BW GOLD LTD
a subsidiary company of Artemis Gold Inc

Blackwater Gold Project

Cyanide Management Plan

November 2021

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ACRONYMS AND ABBREVIATIONS

Artemis	Artemis Gold Inc.
BC	British Columbia
Blackwater or the Project	Blackwater Gold Project
BW Gold	BW Gold LTD.
CEA Agency	Canadian Environmental Assessment Agency
CMP or the Plan	Cyanide Management Plan
CCN	Cheslatta Carrier Nation
CLC	Community Liaison Committee
DS	Decision Statement
EA	Environmental Assessment
EAC	Certificate
EAO	Environmental Assessment Office
EMC	Environmental Monitoring Committee
EMLI	Ministry of Energy, Mines and Low Carbon Innovation
ENV	BC Ministry of Environment and Climate Change Strategy
FLNRORD	Ministry of Forestry, Lands, Natural Resource Operations and Rural Development
ICMC	International Cyanide Management Code
km	Kilometre
LDN	Lhoosk'uz Dené Nation
LOM	Life of mine
MERP	Mine Emergency Response Plan
MOC	Management of Change
NaCN	Sodium cyanide
NFN	Nazko First Nation
NTBB	Nee Tahi Buhn Band
NWFN	Nadleh Whut'en First Nation
OHS	Occupational Health and Safety
OHSP	Occupational Health and Safety Program
OMS Manual	Operation, Maintenance and Surveillance Manual

SFN	Saik'uz First Nation
PCS	Process control system
PLC	Programmable logic controllers
SDS	Safety data sheets
SOP	Standard operating procedure
StFN	Stellat'en First Nation
STN	Skin Tyee Nation
TNG	Tsilhqot'in National Government
TSF	Tailings storage facility
UFN	Ulkatcho First Nation
WAD	Weak acid dissociable
WMMP	Wildlife Mitigation and Monitoring Plan

1. PURPOSE AND OBJECTIVES

The purpose of the Cyanide Management Plan (CMP) is to communicate the methods and policies for handling, using, and administering cyanide use at the Blackwater Gold Mine (Blackwater or Project). The CMP meets the performance goals set by the International Cyanide Management Code (ICMC) Standards of Practice and follows the Principles and Standards of Practice of the Code for the manufacture, transport and use of cyanide in the production of gold:

- Standard of Practice 1: Production – Encourage responsible cyanide manufacturing by purchasing from manufacturers who operate in a safe and environmentally protective manner;
- Standard of Practice 2: Transportation – Protect communities and the environment during cyanide transport;
- Standard of Practice 3: Handling and Storage – Protect workers and the environment during cyanide handling and storage;
- Standard of Practice 4: Operations – Manage cyanide process solutions and waste streams to protect human health and the environment;
- Standard of Practice 5: Decommissioning – Protect communities and the environment from cyanide through development and implementation of decommissioning plans for cyanide facilities;
- Standard of Practice 6: Worker Safety – Protect workers' health and safety from exposure to cyanide;
- Standard of Practice 7: Emergency Response – Protect communities and the environment through the development of emergency response strategies and capabilities;
- Standard of Practice 8: Training – Train workers and emergency response personnel to manage cyanide in a safe and environmentally protective manner; and
- Standard of Practice 9: Dialogue – Engage in public consultation and disclosure.

This CMP was developed to be consistent with the Cyanide Code and to address the requirements of Condition 32 of the Blackwater Project's Environmental Assessment Certificate (EAC #M19-01). It is applicable to all Project phases. It describes how cyanide containing effluent will be monitored and treated prior to discharge as well as the treatment and action criteria for cyanide effluents (see sections 4.5 and 4.9), and management strategies to ensure that hydrogen cyanide gas stays below applicable human health thresholds (see sections 4.2 and 6).

2. ROLES AND RESPONSIBILITIES

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

Table 2-1 provides an overview of general environmental management responsibilities for key positions that will be involved in environmental management. Roles associated with cyanide management are also described.

Table 2-1: Blackwater Roles and Responsibilities

Role	Responsibility
Chief Executive Officer (CEO)	The CEO is responsible for overall Project governance. Reports to the Board.
Chief Operating Officer (COO)	The COO is responsible for engineering and Project development and coordinates with the Mine Manager to ensure overall Project objectives are being managed. Reports to CEO.
Vice President (VP) Environment & Social Responsibility	The VP is responsible for championing the Environmental Policy Statement and EMS, establishing environmental performance targets and overseeing permitting. Reports to COO.
General Manager (GM) – Development	The GM Development is responsible for managing project permitting, the Project's administration services and external entities, and delivering systems and programs that ensure Artemis's values are embraced and supported: Putting People First, Outstanding Corporate Citizenship, High Performance Culture, Rigorous Project Management and Financial Discipline. Reports to COO.
Mine Manager	The Mine Manager, as defined in the *Mines Act*, has overall responsibility for mine operations, including the health and safety of workers and the public, Environmental Management System (EMS) implementation, overall environmental performance and protection, and permit compliance. The Mine Manager may delegate their responsibilities to qualified personnel. Reports to GM.
Environmental Manager (EM)	The EM is responsible for the day-to-day management of the Project's environmental programs and compliance with environmental permits, tracking and reporting of key performance indicators (KPIs) updating the EMS and Environmental Management Plans (EMPs). Reports to GM.
Departmental Managers	Departmental managers are responsible for implementation of the EMS relevant to their areas. Report to Mine Manager.
Cyanide Champion	Cyanide Champions are designated employees responsible to monitoring performance to the CMP, including maintaining adequate documentation of monitoring, testing, inspection and maintenance records, coordinating Management of Change (MOC) reviews and records of implementation; and scheduling certification and subsequent re-certifications to the code.
Mill Manager	Ensure training for mill staff is adequate and appropriate. Manage this plan and any supporting standard operating procedures (SOPs). Support the regular testing of Emergency Response Plans. Work with regulatory bodies in the case of a cyanide-related incident.

Role	Responsibility
Tailings Manager	Ensure training for employees responsible for implementing the OMS is adequate and appropriate. Manage this plan, the OMS and any supporting SOPs. Support the regular testing of Emergency Response Plans. Work with regulatory bodies in the case of a cyanide-related incident.
Mill Operators/Tailings Operators	Perform inspections on equipment and work areas. Report any issues immediately. Understand SOPs and how to respond to a cyanide emergency including spills, alarms, etc.
Materials Management	Materials Management will maintain adequate inventory and supplies of sodium cyanide in accordance with section 2, such as ensuring that code compliance contracts are in place with cyanide producers and transporters.
Occupational Health and Safety Manager	Ensure the effective review and implementation of the Occupational, Health and Safety Plan and the process in worker safety with respect to cyanide, have responsibility for Fire and Mine Rescue Team; Assist in coordinating drills; and Maintain records of training and drills.
Employees and Contractors	Complete required cyanide hazard awareness training and follow site procedures for limited access to cyanide facilities and responding to alarms etc. Contractors working in areas of the mill or tailings with cyanide solutions must understand and follow the SOPs developed for work in those areas, including completing cyanide hazard awareness training
Mine Emergency Response Plan (MERP) Coordinator	The MERP Coordinator will write the MERP and assist the Mine Manager in implementing and updating the MERP, including cyanide emergency response plans, as required, and provide training. The appointed Coordinator will have appropriate managerial and operational skills and be knowledgeable and trained in emergency response management and will have well-rounded knowledge of each department on the mine site. The Coordinator will have the authority to ensure cooperation and participation at all levels in the organization and will coordinate the engagement of external agencies involved in
Mine Emergency Response Team	An Emergency Response Team is present on-site and is comprised of personnel with advanced training in spill response techniques. The ERT will ensure they have completed the required training for cyanide emergency and participated in drills related to implementing cyanide plans.

3. COMPLIANCE OBLIGATIONS, GUIDELINES, AND BEST MANAGEMENT PRACTICES

3.1 Legislation

Federal and provincial legislation that may be relevant to cyanide management includes:

- *Canadian Environmental Protection Act, 1999*
  - *Environmental Emergency Regulations*
  - *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations*
  - *Interprovincial Movement of Hazardous Waste Regulations*
- *Transportation of Dangerous Goods Act, 1992*
  - *Transportation of Dangerous Goods Regulations*
- *Fisheries Act*
  - *Metal and Diamond Mining Effluent Regulations*
- *Mines Act*
  - Health, Safety and Reclamation Code for Mines in British Columbia
- *Environmental Management Act*
  - *Contaminated Sites Regulation*
  - *Hazardous Waste Regulation*
  - *Spill Reporting Regulation*
  - *Waste Discharge Regulation*
- *Transport of Dangerous Goods Act*
  - *Transport of Dangerous Goods Regulation*
- *Water Sustainability Act*
  - *Dam Safety Regulation*
  - *Groundwater Protection Regulation.*

Municipal bylaws include:

- City of Prince George Highways Bylaw No.8065 (City of Prince George, 2008) regulates the use of highways within the City of Prince George; and
- City of Prince George Transport of Dangerous Goods Bylaw No. 8129 (City of Prince George, 2009).

3.2 Environmental Assessment Certificate and Federal Decision Statement Conditions

As noted above the CMP addresses the requirements of Condition 32 of Blackwater EAC, received on June 19, 2019. A concordance table identifying where the EAC condition requirements are located in the plan is provided in Appendix A.

The Project received a federal Decision Statement (DS) on April 15, 2019.There are no conditions in the federal DS related to cyanide management.

3.3 Codes and Agreements

Codes and Agreements pertaining to cyanide management include:

- ICMC 2018a, 2018b (The Cyanide Code does not supersede any existing legislation or regulations but supplements them.) The purpose of the Cyanide Code is to improve the management of cyanide used in gold mining and assist in the protection of human health and the environment.
  - The Cyanide Code is a third party independently audited, voluntary program for gold mining companies, cyanide producers, and transporters. It focuses exclusively on the safe management of cyanide and cyanidation mill tailings and leach solutions. Companies that adopt the Cyanide Code must have their mining operations audited by an independent third party to determine the status of Cyanide Code implementation.
  - Those operations that meet the Cyanide Code requirements can be certified. The Cyanide Code is intended to complement but not substitute for operations' existing regulatory requirements. Compliance with the rules, regulations, and laws of the applicable local, provincial, and federal jurisdictions is mandatory.
  - The Cyanide Code assesses areas including production, transport, storage, use, financial assurance, accident prevention, emergency response, training, public reporting, stakeholder involvement, and verification procedures.
- The *Canada-British Columbia Agreement Respecting Administration of the Transportation of Dangerous Goods Act* provides that BC will administer all on-highway inspection enforcement activities. The federal government will administer all other inspection and enforcement activities (Transport Canada 2004).

4. PRODUCTION AND TRANSPORTATION

4.1 Production

ICMC Standard of Practice 1.1

Purchase cyanide from manufactures employing appropriate practices and procedures to limit exposure of their workforce to cyanide and to prevent releases of cyanide to the environment.

BW Gold will use its internal procurement processes and procedures to ensure responsible production processes for cyanide. BW Gold has committed to purchasing sodium cyanide, preferably as solid NaCN briquettes, from manufacturers and distributors who are signatories to the Cyanide Code wherever possible. In the event that BW Gold purchases cyanide from an independent distributor, evidence will be provided that the cyanide is from a manufacturer that operates in compliance with the Code.

It is currently planned to receive the solid NaCN in ISOtainers, which minimizes handling for employees, however the plant will have the capability to receive solid NaCN in boxes and add the solid NaCN to mixing tanks on site to prepare the cyanide solution.

Copies of external audits and auditor credentials for cyanide production facilities used to generate cyanide for the Project will be available at the Cyanide Code website.

4.2 Transportation

ICMC Standard of Practice 2.1

Establish clear lines of responsibility for safety, security, release prevention, training, and emergency response in written agreements with producers, distributors, and transporters.

BW Gold will establish written agreements with cyanide producers, distributors and transporters, designating the specific responsibilities for each aspect of cyanide transport. By using ICMC compliant vendors, BW will be able to demonstrate that their transporters (and the transportation system used) have completed their due diligence in terms of assessing risks of transportation routes, ensuring adequate emergency response planning and equipment is in place and providing training to their employees. By using a code compliant manufacturer and transporter, BW is using vendors that have had their conformance to the cyanide code requirements externally verified. The following items will be addressed (as appropriate for the manner of transport) in those agreements:

- Packaging as required by, and labeling in languages necessary to identify the material in the governmental jurisdiction/s the shipment passes through;
- Storage prior to shipment;
- Emergency response and management evaluation and selection of routes to reduce risks, including community involvement;
- Storage and security at ports of entry;
- Interim loading, storage and unloading during shipment;
- Transport to the operation;
- Unloading at the operation;

- Addition of colorant dye to high strength liquid cyanide prior to delivery at the mining operation, and addition of dye to solid cyanide prior to or at the time of mixing;
- Safety and maintenance of the means of transportation (e.g., aircraft, vessels, vehicles, trains, etc.) throughout transport;
- Task and safety training for transporters and handlers throughout transport;
- Security throughout transport; and
- Emergency response throughout transport.

The written agreement will also specify that the designated responsibilities extend to any subcontractors used by the producer, distributor, transporter or the operation for transportation-related activities.

ICMC Standard of Practice 2.2

Require that cyanide transporters implement appropriate emergency response plans and capabilities, and employ adequate measures for cyanide management.

BW Gold will ensure that the transporter, and any subcontractors involved in cyanide transport, make health, safety and environmental considerations a priority while transporting cyanide to the mine.

BW Gold will require in their transport contracts for cyanide that the transporter is a signatory to the Code and has its cyanide transport activities certified as compliant with the Code's Principles and Transport Practices. In the event that there is a disruption in either the certified producer or certified supplier BW Gold will make every effort to re-establish a certified cyanide supply as soon as reasonably practical.

Chain of custody records documenting the transportation route of the cyanide from the supplier to the site will be retained for a period of a least three years to demonstrate that certified transportation routes have been used.

Detailed surveys for two transportation routes were completed by in July 2013 (AMEC 2013). These assessments will be confirmed and updated with the transporter once a supplier and transporter of sodium cyanide is confirmed.

Transporters will submit brief reports from each delivery to the site and will be required to contact the facility's Logistics and Transportation group if unsafe rail/driving conditions or significant hazards are observed on access routes to Prince George and the Project site.

BW Gold will complete a dangerous goods assessment will include risks associated with the rail and road transportation routes to the site, rail and road conditions, possible impacts with sensitive environmental areas on these routes, the overall environmental risk associated with sections of the transportation routes, and recommendations for controls to be in place to reduce the environmental risks.

The City of Prince George has certain routes through the City that have been identified for the transportation of dangerous goods.

5. HANDLING AND STORAGE

5.1 Design and Construction

ICMC Standard of Practice 3.1

Design and construct unloading, storage, and mixing facilities consistent with sound, accepted engineering practices, quality control and quality assurance procedures, spill prevention and spill containment measures.

BW's main source of Sodium cyanide will be delivered to the site in containers approved by the United Nations International Organization for Standardization (ISO) from the certified production facility via rail and road. These 'ISOtainers' will be dedicated to cyanide transport and are designed for controlled dissolution upon delivery to the site (Photo 5-1). All ISOtainers will be returned to the supplier for re-use. Based on availability, BW Gold may also receive sodium cyanide in solid form in bags.

Photo 5-1: An ISOtainer carrying sodium cyanide briquettes.

Solid cyanide briquettes will be stored in sealed ISOtainer under cover within the reagents area of processing plant. The ISOtainer prevents the contact of solid cyanide with the ground. This storage area will be bermed to contain leaks from the ISOtainers as well as adequate ventilation to prevent build up of hydrogen cyanide gas. The storage of the ISOtainers will also be segregated from incompatible chemicals (acids, oxidizers) and food.

A dye will be added to the NaCN by the manufacturer so that high concentration cyanide will be immediately identifiable throughout the plant. Any spills would also be contained and identifiable as high concentration cyanide.

Design and construction of unloading, storage and mixing facilities, will be done so in accordance with sound and accepted engineering practices. ISOtainers containing solid or liquid NaCN for storage will be off-loaded from trucks parked on a bermed concrete pad and stored within the reagent area. When NaCN is required, an ISOtainer would be moved to a concrete, bermed area near the mixing tank where one of two scenarios would take place: either water (pH adjusted) will be added to dissolve the solid NaCN and the solution is pumped to the mixing tank, or the liquid contents are transferred directly to the mixing tank. Both the unloading and storage areas will include sumps, sloped concrete pads, and other engineered features to facilitate the recovery of any spilled materials by pumping them back to the mixing tank.

The mixing tank will be located in the reagents area within a secondary containment area constructed with concrete walls and floor, providing sufficient capacity to hold at least 110% of the largest tank within the containment in addition to any piping that drains back to the tank. This area will be covered to protect sump capacity from precipitation. All fixed piping for reagent/processing cyanide solutions will be constructed from materials known to be compatible with high pH cyanide– containing solutions. Documentation of this compatibility will be retained. Double walled piping will be used at concentrated addition points.

As an alternate to the use of ISOtainers for delivery and mixing of sodium cyanide, BW may also receive sodium cyanide in solid form in boxes. In this case the bags will be stored in a secure and dry location away from incompatible materials (such as acids, strong oxidizers, or explosives). The solid reagent would be added to a mixing tank and mixed with water to create a high strength cyanide solution.

The system for offloading and mixing the sodium cyanide into solution will include methods to prevent the overfilling of cyanide storage tank, such as an automatic level indicator, high- level alarm, or integrated tank and tanker valve-shutdown device.

Contractual conditions for the contractors responsible for the design and the construction of cyanide off-loading, mixing and storage facilities will specifically include requirements for the implementation of quality management programs to recognized international standards, in order to provide a high measure of confidence that the facilities will function as designed. BW Gold will employ quality control and quality assurance procedures in the construction of foundations, storage and mixing tanks, solution handling facilities and containments to ensure that design objectives have been achieved. Records will be retained documenting that these procedures have been followed.

Tanks and pipelines should be clearly identified as containing cyanide, and the direction of flow should be indicated on pipelines. This should be accomplished by using labels, tags, signs or other clearly legible markings.

The empty ISOtainers will be returned to the cyanide manufacturer for re-use. Approximately two weeks' supply of cyanide between ISOtainers and boxed or boxed solid cyanide briquettes will be maintained on site to ensure no supply disruption. The storage of cyanide will follow ICMI requirements. As a contingency only, during instances where solid NaCN briquettes are unavailable, liquid NaCN will be bought directly to site. This alternate liquid offload area has been designed to contain any spills during offloading. It is not expected that liquid cyanide will be required; however, provisions to accept liquid cyanide will be included as a contingency.

In the event solid cyanide in boxes are used, procedures to rinse the boxes or other methods for safely disposing of the boxes will be developed before they are received at site.

The cyanide unloading and storage areas are located away from people and surface waters. The closest human receptors to the mine site are Tatelkuz Lake Indian Reserve #28 (15 km) and Tatelkuz Lake Resort (8.5 km). Runoff from the plant site will be captured by perimeter ditching which feed a sediment control pond, ultimately reporting to the TSF during operations. Access to the mine site will be restricted to those with permission from the Mine Manager. A security gate will be located on the Mine Access Road at the entrance to the mine site.

5.2 Operation

ICMC Standard of Practice 3.2

Operate unloading, storage, and mixing facilities using inspections, preventative maintenance and contingency plans to prevent or contain releases and control and respond to worker exposures.

Employees will be trained to clean any cyanide residue from the outside of the ISOtainers and seal the containers following unloading. Similar procedures for handling and disposal of empty boxes will also be developed, in the event that sodium cyanide is received in boxes

Work instructions or SOPs will be developed and used in the training of operators and also to develop offloading check sheets where the operators confirm that all steps in the off-load and mixing of cyanide are recorded. Once cyanide is in use at the mine, annual audits will be conducted to verify compliance with all aspects of the CMP.

The procedure will include:

- Operation of all valves and couplings for unloading and mixing cyanide;
- Requiring appropriate Personal Protective Equipment (PPE);
- Having a second individual observe from a safe area any cyanide offload or mixing; and
- Spill response measures.

Daily workplace inspections will be conducted of the cyanide storage and mixing areas prior to each shift. These inspections will include documented observations of the condition of production and safety equipment and any out-of-order conditions. Preventative maintenance procedures will be developed to address the integrity of unloading, storage and mixing facility equipment.

Operational contingency planning is discussed in Section 6.1.4 of this Plan. The BW Gold Cyanide Management Plan addresses potential cyanide releases, including developing procedures to address:

- Release of hydrogen cyanide gas during cyanide off-loading, storage, and initial mixing;
- Spill of solid sodium cyanide pellets from an ISO container or box caused by an onsite transportation accident; and
- Spill of liquid sodium cyanide caused during mixing or unloading from an ISO container or box to the storage/mixing tanks.

All pumps, hoses, and other critical equipment for cyanide dissolution and storage will be included in the preventive maintenance program for the Project. The preventive maintenance program will generate work orders on a predetermined schedule so that process equipment can be inspected and maintained or replaced as necessary to assure its continued proper functioning and to prevent cyanide exposures and releases.

A SOP will be prepared to describe the necessary measures for decontamination of this equipment prior to maintenance, sale, or disposal. All decontamination rinsate will be routed to the detoxification or processing circuit.

6. OPERATIONS

6.1 Management and Operating Systems

ICMC Standard of Practice 4.1

Implement management and operating systems designed to protect human health and the environment including contingency planning and inspection and preventative maintenance procedures.

6.1.1 Operating Plans and Procedures

Management systems and operating plans or procedures should also include contingencies for situations where there is an upset in a facility's water balance, when inspections or monitoring identifies a problem, and when a temporary closure or cessation of operations may be necessary. Prior planning for these situations allows rapid responses and minimizes risks of cyanide exposures and releases. BW Gold will be developing management and operating systems designed to protect human health and the environment. BW Gold will develop a preliminary Occupational Health and Safety Program (OSHP), which will include processes for risk assessment, developing procedures, and training. As part of the implementation of this program BW Gold will adopt the manufacturer designed specific operating plans and procedures for the mill as well as develop site specific SOPs describing how cyanide-related tasks should be conducted to protect human health and the environment. These include:

- Risk assessments including Job Hazard Analysis (JHA); and
- SOPs.

SOPs will be adapted to the site or developed for cyanide facilities, including: unloading, mixing and storage facilities, and regeneration and disposal systems. The SOPs are developed and used where specific tasks that require a JHA are undertaken on a regular basis. SOPs will be available to BW Gold employees in SharePoint or a similar platform.

The Tailings Storage Facility (TSF) will be operated in accordance with the Mines Act permit and the Health, Safety and Reclamation Code for Mines in British Columbia (EMLI 2021) and the TSF – Operation, Maintenance and Surveillance (OMS) Manual.

Field instrumentation will input data into programmable logic controllers (PLC) which will be monitored by a process control system (PCS). The PCS will be configured to provide outputs to alarms, control the function of selected process equipment, and provide advisory comment to the plant operators and will be located in a central control room. The crushing plant will have its own dedicated control room, with duplicate displays in the central control room. As Stages 2 and 3 are developed, a single central control room will contain the PCS system for all three process lines.

Mill process parameters will include, pH, cyanide addition rates, carbon utilization, and cyanide destruct concentrations – Weak Acid Dissociable (WAD) cyanide as well as alarms that note when process parameters are out-of-range.

6.1.2 Inspections and Preventative Maintenance

Daily workplace inspections will be conducted for each area where cyanide is used. These inspections will include a check of safety and production equipment conditions. Inspection forms will include date of the inspection, the name of the inspector, and any observed deficiencies. Work request numbers will be recorded when an inspection identifies an item requiring scheduled maintenance, prior to each shift.

BW Gold will develop inspection programs or procedures for the following at unloading, storage, mixing and process areas:

- Tanks for mixing and holding cyanide solutions for structural integrity and signs of corrosion and leakage – tanks will be visually inspected daily during workplace inspections and monthly as part of the preventative maintenance program. Integrity testing is performed at a minimum of every five years or as recommended in the latest integrity testing report.
- The cyanide box system will be inspected prior to use as with any other cyanide mixing system. Documentation will be developed based on manufacturer recommendations and ICMI requirements.
- Secondary containments for their integrity, the presence of fluids and their available capacity, and to ensure that any drains are closed and, if necessary, locked, to prevent accidental releases to the environment – secondary containments are inspected for integrity and available capacity daily during workplace examinations. Secondary containments are not equipped with valves that drain to the environment.
- Pipelines, pumps and valves for deterioration and leakage – Pipelines, pumps and valves are inspected for deterioration and leakage during daily workplace examinations. Pipelines are also subject to integrity thickness testing on a periodic basis.
- Ponds and impoundments for the parameters identified in their design documents as critical to their containment of cyanide and solutions and maintenance of the water balance, such as available freeboard and integrity of surface water diversions – the TSF is inspected according to the procedures outlined in the OMS Manual.

Preventative maintenance programs will be implemented and activities will be documented.

Wildlife monitoring is conducted daily by BW Gold personnel during workplace examinations.

6.1.3 Management of Change (MOC)

BW Gold will develop MOC procedures to identify changes to the facility and its operating practices that may increase the potential for cyanide releases before such changes are implemented, so that they can be evaluated and addressed as necessary. Changes include equipment or process changes to cyanide systems which are not simple repairs or replacement in kind. Prior to moving into a new phase of the mining lifecycle will also require a detailed review of the cyanide management plan and the associated SOPs and inspection and maintenance systems.

6.1.4 Contingency Procedures and Emergency Power

The site will have a source of emergency power for pumps and other equipment to prevent unintentional cyanide releases and worker exposure when their primary power supply is interrupted. Back-up power generating equipment will be maintained and tested to ensure its viability.

The SOPs for operation of the cyanide destruction plant will also be developed, including 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.

6.2 Cyanide Use

ICMC Standard of Practice 4.2

Introduce management and operating systems to minimize cyanide use, thereby limiting concentrations of cyanide in mill tailings.

Sodium cyanide is used at BW Gold in the leaching of gold from ore. Appropriate cyanide addition rates will be determined during the commissioning of the mill and will be adjusted as necessary based on the performance of the mill and changes in ore quality.

Sodium cyanide solution will be pumped to the leaching circuit, where it is added to the ore slurry. There will be monitoring points in the process that are used to measure the cyanide levels in leaching, thickening, and cyanide destruction prior to being sent to the TSF.

Conventional bottle roll tests will be used to determine the optimum cyanide addition rates, based upon bench-scale testing of pre-operational ROM ore samples. During operations, changes in ore characteristics will be accounted for with an automated system to monitor the use of cyanide in the leach process and to adjust cyanide addition rates accordingly. Cyanide use represents a significant portion of operating costs so its use will be optimized.

The goal of including such a system is to maximize the efficiency of the leaching process and reduce the potential for use of excess cyanide. This will lower overall cyanide requirements, minimize the amount of cyanide being transported to the site and used at the operation, and reduce overall occupational, health and safety (OHS) and environmental risks.

6.3 Water Management

ICMC Standard of Practice 4.3

Implement a comprehensive water management program to protect against unintentional releases.

The proper management of process solution and storm water is central to the prevention of releases from tailings impoundments and impacted storm water ponds. A life of mine watershed model (LoM model) was developed to provide input information for project permitting.

The LoM model employs a spreadsheet that allows input and output flexibility in process selection and representation of mine facilities during subsequent modelling of mine development.

BW Gold will use the LoM model to support water management design decisions, water quality modelling, and in-stream flow needs assessments. Inspection and monitoring to maintain the water balance will be incorporated into the facility's operating procedures. The LoM model is probabilistic in nature, taking into account the uncertainty and variability inherent in the prediction of precipitation patterns. This entails considering precipitation and evaporation ranges, extremes and seasonal variations, as well as average conditions and monitoring precipitation. The hydrologic processes incorporated into the model include, among others:

- Precipitation (rainfall and snowmelt), evaporation and seepage rates;
- Inflows from up-gradient sub-catchments, including surface runoff and groundwater flow; and
- Surface and ground water flows off site to the downstream catchment.

Each of the major mine facilities is integrated into the LoM model to determine the sources and losses of water at each facility, including the mill, TSF, and open pit.

The Project will also monitor precipitation daily at the site meteorological and air quality stations in order to validate the assumptions used in the LoM model and to ensure that the TSF will operate as designed. A SOP will describe the precipitation monitoring process and the use of these data in validating or updating the LoM model.

The design documents for ponds and impoundments will include a minimum freeboard over the design storage capacity.

The OMS Manual will guide operations of the TSF and ancillary facilities, including inspections of the TSF, tailings and reclaim water pipelines, valves, and dams. These facilities will be inspected on a regular basis (daily, weekly, monthly inspections per OMS) and after any significant storm or runoff events. The OMS Manual will describe how routine, formal inspections will be conducted and documented and how follow-up corrective actions will be initiated and tracked.

Cyanide monitoring in surface water or soil will occur after any spill to determine the extent of contamination and ensure cleanup has been carried out sufficiently.

6.4 Wildlife Protection

ICMC Standard of Practice 4.4

Implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions.

The most effective measure to protect birds, other wildlife and livestock from the adverse effects of cyanide process solutions is to maintain WAD cyanide concentrations 50 mg/l (ppm) or lower. The only open water body containing WAD cyanide will be the TSF. A concentration of <50 mg/l WAD cyanide or lower in solution is typically viewed as being protective of most wildlife and livestock mortality other than aquatic organisms.

Wildlife mortality from cyanide exposure is not anticipated at the TSF because operation of the SO_2/air plant will reduce the concentration of total and WAD cyanide in the tailings to concentrations well below levels found to be toxic to wildlife (approximately <25 mg/L total cyanide). Furthermore, process and receiving water quality sampling and analysis requirements are detailed in the Mine Site Water and Discharge Monitoring and Management Plan (MSDP) and the Aquatic Effects Monitoring Plan (AEMP). Actual cyanide concentrations in the TSF ponds (C,D) and process plant process water streams will be compared to predictions and actual cyanide consumption and opportunities to reduce cyanide consumption will be identified through plant optimization and ramp-up. This will be reported on through the annual EMA and ARR provincial annual reports. BW Gold will also ensure that 6 months prior to development of the first EMA report for the site in the year that cyanide is first used on site, Artemis will provide to the Nations, an annual report template for the section on cyanide and nitrate with cyanide/nitrogen species to ensure the correct parameters and graphs will be included.

No adverse impacts to aquatic resources are expected from trace cyanide within the deposited tailings, because there are no planned direct discharges to surface waters from the TSF during the operations phase of the mine. As water from the TSF is pumped to the open pit during the ~20-year closure phase of the mine, no direct discharge from the TSF will occur. post-closure, TSF pond water is directly released to the downstream environment via the spillway. The modelled water quality of the post-closure TSF pond is predicted to not exceed the Freshwater Aquatic Life Water Quality Guideline for WAD cyanide, given

the ~20-year closure phase that will allow for natural cyanide degradation, as well as the closure cover specified for the tailings surface.

Employees in the process area will be trained to observe their workplace for incidents of wildlife activity or mortality in cyanide areas and to immediately report any such observations to their supervisors in accordance with the applicable SOP.

TSF operators will monitor wildlife mortality in their inspections in accordance with applicable portions of an appropriate SOP that will establish such inspections as part of the TSF operator's routine and will require a notation of such observations consistent with the Wildlife Mitigation and Monitoring Plan (WMMP; Appendix 9-H of the Mines Act/Environmental Management Act Permits Application [Application]). The SOP will require immediate notification of supervisory personnel if any mortality is observed and will outline the specific incident reporting and corrective and preventive action procedures to be followed. Records of the inspections will be retained in accordance with EMS requirements. This SOP will allow for the cause of the mortality to be determined and will be modified as needed to minimize the potential for recurrence.

Environmental staff will also conduct wildlife monitoring at scheduled times at the TSF. This monitoring will provide insight as to how wildlife may be accessing the TSF. Inspections will include mapping locations, identifying species, recording the number of sightings, and detailing how the wildlife is using the TSF.

Heap leach facilities are not part of the mine design.

6.5 Discharges to Surface Waters

ICMC Standard of Practice 4.5

Implement measures to protect fish and wildlife from direct and indirect discharges of cyanide process solutions to surface water.

6.5.1 Operation of the Detoxification Plant

Leach residue from the carbon-in-leach (CIL) circuit, as well as containment sump drainage from various areas will be treated for destruction of free and WAD cyanide using the Inco SO_2 process. The discharge from the cyanide destruct tanks will constitute the majority of the mill final tailings stream and will be discharged to the TSF.

The SO_2/air detoxification process unit (the unit) will be located within the reagents area and will be designed and constructed to address the requirements of the Cyanide Code, international BMPs, and internationally-accepted engineering specifications and to meet all applicable regulatory requirements. It will be designed to meet or exceed the specific regulatory targets identified for the unit. Liquid sulphur dioxide (SO_2) will be transported to the site and sulphur managed in accordance with the Chemicals and Materials Storage, Transfer and Handling Plan (Appendix 9-M of the Application).

Process pH control will be maintained via lime addition. Iron-complexed cyanides are reduced to the ferrous (Fe_2+ or reduced) state and precipitated as insoluble copper-iron-cyanide complexes. Residual metals liberated from the WAD cyanide complexes are precipitated as their hydroxides. Thiocyanate (SCN-) is partially oxidized to cyanate. Hydrolysis of cyanate (addition of water) produces bicarbonate (HCO_3) and ammonia (NH_3). Ammonia will typically oxidize slowly in the tailings pond to nitrate (NO-).

A lime storage bin and lime mix storage tank will be located in the reagents areas. Within the unit, tanks and pipelines for process solutions will be constructed of materials compatible with slurry containing cyanide and cyanide solution.

The unit will be built within concrete secondary containment structures with sufficient capacity to hold at least 110% of the largest tank within the containment as well as any piping that drains back to the tank. Sumps within the containment will be equipped with sump pumps to return any released solution to the treatment process. Float switches or other high-level indicators will be placed at key locations within the secondary containment to identify the presence of solution and alert operators in the detoxification facility control room.

A backup generator (4.16 kV, 2 MW) will be available to power Processing Plant critical functions in case of a power outage. Automatic control and shutdown systems will be used to prevent any release of tailings prior to detoxification.

As previously noted, the unit will be designed to reduce the level of WAD cyanide in the spent leaching slurry and in the tailings subsequently discharged to the TSF in order to meet applicable regulatory limits, consistent with internationally recognized BMP guidelines, such as the WAD cyanide limits described in the Cyanide Code (<50 mg/l WAD cyanide).

A SOP will provide specific instructions for operation of the unit. In addition, the SOP will identify cyanide-related risks, list the necessary PPE, require pre-work safety inspections, and reference employee training requirements. The SOP will address how plant operations are to be monitored to ensure effective detoxification of cyanide before the tailings are discharged to the TSF. Contingency actions for any observed process upsets in the detoxification facility will also be defined in the procedure.

6.5.2 Discharge from the TSF

Water within the Project area will be used by collecting runoff from the mine site area and recycling process water to the maximum practicable extent. Site runoff water will be collected and stored within the TSF and used to inundate the waste rock and tailings solids to limit the potential for acid rock drainage and metal leaching. Water will be stored in the supernatant ponds within the TSF and recycled to the mill for use in the process.

All site drainage during operations and closure will drain by gravity to the TSF. Virtually all seepage from the TSF, low-grade ore stockpile, and overburden and NAG stockpiles will also be collected and directed to the TSF. The water release conditions will be controlled by a temperature and flow control system consisting of temperature and flow measurement devices and associated control logic feedback loops on the discharge pipeline. Management activities and monitoring relating to discharges from the TSF are included in the MSDP (Appendix 9-E of the Application) and the AEMP (Appendix 7-E of the Application).

6.5.3 Preventive Maintenance for Detoxification Unit and TSF

The preventive maintenance program for the detoxification unit and the TSF will include primary and backup pumps for reclaim water and reagent; backup generators; level gauges; cyanide detoxification process monitoring devices; and other critical equipment.

The preventive maintenance system will generate work orders on a predetermined schedule so that this equipment can be inspected and maintained or replaced as necessary to assure its continued proper functioning, thereby preventing or minimizing the likelihood of any cyanide exposures or releases. An SOP will be prepared describing the necessary measures for decontamination of equipment that has been in contact with cyanide solution prior to its routine maintenance, sale, or disposal.

6.6 Groundwater Protection

ICMC Standard of Practice 4.6

Implement measures designed to manage seepage from cyanide facilities to protect the beneficial uses of groundwater.

The principal design objectives for the TSF are to protect the regional groundwater and surface water during both operations and in the long-term (after closure) and to achieve effective reclamation at mine closure. The TSF was designed to permanently store tailings, PAG1 and PAG2 waste rock, and NAG3 potentially metal leaching waste rock that will be generated during mine operations. The TSF will comprise two adjacent sites, TSF C and TSF D.

Seepage from the TSF will be controlled primarily by the low-permeability core zone constructed prior to the development of the tailings beach, the cut-off trenches, and the low-permeability foundation materials. Seepage from the TSF will result from infiltration of ponded water directly through the embankment fill and the natural ground, and from expulsion of pore water as the tailings mass consolidates.

Special design provisions incorporated into the tailings dam design to minimize seepage losses include the development of extensive tailings beaches to isolate the supernatant pond from the dam, embankment drainage collection systems, and toe drains at the downstream toe of the dams to reduce seepage gradients. Additional seepage collection ditches constructed along the toe of the embankments will collect seepage and surface runoff and direct the flow to the pumpback systems.

Secondary seepage collection at the ECD will be achieved by constructing a collection dam approximately 1 km downstream at a topographic low point in Davidson Creek. A pumpback system will manage seepage and storm water inflows. Recovered water will be pumped to TSF D, and the collection pond will be kept dewatered to the maximum extent practicable. Seepage through this dam will be captured in an embankment drain system and sump and be pumped back to the ECD pond.

Two seepage interception trenches, one on each side of Davidson Creek, will be excavated through the surficial sand and gravel terraces downstream of the TSF D Main Dam and will report to the ECD pond. The locations of the seepage interception trenches are based on the results of geotechnical drilling along the proposed alignments. The trenches will be excavated and keyed into the low-permeability overburden horizon and will be approximately 3.3 km long and typically 5 to 15 m deep. Any seepage from the dam will be collected and recycled back to the TSF.

Groundwater monitoring wells have been installed in the downstream areas below TSF D and could be used to locate recovery wells, if required, to recover any foundation seepage. Additional monitoring wells will be installed as required before TSF D is commissioned. The TSF C West Dam seepage will be controlled in the long-term by selectively discharging tailings to hydraulically separate the supernatant pond from the West Dam. Groundwater monitoring results will be compared to WAD cyanide concentrations in groundwater to ensure they are not above levels protective of beneficial use. Monitoring program for site water, including groundwater, are included in the MSDP (Appendix 9-E of the Application) E and AEMP (Appendix 7-A of the Application).

BW Gold does not have an underground mine and as such, does not use mill tailings as underground backfill.

6.7 Spill Prevention and Containment

ICMC Standard of Practice 4.7

Provide spill prevention or containment measures for process tanks and pipelines.

Spill prevention and containment measures will be included in the design for process tanks and pipelines containing cyanide solutions. All tanks will be located within concrete secondary containment areas. Containment areas are designed with the capacity to contain 110 percent of the largest tank or vessel plus hold a 100 year, 24-hour storm event. The floor area and wall height is designed to contain spills, and the floors slope toward a collection sump for cleanup and return of the spill to the process stream for which it is best suited.

All spills within the containment area are amenable to being returned directly to the cyanidation process, and no residual spill material will be generated in normal operations that will require management or disposal as a waste. Spills of dry NaCN briquettes or granules in the unloading or storage area will be captured and deposited in the mixing tanks. Any spills of process solution will be captured with portable suction pumps and returned to appropriate locations in the process, i.e., areas that will not contribute to a process upset. Containment areas associated with cleaned-up spills will be washed into sumps within the containment, and the collected effluent will be pumped back to the process stream.

Low-flow or low-pressure sensors will be installed on the tailings and reclaim water pumps to alert process facility control room operators regarding potential leaks or pipeline ruptures. The pipelines will also be designed to ensure that any solution released from the tailings pipeline and the portion of the reclaim water pipeline between the impoundment and the storage tank will flow by gravity into the TSF.

In general, routine and planned actions to correct upset conditions before they result in spills or releases to the environment, exposure to workers, or other major accidents are described in the Mine Emergency Response Plan (Appendix 9-K of the Application). Planned releases of tailings water from the TSF are also addressed in the MSDP (Appendix 9-E of the Application).

Prevention measures include daily workplace examinations and preventative maintenance inspections. Daily workplace examinations include inspections of pipelines for signs of a release or potential failure. Preventative maintenance inspections include periodic visual inspections and thickness tests.

Tanks and pipelines are constructed of materials compatible with cyanide and high pH conditions. Construction materials include HDPE and carbon steel. Design criteria specifications and P&IDs document construction materials.

6.8 Construction Quality Procedures

ICMC Standard of Practice 4.8

Implement quality control/quality assurance procedures to confirm that cyanide facilities are constructed according to accepted engineering standards and specifications.

Proper quality control and quality assurance procedures will be implemented during construction of cyanide facilities, including the mill and the TSF. The term “cyanide facilities” is defined in the Code’s definitions and acronyms to include “storage, production, waste management or regeneration units for managing cyanide or cyanide containing process solution, and pollution control devices, equipment or installations used to prevent, control or minimize the risk of a cyanide release.” Cyanide process solutions

include all reagent and in-process solution such as leach solution and tailings reclaim water but exclude solution containing less than 0.5 mg/l WAD cyanide.

QA/QC programs will be followed for all major installations of cyanide facilities, such as tailings impoundments, mill buildings and equipment, reagent-strength cyanide tanks, and the concrete containments, supports and piping related to these facilities.

The QA/QC program will address the suitability of materials and adequacy of soil compaction for earthworks such as tank foundations and earthen liners, the installation of synthetic membrane liners used in ponds, and for construction of cyanide storage and process tanks. These documents will be retained for the life of the facility.

6.9 Monitoring Programs

> ***ICMC Standard of Practice 4.9***
>
> Implement monitoring programs to evaluate the effects of cyanide use on wildlife, surface and ground water quality.

The following monitoring procedures have been developed to evaluate BW Gold's effects on wildlife, surface and groundwater quality:

- Mine Site Water and Discharge Monitoring and Management Plan; and
- Aquatic Effects Monitoring Program.

These plans have been developed by qualified professionals. The plans and subsequently developed procedures will specify how and where samples should be taken, sample preservation techniques, chain-of-custody procedures, shipping instructions and cyanide species to be analyzed. Sampling conditions are recorded on Field Sampling Data Sheets.

WAD cyanide concentrations are monitored in surface water and groundwater down gradient of the site on a quarterly basis.

6.9.1 Inspections for Storage and Handling Facilities

Formal inspections of the cyanide off-loading and storage facilities will be completed monthly in accordance with an SOP that will describe how these inspections are to be completed and documented on an inspection checklist and how follow-up corrective actions are to be initiated and tracked. Use of a detailed checklist is meant to focus the attention of the inspector on the specific items that must be observed.

Tank and pipeline inspections will focus on structural integrity, signs of corrosion and leakage, and legibility of labels indicating piping or tank contents and the direction of flow in pipelines. Secondary containment systems and associated supply and discharge piping components will be inspected for their integrity, the presence of fluids, or evidence of leakage, cracks, and available capacity.

Any noted releases of cyanide solution or suspected unsafe conditions will prompt immediate corrective action, as appropriate for the observed condition. Examples of such actions could include pumping the solution to the production process, repairing leaking equipment (and inspecting similar equipment to prevent like occurrences), increasing testing/inspection frequencies, conducting more rigorous types of leak detection tests, or performing other measures commensurate with the nature and significance of the observed release. Because of the critical nature of these systems to the safe operation of the facility, any such occurrences will be documented as nonconformities and formal corrective and preventive actions will be undertaken in accordance with the Cyanide Code requirements.

Cyanide off-loading and storage area security fencing will also be inspected at monthly intervals to evaluate its integrity, to ensure that access restriction signs are legible, and to ensure that access to this area is restricted to authorized personnel only. All inspection records will be retained in accordance with EMS requirements.

6.9.2 Inspections of Process Equipment

The processing plant will be subject to regularly scheduled inspections (daily, weekly etc.) that will be documented, and records of the inspections will be maintained at the Project. Pre-work inspections will be conducted prior to each shift in accordance with the applicable SOP. Operators will be required to complete visual inspections of areas that are monitored through the control room and to ensure monitors are performing adequately and results are correct. Inspection records will be maintained as required by the Cyanide Code.

6.9.3 Inspection of Detoxification Plant and TSF

The detoxification facility and TSF will be subjected to daily inspections. Any unsafe conditions will be noted in an operator's logbook and appropriate actions will be taken to address the deficiency. Significant safety problems or any releases of cyanide solutions will also require documentation as a nonconformity and formal resolution to meet Cyanide Code requirements. Any wildlife mortality will also be documented and reported.

All tanks, piping, valves, and secondary containment structures at the detoxification facility will be subject to periodic formal inspections. An SOP will be prepared that describes how the inspections will be conducted and documented on inspection checklists and how follow-up corrective actions will be initiated and tracked. Detailed checklists will be used to focus the inspector on specific items to be observed.

Tank and pipeline inspections will focus on structural integrity of the original system plus all authorized modifications; signs of corrosion and leakage; legibility/adequacy of labels, colour coding, or other markings indicating pipeline contents and direction of flow; and any evidence of unauthorized and/or undocumented system modifications. Secondary containment structures and associated piping systems will be inspected for their integrity, indications of cracks or leakage, presence of fluids, and available capacity. All inspection records will be retained in accordance with regulatory and EMS requirements.

A monitoring program will be implemented to confirm that the detoxification facility is functioning as designed, i.e., reducing residual WAD cyanide to required concentrations.

At a minimum, detoxification plant influent and effluent will be monitored for the following parameters, at the frequencies indicated:

- pH (continuous monitor and alarm);
- WAD cyanide (multiple times during each shift);
- Total cyanide (weekly at the process plant, end of pipe, and TSF or reclaim water); and
- Copper, iron, and zinc (during each shift).

The adequacy of the monitoring program will be specifically evaluated in view of any proposed process modifications, and this plan and related SOPs will be adjusted accordingly.

Process plant security practices will be reviewed regularly (daily) to ensure that access to the cyanidation and detoxification facilities remains restricted to authorized personnel only.

7. DECOMMISSIONING

7.1 Decommissioning Procedures

ICMC Standard of Practice 5.1

Plan and implement procedures for effective decommissioning of cyanide facilities to protect human health, wildlife, and livestock.

The cyanide facilities will be included as part of the overall mine closure activities discussed in the Mine Closure Plan (Chapter 4 of the Application). Decommissioning and closure of cyanide facilities will entail the removal or detoxification of unused reagent cyanide and the cleanup of cyanide-containing residues in process tanks and equipment. The measures to accomplish these tasks are included in the Reclamation and Closure Plan, as are the cost estimates and information on financial assurance for decommissioning and closure in conformance with the Cyanide Code.

As noted in the Reclamation and Closure Plan, all cyanide process tanks and piping systems will be triple flushed with water to remove residual cyanide and the effluent routed to the detoxification circuit for reduction of residual cyanide concentrations to levels accepted by the Cyanide Code or regulatory requirements. Detoxified washwater will then be released to the tailings pipeline for deposition in the TSF. The decommissioned process plant tanks and piping systems will then be cut up and recycled for their scrap metal value.

Surplus water from the TSF supernatant pond will be pumped to the pit at closure to facilitate pit filling. Cyanide concentrations in the pit will be below detection when the pit is full due to natural degradation and dilution. The LoM model included in the MSDP (Appendix 9-E of the Application) demonstrates how water will be managed throughout decommissioning.

The plan will also include the installation of measures necessary for control or management of surface or groundwater such as pumping and treatment systems that would operate during the facility's closure period.

The Reclamation and Closure Plan, including the decommissioning of cyanide facilities will be reviewed on a regular basis (every 5 years) or more frequently, such as prior to modifications to the cyanide facilities which would impact the closure of the facility.

7.2 Decommissioning Funding

ICMC Standard of Practice 5.2

Establish an assurance mechanism capable of fully funding cyanide-related decommissioning activities.

The Reclamation and Closure Plan includes an estimate of the cost to fully fund third-party implementation of the cyanide-related decommissioning measures as identified in the decommissioning plan. The plan includes line items for site decommissioning and corresponding cost estimates.

8. WORKER SAFETY

8.1 Exposure Control

ICMC Standard of Practice 6.1

Identify potential exposure scenarios and take measures as necessary to eliminate, reduce, and control them.

BW Gold will develop an OHSP, which will include descriptions of how OHS risks are assessed, how procedures are developed and training needs assessed and delivered. As part of this process, prior to receipt of cyanide, procedures describing how cyanide-related tasks should be conducted to minimize worker exposure, use of PEP, emergency response, etc. Procedures and training programs will be developed in coordination with the OHS Committee.

Routine safety meetings and regularly scheduled formal safety meetings will be held to solicit worker input to OHS issues and to ensure that employees perform their tasks in a manner that is protective of their health and safety and those of their co-workers. At each meeting, employees will have the opportunity to ask questions and identify health and safety concerns.

The change management procedures described in Section 6.1.3, will also be developed to identify changes to the facility or its operating practices that may increase the potential for workers to be exposed to cyanide and ensure before such changes are implemented they will be evaluated and addressed as necessary. A written procedure requiring written notification to safety personnel and a sign-off before the change will be developed to address this. Verification will be through a review of the procedure as well as completed forms that have been signed off by safety personnel.

Through the OHS Committee, methods will be put in place to seek employee input and evaluate health and safety procedures.

8.2 Operating and Monitoring Measures

ICMC Standard of Practice 6.2

Operate and monitor cyanide facilities to protect worker health and safety and periodically evaluate the effectiveness of health and safety measures.

To the extent practicable, the facilities will be engineered and the operational practices designed to limit worker exposure to HCN gas levels below 4.7 ppm. Keeping cyanide in solution is one of the most important considerations in limiting the potential for worker exposure to hydrogen cyanide gas. The solubility of cyanide in water is related to the pH, so maintaining the necessary pH is very important. During the design and construction phase of the processing plant, BW Gold will implement measures to operate and monitor cyanide facilities to protect worker health and safety, including, maintaining the pH of the cyanide solutions, hydrogen cyanide monitoring, work practices/procedures, and posting warning signs and labels. Means to periodically evaluate these measures include; equipment calibration and maintenance, occupational hygiene monitoring, and incident investigations will also be developed. The effectiveness of these measure will be assessed during the annual audit (see Section 5.2).

The pH will be maintained in the various cyanide-bearing process solutions and slurries throughout its operation to minimize the release of HCN to protect workers and keep the HCN levels below regulatory limits. Critical pH meters will be installed and throughout the process to monitor and alarm if the pH falls

out of specification. These meters will be calibrated regularly, in accordance with manufacturers' recommendations and checked during the operators shift round.

8.2.1 HCN Monitoring Equipment and Calibration

The cyanide facilities will be monitored to protect the health and safety of its workers. Fixed airborne cyanide detection monitors will be located at the cyanide off-loading, dissolution, and storage area; the processing plant; and the detoxification facility. Monitors will be set to sound a highly audible unique alarms, and initiate a flashing beacon (light). These alarms will send an alert to control room personnel. The first alarm will sound if the concentration of HCN reaches High set point of 4.7 ppm. When a High Alarm sounds, the area operator will troubleshoot the cause of alarm, and all other personnel exit the area. The alarms will also include a High-High setting of 10 ppm. When a High-High Alarm sounds, all personnel leave the area and barricade tape access to the area until the condition causing the alarm has been resolved.

Confirmatory monitoring with portable personal monitors will also be conducted periodically, as noted in the OHSP in order to ensure that employees are not exposed to potentially harmful concentrations of HCN. All monitoring results will be retained in accordance with EMS requirements.

Fixed and portable cyanide monitoring equipment will be maintained, tested, and calibrated as directed by its manufacturer. Records of these activities will be retained in accordance with EMS requirements. Fixed and personal monitors are used to limit exposure to hydrogen cyanide gas. Six fixed monitors are located throughout unloading, mixing and process areas. These monitors have a HIGH Alarm set a 47 ppm and a High High Alarm set at 10 ppm. Based on risk assessment results, personal monitors will also be provided for some tasks or locations. These will also be set with a High and High High Alarms. When a High Alarm sounds, the area operator troubleshoots cause of alarm, and all other personnel exit the area.

Hydrogen cyanide monitoring equipment will be maintained, tested and calibrated, at a minimum, as directed by the manufacturer. Calibration records are to be maintained for at least three years.

The OHSP will include processes for assessing the risks of exposures to chemicals, including cyanide. This process will assess those tasks where the risks of exposure to cyanide cannot be adequately eliminated, reduced, or controlled with process changes and the use of engineering or administrative controls, then employees performing such tasks will be required to use appropriate PPE.

The program will identify the necessary PPE required for each work area, job function, and task that presents the potential for worker exposure to cyanide, after all practical process changes and/or engineering controls have been implemented to eliminate, reduce, or control the exposure. The program will also describe the training necessary for use of the PPE. SOPs and work orders require necessary PPE where harmful concentrations of cyanide are possible (e.g., unloading and mixing). Necessary PPE is also determined and documented during the JHA process.

Warning signs will be in place where cyanide is used or present, advising workers that cyanide is present, and that smoking, open flames, and eating and drinking is not allowed, and that, if necessary, suitable PPE must be worn. Mixing, storage and process tanks are labeled to identify their contents.
Piping containing cyanide process solutions is labeled to indicate contents and direction of flow.

Cyanide (HCN, NaCN) SDSs will be available in areas where cyanide is managed.

8.3 Worker Exposure Emergency Response

ICMC Standard of Practice 6.3

Develop and implement emergency response plans and procedures to respond to worker exposure to cyanide.

High strength cyanide solution will be dyed for clear identification in the event of a leak. This is a requirement that must be in the cyanide sales contract.

Showers, eye wash stations, and dry powder fire extinguishers will be located at strategic locations throughout the operation. Showers and eyewash stations will be inspected on a daily basis as part of work place examinations. The fire extinguishers will be inspected on a monthly basis.

Additional equipment available in the event of a worker exposure to cyanide includes:

- First Aid kits;
- Oxygen;
- Resuscitators;
- Cyanokits; and
- Means of communication – radios and telephones.

The strategic locations of this equipment will be based on ensuring that it is readily available in the in event of an emergency.

First aid kits will be routinely inspected to ensure that required equipment and materials are available and in good condition.

A cyanide antidote acceptable under applicable regulations will also be available on site and will be stored and replaced with new antidote kits at intervals recommended by the manufacturer. Gold mines and mills have historically used a Cyanide Antidote Kit (CAK) that contains three components: amyl nitrite, sodium nitrite, and sodium thiosulfate. Amyl Nitrite was discontinued in February 2012 and the traditional CAK is no longer available in Canada. As the traditional kits expire throughout the year, gold mines and mills will need to replace them with the only available cyanide antidote kit on the Canadian market, Merck's Cyanokit. Prior to startup of operations the current options for cyanide antidotes should be verified and selected. When determining the antidote to be used, provisions will be made for the type of administration required and training requirements, as well as storage and inspection requirements. Inspection records will be retained in accordance with this manual.

First aid procedures for response to cyanide exposure will be included in an SOP. All workers who may be called upon to respond to cyanide exposures will be trained in these procedures and will take part in routine drills to test and improve their response skills. Because the current antidotes (Cyanokit) must be provided intravenously or intramuscularly, administration of antidotes is restricted to qualified medical personnel or specially trained members of the Emergency Response Team. Appropriate training programs will be implemented and documented in accordance with EMS requirements.

Guidelines for transport of exposed workers to local medical facilities that have adequate, qualified staff, equipment, and expertise to provide additional treatment will be included in an SOP. Any incidents involving cyanide exposure will be documented and investigated. Specific procedures for accident and incident investigations, reporting, and recordkeeping will be addressed in an SOP.

Because of the intrinsic hazards associated with cyanide operations, any incidents involving cyanide exposure will also be addressed as nonconformities and formally investigated and resolved in accordance with the Cyanide Code requirements. Regardless of the circumstances of any such incident, programs and procedures to protect worker health and safety will always be reviewed to ensure that responses to cyanide exposures remain adequate and appropriate. Procedural modifications or improvements will be implemented where necessary to minimize the potential for future recurrence.

9. EMERGENCY RESPONSE

9.1 Emergency Response Plans

> ***ICMC Standard of Practice 7.1***
>
> Prepare detailed emergency response plans for potential cyanide releases.

Although measures will be incorporated into the design, construction, and operations of the processing facilities to prevent cyanide releases to the natural environment as well as workplace exposures, it is necessary to plan for emergency situations and to be prepared to respond rapidly and effectively in the event that emergencies do occur. Emergency response plan(s), ERPs, will include measures to address potential cyanide releases such as:

- Catastrophic release of hydrogen cyanide from storage or process facilities;
- Transportation incidents (on site transport, responsibility of supplier/transporter, to be confirmed in the contract documents);
- Releases during unloading and mixing;
- Releases during fires and explosions;
- Pipe, valve and tank ruptures;
- Overtopping of ponds and impoundments;
- Power outages and pump failures;
- Uncontrolled seepage;
- Failure of cyanide treatment, destruction or recovery systems; and
- Failure of tailings impoundments, and other cyanide facilities.

These plans will describe specific response actions (as appropriate for the anticipated emergency situations) including: clearing site personnel from the area of exposure, potentially affected communities, use of cyanide antidotes and first aid measures for cyanide exposure; control of releases at their source; and containment, assessment, mitigation and future prevention of releases.

Transport and delivery of sodium cyanide to BW Gold will be the responsibility of the seller, and will be stated as such in established sales contracts. These will confirm the seller is responsible for transportation requirements in accordance with the applicable Principles, Standards of Practice, performance goals, and certification requirements of the Code. These requirements include transportation-related emergencies. BW Gold will take responsibility for the ISO tank containers once they are delivered to the BW Gold site; however, BW Gold will be involved in spills that happen on site property and response plans for transportation incidents that happen on the site will be included in ERPs. BW Gold will also exercise due diligence in confirming the routes that the seller will use and receive copies of their plans for executing a spill clean up in the event one occurs.

9.2 Personnel and Stakeholder Involvement

> ***ICMC Standard of Practice 7.2***
>
> Involve site personnel and stakeholders in the planning process.

A MERP has been developed and includes the approach for management of all emergencies at site. During the development of the site ERPs for cyanide, it may make sense to designate specific onsite response roles to outside responders or medical facilities. In these cases, those responders and medical facilities will be involved in the emergency planning process. The nature of such involvement depends on the role the outside responder would play. If, for example, the ERP calls for an outside fire department or hazmat team to respond to an onsite release, then the responders should have first-hand knowledge of the site and the available resources as well as provide their input to the specific procedures to be used. If an outside medical facility were to respond to an onsite release and exposure, that facility should be familiar with the site and also review and provide input to the ERP.

Although emergency aid agreements (formerly mutual aid agreements) are currently not in place, BW Gold has an existing relationship with BC Air Ambulance, and the Prince George and Vanderhoof hospitals. Where these or other external stakeholders are involved in or could be impacted by the Cyanide ERPs, periodic dialogue with these groups will occur. Records of this dialogue and involvement will be retained.

9.3 Personnel, Equipment, and Resources

> ***ICMC Standard of Practice 7.3***
>
> Designate appropriate personnel and commit necessary equipment and resources for emergency response.

Emergency response coordinators, roles and responsibilities, call-out procedures, and available response equipment will be outlined in the ERP.

9.3.1 Emergency Response Team / Offsite Responders

The ERP will identify responsibilities for responses to cyanide emergencies. These plans will designate the primary and alternate emergency response coordinators who have explicit authority to commit the resources necessary to implement the Plan. The plans will also identify the Emergency Response Teams (ERT). The plan will specify the duties and responsibilities of the coordinators and team members. These personnel will have received the training as specified in Section 10.3. The ERP will include 24-hour contact information and call-out procedures for response personnel.

As noted above where external resources (outside responders, medical facilities and communities in the emergency response procedures) are included in the ERP the role and contact information of the group will be included in the ERP.

9.3.2 Response Equipment and Maintenance / Inspection Requirements

A documented ERP or associated SOP will be prepared to ensure the availability of emergency response equipment in the event it is needed. A list of equipment items required for the management of cyanide exposures and releases will be included in the SOP and it will address items necessary for containment and cleanup of spillage, traffic control, first aid, PPE, special equipment for response vehicles, and necessary items for documentation and communication. As necessary this will include personal protection gear available along transportation routes.

The SOP will also include procedures to inspect emergency response equipment to ensure its availability.

9.4 Notification Procedures

ICMC Standard of Practice 7.4

Develop procedures for internal and external emergency notification and reporting.

Reporting of cyanide releases and exposures will follow the same procedures established in the ERP and appropriate site SOPs for the internal and external reporting of accidents and incidents. These plans will include as appropriate contact information for notifying regulatory agencies, outside response providers and medical facilities of the cyanide emergency.

In the event of a major accident, BW Gold will comply fully with all applicable reporting requirements and will provide the competent authorities with the following information:

- Circumstances of the accident;
- Identification and volume of the hazardous materials involved;
- Information to enable an assessment of the effects of the accident on human health and the environment;
- Emergency measures taken; and
- Measures to be taken to alleviate medium- and long-term effects of the accident, as well as to prevent recurrence.

The ERP will include procedures and contact information for notifying potentially affected communities of the cyanide-related incident and any necessary response measures, and for communication with the media.

9.5 Monitoring Elements and Remediation Measures

ICMC Standard of Practice 7.5

Incorporate into response plans monitoring elements and remediation measures that account for additional hazards of using cyanide treatment chemicals.

As previously noted, the unloading, storage, mixing, and use of cyanide will be conducted within full containment. The plant design will require individual containment areas to be sized to accept 110% of any reporting solid or liquid. Any spills within the containment area are amenable to being returned directly to the cyanidation process, and no residual spill material will be generated in normal operations that will require management or disposal as a waste.

Spills of dry NaCN or granules in the unloading or storage area will be captured and deposited in the mixing tanks. Any spills of process solution will be captured in containment sumps and returned to appropriate locations in the process, i.e., areas that will not contribute to a process upset, using portable suction pumps. Containment areas associated with cleaned-up spills will likewise be washed into containment sumps, from which the collected effluent can be pumped back to the process.

Because any potential spills are captured and returned directly to the cyanidation process and no residual spill material will be generated during normal operations, a potential waste stream is eliminated and no waste disposal actions are required. In the unlikely event that solid NaCN briquettes spill to the ground surface beyond the mine property during delivery to the site, the Environmental Superintendent will contact and coordinate necessary response actions with local, regional, and national officials, as indicated by the community emergency plans from the affected transportation corridor community.

While unlikely, spills that occur outside the containment will be removed using machinery and deposited in the TSF. SOPs will be developed to train employees on the proper handling and disposal of any cyanide releases, including required PPE for the task. The SOPs will also define the end point of the remediation, including how samples will be taken, what analysis will be performed, and what final concentration will be allowed in residual soil as evidence that the release has been completely cleaned up. For sampling of the released material, sampling will occur immediately downstream of the point the release enters a river, or if the release has entered a water body, samples upstream and downstream from the point the release will be collect. These SOPs will be developed in consideration of the site Reclamation and Closure Plan and the Fuel Management and Spill Response Plan.

Sodium hypochlorite, ferrous sulfate and hydrogen peroxide are all hazardous to aquatic life and will not be used to treat a cyanide release once it has entered surface water. This prohibition will also apply to normally dry drainages since these may flow in response to precipitation and deposit residual treatment chemicals into downstream surface

If any of the spill scenarios identify the potential for an impact to the site drinking water, a plan to provide alternate drinking water supply will be developed.

9.6 Response Planning Evaluation

> ***ICMC Standard of Practice 7.6***
>
> Periodically evaluate response procedures and capabilities and revise them as needed.

The ERP for cyanide emergencies will be periodically evaluated and updated. These updates will occur regularly to ensure the ERT contact information is accurate. The ERP will also be reviewed and updated as needed based on the MOC process; see Section 6.1.3.

Despite any other changes BW Gold will ensure the ERPs, including the TSF Emergency Action Plan are reviewed at least annually for adequacy. Dates and changes to the document will be summarized in the document revision log.

9.6.1 Cyanide Emergency Response Drills

Onsite and off-site emergency drills for response to cyanide exposures and/or releases will be completed at least annually. The drills will be designed to simulate one or more of the types of releases and exposure scenarios noted in this plan; scenarios selected for such drills will not be repeated until all of the noted scenarios have been tested.

Each drill will be evaluated to determine the adequacy of response procedures and responder training. Written documentation of the scope and evaluated results of each drill will be retained.

The ERPs will subsequently be revised, as necessary, based on evaluation of drill results.

10. TRAINING

10.1 Cyanide Hazards

ICMC Standard of Practice 8.1

Train workers to understand the hazards associated with cyanide use.

Workers are trained to understand the hazards associated with cyanide use. BW Gold will use a variety of training programs to provide all personnel who may encounter cyanide with training in recognizing the cyanide materials present at the operation, the health effects of cyanide, symptoms of cyanide exposure, and procedures to follow in the event of exposure.

All employees and contractors will undergo general site orientation prior to commencing work on site and will be required to repeat this awareness training if away from site for a period of time. Employees and contractors that are required to perform work in the mill will undergo a specific mill orientation that includes details on cyanide risks. As part of their standard job-specific training, employees directly involved with cyanide management tasks will also receive specific training on how their job responsibilities must be performed to prevent unplanned releases of cyanide; to minimize cyanide-related risks to their own health and safety and to the health and safety of their co-workers; and to minimize environmental impacts of cyanide. Refresher frequencies for general site orientation have not yet been established, but are likely to be between 6-12 months' absence from site triggering a refresher.

Training topics will include a general introduction to this plan, including specific emergency response requirements as detailed in this plan; the SOPs applicable to individual work assignments; and applicable portions of the ERPs. All workers will be trained in what to do when a HCN alarm is sounded.

Training will include recognition of the cyanide or cyanide-bearing materials that may be present at the site, information regarding the health effects of cyanide, symptoms of cyanide exposure, and procedures to follow in the event of exposure. The documents will be made available to all employees via the controlled document distribution and records management requirements of the OHSP.

Training will be provided by knowledgeable personnel who are experienced in effective communication techniques. All employees receiving cyanide worker training will be required to pass a written test to ensure their understanding of the subject matter covered. Refresher training will also be conducted for all cyanide workers at least annually. Task-specific annual refresher training will also be required for cyanide awareness for employees working in the mill or handling cyanide (e.g., warehouse, TSF). Training and NACN Management will follow ICMI guidelines and protocols. We will be having a yearly independent ICMI assessment at Blackwater. The first assessment cannot occur until after first gold pour. We will then be assessed at 12-month intervals, with continuous improvement and ranking of our ICMI operational rules/protocols/training & policies and procedures is mandatory year on year.

10.2 Worker Training

ICMC Standard of Practice 8.2

Train appropriate personnel to operate the facility according to systems and procedures that protect human health, the community, and the environment.

Workers are trained to perform their normal production tasks, including unloading, mixing, production and maintenance, with minimum risk to worker health and safety and in a manner that prevents unplanned cyanide releases. Prior to working with cyanide, employees will have received their task specific training

before being allowed to work with cyanide in an unsupervised manner. The effectiveness of this training will be evaluated through the use of knowledge tests at the completion of the training, planned job observations, and periodic workplace assessments of employee behaviour. Where there is a change to a procedure associated with cyanide use or job observations have determined that training is not sufficient, refresher training will be provided.

Appropriately qualified personnel provide task training related to cyanide management activities. Area supervisors typically provide task training for SOPs. These supervisors have knowledge and experience with the tasks and topics of the SOPs.

Task specific SOPs, such as sampling of cyanide solutions, decontamination and maintenance on equipment and piping containing cyanide, receipt and mixing of cyanide solutions, confined space entry into vessels containing cyanide, LOTO of cyanide systems, etc. will all be developed prior to receipt of cyanide on site. Example list of cyanide-related, task-specific SOPs to be developed and employees trained on prior to receipt of cyanide on site (not an exhaustive list):

- Cyanide Systems Decontaminate and Handover;
- Cyanide Isotainer Delivery, Offload and Handover;
- Boxed Cyanide Delivery, Offload and Handover;
- CN WAD Determination Using WAD Analyzer;
- Free Cyanide Titration;
- Mixing Cyanide; and
- Replacing Gasket on Cyanide ISO Container.

Documentation of training records are retained throughout an individual's employment. These records include the names of the employee and the trainer, the date of training, and the topics covered. Supervisor acknowledgement/sign-off is typically used to document if the employee demonstrated an understanding of procedural and task training.

10.3 Exposure and Release Training

ICMC Standard of Practice 8.3

Train appropriate workers and personnel to respond to worker exposures and environmental releases of cyanide.

All cyanide unloading, mixing, production and maintenance personnel will be trained in the procedures to be followed if cyanide is released through task specific training. These procedures will include decontamination, first aid, and emergency reporting procedures.

Mill specific SOP's will be developed to support Mill Evacuation requirements related to elevated HCN gas concentrations prior to receipt of cyanide.

The site Emergency Response Team (ERT) personnel or other site personnel who may be called upon to respond to workplace exposures to cyanide will be trained in the neutralization, decontamination, and first aid procedures noted in the ERPs. This training will include the procedure for notifying appropriate site personnel and will stress that the responder must first ensure their own protection through use of cyanide-specific PPE. The training will include the use of response equipment and cover both worker exposures and environmental releases.

Specialized training will also be provided to those workers designated as members of the Emergency Response Team. All employees receiving specialized cyanide-related emergency response training will be required to pass a written and practical test to assure their understanding of the subject matter. The ERT will also include qualified medical staff or other trained personnel who will be authorized to administer cyanide antidotes, if required.

Emergency drills simulating worker exposures and environmental releases will be conducted at least annually to provide practical, hands-on training for all categories of workers having access to cyanide during the performance of a particular job function. Emergency simulation results will be evaluated from a training perspective to confirm that personnel have the knowledge and skills required for rapid, safe, and effective response. The training requirements of this plan, the OHSP and ERPs will be revised if any deficiencies or nonconformities are identified. Records of these drills will be retained.

Off-site emergency responders, including local responders and medical providers, will be provided a copy of the BW Gold Cyanide ERPs.

11. DIALOGUE

11.1 Stakeholder Opportunity

ICMC Standard of Practice 9.1

Provide stakeholders the opportunity to communicate issues of concern.

Blackwater is approximately 112 kilometres (km) southwest of Vanderhoof, 160 km southwest of Prince George, and 446 km northeast of Vancouver. Driving time from Vanderhoof to the mine site is about 2.5 hours. The Project is located within the Caribou Regional District and the traditional territories of Lhoosk'uz Dené Nation (LDN), Ulkatcho First Nation (UFN), Skin Tyee Nation (STN) and Tsilhqot'in Nation (TNG). Other components of the Project, including the existing Kluskus and Kluskus-Ootsa Forest Service Roads and transmission line, cross the traditional territories of Nadleh Whut'en First Nation, Saik'uz First Nation (SFN), and Stellat'en First Nation (StFN; collectively, the Carrier Sekani First Nations) as well as the traditional territories of the Nazko First Nation (NFN), Nee Tahi Buhn Band (NTBB), Cheslatta Carrier Nation (CCN), and Yekooche First Nation (YFN; EAO 2019a, 2019b).

The environmental assessment (EA) included extensive engagement with the Indigenous nations, federal and provincial government agencies, stakeholders and the public on potential environmental, economic, social, heritage, and health effects, including cumulative effects. The EAO established a technical advisory group (Working Group), comprised of provincial and federal government agencies, local government and Indigenous nations shortly after commencing the EA process, to provide input throughout the Project review, including EAC conditions.

The EAO and CEA Agency also worked collaboratively with LDN, UFN, and NWFN, SFN, and StFN to assess the impacts and reach consensus on the Project impacts on LDN, UFN, NWFN, SFN, and StFN Aboriginal title, rights, and interests. The result of this collaboration is discussed in the CEA Agency and EAO Assessment Reports (CEA Agency 2019; EAO 2019a). LDN and UFN provided their consent to the issuance of an EA Certificate for the Project in letters provided to the EAO on October 9 and October 25, 2020, respectively. BW Gold has a Project Participation Agreement with UFN and LDN and is discussing agreements with other Indigenous nations.

Engagement over the life of the mine will be facilitated through an Environmental Monitoring Committee (EMC) and Community Liaison Committee (CLC) as described in Section 9.3.

11.2 Dialogue Initiation

ICMC Standard of Practice 9.2

Initiate dialog describing cyanide management procedures and responsively address identification concerns.

BW Gold will develop the CMP in consultation with the BC Ministry of Environment and Climate Change Strategy (ENV), BC Ministry of Energy, Mines and Low Carbon Innovation (EMLI), LDN, UFN, NWFN, StFN, SFN and NFN as required by EAC Condition 32 (Cyanide Management Plan).

11.3 Availability of Information

ICMC Standard of Practice 9.3

Make appropriate operational and environmental information regarding cyanide management available to stakeholders.

The EAC includes two conditions requiring the establishment of two committees to provide information to Indigenous nations, regulators, and stakeholders during mine Construction, Operations, Closure, and Post-closure.

Condition 19 requires an EMC to be established to facilitate information sharing and provide advice to BW Gold on the ongoing development and operation of the Project, and the implementation of EAC conditions, in a coordinated and collaborative manner. BW Gold must invite the EAO, EMLI, ENV, BC Ministry of Forestry, Lands, Natural Resource Operations and Rural Development (FLNRORD), and LDN, UFN, NWFN, StFN, SFN, and NFN to participate in all EMC activities. BW Gold has established the EMC and developed Terms of Reference setting out the operating parameters of the EMC in consultation with the EAO, EMLI, ENV, FLNRORD, and Indigenous nations.

Condition 37 of the EAC requires a CLC to be established. The purpose of the CLC is to provide information to BW Gold on Project effects in the members' communities, to provide advice to BW Gold on mitigation measures to address social and economic effects, and review and comment on the Community Effects Monitoring and Management Plan (CEMMP) and the plan's implementation. As part of Condition 37, BW Gold is developing Terms of Reference setting out the operating parameters of the CLC in consultation with the District of Vanderhoof, Village of Fraser Lake, LDN, UFN, NWFN, StFN, SFN and NFN, Northern Health, and EAO.

12. ADAPTIVE MANAGEMENT

Condition 3 of the EAC identifies requirements for adaptive management for the CMP. The results of the Aquatic Effects Monitoring Program, WMMP, Mine Site Water Management Plan, and Groundwater Monitoring and Management Plan will be used to guide adaptive management.

BW Gold will work towards continual improvement of mine infrastructure, including mine roads. The Environment Manager will investigate improvements in any trend and assess whether the practices responsible for the improvements can be applied to other areas of the Project.

Deteriorating trends will be studied to determine the root cause. When the cause is identified, the MERP Coordinator will propose a suitable corrective action to the Mine Manager. Examples of corrective actions could include:

- Increased spending;
- Increased response training;
- Change of procedures and work plans;
- Additional training of employees and contractors on procedures;
- Enhancement of maintenance or monitoring measures; and/or
- Additional supervisory oversight.

12.1 Cyanide Management Plan Maintenance

BW Gold will drive continual improvement of cyanide management through the programs described in this plan. Training, drills, audits, and inspections will form the basis of continual improvement. Records will be maintained for all activities that are carried out with respect to cyanide, and programs will be developed annually to improve on performance. This includes an annual review of this program and prior to any change in the mining lifecycle. The review of this program might also be initiated based on a trigger of the Management of Change procedure; see Section 6.1.3.

13. REPORTING

Condition 5 of the EAC identifies compliance verification and reporting requirements as follows:

"The Holder [BW Gold] must submit a report to the attention of the EAO and Aboriginal Groups on the status of compliance with this Certificate at the following times:

a. at least 30 days prior to the start of Construction;

b. on or before March 31 in each year after the start of Construction;

c. at least 30 days prior to the start of Operations;

d. on or before March 31 in each year after the start of Operations;

e. at least 30 days prior to the start of Closure;

f. on or before March 31 in each year after the start of Closure until the end of Closure;

g. at least 30 days prior to the start of Post-Closure; and

h. *on or before March 31 in each year after the start of Post-Closure until the end of Post-Closure."*

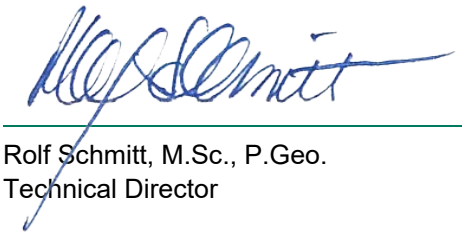
14. QUALIFIED PROFESSIONALS

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

Prepared by:

Michelle Gillen, Certified Environmental Auditor,
Cyanide Code Auditor

Reviewed by:



Rolf Schmitt, M.Sc., P.Geo.
Technical Director

15. REFERENCES

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

Legislation

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

Contaminated Sites Regulation, BC Reg. 6/2021.

Dam Safety Regulation, BC Reg. 11/2021.

Environmental Assessment Act, SBC 2018, c 51.

Environmental Emergency Regulations, 2019, SOR/2019-51.

Environmental Management Act, SBC 2003, c 53.

Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations, SOR/2005-149.

Fisheries Act, RSC 1985, c F-14.

Groundwater Protection Regulation, BC Reg. 152/2016.

Hazardous Waste Regulation, BC Reg. .63/1988.

Impact Assessment Act, RSC 2019, c 28.

Interprovincial Movement of Hazardous Waste Regulations, SOR/2002-301.

Metal and Diamond Mining Effluent Regulations, SOR/2002-222.

Mines Act, RSBC 1996, c 293.

Spill Reporting Regulation, BC Reg. 187/2017.

Transport of Dangerous Goods Act, RSBC 1996, c 458.

Transport of Dangerous Goods Regulation, BC Reg. 231/2002.

Transportation of Dangerous Goods Act, 1992, SC 1992, c 34.

Transportation of Dangerous Goods Regulations, SOR/2001-286.

Waste Discharge Regulation, BC Reg. 320/2004.

Water Sustainability Act, SBC 2014, c15.

Secondary Sources

AMEC. 2013. *Transportation Route Survey.* October 9, 2013.

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

BC ENV. 2020 *Approved Water Quality Guidelines*. Province of BC, Ministry of Environment & Climate Change Strategy: Victoria, BC. https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-quality/water-quality-guidelines/approved-water-quality-guidelines (accessed December 2020).

CEA Agency. 2019. *Blackwater Gold Project Environmental Assessment Report*. Online posting. https://iaac-aeic.gc.ca/050/documents/p80017/129204E.pdf.

International Cyanide Management Institute (ICMI). 2018a. *The International Cyanide Management Code*. February 2018.

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New Gold. 2015. *Blackwater Gold Project Environmental Assessment Application/Environmental Impact Statement*. Prepared by AMEC Environment & Infrastructure for New Gold Inc. Vancouver, BC.

APPENDIX A CONCORDANCE FOR ENVIRONMENTAL ASSESSMENT CERTIFICATE #M19-01

Table A-1: Environmental Assessment Certificate #M19-01 Conditions and Relevant Plan Sections

Condition	Description	Location in Plan
Condition 2 (Plan Development)	Where a condition of this Certificate requires the Holder to develop a plan, program or other document, any such plan, program or other document must, at a minimum, include the following information: a) purpose and objectives of the plan, program or other document;	Section 1
	b) roles and responsibilities of the Holder and Employees;	Section 2
	c) names and, if applicable, professional certifications and professional stamps/seals, of those responsible for the preparation of the plan, program, or other document;	Section 13
	d) schedule for implementing the plan, program or other document throughout the relevant Project phases;	Section 1
	e) means by which the effectiveness of the mitigation measures will be evaluated including the schedule for evaluating effectiveness;	Section 12
	g) schedules and methods for the submission of reporting to specific agencies, Aboriginal Groups and the public and the required form and content of those reports; and	Section 13
	h) process and timing for updating and revising the plan, program or other document, including any consultation with agencies and Aboriginal Groups that would occur in connection with such updates and revisions.	Section 12.1
Condition 3 (Adaptive Management)	Where a condition of this Certificate requires the Holder to develop a plan, program or other document that includes monitoring, including monitoring of mitigation measures or monitoring to determine the effectiveness of the mitigation measures, the Holder must include adaptive management in that plan. The objective of the adaptive management is to address the circumstances that will require the Holder to implement alternate or additional mitigation measures to address effects of the Project if the monitoring shows that those effects: a) are not mitigated to the extent contemplated in the Application; b) are not predicted in the Application; or c) have exceeded the triggers identified in paragraph g) of this condition. The adaptive management in the plan must include at least the following: d) the monitoring program that will be used including methods, location, frequency, timing and duration of the monitoring; e) the baseline information that will be used, or collected where existing baseline information is insufficient, to support the monitoring program; f) the scope, content and frequency of reporting of the monitoring results;	Section 10

Condition	Description	Location in Plan
	g) the identification of qualitative and quantitative triggers, which, when observed through monitoring required under paragraph d), will require the Holder to alter existing, or develop new, mitigation measures to avoid, reduce, and/or remediate effects; h) the methods that will be applied to detect when a numeric trigger, or type or level of change referred to in paragraph g), has occurred; i) a description of the process for and timing to alter existing mitigation measures or develop new mitigation measures to reduce or avoid effects; j) identification of the new and/or altered mitigation measures that will be applied when any of the changes identified in paragraphs a) to c) occur, or the process by which those will be established and updated over the relevant timeframe for the specific condition; k) the monitoring program that will be used to determine if the altered or new mitigation measures and/or remediation activities are effectively mitigating or remediating the effects and or avoiding potential effects; and l) the scope, content and frequency of reporting on the implementation of altered or new mitigation measures. If there are any requirements or mitigation measures required in the plan, program or other document for which adaptive management, or elements of adaptive management listed in paragraphs d) to l) are assessed to be not appropriate or applicable, the plan must include identification of those requirements and measures, and the rationale for that assessment.	
Condition 4 (Consultation)	Where a condition of this Certificate requires the Holder consult a particular party or parties regarding the content of a plan, program or other document, the Holder must, to the satisfaction of the EAO: a) provide written notice to each such party that: i) includes a copy of the plan, program or other document; ii) invites the party to provide its views on the content of such plan, program or other document; and iii) indicates: i. if a timeframe for providing such views to the Holder is specified in the relevant condition of this Certificate, that the party may provide such views to the Holder within such time frame; or ii. if a timeframe for providing such views to the Holder is not specified in the relevant condition of this Certificate, specifies a reasonable period during which the party may submit such views to the Holder; b) undertake a full and impartial consideration of any views and other information provided by a party in accordance with the timelines specified in a notice given pursuant to paragraph (a); c) provide a written explanation to each such party that provided comments in accordance with a notice given pursuant to paragraph (a) as to: i) how the views and information provided by such party to the Holder have been considered and addressed in a revised version of the plan, program or other document; or ii) why such views and information have not been addressed in a revised version of the plan, program or other document;	The draft CMP was provided to Aboriginal Groups for review and comment. A consultation record has been prepared.

Condition	Description	Location in Plan
	d) maintain a record of consultation with each such party regarding the plan, program or other document; and e) provide a copy of such consultation record to the EAO, the relevant party, or both, promptly upon the written request of the EAO or such party. The copy of such consultation record must be provided to the EAO, relevant party, or both, no later than 15 days after the Holder receives the request for a copy of the consultation record, unless otherwise authorized by the EAO.	
Condition 32 (Cyanide Management Plan)	The Holder must develop a Cyanide Management Plan in consultation with EMPR, ENV, and Aboriginal Groups. The plan must include at least the following: ■ A description of how the plan is consistent with the Principles and Standards of Practice in the International Cyanide Management Code for the Manufacture, Transport, and Use of Cyanide In the Production of Gold (the International Cyanide Code, December 2016, or as updated or replaced from time to time);	Sections 2 to 9
	■ Means by which cyanide-containing effluent will be monitored and treated prior to discharge, including to the TSF;	Sections 4.5 and 4.6
	■ Identification of cyanide concentrations that would trigger the need for additional effluent treatment; and	Section 4.5.1
	■ Management strategies to ensure that hydrogen cyanide gas stays below applicable human health thresholds.	Section 6