE PIPELINE
TW 13-02
TW 13-03
CHOKE STN 1
CENTRAL WATER TRANSFER POND
CHOKE STN 1
Km 15 WELL
WATER MANAGEMENT POND
TS-3
SOUTH COLLECTION CHANNEL
MOBILE MAINTENANCE & WAREHOUSING LAYDOWN
OPERATIONS CAMP
Km 15 WELL
CHOKE STN 3
WASTE ROCK STOCKPILE
RUN OF MINE PAD
METAL TREATMENT COLLECTION POND
TW 13-01
TS-2 ACCESS
ACCESS ROAD
EXPLOSIVES MAGAZINE ACCESS ROAD
METALS WTP
TW 13-04
RCH071
PROCESS PLANT
EXPLORATION CAMP
WW 10-01
WW 11-01
TS-2
EXPLOSIVES MAGAZINE
CONSTRUCTION CAMP
PW 13-1
LOW GRADE & HIGH GRADE ORE STOCKPILE
MINING FLEET ASSEMBLY AREA
PIT AREA
PW 13-3
N
W
E
S

Reference Drawing Name	Drawing Code
Gold Processing Plant	BWST1-0200-GEN-GAD-0001_01
Blackwater Project Exploration Camp Construction	BWST1-1100-GEN-GAD-0001
Construction Camp - Layout	BWST1-1200-ARC-GAD-0001
Blackwater Gold Wastewater Treatment Plant - General Arrangement	BWST1-1340-MEC-GAD-0001
Erosion & Sediment Control Plan - Plant Site - General Arrangement	BWST1-2310-CIV-DWG-3810
Tailings Storage Facility - Main Dam C - Stage 1 General Arrangement	BWST1-2800-CIV-DWG-1002
Tailings Storage Facility Water Management Pond - General Arrangement	BWST1-2700-CIV-DWG-1130
Water Management Central Diversion System Water Transfer Pond Plan	BWST1-2550-CIV-DWG-3140
Fresh Water Reservoir Site Overview Plan - General Arrangement	BWST1-2900-CIV-DWG-4001
Taillings Storage Facility Davidson Creek Diversion System - Pump Station Layout	BWST1-2110-MEC-DWG-1160
Tailings Storage Facility Main Dam C Diversion Berm - Plan and Profiles	BWST1-2110-CIV-DWG-1105
Tailings Storage Facility - Main Dam C - Interim Environmental Control Dam - Plan And Profile	BWST1-2600-CIV-DWG-1410
Tailings Storage Facility Main Dam C Sediment Control Pond Inlet Channels - Plan and Profiles	BWST1-2820-CIV-DWG-1402
Water Managment Central Diversion System North Collection Channel - Plan and Profile	BWST1-2510-CIV-DWG-3110
Water Management Central Diversion System North Diversion Channel - Plan and Profile	BWST1-2520-CIV-DWG-3120
Water Management Central Diversion System South Diversion Channel - Plan and Profile	BWST1-2530-CIV-DWG-3130
Water Management Topsoil Stockpiles TS-2 Collection Channel - Plan, Profile and Sections	BWST1-7220-CIV-DWG-3755
Water Management Topsoil Stockpiles TS-2 Diversion Channel - Plan, Profile and Sections	BWST1-7220-CIV-DWG-3756
Water Management Topsoil Stockpiles TS-4B Collection Channels - Plan, Profile and Sections	BWST1-7250-CIV-DWG-3765
Water Management Topsoil Stockpiles TS-6 Collection Channel - Plan, Profile and Sections	BWST1-7270-CIV-DWG-3781
Water Management Topsoil Stockpiles TS-6 Diversion Channel - Plan, Profile and Sections	BWST1-7270-CIV-DWG-3787
WMS Access Trails	BWST1-1400-CIV-DWG-0050-0088
Roads and Pipelines, Overview and Details	BWST1-0000-CIV-GAD-0002-0009
Blackwater Gold Project Site Power Distribution 25kV Overhead Power Line Proposed Route Layout Plan	BWST1-6410-ELE-GAD-0001

Lakes:
Rivers & Streams:
Light Vehicle Access Roads:
Exploration Trails:
CPD:
OH 25 kV: O/H
OH 230 kV: O/H
Pipelines:
Major interval: 25m,
Minor interval: 5m: 25

Revision #	Revision Note	Date
M	Updated R-Pad, Fuel Bay, Roads, and Pipelines	07/27/2023
L	Removed Natural Pond & Diversion Channel	07/14/2023
K	Permanent Camp Access, Pipeline Updates	06/16/2023
J	Addressed Markups, Updated TF's & kV Lines	05/27/2023
I	Addressed Markups	05/19/2023
H	Addressed Markups, Updated Various Items	05/15/2023
G	Added Potable Water Treatment Plant	05/05/2023
F	Revised Process Plant and Access Road	04/21/2023
E	Addressed Markups	03/14/2023

Client Approval By:

ARTEMIS GOLD INC

Blackwater Mine — General Overview Day 0

McElhanney

McElhanney Ltd.
100, 402 - 11th Avenue SE
Calgary, AB
T(403)245-4711 F(403)229-9160

Drawing Number: BWST1-0000-CIV-GAD-0001_02

Acad File: Blackwater GAD_RevM.dwg | Drafted by: KAK | Checked by:SAB

Scale: 1:10,000

100 0 100 200 300 400 500

DATE: 2023-07-31 - 09:19 FILE: X:\2241\21295-03 Blackwater - Site General Arrangement\10.0 Drawings\10.1 Engineering\10.1.3 Models\Blackwater GAD_RevM.dwg

SUMMARY OF PREVIOUS MONTH (MARCH 2025) ENVIRONMENTAL INCIDENTS (PROVIDED BY BWG)

ID	Hazard/ Incident Date Time	Brief Description	Location	Department	Select the immediate actions taken?	Initial Hazard or Incident details	Spilled Fluid Details	Is the spill near a creek or water body if applicable?	Regulatory Reporting Status	Material Disposal Site	Media Affected by spill	Spill Cause	Spill Clean Up Date	Spill Source	Spilled Fluid Quantity (Liters)
2628	2025-03-31 8:10	773 haul truck blew a transmission line the the LGO stockpile area.	LGO stockpile entrance	Earthworks	Stopped hauling past the area of the break down to reduce risk for ground workers.	Hazard/Incident Date: 2025-03-31 08:10 AM; Reported by - | Employed by: , Hazards | Incident Details: 773 haul truck was climbing a ramp from the LGO pad onto the LGO stockpile, truck threw a hazards code, driver pulled over and inspected the truck and noticed the leak, pulled out spill kit and tried to contain spill as best as possible, called supervisor and assisted in moving the truck off of road way and cleaned up spill, disposed of in proper bins. ; Immediate Actions Taken - Stopped hauling past the area of the break down to reduce risk for ground workers. , Recommended Action - Hold traffic if incidents occur near haul roads, safe out areas for group personnel.	Transmission oil	No	Not Required	Rags/soils bin by maintenance yard	Dirt	Hose failure	2025-03-31	Transmission	10 litres
2620	2025-03-28 11:30	Leak in hydraulic hose.	Construction camp	Marmac	Stop machine and put spill pads down. Also assessed the area for more spots of possible leaks then proceeded to call a supervisor.	Hazard/Incident Date: 2025-03-28 11:30 AM; Reported by - Employed by: , Hazards | Incident Details: Loader operator was clearing snow piles into dump truck. While waiting for truck to return, the operator got out to look over the machine. While inspecting the machine they notice a hydraulic leak and a small amount of oil on the ground (snow). Operator then turned off machine and put spill pads down and assessed the area for more spillage. ; Immediate Actions Taken - Stop machine and put spill pads down. Also assessed the area for more spots of possible leaks then proceeded to call a supervisor. , Recommended Action - Ensure PMs are being completed and that proper pretrips are happening.	Hydraulic oil	No	Not Required	Green totes	Snow	Crack in hose and needed to be replaced.	2025-03-28	Hydraulic hose inside a compartment.	1-2 litres.
2617	2025-03-25 11:00	Excavator fitting broke, hydraulic oil spilled.	Mobile service area	Frost Lake	Site frozen supervisor was called who called in Josh representative. Spill kit was brought out to contain and clean spill.	Hazard/Incident Date: 2025-03-25 11:00 AM; Reported by -| Employed by: , Hazards | Incident Details: Loading excavator onto the low bed and digging bucket snagged a hydraulic coupling. ; Immediate Actions Taken - Site frozen supervisor was called who called in Josh representative. Spill kit was brought out to contain and clean spill. , Recommended Action -	Hydraulic oil	No	Not Required	Msa	Spill affected snow	Broken hydraulic fitting	2025-03-18	Excavator fitting	4
2619	2025-03-25 5:00	50lbs of elemental sulfur spilled on ground in front of north side of reagent building	North side of reagent building	Processing	Product was cleaned up using shop vac and shovels	Hazard/Incident Date: 2025-03-25 05:00 AM; Reported by -| Employed by: , Hazards | Incident Details: Safety Department Noticed spill during walks / inspections.; Immediate Actions Taken - Product was cleaned up using shop vac and shovels, Recommended Action - Provide information to supplier and people handling pallets better care in the moving of pallets	Elemental Sulfur Class 4 product	No	Not Required	Green environmental bin	None product cleaned up off frozen ice.	Poorly packaged Sulfur prill delivered to plant site reagent building. Bags were damaged during shipping and handling problems by supplier. Product placed in front of building to be used.	2025-03-25	Dry prills	50 lbs
2613	2025-03-25 3:30	HT1304 Hydraulic Line Split	100M North of Frost crusher	Mine Operations	The operator shut down the truck and deployed the provided spill kits. The operator called the supervisor, who brought a spill tray and spill pads, which were laid under the spill area.	Hazard/Incident Date: 2025-03-25 03:30 AM; Reported by Hazards | Incident Details: -HT1304 called to report a leak from their truck. They pulled over, shut down the truck, and called their supervisor, who provided additional spill kits and spill trays.; Immediate Actions Taken - The operator shut down the truck and deployed the provided spill kits. The operator called the supervisor, who brought a spill tray and spill pads, which were laid under the spill area., Recommended Action - No - situation was handled promptly and with minimal amount spilt to ground.	Hydraulic Oil	No	Not Required	Removed contaminated spill pads from under the truck and disposed of oily pads in the appropriate oily rags bin at the maintenance shop. Small amount of soil scooped up and disposed of in Contaminated Soil Bin.	Compact Partially Frozen Ground	Split Hydraulic Hose	2025-03-25	Hydraulic Hoist System	30L
2614	2025-03-22 9:00	Sulphur prill spill by crusher	crusher reagent lay down area	Processing	Cleaned up and put in green bin	Hazard/Incident Date: 2025-03-22 09:00 AM; Reported by - | Employed by: , Hazards | Incident Details: operator unloading Sulphur bags punctured bag; Immediate Actions Taken - Cleaned up and put in green bin, Recommended Action - use spotter, supplier will be on site to investigate incident	4kg	No	Not Required	shoveled up and placed in green bin	snow and ground	Hole in bag	2025-03-24	n/A	N/A
2602	2025-03-19 18:00	HT1312 Transmission Oil Leak	Rom Truck Park Up	Mine Operations	Spill kits and a tray were used to catch the leaking oil minimising amount making it to the ground. Mechanics were called.	Hazard/Incident Date: 2025-03-19 18:00 PM; Reported by - Hazards | Incident Details: -HT1312 noticed a leak underneath the truck at the ROM park up. A spill Tray and a spill pads were placed underneath the truck to catch the oil.; Immediate Actions Taken - Spill kits and a tray were used to catch the leaking oil minimising amount making it to the ground. Mechanics were called. , Recommended Action - Situation was handled well and promptly reducing amount of oil making it to the ground.	Hydraulic Oil	No	Not Required	contaminated soil area	Frozen Ground.	Hose Failure	2025-03-20	Transmission	30L
2604	2025-03-19 0:00	1L Hydrocarbon Spill at Lube Bay.	Mobile Maitenance Lube Bay	Environmental	Spill cleanup was initiated. All contaminated material was disposed of in appropriate bins.	Spot spill at mm lube area	Hydrocarbon	No	Not Required	Contaminated Soil/Snow Bins	Ground	human error	2025-03-19	unknown-vehicle maintenance	1
2605	2025-03-19 0:00	1.5L Hydrocarbon Spill at MM Lube Bay	Mobile Maintenance Lube Bay	Environmental	Spill cleanup was initiated. All contaminated material was disposed of in appropriate bins.	Spill at lube bay in mm. Spill was cleaned up.	Hydrocarbon	No	Not Required	Contaminated Soil/Snow Bins	Ground	human error	2025-03-19	unknown-vehicle maintenance	1.5
2606	2025-03-19 0:00	0.75L Hydrocarbon Spill at MM Lube Bay	MM Lube Bay	Environmental	Spill cleanup was initiated. All contaminated material was disposed of in appropriate bins.	Small spot spills at lube bay. Clean up was actioned and contaminated material was disposed of in bins.	Hydrocarbon	No	Not Required	Contaminated soil/snow bins	Ground	human error	2025-03-19	unknown-vehicle maintenance	0.75

2599	2025-03-18 6:10	6401 hydraulic leak found at walk around	Rom park up at primary	Mine Operations	Paced spill pads down and called supervisor	Hazard/Incident Date: 2025-03-18 06:10 AM; Reported by - | Employed by: , Hazards | Incident Details: Operator seen oil leak on walk around put pads down to collect any oil and called supervisor ; Immediate Actions Taken - Paced spill pads down and called supervisor , Recommended Action -	Hydraulic oil	No	Not Required	Appropriate disposal bins	Frozen ground	Hose failure	2025-03-18	Hydraulic hose on quick change	1.5 liters
2596	2025-03-17 9:30	Minor hydraulic spill at FTE drill	Pit Area: 1600E grade control drilling pad	Mine Geosciences	Cleaned up spill right away.	Hazard/Incident Date: 2025-03-17 09:30 AM; Reported by - | Employed by: , Hazards | Incident Details: Upon retracting the cyclone, samplers noticed fluids coming from the hoses and reported it to the driller. Cleanup done immediately after shut down of drill.; Immediate Actions Taken - Cleaned up spill right away., Recommended Action - Do not leave tools hanging from hydraulic lines on the drill rig, especially areas with pinch points.	Hydraulic oil	No	Not Required	Immediately cleaned up and disposed the contaminated soil and spill pads.	Ground	Hammer was left hanging from hydraulic lines, when the cyclone was retracted to beside the drill it cause the hammer to pinch and rupture the lines.	2025-03-17	Hoses	1-2L
2597	2025-03-17 8:10	1312 truck transmission oil leak	TSF PAG dump	Mine Operations	Truck shut down and spill pads laid in place maintenance was notified	Hazard/Incident Date: 2025-03-17 08:10 AM; Reported by - | Employed by: , Hazards | Incident Details: 1312 Operator dumped load off on dump a leak was noted on truck operator pulled out of the way to check truck out and called supervisor to report issues truck was shut down and spill pads were placed to catch any extra oils ; Immediate Actions Taken - Truck shut down and spill pads laid in place maintenance was notified , Recommended Action - No it was handled very well	Transmission fluid	No	Not Required	Spill pads disposed of in designated containers	Oil contacted frozen section of dump	O-ring started leaking	2025-03-17	O-Ring	1/2 liters
2639	2025-03-16 0:00	TSS BCWQG Exceeded at DC-05	DC-05	Environmental	Issue rectified at time of report	BC WQG TSS limits exceeded at DC-05 from March 12-15.			Initial Notification Issued to the regulator							
2595	2025-03-16 20:10	Doing a berm break and draining large puddles and the loader sprung a leak from a pilot line	On the road to the IECD & sed pond	Earthworks	Spill pads and socks were used to contain the spill quickly to an area under the machine.	Hazard/Incident Date: 2025-03-16 20:10 PM; Reported by | Employed by: , Hazards | Incident Details: Operator was opening a hole in the berm to drain a large puddle that had formed in the haul road, he pulled over for break amd smelled hydralic fluid. Quickly found the leak and estopped the machine (it was trying to do an idle down) got the spill pads and socks down and contained the spill to a small area under the machine. Mechanics got the new oring and fitting installed and we moved the machine put of the way to continue with the clean up.; Immediate Actions Taken - Spill pads and socks were used to contain the spill quickly to an area under the machine., Recommended Action - We should take a look at the limits that the machine can articulate (LD6401 988 loader), looks like the back of the lift arms behind the pin made contact with the fitting causing the leak (right of the machine)	Hydralic oil	No	Not Required	Brought all contaminated materials to the maintenance bins and segregated the pads and socks from the snow	Small amount of snow and dirt	Oring/ fitting failure	2025-03-16	Small pilot line	40L
2589	2025-03-14 20:40	Oil spill at fuel island behind plant site	Plant site fuel island (pumps 1&2)	Earthworks	Spill pads and socks were deployed immediately by the driver, I showed up 5 mi uses after with more spill pads and cones to block off the area. Made a call to maintaince and had the F&L truck show up and suck the remaining oil out of the broken tote. Clean up is on going at this time (11:15pm) with bags for contaminated snow and ice.	Hazard/Incident Date: 2025-03-14 20:40 PM; Reported by Hazards | Incident Details: -Driver Statement I was trying to sand the gas and clear diesel side of the fuel tank, I was backing up and miss judged how much wider my under body blade is and it hit the oil container. I pulled ahead and proceeded to lay out spill pads. ; Immediate Actions Taken - Spill pads and socks were deployed immediately by the driver, I showed up 5 mi uses after with more spill pads and cones to block off the area. Made a call to maintaince and had the F&L truck show up and suck the remaining oil out of the broken tote. Clean up is on going at this time (11:15pm) with bags for contaminated snow and ice., Recommended Action - Don't put oil totes in a narrow drive lane. It was an accident waiting to happen.	Mixed oil	No	Not Required	On site bins	Snow and ice	Sand truck was sanding the pump drive through and clipped the tote with the belly blade.	15-Mar-25	1000L storage tote	25L
2587	2025-03-14 8:10	1310 truck drain plug on left rear differential came off drying operation	Noticed and truck pulled over on TSF pag dump	Mine Operations	Truck was positioned with drain plug up to stop any further leak and spill pads laid to prevent oil from moving along ground	Hazard/Incident Date: 2025-03-14 08:10 AM; Reported by - | Employed by: , Hazards | Incident Details: 1310 arrived on dump another operator noticed oil on tire called operator truck was parked with drain plug up to stop any extra oil leaking spill pads were laid in place and maintenance was called ; Immediate Actions Taken - Truck was positioned with drain plug up to stop any further leak and spill pads laid to prevent oil from moving along ground , Recommended Action - Insure plugs are tightened after checks are done	Gear oil	No	Not Required	Oil was cleaned of of frozen ground pads disposed of in appropriate containers	Frozen ground	Drain plug came undone	2025-03-14	Differential	3 liters
2583	2025-03-12 20:10	HT1309 Brake Line Leak	The incident happened on bench 1600 of the ore body.	Mine Operations	Spill kits were used to catch the oil coming from the leak. Soaking up the oil on the surface.	Hazard/Incident Date: 2025-03-12 20:10 PM; Reported by - | Employed by: , Hazards | Incident Details: ; Immediate Actions Taken - Spill kits were used to catch the oil coming from the leak. Soaking up the oil on the surface., Recommended Action -	Hydraulic Oil	No	Not Required	Spill pads absorbed the contents and were disposed of in appropriately marked containers at the maintenance yard.	Frozen ground	O-Ring failed	2025-03-12	Brake System	20
2576	2025-03-09 19:30	Diesel spill due to overfill of dozer CR 397	4K on the side of the hall road	Big Country Equipment Repair	Spill pad placed on ground. Mud and snow , shovelled up and placed in buckets	Hazard/Incident Date: 2025-03-09 19:30 PM; Reported by - | Employed by: , Hazards | Incident Details: While fuelling dozer overflow out of tank breather; Immediate Actions Taken - Spill pad placed on ground. Mud and snow , shovelled up and placed in buckets, Recommended Action - Heavy duty should fix their Wiggins fuel filler fitting on the dozer	Diesel	No	Not Required	Pads, Snow and soil contained in buckets and disposed of in appropriate disposal containers	Mud snow	Overfill	2025-03-09	Fuel tank	5 liters
2569	2025-03-06 7:30	Boomtruck hydraulic oil release	Mobile maintenance yard	Energy Crane Service	Spill tray, limited use of the specific cylinder	Hazard/Incident Date: 2025-03-06 07:30 AM; Reported by - Hazards | Incident Details: -Upon rig up of the boomtruck, rigger noticed hydraulic oil gathering inside the rear outrigger box. Quickly put a drip tray under the box to prevent spillage and upon quick visual inspection, could see that an o-ring fitting had failed on internal cylinder. -	NA	NA	NA	NA	NA, Was Captured in Spill tray	NA	NA	NA	NA

2570	2025-03-04 17:00	Partisol (Air Sampler) unit was unplugged from generator adjacent to water towers at Operations Camp	Generator adjacent to water towers at Operations Camp	Environmental	Grabbed an additional extension cord and hooked up to new generator. Talked electrician, working on the new generator and instructed him to contact myself or Sam Lynch if the generator was down or needed to be unplugged. Placed new stickers with numbers for each shift on the cord where it plugs in.	Hazard/Incident Date: 2025-03-04 17:00 PM; Reported by Hazards | Incident Details: -Unknown person/s unplugged extension cord powering Partisol Air Sampler Unit. The cord had a sticker attached with instructions to call the Environment department if the generator was down or the needed to be unplugged (numbers for each shift were on the sticker). Sticker was not found on the cord when Enviro dept checked the unit and was unplugged when found. ; Immediate Actions Taken - Grabbed an additional extension cord and hooked up to new generator. Talked to electrician, working on the new generator and instructed him to contact myself or Sam Lynch if the generator was down or needed to be unplugged. Placed new stickers with numbers for each shift on the cord where it plugs in., Recommended Action - Communication between Infrastructure/Site Services about planned maintenance of generators or switch to permanent power so it does not interfere with planned Partisol Air Sampling.	NA	NA	NA	NA	NA	NA	NA	NA	NA
2563	2025-03-04 6:00	LD6201 Fuel spill	ROM	Mobile Maintenance	Supervisor notified immediately, fuel spill cleaned up using shovel and contaminated soil disposed of in appropriate GFL labeled bin.	Fuel spill while fueling LD6201. Mechanical fuel shut off mechanism on LD6201 was found to be not working causing a diesel fuel spill from fuel tank vent tube. Majority of fuel was captured in spill tray however 2-3L of fuel contacted the ground when fuel sprayed from vent hose	Diesel	No	Not Required	GFL Contaminated Soils Bin	ground	mechanical failure	2025-03-04	LD6201 Fuel Tank	3
2562	2025-03-03 11:50	Engine oil cap was not tight and came loose.	MSA Access road	Earthworks	The operator stopped and called his supervisor to begin cleanup. The spill was cleaned up and contaminated pads disposed of.	The engine oil cap was not tight on a Feller Buncher #2. As the Buncher was walking to the new work area the operator noticed oil on the track frame.	Engine oil	Na	Not Required	Hydrocarbon impacted bins	Equipment Tracks	Loose oil cap	2025-03-04	Tigercat Feller Buncher	6L
2559	2025-03-01 19:00	While operator was clearing snow. Operator was using skid steer to back blade walking path. While operator was reversing. Skid steer bucket was caught on 1 inch glycol line and ripped line in half.	Just outside 31-CV-01 tunnel. Crushing circuit	Processing	Clean up spilled glycol. Maintenance fix line.	Hazard/Incident Date: 2025-03-01 19:00 PM; Reported by - Hazards | Incident Details: -While skid steer operator was clearing snow. Operator was using skid steer bucket to back blade walking path to 31-CV-01 tunnel. The operator was unaware that there was a glycol line under the snow and while moving backwards, operator ripped the line in half, causing maybe 2 liters of glycol to be spilled on the ground. The portable glycol unit was not running at the time. The only spillage is from whatever was in the 1 inch line. ; Immediate Actions Taken - Clean up spilled glycol. Maintenance fix line. , Recommended Action - Better signage for buried lines. Not just in this incident, but throughout site.	glycol	no	Not Required	Hydrocarbon impacted bins	Ground	human error	01-Mar-25	glycol line	2
2557	2025-03-01 13:30	Land sea truck with garbage bags in box of truck and ravens are opening bags and spreading garbage.	Security office on plant site.	Infrastructure / SS	Standing and keeping the ravens away as best I can.	Hazard/Incident Date: 2025-03-01 13:30 PM; Reported by - Hazards | Incident Details: -V23 land sea truck parked outside security offices with 2 black garbage bags under attended and ravens have spread garbage.; Immediate Actions Taken - Standing and keeping the ravens away as best I can. Land Sea manager reviewed incident with janitors responsible. Did root cause analysis and provided report. Attached. Recommended Action - Don't leave garbage un attended outside	NA	NA	Not Required	NA	NA	NA	NA	NA	NA

Blackwater Gold Mine
IEM Site Visit Report 032
July 22 – 23, 2025

Prepared By
EDI Environmental Dynamics Inc.
3810 18th Ave
Prince George BC V2N 4V5

EDI Contacts
Graeme Paterson, PAg, CPESC
Leslie Chamberlist, PAg, CPESC
Independent Environmental Monitor Leads

EDI Project
21P0403
July 2025

mPRO

EDI
ENVIRONMENTAL DYNAMICS INC.
Down to Earth Biology

This page is intentionally blank.

1 PROJECT OVERVIEW

The Blackwater Mine Project is being developed by Blackwater Gold Limited (BWG), a subsidiary of Artemis Gold Inc. (Artemis). The Environmental Assessment Certificate (EAC) M19-01 was issued on 21 June 2019 and Condition 12 of the EAC requires the Holder to retain the services of an Independent Environmental Monitor (IEM) to observe, record for, and report to the BC Environmental Assessment Office (EAO) and Aboriginal Groups on compliance with the Certificate; and provide information to the EAO and Aboriginal Groups, BC Ministry of Energy, Mines and Low Carbon Innovation (EMLI), BC Ministry of Environment (ENV), and BC Ministry of Forests (MOF) as directed by EAO.

A Decision Statement issued under Section 54 of the Canadian Environmental Assessment Act (CEAA 2012) for the Project was issued on 15 April 2019. Condition 9 of this Decision Statement requires the Proponent to retain an IEM who shall advise the Proponent, the Agency, and Indigenous groups if, in their view, the activities do not comply with the conditions set out in the Decision Statement. The IEM shall also advise the Proponent, the Agency, and Indigenous groups whether measures should be taken in respect to these activities. IEM reports are prepared to satisfy both EAC and CEAA conditions.

1.1 SITE VISIT SUMMARY

The IEM team completed a site visit on July 22 and 23, 2025, with representatives from the Stellat'en First Nations and the BWG Environmental team.

Summaries of the site locations visited, and subsequent activities, observations, and ongoing matters are described in the tables below.

Site Visit Summary

Date (dd/mm/yyyy)	IEM Team On-site Personnel	Monitoring Sites/Inspection Focus
22/07/2025	Matthew Van Osch	Water Management Pond, workers accommodation, Mobile Maintenance Yard, Andrew's Hill laydown, Tailings Storage Facility, North Diversion Channel, Southern Collection Channel, Water Management Pond outfall to Davidson Creek, Central Water Transfer Pond and the Fresh Water Reservoir. Inspections focused on water management, erosion and sediment control, hydrocarbon management, and waste management.
23/07/2025		Plant Site and the Low-Grade Ore Stockpile. Inspections focused on waste management, erosion and sediment control, and potentially acid generating material management.

Activities/Observations (Record ID #s included in this table correspond to the Environmental Issue Tracking Log record ID #s)	Non-Compliance Observed?
Plant Site	
As a result of a planned shutdown during the time of the IEM team site visit, ore material was not actively being transported along the crusher conveyor at the Plant Site. Crews were observed working the ore stockpile with machinery (Photo 114095-3). Following onsite discussions, the IEM team understands BWG remains engaged with contractors to generate cost estimates associated with the potential construction of a wind screen at the Plant Site (to minimize generation of ore material dust).	No
The run of mine (ROM) pad has begun to be expanded into the footprint of the former exploration camp (Photo 114094-1).	No
Mine Site Laydowns	
Spills to ground beneath multiple pieces of equipment were observed at the laydown known locally as 'Andrew's Hill' (Record ID-114079). Confirmation that all spills had been cleaned up was provided on July 22, 2025.	Closed
A fuel spill to ground was observed beneath the fueling tank at the 'Andrew's Hill' laydown (Photo 114080-1; Record ID-114080). Confirmation the spill had been cleaned up was provided on July 28, 2025.	Closed
Excess grease (with the potential to fall to ground) was observed on the boom and bucket of excavator unit 328 staged at the Mobile Maintenance Yard (Photo 114082-3). This matter was initially identified by the IEM team as being non-compliant based upon Section 9.1 (Table 9.1-1) of the CEMP which indicates machinery will be clean and free of excess oil and grease by following developed maintenance and operational procedures. In a response provided on July 28, 2025, BWG provided confirmation the excess grease observed by the IEM team had been removed. BWG also detailed their opinion that the grease observed on the excavator was not considered excessive and that the equipment was in compliance with CEMP Section 9.1 and standard operating procedures (SOP) in place. The response provided rationale for their opinion which included that the pre-inspection logbook for this piece of machinery confirmed an inspection had been completed and procedures specific to managing grease were followed while this machine was operational and clarification that this piece of equipment was not operational for the day. In addition, BWG indicated that the CEMP Section 9.1 requirement is specific to following SOPs and not an assumption based upon visual interpretation. As BWG and the IEM team have differing opinions on whether the volume of grease observed on the machinery is excessive, the IEM has removed the classification of this observation as a non-compliance and will discuss this matter further with BC EAO. In addition, the IEM team has requested a copy of BWGs SOP related to the management of grease on machinery.	No
A mix of various waste streams (including food, domestic, and hydrocarbon) were observed on the ground adjacent to bins staged within the infrastructure laydown of the Plant Site (Photo 114084-2; Record ID-114084). Confirmation that all waste around the bins had been cleaned up and disposed of appropriately was provided on July 28, 2025.	Closed
Tailings Storage Facility	
Water and waste materials continue to accumulate within the Tailings Storage Facility (TSF) upstream of the TSF dam (Photo 114075-2).	No
Water Management Infrastructure	
Hydroseeding and live staking was observed along the upper extents of the South Collection Channel (Photo 114074-2).	No
Excess sediment accumulation (requiring removal to maintain effectiveness of the ditch line) was observed in the lower portions of the South Collection Channel near the discharge point into the Central Water Transfer Pond (Photo 114078-3; Record ID-114078). A response was provided by BWG on July 28, 2025, which detailed that sediment within the collection channels would be removed in 2025. The response additionally indicated that 'collection channels' were not referenced under Section 11.1 of the Surface Erosion Prevention and Sediment Control Plan (SEPSCP) which details the inspection and maintenance of erosion, sediment, and water management controls to maintain their performance. The IEM team submitted a follow up response on July 29, 2025, to have confirmation that excess sediment accumulation within the channel at this location had been addressed. Additionally, the IEM team inquired whether BWG disagrees with the IEM team's assessment that this matter was out of compliance and if so, to provide rationale detailing the exemption of the collection channels from the requirements to maintain erosion, sediment, and water management controls (including the removal of excess sediment accumulation) as detailed within Section 11.1 of the SEPSCP. A response had not been received at the time of report distribution.	Yes
Discharge from the Water Management Pond (WMP) outfall to Davidson Creek (to meet instream flow needs) was observed during the recent site visit (Photo 114070-3). Water at this location is sent via pipeline from the WMP treatment (clarifying) plant.	No
Water within the WMP continues to be visibly turbid (Photo 114071-4). BWG indicated they have recently reached out to contractors to discuss potentially completing a dredge of the pond.	No
During the visit to the North Diversion Channel, vegetation growth through the previously installed erosion control blankets along the high side of the channel was observed (Photo 114073-5).	No

During a previous site visit in March 2025 (as detailed in IEM Report 028), the pump at the Central Water Transfer Pond (CWTP) was observed to not be in operation. This pump is used to divert water to the Davidson Creek discharge point as part of the maintenance of permitted downstream flow levels. Following onsite discussions, the IEM understands the pump had mechanical issues that required repair and that this would be completed shortly. BWG staff indicated that under normal circumstances, if water could not be pumped from the CWTP to Davidson Creek then water from the Water Management Pond (WMP) would be directed to supplement downstream flows. The IEM understands that at the time of the site visit BWG was not discharging water from the WMP to the Davidson Creek system due to concerns with elevated turbidity of the water within the pond. As a follow up measure, the IEM submitted an RFI inquiring if the project remains in compliance with Section 3.8 of the Federal Decision Statement (FDS) and the *Fisheries Act* Authorization (which detail that the Project shall maintain in-stream flow needs in Davidson Creek during all phases of the project) during periods of time where no water is being discharged from the CWTP or the WMP to Davidson Creek. BWG provided a response on April 2, 2025, which detailed that in February 2025, flow levels within Davidson Creek had been documented below the in-stream flow requirements detailed in the project's *Fisheries Act* Authorization (FAA) and that these instances had been reported to Fisheries and Oceans Canada (DFO) in accordance with the projects FAA reporting schedule. As the response from BWG received on April 2, 2025 indicated the project had not been in compliance with the FAA, and, because the Project's FAA is associated with the FDS (within the IEMs purview), a follow up RFI was submitted on April 2, 2025, inquiring whether the non compliance had been reported to the Impact Assessment Agency of Canada (IAAC) and accompanying nations detailed under the FDS. Additionally, the IEM requested details about which days the project has not met the FAA/FDS requirements for discharge to Davidson Creek, how often flow rates are sampled/monitored (for example, continual flow data or spot check), and confirmation water discharges are now back within compliant ranges. Responses from BWG were provided to the IEM team on May 14, 2025, which provided additional details related to this matter. The dates identified where instream flow needs (IFN) within Davidson Creek were unable to be met were confirmed to be on February 6, 7, 9 and March 14 and 15, 2025. BWG confirmed since March 15, 2025 there have been no instances of flow data below the IFN requirements. BWG detailed continuous flow data is recorded in Davidson Creek during open water seasons. During winter conditions, due to ice build up and the rating curve between stream levels and flow rates becoming inapplicable, handheld flow measurements are taken weekly. In response to the IEM inquiries relating to the notification requirements to IAAC (and accompanying First Nations), BWG detailed they are required to report annually to IAAC, including during scenarios when flow measurements fall below IFN within Davidson Creek and that the reporting requirements under which IAAC must be notified are detailed within Table 7-1 of the Accidents and Malfunctions Administration and Communication Plan (AMACP). Upon consulting Section 7, Table 7-1, and Table 2.2-3 of the AMACP (which are all portions of the document that work in concert to form the external reporting requirements referenced in BWGs response), the IEM team noted an example of a water supply system pump failure specifically detailed within Table 2.2-3, which was classified as being an incident with a 'moderate' level of consequence. In accordance with Table 7-1 of the AMACP, accidents/malfunctions classified as 'moderate' are required to be reported within 24 hours to Indigenous Monitors, EMC Members, Health Emergency Management BC, IAAC, and BC EAO. As it is the understanding of the IEM team that IAAC (and potentially other required parties) were not reported to within 24 hours of events related to IFNs within Davidson Creek being out of compliance on February 6, 7, 9 and March 14, and 15, 2025, (as required for 'moderate' level events in Table 7-1), a non-compliance was issued for failure to notify external parties in accordance with Table 7-1 of the AMACP. This item will remain open until the IEM team has received confirmation from BWG that all parties requiring 24-hour notice in Table 7-1 have been notified of this series of incidents. Following the issuance of IEM Report 030, Source Environmental (representing the Nechako Nations) reached out to the IEM team on May 28, 2025, and indicated that in addition to the dates where IFNs were not met in the IEM report, that it was their understanding that IFN levels in Davidson Creek were also not met between February 15-23, 2025. **This item is held over from the four previous reporting periods (IEM Reports 028, 029, 030 and 031).** **Update on this matter for IEM Report 032:** The IEM team continues to await a response relating to this non-compliant matter from BWG.	Yes
Fresh Water Reservoir	
Clearing has been completed within portions of the footprint of the future Fresh Water Reservoir (FWR), which once constructed will supply instream flow needs to the Davidson Creek system throughout operations of the mine. During the recent site visit crews were observed completing fish salvages in the lower extents of Davidson Creek within the future FWR footprint to prepare the area for the construction of the FWR (Photos 114069-3 and 114069-5).	No
Low Grade Ore Stockpile	
Crews continue to place low grade ore (LGO) generated from the ore body/open pit at the LGO stockpile (Photo 114096-14).	No
Excess sediment accumulation (along with what appeared to be fill material from the adjacent pad) was observed within a portion of the lined perimeter ditch adjacent to the LGO stockpile pad that collects potentially acid generating (PAG) contact water and directs it to the LGO stockpile pond (Photos 114083-1 and 114083-2; Record ID-114083). In addition to the non-compliance issued by the IEM team, a request for information (RFI) was submitted inquiring whether BWG considers the water flowing within the ditching to be PAG contact water (due to the proximity to the stockpile of LGO) and if so, whether sediment accumulation within the ditch line would be treated as PAG material and disposed of in an appropriate location. BWG provided a response on July 28, 2025, which confirmed that material had been removed from the ditch line (Photo 17). In addition, it was confirmed the material was being treated as PAG and that it would be placed either within the LGO stockpile, or the tailings storage facility.	Closed

Workers Accommodation – Operations Camp	
Cigarette butts (domestic waste) were observed on the ground outside of several dorm room exits (Record ID-114081). Confirmation cigarette butts had been cleaned up was provided on July 28, 2025.	Closed
During a walk around of the Operations Camp at the time of the previous site visit conducted by the IEM team in June 2025 (as detailed in IEM Report 031), the blocking under the kitchen trailers was noted to be absent, allowing wildlife access under the trailers (Record ID-113864). **This item is held over from the previous reporting period (IEM Report 031).** **Update on this matter for IEM Report 032**: Confirmation that skirting had been installed around the base of the building to prevent wildlife access was provided on July 22, 2025.	Closed
Workers Accommodation – Construction Camp	
During the IEMs previous site visit on June 11, 2025 (as detailed in IEM Report 031), a sewage leak beneath Bunkhouse 1 at the Construction Camp was observed by BC EAO, Artemis and the IEM team. A request for information was submitted inquiring about details on plans to complete a clean up of the area (including timelines for completion), an estimate of the volume of the spill, whether any external regulatory/nations require notification (and if so, whether they been notified) and, following the removal of the bunk house, whether there will be any testing of soils and excavation (if required) to confirm the spill has been remediated. **This item is held over from the previous reporting period (IEM Report 031).** **Update on this matter for IEM Report 032**: BWG provided a copy of the end of spill report to the IEM team on July 27, 2025, which included additional information of the spill (estimated at 250L) as well as details on the clean up of the area that was completed on June 12, 2025. BWG has indicated there will be adequate follow up testing and clean up, if required, following the removal of the dorm building. BWG confirmed the spill was reported to various parties including ENV, LDN, UFN, NFN, Northern Health, EMLI, EAO and WLRS. Additional details and photographs can be found in the end of spill report which has been attached to this report.	No
Mine Site Access Roads	
Several straw wattle and spring berm check dams installed at various locations along the access road to the Operations Camp were observed to contain excess sediment accumulation and be in need of maintenance in order to maintain the effectiveness of the installed ESC measure (Photo 114077-3; Record ID-114077). BWG provided a response on July 28, 2025, which indicated that maintenance had been recommended for the areas identified by the IEM team, however, it was not clear whether all areas had been addressed. This matter will remain open until confirmation that maintenance of ESC measures at all locations identified by the IEM team has been received.	Yes

Notable Environmental Incidents

Record ID No(s).	Date (dd/mm/yyyy)	Location	Description of Event
114090	10/07/2025	Fresh Water Reservoir (Davidson Creek)	On July 10, 2025, it was reported that on June 24, 2025, a slide of material into Davidson Creek (located at 10U 377761, 5899065 – upstream of compliance sampling point DC-05) had occurred during clearing within the Fresh Water Reservoir resulting in a temporary blockage of Davidson Creek. BWG indicated the flow of the creek soon overflowed its banks, flowed through the course woody debris in the adjacent block, and back into the creek. It was reported water flow did not ever completely stop below the slide and it was restored to full flow within 10 minutes. BWG indicated to the IEM team on July 27, 2025, that there were no measurable downstream turbidity impacts as a result of the event and that the deposited material has been left in place and Davidson Creek continues to flow around the impacted area (Photo 19). BWG reported the incident to ENV, EMLI, WLRS, EAO, IAAC, Health Emergency Management BC and DFO. Additional detail can be found in the attached summary of previous month (June 2025) environmental incidents provided by BWG to the IEM team on July 10, 2025 (see BWG Record 2820).
114091	10/07/2025	Contractors Explosives Magazine Worksite (end of the topsoil stockpile 2 roadway)	On July 10, 2025, it was reported that on June 14, 2025, a spill of approximately 500kg of ammonium nitrate had occurred at the contractors (Oria) worksite located near the explosive's magazine at the end of the 'Topsoil Stockpile 2' roadway. ENV, EMLI, WLRS and EAO were notified and the spill was cleaned up on June 14, 2025. Additional detail can be found in the attached summary of previous month (June 2025) environmental incidents provided by BWG to the IEM team on July 10, 2025 (see BWG Record 2804).
114092	10/07/2025	Operations Camp	On July 10, 2025, it was reported that on June 1, 2025, water levels within a pipeline trench near the Operations Camp had been inadvertently drawn down to a level that left a cluster of toad eggs out of the water. Pumping was stopped and a small dam created to help restore water levels in drainage ditch. Additional detail can be found in the attached summary of previous month (June 2025) environmental incidents provided by BWG to the IEM team on July 10, 2025 (see BWG Record 2779).

Environmental Issue Tracking Log – Open Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)
113346	14/05/2025	Failure to notify external parties of a 'moderate level' incident (as detailed and described in Tables 2.2-3 and Table 7-1 of the AMACP) within 24 hours related to the instances on February 6, 7, 9 and March 14 and 15, 2025 when the instream flow needs (IFN) within Davidson Creek were unable to be accommodated as a result of pump failure (freezing).	Provide confirmation all parties (including Indigenous Monitors, EMC Members, Health Emergency Management BC, IAAC and BC EAO) have been notified of instances when IFN within Davidson Creek were out of compliance on February 6, 7, 9 and March 14 and 15 in accordance with Section 7 of the AMACP.	31/05/2025
114077	22/07/2025	Several straw wattle and spring berm check dams installed at various locations along the access road to the Operations Camp observed with excessive sediment accumulation and be in need of maintenance to maintain the ongoing performance of the measure.	Inspect, maintain and implement erosion and sediment control measures in accordance with Section 11.1 of the Surface Erosion Prevention and Sediment Control Plan.	06/08/2025
114078	22/07/2025	Excess sediment accumulation observed within the lower extents of the South Collection Channel, near the discharge point into the Central Water Transfer Pond.	Inspect, maintain and implement erosion and sediment control measures in accordance with Section 11.1 of the Surface Erosion Prevention and Sediment Control Plan.	06/08/2025

Environmental Issue Tracking Log – Closed Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)	Follow-up	Completed Date (dd/mm/yyyy)
113864	11/06/2025	Skirting around the base of the kitchen trailers was noted to be absent.	Provide confirmation that skirting has been installed in accordance with Wildlife Management and Monitoring Plan (Rev I.1) Section 3.1 (Infrastructure Design Management).	31/07/2025	Confirmation that skirting had been installed was provided on July 22, 2025.	22/07/2025
114079	22/07/2025	Spills to ground beneath multiple pieces of equipment at the equipment laydown known locally as 'Andrew's Hill.	Clean up and dispose of contaminated material in accordance with Section 9.2 of the Fuel Management and Spill Control Plan.	06/08/2025	Confirmation spills had been cleaned up was provided on July 22, 2025.	22/07/2025
114080	22/07/2025	Fuel spill observed beneath a fueling tank at the equipment laydown known locally as 'Andrew's Hill.'	Clean up and dispose of contaminated material in accordance with Section 9.2 of the Fuel Management and Spill Control Plan.	06/08/2025	Confirmation the fuel spill had been cleaned up was provided on July 28, 2025.	28/07/2025

114081	22/07/2025	Cigarette butts (domestic waste) observed on the ground outside several dorm exits at the Operations Camp.	Store domestic wastes in sealed, wildlife resistant containers for disposal in accordance with CEMP Section 9.1, table 9.1.1 (General Mitigation Measures)	06/08/2025	Confirmation the cigarette butts had been cleaned up was provided on July 28, 2025.	28/07/2025
114084	23/07/2025	Mix of various waste streams (food, domestic and hydrocarbon) on the ground near waste bins within the infrastructure laydown at the Plant Site.	Collect, store and dispose of various waste streams in accordance CEMP Section 9.1, table 9.1.1 (General Mitigation Measures)	06/08/2025	Confirmation all waste had been cleaned up was provided on July 28, 2025.	28/07/2025
114083	23/07/2025	Excess sediment accumulation/material observed within the Low-Grade Ore (LGO) stockpile pad PAG contact water ditch line.	Inspect, maintain and implement erosion and sediment control measures in accordance with Section 11.1 of the Surface Erosion Prevention and Sediment Control Plan and inspect and maintain the LGO stockpile drainage ditches in accordance with Section 7.1 of the Mine Waste and Water Management Plan.	06/08/2025	Confirmation material accumulation had been removed from the ditch line (and disposed of appropriately as PAG material) was provided on July 28, 2025.	28/07/2025

Upcoming Construction Activities

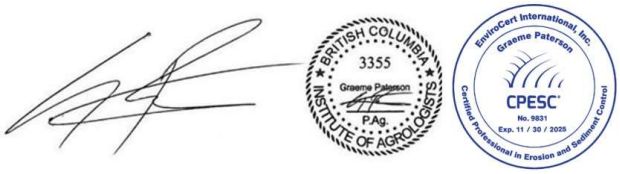
Summary of Activities	Anticipated Start Date
-	-

Key Communications

Date (dd/mm/yy)	Communication Type	Personnel	Communication Summary
-	-	-	-

Yours truly,

EDI ENVIRONMENTAL DYNAMICS INC.



Graeme Paterson, P.Ag, CPESC

Independent Environmental Monitor Lead

ATTACHMENTS:

- Photos
- Site Overview map
- End of Spill Report for sewage spill beneath construction camp bunk
- Summary of Previous Month (June 2025) Environmental Incidents (provided by BWG)

Report Distribution List:

Blackwater Gold (Artemis): Tim Donnelly, Adam Gyorffy, Mark Warbanski, Ryan Todd, Sam Lynch, Steven Hayward, Norm Fraser, Jessica Saunders, Quain Sulin, Randall Hennigar, Linda Siwallace

Ulkatcho First Nation: Alyisha Knapp

Lhoosk'uz Dene Nation: Laurie Vaughn

Stellat'en First Nation: Doug Casimel, Deane Carlson, Taneesha Raymond

Saik'uz First Nation: Kasandra Turbide, Howard Alexis, Jimmy Vickers

Nadleh Whut'en First Nation: Kristen Chapman, Pam Ketlo, Jonathan Kostyshyn, Joshua Parsons

Nazko First Nation: Stephanie Deneault, Terrance Paul, Florian Bergoin

Source Environmental Associates Inc: Martin Shin, Georgina Farah, Fraser Riddolls, Rina Freed, Anna Everett, Sally Turnbull, Taleya Ouellet

Skin Tyree Nation: Bea Paton

Tsilhqot'in National Government: Trina Setah

Metis Nation of BC: Danielle Courcelles

Nee-Tahi-Buhn Band: Kieran Broderick, Ryan Brooks

Environmental Dynamics Inc (EDI): Graeme Paterson, Leslie Chamberlist, Matthew Van Osch

Impact Assessment Agency of Canada (IAAC): Mathieu Trudelle, Shannon Wallace, Carl Johansson, Steven Fraser

Environmental Assessment Office (EAO): Chris Parks, Warren Fekete, Christie Lombardi, Shayla Frechette

Ministry of Mining and Critical Metals (MCM): Rachel Taylor

Ministry of Environment and Climate Change Strategy (ENV): Breanne Hill

Ministry of Water, Land and Resource Stewardship (WLRS): Duncan McColl

Photo 114095-3. Overview of crews working the ore stockpile beneath the crusher conveyor at the Plant Site. Conveyor was not running at the time of visit due to planned Plant Site shutdown.

Photo 114094-1. Overview of the ROM pad which has now been expanded within the footprint of the former exploration camp.

Photo 114080-1. Hydrocarbon spill to ground beneath fuel tank staged at the Andrew's Hill laydown.

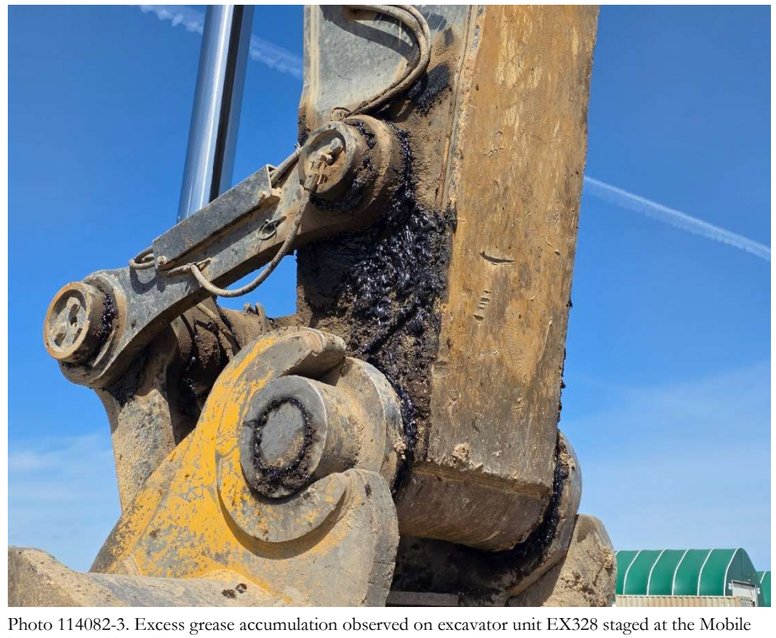


Photo 114082-3. Excess grease accumulation observed on excavator unit EX328 staged at the Mobile Maintenance Yard. Excessive grease also observed on bucket of machine.

Photo 114084-2. Mix of waste streams (food, domestic, and hydrocarbon) observed on the ground adjacent to waste bins at the infastructure laydown near the Plant Site.

Photo 114075-2. Overview of the Tailings Storage Facility facing towards the TSF dam.

Photo 114074-2. Live staking and hydroseed application along the slopes adjacent to the upper extents of the Southern Collection Channel.

Photo 114078-3. Excess sediment accumulation within the lower extents of the Southern Collection Channel near its discharge point into the Central Water Transfer Pond.

Photo 114070-3. Discharge from the Water Management Pond (WMP) outfall to Davidson Creek. Water is treated at the WMP treatment (clarifier) plant prior to discharge.

Photo 114073-5. Vegetation growth observed beneath the erosion and sediment control blankets installed on the high side of the North Diversion Channel.

Photo 114071-4. Overview of turbid water within the water management pond.

Photo 114069-3. Overview of Davidson Creek where crews were completing fish salvage within the cleared footprint of the Fresh Water Reservoir.

Photo 114069-5. Crews working on establishing fish barriers on Davidson Creek within the cleared footprint of the Fresh Water Reservoir.

Photo 114096-14. Overview of the Low-Grade Ore Stockpile.

Photo 114083-1. Excess sediment accumulation (along with what appears to be fill material from the nearby pad) within the lined PAG contact water ditch line adjacent to the Low-Grade Ore stockpile.

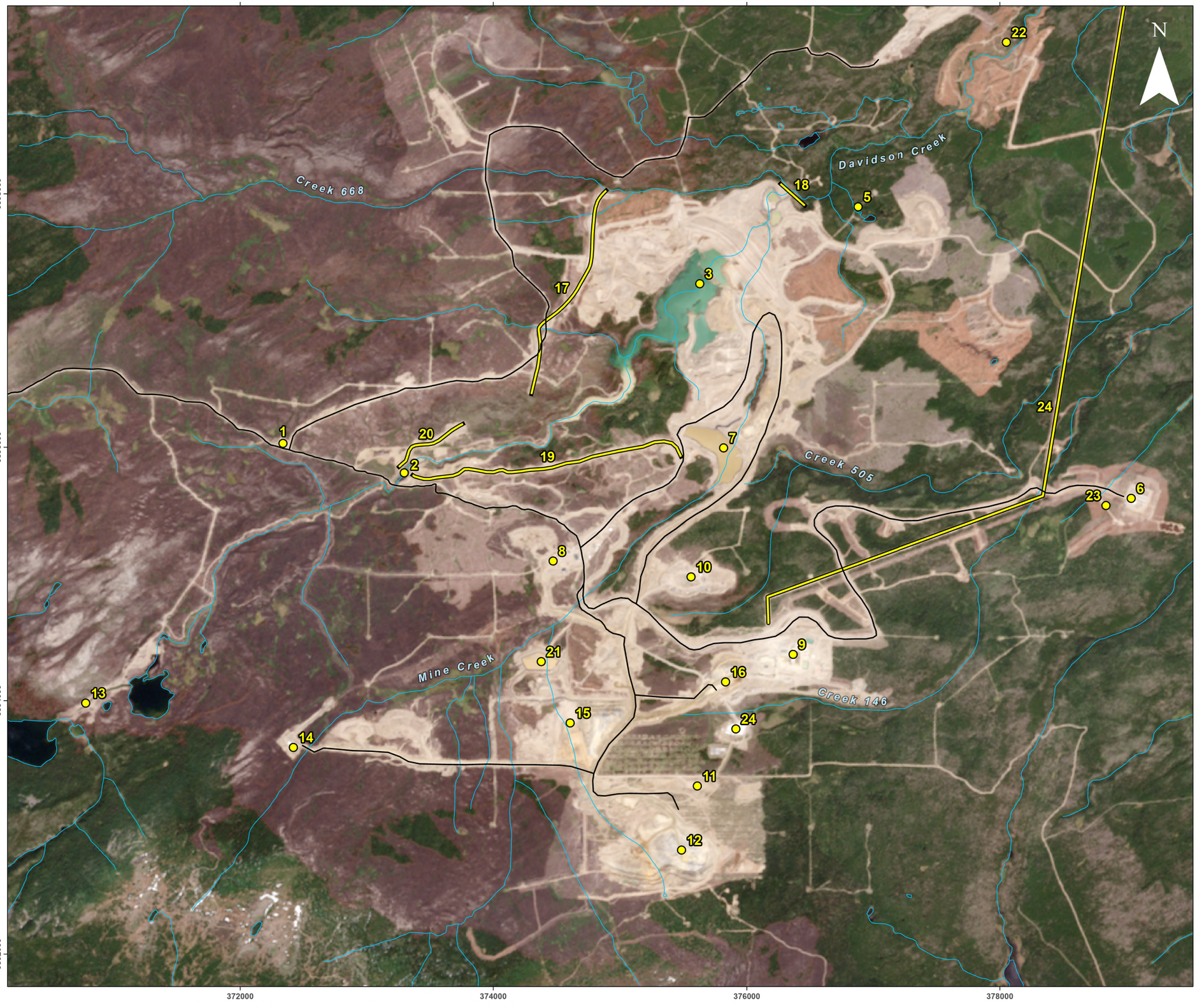
Photo 114083-2. Excess sediment accumulation within the lined PAG contact water ditch line adjacent to the Low-Grade Ore stockpile.

Photo 17. Confirmation material was removed from the PAG contact water ditch line adjacent to the Low-Grade Ore Stockpile. Photograph provided by BWG on July 28, 2025.

Photo 114077-3. Example of location along access road to Operations Camp where sediment accumulation has occurred within check dams. Examples also noted at other locations not included in photograph.

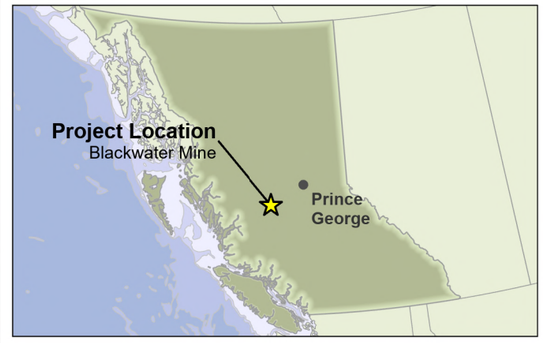
Photo 19. Slide into Davidson Creek (above the DC-05 compliance sampling point) within the Fresh Water Reservoir clearing worksite. Photograph provided by BWG on July 27, 2025.

Work Space Locations



Legend

- Mine Access Road
- Watercourse
- Waterbody
- 1,Security Gate
- 2,Central Water Transfer Pond
- 3,Tailings Storage Facility
- 4,Tailings Storage Facility Dam
- 5,Water Management Pond Outfall to Davidson Creek
- 6,Operations Camp
- 7,Water Management Pond
- 8,Mobile Maintenance Yard
- 9,Plant Site
- 10,Andrew's Hill Laydown
- 11,Heavy Equipment Assembly Pad
- 12,Ore Body/Open Pit
- 13,Lake 15/16 Fish Compensation Channel
- 14,Explosives Magazine
- 15,Low Grade and High Grade Ore Stockpile
- 16,Run of Mine Pad
- 21,Low Grade Ore Stockpile
- 22,Freshwater Reservoir
- 23,Air Monitoring Station
- 24,Construction Camp
- 17, North Diversion Channel
- 18, Interim Environmental Control Dam
- 19, South Collection Channel
- 20, North Collection Channel
- 24, Transmission Line



0 0.5 1 1.5 2
Kilometres

Map Scale = 1:30,000 (printed on 11 x 17)
Map Projection: NAD 1983 UTM Zone 10N

Data Sources
- Workspaces. EDI Environmental Dynamics Inc. June 13, 2025.
- Main Basemap. CanVec 1:50,000: Government of Canada; Sentinel-2 Level 2A True Colour image June 9, 2025. Contains modified Copernicus Sentinel data 2024 processed by Sentinel Hub.

Disclaimer
EDI Environmental Dynamics Inc. has made every effort to verify this map is free of errors. Data have been derived from a variety of digital sources and, as such, EDI does not warrant the accuracy, completeness, or reliability of this map or its data.

Drawn:	Checked:		
CT / OL / CN	GP	Map 1	Date: 6/19/2025

EDI

Path: L:\PROJECTS\2021\NBC\21P0403_BlackwaterMine\21P0403_BlackwaterMine.aprx\21P0403_Blackwater_IEM_20250610

BRITISH COLUMBIA
Ministry of Environment and Climate Change Strategy

Update to Minister/End-of-Spill Report Form

Environmental Emergency Program
SpillReports@gov.bc.ca

This report template can be completed to satisfy the requirements of either the End-of-Spill Report or the Update to Minister Report. Please specify which report you are completing in section I of this form. If any of the fields of this form are not applicable to the spill for which this form is being completed, indicate 'N/A' in the field; reports with incomplete fields will be sent back to the responsible person.

End-of-Spill Report: Section 6 of the Spill Reporting Regulation outlines the requirements for the End-of-Spill Report. Responsible persons must submit a written End-of-Spill Report to the Ministry of Environment and Climate Change Strategy within 30 days following the emergency response completion date of a spill as outlined in section 6 (1) of the Spill Reporting Regulation. Responsible persons must submit a written report to the Ministry of Environment and Climate Change Strategy as soon as practicable if either of the following two conditions are present:

1. The spill entered, or was likely to enter, a body of water as defined in the Spill Reporting Regulation
2. The quantity of the substance spilled was, or was likely to be, equal to or greater than the listed quantity for the listed substance as outlined in the Spill Reporting Regulation

Update to Minister Report: Section 5 of the Spill Reporting Regulation outlines the requirements for the Update to Minister Report. Responsible persons must submit a written report to the Ministry of Environment and Climate Change Strategy as soon as practicable if any of the following three conditions are present:

1. On request of the Minister
2. At least once every 30 days after the date that the spill began
3. At any time that the responsible person has reason to believe that information previously reported in the Initial Report has become inaccurate or incomplete

Complete this form and submit it by email to SpillReports@gov.bc.ca. For additional information, please visit the British Columbia Environmental Emergency Program Report a Spill webpage.

Dangerous Goods Incident Report (DGIR) number: 252415

Section I: Type of report **Sections 5 and 6 of Spill Reporting Regulation**	
This form is completed to satisfy the requirements of the:	
☐ Update to Minister Report	☒ End-of-Spill Report

Section II: Contact information **Section 6 (2) (a) of the Spill Reporting Regulation**	
Details for person filling out the report	Name of company representative: Steven Hayward
	Company name: Artemis Gold Inc.
	Email: shayward@artemisgoldinc.com
	Address: 101-139 1st Street East Vanderhoof, BC, V0J 3A0
	Telephone number: (778) 916-6248

Details for responsible person Same as above ☑	Name of company representative:
	Company name:
	Email:
	Address:
	Telephone number:
Details for owner of the substance spilled Same as above ☐	Name of company representative: Alan Matthews
	Company name: amatthews@artemisgoldinc.com
	Email: amatthews@artemisgoldinc.com
	Address: 101-139 1st Street East Vanderhoof, BC, V0J 3A0
	Telephone number: (778)916-7392

Section III: Timing of the spill
Section 6 (2) (b) of the Spill Reporting Regulation

Date of spill: 2025-05-28 Time of spill: 12:00 Duration of the spill (days): 18

Date reported: 2025-06-18 Emergency response completion date[1]: 2025-06-12

Section IV: Site description
Section 6 (2) (c) (d) of the Spill Reporting Regulation

Provide a description of the spill site and the sites affected by the spill. The description of the spill site may include a description of the receiving environment, the proximity to a nearby city/town/roadway, the type of vegetation in the area, how densely populated the area is, accessibility to spill site, nearby waterways, and any other defining characteristics of the area.

Spill site was under Dorm 1 at Construction Camp at Blackwater Gold Mine. Affected material was packed construction aggregate with no vegetation present. Closest watercourse was Creek 146, 170m away.

Latitude: Degrees 53 Minutes 10 Seconds 43.0936

Longitude: Degrees 124 Minutes 51 Seconds 22.3213

or

Site civic address or location: Street

City Postal Code

or

DLS or BCNTS (if applicable): Site ID number (if applicable):

[1] For the definition of the *emergency response completion date*, please refer to B.C. Reg. 187/2017 Spill Reporting Regulation

Section V: Description of the source, type, and quantity of the spill **Section 6 (2) (e) (f) of the Spill Reporting Regulation**
Description of the source of the spill (pipeline, rail, truck, facility, etc.): Pipe failure
Type of substance spilled (common name): Sewage and Gray Water
United Nations (UN) number of substance spilled (if applicable):
Item number from the table in the Schedule in the Spill Reporting Regulation: 24
Quantity (in litres or kilograms) of the substance spilled – if the quantity is unknown, provide a reasonable estimate and explain why the quantity is unknown and cannot be determined: 250

Section VI: Description of the circumstances, cause, and impacts of the spill **Section 6 (2) (g) (i) (ii) (iii) of the Spill Reporting Regulation**
Provide a description of the activity during which the spill occurred (transportation, transfer of cargo, fuelling, cleaning, maintenance, etc.): Mining camp operations
Provide a description of the incident leading to the spill (tank rupture, overfill, collision, rollover, derailment, fire, explosion, etc.): Pipe under camp had developed crack leading to leak.
Provide a description of the underlying cause of the spill (human error, external conditions, organizational or management failure, etc.): Mechanical failure.

Section VII: Impacts to human health, the environment, and infrastructure **Section 6 (2) (g) (iv) (v) of the Spill Reporting Regulation**
Describe any adverse effects of the spill on human health (please state 'N/A' if there were no adverse effects on human health): N/A
Number of people evacuated:
Number of fatalities:
Number of people injured:
Describe any adverse impacts on infrastructure[2] (please state 'N/A' if there were no adverse impacts to infrastructure):
Impacts to water
Was there an impact to a body of water? ◯ Yes ◉ No

[2] For the definition of *infrastructure,* refer to section 91.1 of the *Environmental Management Act 2003*

Description of impact:	
Describe the body of water (stream, aquifer, fish habitat, naturally formed body of water, ditch, lake, etc.):	
Name of body of water:	
Impacts to the environment	
Was there an impact on flora (vegetation)? ◯ YES ◉ NO	If yes, list the common and species names:
Provide a description of the impact on flora (oiled, removed, etc.):	
Was there an impact on fauna (animals)? ◯ YES ◉ NO	If yes, list the common and species names:
Provide a description of impact on fauna (include injured, dead, etc.):	
Was there an impact on aquatic and/or terrestrial habitats? ◯ YES ◉ NO	If yes, list the type of habitat (riparian, breeding ground, etc.):
Provide a description of impact on aquatic and terrestrial habitats, including response actions taken to restore any of the impacts listed:	

Section VIII: Spill response actions **Section 6 (2) (h) of the Spill Reporting Regulation**		
Action taken to comply with section 91.2 of the *Environmental Management Act 2003*	Who took the action (company, person, contractor, etc.)	Date that the action was taken (click the arrow or enter the date using the format YYYY-MM-DD)
Hydro-Vac truck company who handles waste water was brought to site. Split liquid was removed by Hydro-Vac truck and material was removed.	BWG Infrastructure Department	2025-06-12
Additional water was used to flush area and remove by Hydro-Vac suction.	BWG Infrastructure Department	2025-06-12
Hydrated lime was used to disinfect area and fans used to dry area.	BWG Infrastructure Department	2025-06-12

Section IX: Waste disposal (please state 'N/A' if no waste was produced) **Section 6 (2) (i) of the Spill Reporting Regulation**		
List the type of waste	Method of disposal	Location of disposal
Sewage/Waste Water	3rd Party Contractor	Off-Site Waste Water Disposal Site

Section X: Attached reports, maps, and photographs **Section 6 (2) (j) (k) of the Spill Reporting Regulation**	
Report of results of sampling, testing, monitoring, and/or assessing carried out during spill response actions (including reports from Qualified Professionals), if applicable	Copy attached ☐
Map of the incident site and areas surrounding the incident site (required)	Copy attached ☑
Photographs of the spill (required)	Copy attached ☑

Section XI: Agencies on scene or notified **Section 6 (2) (l) (m) of the Spill Reporting Regulation**
List the names of all agencies that were at the incident site: Environmental Assessment Office

List the names of other persons or agencies that were advised about the spill:

Section XII: Additional comments

Exact spill date is not known and approximated at May 28. Initial pipe bypass was put in place after notification was received. Spill clean up was planned including coordination of confined space training for Hydro-Vac operators and scheduling cleanup once shift change was complete and night shift employees were not staying in dorm. Once spill cleanup was initiated a full connection repair was put in place for the pipe on June 12.

Section XIII: Verification of information provided

I confirm that the above information is true and complete.

Name of person completing form:	Date completed (YYYY-MM-DD)
Steven Hayward	2025-07-02

Name of responsible person (person or company):	Date completed (YYYY-MM-DD)
Artemis Gold Inc.	2025-07-02

Section XIV: Approval - For internal use only

Reviewed by:	Date completed (YYYY-MM-DD)

Save Reset Form

DGIR 252415 Attachments

Photos 1 & 2: Spill Photos

Photo 3: Pipe Failure

Photo 4: Pipe Repair

Photo 5: Spill Clean Up

Photo 6: Spill Clean Up

Photo 7: Drone Photo of Spill Location at BWG Construction Camp

SUMMARY OF PREVIOUS MONTH (JUNE 2025) ENVIRONMENTAL INCIDENTS (PROVIDED BY BWG)

ID	Hazard/ Incident Date Time	Brief Description	Location	Department	Select the immediate actions taken?	Initial Hazard or Incident details	Spilled Fluid Details	Is the spill near a creek or water body if applicable?	Regulatory Reporting Status	Material Disposal Site	Media Affected by spill	Spill Cause	Spill Clean Up Date	Spill Coordinates	Spill Source	Spilled Fluid Quantity (Liters)
2829	6/30/2025 14:45	6060 Shovel leaked hydraulic oil out of final drive relief valve.	1590 bench in pit	Mine Operations	-Operator shutdown machine and put spill pads out. -Maintenance was called. -Cleaned up mess and removed contaminated soil.	Hazard/Incident Date: 2025-06-30 Hazard/Incident Details: Shovel was tramming into face. While doing so hydraulic oil came out of the breather on the relief valve. Spill was cleaned up and contained.	Hydraulic oil	No	Not Required	MSA	soil	Over pressured instruments	6/30/2025	53.169231, -124.866430	Final drive relief valve	30
2820	6/24/2025 12:20	Bank Failure during Logging	FWR	Earthworks	WQ samples, bank walks and investigation	After assessing that a slope was wet and needed special procedures, we proceeded to hand fell the timber on the slope to avoid sending machines into the area. During the timber recovery phase, we cut a Skid trail into the dry slope above the wet slope to allow cable yarding and hoechucking. During the process of hoechucking and trail building, the end of the trail fell away, sliding into the creek below. The slide took a large amount of the hill side, as well as some timber, down the slope, temporarily blocking the creek. The flow of the creek was such that it soon over flowed its banks, flowed through the course woody debris in the adjacent block, and back into the creek. Water flow never completely stopped below the slide and was restored to full flow within 10 minutes. It was also noted that water quality below the slide was the same as the water quality above the slide	-	-	Initial Notification Issued to the regulator	-	-	-	-	-	-	-
2814	6/21/2025 14:10	Oil drums were found leaking inside of a covered freight trailer	This incident occurred in front of the BWG Warehouse inside a covered van trailer	Supply Chain	Spill pads were placed on the ground underneath the oil drip, and the freight skids were carefully moved around to give room to inspect the drums. Once the holes were found, they were plugged with the putty found in the spill kits.	Hazard/Incident Date: 2025-06-21 14:10 PM; Hazards	Incident Details: - A driver for our freight carrier Bandstra was unhitching from his trailer when he noticed oil dripping from the bottom of his trailer toward the nose by the landing gear. He called the area supervisor immediately and asked for a spill kit. It was discovered that the source of the fluid was two damaged oil drums inside the trailer, and that the fluid had leaked through the floor and onto the ground underneath. The crew managed to carefully tip the barrels upright inside the trailer and put leak stopping putty on the damaged areas to stop the leaking. Both drums that were leaking were found to be defective as there were small ruptures that were bulging outward as if pressure had built up and released through the bottom of the drums. Immediate Actions Taken - Spill pads were immediately placed on the ground underneath the oil drip. Freight skids were carefully moved around to inspect the drums to find the holes, and once found, the holes were plugged with the putty found in the spill kits. Recommended Action - No recommendations	150 Gear oil	No	Not Required	Hydrocarbon contaminated waste bin.	Ground/soil	Defective 55gal oil drum	6/28/2025	53.183912, -124.853004	55gal oil drum	7
2813	6/20/2025 15:20	While transporting copper sulphate the bag fell off the forks and onto the ground resulting in spillage	This incident occurred on the plant site behind the BWG warehouse next to our reagent storage cans.	Supply Chain	Scene was frozen. Health and safety were informed of the incident. Environment was informed of the incident. ERT was informed of the incident. Cleanup efforts started immediately and were completed within the next 2 hours.	Hazard/Incident Date: 2025-06-20 15:20 PM; Hazards	Incident Details: Telehandler operator was filling reagents orders for the daily requirements. When delivering a bag of copper sulphate the bag fell off of the telehandlers forks and hit the ground resulting in the bag breaking open and spilling the dry chemical onto the ground. The operator froze the scene, and called their supervisor immediately;. Immediate Actions Taken - Scene was frozen. Health and safety were informed of the incident. Environment was informed of the incident. ERT was informed of the incident. Cleanup efforts started immediately and were completed within the next 2 hours.	Copper Sulphate	No	Not Required	Disposed of in a green hazardous waste bin	Soil	Dropped super sack	6/20/2025	53.183668, -124.853201	Tipped over super sack	10kg
2807	6/17/2025 7:50	Waste Bin truck blew a hydraulic line on plant site while swapping out waste bins.	Plant site, on the road in front the old fixed plant maintenance offices (old Bird laydown).	Supply Chain	Spill was contained, health and safety and environmental departments were contacted and made aware of the incident	Hazard/Incident Date: 2025-06-17 07:50 AM; Hazards	Incident Details: -This morning around 7:50 AM I got a call from one of the waste truck driver while in a meeting, I was unable to answer, but texted him during the meeting to see what he needed. He let me know that he had blown a Hydraulic line and needed assistance with containment and clean up. I sent one of the warehouse techs over to help assist with the spill. I then made my way over after the meeting to assess the spill.. After seeing the spill I contacted the environmental department and safety to confirm release of driver and scene. I was given the okay from both departments. I will contact someone to bring a machine to assist with clean up of spill.; Immediate Actions Taken - Spill was contained, health and safety and environmental departments were contacted and made aware of the incident, Recommended Action -	Hydraulic oil	No	Not Required	Contaminated Soil bin	Soil	Hydraulic hose failure during operation	6/17/2025	-	Blown hydraulic line	Estimated 15L
2809	6/17/2025 7:40	Small hydraulic leak noticed beneath HT1303.	ROM Park Up.	Mine Operations	Spill pads placed. Mechanic was dispatched to location.	Hazard/Incident Date: 2025-06-17 07:40 AM; Hazards | Incident Details: Operator reported a leak on HT1301. Supervisor was in the area, put down spill pads and called maintenance for repair. Immediate Actions Taken - Spill pads deployed to prevent further contamination. Mechanic was dispatched to location to complete repair. Recommended Action -	Hydraulic Oil	No	Not Required	Contaminated Soil Bin	Rock NAG	Failed O-Ring	6/18/2025	53.182350, -124.859751	Transmission PTO Hose	1L
2808	6/17/2025 7:00	Hydro vac popped a top of rad coolant line.	LV Ore body road, below the build pad.	Jenik services LTD	Please refer to section 21.	Hazard/Incident Date: 2025-06-17 07:00 AM; Hazards | Incident Details: Hydro vac operator was driving past the build pad on his way to the m-trail well, to load up with water for daily duties. That's when he heard a pop. Operator pulled over and shut truck off immediately to investigate. Operator noticed the coolant leak right away, putting out a spill tray and blocking further spill with related spill response materials. Operator then called his supervisor, at which time we secured the scene with cones and repaired the truck. Once repaired, the truck was moved and the contaminated soil was shovelled up into a spill bag, all the spill response materials were loaded into another bag. The spill happened in the middle of a beermed road, and did not breach the edges. The make up of the soil made it pretty easy to do a thorough, effective clean up. Contaminated material was brought to appropriate green bin for disposal.; Immediate Actions Taken - Please refer to section 21., Recommended Action - Top up the spill kit used, and continue to keep operators informed of the importance of spill response, and supplies.	Anti freeze	No	Not Required	Brought contaminated soil, and spill pads in spill bags, to coolant disposal green bin located at fuel station south of plant site.	Gravel/clay road surface	Hose failure.	6/17/2025	-	Engine	12 liters
2805	6/15/2025 14:30	Over full transmission.	On the 1560 bench	Mine Operations	Truck shut off, spill pads down, spill tray as well.	Hazard/Incident Date: 2025-06-15 14:30 PM; Hazards | Incident Details: Transmission was over filled, ; Immediate Actions Taken - Truck shut off, spill pads down, spill tray as well. spill cleaned up, Recommended Action - Better checks of fluid levels from maintenance.	Transmission fluid	No	Not Required	Hydrocarbon dump bin at maintenance	Dirt	Over filled	6/15/2025	-	Transmission	10 litres
2804	6/14/2025 18:00	At approximately 6pm there was an issue with the ANP silo gate closing this allowed product to continue flowing causing a spill	Orica site at the end of the TS2 road	Orica	Tarping pile immediately then removal of product from ground as priority.	Hazard/Incident Date: 2025-06-14 18:00 PM; Hazards | Incident Details: Mmu operator was running the silo gate when a malfunction delayed the closing. This allowed product to flow until it was manually closed onto the concrete pad and the ground.; , Immediate Actions Taken - Tarping pile immediately then removal of product from ground as priority., Recommended Action - There is a plan currently in place to modify the current mechanism that should eliminate the chances of this occurring in a similar manner	Dry Ammonium Nitrate	No	Final Report Issued to the regulator	Product to be disposed through intended use and blasting	Ground/ concrete	Slide gate controll fail	6/14/2025	-	Non fluid	500kg
2799	6/13/2025 18:30	Diesel Jerry can spill	A Jerry can with diesel must have fallen off pickup truck on the north haul road. Near the TS2 intersection.	Mine Operations	988 loader scooped it up.	Hazard/Incident Date: 2025-06-13 18:30 PM; Hazards | Incident Details: Don't know ; Immediate Actions Taken - 988 loader scooped it up. , Recommended Action - Secure bottles, cans and other liquids when driving. Especially a flat deck or mech truck.	Diesel	No	Not Required	Maintenance shop hydro carbons bin	Dirt	Some pickup didnt have it secured and likely a flat deck	6/13/2025	-	Jerry can	20
2796	6/12/2025 22:10	Oil leak on dozer at pag dump	Pag dump	Mine Operations	Cleaned up with dozer and 988 loader	Hazard/Incident Date: 2025-06-12 22:10 PM; Hazards | Incident Details: Operator noticed a leak while backing up; Immediate Actions Taken - Cleaned up with dozer and 988 loader, Recommended Action -	Hydraulic oil	No	Not Required	Contaminated material transfer area	Ground	O-ring failure in hydraulic line	6/12/2025	-	Cr 398	36
2795	6/11/2025 15:00	Grease Spill out from Grease Bin at Operations camp on ground	Operations Camp - back of loading dock	Land/Sea	Bins were removed right away and replaced with empty bins	Hazard/Incident Date: 2025-06-11 15:00 PM; Hazards | Incident Details: Grease leaked out of Grease bin due to a hole in the metal bin ; Immediate Actions Taken - Bins were removed right away and replaced with empty bins , grease on ground was cleaned up Recommended Action - Landsea has to do a better job of inspecting bins and reporting when full	Grease	No	Not Required	Bins are taken off site and replaced	Ground	Hole in metal grease bin	6/11/2025	-	Deep fried oil	10L
2793	6/11/2025 6:30	Unreported spill found at Operations Camp	Operations Camp Parking Lot	Environmental	contaminated material cleaned up and disposed of properly	Hazard/Incident Date: 2025-06-11 06:30 AM; Hazards | Incident Details: spill was noticed in operations camp parking lot with no vehicle around, Spill was cleaned up and disposed of in gfl bin; Immediate Actions Taken - contaminated material cleaned up and disposed of properly, Recommended Action -	Fuel	No	Not Required	contaminated soil bin	Parking lot gravel	Unknown	6/11/2025	-	Unknown	24
2784	6/8/2025 9:40	20250608-9:45 ENV - ~15L coolant leak from fuel & lube truck on 1580-006 pattern	1580-006 drill pattern	JDS Drilling	Source of spill was immediately identified and stopped. Spill pads were placed down for containment and to begin clean up.	Hazard/Incident Date: 2025-06-08 09:40 AM; Hazards | Incident Details: Upon returning to the 1580-006 pattern, the operator noticed a spill underneath FT004. The source was immediately found and stopped, and spill pads were placed down for containment and to begin clean up. ; Immediate Actions Taken - Source of spill was immediately identified and stopped. Spill pads were placed down for containment and to begin clean up. , Recommended Action - investigation ongoing - corrective actions to come.	coolant - Delo ELC Afreeze 50/50	No	Not Required	Hydrocarbon Impacted Bin	dirt	under investigation - initial investigations suggest nozzle got pinched in door and gravity dripped as no pressure was in system.	6/8/2025	-	FT004 - coolant hose nozzle	between 12 and 18L
2785	6/8/2025 1:10	1504 leak	North Haul Road. Rom intersection up.	Mine Operations	Haul truck was stopped immediately, spill tray placed under and looked at by a machanic.	Hazard/Incident Date: 2025-06-08 01:10 AM; Hazards | Incident Details: Haul truck 1504 was picked up from the shop and began leaking fluid on the main haul road. Source still unknown. Grader 02 spotted it; Immediate Actions Taken - Haul truck was stopped immediately, spill tray placed under and looked at by a mechanic. , Recommended Action - No.	Unknown (steering or engine oil)	No	Not Required	Contaminated material transfer area TSF	Dirt	Unknown	6/9/2025	-	Unknown	30
2782	6/7/2025 20:00	980 coolant leak	Marmac HQ	Mine Operations	Spill pads down. Soil scraped up.	Hazard/Incident Date: 2025-06-07 20:00 PM; Hazards | Incident Details: Operator opened the wrong valve thinking it was the A/C taps.; Immediate Actions Taken - Spill pads down. Soil scraped up. , Recommended Action - Call mechanic if unsure of which is the hot taps	Coolant	No	Not Required	Contaminated material transfer area TSF	Dirt	Valve was opened	6/7/2025	-	Coolant line	7 litres
2792	6/7/2025 14:50	Spill under generator	TW-13-01	Environmental	contaminated material was removed and disposed of in gfl bin	Hazard/Incident Date: 2025-06-07 14:50 PM; Hazards | Incident Details: moving generator and discovered fuel spill underneath; Immediate Actions Taken - contaminated material was removed and disposed of in gfl bin, Recommended Action -	Diesel	No	Not Required	contaminated soil bins	construction aggregate	unknown	6/8/2025	-	Generator	45
2780	6/7/2025 4:00	HT1308 reported leak from Hydraulic Oil Breather	ROM park up.	Mine Operations	The spill was reported fixed and cleaned up.	Hazard/Incident Date: 2025-06-07 04:00 AM; Hazards | Incident Details: HT1308 Operator noticed oil coming from Breather on walk around.; Immediate Actions Taken - The spill was reported fixed and cleaned up., Recommended Action -	Hydraulic Oil	No	Not Required	Oil was shovelled up and disposed of in Contaminated Soil Bin.	Rock/Dirt	Hydraulic Overfull	6/7/2025	-	Hydraulic Oil Tank Breather	1L
2778	6/4/2025 13:20	Hydrocarbon spill from truck in parking lot	Environment parking lot	Environmental	Spill pads and shovelled dirt.	Hazard/Incident Date: 2025-06-04 13:20 PM; Hazards | Incident Details: Pre trip. Noticed spill under vehicle. Spill was cleaned up. ; Immediate Actions Taken - Spill pads and shovelled dirt. , Recommended Action -	Hydrocarbon	No	Not Required	Disposal in appropriate GFL bins	Ground	Mechanical issue	6/4/2025	-	Lv 52	.75 litres
2774	6/3/2025 2:10	Oil leak on water truck	In the taf near the heavy haul road crossing to the page dump	Earthworks	Put spill pads down	Hazard/Incident Date: 2025-06-03 02:10 AM; Hazards | Incident Details: Driving heard a loud sound proceeding through a stop sign. Stopped to check it out and noticed the leak. Put spill pads down and called supervisor ; Immediate Actions Taken - Put spill pads down, Recommended Action -	Engine oil	No	Not Required	Spill pads to be clean up into containment bag and disposed of in proper disposal bin	Spill on rocks	Hose failure	6/3/2025	-	Engine	1 litre

2768	6/2/2025 4:00	Coolant Hose failure on AT 1002	Wmp mud dump	Mine Operations	Spill tray and spill pads put down to contain the spill, coolant hose was zap strapped to stop it from leaking.	Hazard/Incident Date: 2025-06-02 04:00 AM; Hazards | Incident Details: Operator dumped his load, as he was leaving the dump he noticed white smoke coming from the engine and could smell coolant. Immediately stopped and turned off the truck; Immediate Actions Taken - Spill tray and spill pads put down to contain the spill, coolant hose was zap strapped to stop it from leaking., Recommended Action - No	Coolant	No	Not Required	Hydrocarbon Impacted Bin	Ground	Hose failure	6/2/2025	WMP	Engine	22.5
2779	6/1/2025 14:00	While pumping water from a pipeline trench near the operations camp , we inadvertently lowered the water level in the drainage ditch that surrounds the camp and subsequently left toad eggs out of the water.	Operations camp drainage ditch	JCS Waterworks	Stopped pumping water and created a bit of a dirt dam to help restore water levels in drainage ditch.	Hazard/Incident Date: 2025-06-01 14:00 PM; Hazards | Incident Details: -Supervisor instructed crew members to pump out the water pipe line trench at the operations camp, following instructions crew pumped the water from the water line ditch and inadvertently lowered the water level in the drainage ditch and subsequently left toad eggs unprotected by the lack of water.; Immediate Actions Taken - Stopped pumping water and created a bit of a dirt dam to help restore water levels in drainage ditch., Recommended Action - No	-	-	Not Required	-	-	-	-	-	-	-
2840	5/28/2025 14:00	Sewage Spill to Ground	Construction Camp	Environmental	Line was bypassed until further repairs and clean up could be completed and coordinated under night shift wing and with confined space training.	Sewage/grey water pipe under Construction Camp had failed resulting in spill to ground.	-	No	Final Report Issued to the regulator	Off-site 3rd party disposal	Laydown construction material	-	6/12/2025	-	Pipe failure	250

Blackwater Gold Mine
IEM Site Visit Report 033
August 19 – 20, 2025

Prepared By
EDI Environmental Dynamics Inc.
3810 18th Ave
Prince George BC V2N 4V5

EDI Contacts
Graeme Paterson, PAg, CPESC
Leslie Chamberlist, PAg, CPESC
Independent Environmental Monitor Leads

EDI Project
21P0403
August 2025

mPRO

EDI
ENVIRONMENTAL DYNAMICS INC.
Down to Earth Biology

This page is intentionally blank.

1 PROJECT OVERVIEW

The Blackwater Mine Project is being developed by Blackwater Gold Limited (BWG), a subsidiary of Artemis Gold Inc. (Artemis). The Environmental Assessment Certificate (EAC) M19-01 was issued on 21 June 2019 and Condition 12 of the EAC requires the Holder to retain the services of an Independent Environmental Monitor (IEM) to observe, record for, and report to the BC Environmental Assessment Office (EAO) and Aboriginal Groups on compliance with the Certificate; and provide information to the EAO and Aboriginal Groups, BC Ministry of Energy, Mines and Low Carbon Innovation (EMLI), BC Ministry of Environment (ENV), and BC Ministry of Forests (MOF) as directed by EAO.

A Decision Statement issued under Section 54 of the Canadian Environmental Assessment Act (CEAA 2012) for the Project was issued on 15 April 2019. Condition 9 of this Decision Statement requires the Proponent to retain an IEM who shall advise the Proponent, the Agency, and Indigenous groups if, in their view, the activities do not comply with the conditions set out in the Decision Statement. The IEM shall also advise the Proponent, the Agency, and Indigenous groups whether measures should be taken in respect to these activities. IEM reports are prepared to satisfy both EAC and CEAA conditions.

1.1 SITE VISIT SUMMARY

The IEM team completed a site visit on August 19 and 20, 2025, with representatives from the Stellat'en and Saik'uz First Nations and the BWG Environmental team.

Summaries of the site locations visited, and subsequent activities, observations, and ongoing matters are described in the tables below.

Site Visit Summary

Date (dd/mm/yyyy)	IEM Team On-site Personnel	Monitoring Sites/Inspection Focus
19/08/2025	Matthew Van Osch	Central Water Transfer Pond, Water Management Pond, Operations Camp, Construction Camp, Tailings Storage Facility, Fresh Water Reservoir, and mine access roads. Inspections focused on water management, water quality management, erosion and sediment control, and waste management.
20/08/2025		Plant Site, Low Grade Ore Stockpile and Pond, Operations Camp and Ore Body. Inspections focused on PAG material management, water management, and hazardous material management.

Activities/Observations (Record ID #s included in this table correspond to the Environmental Issue Tracking Log record ID #s)	Non-Compliance Observed?
Ore Body/Open Pit	
Excavation, drilling, and benching continues within the open pit (Photo 114222-5).	No
Plant Site	
The IEM team completed a visit to the location where a 50,000 litre (L) processing slurry spill to ground occurred at the plant site on July 3, 2025 (Photo 2 and Photo 114223-4). As the slurry processing is part of the leaching circuit (which involves the use of cyanide), and there was previously no mention of the presence of cyanide in the spilled material in either the incident summary table provided to the IEM, or, the spill report to the Ministry of Environment and Climate Change Strategy (ENV), the IEM team inquired whether there was any cyanide in the material that spilled. On August 25, 2025, BWG provided confirmation the processing slurry that was spilled contained cyanide. As the spill was confirmed to contain cyanide (a hazardous substance) and occurred outside of the engineered concrete containment surrounding the tanks, it appeared to meet a specific description of a "spill of hazardous substances outside of engineered containment" which is classified as a major (level 4) incident within Table 2.2-3 of the Accidents and Malfunctions Plan. As noted in the Notable Environmental Incident Table in this report, this incident was reported to ENV, Ulkatcho First Nations, Lhoosk'uz Dene Nation, Nadleh Whut'en First Nation, Saik'uz First Nation, Stellat'en First Nation and Nazko First Nation. If classified as a major incident, however, external reporting would also be required to additional parties including (but not limited to) the Impact Assessment Agency of Canada (IAAC) and the BC Environmental Assessment Office (BC EAO) both of whom the IEM reports to. The IEM submitted a follow up request for information (RFI) inquiring whether BWG had classified this as a major incident, and if not, to provide rationale. BWG provided a response on August 26, 2025, which indicated the material released was not classified as a major incident as spilled material was within the collection ditching of the Plant Site perimeter and any released material would be contained within the drainage system of the Plant Site. BWG also noted the spill did not represent any risk to damage to aquatic life and downstream human environments. The IEM team remains engaged in discussions with both IAAC and EAO related to BWGs provided interpretation of classification and external reporting requirements associated with this incident. Additional information related to this incident can be found in the Notable Environmental Incident Table in this report.	No
The IEM team has recently reached out to BWG to follow up on the status of the high-grade ore dust mitigation at the Plant Site. A series of RFIs were submitted to BWG on August 13, 2025, including: confirmation of the completion of additional sampling that was recommended by the qualified environmental professional (QEP), details on whether any impacts were observed in the additional sampling or in subsequent sampling events, and, an update on the status or plans to implement any additonal mitigation measures including the previously discussed windscreen. A response from BWG has not been received prior to the issuance of this report.	No
Mine Site Laydowns	
During the previous IEM team site visit between July 22-23, 2025 (as detailed in IEM Report 032), excess grease (with the potential to fall to ground) was observed on the boom and bucket of excavator unit 328 staged at the Mobile Maintenance Yard. This matter was initially identified by the IEM team as being non-compliant based upon Section 9.1 (Table 9.1-1) of the CEMP which indicates machinery will be clean and free of excess oil and grease by following developed maintenance and operational procedures. In a response provided on July 28, 2025, BWG provided confirmation the excess grease observed by the IEM team had been removed. BWG also detailed their opinion that the grease observed on the excavator was not considered excessive and that the equipment was in compliance with CEMP Section 9.1 and standard operating procedures (SOP) in place. The response provided rationale for their opinion which included that the pre-inspection logbook for this piece of machinery confirmed an inspection had been completed and procedures specific to managing grease were followed while this machine was operational and clarification that this piece of equipment was not operational for the day. In addition, BWG indicated that the CEMP Section 9.1 requirement is specific to following SOPs and not an assumption based upon visual interpretation. As BWG and the IEM team have differing opinions on whether the volume of grease observed on the machinery is excessive, the IEM team removed the classification of this observation as a non-compliance and engaged in discussions with BC EAO. In addition, the IEM team requested a copy of BWGs SOP related to the management of grease on machinery. **This item is held over from the previous reporting period (IEM Report 032).** **Update for IEM Report 033**: The IEM has received a copy of the BWG SOP related to grease management and continues to discuss this matter with BC EAO.	No
Water Management Infrastructure	
During the previous IEM team site visit between July 22-23, 2025 (detailed in IEM Report 032), excess sediment accumulation (requiring removal to maintain effectiveness of the ditch line) was observed in the lower portions of the South Collection Channel near the discharge point into the Central Water Transfer Pond (Record ID-114078). A response was provided by BWG on July 28, 2025, which detailed that sediment within the collection channels would be removed in 2025. The response additionally indicated that 'collection channels' were not referenced under Section 11.1 of the Surface Erosion Prevention and Sediment Control Plan (SEPSCP) which details the inspection and maintenance of erosion, sediment, and water management controls to maintain their performance. The IEM team submitted a follow up response on July 29, 2025, to have confirmation that excess sediment accumulation within the channel at this location had been addressed. Additionally, the IEM team inquired whether BWG disagrees with the IEM team's assessment that this matter was out of compliance and if so, to provide rationale detailing the exemption of the collection channels from the requirements to maintain erosion, sediment, and water management controls (including the removal of excess sediment accumulation) as detailed within Section 11.1 of the SEPSCP. **This item is held over from the previous reporting period (IEM Report 032).** **Update for IEM Report 033**: A response from BWG has not been received prior to the issuance of this report.	Yes

Water levels within the Water Management Pond (WMP) were observed to be substantially lower than during previous visits (Photo 114205-4). The IEM understands BWG continues to use water from the WMP to meet instream flow needs (IFN) in Davidson Creek.	No
Following onsite discussions with the plant operator at the WMP water treatment plant, it was indicated to the IEM team member that turbidity of water being released from the plant to the Davidson Creek outfall is usually at a turbidity level between 30 to 60 Nephelometric Turbidity Units (NTU). The onsite BWG staff was not sure of the validity of this claim and indicated he would follow up to confirm these values. An RFI was submitted to confirm the turbidity of water discharged to Davidson Creek from the WMP was within the 30-60 NTU range and if so, have there been any water quality exceedances at the downstream compliance sampling point, DC-05. BWG provided a response on August 25, 2025, which indicated that this information was not correct and that regular sampling at the DC-05 compliance point confirmed that TSS levels remain compliant with permitted discharge requirements.	No
Water levels were observed to be low within the Central Water Transfer Pond (CWTP). Following onsite discussions with BWG staff, it was indicated to the IEM team member that they had stopped using water from the CWTP for dust mitigation and that this decision was partly related to potential issues in meeting IFN within Davidson Creek. The IEM team submitted an RFI inquiring whether there had been any instances of being unable to meet IFN because of low water levels and if so, what dates and follow up actions were taken - including any external reporting per the Accidents and Malfunctions Plan (if required). The IEM request was based upon Federal Decision Statement (FDS) Condition 3.8 which states "*The Proponent shall develop, prior to construction, measures to maintain instream flow needs in Davidson Creek. The Proponent shall maintain instream flow needs in Davidson Creek during all phases of the Designated Project at a minimum within flow rates recommended by the Proponent in Appendix 5.1.2.6D of the Environmental Impact Statement, unless otherwise authorized by Fisheries and Oceans Canada.*" The IEM also noted there is reference to FDS Condition 3.8 within Section 4.2 of the Mine Site Water and Discharge Monitoring and Management Plan, a plan that is included under the IEM oversight in accordance with the IEM Terms of Engagement. On August 26, 2025, BWG provided the following response: "As the condition states, unless otherwise authorized in which that authorization is now subject to. We now have the Fisheries Act Authorization and as a result, that aspect is now addressed as part of FDS compliance. As specifics are not mentioned in the Management Plan, the IEM is on the content of the document and not to outside references which states is now authorized. Specifics stated for the FDS are embedded in the EIS Appendix 5.1.2.6D as mentioned in FDS section 3.8. The aspects specified in the referenced FDS are no longer applicable as BWG is compliant in holding an approved Fisheries Act Authorization under Fisheries and Oceans Canada." BWG did not elaborate on whether IFN values in Davidson Creek continue to be met and based upon the information provided, the IEM team has inferred BWG has determined a response to the inquiries made by the IEM are not required. The IEM team remains engaged in discussions with IAAC related to BWGs interpretation of FDS Condition 3.8.	No
During a previous site visit in March 2025 (as detailed in IEM Report 028), the pump at the CWTP was observed to not be in operation. This pump is used to divert water to the Davidson Creek discharge point as part of the maintenance of permitted downstream flow levels. Following onsite discussions, the IEM understands the pump had mechanical issues that required repair and that this would be completed shortly. BWG staff indicated that under normal circumstances, if water could not be pumped from the CWTP to Davidson Creek then water from the WMP would be directed to supplement downstream flows. The IEM understands that at the time of the site visit BWG was not discharging water from the WMP to the Davidson Creek system due to concerns with elevated turbidity of the water within the pond. As a follow up measure, the IEM submitted an RFI inquiring if the project remains in compliance with Section 3.8 of the Federal Decision Statement (FDS) and the *Fisheries Act* Authorization (which detail that the Project shall maintain in-stream flow needs in Davidson Creek during all phases of the project) during periods of time where no water is being discharged from the CWTP or the WMP to Davidson Creek. BWG provided a response on April 2, 2025, which detailed that in February 2025, flow levels within Davidson Creek had been documented below the in-stream flow requirements detailed in the project's *Fisheries Act* Authorization (FAA) and that these instances had been reported to Fisheries and Oceans Canada (DFO) in accordance with the projects FAA reporting schedule. As the response from BWG received on April 2, 2025, indicated the project had not been in compliance with the FAA, and, because the Project's FAA is associated with the FDS (within the IEMs purview), a follow up RFI was submitted on April 2, 2025, inquiring whether the non compliance had been reported to the Impact Assessment Agency of Canada (IAAC) and accompanying nations detailed under the FDS. Additionally, the IEM requested details about which days the project has not met the FAA/FDS requirements for discharge to Davidson Creek, how often flow rates are sampled/monitored (for example, continual flow data or spot check), and confirmation water discharges are now back within compliant ranges. Responses from BWG were provided to the IEM team on May 14, 2025, which provided additional details related to this matter. The dates identified where instream flow needs (IFN) within Davidson Creek were unable to be met were confirmed to be on February 6, 7, 9 and March 14 and 15, 2025. BWG confirmed since March 15, 2025, there have been no instances of flow data below the IFN requirements. BWG detailed continuous flow data is recorded in Davidson Creek during open water seasons. During winter conditions, due to ice build up and the rating curve between stream levels and flow rates becoming inapplicable, handheld flow measurements are taken weekly. In response to the IEM inquiries relating to the notification requirements to IAAC (and accompanying First Nations), BWG detailed they are required to report annually to IAAC, including during scenarios when flow measurements fall below IFN within Davidson Creek and that the reporting requirements under which IAAC must be notified are detailed within Table 7-1 of the Accidents and Malfunctions Administration and Communication Plan (AMACP). Upon consulting Section 7, Table 7-1, and Table 2.2-3 of the AMACP (which are all portions of the document that work in concert to form the external reporting requirements referenced in BWGs response), the IEM team noted an example of a water supply system pump failure specifically detailed within Table 2.2-3, which was classified as being an incident with a 'moderate' level of consequence. In accordance with Table 7-1 of the AMACP, accidents/malfunctions classified as 'moderate' are required to be reported within 24 hours to Indigenous Monitors, EMC Members, Health Emergency Management BC, IAAC, and BC EAO. As it is the understanding of the IEM team that IAAC (and potentially other required parties) were not reported to within 24 hours of events related to IFNs within Davidson Creek being out of compliance on February 6, 7, 9 and March 14, and 15, 2025, (as required for 'moderate' level events in Table 7-1), a non-compliance was issued for failure to notify external parties in accordance with Table 7-1 of the AMACP. This item will remain open until the IEM team has received confirmation from BWG that all parties requiring 24-hour notice in Table 7-1 have been notified of this series of incidents.	Closed

Following the issuance of IEM Report 030, Source Environmental (representing the Nechako Nations) reached out to the IEM team on May 28, 2025, and indicated that in addition to the dates where IFNs were not met in the IEM report, that it was their understanding that IFN levels in Davidson Creek were also not met between February 15-23, 2025. **This item is held over from the five previous reporting periods (IEM Reports 028, 029, 030, 031 and 032).** **Update on this matter for IEM Report 033:** On August 13, 2025, BWG provided a copy of the notification of the incident submitted in accordance with a Moderate Level incident within the AMACP. The notification included an incident summary, and a QEP authored memorandum that provided a review of potential impacts to fish and fish habitat as a result of the events (both of which can be found attached to this report). The QEP memorandum provided additional detail that noted no field readings were recorded between February 1-5, and 10-21, 2025 and March 9-13 and 16-7, 2025, which made the determination of whether IFNs were met on these days not possible. Following confirmation that all parties outlined in Table 7-1 of the AMACP had been notified of the non-compliance, this item has been closed.	
Fresh Water Reservoir	
The IEM team completed a visit to the location where a slope failure had previously occurred within the Fresh Water Reservoir (FWR) worksite in June 2025 (detailed in IEM Report 032). As the slide deposited material into Davidson Creek, the IEM visited the site to observe the status of flow in Davidson Creek (Photo 114201-7). An active seep within the footprint of the slide was observed (Photo 114201-6). During the site visit and following onsite discussions with BWG staff, the IEM team member was advised that as a result of the slide, an initial spike of turbidity was noted within Davidson Creek, but cleared within a day. BWG staff indicated that turbidity sampling was conducted daily following the event to confirm there were no turbidity issues within the downstream extents of Davidson Creek.	No
Crews were observed working on excavation and shaping of the future basin area along the floor of the FWR (Photo 114202-5). The IEM team understands fish salvage operations had recently been completed within the entirety of the FWR footprint.	No
Low Grade Ore Stockpile	
Crews continue to place low grade ore (LGO) generated from the ore body/open pit at the LGO stockpile.	No
During a visit to the LGO stockpile, portions of the ditch line designed to convey potentially acid generating (PAG) contact water between the LGO stockpile and LGO pond were observed to be at a raised elevation in comparison to the toe of the adjacent slope (Photo 114219-4). This has resulted in water being unable to enter portions of the ditch and was instead flowing alongside, and in some locations, beneath the liner (Photo 114219-2). From visual observations, it appeared no PAG material was contributing water to this drainage pathway as the source appeared to be from the cleared, but unfinished portion of the LGO stockpile pad area where PAG material is not yet being stored. Within the area where PAG material is present on the LGO stockpile pad the IEM team member noted that the toe of the slope appeared to be level with the ditch, promoting the drainage of PAG contact water into the ditch in accordance with its design. The IEM team provided this observation as an opportunity for improvement and recommended the area be monitored/inspected to prevent any potential damage to project infrastructure. Additionally, the IEM team has submitted an RFI seeking confirmation that the water observed flowing alongside and beneath the ditch liner is not PAG contact water. BWG provided a response on August 25, 2025, confirming that all PAG water is contained on-top of the LGO liner or within the LGO liner foundation drain and reporting to the lined collection ditch. Additionally, BWG completed an inspection of the identified portions of the ditch line and detailed water flowing into the area is surface runoff from precipitation and minor groundwater runoff and that no structural concerns were noted within the lined channel during their site inspection. BWG further advised surface water sumps are in place upstream of this location to capture water and pump it into the lined channel to minimize water flow towards the identified portion of the channel.	No
Portions of the base of the LGO stockpile pond liner were observed to be protruding within the pond in a 'bubble-like' formation (Photo 114220-1). An RFI was submitted inquiring details of what is causing this deformation of the base of the liner, and confirmation from the engineering department that the pond remains structurally sound and is functioning to design to capture all PAG contact water from the LGO stockpile area. In a response provided on August 25, 2025, BWG detailed the cause of the protrusions is trapped air beneath the liner and that there are no concerns with the integrity of the liner. It was further detailed that both Engineering (Knight Piésold) and Earthworks Engineering (Artemis) have confirmed the pond is preforming as designed.	No
Mine Site Access Roads	
During the previous IEM team visit (as detailed in IEM Report 032), several straw wattle and spring berm check dams installed at various locations along the access road to the Operations Camp were observed to contain excess sediment accumulation and require maintenance in order to continue the effectiveness of the installed ESC measures (Record ID-114077). BWG provided a response on July 28, 2025, which indicated that maintenance had been recommended for the areas identified by the IEM team, however, it was not clear whether all areas had been addressed. This matter will remain open until confirmation that maintenance of ESC measures at all locations identified by the IEM team has been received. **This item is held over from the previous reporting period (IEM Report 032).** **Update for IEM Report 033**: A response from BWG has not been received prior to the issuance of this report.	Yes
The former bridged crossing over Watercourse 636 (which ultimately flows into Davidson Creek) at 9.5km on the C-trail access road has been replaced with a culvert crossing (Photo 114199-4). The IEM team understands this was implemented to facilitate the increase in haul traffic along the roadway. The outlet of the culvert was observed to lack energy dissipation to protect the stream bed against erosion which does not appear to align with the best management practices listed within Section 7.4 of the Surface Erosion Prevention and Sediment Control Plan (SEPSCP) and Sheet 4 of the design drawings included in Appendix A of that document (Photo 114199-2). Additionally, as the observed culvert appeared to be undersized for potential high flows (Photo 114199-1), the IEM team submitted an RFI to inquire whether the installed culvert could pass a 10-year peak runoff flow as required in Sheet 4 of the design drawings included in Appendix A of the SEPSCP. This observation was originally issued as a non-compliance by the IEM team, however in a response provided on August 25, 2025, BWG indicated it did not agree with the IEMs opinion that this matter was out of compliance. Rationale for the difference in opinion was based upon language within Section 7.4 of the SEPSCP which states that '*the best management practices (BMP) are generic in nature and are intended to provide general guidance for potential ESC scenarios*' and that BWG did not see verified evidence to determine the observation identified constituted a non-compliance determination. Additionally, BWG advised the culvert installed was 1200mm in size and capable of passing a max flow of 4.2m^3/s.	No

In response, the IEM asked BWG to provide rationale why, if BMPs are included within the SEPSCP to be used as guidance for potential ESC scenarios, they did not implement the specifically detailed installation of energy dissipation on the downstream side of a culvert to proactively manage against erosion at this location and in this scenario. Additionally, the IEM followed up on the original request to provide confirmation the culvert can pass a 10-year flood event. BWG responded on August 26, 2025, and restated reference to their original response pointing to language within Section 7.4 of the SEPSCP which states that BMPs are generic in nature and are intended to provide general guidance for potential ESC scenarios. They further indicated 'this is a guidance reference and not a requirement to follow to precise prescriptions of the management plan, which would otherwise create the conditions to determine an aspect as non-compliant.' The follow up response on August 26, 2025, also included confirmation the culvert in place could pass a 10-year flood event and included a photograph that was cited as evidence that BWG had installed energy dissipation at the culvert outlet. However, the provided photograph appeared to be a different crossing location than the one that is the subject of this matter as the location depicted in the photo was not consistent with the conditions observed by the IEM team (due to the presence of two culverts at the discharge point). The IEM team has followed up with BWG on the photo documentation confirming erosion dissipation was installed at this culvert location but had not heard back prior to the issuance of this report. As BWG and the IEM team have differing opinions on whether or not the IEM observation should be classified as a non-compliance, the IEM team has removed this non-compliance and is engaged in discussions with BC EAO related to BWGs interpretation and implementation of best management practices outlined within the SEPSCP to manage ESC on the project.	

Notable Environmental Incidents

Record ID No(s).	Date of Incident (dd/mm/yyyy)	Location	Description of Event
114147	29/07/2025	Mine Access Road	On August 10, 2025, it was reported that on July 29, 2025, a fox mortality had occurred following a collision with a light vehicle at kilometre 15.5 on the Mine Access Road. The incident was reported to the Ministry of Water, Land and Resource Stewardship. Additional detail can be found in the attached summary of previous month (July 2025) environmental incidents provided by BWG to the IEM team on August 10, 2025 (See BWG Record 2867)
114148	25/07/2025	Tailings Storage Facility	On August 10, 2025, it was reported that on July 25, 2025, a spill of approximately 3000L of tailings supernatant had occurred from booster pump 2 along the A-trail access road. The affected area was cleaned up and disposed of within the TSF. The incident was reported to the Ministry of Environment and Climate Change Strategy (ENV), Ulkatcho First Nations, Lhoosk'uz Dene Nation, Nadleh Whut'en First Nation, Saik'uz First Nation, Stellat'en First Nation and Nazko First Nation. Additional detail can be found in the attached summary of previous month (July 2025) environmental incidents provided by BWG to the IEM team on August 10, 2025 (see BWG Record 2863)
114149	08/07/2025	Water Management Pond	On August 10, 2025, it was reported that on July 8, 2025, a spill of approximately 350L of diesel had occurred at the Water Management Pond booster station 1 location. The incident was reported to ENV, Ulkatcho First Nations, Lhoosk'uz Dene Nation, Nadleh Whut'en First Nation, Saik'uz First Nation, Stellat'en First Nation and Nazko First Nation Additional detail can be found in the attached summary of previous month (July 2025) environmental incidents provided by BWG to the IEM team on August 10, 2025 (see BWG Record 2842)
114150	03/07/2025	Plant Site	On August 10, 2025, it was reported that on July 3, 2025, a spill of 50,000 L of processing slurry to ground had occurred at the plant site. The contaminated material was cleaned up with a loader and disposed of within the tailing's storage facility. The incident was reported to ENV, Ulkatcho First Nations, Lhoosk'uz Dene Nation, Nadleh Whut'en First Nation, Saik'uz First Nation, Stellat'en First Nation and Nazko First Nation. Additional detail can be found in the attached summary of previous month (July 2025) environmental incidents provided by BWG to the IEM team on August 10, 2025 (see BWG Record 2839).
114151	09/06/2025	Workers Accommodation (Operations Camp)	On August 10, 2025, it was reported that a PM10 exceedance had occurred on June 9, 2025. The incident was reported to the ENV, Ulkatcho First Nations, Lhoosk'uz Dene Nation, Nadleh Whut'en First Nation, Saik'uz First Nation, Stellat'en First Nation and Nazko First Nation. Additional detail can be found in the attached summary of previous month (July 2025) environmental incidents provided by BWG to the IEM team on August 10, 2025 (see BWG Record 2833).

Environmental Issue Tracking Log – Open Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)
114077	22/07/2025	Several straw wattle and spring berm check dams installed at various locations along the access road to the Operations Camp observed with excessive sediment accumulation and need maintenance to continue the ongoing performance of the measures.	Inspect, maintain, and implement erosion and sediment control measures in accordance with Section 11.1 of the Surface Erosion Prevention and Sediment Control Plan.	06/08/2025
114078	22/07/2025	Excess sediment accumulation observed within the lower extents of the South Collection Channel, near the discharge point into the Central Water Transfer Pond.	Inspect, maintain, and implement erosion and sediment control measures in accordance with Section 11.1 of the Surface Erosion Prevention and Sediment Control Plan.	06/08/2025

Environmental Issue Tracking Log – Closed Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)	Follow-up	Completed Date (dd/mm/yyyy)
113346	14/05/2025	Failure to notify external parties of a 'moderate level' incident (as detailed and described in Tables 2.2-3 and Table 7-1 of the AMACP) within 24 hours related to the instances on February 6, 7, 9 and March 14 and 15, 2025 when the instream flow needs (IFN) within Davidson Creek were unable to be accommodated as a result of pump failure (freezing).	Provide confirmation all parties (including Indigenous Monitors, EMC Members, Health Emergency Management BC, IAAC and BC EAO) have been notified of instances when IFN within Davidson Creek were out of compliance on February 6, 7, 9 and March 14 and 15 in accordance with Section 7 of the AMACP.	31/05/2025	Confirmation that parties had been notified of the non-compliance was provided on August 13, 2025.	13/08/2025

Upcoming Construction Activities

Summary of Activities	Anticipated Start Date
-	-

Yours truly,

EDI ENVIRONMENTAL DYNAMICS INC.

Graeme Paterson, P.Ag, CPESC

Independent Environmental Monitor Lead

ATTACHMENTS:

- Photos
- Site Overview map
- Summary of Previous Month (July 2025) Environmental Incidents (provided by BWG)
- Incident Report and QEP Memo for IFNs below project requirements in Davidson Creek (Record ID-113346)

Report Distribution List:

Blackwater Gold (Artemis): Tim Donnelly, Adam Gyorffy, Mark Warbanski, Ryan Todd, Sam Lynch, Steven Hayward, Norm Fraser, Jessica Saunders, Quain Sulin, Randall Hennigar, Linda Siwallace

Ulkatcho First Nation: Alyisha Knapp

Lhoosk'uz Dene Nation: Laurie Vaughn

Stellat'en First Nation: Doug Casimel, Deane Carlson, Taneesha Raymond

Saik'uz First Nation: Kasandra Turbide, Howard Alexis, Jimmy Vickers

Nadleh Whut'en First Nation: Kristen Chapman, Pam Ketlo, Jonathan Kostyshyn, Joshua Parsons

Nazko First Nation: Stephanie Deneault, Terrance Paul, Florian Bergoin

Source Environmental Associates Inc: Martin Shin, Georgina Farah, Fraser Riddolls, Rina Freed, Anna Everett, Sally Turnbull, Taleya Ouellet

Skin Tyree Nation: Bea Paton

Tsilhqot'in National Government: Trina Setah

Metis Nation of BC: Danielle Courcelles

Nee-Tahi-Buhn Band: Kieran Broderick, Ryan Brooks

Environmental Dynamics Inc (EDI): Graeme Paterson, Leslie Chamberlist, Matthew Van Osch

Impact Assessment Agency of Canada (IAAC): Mathieu Trudelle, Shannon Wallace, Carl Johansson, Steven Fraser

Environmental Assessment Office (EAO): Chris Parks, Warren Fekete, Christie Lombardi, Shayla Frechette

Ministry of Mining and Critical Metals (MCM): Rachel Taylor

Ministry of Environment and Climate Change Strategy (ENV): Breanne Hill

Ministry of Water, Land and Resource Stewardship (WLRS): Duncan McColl

Photo 114222-5. Overview of status of ongoing mining practices within the open pit.

Photo 2. Spill of processing slurry that occurred on July 3, 2025, at the Plant Site. Photograph from end of spill report to ENV provided by BWG to IEM team on August 13, 2025.

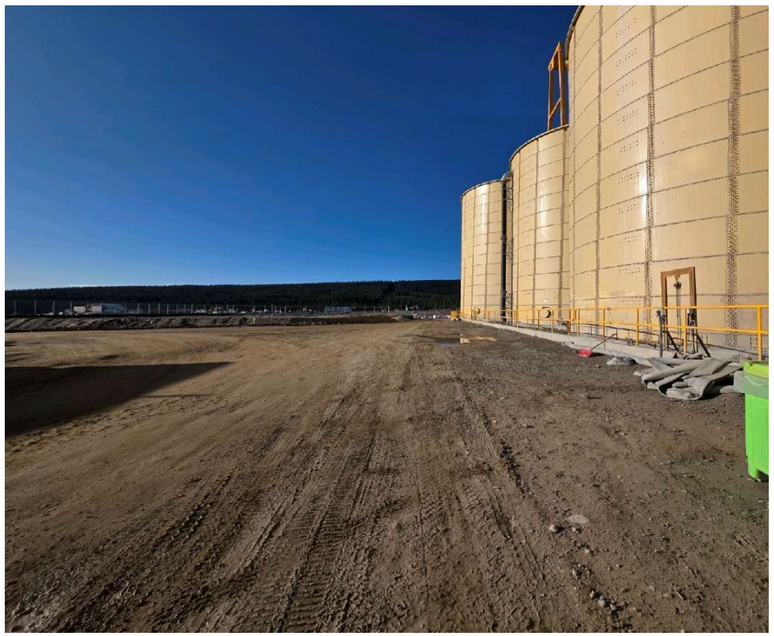


Photo 114223-4. Area adjacent to the leach circuit tanks at the Plant Site following clean up of the 50,000L spill of processing slurry that occurred on July 3, 2025.

Photo 114205-4. Overview of low water level within the Water Management Pond.

Photo 114201-7. Current state of Davidson Creek following slope failure within the Fresh Water Reservoir footprint that occurred on June 24, 2025. Current channel can be seen on high side of slide.

Photo 114201-6. Seep coming from footprint of former slide area into Davidson Creek within the Fresh Water Reservoir worksite.

Photo 114202-5. Overview of crews working on excavation and shaping of the Fresh Water Reservoir.

Photo 114219-4. Raised edge of LGO stockpile drainage ditch resulting in water flowing alongside channel as opposed to within it.

Photo 114219-2. Example location along LGO stockpile ditch line where liner is raised (not keyed in) and allowing water to flow beneath it.

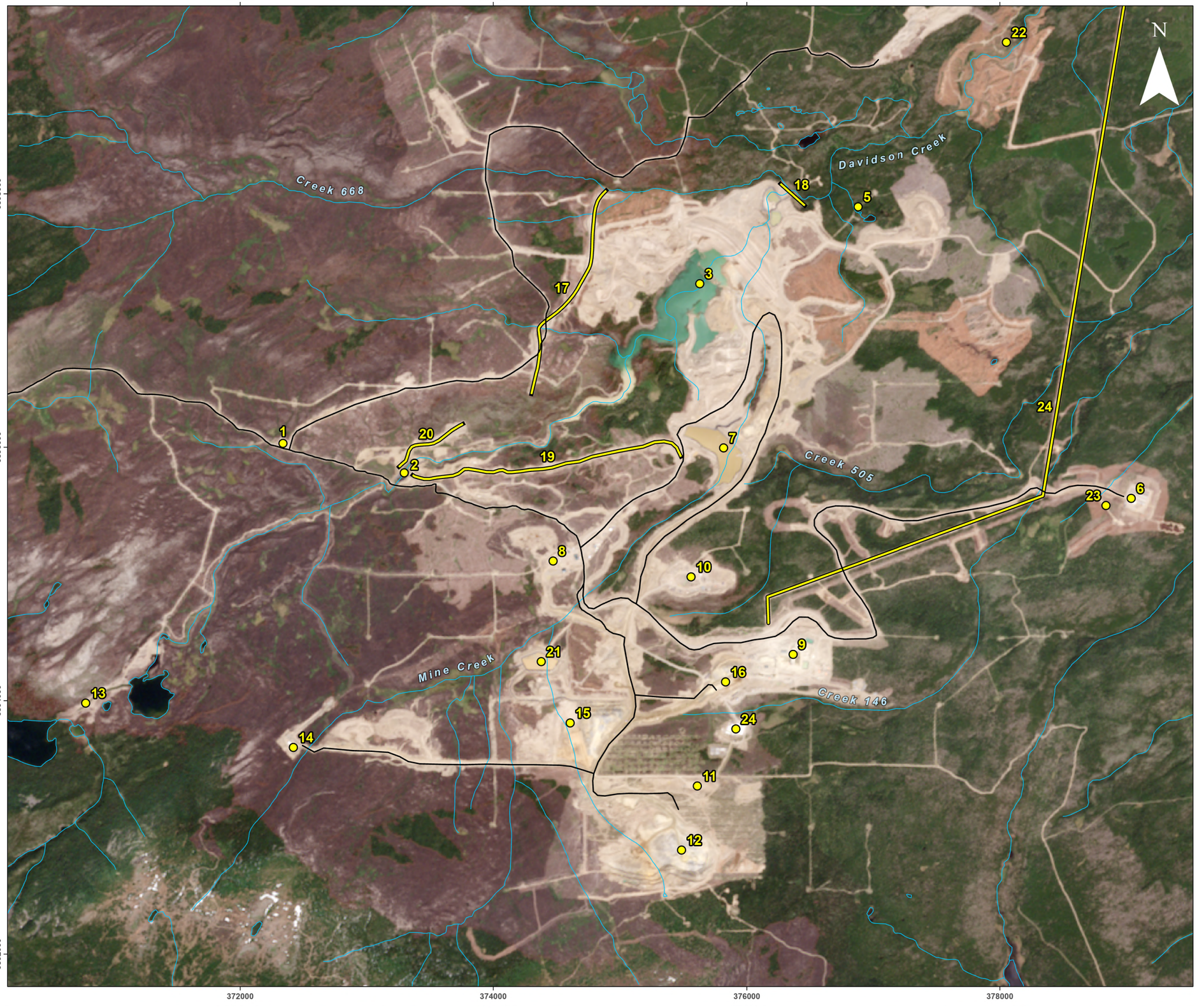
Photo 114220-1. Portions of the liner along the base of the LGO stockpile pond protruding in 'bubble-like' formations. BWG detailed the cause of the protrusions is trapped air beneath the liner and that there are no concerns with the integrity of the liner as confirmed by the Engineering departments.

Photo 114199-4. Overview of former bridge crossing over Watercourse 636 at 9.5 km on the C-trail access road which has since been replaced with a culvert crossing.

Photo 114199-2. Lack of energy dissipation on downstream side of Watercourse 636 culvert crossing at 9.5 km on the C-trail access road.

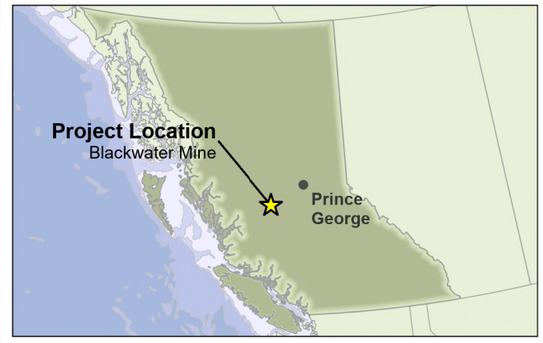
Photo 114199-1. Upstream side of culvert crossing of Watercourse 636 at 9.5km on the C-Trail access road.

Work Space Locations



Legend

- Mine Access Road
- Watercourse
- Waterbody
- 1,Security Gate
- 2,Central Water Transfer Pond
- 3,Tailings Storage Facility
- 4,Tailings Storage Facility Dam
- 5,Water Management Pond Outfall to Davidson Creek
- 6,Operations Camp
- 7,Water Management Pond
- 8,Mobile Maintenance Yard
- 9,Plant Site
- 10,Andrew's Hill Laydown
- 11,Heavy Equipment Assembly Pad
- 12,Ore Body/Open Pit
- 13,Lake 15/16 Fish Compensation Channel
- 14,Explosives Magazine
- 15,Low Grade and High Grade Ore Stockpile
- 16,Run of Mine Pad
- 21,Low Grade Ore Stockpile
- 22,Freshwater Reservoir
- 23,Air Monitoring Station
- 24,Construction Camp
- 17, North Diversion Channel
- 18, Interim Environmental Control Dam
- 19, South Collection Channel
- 20, North Collection Channel
- 24, Transmission Line



0 0.5 1 1.5 2
Kilometres

Map Scale = 1:30,000 (printed on 11 x 17)
Map Projection: NAD 1983 UTM Zone 10N

Data Sources
- Workspaces. EDI Environmental Dynamics Inc. June 13, 2025.
- Main Basemap. CanVec 1:50,000: Government of Canada; Sentinel-2 Level 2A True Colour image June 9, 2025. Contains modified Copernicus Sentinel data 2024 processed by Sentinel Hub.

Disclaimer
EDI Environmental Dynamics Inc. has made every effort to verify this map is free of errors. Data have been derived from a variety of digital sources and, as such, EDI does not warrant the accuracy, completeness, or reliability of this map or its data.

Drawn:	Checked:		
CT / OL / CN	GP	Map 1	Date: 6/19/2025

EDI

Path: L:\PROJECTS\2021\NBC\21P0403_BlackwaterMine\21P0403_BlackwaterMine.aprx\21P0403_Blackwater_IEM_20250610

SUMMARY OF PREVIOUS MONTH (JULY 2025) ENVIRONMENTAL INCIDENTS (PROVIDED BY BWG)

ID	Hazard/ Incident Date Time	Brief Description	Location	Status	Department	Select the immediate actions taken?	Initial Hazard or Incident details	Spilled Fluid Details	Is the spill near a creek or water body if applicable?	Regulatory Reporting Status	Material Disposal Site	Media Affected by spill	Spill Cause	Spill Clean Up Date	Spill Coordinates	Spill Source	Spilled Fluid Quantity (Liters)
2869	7/31/2025 11:30 AM	Jepson fuel truck had a pump fail which caused a leak while offloading	Plant Site Fuel Station	Resolved	Warehouse & Logistics	Pump was stopped, another truck was brought in with a working pump and unloaded fuel. Skidsteer was brought over to clean up the ground and fresh material was placed after contaminated soil was picked up	Hazard/Incident Date: 2025-07-31 11:30 AM; Reported by - | Employed by: , Hazards | Incident Details: Fuel truck opperator was getting ready to unload into tank 17 when he turned the pump on the seal on pump failed resulting in diesel spraying on the ground within the lined, containment berm; Immediate Actions Taken - Pump was stopped, another truck was brought in with a working pump and unloaded fuel. Skidsteer was brought over to clean up the ground and fresh material was placed after contaminated soil was picked up, Recommended Action - Opperator was in the right place to catch the leak before it got worse	Dyed Diesel	No	Not Required	One bin of soil	Ground in bermed area	pump seal failed	7/31/2025	-	Leaking pump	57
2867	7/29/2025 6:30 AM	Light duty vehicle contacted a fox on the access road resulting in a wildlife mortality.	Kilometer 15.5 on the mine access road.	Resolved	Fixed Plant Maintenance	Driver pulled over, contacted environmental department and reported the incident.	Hazard/Incident Date: 2025-07-29 06:30 AM; Reported by Hazards | Incident Details: Worker was driving back to camp after finishing night shift when a fox ran out of the ditch and onto the access road in front of the vehicle. The driver applied the brakes and attempted to avoid the animal, however the rear of the vehicle ended up making contact with the fox resulting in an immediate mortality. The driver then pulled over in a safe location and contacted the environmental department. Immediate Actions Taken - The driver contacted the environmental department and completed an incident report. Environmental department moved carcass and sent notification as per the requirements in the Wildlife Mitigation and Monitoring Plan. Recommended Action - N/a	-	-	Final Report Issued to the regulator	-	-	-	-	-	-	-
2865	7/26/2025 10:00 AM	Fuel leak on dozer	The spill occurred on an access road located on the back side of the TSFC dam.	Resolved	Earthworks	The operator noticed the spill and placed a drip tray beneath the machine to capture the released fluid. Environment was on site and the area supervisor was notified.	Hazard/Incident Date: 2025-07-26 10:00 AM; Hazards | Incident Details: A bleeder valve located on the dozer fuel line was knocked open resulting in fuel being released to ground. Immediate Actions Taken - The operator noticed the spill and placed a drip tray beneath the machine to capture the released fluid. Environment was on site and the area supervisor was notified. Recommended Action - Operator identified the spill and reacted quickly to minimize environmental impact.	Diesel fuel	No	Not Required	Hydrocarbon contaminated soil bin	Compacted road material	A bleeder valve was knocked open allowing diesel fuel to leak onto the ground.	7/26/2025	10U 375437 5897934	Engine	20
2863	7/25/2025 7:30 AM	Tailings supernatent leak - booster pump 2	Booster Pump 2 - A trail	In Progress	Fixed Plant Maintenance & Infrastructure	Leak was stopped and environment notified. Affected area was cleaned up and disposed of in TSF area.	During scheduled maintenance at booster pump 2 while reclaim line was off, a leak occurred when installing a new flange for the new HDPE pipe to be tied into current pipe. Leak caused from head pressure still in the line.	Tailings supernatent	No	Initial Notification Issued to the regulator	TSF	Ground	Maintenance	7/25/2025	10U 375243 5895663	Reclaim line - booster pump 2	3000
2860	7/22/2025 10:00 AM	Coolant leak from damaged transmission cooler.	C trail	Resolved	Marmac	Truck was parked and the supervisor was notified. The spill was then remediated.	Hazard/Incident Date: 2025-07-22 10:00 AM; Reported by -| Employed by: , Hazards | Incident Details: Operator was driving to pick up sandbags down a trail when the vehicle undercarriage made contact with a stump. The contact broke the bottom fitting for the transmission cooler. ; Immediate Actions Taken - Truck was parked, the area supervisor was contacted, and the spill was remediated. Recommended Action - Reminder to crews to watch where they are driving along trails and assess if an ATV would be more appropriate than a truck.	Coolant	No	Not Required	Contaminated soil bin	Ground	Fitting broke	7/22/2025	53.22617, -124.85534	Transmission cooler	1-2 L
2849	7/16/2025 1:20 AM	Diesel Tank overflow	LGO fuel bay	Resolved	Big Country Equipment Repair	Spill pads soaked up most the mess. Contamination soil cleaned up as best as possible.	Hazard/Incident Date: 2025-07-16 01:20 AM; Reported byEmployed by: , Hazards | Incident Details: HT1304 trucks fuel shut off didn't function correctly. Most of the spill was contained in the spill tray. The operator of the truck saw the spill. ; Immediate Actions Taken - Spill pads soaked up most the mess. Contamination soil remediated Recommended Action -	Approximately 5L of diesel	No	Not Required	Hydrocarbon Impacted Bin	Ground	Fuel tank auto shut off didn't function correctly causing diesel to overflow	7/16/2025	-	Fuel tank	5L
2847	7/12/2025 2:40 PM	DRL11 compressor fluid (ATF) spill	1540-001 drill pattern in the open pit	Resolved	JDS Drilling	Spill tray placed under leak to catch all other fluid leaking from component, mechanics called to diagnos	Hazard/Incident Date: 2025-07-12 14:40 PM; Reported by | Employed by: , Hazards | Incident Details: Leak/spill identified while inspecting the drill; Immediate Actions Taken - Spill tray placed under leak to catch all other fluid leaking from component, mechanics called to diagnos, material cleaned up. Recommended Action - not at this time	ATF	No	Not Required	contaminated soil bin	ground	gasket failure	7/12/2025	-	compressor	-1litre
2845	7/10/2025 5:30 PM	DR012 Hydraulic leak	1580-019 drill pattern in the open pit	Resolved	JDS Drilling	Scene frozen and pictures taken. Due to the fluid release being a spray/mist, there were no areas at the scene where the fluid had a chance to pool in order for spills pads to be deployed. Instead, spill pads and rags were used to soak up/clean up the oil that remained on the drill preventing any fluid from reaching the ground. Area cleaned up with CAT390 excavator and CAT740 rock truck. Material taken to contaminated soils pile.	Hazard/Incident Date: 2025-07-10 17:30 PM; Reported by | Employed by: , Hazards | Incident Details: While drilling, the operator seen a spray of hydraulic fluid hit the front window of the drill. Operator immediately ceased drilling, shut the key off, got out of the drill and closed the main hydraulic tank valve. After doing this the operator then realized that the hydraulic fluid spray had actually gone over the cab of the drill and landed on the ground in front of him. As well, noticed that the hydraulic fluid had sprayed back onto the engine. Operator then notified supervisor of the incident and monitored the drill until the supervisor arrived. ; Immediate Actions Taken - Scene frozen and pictures taken. Due to the fluid release being a spray/mist, there were no areas at the scene where the fluid had a chance to pool in order for spills pads to be deployed. Instead, spill pads and rags were used to soak up/clean up the oil that remained on the drill preventing any fluid from reaching the ground. Area cleaned up with CAT390 excavator and CAT740 rock truck. Material taken to contaminated soils ., Recommended Action - At this time, recommendations are limited until the investigation is complete.	5-30 hydraulic fluid	No	Not Required	contaminated soils pile	overburden and rock pattern	hydraulic line from feed pump to feed system ruptured	7/10/2025	-	hydraulic system	59
2843	7/9/2025 4:40 AM	ATF spill (compressor fluid) spill - cracked compressor discharge transfer line	In the pit, on the 1580-015 pattern	Resolved	JDS	Drill shut down to reduce fluid spill, spill pads and spill trays used to contain the majority of the fluid. The supervisor called to report the spill. The supervisor and mechanic assessed the scene and situation to develop an action plan.	Hazard/Incident Date: 2025-07-09 04:40 AM; Reported by - Hazards | Incident Details: -While tramming the drill between holes the driller noticed oil spraying and shut down the drill immediately. The driller grabbed spill pads to place under the drill and close to the failed hose to contain as much as possible. They then called the Supervisor and the mechanics about the issue.; Immediate Actions Taken - Drill shut down to reduce fluid spill, spill pads and spill trays used to contain the majority of the fluid. The supervisor called to report the spill. The supervisor and mechanic assessed the scene and situation to develop an action plan., Recommended Action - Investigation into the failure and hose in ongoing to understand the failure method and mitigations.	ATF	No	Not Required	Spill pads used to contain large amounts of fluid. Drill must be moved before remainder can be cleaned up	spill affected overburden in the pit	hose failure	7/9/2025	-	Air compressor	~5L was uncontained and hit the ground.
2842	7/8/2025 6:50 PM	Started filling booster 1 for the wmp pump took my readings to the book to fill them in, shortly after drove off to wmp. Seen diesel and stopped. Shut off pump and called supervisor	Booster station 1 and wmp	Resolved	Marmac	Shut off pump, placed spill tray where leak was from container of truck, placed spill pads in positions that would prevent spreading further	Hazard/Incident Date: 2025-07-08 18:50 PM; Reported by - Employed by: , Hazards | Incident Details: Drove to wmp booster pump 1. Started filling and took my readings of PSI, RPM, Casing temp and went to the truck to log it,while I was logging it, I started getting anxious about how long it seemed to be taking, thought I reeled up the line and started driving off. Avoiding rocks and big dips, got to valve pad and realized there was a spill, stopped and ran to the back, shut off the pump and placed the berm on the ground where the fluid was spilling out. Placed what I had for spill pads, called primary supervisor for Marmac, no answer so I messaged, still no answer so I called site service super intendant, after I looked around for more spill pads. Then called Artemis Mobile maintenance to inform of the hose being disconnected to give him time to figure out what he could do for a solution. Environment was called to notify of spill. Equipment and contaminated material bins were mobilized to area and spill cleanup was started. All material was cleaned up and placed on tarp on night shift following spill. Contaminated soil truck was then loaded the next day to disposal.No spill to water occured; Immediate Actions Taken - Shut off pump, placed spill tray where leak was from container of truck, placed spill pads in positions that would prevent spreading further, Recommended Action - Stay by hose, double check, dont get complacent DGIR#: 252683	Diesel	Yes	Final Report Issued to the regulator	Disposal containers	Ground	Torn hose	7/8/2025	53.19815° N, 124.85595° W	ST05 connection to pump	350

2838	7/4/2025 11:10 AM	Hydraulic oil spill	Plant site 10 N 376017 E 5894305 N	Resolved	Mine Operations	Spill pads placed than spill pads disposed of and oil cleaned up and disposed of in proper bin	Hazard/Incident Date: 2025-07-04 11:10 AM; Reported by	Employed by: , Hazards	Incident Details: Operator noticed leak put down spill pads called supervisor ; Immediate Actions Taken - Spill pads placed than spill pads disposed of and oil cleaned up and disposed of in proper bin, Recommended Action -	Hydraulic Oil	No	Not Required	Disposal bin at shop	Ground	O-Ring failure	7/4/2025	-	Hydraulic Pump	20 milliliters
2834	7/3/2025 3:10 PM	Hydraulic oil release while rigging down boomtruck.	Primary crusher in plant site	Resolved	Energy Crane Service	Absorbents	Hazard/Incident Date: 2025-07-03 15:10 PM; Reported by - Employed by: , Hazards Incident Details: Only I was involved. I haulted all operations, shut off the truck, assessed the situation, called supervisor and used absorbents to keep the spill contained, spill cleaned up; Immediate Actions Taken - Absorbents, Recommended Action - Replace spill kit		Hydraulic oil	No	Not Required	Hydrocarbon Impacted Bin	Dirt	Unsure, hose failure most likely	7/3/2025	-	Hydraulic system	20
2839	7/3/2025 1:30 PM	Processing Slurry Spill to Ground	Plant Site CIL Tanks	Resolved	Environmental	Pump was immediately shut down, supervisor and environment department were notified	Diesel pump was transferring slurry from one tank to another when the outflow hose line failed resulting in spilled material reporting to the ground. Pump was immediately shut down, supervisor and environment department were notified. Released material was contained with a dirt bund and clean up was coordinated with a hydro-vac truck. Contaminated material was cleaned up with a loader and disposed of in TSF.		Processing Plant Slurry	No	Final Report Issued to the regulator	TSF	Laydown aggregate material	Mechnical Failure	7/4/2025	-	Cil Tank Transfer	50000
2832	7/2/2025 3:00 PM	Hydraulic line rubbed on battery cable, wore through, and spilled 123L of hydraulic oil.	1570-006 pattern	Resolved	JDS Drilling	hose was clamped off and spill containment was put in place	While operating Drill 12, a spill was noticed. The operator immediately shut off the drill to stop any additional flow and placed containment under the leak. It was found that the main hydraulic line to the rad fans had been rubbing on the positive line to the battery and had worn through its protective wrapping causing a hole in the hydraulic line. The spill was cleaned up by sucking up as much oil as we could with our lube truck and the remainder was cleaned up . The hose was replaced with additional protective wrapping and all drills were inspected for wear in this area. Total volume spilled: 123L of 66 Powerdrive A/S Syn TO4 5W30		hydraulic oil	No	Not Required	Hydrocarbon Impacted Bin	dirt/rock	on drill 12, the positive cable off the battery arced and contacted the main hose supplying hydraulic oil to the rad fans causing a hose failure and approx. 160L spill	7/2/2025	Hole J215892817.7013 75349.753 1579.026037	Drill 12	160
2833	7/2/2025 12:00 AM	Medium Trigger Particulate Matter Exceedance - June 9		Resolved	Environmental		As per Permit 110650 Section 4.2.5 the PM10 TRP Medium Trigger (40ug/m3) was exceeded on June 9th, 2025, with a PM10 concentration of 45.5 ug/m3. The particulate matter sample was collected using a Thermo-Scientific Partisol Air Quality monitor and data was analyzed by ALS Laboratory. Table 1 provides a summary of the data. It was noted on June 9th, smoke from a nearby wildfire (Fire ID: R10549) burning approximately 130 km northwest had reached the Mine site. Windrose data from the Blackwater High and Low Stations indicate winds were predominately from the North and West, with gusts reaching up to 23.7 km/h (Appendix 1). Firesmoke Canada (https://FireSmoke.ca) PM2.5 concentrations on June 9th, were low and below the objective; however, FireSmoke does not provide PM10 concentrations. Additionally particulate measurements were reviewed for Quesnel Johnson Avenue (Quesnel) and Vanderhoof Court House (Vanderhoof) using BC Environment and Parks Envista (https://envistaweb.env.gov.bc.ca). Quesnel had an average concentration of 9.1 ug/m3 (PM2.5) and 22.2 ug/m3 (PM10), with a maximum PM10 concentration of 53.1 ug/m3. Vanderhoof average concentrations were 4.7 ug/m3 (PM2.5) and 12.5 ug/m3 (PM10) and a maximum PM10 concentration of 29.1 ug/m3. A Purple Air monitor located near the Partisol (Operations Camp) also records PM2.5 and PM10 levels, both average concentrations were below the TRP Medium Triggers, suggesting elevated PM10 concentrations were localized around the Partisol monitoring and not site wide. The elevated PM10 levels observed on June 9th is likely attributed to smoke from the nearby wildfire and site-related dust emissions, including vehicle movement on unpaved roads and wind-driven dust. Blackwater Gold Ltd. (BWG) implements a water application on active roads and construction areas 24-hours a day, with water trucks actively working to minimize dust generated by traffic on June 9th.	-	-	Final Report Issued to the regulator	-	-	-	-	-	-	-

ARTEMIS GOLD INC | Blackwater Mine

Incident Report

August 5, 2025

Impact Assessment Agency of Canada
22nd Floor, Place Bell
160 Elgin Street
Ottawa ON K1A 0H3

Dear sir or madam:

As per BW Gold's Accidents and Malfunctions Administration and Communication Plan, please see information below regarding an incident that occurred on the Blackwater Mine.

Due to persistent cold weather conditions at the beginning of February 2025, the Central Water Transfer Pond (CWTP) pump failed due to freezing conditions, and subsequently the discharge line froze. Maintenance of this system occurred from February 6, including the removal of ice blockages, and replacing the pump. Pumping from the CWTP resumed February 22nd.

On February 2nd, the breaker for the Water Management Pond (WMP) pump failed. A long lead time for the replacement parts results in a delay in return to pumping. Additionally, due to the conditions described above, the CWTP did not contribute flows to the WMP, resulting in limited water volumes to pump. Maintenance of this system occurred over the following days, and pumping from the WMP resumed February 21st.

In response to the pump failures in February, a review of pump and supply systems was done to identify:

1. Changes should be made to limit the potential for freezing during winter conditions; and,
2. Electrical components inventory for regularly used parts (such as breakers) to limit the potential of downtime for pumping infrastructure

Following this review, pipeline improvements for the CWTP and WMP were made in early March:

- Pipelines sections were re-graded to minimize low points for water accumulation and ice buildup during freezing weather
- Low point drains were maintained and heated with frost fighters for draining of sections during unexpected downtime.
- Select pipeline sections were buried under 3 meters of material to reduce freezing risk under frost line.

To support those activities, discharge from the CWTP and WMP occurred intermittently, until the pump at the CWTP was brought back online on March 18th.

Water from the CWTP and WMP discharge to Davidson Creek, and support meeting Construction Instream Flow Needs (CIFN) regulated by the Mine's *Fisheries Act Authorization*. The natural reduction in flow associated with those persistent cold periods in February and March, in conjunction with the limited pumping capacity of those facilities over this time resulted in flows below CIFN on February 6, 7, 9, and March 14 and 15. Details on these low flow events, including follow up actions, have been provided through the monthly *Fisheries Act Authorization* reports for February and March. A

subsequent review of potential impacts to fish and fish habitat during these events was done by a Qualified Professional and determined that the potential risk of a significant effect is low (attached).

To further reduce risks related to discharges the Freshwater Reservoir (FWR) will be commissioned in Q4, 2025. The FWR operates as a pipe discharge system where no pumping of water to meet IFN is required. Remaining critical piping infrastructure will be buried to ensure reduction in freezing risk. These changes were discussed and reviewed with the Independent Environmental Monitor (IEM) during the May inspection. As reflected in this conversation, BWG anticipates that these changes will reduce the potential for freezing events to limit pumping at the CWTP and the WMP.

Upon review of these occurrences the IEM indicated that based on their interpretation of an example included in the Accidents and Malfunctions Administration and Communication Plan that this event should be reported as a moderate occurrence. BW Gold does not align with this interpretation; however, this submission is the outcome associated with subsequent discussion with the IEM. It is important to note that while the timing of this submission is tied to this outcome, reviews of the pump failure and downstream risks were not similarly delayed. As outlined above, fulsome review of these events has occurred, including a review of the cause, identification and implementation of mitigations, and a review of potential downstream risks. This report, and attachment, include information needed to fulfill those follow-up reporting requirements and no additional follow-up will occur.

Please do not hesitate to contact the undersigned if there are any further questions.

Kind regards,

Mark Warbanski
Environment Manager
Blackwater Gold Mine

Attachment:

- Memorandum – Risk to Fish and Fish Habitat Due to Discharge Below CIFN Threshold

Whisky Jack Consulting

Memorandum

275072 Symons Valley Road
Rocky View County, AB, T4B 4N1
T:587.777.5667

Attention: Mark Warbanski, BW Gold Ltd.

Date: May 29, 2025

Project Name: Blackwater Gold

No. of Pages: 10

From: Robert St. Jean, P.Bio

Re: Risk to Fish and Fish Habitat Due to Discharge Below CIFN Threshold

---

1. Introduction

BW Gold Ltd. (BW Gold) is currently constructing the Blackwater Project, an open pit mine located 112 kilometres (kms) southwest of Vanderhoof, and approximately 160 kms west-southwest of Prince George, British Columbia (BC).

The Blackwater Project received Environmental Assessment Certificate (EAC) #M19-01 under the 2002 Environmental Assessment Act on June 21, 2019, and an Environmental Assessment Decision Statement (FDS) under the Canadian Environmental Assessment Act, 2012 on April 15, 2019, and on June 30, 2023, Fisheries and Oceans Canada (DFO) issued BW Gold a Fisheries Act Authorization (FAA) number 21-HPAC-01447. Condition 2.2.9 requires downstream flows in Davidson Creek to be always maintained during construction, with condition 2.2.9.1 establishing the Construction Instream Flow Needs (CIFN) for Davidson Creek during various periods throughout the year (DFO, 2023).

> *Condition 2.2.9: Downstream flows to Davidson Creek shall be maintained at all times during construction and commissioning of mine infrastructure, including diversion channels, reservoirs, and the freshwater supply system (FWSS), such that death of fish is avoided and impacts to fish habitat are limited to what is authorized:*
>
> *2.2.9.1: Prior to the operation of the FWR when the natural discharge in Davidson Creek exceeds the Construction Instream Flow Needs (CIFN) threshold (below), water withdrawals from Davidson Creek may occur at a rate such that the actual instream flow in Davidson Creek immediately downstream of the Freshwater Reservoir (FWR) meet the CIFN thresholds:*
>
> *- August 31 – May 14:* ***0.07m^3/s***
> *- May 15 – June 30 (min.21 days):* ***0.56m^3/s***
> *- May 15 – June 30 (remaining):* ***0.35m^3/s***
> *- July 1 – July 15:* ***0.30m^3/s***
> *- July 16 – August 31:* ***0.15m^3/s***

2. Background Information

Fisheries Act Authorization 21-HPAC-01447 was issued to BW Gold based on the Blackwater Project's application for authorization submitted to DFO under paragraph 35(2)(b) of the *Fisheries Act* (Palmer, 2023a). This application includes direct habitat losses as a result of the project and potential downstream impacts to Davidson Creek due to flow changes. Appendix D: Construction Phase Temporary Minimum Flow Threshold Memo of the FAA application describes in detail the rational in determining the temporary minimum instream flow thresholds, to minimize the potential for harm to fish during flow reduction, for Davidson Creek (Palmer, 2023b). Review of Appendix D is recommended to get a better understanding of the FAA condition 2.2.9.1 flow requirements.

The Davidson Creek watershed supports both Rainbow Trout (Oncorhynchus mykiss) and Kokanee (Oncorhynchus nerka). Rainbow Trout utilize Davidson Creek year-round for spawning, rearing and overwintering while Kokanee only utilize the lower Davidson Creek for spawning activity (Figure 1) (Palmer, 2023b). Kokanee eggs incubate throughout the winter months, hatching in spring and out-migrating to Tatelkuz Lake (ERM, 2023).

In accordance with the reporting requirements set out in the FAA, BW Gold submits a monthly compliance monitoring report to DFO. The February and March 2025 report provided CIFN flow measurements associated with monitoring station DC-05 in table 2 on page 7 and page 6, respectively. (BWG, 2025a; BWG, 2025b).

Table 1: Discharge data at DC-05 as per table 2 of February 2025 FAA 21-HPAC-01447 Compliance Report (BWG, 2025a).

Date (February)	IFN (m^3s)	Flow (m^3/s)
Feb 1	0.07	Flow measurement attempted and could not be collected. Daily temps below operating temperature for SonTek FlowTracker 2.
Feb 2		Flow measurement attempted and could not be collected. Daily temps below operating temperature for SonTek FlowTracker 2.
Feb 3		Flow measurement attempted and could not be collected. Daily temps below operating temperature for SonTek FlowTracker 2.
Feb 4		Flow measurement attempted and could not be collected. Daily temps below operating temperature for SonTek FlowTracker 2.
Feb 5		Flow measurement attempted and could not be collected. Daily temps below operating temperature for SonTek FlowTracker 2.
Feb 6		0.02
Feb 7		0.02
Feb 9		0.02
Feb 14		Flow measurement attempted and could not be collected. Daily temps below operating temperature for SonTek FlowTracker 2.
Feb 22		0.07
Feb 25		0.08

Table 2: Discharge data at DC-05 as per table 2 of March 2025 FAA 21-HPAC-01447 Compliance Report (BWG, 2025b).

Date (March)	IFN (m^3s)	Flow (m^3/s)
1	0.07	0.10
8		0.08
14		0.05
15		0.06
18		0.15
26		0.21
31		0.09

The data provided in table 1 & 2 shows flow measurements under the CIFN requirement of 0.07m^3/s outlined in Condition 2.2.9.1. DFO has requested BW Gold to have a Qualified Professional (QP) review relevant information and provide a memorandum on potential fish and fish habitat impacts due to measured flows being below CIFN.

2.1 Memorandum Objective

The purpose of this memorandum is to provide a suggested risk of impacts to fish and fish habitat through a review of available information and outline any follow up actions required.

3. Risk to Fish and Fish Habitat

Utilizing the flow values presented in table 1 & 2 there is a period between February 6th – 9th, March 14th – 15th with recorded values shown to be below the CIFN threshold. With no field readings recorded between February 1st – 5th, February 10th – 21st, March 9th – 13th, and 16th – 17th, it is not possible to determine if flows on these days were below or above 0.07m^3/s. The duration of days below the CIFN threshold is a minimum of 4 days in February and 2 days in March. Assuming the days with no field measurements were below CIFN, the maximum low flow days would be 21 in February and 9 in March.

The potential risk to fish associated with a period of reduced flow, below CIFN threshold, for February and March can be categorized as potentially either effecting Rainbow Trout overwintering or Kokanee egg incubation in lower Davidson Creek. This is supported by the life history information collected in Davidson Creek during the baseline surveys in 2011 and 2012 (Table 2, AMEC, 2015; Palmer, 2023b).

Table 2: Species and life stage utilization for Davidson Creek as reported by AMEC (2015).

Species	Life Stage	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rainbow Trout	Juvenile overwintering												
	Juvenile rearing and migration												
	Adult migration and spawning												
	Egg incubation												
Kokanee	Adult migration and spawning												
	Egg incubation												

370000 375000 380000 385000 390000

5905000 5900000 5895000

Chedakuz Creek
TATELKUZ LAKE 28 I.R.
Turtle Creek
Transmission Line
Lower Davidson Creek
4-DC
Mid Davidson Creek
Tatelkuz Lake
Fawnie Dome 1726m
Kluskus-Ootsa FSR
Mine Access Road
Creek 226858
Fresh Water Supply Pipeline
Creek 314089
Davidson Creek
Tatelkuz Lake Intake
Creek 700
Top Lake
Snake Lake
Creek 636713
Main Dam
Creek 428073
Fresh Water Reservoir (FWR)
Environmental Control Dam (ECD)
H2
Creek 661
Creek 668328
Main Dam
Creek 146920
Creek 543585
Creek 661
Chedakuz Creek
Saddle Dam
Creek 505659
Lake 01428UEUT
West Dam
Creek 704454
Creek 705
Lake 16
Lake 15
Stockpiles
Open Pit
Mount Davidson 1856 m
Kuyakuz Lake

370000 375000 380000 385000 390000

Document Path: G:\Shared drives\Projects 2020\20065 - Artemis Gold Inc\2006501 - Blackwater Project 2020-2022\Mapping\Figures\5_ArcGIS\Figure 1 - Portion of Davidson Creek Subject to Instream Flow Needs.mxd

Legend

- Watershed Model Node
- Upstream extent of kokanee in Davidson Creek
- Spot Height
- Elevation Contour (25 m interval)
- Indian Reserve
- Mine Footprint
- Local Study Area Boundary

Impacted Fish Habitat

- Downstream Flow

Watersheds

- Davidson Creek

Scale 1:75000
UTM Zone 10N
NAD 1983 Datum

0 1 2
kilometres

N

Prepared For:

CLIENT: Artemis Gold Inc.
PROJECT: Blackwater
DRAWN: B. Elder
CHECKED: S. Gronsdahl
PROJECT: 2006501
DATE: Feb 24, 2022

Prepared by:

Palmer™

Portion of Davidson Creek Subject to Instream Flow Needs

FIGURE 1

375000
380000
385000
5905000
5900000

N

Chedakuz Creek
TATELKUS LAKE 28
CC_MT2
CC_MT6
CC_MT3
DC-1-OW
DC-2-OW
DC-3-OW
DC-4-OW
TL BMC1
Tatelkuz Lake
TL LIM 3
Kluskus FSR
Chedakuz FSR
1121 m
DC-5-OW
DC-6-OW
1158 m
Davidson Creek
DC-7-OW
1077 m
DC-8-OW
DC-10-OW
DC-9-OW
Davidson Creek

Blackwater Gold

Figure 1. Davidson Creek Assessment Site Locations

Project No.	Date	Revision
12009	May 23, 2024	00
Prepared By	Reviewed By	Page Size
TK	SH	11 x 17

- Overwintering RB Abundance
- BWG Certified Project Footprint

Transportation
- Gravel Road
- Project Access

Hydrology
- Streams
- Lake
- Indian Reserve

Figure 2

0 750 1,500 2,250 m

Scale: **1:40,000**

Projection: **NAD 1983 UTM Zone 10N**

Base map Source: **ESRI World Imagery**

TRITON Environmental Consultants

File Path: G:\1.0 Projects\12009-Blackwater Fisheries Support\12009-Blackwater Fisheries Support.aprx\12009-Davidson Creek Assessment Site Locations_240508

3.1 Rainbow Trout Overwintering

The flows within Davidson Creek did not cease but were reduced, to approximately 0.02m^3/s in February and 0.05m^3/s in March, from the CIFN threshold of 0.07m^3/s at the monitoring location DC-05. This reduction in flow would likely cause water elevations in Davidson Creek to also reduce, although not measured at the time of the event.

During the winter months Rainbow Trout, primarily overwinter in the deeper pools of Davidson Creek and are less likely to be found in the margins. This behaviour would reduce the likelihood of individuals being stranded due to a reduction in water elevation. BW Gold completed fish stranding and stream dewatering bank walks daily at DC-05 for at least 100m, with no observations of dewatering or fish stranding (BWG, 2025a; BWG, 2025b). At DC-05 flows continued through the period of reduced flow, mitigating any potential for Davidson Creek to freeze to the bottom.

Triton Environmental Consultants Ltd. (Triton), on behalf of BW Gold, were completing Rainbow Trout overwintering field assessments in Davidson Creek between March 4th and 11th in association with the long-term monitoring requirements set out in the Federal Decision Statement Condition 3.14. Established monitoring points DC-5-OW, DC-2-OW, and DC-3-OW (Figure 2) were visited March 9th, March 10th, and March 11th respectively (Triton, 2025). As part of the monitoring requirements, underwater cameras are set for up to 60 minutes, water quality and general observations are recorded. Triton noted live juvenile Rainbow Trout were observed at every site, no observations of fish mortality were recorded, and water quality was not a concern (Table 3) (Triton, 2025).

Table 3: Water quality for monitoring sites as reported by Triton (2025).

Site	Date	Pool Location	Depth (m)	Temperature (°C)	DO (%)	DO (mg/L)	Conductivity (µS)	Specific Conductivity (µS)	pH	Turbidity
DC-2-OW	2025-03-10	Head	0.08	0	94.8	13.84	59.7	114.2	7.56	3.64
DC-2-OW	2025-03-10	Middle	0.52	0	90.1	13.15	59.7	114	7.57	4.03
DC-2-OW	2025-03-10	Tailout	0.27	0	94.6	13.82	59.7	114.1	7.55	3.59
DC-3-OW	2025-03-11	Head	0.21	0	91.6	13.38	64.2	122.9	7.54	5.26
DC-3-OW	2025-03-11	Middle	0.35	0	86.7	12.64	64.8	124	7.9	5.45
DC-3-OW	2025-03-11	Tailout	0.19	0	94.3	13.78	64.9	124.1	7.47	5.54
DC-5-OW	2025-03-09	Head	0.09	0.1	94.2	13.73	57.8	110.1	7.84	7.5
DC-5-OW	2025-03-09	Middle	0.3	0.3	93	13.48	57.9	109.6	7.84	3.48
DC-5-OW	2025-03-09	Tailout	0.11	0.3	93.1	13.5	57.8	109.6	7.82	2.85

The dissolved oxygen (DO, mg/L) recorded by Triton (table 3) are similar to the 12.9 mg/L value provided by BW Gold in the March 2025 FAA compliance monitoring report (BWG, 2025b).

A reduction in flow below 0.07m^3/s at DC-05 is not outside the parameters of the natural flow drop in Davidson Creek for the month of March with flows only having exceeded the CIFN threshold 35% of the time within the data set between 1981-2020 (Figure 3, Palmer, 2023b). Appendix D: Construction Phase Temporary Minimum Flow Threshold Memo of the FAA application states, "*The proposed temporary threshold is significantly more conservative during winter than it is during summer.*" (page 10, Palmer, 2023b). The CIFN being conservative provides a buffer if flows are reduced to be closer to the mean discharge of approximately 0.06m^3/s.

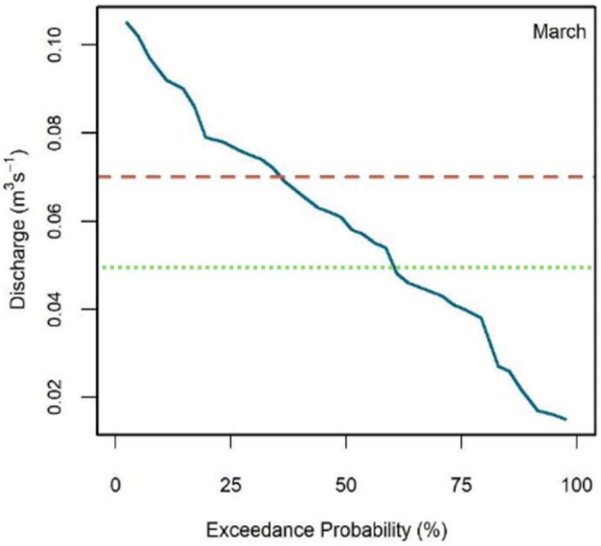


Figure 3: March flow-duration curve (solid blue line) for Davidson Creek, using modelled monthly data (1981-2020). The dashed red line represents CIFN and dotted green line representing lowest flow recorded on March 14th, 2025 (Palmer, 2023b).

Although a similar figure, was not available for February it is likely the historical February flows would be similar to what is has been seen in March. A discharge rate of 0.02m^3/s in Davidson Creek has been shown to naturally occur, occasionally.

Flow below the CIFN threshold may reduce the wetted channel width and overwintering pool depth but the risk of causing a significant effect on overwintering Rainbow Trout in Davidson Creek is low as flows downstream were maintained.

3.2 Kokanee Egg Incubation

Kokanee spawning habitat and the location of potential redds is restricted to the lower Davidson Creek area (Figure 1). Lower Davidson Creek will see less influence from reductions in flow at DC-05 due to receiving other water inputs such as, additional groundwater, tributary inputs and runoff. As previously discussed, and seen in figure 3, the reduction of flow down to 0.02 - 0.05m^3/s is within the historical range of discharge in upper Davidson Creek.

BW Gold monitors the Kokanee fry spring outmigration through the Aquatic Effects Monitoring Program (AEMP) with one measurement being the calculated total fry abundance for the outmigration period (ERM, 2023). Triton is completing this component of the AEMP in spring 2025 and at the time of writing this memo the results are not available for review.

The risk of causing a significant effect on Kokanee egg incubation in lower Davidson Creek is low, however; it is recommended that the results of the AEMP total fry abundance survey be reviewed to determine if outmigration numbers were within confidence intervals of previous years including the baseline data.

3.3 Fish Habitat

Fish habitat downstream of DC-05 remained in place throughout the reduction in flow in February & March 2025. The temporary reduction in flow down to 0.02 - 0.05m^3/s would likely cause a decrease in wetted channel width depending on channel morphology and amount of additional water inputs as you progress downstream.

Any reduction in usable habitat by overwintering Rainbow Trout would be temporary and fall within natural flow fluctuations during the winter months. The risk of a significant effect on fish habitat in Davidson Creek is low.

4. Recommendations

Summary of follow up recommendations:

1) Continue to monitor CIFN discharge and Davidson Creek per BW Gold FAA application Appendix D section 6: Proposed Monitoring Strategy (Palmer, 2023b).

2) Review the 2025 Kokanee fry total abundance results, compiled by Triton under the AEMP, to see if estimates are within expected confidence range.

5. Conclusion

This memo provides background information on the CIFN, monitoring information collected during the period of reduced flows below the CIFN threshold, follow up recommendations and potential risk to fish and fish habitat.

Table 4: Summary of potential risk of significant effect to fish and fish habitat.

Environmental Aspect	Potential Risk of Significant Effect
Rainbow Trout Overwintering	Low
Kokanee Egg Incubation	Low (with follow up data review)
Fish Habitat	Low

6. Statement of Limitations

This memorandum was prepared for BW Gold Ltd. in connection with the Blackwater Gold Mine Project. The material in this memo reflects Whisky Jack Consulting Ltd. best judgment in light of the information available to us at the time of preparing this memo. Conclusions and recommendations in

this report are based on an analysis of the best available information and professional judgement that is subject to a degree of scientific uncertainty and therefore cannot be used as absolute fact. Whisky Jack Consulting has made the findings and conclusions set out in this report in a manner consistent with the level of care and skill normally exercised by members of the environmental science profession practicing under similar conditions at the time the work was performed.

The report author believes this report to be accurate. However, he cannot guarantee the completeness or accuracy of information supplied to him. Any use which a third party, other than the parties mentioned above, makes of this report, or any reliance on, or decisions to be made based on it, are the responsibility of such third parties. The author accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken.

Prepared By:

Name	Signature	Title	Phone	Date
Robert St. Jean, P.Bio		Senior Biologist, Whisky Jack Consulting Ltd.	587.777.5667	May 29, 2025

7. References

AMEC. 2015. Blackwater Gold Project – Instream Flow Study. Appendix 5.1.2.6D. Prepared for New Gold Inc.

BWG. 2025a. *Fisheries Act* Authorization 21-HPAC-01447 - Monitoring Report – February 2025. Prepared by BW Gold Ltd. February, 2025.

BWG. 2025b. *Fisheries Act* Authorization 21-HPAC-01447 - Monitoring Report – March 2025. Prepared by BW Gold Ltd. March, 2025.

DFO. 2023. Paragraphs 34.4(2)(b) and 35 (2)(b) *Fisheries Act* Authorization, Path No.: 21-HPAC-01447. Prepared by Fisheries and Oceans Canada., Vancouver, BC. June 30, 2023.

ERM. 2023. Blackwater Gold Project: Aquatic Effects Monitoring Program Plan, Version 1.0. Prepared for BW Gold Ltd. by ERM Consultants Canada Ltd., Vancouver BC. July, 2023.

Palmer. 2023a. Blackwater Gold Project Application for Authorization under Paragraph 35(2)(b) of the *Fisheries Act* (Non-Emergency Situations). Prepared by Palmer Environmental Consulting Group Inc., Vancouver, BC. March 7, 2023.

Palmer. 2023b. Appendix D: Blackwater Fisheries Offsetting Plan, Construction Phase: Temporary Minimum Flow Threshold in Davidson Creek. Memorandum prepared for Blackwater Gold Ltd. by Palmer Environmental Consulting Group Inc., Vancouver, BC. February 23, 2023.

Triton. 2025. *Email*: RE: Winter Overwintering Assessment. Prepared by Triton Environmental Consultants Ltd. Prince George, BC. May 16, 2025.

Blackwater Gold Mine
IEM Site Visit Report 034
September 18, 2025

Prepared By
EDI Environmental Dynamics Inc.
3810 18th Ave
Prince George BC V2N 4V5

EDI Contacts
Graeme Paterson, PAg, CPESC
Leslie Chamberlist, PAg, CPESC
Independent Environmental Monitor Leads

EDI Project
21P0403
September 2025

mPRO

EDI
ENVIRONMENTAL DYNAMICS INC.
Down to Earth Biology

This page is intentionally blank.

1 PROJECT OVERVIEW

The Blackwater Mine Project is being developed by Blackwater Gold Limited (BWG), a subsidiary of Artemis Gold Inc. (Artemis). The Environmental Assessment Certificate (EAC) M19-01 was issued on 21 June 2019 and Condition 12 of the EAC requires the Holder to retain the services of an Independent Environmental Monitor (IEM) to observe, record for, and report to the BC Environmental Assessment Office (BC EAO) and Aboriginal Groups on compliance with the Certificate; and provide information to the BC EAO and Aboriginal Groups, BC Ministry of Energy, Mines and Low Carbon Innovation (EMLI), BC Ministry of Environment (ENV), and BC Ministry of Forests (MOF) as directed by EAO.

A Decision Statement issued under Section 54 of the Canadian Environmental Assessment Act (CEAA 2012) for the Project was issued on 15 April 2019. Condition 9 of this Decision Statement requires the Proponent to retain an IEM who shall advise the Proponent, the Agency, and Indigenous groups if, in their view, the activities do not comply with the conditions set out in the Decision Statement. The IEM shall also advise the Proponent, the Agency, and Indigenous groups whether measures should be taken in respect to these activities. IEM reports are prepared to satisfy both EAC and CEAA conditions.

1.1 SITE VISIT SUMMARY

The IEM team completed a site visit on September 18, 2025, with representatives from BC EAO, the Stellat'en and Nadleh Whut'en First Nations, and the BWG Environmental team.

Summaries of the site locations visited, and subsequent activities, observations, and ongoing matters are described in the tables below.

Site Visit Summary

Date (dd/mm/yyyy)	IEM Team On-site Personnel	Monitoring Sites/Inspection Focus
18/09/2025	Graeme Paterson	Site Visit with BC EAO. Plant Site, Water Management Pond, Central Water Transfer Pond, Davidson Creek, Fresh Water Reservoir, and mine site access roads. Inspections focused on hazardous material management, cyanide management, PAG management, water management, erosion and sediment control, and instream flow needs in Davidson Creek.

Activities/Observations (Record ID #s included in this table correspond to the Environmental Issue Tracking Log record ID #s)	Non-Compliance Observed?
Plant Site	
On September 15, 2025 BWG announced on its public website that it would be implementing a 33% increase to the Phase 1 processing plant capacity, referred to as Phase 1A. The move to Phase 1A will result in an increase in processing capacity from 6 million tonnes per year to 8 million tonnes per year. As detailed within the Artemis announcement on its public website, Phase 1A enhancements will include: • addition of a 3.5 MW vertical mill to the current ball mill grinding circuit and modifications to the current cyclone cluster; • expanded leach circuit with the addition of one aeration tank and one pre-leach tank to the existing carbon-in-leach train; • expansion and upgrades to the oxygen supply system and addition of oxygen shear reactors on the existing detoxification circuit; • upgrade of the existing elution circuit to increase carbon stripping capacity; • optimization of the reagents mixing and delivery systems to increase efficiency and lower costs; • addition of two storage ponds for fresh water and recycled process water near the plant site for better operational flexibility, and; • addition of a crushed ore stockpile cover, which will improve winter operation and further reduce fugitive dust.	No
During the previous site visit in August 2025 (as detailed in IEM Report 033), the IEM team visited the location of a 50,000 litre (L) processing slurry spill to ground at the plant site that occurred on July 3, 2025. As the slurry processing is part of the leaching circuit (which involves the use of cyanide), and there was previously no mention of the presence of cyanide in the spilled material in either the incident summary table provided to the IEM, or the spill report to the Ministry of Environment and Climate Change Strategy (ENV), the IEM team inquired whether there was any cyanide in the material that spilled. On August 25, 2025, BWG provided confirmation the processing slurry that was spilled contained cyanide. As the spill was confirmed to contain cyanide (a hazardous substance) and occurred outside of the engineered concrete containment surrounding the tanks, it appeared to meet a specific description of a "spill of hazardous substances outside of engineered containment" which is classified as a major (level 4) incident within Table 2.2-3 of the Accidents and Malfunctions Plan. As noted in the Notable Environmental Incident Table in this report, this incident was reported to ENV, Ulkatcho First Nations, Lhoosk'uz Dene Nation, Nadleh Whut'en First Nation, Saik'uz First Nation, Stellat'en First Nation and Nazko First Nation. If classified as a major incident, however, external reporting would also be required to additional parties including (but not limited to) the Impact Assessment Agency of Canada (IAAC) and the BC Environmental Assessment Office (BC EAO) both of whom the IEM reports to. The IEM submitted a follow up request for information (RFI) inquiring whether BWG had classified this as a major incident, and if not, to provide rationale. BWG provided a response on August 26, 2025, which indicated the material released was not classified as a major incident as spilled material was within the collection ditching of the Plant Site perimeter and any released material would be contained within the drainage system of the Plant Site. BWG also noted the spill did not represent any risk of damage to aquatic life and downstream human environments. The IEM team remains in discussions with both IAAC and BC EAO related to BWGs provided interpretation of classification and external reporting requirements associated with this incident. **This item is held over from the previous reporting period (IEM Report 033).** **Update for IEM Report 034**: The IEM team have discussed this matter with BC EAO and IAAC and will defer to those agencies on any further action or follow up related to this matter. Additionally, this location was visited with BC EAO during the site visit on September 18, 2025.	No
During the site visit, crews were completing maintenance activities on one of the processing slurry tanks at the Plant Site. This process involves the removal of the processing slurry (containing cyanide) from the tank and temporarily holding it within the engineered concrete secondary containment structure surrounding the tanks (Photo 114311-4 and Photo 114311-10). Based upon discussions with BWG, it is understood a submerged pump was drawing processing slurry back into a different tank within the structure. Section 6.7 of the Cyanide Management Plan (Spill Prevention and Containment) details that process tanks containing cyanide solutions will be located within concrete secondary containment areas capable of containing 110 % of the largest tank or vessel in addition to a 100 year, 24-hour storm event. An RFI was submitted inquiring whether the containment capacities outlined in Section 6.7 of the Cyanide Management Plan can be met when it is being used as a temporary holding location for process slurry.	No
During the previous reporting period (as detailed in IEM Report 033) the IEM team reached out to BWG to follow up on the status of the high-grade ore dust mitigation at the Plant Site. A series of RFIs were submitted to BWG on August 13, 2025, including: confirmation of the completion of additional sampling that was recommended by the qualified environmental professional (QEP), details on whether any impacts were observed in the additional sampling or in subsequent sampling events, and, an update on the status or plans to implement any additonal mitigation measures including the previously discussed windscreen. **This item is held over from the previous reporting period (IEM Report 033).** **Update for IEM Report 034:** BWG provided a response on September 16, 2025, which detailed that the additional sampling recommended in the QEP technical memorandum had been completed, but that analysis had not been completed to date. BWG advised the installation of a wind wall had been determined to not be feasible and effective for dust management and that a re-design was currently ongoing to reduce dust from the stockpile. Further, it was indicated that BWG had not completed any additional analysis on total volumes of dust deposition since the original estimate from May 2025 that detailed the deposition of 1.2 tonnes over the 1.3 km^2 area surrounding the Plant Site. During the September 18, 2025, site visit, BWG indicated they had recently had the supplier of the dust management dosing chemical used along the conveyor (called 'IPAC') complete a site visit to review and optimize the dust suppression system along the conveyor. The IEM understands this included the installation of a dosing station at the end of the conveyor (near the drop point to the stockpile) and modifications to the sprayer density and technique. It was confirmed that BWG uses the IPAC chemical in the sprayers when freezing temperatures are present and sprays water during non-freezing conditions. The pile continues to be held at an elevation closer to the drop point from the conveyor system to minimize the dust generated as material falls between the conveyor and the pile, a practice that BWG intends to maintain through the winter period (Photo 114312-1). Finally, as previously mentioned, BWG have confirmed a stockpile cover will be installed as a part of the Phase 1A expansion by the end of 2026 to reduce fugitive dust.	No

Mine Site Laydowns	
During a previous IEM team site visit between July 22-23, 2025 (as detailed in IEM Report 032), excess grease (with the potential to fall to ground) was observed on the boom and bucket of excavator unit 328 staged at the Mobile Maintenance Yard. This matter was initially identified by the IEM team as being non-compliant based upon Section 9.1 (Table 9.1-1) of the CEMP which indicates machinery will be clean and free of excess oil and grease by following developed maintenance and operational procedures. In a response provided on July 28, 2025, BWG provided confirmation the excess grease observed by the IEM team had been removed. BWG also detailed their opinion that the grease observed on the excavator was not considered excessive and that the equipment was in compliance with CEMP Section 9.1 and standard operating procedures (SOP) in place. The response provided rationale for their opinion which included that the pre-inspection logbook for this piece of machinery confirmed an inspection had been completed and procedures specific to managing grease were followed while this machine was operational and clarification that this piece of equipment was not operational for the day. In addition, BWG indicated that the CEMP Section 9.1 requirement is specific to following SOPs and not an assumption based upon visual interpretation. As BWG and the IEM team have differing opinions on whether the volume of grease observed on the machinery is excessive, the IEM team removed the classification of this observation as a non-compliance and engaged in discussions with BC EAO. In addition, the IEM team requested a copy of BWGs SOP related to the management of grease on machinery (which was received during the IEM Report 033 reporting period.) **This item is held over from the previous two reporting periods (IEM Report 032 and 033).** **Update for IEM Report 034**: The IEM team have discussed this matter with BC EAO and will defer to that agency on any further action or follow up in relation to this matter.	No
Water Management Infrastructure	
During a previous IEM team site visit between July 22-23, 2025 (detailed in IEM Report 032), excess sediment accumulation (requiring removal to maintain effectiveness of the ditch line) was observed in the lower portions of the South Collection Channel near the discharge point into the Central Water Transfer Pond (Record ID-114078). A response was provided by BWG on July 28, 2025, which detailed that sediment within the collection channels would be removed in 2025. The response additionally indicated that 'collection channels' were not referenced under Section 11.1 of the Surface Erosion Prevention and Sediment Control Plan (SEPSCP) which details the inspection and maintenance of erosion, sediment, and water management controls to maintain their performance. The IEM team submitted a follow up response on July 29, 2025, to have confirmation that excess sediment accumulation within the channel at this location had been addressed. Additionally, the IEM team inquired whether BWG disagrees with the IEM team's assessment that this matter was out of compliance and if so, to provide rationale detailing the exemption of the collection channels from the requirements to maintain erosion, sediment, and water management controls (including the removal of excess sediment accumulation) as detailed within Section 11.1 of the SEPSCP. **This item is held over from the previous two reporting periods (IEM Report 032 and 033).** **Update for IEM Report 034**: BWG provided photographic evidence on September 8, 2025, showing that the South Collection Channel had been cleaned out, closing this item (Photo 4).	Closed
During the previous visit in August 2025 (as detailed in IEM Report 033), water levels were observed to be low within the Central Water Transfer Pond (CWTP). Following onsite discussions with BWG staff, it was indicated to the IEM team member that they had stopped using water from the CWTP for dust mitigation and that this decision was partly related to potential issues in meeting IFN within Davidson Creek. The IEM team submitted an RFI inquiring whether there had been any instances of being unable to meet IFN because of low water levels and if so, what dates and follow up actions were taken - including any external reporting per the Accidents and Malfunctions Plan (if required). The IEM request was based upon Federal Decision Statement (FDS) Condition 3.8 which states "*The Proponent shall develop, prior to construction, measures to maintain instream flow needs in Davidson Creek. The Proponent shall maintain instream flow needs in Davidson Creek during all phases of the Designated Project at a minimum within flow rates recommended by the Proponent in Appendix 5.1.2.6D of the Environmental Impact Statement, unless otherwise authorized by Fisheries and Oceans Canada.*" The IEM also noted there is reference to FDS Condition 3.8 within Section 4.2 of the Mine Site Water and Discharge Monitoring and Management Plan, a plan that is included under the IEM oversight in accordance with the IEM Terms of Engagement. On August 26, 2025, BWG provided the following response: "As the condition states, unless otherwise authorized in which that authorization is now subject to. We now have the Fisheries Act Authorization and as a result, that aspect is now addressed as part of FDS compliance. As specifics are not mentioned in the Management Plan, the IEM is on the content of the document and not to outside references which states is now authorized. Specifics stated for the FDS are embedded in the EIS Appendix 5.1.2.6D as mentioned in FDS section 3.8. The aspects specified in the referenced FDS are no longer applicable as BWG is compliant in holding an approved Fisheries Act Authorization under Fisheries and Oceans Canada." BWG did not elaborate on whether IFN values in Davidson Creek continue to be met and based upon the information provided, the IEM team has inferred BWG has determined a response to the inquiries made by the IEM are not required. **This item is held over from the previous reporting period (IEM Report 033)**. **Update for IEM Report 034**: The IEM team continues to discuss this matter with BC EAO and IAAC.	No
In an effort to reduce the amount of turbid water present within the Water Management Pond (WMP) and to continue to have a source of water to discharge into Davidson Creek to maintain IFNs, BWG has installed a collection sump near the entrance to the WMP to capture water from Mine Creek and pump it to the CWTP via the South Collection Channel (Photo 114314-2 and 114314-5).	No
During the visit to the WMP, the IEM observed the presence of fencing that BWG had recently advised had been installed near the pond inlet to deter wildlife from entering (Photo 114313-3).	No
Following onsite discussions, the IEM understands the pumps within the decant tower at the WMP used to transport water to the Plant Site are no longer useable due to sediment congestion within the pump intakes from the turbid water within the pond (Photo 114313-7). To reduce the accumulation of turbid water within the pond, BWG have advised they are planning to install erosion, sediment, and water control measures throughout various areas which ultimately drain into Mine Creek upstream of the WMP. This will include works along various haul roads and at locations throughout the stripped and exposed areas between the Mobile Maintenance Shop and the access road to the explosive plant (Photo 9).	No

Fresh Water Reservoir	
Development of the Fresh Water Reservoir (FWR) continues (Photo 114317-7). Construction has recently commenced on the footprint of the future diversion channel and concrete flow chamber structure along the base of the basin which will divert Davidson Creek through the worksite (and beneath the dam) during the remaining portions of construction (Photo 114317-1). Once the FWR is complete, the controlled release of water through the flow chamber near the base of the dam will be used to maintain IFNs in Davidson Creek.	No
The downstream compliance sampling point for water quality and IFNs in Davidson Creek was visited (referred to as DC-05) (Photo 114318-4). Section 4.3.2 of the Aquatic Effects Monitoring Plan currently details that the DC-05 sampling location is to have an automated hydrometric station in place with connectivity to a telemetry system. From onsite discussions with BWG and BC EAO, the IEM understands a telemetry system is not currently in place that would allow real time monitoring of IFN. Although the probes installed have continuous sample collection, BWG staff must download and analyze the data prior to confirming whether IFNs have been met. The IEM team currently remains in discussion with BC EAO and IAAC on this matter.	No
A discussion with representatives from BWGs engineering department occurred in relation to the potential need to install the Tatelkuz Lake fresh water supply pipeline to the FWR in order to meet IFNs within Davidson Creek, particularity when the plant is set to increase production by 33% under the recent Phase 1A announcement. As detailed in Section 7.3.5 of the Mine Site Water and Discharge Monitoring and Management Plan, currently, the fresh water supply pipeline is set to be installed in 'year +6,' which the IEM understands is based upon the predicted water needs at site, and the ability to continue to manage IFNs with an increased need at the plant site. Onsite engineers indicated the need to re-assess the predicted need for water and the potential to bring the freshwater supply pipeline online sooner is currently being discussed internally.	No
Mine Site Access Roads	
During a previous IEM team visit in July 2025 (as detailed in IEM Report 032), several straw wattle and spring berm check dams installed at various locations along the access road to the Operations Camp were observed to contain excess sediment accumulation and require maintenance in order to continue the effectiveness of the installed ESC measures (Record ID-114077). BWG provided a response on July 28, 2025, which indicated that maintenance had been recommended for the areas identified by the IEM team, however, it was not clear whether all areas had been addressed. This matter was to remain open until confirmation that maintenance of ESC measures at all locations identified by the IEM team had been received. **This item is held over from the two previous reporting periods (IEM Reports 032 and 033).** **Update for IEM Report 034**: Confirmation maintenance on ESC measures had been completed at all locations previously identified by the IEM team was provided by BWG on September 16, 2025, closing this matter.	Closed
During the previous site visit in August 2025 (as detailed in IEM Report 033), the former bridged crossing over Watercourse 636 (which ultimately flows into Davidson Creek) at 9.5km on the C-Trail Access Road has been replaced with a culvert crossing. The IEM team understands this was implemented to facilitate the increase in haul traffic along the roadway. The outlet of the culvert was observed to lack energy dissipation to protect the stream bed against erosion which did not appear to align with the best management practices listed within Section 7.4 of the Surface Erosion Prevention and Sediment Control Plan (SEPSCP) and Sheet 4 of the design drawings included in Appendix A of that document. Additionally, as the observed culvert appeared to be undersized for potential high flows, the IEM team submitted an RFI to inquire whether the installed culvert could pass a 10-year peak runoff flow as required in Sheet 4 of the design drawings included in Appendix A of the SEPSCP. This observation was originally issued as a non-compliance by the IEM team, however in a response provided on August 25, 2025, BWG indicated it did not agree with the IEMs opinion that this matter was out of compliance. Rationale for the difference in opinion was based upon language within Section 7.4 of the SEPSCP which states that '*the best management practices (BMP) are generic in nature and are intended to provide general guidance for potential ESC scenarios*' and that BWG did not see verified evidence to determine the observation identified constituted a non-compliance determination. Additionally, BWG advised the culvert installed was 1200mm in size and capable of passing a max flow of 4.2m^3/s. In response, the IEM asked BWG to provide rationale why, if BMPs are included within the SEPSCP to be used as guidance for potential ESC scenarios, they did not implement the specifically detailed installation of energy dissipation on the downstream side of a culvert to proactively manage against erosion at this location and in this scenario. Additionally, the IEM followed up on the original request to provide confirmation the culvert can pass a 10-year flood event. BWG responded on August 26, 2025, and restated reference to their original response pointing to language within Section 7.4 of the SEPSCP which states that BMPs are generic in nature and are intended to provide general guidance for potential ESC scenarios. They further indicated 'this is a guidance reference and not a requirement to follow to precise prescriptions of the management plan, which would otherwise create the conditions to determine an aspect as non-compliant.' The follow up response on August 26, 2025, also included confirmation the culvert in place could pass a 10-year flood event and included a photograph that was cited as evidence that BWG had installed energy dissipation at the culvert outlet. However, the provided photograph appeared to be a different crossing location than the one that is the subject of this matter as the location depicted in the photo was not consistent with the conditions observed by the IEM team (due to the presence of two culverts at the discharge point). The IEM team has followed up with BWG on the photo documentation confirming erosion dissipation was installed at this culvert location but had not heard back prior to the issuance of IEM Report 033. As BWG and the IEM team have differing opinions on whether or not the IEM observation should be classified as a non-compliance, the IEM team has removed this non-compliance and is engaged in discussions with BC EAO related to BWGs interpretation and implementation of best management practices outlined within the SEPSCP to manage ESC on the project. **This item is held over from the previous reporting period (IEM Report 033).** **Update for IEM Report 034**: The IEM team have discussed this matter with BC EAO and will defer to that agency on any further action or follow up in relation to this matter. Additionally, this site was visited with BC EAO during the recent site visit, and the presence of some placed riprap was observed at the culvert outlet which onsite BWG staff confirmed was for energy dissipation (Photo 114319-1).	No

Notable Environmental Incidents

Record ID No(s).	Date of Incident (dd/mm/yyyy)	Location	Description of Event
114300	31/08/2025	Davidson Creek (downstream of Watercourse 668 Confluence)	On September 8, 2025, it was reported that on August 31, 2025, 51 deceased rainbow trout that had been previously salvaged from Davidson Creek, (downstream of the 668 confluence) had been found deceased in the transport buckets. It was suspected mortality was due to a reduction in dissolved oxygen during transport. The incident was reported to the Ministry of Water, Land and Resource Stewardship (WLRS), Ulkatcho, Lhoosk'uz Dene, Nadleh Whut'en, Saik'uz, Stellat'en, and Nazko Nations. Additional detail can be found in the attached Monthly Summary Table of August 2025 Incidents.

Environmental Issue Tracking Log – Open Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)
-	-	-	-	-

Environmental Issue Tracking Log – Closed Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)	Follow-up	Completed Date (dd/mm/yyyy)
114077	22/07/2025	Several straw wattle and spring berm check dams installed at various locations along the access road to the Operations Camp observed with excessive sediment accumulation and in need of maintenance to continue the ongoing performance of the measures.	Inspect, maintain, and implement erosion and sediment control measures in accordance with Section 11.1 of the Surface Erosion Prevention and Sediment Control Plan.	06/08/2025	Confirmation maintenance had been completed at all locations was provided by BWG on September 16, 2025.	08/09/2025
114078	22/07/2025	Excess sediment accumulation observed within the lower extents of the South Collection Channel, near the discharge point into the Central Water Transfer Pond.	Inspect, maintain, and implement erosion and sediment control measures in accordance with Section 11.1 of the Surface Erosion Prevention and Sediment Control Plan.	06/08/2025	Confirmation sediment accumulation had been removed from the South Collection Channel was provided on September 8, 2025.	08/09/2025

Upcoming Construction Activities

Summary of Activities	Anticipated Start Date
-	-

Yours truly,

EDI ENVIRONMENTAL DYNAMICS INC.

Graeme Paterson, P.Ag, CPESC

Independent Environmental Monitor Lead

ATTACHMENTS:

- Photos
- Site Overview map
- Summary of Previous Month (August 2025) Environmental Incidents (provided by BWG)

Report Distribution List:

Blackwater Gold (Artemis): Tim Donnelly, Adam Gyorffy, Mark Warbanski, Ryan Todd, Sam Lynch, Steven Hayward, Norm Fraser, Jessica Saunders, Quain Sulin, Randall Hennigar, Linda Siwallace

Ulkatcho First Nation: Alyisha Knapp

Lhoosk'uz Dene Nation: Laurie Vaughn

Stellat'en First Nation: Doug Casimel, Deane Carlson, Taneesha Raymond

Saik'uz First Nation: Kasandra Turbide, Howard Alexis, Jimmy Vickers

Nadleh Whut'en First Nation: Kristen Chapman, Pam Ketlo, Jonathan Kostyshyn, Joshua Parsons

Nazko First Nation: Stephanie Deneault, Terrance Paul, Florian Bergoin

Source Environmental Associates Inc: Martin Shin, Georgina Farah, Fraser Riddolls, Rina Freed, Anna Everett, Sally Turnbull, Taleya Ouellet

Skin Tyree Nation: Bea Paton

Tsilhqot'in National Government: Trina Setah

Metis Nation of BC: Danielle Courcelles

Nee-Tahi-Buhn Band: Kieran Broderick, Ryan Brooks

Environmental Dynamics Inc (EDI): Graeme Paterson, Leslie Chamberlist, Matthew Van Osch

Impact Assessment Agency of Canada (IAAC): Mathieu Trudelle, Shannon Wallace, Carl Johansson, Steven Fraser

BC Environmental Assessment Office (BC EAO): Chris Parks, Warren Fekete, Christie Lombardi, Shayla Frechette

Ministry of Mining and Critical Metals (MCM): Rachel Taylor

Ministry of Environment and Climate Change Strategy (ENV): Breanne Hill

Ministry of Water, Land and Resource Stewardship (WLRS): Duncan McColl

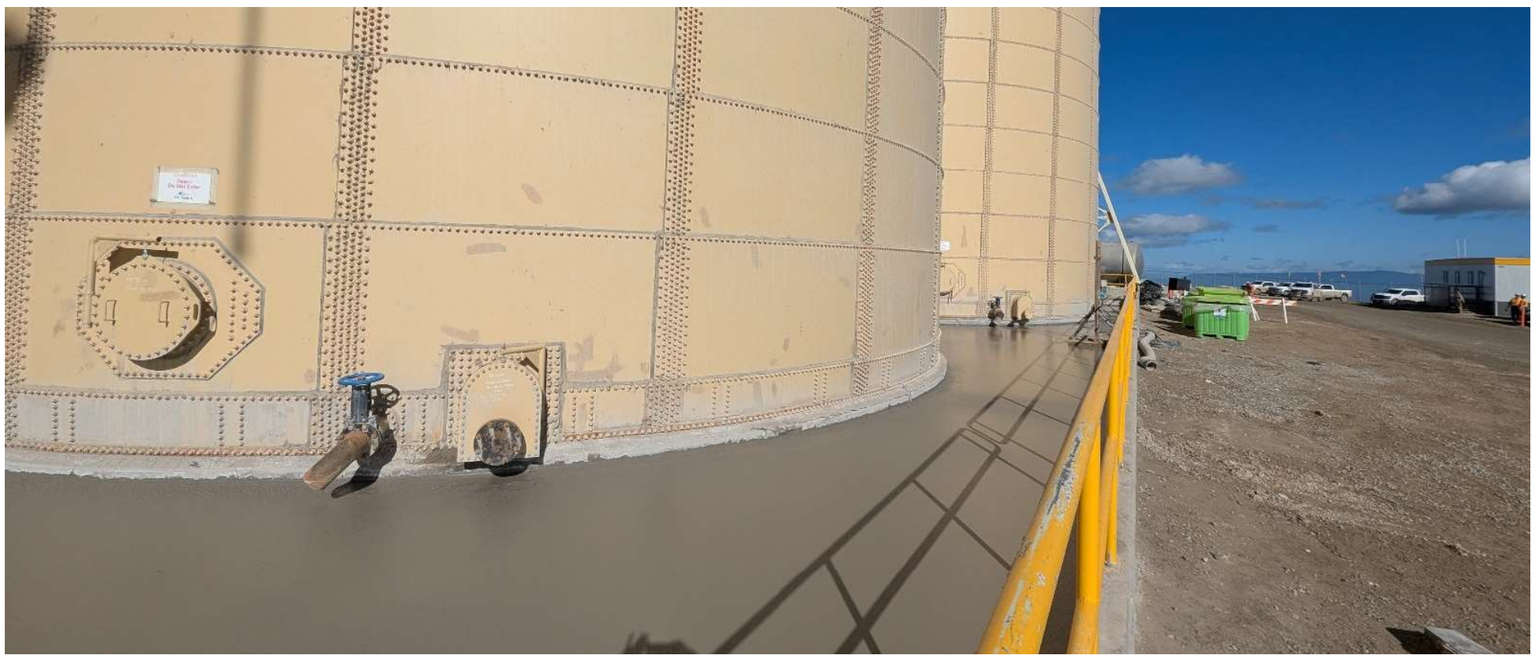


Photo 114311-4. Process slurry (containing cyanide) being temporarily held within the engineered concrete secondary containment structure surrounding the tanks during maintenance at the Plant Site.

Photo 114311-10. Process slurry (containing cyanide) being temporarily held within the engineered concrete secondary containment structure surrounding the tanks during maintenance at the Plant Site

Photo 114312-1. Overview of high-grade ore stockpile at the Plant Site. BWG advised sprayers have recently been installed near the drop point from the conveyor to the pile.

Photo 4. Confirmation of removal of sediment accumulation from the South Collection Channel. Photograph provided by BWG on September 8, 2025.

Photo 114314-2. Collection point for water from Mine Creek prior to entry into the WMP. Water is being pumped to CWTP via the South Collection Channel.

Photo 114314-5. Discharge point of water from the Mine Creek Diversion (prior to entering WMP) into the South Collection Channel (ultimately leads to the CWTP).

Photo 114313-3. Fencing installed at inlet to WMP to deter wildlife entry.

Photo 114313-7. Overview of the WMP. Decant tower currently not able to be used to send water to Plant Site due to sediment accumulation within the pump intakes.

Photo 9. Approximate area where various ESC and water management measures will be installed to attempt to improve the quality of water that flows into the WMP. Approximate pathway of Mine Creek (which drains into the WMP) is included in red on drawing for reference.

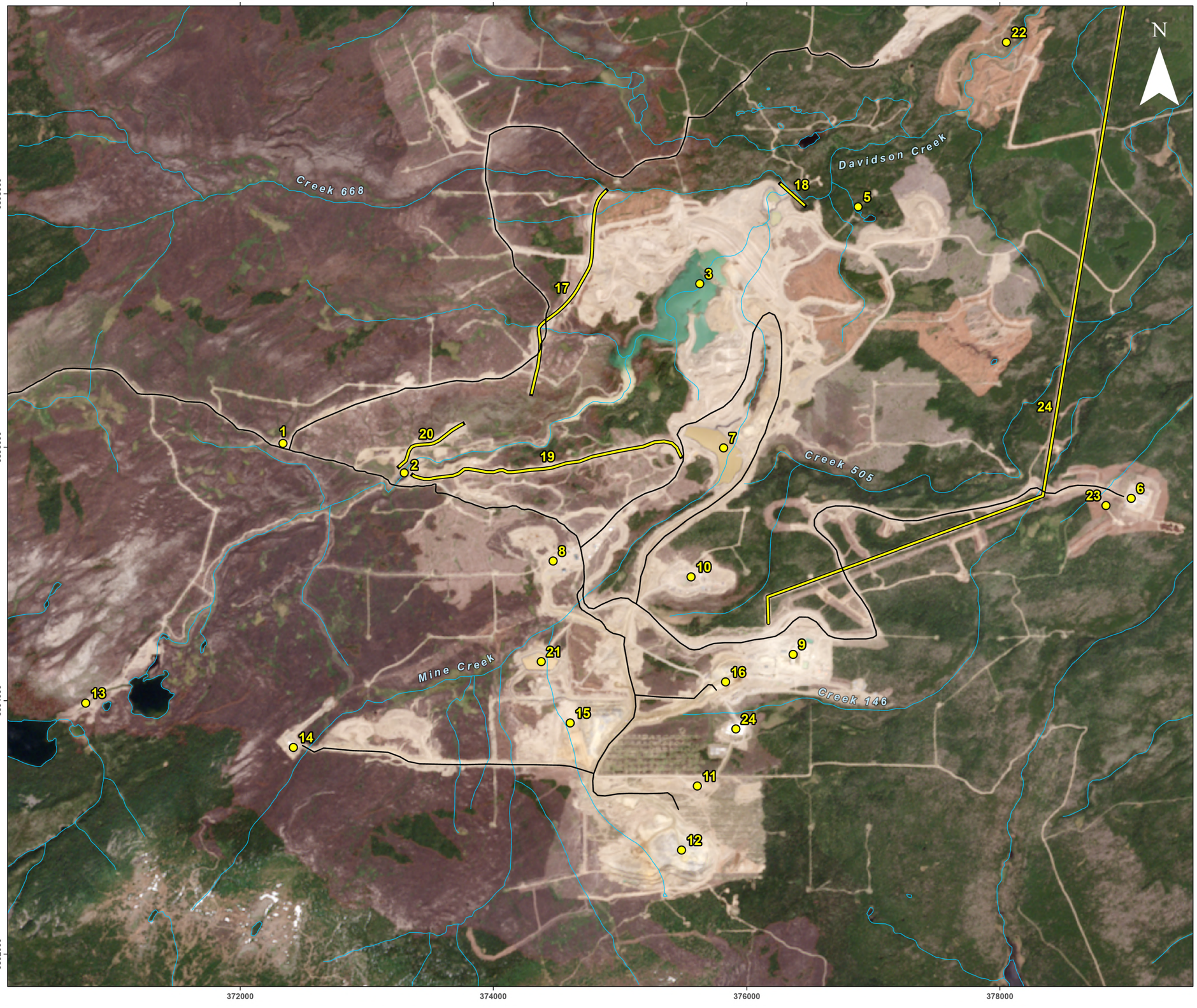
Photo 114317-7. Overview of crews working within the FWR. Approximate centerline of future dam indicated on photo.

Photo 114317-1. Works on the floor of the FWR to develop the future diversion channel and concrete flow chamber structure to facilitate water passage through the site during construction, and ultimately IFNs to Davidson Creek from downstream side of dam once complete. Flow direction indicated on photo.

Photo 114318-4. Overview of Davidson Creek compliance sampling point for water quality and instream flow needs (DC-05). Location of probes indicated on photo.

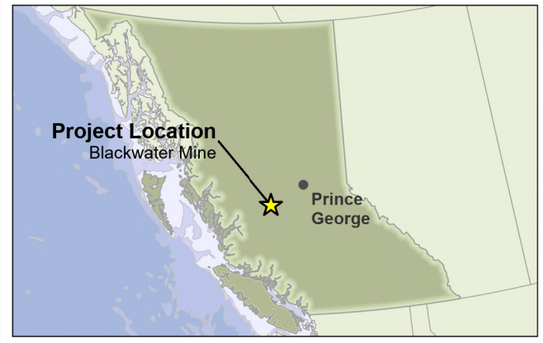
Photo 114319-1. Rock placed at outlet of culvert at Watercourse 636 at crossing along C-Trail Access Road (kilometer 9.5).

Work Space Locations



Legend

- Mine Access Road
- Watercourse
- Waterbody
- 1,Security Gate
- 2,Central Water Transfer Pond
- 3,Tailings Storage Facility
- 4,Tailings Storage Facility Dam
- 5,Water Management Pond Outfall to Davidson Creek
- 6,Operations Camp
- 7,Water Management Pond
- 8,Mobile Maintenance Yard
- 9,Plant Site
- 10,Andrew's Hill Laydown
- 11,Heavy Equipment Assembly Pad
- 12,Ore Body/Open Pit
- 13,Lake 15/16 Fish Compensation Channel
- 14,Explosives Magazine
- 15,Low Grade and High Grade Ore Stockpile
- 16,Run of Mine Pad
- 21,Low Grade Ore Stockpile
- 22,Freshwater Reservoir
- 23,Air Monitoring Station
- 24,Construction Camp
- 17, North Diversion Channel
- 18, Interim Environmental Control Dam
- 19, South Collection Channel
- 20, North Collection Channel
- 24, Transmission Line



0 0.5 1 1.5 2
Kilometres

Map Scale = 1:30,000 (printed on 11 x 17)
Map Projection: NAD 1983 UTM Zone 10N

Data Sources
- Workspaces. EDI Environmental Dynamics Inc. June 13, 2025.
- Main Basemap. CanVec 1:50,000: Government of Canada; Sentinel-2 Level 2A True Colour image June 9, 2025. Contains modified Copernicus Sentinel data 2024 processed by Sentinel Hub.

Disclaimer
EDI Environmental Dynamics Inc. has made every effort to verify this map is free of errors. Data have been derived from a variety of digital sources and, as such, EDI does not warrant the accuracy, completeness, or reliability of this map or its data.

Drawn:	Checked:		
CT / OL / CN	GP	Map 1	Date: 6/19/2025

EDI

Path: L:\PROJECTS\2021\NBC\21P0403_BlackwaterMine\21P0403_BlackwaterMine.aprx\21P0403_Blackwater_IEM_20250610

SUMMARY OF PREVIOUS MONTH (AUGUST 2025) ENVIRONMENTAL INCIDENTS (PROVIDED BY BWG)

Hazard/ Incident Date Time	Brief Description	Location	Status	Select the immediate actions taken?	Initial Hazard or Incident details	Spilled Fluid Details	Is the spill near a creek or water body if applicable?	Regulatory Reporting Status	Material Disposal Site	Media Affected by spill	Spill Cause	Spill Clean Up Date	Spill Coordinates	Spill Source	Spilled Fluid Quantity (Liters)
8/31/2025 12:00 AM	Fish Salvage Accidental Mortality	Davidson Creek	Resolved	Corrective Actions: To mitigate a future occurrence to the above noted incident the following has been set into place: •During vehicle transport, the buckets will be switched to a 113L cooler. This will provide the fish more room to move, greater water surface area and keep the water closer to creek temperature. At the release locations RB will be transferred to 5gal buckets to allow crew members to walk them down to the creek edge. •3 bubblers will be installed in the cooler. •A 3rd release will be schedule between the midday and end of day releases, this will reduce the number of fish transferred at the end of the day and less fish in the cooler during transport.	On August 31st, at approximately 17:15 when crews arrived at the fish release location (lower Davidson Creek) 51 rainbow trout were found deceased in the transport buckets. It is suspected that the mortality was due to a reduction in Dissolved Oxygen during transport. •The RB were transported in 2 separate 5gal pails, one with 2 bubblers and one with 1. •The bucket with 2 bubblers had slightly more fish then the other. •Mortalities were equally split between the buckets at around 25 each with total number of fish being transported being approximately 200. •Between releases, the captured RB are held in live wells placed in the creek. From live well to release location, the time in buckets is approximately 45min. •To limit amount of time in live wells, on August 31 and days prior the salvage team have been completing a midday (noon) release along with the end of day release (5pm). The midday release also transported approximately 200 fish, in the same manner without incident. •The 30th and 31st were considerably higher fish number days (~2x) from previous couple weeks. •The high daily temperature during release (~29c) may have caused DO to reduce at a higher rate	-	-	Final Report Issued to the regulator	-	-	-	-	-	-	-
8/29/2025 1:30 PM	Diesel spill from fuel truck	Co-Op Tank 14 near Earthworks HQ	Resolved	Driver immediately deployed spill pads and absorbent material and called me to notify me. After he was done offloading the rest of his load I sent a crew to clean up.	Hazard/Incident Date: 2025-08-29 13:30 PM; Reported by - Steve Conelley | Employed by: , Hazards | Incident Details: Fuel truck diver began to pump off fuel into tank 14 and noticed a leak coming from the valve. Spill trays were already in place prior to fueling but due to the pressure the fuel sprayed across the ground. ; Immediate Actions Taken - Driver immediately deployed spill pads and absorbent material and called me to notify me. After he was done offloading the rest of his load I sent a crew to clean up., Recommended Action -	Approx 20 L of diesel	No	Not Required	Material was cleaned up and hand shoveled into a green contaminated soil bin	Gravel	Valve failure	8/29/2025	-	Fuel truck	20 L
8/23/2025 4:30 PM	Diesel fluid wash out from a 6060 shovel was spilled to ground.	Ore Body Shovel Pad	Resolved	Spill pads and a hydro-vac truck was utilized to clean up the spilled fluid. Impacted materials were disposed of appropriately.	Hazard/Incident Date: 2025-08-23 16:30 PM; Reported by - Talor Joseph 7802997605 | Employed by: Hazards | Incident Details: During repairs on a 6060 shovel, the diesel tank was being washed out and the waste fluid was collected in a tote. The tote over-filled and diesel laden water was spilled onto the surrounding ground. Immediate Actions Taken - A vac-truck was utilized to suck up the fluid from the tote. Spill response supplies were deployed onto the effected ground. Recommended Action - More people should have been involved with the maintenance to prevent such occurrences in the future.	Diesel	No	Not Required	Contaminated materials disposal bin	Ground	Collection tank overflowed	8/24/2025	10U 375350 E, 5892699 N	Diesel from tank being washed	30 L
8/13/2025 3:30 PM	Coolant leak from Booster Unit	This happened at drill hole CO-066 in the open pit	Resolved	The equipment was shut down, spill mitigation measures were deployed, the area supervisor was notified, and remediation measures were completed.	Hazard/Incident Date: 2025-08-13 15:30 PM; Reported by - Evan Harmon (403)458-8276| Employed by: FTE Hazards | Incident Details: The assistant driller noticed a leaking line and immediately deployed spill mitigation measures. The area supervisor was then notified of the leak, and the required repairs were made. FTE notified their on-site BWG contact with the geology department and remediated the spill. Contaminated soil and spill response products were disposed of in the appropriate contaminated waste bins. Immediate Actions Taken - The equipment was shut down, spill mitigation measures were deployed, the area supervisor was notified, and remediation measures were completed. Recommended Action - Continue to perform regular equipment inspections and keep spill response supplies near the work areas to allow for immediate spill response.	Coolant	No	Not Required	Spill pads and contaminated soil were segregated and placed in proper contaminated waste bins.	Ground/soil	Hose failure from water pump	8/13/2025	10U 375483 E 5892721 N	Coolant hose on booster unit	4
8/13/2025 7:10 AM	Lube tech was refueling HME 3600 Hitachi shovel and the fuel didn't kick out resulting 4L of fuel coming out of tank into ground.	Up at pit	Resolved	Froze sene, BCER brought pails and shovel, scooped up contaminated soil, mechanic brought back contaminated soil to maintenance yard to dispose of in contaminated soil bin.	Hazard/Incident Date: 2025-08-13 07:10 AM; Reported by - Justin Newman 7802923267| Employed by: , Hazards | Incident Details: Fuel/Lube truck operator locked out shovel, fuelled up unit and then fuel nozzle didn't trip when tank was full resulting in 4 liters coming out of top vent on tank and spilling onto dirt ground on leftside rear of unit. Lube tech froze the sene and contacted Artemis supervisor about spill, Artemis supervisor contacted BCER mechanic to give a hand to clean up area. Took before cleaning up photos, cleaned up area, and took after photos. Tech removed lock and released to go back to work.; Immediate Actions Taken - Froze sene, BCER brought pails and shovel, scooped up contaminated soil, mechanic brought back contaminated soil to maintenance yard to dispose of in contaminated soil bin., Recommended Action - Lube tech thought should fuel the same as other units but looking into if unit needs power to level light below on tree as this is what they were used to. May need a different procedure to fuel.	Diesel Fuel	No	Not Required	Shoveled into pails and disposed of in contaminated bin at maintenance yard	Soil	Kick out not working	8/13/2025	-	Fuel Tank	4 liters
8/12/2025 12:20 PM	Mechanical failure causing hydraulic oil leak (spill) on EX-328 at the Fresh Water Reservoir (FWR)	Fresh Water Reservoir (FWR)	Resolved	Operator called on radio advising lead-hand of failure. Superintendent and lead-hand responded to scene directing other operators in the area to head to scene to help with containment. 6 people on site within minutes deploying (1) Spill Containment Barrel and (4) spill kit bags to affected media. Within (10) minutes, a second excavator was on scene gathering affected media and loading into ADT to prevent leaching. ADT was brought to MSA yard and disposed in a large contaminated soil bin.	Hazard/Incident Date: 2025-08-12 12:20 PM; Reported by - Byron Eagles | Employed by: , Hazards | Incident Details: EX-328 loading trucks at FWR. While cleaning floor, the gland on the stick cylinder failed spilling hydraulic oil to ground. Operator announced on radio to the lead-hand that the machine had a hose failure.; Immediate Actions Taken - Operator called on radio advising lead-hand of failure. Superintendent and lead-hand responded to scene directing other operators in the area to head to scene to help with containment. 6 people on site within minutes deploying (1) Spill Containment Barrel and (4) spill kit bags to affected media. Within (10) minutes, a second excavator was on scene gathering affected media and loading into ADT to prevent leaching. ADT was brought to MSA yard and disposed in a large contaminated soil bin., Recommended Action - No	Hydraulic oil	No	Not Required	Affected ground material was immediately loaded into an ADT with another excavator and disposed of in a large contaminated soil bin at MSA.	Ground	Gland on the end of the stick cylinder failed causing spill and damage to the cylinder.	8/12/2025	-	Hydraulic system on excavator.	50-60 liters
8/11/2025 2:00 PM	Jenson fuel delivery truck spilt diesel at crusher fuel tank	Esker pit (frost fuel tank	Resolved	Cleaned up.	Hazard/Incident Date: 2025-08-11 14:00 PM; Reported by - Jordan Jewett 2503019933| Employed by: , Hazards | Incident Details: Environment called me on the radio and said they were coming to investigate a spill. I was unaware of a spill on site. We went down to the fuel tank and it appeared that the fuel delivery truck that just left spilt some diesel while unhooking hoses. I got a shovel and some 5 gallon pales and cleaned it up.; Immediate Actions Taken - Cleaned up., Recommended Action - Would be nice to let us know at the pit immediately when it happens so we can attend to it faster.	Diesel	No	Not Required	Shoveled contaminated gravel into 5 gallon pales with lids and placed on pallet at gft waste station	Gravel	Pulling fuel delivery hose apart	8/11/2025	-	Delivery Truck	5
8/10/2025 2:40 PM	Small spill from grader	Top of TDF	Resolved	Spill pads put down right away mechanics and fuel and lube crew were close to TDF and were there with tray and pumping oil right away	Hazard/Incident Date: 2025-08-10 14:40 PM; Reported by - Sean Deir , Hazards | Incident Details: -While grader was blading ruts rock came up and clipped drain plug for hydronic tank 2 liters of hydronic oil spilled on the ground before spill tray was put under and fuel truck sucked out the rest of oil.; Immediate Actions Taken - Spill pads put down right away mechanics and fuel and lube crew were close to TDF and were there with tray and pumping oil right away , Recommended Action -	Hydraulic Oil	No	Not Required	Hydrocarbon Impacted Bin	Ground	Equipment damage	8/10/2025	-	Hydraulic Tank	2L
8/6/2025 11:00 AM	fuel tank overfilled on LD6202	Main crusher pocket near U-Dorm	Resolved	Notify supervision, clean up contaminated soil, report spill.	Hazard/Incident Date: 2025-08-06 11:00 AM; Reported by - Jeff Hull 250-299-9251| Employed by: , Hazards | Incident Details: System indicator light for fill indication is inoperative, repair request has been submitted. The loader and fuel & lube technician we're checking other levels and performing a walk around on the unit when the tank overflowed.; Immediate Actions Taken - Notify supervision, clean up contaminated soil, report spill., Recommended Action - Operations & Maintenance to have good communication and line of site on inoperative systems on equipment. A reporting structure from operations that encourages a culture of finding, notifying and resolving equipment faults.	Diesel	No	Not Required	MSA contaminated soil containment bin	Sand/Gravel	System indicator light for fill indication is inoperative. The loader and fuel & lube technician we're checking other levels and performing a walk around on the unit when the tank overflowed.	8/6/2025	-	Fuel Tank	4L

Blackwater Gold Mine
IEM Site Visit Report 035
October 15 – 16, 2025

Prepared By
EDI Environmental Dynamics Inc.
3810 18th Ave
Prince George BC V2N 4V5

EDI Contacts
Graeme Paterson, PAg, CPESC
Leslie Chamberlist, PAg, CPESC
Independent Environmental Monitor Leads

EDI Project
21P0403
October 2025

mPRO

EDI
ENVIRONMENTAL DYNAMICS INC.
Down to Earth Biology

This page is intentionally blank.

1 PROJECT OVERVIEW

The Blackwater Mine Project is being developed by Blackwater Gold Limited (BWG), a subsidiary of Artemis Gold Inc. (Artemis). The Environmental Assessment Certificate (EAC) M19-01 was issued on 21 June 2019 and Condition 12 of the EAC requires the Holder to retain the services of an Independent Environmental Monitor (IEM) to observe, record for, and report to the BC Environmental Assessment Office (BC EAO) and Aboriginal Groups on compliance with the Certificate; and provide information to the BC EAO and Aboriginal Groups, BC Ministry of Energy, Mines and Low Carbon Innovation (EMLI), BC Ministry of Environment (ENV), and BC Ministry of Forests (MOF) as directed by EAO.

A Decision Statement issued under Section 54 of the Canadian Environmental Assessment Act (CEAA 2012) for the Project was issued on 15 April 2019. Condition 9 of this Decision Statement requires the Proponent to retain an IEM who shall advise the Proponent, the Agency, and Indigenous groups if, in their view, the activities do not comply with the conditions set out in the Decision Statement. The IEM shall also advise the Proponent, the Agency, and Indigenous groups whether measures should be taken in respect to these activities. IEM reports are prepared to satisfy both EAC and CEAA conditions.

1.1 SITE VISIT SUMMARY

The IEM team completed a site visit on October 15 – 16, 2025, with representatives from the Saik'uz First Nation, and the BWG Environmental team.

Summaries of the site locations visited, and subsequent activities, observations, and ongoing matters are described in the tables below.

Site Visit Summary

Date (dd/mm/yyyy)	IEM Team On-site Personnel	Monitoring Sites/Inspection Focus
15/10/2025	Matthew Van Osch	LGO Stockpile Pad and Pond, Fresh Water Reservoir, Water Management Pond, Open Pit, Mobile Maintenance Yard, Operations Camp, and Andrew's Hill laydown. Inspections focused on water management, erosion and sediment control, PAG contact water management, hydrocarbon management, and waste management.
16/10/2025		Transmission Line reclamation sites. Inspections focused on reclamation progress.

Activities/Observations (Record ID #s included in this table correspond to the Environmental Issue Tracking Log record ID #s)	Non-Compliance Observed?
Plant Site	
During the previous site visit on September 18, 2025 (as detailed in IEM Report 034), crews were completing maintenance activities on one of the processing slurry tanks at the Plant Site. Based upon discussions on site with BWG, it was understood this process involved the removal of the processing slurry (containing cyanide) from the tank and temporarily holding it within the engineered concrete secondary containment structure surrounding the tanks. It was further advised by BWG that a submerged pump was drawing processing slurry into a different tank within the structure. Section 6.7 of the Cyanide Management Plan (Spill Prevention and Containment) details that process tanks containing cyanide solutions will be located within concrete secondary containment areas capable of containing 110 % of the largest tank or vessel in addition to a 100 year, 24-hour storm event. An RFI was submitted inquiring whether the containment capacities outlined in Section 6.7 of the Cyanide Management Plan can be met when it is being used as a temporary holding location for process slurry. **This item is held over from the previous reporting period (IEM Report 034).** **Update for IEM Report 035**: A response was provided by BWG on October 2, 2025, which clarified that what was observed by the IEM, EAO, and Nation reps was not the secondary containment structure being utilized as a holding cell, but was process slurry being captured, as designed, within the secondary containment structure as the result of a tank backing up. At the time of the visit, slurry was being pumped from the secondary containment into another tank. Pumping continued until the capacity of the containment structure was restored. BWG has advised it is working to develop a process for CIL tank drainage to minimize future similar occurrences.	No
Open Pit/Ore Body	
The IEM team completed a visit to the area south (upslope) of the Open Pit to observe a groundwater capture sump which has been established to intercept and divert water around the open pit (Photo 114451-1). Water captured within this collection sump is pumped to a ditch immediately west and sends the water towards the Mine Creek drainage which ultimately terminates in the Water Management Pond.	No
Water that has come into contact with potentially acid generating (PAG) material (PAG contact water) within the open pit, is currently being captured and managed at two locations (Photo 2). Within the Open Pit, PAG contact water is captured in a low spot in the northwestern portion of the Pit and is understood to be hauled (by vac-truck) to the plant site to be passed through the metals water treatment plant and used for process water. Following onsite discussions, the IEM team understands a more permanent pipeline will be installed prior to spring of next year (preliminary works already underway) to remove the reliance of hauling by truck. PAG contact water is also being captured in a collection sump along the lower extent of the haul road. Following onsite discussions, the IEM team understands PAG contact water collected at this location is being transported by vac-truck to the LGO stockpile pond. A more permanent solution is also expected to be constructed prior to spring, and is likely to involve the installation of a pipeline to the plant site to facilitate water removal from the area.	No
Mine Site Laydowns	
Several hydrocarbon stains were observed on the ground adjacent to a service bay tent at the Mobile Maintenance Yard (Photo 114471-1). Following discussions with BWG, the IEM team understands this location has a liner installed beneath it to prevent spills from migrating into the ground. It was recommended the observed spills be cleaned up to prevent tracking of hydrocarbon outside of the lined area. This matter was submitted as an opportunity for improvement. BWG confirmed all spills had been cleaned up on October 17, 2025 (Photo 4).	No
Hydrocarbon stains were observed on the ground behind an excavator (unit 3703) staged at the western end of the Mobile Maintenance Yard (Record ID-114472). Confirmation the spill had been cleaned up was provided on October 21, 2025.	Closed
Spills to ground were noted beneath three small pieces of equipment staged at the Andrew's Hill laydown. As BWG crews were in the process of cleaning up the spills, this matter was not issued as a non-compliance, however, the IEM team requested notification once the spills had been cleaned up. Confirmation that all spills had been cleaned up was provided by BWG on October 21, 2025.	No
Water Management Infrastructure	
During a previous visit in August 2025 (as detailed in IEM Report 033), water levels were observed to be low within the Central Water Transfer Pond (CWTP). Following onsite discussions with BWG staff, it was indicated to the IEM team member that they had stopped using water from the CWTP for dust mitigation and that this decision was partly related to potential issues in meeting IFN within Davidson Creek. The IEM team submitted an RFI inquiring whether there had been any instances of being unable to meet IFN because of low water levels and if so, what dates and follow up actions were taken - including any external reporting per the Accidents and Malfunctions Plan (if required). The IEM request was based upon Federal Decision Statement (FDS) Condition 3.8 which states "*The Proponent shall develop, prior to construction, measures to maintain instream flow needs in Davidson Creek. The Proponent shall maintain instream flow needs in Davidson Creek during all phases of the Designated Project at a minimum within flow rates recommended by the Proponent in Appendix 5.1.2.6D of the Environmental Impact Statement, unless otherwise authorized by Fisheries and Oceans Canada.*" The IEM also noted there is reference to FDS Condition 3.8 within Section 4.2 of the Mine Site Water and Discharge Monitoring and Management Plan, a plan that is included under the IEM oversight in accordance with the IEM Terms of Engagement. On August 26, 2025, BWG provided the following response: "As the condition states, unless otherwise authorized in which that authorization is now subject to. We now have the Fisheries Act Authorization and as a result, that aspect is now addressed as part of FDS compliance. As specifics are not mentioned in the Management Plan, the IEM is on the content of the document and not to outside references which states is now authorized. Specifics stated for the FDS are embedded in the EIS Appendix 5.1.2.6D as mentioned in FDS section 3.8. The aspects specified in the referenced FDS are no longer applicable as BWG is compliant in holding an approved Fisheries Act Authorization under Fisheries and Oceans Canada." BWG did not elaborate on whether IFN values in Davidson Creek continue to be met and based upon the information provided, the IEM team has inferred BWG has determined a response to the inquiries made by the IEM are not required. **This item is held over from the previous two reporting periods (IEM Report 033 and 034)**. **Update for IEM Report 035**: The IEM has discussed this matter with both BC EAO and IAAC and have received clarification from both agencies that oversight of instream flow needs within the Davidson Creek system falls within the scope of the IEM team. If BWG would like to discuss this matter further, they are to direct any questions to BC EAO and IAAC directly. It is understood that DFO, IAAC and BC EAO continue to discuss IFNs with BWG.	No

The IEM team visited various locations along the Mine Creek drainage to observe various runoff, erosion, and sediment control (ESC) measures that BWG have recently implemented to reduce the quantity of turbid water flows to the Water Management Pond (Photo 5). BWG have utilized riprap at a number of the improvement areas, which has been confirmed to be non-PAG. Measures installed to date include: • installation of rock energy dissipators, collection sumps, and improvements to ditching and drainage along the road to the explosive magazine storage area which has connectivity to the upper portions of Mine Creek and its tributaries (Photos 114456-1 and 114455-1); • rock armoring of select slopes and improvements to road ditching and drainage at the crossing of Mine Creek downslope of the LGO stockpile pad (Photo 114457-2); and, • installation of riprap armoring around the LGO stockpile pond (Photo 114470-15). Following onsite discussions, the IEM team understands that BWG plans to install ditching and collection sumps adjacent to Topsoil Stockpile 2, near the explosives magazine in the western corner of the mine site, where evidence of notable erosion and sediment transport toward the Mine Creek drainage has been identified (Photo 5).	No
Fresh Water Reservoir	
Construction of the Fresh Water Reservoir continues. During the visit, crews were observed installing portions of the liner on the eastern side of the basin (Photo 114458-2), developing the diversion channel that will facilitate passage of Davidson Creek through active work areas and beneath the dam during construction (Photo 114458-3), installation of subdrains beneath the liner, and the construction of the concrete flow chamber structure that will control discharge rates from the reservoir to Davidson Creek (Photo 114458-11).	No
Mine Site - General	
During the previous site visit on September 18, 2025 (as detailed in IEM Report 034) the downstream compliance sampling point for water quality and instream flow needs (IFNs) in Davidson Creek was visited (referred to as DC-05). Section 4.3.2.1 of the Aquatic Effects Monitoring Plan (AEMP) currently details that the DC-05 sampling location is to have an automated hydrometric station in place with connectivity to a telemetry system. From onsite discussions on September 18, 2025, between BWG, the IEM, and BC EAO, it was understood a telemetry system was not currently in place that would allow real time monitoring of IFN. Although the probes installed have continuous sample collection, BWG staff must download and analyze the data prior to confirming whether IFNs have been met. **This item is held over from the previous reporting period (IEM Report 034).** **Update for IEM Report 035:** Following the site visit on September 18, 2025 and subsequent discussions about whether a hydrometric station with telemetry is currently operational to facilitate real time monitoring of flow at the DC-05 compliance sampling location, further review of Section 4.3.2.1 of the AEMP was completed and it was noted that a total of 10 stream sites (including DC-05) and 1 lake site are currently described within the document as requiring hydrometric stations with telemetry capability to facilitate real-time flow data download. The sites are as follows and their locations can be found on Figure 4.2-1 within the AEMP: • Stream Sites: DC-05 (understood to be installed but currently not operational), DC-15, TC-10, 661-02, 661-09, CC-10, CC-12, CC-15, 705-10, MC-05 • Lake Site (Tatelkuz): TL-01H. The IEM team submitted a request for information on October 7, 2025, inquiring whether the list of sites detailed within Section 4.3.2.1 of the AEMP had hydrometric stations with telemetry capability installed. In a series of responses provided by BWG on October 7 and 11, 2025, it was indicated that the sample locations all collect continuous data, but currently, do not have telemetry capability to facilitate real time data download as is detailed within the AEMP. The IEM understands BWG (along with its subcontractors ERM Consultants and Knight Piesold) have determined that connectivity to telemetry as is currently described within the AEMP would provide limited benefit to the monitoring program and see the best path forward is to revise the AEMP in the next update accordingly. As the network of hydrometric stations detailed within Section 4.3.2.1 do not currently have the ability to provide real time data download via telemetry, a non-compliance has been issued for this matter (Record ID-114475). The IEM has advised BWG that should the AEMP be updated to remove the telemetry requirement at these stations, that it is expected that the rationale for this change will be provided by a qualified environmental professional and that the document revision process engages all stakeholders (as is detailed within the AEMP, noting its ties to the EAC, the EloMC and ENV) if this is the manner in which BWG will resolve this non-compliant matter. The IEM has set the closure date for this non-compliance at May 1, 2026, to accommodate the BWG schedule of updates to the AEMP (due by April 30, 2026), which BWG has advised will require the incorporation of recommendations from its qualified environmental professional that will be detailed in a pending annual report. This non-compliance will remain open in subsequent IEM reports until BWG installs hydrometric stations with telemetry capability at the locations specified in the AEMP or the AEMP is appropriately revised.	Yes
Transmission Line	
The IEM understands BWGs contractor has completed reclamation activities between poles 1 and 590 leaving only 3km of the right of way remaining to be reclaimed. It is understood the final portion of the line to be reclaimed, between the crossing of Davidson Creek and the Plant site within the Mine Site boundary, will be completed by BWG, but has yet to commence. The IEM team completed a visit to the transmission line at kilometer markers 119.5, 110 and 74 on the Kluskus Forest Service Road to observe reclamation activities at these locations of line. Reclamation works included the placement of coarse woody debris (CWD) overtop of a layer of topsoil, seed application, and the installation of road deactivations and signage (Photos 114490-4).	No
During the IEM team visit to locations along the transmission line to observe reclamation works, it appeared that limited quantities of large woody debris (>12 cm in diameter) had been placed along the right of way (Photo 114490-5). The Transmission Line Construction Environmental Monitoring Plan (TL CEMP) mentions salvaging and retaining woody debris during clearing and construction in accordance with the CWD Management Standard Operating Procedure (CWD SOP) and using this woody debris as visual barriers along the corridor (for wildlife purposes). Upon review of the CWD SOP, Table 3-1 of the document details that where non-merchantable logs (>12 cm diameter) are available, that approximately 50 logs or root wads per hectare (equating to approximately 10 m spacing for final application) will be retained for reclamation purposes, and that a site wide inventory of CWD available for reclamation purposes will be established and maintained. The IEM submitted an RFI to inquire whether the CWD had been salvaged in accordance with the requirements in the TL CEMP and CWD SOP during construction of the Transmission Line.	No

Notable Environmental Incidents

Record ID No(s).	Date of Incident (dd/mm/yyyy)	Location	Description of Event
114515	01/09/2025, 04/09/2025, 07/09/2025, 10/09/2025, 13/09/2025	Workers Accommodation (Operations Camp)	On October 17, 2025, it was reported that on September 1, 4, 7, 10 and 13, 2025 a series of PM 2.5 and PM 10 sample results from the Partisol air quality sensor (located near the Operations Camp) exceeded required levels. The exceedances were likely attributed to the poor air quality in the region caused by nearby wildfires. The exceedances were reported to ENV, Ulkatcho First Nations, Lhoosk'uz Dene Nation, Nadleh Whut'en First Nation, Saik'uz First Nation, Stellat'en First Nation and Nazko First Nation. Additional detail can be found in the attached Monthly Summary Table of September 2025 Incidents provided by BWG to the IEM team on October 17, 2025.

Environmental Issue Tracking Log – Open Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)
114475	16/10/2025	Automated hydrometric stations with telemetry loggers capable of facilitating real-time flow data download currently not present at the following locations as detailed within Section 4.3.2.1 of the AEMP: Stream sites including DC-05 (*installed but not functioning)* DC-15, TC-10, 661-02, 661-09, CC-12, CC-15, 705-10, MC-05, and Tatelkuz Lake site TL-01H.	Install continuous automated hydrometric stations with telemetry to facilitate real-time flow data download at the 10-stream sites, and 1 lake site as detailed in Section 4.3.2.1 of the AEMP.	01/05/2026

Environmental Issue Tracking Log – Closed Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)	Follow-up	Completed Date (dd/mm/yyyy)
114472	15/10/2025	Hydrocarbon spills to ground behind excavator unit 3703 staged at the western end of the Mobile Maintenance Yard.	Clean up and dispose of contaminated material in accordance with Section 9.2 of the Fuel Management and Spill Control Plan.	01/11/2025	On October 21, 2025, confirmation was received from BWG that the hydrocarbon spill had been cleaned up.	21/10/2025

Upcoming Construction Activities

Summary of Activities	Anticipated Start Date
-	-

Yours truly,

EDI ENVIRONMENTAL DYNAMICS INC.

Graeme Paterson, P.Ag, CPESC

Independent Environmental Monitor Lead

ATTACHMENTS:

- Photos
- Site Overview map
- Summary of Previous Month (September 2025) Environmental Incidents (provided by BWG)

Report Distribution List:

Blackwater Gold (Artemis): Tim Donnelly, Adam Gyorffy, Mark Warbanski, Ryan Todd, Sam Lynch, Steven Hayward, Norm Fraser, Jessica Saunders, Quain Sulin, Randall Hennigar, Linda Siwallace

Ulkatcho First Nation: Alyisha Knapp

Lhoosk'uz Dene Nation: Rene Jimmy

Stellat'en First Nation: Doug Casimel, Deane Carlson, Taneesha Raymond

Saik'uz First Nation: Kasandra Turbide, Howard Alexis, Jimmy Vickers

Nadleh Whut'en First Nation: Kristen Chapman, Pam Ketlo, Jonathan Kostyshyn, Joshua Parsons

Nazko First Nation: Stephanie Deneault, Terrance Paul, Florian Bergoin

Source Environmental Associates Inc: Martin Shin, Georgina Farah, Fraser Riddolls, Rina Freed, Anna Everett, Sally Turnbull, Taleya Ouellet

Skin Tyree Nation: Bea Paton

Tsilhqot'in National Government: Trina Setah

Metis Nation of BC: Danielle Courcelles

Nee-Tahi-Buhn Band: Kieran Broderick, Ryan Brooks

Environmental Dynamics Inc (EDI): Graeme Paterson, Leslie Chamberlist, Matthew Van Osch

Impact Assessment Agency of Canada (IAAC): Mathieu Trudelle, Shannon Wallace, Carl Johansson, Steven Fraser

BC Environmental Assessment Office (BC EAO): Chris Parks, Warren Fekete, Christie Lombardi, Shayla Frechette

Ministry of Mining and Critical Metals (MCM): Rachel Taylor

Ministry of Environment and Climate Change Strategy (ENV): Breanne Hill

Ministry of Water, Land and Resource Stewardship (WLRS): Duncan McColl

Photo 114451-1. Groundwater capture sump upslope of the open pit. Water from the sump is being pumped to a ditch line which sends the water towards the Mine Creek drainage (terminating within the WMP).

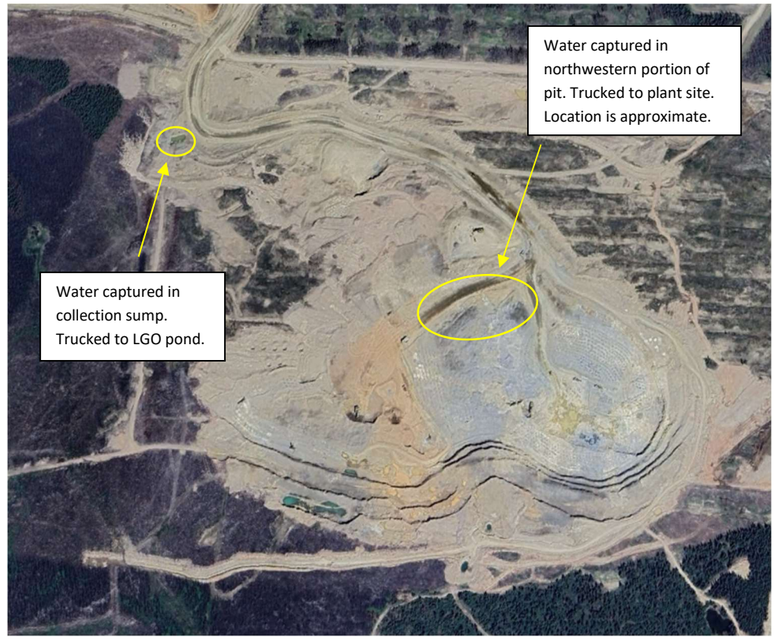


Photo 2. Locations of PAG contact water capture points at the Open Pit.

Photo 114471-1. Several spills to ground observed within a lined area at the Mobile Maintenance Yard. Opportunity for improvement issued to prevent tracking of hydrocarbon contamination out of lined area.

Photo 4. Lined area at Mobile Maintenance Yard following clean up of hydrocarbon stains by BWG (note dark spots are water from rain event). Photo provided by BWG on October 17, 2025

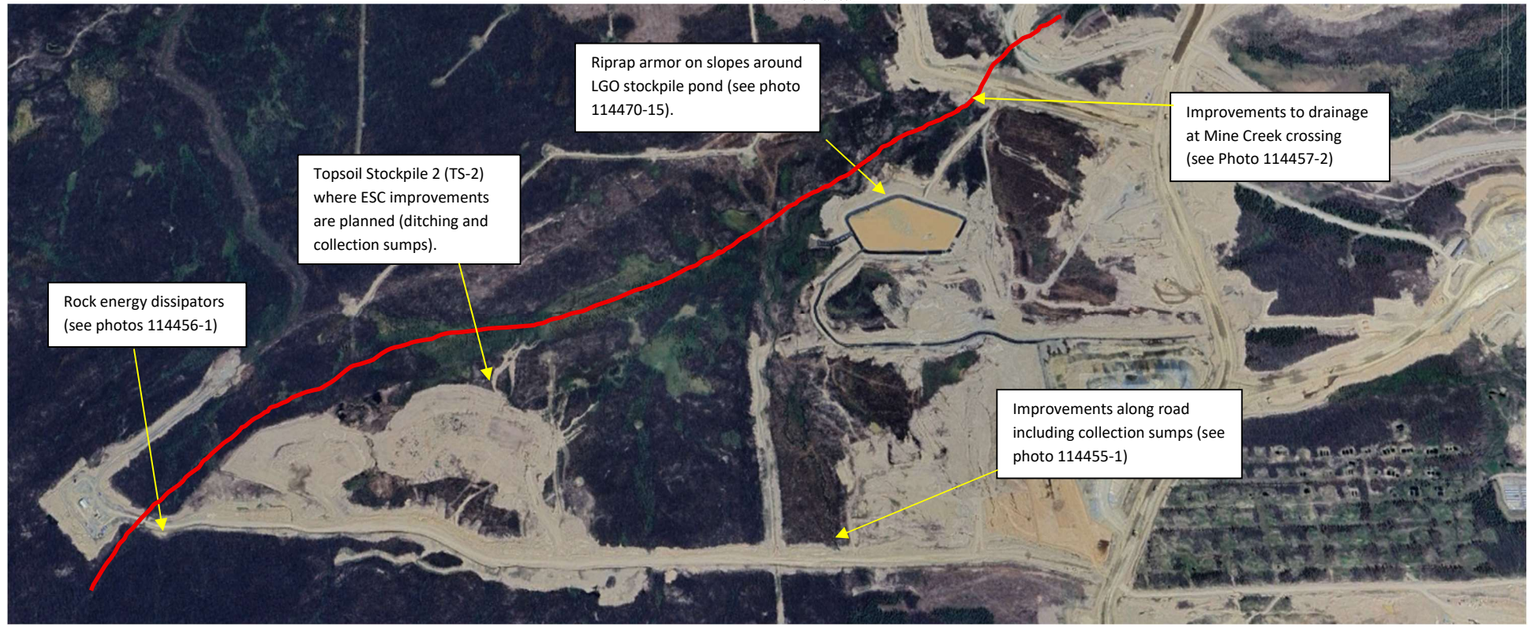


Photo 5. Summary of locations of ESC improvements implemented within the Mine Creek drainage. Note that this may not include all improvements made to date. Additional detail can be seen in subsequent photos referenced. Generalized pathway of Mine Creek sketched onto photo for reference (in red).

Photo 114456-1. Rock energy dissipaters installed within the ditch line along eastern approach to the bridge crossing over Mine Creek to the explosive magazine area.

Photo 114455-1. Example of a collection sump installed within the ditch line along the road to the explosive magazine area. Area has connectivity to tributary to Mine Creek. Approximate flow pathway towards tributary indicated on photo.

Photo 114457-2. Improvements to drainage (collection sumps, rock armoring) in drainage adjacent to the road crossing of Mine Creek downslope of the LGO stockpile pond. Mine Creek flow indicated on photo.

Photo 114470-15. Riprap armoring installed along slopes surrounding the LGO stockpile pond. Approximate pathway of Mine Creek indicated on photo for reference.

Photo 114458-2. Liner installation continues at the eastern end of the Fresh Water Reservoir.

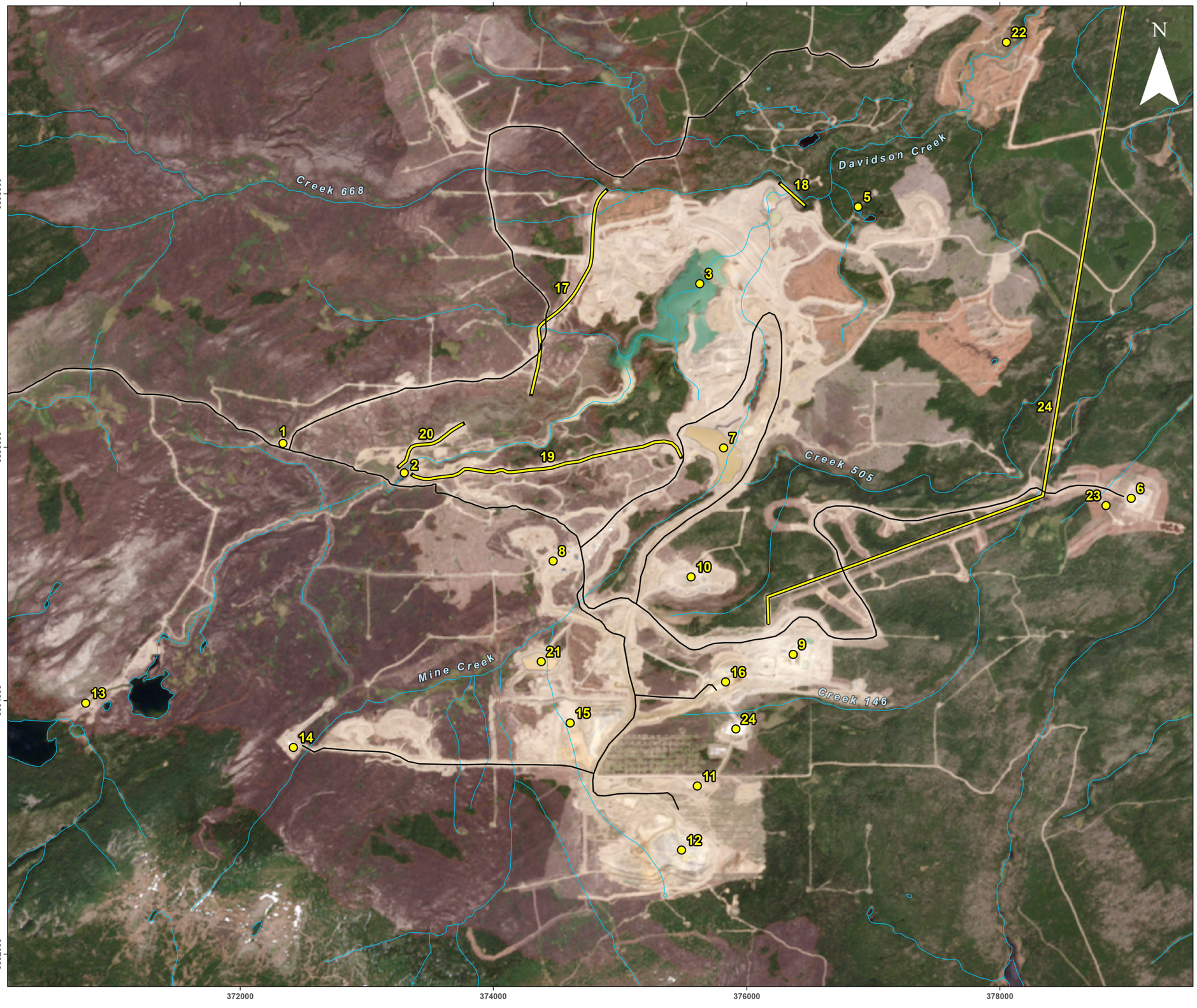
Photo 114458-3. Overview of the status of the Davidson Creek diversion channel construction within the Fresh Water Reservoir. Approximate pathway indicated on photo.

Photo 114458-11. Formwork for a portion of the concrete flow chamber structure being constructed within the Fresh Water Reservoir.

Photo 114490-4. Signage installed on top of an access road deactivation berm on the Transmission Line.

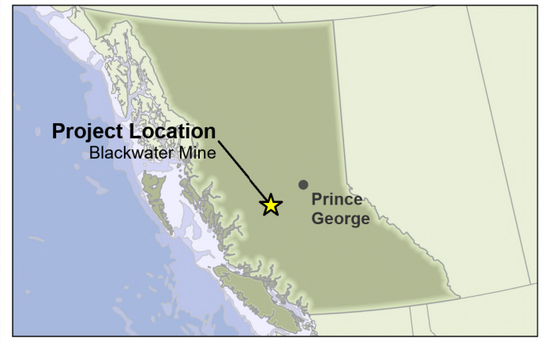
Photo 114490-5. Overview of the reclamation works at 119.5km on the Kluskus Forest Service Road.

Work Space Locations



Legend

- Mine Access Road
- Watercourse
- Waterbody
- 1,Security Gate
- 2,Central Water Transfer Pond
- 3,Tailings Storage Facility
- 4,Tailings Storage Facility Dam
- 5,Water Management Pond Outfall to Davidson Creek
- 6,Operations Camp
- 7,Water Management Pond
- 8,Mobile Maintenance Yard
- 9,Plant Site
- 10,Andrew's Hill Laydown
- 11,Heavy Equipment Assembly Pad
- 12,Ore Body/Open Pit
- 13,Lake 15/16 Fish Compensation Channel
- 14,Explosives Magazine
- 15,Low Grade and High Grade Ore Stockpile
- 16,Run of Mine Pad
- 21,Low Grade Ore Stockpile
- 22,Freshwater Reservoir
- 23,Air Monitoring Station
- 24,Construction Camp
- 17, North Diversion Channel
- 18, Interim Environmental Control Dam
- 19, South Collection Channel
- 20, North Collection Channel
- 24, Transmission Line



0 0.5 1 1.5 2
Kilometres

Map Scale = 1:30,000 (printed on 11 x 17)
Map Projection: NAD 1983 UTM Zone 10N

Data Sources
- Workspaces. EDI Environmental Dynamics Inc. June 13, 2025.
- Main Basemap. CanVec 1:50,000: Government of Canada; Sentinel-2 Level 2A True Colour image June 9, 2025. Contains modified Copernicus Sentinel data 2024 processed by Sentinel Hub.

Disclaimer
EDI Environmental Dynamics Inc. has made every effort to verify this map is free of errors. Data have been derived from a variety of digital sources and, as such, EDI does not warrant the accuracy, completeness, or reliability of this map or its data.

Drawn:	Checked:		
CT / OL / CN	GP	Map 1	Date: 6/19/2025

EDI

Path: L:\PROJECTS\2021\NBC\21P0403_BlackwaterMine\21P0403_BlackwaterMine.aprx\21P0403_Blackwater_IEM_20250610

SUMMARY OF PREVIOUS MONTH (SEPTEMBER 2025) ENVIRONMENTAL INCIDENTS (PROVIDED BY BWG)

Environment Monthly Report								
September 2025								
Event Title	Event Date	Classification	Departments	Report	Type	Product(s) Name	Unit	Initial Amount
1305 truck break line oil leak	30/09/25	Environment	[Mine Operations] Blackwater Gold	1305 truck was travelling into the 3601 pit when a break line hose on the right rear dual let go, upon investigation there was a rock in rim area that damaged hose approximately 3 to 4 liters lost	Incident	Brake Fluid	L	3.5
EX374 Coolant Leak	29/09/25	Environment	[Mine Operations] Heavy Metal Equipment	During a pit inspection Supervisor noticed a small coolant leak coming from the back of EX374. no more than 10 liters had made it to the ground.	Incident	Coolant	L	10
Westrail drill 6 blowen compressor hose	27/09/25	Environment	[Mine Operations] Blackwater Gold	west rail drill 6 compressor hose let go losing approximately 30 liters of compressor oil	Incident	Summit Supra 32W compressor oil	L	37
Fuel spill in pit	24/09/25	Environment	[Maintenance & Engineering] Big Country Equipment	fuel personnel was waiting for DZ4901 to shut down to fuel the unit, a passer by notified the fuel operator that he had a static leak coming from the back compartment of his truck. fuel operator got out of his vehicle and closed the fuel shut of valve and began repairs and clean up.	Incident	Diesel	L	10
42L Steering Oil Leak on 1310 Haul Truck	23/09/25	Environment	[Mine Operations] Blackwater Gold	Operator was doing post op at the end of shift, noticed steering oil coming out of the steering oil filter. Shut down the truck and called it into dispatch. Spill kit and pads were used to contain and capture the leak. 42 L of steering oil was put back into the truck.	Incident	Steering oil	L	42
15 L Hydraulic leak on AT993	21/09/25	Environment	[Mine Operations] Blackwater Gold	Operator started up AT993 was going to start hauling scat from the plant when he could smell hydraulic oil. Went and looked under the truck and one of the hydraulic lines was leaking oil.	Incident	Hydraulic oil	L	15
Final drive hose started to leak	16/09/25	Environment	[Mine Operations] Other	1/2" hydraulic hose failed and leaked while hole was being drilled.	Incident	Hydraulic oil.	L	50
High Trigger Exceedance for Partisol PM 2.5	13/09/25	Environment	[Environment] Blackwater Gold	High Trigger Exceedance for Partisol PM 2.5 attributed to wildfires	Incident		<None>	
Diesel Spill 50L Fuel Island	12/09/25	Environment	[Mine Operations] JDS	JDS Drill & Blast labourer was preparing to fill up the JDS Fuel and Lube Truck. As per current fueling practice, employee brought wiggins fuel connection over to truck and then returned to pump to prime the line. When the employee started the pump, the employee noticed that the wiggins had been left open previously and discharged 50L of fuel. The employee shut the pump off as soon as they noticed the fuel discharge.	Incident	diesel fuel	L	50
Hydraulic filter fell off of 6201 loader	12/09/25	Environment	[Mine Operations] Blackwater Gold	6201 loader had the hydraulic filter come loose and fall off while feeding the crusher. Operator called supervisor and spill was contained and cleaned up.	Incident	Hydraulic oil	L	20
High Trigger Exceedance for Partisol PM 2.5 and Medium Trigger Exceedance for PM 10	10/09/25	Environment	[Environment] Blackwater Gold	High Trigger Exceedance for Partisol PM 2.5 and Medium Trigger Exceedance for PM 10 attributed to wildfires in the area	Incident		<None>	
Compressor Fluid Discharge	09/09/25	Environment	[Mine Operations] JDS	Mechanics were in the process of re-installing the compressor on Drill 011 following a repair to a newly received critical spare compressor. Upon installation the replacement compressor had exhibited the potential for a leak and was removed, assessed and repaired by the site maintenance team successfully. Upon re-installation and successful commissioning, as the drill was shut off, the compressor oil stop valve stuck in the open allowing air pressure from the receiver tank to push air and ATF (compressor oil) back through the compressor exiting the air filters for the compressor resulting in a discharge of approximately 30L of fluid.	Incident	ATF (compressor oil)	L	30
High Trigger Exceedance for Partisol PM 10	07/09/25	Environment	[Environment] Blackwater Gold	High Trigger Exceedance for Partisol PM 10 attributed to wildfire	Incident		<None>	

Food Waste at General Construction Waste Bin on ground from ravens	06/09/25	Environment	[Processing Plant] Other	Food waste thrown in general construction waste bin ended up on ground after ravens tore open bags.	Incident		<None>	
Biofoam Spill Waterwell Drill	04/09/25	Environment	[Mine Operations] FTE Drilling	Contractor brought in drilling foam and used it without following proper site approval protocol. This resulted in approximately 70L of highly diluted biofoam being released to the ground.	Incident	Biofoam	L	70
High Trigger Exceedance for Partisol PM 2.5 and Medium Trigger Exceedance for PM 10	04/09/25	Environment	[Environment] Blackwater Gold	High Trigger Exceedance for Partisol PM 2.5 and Medium Trigger Exceedance for PM 10 attributed to local wildfire	Incident		<None>	
High Trigger Exceedances for Partisol PM 2.5 and PM 10	01/09/25	Environment	[Environment] Blackwater Gold	PM 2.5 and PM 10 sample results from Partisol identified high level exceedances likely attributed to wildfire smoke in the area.	Incident		<None>	

Blackwater Gold Mine
IEM Site Visit Report 036
November 25 – 26, 2025

Prepared By
EDI Environmental Dynamics Inc.
3810 18th Ave
Prince George BC V2N 4V5

EDI Contacts
Graeme Paterson, PAg, CPESC
Leslie Chamberlist, PAg, CPESC
Independent Environmental Monitor Leads

EDI Project
21P0403
December 2025

mPRO

EDI
ENVIRONMENTAL DYNAMICS INC.
Down to Earth Biology

This page is intentionally blank.

1 PROJECT OVERVIEW

The Blackwater Mine Project is being developed by Blackwater Gold Limited (BWG), a subsidiary of Artemis Gold Inc. (Artemis). The Environmental Assessment Certificate (EAC) M19-01 was issued on 21 June 2019 and Condition 12 of the EAC requires the Holder to retain the services of an Independent Environmental Monitor (IEM) to observe, record for, and report to the BC Environmental Assessment Office (BC EAO) and Aboriginal Groups on compliance with the Certificate; and provide information to the BC EAO and Aboriginal Groups, BC Ministry of Energy, Mines and Low Carbon Innovation (EMLI), BC Ministry of Environment (ENV), and BC Ministry of Forests (MOF) as directed by EAO.

A Decision Statement issued under Section 54 of the Canadian Environmental Assessment Act (CEAA 2012) for the Project was issued on 15 April 2019. Condition 9 of this Decision Statement requires the Proponent to retain an IEM who shall advise the Proponent, the Agency, and Indigenous groups if, in their view, the activities do not comply with the conditions set out in the Decision Statement. The IEM shall also advise the Proponent, the Agency, and Indigenous groups whether measures should be taken in respect to these activities. IEM reports are prepared to satisfy both EAC and CEAA conditions.

1.1 SITE VISIT SUMMARY

The IEM team completed a site visit on November 25 – 26, 2025 with representatives from the Saik'uz and Stellat'en First Nations, and the BWG Environmental team.

Summaries of the site locations visited, and subsequent activities, observations, and ongoing matters are described in the tables below.

Site Visit Summary

Date (dd/mm/yyyy)	IEM Team On-site Personnel	Monitoring Sites/Inspection Focus
25/11/2025	Graeme Paterson	Tailings Storage Facility, Interim Environmental Control Dam, Fresh Water Reservoir, Low Grade Ore Stockpile Pad, Mobile Maintenance Yard, and the Lake 15/16 fish habitat offset. Inspections focused on cyanide management, surface and groundwater management, erosion and sediment control, hydrocarbon management, and fish habitat.
26/11/2025		Plant Site and mine site laydowns. Inspections focused on dust management, hydrocarbon management, hazardous material management and cyanide management.

Activities/Observations (Record ID #s included in this table correspond to the Environmental Issue Tracking Log record ID #s)	Non-Compliance Observed?
Tailings Storage Facility	
On October 27, 2025, the IEM team, the Ministry of Mining and Critical Metals (MCM), the Ministry of Environment and Climate Change Strategy (ENV), the BC Environmental Assessment Office (EAO), the Impact Assessment Agency of Canada (IAAC) and the Ministry of Water, Land and Resource Stewardship (WLRS) were notified by Source Environmental (representing the Nechako Nations) that following their review of a recent submission of an Influent Water Quality Report (under *Mines Act* Permit M-246), notifications from a BWG Groundwater Trigger Response Plan, and communications with BWG, that elevated levels of weak acid dissociate cyanide (WAD cyanide) have been identified within the Tailings Storage Facility (TSF) pond, and within a groundwater well (GT 21-03s) adjacent to the interim Environmental Control Dam (IECD). The notification from Source Environmental also included a technical memorandum which details a summary of the situation, contributing factors (e.g. ineffectiveness of the plant site cyanide destruction circuit), comments, questions, and recommendations. A second memorandum from Source Environmental representing the Ulkatcho and Lhoosk'uz Dene Nations that was submitted to BWG, regulatory agencies, and nations was provided to the IEM team on November 13, 2025. Included in the notification from Source Environmental to the IEM and various regulators on October 27, 2025, was a copy of the BWG influent quality report provided by BWG to MCM on September 29, 2025, detailing a summary of improvements that were planned to be implemented to the cyanide destruction circuit at the Plant Site including: • dissolved oxygen enhancement – installation of two additional oxygen generators to improve oxygen availability in the detoxification tanks, with a delivery expected in November 2025; • pH control optimization – install automated pH control and relocate the lime addition point from the detoxification feed (noting the pH was previously manually controlled); • technical support and trouble shooting – engage with a cyanide detoxification industry specialist to provide expert troubleshooting and operational recommendations; and, • hydrogen peroxide system – install a hydrogen peroxide dosing system which will provide an additional oxidation pathway to improve the destruction of WAD cyanide. Within the technical memorandum, Source Environmental detailed that cyanide concentrations of the water within the TSF C pond (estimated at 2.5 million cubic meters), are at levels approximately 1 million times the concentration of those projected during project permitting and were used as the design basis for the Membrane Water Treatment Plant that is to be implemented to treat TSF C pond water throughout operations. The exceedances noted in the groundwater well adjacent to the IECD (GT 21-03s) were identified in a groundwater trigger response plan which identified a Level 1 exceedance (1.5 times the baseline concentration) of WAD cyanide and nitrate and a Level 3 (exceeding the BC Contaminated Sites Regulation standard for aquatic life) exceedance for Cobalt. Additional detail on these matters can be found in both Source Environmental memorandums which have been attached to this report for reference. The IEM team will continue to discuss this matter with Nations, Regulators, and BWG.	Not Determined
The IEM was requested by Source Environmental (representing the Nechako, Ulkatcho, and Lhoosk'uz Dene Nations) to attend the Environmental Life of Mine Committee (ELoMC) meeting on November 27, 2025, to receive additional information on the current status of cyanide management within the destruction circuit, TSF pond, and groundwater program as well as mitigation measures implemented to date. <u>Plant Site and TSF</u> From information provided during the ELoMC meeting, the IEM understands BWG have implemented the following measures in response to elevated cyanide levels in the TSF: installation of two additional oxygen generators (for a current total of 6) and a hydrogen peroxide system to support cyanide destruction, modification of the reagent dosing within the cyanide destruction tanks, and installation of automated pH control within the circuit. In addition, BWG is currently completing ore characterization and evaluating the opportunity to accelerate the installation of three additional oxygen generators (bringing the total to 9) to be installed together with sheer reactors (under Phase 1A). During the ELoMC meeting, it was reported that the current concentration of WAD cyanide in material (supernatant) leaving the plant site, is at approximately 10 mg/L which BWG have stated is their current discharge target and remains below the Cyanide Management Plan target of 50 mg/L. At the time of the meeting concentrations within the TSF C pond were approximately 60 mg/L. During the recent site visit, the IEM team visited the Plant Site to observe the two recently installed oxygen generators and the hydrogen peroxide dosing system (Photo 114725-5). <u>Groundwater</u> During the ELoMC meeting on November 27, 2025, it was detailed that cyanide has been detected in groundwater in and around the IECD within the footprint of the future Main Dam D, but that it has not been detected in the downstream environment. Currently, it is understood WAD cyanide has been detected in monitoring wells GT 21-03s located adjacent to the IECD (Photo 114712-6), and MW22-03d located between the TSF dam and the IECD (Photo 114707-4). BWG have also advised that WAD cyanide has been identified within a groundwater collection feature downstream of the IECD (referred to as the IECD Sump) which has been in place since the construction of the IECD (Photos 114712-3 and 114712-5). The IEM understands BWG have been pumping water from existing groundwater pump wells (PW24-01 and PW24-02) and the IECD sump back into the IECD and TSF ponds. In response to the elevated cyanide levels identified within monitoring well GT21-03s, BWG has implemented its groundwater trigger response plan (under the oversight of a qualified professional) in the area downstream of the TSF dam with the objective to improve the characterization of potential seepage pathways from the TSF and complete the installation of additional groundwater monitoring wells and seepage collection measures (e.g., pumping wells). The IEM understands that no measurable concentrations of cyanide have been reported in the former Davidson Creek reach downstream of the IECD. BWG have also confirmed there have been no exceedances of cyanide at the DC-05 compliance sampling point downstream of the Fresh Water Reservoir, or in any wells downstream of the IECD. The IEM understands groundwater sampling is being conducted monthly. During the recent site visit, the IEM team visited pumping locations at the IECD sump and a pumping well located adjacent to the IECD (PW24-02) and observed a selection of the new groundwater wells that have been installed in the area between the TSF and IECD within the future Main Dam D footprint (Photos 114711-1, and 114712-4). The IEM team will continue to discuss this matter with Nations, Regulators and BWG.	Not Determined

BWG have recently relocated the reclaim barge (which draws water from the TSF to the Plant Site to be used for processing) within the TSF pond east of the original location. During the visit to the reclaim barge, BWG staff pointed out the location of two wildlife air cannons in place to deter wildlife activity (Photo 114714-2). BWG also confirmed there are two wildlife cameras overlooking the TSF.	No
Plant Site	
Crews continue construction of Plant Site components associated with the Phase 1A expansion (Photo 114726-1).	No
The Plant Site conveyor was visited to observe the status of dust generation during the strong winds at the time of the visit. Material falling from the ore conveyor drop point appeared to be wetted and was observed falling from a short distance, both measures that BWG have implemented to reduce dust generation (Photo 114727-1).	No
Mine Site Laydowns	
A tote containing what appeared to be a hazardous substance (waste oil or hydrocarbon contaminated water) was observed stored outside of secondary containment at the infrastructure laydown adjacent to the Plant Site (Photo 114728-3; Record ID-114728). Confirmation the tote had been removed was provided on December 4, 2025.	Closed
A bag containing used hydrocarbon containers (hazardous waste) was observed in an open top bin labelled 'general construction waste' at the infrastructure laydown adjacent to the Plant Site (Record ID-114730). Confirmation that the bag containing hazardous waste had been removed from the open top bin was provided on December 4, 2025.	Closed
Hydrocarbon spills to ground were observed beneath a generator (unit 83206) and a heater/blower (unit 116983) staged at the Mobile Maintenance Yard (Record IDs 114720 and 114721). Confirmation that both spills had been cleaned up was provided on December 4, 2025.	Closed
Food waste (multiple juice boxes) was observed in an open top construction waste bin at the Andrews Hill laydown (Photo 114731-1; Record ID-114731). Confirmation the bin had been removed and replaced with an empty one was provided on December 4, 2025.	Closed
A drum of oil was observed stored outside of secondary containment at the Andrews Hill laydown (Record ID-114732). Confirmation the drum had been removed from the area was provided on December 4, 2025.	Closed
Low Grade Ore Stockpile	
Crews were observed developing the western end of the Low-Grade Ore Stockpile (LGO stockpile) pad including development of the compacted material base and installation of drainage channels for the eventual placement of additional low grade ore material (Photo 114716-2). Ore material that continues to be placed at the LGO stockpile remains within the footprint of the previously constructed portion of the pad (with compacted base and water management features) and contained within a perimeter berm to capture and direct any drainage to the water collection and conveyance measures surrounding the pad.	No
Fresh Water Reservoir	
Construction of the Fresh Water Reservoir continues. During the visit, crews were observed installing portions of the liner on the western side of the basin (Photo 114704-2). Construction of the concrete flow chamber to control flows from the reservoir appears to be nearing completion and works were observed ongoing downstream of its location to construct the discharge channel towards Davidson Creek (Photo 114705-3).	No
Development of the Davidson Creek diversion channel through the active work area has been completed and Davidson Creek is now flowing within the channel (Photo 114702-2). With works still ongoing around the concrete flow chamber and downstream discharge channel, the diversion channel has not yet been connected to these features and is currently being directed into the lower portion of the existing Davidson Creek channel immediately upstream of the concrete flow chamber.	No
A low point was observed on the haul road adjacent to a portion of the Davidson Creek diversion channel where road runoff could potentially enter the channel (Photo 114703-8). As temperatures are now generally near or below freezing, the risk of runoff and sediment transport is reduced, however this matter was discussed with BWG and provided as an opportunity for improvement. On December 4, 2025, BWG confirmed a material berm had been placed in the area identified by the IEM (Photo 18).	No
A stockpile of material (aggregate containing some fines) was observed near Davidson Creek downstream of the Fresh Water Reservoir (Photo 114706-1). The IEM recommended the pile be removed from this area or ESC control measures be installed between the pile and the watercourse to prevent any potential introduction of material into Davidson Creek. This matter was issued as an opportunity for improvement. BWG confirmed the stockpile had been moved back from the edge of the watercourse on December 4, 2025 (Photo 20)	No

Mine Site - General	
During a site visit on September 18, 2025, (as detailed in IEM Reports 034 and 035) the downstream compliance sampling point for water quality and instream flow needs (IFNs) in Davidson Creek was visited (referred to as DC-05). Section 4.3.2.1 of the Aquatic Effects Monitoring Plan (AEMP) currently details that the DC-05 sampling location is to have an automated hydrometric station in place with connectivity to a telemetry system. From onsite discussions on September 18, 2025, between BWG, the IEM, and BC EAO, it was understood a telemetry system was not currently in place that would allow real time monitoring of IFN. Although the probes installed have continuous sample collection, BWG staff must download and analyze the data prior to confirming whether IFNs have been met. Following the site visit on September 18, 2025, and subsequent discussions about whether a hydrometric station with telemetry is currently operational to facilitate real time monitoring of flow at the DC-05 compliance sampling location, further review of Section 4.3.2.1 of the AEMP was completed and it was noted that a total of ten stream sites (including DC-05) and one lake site are currently described within the document as requiring hydrometric stations with telemetry capability to facilitate real-time flow data download. The sites are as follows and their locations can be found on Figure 4.2-1 within the AEMP: • Stream Sites: DC-05 (understood to be installed but currently not operational), DC-15, TC-10, 661-02, 661-09, CC-10, CC-12, CC-15, 705-10, MC-05 • Lake Site (Tatelkuz): TL-01H. The IEM team submitted a request for information on October 7, 2025, inquiring whether the list of sites detailed within Section 4.3.2.1 of the AEMP had hydrometric stations with telemetry capability installed. In a series of responses provided by BWG on October 7 and 11, 2025, it was indicated that the sample locations all collect continuous data, but currently, do not have telemetry capability to facilitate real time data download as is detailed within the AEMP. The IEM understands BWG (along with its subcontractors ERM Consultants and Knight Piesold) have determined that connectivity to telemetry as is currently described within the AEMP would provide limited benefit to the monitoring program and see the best path forward is to revise the AEMP in the next update accordingly. As the network of hydrometric stations detailed within Section 4.3.2.1 of the AEMP do not currently have the ability to provide real time data download via telemetry, a non-compliance has been issued for this matter (Record ID-114475). The IEM has advised BWG that should the AEMP be updated to remove the telemetry requirement at these stations, that it is expected that the rationale for this change will be provided by a qualified environmental professional and that the document revision process engages all stakeholders (as is detailed within the AEMP, noting its ties to the EAC, the ELoMC and ENV) if this is the manner in which BWG will resolve this non-compliant matter. The IEM has set the closure date for this non-compliance at May 1, 2026, to accommodate the BWG schedule of updates to the AEMP which BWG has advised are due April 30, 2026. This non-compliance will remain open in subsequent IEM reports until BWG installs hydrometric stations with telemetry capability at the locations specified in the AEMP or the AEMP is appropriately revised. **This matter is held over from the previous reporting period (IEM Report 035).** **Update for IEM Report 036**: On November 13, 2025, BWG advised the IEM team that telemetry at the DC-05 sample location point had been successfully installed and began transmitting data on November 12, 2025. As a result, mention of DC-05 will be removed from the outstanding sample points associated with this non-compliance both within the text of this portion of the IEM Report, and within the Open Environmental Issues Tracking Log Table in the next IEM report.	Yes
During onsite discussions, the IEM learned that rock being used for erosion protection at various location across site, including at the IECD emergency overflow channel (Photo 114723-1) and around the low grade ore stockpile pad that rock is classified as non potentially acid generating (non-PAG), however, the IEM understands the process for segregating, stockpiling, and distributing non-PAG material for erosion protection may not be directly overseen by the BWG environmental department. The IEM submitted an RFI to have BWG provide a summary of how rock is segregated on site to confirm that any used for erosion protection across the site is non-PAG.	No
Lake 15 – 16	
Crews recently completed the Lake 16 outlet to the Lake 15/16 fish habitat offset channel which the IEM understands included widening and deepening of the channel, installation of woody debris and rock structures within the channel (for habitat complexity) and vegetation planting along the shoreline (Photo 114724-2).	No
Transmission Line	
During the previous IEM team visit to locations along the transmission line to observe reclamation works on October 16, 2026 (as detailed in IEM Report 35), it appeared that limited quantities of large woody debris (>12 cm in diameter) had been placed along the right of way (Photo 114490-5). The Transmission Line Construction Environmental Monitoring Plan (TL CEMP) mentions salvaging and retaining woody debris during clearing and construction in accordance with the CWD Management Standard Operating Procedure (CWD SOP) and using this woody debris as visual barriers along the corridor (for wildlife purposes). Upon review of the CWD SOP, Table 3-1 of the document details that where non-merchantable logs (>12 cm diameter) are available, that approximately 50 logs or root wads per hectare (equating to approximately 10 m spacing for final application) will be retained for reclamation purposes, and that a site wide inventory of CWD available for reclamation purposes will be established and maintained. The IEM submitted an RFI to inquire whether the CWD had been salvaged in accordance with the requirements in the TL CEMP and CWD SOP during construction of the Transmission Line. **This item is held over from the previous reporting period (IEM Report 035).** **Update for IEM Report 036**: The IEM team did not receive a response from BWG prior to authoring this report.	No

Notable Environmental Incidents

Record ID No(s).	Date of Incident (dd/mm/yyyy)	Location	Description of Event
114651	28/10/2025	LGO Dump	On November 9, 2025, it was reported that on October 28, 2025, a spill of 229 Litres of Coolant had occurred at the LGO dump. The spill was reported to ENV, the Lhoosk'uz Dene Nation, Ulkatcho First Nation, Stellat'en First Nation, Saik'uz First Nation, Nadleh Whut'en First Nation and Nazko First Nation. Additional detail can be found in the attached Monthly Summary Table of October 2025 incidents provided by BWG to the IEM team on November 9, 2025.

Environmental Issue Tracking Log – Open Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)
114475	16/10/2025	Automated hydrometric stations with telemetry loggers capable of facilitating real-time flow data download currently not present at the following locations as detailed within Section 4.3.2.1 of the AEMP: Stream sites including DC-05*, DC-15, TC-10, 661-02, 661-09, CC-12, CC-15, 705-10, MC-05, and Tatelkuz Lake site TL-01H. *BWG advised the IEM team that telemetry at the DC-05 sample location point had been successfully installed and began transmitting data on November 12, 2025. Mention of DC-05 will be removed from this Non-Compliance in the next IEM Report.	Install continuous automated hydrometric stations with telemetry to facilitate real-time flow data download at all ten stream sites, and one lake site as detailed in Section 4.3.2.1 of the AEMP.	01/05/2026

Environmental Issue Tracking Log – Closed Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)	Follow-up	Completed Date (dd/mm/yyyy)
114720, 114721	25/11/2025	Hydrocarbon spill to ground beneath generator (unit 83206) and heater/blower (unit 116983) both staged at the Mobile Maintenance Yard.	Clean up and dispose of contaminated material in accordance with Section 9.2 of the Fuel Management and Spill Control Plan.	13/12/2025	Confirmation spills had been cleaned up beneath both pieces of machinery was provided by BWG on December 4, 2025.	04/12/2025
114732	26/11/2025	Drum of oil stored outside of secondary containment at the Andrews Hill laydown.	Store hazardous materials in secondary containment to restrict the spread of any spilled product in accordance with Section 10.5 of the CEMP.	13/12/2025	Confirmation the drum had been removed from the area was provided by BWG on December 4, 2025.	04/12/2025
114728	26/11/2025	Tote containing what appears to be a hazardous substance (waste oil, or hydrocarbon contaminated water) stored outside of secondary containment at the infrastructure laydown adjacent to the Plant Site.	Store hazardous materials in secondary containment to restrict the spread of any spilled product in accordance with Section 10.5 of the CEMP.	13/12/2025	Confirmation the tote had been removed from the area was provided by BWG on December 4, 2025.	04/12/2025
114730	26/11/2025	Bag containing used hydrocarbon containers (hazardous waste) observed in an open top bin labelled 'general construction waste' near the infrastructure laydown	Segregate, store and dispose of hazardous waste in accordance with Section 10.1 of the Chemicals and Materials Storage, Transfer and Handling Plan.	13/12/2025	Confirmation the bag containing hazardous waste had been removed from the bin was provided by BWG on December 4, 2025	04/12/2025
114731	26/11/2025	Food/domestic waste observed in open top construction waste bin at the Andrews Hill laydown.	Store domestic wastes in sealed, wildlife resistant containers for disposal in accordance with CEMP Section 9.1, table 9.1.1 (General Mitigation Measures).	13/12/2025	Confirmation the bin had been removed and replaced with an empty one was provided by BWG on December 4, 2025.	04/12/2025

Upcoming Construction Activities

Summary of Activities	Anticipated Start Date
-	-

Yours truly,

EDI ENVIRONMENTAL DYNAMICS INC.

Graeme Paterson, P.Ag, CPESC

Independent Environmental Monitor Lead

ATTACHMENTS:

- Photos
- Site Overview map
- Summary of Previous Month (October 2025) Environmental Incidents (provided by BWG)
- Memorandum from Source Environmental (NFN) – Cyanide Destruction and Water Treatment for Blackwater Project
- Memorandum from Source Environmental (UFN/LDN) – Cyanide Accumulation in the TSF and Seepage Concerns

Report Distribution List:

Blackwater Gold (Artemis): Tim Donnelly, Adam Gyorffy, Mark Warbanski, Ryan Todd, Sam Lynch, Steven Hayward, Norm Fraser, Jessica Saunders, Quain Sulin, Randall Hennigar, Linda Siwallace

Ulkatcho First Nation: Alyisha Knapp

Lhoosk'uz Dene Nation: Rene Jimmy

Stellat'en First Nation: Doug Casimel, Deane Carlson, Taneesha Raymond

Saik'uz First Nation: Kasandra Turbide, Howard Alexis, Jimmy Vickers

Nadleh Whut'en First Nation: Kristen Chapman, Pam Ketlo, Jonathan Kostyshyn, Joshua Parsons

Nazko First Nation: Stephanie Deneault, Terrance Paul, Florian Bergoin

Source Environmental Associates Inc: Martin Shin, Georgina Farah, Fraser Riddolls, Rina Freed, Anna Everett, Sally Turnbull, Taleya Ouellet

Skin Tyree Nation: Bea Paton

Tsilhqot'in National Government: Trina Setah

Metis Nation of BC: Danielle Courcelles

Nee-Tahi-Buhn Band: Kieran Broderick, Ryan Brooks

Environmental Dynamics Inc (EDI): Graeme Paterson, Leslie Chamberlist, Matthew Van Osch

Impact Assessment Agency of Canada (IAAC): Mathieu Trudelle, Shannon Wallace, Carl Johansson, Steven Fraser

BC Environmental Assessment Office (BC EAO): Chris Parks, Shayla Frechette

Ministry of Mining and Critical Metals (MCM): Rachel Taylor

Ministry of Environment and Climate Change Strategy (ENV): Breanne Hill

Ministry of Water, Land and Resource Stewardship (WLRS): Duncan McColl

Photo 114725-5. Overview of two additional oxygen generators and hydrogen peroxide dosing system associated with improvements to the cyanide destruction circuit installed at the Plant Site.

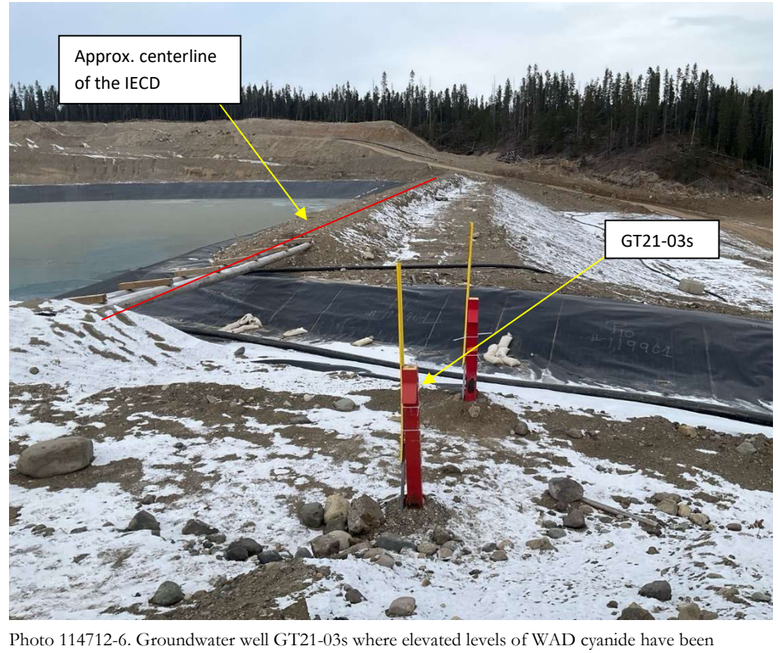


Photo 114712-6. Groundwater well GT21-03s where elevated levels of WAD cyanide have been detected.

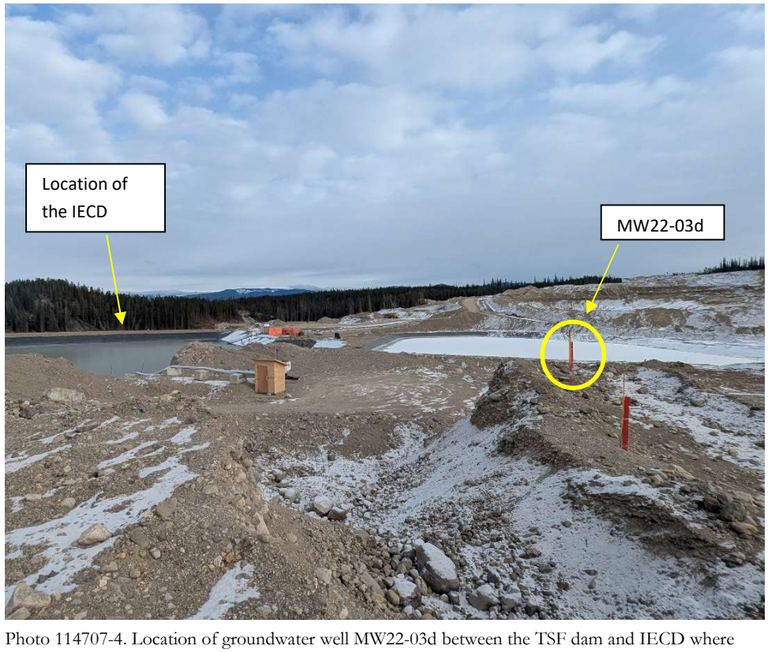


Photo 114707-4. Location of groundwater well MW22-03d between the TSF dam and IECD where WAD cyanide has been detected. Location of downstream IECD indicated on photo.

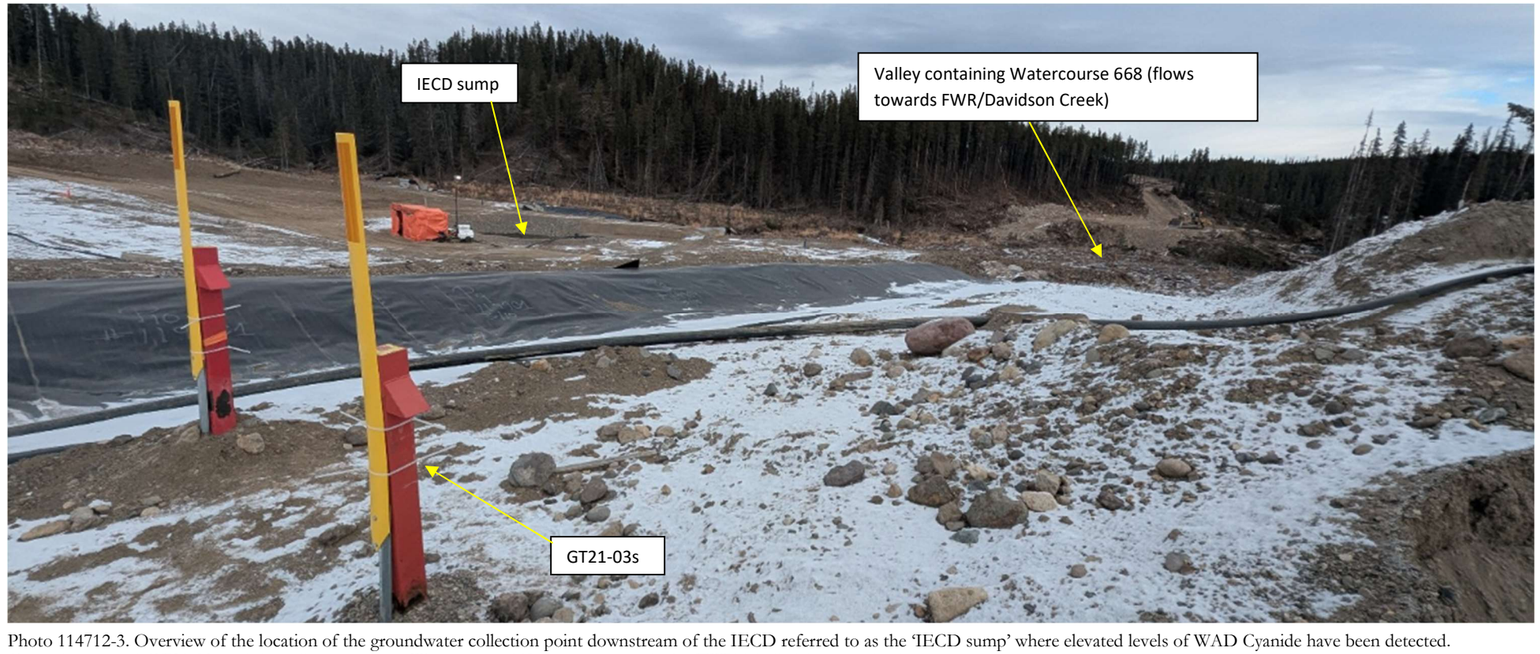


Photo 114712-3. Overview of the location of the groundwater collection point downstream of the IECD referred to as the 'IECD sump' where elevated levels of WAD Cyanide have been detected. Groundwater well GT21-03s and the valley containing Watercourse 668 (flowing towards the FWR) labelled for spatial reference.

Photo 114712-5. Photo of the IECD sump capturing groundwater downstream of the IECD. WAD cyanide has been detected in groundwater at this location. BWG currently pumping water back upstream to the IECD and TSF.

Photo 114711-1. One of the drill crews on-site installing monitoring and pumping groundwater wells. Drill rig in photo is located between the TSF and IECD.

Photo 114712-4. New groundwater monitoring wells installed downstream of the IECD sump.

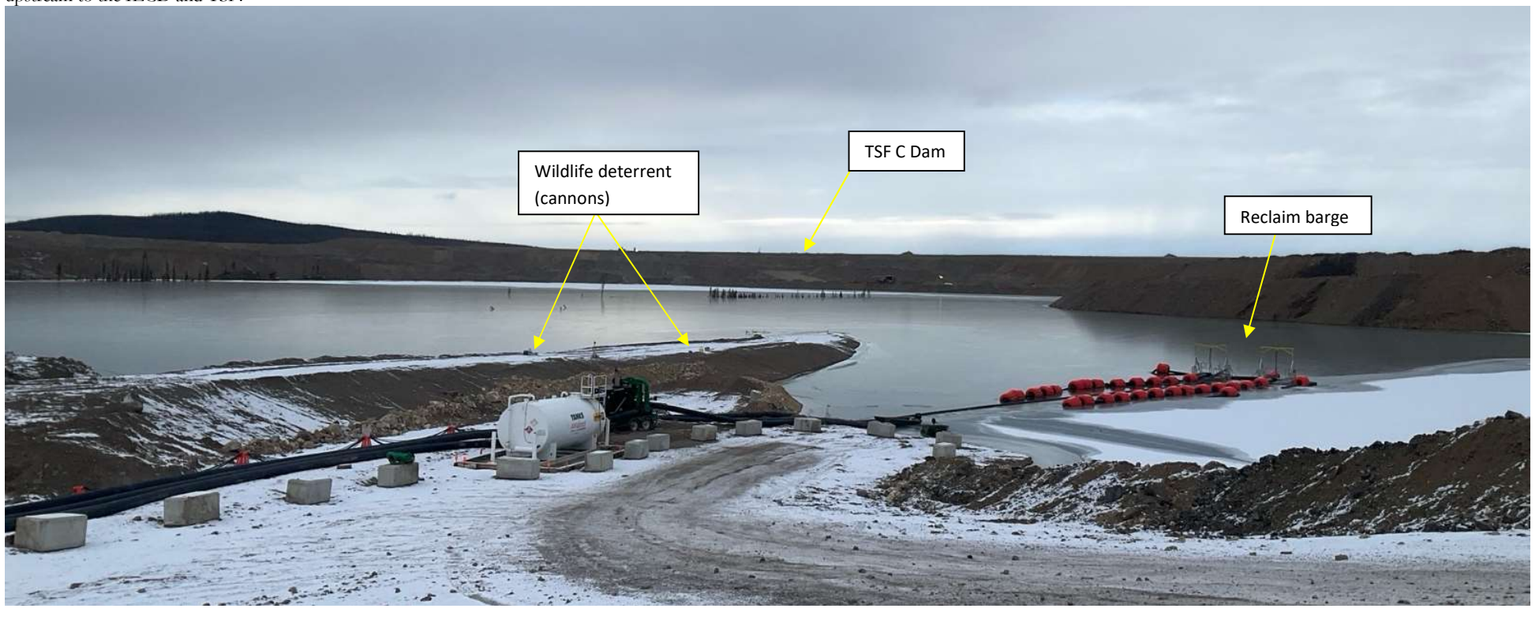


Photo 114714-2. Overview of TSF and reclaim barge that draws water and sends it to the Plant Site to be used for processing. Location of wildlife deterrents indicated on photo.

Photo 114726-1. Plant site updates associated with the Phase 1A expansion continue.

Photo 114727-1. Overview of the conveyor drop point at the Plant Site. Material falling onto high grade ore stockpile appeared to be wetted at the time of observation.

Photo 114728-3. Tote containing what appeared to be a hazardous substance (hydrocarbon contaminated water or waste oil) stored outside of secondary containment at the infrastructure laydown. BWG confirmed tote had been removed on December 4, 2025.

Photo 114731-1. Food/domestic waste observed in an open top bin staged at the Andrew's Hill laydown. BWG confirmed bin containing these contents had been removed and replaced with an empty one on December 4, 2025.

Photo 114716-2. Overview of development of the western end of the low-grade ore stockpile pad (installing compacted base and drainage channels). Low grade ore placement continues at the existing stockpile within the footprint of the previously constructed portion of the pad (with compacted base and water management features).

Photo 114704-2. Crews working on the western side of the Fresh Water Reservoir.

Photo 114705-3. Crews working on discharge channel downstream of the concrete flow chamber within the Fresh Water Reservoir.

Photo 114702-2. Davidson Creek diversion along the base of the future Fresh Water Reservoir.

Photo 114703-8. Low spot identified as potential entry point for road runoff to enter into the Davidson Creek diversion channel within the Fresh Water Reservoir. Observation provided to BWG as an opportunity for improvement.

Photo 18. Material berm put in place at low spot identified along the Davidson Creek diversion channel within the Fresh Water Reservoir. Photograph provided by BWG on December 4, 2025.

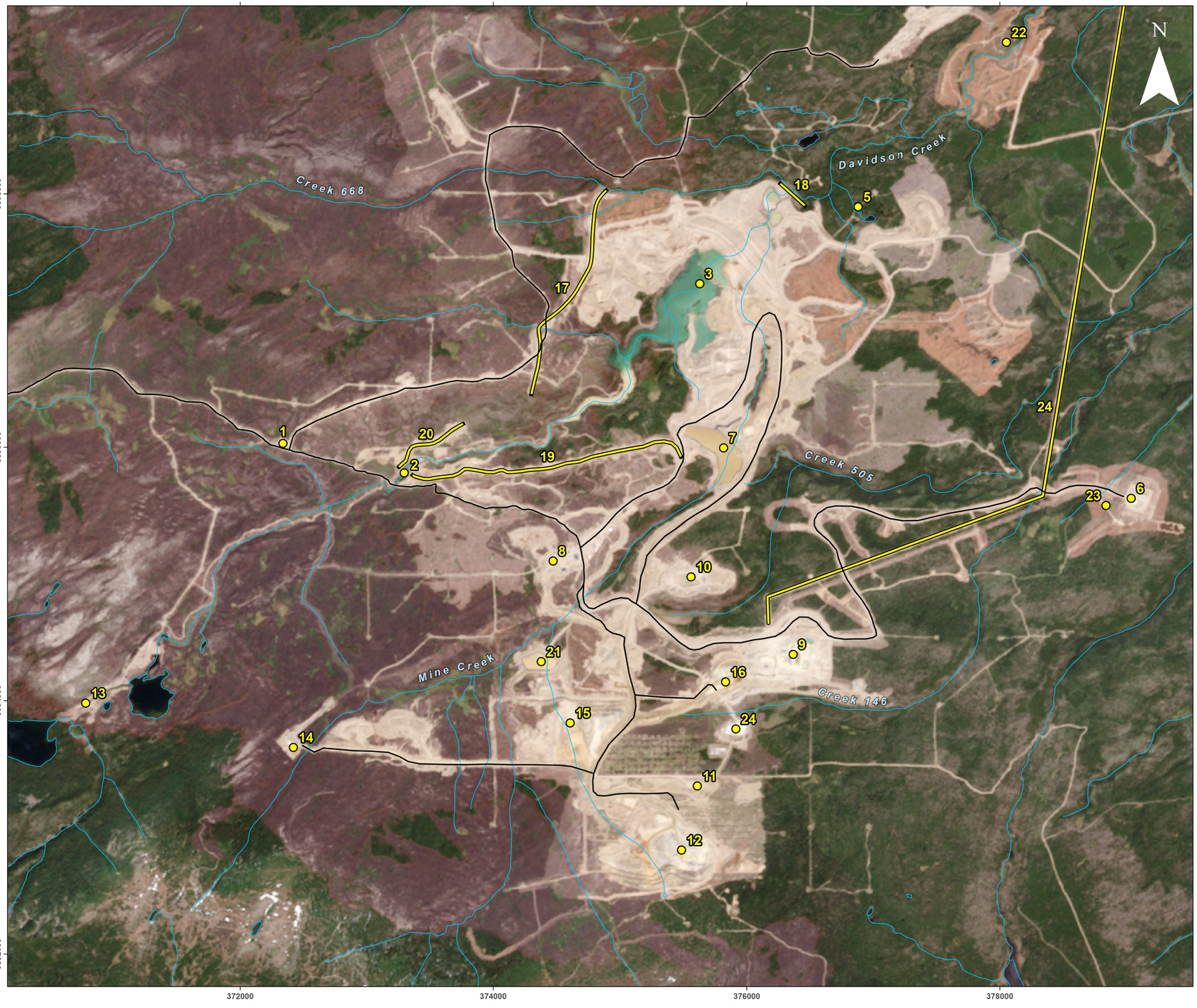
Photo 114706-1. Stockpile of aggregate (with some fines) located adjacent to Davidson Creek. IEM recommended this pile be removed to prevent sediment transport into Davidson Creek.

Photo 20. Stockpile of aggregate pulled back from edge of Davidson Creek downstream of the Fresh Water Reservoir. Photograph provided by BWG on December 4, 2025.

Photo 114723-1. Riprap placed at the IECD emergency overflow channel.

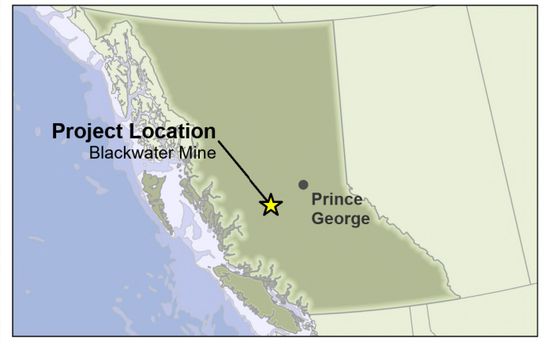
Photo 114724-2. Overview of recent works completed on the Lake 15/16 fish habitat offset channel (near the lake 16 outlet). Works included channel widening, placement of woody debris and rock for habitat complexity, and seeding and willow staking of shoreline in foreground of photo.

Work Space Locations



Legend

- Mine Access Road
- Watercourse
- Waterbody
- 1,Security Gate
- 2,Central Water Transfer Pond
- 3,Tailings Storage Facility
- 4,Tailings Storage Facility Dam
- 5,Water Management Pond Outfall to Davidson Creek
- 6,Operations Camp
- 7,Water Management Pond
- 8,Mobile Maintenance Yard
- 9,Plant Site
- 10,Andrew's Hill Laydown
- 11,Heavy Equipment Assembly Pad
- 12,Ore Body/Open Pit
- 13,Lake 15/16 Fish Compensation Channel
- 14,Explosives Magazine
- 15,Low Grade and High Grade Ore Stockpile
- 16,Run of Mine Pad
- 21,Low Grade Ore Stockpile
- 22,Freshwater Reservoir
- 23,Air Monitoring Station
- 24,Construction Camp
- 17, North Diversion Channel
- 18, Interim Environmental Control Dam
- 19, South Collection Channel
- 20, North Collection Channel
- 24, Transmission Line



0 0.5 1 1.5 2
Kilometres

Map Scale = 1:30,000 (printed on 11 x 17)
Map Projection: NAD 1983 UTM Zone 10N

Data Sources
- Workspaces. EDI Environmental Dynamics Inc. June 13, 2025.
- Main Basemap. CanVec 1:50,000: Government of Canada; Sentinel-2 Level 2A True Colour image June 9, 2025. Contains modified Copernicus Sentinel data 2024 processed by Sentinel Hub.

Disclaimer
EDI Environmental Dynamics Inc. has made every effort to verify this map is free of errors. Data have been derived from a variety of digital sources and, as such, EDI does not warrant the accuracy, completeness, or reliability of this map or its data.

Drawn:	Checked:		
CT / OL / CN	GP	Map 1	Date: 6/19/2025

EDI

Path: L:\PROJECTS\2021\NBC\21P0403_BlackwaterMine\21P0403_BlackwaterMine.aprx\21P0403_Blackwater_IEM_20250610

SUMMARY OF PREVIOUS MONTH (OCTOBER 2025) ENVIRONMENTAL INCIDENTS (PROVIDED BY BWG)

Environment Monthly Report								
October 2025								
Event Title	Event Date	Classification	Location	Specific Area	Report	Product(s) Name	Unit	Initial Amount
Hydraulic Spill At Drill Rig	30/10/25	Environment	Pit	1550 Bench	Approximately 4 liters of hydraulic fluid was spilled. The leak was caused by the discharge hose "kicking" after encountering water and impacting the hydraulic fitting for the cyclone pressure gauge. This happened at approximately 3:00am on the morning of Oct 30th. The pit supervisor was informed.	Hydraulic oil	L	4
Coolant Spill at Drill Rig	29/10/25	Environment	Pit	1550 Bench	The coolant filter unthreaded and came off the drill causing coolant to leak out onto the ground. The leak was identified by the driller and assistant. They reattached the filter, shoveled up the contaminated ground material and disposed of it in the contaminated soil bin. Spill pads were used to clean up anything that was left on the drill. The spill happened at 3:10am on Oct 29th and is estimated to have been 16 liters.	Coolant	L	16
HT1495 Coolant Spill	28/10/25	Environment	Low grade ore (LGO) dump	1480 LGO Dump	At Approximately 11:10pm the operator of HT1495 was made aware of a coolant leak by the dump dozer Operator. The truck pulled over on the LGO dump and discovered a large coolant leak caused by a damaged Coolant line fitting. The operator shut down the machine and placed a spill tray under the area leaking the fluid	Engine Coolant	L	229
West Rail Drill 6 Hydraulic Leak	28/10/25	Environment	Pit	1550-014 Pattern	Drill 6 lost feed pressure at 4am while at the bottom of a hole. The operator suspected a electrical issue. when they went outside 15-20 min later they discovered an Hydraulic oil leak of roughly 100L. Spill pads were deployed by the operator.	Hydraulic oil	L	189
Oil spill on mobile compressor near door #3 of mill	27/10/25	Environment	[Plant site] Mill building	Door #3	Compressor released oil out of the air tank drain on rental compressor estimated amount of 7 liters, was immediately reported to supervisor and immediately cleaned up	Compressor oil	L	7
1502 truck steal hydraulic line leaked	23/10/25	Environment	Pit	1270 elv PAG dump	1502 truck was traveling from 3601 to PAG dump, when 1502 dumped off the operator from 1313 truck told them they had a leak to check truck out, operator from 1502 noticed the leak called dispatch, truck was Safed up and containment was put in place	Hydraulic oil	L	6
1301 steering filter came loose	21/10/25	Environment	Pit	1550 bench in pit	Haul truck was getting loaded and pulled out. Digger operator noticed a leak. Haul truck driver dumped their load and parked. Spill kit was put down and maintenance was called.	Hydraulic steering oil	L	90
Fuel spill on Grade Control drill	15/10/25	Environment	Pit	1560 Bench within the 1550-011 drill pattern.	At 11:30pm the grade control driller left the drill to get parts to change an inner tube, when they came back to the drill pad the driller could smell fuel. He did a walk around and saw a paddle of fuel on the ground. He and his assistant grabbed absorbent pads and began to contain the fuel that was on the ground. He contacted geology and the FTE supervisor about the situation. The other supervisors and a mechanic came and changed out the broken fuel line and the fuel line beside it to be sure to reduce the risk of it happening again. FTE will be doing a thorough check of all lines on the drill prior to commencing drilling	Diesel	L	75
1302 hydraulic leak	09/10/25	Environment	Pit	Parkup ROM	The operator of 1302 parked and shut the truck off. When they got out they noticed a hydraulic leak under the haul truck. Spill kit was put down.	Hydraulic oil	L	15
EX 340 long reach excavator hydraulic block on stick fell off	02/10/25	Environment	Pit	Top of ROM crushers	EX 3402 was cleaning out crushers for planed PM as the they were cleaning or pocket a hydraulic junction box fell off and 2 to 3 liters of oil was spilt on side of crushes pocket.	Hydraulic oil	L	3
Steering filter loose on HT1313	01/10/25	Environment	Potential acid generating (PAG) dump		Call came in for a leak on HT1313, upon arrival techs found the steering filter had come loose and caused approximately 15L of steering oil to spill. Filter was inspected for damaged o-ring and then reinstalled and tightened to spec upon completion.	66 powerdrive Syn A/S 5w-30	L	15

TECHNICAL MEMORANDUMS

TECHNICAL MEMORANDUM

Date: **October 27, 2025**

To: **Kasandra Turbide, Doug Casimel, Kirsten Chapman, Nechako First Nations;**

From: **Patrick Littlejohn, Ph.D., P.Eng., Farzad Mohamm, Ph.D., P.Eng., Georgina Farah, B.Sc., M.A.C.P.**

Subject: **Cyanide Destruction and Water Treatment for the Blackwater Project**

Source Environmental Associates Inc. (Source) was retained by Nechako First Nations (NFN)) to provide technical review services associated with the Blackwater Gold project (hereafter, the Project), owned and operated by BW Gold Ltd. (hereafter, BWG). Source was requested to review a technical memo, dated September 29, 2025, that was submitted to BC Ministry of Mines and Critical Minerals by BWG in response to M-246 permit condition C.5.(e)(iii), hereafter "*the BWG Memo*". The BWG Memo pertains to the status of the Membrane Water Treatment Plant (WTP) and the quality of water in the project's Tailings Storage Facility C (TSF C).

Background

Mineral processing for the project involves cyanide leaching of ore to dissolve gold, gold recovery with carbon, and then application of cyanide destruction to tailings to destroy cyanide before tailings are directed to TSF C. Cyanide usage at the Project began in late 2024.

The Project design includes a membrane water treatment plant (WTP) designed to treat TSF C supernatant. The membrane WTP is necessary for addressing water that is laden with cyanide/cyanide detox chemicals. The membrane WTP has not been constructed yet. The Project currently has a metals removal WTP that is operational but this system is not suitable for treating the TSF C supernatant.

The membrane WTP is required to treat TSF water for discharge to maintain an appropriate water level in the TSF. The expectation is that water treatment and discharge from the TSF may be **required** starting in mid-2027[1], depending on weather and water accumulation at site. It may be **prudent** to begin discharging earlier than that to maintain appropriate water level. The membrane WTP is expected to be operational in mid-2026.

Mine contact water in TSF C contains a variety of contaminants of potential concern (COPCs) including cyanide, cyanide destruction by-products, and cyanide destruction reagents. As these species are difficult to model and predict accurately, the Project's Mines Act permit includes a condition mandating BWG assess the expected versus actual quality of TSF C water and to

[1] September 29, 2025 water balance model WBM reconciliation document, Figure 4.1

compare to the design basis for the membrane WTP. This was conducted by BWG and is described in the BWG Memo.

Summary of Findings

The following are Source's key findings from review of the BWG Memo:

- The site's cyanide destruction circuit is not functioning even close to its design specifications. The system has clear process control challenges that has led to poor cyanide removal. pH monitoring data shows numerous excursions of pH into the acidic range, as low as pH 4, which represents a risk to worker safety related to potential volatilization of cyanide gas.

- As a result of the consistent failure of the cyanide destruction circuit to meet specifications, the TSF C supernatant pond contains approximately one million times (1,000,000x) the level of cyanide that was projected during permitting and was used as the design basis for the Membrane WTP. Several other key parameters are also orders of magnitude higher in TSF C supernatant than was projected in water quality modeling.

- The Membrane WTP as originally designed and as modified per the BWG Memo is not capable of treating TSF C supernatant with its current quality. Treatment of TSF C water with the Membrane WTP as designed would almost certainly generate acutely toxic effluent, and there is high likelihood of acute toxicity in site discharge even if Membrane WTP effluent was diluted through both the Water Management Pond (WMP) and the Freshwater Reservoir (FWR). The author of the appendix to the BWG Memo does not even mention the risk associated with treatment of high levels of cyanide and so it is not clear that the WTP designer appreciates the risk that elevated levels of cyanide represent to WTP performance.

- Even if the cyanide destruction circuit were functioning according to specifications today, the ~2.5 million cubic meters of cyanide laden water currently stored in TSF C represents a large water treatment and water management challenge, as the Project's water management plan was predicated on successful destruction of cyanide prior to tailings deposition in TSF C.

- Urgent action is needed both to fix the cyanide destruction circuit and also to destroy cyanide already deposited in the TSF.

- The present situation underscores the need to action Source's repeated request for better cyanide accounting and reconciliation in reporting.

- Source requests ongoing collaborative engagement including discussion with BWG's relevant Qualified Professionals (QPs) in order to proactively address this issue.

More detailed discussion of review findings are presented in the following sections.

Comments & Recommendations

1. Need to Improve Operation of the Cyanide Destruction Circuit

The CN destruction system is not performing effectively, as evidenced by the presence of approximately 1,000,000 times more WAD cyanide in the TSF C supernatant pond than projected in the water quality model submitted during permitting (~30 mg/L weak acid dissociable (WAD) cyanide in the TSF C supernatant versus 0.00002 mg/L WAD cyanide expected in the TSF C supernatant[2]). The BWG memo provides operating data from the cyanide destruction circuit that provides insight into why the system is not functioning properly.

In particular:

- Sustained oxygen deficiency in the cyanide destruction circuit. The BWG memo documents significant and ongoing O_2 deficiency in the detox reactor (BWG memo, Figure 2). Adequate dissolved oxygen (and air flux) is critical to oxidize cyanide to cyanate and onward; chronic oxygen limitation alone will depress reaction rates and conversions across all operating windows.

- Poor pH control, with pH consistently outside the required range. Operating data shows the process repeatedly operated at pH values as low as ~4 and above ~12, instead of the required pH 8–9 band for SO_2/Air detox (BWG memo, Figure 3). Operation below pH 7 favours formation/release of cyanide gas, while operation above pH 10 slows reaction kinetics and destabilizes copper catalysis—both outcomes materially undermining detox performance. The potential for volatilization of cyanide also represents a health and safety risk to workers.

- Under-dosing of SO_2 and copper catalyst. Recorded reagent feeds were frequently below the stoichiometric and catalytic setpoints needed for the site's CN loadings and residence time (BWG memo, Figure 4). Starvation of SO_2 limits destruction of cyanide and inadequate copper depresses catalytic turnover, together explaining the elevated residuals observed downstream.

[2]MAEMA joint application, Appendix 5-H, Membrane WTP Design Report, Table 3-5

One consequence of the above is that the site may be in contravention of clause 1.1.5 of the Project's Environmental Management Act permit, which mandates that tailings slurry deposited in the TSF must be '…*typical of concentrator tailings from the milling of ore [as described in permit application documents]*'. The permit application documents describe near complete destruction of cyanide prior to deposition of tailings in the TSF.

Recommendations:

Source has the following recommendations for improvements to the cyanide destruction circuit. These recommendations are made without benefit of visiting the Project site and observing the specifics of the cyanide destruction circuit but are informed by experience with cyanide destruction at other mine sites.

- **Oxygen Supply:**
  - Urgent implementation of additional oxygen supply equipment, as described in the BWG Memo
  - Include measurement of gas flow rate to each reactor to allow for mass-flow control of air supply
  - Use online monitoring of dissolved oxygen and control flow on this basis (i.e. dissolved oxygen setpoint of >5-6 mg/L with high/low alarms and diversion/cessation of flow on low DO)
- **pH Control:**
  - Add automatic pH control with dual isolated pH probes and validation checks
  - Control flow based on pH with diversion/cessation of flow if pH is <~7.8 or >~9.5
  - Ensure cyanide gas risk mitigation measures such as ventilation, HCN gas detection, operator training and standard operating procedures for pH excursions are appropriate and up to date
- **Reagent Dosing:**
  - Pace SO_2 and copper dosing to flow with trim controlled by ORP/DO, do not use either as the sole control method
  - If not already present, add online data historian for pH, DO, ORP, flow rate, feed quality, reagent dosage rates. Use this information for regular review and tuning.
- **Handling of Off-specification Effluent:**
  - If the cyanide destruction circuit is not on spec, partially treated tailings slurry should be recycled and retreated. Continued deposition of high cyanide tailings into the TSF will not allow the TSF quality to recover.

Source notes and supports BWG's choice to retain a cyanide destruction specialist and encourages BWG to involve this person in recommissioning/restart of the circuit, revision of control strategy, and updates to SOPs.

2. Membrane WTP Design is Not Suitable for Current TSF C Water

The Membrane WTP as originally designed and as modified per the BWG Memo is not capable of treating TSF C supernatant with its current quality. At best, reverse osmosis membranes will consistently reject ~85% of WAD cyanide, meaning that if the system treats water containing 30 mg/L WAD cyanide, the effluent of the system will contain 4.5 mg/L WAD cyanide. This is well above the BC water quality guideline for protection of aquatic life (acute) of 0.01 mg/L WAD cyanide.

Even if effluent was diluted with cyanide free water through the WMP and FWR, the maximum dilution of cyanide in these structures would be on the order of 100x, which, if applied to 4.5 mg/L WAD cyanide in Membrane WTP effluent, would still yield 0.045 mg/L WAD cyanide in site effluent directed to Davidson Creek. For reference, failure of acute toxicity testing has regularly occurred at the Eagle Gold mine when cyanide levels are in the range of 0.015-0.020 mg/L WAD cyanide. If the Membrane WTP was consistently treating TSF supernatant and discharging to the WMP, the level of dilution prior to discharge to the environment would be less than 100x.

Further, it is concerning that the appendix to the BWG Memo authored by Bi Pure Water does not even mention the dramatically higher levels of WAD cyanide in TSF C water or how that could impact WTP performance. Source is unaware of any analogue reference sites that demonstrate >99% removal of cyanide from mine contact water with reverse osmosis. The use of reverse osmosis membranes as the primary method of preventing cyanide from entering treated water is fraught and not conservative. Minor pH excursions, variations following clean-in-place, and cyanide complexation all have potential to cause regular exceedance of acute guidelines of cyanide in effluent.

Recommendations:

- Source encourages BWG and Bi Pure to holistically consider the differences between the current TSF C water quality and what was predicted and used as design basis for the membrane WTP, with particular attention paid to the impact of high levels of influent cyanide and copper on membrane WTP performance. An updated design basis should include a range of feed qualities that encompasses the current TSF C water quality, including WAD cyanide, all nitrogen species, TDS, and temperature.
- Methods of incorporating cyanide destruction into the membrane WTP flowsheet should be evaluated and included in the flowsheet. For example, application of the air/SO_2 process or hydrogen peroxide as a pretreatment and/or on the effluent. Source recommends investigating and including both pre-treatment and post-treatment for residual cyanide to account for the risk of future process upsets.
- Please provide any reference sites/analogue data that show results of membrane treatment of waters containing high levels of WAD cyanide and cyanide-metal complexes

(i.e. copper cyanide). Reference sites/analogue data should include influent/effluent quality and comparison of the water quality matrix (i.e. holistic assessment and not focus on select parameters).

- In the absence of relevant reference sites/analogue data, BWG should undertake site-specific bench/pilot testing to evaluate the impact of elevated levels of cyanide on treatment performance and ensure that process design reflects achievable results.
- Engineering design of the membrane WTP should include a detailed assessment of cyanide-specific risks on process operation, results, and worker safety, and mitigations for these risks should be integrated into the design as implemented.

3. Managing and Improving TSF C Water Quality

Currently there is approximately 2.5 million cubic meters of water in the TSF C supernatant pond. Even if the cyanide destruction circuit starts working perfectly immediately and there is no further addition of excess cyanide into the TSF, there is still the question of how to manage (destroy) the existing inventory of cyanide in the TSF, and subsequently, cyanide destruction residuals.

While cyanide does gradually degrade through natural processes, natural processes are much slower in the fall/winter than in the summer, and natural degradation will not keep up with continual addition of new cyanide with tailings.

BWG has stated that they intend to increase the rate of milling earlier than in the original mine plan, which would necessitate increased usage of cyanide. Increasing the throughput and mass load of cyanide through the cyanide destruction circuit will increase risk to the downstream environment if water cannot be managed with the existing infrastructure.

Recommendations:

- Development of an integrated cyanide management plan that includes not only improvements to the existing cyanide destruction system as well as methods of managing the existing cyanide inventory in the TSF supernatant.
- Consider methods of improving water quality in the TSF (e.g. dosing hydrogen peroxide into the supernatant pond or a slipstream thereof) to reduce the mass of untreated cyanide in the TSF supernatant.
- Any water/cyanide management planning must be backed up by quantitative water quality/water balance modeling and scheduling. Such water quality modeling should include accounting of not only cyanide but also cyanide destruction residuals (i.e. nitrate, nitrite, ammonia) as well as cyanide destruction reagents (i.e. copper, sodium, and sulphate)

- Any management approach should account for not only current milling rates but also potential increase in milling rate (i.e. expansion plans noted in September 2025[3])

4. Quality of TSF C Water with Respect to Other Parameters

The BWG Memo shows the differences between predicted and actual concentrations of selected species in TSF C. Given the divergence from projections, comparison of a broader range of parameters is requested.

Information Request:

- Please provide complete data on the current quality of TSF C, including standard metals for analysis, anions, and nutrients. Sodium, zinc, and sulphate are all particularly relevant in this context but the full analytical suite is requested.

5. Quality of TSF C Seepage and Notification of Exceedances

On October 22nd, the NFN received a Level 1 Groundwater Trigger Response Plan (TRP) exceedance at groundwater well GT21-03S (Figure 1.0 and 2.0) for WAD cyanide and nitrite as well as a Level 3 exceedance of cobalt. A Level 1 exceedance in the Groundwater TRP is defined as above 1.5 x's the baseline concentration, while a Level 3 exceedance is defined as exceeding the Contaminated Sites Regulation standard for Aquatic Life.

The quality of TSF C supernatant pond water has impacted the quality of seepage through the TSF C Dam, and the above TRP exceedance indicates that existing seepage capture/groundwater protection measures are insufficient. The consequence of the failure of seepage capture/groundwater protection measures may be greater because of the high levels of cyanide in the TSF C. A fulsome review of the groundwater TRP exceedance is outside the scope of the present memo, but the NFN technical team will provide more detailed comments on this in the future.

[3] https://www.princegeorgecitizen.com/local-news/artemis-gold-announces-expansion-plans-for-blackwater-mine-11215945

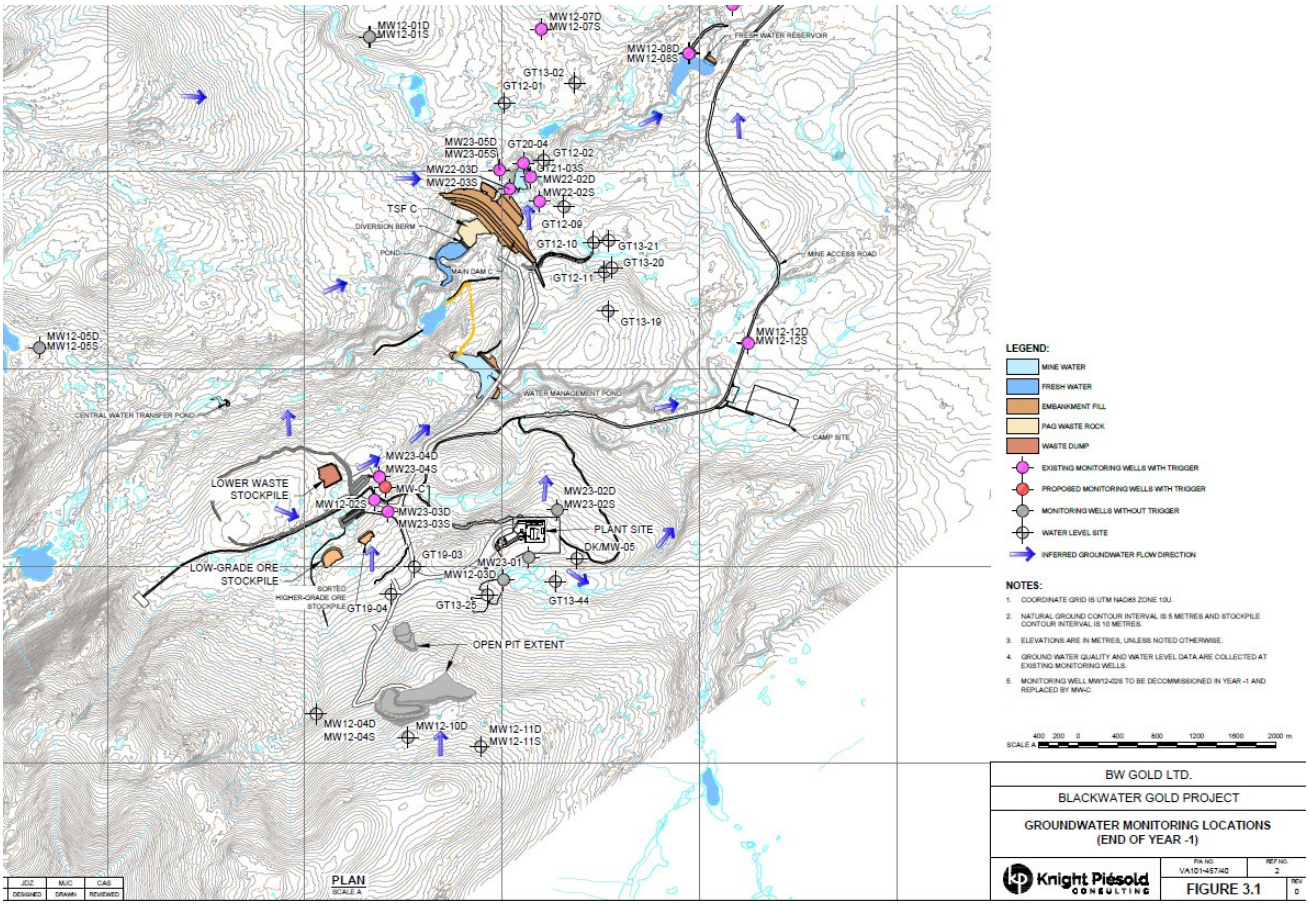


Figure 1.0 Groundwater Monitoring Locations[4] – End of Year -1

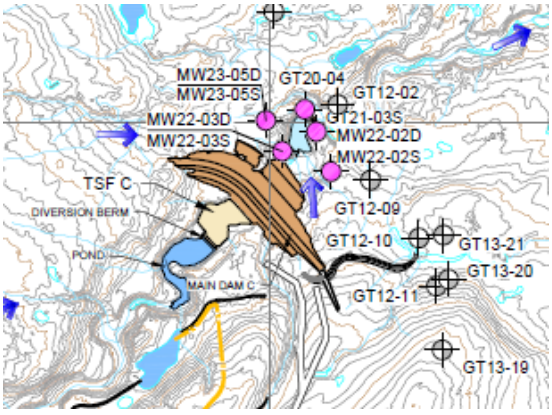


Figure 2.0 GT21-03S Groundwater Monitoring Well Location

[4] Blackwater Mine Groundwater Trigger Response Plan for Non Point Source Discharges to Ground, May 17 2024, Knight Piesold

6. Need for TSF Water Quality Target

Comment #3 of this memo describes the need to improve water quality in TSF C. In line with this comment, there is a need to establish a numeric water quality target for TSF C that includes cyanide and possibly other water quality parameters. Such a target should integrate the following goals:

- Protect wildlife that may come in contact with TSF C supernatant
- Protect groundwater that may be affected by TSF C seepage
- Prevent cyanide from entering site water management infrastructure that is not meant to contain cyanide (i.e. the WMP and FWR)
- Ensure TSF C water quality is maintained in a range that is suitable for treatment with the Membrane WTP while meeting site discharge needs
- Achieves site discharge limits and meets all downstream water quality objectives

This target may be the same as the TSF C water quality predicted in the water quality/water balance model submitted during permitting or may be a different value, as long as it integrates all of the above concepts.

Recommendation:

- Develop a TSF C water quality target that integrates protection of wildlife and groundwater, prevents cyanide from entering site water management infrastructure, allows the Membrane WTP to meet site discharge needs, and protects the downstream environment.
- A TSF C water quality target should include cyanide at a minimum but other parameters may be valuable to include as well (i.e. copper, nitrite, ammonia, cobalt).

7. Need for Cyanide Destruction Effluent Target

In line with Comment #6 of this memo, a numeric water quality target for effluent from the cyanide destruction system is required. This will help focus cyanide destruction circuit improvements and will help integrate improvement measures with site needs with respect to TSF C water quality.

In the permit application, the design basis for the cyanide destruction plant was as follows[5]:

- Influent WAD cyanide: 300 mg/L
- WAD Cyanide detoxification target (not to exceed): 25 mg/L
- WAD Cyanide detoxification target (not to exceed): 10 mg/L

[5] Joint MAEMA permit application, Appendix 3-F, Appendix 3, document 105177-ER-00000-22222-001, area 4700

Also in the permit application, the water quality/water balance model source term for process water was 0.03 mg/L WAD cyanide[6]. It is not clear if this difference between mill design basis and source term reflects misalignment in the application or misunderstanding on the part of the reviewer.

Regardless of permit application documents, water quality targets for the effluent of cyanide destruction should be developed and aligned with cyanide planning per other comments in this memo.

Recommendation:

- Develop water quality target(s) for cyanide and possibly other parameters for the effluent of the cyanide destruction system. Such targets should be integrated into other design, planning and modeling activities described in this memo.

8. Discharge Limits and Regulated Parameters

Neither WAD cyanide nor copper are regulated parameters per the site's discharge permit under the Environmental Management Act. Both of these species are considerably higher in TSF C water than was projected and are relevant to environmental impacts and non-degradation targets.

Recommendation:

- Please monitor and evaluate these species in particular and discuss these parameters in future annual reporting. Levels of these species are highly elevated compared to predictions and are environmentally important, including both immediate toxicity as well as non-degradation targets in the downstream environment and Yinka Dene Water Law.

9. Cyanide and Nitrogen Reconciliation Reporting

In many previous submissions over the course of environmental assessment, permitting, and mine operations, Source has advocated for analysis and reconciliation of predicted versus actual levels of nitrogen species (i.e. cyanide, nitrate, nitrite, ammonia, cyanate and thiocyanate) and byproducts associated with cyanide destruction (i.e. sodium, copper and sulphate). This analysis was not mandated in the site's permits as part of the Nitrogen Management Plan. The need for this analysis to include cyanide and cyanide species has not been recognized by all parties at other tables.

The present situation where actual concentrations of these species are dramatically out of alignment with predictions is an object lesson in how these species can be difficult to predict. This

[6] Joint MAEMA permit application, Appendix 5-D, Blackwater Geochemistry Source Term Report, Table 4-7

situation supports the reporting and reconciliation actions that Source has advocated for in the past.

Recommendation:

- Please revise the site's Nitrogen Management Plan to meaningfully incorporate assessment of cyanide and cyanide destruction species. Source has authored extensive technical comments on this topic, most recently in a memo dated February 11, 2025.

10. Meeting and Follow-up

As the previous comments make clear, the status of TSF C supernatant water quality increases environmental risk in a variety of ways and must be addressed on multiple fronts. This is a highly concerning issue and Source requests ongoing collaboration between BWG and UFN, LDN and NFN on the subject including at the detailed technical level. Source staff have extensive, highly relevant experience on this topic and seek proactive technical engagement to address this issue and prevent environmental impacts.

Recommendation:

- Source requests a meeting to discuss this issue in detail and that BWG bring technical staff/QPs on the subject of water treatment, cyanide destruction, water management and water quality modeling.

Closing Remarks

Thank you for the opportunity to review this element of the Blackwater Gold project on behalf of UFN, LDN and NFN. We look forward to good faith, proactive technical engagement to resolve this issue and prevent environmental impacts, as well as impacts to rights and title. Please direct any technical feedback to the undersigned.

Source Environmental Associates Inc.

per:

Patrick Littlejohn, Ph.D., P.Eng.
Senior Chemical Engineer
patrick.littlejohn@seamining.ca

Farzad Mohamm, Ph.D., P.Eng.
Senior Chemical Engineer
farzad.mohamm@seamining.ca

Georgina Farah, B.Sc., M.A.C.P
Environmental Scientist
georgina.farah@seamining.ca

TECHNICAL MEMORANDUM

Date: **November 6, 2025**

To: **Alyisha Knapp (Ulkatcho First Nation)**

Lana Koldeweihe (Lhoosk'uz Dené Nation)

From: **Rina Freed, Ph.D., P.Eng., Martin Shin, M.A.Sc., E.I.T., and Sally Turnbull, B.Sc.**

Subject: **Cyanide Accumulation in the Tailings Storage Facility and Seepage Concerns**

Source Environmental Associates Inc. (Source) was retained by Ulkatcho First Nation (UFN) and Lhoosk'uz Dené Nation (LDN) to review technical documents related to cyanide concentrations in the Blackwater Gold Project, including the Tailings Storage Facility (TSF).

This memorandum follows issues discussed and raised at the October 23rd, 2025, EloMC with BW Gold, UFN, LDN, BC EAO and the Nechako First Nations (NFNs).

Background

Source reviewed the following technical documents:

- BWG Membrane WTP Influent Quality Report as per M-246 condition C.5.(e)(iii), *file name: M-246_C.5.(e)(iii)_r0-COMPILED.pdf* (BW Memo);
- Level 3 Groundwater Trigger Response Plan exceedance notification dated October 21st, 2025 for well GT21-03S;
- BW Gold Cyanide Management Plan.

This memo provides comments on behalf of LDN and UFN following a review of the Water Treatment Pond Influent Quality Report and Level 3 Groundwater Trigger Response Plan (TRP) exceedance notification. Comments and recommendations regarding the cyanide destruction circuit and water treatment plant were also submitted by Source on behalf of the Nechako First Nations (NFNs) and are attached as an Appendix. The UFN and LDN technical representatives have reviewed and endorse NFN's comments and recommendations.

Key background information includes the following:

- Cyanide levels in the pond have been monitored and are consistently much higher than predicted, in the range of 10 – 60 mg/L. The levels currently pose a significant concern for a number of reasons highlighted herein.

- Cyanide levels in the mill effluent are expected to be very low as a result of the cyanide destruction circuit. The initial predictions of WAD cyanide levels in the TSF-C Pond are

based on full cyanide destruction and are <0.02 mg/L, as seen in Figure 1 (slightly higher than the WQG-AL BC LT of 0.01 mg/L).

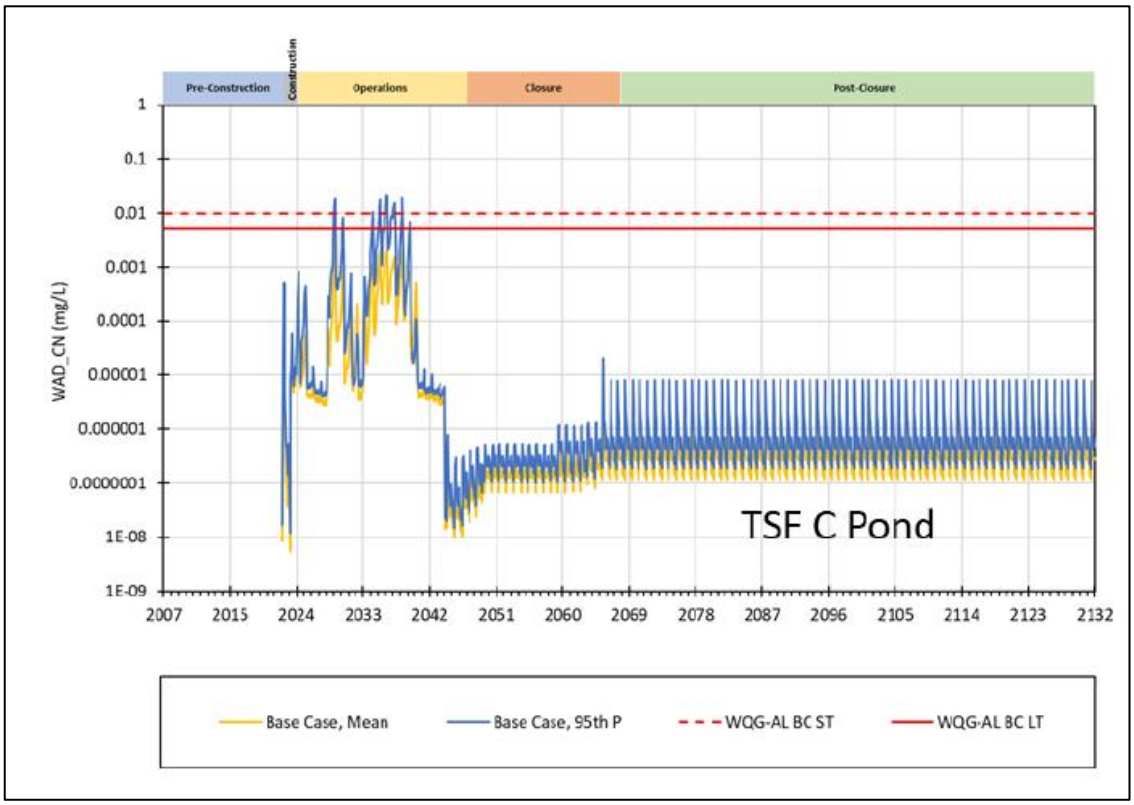


Figure 1. Predicted Weak Acid Dissociable (WAD) Cyanide at TSF C Pond (LORAX, 2021)

- The current cyanide level in the TSF poses a risk to wildlife. Bird deterrents have been installed in the TSF pond (cannons).

- There is no liner to prevent seepage associated with the design of the Blackwater TSF. As a result, the cyanide destruct system is the main protection mechanism to prevent seepage of cyanide to the receiving environment.

- There is a high risk of TSF waters accumulating and not being suitable for discharge because of high cyanide levels following membrane treatment (and treatment systems not being designed appropriately). This may pose a risk to Tailings Dam Safety if not addressed due to accumulation and lack of approval for discharge.

Issues Raised

1. Need for Qualified Professional Responsible for Cyanide Destruction Circuit

There are significant and ongoing issues in the operation of the cyanide destruct circuit that have resulted in high cyanide levels in the TSF-C Pond. BW Gold indicated sustained oxygen deficiency, poor pH control, and inconsistent reagent dosing within the detox system, all of which have materially undermined cyanide removal efficiency and contributed to the current accumulation of cyanide-laden water in the TSF-C Pond.

Given the critical importance of this system, a Qualified Professional (QP) should be assigned with the direct responsibility for the performance, optimization, and ongoing oversight of the circuit. The QP should ensure the goal of meeting the predicted effluent of 0.02 WAD cyanide, i.e. essentially full destruction of cyanide. BW Gold staff (Ryan Todd) indicated that Mr. Randy J. Agius, a cyanide detox specialist (third-party consultant), is acting as the designated QP however he was not present at the Oct 23rd ELOMC meeting. Source urgently requests a meeting with Mr. Agius (or whoever is the designated QP for cyanide destruction) and BW technical/management staff to discuss the outstanding technical issues, review recent operating data, and establish a clear corrective-action framework.

Discussion points for this meeting and information requests include:

- Confirm that the target/requirement for cyanide concentration following destruction is the previously predicted effluent concentration (i.e. 0.02 WAD cyanide, full destruction) – to be confirmed.
- Consequences of not meeting effluent target and management of off-specification effluent (i.e. when to cease discharge from the mill to the TSF because of the environmental risks including seepage (lack of liner), potential problems with TSF discharge and risk to wildlife) – action to be confirmed.
- Details of any monitoring data directly following cyanide destruction that indicate recent actions may be improving the cyanide destruction and achievement of full cyanide destruction including oxygen supply, pH control, reagent dosing strategy, etc.
- Discussion of cyanide-cobalt complexes or other metal-cyanide complexation and implications for the TSF pond waters, TSF treatment and discharge ability and groundwater seepage risks. A Level 3 Groundwater TRP exceedance for cobalt and a concurrent Level 1 exceedance for cyanide were observed at well GT21-03S. Clarification is requested on how the stability of these parameters/complexes is considered in the evaluation of risks to TSF pond water, treated discharge, and seepage. In addition, what operational challenge may arise (or may have already arisen) from the presence of other metals in the mill process water.

2. Cyanide Concentration Goal for Destruct Circuit Effluent

There are very high levels of cyanide in the TSF-C Pond attributed to ongoing issues with the cyanide destruct circuit. The continual discharge of high-cyanide effluent into the TSF-C Pond has resulted in the accumulation of cyanide-laden water, indicating the cyanide destruction circuit in the mill is either not working or inadequate to meet requirements.

The expectation resulting from the Environmental Assessment Certificate overall is that mitigation plans will allow for the predictions to be met. EAO Condition 32 requires a Cyanide Management Plan (CMP) with "the means by which cyanide-containing effluent will be monitored and treated prior to discharge, including discharge to the TSF". The CMP is lacking in that it does not explicitly identify the SOPs (Section 6.1.4) for operation of the cyanide destruction plant (the CMP simply states they will be developed). Overall, the EAC conditions requires the cyanide destruction circuit to function as intended and expected given the reliance on this key mitigation for treatment of effluent to be discharged to the receiving environment.

A cyanide concentration regulatory requirement should be established in the CMP (and by MCM in the MA permit) for the effluent exiting the cyanide destruction circuit along with consequences if the requirement is not met (i.e. cease operating the mill). This goal would serve as a critical operational control point.

Source recommends that BW Gold, in collaboration with UFN and LDN and regulatory agencies, define the cyanide concentration requirement for the cyanide destruction circuit. It is recommended that the originally predicted value of less than 0.02 mg/L cyanide (Figure 1, prediction) be used as the requirement (i.e. the cyanide destruction circuit functions as intended, fully destroying cyanide). In addition, there needs to be an urgent and substantive update to the CMP (Section 9).

3. Need for TSF-C Water Quality Protection Goal for Cyanide

BW Gold is required to report the actual versus predicted water quality in the TSF-C Pond as per Permit M-246. The report received by the BC Ministry of Mining and Critical Minerals (MCM) and UFN/LDN reported levels of cyanide far higher than predicted. Several other parameters (e.g., cobalt, copper, nickel, cadmium, ammonia, and nitrite) were also found to be higher than predicted. As communicated in the October 23rd EloMC call, BW Gold attributed these high levels to issues with the cyanide destruct circuit not working as intended as well as higher metallurgical variability in the ore than anticipated.

BW Gold's Cyanide Management Plan refers to the TSF-C WAD cyanide concentrations being maintained less than 50 mg/L (ppm), below acute toxicity levels for birds and other wildlife. This value is much higher than the predicted levels expected in the TSF (and much higher than levels in the TSF to meet the expected levels shown in Figure 1).

A limit for the TSF-C pond water quality needs to be defined. Establishing a clear and measurable protection goal for the TSF-C Pond is critical at this time to avoid significant risks. The risks include accumulation of cyanide laden waters in the TSF that cannot be discharged due to receiving environment requirements not being met and seepage concerns. The TSF requirement should be many orders of magnitude lower than the protection goal for wildlife and should reflect the predicted concentrations as this reflects the intended design and is a requirement from the EAC/permitting. Cyanide levels in the TSF need to be progressively reduced to concentrations that minimize risks (described above) in a timely manner.

Source recommends that BW Gold, in collaboration with UFN/LDN and regulatory agencies, establish a TSF-C water quality protection goal for cyanide based on the predicted concentration intended by the design of the project, substantially lower than current concentrations. This should also consider all TSF discharge issues associated with cyanide including a Nitrogen Management Plan that considers all sources of nitrogen species including cyanide destruction.

4. Request for Additional Monitoring and Reporting

BW Gold has proposed actions associated with the TSF-C Pond water quality issue including ordering additional oxygen generators to improve oxygenation in the cyanide destruct circuit and the application of hydrogen peroxide.

At present, the TSF-C Pond water quality is reported on a quarterly basis. Given the ongoing concerns and the importance of timely detection of system upsets, this reporting frequency is insufficient to ensure transparency and proactive management. UFN and LDN request the following enhanced monitoring and reporting measures:

1. Daily monitoring of WAD cyanide in the cyanide detox circuit effluent quality and TSF-C pond water quality, including key supporting parameters such as pH, dissolved oxygen, and ORP.
2. Weekly reporting of the daily monitoring results to UFN and LDN

5. Concern with Membrane Water Treatment Plant and Discharge Limits

As detailed in the appended NFN memorandum (Source, 2025), there are design and effluent limit concerns associated with the Membrane Water Treatment Plant (MWTP).

UFN and LDN concur with NFN's recommendations outlined in their Comments 2 and 8. In summary, the Membrane Water Treatment Plant (MWTP), as originally designed, is not suitable for treating the current quality of TSF-C supernatant. Reverse osmosis membranes typically reject only ~85% of WAD cyanide, which means that influent water containing 30 mg/L WAD cyanide would yield an effluent concentration of approximately 4.5 mg/L, well above the BC aquatic life guideline of 0.01 mg/L. Even accounting for dilution through the Water Management Pond (WMP) and Fresh Water Reservoir (FWR), cyanide levels in effluent discharged to Davidson Creek would remain above acute toxicity thresholds observed at other sites (e.g., 0.015 - 0.020 mg/L at Eagle

Gold). An appendix to the BWG Memo related to Bi Pure Water was provided. This appendix does not address the higher cyanide concentrations present in TSF C water or implications for treatment performance.

Reverse osmosis alone is not a conservative or proven approach for >99% cyanide removal and is sensitive to pH variations, membrane fouling, and cyanide–metal complexation (e.g., copper cyanide). Source recommends that BW Gold revise the MWTP design basis to reflect actual TSF C water quality, evaluate integration of a cyanide destruction step (e.g., SO_2/air or H_2O_2 oxidation) as pre- and post-treatment, and conduct site-specific pilot testing to confirm achievable effluent performance before discharge authorization.

6. Production Increases as Part of Phase 1a Proposed Expansion

As per the press release on September 15th, 2025, BW Gold is proposing a Phase 1a expansion that would result in a 33% increase in throughput by Q4 2026. Increased throughput would result in increased loading into the cyanide destruct circuit and ultimately into the TSF-C Pond. Given the levels of cyanide in the TSF-C Pond, any expansions in production, and therefore potential increases in cyanide loading into the TSF-C Pond, should not be pursued until the cyanide destruct circuit is meeting the predicted levels (i.e. no cyanide remaining after destruction) and the contaminated water in the Pond is adequately managed.

7. Groundwater Seepage – Cobalt (Level 3 Trigger) and Cyanide (Level 1 Trigger)

Cobalt (Level 3 Trigger)

UFN and LDN were notified on October 21st, 2025, of a Level 3 Groundwater TRP exceedance for cobalt at groundwater monitoring well GT21-03S based on quarterly samples taken on October 2nd and 3rd, 2025. As per BW Gold's Groundwater TRP, a Level 3 Trigger is defined as the appropriate BC Contaminated Sites Regulation (CSR[1]) standard.

This monitoring well is located down from the Interim Environmental Control Dam (IECD) within the ultimate footprint of TSF-D, indicating seepage from the TSF pond.

So far there have been no indications of impacts to the receiving environment based on surface water quality monitoring in Davidson Creek. At the October 23rd, 2025, EloMC call UFN and LDN were informed that BW Gold is working to install additional monitoring wells to delineate the seepage plume and are operating pumps in wells PW24-01 and PW24-02 as well as the IECD sump as mitigation measures.

[1] The CSR may not be the appropriate trigger as we expect that exceedances would be noted in the receiving environment before it is noted in the groundwater monitoring wells. Care should be taken to select appropriate triggers such as increase from background, exceedance of WQGs, etc. The CSR values for some parameters are remarkably high and not considered to be protective (i.e. sulphate is above gypsum saturation).

Source requests a follow-up meeting with BW Gold's Groundwater QP to review implementation of the mitigative measures and to discuss the seepage assessment. We support the following information provided in advance of the proposed meeting:

- Identification of key stratigraphic units around the TSF-C Dam, IECD, and adjacent wells
- Hydrogeological characterization to assess seepage potential (hydrogeological conceptual model, hydraulic conductivity, hydraulic gradients, and inferred seepage rate)
- Potential design and capture seepage interception systems (SIS) (extraction rate and cumulative volumes)
- Water quality of seepage and pump-back water, with comparative analysis to TSF-C Pond to evaluate source correlation

Cyanide (Level 1 Trigger)

UFN and LDN were also notified on October 21st, 2025, of a Level 1 exceedance for cyanide at groundwater monitoring well GT21-03S based on quarterly samples taken on October 2nd and 3rd, 2025. Upon review of the data provided by BW Gold, Source also determined that there were additional Level 1 exceedances for nitrite and conductivity at the same monitoring well. As per BW Gold's Groundwater TRP, Trigger Levels 1 is defined as 1.5 times the 95th percentile baseline concentration. We request a water quality model to predict levels of cyanide and nitrogen species for the TSF pond over time to allow predictions of the time to reach required limits.

8. Wildlife Deterrents

There are concerns that wildlife may access the TSF-C Pond while there are concerningly high levels of cyanide present. Although there is some fencing present throughout the Site to deter wildlife from entering ponds, there does not appear to be sufficient fencing throughout the Site to ensure wildlife cannot enter potentially dangerous Ponds. This is a concern given that reported TSF-C Pond levels are above the 50 ppm goal outlined in the CMP. UFN and LDN were also informed at the October 23rd EIoMC call that there are two blast canons installed in the TSF area to scare off birds that may try to access the TSF-C Pond and that BW Gold is planning to expand this before migration season 2026. Further details on the planned usage and efficacy of the blast cannons were not discussed.

UFN and LDN request an update from BW Gold on a plan to ensure wildlife cannot access the TSF-C Pond given dangerously high cyanide levels.

9. Update Cyanide Management Plan

An update to the Cyanide Management Plan required under EA Condition 32 is required as the Cyanide Management Plan is not meeting the intent of the Conditions. EAO Condition 32 requires a Cyanide Management Plan (CMP) with "the means by which cyanide-containing effluent will be monitored and treated prior to discharge, including discharge to the TSF". The CMP is lacking in

that it does not explicitly identify the SOPs (Section 6.1.4) for operation of the cyanide destruction plant (the CMP simply states they will be developed). The CMP requires monitoring of WAD cyanide concentrations in the discharge to the TSF and actions to take in the event of increasing concentrations at the compliance point. The compliance point is not specified and should be defined.

Examples include (but are not limited to) the following:

- Please provide in the CMP the SOPs for operation of the cyanide destruction circuit including monitoring for WAD cyanide concentrations in the discharge to the TSF and actions taken in the event of increasing concentrations at the compliance point (what compliance point is referred to the CMP, section 6.1.4)?
- Source suggests that no tailings slurry leave the mill and be transported to the TSF unless the water concentration in supernatant meets expected levels of cyanide (< 0.02 mg/L).[2]
- Who is the "cyanide champion(s)" referred to in the CMP?
- Please include the current names of staff responsible with cross-shifts for roles related to the CMP.
- Please add to the list of roles in the CMP: Mr. Randy J. Agius (or another QP), designated as the responsible QP for the cyanide destruct circuit. The CMP should clearly define this role to ensure accountability for verifying that the cyanide destruction circuit consistently achieves the predicted effluent concentration. We ask that a name be added to the plan and that name be updated as needed as this is a critical role in the CMP and care and attention to the role in the CMP is warranted.
- Please add to the CMP the required limit (0.02 mg/L WAD cyanide) for effluent leaving the cyanide destruct circuit.

10. Timeline to Assess Risks

There is a significant concern with the ability to discharge from the TSF as required in the next few years because of the high cyanide levels and lack of design for treatment systems to handle elevated levels. This risk needs to be assessed within a reasonable timeframe. Please provide a timeline within which this risk will be assessed. It is important that the EOR for tailings dam safety provide approval of this risk assessment and ensure the ability to maintain tailings beaches in the case that there is accumulation prior to successful discharge from the TSF to the receiving environment.

The timeline to resolve the cyanide destruction mal-functioning issue and achieve expected/predicted levels (i.e. full cyanide destruction) should be outlined and reviewed by UFN and LDN.

[2] A cease mill operation and cease discharge to the TSF would assist with success of the cyanide destruction plant to meet the predicted levels.

Closing Remarks

Thank you for the opportunity to provide comments on the cyanide accumulation in the TSF-C pond and groundwater seepage.

If you have any questions, please contact the undersigned.

Yours truly,

Source Environmental Associates Inc.

Per:

Rina Freed, Ph.D., P.Eng.
Senior Environmental Engineer
rina.freed@seamining.ca

Martin Shin, M.A.Sc., E.I.T.
Project Engineer – Environmental and Mining
martin.shin@seamining.ca

Sally Turnbull, B.Sc.
Environmental Consultant
sally.turnbull@seamining.ca

Engineers and Geoscientists British Columbia Permit to Practice Number

Source Environmental Associates Inc. : 1002433

TECHNICAL MEMORANDUM

Date: **October 27, 2025**

To: **Kasandra Turbide, Doug Casimel, Kirsten Chapman, Nechako First Nations;**

From: **Patrick Littlejohn, Ph.D., P.Eng., Farzad Mohamm, Ph.D., P.Eng., Georgina Farah, B.Sc., M.A.C.P.**

Subject: **Cyanide Destruction and Water Treatment for the Blackwater Project**

Source Environmental Associates Inc. (Source) was retained by Nechako First Nations (NFN)) to provide technical review services associated with the Blackwater Gold project (hereafter, the Project), owned and operated by BW Gold Ltd. (hereafter, BWG). Source was requested to review a technical memo, dated September 29, 2025, that was submitted to BC Ministry of Mines and Critical Minerals by BWG in response to M-246 permit condition C.5.(e)(iii), hereafter "*the BWG Memo*". The BWG Memo pertains to the status of the Membrane Water Treatment Plant (WTP) and the quality of water in the project's Tailings Storage Facility C (TSF C).

Background

Mineral processing for the project involves cyanide leaching of ore to dissolve gold, gold recovery with carbon, and then application of cyanide destruction to tailings to destroy cyanide before tailings are directed to TSF C. Cyanide usage at the Project began in late 2024.

The Project design includes a membrane water treatment plant (WTP) designed to treat TSF C supernatant. The membrane WTP is necessary for addressing water that is laden with cyanide/cyanide detox chemicals. The membrane WTP has not been constructed yet. The Project currently has a metals removal WTP that is operational but this system is not suitable for treating the TSF C supernatant.

The membrane WTP is required to treat TSF water for discharge to maintain an appropriate water level in the TSF. The expectation is that water treatment and discharge from the TSF may be **required** starting in mid-2027[1], depending on weather and water accumulation at site. It may be **prudent** to begin discharging earlier than that to maintain appropriate water level. The membrane WTP is expected to be operational in mid-2026.

Mine contact water in TSF C contains a variety of contaminants of potential concern (COPCs) including cyanide, cyanide destruction by-products, and cyanide destruction reagents. As these species are difficult to model and predict accurately, the Project's Mines Act permit includes a condition mandating BWG assess the expected versus actual quality of TSF C water and to

[1] September 29, 2025 water balance model WBM reconciliation document, Figure 4.1

compare to the design basis for the membrane WTP. This was conducted by BWG and is described in the BWG Memo.

Summary of Findings

The following are Source's key findings from review of the BWG Memo:

- The site's cyanide destruction circuit is not functioning even close to its design specifications. The system has clear process control challenges that has led to poor cyanide removal. pH monitoring data shows numerous excursions of pH into the acidic range, as low as pH 4, which represents a risk to worker safety related to potential volatilization of cyanide gas.

- As a result of the consistent failure of the cyanide destruction circuit to meet specifications, the TSF C supernatant pond contains approximately one million times (1,000,000x) the level of cyanide that was projected during permitting and was used as the design basis for the Membrane WTP. Several other key parameters are also orders of magnitude higher in TSF C supernatant than was projected in water quality modeling.

- The Membrane WTP as originally designed and as modified per the BWG Memo is not capable of treating TSF C supernatant with its current quality. Treatment of TSF C water with the Membrane WTP as designed would almost certainly generate acutely toxic effluent, and there is high likelihood of acute toxicity in site discharge even if Membrane WTP effluent was diluted through both the Water Management Pond (WMP) and the Freshwater Reservoir (FWR). The author of the appendix to the BWG Memo does not even mention the risk associated with treatment of high levels of cyanide and so it is not clear that the WTP designer appreciates the risk that elevated levels of cyanide represent to WTP performance.

- Even if the cyanide destruction circuit were functioning according to specifications today, the ~2.5 million cubic meters of cyanide laden water currently stored in TSF C represents a large water treatment and water management challenge, as the Project's water management plan was predicated on successful destruction of cyanide prior to tailings deposition in TSF C.

- Urgent action is needed both to fix the cyanide destruction circuit and also to destroy cyanide already deposited in the TSF.

- The present situation underscores the need to action Source's repeated request for better cyanide accounting and reconciliation in reporting.

- Source requests ongoing collaborative engagement including discussion with BWG's relevant Qualified Professionals (QPs) in order to proactively address this issue.

More detailed discussion of review findings are presented in the following sections.

Comments & Recommendations

1. Need to Improve Operation of the Cyanide Destruction Circuit

The CN destruction system is not performing effectively, as evidenced by the presence of approximately 1,000,000 times more WAD cyanide in the TSF C supernatant pond than projected in the water quality model submitted during permitting (~30 mg/L weak acid dissociable (WAD) cyanide in the TSF C supernatant versus 0.00002 mg/L WAD cyanide expected in the TSF C supernatant[2]). The BWG memo provides operating data from the cyanide destruction circuit that provides insight into why the system is not functioning properly.

In particular:

- Sustained oxygen deficiency in the cyanide destruction circuit. The BWG memo documents significant and ongoing O_2 deficiency in the detox reactor (BWG memo, Figure 2). Adequate dissolved oxygen (and air flux) is critical to oxidize cyanide to cyanate and onward; chronic oxygen limitation alone will depress reaction rates and conversions across all operating windows.

- Poor pH control, with pH consistently outside the required range. Operating data shows the process repeatedly operated at pH values as low as ~4 and above ~12, instead of the required pH 8–9 band for SO_2/Air detox (BWG memo, Figure 3). Operation below pH 7 favours formation/release of cyanide gas, while operation above pH 10 slows reaction kinetics and destabilizes copper catalysis—both outcomes materially undermining detox performance. The potential for volatilization of cyanide also represents a health and safety risk to workers.

- Under-dosing of SO_2 and copper catalyst. Recorded reagent feeds were frequently below the stoichiometric and catalytic setpoints needed for the site's CN loadings and residence time (BWG memo, Figure 4). Starvation of SO_2 limits destruction of cyanide and inadequate copper depresses catalytic turnover, together explaining the elevated residuals observed downstream.

[2]MAEMA joint application, Appendix 5-H, Membrane WTP Design Report, Table 3-5

One consequence of the above is that the site may be in contravention of clause 1.1.5 of the Project's Environmental Management Act permit, which mandates that tailings slurry deposited in the TSF must be '…*typical of concentrator tailings from the milling of ore [as described in permit application documents]*'. The permit application documents describe near complete destruction of cyanide prior to deposition of tailings in the TSF.

Recommendations:

Source has the following recommendations for improvements to the cyanide destruction circuit. These recommendations are made without benefit of visiting the Project site and observing the specifics of the cyanide destruction circuit but are informed by experience with cyanide destruction at other mine sites.

- **Oxygen Supply:**
  - Urgent implementation of additional oxygen supply equipment, as described in the BWG Memo
  - Include measurement of gas flow rate to each reactor to allow for mass-flow control of air supply
  - Use online monitoring of dissolved oxygen and control flow on this basis (i.e. dissolved oxygen setpoint of >5-6 mg/L with high/low alarms and diversion/cessation of flow on low DO)
- **pH Control:**
  - Add automatic pH control with dual isolated pH probes and validation checks
  - Control flow based on pH with diversion/cessation of flow if pH is <~7.8 or >~9.5
  - Ensure cyanide gas risk mitigation measures such as ventilation, HCN gas detection, operator training and standard operating procedures for pH excursions are appropriate and up to date
- **Reagent Dosing:**
  - Pace SO_2 and copper dosing to flow with trim controlled by ORP/DO, do not use either as the sole control method
  - If not already present, add online data historian for pH, DO, ORP, flow rate, feed quality, reagent dosage rates. Use this information for regular review and tuning.
- **Handling of Off-specification Effluent:**
  - If the cyanide destruction circuit is not on spec, partially treated tailings slurry should be recycled and retreated. Continued deposition of high cyanide tailings into the TSF will not allow the TSF quality to recover.

Source notes and supports BWG's choice to retain a cyanide destruction specialist and encourages BWG to involve this person in recommissioning/restart of the circuit, revision of control strategy, and updates to SOPs.

2. Membrane WTP Design is Not Suitable for Current TSF C Water

The Membrane WTP as originally designed and as modified per the BWG Memo is not capable of treating TSF C supernatant with its current quality. At best, reverse osmosis membranes will consistently reject ~85% of WAD cyanide, meaning that if the system treats water containing 30 mg/L WAD cyanide, the effluent of the system will contain 4.5 mg/L WAD cyanide. This is well above the BC water quality guideline for protection of aquatic life (acute) of 0.01 mg/L WAD cyanide.

Even if effluent was diluted with cyanide free water through the WMP and FWR, the maximum dilution of cyanide in these structures would be on the order of 100x, which, if applied to 4.5 mg/L WAD cyanide in Membrane WTP effluent, would still yield 0.045 mg/L WAD cyanide in site effluent directed to Davidson Creek. For reference, failure of acute toxicity testing has regularly occurred at the Eagle Gold mine when cyanide levels are in the range of 0.015-0.020 mg/L WAD cyanide. If the Membrane WTP was consistently treating TSF supernatant and discharging to the WMP, the level of dilution prior to discharge to the environment would be less than 100x.

Further, it is concerning that the appendix to the BWG Memo authored by Bi Pure Water does not even mention the dramatically higher levels of WAD cyanide in TSF C water or how that could impact WTP performance. Source is unaware of any analogue reference sites that demonstrate >99% removal of cyanide from mine contact water with reverse osmosis. The use of reverse osmosis membranes as the primary method of preventing cyanide from entering treated water is fraught and not conservative. Minor pH excursions, variations following clean-in-place, and cyanide complexation all have potential to cause regular exceedance of acute guidelines of cyanide in effluent.

Recommendations:

- Source encourages BWG and Bi Pure to holistically consider the differences between the current TSF C water quality and what was predicted and used as design basis for the membrane WTP, with particular attention paid to the impact of high levels of influent cyanide and copper on membrane WTP performance. An updated design basis should include a range of feed qualities that encompasses the current TSF C water quality, including WAD cyanide, all nitrogen species, TDS, and temperature.
- Methods of incorporating cyanide destruction into the membrane WTP flowsheet should be evaluated and included in the flowsheet. For example, application of the air/SO_2 process or hydrogen peroxide as a pretreatment and/or on the effluent. Source recommends investigating and including both pre-treatment and post-treatment for residual cyanide to account for the risk of future process upsets.
- Please provide any reference sites/analogue data that show results of membrane treatment of waters containing high levels of WAD cyanide and cyanide-metal complexes

(i.e. copper cyanide). Reference sites/analogue data should include influent/effluent quality and comparison of the water quality matrix (i.e. holistic assessment and not focus on select parameters).

- In the absence of relevant reference sites/analogue data, BWG should undertake site-specific bench/pilot testing to evaluate the impact of elevated levels of cyanide on treatment performance and ensure that process design reflects achievable results.
- Engineering design of the membrane WTP should include a detailed assessment of cyanide-specific risks on process operation, results, and worker safety, and mitigations for these risks should be integrated into the design as implemented.

3. Managing and Improving TSF C Water Quality

Currently there is approximately 2.5 million cubic meters of water in the TSF C supernatant pond. Even if the cyanide destruction circuit starts working perfectly immediately and there is no further addition of excess cyanide into the TSF, there is still the question of how to manage (destroy) the existing inventory of cyanide in the TSF, and subsequently, cyanide destruction residuals.

While cyanide does gradually degrade through natural processes, natural processes are much slower in the fall/winter than in the summer, and natural degradation will not keep up with continual addition of new cyanide with tailings.

BWG has stated that they intend to increase the rate of milling earlier than in the original mine plan, which would necessitate increased usage of cyanide. Increasing the throughput and mass load of cyanide through the cyanide destruction circuit will increase risk to the downstream environment if water cannot be managed with the existing infrastructure.

Recommendations:

- Development of an integrated cyanide management plan that includes not only improvements to the existing cyanide destruction system as well as methods of managing the existing cyanide inventory in the TSF supernatant.
- Consider methods of improving water quality in the TSF (e.g. dosing hydrogen peroxide into the supernatant pond or a slipstream thereof) to reduce the mass of untreated cyanide in the TSF supernatant.
- Any water/cyanide management planning must be backed up by quantitative water quality/water balance modeling and scheduling. Such water quality modeling should include accounting of not only cyanide but also cyanide destruction residuals (i.e. nitrate, nitrite, ammonia) as well as cyanide destruction reagents (i.e. copper, sodium, and sulphate)

- Any management approach should account for not only current milling rates but also potential increase in milling rate (i.e. expansion plans noted in September 2025[3])

4. Quality of TSF C Water with Respect to Other Parameters

The BWG Memo shows the differences between predicted and actual concentrations of selected species in TSF C. Given the divergence from projections, comparison of a broader range of parameters is requested.

Information Request:

- Please provide complete data on the current quality of TSF C, including standard metals for analysis, anions, and nutrients. Sodium, zinc, and sulphate are all particularly relevant in this context but the full analytical suite is requested.

5. Quality of TSF C Seepage and Notification of Exceedances

On October 22nd, the NFN received a Level 1 Groundwater Trigger Response Plan (TRP) exceedance at groundwater well GT21-03S (Figure 1.0 and 2.0) for WAD cyanide and nitrite as well as a Level 3 exceedance of cobalt. A Level 1 exceedance in the Groundwater TRP is defined as above 1.5 x's the baseline concentration, while a Level 3 exceedance is defined as exceeding the Contaminated Sites Regulation standard for Aquatic Life.

The quality of TSF C supernatant pond water has impacted the quality of seepage through the TSF C Dam, and the above TRP exceedance indicates that existing seepage capture/groundwater protection measures are insufficient. The consequence of the failure of seepage capture/groundwater protection measures may be greater because of the high levels of cyanide in the TSF C. A fulsome review of the groundwater TRP exceedance is outside the scope of the present memo, but the NFN technical team will provide more detailed comments on this in the future.

[3] https://www.princegeorgecitizen.com/local-news/artemis-gold-announces-expansion-plans-for-blackwater-mine-11215945

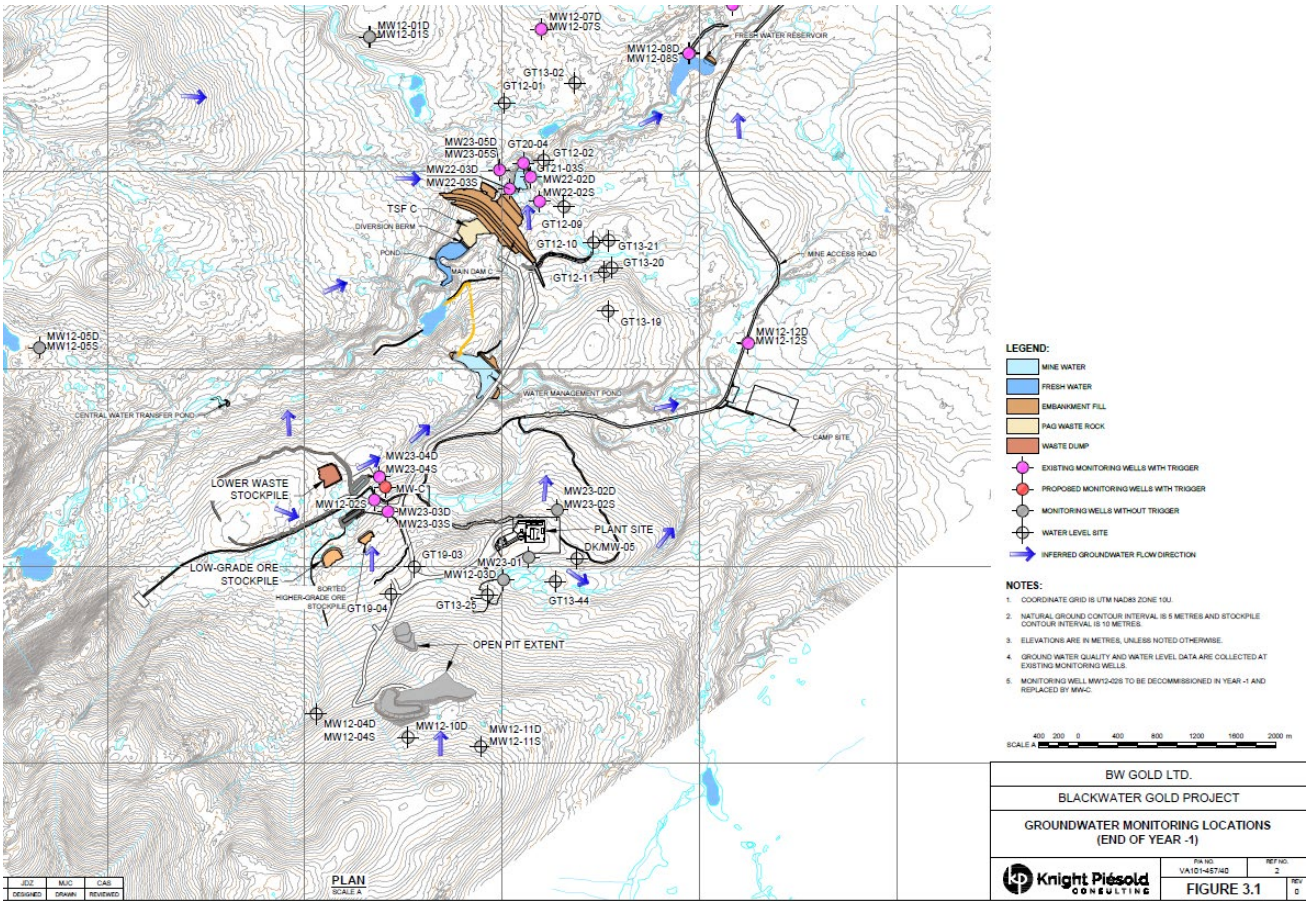


Figure 1.0 Groundwater Monitoring Locations[4] – End of Year -1

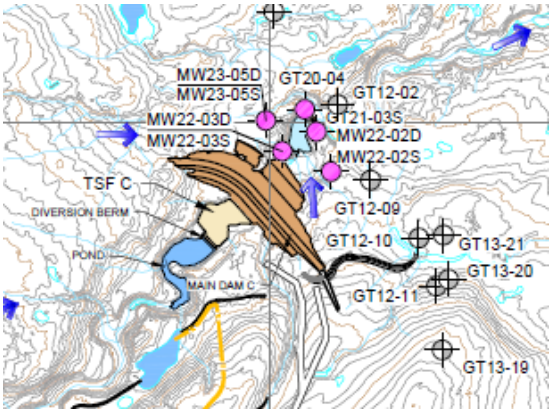


Figure 2.0 GT21-03S Groundwater Monitoring Well Location

[4] Blackwater Mine Groundwater Trigger Response Plan for Non Point Source Discharges to Ground, May 17 2024, Knight Piesold

6. Need for TSF Water Quality Target

Comment #3 of this memo describes the need to improve water quality in TSF C. In line with this comment, there is a need to establish a numeric water quality target for TSF C that includes cyanide and possibly other water quality parameters. Such a target should integrate the following goals:

- Protect wildlife that may come in contact with TSF C supernatant
- Protect groundwater that may be affected by TSF C seepage
- Prevent cyanide from entering site water management infrastructure that is not meant to contain cyanide (i.e. the WMP and FWR)
- Ensure TSF C water quality is maintained in a range that is suitable for treatment with the Membrane WTP while meeting site discharge needs
- Achieves site discharge limits and meets all downstream water quality objectives

This target may be the same as the TSF C water quality predicted in the water quality/water balance model submitted during permitting or may be a different value, as long as it integrates all of the above concepts.

Recommendation:

- Develop a TSF C water quality target that integrates protection of wildlife and groundwater, prevents cyanide from entering site water management infrastructure, allows the Membrane WTP to meet site discharge needs, and protects the downstream environment.
- A TSF C water quality target should include cyanide at a minimum but other parameters may be valuable to include as well (i.e. copper, nitrite, ammonia, cobalt).

7. Need for Cyanide Destruction Effluent Target

In line with Comment #6 of this memo, a numeric water quality target for effluent from the cyanide destruction system is required. This will help focus cyanide destruction circuit improvements and will help integrate improvement measures with site needs with respect to TSF C water quality.

In the permit application, the design basis for the cyanide destruction plant was as follows[5]:

- Influent WAD cyanide: 300 mg/L
- WAD Cyanide detoxification target (not to exceed): 25 mg/L
- WAD Cyanide detoxification target (not to exceed): 10 mg/L

[5] Joint MAEMA permit application, Appendix 3-F, Appendix 3, document 105177-ER-00000-22222-001, area 4700

Also in the permit application, the water quality/water balance model source term for process water was 0.03 mg/L WAD cyanide[6]. It is not clear if this difference between mill design basis and source term reflects misalignment in the application or misunderstanding on the part of the reviewer.

Regardless of permit application documents, water quality targets for the effluent of cyanide destruction should be developed and aligned with cyanide planning per other comments in this memo.

Recommendation:

- Develop water quality target(s) for cyanide and possibly other parameters for the effluent of the cyanide destruction system. Such targets should be integrated into other design, planning and modeling activities described in this memo.

8. Discharge Limits and Regulated Parameters

Neither WAD cyanide nor copper are regulated parameters per the site's discharge permit under the Environmental Management Act. Both of these species are considerably higher in TSF C water than was projected and are relevant to environmental impacts and non-degradation targets.

Recommendation:

- Please monitor and evaluate these species in particular and discuss these parameters in future annual reporting. Levels of these species are highly elevated compared to predictions and are environmentally important, including both immediate toxicity as well as non-degradation targets in the downstream environment and Yinka Dene Water Law.

9. Cyanide and Nitrogen Reconciliation Reporting

In many previous submissions over the course of environmental assessment, permitting, and mine operations, Source has advocated for analysis and reconciliation of predicted versus actual levels of nitrogen species (i.e. cyanide, nitrate, nitrite, ammonia, cyanate and thiocyanate) and byproducts associated with cyanide destruction (i.e. sodium, copper and sulphate). This analysis was not mandated in the site's permits as part of the Nitrogen Management Plan. The need for this analysis to include cyanide and cyanide species has not been recognized by all parties at other tables.

The present situation where actual concentrations of these species are dramatically out of alignment with predictions is an object lesson in how these species can be difficult to predict. This

[6] Joint MAEMA permit application, Appendix 5-D, Blackwater Geochemistry Source Term Report, Table 4-7

situation supports the reporting and reconciliation actions that Source has advocated for in the past.

Recommendation:

- Please revise the site's Nitrogen Management Plan to meaningfully incorporate assessment of cyanide and cyanide destruction species. Source has authored extensive technical comments on this topic, most recently in a memo dated February 11, 2025.

10. Meeting and Follow-up

As the previous comments make clear, the status of TSF C supernatant water quality increases environmental risk in a variety of ways and must be addressed on multiple fronts. This is a highly concerning issue and Source requests ongoing collaboration between BWG and UFN, LDN and NFN on the subject including at the detailed technical level. Source staff have extensive, highly relevant experience on this topic and seek proactive technical engagement to address this issue and prevent environmental impacts.

Recommendation:

- Source requests a meeting to discuss this issue in detail and that BWG bring technical staff/QPs on the subject of water treatment, cyanide destruction, water management and water quality modeling.

Closing Remarks

Thank you for the opportunity to review this element of the Blackwater Gold project on behalf of UFN, LDN and NFN. We look forward to good faith, proactive technical engagement to resolve this issue and prevent environmental impacts, as well as impacts to rights and title. Please direct any technical feedback to the undersigned.

Source Environmental Associates Inc.

per:

Patrick Littlejohn, Ph.D., P.Eng.
Senior Chemical Engineer
patrick.littlejohn@seamining.ca

Farzad Mohamm, Ph.D., P.Eng.
Senior Chemical Engineer
farzad.mohamm@seamining.ca

Georgina Farah, B.Sc., M.A.C.P
Environmental Scientist
georgina.farah@seamining.ca

Blackwater Gold Mine
IEM Site Visit Report 031
June 11, 2025

Prepared By
EDI Environmental Dynamics Inc.
3810 18th Ave
Prince George BC V2N 4V5

EDI Contacts
Graeme Paterson, PAg, CPESC
Leslie Chamberlist, PAg, CPESC
Independent Environmental Monitor Leads

EDI Project
21P0403
June 2025

mPRO

EDI
ENVIRONMENTAL DYNAMICS INC.
Down to Earth Biology

This page is intentionally blank.

1 PROJECT OVERVIEW

The Blackwater Mine Project is being developed by Blackwater Gold Limited (BWG), a subsidiary of Artemis Gold Inc. (Artemis). The Environmental Assessment Certificate (EAC) M19-01 was issued on 21 June 2019 and Condition 12 of the EAC requires the Holder to retain the services of an Independent Environmental Monitor (IEM) to observe, record for, and report to the BC Environmental Assessment Office (EAO) and Aboriginal Groups on compliance with the Certificate; and provide information to the EAO and Aboriginal Groups, BC Ministry of Energy, Mines and Low Carbon Innovation (EMLI) , BC Ministry of Environment (ENV), and BC Ministry of Forests (MOF) as directed by EAO.

A Decision Statement issued under Section 54 of the Canadian Environmental Assessment Act (CEAA 2012) for the Project was issued on 15 April 2019. Condition 9 of this Decision Statement requires the Proponent to retain an IEM who shall advise the Proponent, the Agency, and Indigenous groups if, in their view, the activities do not comply with the conditions set out in the Decision Statement. The IEM shall also advise the Proponent, the Agency, and Indigenous groups whether measures should be taken in respect to these activities. IEM reports are prepared to satisfy both EAC and CEAA conditions.

1.1 SITE VISIT SUMMARY

The IEM team completed a site visit on June 11, 2025, with representatives from the British Columbia Environmental Assessment Office (BC EAO) and the BWG Environmental team.

Summaries of the site locations visited, and subsequent activities, observations, and ongoing matters are described in the tables below.

Site Visit Summary

Date (dd/mm/yyyy)	IEM Team On-site Personnel	Monitoring Sites/Inspection Focus
11/06/2025	Leslie Chamberlist	Air quality monitoring station, Operations Camp, Plant Site, Construction Camp, Northern Diversion Channel, Tailing Storage Facility, Water Management Pond, and Mt Davidson exploration road. Inspections focused on wildlife deterrents, waste management and water management.

Activities/Observations (Record ID #s included in this table correspond to the Environmental Issue Tracking Log record ID #s)	Non-Compliance Observed?
Plant Site	
Following the observation of dust generation and deposition from the drop point on the conveyor during the site visit in March 2025 (as detailed in IEM Report 028), a request for information (RFI) inquiring whether spray bar sprinklers (as described in Section 8.2 of the Air Quality and Fugitive Dust Management Plan) were being used at the material transfer points on the primary and secondary crusher circuits, conveyors, and stockpile drop points. In a response provided on April 19, 2025, BWG indicated spray bar dosing stations are currently installed on the conveyor (at both crusher screen discharge chutes) and that a cold temperature reagent (known as 'IPAC') is being added for dust suppression during periods of cold temperatures. In addition, it was detailed that water trucks have been used at the primary crusher to apply water to material prior to processing when above freezing temperatures permit. Section 8.2 of the Air Quality and Fugitive Dust Management Plan details that spray bar sprinklers will be installed as a mitigation measure at material transfer points to limit dust emissions and identifies stockpile drop points as a location where this will be applied. As stockpile drop points are described as a location where spray bar sprinklers will be installed, the IEM submitted a follow up RFI to inquire if sprayers are currently present at the stockpile drop point at the terminus of the plant site conveyor. On April 26, 2025, BWG provided a response which indicated there are no spray bars present at the end of the conveyor and that currently they are only installed at the discharge chutes onto the conveyor. BWG further advised that additional spray bar locations are being reviewed as seasonal temperatures have increased. The IEM team continues to discuss this matter both internally and with BC EAO. **This item is held over from the three previous reporting periods (IEM Reports 028, 029 and 030).** **Update on this matter for IEM Report 031**: Plant site visited with EAO; EAO continuing follow up on this item. (Photos 113867-3 and 113867-4).	No
Water Management Infrastructure	
During the previous site visit in March 2025 (as detailed in IEM Report 028), the pump at the Central Water Transfer Pond (CWTP) was observed to not be in operation. This pump is used to divert water to the Davidson Creek discharge point as part of the maintenance of permitted downstream flow levels. Following onsite discussions, the IEM understands the pump had mechanical issues that required repair and that this would be completed shortly. BWG staff indicated that under normal circumstances, if water could not be pumped from the CWTP to Davidson Creek then water from the Water Management Pond (WMP) would be directed to supplement downstream flows. The IEM understands that at the time of the site visit BWG was not discharging water from the WMP to the Davidson Creek system due to concerns with elevated turbidity of the water within the pond. As a follow up measure, the IEM submitted an RFI inquiring if the project remains in compliance with Section 3.8 of the Federal Decision Statement (FDS) and the *Fisheries Act* Authorization (which detail that the Project shall maintain in-stream flow needs in Davidson Creek during all phases of the project) during periods of time where no water is being discharged from the CWTP or the WMP to Davidson Creek. BWG provided a response on April 2, 2025, which detailed that in February 2025, flow levels within Davidson Creek had been documented below the in-stream flow requirements detailed in the project's *Fisheries Act* Authorization (FAA) and that these instances had been reported to Fisheries and Oceans Canada (DFO) in accordance with the projects FAA reporting schedule. As the response from BWG received on April 2, 2025 indicated the project had not been in compliance with the FAA, and, because the Project's FAA is associated with the FDS (within the IEMs purview), a follow up RFI was submitted on April 2, 2025, inquiring whether the non compliance had been reported to the Impact Assessment Agency of Canada (IAAC) and accompanying nations detailed under the FDS. Additionally, the IEM requested details about which days the project has not met the FAA/FDS requirements for discharge to Davidson Creek, how often flow rates are sampled/monitored (for example, continual flow data or spot check), and confirmation water discharges are now back within compliant ranges. Responses from BWG were provided to the IEM team on May 14, 2025, which provided additional details related to this matter. The dates identified where instream flow needs (IFN) within Davidson Creek were unable to be met were confirmed to be on February 6, 7, 9 and March 14 and 15, 2025. BWG confirmed since March 15, 2025 there have been no instances of flow data below the IFN requirements. BWG detailed continuous flow data is recorded in Davidson Creek during open water seasons. During winter conditions, due to ice build up and the rating curve between stream levels and flow rates becoming inapplicable, handheld flow measurements are taken weekly. In response to the IEM inquiries relating to the notification requirements to IAAC (and accompanying First Nations), BWG detailed they are required to report annually to IAAC, including during scenarios when flow measurements fall below IFN within Davidson Creek and that the reporting requirements under which IAAC must be notified are detailed within Table 7-1 of the Accidents and Malfunctions Administration and Communication Plan (AMACP). Upon consulting Section 7, Table 7-1, and Table 2.2-3 of the AMACP (which are all portions of the document that work in concert to form the external reporting requirements referenced in BWGs response), the IEM team noted an example of a water supply system (pump failure) specifically detailed within Table 2.2-3, which was classified as being an incident with a 'moderate' level of consequence. Accidents/malfunctions classified as 'moderate,' are, in accordance with Table 7-1 of the AMACP, required to be reported within 24 hours to Indigenous Monitors, EMC Members, Health Emergency Management BC, IAAC, and BC EAO. As it is the understanding of the IEM team that IAAC (and potentially other required parties) were not reported to within 24 hours of events related to IFNs within Davidson Creek being out of compliance on February 6, 7, 9 and March 14, and 15, 2025, (as required for 'moderate' level events in Table 7-1), a non-compliance was issued for failure to notify external parties in accordance with Table 7-1 of the AMACP. This item will remain open until the IEM team has received confirmation from BWG that all parties requiring 24-hour notice in Table 7-1 have been notified of this series of incidents. **This item is held over from the three previous reporting periods (IEM Reports 028, 029 and 030).** **Update on this matter for IEM Report 031:** Following the issuance of IEM Report 030, Source Environmental (representing the Nechako Nations) reached out to the IEM team on May 28, 2025 and indicated that in addition to the dates where IFNs were not met in the IEM report, that it was their understanding that IFN levels in Davidson Creek were also not met between February 15-23, 2025. The IEM team reached out to BWG to confirm whether this was the case and to provide rationale for the discrepancy in reporting. Response not yet received at time of reporting.	Yes

The IEM and EAO visited the North Diversion Channel to check on erosion control measures. Vegetation was observed growing through the erosion control blankets installed in areas along the North Diversion Channel (Photo 113870-1).	No
Tailing Storage Facility	
Construction continues within the Tailing Storage Facility (TSF) (Photo 113871-1).	No
While at the TSF, wildlife observations and deterrents were discussed. Artemis staff indicated wildlife were not commonly observed in this area. The primary deterrent for wildlife is the constant truck traffic 24 hours per day. It is the IEM's understanding that 5 wildlife cameras are being deployed in the coming weeks with 2 being located at the TSF. Other wildlife exclusion methods used in the TSF include plastic owls for birds and surveys for amphibians with salvage completed where necessary.	No
Workers Accommodation – Operations Camp	
Hydroseeding, live staking, and amphibian fencing was observed adjacent to the Operations Camp parking lot. The fence was installed to prevent amphibians from entering the parking area (Photo 113866-1).	No
Erosion and sediment control measures (spring berms) installed within the perimeter ditch around the Operations Camp were observed to be capturing sediment. Maintenance may soon be required to allow the spring berms to continue to function as intended.	No
During the walk around of the Operations Camp, the blocking under the kitchen trailers was noted to be absent, allowing wildlife access under the trailers (Photo 113864-1).	Yes
A mass of amphibian eggs was observed in one of the perimeter ditches behind the Operations Camp. Following onsite discussions, it was understood BWG plans to delineate this area. A request for information was submitted to Artemis for confirmation and photos once the work has been completed. Confirmation was received that the amphibian eggs were salvaged and relocated to a nearby appropriate wetland on site. Salvage of the eggs was conducted due to the proximity to the camp infrastructure and limited available routes for toads to migrate to wooded areas.	No
Kitchen grease and oil was observed leaking to ground from a waste container outside the kitchen of the Operations Camp (Record ID 113862). On June 19, 2025, confirmation the grease spill was cleaned up was received.	Closed
Workers Accommodation – Construction Camp	
A sewage leak beneath Bunkhouse 1 at the Construction Camp was reported by a worker. The site was visited by EAO, Artemis representative, and the IEM confirming the sewage leak. A request for information was submitted to Artemis to describe plans to clean up this spill, including a timeline for when it will be completed, an estimate of the volume of the spill, and whether any external regulatory/nations require notification and if so, have they been notified. Additionally, following the removal of the bunk house, will there be any testing of soils and excavation (if required) to confirm the spill has been remediated (Photo 113868-1).	No
Cigarette butts were noted on the ground outside the entrance to the dorms at the Construction Camp (Record ID 113874). On June 19, 2025, confirmation the cigarette butts had been cleaned us was received.	Closed
Mine Site Access Roads	
EAO and the IEM visited the Davidson Exploration Road during the recent visit to site. Large woody debris has been placed across the road at regular intervals (Photo 113872-1).	No

Notable Environmental Incidents

Record ID No(s).	Date (dd/mm/yyyy)	Location	Description of Event

Environmental Issue Tracking Log – Open Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)
113864	11/06/2025	Skirting around the base of the kitchen trailers was noted to be absent.	Provide confirmation that skirting has been installed in accordance with Wildlife Management and Monitoring Plan (Rev I.1) Section 3.1 (Infrastructure Design Management).	31/07/2025
113346	14/05/2025	Failure to notify external parties of a 'moderate level' incident (as detailed and described in Tables 2.2-3 and Table 7-1 of the AMACP) within 24 hours related to the instances on February 6, 7, 9 and March 14 and 15, 2025 when the instream flow needs (IFN) within Davidson Creek were unable to be accommodated as a result of pump failure (freezing).	Provide confirmation all parties (including Indigenous Monitors, EMC Members, Health Emergency Management BC, IAAC and BC EAO) have been notified of instances when IFN within Davidson Creek were out of compliance on February 6, 7, 9 and March 14 and 15 in accordance with Section 7 of the AMACP.	31/05/2025

Environmental Issue Tracking Log – Closed Actions

Record ID(s)	Start Date (dd/mm/yyyy)	Description	Action Required	Due Date (dd/mm/yyyy)	Follow-up	Completed Date (dd/mm/yyyy)
113874	11/06/2025	Cigarette butts on the ground outside of entrance to dorms at Construction Camp.	Store domestic wastes in sealed, wildlife resistant containers for disposal in accordance with CEMP Section 9.1, table 9.1.1 (General Mitigation Measures)	21/06/2025	Confirmation the cigarette butts were cleaned up was received on June 19, 2025.	19/06/2025
113862	11/06/2025	Kitchen grease/oil (food waste) observed leaking from waste containers at the Operations Camp.	Store domestic wastes in sealed, wildlife resistant containers for disposal in accordance with CEMP Section 9.1, table 9.1.1 (General Mitigation Measures)	21/06/2025	Confirmation the grease was remediated was received on June 19, 2025.	19/06/2025

Upcoming Construction Activities

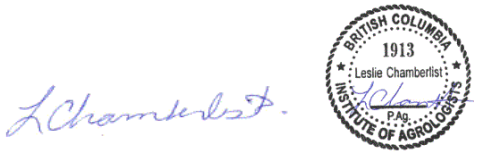
Summary of Activities	Anticipated Start Date
Fish salvage activities starting within Creek 668	July 15, 2025

Key Communications

Date (dd/mm/yy)	Communication Type	Personnel	Communication Summary
-	-	-	-

Yours truly,

EDI ENVIRONMENTAL DYNAMICS INC.



Leslie Chamberlist, P.Ag, CPESC

Independent Environmental Monitor Lead

ATTACHMENTS:

- Photos
- Site Overview map
- Summary of Previous Month (May 2025) Environmental Incidents (provided by BWG)

Distribution List:

Blackwater Gold (Artemis): Tim Donnelly, Adam Gyorffy, Mark Warbanski, Ryan Todd, Sam Lynch, Steven Hayward, Norm Fraser, Jessica Saunders, Quain Sulin, Randall Hennigar, Linda Siwallace

Ulkatcho First Nation: Alyisha Knapp

Lhoosk'uz Dene Nation: Laurie Vaughn

Stellat'en First Nation: Doug Casimel, Deane Carlson, Taneesha Raymond

Saik'uz First Nation: Kasandra Turbide, Howard Alexis

Nadleh Whut'en First Nation: Kristen Chapman, Pam Ketlo

Nazko First Nation: Stephanie Deneault, Terrance Paul, Florian Bergoin

Source Environmental Associates Inc: Martin Shin, Georgina Farah, Fraser Riddolls, Rina Freed, Anna Everett

Skin Tyree Nation: Bea Paton

Tsilhqot'in National Government: Trina Setah

Metis Nation of BC: Danielle Courcelles

Environmental Dynamics Inc (EDI): Graeme Paterson, Leslie Chamberlist, Matthew Van Osch

Impact Assessment Agency of Canada (IAAC): Mathieu Trudelle, Shannon Wallace, Carl Johansson

Environmental Assessment Office (EAO): Chris Parks, Warren Fekete, Christie Lombardi

Ministry of Mining and Critical Metals (MCM): Rachel Taylor

Ministry of Environment and Climate Change Strategy (ENV): Breanne Hill

Ministry of Water, Land and Resource Stewardship (WLRS): Duncan McColl

Photo 113867-3 Spray point at the tertiary crusher.

Photo 113867-4 Stockpile of high-grade ore at the drop point of the till conveyor.

Photo 113870-1 Vegetation has started to grow through the erosion control matting at the Northern Diversion Channel.

Photo 113871-1 Work continues within the Tailings Storage Facility.

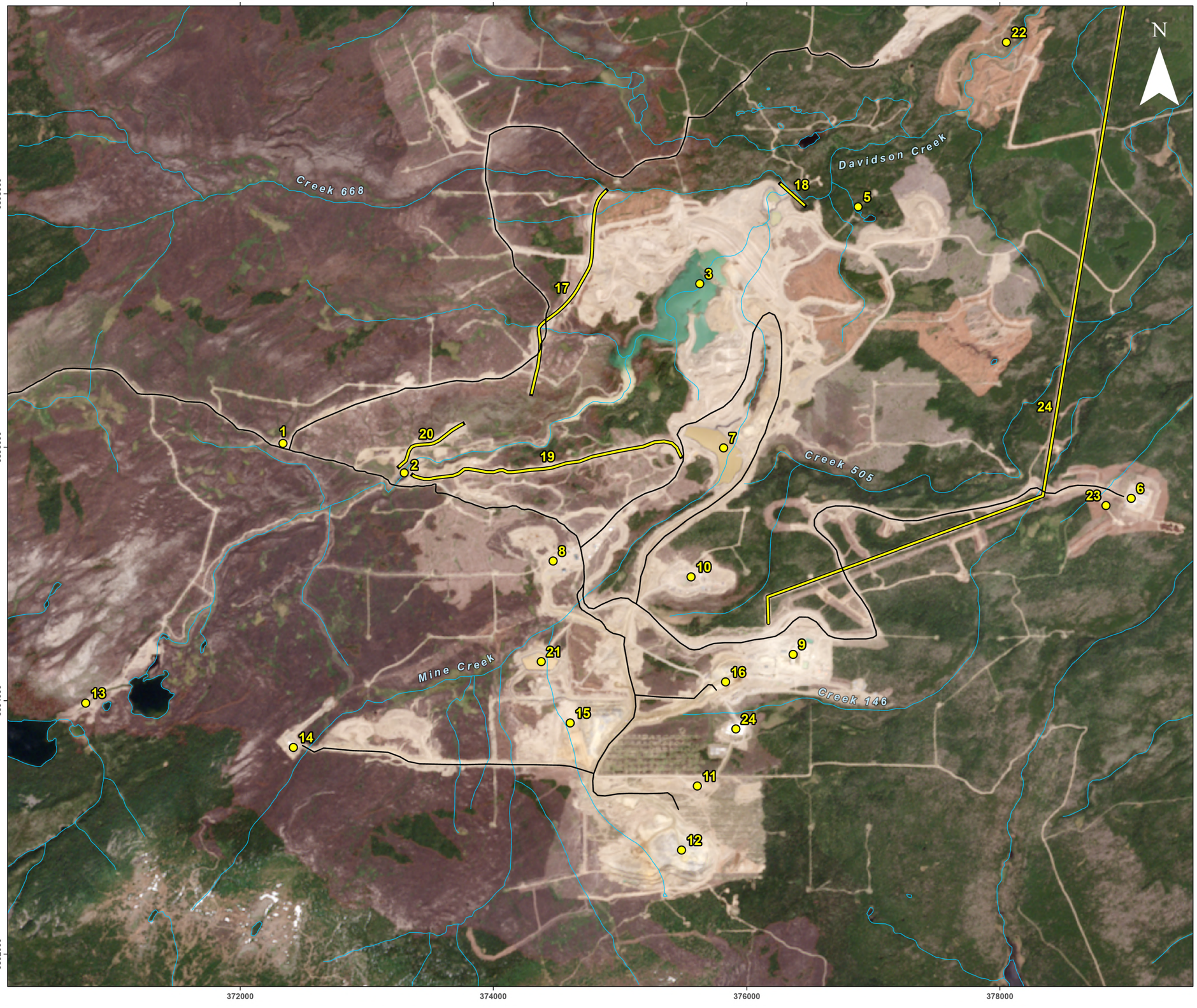
Photo 113866-1 Live willow staking, hydroseeding, and amphibian fence installed near the Operations Camp.

Photo113864-1 No skirting around the base of the kitchen trailers at the Operations Camp.

Photo 113868-1 Sewage leak below the bunk house at the Construction Camp.

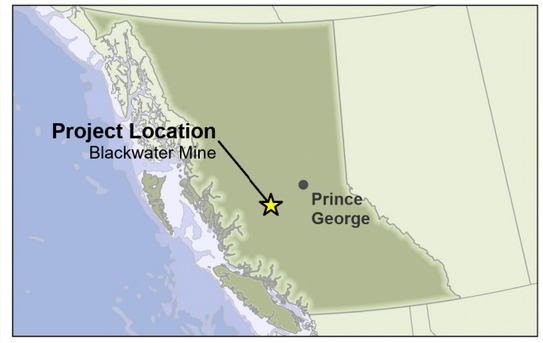
Photo113872-1 Large woody debris placed on Mt Davidson Exploration Road.

Work Space Locations



Legend

- Mine Access Road
- Watercourse
- Waterbody
- 1,Security Gate
- 2,Central Water Transfer Pond
- 3,Tailings Storage Facility
- 4,Tailings Storage Facility Dam
- 5,Water Management Pond Outfall to Davidson Creek
- 6,Operations Camp
- 7,Water Management Pond
- 8,Mobile Maintenance Yard
- 9,Plant Site
- 10,Andrew's Hill Laydown
- 11,Heavy Equipment Assembly Pad
- 12,Ore Body/Open Pit
- 13,Lake 15/16 Fish Compensation Channel
- 14,Explosives Magazine
- 15,Low Grade and High Grade Ore Stockpile
- 16,Run of Mine Pad
- 21,Low Grade Ore Stockpile
- 22,Freshwater Reservoir
- 23,Air Monitoring Station
- 24,Construction Camp
- 17, North Diversion Channel
- 18, Interim Environmental Control Dam
- 19, South Collection Channel
- 20, North Collection Channel
- 24, Transmission Line



0 0.5 1 1.5 2
Kilometres

Map Scale = 1:30,000 (printed on 11 x 17)
Map Projection: NAD 1983 UTM Zone 10N

Data Sources
- Workspaces. EDI Environmental Dynamics Inc. June 13, 2025.
- Main Basemap. CanVec 1:50,000: Government of Canada; Sentinel-2 Level 2A True Colour image June 9, 2025. Contains modified Copernicus Sentinel data 2024 processed by Sentinel Hub.

Disclaimer
EDI Environmental Dynamics Inc. has made every effort to verify this map is free of errors. Data have been derived from a variety of digital sources and, as such, EDI does not warrant the accuracy, completeness, or reliability of this map or its data.

Drawn:	Checked:		
CT / OL / CN	GP	Map 1	Date: 6/19/2025

EDI

Path: L:\PROJECTS\2021\NBC\21P0403_BlackwaterMine\21P0403_BlackwaterMine.aprx\21P0403_Blackwater_IEM_20250610

SUMMARY OF PREVIOUS MONTH (MAY 2025) ENVIRONMENTAL INCIDENTS (PROVIDED BY BWG)

ID	Hazard/ Incident Date Time	Brief Description	Location	Department	Select the immediate actions taken?	Initial Hazard or Incident details	Spilled Fluid Details	Is the spill near a creek or water body if applicable?	Regulatory Reporting Status	Material Disposal Site	Media Affected by spill	Spill Cause	Spill Clean Up Date	Spill Coordinates	Spill Source	Spilled Fluid Quantity (Liters)
2710	5/1/2025 8:00	Oil drums without proper lids containing hydrocarbons were found to be dropped off at the hazardous waste laydown	Hazardous waste Laydown (Plant site)	Warehouse & Logistics	We contacted the department who we believe to have dropped off the oil to notify them of storage requirements and to get the oil transferred into a new tote.	Hazard/Incident Date: 2025-05-01 08:00 AM; Hazards | Incident Details: -While doing the daily inspection at the hazardous waste laydown, it was noticed that a 1000L cube had been placed at the hazardous waste storage location with a large hole cut into the top of the bin. This is not how the oil should be stored. There needs to be a proper lid on the storage container to help minimize the risk of spillage.; Immediate Actions Taken - We contacted the department who we believe to have dropped off the oil to notify them of storage requirements and to get the oil transferred into a new tote., Recommended Action - Perhaps an information notice should be sent out stating the storage requirements of hydrocarbon waste.	-	-	-	-	-	-	-	-	-	-
2706	5/1/2025 8:40	Diesel spill at fuel bay	Bulk fuel bay	JDS Drilling	Spill pads were placed down immediately and effected soil was scrapped and disposed off in proper bin.	Hazard/Incident Date: 2025-05-01 08:40 AM; Hazards | Incident Details: During refueling activities, a worker accidentally knocked the fuel handle while it was outside of the fuel tank resulting in a diesel spill. Immediate Actions Taken - Spill pads were placed down immediately, and effected soil was scrapped and disposed of in proper bin., Recommended Action - Proper placement of nozzle reviewed with worker to ensure nozzle does not discharge when worker is dismounting the fuel truck platform.	Diesel	No	Not Required	Spill pads were placed down immediately and effected soil was scrapped and disposed off in proper bin.	Ground	Improper placement of fuel nozzle when not in use.	5/1/2025	53.181350, -124.856240	Fuel bay fuel nozzle	3
2707	5/1/2025 18:30	Auto kick-off failed during fueling activities resulting in a spill.	Tailings storage facility stage 1	Mobile Maintenance	The spill was reported to the area supervisor and remediation was initiated.	Hazard/Incident Date: 2025-05-01 18:30 PM; Hazards | Incident Details: Wile fueling CR397 D10 Dozer, the automatic shut off on the dozer failed to kick off resulting in a small spill out the overflow tube. Immediate Actions Taken - The spill was reported to the area supervisor and remediation was initiated. Recommended Action - None	Diesel	No	Not Required	Contaminated soils bin	Ground	Auto kick off failure on CR397	5/1/2025	53.211551, -124.856822	Fuel and lube truck	5
2723	5/7/2025 18:40	Rock hit Eng oil pan	Bottom of A trail	Big Country Equipment Repair	Freeze scene, Put down spill tray, Call supervision, Repair crack in oil pan, Clean up spill, Dispose of contaminated soil	Hazard/Incident Date: 2025-05-07 18:40 PM; Hazards | Incident Details: Technician was dispatched to change an excavator bucket tooth at the bottom of A trail. Upon driving up the cobble packed area of the road a large oblong shaped rock kicked up and made contact with the underside of the service truck resulting in a crack to the engine oil pan.; Immediate Actions Taken - Freeze scene, Put down spill tray, Call supervision, Repair crack in oil pan, Clean up spill, Dispose of contaminated soil, Recommended Action -	Engine Oil 15W40	No	Not Required	MSA yard contaminated soil disposal	Rock, soil	Rock contacting oil pan	5/7/2025		Engine	~4
2734	5/8/2025 14:00	Spill at CWTP	CWTP	Environmental	Cleaned on May 9th	Hazard/Incident Date: 2025-05-08 14:00 PM; Hazards | Incident Details: Environment noticed during inspection, unknown source and unknown hydrocarbon, contacted site services to clean, cleaned up with <1m3 of soil removed from area, contained. ; Immediate Actions Taken - Cleaned on May 9th, Recommended Action -	Unknown hydrocarbon	No	Not Required	Hydrocarbon Impacted Bin	Gravel	Unknown	5/9/2025		Unknown hydrocarbon	.5 m3
2728	5/14/2025 9:00	West Trail Drill Six blew a hydraulic line	1590-014 Pattern in the pit	Mine Operations	Spill pads and tray place under machine all materials cleaned up and disposed of in appropriate bins	Hazard/Incident Date: 2025-05-14 09:00 AM; Hazards | Incident Details: Drill operator; Immediate Actions Taken - Spill pads and tray place under machine all materials cleaned up and disposed of in appropriate bins, Recommended Action -	Hydraulic Oil	No	Not Required	Green bin returned to warehouse	Rock	Hose failure	5/14/2025	1590-014 drill pattern	Hydraulic System on the drill	170 Liters
2729	5/14/2025 19:20	SH3601 Suction Coolant line Leak	Open Pit 1590 Bench West.	Mine Operations	Spill pads where placed under the leak. Mechanics fixed the hose and Shovel scooped up cont soil to a depth where no more liquid was observed.	Hazard/Incident Date: 2025-05-14 19:20 PM; Hazards | Incident Details: SH3601 operator called in a coolant leak at 7:20 PM. The operator shut off the machine and reported it to dispatch, who sent mechanics to assess the leak and repair the line.; Immediate Actions Taken - Spill pads where placed under the leak. Mechanics fixed the hose and Shovel scooped up cont soil to a depth where no more liquid was observed., Recommended Action -	Engine Coolant	No	Required and Notification Complete	Used the SH3601 once it came up. Subbed out the area of the leak and brought the contaminated rock to the TSF PAG Cont Rock area.	Rock Waste	Hose Clamp Loosened off.	5/14/2025		Left Side Engine Coolant System.	370L were added into the reservoir back to operating level.
2736	5/17/2025 14:40	Cr409 haul road by tsf broken hydraulic hose	East side of tsf. Mine creek side of dam	Earthworks	Parked machine in safe place and placed pads down maintenance called to repair	Hazard/Incident Date: 2025-05-17 14:40 PM; Hazards | Incident Details: Rock got wedged in guard and broke hydraulic hose fitting ; Immediate Actions Taken - Parked machine in safe place and placed pads down maintenance called to repair , Recommended Action -	Hydraulic oil	No	Not Required	Spill pad to be disposed of	Small amount on road	Broken hose on dozer	5/17/2025		Broken hose on dozer	5 liters approx
2738	5/17/2025 16:00	Ht 1504 coolant line failure	Back of shop/MSA	Mine Operations	Spill contained with booms spill pads and 2.5 gallon buckets	Hazard/Incident Date: 2025-05-17 16:00 PM; Hazards | Incident Details: Haul truck operator and d8 dozer operator ; Immediate Actions Taken - Spill contained with booms spill pads and 2.5 gallon buckets, Recommended Action -	Coolant	No	Required and Notification Complete	Green disposal bin	Mud	Hose failure	5/17/2025	x:374403 y:5894961	Coolant heater line from engine to cab	132
2743	5/18/2025 19:50	Grader 5803 hydraulic leak	1590 bench	Mine Operations	Operation was ceased immediately. Machine turned off and spill pads applied to affected area.	Hazard/Incident Date: 2025-05-18 19:50 PM; Hazards | Incident Details: 5803 was grading the 1590 bench when a hole in the hose appeared from friction against the metal grader body. ; Immediate Actions Taken - Operation was ceased immediately. Machine turned off and spill pads applied to affected area. , Recommended Action - The new hose could be protected with a rubber covering to prevent friction wear.	Hydraulic	No	Not Required	contaminated soils dump at the PAG	1590 rock bench	Hydraulic Hose rubbing on metal body of grader	5/19/2025		Hydraulic leak on hose	37
2744	5/19/2025 6:50	Discovery of a coolant spill upon arrival at the FTE drill	Open pit near 1580 patterns being drilled by JDS	Mine Geosciences	Immediately cleanup with appropriate spill pads and dispose of them at the correct location.	Hazard/Incident Date: 2025-05-19 06:50 AM; | Hazards | Incident Details: Grade control arrived at the drill with FTE and immediately noticed the red coolant leaking from the drill. Immediately implemented spill response and will begin disposal of pads once cleanup is completed. Photos will be provided.; Immediate Actions Taken - Immediately cleanup with appropriate spill pads and dispose of them at the correct location., Recommended Action - Took awhile to find the appropriate spill pads, FTE had hydrocarbon ones but not coolant pads. Will ensure they have all the appropriate spill gear for their piece of equipment.	Coolant	No	Not Required	Pads will be disposed at the fuel bay	Ground	Small slow leak from loose coolant filter	5/19/2025		Coolant Filter	10
2759	5/24/2025 10:40	Spill cleanup in mobile maintenance yard	Mobile Maintenance Yard	Mobile Maintenance	Cleaned up	Hazard/Incident Date: 2025-05-24 10:40 AM; Hazards | Incident Details: Clean up from environmental inspection ; Immediate Actions Taken - Cleaned up, Recommended Action -	Unknown, cleaning up old spills, likely hydraulic oil	No	Not Required	Contaminated soil bin	Ground	Unknown	5/26/2025		DG container and excavator hammer	0.5 litre

2753	5/24/2025 12:00	Hydraulic hose failure on excavator.	Top east end of the TSF.	Earthworks	The excavator was shut down upon discovery of the spill. Spill pads were deployed to prevent further contamination.	Hazard/Incident Date: 2025-05-24 12:00 PM; Hazards | Incident Details: Hydraulic hose failed resulting in spill to ground. Immediate Actions Taken - Spill pads were deployed to prevent further contamination, and contaminated materials were excavated and placed within a contaminated soils bin.	Hydraulic oil	No	Not Required	Contaminated soil bin.	Ground	Hose failure	5/24/2025	53.210768, -124.858931	Broken hydraulic hose on ex285	15
2754	5/24/2025 13:50	An excavator experienced a minor hydraulic leak.	BP2	Earthworks	Spill pads were deployed. The machine was parked and the maintenance department was contacted.	Hazard/Incident Date: 2025-05-24 13:50 PM; Hazards | Incident Details: Small hydraulic oil leak was observed on excavator EX320. Operator stopped work and contacted the area supervisor. Spill pads were deployed, the machine was parked and maintenance was notified. Immediate Actions Taken - Put spilled pads down, contained active leak and called maintenance department, Recommended Action - None	Hydraulic Oil	No	Not Required	Contaminated materials were segregated and disposed of in approved contaminated waste bins.	Ground	Hydraulic hose.	5/24/2025	53.211108, -124.869663	Cracked O ring on the hydraulic hose fitting.	5 liters
2755	5/25/2025 17:30	Hydraulic hose ruptured on drill # 6.	Open Pit bench 1580.	Mine Operations	Equipment was shut down. The area supervisor was notified. Contaminated materials were excavated and removed from the area.	Hazard/Incident Date: 2025-05-25 17:30 PM; Hazards | Incident Details: While drilling a hole with #6 drill, the hydraulic hose blew releasing hydraulic oil to the ground. Immediate Actions Taken - The drill was shut down, and the area supervisor was notified. Contaminated materials were loaded out and removed. Recommended Action - None	Hydraulic oil	No	Not Required	Hydrocarbon Impacted Bin	Waste rock located on the berm.	Hydraulic hose ruptured.	5/26/2025	53.168507, -124.867328	Drill	20
2756	5/26/2025 12:40	A diesel spill occurred during an equipment service.	Open Pit, Bench 1590	JDS Drilling	Spill pads and drip trays were utilized to prevent further contamination.	Hazard/Incident Date: 2025-05-26 12:40 PM; Hazards | Incident Details: While checking the DEF codes on loader, a supervisor noticed fuel on the ground. The machine was shut down immediately and the spilled fluid was contained. Immediate Actions Taken - Spills mitigation measures including pads and drip trays were deployed to prevent further contamination. Recommended Action - No	Deisel	No	Not Required	Contaminated soil waste bin.	Ground	The waste separator on the fuel drain was loose.	5/26/2025	53.169311, -124.868209	Fuel filter	10
2758	5/26/2025 19:10	Hydraulic line ruptured on an excavator.	Open Pit on bench 1590.	Mine Operations	Machine was parked to be fixed. Contaminated soil was excavated and taken to contaminated soil bin.	Hazard/Incident Date: 2025-05-26 19:10 PM; Hazards | Incident Details: Operator notice the oil on the ground after moving and notified their supervisor. The machine was moved off the bench and parked for maintenance. Immediate Actions Taken - The machine was moved to an area where maintenance could be completed, and the contaminated materials were remediated. Recommended Action - None	Hydraulic oil	No	Not Required	Impacted material was taken to MSA contamination bin.	Ground	Ruptured hydraulic hose on the final drive.	5/26/2025	53.169710, -124.865959	Hydraulic hose	80
2760	5/27/2025 13:10	Hydraulic oil leak was observed beneath a 308 dozer.	West side of the PAG dump.	Earthworks	The equipment was shut down, spill pads were utilized, and maintenance was contacted to perform repairs.	Hazard/Incident Date: 2025-05-27 13:10 PM; Hazards | Incident Details: The operator noticed a leak from the dozer undercarriage. The area supervisor was notified, and spill mitigation measures were deployed. The maintenance department was notified to perform the required repairs. Immediate Actions Taken - The equipment was shut down, spill pads were utilized, and maintenance was contacted to perform repairs. Recommended Action - None	Hydraulic fluid	No	Not Required	The contaminated materials were segregated and placed within the appropriate contaminated materials bins.	Ground	Hydraulic line in the dozer undercarriage.	5/27/2025	53.214342, -124.864619	Hydraulic line	15
2766	5/31/2025 8:10	Minor Spill of Hydraulic Fluid into collection sump	South East of Main Dam C	Geotech Drilling	Hydraulic fluid cleaned up. Repairs to loose fitting made.	1 liters of Hydraulic Fluid release into collection sump from a minor leak on a drill. Clean up started. Minor fluid in collection sump.	Hydraulic Oil	No	Not Required	Contaminated Fluid disposed in Tote in hydrocarbon disposal area near plant site	None	Loose and damaged part	5/31/2025	376,467mE 5,896,910mN	Sonic Drill	1-2
2765	5/31/2025 11:10	Fuel nozzle malfunctioned resulting in spill.	ROM fuel bay	Big Country Equipment Repair	Stopped work in the immediate area, notified supervisor, and placed spill pads on the contaminated ground.	Hazard/Incident Date: 2025-05-31 11:10 AM. Hazards | Incident Details: During machine fueling procedures, the fuel nozzle malfunctioned resulting in a diesel spill to ground. Immediate Actions Taken - Stopped work in the immediate area, notified supervisor, and placed spill pads on the contaminated ground. Recommended Action - Address the fuel nozzle to prevent the incident from happening again.	Diesel fuel	No	Not Required	Contaminated waste bin.	Ground	Breather valve is not functioning correctly.	5/31/2025	53.182860, -124.858225	Fuel tank	15