INTERIM CLOSURE AND RECLAMATION PLAN
Ulu Gold Project

Kitikmeot Region, Nunavut

March 2020

BLUE STAR GOLD CORP.

PLAIN LANGUAGE SUMMARY

This *Interim Closure and Reclamation Plan* (the Plan) describes what will be done to conduct progressive reclamation, seasonal closure, future final closure, and post-closure activities within the Ulu Gold Project area, near Kugluktuk, Nunavut. This Plan has been updated from the ones provided by preceding owners of the property; it reflects the current owner's intentions for the site.

Preceding owners of the Ulu Gold Project intended to mine and transport the ore to the Lupin mill or to a potential mill a High Lake. Underground workings were developed, ore was brought to surface for testing and waste rock was used to construct material laydown areas. Much of the equipment and infrastructure mobilized to site in 1996 is no longer useful, and there has been some contamination of the land.

At the time of acquisition by the current owner, the site was in care and maintenance and undergoing some clean-up. The current owner wishes to restart exploration and continue some clean-up so the site is seen like an exploration project but may still be able to be a mine in the future should that opportunity arise.

REVISION HISTORY

Revision #	Date	Summary of Changes	Author	Approval Date
Interim Closure and Reclamation Plan				
0	August 1998	Initial draft plan submitted to the Northwest Territories Water Board.	Echo Bay Mines Ltd.	Not approved
1.0	April 2001	Plan submitted to Nunavut Water Board (NWB).	Echo Bay Mines Ltd.	Approved January 7, 2004 under Water Licence NWB1ULU0008
2.0	January 2004	Updated to reflect comments received from intervenors.	Wolfden Resources Inc.	Approved October 6, 2006
3.0	November 2007	Updated for application to renew water licence.	Zinifex Canada Inc.	Not approved
4.0	August 2011	Updated to reflect new water licence and ownership.	Elgin Mining Inc.	Not approved
5.0	March 2013	Updated to reflect comments received from intervenors.	Bonito Capital Corporation	Approved May 13, 2015 under Water Licence 2BM-ULU1520.
6.0	March 2016	Updated to reflect new water licence. Updated contact and general information. Added document control table. Updated site history. Added option to dispose of sludge on-site, as described in the NWB-approved *Sewage Treatment Plant Operations and Maintenance Plan*. Added options for dealing with hydrocarbon-contaminated soil and liners. Added estimated volume of ore and contaminated soil to be managed at final closure. Updated reference section.	Bonito Capital Corporation	Not approved
7.0	March 2020	Updated to reflect new ownership and proposed plans for the site. New document (content restructured, added to, and updated).	Blue Star Gold Corp.	
Progressive Reclamation Plan				
1.0	September 2017	New draft document.	Bonito Capital Corporation	Not approved
2.0	March 2018	Final document.	Bonito Capital Corporation	Not approved

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TERMS AND ABBREVIATIONS

°C	Degrees Celsius
F1	Petroleum Hydrocarbon fraction F1 encompasses the equivalent normal straight-chain hydrocarbon boiling point range C6 to C10
F2	Petroleum Hydrocarbon fraction F2 encompasses the equivalent normal straight-chain hydrocarbon boiling point range >C10 to C16
F3	Petroleum Hydrocarbon fraction F1 encompasses the equivalent normal straight-chain hydrocarbon boiling point range >C16 to C34
F4	Petroleum Hydrocarbon fraction F1 encompasses the equivalent normal straight-chain hydrocarbon boiling point range >C34 to C50+
FCP	Final Closure Plan
ICRP	Interim Closure and Reclamation Plan
IOL	Inuit Owned Lands
KIA	Kitikmeot Inuit Association
ML/ARD	Metal leaching and acid rock drainage
NIRB	Nunavut Impact Review Board
NPC	Nunavut Planning Commission
NWB	Nunavut Water Board
PHC	Petroleum hydrocarbon
STF	Soil treatment facility

CONCORDANCE TABLE WITH COST ESTIMATE

Interim Closure and Reclamation Plan				Closure Cost Estimate				Reference Documents
Task No.	Task	Subtask No.	Subtask	Section No.	Section	Subtask No.	Subsection	
6	Progressive Reclamation Measures	6.3	Mine Workings	1	Direct Costs	1.5	Mine Workings	-
		6.4	Mine Sump	1	Direct Costs	1.4	Ore Management	-
		6.5	Ore and Waste Rock	1	Direct Costs	1.4	Ore Management	Appendix A: 2019 Geochemical Monitoring: *ML/ARD Summary of Waste Rock, Ulu, Nunavut*. Prepared by SRK Consulting for Blue Star Gold Corp. March 16, 2020
		6.5	Ore and Waste Rock	2	Indirect Costs	2.2	ML/ARD Investigation	Appendix A: 2019 Geochemical Monitoring: *ML/ARD Summary of Waste Rock, Ulu, Nunavut*. Prepared by SRK Consulting for Blue Star Gold Corp. March 16, 2020
		6.6	Infrastructure and Equipment	1	Direct Costs	1.1. & 1.2	Building Demolition Non-Hazardous Landfill	*Landfill Management Plan* (Blue Star 2020b)
		6.7	Hazardous Materials and Contaminated Soil	1	Direct Costs	1.2	Hazardous Material Management	Appendix B: *Results of 2019 Contaminated Soil Investigation at Ulu Gold Project*. Prepared by SRK Consulting for Blue Star Gold Corp. March 12, 2020
		6.7	Hazardous Materials and Contaminated Soil	1	Direct Costs	1.3	Soil Treatment Facility	*Soil Treatment Facility Management Plan* (Blue Star 2020d)
		6.8	Borrow and Quarry Materials	1	Direct Costs	1.7	Borrow and Quarry	*Borrow Management Plan* (Blue Star 2020e)
		6.9	Monitoring and Maintenance	2	Indirect Costs	2.3 & 2.4	Monitoring and Reporting Management and QA/QC	Water License 2BM-ULU1520 *Landfill Management Plan* (Blue Star 2020b) *Soil Treatment Facility Management Plan* (Blue Star 2020d)

1. INTRODUCTION

1.1 OVERVIEW OF THE ULU GOLD PROJECT

The Ulu Gold Project (the Project) is located on Inuit Owned Lands in the Kitikmeot region of Nunavut, approximately 200 km southeast of Kugluktuk, Nunavut (see Figure 1). Underground exploration was conducted in 1996, 1997, 2005, and 2006. Since 2006, the camp has been reopened to support surface exploration and progressive reclamation activities in 2012, 2014, 2018 and 2019. Blue Star Gold Corp. (Blue Star) acquired the Project from Bonito Capital Corp. and the water licence was assigned December 2019. Blue Star is now responsible for activities associated with the Project, including the implementation of this Plan. Blue Star's near-term plans are to recommence exploration and undertake progressive reclamation for the Project.

The *Interim Closure and Reclamation Plan* (ICRP) is intended exclusively for use by Blue Star and its contractors. Its purpose is to ensure that best practices are implemented at its Project to minimize potential environmental impacts and potential environmental liabilities during progressive reclamation and exploration activities, and also to ensure that the conditions of the water and land use licences are met. The ICRP should be read in conjunction with the documents listed in Table 1. The ICRP also outlines Blue Star's path forward to inform a future final closure and reclamation plan for the site.

Table 1 Related project documents, permits, and licences

Document	Authors
Engagement Plan (2020a)	Blue Star Gold Corp.
Landfill Management Plan (2020b)	Blue Star Gold Corp.
Waste Management Plan (2020c)	Blue Star Gold Corp.
Soil Treatment Facility Management Plan (2020d)	Blue Star Gold Corp.
Borrow and Quarry Rock Management Plan (2020e)	Blue Star Gold Corp.
Spill Response Plan (2020f)	Blue Star Gold Corp.
Wildlife Protection Plan (2020)	Environmental Dynamics Inc.
Interim Water Management Plan (2006a)	Gartner Lee Ltd.
Mineral Claim	Government of Canada
Screening Decision Report	Nunavut Impact Review Board
Water Licence	Nunavut Water Board
Land Use Licence	Kitikmeot Inuit Association

1.2 SCOPE

This ICRP (the Plan) describes the procedures for progressive reclamation and temporary closure, and outlines considerations for future final closure at the Project. This ICRP provides details of Blue Star's near-term plan to recommence exploration, progressively reclaim the site to support exploration activities, yet allow for potential future mine development.

1.3 PLAN OBJECTIVES

The Blue Star team endeavours to fulfill Blue Star's reclamation and closure objectives for the Project. Accordingly, the objectives of this plan are to:

- Ensure employees and contractors are aware of their responsibilities regarding progressive reclamation, temporary closure of the site, and associated monitoring activities.
- Outline appropriate measures to remediate areas affected by petroleum hydrocarbons and to treat the soil.
- Outline appropriate measures to dispose of infrastructure no longer necessary for ongoing exploration at the site.
- Outline potential scenarios and studies required for future final closure of the site.

1.4 PROJECT SCHEDULE

The Project currently is a surface exploration site and with historical underground workings. Table 2 outlines the Project schedule as currently envisioned by Blue Star. The timing of exploration activities and camp relocation are expected to occur in the near term, yet this is contingent upon a variety of factors that include safety, logistics, conditions on site, exploration success, and market conditions.

Table 2 Project schedule

Year	Summary of Main Project Activities
2020	Recommence surface exploration. Construct a soil treatment facility. Excavate and treat petroleum hydrocarbon contaminated soils. Establish an on-site landfill for the disposal of non-hazardous materials. Implement selected management option for the stockpiled ore. Assess alternate camp locations. Close the landfill at the end of each season. Initiate reclamation research to evaluate requirements and options for future final closure of site roads, constructed pads, and historical mine openings. Conduct monitoring in accordance with water and land use licences terms and conditions.
2021	Continue surface exploration. Continue treatment of contaminated soil in the soil treatment facility. Close the landfill at the end of each season. Relocate the Ulu camp to a new location closer to the airstrip. Commence limited baseline environmental studies. Conduct monitoring in accordance with water and land use licences terms and conditions.
2022–2024	Continue surface exploration. Commence underground exploration. Undertake mine development planning. Continue treatment of contaminated soil in the soil treatment facility. Continue baseline environmental studies. Conduct monitoring in accordance with water and land use licences terms and conditions.

Year	Summary of Main Project Activities
2025	Continue exploration. Close the soil treatment facility. Dispose of remaining non-hazardous waste in the landfill (i.e., soil treatment facility liner). Close the landfill. Continue baseline environmental studies. Conduct monitoring in accordance with water and land use licences terms and conditions.
2026 onwards	Continue exploration. Continue baseline environmental studies. Conduct monitoring in accordance with water and land use licences terms and conditions.

1.5 PLAN MANAGEMENT

The Plan is reviewed annually by Blue Star's General Manager and is updated as needed following receipt of or amendments to licences and permits, to ensure alignment with relevant terms and conditions. When material changes occur, the updated document will be provided to parties in accordance with the *Engagement Plan* (Blue Star 2020a).

1.6 PLAN IMPLEMENTATION

This Plan is effective upon approval and is valid throughout all phases of the Project.

The General Manager or their designate is responsible for Plan implementation.

A copy of this Plan is posted in key locations at the site while the camp is open. All employees and contractors conducting progressive reclamation and monitoring activities will be made aware of its contents.

Legend

- Community
- Territorial Boundary
- Road Network
- Watercourse
- Waterbody

Map 1. Ulu Gold Project Site Location

Data Sources:

Topogrpahy and Road Network Data courtesy Esri.

Community data provided courtesy GNWT and GN spatial data warehouses.

Disclaimer
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2. Site Description

2.1. LOCATION AND ACCESS

The Project is located in the Kitikmeot region of Nunavut, approximately 523 km north–northeast of Yellowknife, Northwest Territories, approximately 45 km north of the Arctic Circle, and 126 km north of Lupin mine. The Project is centred at longitude 110°58'24 "W and latitude 66°54 '27"N. The closest population centres are Kugluktuk, approximately 210 km to the northwest, and Cambridge Bay, approximately 340 km to the northeast. The proposed deep-water port at Grays Bay is located 100 km to the north.

The Project is accessible by aircraft. A 3.5 km gravel road connects the 1,200 m by 32 m gravel airstrip to the Project. Float- and ski-equipped aircraft may also land on adjacent lakes. A winter road was constructed from the Lupin mine to the site to transport equipment and may be re-established as a winter trail in the future. The proposed route corridor for the all-weather Grays Bay road passes in close proximity to the Project. Figure 2 illustrates the location of the overland routes.

2.2. PAST DEVELOPMENT ACTIVITIES

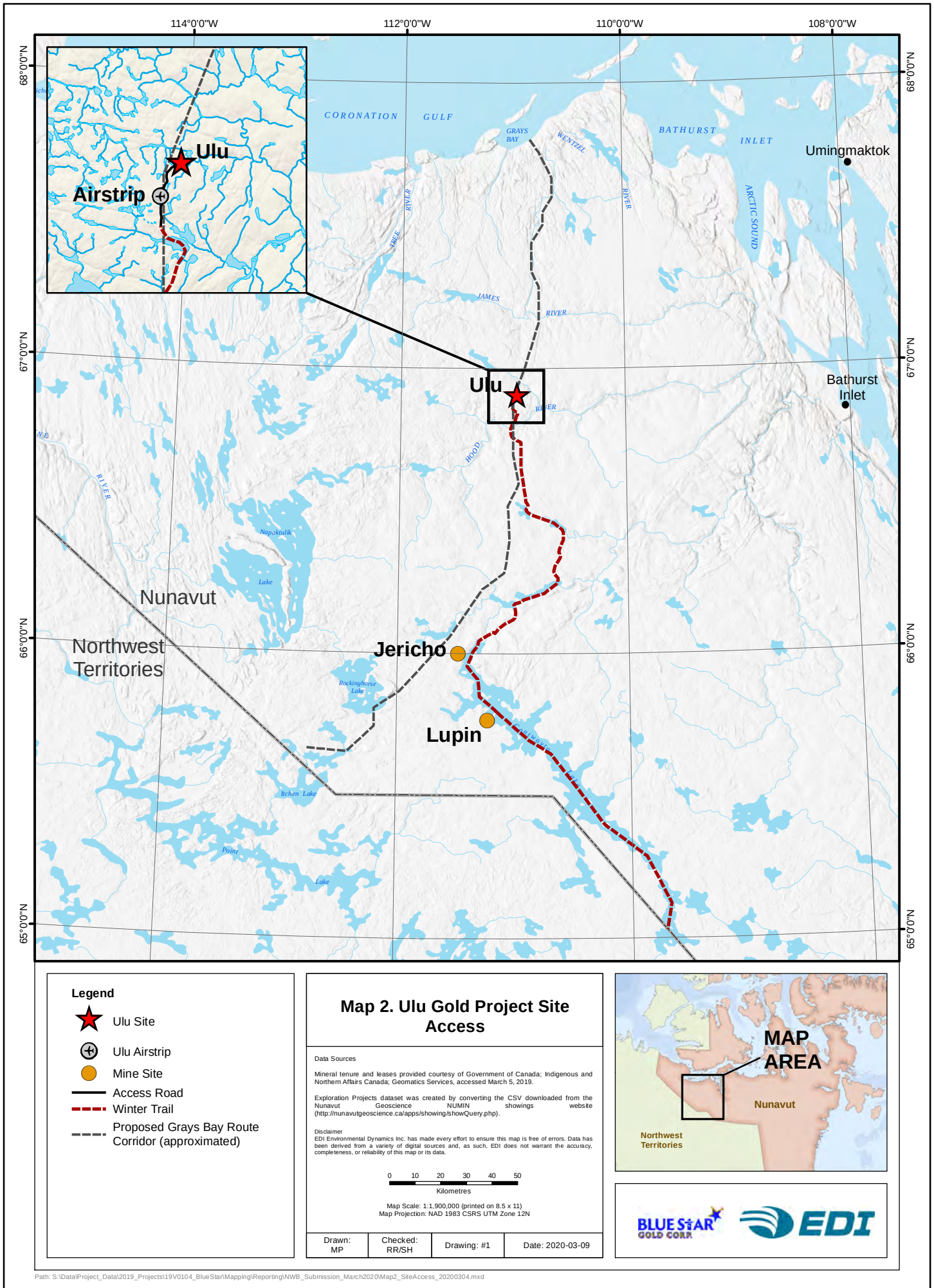
The original Ulu claim was staked in 1988 by BHP Minerals Canada Ltd. (BHP) and the current Ulu mining lease corresponds to the original claim. The Flood Zone was discovered in 1989 and environmental baseline studies commenced in 1990.

Echo Bay Mines Ltd. (Echo Bay) purchased the Ulu project from BHP in 1995 with the intent of developing it to provide mill feed to the Lupin mine. In 1996, Echo Bay mobilized surface and underground equipment and supplies with low-ground pressure (Nodwell and Commander) vehicles to a temporary camp, Camp 3 (Figure 3). In 1996, Echo Bay collared a portal and installed a ramp to access the Flood Zone and completed construction of the Ulu camp (Figure 4). Echo Bay suspended mining operations and surface exploration activities in 1997.

Kinross Gold Corp. acquired the Ulu project in a business combination with Echo Bay in 2002. In 2003, Wolfden Resources Inc. (Wolfden) acquired the Ulu mining lease from Kinross Gold Corp. The Ulu camp was reopened to support surface exploration, engineering, environmental and archaeological studies between 2004 and 2006. The portal was reopened in 2005 and 2006.

Wolfden was acquired by Zinifex Ltd. in 2007, which merged with Oxiana Ltd. to become Oz Minerals Limited in 2008. A portion of Oz Minerals' assets, including the Ulu Gold Project, was acquired in 2009 by China Non Ferrous Metals Co Ltd. (Minmetals), the company now operating as MMG Resources Inc. Bonito Capital Corp. (Bonito), a wholly owned subsidiary of Elgin Mining Inc., acquired the property in 2011. The Ulu camp was inactive during this period.

In 2012, Bonito refurbished and updated the 50-person camp and kitchen to conduct surface exploration. In 2014, Bonito was acquired by Mandalay Resources Corporation. The Ulu camp has been reopened seasonally since 2015 to conduct care and maintenance work, progressive reclamation, and support surface exploration in the region. Blue Star acquired 100% interest in the Ulu Gold Project in February 2020.



Legend

- Ulu Site
- Ulu Airstrip
- Mine Site
- Access Road
- Winter Trail
- Proposed Grays Bay Route Corridor (approximated)

Map 2. Ulu Gold Project Site Access

Data Sources

Mineral tenure and leases provided courtesy of Government of Canada; Indigenous and Northern Affairs Canada; Geomatics Services, accessed March 5, 2019.

Exploration Projects dataset was created by converting the CSV downloaded from the Nunavut Geoscience NUMIN showings website (http://nunavutgeoscience.ca/apps/showing/showQuery.php).

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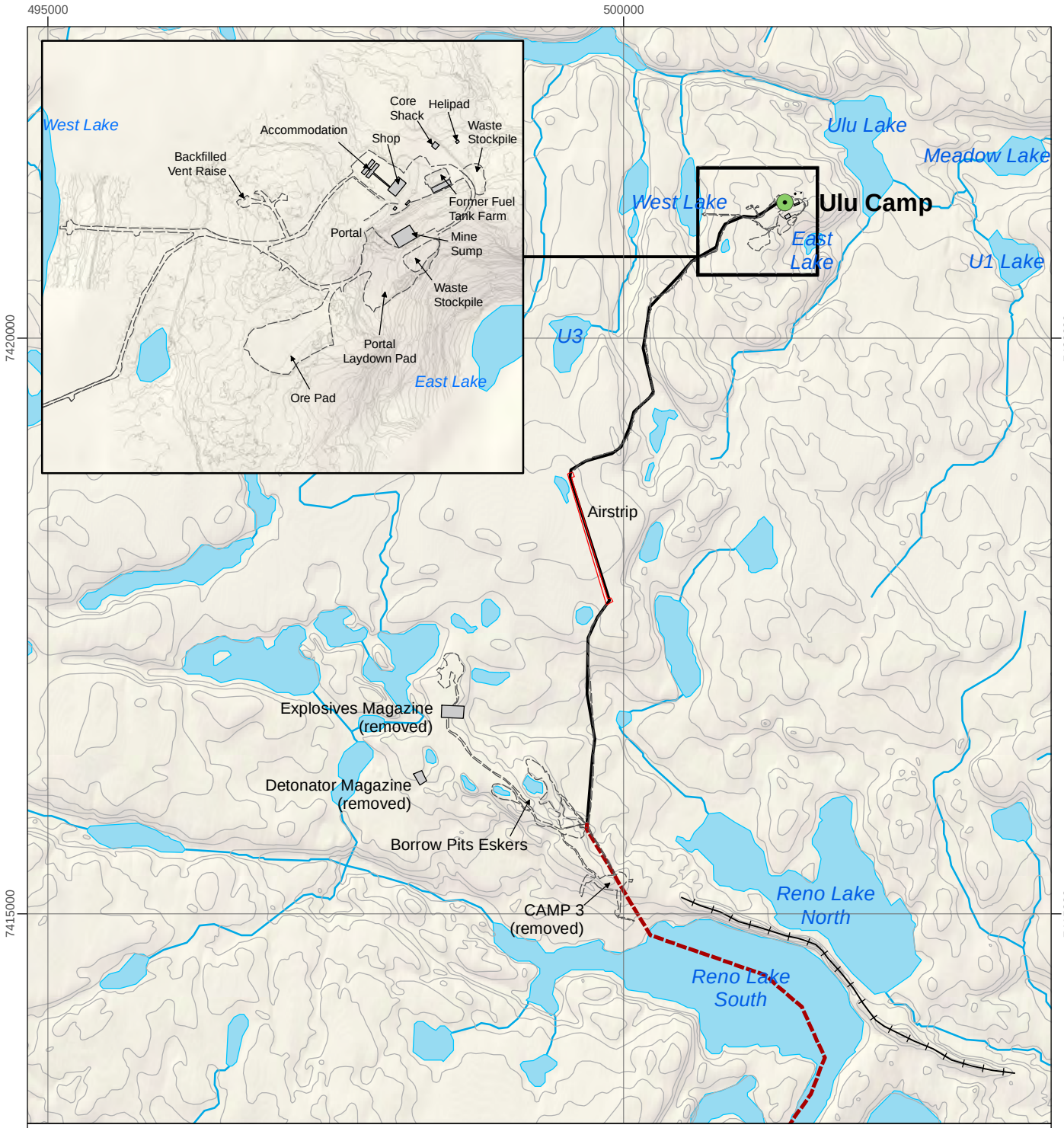

Legend

- Ulu Camp Location
- Esker / Borrow Pit Zone
- Access Road
- Winter Trail
- Road Access/Disturbance Area
- Site Infrastructure (linear)
- Site Infrastructure/Buildings
- Airstrip

Map 3. Ulu Gold Project Site Plan

Data Sources

Mineral tenure and leases provided courtesy of Government of Canada; Indigenous and Northern Affairs Canada; Geomatics Services, accessed March 5, 2019.

Exploration Projects dataset was created by converting the CSV downloaded from the Nunavut Geoscience NUMIN showings website (http://nunavutgeoscience.ca/apps/showing/showQuery.php).

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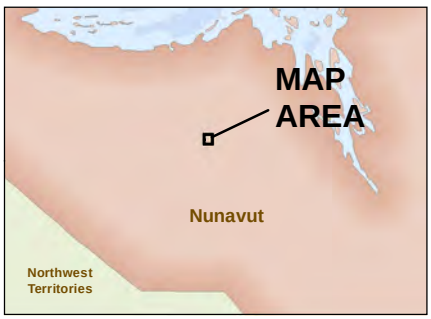

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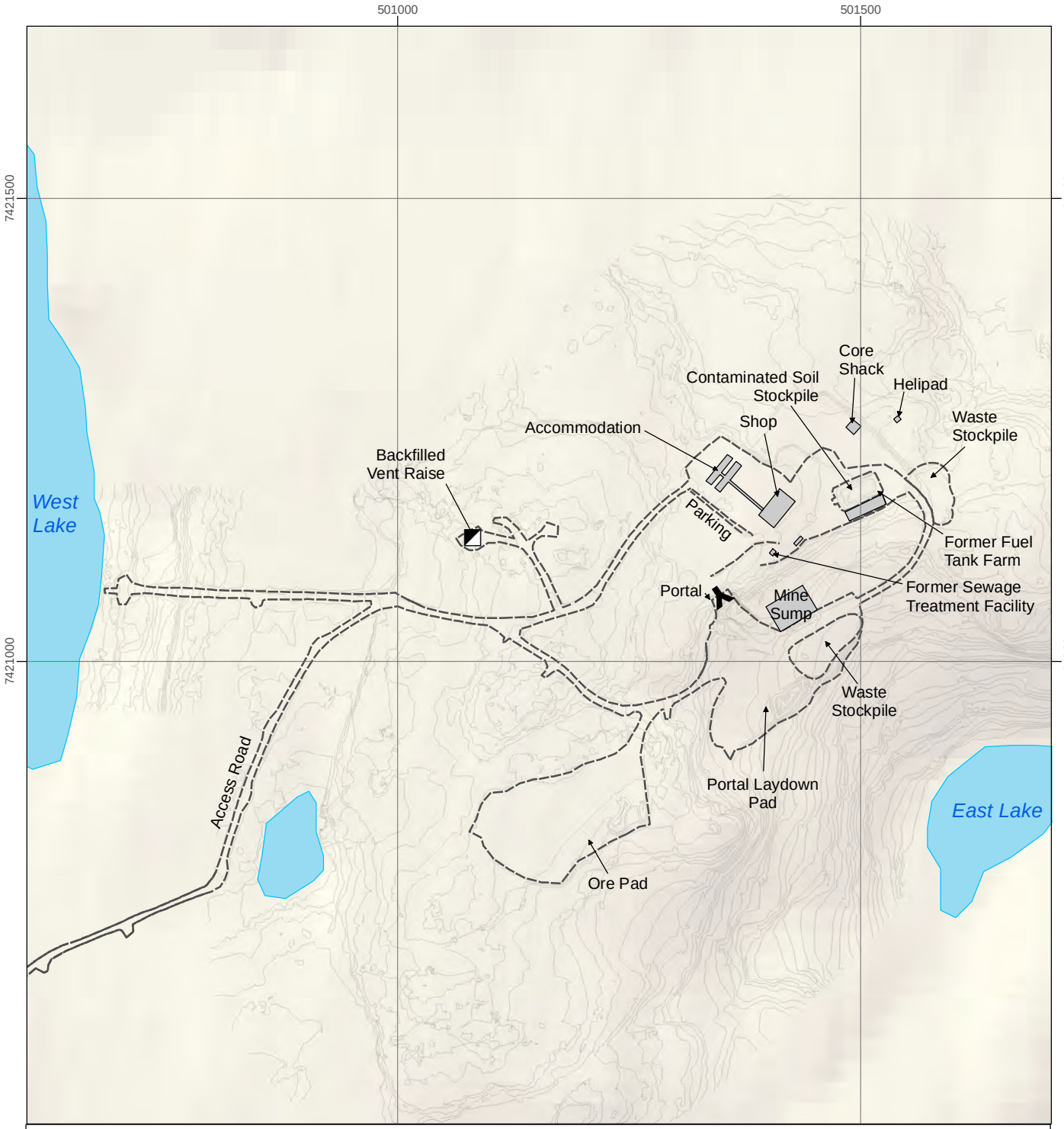

Legend

- Vent Raise (Backfilled)
- Elevation Contour (1 metre interval)
- Road Access/Disturbance Area
- Site Infrastructure/Buildings
- Airstrip

Map 4. Ulu Gold Project Exploration Site Facilities

Data Sources

Mineral tenure and leases provided courtesy of Government of Canada; Indigenous and Northern Affairs Canada; Geomatics Services, accessed March 5, 2019.

Exploration Projects dataset was created by converting the CSV downloaded from the Nunavut Geoscience NUMIN showings website (http://nunavutgeoscience.ca/apps/showing/showQuery.php).

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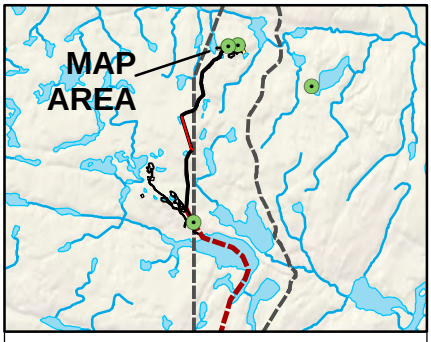

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2.3. ONGOING ACTIVITIES

2.3.1. EXPLORATION ACTIVITIES

Blue Star intends to recommence exploration-related activities at the Project within the existing Ulu mining lease. Exploration activities include ground geophysics, mapping, sampling and drilling. The site will be used to support exploration activities and house the personnel conducting exploration and progressive reclamation activities.

2.3.2. SITE MONITORING AND MAINTENANCE

Site monitoring and maintenance will be carried out in accordance with site authorizations and approved management plans.

2.4. COMPLETED RECLAMATION MEASURES

When underground and surface exploration activities were suspended in 1996, Echo Bay (the property owner at that time) relocated some tools, small equipment, and supplies by air to the Lupin Mine. The accommodations at Camp 3 were removed upon the development of the Ulu Camp, with the exception of the garage by Echo Bay. The site was placed into a care and maintenance status and no progressive reclamation activities were completed until 2014. Since 2014, the preceding owner undertook progressive reclamation of the site. The following key activities are understood to have taken place:

- Backhaul of waste and hazardous materials to Yellowknife for offsite disposal
- Demolition of the Camp 3 fuel tank farm, excavation of the adjacent impacted soil, and relocation of the contaminated soil to the Ulu Camp
- Removal from service, cleaning, and demolishing all fuel tanks
- Demolition of accommodations considered by the preceding owner to be unnecessary for future site activities
- Demolition of the Camp 3 garage
- Decommissioning of the sewage treatment facility and associated infrastructure
- Decommissioning of the water supply infrastructure
- Burning of wood waste
- Consolidation of the resulting demolition waste into select areas at the Ulu camp
- Backfilling the vent raise
- Cutting a number of diamond drill casings flush with the ground
- Road maintenance repairs

3. Existing Conditions

3.1. PHYSICAL AND CHEMICAL ENVIRONMENT

3.1.1. PHYSIOGRAPHY

The Ulu site is situated in the treeless arctic tundra where rock and glacial features dominate the landscape. The topography of the Ulu mining lease is characterized by deeply incised linear valleys bounded by steep bluffs, for about 85 m of relief. The basalt units form topographic plateaus, elevated above the sediments and granitic rocks. The typical landscape surface consists of 50-60% outcrops, north-trending lakes (accounting for less than 15%), and grassy swamps, boulder-strewn glacial drift and frost-heaved blocks (Cowley 2015).

Regional drainage is easterly into Bathurst Inlet. Major rivers include the James River to the north and the Hood River which is located 8 km south–southeast of Ulu (Figure 5). Drainage in the vicinity of the Ulu mining lease is characterized by ponds of standing water without associated inlets or outlets. Locally, the property is located within the Rio Fido watershed which includes Penthouse Lake, which is approximately 2.5 km southeast of the property and drains northeastward into Frayed Knots River, a tributary of the Hood River. The Hood River valley is incised more than 100 m below the surrounding upland plateau. The Hood River eventually flows into the Arctic Ocean near Bathurst Inlet (Cowley 2015).

3.1.2. SURFICIAL AND BEDROCK GEOLOGY

Quaternary surficial deposits include thin bouldery sandy-silty till veneers less than 2 m thick, thicker hummocky drift sheets likely composed of both subglacial and ablation tills which obscure bedrock, and areas of extensive glaciofluvial sediments such as eskers, esker complexes, deltas, and kames (Cowley 2015).

Permafrost 50 km north of the site (at the High Lake exploration project), calculated from temperature measurements in exploration drill holes, is approximately 440 metres deep (TBT Engineering, 2010). Thermistors installed underground at Ulu on the 75 m level indicated an average rock temperature of minus (-) 9.5 degree Celsius (°C) at that elevation (Tansey, 1997).

The Project is located within the Slave Structural Province, an Archean granite-greenstone terrain. Rocks within the Slave Structural Province are assigned to the following three lithotectonic assemblages: an early assemblage of gneisses, granitic rocks and quartz arenites; greywackes, mudstones, volcanic rocks and syn-volcanic intrusions of the Yellowknife Supergroup; and a younger sedimentary-plutonic assemblage of clastic sediments and granitic rocks.

The Ulu deposit is an epigenetic lode-gold occurrence. It is located on the western margin of the High Lake Volcanic Belt, where Yellowknife Supergroup rocks are in contact with an Archean granitic batholith. On the property, the greenschist- to amphibolite-facies mafic volcanic and sedimentary rocks are folded into a 3 km long anticline (Figure 6). Gold-arsenic zones show a strong spatial association with the trace of this anticline. The Flood zone, the largest gold-rich zone, is localized at the core of this fold. It generally dips steeply (70° to 80°) to the southwest. Mineralization is hosted in high-iron tholeiitic basalt characterized by a lower amphibolite mineral assemblage of ferrohornblende + plagioclase + ilmenite with accessory quartz and epidote. Alteration minerals consist of biotite, chlorite, hornblende,

actinolite-tremolite, and potassium feldspar (microcline) with minor calcite, epidote, tourmaline, and titanite. The highest gold values occur where brecciated clasts of basaltic wall rock are replaced by acicular arsenopyrite + quartz + K-feldspar (Flood et al., 2004).

3.1.3. GEOCHEMICAL CHARACTERIZATION OF BORROW, ORE AND WASTE ROCK

In 2019, prior to completing the Project acquisition, Blue Star retained qualified professionals to assess the geochemical characteristics of the ore and waste rock on surface at the Ulu camp and review past geochemistry assessments of the ore and waste rock in order to inform progressive reclamation planning. The resulting metal leaching / acid rock drainage assessment is included in Appendix A. The assessment confirmed previous findings that the ore currently on surface may generate acidic drainage within a short timeframe and the rates of metal leaching are expected to increase under acidic conditions. Increased rates of metal leaching may be expected from the waste rock on surface under acidic conditions. Historical kinetic testing of crushed waste rock (0.2 to 3.0 mm in size) indicated that the onset of acidic conditions would be delayed for decades.

A geochemical assessment of the existing esker borrow pits has not been located within historical files.

3.1.4. SURFACE WATER

West Lake has been the licensed source of water since 1997, and East Lake received sewage treatment plant effluent prior to 2012. Surface runoff (including all runoff from the ore storage pad, portal laydown area, and main camp area) flows predominately towards East Lake, which in turn drains into Ulu Lake (Gartner Lee, 2006b).

As presented in the Environmental Assessment for the Ulu Project (EBM 1997) Reno Lake North, Reno Lake South, West Lake and Ulu Lake are oligotrophic, having soft water, and being highly sensitive to acidity. Concentrations of essential nutrients are low.

In 2004, preliminary baseline water quality studies were carried out in the Ulu area to build on the previous studies carried out at the Project (Gartner Lee 2005). Study areas included Ulu, West and East lakes as well as several creeks. Ulu Lake was considered to be a suitable reference site at the time. West Lake is similar in character to Ulu Lake, although has higher hardness, conductivity, and sulphate levels than that observed in other lakes in the area. East Lake is similar in water quality to the other lakes in the area yet contained a moderate level of nutrients, is moderately productive and meso-eutrophic.

3.1.5. CONTAMINATED SOIL

In 2019, under the supervision of the previous owners, Blue Star retained a qualified professional to conduct a site assessment to determine the volume and character of petroleum hydrocarbon (PHC) impacts at the site. The assessment is included as Appendix B. An estimated utmost limit of the volume of PHC contaminated soil to be managed is provided in Table 3.

Table 3 Petroleum hydrocarbon contaminated soil volume estimate

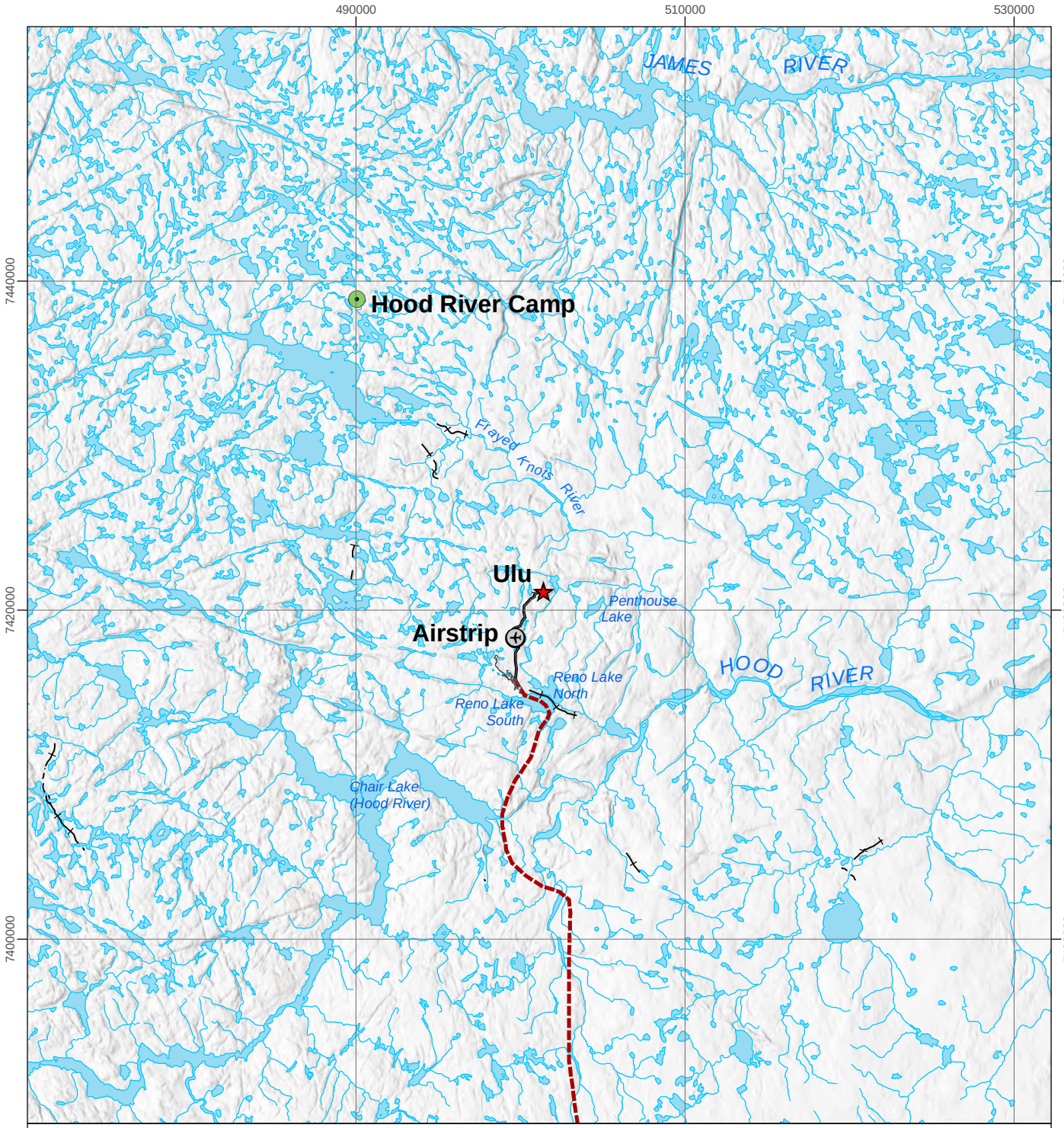
Area	soil to be treated (m^3)	soil to be managed by burial (m^3)	soil to be shipped off-site for treatment (m^3)
Camp 3 Tank Farm	0	0	0
Camp 3 Stockpile	125[1]	1100	0
Main Tank Farm	5000	[2]	0
Day Tank Farm	300[3]		0
Shop Floor	100	[2]	40
Parking Areas		25	10

Notes:

The soil may be sufficiently remediated to meet subsoil objectives when it is off-loaded and buried 1.5 m or more below surface.

[2] Segregation of soil during excavation could reduce the volume of soil destined for treatment in the soil treatment facility

[3] This volume assumes that the contamination extends from surface to bedrock. The actual volume of contaminated soil to be managed may be closer to 30 m^3.



Legend

- Ulu Site
- Ulu Airstrip
- Esker
- Access Road
- Winter Trail

Map 5. Ulu Gold Project Regional Physiography

Data Sources

Mineral tenure and leases provided courtesy of Government of Canada; Indigenous and Northern Affairs Canada; Geomatics Services, accessed March 5, 2019.

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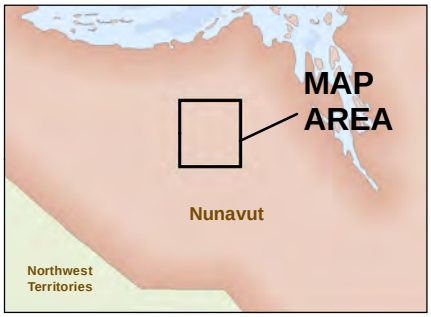

BLUE STAR GOLD CORP EDI

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Lithology Legend

- Ag Leucocratic
- Agd Homblende/biotite Granodiorite
- Am Mafic metavolcanics rocks and contemporaneous dykes, sills
- Aw Metagreywacke
- Q Unconsolidated Sediments

BLUE STAR GOLD CORP.

Interim Reclamation and Closure Pan Plan

Regional Geology

Ulu Gold Project

Date:	Approved:	Figure:
Date	AS	6

3.2. BIOLOGICAL ENVIRONMENT

3.2.1. VEGETATION AND WILDLIFE

The Project is located within the Southern Arctic Ecozone and the Takijuq Lake Upland Ecoregion. Much of this region is composed of unvegetated rock outcrops. Vegetative cover is characterized by shrub tundra, consisting of dwarf birch, willow, northern Labrador tea, avens species and blueberry species. Organic cryosols are the dominant soils in the lowlands and permafrost is deep and continuous (ECCC 2019).

Characteristic wildlife includes barren-ground caribou, muskoxen, grizzly bear, wolverine, Arctic hare, Arctic fox, red fox and wolf. Small mammals (e.g., Arctic ground squirrel, voles, and lemmings) are distributed throughout the region and provide an important food source for predators. Many species of migratory birds are present in the area during the summer season, including waterfowl, raptors, songbirds, and shorebirds, while some bird species are present year-round (e.g., ptarmigan, gyrfalcon, and common raven) (ECCC 2019).

3.2.2. FISH AND FISH HABITAT

As presented in Gartner Lee Ltd. (2006), results of food web, fish, and fish habitat studies indicate that West Lake has a similar benthic community composition to that found in other lakes in the area, being one dominated by arthropods. Compared to other lakes in the area, West Lake was observed to have a higher plankton species richness, dominated by a diatom that is characteristic of a low-nutrient lake. Adult lake trout were sampled in West Lake and some sampled were found to be in spawning condition. West Lake provides rearing, spawning and nursery habitat.

3.3. ATMOSPHERIC ENVIRONMENT

Weather is typical of the continental barrenlands, which experience cool summers and extremely cold winters. Winter temperatures can reach -45°C and high winds can create extreme wind chill conditions and extensive drifting snow. Summer temperatures are generally in the range of 5° to 10°C. Based on regional normals from Lupin A station between 1980 and 2010 (ECCC, 2020), average yearly rainfall in the region is 160 mm, mostly occurring during July and August, and average yearly snowfall is equivalent to 138 mm of water, most of which falls during autumn and spring. The average yearly temperature is -10.9°C. Monthly precipitation and temperature normals are described in Figure 7 and Table 4.

The ground remains snow-covered for more than 250 days a year. Snow accumulation begins in September and remains into June. Average annual snowfall rarely exceeds 0.5 m, most of which falls during autumn and spring storms. Small lakes are clear of ice usually by the third week in June (though ice on the larger lakes can persist into the middle of July) and start freezing over again in mid to late September. Wind speeds have been recorded in excess of 100 km per hour (Cowley 2015).

Weather information was collected between June and mid-September between 1990 and 1992 by BHP from its portable weather station at Penthouse Lake. Data collected from Penthouse Lake is compared to data collected at Lupin and Kugluktuk during the same time period in Table 5. For the majority of the time, recorded wind speeds were in excess of 25 km per hour and generally were from the south (Cowley 2015).

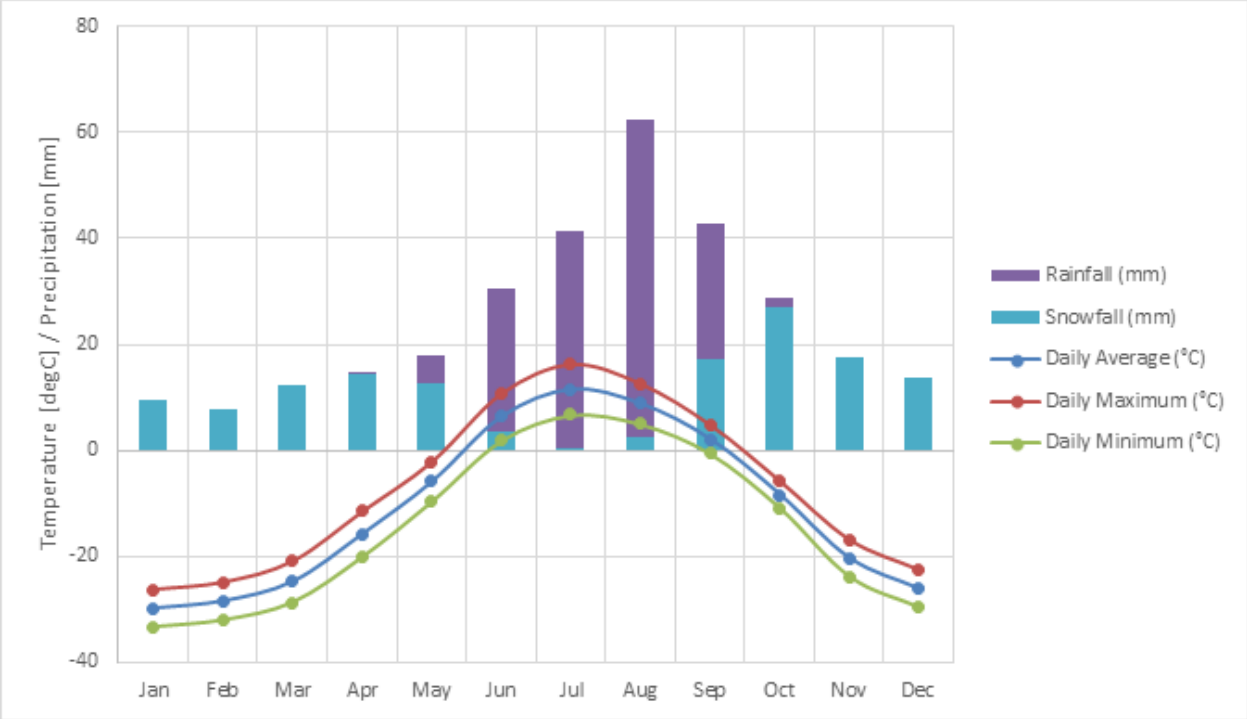

Figure 7 Temperature and Precipitation Normals

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Table 4 Precipitation and temperature normals based on Lupin A records

Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Rainfall (mm)	0	0	0	0.4	5.3	26.8	41.1	59.8	25.5	1.6	0	0	160.5
Snowfall (mm)	9.4	7.8	12.2	14.3	12.5	3.6	0.4	2.6	17.1	27.1	17.4	13.7	138
Precipitation (mm)	9.4	7.8	12.2	14.6	17.8	30.4	41.5	62.5	42.6	28.7	17.4	13.7	298.5
Daily Average Temperature (°C)	-29.9	-28.5	-24.8	-15.8	-5.9	6.4	11.5	8.8	2.1	-8.4	-20.4	-26.2	-10.9
Daily Maximum Temperature (°C)	-26.3	-24.9	-20.9	-11.5	-2.1	10.8	16.3	12.6	4.8	-5.8	-16.9	-22.6	-7.2
Daily Minimum Temperature (°C)	-33.4	-32.1	-28.7	-20.1	-9.6	1.9	6.7	5	-0.6	-10.9	-23.9	-29.7	-14.6

Source: Compiled into text from ECCC 2020a \\srk.ad\dfs\na\van\Projects\01_SITES\Ulu\1CB041.000_Landfill_Design\Task1020_WaterManagement\Ulu_Hydrology_20200120_COG_V01.xlsx

Table 5 Weather data comparison for the region – 1990-1992

Parameter		Penthouse Lake	Lupin	Kugluktuk
JUNE	Mean Daily Temp.	5.8°C	4.7°C	3.8°C
	Max. Temp.	28.0°C	24.4°C	27.8°C
	Min. Temp.	-6.0°C	-13.9°C	-15.0°C
	Rainfall (mm)	0	24	14
JULY	Mean Daily Temp.	11.6°C	9.7° C	9.7°C
	Max. Temp.	30.0°C	27.2°C	32.2°C
	Min. Temp.	-2.0°C	-2.2°C	0.6°C
	Rainfall (mm)	18	36	25
AUG	Mean Daily Temp.	5.5°C	8.7°C	8.7°C
	Max. Temp.	22.0°C	24.4°C	29.4°C
	Min. Temp.	-4.0°C	-3.2°C	-3.3°C
	Rainfall (mm)	23	41	38
SEPT	Mean Daily Temp.	1.4°C	2.0°C	2.5°C
	Max. Temp.	15.0°C	16.7°C	26.1°C
	Min. Temp.	-7.0°C	-11.9°C	-20.0°C

Source: Cowley 2015

3.4. SITE FACILITIES

3.4.1. BUILDINGS, OTHER STRUCTURES AND EQUIPMENT

Camp 3

A fuel tank farm (consisting of two 1,324,895 L and six 52,995 L tanks), explosives magazine, detonator magazine, garage, and the esker borrow pits were developed at Camp 3. The borrow pits were used to build and maintain the road and airstrip and to establish the camp pad and portal pad at the Ulu exploration camp. The fuel tank farm was demolished in 2018 and associated petroleum contaminated soil transported to the Ulu camp for storage. The camp and garage have been demolished. Demolition waste has been transported to Ulu camp for disposal. Mobile equipment located at the Ulu camp was used to demolish, excavate contaminated soil, and transport the waste.

Ulu Camp

The remaining Weatherhaven residential complex consists of 20 rooms, a kitchen, and dry. Additional infrastructure at Ulu camp consists of a vehicle repair shop, vehicle parking, generators, core shack, core storage, ore storage pad, portal pad (waste rock pad), mine workings, mine sump (water retention pond), access roads, and lined fuel containment areas. The tanks in the fuel tank farm (which had consisted of five 52,995 L tanks) and day tank farm were demolished in 2018. The freshwater system, sewage treatment plant, and sewage line were decommissioned by the preceding owner.

A list of mobile equipment at Ulu camp and its operational status (as provided by the preceding owner) is provided in Table 6. The decommissioned equipment has been stockpiled by the preceding owner in preparation for disposal.

Table 6 List of existing equipment

Equipment	Reported Status
Ford B-600 School Bus	operating
Cat 311 Excavator	operating
1993 Ford F350 4 × 4 Pickup - Brown	operating (pending inspection)
Cat 988B Wheel Loader	operating (pending inspection)
Elphinstone R-1700 Scooptram (7.5 yd)	operating (pending inspection)
Wagner ST-7.5Z Scooptram (7.5 yd)	operating (pending inspection)
Getman A-64 Scissor Lift	operating (pending inspection)
Kubota M5400 Man Carrier	operating (pending inspection)
Compressor 825 cfm Gardner-Denver	operating (pending inspection)
Compressor 375 cfm Leroi	operating (pending inspection)
Gen Set 600 kW CAT	operating (pending inspection)
Gen Set 250 kW Detroit (8V92T)	operating (pending inspection)
Volvo Water Truck	operating (pending inspection)
Cat Loader 966D	operating (pending inspection)
Cat Bulldozer D8N, with ripper	operating (pending inspection)
Cat Rock Truck 769	operating (pending inspection)
Cat 14G Grader	operating (pending inspection)
Ford Pickup - F-350 4 × 4 Blue	operating (pending inspection)
Ford Pickup - F-350 4 × 4 White	operating (pending inspection)

Equipment	Reported Status
Lincon Welder SAE-400	operating (pending inspection)
Foremost Delta Commander	operating (pending inspection)
Cat Rock Truck 769	needs repairs
Ford 800 Boom Truck	needs repairs
1980 Ford LW9000 Flat Deck, Hiab	needs tires
Peterbilt Tri-Axel tanker	needs tires
1993 Ford F350 4 × 4 Pickup - Green	out of service
Cat Water Truck	out of service
Fuel Truck (1000 gal) Mack	out of service
Atlas Copco Rocket 322S Drill Jumbo	to be decommissioned
Tamrock HS205M Maxi Drill Jumbo	to be decommissioned
Wagner MT-444 Haul Truck	to be decommissioned
Wagner MT-426 Haul Truck	to be decommissioned
Wagner ST-3.5 Scooptram	to be decommissioned
Wagner ST-2D Scooptram	to be decommissioned
Tamrock H-102 Micro Drill Jumbo	to be decommissioned
Compressor 600 cfm Gardner-Denver	to be decommissioned
Generator 250 kW Detroit (8V92T)	to be decommissioned
Generator 250 kW Detroit (8V92T)	to be decommissioned
Cat-563 Drum Packer	to be decommissioned
Generator 600 kW Cat	decommissioned
Generator 600 kW Cat	decommissioned
Generator 500 kW Cummins	decommissioned
Generator 500 kW Cummins	decommissioned
Cat 824C Rubber Tired Bulldozer	decommissioned
Cat 930 Front- End Loader	decommissioned

Notes:

Definitions for the terms used to describe the status of the equipment have not been provided.

The operating status of the equipment is to be confirmed pending inspection by Blue Star.

3.4.2. MINE WORKINGS

In 1996, a 632 m long 5.2 m wide by 4.9 m high -15% ramp was developed to the 75 m level to access the Flood Zone. In 1997, the ramp was extended to the 155 m level, an escape way/fresh air vent raise and seven cross cuts were excavated (Figure 8). The portal was closed to prevent access and vent raise was backfilled by the preceding owner.

3.4.3. MINE SUMP

The mine sump, also referred to as the water retention pond, was established adjacent to the mine portal. Its purpose was to provide containment for the settling and sediment retention of water pumped from the mine decline ramp and the mine portal entrance. The 30 × 50 m sump was built above ground and is lined with a geomembrane; portions of the berm were constructed using mineralized rock. This sump was used periodically during camp operations for containment of sewage treatment plant effluent.

3.4.4. ORE AND WASTE ROCK

Approximately 2,227 tonnes of ore were stockpiled at the ore pad from the 1996/1997 underground program (Tansey 1997); a resulting 750 kg bulk sample was recovered in 1996 for metallurgical test work at Lupin. The preceding owner reported that 1,738 m^3 (3,358 tonnes assuming a specific gravity of 1.93 tonnes per m^3) of ore was relocated to a stockpile between the portal and the mine sump. The discrepancy in ore volume between the previous reports is noted, Blue Star will assume the greater value for the progressive reclamation work.

Approximately 126,900 tonnes of waste rock were extracted from the underground workings (BGC et al 2005). The waste rock was used to construct the ore pad, and to expand the camp pad and portal pad; it is estimated that approximately 5,000 m^3 of waste rock is stockpiled on the portal pad. The pads were capped with a thin layer of esker material to provide a base for infrastructure construction and material laydown. Development waste rock was also backhauled to Camp 3 area for use as riprap. The location and volume of waste rock at Camp 3 is unknown.

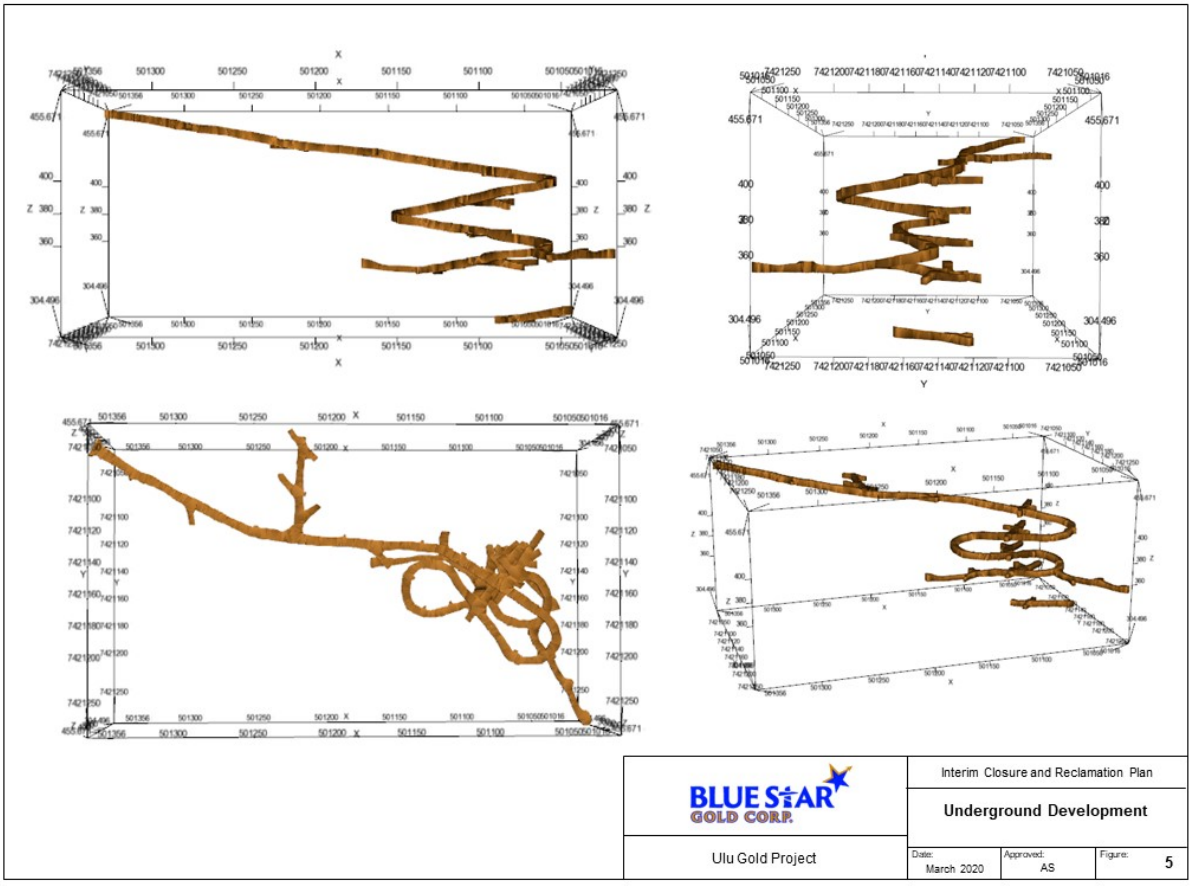


Figure 8 Underground Development

3.4.5. ROADS AND AIRSTRIP

A network of roads (14 km), constructed material sourced from the esker borrow pit, connect the Ulu camp and portal area with the airstrip (1,200 m long) and Camp 3 as shown on Figure 3. Culverts were installed in the road to provide unrestricted flow to the drainage courses during spring melt and precipitation events. Silt fences were placed below the culverts by the preceding owner to provide sediment control.

3.4.6. BORROW PIT

The borrow pit used for the road, airstrip, and final grade on the camp pad is located near Camp 3 at Reno Lake.

3.4.7. WASTE, CHEMICAL AND SEWAGE STORAGE AREAS

The preceding owner demolished unused facilities and stockpiled them in preparation for disposal at the portal entrance, as illustrated in Figure 4. Blue Star intends to license and utilize a non-hazardous waste surface landfill that does not compromise the underground workings, as outlined in the *Landfill Management Plan* (Blue Star 2020b).

The preceding owner backhauled oil/waste oil and hazardous waste offsite. The existing inventory of fuel and waste oil includes 16 totes and 217 205-litre drums, based on the number of totes and drums observed on site by Blue Star in July 2019. The volume of hazardous waste is estimated to be 70m^3, assuming the totes and drums are full. The volume does not include the waste oil/fuel that is expected to be drained when decommissioning equipment.

The preceding owner excavated the PHC contaminated soil at the Camp 3 fuel tank farm following the demolition of the facility. Approximately 1,220 m^3 of PHC impacted soil was transported to the Ulu Camp tank farm and stockpiled into the area that had previously held the fuel tanks.

4. Reclamation Planning

4.1. APPROACH TO CLOSURE PLANNING

The ICRP further develops the measures and methods previously approved in the preceding interim closure plan iterations for the Project. Since early 2019, Blue Star has undertaken, and continues to undertake, work with the landowner (Kitikmeot Inuit Association; KIA) to understand the KIA's interests regarding land use in the Ulu area. The aim is to scope and refine the proposed progressive reclamation measures, allowing for the continued use of the Ulu site for exploration-related activities while preserving the site's future mining potential. In support of developing a mutual understanding of the site and a path forward on planned site activities, a coordinated site visit was undertaken prior to commencing the water licence assignment process, and collaboration among the KIA's and Blue Star's technical advisors is ongoing, which includes the development of this Plan.

4.2. ROLES AND RESPONSIBILITIES

Blue Star is responsible for activities associated with the Project, including implementation and management of this Plan. Blue Star's contact information is provided below.

Blue Star Gold Corp.
Suite 1125-595 Howe Street
Vancouver BC V6C 2T5
Contact: Peter Kuhn, General Manager
Phone: 1 604 347 6999
Email: kjgold2010@gmail.com

4.2.1. STAFF, CONTRACTORS, SUPPLIERS AND VISITORS

All personnel conducting activities on site, including staff, contractors, suppliers, and visitors are required to be guided by this Plan as it pertains to their activities on site. Specifically, these responsibilities include:

- Take all necessary steps to minimize negative effects to water, land and air.
- Cooperate fully with supervisors and/or Blue Star management to implement an environmental protection program in each work area.
- Workers to carry out only those duties and tasks that they are qualified for (relevant experience and training).
- Where there is uncertainty, to ask questions and bring concerns to the attention of the supervisor when working with products or conducting tasks that may pose potential environmental risks.
- Report wildlife observations, archaeological finds, spills and emergencies in accordance with relevant management plans.

4.2.2. MANAGERS AND SUPERVISORS

Managers and supervisors have a responsibility to ensure that staff, contractors, consultants and visitors have been trained in Blue Star environmental and heritage resource protection expectations and procedures. Additional supervisor and manager responsibilities include:

- Maintain a no-blame work environment in implementing mitigation measures and follow-up actions.
- Ensure site-, task- and material-specific training is provided to all departments and staff.
- Ensure availability of appropriate and sufficient supplies on site to support the implementation of mitigation measures and follow-up actions.
- Provide assistance in responding to environmental hazards.
- Maintain records regarding inspections, personnel training, equipment testing, maintenance and, decommissioning.
- Ensure compliance reporting is undertaken in a timely manner.
- Engage with relevant parties in a timely and transparent manner, where appropriate.

4.2.3. RECLAMATION PROJECT MANAGER

In addition to the responsibilities listed above, the Reclamation Project Manager is responsible for the following tasks:

- Overseeing soil and waste handling, transport, sampling, and management.
- Day-to-day oversight of all related reclamation efforts.
- Coordination with other managers and supervisors to ensure safe and appropriate allocation of resources on site.
- Maintaining the reclamation schedule, and where schedule changes occur, advising the General Manager in a timely manner.

4.3. STATUS OF RECLAMATION AND CLOSURE PLANNING

4.3.1. PAST CLOSURE PLANNING

Blue Star has reviewed the previous closure and reclamation (previously referred to as abandonment and restoration) plans filed with the Nunavut Water Board (NWB) and the historical water licenses associated with the property. Blue Star notes that the content of the plans has changed little since 2001.

Several studies were undertaken in support of the environmental assessment of the Project (Nunavut Impact Review Board file # 99WR055) and of the development of the initial interim closure plan submitted to the NWB; these include, but are not limited to, the following documents:

- Ulu Project: Preliminary Assessment of Acid Rock Drainage Potential, Klohn-Crippen Consultants Ltd., October 1996.
- Fisheries Assessment of Streams and Lakes in the Ulu Project Area, RL&L Environmental Services Ltd., November 1996.
- Notes on Wildlife in the Vicinity of the Echo Bay Mines Ulu Project and Associated Transportation Corridor, Hubert and Associates and Canamera Geological Ltd., August 1996.
- Wildlife and Wildlife Habitat Assessment, Canamera Geological Ltd., Environmental Resources Division, November 1996.
- Ulu Mine Project Archaeological Impact Assessment: Phase I, Quaternary Consultants Ltd., July 1996.
- Ulu Mine Project Archaeological Impact Assessment: Phase II, Quaternary Consultants Ltd., September 1996.
- Land-Cover and Vegetation of the Ulu Site and Ulu/Lupin Winter Road, Nunavut, Canada, Institute for Advanced Field Education Ltd., January 1998.

- Kinetic Testing of Sulfide-Rich Material from Ulu, Klohn-Crippen Consultants Ltd., April 1998.
- Baseline Aquatic Studies Program in the Ulu Project Area, Nunavut, RL&L Environmental Services Ltd., May 1998.

The following studies were undertaken by Wolfden in anticipation of resuming underground activities at the site:

- Hydrological Assessment of West Lake, Gartner Lee Limited, May 2006.
- Preliminary Baseline Water Quality Assessment – Ulu, Gartner Lee Limited, February 2005.
- Review of Field Column Kinetic Test Data, Mehling Environmental Management Inc., December 2004.

4.3.2. CURRENT CLOSURE PLANNING

It is understood that a body of work, which includes baseline environmental studies, was undertaken at Ulu from 2004 to 2006; however, this information was not available for informing this Plan. Blue Star is in the process of obtaining access to those data.

Closure, abandonment, and restoration of a mine is the final stage in the life cycle of a viable mining operation and the decision for final closure comes after careful consideration of all other options available.

Closure planning for mining projects is best understood as a continuum that evolves from a basic conceptual level during pre-production stages towards detailed designs as facilities are completed and as-built details are available for consideration in closure designs. The level of closure planning detail and the timelines to complete closure activities vary with the development of the different components of the site.

In the late 1990s, the Project was in an advanced stage of exploration, given its ability to provide mill feed to the Lupin Mine. Since the Lupin Mine sold their interest in the Project in 2003, the Project has transitioned from exploration to near feasibility and back to exploration again as discussed in Section 2.2. Until 2017, reclamation and closure planning did not advance to recognize the change in the status of the site.

This ICRP considers the *Interim Closure and Reclamation Plan* for the Ulu Exploration Project (Bonito, 2013 [NWB approved], 2016 [not approved]) and the *Ulu Project – Progressive Reclamation Workplan* (Bonito, 2018 [not approved]) prepared by the previous site operators. The revisions to the ICRP present Blue Star's approach to progressive reclamation required to return the Project to a scale appropriate for exploration activities and has been developed through discussions with the KIA. Activities listed in Section 2.4 are assumed to be completed; their status will be confirmed by Blue Star at earliest opportunity.

4.4. COMMUNITY ENGAGEMENT SUMMARY

Blue Star has undertaken a number of engagements since early 2019 on matters relating to both specific aspects of its operation in Nunavut as well as general aspects relating to its current and future planned activities in the region, including reclamation and exploration at the Ulu site.

Through the property acquisition process and the related licence assignment processes, Blue Star worked closely with the KIA and the Government of Canada to develop a mutual understanding of the current conditions at Ulu and Blue Star's near-term plans for the site. As the acquisition of the Project did not conclude until January 2020, Blue Star was unable to formally engage with the public on specific aspects of Ulu interim closure planning until after this time. Since the acquisition of Project, Blue Star has met with the KIA in person several times and has dialogued with stakeholders over email and by phone. Public meetings planned for Kugluktuk and Cambridge Bay in mid-March 2020 were postponed in response to a pandemic and will be held at the earliest opportunity.

In addition to participation in the public processes administered by the Nunavut Planning Commission, the Nunavut Impact Review Board (NIRB) and the NWB, Blue Star commits to upholding its *Engagement Plan* (Blue Star 2020a).

4.5. ALTERNATIVES ASSESSMENT

In the process of planning the progressive reclamation strategies for the Project, several tools, techniques, and methodologies were utilized with the following goals:

- Examine possible alternatives to reclaim project components.
- Determine which alternatives were best suited to the site, the desired near-team closure objectives, future long-term closure objectives, and end land use.

This included the following assessments:

- Landfill needs and location options
- Management options for PHC contaminated soil
- Analysis of various liner systems for the soil treatment facility
- Planning for future rock quarry development

4.6. RECLAMATION RESEARCH

Reclamation research will be an ongoing component of Blue Star's closure planning process and will focus primarily on the key closure measures proposed for the site, both in the near term and long term. This research will include the following topics:

- Material suitability for landfill erosion covers
- Rock quarry assessments
- Ore and waste rock management

5. Objectives and Design Criteria

5.1. OBJECTIVES

Closure principles guide the selection of closure objectives. Four core closure principles are applicable to advanced mineral exploration and mine sites: physical stability, chemical stability, no long-term active care requirements, and future use (including aesthetics and values) ensuring future generations of Inuit will be able to enjoy the land as Inuit do today (MWLWB/AANDC 2013; NTI 2008).

Blue Star considers the overarching objectives of Nunavut Tunngavik Incorporated (NTI)'s Reclamation Policy (2008) applicable in this context which include:

- Establishing goals for the reclamation of Inuit Owned Lands (IOL) and setting out the obligations of the land user.
- Minimizing the environmental liability to Inuit from the use of IOL.
- Ensuring that reclamation requirements are incorporated in a reclamation plan.
- Integrating Inuit Qaujimajatuqangit and consultation with Inuit into the reclamation process.
- Maximizing the benefits of reclamation to Inuit.

5.1.1. PROGRESSIVE RECLAMATION GOAL AND OBJECTIVES

Blue Star wishes to recommence exploration and undertake progressive reclamation to return the site to a condition reflective of the currently intended level of exploration activity, yet supportive of potential future mine development. In considerations of the closure principles of advanced mineral exploration sites, the near-term closure and reclamation objectives are the following:

- Stabilize the site through progressive reclamation and ensure environmental protection to the extent necessary to minimize liability to Inuit, and yet support the continued use as an exploration site allowing for future development of a mine and mine-related infrastructure and benefit to Inuit.
- Ensure that there is no danger to the health or safety of people and wildlife.

5.1.2. TEMPORARY CLOSURE GOAL AND OBJECTIVES

Temporary closure, or a planned shutdown, is considered a short-term event and the result of seasonal, economic, or regulatory requirements. The Project is expected to temporarily close seasonally, between periods of exploration and progressive reclamation activities. The goal for temporary closure is to maintain the site for future exploration and progressive reclamation activities. The objectives for temporary closure are to ensure that:

- No danger to the health or safety of people and wildlife is posed over the reasonably foreseen closure period.
- Degradation of the site facilities is minimized.
- Monitoring required under the various authorizations may be undertaken to enable implementation of adaptive management measures and fulfillment of compliance obligations.

5.1.3. PERMANENT CLOSURE AND RECLAMATION GOAL AND OBJECTIVES

Permanent closure and reclamation of the site occur at the end of mine life, when economic ore reserves have been exhausted or a decision has been made to abandon the site. Objectives of permanent closure are the following:

- Ensure that no danger is posed to the health or safety of people and wildlife.
- Ensure the requirements for long-term maintenance and monitoring associated with all the site facilities are minimized.
- Ensure contaminant loadings to the environment from the closed facilities are minimized or prevented.
- Ensure the site and affected areas are returned to a condition that is compatible with the surrounding original undisturbed area with respect to its future potential/productivity uses.

5.1.4. ADAPTIVE MANAGEMENT

Adaptive management is an approach to environmental management that, according to the NIRB Technical Guide Series, Terminology and Definitions (2018), is a systematic and ongoing decision-making process that, when uncertainty exists, aims to reduce that uncertainty over time and is well suited to mine closure planning, given the long-term planning horizon and associated uncertainty. Adaptive management is precautionary in nature and allows for contribution of improved science to the development of robust mitigation measures. A key characteristic of adaptive management is monitoring, which is used to advance scientific understanding and to adjust management policies in an iterative process. Embedding adaptation into closure planning involves thinking about how the results of monitoring will change planned management actions.

Adaptive management planning identifies actions needed when a predetermined threshold is met or triggered, and allows for performance monitoring and project re-evaluation in the future. Risk triggers provide progressive decision points that identify how and when management action should be taken. At a high level, adaptive management may include the following steps:

- Identify risk triggers associated with vulnerabilities or uncertainties.
- Quantify impacts and uncertainties.
- Evaluate strategies and define an implementation path that allows for multiple options at specific triggers.
- Monitor the performance and critical variables in the system.
- Implement or re-evaluate strategies when triggers are reached.

5.2. DESIGN CRITERIA

Design criteria are presented in design documents appended to the respective facility management plans. The information in this section is provided for summary purposes only, the design documents stand alone and take precedence.

5.2.1. LANDFILL COVER DESIGN

Design criteria for final cover on the non-hazardous waste onsite landfill (the Landfill) include but are not limited to the following parameters:

- Maximum side slopes of 4H:1V
- PHC concentrations of material placed within the Landfill shall not exceed the CCME 2008 guidelines (Table 3)
- Minimized surface run-off through the area during operations and post-closure
- Drainage gradient of the Landfill's outer surfaces post-closure shall not be less than 1%.

5.2.2. SOIL TREATMENT FACILITY

The design criteria for the soil treatment facility (STF) includes, but is not limited to, the following features:

- Average height of soil undergoing active treatment will be no greater than 1.5 m
- Floor of each cell will be sloped at a minimum slope of 1% towards a sump
- Each cell will be accessed via access ramps sloped at 5H:1V
- Each cell shall be lined with a low permeability liner with a hydraulic conductivity of less than 1 x10-7 cm/s
- Minimum 0.5 m freeboard, based on the capacity to store a 24-hour 10-year frequency storm event and on the average annual snow accumulation using a 10:1 ratio
- Berms will have a minimum height of 1.5 m
- Inner berm slopes of 2H:1V and outer berm slopes of 1.5H:1V
- Located greater than 500 m from sensitive areas
- Located on a site with slope less than 5%
- Groundwater table must be greater than 1 m from the base of the facility.

5.2.3. PETROLEUM HYDROCARBON CONTAMINATED SOIL REMEDIATION

The soil quality remediation objectives for PHC fractions F1 to F4 (Table 7) are based on the Government of Nunavut's *Environmental Guideline for Contaminated Site Remediation* (2009) Tier 2 guidelines for:

- Wildland land use
- Relevant exposure pathways
- Coarse-grained soils.

Selection of the remediation objectives based on future land use and the exposure pathways present at the site is described in the 2019 contaminated soil investigation report (Appendix B).

Table 7 Soil quality remediation objectives for petroleum hydrocarbons

Objectives for Coarse-Grained Soils	F1 mg/kg	F2 mg/kg	F3 mg/kg	F4 mg/kg
Surface (0 to 1.5m depth)	210	150	300	2,800
Subsoil (>1.5m depth)	700	1,000	2,500	10,000

Source: CCME 2008

Note: "Coarse" means coarse-textured soil having a median grain size of >75 µm

6. Progressive Reclamation Measures

6.1. DEFINITION OF PROGRESSIVE RECLAMATION

Progressive reclamation takes place prior to permanent closure, and is the reclamation of components and/or decommissioning of those facilities that no longer serve a purpose. These activities can be completed concurrently with exploration activities at the site, utilizing available resources to reduce future liability, minimize the duration of environmental exposure, and enhance environmental protection. Progressive reclamation may shorten the time for achieving the future final closure objectives and may provide valuable experience on the effectiveness of certain measures that may be implemented during permanent closure.

6.2. OPPORTUNITIES FOR PROGRESSIVE RECLAMATION

Blue Star's approach to progressive reclamation is to utilize the operable equipment available at site to dispose of non-useable equipment and materials in the Landfill and to manage PHC contaminated soil in the STF. Blue Star plans on using the following equipment that is available on site:

- Excavator
- Front end loader
- Ore truck(s)
- Bulldozer with ripper
- Grader
- Fuel truck
- Light vehicles for transport
- Bus

To implement the progressive reclamation measures, a crew of approximately 20 persons will be mobilized to site in June 2020 to open the existing Ulu camp and service the vehicles and equipment required for progressive reclamation. Figure 10 shows the infrastructure required for progressive reclamation activities described in the following sections.

6.3. MINE WORKINGS

The vent raise was backfilled with waste rock and esker sand by the preceding owner; documentation verifying that the work was certified by a qualified engineer has not been provided by the preceding owner. The vent raise backfill will be monitored during progressive reclamation activities and observations included in the annual geotechnical inspection reports. A qualified professional engineer will be retained prior to the cessation of progressive reclamation activities to determine if additional measures are necessary, and if required, to certify the closure measures completed.

The mine portal has been sealed to prevent access. Two sea cans will be placed in front of the portal to enhance the current access restriction measures. The portal seal will be monitored during progressive reclamation activities and observations included in the annual geotechnical inspection report.

The steel recovered from the demolished fuel tanks is thought to be appropriate for steel closure of mine entrances; however, the dimensions of the remaining intact sheets are unknown. An assessment of the quality and dimensions of the scrap steel will be made in 2020 and suitable materials will be set aside for possible reuse. Steel not re-purposed will to be landfilled prior to the cessation of progressive

reclamation activities. For the purposes of the progressive reclamation security estimate (Appendix C), it is assumed the vent raise will be capped with steel under the direction of a qualified professional engineer.

6.4. MINE SUMP

The mine sump will either be decommissioned or be modified to manage the ore stockpiled on surface, as describe in Section 6.5. Mineralized rock used to construct the berms will be managed with the existing ore stockpile material and the berm will be re-established with unmineralized waste rock. For the purposes of the security estimate, it is assumed the sump will be utilized for ore storage. This will include replacement of the mineralized material within the berms and base liner system as well as a liner and esker cover. If the sump is decommissioned, the geomembrane liner will be removed and disposed of in the Landfill.

6.5. ORE AND WASTE ROCK

The ore stockpiled on surface has the potential to generate metal leachate and acidic rock drainage within the next decade. Studies will be undertaken in 2020 by a qualified professional to determine the optimal method for managing the ore stockpiled on surface; these studies will include sampling, laboratory analysis, and reporting of findings with recommendations. The following options are being considered:

- Neutralization in place
- Relocation
- Neutralization and/or encapsulation in either the mine sump or the STF following soil treatment.

The ore remaining on the ore pad and the mineralized rock used for the construction of the mine sump will be managed with the stockpiled ore.

The NWB will be notified 30 days prior to the implementation of the selected option, or as otherwise stipulated under the water licence. Management of the ore stockpile will be undertaken during progressive reclamation activities.

A systematic geochemical sampling program will be conducted along the existing infrastructure to determine the proportion and distribution of rock with high metal leaching and acid rock drainage (ML/ARD) risk.

6.6. INFRASTRUCTURE AND EQUIPMENT

6.6.1. BUILDING AND EQUIPMENT DEMOLITION

With the possible exception of the core shack, all buildings at the Project are collapsible and are designed to be dismantled easily. Blue Star intends to assess the condition and usefulness of the buildings on site to support future exploration. Anything deemed no longer useful, irreparable, or unsalvageable will be disposed of in the Landfill. For the purposes of the security estimate, it is assumed that all buildings except the core shack will be disposed of in the Landfill during progressive reclamation activities.

Much of the existing equipment and parts found on site are no longer useful, are in a mature state of disrepair, or are completely decommissioned. Accordingly, Blue Star considers this equipment suitable

for disposal in the Landfill. Prior to disposal, all fluids, batteries, and mercury switches will be removed from the equipment. If air conditioners are present, they will be checked for refrigerants which will be removed by approved personnel prior to dismantling. Table 8 lists the equipment that is planned for disposal. Salvageable equipment will be retained and transferred for use and storage when an exploration camp is established closer to the airstrip.

Table 8 List of equipment planned for disposal

Equipment	
1993 Ford F350 4 × 4 Pickup - Brown	1993 Ford F350 4 × 4 Pickup - Green
Ford Pickup - F-350 4 × 4 Blue	Ford Pickup - F-350 4 × 4 White
1980 Ford LW9000 Flat Deck, Hiab	Ford 800 Boom Truck
Fuel Truck (1000 gal) Mack	Peterbilt Tri-Axle tanker
Cat 930 Front End Loader	Cat 824C Rubber-Tired Bulldozer
Cat Rock Truck 769	Cat Water Truck
Getman A-64 Scissor Lift	Volvo Water Truck
Cat-563 Drum Packer	Foremost Delta Commander
Compressor 600 cfm Gardner-Denver	Compressor 825 cfm Gardner-Denver
Compressor 375 cfm Leroi	Generator 600 kW Cat
Generator 600 kW Cat	Generator 600 kW Cat
Generator 250 kW Detroit (8V92T)	Generator 250 kW Detroit (8V92T)
Generator 500 kW Cummins	Generator 500 kW Cummins
Atlas Copco Rocket 322S Drill Jumbo	Tamrock H-102 Micro Drill Jumbo
Tamrock HS205M Maxi Drill Jumbo	Elphinstone R-1700 Scooptram (7.5 yd)
Wagner MT-426 Haul Truck	Wagner MT-444 Haul Truck
Wagner ST-2D Scooptram	Wagner ST-3.5 Scooptram
Wagner ST-7.5Z Scooptram (7.5 yd)	Kubota M5400 Man Carrier

6.6.2. WASTE STORAGE AND DISPOSAL AREAS

The Landfill, a new waste management facility, will be constructed, operated, and closed during the progressive reclamation work program. The Landfill will have the capacity to receive approximately 20,000 m^3 of non-hazardous solid waste. Its proposed location, illustrated on Figure 10, occurs in an area situated between the former Ulu Camp tank farm and the portal access road. It is also situated in proximity to all consolidated waste stockpiled by the previous site operator in 2018/2019. The Landfill is intended to operate during progressive reclamation activities as described in the *Landfill Management Plan* (Blue Star 2020b). Details of the Landfill design and engineering drawings are included as an appendix to the *Landfill Management Plan* (Blue Star 2020b).

6.6.3. FUEL STORAGE

Fuel will be stored in fuel caches. Oil, lubricants, and coolant will be stored within secondary containment inside the shop until its demolition.

6.7. HAZARDOUS MATERIALS AND CONTAMINATED SOIL

Hazardous materials and domestic waste generated during progressive reclamation will be handled in accordance with the *Waste Management Plan* (Blue Star 2020c). This will include fluids recovered when

equipment is decommissioned, and fluids generated when fuel tanks and drums are decontaminated (if needed).

PHC contaminated soil is to be excavated and the resulting floor and sidewalls of the excavations are to meet the soil quality remediation objectives (Table 7). The remediation confirmatory sampling procedure is provided in Appendix B of the *Soil Treatment Facility Management Plan* (Blue Star 2020d).

An STF will be constructed and operated to remediate PHC contaminated soil in accordance with the *Soil Treatment Facility Management Plan* (Blue Star 2020d). Soil treatment will use naturally occurring micro-organisms contained in the soil and volatilization to break down PHC in what are known as biopiles. Nutrients and water will be added, and the soil aerated to enhance microbial activity. The treatment of contaminated soil will be restricted to the warmer months when the soil is not frozen or covered with snow. The planned location for the STF is identified in Figure 9. The security cost estimate is based on the schedule and quality estimates in Table 9, taken from the *Soil Treatment Facility Management Plan* (Blue Star 2020d).

Table 9 Soil treatment facility schedule and quantity estimates

Year	Volume	Comments
2020	4,000m³	Placement of estimated volume for treatment within the soil treatment facility. Active season of material aeration.
2021	2,400m³	Remediated for removal.
2022	800m³	Remediated for removal.
2023	800m³	Remediated for removal.
2024	TBC	Repeated process based on the yearly remediated quantities and remaining PHC contaminated material.

Notes: Volumes based on investigation conducted in 2019 (SRK 2020).
Assumes 1/3 PHC contaminated soil will be acceptable for subsoil management

The soil underlying secondary containment in areas used for equipment dismantling and fuel caches during progressive reclamation will be tested when the caches are removed, and any impacted soil will be recovered and treated in the STF or packaged and shipped off-site for treatment. The removal will be done through backhauling (utilizing the return flights of fuel and large item delivery) of the material to a treatment facility off site. The current estimate of contaminated material unsuitable for treatment in the STF and therefore requiring backhaul and off-site is 110 m³ (see Section 3.1.5 and Section 3.4.7).

Upon completion of the soil remediation activities Blue Star intends to assess the condition of and usefulness of the lined facility to be re-purposed to support future exploration. For the purposes of the progressive reclamation security estimate it is assumed the STF will be decommissioned.

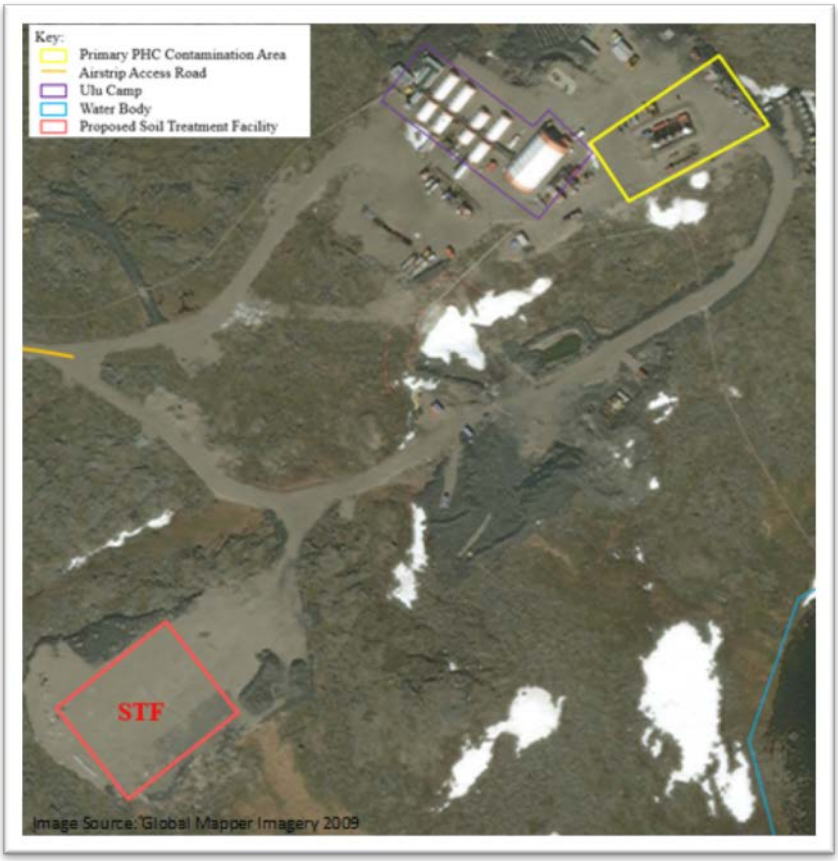


Figure 9 Soil Treatment Facility Overview

6.8. BORROW AND QUARRY MATERIALS

Eskers have historically provided a source of aggregate for the Project. Disturbed areas will be rounded and contoured with a bulldozer to minimize erosion. This will involve walking/tramming the machine to and from camp.

Should a rock quarry be established and developed, it will be operated and closed in accordance with the *Borrow and Quarry Rock Management Plan* (Blue Star 2020e). Prospective quarry sites and the geochemical characterization program are described in the *Borrow and Quarry Rock Management Plan* (Blue Star 2020e).

6.9. MONITORING AND MAINTENANCE

6.9.1. PROGRESSIVE RECLAMATION MONITORING AND MAINTENANCE PROGRAMS

The performance of the backfill in the vent raise, the cover on the Landfill (and the cover on the ore stockpile) will be monitored during progressive reclamation. Observations will be recorded in the annual geotechnical report.

Surface and seepage water monitoring will be undertaken in accordance with the water licence during the annual geotechnical inspection.

Monitoring of the STF includes: biopile PHC concentrations and moisture content, surface water accumulation, groundwater quality, visual inspections during operations, and annual geotechnical inspections as outlined in the *Soil Treatment Management Plan* (Blue Star 2020d). Maintenance of the facility will be undertaken, along with reporting and documentation, as outlined in the *Soil Treatment Facility Management Plan* (Blue Star 2020d).

Regular inspections of the Landfill are to be conducted to ensure operational compliance and specifically following a rain event when the site is occupied. Surface water quality and Landfill cover performance are to be monitored as outlined in the *Landfill Management Plan* (Blue Star 2020b). Reporting and documentation requirements are provided in this plan.

The road and airstrip will be maintained as necessary to complete progressive reclamation activities.

The progressive reclamation will extend for a period of 6 years; this will include the time required to complete the progressive reclamation work, remediate the remaining PHC contaminated soil, and achieve final closure of the Landfill and STF.

6.9.2. POST-PROGRESSIVE RECLAMATION MONITORING AND MAINTENANCE PROGRAMS

Upon decommissioning the STF, soil samples are to be taken and compared to baseline soil samples to confirm that there is no migration of contaminants into the foundation or surrounding area, as outlined in the *Soil Treatment Facility Management Plan* (Blue Star 2020d).

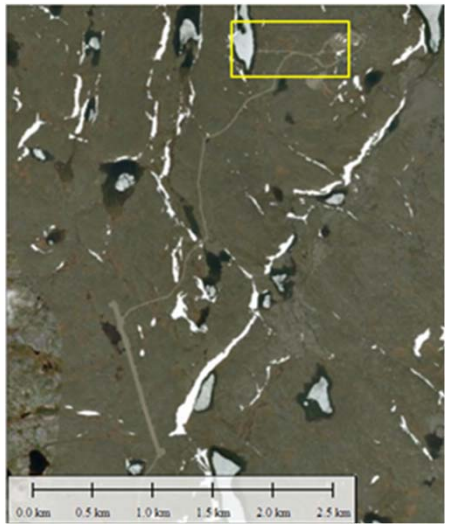
Landfill cover (and ore stockpile cover, if used) performance monitoring by a geotechnical engineer will occur in accordance with the water licence.

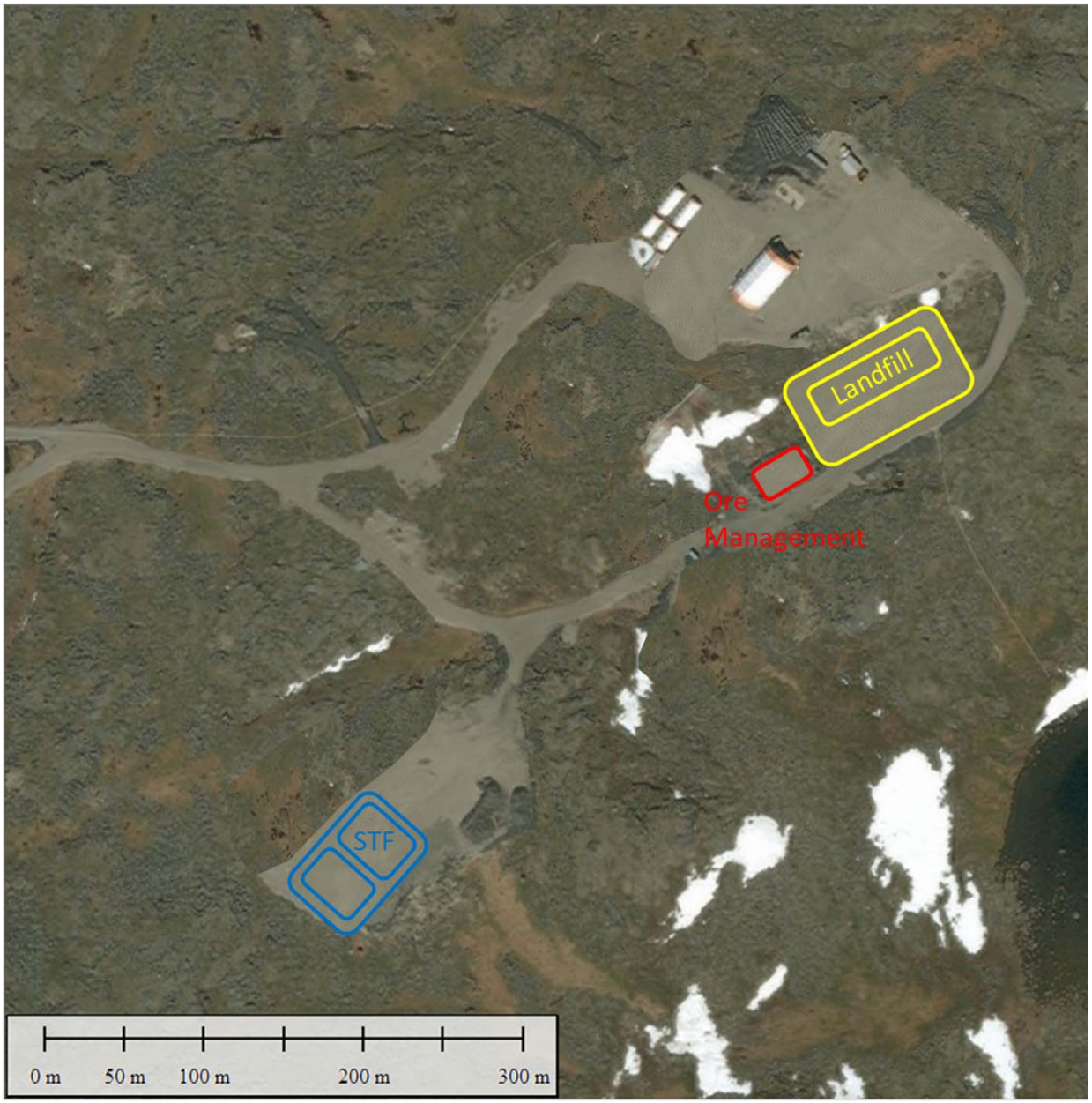
The post closure period is identified as 4 years and will include continued visual inspections, water quality monitoring, and geotechnical inspection.

6.9.3. CONTINGENCIES

A proposed schedule for undertaking the progressive reclamation activities is provided in Section 1.1.4. The proponent acknowledges that this may change in consideration of logistics and on-site conditions; however, the intent to carryout the work as licensed remains.

Should monitoring determine that the work as licensed not be a successful means of achieving progressive reclamation criteria and objectives, alternatives will be developed.





BLUE STAR GOLD CORP.

Ulu Gold Project

Interim Reclamation and Closure Plan

Progressive Reclamation Site Facilities

Date:	Approved:	Figure:
April 2020	DG	**10**

7. Temporary Closure Measures

As described in Section 5.1.2, temporary closure of the site may occur for different reasons; however, related closure activities are the same regardless of the reasons for temporary closure.

Monitoring and administrative activities would continue to maintain all compliance requirements. At a minimum, annual site inspections will take place. Typical activities associated with temporary closure of each project component are outlined below.

7.1. MINE WORKINGS

The portal and vent raise will be inspected to ensure there are no areas of subsidence; control measures would be implemented if necessary.

7.2. WATER MANAGEMENT

The water intake hose will be removed from the lake and securely stored on site. The water pump will be drained, and the pump placed into storage.

Site drainage patterns will be inspected, and sediment control features upgraded where necessary.

7.3. BUILDINGS AND STORAGE FACILITIES

7.3.1. ULU CAMP

Temporary camp closure is expected to take approximately one week, using available on-site labour and supervision.

Most consumable supply inventories would be brought to a minimum through scheduled use, reducing the risk of long-term storage at the site.

Valuables will be removed from camp to off-site storage. Remaining items key to the closure and start-up of the camp will be secured inside the Weatherhaven residential complex.

The rooms, kitchen, and dry in the residential complex will be cleaned out, fuel disconnected, and doors wired shut to prevent snow and wildlife ingress. All food will be removed to off-site storage. The kitchen will be emptied and cleaned, including the grease traps, so as not to attract wildlife. A small amount of non-perishable food may be left on site in the core shack, as emergency rations.

The greywater sump will be inspected to ensure it is free from wildlife attractants. Erosion control measures will be implemented where necessary.

The doors and windows of the core shack will be boarded to prevent snow and wildlife ingress. Core storage areas will be inspected for stability.

The incinerator and surrounding area will be cleaned out, ash and debris removed in accordance with the *Waste Management Plan* (Blue Star 2020c), and the incinerator secured in such a manner as to prevent snow ingress into the chambers and wildlife attraction.

7.3.2. FUEL AND MATERIAL STORAGE

Fuel and other materials such as drill additives, lubricants, and coolants may remain in fuel caches and inside the sea container at the airstrip for emergency use and to support camp closure and start-up. All barrels and other storage containers will be inspected to ensure integrity. Fuel remaining in caches will be covered with tarps.

7.4. MOBILE EQUIPMENT

The remaining operational vehicle fleet will be parked inside the vehicle repair shop (when present). Batteries will be removed from key pieces of equipment and moved to off-site storage. Provisions to secure a loader at the airstrip over winter will be considered.

7.5. WASTE MANAGEMENT

Hazardous and domestic waste generated during the season will be managed in accordance with the *Waste Management Plan* (Blue Star 2020c).

7.6. DRILLS

Drills will be demobilized from the field and stored in a designated area on site. Fuel lines will be disconnected, and fuel tanks stored in secondary containment and covered. Drill cuttings sumps will undergo a final inspection to ensure proper containment and erosion control. The area around drill stems will undergo a final inspection to ensure any areas of subsidence have been backfilled in such a manner as to prevent water accumulation.

7.7. MONITORING AND MAINTENANCE

Site components and infrastructure will be visually inspected at least annually and in accordance with the applicable authorizations. The visual inspections will document unexpected conditions as they relate to protection of health, safety and the environment, physical stability, and security. Blue Star management will be notified of all unexpected conditions; these will be investigated and addressed as required. In general, all monitoring and reporting will occur in accordance with the applicable authorizations and will include but not be limited to the following:

- Regular inspections of buildings, Landfill, ore stockpile, STF, borrow pits, and roads
- Implementation of inspection follow-up actions as necessary
- Regular inspection of available water storage capacity

All inspections and monitoring activities will be recorded and filed with the corporate office.

Infrastructure maintenance will be undertaken and will include the following tasks:

- Culvert repair and other road repairs as required.
- STF maintenance in accordance with the Soil Treatment Facility Management Plan (Blue Star 2020d).
- Equipment maintenance as required
- Landfill maintenance in accordance with the Landfill Management Plan (Blue Star 2020b)

8. Final Closure Measures

Final closure commences when a formal notice of abandonment is filed during the final stages of mining or exploration, or during a long-term shut down event. Once a decision for final abandonment has been made, a Final Closure Plan (FCP) will be submitted to the NWB.

Decommissioning of the site would then commence in accordance with an approved FCP during the next available construction season. It would include either on-site disposal where appropriate and/or removal of camp components and equipment either by air, or via a future winter trail or an all-season road, for off-site disposal.

Post closure monitoring will be undertaken in accordance with an approved FCP and water licence.

Inspections will be carried out in accordance with the various authorizations.

Future final closure measures may reasonably include those presented below.

8.1. ROADS AND AIRSTRIP

Upon final closure, all roads would be regraded with the shoulder slopes flattened to reduce erosion and promote positive drainage. All culverts will be removed and the drainage opened to allow natural flow. In order to promote natural growth of vegetation, the roads will be scarified to provide the needed microclimate sites for seed establishment. No active seeding is planned. The roads that are raised above the natural topography will be reduced in height and contoured prior to scarifying.

Depending upon the requirements of the KIA as the landowner, the airstrip may also be regraded and the surface scarified upon final closure.

8.2. BORROW AND QUARRIES

Esker borrow areas will be contoured to minimize erosion. Quarries, if developed, will be inspected to ensure slopes are suitable for long-term slope stability and water shedding, and any stockpiled overburden will be distributed to promote the establishment of vegetation islands.

8.3. MINE WORKINGS

Upon final abandonment of the Project, the portal will be sealed in accordance with an engineered design. The area immediately in front of the portal will be re-contoured for long-term stability and drainage.

8.4. WASTE MANAGEMENT

Waste items may be disposed of either underground, in a surface landfill, or off-site. Engineered designs for the disposal of bulky materials underground or in a surface landfill will be developed.

8.5. RISK MANAGEMENT

As part of the development of future final closure measures, Blue Star may establish a set of adaptive management terms and apply them to the waste rock that was removed from the underground workings in 1996 and 1997.

8.6. MONITORING AND MAINTENANCE

8.6.1. CLOSURE MONITORING AND MAINTENANCE PROGRAMS

Soil Contamination

The soil underlying those areas used for fuel caches during closure will be tested prior to final closure. Any impacted soil will be recovered, packaged, and shipped off-site for treatment.

8.6.2. POST-CLOSURE MONITORING, MAINTENANCE, AND REPORTING

Post-closure monitoring is anticipated to involve water quality monitoring downstream of reclaimed infrastructure and geotechnical stability assessments of the closed landfill and reclaimed areas.

Water Quality

Post-closure, the camp pad and material laydown pads will continue to be exposed to the environment. Accordingly, it is reasonable to anticipate the need for post-closure water quality monitoring for some time. Research conducted during the progressive reclamation activities will better inform the duration of post-closure monitoring.

Geotechnical

Monitoring of the stability of the portal closure measures, cover(s), closed roads, airstrip, borrow, and quarries is reasonable to include in post-closure monitoring.

9. Final Environment Conditions

9.1. RESIDUAL EFFECTS PREDICTION

Historically, previous site owners used waste rock to construct site infrastructure such as roads, pads, and berms. The potential for negative residual effects as a result of the legacy waste rock on surface is not currently understood. Past assessments of waste rock geochemistry indicate that the delay to onset of acidic conditions in the waste rock is likely to be decades and that treatment may be required to reclaim waste rock in place. To better understand potential future residual effects at closure and to inform development of appropriate mitigation measures, an assessment of the different size fractions of waste rock on surface is to be completed in 2020 (see Appendix A). Once the volume/percentage of fine-grained material is known, treatment options will be better understood. In the interim, monitoring in accordance with the water licence to assess the possibility of attenuation or concentration of metals by acidic tundra soils is considered adequate.

9.2. LANDFORMS AND VEGETATION

Revegetation of disturbed areas at the Project will focus on the enhancement of the ground surfaces by promoting natural reintroduction of native species while reducing the opportunity for erosion. Scarifying of hard-packed surfaces to open up the ground will provide the required microclimate for natural plant growth, enhancing seed entrapment, moisture retention, and wind protection. The roads, currently raised above the natural topography, will be reduced in height and contoured prior to scarifying.

The site has been constructed to provide a level pad for camp construction and materials laydown. This grading is only minimally raised above the fractured rock outcropping and boulders, leaving very little flexibility in the final topography. At this time, it is anticipated that the areas near the natural slopes will be shaped to blend in with the natural topography.

10. Closure Schedule and Execution Strategy

10.1. REGULATORY FRAMEWORK

Should Blue Star decide to proceed to final closure at Ulu in the future, an application will be submitted to the Nunavut Planning Commission (NPC) for a conformity review. It is reasonably anticipated that the NPC will refer the application to the NIRB for screening or review, after which Blue Star will apply to the NWB for an amendment to its water licence to approve a Final Closure Plan. Depending on the surface and subsurface agreements in place at the time, related submissions may need to be made to the KIA, the Government of Canada, and NTI.

10.2. FINAL CLOSURE SCHEDULE AND EXECUTION STRATEGY

Final closure will proceed once a Final Closure Plan has been approved and the water licence has been amended. The closure activity schedule will be determined during planning of final closure; it will consider the site conditions existing at that time, as well as equipment and workforce availability and cost. Closure work will be undertaken using equipment previously transferred to the adjacent exploration site, as described in Section 6.6.1. Depending on the status of exploration activities and available bed space, the establishment of a temporary camp may be needed to support the closure.

11. Reclamation and Closure Liability

Table 10 provides a summary of the costs for completing the tasks outlined in Section 6. A detailed breakdown of these costs is included in Appendix C.

Table 10 Progressive reclamation cost estimate

Task	Costs C$
Direct Costs	**$1,074,749**
Building Demolition	$33,491
Non-Hazardous Waste Landfill	$287,597
Soil Treatment Facility	$517,773
Ore Management	$80,411
Mine Workings	$55,760
Hazardous Material Management	$55,492
Borrow & Quarry	$4,807
Construction Material Transport to Site	$39,418
Indirect Costs	**$1,479,617**
Mobilization	$421,140
Waste Rock ML/ARD Investigation	$43,418
Monitoring and Reporting	$205,539
Management and QA/QC	$145,600
Bonding/Insurance	$10,747
Health and Safety	$10,747
Project Management	$53,737
Engineering	$53,737
Contingency	$534,950
Total	**$2,554,367**

The financial security held by the Minister of Crown-Indigenous Relations and Northern Affairs (CIRNA) has remained largely the same, approximately $1,680,000, since 2000 ($1,685,542 is currently held by CIRNA). Blue Star posted $750,000 as additional financial security with the KIA to address the shortfall in reclamation security held by CIRNA and the KIA during the licence assignment process. It should be noted that in the time between licence assignment to Blue Star and the submission of this plan, no new work has been undertaken on site.

A staged approach to security administration is considered suitable; this will allow exploration to proceed, planned reclamation to be undertaken as was contemplated in the licence assignment process, and additional related progressive reclamation activities to be undertaken as needed in the future.

The Licensee acknowledges that following completion of progressive reclamation, historical mine-related infrastructure and liabilities will remain on site, such as roads and pads, airstrip, mine portal, and waste rock. Prior to advancing the project to construction and operations, an assessment of future closure requirements and of the appropriate financial security needed for implementation will be

required. The Licensee commits, through the amendments to the licence and approval of this ICRP, to submit and maintain appropriate financial security as the project moves through the mine life cycle.

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