

Preliminary Screening Report Form

Preliminary screener: MVLWB Reference / File number: MV2018C0023 MV2018L2-0006 TITLE: New Type A Permit Type B Water Licence ORGANIZATION: TerraX Minerals Inc. (TerraX) MEETING DATE: January 17, 2019 March 7, 2019	EIRB Reference number:
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Type of Development:
(CHECK ALL THAT APPLY)

- New
- Amend, EIRB Ref. #
- Requires permit, licence, or authorization
- Does not require permit, licence, or authorization

Project Summary:
Project History and Purpose of Applications

TerraX Mineral Inc. (TerraX) is currently conducting mineral exploration activities under two Land Use Permits (Permits): MV2014C0005 and MV2016C0038. On May 7, 2015, TerraX was authorized to conduct mineral exploration at the Northbelt and Walsh Lake Properties under its Permit MV2014C0005. On January 12, 2017, TerraX was authorized to conduct mineral exploration in the Southbelt property area under Permit MV2016C0038. As TerraX has acquired additional mineral claims and leases, and plans to expand their mineral exploration project, they have applied for a new Permit MV2018C0023 to encompass the area authorized under both current Permits, as well as additional property not included in the two existing Permits. On December 3, 2018, TerraX applied to have one Permit (MV2018C0023) covering their entire project area, and a Type B Water Licence (Licence) MV2018L2-0006 Application is to use water for additional drilling over the expanded property. On January 17, 2019, the Board issued Permit MV2018C0023. The Licence MV2018L2-0006 Application was going through the regulatory process as an Information Request regarding water source was sent to TerraX on January 15, 2019. Therefore, the Board considered the Licence Application separately from the Permit Application. On January 25, 2019, TerraX submitted a response to the Information Request.

Previously preliminary screening reports of [MV2014C0005 on May 7, 2015](#) and [MV2016C0038 on January 12, 2017](#), and [MV2018C0023 on January 17, 2019](#) have been incorporated in this screening for reference, to ensure all ongoing and proposed activities are included in this current screening of the project. Items that have been previously screened are italicized and indicated as:

- *MV2014C0005 screening on May 7, 2015*
- *MV2016C0038 screening on January 12, 2017*
- *MV2018C0023 screening on January 17, 2019*

The items screened for these Permit Applications are indicated as:

- MV2018L2-0006 screening on March 7, 2019

Project summary from MV2014C0005 screening on May 7, 2015:

- *Mineral exploration at the Northbelt and Walsh Lake Properties*
- *Surface mineral exploration including diamond drilling affecting approximately 30 X30 metres per each drill hole.*
- *Phase I will be carried out within areas previously drilled. Historical trail roads and trails will be used.*
- *It is expected that Phase 1 will take 3 months, planned to start winter of 2014.*
- *Drilling will take a one week break during the annual Yellowknife Loppet in April and a 4-6 week break during break-up, recommencing in late June*
- *Phase II will likely begin Fall 2014 and be expanded to include 20 Shear, Pinto, AES, Island Lake, and Jed shears.*
- *Future drill phases will be carried out dependent on success in previous drill phases. Historical roads and trails will be used*

Project summary from MV2016C0038 screening on January 12, 2017:

On November 30, 2016, TerraX applied for Permit MV2016C0038 to carry out drilling exploration in the Southbelt Property area, located approximately 8 km south of Yellowknife and comprised of 10 mineral claims within an area of 9,138.13 acres (36.98 square kilometers). The purpose of the proposed activities is to explore for gold and base metals (zinc, lead, copper, molybdenum) using diamond drilling. The program can be broken into two main phases:

- Phase 1: Diamond drilling; and
- Phase 2: Additional drilling contingent on results of Phase 1.

Access to the Southbelt Property area is via existing trails, boat and helicopter, and activities are proposed to occur on a year-round basis. Previous exploration activities in the area have occurred since the 1940's, and have mainly consisted of diamond drilling.

Phase 1 activities will be carried out entirely within areas previously drilled, and will involve the use of up to two diamond drills. Existing, well established roads and trails will be used to transport drill equipment to the target area, including previously established ice roads connecting Kam, Keg, Peg, Octopus Lakes. The Phase I portion of the exploration program is expected to take 3 months, commencing in the winter of 2017, and drilling would take place prior to the spring break-up in mid-April to utilize lake access and to minimize environmental damage along access roads. After spring break-up, Phase 1 drilling will continue into late August or early September.

Continued drilling on the Southbelt Property (Phase 2) will be contingent on Phase 1 drilling success, and the success of other ongoing exploration programs (mapping, prospecting, geophysics, geochemistry) that are below the thresholds of the Mackenzie Valley Land Use Regulations (MVLUR).

MV2018C0023 screening on January 17, 2019:

The TerraX 'Yellowknife City Gold Project' (YCGP) is located immediately east, south and north of the City of Yellowknife and covers 782.23 square kilometers. The project is comprised of 164 mineral claims and 134 mineral leases. An additional four mineral claims are currently part of the federally managed Giant Remediation Project, which TerraX does not have access to. These claims are Goodwin #1 (32956), Goodwin #10 (32959), Goodwin #11 (32960), and Goodwin #12 (32961). These claims are not part of these Permit MV2018C0023 and Licence MV2018L2-0006 Applications. As TerraX has acquired more mineral leases and claims, the project area has increased compared to previous screenings.

Access to the YCGP area is via truck on winter roads, ATV, UTV, and snow machine on existing trails, boat, and helicopter. Whenever possible, existing trails are used to gain access for the exploration and drilling activities. New access trails are only necessary based on ground/ice conditions and the location of drill targets away from exiting trails. Exploration work on the northern portion of the YCGP will be accessed by the existing secondary winter road route from Prosperous Lake to Johnston Lake. The methods of access are similar to previous screenings. As TerraX's project area has increased, the amount of trail access and exploration work have increased compared to previous screenings.

The annual diamond drill programs are expected to drill 40 to 80 drill holes and between 10,000 and 20,000 metres with anticipated depths between 50 to 650 metres per each drill hole. The total area directly involved per each drill hole site which includes the drill, heater shack, rod sloop, and equipment is approximately 15 metres X 15 metres (225 m²). As the project has expanded, the amount of drill holes has increased compared to previous screenings.

MV2018L2-0006 screening on March 7, 2019:

During the review of the Applications of MV2018C0023 and MV2018L2-0006, DFO commented that it did not have enough information to assess the Project, and recommended TerraX provide additional information on water source. Therefore, Board staff sent an Information Request to TerraX requiring more information on the water source. On January 26, 2019, TerraX submitted a [response](#) and provided over 900 water sources and its estimated capacity.

Waste Management

All hazardous (i.e. fuels, used oils, chemicals, batteries, paint, contaminated soil), and non-mineral (i.e. black and grey water, construction materials, garbage) wastes will be contained and removed from site on a daily basis to an appropriate and approved facility. Mineral wastes, which are drill cuttings, will be placed in a natural depression or sump. If camp(s) is/are established, the camp(s) 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. Hazardous wastes will be kept in secure storage at camp. Used materials from camp 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 be 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. TerraX has provided a letter of acceptance from KBL Environmental in Appendix 1 of their Waste Management Plan.

As TerraX has applied for camp activities, the management of camp waste is an addition to this screening.

Camp

TerraX has applied for camp activities that has not been previously screened. For the majority of the exploration activities, drilling will be conducted in the areas covered by the current Permits for 2019-2021. In these areas, all personnel are accommodated locally in Yellowknife and are transported to the exploration areas by truck, boat, helicopter, UTV, or ATV. Therefore, no temporary or permanent camp facilities are required. However, temporary and permanent camp facilities will eventually be required on the far northern portion of the property in the Quyta Lake to Clan Lake area. Five potential campsite locations have been identified. It is important to note that not all five campsites would be utilized at one time, it will depend on exploration results throughout the claim block. These locations are all sandy ridges with good drainage adjacent to lakes with deep enough water for float planes to land safely. The potential camps are located on the following lakes:

- 1) Southeast corner of Quyta Lake
- 2) South end of Neck Lake
- 3) Northern end of Johnston Lake (two potential camp locations)
- 4) Southeast of Clan Lake

Equipment

Equipment list from MV2014C0005 screening on May 7, 2015:

- 3 Diamond Drills
- 3 Sloops for Equipment
- 3 Diesel water pumps
- Caterpillar D6k
- CAT 527 or wheel skidder

Equipment list from MV2016C0038 screening on January 12, 2017:

Table 1 Equipment list from January 12, 2017 screening

<u>Type and Number</u>	<u>Size</u>	<u>Purpose</u>
<u>25HH, 30HH, DD50 or H2000 Diamond Drills</u>	<u>23,000 to 25,000 lbs. each</u>	<u>Carry out drilling</u>
<u>Sloop for Equipment (1-3)</u>	<u>Skid mounted, approximately 3-ton capacity each</u>	<u>Carry drill rods, bits and consumables</u>
<u>Electric water pump and 1000 metres of water line (1-3)</u>	<u>3-5 hp motor with up to 1000m of hose per drill with approximate weight of 1000 lbs.</u>	<u>Provide water for drill rig</u>
<u>Insulated pump shack with fuel tank and propane bottles (1-3)</u>	<u>Approximately 1,5000 to 2,000 lbs.</u>	<u>Required during winter conditions to keep water pump and water lines from freezing.</u>
<u>Insulated heat shack for water lines with fuel tank and propane bottles (1 to 3)</u>	<u>Approximately 1,5000 to 2,000 lbs.</u>	<u>Required during winter conditions to keep water pump and water lines from freezing.</u>
<u>Insulated heat shack for each drill with fuel tank (1 to 3)</u>	<u>Approximately 1,5000 to 2,000 lbs.</u>	<u>Required during winter to provide heat to the drill.</u>
<u>Drill cuttings tank (1-3)</u>	<u>Approximately 1,5000 to 2,000 lbs.</u>	<u>Used to collect drill cuttings that are then pumped to a natural land based sump from either a land or ice based drilling site.</u>
<u>Cuttings separator unit inside a wooden shack or a steel container with fuel tank and generator (1-3)</u>	<u>Approximately 8,000 to 10,000 lbs.</u>	<u>Used to collect drill cuttings that are then removed to a natural land based sump. This unit is used to minimize water usage.</u>
<u>D-6 Dozer (1-3)</u>	<u>Approximately 29,000 lbs. each</u>	<u>For moving drills and equipment</u>
<u>Marooka (1-3)</u>	<u>Approximately 32,000 lbs. each</u>	<u>For moving drills and equipment</u>
<u>Skidder (1-3)</u>	<u>Approximately 18,000 lbs. each</u>	<u>For moving drills and equipment</u>
<u>Snowcat with 8 way snow plow (1-2)</u>	<u>Approximately 18,000 lbs. each</u>	<u>For building and grooming ice roads and portages in winter</u>
<u>Ardco water truck with large flotation tires and a V snow plow (1-2)</u>	<u>Approximately 17,000 lbs. each</u>	<u>For building ice roads, drill pads and portages in winter</u>
<u>Electric and diesel powered water pumps with up to 1000 metres of water line (1-3)</u>	<u>Approximately 100 to 200 lbs.</u>	<u>For building ice roads, drill pads and portages in winter</u>
<u>½ ton to 1.5 ton, 4 x 4 wheel drive trucks</u>	<u>Approximately 1,000 to 3,500 lbs.</u>	<u>For moving personnel, light weight drill supplies, fuel and drill core</u>
<u>¾ ton 4 x 4 wheel drive trucks with a 6 way snow plow (1-2)</u>	<u>Approximately 1,500 to 2,000 lbs.</u>	<u>For clearing lake ice and grooming ice roads</u>
<u>Bombardier tracked Ski dozer with 4-way angle plow (1)</u>	<u>Approximately 9,000 lbs.</u>	<u>For building and grooming ice roads and portages in winter</u>

<u>1 ton dump truck (1)</u>	<u>Approximately 2,000 lbs.</u>	<u>For removing snow and ice from drill site clean-ups</u>
<u>Tracked skid steer loader (1)</u>	<u>Approximately 9,000 lbs.</u>	<u>For removing snow and ice from drill site clean-ups</u>
<u>Snow machines with small metal sleds (4 to 6)</u>	<u>Approximately 250-350 lbs. each</u>	<u>For moving personnel, light weight drill supplies, fuel and drill core</u>

Equipment list for MV2018C0023 screening on January 17, 2018:

The equipment listed below (Table 2) is for a range of activity from 1 to 6 drills operating under winter conditions and 1 to 9 drills operating under summer conditions. As TerraX's project has expanded, the overall amount of equipment has increased compared to previous screenings.

Table 2 Proposed equipment list

Type and Number	Size	Purpose
25HH, 30HH, DD50 or H2000 Diamond Drills (6 to 9)	23,000 to 25,000 lbs. each	Carry out drilling
Sloop for Equipment (6-9)	Skid mounted, approximately 3ton capacity each	Carry drill rods, bits and consumables
Electric water pump and 1000m of water line (6-9)	3-5 hp motor with up to 1000m of hose per drill with approximate weight of 1000 lbs.	Provide water for drill rig
Insulated pump shack with fuel tank and propane bottles (6 to 9)	Approximately 1,5000 to 2,000 lbs.	Required during winter conditions to keep water pump and water lines from freezing.
Insulated heat shack for water lines with fuel tank and propane bottles (6 to 9)	Approximately 1,5000 to 2,000 lbs.	Required during winter when the water pump is further away from the drill in order to keep water lines from freezing.
Insulated heat shack for each drill with fuel tank (6 to 9)	Approximately 1,5000 to 2,000 lbs.	Required during winter to provide heat to the drill.
Drill cuttings tank (6-9)	Approximately 1,5000 to 2,000 lbs.	Used to collect drill cuttings that are then pumped to a natural land based sump from either a land or ice based
Portable heated toilets (1 to 3)	Approximately 500 lbs. each	For use with the drilling to minimize impacts
Cuttings separator unit inside a wooden shack or a steel container with fuel tank and generator (1-3)	Approximately 8,000 to 10,000 lbs.	Used to collect drill cuttings that are then removed to a natural land based sump. This unit is used to minimize water usage.
D-6 Dozer (1-3)	Approximately 29,000 lbs. each	For moving drills and equipment
Marooka (3-5)	Approximately 32,000 lbs. each	For moving drills and equipment
Skidder (1-3)	Approximately 18,000 lbs. each	For moving drills and equipment
Snowcat with 8 way snow plow (1-2)	Approximately 18,000 lbs. each	For building and grooming ice roads and portages in winter
Ardco water truck with large flotation tires and a V snow plow (1-2)	Approximately 17,000 lbs.	For building ice roads, drill pads and portages in winter
Electric and diesel powered water pumps with up to 1000 metres of water line (6 to 9)	Approximately 100 to 200 lbs.	For building ice roads, drill pads and portages in winter
½ ton to 1.5 ton, 4 x 4 wheel drive trucks (6 to 9)	Approximately 1,000 to 3,500 lbs.	For moving personnel, light weight drill supplies, fuel and drill core
¾ ton 4 x 4 wheel drive trucks with a 6 way snow plow (1-2)	Approximately 1,500 to 2,000 lbs. each	For clearing lake ice and grooming ice roads
Bombardier tracked Ski dozer with 6-way angle plow (1)	Approximately 7,000 lbs.	For building ice roads, drill roads and portages in winter

1 ton dump truck (1)	Approximately 2,000 lbs.	For removing snow and ice from drill site clean-ups
Tracked skid steer loader (1)	Approximately 9,000 lbs.	For removing snow and ice from drill site clean-ups
Snow machines with small metal sleds (6 to 9)	Approximately 250-350 lbs. each	For moving personnel, light weight drill supplies, fuel and drill core
Cuttings separator unit inside a wooden shack or a steel container with fuel tank and generator (1-3)	Approximately 8,000 to 10,000 lbs.	Used to collect drill cuttings that are then removed to a natural land based sump. This unit is used to minimize water usage.
D-6 Dozer (1-3)	Approximately 29,000 lbs. each	For moving drills and equipment
Marooka (3-5)	Approximately 32,000 lbs. each	For moving drills and equipment
Skidder (1-3)	Approximately 18,000 lbs. each	For moving drills and equipment
Snowcat with 8 way snow plow (1-2)	Approximately 18,000 lbs. each	For building and grooming ice roads and portages in winter
Ardco water truck with large flotation tires and a V snow plow (1-2)	Approximately 17,000 lbs.	For building ice roads, drill pads and portages in winter
Electric and diesel powered water pumps with up to 1000 metres of water line (6 to 9)	Approximately 100 to 200 lbs.	For building ice roads, drill pads and portages in winter
½ ton to 1.5 ton, 4 x 4 wheel drive trucks (6 to 9)	Approximately 1,000 to to 3,500 lbs.	For moving personnel, light weight drill supplies, fuel and drill core
¾ ton 4 x 4 wheel drive trucks with a 6 way snow plow (1-2)	Approximately 1,500 to 2,000 lbs. each	For clearing lake ice and grooming ice roads
Bombardier tracked Ski dozer with 6-way angle plow (1)	Approximately 7,000 lbs.	For building ice roads, drill roads and portages in winter
1 ton dump truck (1)	Approximately 2,000 lbs.	For removing snow and ice from drill site clean-ups
Tracked skid steer loader (1)	Approximately 9,000 lbs.	For removing snow and ice from drill site clean-ups
Snow machines with small metal sleds (6 to 9)	Approximately 250-350 lbs. each	For moving personnel, light weight drill supplies, fuel and drill core

Fuel

Fuel storage from MV2014C0005 screening on May 7, 2015:

3 X 600 litres diesel
6 X 40 litres gasoline
= 2040 litres

Fuel storage from MV2016C0038 screening on January 12, 2017:

Table 3 Fuel storage for MV2016C0038

<i>Fuel Type</i>	<i>Maximum Amount*</i>
Diesel	10,000 litres
Gasoline	2,050 litres
Aviation Fuel	4,100 litres
Propane	2,000 pounds

*Means Maximum amounts of fuel stored on the Southbelt Property.

Fuel storage for MV2018C0023 screening on January 17, 2018:

Fuel storage at each drill site location is projected to consist of approximately 400 litres of diesel within engineered tankage on the drill, one 600 litre double walled containment tank, one 100-lb cylinder of propane and one small safety container (20 litres) of gasoline for UTV, ATV, and snowmobile use. In addition, water pumps will have approximately 50 litres of fuel stored in the water pump tank. The volumes noted above are for one diamond drill; as additional diamond drills are utilized these volumes will increase (Table 4). The number of drills will vary from 1 to 9 depending on the season and the location and number of drill targets to be tested. Storage at fuel caches and transport of fuel will be with engineered double wall containment tanks mounted on truck or tractor with engineered transfer pumps equipped with grounding cables.

Table 4 Proposed Daily Minimum to Maximum Fuel stored at Diamond Drills

Number of Drills	Diesel (litres)	Gasoline (litres)	Propane (lbs)
1 drill	1,150	20	350
6 drills	8,050	140	2,450
9 drills	10,350	180	3,150

Table 5 Proposed Maximum Fuel Cache Amounts for Campsites and related Drilling Activities

Fuel Type	Maximum Amount
Diesel	72,850 litres
Gasoline	5,280 litres
Aviation Fuel	40,000 litres
Propane	12,250 pounds

As TerraX's project has expanded and amount of equipment has increased, the amount of fuel storage has increased compared to previous screenings.

Scope:

Scope from MV2014C0005 screening on May 7, 2015:

This Permit entitles TerraX Minerals Inc. to conduct the following land-use operations:

- a) Mineral exploration, including diamond drilling, trenching, and use and storage of explosives;
- b) Use of equipment, vehicles, and machines;
- c) Construction and maintenance of winter access roads; and
- d) Fuel storage.

Scope from MV2016C0038 screening on January 12, 2017:

This Permit entitles the Permittee to conduct the following land-use operations:

- a) Mineral exploration, including diamond drilling;
- b) Use of equipment, vehicles, and machines;
- c) Construction and maintenance of access roads; and
- d) Use and storage of fuel.

Scope for MV2018C0023 screening on January 17, 2018:

- a) Mineral exploration including diamond drilling;
- b) Use of equipment, vehicle, and machines;
- c) Use and storage of fuel;
- d) Construction, operation, and maintenance of camp(s); and
- e) Construction, operation, and maintenance of winter road and access road.

Items d) camp(s) have not previously been included in the scope.

Additional scope for MV2018L2-0006 screening on March 7, 2019:

- a) Withdrawal of water;
- b) Deposit of waste; and
- c) Progressive Reclamation and associated closure activities.

Land Use Eligibility - Section 18 Mackenzie Valley Land Use Regulations: 18 (a)(i)

Type of Disposition

Mineral Claims

Disposition Number(s)

MV2014C0005 screening on May 7, 2015:
Northbelt: K16943 - K16946, K16972 - K16977
Walsh Lake: 45132 - 45136

MV2018C0023 screening on January 17, 2019:

164 Mineral Claims as listed in Appendix 1 of the Application's [Exploration Plan](#)

Prospecting Permit (s)

Mineral Leases

MV2014C0005 screening on May 7, 2015

Northbelt: 2554 - 2573, 2577-2579, 2597, 2598, 2606-2609, 2693-2705, 2805-2816, 2921-2930, 3038, 4245-4248, 4250-4255, 3334, 2386-2410, 2455-2474

Walsh Lake: NT3622 – 3625, NT3172, NT4814, NT3676

MV2016C0038 screening on January 12, 2017:

K19813, K19815, K19669, K19670, K19788, K19905, K19906, M10087, M10088, M10089.

MV2018C0023 screening on January 17, 2019:

134 Mineral Leases as listed in Appendix 1 of the Application's [Exploration Plan](#)

Oil and Gas: EL/SDL/PL

Quarry Permit

Timber Permit

Other:

Principal Activities (*related to scoping*) (CHECK ALL THAT APPLY)

- | | | |
|--|---|---|
| <input checked="" type="checkbox"/> Construction | <input checked="" type="checkbox"/> Exploration | <input checked="" type="checkbox"/> Decommissioning |
| <input checked="" type="checkbox"/> Installation | <input type="checkbox"/> Industrial | <input type="checkbox"/> Abandonment |
| <input checked="" type="checkbox"/> Maintenance | <input type="checkbox"/> Recreation | <input type="checkbox"/> Aerial |
| <input type="checkbox"/> Expansion | <input type="checkbox"/> Municipal | <input type="checkbox"/> Harvesting |
| <input checked="" type="checkbox"/> Operation | <input type="checkbox"/> Quarry | <input checked="" type="checkbox"/> Camp |
| <input type="checkbox"/> Repair | <input type="checkbox"/> Linear / Corridor | <input type="checkbox"/> Scientific/ |
| <input type="checkbox"/> Research | <input checked="" type="checkbox"/> Sewage | <input checked="" type="checkbox"/> Solid Waste |
| <input checked="" type="checkbox"/> Water Intake | | |
| <input type="checkbox"/> Other: | | |

Principal Development Components (*related to scoping*) (CHECK ALL THAT APPLY)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Access Road | <input checked="" type="checkbox"/> Waste Management |
| <input checked="" type="checkbox"/> construction | <input checked="" type="checkbox"/> disposal of hazardous waste |
| <input checked="" type="checkbox"/> abandonment/removal | <input checked="" type="checkbox"/> waste generation |
| <input checked="" type="checkbox"/> modification e.g., widening, straightening | <input checked="" type="checkbox"/> sewage |
| <input checked="" type="checkbox"/> Automobile, Aircraft or Vessel Movement | <input checked="" type="checkbox"/> disposal of sewage |
| <input type="checkbox"/> Blasting | <input checked="" type="checkbox"/> Geoscientific Sampling |
| <input type="checkbox"/> Building | <input type="checkbox"/> Trenching |
| <input checked="" type="checkbox"/> Burning | <input checked="" type="checkbox"/> Diamond drill |
| <input type="checkbox"/> Burying | <input checked="" type="checkbox"/> Borehole core sampling |
| <input type="checkbox"/> Channelling | <input type="checkbox"/> Bulk soil sampling |
| <input type="checkbox"/> Cut and Fill | <input type="checkbox"/> gravel |
| <input checked="" type="checkbox"/> Cutting of Trees or Removal of Vegetation | <input type="checkbox"/> hydrological Testing |
| <input type="checkbox"/> Dams and Impoundments | <input type="checkbox"/> Site Restoration |
| <input type="checkbox"/> construction | <input type="checkbox"/> fertilization |
| <input type="checkbox"/> abandonment/removal | <input type="checkbox"/> grubbing |
| <input type="checkbox"/> modification | <input type="checkbox"/> planting/seeding |
| <input type="checkbox"/> Ditch Construction | <input type="checkbox"/> reforestation |
| <input type="checkbox"/> Drainage Alteration | <input type="checkbox"/> scarify |
| <input type="checkbox"/> Drilling other than Geoscientific | <input type="checkbox"/> spraying |
| <input type="checkbox"/> Ecological Surveys | <input type="checkbox"/> re-contouring |
| <input type="checkbox"/> Excavation | <input checked="" type="checkbox"/> Slashing and removal of vegetation |
| <input type="checkbox"/> Explosive Storage | <input type="checkbox"/> Soil Testing |
| <input checked="" type="checkbox"/> Fuel Storage | <input type="checkbox"/> Stream Crossing/Bridging |

- Topsoil, Overburden or Soil
 - fill
 - disposal
 - removal
 - storage

- Tunnelling/Underground
- Other:

NTS topographic map sheet numbers:
NTS 085J / 07, 08, 09 and 16

Latitude / longitude and UTM system:

MV2014C0005 screening on May 7, 2015
62° 32' 13" N, 114° 13' 48" W and 62° 40' 37" N, 114° 25' 00" W

MV2016C0038 screening on January 12, 2017:
Minimum Latitude: 62°, 19', 23" Maximum latitude: 62°, 26', 05"
Minimum longitude: -114°, 20', 11" Maximum longitude: -114°, 34', 04"

MV2018C0023 screening on January 17, 2019:
Minimum Latitude: 62° 20' 00"N Maximum latitude: 62° 58' 00"N
Minimum longitude: 114° 05' 00"W Maximum longitude: 114° 32' 00"W

NAD83 Zone 11

Nearest community and water body:
Yellowknife, NT; Great Slave Lake

Land Status (consultation information)

- Free Hold/Private
- Commissioner's/Territorial Lands
- Federal Crown Land
- Municipal Land

Transboundary/Transregional Implications

- British Columbia
- Nunavut
- Wek'èezhii
- Alberta
- National Park
- Gwich'in
- Saskatchewan
- Inuvialuit Settlement Region
- Sahtu
- Yukon

Type of transboundary implication: Impact / Effect Development

Public concern: _____
(Describe.)

Physical - Chemical Effects

Impact Mitigation
1) Ground Water

- water table alteration MV2014C0005 screening on May 7, 2015:
The condition on flowing artesian wells should mitigate this.

MV2018C0023 screening on January 17, 2019:
Impacts and mitigations on the water table remain similar to those of activities previously screened.

MV2018L2-0006 screening on March 7, 2019:
The expanded drilling activities may increase the potential impacts to water table alteration, but the mitigations are similar to those previously screened.

- water quality changes MV2014C0005 screening on May 7, 2015:

Non-toxic drilling waste should be disposed in a sump, toxic drilling waste should be disposed at an approved disposal facility so they do not enter any body of water. Spill Contingency Plan will be in place to address potential spills and with a requirement to contact the NWT 24-Hour Spill Line (867) 920-8130.

MV2018C0023 screening on January 17, 2019:

TerraX has submitted a Spill Contingency Plan to mitigate the potential release of unauthorized discharge to the environment.

The impacts and mitigations on groundwater quality remain similar to those activities previously screened.

MV2018L2-0006 screening on March 7, 2019:

The expanded drilling activities may increase the potential impacts to ground water quality, but the mitigations are similar to those previously screened.

infiltration changes

other:

N/A

Impact

2) Surface Water

Mitigation

flow or level changes

water quality changes

MV2014C0005 screening on May 7, 2015:

Non-toxic drilling waste should be disposed in a sump, toxic drilling waste should be disposed at an approved disposal facility so they do not enter any body of water Spill Contingency Plan will be in place to address potential spills and with a requirement to contact the NWT 24-Hour Spill Line (867) 920-8130. Proper fuel handling and waste disposal should mitigate this impact.

MV2016C0038 screening on January 12, 2017:

The use of fuel and heavy equipment near water or on ice may impact water quality if a spill occurs or if sediments are transported into the water. Conditions from the 'Standard Conditions for a Land Use Permit' list will be suggested to ensure water quality is maintained.

MV2018C0023 screening on January 17, 2019:

TerraX will also ensure that all heavy equipment and refuelling vehicles carry portable spill kits that include items such as absorbent pads, containment booms, and spill pool catchment receptacles. Readily available and fully stocked spill kits can effectively mitigate potential spills. TerraX has submitted a Spill Contingency Plan with its Application to mitigate the impacts of spill on surface water quality.

Artesian aquifers may be encountered during drilling activities and impact the surrounding water quality. TerraX is required to seal the borehole, and dispose of the generated fluids as approved by the Board and an Inspector.

Drill cuttings will be deposited in sumps at least 100 m from ordinary high-water mark of the nearest waterbody.

The impacts of camp activities on surface water quality has not been previously screened. TerraX has submitted a Waste Management Plan to handle sewage and greywater, which should mitigate the impacts of camp waste on surface water.

The impacts and mitigations on surface water quality are similar to those previously

screened.

MV2018L2-0006 screening on March 7, 2019:

The deposit of waste may increase the potential cumulative impacts on surface water quality, but the mitigations are similar to those previously screened.

water quantity changes

MV2018C0023 screening on January 17, 2019:

The use of Water for diamond drilling and camp use could impact the water quantity of lake sources.

The impacts of the camp on water quantity has not been previously screened. The water volumes and water source have not been identified in the Application. The Licence MV2018L2-0006 Application is still going through the regulatory process, and the potential impacts and mitigation will be assessed by the Board once the water source and water volumes are identified.

MV2018L2-0006 screening on March 7, 2019:

In response to an Information Request, TerraX provided over 900 potential water sources and its estimated capacity in its mineral claim and lease. TerraX indicated 0.5% of those potential water sources would be used. TerraX has also agreed to submit a Water Use Report to submit volume of water used, and the capacity of the water sourced used, which will help the Inspector keep track of its water use.

drainage pattern changes

MV2014C0005 screening on May 7, 2015:

Land Use Permit Condition in place to prohibit the obstruction of natural drainages

MV2018C0023 screening on January 17, 2019:

The impacts and mitigation on drainage pattern are similar to those previously screened.

MV2018L2-0006 screening on March 7, 2019:

The expanded project area may increase the potential impacts to drainage patterns, but the mitigations are similar to those previously screened.

temperature

wetland changes/loss

other:

N/A

Impact
3) Noise

Mitigation

noise in/near water

MV2014C0005 screening on May 7, 2015:

No mitigation - Localized noise increase due to equipment use.

MV2016C0038 screening on January 12, 2017:

Noise increase is expected due to road activities and the use of machinery. These impacts will be temporary in nature, and cease as soon as equipment passes by an area, or is turned off. No mitigation proposed.

MV2018C0023 screening on January 17, 2019:

The impacts and mitigation on noise in/near water are similar to those previously screened.

MV2018L2-0006 screening on March 7, 2019:

Water withdrawal may increase the noise in/near water, but the impact and mitigation are similar to those previously screened.

noise increase

MV2014C0005 screening on May 7, 2015:

No mitigation - Localized noise increase due to equipment use.

MV2016C0038 screening on January 12, 2017:

Noise increase is expected due to road activities and the use of machinery. These impacts will be temporary in nature, and cease as soon as equipment passes by an area, or is turned off. No mitigation proposed.

MV2018C0023 screening on January 17, 2019:

The impacts and mitigation on noise increase are similar to those previously screened.

MV2018L2-0006 screening on March 7, 2019:

The impact and mitigation on noise increase are similar to those previously screened.

other:

N/A

Impact
4) Land

Mitigation

geologic structure changes

soil contamination

MV2014C0005 screening on May 7, 2015:

A Spill Contingency Plan will be in place to outline preventative spill measures and address spill clean-up.

Proper fuel handling and waste disposal should mitigate this impact.

MV2016C0038 screening on January 12, 2017:

There is the potential for soil contamination due to the fuel being transported and used by equipment. Conditions from the 'Standard Conditions for a Land Use Permit' list will be suggested to ensure soil is not contaminated by fuel.

MV2018C0023 screening on January 17, 2019:

The impacts and mitigation on soil contamination are similar to those previously screened. TerraX will also ensure that all heavy equipment and refuelling vehicles carry portable spill kits that include items such as absorbent pads, containment booms, and spill pool catchment receptacles. Readily available and fully stocked spill kits can effectively mitigate potential spills.

MV2018L2-0006 screening on March 7, 2019:

The deposit of waste may increase the potential for soil contamination, but the mitigations are similar to those previously screened.

buffer zone loss

soil compaction and settling

MV2014C0005 screening on May 7, 2015:

Some soil compaction may be expected through the increase use of equipment. As previous exploration programs have impacted this area, there is little potential for significant impact to the local environment through soil compaction. Land Use Permit Conditions have been put in place to minimize rutting and soil compaction.

MV2016C0038 screening on January 12, 2017:

Heavy equipment and vehicle movements have the potential to increase localized soil compaction and settling. Established erosion and sediment control measures should be followed.

MV2018C0023 screening on January 17, 2019:

The impact of the camp operations has not been previously screened. TerraX is required to locate camps on Durable Land or previously cleared areas, which should mitigate the impacts of camp activities on soil compaction. Other impacts and mitigation on soil compaction and settling are similar to those previously screened.

MV2018L2-0006 screening on March 7, 2019:

The impacts and mitigation are similar to those previously screened.

destabilization/erosion

MV2014C0005 screening on May 7, 2015:

Using proper mining techniques will likely mitigate any destabilization potential.

MV2016C0038 screening on January 12, 2017:

Erosion/sedimentation may increase as a result of heavy equipment operation. Standard prevention techniques and established erosion and sediment control measures should be followed.

MV2018C0023 screening on January 17, 2019:

The impacts and mitigation on erosion are similar to those previously screened. TerraX is required to conduct daily erosion inspections of Discharge points during periods of Discharge, which should mitigate the impacts on erosion.

MV2018L2-0006 screening on March 7, 2019:

The expansion of drilling activities, deposit of waste, and equipment may increase the potential destabilization/erosion. However, the impacts and mitigation on erosion are similar to those previously screened.

permafrost regime alteration

MV2018C0023 screening on January 17, 2019:

Local areas of discontinuous permafrost occur in the upper 3 to 5 metres of low-lying swampy areas. Drilling activities thus far has not intersected significant permafrost. TerraX is required to insulate ground surface under all structures to protect the permafrost.

MV2018L2-0006 screening on March 7, 2019:

The expansion of drilling project may increase the potential impacts on permafrost, but the impacts and mitigation are similar to those previously screened.

explosives/scarring

other:

N/A

Impact

5) Non-renewable natural resources

Mitigation

resource depletion

MV2014C0005 screening on May 7, 2015:

No mitigation – As described on page 8 of the Exploration Plan (Original Application) over the 5 years of the permit it is likely that total of 100,000 meters of drilling will be carried out.

MV2018C0023 screening on January 17, 2019:

Impacts and mitigation on resources is similar to those previously screened.

MV2018L2-0006 screening on March 7, 2019:

Increase in drilling activities may have more impact on resource depletion. However, the Impacts and mitigation on resources is similar to those previously screened.

other:

N/A

Impact
6) Air/climate/atmosphere

Mitigation

other:

MV2014C0005 screening on May 7, 2015:

No mitigation – Air quality will be temporarily affected by vehicle and equipment use.

MV2018C0023 screening on January 17, 2019:

The impacts of the camp have not been previously assessed. Incinerator in the camp may release harmful substances in the air. TerraX will set emission limits in accordance with Canada-Wide Standards (CWS) for Dioxins and Furans (CCME 2001), CWS for Mercury Emissions (CCME 2000), and the NWT Ambient Air Quality Guidelines. These requirements will mitigate the impact of burning on air quality.

MV2018L2-0006 screening on March 7, 2019:

The impacts and mitigation have been assessment in the MV2018C0023 screening on January 17, 2019. The Impacts and mitigation on air/climate/atmosphere is similar to those previously screened.

N/A

BIOLOGICAL ENVIRONMENT

Impact
1) Vegetation

Mitigation

species composition

MV2014C0005 screening on May 7, 2015:

Natural regeneration should mitigate this impact.

MV2018C0023 screening on January 17, 2019:

Impacts and mitigation on vegetation species are similar to those previously screened.

MV2018L2-0006 screening on March 7, 2019:

Impacts and mitigation on vegetation species are similar to those previously screened.

species introduction

toxin/heavy accumulation

other: Linear Migration routes, habitat fragmentation

MV2016C0038 screening on January 12, 2017:

A Wildlife Management and Mitigation Plan has been submitted and reviewed with the Application. Conditions will be suggested to ensure the protection of migration routes and habitats.

MV2018C0023 screening on January 17, 2019:

Impacts and mitigation on migration routes and habitat are similar to those previously screened.

MV2018L2-0006 screening on March 7, 2019:

The Impacts and mitigation have been assessed in the MV2018C0023 screening on January 17, 2019.

N/A

Impact
2) Wildlife and Fish

Mitigation

effects on rare, threatened or endangered species

MV2018C0023 screening on January 17, 2019:

The project area overlaps with the ranges of the following NWT-listed and/or pre-listed species: Boreal Caribou (Threatened in the NWT), Barren-ground Caribou (Threatened in the NWT), Grizzly Bear (Special Concern in NWT), Little Brown Myotis (bat) (Special Concern in the NWT), and Wood Bison (Threatened in the NWT). However, ENR has indicated during the review period that the likelihood of impacts on these species at risk is minimal. In addition, TerraX has submitted a Wildlife Management and Mitigation Plan.

MV2018L2-0006 screening on March 7, 2019:

The Impacts and mitigation have been assessed in the MV2018C0023 screening on January 17, 2019.

fish population changes

MV2018C0023 screening on January 17, 2019:

Water intake may impact the fish population. The water volumes and water source have not been identified in the Application. The Licence MV2018L2-0006 Application is still going through the regulatory process, and the potential impacts and mitigation will be assessed by the Board once the water source and water volumes are identified.

MV2018L2-0006 screening on March 7, 2019:

Increase in water intake for drilling activities may increase the potential impacts on fish population if the water source is fish bearing. If a water source is fish bearing, TerraX is required to seek approval from the Inspector on the location of the water intake pipe. This requirement may reduce the potential impacts of water intake on the fish population.

waterfowl population changes

breeding disturbance

MV2018C0023 screening on January 17, 2019:

A Wildlife Management and Mitigation Plan has been submitted with the Application. The use of equipment for drilling and camp use could impact fish and wildlife breeding habitat. Conditions related to equipment use can be included to ensure the protection of breeding of wildlife and fish.

MV2018L2-0006 screening on March 7, 2019:

Increase in water intake for drilling activities may increase breeding disturbance. In addition to the TerraX's Wildlife Management and Mitigation Plan, TerraX is required to seek approval from the Inspector on the location of the water intake pipe. This requirement may reduce the potential impacts of water intake pipe being placed where the fish are spawning.

- population reduction
- species diversity change
- health changes

behavioural changes

MV2014C0005 screening on May 7, 2015:

The Permittee shall take all reasonable measures to prevent damage to wildlife and fish Habitat during this land-use operation.

MV2018C0023 screening on January 17, 2019:

The impacts of camp activities on wildlife behavior change have not been previously assessed. Greywater, blackwater, food, and garbage may attract wildlife. TerraX will handle and store food and garbage (e.g. sealed animal proof containers) to minimize the attractions of wildlife. Greywater and blackwater will be treated and disposed of in a manner to minimize wildlife attraction.

MV2018L2-0006 screening on March 7, 2019:

The Impacts and mitigation have been assessed in the MV2018C0023 screening on January 17, 2019.

habitat changes / effects

MV2016C0038 screening on January 12, 2017:

A Wildlife Management and Mitigation Plan has been submitted with the Application. Conditions will be suggested to ensure the protection of wildlife.

MV2018C0023 screening on January 17, 2019:

The impacts of camp activities on habitat has not been previously assessed. The use of equipment for drilling and camp use could impact fish and wildlife habitat. TerraX is required to locate camps on previously cleared areas. Moreover, conditions related to equipment use can be included to ensure the protection of wildlife and fish habitat. Other impacts and mitigations on habitat are similar to those previously screened.

MV2018L2-0006 screening on March 7, 2019:

The Impacts and mitigation have been assessed in the MV2018C0023 screening on January 17, 2019.

game species effects

MV2014C0005 screening on May 7, 2015:

The Permittee shall take measures to prevent disturbance to caribou.

MV2018C0023 screening on January 17, 2019:

A Wildlife Management and Mitigation Plan has been submitted with the Application, which includes species-specific mitigation measures on caribou.

MV2018L2-0006 screening on March 7, 2019:

The Impacts and mitigation have been assessed in the MV2018C0023 screening on January 17, 2019.

toxins/ heavy metals

forestry changes

agricultural changes

other:

N/A

Interacting Environment

Impact

1) Habitat and Communities

- predator-prey
- wildlife habitat/ecosystem composition changes

Mitigation

MV2018C0023 screening on January 17, 2019:

A Wildlife Management and Mitigation Plan has been submitted with the Application. The use of equipment for drilling and camp use could impact fish and wildlife habitat. Conditions related to equipment use can be included to ensure the protection of wildlife habitat.

TerraX will conduct pre-activity surveys to identify active bear dens if exploration activity is being conducted in new areas. If identified, TerraX will set an 800 m exclusion zone from the bear den.

MV2018L2-0006 screening on March 7, 2019:

The Impacts and mitigation have been assessed in the MV2018C0023 screening on January 17, 2019.

- reduction/removal of keystone or endangered species
- removal of wildlife corridor or buffer zone
- other:
- N/A

Impact

2) Social and Economic

- planning/zoning changes or conflicts
- increase in urban facilities or services use
- rental house
- airport operations/capacity changes
- human health hazard
- impair the recreational use of water or aesthetic quality
- affect water use for other purposes
- affect other land use operations
- quality of life changes

Mitigation

MV2018C0023 screening on January 17, 2019:

Activities near cabins in and around the Walsh Lake, Banting Lake, and other areas may disturb the cabin users. The Board could set a 50-metre buffer zone from cabins and ensure TerraX engage and accommodate cabin owners. This will minimize the impacts on the cabin owners near the project area.

MV2018L2-0006 screening on March 7, 2019:

The Impacts and mitigation have been assessed in the MV2018C0023 screening on January 17, 2019.

public concern

other:

N/A

Impact

3) Cultural and Heritage

Mitigation

effects to historic property

increased economic pressure on historic properties

change to or loss of historic resources

change to or loss of archaeological resources

increased pressure on archaeological sites

MV2014C0005 screening on May 7, 2015:

Land Use Permit Conditions in place to mitigate change to or loss of archaeological resources.

MV2018C0023 screening on January 17, 2019:

Mineral exploration activities may potentially impact archaeological sites. TerraX will follow its Chance Find Procedure submitted with its Application. TerraX has conducted several studies on the archaeological sites in the previous project area. TerraX is required to conduct new studies if any mineral exploration is conducted in the expanded project area. For known archaeological sites, TerraX is required to use a 30 m buffer from the sites. These requirements will mitigate the risk to archaeological sites.

MV2018L2-0006 screening on March 7, 2019:

The Impacts and mitigation have been assessed in the MV2018C0023 screening on January 17, 2019.

change to or loss of aesthetically important sites

effects to aboriginal lifestyle

other:

N/A

- Pursuant to Schedule 4.1 of the **Northwest Territory Métis Nation (NWTMN)** Interim Measures Agreement, the MVLWB determined that written notice was given to the NWTMN and that a reasonable period of time was allowed for NWTMN to make representations with respect to the Application.
- Pursuant to subsection 1.6, paragraphs (a) and (b) of the **Akaiicho Territory Dene First Nations (ATDFN)** Interim Measures Agreement, the MVLWB determined that written notice was given to the ATDFN and that a reasonable period of time was allowed for ATDFN to make representations with respect to the Application.

Preliminary Screener / Referring Body Information

Akaitcho IMA Implementation Office
Athabasca Denesuline Council CO Prince Albert Council
Bathurst Inlet Development Ltd.
Bathurst Inlet Lodge
BNT Gold Resources Ltd.
CanNor NWT Region
City of Yellowknife
Dene Nation
Deninu K'ue First Nation
Det'on Cho Corporation
Environment and Climate Change Canada
Fisheries and Oceans Canada
Fort Smith Métis Council
GNWT-ECE
GNWT - ENR
GNWT - Health
GNWT – INF
GNWT - ITI
GNWT - Lands
GNWT - MACA
Golder Associates
Hamlet of Fort Resolution
Hay River Metis Council
INAC - CARD
INAC - NWT Inspectors
Katlodeeche First Nation
Lutsel K'e Dene First Nation - Chief or Wildlife, Lands and Environment
Mackenzie Valley Environmental Impact Review Board
Manitoba Denesuline
MVLWB
National Energy Board
North Slave Metis Alliance
Northwest Territory Métis Nation
NWT & Nunavut Chamber of Mines
NWT – OROGO
Salt River First Nation
Smith's Landing First Nation
Snap Lake Environmental Monitoring Agency - SLEMA
Town of Fort Smith
Tłı̄chǫ Government
Tłı̄chǫ Lands Protection Department
Wek'eezhii Renewable Resources Board
West Point First Nation
WLWB
Wood
Workers' Safety and Compensation Commission
Yellowknives Dene First Nation

Reasons For Decision

(List all reasons and supporting rationales for preliminary screening decision)

DECISION

The Mackenzie Valley Land and Water Board (the Board) is satisfied that the preliminary screening of Applications MV2018C0023 and MV2018L2-0006, TerraX Minerals Inc., Mineral Exploration, Yellowknife, NT has been completed in accordance with section 125 of the *Mackenzie Valley Resource Management Act (MVRMA)*.

The Board is satisfied that communities and First Nations affected by the Applications have been notified and provided adequate time to provide comment on the Application as required by land claim and self government agreements, the MVRMA, policy directions relating to Interim Measures Agreements, and any other applicable legislation and agreements.

Having reviewed all relevant evidence on the Public Registry, including the submissions of the Applicant, the written comments received by the Board and any Staff Reports prepared for the Board, the Board has decided that in its opinion:

- The proposed development will not have a significant adverse impact on the environment; and
- The proposed development is not a cause of public concern.

The Board is also of the opinion that the Applications can proceed through the regulatory process and that any impacts of the development on the environment can be mitigated through the imposition of the terms and conditions in the attached Land Use Permit and Water Licence.

As a result, the Board, having due regard to the facts and circumstances, the merits of the submissions made to it, and to the purpose, scope, and intent of the MVRMA and the Mackenzie Valley Land Use Regulations and the *Waters Act* and Waters Regulations has decided that this Land Use Permit and Water Licence be issued subject to the terms and conditions contained therein.

Preliminary Screening Decision	
<input checked="" type="checkbox"/>	Outside Local Government Boundaries
<input type="checkbox"/>	The development proposal might have a significant adverse impact on the environment, <i>refer it to the EIRB.</i>
<input checked="" type="checkbox"/>	<i>Proceed with regulatory process and/or implementation.</i>
<input type="checkbox"/>	The development proposal might have public concern, <i>refer it to the EIRB.</i>
<input checked="" type="checkbox"/>	<i>Proceed with regulatory process and/or implementation.</i>
<input type="checkbox"/>	Wholly Within Local Government Boundaries
<input type="checkbox"/>	The development proposal is likely to have a significant adverse impact on air, water or renewable resources, <i>refer it to the EIRB.</i>
<input type="checkbox"/>	<i>Proceed with regulatory process and/or implementation.</i>
<input type="checkbox"/>	The development proposal might have public concern, <i>refer it to the EIRB.</i>
<input type="checkbox"/>	<i>Proceed with regulatory process and/or implementation.</i>

Preliminary Screening Organization

Mackenzie Valley Land and Water Board

March 7, 2019

Signatures



Mavis Cli-Michaud, Chair