



TGX:TSX-V

TRUE NORTH GEMS

29<sup>th</sup> August, 2013

YESAB  
Whitehorse Office  
203-309 Strickland Street  
Whitehorse  
Yukon Territory  
Y1A2J9

**Subject: Winter Road application – Tsa da Glisza Emerald Project Reclamation**

Dear Sir/Madam,

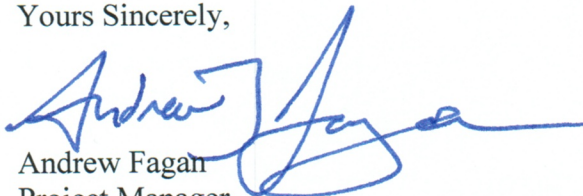
Please find enclosed the application for the construction of a winter access road for the Tsa da Glisza Emerald Project, Watson Lake Mining District, Yukon Territory. This project is located off the Robert Campbell highway between the communities of Ross River and Watson Lake.

During the period 2011 to 2013 this project has been reclaimed. All that remains is the approval and utilization of the winter road to complete the equipment extraction and complete the shut-down of the project.

The attached application was prepared by EBA Engineering, A Tetra tech Company, of Whitehorse on behalf of True North Gems Inc. True North have reviewed this application and approve of its contents.

If you have any questions or concerns please don't hesitate to get in touch with me via email ([afagan@truenorthgems.com](mailto:afagan@truenorthgems.com)) or on my cell +1 (604) 488-2564. As I am currently in the field on Greenland, please copy all correspondence to Kristina Gardner, the Project Manager at EBA Engineering via email ([kgardner@eba.ca](mailto:kgardner@eba.ca)) or call (867) 668-9229.

Yours Sincerely,



Andrew Fagan  
Project Manager  
True North Gems Inc.

TRUE NORTH GEMS

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# YESAA APPLICATION – PROJECT PROPOSAL TSA DA GLISZA WINTER ROAD PELLY MOUNTAINS, YUKON



## REPORT

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AUGUST 2013  
ISSUED FOR USE  
EBA FILE: W23103106-01.006

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- Appendix A EBA's General Conditions  
Appendix B Permit Applications  
Appendix C Fuel Spill Contingency Plan

## ACRONYMS & ABBREVIATIONS

|       |  |
|-------|--|
| ATV   | All-Terrain Vehicle  |
| EBA   | EBA Engineering Consultants Ltd., operating as EBA, A Tetra Tech Company |
| DBH   | Diameter at Breast Height  |
| DFO   | Fisheries and Oceans Canada  |
| KZK   | Kudh Ze Kayah  |
| TNG   | True North Gems  |
| YESAA | <i>Yukon Environmental and Socio-Economic Assessment Act</i>             |
| YESAB | Yukon Environmental and Socio-Economic Assessment Board                  |
| YG    | Government of Yukon  |

## LIMITATIONS OF REPORT

This report and its contents are intended for the sole use of True North Gems Inc. and their agents. EBA Engineering Consultants Ltd. does not accept any responsibility for the accuracy of any of the data, the analysis, or the recommendations contained or referenced in the report when the report is used or relied upon by any Party other than True North Gems Inc., or for any Project other than the proposed development at the subject site. Any such unauthorized use of this report is at the sole risk of the user. Use of this report is subject to the terms and conditions stated in EBA's Services Agreement. EBA's General Conditions are provided in Appendix A of this report.

## 1.0 PROPONENT CONTACT INFORMATION

True North Gems (TNG) is the proponent for this project. EBA Engineering Consultants Ltd. operating as EBA, A Tetra Tech Company (EBA) was retained by TNG to prepare the present project proposal for submission to the Yukon Environmental and Socio-Economic Assessment Board (YESAB).

For the purpose of this assessment, please use the following contacts:

**Main Contact:**

Kristina Gardner, MFC, RPF  
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Whitehorse Environment Group  
EBA, A Tetra Tech Company  
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[afagan@truenorthgems.com](mailto:afagan@truenorthgems.com)

## 2.0 REQUIREMENTS FOR AN EVALUATION UNDER YESAA

The project is assessable under the *Yukon Environmental and Socio-Economic Assessment Act* (YESAA) as it:

- Is located in the Yukon
- Involves project and accessory activities listed in the Assessable Activities, Exceptions and Executive Committee Project Regulations, including:
  - Part 13, Item 13 (On Crown or settlement land, levelling, grading, clearing, cutting or snow ploughing of (a) a trail; (b) the right of way of a power line, pipeline, railway line or road; or (c) a route that provides access to land for the purposes of a geophysical, geological or engineering survey)
- Requires, or may require, the following Government of Yukon (YG) permits:
  - Land Use Permit.

The permit applications have been completed and are attached in Appendix B.

## 3.0 PROJECT LOCATION

The proposed project is located between the Robert Campbell Highway access to Kudh Ze Kayah (KZK) and the Tsa Da Glisza property (the site), following an existing winter trail from KZK to the site. KZK is located 25 km from the Robert Campbell Highway on the KZK Road (Figure 3.0-1).

The project is located approximately 120 km Southeast of Ross River. The majority of the road route is staked with mineral claims, and the remainder will be staked prior to the project. Settlement Land parcel RRDC-R-15A and Land Disposition 2010-0620 are located east of the project north of the North Lakes.

Land disposition 105G07-002 is located on the project route just south of KZK. The project traverses Registered Trapping Concession 249 and 405 and falls within Outfitting Concession 20 (Game Management Subzone 10-07).

The project is located on Mapsheets 105G10 and 105G07. The boundaries of the site are (UTM NAD 83, Zone 09W):

- NW Boundary: 6836696 N, 411969E
- NE Boundary: 6835440 N, 420379E
- SW Boundary: 6794448N, 410772E
- SE Boundary: 6794082N, 418043E.

Please refer to the following documents for information describing the project location:

- Form 1 (YESAB Online Registry)
- Figure 3.0-1: Project Location
- Figure 3.0-2: Site Plan.

## 4.0 PROJECT PURPOSE

### 4.1 Project Purpose

The purpose of this project is to use a pre-existing winter access trail, approximately 21 km long, to transport the equipment and supplies from the Tsa da Glisza site to KZK, following completion of reclamation activities at the site.

### 4.2 Project Alternatives

Three alternatives were considered during the project planning process:

- The first alternative was to transport all equipment and materials from the site via air. This alternative was not recommended due to the significant time required to dismantle the heavy equipment prior to its transport, and the significant cost of airlifting the many loads that would result from this exercise
- A second alternative was to complete on-site disposal of equipment and materials. This alternative was not recommended because of the amount of equipment at site, and the permitting requirements for disposal
- The third, and preferred alternative, was to remove all equipment and materials from the site by winter road for safe disposal at existing facilities.

### 4.3 Project History

The Tsa Da Glisza property is located within the Finlayson mining district of southeast Yukon Territory's Pelly Mountain range (50 km south of the Robert Campbell Hwy, between Ross River to the north, and Upper Liard to the south). The original Class 3 Quartz Mining Exploration Operating Plan (LQ00076) was

obtained in 2001 to mobilize, set up camp and develop the trenching program. The Class 3 Approval was amended in 2002 to include new roads, adit and winter road construction. It was further amended in 2003 to include an airstrip, surface sampling and underground exploration. LQ00076 was extended in 2006 for a second five-year permit period to an expiry date of August 13, 2011. An extension to LQ00076 was applied for in January 2011. The project was transferred to YG Client Services and Inspections on September 2, 2011. Reclamation of the site was undertaken from 2011 to 2013. TNG is currently preparing the site for closure. One component of closure is to remove all equipment, construction material, contaminated waste and supplies from the site.

The Tsa Da Glisza winter access trail was used to bring supplies and materials to and from the site in 2002/2003 and 2005.

## **5.0 PROJECT DESCRIPTION**

### **5.1 Project Scope**

The scope of the project is to pack and haul equipment and materials using a 21 km long winter access trail from the Tsa Da Glisza site to KZK in winter 2013/2014.

### **5.2 Principal Project Activities**

The principle activities of the proposed project include:

- Using two D6 Caterpillar Dozers pulling sleighs to transport equipment and materials from the site to KZK (Figure 3.0-2), comprising approximately 15 trips along the 5 m wide, 21 km long winter access trail between the two locations
- If time allows, equipment and materials will be hauled down the KZK Road to the Robert Campbell Highway and temporarily stored in an existing cleared area until they can be hauled out in spring.

### **5.3 Accessory Project Activities**

The accessory activities of the proposed project include:

- Compacting snow with the D6 Dozers and snow machines along the KZK Road to KZK
- Creating ice bridges across creeks where needed
- Clearing vegetation, greater than 5 cm in diameter at breast height (DBH), along the winter trail, where required (estimated 1% of the route will require clearing)
- Storing materials and equipment at KZK (where Tech Cominco previously cleared a camp area) until the spring of 2014, subject to the approval of Teck Corporation and the local gatekeeper on the KZK Road. If approval is not given, the materials and equipment will be stored at the Robert Campbell highway until they can be removed in spring
- Disposing of waste metal and other wastes to approved facilities

- Hauling a cabin on a sleigh (sleigh cabin) pulled by a D6 Caterpillar Dozer along the winter road to a temporary camp located approximately at Creek 2, the old KZK camp location
- Storing fuel at a temporary camp for use during the project
- Using one existing cabin at the Tsa da Glisza site for warming and emergency use
- Decommissioning the trail where required
- Clearing snow from the KZK road at decommissioning
- Loading and transport of equipment and materials from KZK to Whitehorse via road in spring 2014
- Inspecting the winter road route with Teck Corporation and the Ross River Dena Council to confirm no environmental damage has occurred.

## 5.4 Project Description

The project is comprised of five components described further below:

- Transporting two D6 Caterpillar dozers and sleighs to KZK
- Developing the winter road
- Transporting equipment and materials from the site to KZK
- Decommissioning the winter road
- Transporting equipment from KZK to appropriate facilities (e.g., Watson Lake or Whitehorse) for disposal or storage.

### 5.4.1 Transporting D-6 Caterpillar Dozers and Sleighs to KZK

The D6 Dozers, sleighs and assorted equipment will be trucked to the Robert Campbell Highway at the KZK Road junction, where there is a manned gatehouse (Figure 3.0-2). The D6 Dozers will pull the sleighs along the KZK Road to KZK to begin the winter road. Access agreements will be in place with mining claim holders to allow use of the KZK Road and the winter road. The Teck Corporation gatehouse will restrict access to the winter road. No unauthorized access to the KZK area will be permitted.

### 5.4.2 Developing the Winter Road

The winter road route will compress snow along the road route to create a packed layer for transportation. No portion of the road route will be cleared to expose soils. Construction works of the winter road will include ploughing snow from adjacent areas to fill gullies and small watercourses. Figure 3.0-2 shows the watercourses along the winter road route.

The two D6 Dozers and attached sleighs will provide low ground pressure over the existing snow pack, helping to preserve ground integrity and vegetation cover. Snow machines or All-Terrain Vehicles (ATVs) will be used to transport crew along the winter road in addition to the D6 Dozers.

No ice bridges are anticipated as most creeks in this area are known to freeze to the bottom. Other construction works such as the use of water are not anticipated. If an ice bridge is required, the ice bridge

will be constructed using water from the associated watercourse. Snow will be cleared from the crossing using an ATV or Dozer. Snow will be pushed away from the route into snow berms. The thickness of the ice will be measured by auguring a test hole in the ice to determine if it is thick enough to cross (1 m thick). If the ice is not thick enough, water will be pumped from the hole (less than 100 m<sup>3</sup>/day) and spread onto the cleared ice surface to freeze. A screen will be used on the water intake, which will be consistent with Fisheries and Oceans Canada (DFO) Freshwater Intake End-of-Pipe Fish Screen Guidelines (DFO 1995). Ice creation will continue until the ice has reached the required thickness and is able to support equipment safely. The ice bridge will be kept clear of snow, and the ice thickness will be measured frequently to ensure adequate thickness for safe use.

Due to natural regeneration of vegetation since the road was used in 2005, the winter trail may require the removal of trees which are greater than 5 cm DBH. The majority of the winter road is located in the Subalpine and Alpine Zones, and cutting of fewer than 20 trees is anticipated. To avoid forming barriers to wildlife, trees that are cut will be placed perpendicular to the road.

### 5.4.3 Transporting Equipment from the Site to KZK

Equipment will be hauled along the winter trail from the Tsa Da Glisza camp to KZK. It is proposed that one round trip per day (24 hour period) will be carried out in order to move supplies and equipment from the site to KZK. It is anticipated that up to 15 trips will be required. Two D6s hauling sleighs will be used to transport materials. Each sleigh is approximately 2.4 m (8 feet) wide and 12 m (40 feet) long. The D8 Caterpillar Dozer, located at the site, will be used to take out heavier equipment, such as the rock trucks. Snow machines or ATVs will be used to transport staff more rapidly between the site and KZK as required, and in the case of emergency.

Once all material and equipment is at KZK, and if time allows before spring conditions soften the KZK Road, the material and equipment will be hauled to the Robert Campbell Highway, where it will be stored in a cleared area near the gatehouse until spring conditions allow them to be hauled to appropriate facilities.

Materials and equipment to be moved from the Tsa da Glisza site include:

- Two 935 mine haul (rock) trucks
- A D8 caterpillar
- A 225 LC Caterpillar backhoe
- A 950 Caterpillar loader
- Two SeaCan containers (6 m long) containing camp items for disposal or storage including, but not limited to:
  - Generators
  - Wiring
  - Heaters
  - A Wind Station

- Appliances
- Fibreglass
- Oil and Hydraulic Fluid in sealed containers
- A flag pole
- An air track rock drill
- A Compressor
- A rock crushing plant (conveyor & crusher mill)
- A 2,250 L fuel tank (empty)
- Snowmobiles
- A Bobcat
- A Chevy Suburban
- A Ford Ranger
- Two drums of Jet B fuel
- Waste metal, including a culvert
- Plastic liners from fuel storage areas
- Camp materials
- Non-perishable camp food supplies
- Exploration equipment
- Two camp cabins.

#### **5.4.4 Staff Accommodation**

While transporting equipment, staff will be accommodated in one of the camp cabins, located at the site or in the sleigh cabin, temporarily placed at approximately the old KZK camp location near Creek 2, in an existing cleared area, on each trip. Employees will use bottled water and small camping stoves at the site and in the sleigh cabin. An existing outhouse at the site will be used, and a portable toilet will be used in the sleigh cabin, with waste disposal in Whitehorse.

The proposed project will require the employment of two to five persons, including two persons to build and maintain the ice road and transport materials and equipment from the site to KZK. The proposed contractor for the project is Kluane Drilling Ltd., who was responsible for the initial design and operation of the road from 2001 to 2005.

#### 5.4.5 Decommissioning the Winter Road

During the final trips on the winter road, the site cabin will be loaded and transported to KZK. The outhouse will be removed. There will be no remaining infrastructure or equipment at the Tsa Da Glisza site upon completion.

With warmer temperatures in spring, the winter road will melt. No further decommissioning of the winter road is anticipated. During decommissioning, the KZK Road will be cleared of snow to 10 cm depth from soil surface. No damage to the road was observed in 2003 or 2005 using this decommissioning method.

The decommissioned winter road will be inspected by Teck Corporation and members of the Ross River Dena Council in summer 2014, following the spirit and intent of the 2003 Memorandum of Understanding between the Ross River Dena Council and True North Gems.

#### 5.4.6 Transporting Equipment from KZK for Disposal or Storage

In the spring of 2014, once the area is free of snow and the road has dried out, all equipment and materials will be hauled to appropriate facilities (e.g., Whitehorse, Watson Lake) from KZK via the KZK Road, the Robert Campbell Highway, and Alaska Highway. If time allowed materials and equipment to be hauled to the cleared area near the gatehouse on the Robert Campbell Highway, then it will be hauled to the appropriate facilities from that location.

#### 5.5 Fuel Management

Vehicles will be refuelled from fuel stored in drums at the site (approximately 32 drums), located in an approved facility under LQ00076 (inspected and approved by EMR August 2, 2013), or from fuel drums carried on sleighs and stored in a cache at the temporary camp (approximately 1,800 L (500 Gallons)). Refuelling will take place at least 30 metres from the edge of any watercourse.

#### 5.6 Schedule of Activities

The Tsa da Glisza winter trail will be used from approximately December 2013 to March 2014 (depending upon the timing of spring thaw). Up to 15 round trips will be required to transport all of the equipment, construction material and supplies from the site to KZK. It is estimated that each round trip will take approximately 24 hours to complete.

## 6.0 DESCRIPTION OF EXISTING ENVIRONMENTAL AND SOCIO-ECONOMIC CONDITIONS

This section describes the existing conditions for the components listed below. This information is based on the existing information available at the time of the assessment.

### Environmental Components

- Biophysical conditions
- Soils and permafrost
- Water

- Vegetation
- Fish and wildlife.

### **Socio-economic Components**

- Community characteristics
- Land Use
- Heritage resources.

## **6.1 Biophysical Conditions**

The project is located within the Pelly Mountain range. The area lies within the Pelly Mountains Ecoregion of the Boreal Cordillera Ecozone (Smith et al. 2004), approximately 120 km southeast of Ross River and 170 km southeast of Faro. The Faro area has a mean daily average temperature of -2.2°C, with the highest daily average of 15°C occurring in July, and the lowest daily mean temperature of -21.5°C occurring in January. Faro receives an average of 214 mm of precipitation on a yearly basis (Environment Canada 2013).

## **6.2 Soils and Permafrost**

The majority of the winter road is located in the Subalpine and Alpine Zones. Soils in the area are heavily influenced by glaciation, with alpine-type glacial erosional features and glacial scouring (Smith et al. 2004). Valley floors, such as those around North Lake, contain bedded lacustrine silt and sand (Smith et al. 2004). The project is located in an area of discontinuous permafrost (Smith et al. 2004). Ice-rich permafrost is present in the valleys. The lack of ponding along the road route in the 2011 winter road investigation demonstrates that previous winter road use (2002 and 2005) has not negatively impacted permafrost along the route.

## **6.3 Surface Water**

The project crosses four watercourses, and travels along two lakes (Figure 3.0-2). The larger lake is called North Lakes South (Figure 3.0-2). North Lakes South flows into the North River from North Lakes, flowing south. Towards the Tsa Da Glisza site, at the base of Regal Ridge, Wolf Creek flows into Mosquito Creek, and into the North River. The North River flows into the Black River and on into the Liard River.

Small tributaries at the north end of the winter road flow north to the Finlayson River, and into the Frances River, joining the Liard River, in the Mackenzie River Watershed.

The project creek crossings are (Figure 3.0-2):

- Creek 1 - Wolf Creek
- Creek 2 - North Creek – flowing from North Lake
- Creek 3 – at the northwest end of North Lakes South, flowing to the lake
- Creek 4 – tributary at the junction of two valleys between the North Lakes.

All creeks are reported to freeze to ground in the winter months.

The project travels alongside west side of North Lakes south and southeast to Regal Ridge (Figure 3.0-2; Photos 1-5). In 2003, a Dozer fell through the ice into North Lake and the area was successfully rehabilitated. In the 2011 investigation of the winter road, the area was completely revegetated (Photo 5). A small amendment was made to the winter road route in 2005 to avoid the 2003 accident area. The 2005 route will be used for the project route. Care will be taken to ensure ice thickness is adequate in this area.

## 6.4 Vegetation

Vegetation in the project area consists of White Spruce (*Picea glauca*) with Jack Pine (*Pinus contorta*) and Trembling Aspen (*Populus tremuloides*; Smith et al. 2004). Understory vegetation is typically Labrador Tea (*Ledum groenlandicum*) with Feathermoss understory in drier areas, and Shrub birch (*Betula glandulosa*) with Shrubby Cinquefoil (*Dasiphora fruticosa*), grass and moss in wetter areas (Smith et al. 2004; Photo 6).

## 6.5 Fish and Wildlife

North Lakes North (Figure 3.0-2) and its tributaries contain Arctic Grayling (*Thymallus arcticus*), Slimy Sculpin (*Cottus cognatus*), Lake Whitefish (*Coregonus clupeaformis*) and Lake Trout (*Salvelinus namaycush*; DFO 2013). The project is located in wildlife key areas for Woodland Caribou (*Rangifer tarandus*), the Finlayson Caribou Herd and Moose (*Alces alces*; YG 2013a).

The project is adjacent to wildlife key areas for Thinhorn Sheep (Stone's Sheep; *Ovis dalli stonei*; YG 2013a). Wildlife species including black bears (*Ursus americanus*), grizzly bears (*Ursus arctos*); wolf (*Canis lupus*), furbearers such as lynx (*Lynx canadensis*), mink (*Mustela vison*), marten (*Martes americana*), and wolverine (*Gulo gulo*) and rodents such as Hoary Marmot (*Marmonta caligata*), Collared Pika (*Ochotona collaris*) are expected in the project area. Willow Ptarmigan (*Lagopus lagopus*) and songbirds are expected in the project area as well. Woodland Caribou, Grizzly Bear, Collared Pika, and Wolverine are listed as species of Special Concern by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC 2012).

## 6.6 Community Characteristics

The project is approximately 120 km from Ross River in the Traditional Territory of the Ross River Dena Council and the Liard First Nation (together the Kaska Dena Nation, and members of the Kaska Dena Council). The Ross River Dena Council is based in Ross River, and the Liard First Nation is based in Watson Lake. Ross River has a population of 364; Watson Lake has a population of 1,050 (YG 2013b). The Ross River Dena Council has 483 registered members (RRDC 2013). True North Gems had a Memorandum of Understanding with the Ross River Dena Council for the Tsa Da Glisza project from 2003 to 2006. True North Gems employed a number of project staff from the Ross River Dena Council during the project's operational period. Current operations continue according to the spirit and intent of the Memorandum of Understanding.

## 6.7 Land Use

Land use in the project area includes hunting, trapping, and fishing. North Lakes and their tributaries are used for subsistence and sport fishing (DFO 2013). The Wolverine Mine and other mining exploration in the project area provide employment and income to the communities.

The project traverses Registered Trapping Concession 249 and 405, and falls within Outfitting Concession 20 (Game Management Subzone 10-07). The project does not traverse any Settlement Lands.

## **6.8 Heritage Resources**

There are no known heritage resources in the project area (G.Hare, pers. comm., 2013).

## **7.0 IDENTIFICATION OF POTENTIAL ENVIRONMENTAL AND SOCIO-ECONOMIC EFFECTS AND PROPOSED MITIGATIONS**

This section, including the determination of valued components, the effects assessment and significance determination, is based on the information available at the time of the assessment.

Valued environmental and socio-economic components for the proposed project have been identified as:

### **Environmental Valued Components**

- Soils and permafrost
- Water quality
- Vegetation
- Wildlife
- Fish and fish habitat.

### **Socio-economic Valued Components**

- Economy and employment
- Land and resource use
- Health and safety
- Heritage resources.

## **7.1 Soils and Permafrost**

### **7.1.1 Effects Characterization**

The project includes building a winter road over soils in permafrost, travelling over packed snow on the existing KZK Road, and fueling vehicles at the site and at the temporary camp. The road will be built over the snow layer, and no soils will be excavated. The compacted snow layer is expected to provide protection to soil, and its compaction will have no impact on permafrost. Blading snow near creeks, if ice bridges are required, has the potential to damage the soil surface and could result in permafrost melt. Careless operation of equipment during operation and decommissioning could also damage the soil surface and permafrost. Soil may be impacted in the event of a spill while refuelling equipment.

### 7.1.2 Proposed Mitigation

The following measures implemented during the course of the project will minimize effects on soils and permafrost:

- Dozers will travel along the trail with the blade raised, except in areas where snow clearing is required
- At least 10 cm of snow will be maintained over all soil surfaces to ensure the protective snow buffer is maintained
- A contractor with significant experience building and using winter roads in the Yukon will be utilized for the project
- The proponent/contractor will at all times have sufficient spill cleanup equipment and materials on site in readiness to immediately contain and clean up all deleterious substances which may be spilled and be familiar with spill protocols
- A Fuel Spill Contingency Plan (Appendix C) will be followed for prevention and mitigation of potential effects from accidents or equipment/vehicle malfunction. The emergency spill response plan will deal with the procedures and methods for spill notification, response mobilization, containment recovery, removal, and remedial measures for spills related to products used onsite.

### 7.1.3 Significance Determination

It was determined through a review of the potential effects and associated project activities that the execution of the proposed project, together with the recommended mitigation, would not result in significant, adverse effects on soil or permafrost.

## 7.2 Water Quality

### 7.2.1 Effects Characterization

The project crosses four mapped watercourses and passes adjacent to two lakes. It also crosses a number of smaller watercourses. All watercourses are relatively shallow (<2m) and it is anticipated that they will be frozen to ground during the execution of the project. Consequently it is expected that no ice bridges will be required. Ice bridges will only be required if ice thicknesses are not sufficient to support equipment.

The primary risks associated with the proposed project include the potential release of sediment or other deleterious substances, such as hydrocarbon fuels or lubricants. Such releases may occur through soils to surface water or groundwater when the compacted snow and ice melt in spring.

### 7.2.2 Proposed Mitigation

During the course of the project the following measures will be implemented to minimize effects on water quality:

- Measures to respond to spills and maintain soil integrity as outlined in Section 7.1.2 and Appendix C will be applied

- Deleterious substances (including but not limited to fuels, lubricants, hydraulics and coolants) of any type will not be deposited or allowed to be deposited into any waters, or in any place where the deleterious substances may enter any waters
- Snow berms, if created, will have regular openings plowed into them, to allow drainage of melt water in spring
- Equipment will be refueled as laid out in Section 5.5. Refuelling will take place at least 30 metres from the edge of any watercourse
- Vehicles and equipment will be maintained in good working condition to minimize risk of spills or leaks.

### 7.2.3 Significance Determination

It was determined through a review of the potential effects and associated project activities that the proposed project, with recommended mitigation, would not result in significant, adverse effects to water quality.

## 7.3 Vegetation

### 7.3.1 Effects Characterization

The winter road is currently vegetated along its length (Photos 1-6). Vehicles on the winter road will pass above the herbaceous layer on a packed layer of snow at least 10 cm deep. Trees greater than 5 cm DBH will be cut along the winter road. The number of trees requiring cutting is expected to be low as a consequence of route preparation in 2002 and 2005 and subsequent slow growth due to the cold climatic conditions. Shrub and tree vegetation along the project route may experience compaction under the snow pack as vehicles pass. Blading snow near creeks, if ice bridges are required, has the potential to damage vegetation. Careless operation of equipment could also damage vegetation. Other potential effects include contaminant uptake into vegetation after accidental spills.

### 7.3.2 Proposed Mitigation

To minimize the effects on vegetation the following measures will be implemented during the project:

- The project will include as few vehicle passes over the trail as reasonably possible
- Dozers will travel along the trail with the blade raised, except in areas where snow clearing is required
- At least 10 cm of snow will be maintained over all soil surfaces to ensure a protective snow buffer is maintained
- Measures to respond to spills as outlined in Appendix C will be applied.

### 7.3.3 Significance Determination

It was determined through a review of the potential effects and associated project activities that the proposed project, with recommended mitigation, would not result in significant, adverse effects on vegetation.

## 7.4 Wildlife

### 7.4.1 Effects Characterization

The project has the potential to disturb wildlife. Increased noise levels from equipment may result in temporary avoidance of the site. Once equipment has passed, noise levels will return to pre-disturbance levels, and site avoidance is expected to cease.

Creating a road surface into an area without roads can create travel corridors for wildlife and increase hunting pressure. The proposed project will create a surface traversable by snow machine or ATV, but not by truck. A manned Teck Corporation gatehouse will restrict access to the winter road. No unauthorized access to the KZK area will be permitted.

Snow banks adjacent to the road may be a barrier to wildlife movement. Windrowed trees can form a barrier to wildlife travel, and tree removal could result in habitat loss for songbirds.

Garbage, if not properly managed, could attract scavengers, including bears, which could result in negative human-bear or other animal interactions.

### 7.4.2 Proposed Mitigation

To minimize the effects on wildlife the following measures will be implemented during the construction and operation of the project:

- Measures to respond to spills and soil erosion as outlined in Appendix C will be applied
- Any tree cutting will occur outside of the migratory bird nesting season (May 1 to July 31) in accordance with the *Migratory Bird Convention Act* to reduce the potential of bird mortality. Cut trees will be placed perpendicular to the road, and not windrowed adjacent to it
- Snow banks, if created, will have regular openings plowed into them, to allow wildlife to leave the road
- Wildlife will have the right of way along the winter road
- To avoid prolonged avoidance by wildlife, work and construction would be completed as efficiently as possible. Travel on the road will be one round trip per 24 hour period
- All waste produced from the project will be managed in accordance with the *Yukon Wildlife Act*, to prevent attracting dangerous and nuisance wildlife, such as bears, coyotes, and foxes. Proper waste management will include disposing of garbage at the Ross River Landfill, and will significantly decrease the potential for human-wildlife conflicts
- The harassment of wildlife, as defined under the *Yukon Wildlife Act*, will be prohibited.

### **7.4.3 Significance Determination**

It was determined through a review of the potential effects and associated project activities that the proposed project, with recommended mitigation, would not result in significant, adverse effects on wildlife.

## **7.5 Fish and Fish Habitat**

### **7.5.1 Effects Characterization**

Work near or over watercourses could potentially result in indirect effects on fish when sediment or other deleterious substances (such as hydrocarbon fuels) accidentally enter fish bearing waters. Sediment could result from watercourse damage and soil erosion while crossing. Sediment is a naturally occurring component of all watercourses; however, concentrations in excess of natural thresholds are harmful to fish and fish habitat, smothering eggs, clogging and abrading gills and resulting in the loss of critical food items and habitat. The project activities and decommissioning may create conditions where silt and sediment have the potential to be released into waterways. The release of other deleterious substances (e.g., hydrocarbons) could also degrade fish habitat or negatively affect fish.

### **7.5.2 Proposed Mitigation**

To minimize the effects on fish and fish habitat the following measures will be implemented during the construction and operation of the project:

- Spill response and soil erosion prevention measures as outlined in Section 7.1.2 and Appendix C will be applied
- If water has to be pumped from watercourses to prepare ice bridges, a screen consistent with DFO Freshwater Intake End-of-Pipe Fish Screen Guidelines, will be used on the water intake
- Deleterious substances (including but not limited to fuels, lubricants, hydraulics and coolants) of any type will not be deposited or allowed to be deposited into any waters, or in any place where the deleterious substances may enter any waters
- Equipment will be refueled as laid out in Section 5.5. Refuelling will take place at least 30 metres from the edge of any watercourse
- Vehicles and equipment will be maintained in good working condition to minimize risk of spills or leaks.

### **7.5.3 Significance Determination**

It was determined through a review of the potential effects and associated project activities that the proposed project, with recommended mitigation, would not result in significant, adverse effects on fish and fish habitat.

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## **7.6 Economy and Employment**

### **7.6.1 Effects Characterization**

Employees and contractors will be sourced locally for the project and ensure that benefits accrue to the Yukon economy.

### **7.6.2 Proposed Mitigation**

No negative effects on the economy and employment are predicted as a result of the project and no mitigations measures are thus proposed.

### **7.6.3 Significance Determination**

It was determined through a review of the potential effects and associated project activities that the proposed project will not result in significant, adverse effects on employment and the economy.

## **7.7 Land and Resource Use**

### **7.7.1 Effects Characterization**

Creating a road surface into a wilderness area can provide access for local hunters and thus increase hunting pressure. The proposed project will create a surface traversable by snow machine or ATV, but not by truck. A manned Teck Corporation gatehouse will restrict access to the winter road. No unauthorized access to the KZK area will be permitted.

The winter road has the potential to impact Registered Trapping Concession 249 and 405. As the road will only be open for one winter, and unauthorized access is not permitted, potential negative effects on Outfitting Concession 20 (Game management subzone 1007) are expected to be low.

### **7.7.2 Proposed Mitigation**

To minimize adverse effects on land and resource use the following measures will be implemented during the course of the project:

- Signs will be posted at the site during work to advise the public of work being undertaken, the associated health and safety risks and limiting site access to project employees, consultants and contractors only
- Work will be completed as efficiently as possible to reduce the period over which the winter road is operational.

### **7.7.3 Significance Determination**

It was determined through a review of the potential effects and associated project activities that the proposed project, with recommended mitigation, would not result in significant, adverse effects on land and resource use.

## **7.8 Health and Safety**

### **7.8.1 Effects Characterization**

As with any construction activities, the use of machinery, presence of construction equipment, noise, and dust have the potential to affect the health and safety of workers. These effects may be realized during the project, but are anticipated to be short in duration. There is a potential effect to health and safety of local area users through interaction with industrial equipment and operations.

### **7.8.2 Proposed Mitigation**

To minimize effects on health and safety the following mitigation measures will be implemented during the course of the project:

- All employees and contractors will be required to adhere to appropriate Occupational Health and Safety Regulations including wearing all appropriate personal protective equipment
- Signs will be posted at the site during work to advise the public of work being undertaken, the associated health and safety risks and limiting site access to project employees only.

### **7.8.3 Significance Determination**

Through the application of the identified mitigations, the project is not anticipated to result in significant adverse effects on health and safety.

## **7.9 Heritage Resources**

### **7.9.1 Effects Characterization**

The project is located in the traditional territories of the Ross River Dena Council and the Liard First Nation. The proposed project area does not have any identified historical use heritage areas. The project will not excavate soils, and will maintain a 10 cm snow cover. There is a small potential effect to heritage resources if resource items are uncovered. Resource items could be removed from the site, or heritage resources could be damaged or disturbed.

### **7.9.2 Proposed Mitigation**

To minimize effects on heritage resources the following mitigation measures will be implemented during the course of the project:

- If any artifacts or heritage resource items of significance are uncovered during the project, activities will be stopped immediately and the Ross River Dena Council, Liard First Nation, and YG Heritage Resources Branch will be notified
- No artifacts or objects will be removed from site by employees, contractors, or other individuals, other than those permitted to do so
- At least 10 cm of snow will be maintained over all soil surfaces to ensure a protective snow buffer is maintained.

### 7.9.3 Significance Determination

It was determined through a review of the potential effects and associated project activities that the proposed project, with the recommended mitigation, will not result in significant, adverse effects on heritage resources.

### 7.10 Summary of Mitigations for All Identified Effects

- Dozers will travel along the trail with the blade raised, except in areas where snow clearing is required
- At least 10 cm of snow will be maintained over all soil surfaces to ensure a protective snow buffer is maintained
- A contractor with significant experience building and using winter roads in the Yukon will be utilized for the project
- The proponent/contractor will at all times have sufficient spill cleanup equipment and materials on site in readiness to immediately contain and clean up all deleterious substances which may be spilled and be familiar with spill protocols
- A Fuel Spill Contingency Plan (Appendix C) will be followed for prevention and mitigation of potential effects from accidents or equipment/vehicle malfunction. The emergency spill response plan will deal with the procedures and methods for spill notification, response mobilization, containment recovery, removal, and remedial measures for spills related to products used onsite
- Snow banks, if created, will have regular openings plowed into them, to allow drainage of melt water in spring and to facilitate exit of wildlife from the road
- Deleterious substances (including but not limited to fuels, lubricants, hydraulics and coolants) of any type will not be deposited or allowed to be deposited into any waters, or in any place where the deleterious substances may enter any waters
- Equipment will be refueled as laid out in Section 5.5. Refuelling will take place at least 30 metres from the edge of any watercourse
- Vehicles and equipment will be maintained in good working condition to minimize risk of spills or leaks
- The project will include as few passes over the trail as reasonably possible
- Any tree cutting will occur outside of the migratory bird nesting season (May 1 to July 31) in accordance with the *Migratory Bird Convention Act* to reduce the potential of bird mortality. Cut trees will be placed perpendicular to the road, and not windrowed adjacent to the road
- Wildlife will have the right of way along the winter road
- To avoid prolonged avoidance by wildlife, work and construction would be completed as efficiently as possible. Travel on the road will be one round trip per 24 hour period
- All waste produced from the project will be managed in accordance with the Yukon *Wildlife Act*, to prevent attracting dangerous and nuisance wildlife, such as bears, coyotes, and foxes. Proper waste

management will include disposing of garbage at the Old Crow Landfill, and will significantly decrease the potential for human-wildlife conflicts

- The harassment of wildlife, as defined under the Yukon *Wildlife Act*, will be prohibited
- If water has to be pumped from watercourses to prepare ice bridges, a screen consistent with DFO Freshwater Intake End-of-Pipe Fish Screen Guidelines, will be used on the water intake
- Signs will be posted at the site during work to advise the public of work being undertaken, the associated health and safety risks and limiting site access to project employees, consultants and contractors only
- Work will be completed as efficiently as possible
- All employees and contractors will be required to adhere to appropriate Occupational Health and Safety Regulations including wearing all appropriate personal protective equipment
- If any artifacts or heritage resource items of significance be uncovered during the project, activities would be stopped immediately and the Ross River Dena Council, Liard First Nation, and YG Heritage Resources Branch would be notified
- No artifacts or objects will be removed from site by employees, contractors, or other individuals, other than those permitted to do so.

### 7.11 Significance Determination

It was determined through a review of the potential effects and associated project activities that the proposed project, with the recommended mitigation, would not result in significant, adverse effects on any of the valued components identified in this project proposal.

## 8.0 ACKNOWLEDGEMENT AND CERTIFICATION

Please refer to Section 9.0 of Form 1.

## 9.0 CLOSURE

We trust this report meets your present requirements for an assessment under YESAA. If you have any questions or comments, please contact the undersigned.

Sincerely,  
EBA Engineering Consultants Ltd.

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Reviewed by:



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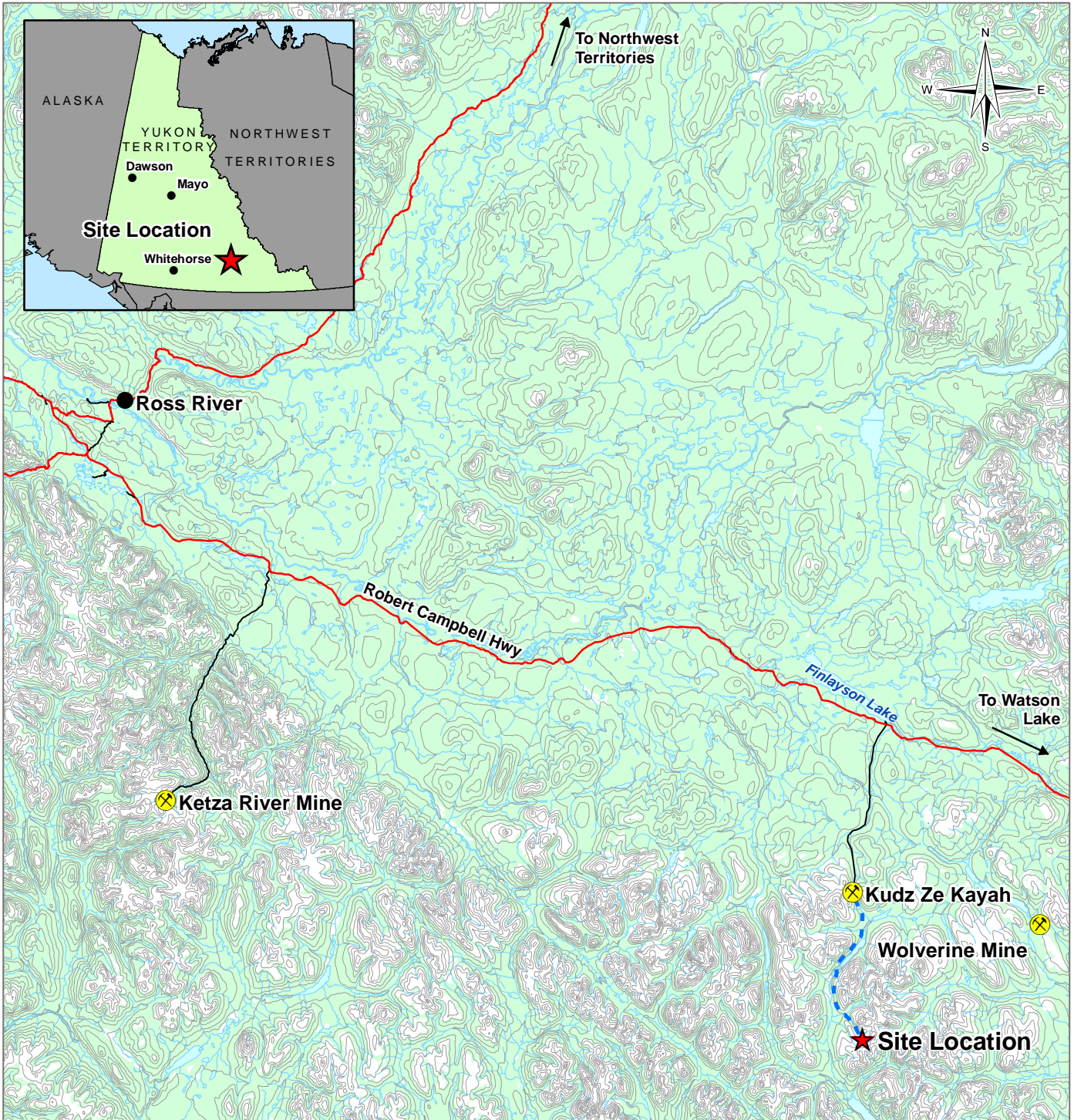
# FIGURES

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Figure 3.0-1 Project Location

Figure 3.0-2 Site Plan





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### LEGEND

- Populated Place
- ★ True North Gems Site
- ⊗ Mineral Project
- Road
- Limited Use Road
- - - Winter Road (Proposed 2014)
- ~ Contour
- ~ Watercourse
- ~ Waterbody
- ~ Vegetation

**NOTES**  
Base data source: 1:250,000 NTS and True North Gems.

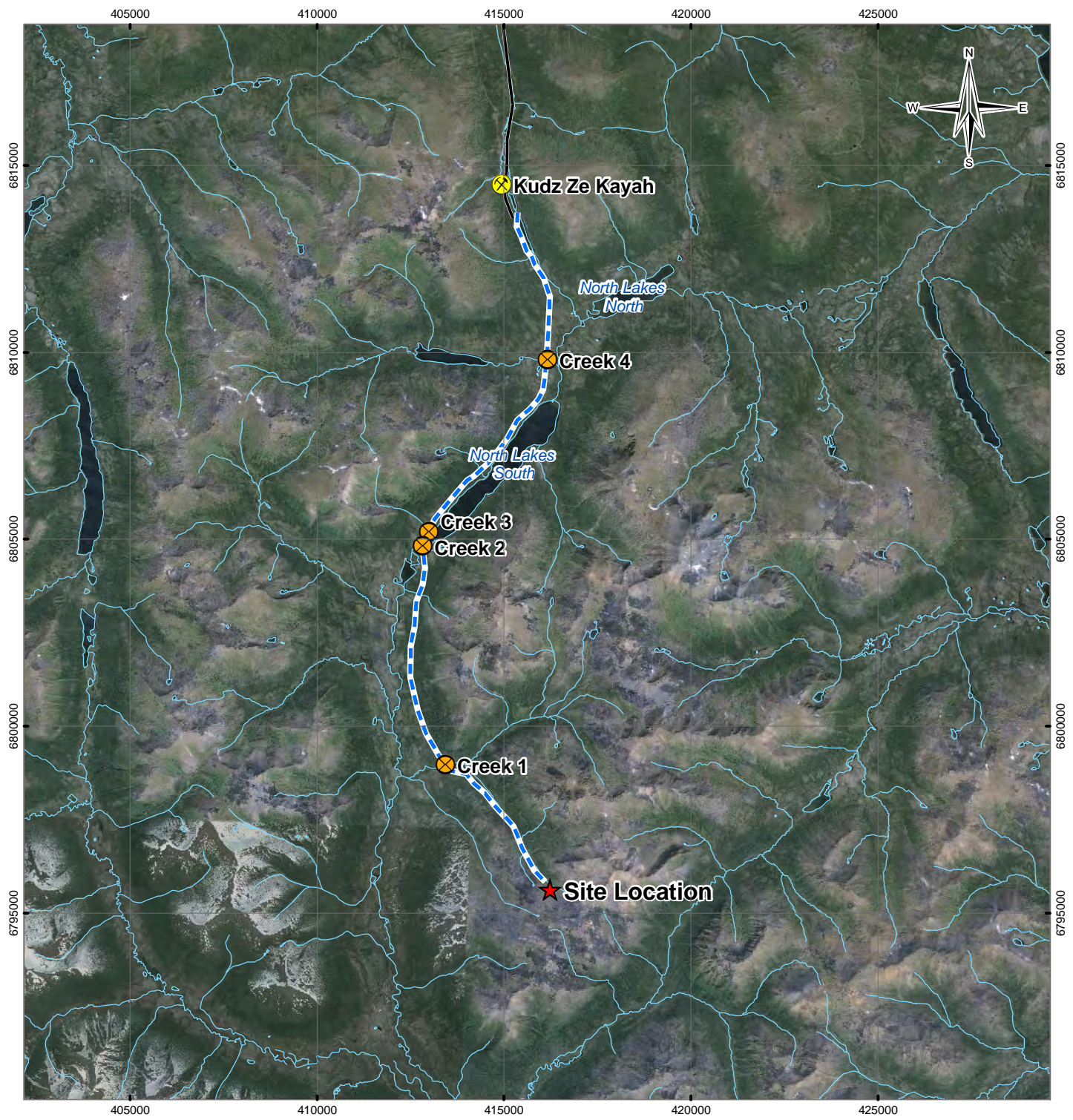
**STATUS**  
ISSUED FOR REVIEW

## TRUE NORTH GEMS TSA DA GLISZA PROPERTY

### Project Location

|   |  |                               |                   |                                  |                     |
|---|--|-------------------------------|-------------------|----------------------------------|---------------------|
| <b>PROJECTION</b><br>UTM Zone 9                   |  | <b>DATUM</b><br>NAD83         |                   | <b>CLIENT</b><br>true north gems |                     |
| Scale: 1:750,000<br>                              |  |                               |                   |                                  |                     |
| <b>FILE NO.</b><br>W23103106_006_SiteLocation.mxd |  |                               |                   |                                  |                     |
| <b>PROJECT NO.</b><br>W23103106-01.006            |  | <b>DWN</b><br>SL              | <b>CKD</b><br>MEZ | <b>APVD</b><br>KG                | <b>REV</b><br>0     |
| <b>OFFICE</b><br>EBA-VANC                         |  | <b>DATE</b><br>August 9, 2013 |                   |                                  |                     |
|   |  |                               |                   |                                  | <b>Figure 3.0-1</b> |

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**LEGEND**

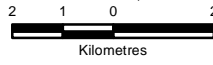
- ★ True North Gems Site
- Creek Crossing
- Mineral Project
- - - Winter Road (Proposed 2014)
- Access Road
- ~ Watercourse
- Waterbody

**NOTES**  
 Base data source: CanVec.  
 Imagery source: Google Earth Pro  
 (April 2013).

**STATUS**  
 ISSUED FOR REVIEW

**TRUE NORTH GEMS  
 TSA DA GLISZA PROPERTY**

**Site Plan**

|   |                       |                                  |
|---|-----------------------|----------------------------------|
| <b>PROJECTION</b><br>UTM Zone 9   | <b>DATUM</b><br>NAD83 | <b>CLIENT</b><br>true north gems |
| Scale: 1:150,000<br><br>Kilometres |                       |                                  |
| <b>FILE NO.</b><br>W23103106_006_SitePlan.mxd   |                       |                                  |
| <b>PROJECT NO.</b><br>W23103106-01.006  | <b>DWN</b><br>SL      | <b>CKD</b><br>MEZ                |
| <b>OFFICE</b><br>EBA-VANC   | <b>APVD</b><br>KG     | <b>REV</b><br>0                  |
| <b>DATE</b><br>August 9, 2013   |                       | <b>Figure 3.0-2</b>              |



# PHOTOGRAPHS

- 
- |         |  |
|---------|--|
| Photo 1 | Winter road along water body past the end of Kudh Ze Kayah Road                              |
| Photo 2 | Winter road along North Lakes S and reclaimed area where Dozer went through ice in 2003      |
| Photo 3 | Reclaimed area along North Lakes S where Dozer went through ice in 2003. Close up of Photo 2 |
| Photo 4 | Winter road through low lying vegetation   |
| Photo 5 | Winter road stream crossing  |
| Photo 6 | Winter road stream crossing area. Close up of Photo 5  |





**Photo 1:** Winter road along water body past the end of the Kudz Ze Kayah Road



**Photo 2:** Winter road along North Lake and reclaimed area where Dozer went through ice in 2003



**Photo 3:** Reclaimed area along North Lakes S where Dozer went through ice in 2003. Close up of Photo 2



**Photo 4:** Winter road through low lying vegetation



**Photo 5:** Winter road stream crossing



**Photo 6:** Winter road stream crossing area. Close up of Photo 5

# APPENDIX A

## EBA'S GENERAL CONDITIONS

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# GENERAL CONDITIONS

## GEO-ENVIRONMENTAL REPORT

This report incorporates and is subject to these “General Conditions”.

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### 1.0 USE OF REPORT AND OWNERSHIP

This report pertains to a specific site, a specific development, and a specific scope of work. It is not applicable to any other sites, nor should it be relied upon for types of development other than those to which it refers. Any variation from the site or proposed development would necessitate a supplementary investigation and assessment.

This report and the assessments and recommendations contained in it are intended for the sole use of EBA's client. EBA does not accept any responsibility for the accuracy of any of the data, the analysis or the recommendations contained or referenced in the report when the report is used or relied upon by any party other than EBA's Client unless otherwise authorized in writing by EBA. Any unauthorized use of the report is at the sole risk of the user.

This report is subject to copyright and shall not be reproduced either wholly or in part without the prior, written permission of EBA. Additional copies of the report, if required, may be obtained upon request.

### 2.0 ALTERNATE REPORT FORMAT

Where EBA submits both electronic file and hard copy versions of reports, drawings and other project-related documents and deliverables (collectively termed EBA's instruments of professional service), only the signed and/or sealed versions shall be considered final and legally binding. The original signed and/or sealed version archived by EBA shall be deemed to be the original for the Project.

Both electronic file and hard copy versions of EBA's instruments of professional service shall not, under any circumstances, no matter who owns or uses them, be altered by any party except EBA. The Client warrants that EBA's instruments of professional service will be used only and exactly as submitted by EBA.

Electronic files submitted by EBA have been prepared and submitted using specific software and hardware systems. EBA makes no representation about the compatibility of these files with the Client's current or future software and hardware systems.

### 3.0 NOTIFICATION OF AUTHORITIES

In certain instances, the discovery of hazardous substances or conditions and materials may require that regulatory agencies and other persons be informed and the client agrees that notification to such bodies or persons as required may be done by EBA in its reasonably exercised discretion.

### 4.0 INFORMATION PROVIDED TO EBA BY OTHERS

During the performance of the work and the preparation of the report, EBA may rely on information provided by persons other than the Client. While EBA endeavours to verify the accuracy of such information when instructed to do so by the Client, EBA accepts no responsibility for the accuracy or the reliability of such information which may affect the report.

# APPENDIX B

## PERMIT APPLICATIONS

---

**ACCESS TO INFORMATION & PROTECTION OF PRIVACY ACT**

This information is being collected under the authority of the *Lands Act*, and *Territorial Lands (Yukon) Act*, to be used for the purpose of reviewing the request for land and any potential approvals as may be required. This information is about the conduct of public business and it cannot and will not be kept confidential. Except as noted below, it will be shared with other government departments and will be treated as information that third parties have the right to under the *Access to Information and Protection of Privacy Act*. Your phone number and address and business plan information might be disclosed as permitted or required by the *ATIPP*.

**OFFICE USE ONLY**

|                 |              |                   |
|-----------------|--------------|-------------------|
| Application Fee | Land Use Fee | General Receipt # |
| Date            | Class        | Permit #          |

**TO BE COMPLETED BY ALL APPLICANTS**

**General Information**

|   |           |                    |             |
|---|-----------|--------------------|-------------|
| Applicant Name  |           | Business Phone     | Home Phone  |
| Business Fax  |           | Home Fax           |             |
| Applicant Address   | City/Town | Territory/Province | Postal Code |
| Contractor's/Supervisor's Name                                    |           | Business Phone     | Home Phone  |
| Business Fax  |           | Home Fax           |             |
| Contractor's Address  | City/Town | Territory/Province | Postal Code |
| Other Personnel (Subcontractor, contractors, company staff, etc.) |           |                    |             |

**Application/Project Description**

Describe purpose, nature and location of all activities - refer to Section 21(2)(b) - *Territorial Land Use Regulation*. Attach additional pages if necessary.

Please indicate if a camp is to be set up. Attach additional pages if necessary.

**Equipment** Attach additional pages if necessary.

| Type & Number | Size | Proposed Use |
|---------------|------|--------------|
|               |      |              |
|               |      |              |
|               |      |              |

**Fuels** Attach additional pages if necessary.

| Fuel Type | Number of Containers | Capacity of Containers |
|-----------|----------------------|------------------------|
|           |                      |                        |
|           |                      |                        |
|           |                      |                        |

**Fuel Containment**

Containment fuel spill contingency plans (Please attach separate contingency plan if necessary):

Method of fuel transfer (To other tanks, vehicles, etc.):

**Proposed Disposal Methods**

a) Garbage:

b) Sewage (Sanitary & Grey Water):

c) Brush & trees:

d) Overburden (Organic soils, waste material, etc.):

**Site Characteristics**

SOILS (sand, gravel, clay, silt, peat etc):

VEGETATION (spruce, pine, poplar, willow, clear etc):

TOPOGRAPHY (flat, steep, rolling, etc):

PROXIMITY TO WATER COURSES (rivers, streams, lakes, ponds within or near the application area)

**Road Routes**

New road Please provide details. Attach additional page if necessary.

Existing road

Has the route been laid out or ground truthed.  Yes  No

**Potential Environment/Resource Impacts**

Describe the effects of the proposed program on land, water, flora & fauna and related socio-economic issues. Attach additional pages if necessary.

Proposed restoration plans.

**Other rights, licenses or permits**

Other rights, licenses or permits related to this permit application (mineral claims, timber permits, water licenses, etc.).

Please indicate if this project involves work around/under utilities and/or telecommunication lines: Yes  No

Community Land Planning may provide assistance if current zoning information is not known – call 667-3530

**CURRENT ZONING APPLICATION LANDS:**  NONE  URBAN RESIDENTIAL

COUNTRY/RURAL RESIDENTIAL  COTTAGE  COMMERCIAL  INDUSTRIAL

OTHER: \_\_\_\_\_

NAME OF APPLICABLE COMMUNITY OR LOCAL AREA PLAN \_\_\_\_\_

**Period of Operation**

Period of operation including time to cover all phases of project work applied for including restoration:

Period of permit (up to two years, with maximum of one year extension);

Start Date

Completion Date

**Location 1<sup>st</sup> set**

**2<sup>nd</sup> set (if applicable) - eg. road**

Lat Degree

Lat Degree

Long Degree

Long Degree

Map Sheet No.:

Community:

**SCHEDULE OF FEES:**

|  |                |
|--|----------------|
| Class A Permit___/Class B Permit___  | \$150.00       |
| First two (2) hectares (automatic fee)   | \$ 50.00       |
| Add \$50.00 for each additional hectare or portion thereof if applicable (____ha@ \$50.00) | \$ _____       |
|  | GST \$ _____   |
|  | Total \$ _____ |

|  |                |
|--|----------------|
| Land Use Permits within a Block Land Transfer: | \$ 25.00       |
|  | GST \$ _____   |
|  | Total \$ _____ |

**SIGNATURE – APPLICANT/OWNER CONSENT**

I/we certify that all of the submitted information is true and correct to the best of my knowledge and belief.

I/we understand that any misrepresentation of submitted data may invalidate any approval of this application.

I/we confirm that, if approval is granted, all work or activities will be undertaken consistently as outlined in this application and in compliance with any terms or conditions as may be specified or contained in said permit.

Signature\_\_\_\_\_ Print Name\_\_\_\_\_

Date\_\_\_\_\_

**OFFICE USE ONLY – APPLICATION CHECK LIST**

Calculation of area involved (including access, staging areas, airstrips, campsites, etc.)

|                       |                              |                             |
|-----------------------|------------------------------|-----------------------------|
| Total Area (Hectares) | Less the original 2 Hectares | TOTAL (for fee calculation) |
|                       |                              |                             |

Application signed and dated     Timber Permit applied for     Fees attached     Lease applied for     Screening report

Water license applied for     Highways Permits applied for     Map included     Address and telephone number

Accepted by: \_\_\_\_\_ Date \_\_\_\_\_

Energy, Mines & Resources  
Lands Branch, Land Use Section K-320  
Whitehorse, Yukon Y1A 2B5  
Phone: 667-3173 Fax: 667-3214

# APPENDIX C

## FUEL SPILL CONTINGENCY PLAN

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## 1.0 INTRODUCTION

Kluane Drilling Ltd (KDL). will demob the remaining equipment from the Tsa Da Glisza camp for True North Gems (TNG) using a winter road. The only hazardous materials that will be involved in the process will be drums of diesel.

### 1.1 Emergency Response numbers

The following include the emergency response contacts:

| Contact   | Phone Number      |
|---|-------------------|
| Yukon Spills Report Centre                      | 867-667-7244      |
| KDL Project Manager -<br>Teresa Ouellette       | 867-633-4800      |
| TNG Project Manager –<br>Andrew Fagan           | 604-687-8055 x106 |
| Health Centre / Nursing<br>Station – Ross River | 867-969-4444      |

## 2.0 ENVIRONMENTAL IMPLICATIONS

### 2.1 Hazard Scenarios

Listed below are situations which could result in risks to human safety and health and/or the physical environment:

- Product spill during the transfer of fuel (e.g. overfill, equipment failure, etc.)
- Damage to part of the storage drums causing a leak (e.g., failure of a valve, hole in tank, etc.)
- Fire relating to a spill/leak
- Fire from another area moving towards the storage drums

### 2.2 Environmental Impacts

Diesel may be harmful to wildlife and aquatic life, as it is not readily biodegradable and has the potential for bioaccumulation in the environment. Runoff into water bodies must be avoided. Diesel burns slowly and thus its risk to the environment is reduced during recovery as burn can be more readily contained compared with volatile fuels.

### 2.3 Avoidance and Mitigation

In effort to avoid and minimize environmental impacts, this spill contingency plan (SCP) has been developed to provide spill response procedures. Snow is a natural sorbent, thus as with spills on soil, spilled fuel can be more easily recovered. Spills on ice are even easier to clean up due to the impermeable surface. Section 3.0 outlines the recommended procedures.

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## 3.0 ROLES, RESPONSIBILITIES AND TRAINING REQUIREMENTS

The following outlines the roles and responsibilities of KDL personnel in maintaining and carrying out the spill response plan, and their training requirements.

- Ensure the SCP is kept current and is available to employees
- Ensure any revisions to the SPD are distributed to all personnel
- Ensure employees are adequately trained to handle petroleum products and carry out this SCP
- Retain records of training
- Ensure that the identified areas are equipped with adequate emergency response materials (spill kit, fire extinguishers, etc.)
- Arrange for site assessment and remediation, if required after a spill event.

## 4.0 SPILL RESPONSE METHODS

### 4.1 General

If there is any spill or leak of diesel during this process the following actions will be taken:

- Ensure the safety of all personnel
- Remove any sources of ignition, if it is safe to do so
- Stop the source of the spill or attempt to extinguish a small fire only if it is safe to do so
- Use fuel berms or fuel socks to ensure spill does not enter water bodies
- Clean up spill as outlined below in Sections 3.2 and 3.3
- Report spill to appropriate authorities at Yukon Spills Report Centre 867-667-7244
- Report spill to the KDL project manager, who will report to TNG and others, as appropriate.

#### 4.1.1 Spill Kit

Spill kits will be stored on the cat train and well as a spare at the Tsa Da Glisza camp site.

The spill kit should include at minimum:

- MSDS for Diesel
- Spill socks
- Absorbent pads / cushions
- Plugging compounds
- PPE for clean-up (Gloves, goggles, protective suit)
- Shovel
- Rake

- 
- Waste bags and ties
  - Salvage drum /Storage container.

#### **4.2 Spills on snow**

- Spill kit will be used
- If it is a small spill, the contaminated material will be raked and shoveled into plastic bags or directly into the container
- If the spill is larger, a dyke will be made using the materials in the spill kit supplemented by snow if required. The snow/diesel mixture will then be shoveled into bags and/or directly into the large container included as part of the spill kit
- All contaminated material will be returned to Whitehorse for disposal.

#### **4.3 Spills on Ice**

- Spill kit will be used
- If it is a small spill, sorbent material from the spill kit will be used to absorb the diesel and then put in plastic bags or directly into the container. Remaining contaminated ice/slush can be scraped and/or shoveled into plastic bags or directly into the container
- If the spill is larger, a dyke will be made using the materials in the spill kit supplemented by snow from surrounding areas if required. The contaminated materials will then be absorbed using the sorbent materials in the spill kit. Remaining contaminated ice/slush can be scraped and/or shoveled into plastic bags or directly into the container
- All contaminated material will be returned to Whitehorse for disposal.