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April 2, 2020

File: MV2018C0011

Mr. Mark Cliffe-Phillips
Mackenzie Valley Environmental Impact Review Board
200 Scotia Center
Box 938, 5102 - 50th Avenue
Yellowknife NT X1A 2N7

Sent via Email

Dear Mr. Cliffe-Phillips,

**Re: Notice of Preliminary Screening Determination – Application for Land Use Permit
Mineral Exploration – Thor Lake Property, NT**

The Mackenzie Valley Land and Water Board (Board) met on April 2, 2020 and considered the Amendment Application from NWT Rare Earths Ltd. (NWT-RE) to Type A Land Use Permit (Permit) MV2018C0011 for mineral exploration on the Thor Lake Property, NT (Project) in accordance with the *Mackenzie Valley Resource Management Act* (MVRMA).

The Board conducted a preliminary screening based on the Application and the public record for the proceeding. Based on the evidence provided, the Board is satisfied the screening has been completed according to section 125 of the MVRMA and has decided **not to refer** the project to environmental assessment. The Preliminary Screening Report includes the Board's reasons for decision, as required by section 121 of the MVRMA (attached).

If the Board does not receive notice of referral to environmental assessment, it will proceed with the issuance of the Amended Permit MV2018C0011 on **Monday April 13, 2020**.

Our Board and staff look forward to continued communications throughout the pause period. If you have any questions or concerns regarding this letter, please contact Shelagh Montgomery at (867) 766-7457 or email smontgomery@mvlwb.com.

Yours sincerely,

A handwritten signature in blue ink, appearing to read "Elizabeth Wright".

Elizabeth Wright
MVLWB, Acting Chair

Copied to: Akaitcho Distribution List
Mr. Geoff Atkins – NWT Rare Earths Ltd.

Attached: Preliminary Screening Report, including Reasons for Decision

Preliminary Screening Report Form

<p>Preliminary screener: MVLWB</p> <p>Reference / File Number: MV2018C0011</p> <p>TITLE: Mineral Exploration</p> <p>ORGANIZATION: NWT Rare Earths Ltd.</p> <p>MEETING DATE: April 2, 2020</p>	<p>EIRB</p> <p>Reference number:</p>
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Type of Development:
(CHECK ALL THAT APPLY)

- | | |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | New |
| <input type="checkbox"/> | Amend, EIRB Ref. # |
| <input checked="" type="checkbox"/> | Requires permit, licence, or authorization |
| <input type="checkbox"/> | Does not require permit, licence, or authorization |

Project Summary:

Phase 1 – Geological Operations (Year 1)

The purpose of the geological work that is to be conducted is to advance the knowledge of potential high grade near surface rare earth mineralization and to bring into initial resource estimation category.

The work planned would be as follows:

- Resampling of historic drill core stored on the property with focus being on lithium as well as rare earth elements (REE);
- Biogeochemical (tree twig sampling);
- Soil sampling. (this involved small holes in the ground, ranging from 10-30cm in depth. Once the sample is retrieved from the bottom of the hole the hole will be refilled);
- Glacial till sampling (similar to soil sampling but to a depth of 1 m. Once the sample is retrieved the hole will be refilled and vegetation placed back over the hole);
- Lithogeochemical (rock) sampling (this would utilize either geological hammer or rock saw. No blasting would be required or anticipated total sample volume approximately 0.5 tonne)

The geological field work would be combined with other activities necessary for operation of the project. These would include:

- Camp repair and maintenance as required;
- Mitigation activities associated with the camp; and
- Surveying the existing mineral claims as required for lease application.

Phase 1 would involve two individuals for the geological aspect of the work and three who would be involved with camp running, repair and maintenance. A maximum of 10 people is expected to be present at the camp at any one time and the total amount of time the camp would be operating in 2018 is estimated to be for one month.

The work being completed during Phase 1 will provide further information for the delineation of drill targets for Phase 2.

Phase 2 –Drilling, Trenching and Bulk Sampling Operations and Continued Geological Operation (Year 2-5)

The expected work for Phase 2 includes a continuation of work that was done in Phase 1 with the addition of a drill program, trenching as well as a potential bulk sample. The focus of this program is on REE and lithium potential.

Potential drill target areas have been identified:

- Tardiff Lakes area
- S and R Zones
- South T Zone

These areas have been subject to previous exploration. The total drill program would be approximately 100 holes.

Drilling is to be conducted utilizing lightweight, skid-mounted portable drills with small footprints and that are easy to maneuver. Access to the drill sites will be along pre-existing drill trails; all drill holes are land based. Given the design of the drilling rig, it can be broken down and transported to various sites by ATV on a trailer and not slid on skies.

During the second year Avalon is proposing to temporarily dewater 1/3 of the ramp in the North T zone in order to access the lithium and rare earth mineralization to collect a sample for grade confirmation and metallurgical testing. The water will be pumped into the settling ponds that are currently onsite. The initial sample will range from 0.5-1 tonnes.

Similar sampling will be carried out over the various years. If the sampling results are showing positive signs of REE and lithium, larger samples would be extracted for the target areas ranging in size from 0.5-50 tonnes for a piolet sale metallurgical testing. A trench of 4 m wide and 1 m deep would provide a sample weighting approximately 50 tonnes.

With the trenching there would be the requirement of use explosives to gather the samples. Avalon will have explosives brought to site as needed.

The total people on site for the phase will range from 5-29 people. The camp currently can house the amount of people anticipated.

All activities in the first two phases are anticipated to be below the trigger for a water licence. However, Avalon is aware that they will need to be in discussion with the Board as the activities at a larger scale may trigger the need for a water licence. It is unknown at this time if a licence will be needed.

Phase 3 – Airstrip Expansion (Year 4-5)

Avalon anticipates that at some point during the later years of the operation that they may decide to proceed with the extension to the current airstrip in order to facilitate safe landing of aircraft on wheels and enable work in all four seasons. For the extension of the airstrip, Avalon will need to develop a sand and hard rock quarry, use of equipment, vehicles and self-propelled power-driven machinery. Additional fuel will also be needed to support the operation as well as explosives to support the development of the quarry.

The construction of the airstrip will be dependent on the success of the first two phases of the operation. It is also important to note that due to camp size restrictions, the airstrip extension and drilling activities would not occur simultaneously.

April 2, 2020: Demonstration Project – Amendment #1 – February 2020

Small scale demonstration project. Extraction of ore from the Upper Zone utilizing open cast methods. Extracted materials will be sorted using a machine specifically designed for identifying rare earths (Sensor-Based Ore Sorting Plant); extracted ore will be sent off-site for further refinement. Waste rock will be left on site and used for further construction.

Equipment

# Pieces	Type and Size	(April 2, 2020) Type and Size Amendment #1 – February 2020
1	30kW Generator	+1 – 30 Kw Generator
2	27 kW Generator	+2 – 27Kw Generator
8	ATV-Quad/UTV	+1 – 250 kW Generator
8	Snow Machine	+1 - Excavator
1	Caterpillar D3 Dozer	+1 – Ore Sorter/Tomra
1	Caterpillar Loader 924 924G	+1 – Boom truck
1	Pickup Truck	+2 – Vibrating screen
2	Connors 25HH-5 Diamond Drill or similar	+1 – Drill (23 tonne)
1	Morooka MSD800	
1	Atlas Copco Drill	
1	Sandvik QJ-340 Jaw Crusher	
1	Sandvik X-434 Cone Crusher	
1	Komatsu D61 Dozer	
1	Komatsu 400 Articulating Truck	
2	Case 40 ton Articulating Trucks	
1	WA430 Komatsu Loader	
1	Ham Smooth Drum Packer	
1	John Deere 350 Excavator	
1	Site by Site UTV	
1	Truck F-350	
Misc.	Parts and tools	

Fuel

Fuel	Number of Containers	Capacity of Containers	(April 2, 2020) Amendment #1 – February 2020
Geological Work – Phase 1			
Diesel	50	205L	
Gasoline	10	205L	
Aviation Fuel	7	205L	
Propane	10	20-100lbs	
Geological Work and Drilling, Trenching and Bulk Sampling – Phase 2			
Diesel	200	205L	
Gasoline	10	205L	
Aviation Fuel	7	205L	
Propane	10	20-100lbs	
Airstrip Extension – Phase 3			
Diesel	600	205L	
Gasoline	20	205L	
Aviation Fuel	20	205L	
Propane	20	100lbs	
Demonstration Project			
Diesel	4		112,500L

Scope:

- a) Mineral exploration, including diamond drilling, bulk sampling and trenching;
- b) Use of heavy machinery and vehicles;
- c) Use and storage of fuel;
- d) Construction use and maintenance of a camp;
- e) Construction use and maintenance of trails and access roads;
- f) Development of a quarry;
- g) Use of explosives; and
- h) Extension of existing airstrip.

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

Type of Disposition	Disposition Number(s)
<input checked="" type="checkbox"/> Mineral Claims	K12405, K12406, K12407
<input type="checkbox"/> Prospecting Permit (s)	
<input checked="" type="checkbox"/> Mineral Leases	3178, 3179, 3265, 3266, 3267
<input type="checkbox"/> Oil and Gas: EL/SDL/PL	
<input type="checkbox"/> Quarry Permit	
<input type="checkbox"/> Timber Permit	
<input type="checkbox"/> Other:	

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

- | | | |
|--|---|--|
| <input checked="" type="checkbox"/> Construction | <input checked="" type="checkbox"/> Exploration | <input type="checkbox"/> Decommissioning |
| <input type="checkbox"/> Installation | <input type="checkbox"/> Industrial | <input type="checkbox"/> Abandonment |
| <input 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 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 type="checkbox"/> construction | <input checked="" type="checkbox"/> disposal of hazardous waste |
| <input type="checkbox"/> abandonment/removal | <input checked="" type="checkbox"/> waste generation |
| <input 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 checked="" type="checkbox"/> Blasting | <input checked="" type="checkbox"/> Geoscientific Sampling |
| <input type="checkbox"/> Building | <input checked="" 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 checked="" type="checkbox"/> Bulk soil sampling |
| <input type="checkbox"/> Cut and Fill | <input type="checkbox"/> gravel |

- 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

- 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:
85I 1/2

Latitude / longitude and UTM system:
62.13663N
112.66986W

62.13597N
112.47788W

62.06220N
112.67126W

62.06154N
112.47718W

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 Alberta Saskatchewan Yukon
 Nunavut National Park Inuvialuit Settlement Region
 Wek'èzhii Gwich'in Sahtu

Type of transboundary implication: Impact / Effect Development

Public concern: _____
(Describe.)

Physical - Chemical Effects

Impact

1) Ground Water

- water table alteration
- water quality changes

Mitigation

Sealing the boreholes will mitigate this impact.

Drilling waste will be disposed of in a sump such that they do not enter any body of water or spread to surrounding lands.

Any drill waste containing toxic substances will be removed to an approved facility.

A Spill Contingency Plan will address potential spills.

Waste will be incinerated or flown off site as per the Waste Management Plan.

Fuel caches and refueling must have adequate secondary containment.

infiltration changes

other:

N/A

Impact
2) Surface Water

Mitigation

flow or level changes

The total quantity of water withdrawn for all water bodies shall not exceed 99 cubic metres per day.

If water withdrawal limits need to be exceeded the permittee/licensee will be in contact with the Board and start the discussion on the need for a water licence.

water quality changes

Drilling waste will be disposed of in a sump such that they do not enter any body of water or spread to surrounding lands.

Any drill waste containing toxic substances will be removed to an approved facility.

A Spill Contingency Plan will address potential spills.

Waste will be incinerated or flown off site as per the Waste Management Plan.

Fuel caches and refueling must have adequate secondary containment.

water quantity changes

The total quantity of water withdrawn for all water bodies shall not exceed 99 cubic metres per day.

If water withdrawal limits need to be exceeded the Permittee will be in contact with the Board and start the discussion on the need for a water licence.

drainage pattern changes

temperature

wetland changes/loss

other:

N/A

Impact
3) Noise

Mitigation

noise in/near water

No mitigation, noise disturbance is temporary in nature.

noise increase

No mitigation, noise disturbance is temporary in nature.

The application and associated documents were distributed to the distribution list which includes a lodge in the vicinity and no comments or recommendations were received relating the notice of the operation.

other:

N/A

Impact
4) Land

Mitigation

geologic structure changes

soil contamination

Drilling waste will be disposed of in a sump such that they do not enter any body of water or spread to surrounding lands.

Any drill waste containing toxic substances will be removed to an approved facility.

A Spill Contingency Plan will address potential spills.

Waste will be incinerated or flown off site as per the Waste Management Plan.

Fuel caches and refueling must have adequate secondary containment.

buffer zone loss

soil compaction and settling

Existing trails and roads will be used when available. Movement of the drill will be done in such a way not to skid the drill across the landscape.

destabilization/erosion

The Permittee has committed to progressive reclamation of the site and conditions are in place to address the reclamation work.

permafrost regime alteration

explosives/scarring

The Permittee has committed to progressive reclamation and conditions are in place to address the reclamation work

other:

N/A

Impact

5) Non-renewable natural resources

Mitigation

resource depletion

No mitigation – sample material (drilling, trenching and bulk sampling) and quarry material extraction are necessary for the completion of the project.

other:

N/A

Impact

6) Air/climate/atmosphere

Mitigation

other:

Air quality will be temporarily affected by vehicle, aircraft and equipment use. No mitigation provided.

N/A

BIOLOGICAL ENVIRONMENT

Impact

1) Vegetation

Mitigation

species composition

species introduction

toxin/heavy accumulation

other: Linear Migration routes, habitat fragmentation

N/A

Impact

2) Wildlife and Fish

Mitigation

- effects on rare, threatened or endangered species
- fish population changes
- waterfowl population changes
- breeding disturbance
- population reduction
- species diversity change
- health changes
- behavioural changes

The Permittee has committed to minimizing the effect on wildlife as a result of the operation.

Certain animals may avoid areas of operations due to noise/activity. This impact is temporary in nature.

Camp activities associated with this Land Use Permit may attract wildlife to the area. Proper waste disposal techniques should reduce the wildlife attractants. Caribou, moose, and other wildlife may avoid the area due to drilling activity. Mitigation includes proper handling of waste/garbage.

- habitat changes / effects

The Permittee is required to take all reasonable measures to prevent damage to wildlife and fish habitat during the land use operation.

Drilling activity and heavy equipment use could result in impacts to wildlife habitat. Minimizing areas cleared, avoiding bear dens, and taking all reasonable measures to avoid damage to wildlife habitat will mitigate potential impacts.

- game species effects
- 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

The Permittee is required to take all reasonable measures to prevent damage to wildlife and fish habitat during the land use operation.

Drilling activity and heavy equipment use could result in impacts to wildlife habitat. Minimizing areas cleared, avoiding bear dens, and taking all reasonable measures to avoid damage to wildlife habitat will mitigate potential impacts.

- reduction/removal of keystone or endangered species

Drilling and equipment use could result in impacts to species at risk or endangered species. Granting right-of-way to wildlife, proper waste handling techniques, minimizing areas cleared, and following best practices for reducing impacts to wildlife will help to mitigate these impacts.

- removal of wildlife corridor or buffer zone

The Permittee is required to take all reasonable measures to prevent damage to wildlife and fish habitat during the land use operation.

- other:
- N/A

Impact

2) Social and Economic

Mitigation

planning/zoning changes or conflicts

increase in urban facilities or services use

Deposit of waste at municipal facilities may burden community as small community do not have the capacity to accept extra waste. The City of Yellowknife has agreed to accept the waste produced by the project.

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

3) Cultural and Heritage

Mitigation

effects to historic property

The permittee shall not operate any vehicle or equipment within 150 metres of a known or suspected historical or archaeological site or burial ground.

The permittee shall not knowingly remove, disturb, or displace any archeological specimen or site.

increased economic pressure on historic properties

change to or loss of historic resources

The permittee shall not operate any vehicle or equipment within 150 metres of a known or suspected historical or archaeological site or burial ground.

The permittee shall not knowingly remove, disturb, or displace any archeological specimen or site. The permittee shall not operate any vehicle or equipment within 150 metres of a known or suspected historical or archaeological site or burial ground.

change to or loss of archaeological resources

The permittee shall not knowingly remove, disturb, or displace any archeological specimen or site.

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 **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
Bathurst Inlet Development Ltd.
Bathurst Inlet Lodge
Canadian Northern Economic Development Agency - 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 Resolution Metis Council
Forward Mining
GNWT - ENR (Environment and Natural Resources)
GNWT - ENR - EAM (Environmental Assessment and Monitoring)
GNWT - ENR - North Slave Region
GNWT - ENR - South Slave Region - Fort Smith
GNWT - Executive and Indigenous Affairs
GNWT - HSS (Health and Social Services)
GNWT - INF (Infrastructure)
GNWT - ITI (Industry, Tourism and Investment)
GNWT – Lands
GNWT - Lands - Hay River Region
GNWT - Lands - North Slave Region
GNWT - Lands - South Slave Region - Fort Smith
GNWT - MACA (Municipal and Community Affairs)
GNWT - PPCA (Policy, Planning, Communications and Analysis (w/in ITI))

GNWT - PWNHC (Prince of Wales Northern Heritage Centre (w/in ECE))
Golder Associates
Hamlet of Fort Resolution
INAC - CARD
INAC - NWT Inspectors
INAC - Yellowknife
Katlocheeche First Nation
Lutsel K'e Dene First Nation - Chief or Wildlife, Lands and Environment
Mackenzie Valley Environmental Impact Review Board
Manitoba Denesuline
MVLWB
New Nadina Explorations Limited
North Slave Metis Alliance
Northwest Territory Metis Nation
NWT & Nunavut Chamber of Mines
NWT- OROGO
Parks Canada
Salt River First Nation
Salt River First Nation
Smith's Landing First Nation
Snap Lake Environmental Monitoring Agency (SLEMA)
Tlicho Government
Tlicho Lands Protection Department
Town of Fort Smith
Town of Hay River
Wek' eezhii Renewable Resources Board
West Point First Nation
WLWB
Wood
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 Amendment Application MV2018C0011 - NWT Rare Earths Ltd., for Mineral Exploration at Thor Lake, 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 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 conditions of a land use permit


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

April 2, 2020

Signatures



Elizabeth Wright, Acting Chair
