

ANNUAL REPORT:
Ulu Gold Project
Exploration and Progressive Reclamation
20EN001
2BM-ULU2030

Kitikmeot Region, Nunavut

March 2022



TABLE OF CONTENTS

1	INTRODUCTON.....	1
1.1	PURPOSE.....	1
1.2	SITE LOCATION AND DESCRIPTION	1
1.3	PANDEMIC PREPAREDNESS & RESPONSE	1
1.4	LOGISTICS & ACCESS	3
2	AUTHORIZATIONS.....	3
3	2021 WORK PROGRAM	7
3.1	CONSTRUCTION, MODIFICATIONS AND MAINTENANCE	7
3.1.1	Non-Hazardous Landfill	7
3.1.2	Road Maintenance	8
3.2	EXPLORATION ACTIVITIES	8
3.3	PROGRESSIVE RECLAMATION ACTIVITIES.....	9
3.3.1	Non-Hazardous Waste Management	9
3.3.2	Hazardous Waste Management	9
3.4	RECLAMATION SECURITY.....	11
3.4.1	Reclamation Research	12
3.4.2	Project Development Monitoring.....	13
3.4.3	Modifications to the Site Plan.....	13
3.5	WATER MANAGEMENT	13
3.6	SPILLS.....	14
3.7	WILDLIFE INTERACTIONS.....	14
3.8	QUARRY ACTIVITIES	15
3.9	ANNUAL INSPECTION ACTIVITIES AND BOARD/LANDOWNER REQUESTS	15
3.10	VISITORS AND OTHER LAND USERS	15
3.11	HERITAGE RESOURCES.....	15
4	INUIT EMPLOYEES AND NORTHERN SERVICE PROVIDERS.....	16
5	COMMUNITY CONSULTATIONS	16
6	MANAGEMENT PLANS	16
7	WORKPLAN FOR UPCOMING YEAR	17
7.1	CAMP EXPANSION	17
7.2	PROGRESSIVE RECLAMATION	17
7.3	GREY WATER.....	17
7.4	EXPLORATION	17
7.5	WATER LICENCE AMENDMENT	17

7.6	WINTER TRAIL FEASIBILITY	17
7.7	WILDLIFE RESEARCH SUPPORT	17
8	REFERENCES.....	18

LIST OF TABLES

Table 1.	Authorizations and compliance summary for 2021 work program	4
Table 2.	Waste backhauled from Ulu, 2021.....	11
Table 3.	Location of Monitoring Program Results	14
Table 4.	Inspector requests and follow-up actions, 2021.....	15

LIST OF FIGURES

Figure 1.	Location map and 2021 study area, Ulu Gold Project	2
-----------	--	---

LIST OF APPENDICES

Appendix A.	NWB Standard Water Licence Report Form, 2BM-ULU2030	A1
Appendix B.	Compliance Assessment, 20EN001.....	B1
Appendix C.	Photos.....	C1
Appendix D1.	Monitoring Program Results: ULU-1	D1
Appendix D2.	Monitoring Program Results: ULU-4b	D2
Appendix D3.	Monitoring Program Results: ULU-7	D3
Appendix D4.	Monitoring Program Results: ULU-8	D4
Appendix D5.	Monitoring Program Results: ULU-9	D5
Appendix D6.	Monitoring Program Results: ULU-11	D6
Appendix D7.	Monitoring Program Results: ULU-14	D7
Appendix D8.	Monitoring Program Results: ULU-15	D8
Appendix E.	Wildlife Siting Report	E1

TABLE OF CONCORDANCE: Ulu Annual Reporting Requirements, by Authorization

Corresponding Authorization Item/Paragraph #	Term	Corresponding Report Section
<i>20EN001</i>		
4	4. The Proponent shall submit a comprehensive annual report with copies provided to the Nunavut Impact Review Board, by March 31st of each year of permitted activities beginning March 31, 2021. The annual report must contain at least the following information: a) A summary of activities undertaken for the year, including but not limited to:	1.1
4a	▪ a map showing the approximate location of drill sites;	Figure 1
	▪ a description of local hires, contracting opportunities and initiatives;	4
	▪ a map showing the location of the fuel cache(s);	Figure 1
	▪ flight altitudes, frequency of flights and flight routes;	1.4
	▪ site photos;	Appendix C
4b	▪ any reclamation work undertaken;	3.3
4b	A work plan for the following year, including any progressive reclamation work to be undertaken;	7
4c	A summary of community consultations undertaken throughout the year, providing copy of materials presented to community members, a description of issues and concerns raised, discussions with community members and advice offered to the company as well as any follow-up actions that were required or taken to resolve any concerns expressed about the project proposal;	5
4d	A log of instances in which community residents occupy or transit through the project area for the purpose of traditional land use or harvesting. This log should include the location and number of people encountered, activity being undertaken (e.g., berry picking, fishing, hunting, camping, etc.), date and time; and any mitigation measures or adaptive management undertaken to prevent disturbance;	3.10
4e	A discussion of issues related to wildlife and environmental monitoring, including the number of cease-work orders required as a result of proximity to caribou and any other wildlife;	3.7
4f	A brief summary of WMMP results as well as any mitigation actions that were undertaken. In addition, the Proponent shall maintain a record of wildlife observations while operating within the project area and include it as part of the summary report. The summary report based on wildlife observations should include the following:	3.7 Appendix E

	1. Locations (i.e., latitude and longitude), species, number of animals, a description of the animal activity, and a description of the gender and age of animals if possible. 2. Prior to conducting project activities, the Proponent should map the location of any sensitive wildlife sites such as denning sites, calving areas, caribou crossing sites, and raptor nests in the project area, and identify the timing of critical life history events (i.e., calving, mating, denning and nesting). 3. Additionally, the Proponent should indicate potential impacts from the project, and ensure that operational activities are managed and modified to avoid impacts on wildlife and sensitive sites.	
4g	An analysis of the effectiveness of mitigation measures for wildlife;	3.7
4h	Summary of any heritage sites encountered during the exploration activities, any followup action or reporting required as a result and how project activities were modified to mitigate impacts on the heritage sites;	3.11
4i	Summary of its knowledge of Inuit land use in/near the project area and explain how project activities were modified to mitigate impacts on Inuit land use; and	3.10
4j	A summary of how the Proponent has complied with conditions contained within this Screening Decision, and all conditions as required by other authorizations associated with the project proposal.	2 <i>Appendix B</i>
2BM-ULU2030		
B10	The Licensee shall file an Annual Report on the appurtenant undertaking with the Board no later than March 31 of the year following the calendar year being reported, which shall contain the following information:	1.1
B10a	tabular summaries and analysis of all data collected under the Monitoring Program in Part J;	3.5 Table 3 <i>Appendix D</i>
B10b	a summary of any construction work, modification and/or major maintenance work carried out on the facilities related to Water use and Waste deposit, including all associated structures, and an outline of any work anticipated for the next year;	3.1 7
B10c	results for samples collected on ore and waste rock as referred to in Part D, Item 15;	1.1
B10d	a list of unauthorized discharges and follow-up action taken;	3.6 <i>Appendix A</i>
B10e	updates or revisions to the Waste Management Plan, Spill Response Plan, Interim Closure and Reclamation Plan, and any other plans associated with the Licence. Revisions may be subject to Board approval;	6
B10f	any updates to the estimate of the restoration liability, as required under Part B, Item 5 and 6, based upon the results of the restoration research, project development monitoring, and any modifications to the site plan;	3.4
B10g	a brief description of follow-up action taken to address concerns detailed in inspection and compliance reports prepared by the Inspector;	3.9
B10h	report all artesian flow occurrences as required under Part F, Item 3;	3.2

B10i	a summary of hazardous materials shipped out, the treatment received, and the location of the approved treatment facility to which they were sent;	3.3.2 Table 2
B10j	a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;	3.3 7
B10k	a summary of any specific studies or reports requested by the Board, and a brief description of any future studies planned or proposed;	3.9
B10l	a public consultation/participation report describing consultation with local organizations and residents of the nearby communities, if any were conducted; and	5
B10m	any other details on Water use or Waste disposal requested by the Board by the 1st of November of the year being reported.	3.9

1 INTRODUCTION

1.1 PURPOSE

The purpose of this document is to fulfill annual reporting requirements pursuant to project authorizations for the Ulu Gold Project (Ulu), specifically the Nunavut Impact Review Board Screening Decision 20EN001 and Nunavut Water Board Water (NWB) Licence 2BM-ULU2030, and to provide an outline of activities undertaken and reportable monitoring results. The NWB Annual Report Standard Form can be found in Appendix A along with supporting and additional information where required. Coordinated reporting for the both the NIRB and the NWB is provided for transparency and efficiency.

Blue Star's Ulu project is contiguous with its Hood River Gold Project (Hood River). Activities in 2021 were licenced by the Kitikmeot Inuit Association (KIA) under one licence, while there are separate water licences for each Hood River and Ulu, with mineral rights for each property also held separately. Ulu activities were coordinated with works undertaken at Hood River, with the Ulu camp and infrastructure supporting Hood River exploration. Hood River is discussed herein to inform an understanding of local site activities and program context.

Activities undertaken at Ulu were limited to exploration and progressive reclamation; mine operations have not resumed.

This report has been submitted on or before March 31, 2022.

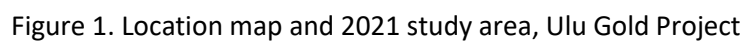
1.2 SITE LOCATION AND DESCRIPTION

Land use was undertaken pursuant to KTL311C013, with all work occurring on Inuit Owned Lands parcel CO-20.

Exploration activities and progressive reclamation of the Ulu mine site were undertaken based out of the Ulu camp, with drilling and prospecting occurring in a variety of areas as illustrated in Figure 1. An archeological assessment was undertaken in drill target areas across both properties. Ulu was accessed via the existing Ulu airstrip.

1.3 PANDEMIC PREPAREDNESS & RESPONSE

The occurrence of the COVID-19 pandemic influenced the scope and execution of Blue Star's field program in various ways including limits to number of personnel on site and the subsequent effects on program scope execution, and Blue Star's inability to access communities for local hires and public consultation. Despite these challenges, Blue Star had a successful, safe and compliant field program in 2021.



1.4 LOGISTICS & ACCESS

Crews and supplies accessed Ulu via fixed wing from Yellowknife to the Ulu airstrip twice weekly. Personnel and supplies arriving and departing by fixed wing were shuttled between the Ulu airstrip and Ulu camp by light duty vehicle.

Depending on weather and payload, fixed wing flights typically cruised at altitudes between 6,000 and 10,000 feet, or as dictated by safety and weather considerations, at the pilot's discretion.

Daily helicopter overflights of work areas were undertaken most mornings prior to the start of work or coincident with shift change to determine local wildlife presence and resulting subsequent flying heights. In the absence of wildlife, local low level flights occurred daily between camps and nearby drill sites to support the movement of people and supplies.

2 AUTHORIZATIONS

Current authorizations relating to the 2021 work program are listed in Table 1. Appendix B includes an assessment of compliance with 20EN001.

Table 1. Authorizations and compliance summary for 2021 work program

Item	Description	Scope	Issuing body	Compliance Summary
<i>Hood River</i>				
HoodRiver-001	Mineral Exploration Agreement	Subsurface mineral rights	Nunavut Tunngavik Inc. (NTI)	Work conducted. Reporting underway, due in June.
2BE-HRP1924	Water licence	Drilling and domestic water use and associated waste deposit, Hood River	NWB	Drilling and domestic water use and waste deposit occurred. Annual reporting submitted. Activities in compliance with authorization.
19EA019	Screening Decision Report	Exploration, prospecting, mapping, sampling, camp establishment, fuel storage, access, baseline environment and heritage studies	Nunavut Impact Review Board (NIRB)	Activities undertaken all within scope of screening decision. Activities in compliance with authorization.
149067	Conformity determination	Exploration, prospecting, mapping, sampling, camp establishment, fuel storage, access, baseline environment and heritage studies	Nunavut Planning Commission (NPC)	-
<i>Ulu</i>				
KTCA20Q004	Quarry Permit Agreement	Quarrying of granular materials	KIA	Granular was quarried. Fees and royalties paid.
L-3563	Mining Lease	Subsurface mineral rights	Crown-Indigenous Relations and Northern Affairs (CIRNA)	Work conducted. Lease in good standing.
2BM-ULU2030	Water licence	Drilling and domestic water use and associated waste deposit, reclamation, bulk sampling, quarrying	NWB	Drilling and domestic water use and waste deposit occurred, along with reclamation and esker quarrying.

Item	Description	Scope	Issuing body	Compliance Summary
				Annual reporting herein. Activities in compliance with authorization.
20EN001	Screening Decision Report	Exploration, prospecting, mapping, sampling, camp establishment, fuel storage, access, baseline environment, and heritage studies, progressive reclamation, bulk sampling, quarrying, winter trail	NIRB	Activities undertaken all within scope of screening decision. Annual reporting herein Activities in compliance with authorization.
149269, 149305	Conformity determination	Exploration, prospecting, mapping, sampling, camp establishment, fuel storage, access, baseline environment, and heritage studies, progressive reclamation, bulk sampling, quarrying, winter trail	NPC	-
EC-00057628	Storage tank registration	Single collapsible Arctic King tank, 50,000 L, for diesel storage, in service when site is occupied	Environment and Climate Change Canada	Registered in 2021, temporarily withdrawn from service at the end of the field season.
<i>Both Hood River & Ulu</i>				
KTL311C013	Land use licence	Exploration, camp operation, reclamation	KIA	Exploration, camp operation and reclamation undertaken. Annual reporting completed. Water and land use fees paid. Activities in compliance with authorization.
21-12A	Nunavut Archaeologist Permit	Archaeological impact assessment	Government of Nunavut (GN)	Archaeological impact assessment completed. Reporting completed.
04-007 2IN-M	Scientific Research License	Baseline environmental studies	Nunavut Research Institute	No work was undertaken pursuant to this licence in 2021.

Item	Description	Scope	Issuing body	Compliance Summary
2021-042	Wildlife research permit	Collect data on current conditions in study area which may support future impact assessment, deploy up to 10 cameras in the vicinity of Ulu infrastructures and activities to collect data on local wildlife use	GN Department of Environment	No work was undertaken pursuant to this permit in 2021.

3 2021 WORK PROGRAM

Activities in 2021 involved operation, improvement and expansion of the existing Ulu camp, assessment and maintenance of the Ulu surface fleet, diamond drilling, prospecting, an archaeological assessment, a geochemical assessment at Ulu, quarrying at Ulu, progressive reclamation of the Ulu site including waste management and landfilling, airstrip maintenance, installation and registration of the bulk fuel storage bladder at the airstrip, fuel caching, waste backhaul, and demobilization of remaining Hood River camp components. Activities commenced on June 8, 2021 and terminated on September 24, 2021 with the seasonal closure of the Ulu camp. Details of the program are provided below with related photos provided in Appendix C.

Blackwater was incinerated, greywater was discharged to a sump, drinking water was withdrawn from West Lake, and fuel caches were established and/or maintained. Cuttings from the core saw were discharged to the existing mine sump.

No sampling was undertaken pursuant to 2BM-ULU2030 Part D Item 15 as the Licensee is not currently in the process of resuming on site operations.

3.1 CONSTRUCTION, MODIFICATIONS AND MAINTENANCE

Upon accessing the Ulu camp, some minor damage from wildlife was repaired and 10 additional tents constructed. The core shack was also expanded and modified and three temporary isolation tents were also constructed. Over the course of the season, the grey water sump was modified to enhance retention, expand capacity and improve safe access. Photos of the expanded camp and improved grey water sump are provided in Appendix C.

The surface fleet was assessed by qualified heavy duty equipment technicians, and critical and preventative maintenance and repairs were ongoing throughout the season. Retired equipment was decontaminated (flushing, removal of components, surface washing), and broken down into smaller pieces in preparation for landfilling. Photos of the equipment decontamination are provided in Appendix C.

No modifications were undertaken.

An engineered facility, the non-hazardous waste landfill was partially constructed and remedial repairs were made to sections of the existing road south of the Ulu camp. Both were undertaken under the supervision of the Project Engineer and are discussed in further detail below.

3.1.1 Non-Hazardous Landfill

The landfill base was prepared by removing boulders and placing esker and contaminated soil meeting subsurface criteria to create a base for safe operation. All of the legacy waste, with the exception of the camp, shop, equipment currently in use and a few additional pieces of heavy equipment, were placed in the landfill. Contaminated soil meeting surface and subsurface criteria was placed in the landfill accordingly, and an interim esker cover placed on top. Altogether, 12,785 m³ of material was placed in the landfill including waste, esker fill and interim cover. All landfilling occurred according to the approved *Landfill Management Plan*.

Further, clean esker samples were collected and submitted to an analytical laboratory for compaction testing to inform suitability for use as final landfill cover.

Photos of landfilling are provided in Appendix C.

3.1.2 Road Maintenance

Historic water licence inspection reports (CIRNA 2015, CIRNA 2016, CIRNA 2017a) indicate that road washouts were observed along the road to the airstrip (Culvert 6) and near former Camp 3. The inspector indicated in 2017 that ore was reportedly used to repair the washout and requested confirmation to the Inspector and the NWB that construction materials used were from an approved source and free of metal leaching and acid rock drainage (MLARD; CIRNA 2017b). The previous owner's follow-up report (BCC 2017) disputes the use of waste rock in the repairs and indicates that confirmation of construction material characteristics would be provided in 2018. To date, no such records have been found. Accordingly, Blue Star undertook to have its project geochemist conduct a field reconnaissance of all infrastructure including the Culvert 6 and Camp 3 road repairs to identify areas where potentially acid generating (PAG) rock may have been used in construction.

Both the Culvert 6 and Camp 3 road repair locations were found to have PAG, intermittent flow and are located upstream of fish bearing waters. Given the potential for ARD and release of a deleterious substance harmful to fish, remedial measures were undertaken in September: the road bed and shoulders were excavated to remove PAG rock, and the road bed reconstructed with non-PAG esker materials. PAG rock that had rolled downslope from the road during past repair work was collected by hand to the greatest extent possible. Sediment and erosion control measures were in place throughout construction, water quality monitoring was undertaken, and silt fencing remains in place. PAG rock removed from the road bed has been relocated to the ore pad and temporarily stored with other PAG rock.

Blue Star confirms that materials used for road repairs were from an approved source, being the quarry licenced under KTCA20Q004, and are geochemically suitable as reported to the NWB in 2020.

Photos of road repair works are provided in Appendix C.

3.2 EXPLORATION ACTIVITIES

The Exploration program included diamond drilling, core cutting, prospecting and sampling. Two diamond drills were utilized, drilling 4,370 m were drilled from 21 holes. Cuttings and drill water were discharged either to sumps adjacent to drill areas or to the existing aboveground mine sump located adjacent to the portal. In most cases, nearby watercourses were used as water sources, however some drill holes near existing Ulu infrastructure pads utilized meltwater that had accumulated at the portal entrance. No artesian flows were encountered during drilling.

In addition to camp operations and diamond drilling, core cutting, prospecting, mapping and sampling were undertaken. Cuttings from the core saw were discharged to the existing mine sump located adjacent to the portal. Helibourne geophysical surveys were flown over an area of 487 ha within the entire Ulu and Hood River (including Roma) study area.

3.3 PROGRESSIVE RECLAMATION ACTIVITIES

Progressive reclamation was undertaken pursuant to the approved *Interim Closure and Reclamation Plan, including*. Activities undertaken are detailed below.

3.3.1 Non-Hazardous Waste Management

Starting in late June, legacy solid waste was sorted, with near term useful or readily recyclable goods recovered and segregated. The remainder of the partially demolished sleeper was deconstructed. Equipment and machinery identified for disposal in the non-hazardous waste landfill (landfill) was decontaminated with all fluids flushed and hazardous components removed. Standing water accumulated in open waste vessels was tested prior to release, in accordance with criteria discussed in advance with the Landowner and the Inspector. Oily or greasy waste equipment was washed prior to disposal, with wash water captured and sent off site for treatment and disposal. Any residual hazardous waste was backhauled to a suitable waste receiver.

During the course of landfill operations in July, Blue Star uncovered approximately 40 m³ of waste buried within two of the access routes built with esker in 2020 within the landfill footprint. Blue Star considered this to be an unauthorized deposit of waste and so reported the finding, excavated the waste and conducted limited sampling of the adjacent esker fill. Sampling results indicated the esker fill met landfill surface criteria. This material was then used in landfill construction, as was 400 m³ of esker obtained from the stockpile area.

Stockpiled petroleum hydrocarbon contaminated soils were sampled, and those meeting surface or subsurface disposal criteria were placed in the landfill to support compaction, fill void spaces and provide daily and interim cover.

Approximately 75 m³ various legacy non-hazardous materials were diverted from the landfill and backhauled for recycling or repurposing off site.

Refer to Section 3.1.1. for further discussion on landfilling

3.3.2 Hazardous Waste Management

Construction of the Soil Treatment Facility (STF) was deferred in 2021 pending outcomes of the reclamation research program. Legacy contaminated soil/esker was stockpiled within the lined area of the former main tank farm in 2020. All stockpiles were sampled in June and July 2021 to determine suitability for either: placement in the landfill, treatment in the future on site soil treatment facility, or backhaul for offsite disposal. Soil quality was found to vary including some meeting surface disposal criteria, some meeting subsurface disposal criteria and some meeting neither criteria and requiring treatment in the future STF: 400 m³ met disposal criteria and was placed in the landfill; 2,100 m³ remains in the stockpile on surface.

During soil sampling, some of the material comprising the former tank farm berms was also sampled to inform future reclamation activities. While most was found to meet landfill surface soil criteria, a portion will need treatment in the future STF.

During execution of other reclamation program components, contaminated soils were observed *in situ* and require further investigation to determine appropriate future handling: following removal of legacy solid waste from staging areas, staining was observed, likely resulting from old equipment leaking over

time; during test pitting associated with the MLARD program, hydrocarbon fumes were detected in some samples, along with an oily sheen observed in test pits in the landfill staging areas. Also during the MLARD program sampling, hydrocarbon fumes were observed in a soil sample collected from road construction materials in the vicinity of Camp 3. Blue Star plans to compile a plan for assessment and remediation of contaminated areas.

Non-compliant standing water, wash water and various effluents and parts from equipment decontamination prior to landfill was backhauled to the waste received in Yellowknife.

3.3.2.1 Polychlorinated Biphenyls

While segregating legacy waste, an old transformer was found comingled with other solid waste staged for disposal by the previous owner. The transformer's data plate indicates it was manufactured in 1966 and accordingly, it was suspected of containing polychlorinated biphenyls (PCBs). While the transformer was found to have been mostly drained, approximately 50 L of residual oil was removed and tested, confirming the presence of Aroclor 1260. The transformer has now been drained completely, the remaining oil removed from site to the custody of a hazardous waste receiver, the transformer stored in accordance with the *PCB Regulations* (2008) and appropriate signage installed.

3.3.2.2 Hazardous Waste Backhaul

Hazardous waste streams recovered across the Ulu site were segregated and backhauled to Kitikmeot Environmental Ltd. in Yellowknife, as listed in Table 2.

Table 2. Waste backhauled from Ulu, 2021

Waste description	UN #	Quantity
Hazardous Waste		
Batteries - lead acid	UN2794	810 kg
Compressed gas - freon	UN1018	20 kg
Flammable liquids-fuel	UN1993	4600 L
PCB oil	UN2315	37 kg
Waste leachate-glycol	-	1200 L
Waste leachate-mix	-	3000 L
Waste leachate-oil	-	3600 L
Waste leachate-sludge	-	566 kg
Non-Hazardous Waste		
Hydraulic hoses	-	2 totes
Scrap metal	-	403 kg
Plastics/recyclables	-	20kg
White goods, freon	-	1 item
General debris	-	550 kg
Incinerator ash	-	1300 kg
Oil/fuel filters	-	100 kg
Oily debris	-	1300 kg
Rags and absorbents	-	962 kg
Soil contaminated with hydrocarbons	-	382 kg
Water contaminated with hydrocarbons	-	400 L

3.4 RECLAMATION SECURITY

Further to Part B Items 5 and 6 of 2AM-ULU2030, the Licensee is not currently planning to resume active operations or proceed to final closure, nor were there changes in operations, components and/or technology. Accordingly, no updates to the restoration liability estimate are provided.

Restoration research, project development monitoring, and any modifications to the site plan undertaken are discussed below. As the reclamation research program is ongoing outcomes of upcoming studies in 2022 will inform and changes, if needed, to the reclamation security. Accordingly, a related update to the restoration liability is not considered appropriate until studies are complete, and so is not included in this annual report.

3.4.1 Reclamation Research

As listed in Section 4.6 of the approved *Interim Closure and Reclamation Plan*, reclamation research includes three topics, each discussed in subsequent sections:

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

Landfill Cover

Qualitative preliminary landfill cover assessment was undertaken through visual observation of the stability of existing materials historically placed around the Ulu site. Materials continue to appear stable with little to no evidence of erosion or other instability. Samples were collected for offsite compaction testing; results were pending at the time of reporting.

Rock Quarries

No further work in relation to the quarries was undertaken in 2021.

Ore and Waste Rock Management

A study of MLARD potential of legacy waste rock forming the base of the infrastructure pads was continued, pursuant to the approved *Interim Closure and Reclamation Plan* (Plan Appendix A). In 2021 Blue Star undertook the following programs to inform a thorough and current understanding of MLARD conditions at Ulu arising from legacy use of waste rock and ore in construction. While final reporting is currently ongoing, a summary of each program component is provided below:

- Delay to onset of ARD conditions
 - Seepage study;
 - Test pits;
- Thermal cover evaluation.

3.4.1.1 Delay to Onset of ARD Conditions

As reported in its 2020 annual report pursuant to 2BM-ULU2030, further investigations into the nature and extent of waste rock, ore and esker used in historic infrastructure construction are needed to inform a current understanding of weathering and MLARD potential occurring at Ulu.

Rock samples collected in 2020 were analysed for mineralogy in 2021 to inform a more representative understanding of site-wide conditions in infrastructure pads. In June 2021, surface samples were collected, test pits were excavated throughout the Ulu infrastructure pads and rinse pH testing was undertaken. Pads were found to be comprised of waste rock, overlain by esker in some areas, or, in the case of the camp footprint, comprised entirely of esker. Most waste rock was found to be PAG with acidic conditions observed both at depth and at surface in some areas where the waste rock was exposed (not covered with esker). Comingled ore and waste rock (previously understood to be the ore stockpile) stored near the portal was not found to be acidic.

A seepage survey was undertaken throughout the season capturing both freshet and late season conditions, providing input into the prediction of delay to ARD and informing an understanding of current ecological risk posed by ARD. Preliminary findings indicate the following:

- Contact water seepage has circum-neutral pH (6.5 to 8);
- ARD has not been encountered during seasonal sampling program since property acquisition by Blue Star;
- Contact water from acidic rock in the pads is currently being neutralized within deeper levels of the pads;
- Conditions are dilute at freshet;
- Sulphide oxidation is evident from sulphate concentrations; and
- Sulphide content and/or form may have also controlled whether acidic conditions have developed at depth;
- Metal leaching is currently at levels below water licence criteria, however is expected to become more severe if pH declines further or if local acidic conditions within the pads become more widespread.

Accordingly, material at the edges of the infrastructure pads where the waste rock is not covered by esker is most at risk of producing ARD due to short flow paths for neutralization. Preliminary calculations indicate this material may develop initial ARD in 1-6 years depending on the depth, while widespread ARD from typical areas of the infrastructure pads may occur in six to 16 years for material with “typical” ARD potential, again depending on the depth. Where rock has historically been covered in esker sand, the delay to ARD is predicted to be longer at 11 to 25 years.

Given the near-term potential risk posed by uncovered waste rock, and in fulfillment of a commitment made in the 2020 annual report, a portion of the rock occurring at the northwest edge of the ore pad where acidic rock conditions were observed was excavated, placed in a windrow on the centre of the ore pad and covered in a tarp to temporarily mitigate the potential for ARD generation and flow into the West Lake catchment.

3.4.1.2 Thermal cover evaluation

Pursuant to the 2020 study results indicating esker sand cover may be support a longer delay to ARD, a desktop study involving thermal modelling was undertaken. Findings indicate that with 1 m of esker sand cover, thaw duration decreases rapidly and temperatures are lower at all depths, compared to areas with no cover. As temperature is a control on reaction rates, degree of sulphide oxidation is expected to decline with depth, even for rock in the exposed pads. Further modelling be undertaken with refinements arising from the 2021 field program.

3.4.2 Project Development Monitoring

Monitoring was carried out in accordance with Schedule J and is reported herein.

3.4.3 Modifications to the Site Plan

At the time of reporting, Modifications to the site plan are not anticipated. Should they be required, Modifications will proceed in accordance with Part G.

3.5 WATER MANAGEMENT

Water use occurred in accordance with 2BM-ULU2030, and occurred between June 8 and September 21. The Monitoring Program requires reporting of information tabulated in Table 3; Table 3 identifies where this information can be found herein.

Table 3. Location of Monitoring Program Results

Station ID	Station Description	Location of Monitoring Results
ULU-1	Water Intake at West Lake	Appendix D1
ULU-2	<i>Former sewage treatment plant effluent discharge. Inactive.</i>	<i>Not applicable</i>
ULU-3	<i>Former sewage treatment plant sludge. Inactive.</i>	<i>Not applicable</i>
ULU-4	<i>Minewater pumped from underground Mine Sump.</i>	<i>Not pumping from underground. Not applicable</i>
ULU-4b	Surface Retention Pond (mine sump).	Appendix D2
ULU-5	<i>Settling/neutralization Pond 1. Inactive, pond not constructed.</i>	<i>Not applicable</i>
ULU-6	<i>Settling/neutralization Pond 2. Inactive, pond not constructed.</i>	<i>Not applicable</i>
ULU-7	Runoff from the waste rock storage area.	Appendix D2
ULU-8	Runoff from the ore storage area.	Appendix D2
ULU-9	Outflow East Lake.	Appendix D2
ULU-10	<i>Ulu Lake inflow from East Lake. Inactive due to decommissioning of sewage treatment plant.</i>	<i>Not applicable</i>
ULU-11	Outflow Ulu Lake	Appendix D2
ULU-12	<i>Domestic water intake for new Ulu camp. Not installed, camp not yet constructed.</i>	<i>Not applicable</i>
ULU-13	<i>Soil treatment facility water holding pond. Not installed, facility not yet constructed.</i>	<i>Not applicable</i>
ULU-14	<i>Bulk fuel storage facility. Inactive due to decommissioning.</i>	<i>Not applicable</i>
ULU-15	<i>Landfill facility seepage. Inactive, facility not yet constructed.</i>	<i>Not applicable</i>
MW-1, -2, -3	<i>Soil treatment facility monitoring well. Not installed, facility not yet constructed.</i>	<i>Not applicable</i>

3.6 SPILLS

Three hydrocarbon spills occurred on each July 12, August 14, and August 26; the latter was assigned spill number 2021-366. Details can be found in Appendix A. Spill reporting was undertaken, and all impacted land was cleaned up. Initial spill reports and follow-up reports were filed with the KIA and CIRNA.

3.7 WILDLIFE INTERACTIONS

Blue Star undertook all activities pursuant to its *Wildlife Protection Plan* (WPP). The WPP considers wildlife use of the area including sensitive sites and timing of critical life history events and outlines potential impacts posed by project activities and mitigation measures. No orders to stop work were issued. The mitigation measures contained in the WPP and implemented on site continue to be considered effective.

One ground squirrel was killed in an encounter with a vehicle during waste management in relation to landfilling. While there were no other direct human-wildlife interactions, wildlife was observed throughout the program are listed in Appendix E. Caribou calving was not observed in the project area.

In addition to routinely giving wildlife the right of way, specific measures were taken pursuant to the WPP in two instances, each in relation to discovery of an active songbird nest. The area was flagged, access limited in the vicinity and the nest monitored until the birds left the nests.

Due to COVID-related restrictions and a reduced workforce on site, wildlife monitoring duties were shared among project personnel. As mentioned in Section 1.4, daily aerial surveys of local work areas were undertaken on most days to determine if wildlife were visibly present in the work areas.

3.8 QUARRY ACTIVITIES

Esker was extracted from the existing borrow area in July, August and September under KTCA20Q004 and in accordance with the approved *Borrow and Quarry Management Plan*. Borrow was predominantly use for landfill construction and road maintenance and repairs. Royalties and land use fees have been paid.

3.9 ANNUAL INSPECTION ACTIVITIES AND BOARD/LANDOWNER REQUESTS

On August 11, the KIA and CIRNA attended site to carry out an inspection. Prior to departing site, the Inspector and landowner verbally requested items summarized in Table 4. Status of follow-up actions is also presented.

Table 4. Inspector requests and follow-up actions, 2021

Inspector Request		Blue Star Action
CIRNA	Improved site-wide signage including Monitoring Stations, water extraction points and warning signs to something larger, more visible and more permanent.	Signage replaced, photos provided to the Inspector
	Confirmation of metering in each drill shack	Photo provided to the Inspector prior to departing site
	Installation of a proper water meter at the extraction point for camp.	Meter installed, photos provided to the Inspector
	Flagging and removing casings of current and historic drill holes.	Casings removed from 2021 holes that will not be drilled further. Once confirmed hole collar will not be reused in the future, casing will be removed. Remaining 2021 casings were flagged and marked.

3.10 VISITORS AND OTHER LAND USERS

No visitors, residents or land users attended Ulu in 2021 while the camp was open.

3.11 HERITAGE RESOURCES

Blue Star's Project Archaeologist was on site in August to conduct continued archaeological impact assessment of drill target areas. Reporting has been undertaken pursuant to the archaeological permit

requirements. Six new sites were found and one previously recorded site was assessed during studies occurring throughout the Ulu and Hood River study areas (which overlap so are reported together here).

Prior to the Project Archaeologist attending the site, two suspected archaeological sites were identified by field staff. These were photo documented and information provided to the Project Archaeologist. The sites were left undisturbed and a temporary buffer established around the features, until they could be examined and documented by the Project Archaeologist, in accordance with Blue Star's *Environment and Heritage Resources Protection Plan*. Ongoing avoidance measures continue to be in place.

4 INUIT EMPLOYEES AND NORTHERN SERVICE PROVIDERS

In 2021, Blue Star did not directly employ any Inuit or Northern residents due to the travel restrictions brought about by the COVID-19 pandemic and Blue Star's related inability to directly access Nunavut communities.

In recognition of the continued acute food insecurity that some residents may face due to loss of direct employment by Blue Star, Blue Star again provided its 2019 workers, all from Kugluktuk, monthly food vouchers for the duration of the field program, being four months. Blue Star further committed to work with the Hamlet of Kugluktuk to provide other Kugluktuk families who may be in need with food vouchers, altogether allocating an additional \$20,000 to families in need who may be facing food insecurity.

Throughout 2021, Blue Star was able to retain the services of 16 northern-based firms, eight of which were registered on either the Kitikmeot Qualified Business Registry or the NTI Inuit Firm Registry. Through these firms, Blue Star indirectly employed two *Nunavut Agreement* (1993) beneficiaries and several northern residents at onsite.

5 COMMUNITY CONSULTATIONS

Due to travel restrictions associated with the COVID-19 pandemic, no in-person community consultations were held in 2021. Dialogue with the Hamlet of Kugluktuk, the KIA, the GN, NTI and past workers was ongoing throughout the year to ensure everyone was apprised of Blue Star's plans and to seek input to program aspects where required. Blue Star reached out to the Burnside and Omingmaktok Hunters and Trappers Associations in Cambridge Bay, the Kugluktuk Agoniatit Association, as well as the Hamlets of Cambridge Bay, Gjoa Haven, Kugaaruk and Taloyoak to determine interest in meeting virtually.

Through engagement with the GN-Department of Environment in Kugluktuk, Blue Star provided logistical and in-kind support to the Kugluktuk Agoniatit Association and the GN in executing their research project on cow:calf ratios, calf mortality and predator abundance on the Bathurst caribou herd calving grounds.

6 MANAGEMENT PLANS

Changes have been made to the existing management plans include:

- QA/QC Plan: updated to reflect Blue Star's standard format.
- Environment and Heritage Resources Protection Plan: updated to correctly reflect 20EN001 regarding buffer distances around archaeological sites.

7 WORKPLAN FOR UPCOMING YEAR

Scoping of the 2022 program is underway at the time of reporting. The program is expected to be a continuation of the 2021 program, focusing on surface exploration, including diamond drilling, and compliance-related activities, with no resumptions of mining operations. No landfilling is planned for 2022 and the construction of the STF is postponed pending outcomes of the reclamation research program.

Specific planned program components are discussed below.

7.1 CAMP EXPANSION

Airstrip maintenance and improvements will be ongoing, as will camp management, possibly including construction of additional new sleepers, with bedspace remaining within the maximum permitted extent.

7.2 PROGRESSIVE RECLAMATION

Progressive reclamation will focus on the reclamation research into MLARD aspects including continuation of the seepage monitoring program, implementation of a rinse pH monitoring program and possible further examination of the local thermal regime.

Delineation and characterization of legacy *in situ* contamination arising from staged legacy waste is also planned.

7.3 GREY WATER

Blue Star is looking into options to better manage its greywater quantity, and may install a unit that functions like an aboveground sump, providing settling and filtration, within a reduced footprint area.

7.4 EXPLORATION

As a part of its ongoing exploration program, Blue Star will utilize a proprietary process to support on-site preparation of mineral samples and reduce overall program effects associated with long lab wait times in 2022. This process involves mixing a proprietary powdered substance (considered non-hazardous under *Transportation of Dangerous Good Regulations*) with site water and rock samples. Following analysis, an effluent is produced which will be stored in drums for off-site disposal, or characterized and on-site disposal options discussed with the Inspector and Landowner in advance. It is expected that up to 500 L of effluent may be generated in total in 2022. Rock waste streams will be disposed of along with core saw cuttings.

A limited archaeological impact assessment of drill target areas may be undertaken if needed.

7.5 WATER LICENCE AMENDMENT

Blue Star is also pursuing an amendment to its licence in order to modify the criteria associated with Part D Item 9.

7.6 WINTER TRAIL FEASIBILITY

Blue Star is considering studies to inform the feasibility of establishing a winter trail between Ulu and Grays Bay to support resupply and backhaul. Limited field studies may occur to confirm routing.

7.7 WILDLIFE RESEARCH SUPPORT

Blue Star will again provide logistical and in-kind support to regional wildlife research undertaken by the Kugluktuk Agoniatit Association in partnership with the GN.

8 REFERENCES

Nunavut Agreement. 1993. Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada.

PCB Regulations SOR/2008-273

Bonito Capital Corp.. 2017. 2BM-ULU1520 Inspection Report “Actions Required” Responses. Letter dated December 1, 2017

Crown Indigenous Relations and Northern Affairs. 2015. Water Licence Inspection Form. Licence number 2BM-ULU1520. Licensee: Bonito Capital Corp.. Date of Inspection: 15/07/2015. Inspector: Eva Paul.

Crown Indigenous Relations and Northern Affairs. 2016. Water Licence Inspection Form. Licence number 2BM-ULU1520. Licensee: Bonito Capital Corp.. Date of Inspection: 6-7/07/2016. Inspector: Eva Paul.

Crown Indigenous Relations and Northern Affairs. 2017a. Water Licence Inspection Form. Licence number 2BM-ULU1520. Licensee: Bonito Capital Corp.. Date of Inspection: 11/07/2017. Inspector: Eva Paul.

Crown Indigenous Relations and Northern Affairs. 2017b. Water Licence Inspection Form. Licence number 2BM-ULU1520. Licensee: Bonito Capital Corp.. Date of Inspection: 20/08/2017. Inspector: Eva Paul.

Appendix A. NWB Standard Water Licence Report Form, 2BM-ULU2030

Annual Report-2021
2BM-ULU2030

NWB Annual Report

Year being reported:

Select ▼

2021

License No: 2BM-UL2030

Issued Date: May 13, 2020

Expiry Date: May 12, 2030

Project Name: Ulu Gold Project

Licensee: Blue Star Gold Corp.

Mailing Address: 500-700 W. Pender St.
Vancouver, BC
V6C 1G8

Name of Company filing Annual Report (if different from Name of Licensee please clarify relationship between the two entities, if applicable):

General Background Information on the Project (*optional):

All of Blue Star's activities, including those occurring at its adjacent Hood River project licenced under 2BE-HRP1924, were based out of the Ulu camp in 2021.

Licence Requirements: the licensee must provide the following information in accordance with

Part C ▼ Item 1 ▼

A summary report of water use and waste disposal activities, including, but not limited to: methods of obtaining water; sewage and greywater management; drill waste management; solid and hazardous waste management.

Water Source(s):	West Lake (domestic), Various (drilling)	
Water Quantity:	60 m3/day	Quantity Allowable Domestic (cu.m)
	318 m3 total	Actual Quantity Used Domestic (cu.m)
	239 m3/day	Quantity Allowable Drilling (cu.m)
	2007.7 m3 total	Total Quantity Used Drilling (cu.m)

Waste Management and/or Disposal

- ☒ Solid Waste Disposal
- ☒ Sewage
- ☒ Drill Waste
- ☒ Greywater
- ☒ Hazardous
- ☒ Other:

See below

Additional Details:

Non-hazardous solid waste was landfilled on site in 2021.

A list of unauthorized discharges and a summary of follow-up actions taken.

Annual Report-2021
2BM-ULU2030

Spill No.: (as reported to the Spill Hot-line)

Date of Spill:

Date of Notification to an Inspector:

Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

Axel oil and hydraulic oil spilled while taking apart a machine. Contaminated soil cleaned up by hand. No impacts, no monitoring.

Spill No.: (as reported to the Spill Hot-line)

Date of Spill:

Date of Notification to an Inspector:

Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

Hydrocarbon-contaminated water was spilled from a container while the container was being moved. Contaminated soil collected with an excavator. No impacts, no monitoring.

Spill No.: (as reported to the Spill Hot-line)

Date of Spill:

Date of Notification to an Inspector:

Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

Water accumulated in secondary containment at ULU-14 was discharged to the environment prior to required sampling and notification. No impacts, no monitoring.

Revisions to the Spill Contingency Plan

Other: (see additional details)



Additional Details:

No revisions.

Revisions to the Abandonment and Restoration Plan

Other: (see additional details)



Additional Details:

No revisions.

Progressive Reclamation Work Undertaken

Additional Details (i.e., work completed and future works proposed)

Non hazardous waste landfilling, reclamation research into MLARD

Results of the Monitoring Program including:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;

Details attached



Additional Details:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are deposited;

Details attached



Additional Details:

Results of any additional sampling and/or analysis that was requested by an Inspector

No additional sampling requested by an Inspector or the Board



Additional Details: (date of request, analysis of results, data attached, etc)

Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.

No additional sampling requested by an Inspector or the Board



Additional Details: (Attached or provided below)

Any responses or follow-up actions on inspection/compliance reports

Inspection Report received by the Licensee (Date):



Additional Details: (Dates of Report, Follow-up by the Licensee)

Inspection report was issued by the Inspector on Dec 9, 2021. Items requiring attention were discussed verbally prior to report issuance, and addressed prior to camp closing.

Any additional comments or information for the Board to consider

Following monthly reporting, it was discovered that core cutting water was measured and reported twice in the July monthly report. Corrected volumes are reported herein.

Camp water metering issued experienced during camp startup and as discussed with the Inspector have been resolved.

ULU-4b is defined in the water licence as the Surface Retention Pond. At the start of the 2021 season, following discussion with its internal technical team Blue Star's initial understanding was that this facility does not yet exist and reported accordingly in its monthly reports throughout 2021. Following further discussion, Blue Star now understands that, given ULU-4 is the underground mine sump, ULU-4b is therefore the above ground mine sump. It has labelled the facility accordingly and will reference it as such moving forward.

Date Submitted:

March 28, 2022

Submitted/Prepared by:

Sharleen Hamm

Contact Information:

Tel: 604-996-1110

Fax:

email: sharleen.hamm@bluestargold.ca

GPS Coordinates for water sources utilized

Source Description	Latitude			Longitude		
	Deg °	Min ,	Sec "	Deg °	Min ,	Sec "
West Lake	66	54	27	110	59	4
Runoff water accumulated in dep	66	54	25	110	58	11
Unnamed lake	66	54	26.391	134	58	8.879
Unnamed lake	66	54	27.885	134	59	5.137
Unnamed lake	66	54	45.031	134	58	49.002
Unnamed lake	66	54	48.344	134	57	37.176
Unnamed lake	66	54	47.751	134	59	14.607

GPS Locations of areas of waste disposal

Location Description (type)	Latitude			Longitude		
	Deg °	Min ,	Sec "	Deg °	Min ,	Sec "
Camp greywater sump	66	54	30	110	58	9.59
Core saw sump (existing mine s	66	54	25	110	58	3.45
Incinerator	66	54	28	110	58	6.81
Landfill	66	54	28	110	57	56
21BSG-001 Cuttings Sump	66	54	25.973	134	58	18.091
21BSG-002 Cuttings Sumps	66	54	27.884	134	58	50.99
	66	54	29.014	134	58	48.933
21BSG-004 Cuttings Sump	66	54	27.846	134	58	15.292
21BSG-005 Cuttings Sump	66	54	45.995	134	58	16.999
21BSG-006 Cuttings Sump	66	54	52.407	134	58	21.017
21BSG-007 Cuttings Sumps	66	54	46.087	134	58	18.629
	66	54	43.125	134	58	23.009
21BSG-008 Cuttings Sump	66	54	45.817	134	58	14.313
21BSG-009 Cuttings Sumps	66	54	29.148	134	58	28.888
	66	54	31.065	134	58	24.754
21BSG-010 Cuttings Sump	66	54	34.596	134	58	1.783
21BSG-011 Cuttings Sump	66	54	36.755	134	57	56.938
21BSG-012 Cuttings Sump	66	54	40.791	134	57	51.503
21BSG-014 Cuttings Sump	66	54	41.567	134	57	56.108
21BSG-015 Cuttings Sump	66	54	36.985	134	58	27.558
21BSG-016 Cuttings Sumps	66	54	34.635	134	58	25.221
	66	54	31.081	134	58	28.749
21BSG-018 Cuttings Sumps	66	54	40.279	134	58	12.892
	66	54	40.602	134	58	13.056
21BSG-020 Cuttings Sumps	66	54	46.575	134	58	6.796
	66	54	47.35	134	58	7.454
21BSG-021 Cuttings Sumps	66	54	42.282	134	58	18.813
	66	54	42.088	134	58	15.934
21BSG-022 Cuttings Sumps	66	54	46.511	134	58	13.378
	66	54	46.576	134	58	11.403
21BSG-023 Cuttings Sumps	66	54	50.807	134	58	16.335
	66	54	50.29	134	58	14.854
21BSG-024 Cuttings Sumps	66	54	42.057	134	58	28.109
	66	54	42.186	134	58	25.147
21BSG-025 Cuttings Sumps	66	54	23.38	134	58	27.52
	66	54	22.842	134	58	27.882

Appendix B. Compliance Assessment, 20EN001

Following a compliance assessment of terms and conditions as well as monitoring and reporting requirements associated with the Screening Decision, it was determined that Blue Star was in compliance with all requirements.

Appendix C. Photos



Photo 1. Ulu camp, July 2021.



Photo 2. Ulu camp, September 2021.



Photo 3. Legacy waste, lower landfill staging area, portal and mine sump.



Photo 4. Ulu landfill area, before and after.



Photo 5. Equipment deconstructed for safe draining, washing and disposal in the landfill.



Photo 6. Equipment drained of fluids prior to disposal in the landfill

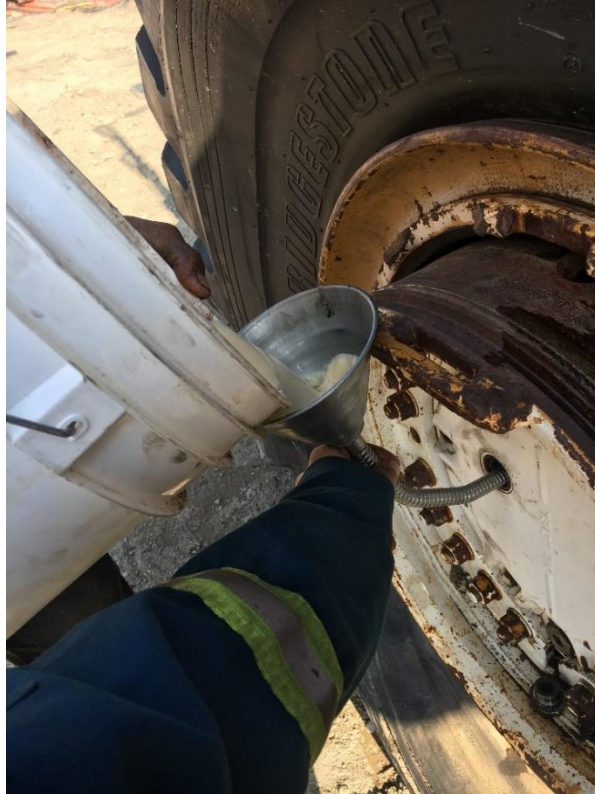


Photo 7. Following draining, fluid reservoirs on each piece of equipment were flushed to remove residual hydrocarbons prior to disposal in the landfill.



Photo 8. Prior to draining and flushing, each piece of equipment was marked with a unique identifier (i.e. KBL05). Following draining, flushing and inspection, each piece was signed off (i.e. LW) and marked ready as for disposal in the landfill.

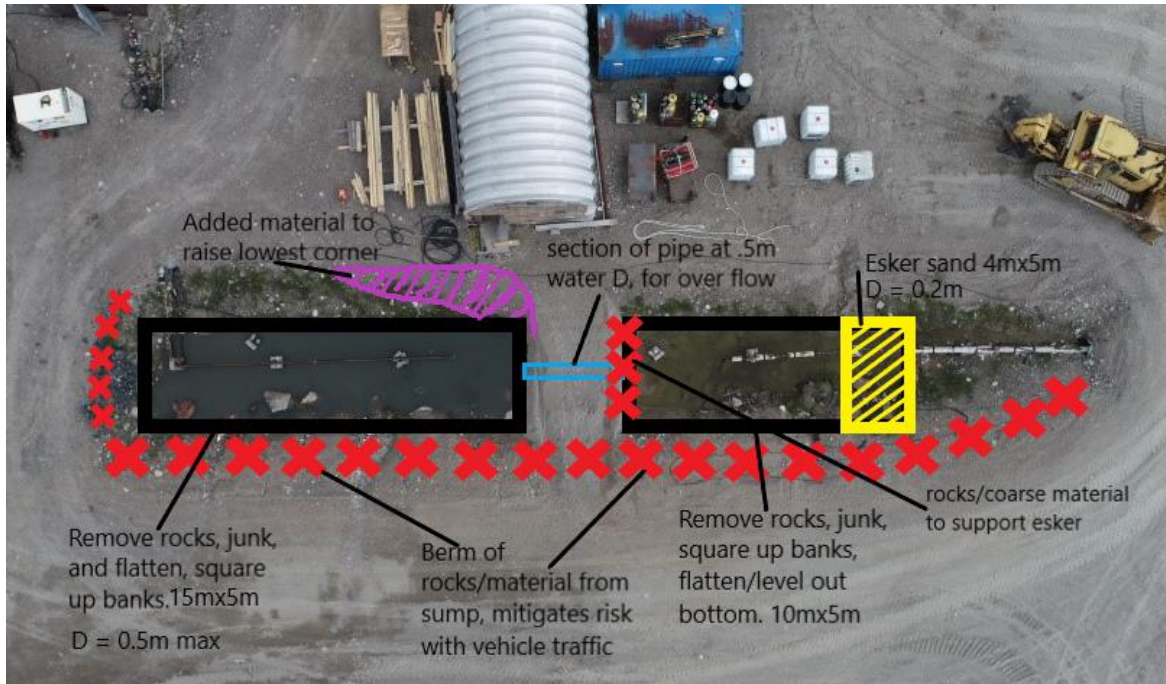


Photo 9. Improvements made to Ulu greywater sump



Photo 10. New drummed fuel cache established at Ulu camp helipad.



Photo 11. Airstrip fuel facilities



Photo 12. Aerial view of a drill site, post-drilling. Collar remains in place for future drilling (centre of image).



Photo 13. Aerial view of a drill site, post-drilling, collar removed



Photo 14. Visible oxidation in road bed at Culvert 6.



Photo 15. Completed road works near Camp 3

Appendix D1. Monitoring Program Results: ULU-1

Date	Volume (m³) Domestic
June	
1	-
2	-
3	-
4	-
5	-
6	-
7	-
8	7
9	0
10	0
11	0
12	0
13	15
14	0
15	0
16	0
17	0
18	23
19	0
20	0
21	0
22	0
23	0
24	5
25	6
26	0
27	0
28	0
29	0
30	10

Date	Volume (m³)		
	Domestic & Core cutting	Drilling	Total
July			
1	1.85		1.85
2	1.4		1.4
3	2.24		2.24
4	2.1		2.1
5	2.49		2.49
6	2.76		2.76
7	1.97		1.97
8	4.07		4.07
9	2.03		2.03
10	2.88		2.88
11	0.81		0.81
12	2.58		2.58
13	2.71		2.71
14	1.33		1.33
15	3.01		3.01
16	1.53		1.53
17	3.34		3.34
18	2.14		2.14
19	3.39		3.39
20	2.33		2.33
21	2.21	45.4	47.6
22	2.69	45.4	48.9
23	2.08	45.4	47.5
24	3.23		4.06
25	2.21		3.04
26	3.78		3.78
27	1.81		2.64
28	4.47		4.47
29	5.59		6.42
30	3.93		4.76
31	2.85		2.85

Date	Volume (m³)		
	Domestic & Core cutting	Drilling	Total
August			
1	3.24		3.24
2	2.42		2.42
3	4.66		4.66
4	2.16		2.16
5	4.09		4.09
6	2.78	9.39	12.17
7	4.03	46.67	50.7
8	2.61	46.67	49.28
9	3	35.57	38.57
10	2.56	37.12	39.68
11	3.8	46.44	50.24
12	2.32	31.25	33.57
13	3.3	3.25	6.55
14	2.8	39.06	41.86
15	4.03	53.38	57.41
16	3.09	3.35	6.44
17	4.84		4.84
18	3.01		3.01
19	3.45		3.45
20	2.93		2.93
21	4.17		4.17
22	1.5		1.5
23	3.84		3.84
24	3.06		3.06
25	3.78		3.78
26	2.95		2.95
27	4.52		4.52
28	2.59		2.59
29	4.85		4.85
30	3.07	3.25	6.32
31	4.6	53.26	57.86

Date	Volume (m³)		
	Domestic & Core cutting	Drilling	Total
September			
1	4.17	28.18	32.35
2	4.28	30.72	35
3	2.01	46.67	48.68
4	6.14	46.84	52.98
5	4.79	46.73	51.52
6	2.02	47.18	49.2
7	2.1	46.67	48.77
8	3.9	13.56	17.46
9	2.13		2.13
10	4.45		4.45
11	0		0
12	5.69		5.69
13	2.82		2.82
14	3.33		3.33
15	2.33		2.33
16	3.33		3.33
17	2.33	31.89	34.22
18	3.33	46.7	50.03
19	2.33	46.71	49.04
20	2.33	9.66	11.99
21	2.33		2.33
22	0		0
23	0		0
24	0		0
25	0		0
26	0		0
27	0		0
28	0		0
29	0		0
30	0		0

Appendix D2. Monitoring Program Results: ULU-4b

There was no discharge from ULU-4b (surface mine sump) in 2021.

Appendix D3. Monitoring Program Results: ULU-7

No flow was observed at ULU-7 in 2021.

Appendix D4. Monitoring Program Results: ULU-8

No flow was observed at ULU-8 in 2021.

Appendix D5. Monitoring Program Results: ULU-9

ULU-9						
Date	Units	Detection Limits	22-Jun	26-Jul	23-Aug	01-Sep
Flow	<i>L/sec</i>	-	-	-	-	-
pH	<i>Field</i>	-	7.3	-	-	-
	<i>Lab</i>	-	6.35	-	-	-
Total Suspended Solids	<i>mg/L</i>	1.0	<1.0	-	-	-
Fecal Coliforms	<i>MPN/100mL</i>	-	<1.0	-	-	-
Total Mercury (Hg)	<i>ug/L</i>	0.0019	<0.0019	-	-	-
Total Arsenic (As)	<i>ug/L</i>	0.020	0.19	-	-	-
Total Cadmium (Cd)	<i>ug/L</i>	0.0050	0.0153	-	-	-
Total Copper (Cu)	<i>ug/L</i>	0.050	1.71	-	-	-
Total Lead (Pb)	<i>ug/L</i>	0.0050	0.0191	-	-	-
Total Nickel (Ni)	<i>ug/L</i>	0.020	1.36	-	-	-
Total Zinc (Zn)	<i>ug/L</i>	0.10	2.25	-	-	-

Appendix D6. Monitoring Program Results: ULU-11

ULU-11								
Date	Units	Detection Limits	21-Jun	26-Jul	26-Jul Field Blank	26-Jul Trip Blank	23-Aug	03-Sep
Flow	L/sec	-	-	-	-	-	-	-
pH	Field	-	6.8	7.22	-	-	7.3	7.3
	Lab	-	6.36	7.44	4.83	4.79	5.97	6.06
Total Suspended Solids	mg/L	1.0	1.4	1.5	<1.0	<1.0	<1.0	1.1
Fecal Coliforms	MPN/100mL	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Mercury (Hg)	ug/L	0.0019	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019
Total Arsenic (As)	ug/L	0.020	0.074	0.082	<0.020	<0.020	0.051	0.056
Total Cadmium (Cd)	ug/L	0.0050	0.0101	0.0115	<0.0050	0.0063	0.0129	0.0065
Total Copper (Cu)	ug/L	0.050	2.4	2.26	<0.050	0.054	1.97	1.74
Total Lead (Pb)	ug/L	0.0050	0.0232	0.0078	<0.0050	<0.0050	0.0065	0.0094
Total Nickel (Ni)	ug/L	0.020	2.37	1.58	<0.020	<0.020	1.45	1.32
Total Zinc (Zn)	ug/L	0.10	5	0.98	<0.10	<0.10	1.8	3.37

Appendix D7. Monitoring Program Results: ULU-14

There was no discharge associated with ULU-14. All accumulated water was pumped out and shipped off site for treatment and disposal.

Appendix D8. Monitoring Program Results: ULU-15

Seepage was sampled once prior to facility construction to establish baseline conditions. Following facility construction, no seepage was observed.

ULU-15				
Date	Units	Detection Limits	23-Jun	Duplicate
Flow	L/sec		0.28	
pH	Field		7.3	
	Lab		7.41	7.41
Conductivity	uS/cm		280	290
Total Suspended Solids	mg/L	1.0	4.7	1.9
Alkalinity (PP as CaCO ₃)	mg/L	1.0	<1.0	
Alkalinity (Total as CaCO ₃)	mg/L	1.0	51	51
Dissolved Chloride (Cl)	mg/L	1.0	8.9	8.7
Dissolved Sulphate (SO ₄)	mg/L	1.0	74	75
Total Ammonia (N)	mg/L	0.015	0.016	0.018
Dissolved Nitrite (N)	mg/L	0.010	<0.010	<0.010
Dissolved Nitrate (N)	mg/L	0.010	0.27	0.26
Turbidity	NTU	0.10	2.9	1.7
Total Mercury (Hg)	ug/L	0.0019	<0.0019	<0.0019
Total Arsenic (As)	ug/L	0.020	0.593	0.559
Total Cadmium (Cd)	ug/L	0.0050	0.218	0.208
Total Copper (Cu)	ug/L	0.0050	4.08	4.27
Total Lead (Pb)	ug/L	0.0050	0.0674	0.0769
Total Nickel (Ni)	ug/L	0.020	1.64	1.72
Total Zinc (Zn)	ug/L	0.10	132	139
F2 (C10-C16 Hydrocarbons)	mg/L	0.10	<0.10	<0.10
F3 (C16-C34 Hydrocarbons)	mg/L	0.10	<0.10	0.14
F4 (C34-C50 Hydrocarbons)	mg/L	0.20	<0.20	<0.20
Benzene	ug/L	0.40	<0.40	<0.40
Toluene	ug/L	0.40	<0.40	<0.40
Ethylbenzene	ug/L	0.40	<0.40	<0.40
m & p-Xylene	ug/L	0.80	<0.80	<0.80
o-Xylene	ug/L	0.40	<0.40	<0.40
Xylenes (Total)	ug/L	0.89	<0.89	<0.89
F1 (C6-C10) - BTEX	ug/L	100	<100	<100
F1 (C6-C10)	ug/L	100	<100	<100

Appendix E. Wildlife Siting Report

Date	Time	Precise Location (if Coordinates, in NAD 83)	Description, Species, #, Behavior, Sex, Age
09-Jun	11:30am	Airstrip	Snow Geese & Canadian Geese, 15-20 flying by
10-Jun	3:00am	50m out back entrance of Sleeper B	Adult arctic hare
12-Jun	4:00pm	top of road at west lake, And on road to air strip	Fresh Caribou scat, and tracks. 2 Caribou came through at night
13-Jun	12:00pm	near road half way to air strip	2 Adult arctic Hare
14-Jun	3:00pm	1km down road from camp	2 Caribou, Adult female and young
15-Jun	2:00pm	2km North of camp	8 or 9 Muskox
17-Jun	11:00pm	100m past air strip on left	Arctic Hare, Adult. Jumping through tundra
17-Jun	11:00pm	Culvert 7 grassy area on right looking at camp 3	3 Caribou, Adult Male and Female, and young one
20-Jun	8:00pm	Camp 03	7 adult caribou
21-Jun	4:30am	Near airstrip	25-30 Caribou
23-Jun	10:00pm	South reno lake, hill up towards camp 03	9 adult Caribou, trotting up grassy hill towards camp 3
24-Jun	12:00pm	1km North of camp	1 Adult muskox
25-Jun	9:30am	Esker borrow, top of hill in main area,	Bald Eagle
27-Jun	10:00am	Between camp fuel berm and ore pad	Young grizzly bear rolling on ground, approx. 300lbs
28-Jun	9:00am	Core shack	Fox prints
29-Jun	11:00am	airstrip	2 adult caribou one male one female
01-Jul		blue seacan by landfill	Robins nesting in seacan
12-Jul		1km North of camp	5 muskox
21-Jul		next to camp	one Caribou
21-Jul		hill from ore pad to portal pond	Large male caribou
22-Jul	3:00pm	parking area in front of camp	Large male caribou, smaller male down road
22-Jul	4:00pm	pond across road from repeater hill	Mother duck and 7 duckling Diving in pond
23-Jul	3:00pm	Road to west lake	Male caribou
23-Jul	11:00am	near burn pan	Arctic hare, lives near here and ore pad. Foraging
24-Jul	3:00pm	Parking area in front of camp	Large Male Caribou
24-Jul		Tent city	Arctic Hare, young, Foraging
25-Jul	11:00pm	Lower landfill road	4 Caribou, 3 adult one young
27-Jul	2:00pm	near Penthouse lake	2 Adult muskox
30-Jul	2:00pm	road below landfill	3 Caribou
31-Jul	10:45pm	road after airstrip	Gyr Falcon, adult. One
01-Aug	11:00am	parking area in camp	Caribou

04-Aug	11:00am	between 5 and 6 on road to airstrip	fox
12-Aug	10:00am	esker pit	caribou, looked ill. Running in circles making noise
12-Aug	1:45pm	pond by culvert 6	bald eagle
12-Aug		esker pit	large wolf on top of hill
16-Aug	9:38am	esker pit	3 caribou
16-Aug	4:00pm	Past esker pit	Wolverine
20-Aug	10:00pm	Drill site a5	4 wolf chasing caribou
23-Aug	7:30am	500m northwest of camp on hill	22 musk ox, 3 calves. Lying down and grazing
22-Aug	2:00pm	Roma D	caribou
24-Aug	1:00pm	road to air strip	one male caribou
27-Aug	10:30am	parking area	falcon circling above
28-Aug	2:00pm	esker pit	4 caribou
29-Aug	5:30pm	1km south of airstrip	1 muskox
31-Aug	6:20pm	culvert 7	one male caribou
30-Aug	2PM	camp	flocks of geese flying by
01-Sep	10:30am	core shack	Falcon circling above
01-Sep	3pm	2km northwest of camp	White wolf chasing muskox calves, 25-30 musk ox running