



Department of Energy, Mines & Resources
PO Box 2703, Whitehorse, Yukon Y1A 2C6



October 2, 2024

File No: LQ00521b

Fireweed Metals Corp.
1020-800 Pender St.
Vancouver, BC
V6C 2V6

Dear Sir/Madam:

Re: Class 4 Quartz Mining Land Use Approval

Your application for a Class 4 approval amendment has been approved and is subject to the attached conditions. The effective date of this approval will be October 2, 2024. All work, including restoration, must be completed by January 15, 2030, and inspected before full security and/or completion certificates can be applied for.

A Water Monitoring Plan is required to be submitted to all affected First Nations, Ross River Dena Council, Liard First Nation, Kwadacha Nation, Dease River First Nation, and First Nation of Na-Cho Nyäk Dun, 30 days prior to the commencement of work, as prescribed in term and condition 2.29.

2.29 A water-monitoring plan shall be developed and implemented to ensure water quality does not deviate from baseline natural conditions as a result of exploration activities at the Mactung site. This plan shall be submitted to all affected First Nation, Ross River Dena Council, Liard First Nation, Kwadacha Nation, Dease River First Nation, and First Nation of Na-Cho Nyäk Dun, 30 days prior to the commencement of work.

The attached 'Operational Guidelines' offer additional mitigations that would enable you to maximize the environmental performance of your program, but are not approval conditions.

Please ensure that pre-season and post-season reports are provided before and after each exploration season. Pre- and post-season reports assist the Mineral Resources Branch in monitoring exploration activity and reclamation. Not providing reports may result in additional security being required.

Please feel free to contact our office at (867) 996-2256 should you have any questions.

Regards,

A handwritten signature in blue ink that reads "Paul Inglis". The signature is written in a cursive style with a large, looping initial "P".

Paul Inglis

Manager, Mining Land Use

cc: EMR Natural Resources Officer, Compliance Monitoring and InspectionsENV
Environmental Affairs, Environmental Protection Branch

MINING LANDS
MINERAL RESOURCES BRANCH
GOVERNMENT OF YUKON

Pursuant to the *Quartz Mining Act* and *Quartz Mining Land Use Regulation*, the Manager, Mining Land Use hereby grants a Class 4 approval to:

Fireweed Metals Corp.
1020-800 Pender St.
Vancouver, BC
V6C 2V6

APPROVAL NUMBER: LQ00521, LQ00521a, and LQ00521b

PROPERTY NAME: Mactung

UNDERTAKING: Quartz

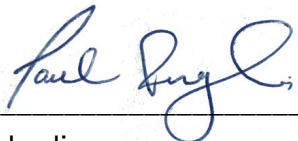
CLASS: Class 4 Approval

EFFECTIVE DATE: October 2, 2024

EXPIRY DATE: January 15, 2030

This approval shall be subject to the restrictions and conditions contained herein and to the restrictions and conditions contained in the *Quartz Mining Act* and the *Quartz Mining Land Use Regulation* made there under as proposed in Mining Land Use Application LQ00521, LQ00521a, and LQ00521b.

Dated this October 2, 2024



Paul Inglis
Manager, Mining Land Use

**MINING LAND USE
APPROVAL
Class 4**

SCOPE OF APPROVAL:				
Claim Status Report (Appendix A)		LQ00521, LQ00521a, and LQ00521b		
Operating Season	June 1 – September 30		Mactung	
PROJECT ACTIVITIES (ON-CLAIM):				
USE OF VEHICLES/EQUIPMENT				
Use of vehicles on existing roads or trails			<input type="radio"/> No <input checked="" type="radio"/> Yes	
Gross vehicle weight		On-roads: More than 40 t	On-trails: Less than 20 t	
Off-road use of vehicles in summer			<input checked="" type="radio"/> No <input type="radio"/> Yes	
Off-road use of vehicles in winter			<input checked="" type="radio"/> No <input type="radio"/> Yes	
NEW & EXISTING ACCESS				
Upgrading of existing access	<input checked="" type="radio"/> No <input type="radio"/> Yes	Length: 0 km	Width: 0 m	
New roads	<input checked="" type="radio"/> No <input type="radio"/> Yes	Length: 0 km	Width: 0 m	
New trails	<input type="radio"/> No <input checked="" type="radio"/> Yes	Length: 5 km	Width: 3 m	
New temporary trails	<input checked="" type="radio"/> No <input type="radio"/> Yes	Length: 0 km	Width: 0 m	
LINES & CORRIDORS				
Lines	<input checked="" type="radio"/> No <input type="radio"/> Yes	Length: 0 km	Width: 0 m	
Corridors	<input checked="" type="radio"/> No <input type="radio"/> Yes	Length: 0 km	Width: 0 m	
SITE PREPARATION				
Number of clearings: 300 total for project		Area: 3,000 m ²		
Number of clearings for helicopter pads and camps: 0		Area: 0 m ² camp is existing		
Removal of the vegetative mat			<input type="radio"/> No <input checked="" type="radio"/> Yes	
EXPLORATION TRENCHING & BULK SAMPLING				
Hand-dug			<input checked="" type="radio"/> No <input type="radio"/> Yes	
Mechanized			<input checked="" type="radio"/> No <input type="radio"/> Yes	
Number: 0	Length: 0 m	Width: 0 m	Depth: 0 m	Total volume: 0 m ³
Bulk sampling		<input checked="" type="radio"/> No <input type="radio"/> Yes		Amount/year: 0 tonnes
Explosives		<input checked="" type="radio"/> No <input type="radio"/> Yes	Total amount: 0 kg	Max. in 30 days: 0 kg
EXPLORATION DRILLING				
TYPE	NUMBER OF HOLES	DEPTH (m)		
Diamond	300	50,000		
Existing Diamond	5	1,070		
Remaining Diamond Drilling LQ00521b	295	48,930		

**MINING LAND USE
APPROVAL
Class 4**

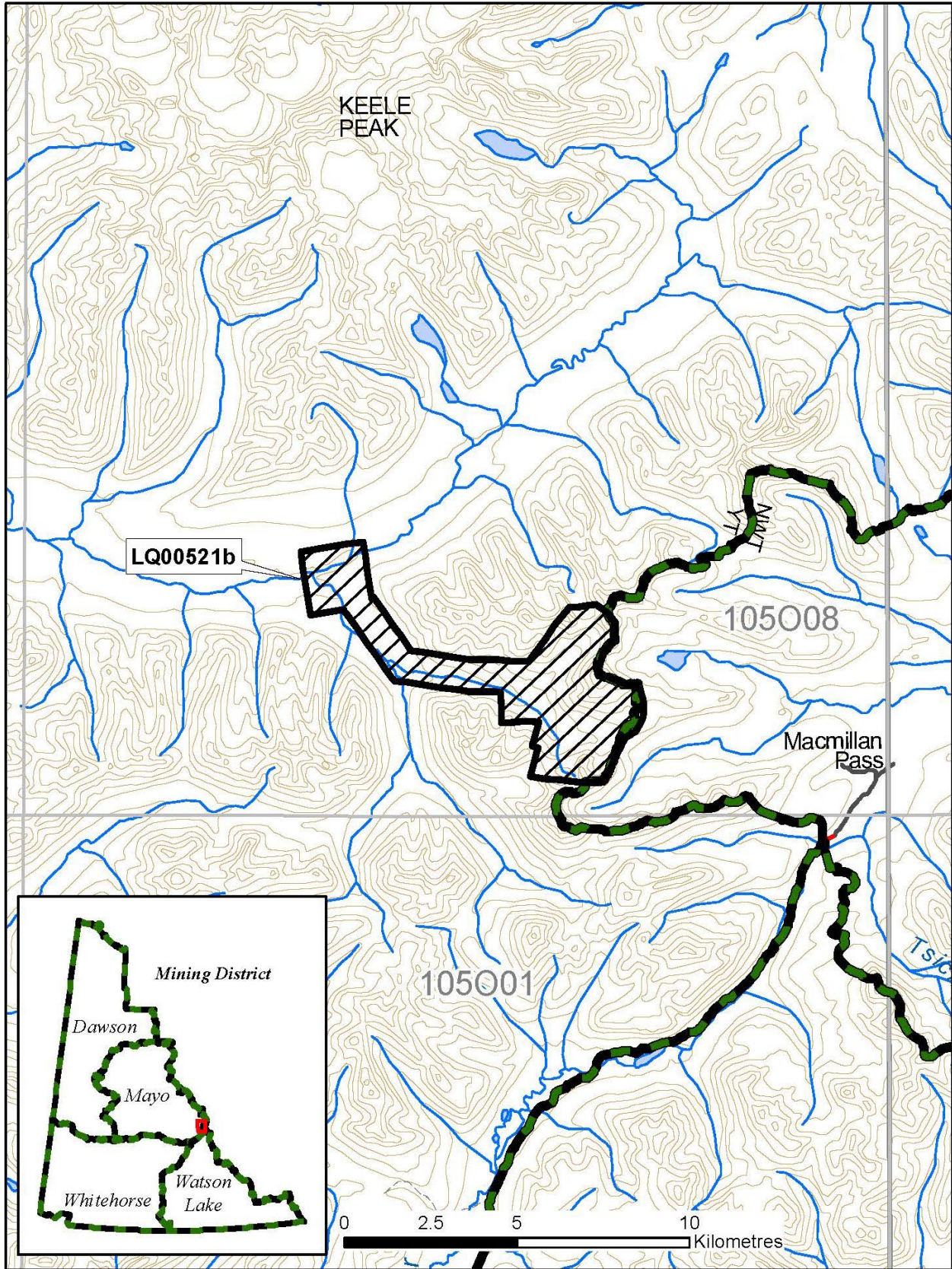
30FUEL STORAGE		
FUEL TYPE	STORAGE TYPE & CAPACITY	TOTAL VOLUME
Propane	Skid Mounted Cylinder	3,785 L
Gasoline	205 L Barrels (6)	1,230 L
Diesel	205 L Drums (30)	6,150 L
Jet A	205 L Drums (14)	2,870 L
FACILITIES & STRUCTURES		
Existing Camp structures: wash and administration trailer, tent pads, core storage building and racks, and storage shed,		
Number of persons in camp at any one time: 25		Number of person days: 3,000
Construction of underground structures		● No ○ Yes
Existing Adit – built prior to LQ00521- infrastructure located at adit: Ore bins and an ore sorter		

All other applicable legislation, regulations, laws, by-laws and ordinances must be complied with. Additional authorizations or approvals may be required. Any doubt as to whether an additional authorization or approval is required should be verified by a duly authorized official at the appropriate government body or bodies.

Project Activities:

- Use of heavy equipment
- Ground geochemical survey, airborne geophysical surveys, soil sampling
- Baseline and environmental studies: water sampling, wildlife monitoring
- Camp operation (up to total of 25 people)
- Construct new trails (5 km x 3 m wide)
- Use of existing on-claim roads, maintenance to top erosion and sedimentation
- Diamond drilling (approximately 300 holes, total 50 000 m)
- Helicopter use; use of the Macmillan airstrip
- Clearing is not expected as drilling is to occur above treeline and existing access will be used. If clearing is required, it will be minimal (dwarf alpine vegetation and herbaceous mat)
- Water use for camp activities and drilling activities (drilling up to 240 m³/day; camp up to 2.25 m³/day)
- Waste management
- Fuel storage: up to 50 barrels of fuel 3 785 L propane)
- Progressive and final reclamation

**MINING LAND USE
APPROVAL
Class 4**



DEFINITIONS

“Act” means the Quartz Mining Act, S.Y. 2003, c.14;

“Access road” means a road that provides access to a public highway or to a private road;

“Adverse effects” of an exploration program means its adverse environmental or socio-economic effects and any adverse effects it may have on the existing or asserted aboriginal or treaty rights of any First Nation;

“Manager, Mining Land Use” means the Chief of Mining Land Use designated pursuant to the Act;

“Clearing” means an area that is cleared of trees, brush or vegetative mat for the purpose of establishing a campsite or carrying out mining exploration, but does not include an area cleared for the purpose of establishing a corridor or trail;

“Corridor” means a path from which trees and brush have been cut to accommodate a water line, fuel line or power line;

“Effective date” means the date this Approval comes into force as evidenced by the date of the signature of the Manager, Mining Land Use;

“Exploration program” means any activity or group of activities undertaken for the sole or principal purpose of assessing land for its suitability for the production of minerals;

“Foundation” means the part of a structure that penetrates the ground and supports the structure;

“Isolated road” means a road that does not provide access to a public highway directly or through a private road;

“Inspector” means an inspector designated pursuant to the Act;

“Line” means a line cut for the purpose of carrying out a geophysical, geological, or engineering survey;

“Low ground pressure vehicle” means a vehicle that applies 35 kPa of pressure or less to the ground surface;

“Operator” means a person who is engaging in an exploration program, or in development or production;

“Person-day” in respect of the use of a campsite, means the use of the campsite by one person during a period of 24 hours;

“Response” means a notice given by the Manager, Mining Land Use that indicates whether or not an exploration program may be carried out or that extends the time for the Manager, Mining Land Use’s review of a Notification or operating plan;

“Road” means a pathway for vehicular traffic the construction of which requires the movement of rock or earth;

“Site” means the area bounded by the sum of the mineral claims described above under ‘Scope of Approval’;

“Summer” means the period of a year that is not winter;

“Trail” means an access to a site within a claim or lease that is constructed with little or no movement of rock or earth; and

“Trenching” means excavation carried out on a mineral claim for the purpose of obtaining geological information;

“Upgrading”, in relation to a road, means re-establishing a road that has not been useable for more than five years by vehicles of a type the road was originally designed to serve, modifying a road to provide usability for vehicles that are of a different type than those for which the road was originally designed to serve and any other upgrading or modifying of a road, other than for maintenance or erosion control;

“Vegetative mat” means the organic surface of soil, characterized by the accumulation of organic matter, or partly decomposed organic matter, derived mainly from leaves, twigs, and woody materials, and includes the root mass of living vegetation;

“Winter” means the period of the year during which (a) the ground is frozen sufficiently to support a vehicle, other than a low ground pressure vehicle, without rutting or gouging of the surface; and (b) there is a sufficient amount of snow on the ground to produce a packed base of 10 cm.

PART ONE – GENERAL REQUIREMENTS

Duration of Approval

- 1.0 This approval is valid upon signature of the Manager, Mining Land Use until the expiry date. In the event that claims lapse, or that agreements to operate on claims are dissolved, the approval becomes null and void for that portion of the operating plan, where there is no right to the minerals.

Compliance with Operating Conditions

- 1.1 All mineral exploration activities must comply with the Operating Conditions contained in Schedule 1 of the *Quartz Mining Land Use Regulation* and within the approval. Where there is a difference between the operating conditions and approval, the terms of this approval shall prevail. These Operating Conditions are enforceable.

Reporting Requirements

Contact Information

- 1.2 Submissions and reports to the Manager, Mining Land Use should be made to both the following addresses:

Manager, Mining Land Use
Box 2703, K-9
Whitehorse, Yukon
Y1A 2C6

Mining Lands Officer
Box 10, K-MA
Mayo, YT Y0B 1G0
mayo.mining@yukon.ca

- 1.3 The contact for the operator will be:

Fireweed Metals Corp.
1020-800PenderSt.
Vancouver,BC
V6C 2V6
Ian Ponsford
ian@fireweedmetals.com

Pre-season and Post-season Reporting

- 1.4 A pre-season report shall be submitted no later than March 31st outlining the exploration activities planned for the season including the proposed locations.
- 1.5 A report shall be submitted no later than December 31st indicating exploration activities completed during that season. This report shall include but is not limited to:
- detailed mapping of all areas worked;
 - location of new construction;
 - new areas of disturbance;
 - map data, in the form of SHP files or GIS compatible, of all new roads and trails;
 - map data, in the form of SHP files or GIS compatible, of all reclaimed roads and trails;
 - areas of permafrost encountered;
 - total disturbed area;
 - pre-activity survey results, if applicable;
 - reclamation activities; and
 - documentation produced by environmental monitors.
- 1.6 The operator shall document non-project users within the project area during the operating season. The information obtained, including the type of use (activity), duration of use, and number of users shall be submitted to the Manager, Mining Land Use in the post-season report.
- 1.7 The operator shall contact the Watson Lake Mining Inspections Office (Compliance, Monitoring and Inspections) at (867) 536-7335 at least 14 days prior to commencing the field season.
- 1.8 The operator shall contact the Watson Lake Mining Inspections Office (Compliance, Monitoring and Inspections) at (867) 536-7335 at least 14 days prior to leaving the site at the end of the operation.

Spill Reporting

- 1.9 All spills must be reported immediately to the 24-Hour Yukon Spill Reporting Line (867) 667-7244 and to the Tintina Mining Inspections Office (Compliance, Monitoring and Inspections) at (867) 536-7335.
- 1.10 An operator who takes an emergency remedial measure shall, as soon as possible but not later than 10 days after taking it, send a written report to the Manager, Mining Land Use describing the duration, nature and extent of the emergency and the measures taken to respond to it.

Heritage Reporting

- 1.11 All paleontological resources uncovered during operations shall be reported to the Yukon Paleontology Program, Government of Yukon in Whitehorse at (867) 667-8089 or (867) 667-5386 and the Manager, Mining Land Use.
- 1.12 All archaeological resources uncovered during operations shall be reported to the Yukon Archaeology Program, Government of Yukon in Whitehorse at (867) 667-3771 or (867) 667-5386 and the Manager, Mining Land Use.
- 1.13 The report(s) developed for Section(s) 2.35 - 2.36, shall be submitted to Government of Yukon – Mining Lands, Mineral Resources Branch and the Heritage Resources Unit, Cultural Services Branch.

Wildlife Reporting

- 1.14 All incidents with wildlife shall be reported to the District Conservation Officer in Watson Lake (Liard Region) at (867) 536-3210.

PART TWO – PROJECT SPECIFIC OPERATING CONDITIONS

Schedule 1 Operating Conditions (Appendix B)

The operator is bound by the Schedule 1 Operating Conditions per the *Quartz Mining Land Use Regulation*. In addition to the Schedule 1 Operating Conditions, the operator must also comply with the following terms and conditions:

Erosion Control and Permafrost

- 2.0 The operator shall insulate the ground surface beneath all temporary structures and temporary facilities used in the project where permafrost is present to:
 - a) prevent any vegetation from being removed; and
 - b) prevent the ground from settling or eroding.

Trenching

- 2.1 Open trenches shall be sloped at one end to avoid entrapment of wildlife.
- 2.2 The operator must ensure that all employees and contractors working at the trench sites are aware of the operating conditions for trenching.

Solid Waste

- 2.3 The operator shall keep all garbage, including kitchen waste, in a container that prevents access by bears and other wildlife, until properly disposed of in accordance with the *Solid Waste Regulations*.

- 2.4 When burning kitchen waste on site it must be burned regularly to reduce odours that might attract wildlife and be burned to ash by forced air or fuel fired incineration.

Petroleum Fuel and Hazardous Substances

- 2.5 The operator shall, with indelible marker or paint, clearly identify the owner, the contents and the date on fuel drums to establish and manage ownership and responsibility.
- 2.6 All fuel cache(s) must be protected with an earthen berm or suitable barrier and flagged to prevent spills resulting from accidental contact with heavy equipment. Flags should be visible above the snow pack.
- 2.7 The location of any spills shall be clearly marked until cleanup has taken place. Location markings shall not be removed until directed in writing by an Inspector.

Drilling

- 2.8 The operator must ensure that all employees and contractors working at the drill sites are aware of the operating conditions for drilling.

Flights

- 2.9 The operator shall adhere to the applicable Flying in Caribou Country guidelines. Specifically, flights shall be avoided over areas that caribou are using during sensitive times of the year (i.e. rutting September 15th – October 15th, calving February 15th - May 15th, and Post Calving June 1st - July 15th). When overflights cannot be avoided, helicopters shall remain 600 m above ground level when flying over caribou or other wildlife, unless conditions are unsafe for aircraft and personnel.
- 2.10 The operator shall follow applicable best management practices outlined in the publication: "Flying in Sheep Country", when safe to do so.
- 2.11 The operator shall not use aircraft or carry out ground-based activities within 1 km of mineral licks at any time of year, unless proven to be of only seasonal importance. Methods to determine seasonal importance shall be discussed with the Liard Regional Biologist (867-536-3214).
- 2.12 The operator shall, when safe to do so, maintain a 1-km no-fly buffer zone around active raptor nests between April 1st - August 31st.

Wildlife

- 2.13 The operator shall invite Ross River Dena Council, Liard First Nation, and First Nation Na-Cho Nyäck Dun to share traditional knowledge on areas of high importance to caribou including delineation of areas of key seasonal use, identification of movement corridors, and timing of seasonal movements. This will provide information to aid the operator in applying an adaptive approach to reducing effects to caribou in the area during key life stages.

- 2.14 The operator shall submit wildlife log observations with their annual post-season reports to the Manager, Mining Land Use as well as the Liard Regional Biologist. This will help aid in gathering information on caribou and other wildlife in the area, which is expected to help in the delineation of key areas and aid the operator in applying an adaptive approach to reducing effects to caribou in the area.
- 2.15 The operator shall not construct new trails (roads are not proposed) that require any vegetation clearing into the thin horn sheep WKA located within project claims.
- 2.16 The operator shall contact the Liard Regional Biologist (867-536-3214) for detailed information on the exact location of mineral licks within the polygon on the Wildlife Key Area maps (note: mineral licks are not situated in the centre of the 5 km diameter circular polygons) and for information on techniques/methodologies related to monitoring mineral licks. Until the operator contacts the Regional Biologist for exact mineral lick location(s), the mapped WKA shall be used as a no-disturbance buffer.
- 2.17 Any new mineral licks found by the operator shall be reported to the Liard Regional Biologist (867-536-3214).
- 2.18 The operator shall contact YG, Environment, Habitat Programs Branch (867-667-3645) for information on the locations of known raptor nest sites in the project area, and to report any discovered nests.
- 2.19 The operator shall install an electric fence around the food preparation and storage area. If conditions are warranted, the fuel storage area and propane tank, sleeping quarters, septic tank, and shower trailer shall also be enclosed in an electric fence; warranted conditions are developed in consultation with the District Conservation Officer in Ross River (867-969-2202) and include site specific bear activity.
- 2.20 The operator shall report any incidents involving nuisance bears or any wildlife exhibiting food conditioning or habituation to the District Conservation Officer in Ross River (867-969-2202).
- 2.21 The operator shall ensure bear deterrent devices are kept in camp.
- 2.22 If a bear or wolverine den is discovered, a 1 km no-disturbance buffer will be established and the operator shall contact the Liard Regional Biologist (867-536-3214) for information on the protection of the dens and appropriate set back distances.
- 2.23 When working in Collared Pika habitats (e.g. talus slopes), the operator shall conduct pre-activity pika surveys. Where pika and pika habitat features (e.g. haystacks) are identified in the work area, the Yukon Conservation Data Centre shall be contacted (867-335-8918) for advice on appropriate mitigation.

Waste Management

2.24 The operator shall remove any flagging tape used to carry out project activities once the activities are completed unless bio-degradable tape is utilized.

Decommissioning/Reclamation

2.25 The operator shall progressively reclaim all roads and trails developed under their mining program, including roads and trails from past approvals, as soon as they are no longer required for mining purposes.

2.26 Reclamation and/or decommissioning of roads and trails shall be progressive in nature and shall be documented annually in the post-season report. Reclamation and/or decommissioning of roads and trails shall occur as soon as roads and trails are no longer needed for exploration activities unless the need is documented in the post and pre-season reports. The status of roads and trails (i.e. active or inactive) and on-going/completed reclamation activities shall be reported to the Manager, Mining Land Use annually via post-season reports.

Access

2.27 The operator shall restrict access on all new roads and trails that are not in daily use within the claim block during the licensed hunting season from August 1st - October 31st. For new roads and trails in daily use, the operator shall provide signage to advise the public that all access is intended for mining or exploration purposes.

Water

2.28 Water sampling shall be carried out at water sampling locations used in the previous sampling events in 2006, 2007, and 2008 (WQ1A, WQ1, WQ2A, WQ2 and WQ3) prior to active exploration, in order to be compared to the previous results and further provide updated baseline information on water quality. Results shall be shared with affected First Nation, Ross River Dena Council, Liard First Nation, Kwadacha Nation, Dease River First Nation, and First Nation of Na-Cho Nyäk Dun.

2.29 A water-monitoring plan shall be developed and implemented to ensure water quality does not deviate from baseline natural conditions as a result of exploration activities at the Mactung site. This plan shall be submitted to all affected First Nation, Ross River Dena Council, Liard First Nation, Kwadacha Nation, Dease River First Nation, and First Nation of Na-Cho Nyäk Dun, 30 days prior to the commencement of work.

2.30 The operator shall provide relevant information and technical expertise to help Ross River Dena Council, Liard First Nation, Kwadacha Nation, Dease River First Nation, and First Nation of Na-Cho Nyäk Dun understand the risks and impacts of development to water sources as these relate to the project. The appropriate form of how this is provided shall be discussed and determined between the First Nations and the operator.

Invasive Species

2.31 Equipment shall be cleaned of foreign soil and plant material prior to moving it into the project property.

Other Resource Users

2.33 The operator shall communicate plans and timing of activities to other land and resource users (First Nations, Dueling Stone Outfitter, trappers, and any other known subsistence harvesters, wilderness tourism operators, and quartz/placer miners) that may be affected by the proposed project at least 30 days prior to each field season and shall work with these individuals and governments to identify and resolve potential land use conflicts and any potential negative effects on other users.

Heritage

2.34 Prior to conducting clearing or ground disturbing activities, the operator shall invite Ross River Dena Council, Liard First Nation, Kwadacha Nation, Dease River First Nation, and First Nation of Na-Cho Nyäk Dun, respective of their Traditional Territories, to discuss areas of potential heritage resources and determine how these resources will be protected.

2.35 A heritage resources overview assessment (HROA) shall be completed for areas of the project footprint that have not been previously assessed. The HROA shall include review of the reports resulting from the previous heritage assessment work. The results of this assessment shall be summarized and shared with the Ross River Dena Council, Liard First Nation, Kwadacha Nation, Dease River First Nation, and First Nation of Na-Cho Nyäk Dun.

2.36 A heritage resources impact assessment (HRIA) shall be completed in advance of ground disturbing activities in areas with elevated potential for the presence of archaeological or historic sites. Prior to conducting the HRIA, the operator shall invite: Ross River Dena Council, Liard First Nation, Kwadacha Nation, Dease River First Nation, and First Nation of Na-Cho Nyäk Dun to participate and provide input into the HRIA. The results of this assessment shall be summarized and shared with the Ross River Dena Council, Liard First Nation, Kwadacha Nation, Dease River First Nation, and Na-Cho Nyäk Dun.

2.37 Upon discovery of a potential heritage resource, the operator shall notify the Ross River Dena Council, the Liard First Nation, Kwadacha Nation, Dease River First Nation, and First Nation of Na-Cho Nyäk Dun, respective of their Traditional Territories, in addition to the Government of Yukon, Manager, Mining Land Use and Yukon Heritage.

PART THREE – RECLAMATION AND/OR DECOMMISSIONING

- 3.0 Reclamation and/or decommissioning shall be progressive in nature where possible and will occur prior to the expiry of the exploration program or prior to the expiry of this approval, whichever comes first, according to standards outlined in the operating conditions, unless otherwise specified by the Manager, Mining Land Use.
- 3.1 Debris, equipment, fuel barrels, scrap metal and other waste at the work site shall be completely disposed of, so as not to attract wildlife, by removal to an authorized disposal site at the cessation of the exploration program or prior to the expiry of the approval, whichever comes first.
- 3.2 Structures must be removed and the site restored at the end of the exploration program or prior to the expiry of this approval, whichever comes first, to a level of utility comparable to its previous level of utility.
- 3.3 If an amendment to this approval or new approval is granted, for the claims within the scope of this approval (Appendix A), all outstanding reclamation continues to be the responsibility of the operator.

PART FOUR – OTHER MATTERS

- 4.0 Security may be required at any time by the Manager, Mining Land Use.
- 4.1 Notice of Schedule III must be provided to the Yukon Water Board ten (10) days prior to use of water.
- 4.2 Attached (Appendix C) are the commitments that form part of this operating plan.

[Appendix A - Claim Status Report]

APPENDIX B

Quartz Mining Land Use Regulation

Schedule 1 **Operating Conditions**

Removal of the Vegetative Mat

1. If the vegetative mat must be removed to carry out exploration activities, it must be removed so as to protect the seed and root stock contained within the mat and be stored separately from other overburden or bedrock removed for use in re-establishing the vegetative mat when the exploration program ceases.

Re-establishment of the Vegetative Mat

2. (1) All vegetated areas disturbed by exploration activities, including fuel and waste storage areas, clearings, corridors, temporary trails, camps and supporting infrastructure, and trenches and drill sites, must be left in a condition conducive to re-vegetation by native plant species or other species adaptable to the local environment to encourage re-vegetation comparable to similar, naturally occurring, environments in the area.

(2) Conditions conducive to re-vegetation include provision of adequate soil layer with moisture retaining ability, no soil contamination by hydrocarbons or other hazardous substances, provision of adequate seed or root stock, and contoured or otherwise stable slopes.

3. If adequate seed or root stock is not naturally available, re-seeding or transplanting of vegetation is required. Only non-invasive species may be used for re-seeding or transplanting. Consult with the Mining Inspector prior to seeding.

Erosion Control and Permafrost

4. All areas disturbed during an exploration program must be re-sloped, contoured or otherwise stabilized to prevent long-term soil erosion, slumping and subsidence.
5. All exploration activities must be carried out to avoid or minimize damage to and loss of permafrost.

Trenching

6. Trenching carried out by hand or using hand-held tools must be methodical. All trenches must be stabilized and marked to minimize risk to the public.
7. Trenches constructed with mechanized equipment must be back filled by first depositing any removed overburden and bedrock and then replacing the vegetative mat that was removed to construct the trench.

Historic Objects and Burial Grounds

8. Exploration activities must not be carried out within 30m of a known archeological site unless the Manager, Mining Land Use indicates, in writing, that such activities may be carried out.
9. Any sites containing archeological objects, paleontological objects or human remains or burial sites discovered in the course of carrying out an exploration program must be immediately marked and protected from further disturbance and, as soon as practicable, the discovery reported to the Manager, Mining Land Use. No further activities may be carried out within 30m of the site until the Manager, Mining Land Use indicates, in writing, that activities may be resumed.

Solid Waste

10. All solid waste, including debris, equipment, barrels, drums, and scrap metal, must be safely stored on the site of the exploration program while the program is carried out and must be disposed of in accordance with the *Solid Waste Regulation* when the program ceases.
11. Camps must be kept clean and tidy.

Petroleum Fuel and Hazardous Substances

12. If petroleum fuel storage capacity exceeds 4000 L, a secondary containment structure must be constructed. The containment structure must be made of a material impervious to petroleum products and:
 - a) if there is a single storage tank, be of sufficient size to accommodate at least 110% of the capacity of the storage tank; or
 - b) if there is more than one storage tank, be of sufficient size to accommodate 110% of the capacity of the largest storage tank or 10% of the total capacity of all the tanks, whichever is larger.
13. All petroleum products, including waste petroleum products, and any other hazardous substances must be stored in a secure fashion no less than 30m from the ordinary high water mark of any water body.
14. All petroleum products, including waste petroleum products, and any other hazardous substance, must be transferred and handled without spillage.
15. All petroleum products and any other hazardous substances must be removed from the site of the exploration program when the program ceases.
16. All waste petroleum products and any other special waste, as defined in the *Special Waste Regulations*, generated in the course of carrying out the exploration program must be disposed of in accordance with the *Special Waste Regulations* when the program ceases.

Spills and Spill Contingency Plans

17. A spill contingency plan for petroleum products and other hazardous waste must be prepared and posted in the camp and at all fuel handling locations used in carrying out the exploration program.
18. All spill clean-up equipment and material must be maintained in a state of readiness sufficient at all times to contain and clean-up any hazardous material spills.
19. If a spill occurs, the spill contingency plan must be immediately implemented and notice given to the 24-hour Yukon Spill Report Line. As soon as practicable, an inspector must be contacted. Whatever remedial action is required to clean-up the spill and reclaim the affected land and water must be taken.

Use of Vehicles

20. Vehicles must be maintained and operated to prevent spills of fuel, lubricants, coolants and oil.

Timber and Brush

21. Cut brush must not be piled so that it blocks movement of wildlife or people.
22. Leaning trees created by cutting of lines, corridors, temporary trails, and clearings must be felled.
23. When it is economically viable to do so, timber suitable for sale must be salvaged and stockpiled.
24. All risk of fire hazard must be avoided.

Drilling

25. All reasonable efforts must be made when drilling to minimize the impact on wildlife and the public.
26. Vegetation other than that within a drill sump, must not be covered with drill cuttings.
27. Core must be stored in a stable fashion.
28. Drill mud must be re-circulated when possible.
29. All drill fluids must be contained in a sump.
30. Drill holes that pose a hazard or that lead to ground water must be plugged to prevent flow of water to the surface.

31. The location of drill holes must be marked on the ground by flagging or other suitable means at the location of the drill hole.

32. Drilling waste, including fluid, cuttings and mud must not be left within 30m of a water body.

Roads, Trails, and Off-road Trail Use

33. All vehicles must be operated to avoid rutting and gouging of roads and trails.

34. Off road and trail routes must be reconnoitered and must be used in a way that minimizes ground disturbance, including damage to permafrost and sensitive wildlife habitat.

35. If rutting, gouging, ponding or permafrost degradation occurs off road or trail, vehicle use must be suspended or relocated to ground that is capable of bearing the weight of the vehicle without causing such damage.

36. Use of skids on permafrost or wet ground is only permitted outside of winter where it is not reasonable to use any other means of transporting equipment.

37. Routes for temporary trails must be reconnoitered and flagged.

38. In addition to any remedial action required in relation to item 2 of this schedule, temporary trails must be blocked to prevent further vehicular access.

Release of Sediment

39. All reasonable care must be taken in carrying out exploration activities near or adjacent to a water body to prevent sediment from entering a water body, unless otherwise permitted by law.

Use of Explosives

40. Explosives must be set off in a manner to minimize impact on wildlife and the public to ensure that forest fires, unplanned landslides, or artificial damming of water bodies does not occur.

Waste Rock

41. Waste rock piles must be located at least 30m from any water body and be physically stable.

42. Waste rock containing sulfides must be returned underground.

43. Access to underground openings must be blocked to prevent access by wildlife and people.

APPENDIX C

Operator Commitments

Environmental Quality

- Disturbance areas will be limited in size, where possible.
- The vegetative mat will be re-established following disturbance, either through encroachment by native plant species or more deliberate means such as re-seeding with a certified weed free native plant mix suitable for use in the area. Seed mixes will be approved by YG Department of Environment.
- Progressive reclamation of future exploration activities may include re-sloping, contouring, and general stabilization of areas where soil was exposed. Areas with steep slopes that are prone to erosion or considered sensitive (e.g. alpine areas) would be suitable candidates for deliberate re-vegetation efforts, such as seeding.

Alpine Subarctic Environment

- For future activities that could affect alpine terrain and associated vegetation the following types of mitigation measures will be implemented to minimize potential effects:
 - Existing alpine access trails will be used as much as possible, with new access only constructed if unavoidable.
 - Where suitable, self-leveling tracked Reverse Circulation (RC) drills can be used for the majority of technical work, which will not require removal of the vegetative mat.
 - Exploration work, such as twinning of existing drill holes, may require skid-mounted drills but these would be designed to utilize existing/refurbished pads.
 - Clearing sizes will be kept to the absolute minimum required to safely and effectively operate drill equipment.
 - Wherever possible multiple drill holes will be completed from a single site to reduce the overall amount of clearing.
 - Disturbances to the vegetative mat (if present) will be avoided or minimized, with leveling of ground conducted only if absolutely necessary. If the vegetative mat must be removed, it will be stockpiled to be replaced during site reclamation.

Contaminants

- Personnel will be trained in the prevention of spills and will be familiar with the procedures outlined in the Spill Contingency Plan and the location of spill kits around the Mactung site.

- Storage of small quantities of materials such as oils, lubricants, and antifreeze will be in the parts trailers or another suitable designated area. These areas will be kept in a clean and tidy order. Workers will have appropriate WHMIS training.
- Oils and fluids from equipment maintenance will be contained in specified containers. Liquid tight containers will be located in an appropriate area.
- Waste from servicing of equipment and other chemical wastes will be hauled off site for recycling or disposal.
- Containers, drums, and barrels will be recycled or disposed in an authorized off-site landfill as appropriate.
- Barrels will be stored in a lined, bermed facility near the existing camp that will be constructed prior to the barrels arriving at site. Fuel will be stored a minimum of 30 m away from the nearest waterbody.

Spill Contingency Plan

- All equipment will be fuelled in a designated refuelling or service area.
- All fuel and fluids will be transported to site using approved fuel trucks and suitable containers.
- Fuel trucks will be equipped with spill kits for responding to accidental spills or releases.
- Fuel transfer equipment components such as pumps, hoses, and nozzles will be visually checked for leaks or damage prior to each refuelling operation.
- Refuelling will not occur in or near active drainages. The exceptions will be pumps, equipment with limited mobility, and emergency equipment.
- Refuelling of water pumps or other equipment with limited mobility that are working in the proximity of any watercourse will adhere to the following conditions:
 - Fuel will be brought into the area on an as-needed basis only, in a fuel vessel or truck that meets current regulatory codes and is equipped with an appropriate spill kit. To the extent possible fuel vessels or carriers will not park or maneuver around watercourses.
 - Personnel involved in refuelling will be specifically trained for the task including how to properly use the equipment contained in the spill kit.
 - A containment tray will be placed below the vehicle's refuelling portal.
 - Fuel transfer nozzles will be operated manually and will not be locked in the open position.

- Fuel transfers will require an operator at each end of the transfer hose and to the extent possible (and as applicable) will be scheduled during daylight hours prior to the start of dayshift.
 - The refuelling vessels and equipment will be placed as close as possible to the equipment being refuelled. Where fuel transfer hoses are laid on the ground to reach equipment being refuelled, no other equipment will be allowed to work within 5 m of the hose or vehicles while the fuel transfer is taking place.
 - Fuel spill kits, including absorbent pads, will be within easy access during refueling operations.
- Fuel will be stored in accordance with Canadian Council of Ministers of the Environment “Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products” (PN 1326).
 - Any bulk fuel tank system used will consist of a double-walled tank that incorporates secondary containment. The volume of the tank will not exceed 10 000 L, and it will be kept at least 30 m from the edge of any watercourse.
 - Potentially hazardous liquids will be stored in appropriate containment and will be permitted in accordance with applicable regulations.
 - Machinery will be washed, refuelled, and serviced well away (e.g. >30 m) from any water body to prevent any deleterious substances from entering the watercourse.
 - Equipment used for the work will be clean and in good working order.
 - All transfers of fuel shall be continually monitored to prevent overfilling or spills resulting from transfer hoses becoming dislodged.
 - If leaks develop in any equipment it will be moved away from any watercourse and repaired or removed from the site, as appropriate.
 - During a high-water event such as a flood or extreme rain event, equipment shall be moved away from watercourses if they may be affected by floodwaters.

Water Quality

- The prospective exploration drilling area at Mactung is located primarily in the alpine zone. There are few headwater streams, and those that are present are seasonally dry during the summer period. A setback (e.g., starting at 30 m or greater, depending on the width of the stream) from these headwater streams would be established to protect local stream water quality. Any water pump used for water extraction will be inspected daily to verify it is free of leaks and is operating properly.
- Roads and trails will be monitored, particularly after precipitation events, to verify banks and side cuts are not eroding, particularly in the vicinity of watercourse.

Wildlife

- A wildlife log will be maintained at site to record wildlife observations.
- All wildlife encounters will be reported to the most senior staff member on-site at the time.
- Wildlife will be given the right of way.
- Wastes produced by on-site activities will be placed in animal-proof containers while on-site, and will be hauled off-site regularly to an approved disposal facility.
- A strict no hunting policy for all project staff at any project exploration areas.
- Voluntary no hunting request signs will be posted at the bottom of the existing access road to the Mactung camp to request that hunters not use the road/trail network for hunting purposes. While this is not expected to be an active mitigation, it may help to relieve a small amount of hunting through education.
- Flights will avoid sensitive wildlife features such as raptor nesting sites and will fly no lower than 600 m above ground level when wildlife is present.
- Measures/considerations to be undertaken to prevent adverse effects to caribou, if present, will include:
 - Maintenance (by GNWT) of a wildlife station at Mile 222 on the Canol Trail in the vicinity of the Project site to monitor and regulate hunting in the NWT.
 - Caribou will have the "right-of-way" at the Mactung site in relation to any activities. Activities will be curtailed or minimized when caribou are in the vicinity of project activities. All project related vehicles will be operated within designated trails/activity footprints.
 - Any wildlife mortality will be reported immediately to the Yukon Department of Environment within 24 hours.

Heritage Resources

- If, during exploration activities, an archaeological or paleontological artifact is found activities will cease. First Nations and YG Heritage Resources will be contacted for further instructions.

Others

- Communications and engagement activities with the Liard First Nation, the Ross River Dena Council and the Na-Cho Nyäk Dun will be ongoing.

Operational Guidelines

Exploration activities

The Yukon Chamber of Mines has developed an informative Best Management Practices document that should be reviewed in the context of project activities. The operator should reference the following document when planning and conducting project activities:

- Yukon Mineral and Coal Exploration Best Management Practices and Regulatory Guide (http://yukonminers.org/wp-content/uploads/2017/06/BMP_RG_Aug29_FINAL_WebFile.pdf).

Bears and other wildlife

To increase worker safety, reduce potential conflicts and prevent unnecessary wildlife mortality, the operator should implement pertinent components of:

- Guidelines for Industrial Activity in Bear Country for the Mineral Exploration, Placer Mining and Oil & Gas Industries (http://www.env.gov.yk.ca/publications-maps/documents/Guidelines_for_Industrial_Activity_in_Bear_Country.pdf)
- If an electric fence is an appropriate precaution, or a requirement, the operator should reference the following comprehensive and highly informative guide: Reducing Wildlife Conflict with Electric Fencing: A Beginner's Guide (<http://www.env.gov.yk.ca/publications-maps/documents/ElectricFencing.pdf>)

Invasive species

To minimize the risk and consequences of spreading invasive plant species the operator should:

- Become familiar with the Yukon invasive species and how to manage them by referring to the Yukon Invasive Species Council document, "Why Should I Care About Invasive Species" (http://yukoninvasives.com/pdf_docs/WhyshouldIcare2011_sm.pdf)
- Employees should be familiarized with all invasive plants listed on the Yukon Invasive Species Council (YISC) website (<https://www.yukoninvasives.com/index.php/en/invasive-species/plants>). Throughout the project duration, invasive plant species present on the project property should be managed as referred by YISC as to limit their spreading and favor native plant regrowth. (<https://www.yukoninvasives.com/index.php/en/invasive-species/plants>).

Heritage Resources

To better understand how to manage potential impacts to heritage resources, the operator should refer to the following document(s):

- Mineral Exploration Best Management Practices for Heritage Resources (http://www.tc.gov.yk.ca/pdf/Mineral_Exploration_BMP_for_Heritage_Resources.pdf)
- Best Management Practices for Burial Sites and Human Remains in Yukon (http://www.tc.gov.yk.ca/pdf/BurialSites_BMP_2014.pdf)

Work in/near water

Project activities have the potential to affect water quantity, quality and/or rate of flow. The operator should provide for the protection of water by applying practices described in:

- Best Management Practices for Works Affecting Water in Yukon (http://www.env.gov.yk.ca/publications-maps/documents/bestpractes_water.pdf).

Aircraft use

Project activities are authorized in an area known to be inhabited by sheep and/or caribou. The operator and/or aircraft pilots should plan flight paths and protocols based on the published guideline(s):

- Flying in Sheep Country: How to Minimize Disturbance from Aircraft
(http://www.env.gov.yk.ca/publications-maps/documents/flying_in_sheep_country.pdf).
- Flying in Caribou Country: How to Minimize Disturbance from Aircraft
(http://www.env.gov.yk.ca/publications-maps/documents/flying_caribou_country.pdf).