



**TerraX Minerals Inc.**

*YELLOWKNIFE CITY GOLD PROJECT, NT*

**WASTE MANAGEMENT PLAN**

NTS 085J / 07, 08, 09 and 16

Latitudes  $62^{\circ} 20' 00''\text{N}$  and  $62^{\circ} 58' 00''\text{N}$   
Longitudes  $114^{\circ} 05' 00''\text{W}$  and  $114^{\circ} 32' 00''\text{W}$

**Original: November 30, 2018**

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## **1.0 Project Description and Location**

The Yellowknife City Gold Project (YCGP) is located in the south-central Northwest Territories. The YCGP is located immediately east, south and north of the City of Yellowknife and covers 782.23 square kilometers (78,222.50 hectares). It is comprised of 164 mineral claims totaling 715 square kilometers (71,513 hectares) and 134 mineral leases totaling 67.10 square kilometers (6,709.5 hectares). TerraX is the registered holder with 100% interest in all the mineral claims and mineral leases.

Access to the YCGP area is via truck, ATV, UTV and snow machine on existing trails, boat and helicopter on a year-round basis. Historic work has been completed over the area of the YCGP since the 1940's. The majority of which has been diamond drilling.

The annual diamond drill programs are expected to drill 40 to 80 drill holes and between 10,000 – 20,000 metres with anticipated depths between 50 to 650 metres per each drill hole. Coring will be completed at NQ size (47 mm diameter). The total area directly involved per each drill hole is approximately 15 X 15 metres (225 metres<sup>2</sup>).

During 2019 the drilling program will be carried out on the Northbelt portion of the YCGP, that is covered by Land Use Permit MV2014C0005, and will be entirely within areas previously drilled. This will initially involve the use of two (2) diamond drills. If a new Land Use Permit and Type B Water License are issued additional drills will be added to the 2019 program and all drilling programs after 2019 will use greater than two (2) drills.

Continued drilling on the YCGP will be contingent on drilling success, and the success of other ongoing below threshold exploration surveys (ie. mapping, prospecting, geophysics, geochemistry sampling). Based on historical results available to TerraX it is deemed highly probable that continuing drill programs will be needed to develop a possible economic deposit. In addition, it must be recognized that with continued below threshold exploration there is also a possibility of newly discovered areas of mineralization on all areas of the YCGP and that these may require drilling.

## **2.0 Environmental Policy**

TerraX is committed to the protection of the environment during its exploration activities, through the application of the following principles:

- Identify and evaluate all environmental aspects of exploration activities, and develop procedures for minimizing, as much as reasonably achievable, the environmental impacts while carrying out these activities;
- Comply with all applicable environmental legislation and regulations and the Terms and Conditions of MVLWB Type A Land Use Permits and Type B Water Licences;
- Facilitate clear and effective communication of TerraX's environmental requirements to employees and contractors to encourage their participation and compliance;

- Provide appropriate training, conduct internal assessment/inspections and the periodic review of procedures during weekly meetings;
- Deal proactively with environmental issues by identifying potential impacts and implementing preventive actions, measures to mitigate and effective contingency plans; and
- Consistently consider the interests of the Stakeholders in exploration activities.

### **3.0 Waste Management Procedure and Characterization**

The objectives of the plan are to:

- Develop a system of appropriate waste disposal, including reuse, recycling, reducing and recovering;
- Minimize and mitigate against any potential impacts to the environment; and
- Comply with Federal and Territorial legislation and the Terms and Conditions provided in the Mackenzie Valley Land and Water Board land use permit documentation.

Waste characterization is used in assessing the appropriate handling, treatment, transportation, and disposal of the waste. Characterization is the assessment of the physical, chemical and toxicological properties of the waste product. These properties are used to determine the dangers relating to handling, storage, and transportation of the waste on public roads, and to determine the environmental consequences of the waste so that an appropriate disposal option can be determined. This also allows the determination of a hazardous or non-hazardous waste as well as dangerous drilling waste classification. Waste transportation and disposal is regulated by the Government of the Northwest Territories (GNWT) and Environment and Climate Change Canada (ECCC).

Regulated wastes include any waste material which is specifically regulated as hazardous, and dangerous for transport. Drilling wastes (drilling fluids and drill cuttings) is conducted under the guidance of the GNWT Lands inspector and the MVLWB.

All waste for this project will be classified into three basic categories from which best management practices can be applied.

1. Hazardous or Potentially Hazardous Wastes.
2. Non-Mineral Waste.
3. Mineral Waste.

TerraX and its contractors will be certified for transportation of dangerous goods, and vehicles will be properly signed and equipped. TerraX will contact the ENR Hazardous Waste Specialist once work activity and drill contractor prepares for site work. If required TerraX will register as

a producer of hazardous waste with the Hazardous Waste Specialist in Yellowknife, Lee Ross at (867) 920-8044 and (867) 873-7562.

TerraX will address waste management with adequate foresight to meet the goal of waste reduction and pollution prevention. Waste generated during the course of the work program on the property will be sorted and removed from site for disposal at appropriate facilities off the property. No waste material of any kind will remain on the property.

#### **4.0 Yellowknife based Drilling Programs Waste Management**

All wastes will be separated, sorted, and disposed of as follow:

Recyclable wastes - will be collected, sorted, removed from site daily and taken to Yellowknife waste management facility.

Combustible wastes – will be collected daily and taken to Yellowknife waste management facility disposal.

Scrap metal – will be collected daily and taken to Yellowknife and disposed of in their waste management facility.

Non-combustible inert wastes – will be removed from site daily and taken to Yellowknife waste management facility.

Non-combustible waste oil and oily rags – will be removed from site daily in sealed containers and taken to Yellowknife waste management facility and disposed using the fees and procedures prescribed by that facility.

Hazardous Wastes – will be removed from site daily in appropriate sealed containers and taken to Yellowknife waste management facility and disposed using the fees and procedures prescribed by that facility. Hazardous waste includes waste fuel (diesel, gasoline, jet fuel, propane), used oil, oil filters, used absorbent pads, paint, chemicals, batteries and used grease.

Non-hazardous waste (construction materials, organics, plastics, metals) materials will be transported to the Yellowknife waste management facility on a daily basis.

Hazardous wastes will be shipped to Yellowknife for reuse, recycling and/or disposal at the waste management facility. Non-hazardous waste includes food, wood, cardboard, plastic, rubber, glass and empty fuel drums.

The sources of waste being generated on the YCGP related to drilling will be:

Source of Waste	Type of Waste
Fuel Handling and Storage	Waste petroleum products, used absorbent pads, empty drums
Chemical Handling and Storage	Used chemicals, empty containers, salt
Equipment maintenance (drills, water pumps and heaters)	Engine oil, oil filters, air filters, scrap metal, batteries, hoses, used absorbent pads, empty drums and containers, packaging
Drill Related	Core boxes, wire, burlap, wooden blocking, worn drill rods, drill bits, plastic end caps and containers, strapping, pallets
Domestic waste	Paper, cardboard, plastics, scrap wood

### 5.0 Camp based Waste Management

The estimated quantities of waste generated by the proposed camp for each category along with characteristics, source and estimated volumes are outlined in Tables 1 to 3.

**Table 1: Hazardous or Potentially Hazardous Wastes Associated with a Camp**

Waste	Characteristics	Source	Estimated volume/mass per year
Incinerator/Ash residue	Ash	Incinerator	1 m3
Lead acid batteries and alkaline batteries	Sealed batteries	Various electronic equipment	10 kg
Used oil, fuels, lubricants, greases, oil filters, and solvents	Fuels, oils and additives	Operation of drills, water pumps and generators	1,000 L
Chemical wastes – liquids or solids (e.g., paint)	Camp cleaning and operations materials	Cleaning solutions, paint	2,000 L
Contaminated soils - Hydrocarbon	soil material with potentially hazardous contamination from hydrocarbons/additives	Hydrocarbon spills	500L

**Table 2: Non-Mineral Wastes Associated with a Camp**

Waste	Characteristics	Source	Estimated volume/mass per year
Domestic refuse	Dry waste / garbage	Camp activities	5,000 kg
Putrescible waste	Food Waste	Kitchen	2,000 kg
Construction materials	Wood, metal and other solid materials	Camp activities	2,000 kg
Sewage– Black water	Sewage	Pacto toilets	1,000 kg
Sewage – Grey water	Drained water used for washing	Kitchen and Dry	50,000 L

**Table 3: Mineral Waste Associated with Camp Based Drilling**

Waste	Characteristics	Source	Estimated volume/mass per year
Drill Cuttings	Non-Toxic Solid Waste	Drilling – finely fragmented rock material and water	50,000 L

Various wastes are generated during the day to day activities associated with an exploration campsite. The camp will be only accessible by aircraft during the summer so additional considerations will apply pertaining to the movement of waste off-site for disposal to an approved facility. The following information will detail the type of waste management that a campsite on the YCGP will utilize:

**Hazardous or Potentially Hazardous Waste**

The hazardous and potentially hazardous materials are kept in secure storage at the TCGP camp. Used materials from camp, and that which is returned from the drills, will be sorted and stored in sealed containers in a designated waste management area at the camp. If materials can remain safely on site they will stored and backhauled on the next winter road. If not then the material will be shipped to Yellowknife via fixed-wing aircraft. There will be separate storage containers for incinerator ash, lead acid batteries, lithium batteries, oil filters, waste oil and fuel, chemical wastes, contaminated soils and sludge. Upon arrival in Yellowknife, the materials will be expedited to the Hazardous Waste Transfer Facility operated by KBL Environmental at #17 Cameron Road in Yellowknife for proper disposal (see Appendix 1 for letter of acceptance from KBL

### **Non-mineral Waste**

The non-mineral waste materials will be sorted at the campsite to remove all reusable or recyclable materials and separate into domestic refuse, putrescible waste, construction materials, black water sewage and greywater sewage. All materials will be stored separately in secure storage at the camp until the material can be backhauled to Yellowknife via winter road or fixed wing aircraft. Once in Yellowknife the material is transported to a suitable landfill. If used the black water sewage will be collected daily from the Pacto toilets and incinerated following all territorial and federal incineration guidelines. Otherwise, camp privies will be used if approved by the Land Use Inspector and the Board.

### **Mineral Waste**

Drill cuttings will be placed in a natural depression or sump at least 100 m from the ordinary high-water mark of the nearest water course (stream or lake) as required under conditions within the Type A Land Use Permit, if issued.

The infrastructure required for waste management in the camp will consist of a combination of on-site storage, incineration, and off-site disposal facilities.

### **Onsite Storage**

- Putrescible storage (wet kitchen scraps) will consist of an insulated bin with a minimum size of (32" by 64" by 54") that is lined with 10 millimetre clear poly. The bin will be designed to ensure that there is no ability for seepage of liquid out of the bin. The lid to the bin will create a seal that will prevent the escape of odours. The bin will be washed as required to help eliminate potential animal attracting odours and it will be inspected daily for potential wildlife attractants.
- Dry storage will consist of sealed sheds. Dry, odourless materials will be placed into garbage bags, cardboard boxes or plastic bins for short term storage prior to incineration or removal from camp. The bin will be swept and cleaned out weekly and inspected daily for potential wildlife attractants.
- Hazardous and potentially hazardous waste – This type of waste will be at a designated waste management facility at the camp. These will be dedicated buildings with shelving and storage for a small quantity of materials awaiting shipment offsite. The buildings will be cleaned weekly. All materials will be stored in sealed drums, lube cubes or pails with ready access to fuel absorbent pads and spill kits. The building and materials stored within will be inspected daily for leakage and potential wildlife attractants.



- A sump box for the grey water from the kitchen and dry will be in place. A design will be forwarded to the Land Use Inspector and the Board once a campsite is chosen.
- An incinerator will be installed and operated at the Camp. The type of incinerator will be forwarded to the Land Use Inspector and the Board prior to the installation in any potential camp site on the YCGP.
- Either pacto toilets or camp privies will be used for the collection of human waste. If Pacto's are used the sealed bags will be removed from the toilets daily for incineration. The Pacto toilets works so that after each individual use the bags are sealed to prevent escape of odours or waste materials. If camp privies are used the disposal of the human waste will comply with the conditions of the Type A Land Use Permit, if issued.

#### **Off-site Disposal**

- Hazardous and potentially hazardous waste materials will be transported to the KBL Environmental Hazardous Waste facilities in Yellowknife for storage, segregation and consolidation of approved waste streams for bulk transportation to specialized end receivers. The facilities are designed, engineered, constructed and maintained to prevent environmental impact through the management of industrial waste. In 2009 KBL developed the Northwest Territories first approved and licensed Hazardous Waste Transfer Facility regulated by the Government of Northwest Territories, Environment and Natural Resources (ENR) to receive waste. The facility is located in Yellowknife's Kam Lake Industrial Park at #17 Cameron Road. The operations are situated on 3.0 acres of Medium Industrial zoned land. The Kam Lake Industrial Area is physically located southwest of the Yellowknife International Airport and Southeast of the City of Yellowknife. The Yellowknife office is located at #343 Old Airport Road Yellowknife, NT X1A 2N8. Ph. 867-873-5263 (See Appendix 1 for Waste Acceptance Letter).

**Appendix 1**

**KBL Letter of Waste Acceptance**

#17 Cameron Road  
P.O. Box 1108  
Yellowknife, NT X1A 2N8

P 867.873.5263  
F 867.669.5555  
kblenvironmental.com

November 29<sup>th</sup>, 2018

Attention: Alan Sexton  
**TerraX Minerals Inc.**  
1605-777 Dunsmuir St.  
Vancouver, BC V7Y 1K4

**Subject: Yellowknife City Gold Project – Letter of Waste Acceptance**

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KBL Environmental Ltd. (KBL) owns and holds a regulatory approval to operate an Industrial Waste Transfer Facility located at #17 Cameron Road in Yellowknife, Northwest Territories. The facility is permitted and regulated through the jurisdiction of the Northwest Territories Department of Environmental and Natural Resources under approval number NT00123. Under this approval KBL is an end receiver of hazardous and non-hazardous wastes.

KBL has been contacted to provide services to manage acceptance of waste generated through exploration activities from TerraX Minerals – Yellowknife City Gold Project in the Northwest Territories. More specifically waste material that we may receive at KBL's Yellowknife Industrial Waste Transfer Facility is as follows but not limited to:

- Metal drums
- Tank or barrel sludge and solids
- Batteries
- Gas cylinders
- Hazardous and non-hazardous liquid hydrocarbon or chemical waste
- Leachable and non-leachable soils impacted with: hydrocarbons and/or metals
- Non Hazardous and Non Regulated Solids.

If there are any questions regarding content included herein please contact our office as required.

Regards,



Jeffrey Bembridge  
KBL Environmental LTD.