Preliminary Screening Report Form

Preliminary screener: MVLWB **Reference / File number:** MV2019X0006 **TITLE:** New Type A Land Use Permit **ORGANIZATION:** Teck Metals Ltd. **MEETING DATE:** May 16, 2019	**EIRB** **Reference number:**

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:

A Type B Licence N1L3-0035 was issued on June 1, 1993 for five years, which was followed by Type B Licence N1L2-0035, issued on July 1, 1997, for a ten-year term to June 30, 2007. In July 2001, Cominco and Teck Metals merged. Since the merger, Teck has been managing the site. On October 26, 2007, the Board issued Teck the MV2006L2-0013 Licence. In June 2009, Teck Cominco Metals Ltd. changed its name to Teck Metals Ltd.

On December 18, 2017, the Board issued a Type B renewal Water Licence MV2017L2-0007 to continue water monitoring and management at the Pine Point Tailings Impoundment Area (TIA). The MV2017L2-0007 Licence authorizes to monitor and treat impacted water on site. The water treatment plant injects a lime/water mixture into the impacted water as it flows through a settling channel. The water becomes more alkaline (higher pH) due to the lime injection, which leads to a chemical precipitation reaction, where the zinc separates out from the water and become a solid that settles to the bottom of the channel. The treated water is then discharged to the receiving environment.

On October 25, 2017, Teck's 1991 Closure and Reclamation Plan with 2006 updates were approved by the Board as an interim submission (attached). At the time of the MV2017L2-0007 Licence renewal, Teck was required to submit a Reclamation Research Plan on May 1, 2018 and Closure and Reclamation Plan by December 31, 2020. On May 1, 2018, Teck submitted a Reclamation Research Plan in accordance with Licence MV2017L2-0007, Part H, condition 3. The Reclamation Research Plan describes the research will be conducted in order to help select a closure option and support the Closure and Reclamation Plan. The Reclamation Research Plan was reviewed and approved by the Board on July 19, 2018. The Permit Application is associated with these reclamation research activities.

Scope:

On June 25, 1992, a letter regarding the preliminary screening of Teck's N1L2-0035 Licence was sent from Minister of INAC to the N.W.T. Water Board. The letter indicates that the screening of N1L2-0035 was conducted under the *Canadian Environmental Assessment Act* in June 1990 and INAC is satisfied that 'any potentially adverse environmental and related social effects that may be caused by the project area insignificant or mitigable with known technology'. The renewed Licence MV2006L2-0013 and MV2017L2-0007 were exempted from preliminary screening as under schedule 1, section 2 of the Exemption List Regulations of the MVRMA. The screening of this form is only for the scope of the Permit as the scope of the Licence is considered exempted.

On March 28, 2019, Teck submitted a Type A Land Use Permit to conducted land use activities associated with its water treatment and reclamation research activities at the Pine Point TIA as described in Teck's approved Reclamation Research Plan. The activities associated with the water treatment is the maintenance of dykes. The reclamation research activities include environmental and geotechnical investigation and implementing on-site reclamation trials for passive water treatment and vegetation. These land use activities require the use of equipment, vehicles, machines, use and maintenance of access roads, use of a temporary camp, and use and storage of fuel. The maximum fuel proposed by Teck is 530 L. The generators are refueled manually via the jerry-can, while the machineries are re-fueled via pumping from tidy tanks on the back of pick-up trucks.

Maintenance of the access road and dyke involves on-going removal of vegetation to ensure structural integrity. Replenishing any fill material that was eroded away as required for dykes, cover, and road surface. Equipment such as grader, bulldozers, dump trucks, and excavators will be used to for the site maintenance.

The environmental and geotechnical investigations include surveys of surface water, groundwater, soil, tailings, and vegetation. Boreholes and test pits will be used for soil and tailings surveys. Potable water (5 – 10 m^3/day) from Hay River will be transported on

site for drilling the boreholes with 2 drill rigs. While drilling, geotechnical instrumentation may be installed to monitor the groundwater and subsurface soil. In addition, some groundwater monitoring wells will be installed for the collection of water samples. To investigate the direction of flow on site, approximately 1 ha of vegetation will be cleared by hand when possible to survey the topography (elevation and slope). ATVs and snowmobiles will be used for conducting land surveys.

Passive water treatment technologies will be installed on-site for field trials. One ha or less of vegetation will be cleared for these on-site trials. The trial area will be graded with the use of excavators, dozers, and/or graders to direct water from the main pond to the constructed wetland. In order to determine the capacity of the local wetland to treat tailing-impacted water, Teck is proposing to collect three 1-m^2 patches of vegetation from the site and sent them off-site for laboratory experiment in a controlled environment.

On-site vegetation trials will be conducted with weathered and fresh logs to determine the effectiveness of plant growth. The trials will be conducted on 3 to 6 plots that are 10 m x 10 m in size. The logs cleared from the wetland clearing mentioned above will be used for this vegetation trial.

A temporary camp will be set up while the investigations are conducted on site. The accommodation consists of a Recreational Vehicle (RV) trailer with a tarped-in porch tent. Two people will stay in the temporary camp for 42 operating days in one calendar year.

Equipment:

Number	Type and Size
1 to 2	Excavator – Cat 336EL (or similar)
1	Hiab Boom Truck
1 to 2	Dump Truck – Cat 770 (or similar)
1 to 2	Bulldozer – Cat D8 (or similar)
1	Grader
1	Hydro-Vac Truck
1	Tanker Truck
1	Hydrated Lime Silo
1	Lime Mix Chamber
1	Water Treatment Equipment Trailer
1	Laboratory Trailer
1-3	5 kW Generator
5	Pumps
1	Small diesel fuel tank (tidy tank)
1	Flatbed Truck
1-2	Snowmobile
1-2	ATV/UTV
1	Helicopter
1	Boat
1	RV Trailer
1-2	Drill Rig
1-5	Light Duty Support Trucks

Fuel:

Fuel Type	Number of Containers and Capacity
Diesel	2 x 20 L and 1 x 450 L
Gasoline	2 x 20 L
Propane	1 x 100 lbs

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

Type of Disposition **Disposition Number(s)**

☐ Mineral Claims
☐ Prospecting Permit (s)
☐ Mineral Leases
☐ Oil and Gas: EL/SDL/PL
☐ Quarry Permit
☐ Timber Permit
☒ Other: Tenured Territorial Surface lease (#85B/16-9-9)

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

- ☐ Construction
- ☒ Installation
- ☒ Maintenance
- ☐ Expansion
- ☐ Operation
- ☒ Repair
- ☒ Research
- ☐ Water Intake
- ☐ Other:
- ☐ Exploration
- ☐ Industrial
- ☐ Recreation
- ☐ Municipal
- ☐ Quarry
- ☐ Linear / Corridor
- ☐ Sewage
- ☐ Decommissioning
- ☐ Abandonment
- ☐ Aerial
- ☐ Harvesting
- ☒ Camp
- ☐ Scientific/
- ☐ Solid Waste

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

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

NTS topographic map sheet numbers:
085B

Latitude / longitude and UTM system:
Min: -114.38472, 60.867689
Max: -114.45254. 60.902621

Nearest community and water body:
Fort Resolution and Hay River
Great Slave Lake

Land Status (*consultation information*)

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

Transboundary/Transregional Implications

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

Type of transboundary implication: ☐ Impact / Effect ☐ Development

☐ Public concern: _____
(Describe.)

Physical - Chemical Effects

Impact	*Mitigation*
1) Ground Water	
☒ water table alteration	Flowing artesian wells could result from drilling programs, the groundwater level could be affected. Teck is required to plug the borehole to prevent outflow of water, thus mitigating the potential impacts on water table level.
☐ water quality changes	
☐ infiltration changes	
☐ other:	
☐ N/A	

Impact	*Mitigation*
2) Surface Water	
☐ flow or level changes	
☒ water quality changes	Quarrying near water could lead to sediment deposition. Teck is required to set a 100-m buffer zone from any watercourse to minimize the potential impacts to water quality. Teck is limited in the locations for fuel storage for current operations at the water treatment facility because of the water treatment facility design in relation to the main pond and serpentine channel. Therefore, the fuel storage and refuelling is from a 450 L fuel tidy tank mounted on the back of a truck. Fuelling of generators or equipment is done by pumping fuel with the electric pump, which has an automatic shut off so it can't over flow. A large spill kit is available on site and smaller spill kit is available in the same truck as the tank should a spill occur. If a spill in the main pond or the serpentine channel were to occur, the syphons would be immediately shut off to prevent discharge to the downstream drainage to allow for clean up.
☐ water quantity changes	
☐ drainage pattern changes	
☐ temperature	
☐ wetland changes/loss	
☐ other:	
☐ N/A	

Impact	*Mitigation*
3) Noise	
☐ noise in/near water	

☒ noise increase	Noise may increase during drilling operations. However, the impacts are temporary and short term, thus no mitigations required.
☐ other:	
☐ N/A	

Impact	*Mitigation*
4) Land	
☐ geologic structure changes	
☐ soil contamination	
☐ buffer zone loss	
☐ soil compaction and settling	
☐ destabilization/erosion	
☒ permafrost regime alteration	Camp area is heavily used, and could cause permafrost to melt. Teck is required to locate camp on durable land that has no vegetation ground cover to better withstand surface disturbance.
☐ explosives/scarring	
☐ other:	
☐ N/A	

Impact	*Mitigation*
5) Non-renewable natural resources	
☐ resource depletion	
☐ other:	
☒ N/A	

Impact	*Mitigation*
6) Air/climate/atmosphere	
☐ other:	
☒ N/A	

BIOLOGICAL ENVIRONMENT

Impact	*Mitigation*
1) Vegetation	
☐ species composition	
☐ species introduction	
☐ toxin/heavy accumulation	
☒ other: Linear Migration routes, habitat fragmentation	The ground-disturbing activities associated with the proposed project take place in the highly disturbed Tailings Impoundment Area. There may be risks of habitat fragmentation, but the chances are minimal, and the project is on previously disturbed land.
☐ N/A	

Impact	*Mitigation*
2) Wildlife and Fish	
☒ effects on rare, threatened or endangered species	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 • Northern Myotis (bat) – Special Concern in the NWT • Wood Bison – Threatened in the NWT • Northern Leopard Frog – Threatened in the NWT. Although the project overlaps with the range(s) of the species listed above, ENR is of the opinion that the scope, nature, areal extent, scale and/or timing of the proposed project are such that the likelihood of impacts to NWT-listed or pre-listed species at risk is minimal.
☒ fish population changes	Quarrying near water could lead to sediment deposition. Teck is required to quarry set a 100-m buffer zone from any watercourse to minimize the potential impacts to fish habitat.
☐ waterfowl population changes	
☐ breeding disturbance	
☐ population reduction	
☐ species diversity change	
☐ health changes	
☒ behavioural changes	The Proponent should utilize food and garbage handling and storage procedures that will minimize the attraction of wildlife. Teck will store food and garbage in the camp trailer and vehicles to minimize attraction of wildlife until final disposal. Teck will store waste and recyclables in the camp trailer and vehicles to minimize attraction of wildlife. Teck will dispose of water in a manner that minimizes attraction of wildlife (i.e., in covered limed pits).5) Teck will remove all waste petroleum products including used oil filters, rags, scrap metal, discarded machinery, parts, drums, barrels, or plastics to an approved waste disposal facility.
☒ habitat changes / effects	Teck will conduct pre-activity surveys within 800 m of the project footprint to identify active bear dens if project activities will occur between September 30 and March 30. Surveys should be conducted in the fall to detect freshly dug dens. If an active bear den is detected, or suspected, Teck will implement and maintain an 800 m exclusion zone until the bear emerges in spring. If a bear den and exclusion zone would result in the halt of part or the entire program, Teck will contact ENR to discuss alternative mitigation options. The location of active bear dens should be kept confidential between the developer and ENR until after emergence in the spring. Teck will not disturb or damage, if encountered, beaver lodges, muskrat push-ups, and hibernacula.
☐ game species effects	
☒ toxins/ heavy metals	The surfactant in glyphosate is known to be toxic to fish and amphibians in higher concentrations. Frogs have been observed at the TIA. Teck will use hand pulling as the first approach used to remove weeds. If necessary (e.g., if roots cannot be removed then herbicides will be carefully applied so that it is directly applied to the plant roots and not over sprayed to nearby water bodies).
☐ forestry changes	
☐ agricultural changes	

☐ other:

☐ N/A

Interacting Environment

Impact ***Mitigation***

1) Habitat and Communities

☐ predator-prey

☐ wildlife habitat/ecosystem composition changes

☐ reduction/removal of keystone or endangered species

☐ removal of wildlife corridor or buffer zone

☐ other:

☒ N/A

Impact ***Mitigation***

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

☐ public concern

☐ other:

☒ **N**/A

Impact ***Mitigation***

3) Cultural and Heritage

☐ effects to historic property

☐ increased economic pressure on historic properties

☐ change to or loss of historic resources

☒ change to or loss of archaeological resources

The ground-disturbing activities associated with the proposed project take place in the highly disturbed Tailings Impoundment Area. It is unlikely that unrecorded archaeological sites remain intact in this area. The Prince of Wales have not recommended conducting any Archeological Overview for the Project Area.

☐ increased pressure on archaeological sites

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

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 Application MV2019X0006, Teck Metals Ltd., Pine Point Tailings Impoundment Area (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 Application 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 Application 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 MV2017L2-0007.

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 has decided that this Land Use Permit be issued subject to the terms and conditions contained therein.

	Preliminary Screening Decision
☒	**Outside Local Government Boundaries**
☐ ☒	The development proposal might have a significant adverse impact on the environment, *refer it to the EIRB*. *Proceed with regulatory process and/or implementation.*
☐ ☒	The development proposal might have public concern, *refer it to the EIRB*. *Proceed with regulatory process and/or implementation.*
☐	**Wholly Within Local Government Boundaries**
☐ ☐	The development proposal is likely to have a significant adverse impact on air, water or renewable resources, *refer it to the EIRB*. *Proceed with regulatory process and/or implementation*.
☐ ☐	The development proposal might have public concern, *refer it to the EIRB*. *Proceed with regulatory process and/or implementation*.

Preliminary Screening Organization

Mackenzie Valley Land and Water Board

May 16, 2019

Signatures

Mavis Cli-Michaud, Chair