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September 10, 2021

File: MV2016C0037 & MV2021L8-0008

Mark Cliffe-Phillips
Mackenzie Valley Review Board
200 Scotia Centre
Box 938, 5102-50th Avenue
Yellowknife NT X1A 2N7

Sent by email

Dear Mark Cliffe-Phillips,

Re: Slave Lake Zinc – O’Connor Lake Project – Notice of Preliminary Screening Determination – Applications for Land Use Permit MV2016C0037 and Water Licence MV2021L8-0008 – Mining Exploration – O’Connor Lake, NT

The Mackenzie Valley Land and Water Board (Board) met on September 9, 2021 and considered the Applications from Slave Lake Zinc (SLZ) for a Land Use Permit (Permit) MV2016C0037 Amendment Request and Water Licence (Licence) MV2021L8-0008 Application for the O’Connor Lake Project (Project) in accordance with the *Mackenzie Valley Resource Management Act* (MVRMA).

The Board conducted a preliminary screening based on 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 Board’s Preliminary Screening Determination and Reasons for Decision, as required by section 121 of the MVRMA, is attached.

If the Board does not receive notice of referral to environmental assessment, it can proceed with issuance of the amended Permit MV2016C0037 and Licence MV2021L8-0008 on **Tuesday September 21, 2021**.

The Board and staff look forward to continued communications throughout the pause period. Please contact Shelagh Montgomery at (867) 766-7457 with any questions or concerns regarding this letter.

Yours sincerely,



Mavis Cli-Michaud

Chair, Mackenzie Valley Land and Water Board

BCC'd to: Akaitcho Distribution List
Ritch Wigham
Denise Lockett, SLZ

Attached: Preliminary Screening Determination and Reasons for Decision



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Preliminary Screening Determination and Reasons for Decision

File Number	Type B Licence MV2021L8-0008 & Type A Permit MV2016C0037
Company	Slave Lake Zinc
Project	O'Connor Lake Project
Location	O'Connor Lake, NT
Activity	Miscellaneous and Mining Exploration
Date of Decision	September 9, 2021

1.0 Decision

In accordance with subsection 124(1) of the *Mackenzie Valley Resource Management Act* (MVRMA), the Mackenzie Valley Land and Water Board (Board) met on September 9, 2021 to make a preliminary screening determination on the Type B Licence Application and Permit Amendment Request from Slave Lake Zinc (SLZ; Applicant) for Land Use Permit MV2016C0037 (Permit)¹ and Water Licence MV2021L8-0008 (Licence)² for the O'Connor Lake Project (Project).³

The Board has determined that some Project activities and/or areas are exempt from preliminary screening, because they were previously screened. The Applicant has proposed new Project activities, however, and the Board has decided not to refer the proposed changes to the Project to the Mackenzie Valley Environmental Impact Review Board (the Review Board) for Environmental Assessment because, based on the evidence, it is the Board's opinion that the proposed changes to

¹See MVLWB Online Registry (www.mvlwb.com) for Slave Lake Zinc – Cover Letter – Permit Amendment Request – Jun18_21 ([hyperlink](#)).

² See MVLWB Online Registry for Slave Lake Zinc – Type B Licence Application – Jun18_21 ([hyperlink](#)).

³ The Project is the O'Connor Lake Project, which is the proposed development, where "development" is defined in Part 5 of the MVRMA as:

"any undertaking, or any part or extension of an undertaking, that is carried out on land or water and includes an acquisition of lands pursuant to the *Historic Sites and Monuments Act* and measures carried out by a department or agency of government leading to the establishment of a park subject to the *Canada National Parks Act* or the establishment of a park under a territorial law."

the Project will not have a significant adverse impact on the environment or be a cause of public concern.

The Board's determinations, including reasons for its decisions, are detailed in sections 3, 4, and 5.

2.0 Background and Scope of Screening

On November 21, 2016, SLZ submitted a Type A Land Use Permit Application (MV2016C0037) to conduct mineral exploration at O'Connor Lake Mine, an abandoned mine site dating back to 1952 located near the east shore of O'Connor Lake and approximately 100 km east of Fort Resolution. O'Connor Lake Mine is a contaminated site managed by CIRNAC – Contaminants and Remediation Division (CIRNAC-CARD) as listed in schedule 4 of the Devolution Agreement. Environmental Site Assessments were conducted at O'Connor Lake Mine in 2007, 2008, and 2009. Concerns include potentially contaminated soil and waste rock, physical hazards such as old structures, fuel drums, batteries and camp debris, and an unsecured mine shaft and headframe.

SLZ had acquired mineral claim MWK97540 from the Mining Recorder's Office. The claim was staked on September 15, 2006. The company has also surveyed the property and has a lease for the property that is renewable at 21-year intervals.

Permit MV2016C0037 was granted by the Board on March 3, 2017.⁴ Since issuance of the Permit, SLZ has conducted exploration activities for lead, silver, and zinc on the site, including diamond drilling, and airborne/ground geophysical surveys. The site is accessible via fixed-wing aircraft on floats or a helicopter. At the time of the Application for Permit MV2016C0037 a Water Licence was not required as water use was under 100 m³/day.

Description of Licence Application and Permit Amendment Application

On June 18, 2021, SLZ submitted a complete Application to amend Permit MV2016C0037 to increase the number of drills and equipment on site, and to expand the camp to accommodate 49 persons (the Permit had previously authorized a 10-person camp).⁵ Proposed exploration activities are the same as those currently authorized under Permit MV2016C0037, including prospecting, sampling (mechanized and by hand), land and/or air geophysics, and drilling. SLZ proposes to drill approximately 100 holes annually.

Manual and automatic pumps will be used for refueling, with portable drip trays and appropriate fuel transfer hoses with pumps used to avoid drips/leaks. Pacto toilets will be used for sewage and incinerated daily in sealed bags. Camp greywater and drill cuttings and drill greywater will be

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disposed of in sumps adjacent to the camp or drill hole, respectively, a minimum of 31 metres from nearby water sources. All sumps will be restored at the end of the operation. Non-hazardous waste such as paper, food waste and untreated wood will be incinerated on-site. The ashes from incineration will be transported off site to an approved disposal site. SLZ anticipates operating the camp from early February to October annually.

SLZ also applied for a new Type B Licence MV2021L8-0008 to support the increased equipment and camp size. SLZ intends to use less than 295 m³/day of water from O'Connor Lake for camp domestic use and drill use.

The Applications include proposed changes to the Project. Under Part 1, Schedule 1, section 2.1 of the Exemption List Regulations to the MVRMA, project areas and activities that have already been subject to Part 5 of the MVRMA are exempt from preliminary screening. The new Project activities require screening by the Board in accordance with subsection 124(1) of the MVRMA.

In accordance with paragraph 125(1)(a) of the MVRMA, the Board must conduct a preliminary screening of the proposed changes to the Project to determine and report to the Review Board whether, in its opinion, the proposed changes to the Project might have a significant impact on the environment, or might be a cause of public concern. The details of the Board's analysis are set out in section 3 below.

2.1 Scope of Screening:

Previously Screened or Assessed Activities:

Activities that the Board understands to have been previously considered,⁶ and which therefore do not require preliminary screening at this time, are listed below.

Camp:

- 10 person wooden/canvas tents (temporary)

Waste:

- Non-hazardous waste such as paper, cardboard, untreated/unpainted wood waste will be incinerated on-site. The remaining ashes and all other waste will be transported to Yellowknife for disposal
- Letter from City of Yellowknife confirming waste acceptance
- Sumps for toilet waste, grey water, drill cuttings

Fuel storage:

- Diesel Fuel – 205 L Drum x 7
- Gasoline – 205 L Drum x 2

⁶ See MVLWB Online Registry for MV2016C0037 – Slave Lake Zinc – Type A LUP – Preliminary Screening – Mar3-17 ([hyperlink](#)).

- Jet A/B – 205 L Drum x 2
- Hydraulic fluid – 20 L Pail x 2
- Lubricating Grease – 20 L Pail x 2
- Propane – 100 Lb x 2

Equipment:

- Longyear 38 for core drilling x 1
- Bing 420 water pumps x 2
- Portable generator x 1
- Outboard engine x 1

Scope:

- Mineral exploration for zinc, lead, and silver
- Diamond drilling, geophysical survey,
- Construction and use of temporary camp

New Activities:

Activities that the Board understands have not been previously considered, and therefore do require screening, are listed below.

Camp:

- 49 person (12 sleep tents)

Waste:

- Pacto toilets used for sewage and incinerated daily in sealed bags

Fuel storage:

- Additional fuel storage listed in the Applications⁷ associated with the larger camp and drilling exploration program

Equipment:

- Additional equipment listed in the Applications⁸ associated with the larger camp and drilling exploration program

Scope:

- Withdrawal of Water for exploration drilling and operation of a camp

⁷ See MVLWB Online Registry (www.mvlwb.com) for Slave Lake Zinc – Cover Letter – Permit Amendment Request – Jun18_21 ([hyperlink](#)).

⁸ *Ibid.*

2.2 Public Record and Regulatory Proceeding:

To assist the Board in its preliminary screening determination for the Project, the Board distributed the Applications and a draft Licence and Permit for public review on June 28, 2021, inviting reviewers to provide comments and recommendations on the Applications and the preliminary screening (e.g., on impacts and mitigation measures) using the Online Review System (ORS). On July 14, 2021, Board staff granted an extension request from the CIRNAC Inspector for a two week extension to the review comment deadline for additional time to conduct a review of Slave Lake Zinc's Type B Licence Application and Permit Amendment in order to work with the Applicant on the security estimate.⁹ Comments were due August 9, 2021, with responses from the Applicant due August 16, 2021. The Board received comments and recommendations from the CIRNAC Inspectors, Government of the Northwest Territories Department of Environment and Natural Resources (GNWT-ENR), and Board staff.¹⁰

Since there were no requests to extend the reviewer comment deadline from First Nations, the Board is satisfied that a reasonable period of notice was given to affected communities and First Nations, as required by subsection 63(2) of the MVRMA.

Pursuant to Schedule 4.1 of the Northwest Territory Métis Nation (NWTMN) Interim Measures Agreement, the Board 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 Applications.

Pursuant to subsection 1.6, paragraphs (a) and (b) of the Akaitcho Territory Dene First Nations (ATDFN) Interim Measures Agreement, the Board 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 Applications.

3.0 Potential Impacts and Proposed Mitigations

Table 1 below summarizes:

- the potential impacts of the proposed changes to the Project;
- the concerns that were identified during the regulatory proceeding and how the Applicant addressed those concerns;
- the proposed and potential mitigations for the potential impacts; and
- the Board's analysis of the potential impacts and proposed mitigations.

⁹ See MVLWB Online Registry for SLZ – Type B Licence Application and Permit Amendment – Extension to Review Comment Deadline – Approved – Jul14_21 ([hyperlink](#)).

¹⁰ See MVLWB Online Registry for SLZ – Type B Licence Application and Permit Amendment - Review Summary Table – Aug16_21 ([hyperlink](#)).

Table 1: Potential Impacts and Proposed Mitigations for the Proposed Changes to the Project

Potential Impact	Activity	<p align="center">Proposed Mitigations</p> <p align="center"><i>Description of measures to reduce potential impacts, including consideration of cumulative impacts and climate change.</i></p>	Board Analysis and Determination
Soil Contamination	Use of fuel	<ul style="list-style-type: none"> • The Applicant proposed the following mitigations in the Applications: <ul style="list-style-type: none"> ○ Fuel will be stored in secondary containment and drip pads will be used. Every effort will be made to avoid fuel spills. • The Board has standard permit and licence conditions that are typically used to mitigate the described impacts. These standard conditions include:¹¹ <ul style="list-style-type: none"> Permit <ul style="list-style-type: none"> ○ REPORT SPILLS ○ WASTE PETROLEUM DISPOSAL ○ CHECK FOR LEAKS ○ FUEL CACHE SECONDARY CONTAINMENT ○ SECONDARY CONTAINMENT – REFUELING ○ FUEL CONTAINMENT ○ FUEL ON LAND ○ SEAL OUTLET ○ SPILL CONTINGENCY PLAN ○ SPILL RESPONSE ○ DRIP TRAYS ○ CLEAN UP SPILLS Licence <ul style="list-style-type: none"> ○ SPILL CONTINGENCY PLAN ○ REPORT SPILLS ○ SPILL PREVENTION AND RESPONSE EQUIPMENT ○ CLEAN UP SPILLS 	Based on the described mitigations, it is the Board’s opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.

¹¹ See the MVLWB Policies and Resources webpage to access the MVLWB [Standard Water Licence Conditions Template](#) and MVLWB [Standard Land Use Permit Conditions Template](#).

Soil Compaction	Camp construction and occupancy	<ul style="list-style-type: none"> • The Applicant described that the camp is temporary. • The Board has standard permit conditions that are typically used to mitigate the described impacts. These standard conditions include: <ul style="list-style-type: none"> ○ CAMP LOCATION ○ EXISTING CAMP 	Based on the described mitigations, it is the Board's opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.
Water flow or level changes	Use of water from O'Connor Lake	<ul style="list-style-type: none"> • The Applicant described that the water use from O'Connor Lake will be seasonal and temporary in nature. • The Board has standard licence conditions that are typically used to mitigate the described impacts. These standard conditions include: <ul style="list-style-type: none"> ○ WATER SOURCE AND MAXIMUM VOLUME ○ MAXIMUM UNDER ICE WATER WITHDRAWAL VOLUME 	Based on the described mitigations, it is the Board's opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.
Changes in air quality and increased greenhouse gases	Equipment exhaust	<ul style="list-style-type: none"> • The Applicant described that equipment use will be temporary and short term during seasonal exploration activities and proposed the following mitigation in the Application: <ul style="list-style-type: none"> ○ Avoid idling. 	Based on the described mitigations, it is the Board's opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.
Direct loss of vegetation	Removal of branches and scrub for mineral exploration activities and heli- pad construction	<ul style="list-style-type: none"> • The Applicant described that the activity will be temporary during season exploration activities. • The Board has standard permit and licence conditions that are typically used to mitigate the described impacts. These standard conditions include: <ul style="list-style-type: none"> Permit <ul style="list-style-type: none"> ○ BRUSH DISPOSAL/TIME ○ MINIMIZE AREA CLEARED ○ FINAL CLEANUP AND RESOTRATION ○ NATURAL REVEGETATION ○ PROGRESSIVE RECLAMATION Licence <ul style="list-style-type: none"> ○ CLOSURE AND RECLAMATION PLAN ○ PROGRESSIVE RECLAMATION 	Based on the described mitigations, it is the Board's opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.

Direct loss or removal of habitat, dens, or nests	Construction and operation of a camp, mineral exploration activities	<ul style="list-style-type: none"> • The Applicant proposed the following mitigations in the Applications: <ul style="list-style-type: none"> ○ A 50 m buffer zone around all known nesting areas of migratory birds will be established. ○ All work or camp activities within the buffer zone will be curtailed until the young have abandoned the nest. • The Board has a standard permit condition that is typically used to mitigate the described impacts: <ul style="list-style-type: none"> ○ HABITAT DAMAGE 	Based on the described mitigations, it is the Board's opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.
Loss or removal of keystone species and/or Species at Risk habitat	Construction and operation of a camp, mineral exploration activities	<ul style="list-style-type: none"> • The Project overlaps with the ranges of the following NWT-listed and/or pre-listed species: Norther Leopard Frog; Wood Bison; Barren-ground Caribou; Little Brown Myotis.¹² • The Board has a standard permit condition that is typically used to mitigate the described impacts: <ul style="list-style-type: none"> ○ HABITAT DAMAGE 	Based on the described mitigations, it is the Board's opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.
Effects on wildlife health (toxins, metals, etc.)	Use of fuel and generation and management of waste associated with construction and operation of a camp and mineral exploration activities	<ul style="list-style-type: none"> • The Applicant proposed the following mitigations in the Applications: <ul style="list-style-type: none"> ○ Ensure Spill Contingency Plan and Waste Management Plans are effective to avoid unnecessary impacts. • The Board has standard permit and licence conditions that are typically used to mitigate the described impacts. These standard conditions include: <ul style="list-style-type: none"> Permit <ul style="list-style-type: none"> ○ REPORT SPILLS ○ WASTE PETROLEUM DISPOSAL ○ CHECK FOR LEAKS ○ FUEL CACHE SECONDARY CONTAINMENT ○ SECONDARY CONTAINMENT – REFUELING ○ FUEL CONTAINMENT ○ FUEL ON LAND ○ SEAL OUTLET ○ SPILL CONTINGENCY PLAN ○ SPILL RESPONSE 	Based on the described mitigations, it is the Board's opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.

¹² See MVLWB Online Registry for SLZ – Type B Licence Application and Permit Amendment - Review Summary Table – Aug16_21, GNWT-ENR, comment 22 ([hyperlink](#)).

		<ul style="list-style-type: none"> ○ DRIP TRAYS ○ CLEAN UP SPILLS ○ WASTE MANAGMENT PLAN ○ REMOVE GARBAGE ○ GREYWATER DISPOSAL – SUMP <p>Licence</p> <ul style="list-style-type: none"> ○ SPILL CONTINGENCY PLAN ○ REPORT SPILLS ○ SPILL PREVENTION AND RESPONSE EQUIPMENT ○ CLEAN UP SPILLS ○ WASTE MANAGEMENT PLAN 	
Human-wildlife conflicts	Operation of a camp and mineral exploration activities	<ul style="list-style-type: none"> • The Applicant proposed the following mitigations in the Applications: <ul style="list-style-type: none"> ○ A local wildlife monitor will be hired to monitor all wildlife (report and record the information in the annual report to the Board) <p>Ensure that the Waste Management plan is effectively been used to eliminate and avoid all wildlife attractants.</p> • The Board has standard permit and licence conditions that are typically used to mitigate the described impacts. These standard conditions include: <p>Permit</p> <ul style="list-style-type: none"> ○ WASTE MANAGMENT PLAN ○ REMOVE GARBAGE <p>Licence</p> <ul style="list-style-type: none"> ○ WASTE MANAGMENT PLAN 	Based on the described mitigations, it is the Board’s opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.
Increased human health hazard and risk	Personnel onsite for mineral exploration activities	<ul style="list-style-type: none"> • The Applicant proposed the following mitigations in the Applications: <ul style="list-style-type: none"> ○ Fence off old headframe area. 	Based on the described mitigations, it is the Board’s opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.
Economic opportunities or loss (employment, training)	Mineral exploration activities	<ul style="list-style-type: none"> • The Applicant proposed the following in the Applications: <ul style="list-style-type: none"> ○ Hire local employees and use local contractors when available and it makes economic sense. 	Based on the described mitigations, it is the Board’s opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.

4.0 Consideration of Potential Impacts

Based on the potential impacts and proposed mitigations identified above in Table 1, the Board considered whether the changes to the Project might have a significant adverse impact on the environment. In general, impacts of the changes to the Project on the environment can be mitigated through conditions in the existing Permit and the use of standard licence conditions established by the Board as per the MVLWB [Standard Process for Creating New Conditions](#). These conditions include requirements for management and monitoring plans that provide detailed information regarding the implementation of mitigation measures and the evaluation of their effectiveness.

A draft Licence and Permit were circulated for review during the regulatory proceeding, and all Parties were given the opportunity to provide comments and recommendations on the draft conditions. In finalizing the conditions, the Board considered all of the evidence provided through the regulatory proceeding.

5.0 Consideration of Public Concern

In addition to considering the potential impacts of the changes to the Project, the Board considered whether the changes to the Project might be a cause of public concern.

Based on the evidence provided during the regulatory proceeding, the Board did not identify any comments or issues that indicate that the Project is a cause of public concern.

6.0 Conclusion

The Board completed a preliminary screening of the Project on March 3, 2017;¹³ however, the Applications include proposed changes to the Project. Accordingly, the Board has determined that Project activities that have already been subject to Part 5 of the MVRMA are exempt from preliminary screening under Part 1, Schedule 1, section 2.1 of the Exemption List Regulations to the MVRMA. The Board has conducted a preliminary screening of the proposed changes to the Project.

The Board has reviewed all the evidence received during the regulatory process with respect to the Preliminary Screening of the proposed changes to the Project. Based on the evidence, it is the Board's opinion that the proposed changes to the Project will not have a significant adverse impact on the environment or be a cause of public concern, as set out in paragraph 125(1)(a) of the MVRMA. The Board has therefore decided not to refer the proposed changes to the Project to Environmental Assessment

¹³ See MVLWB Online Registry for MV2016C0037 – Slave Lake Zinc – Type A LUP – Preliminary Screening – Mar3-17 ([hyperlink](#)).

If the Board does not receive a notice of referral to environmental assessment by September 20, 2021 the Board will issue the amended Permit and Licence on September 21, 2021.

SIGNATURE



Mavis Cli-Michaud
Chair, Mackenzie Valley Land and Water Board

September 9, 2021

Date



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September 10, 2021

File: MV2016C0037 & MV2021L8-0008

Mark Cliffe-Phillips
Mackenzie Valley Review Board
200 Scotia Centre
Box 938, 5102-50th Avenue
Yellowknife NT X1A 2N7

Sent by email

Dear Mark Cliffe-Phillips,

Re: Slave Lake Zinc – O’Connor Lake Project – Notice of Preliminary Screening Determination – Applications for Land Use Permit MV2016C0037 and Water Licence MV2021L8-0008 – Mining Exploration – O’Connor Lake, NT

The Mackenzie Valley Land and Water Board (Board) met on September 9, 2021 and considered the Applications from Slave Lake Zinc (SLZ) for a Land Use Permit (Permit) MV2016C0037 Amendment Request and Water Licence (Licence) MV2021L8-0008 Application for the O’Connor Lake Project (Project) in accordance with the *Mackenzie Valley Resource Management Act* (MVRMA).

The Board conducted a preliminary screening based on 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 Board’s Preliminary Screening Determination and Reasons for Decision, as required by section 121 of the MVRMA, is attached.

If the Board does not receive notice of referral to environmental assessment, it can proceed with issuance of the amended Permit MV2016C0037 and Licence MV2021L8-0008 on **Tuesday September 21, 2021**.

The Board and staff look forward to continued communications throughout the pause period. Please contact Shelagh Montgomery at (867) 766-7457 with any questions or concerns regarding this letter.

Yours sincerely,



Mavis Cli-Michaud

Chair, Mackenzie Valley Land and Water Board

BCC'd to: Akaitcho Distribution List
Ritch Wigham
Denise Lockett, SLZ

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Preliminary Screening Determination and Reasons for Decision

File Number	Type B Licence MV2021L8-0008 & Type A Permit MV2016C0037
Company	Slave Lake Zinc
Project	O'Connor Lake Project
Location	O'Connor Lake, NT
Activity	Miscellaneous and Mining Exploration
Date of Decision	September 9, 2021

1.0 Decision

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³ The Project is the O'Connor Lake Project, which is the proposed development, where "development" is defined in Part 5 of the MVRMA as:

"any undertaking, or any part or extension of an undertaking, that is carried out on land or water and includes an acquisition of lands pursuant to the *Historic Sites and Monuments Act* and measures carried out by a department or agency of government leading to the establishment of a park subject to the *Canada National Parks Act* or the establishment of a park under a territorial law."

the Project will not have a significant adverse impact on the environment or be a cause of public concern.

The Board's determinations, including reasons for its decisions, are detailed in sections 3, 4, and 5.

2.0 Background and Scope of Screening

On November 21, 2016, SLZ submitted a Type A Land Use Permit Application (MV2016C0037) to conduct mineral exploration at O'Connor Lake Mine, an abandoned mine site dating back to 1952 located near the east shore of O'Connor Lake and approximately 100 km east of Fort Resolution. O'Connor Lake Mine is a contaminated site managed by CIRNAC – Contaminants and Remediation Division (CIRNAC-CARD) as listed in schedule 4 of the Devolution Agreement. Environmental Site Assessments were conducted at O'Connor Lake Mine in 2007, 2008, and 2009. Concerns include potentially contaminated soil and waste rock, physical hazards such as old structures, fuel drums, batteries and camp debris, and an unsecured mine shaft and headframe.

SLZ had acquired mineral claim MWK97540 from the Mining Recorder's Office. The claim was staked on September 15, 2006. The company has also surveyed the property and has a lease for the property that is renewable at 21-year intervals.

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Description of Licence Application and Permit Amendment Application

On June 18, 2021, SLZ submitted a complete Application to amend Permit MV2016C0037 to increase the number of drills and equipment on site, and to expand the camp to accommodate 49 persons (the Permit had previously authorized a 10-person camp).⁵ Proposed exploration activities are the same as those currently authorized under Permit MV2016C0037, including prospecting, sampling (mechanized and by hand), land and/or air geophysics, and drilling. SLZ proposes to drill approximately 100 holes annually.

Manual and automatic pumps will be used for refueling, with portable drip trays and appropriate fuel transfer hoses with pumps used to avoid drips/leaks. Pacto toilets will be used for sewage and incinerated daily in sealed bags. Camp greywater and drill cuttings and drill greywater will be

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disposed of in sumps adjacent to the camp or drill hole, respectively, a minimum of 31 metres from nearby water sources. All sumps will be restored at the end of the operation. Non-hazardous waste such as paper, food waste and untreated wood will be incinerated on-site. The ashes from incineration will be transported off site to an approved disposal site. SLZ anticipates operating the camp from early February to October annually.

SLZ also applied for a new Type B Licence MV2021L8-0008 to support the increased equipment and camp size. SLZ intends to use less than 295 m³/day of water from O'Connor Lake for camp domestic use and drill use.

The Applications include proposed changes to the Project. Under Part 1, Schedule 1, section 2.1 of the Exemption List Regulations to the MVRMA, project areas and activities that have already been subject to Part 5 of the MVRMA are exempt from preliminary screening. The new Project activities require screening by the Board in accordance with subsection 124(1) of the MVRMA.

In accordance with paragraph 125(1)(a) of the MVRMA, the Board must conduct a preliminary screening of the proposed changes to the Project to determine and report to the Review Board whether, in its opinion, the proposed changes to the Project might have a significant impact on the environment, or might be a cause of public concern. The details of the Board's analysis are set out in section 3 below.

2.1 Scope of Screening:

Previously Screened or Assessed Activities:

Activities that the Board understands to have been previously considered,⁶ and which therefore do not require preliminary screening at this time, are listed below.

Camp:

- 10 person wooden/canvas tents (temporary)

Waste:

- Non-hazardous waste such as paper, cardboard, untreated/unpainted wood waste will be incinerated on-site. The remaining ashes and all other waste will be transported to Yellowknife for disposal
- Letter from City of Yellowknife confirming waste acceptance
- Sumps for toilet waste, grey water, drill cuttings

Fuel storage:

- Diesel Fuel – 205 L Drum x 7
- Gasoline – 205 L Drum x 2

⁶ See MVLWB Online Registry for MV2016C0037 – Slave Lake Zinc – Type A LUP – Preliminary Screening – Mar3-17 ([hyperlink](#)).

- Jet A/B – 205 L Drum x 2
- Hydraulic fluid – 20 L Pail x 2
- Lubricating Grease – 20 L Pail x 2
- Propane – 100 Lb x 2

Equipment:

- Longyear 38 for core drilling x 1
- Bing 420 water pumps x 2
- Portable generator x 1
- Outboard engine x 1

Scope:

- Mineral exploration for zinc, lead, and silver
- Diamond drilling, geophysical survey,
- Construction and use of temporary camp

New Activities:

Activities that the Board understands have not been previously considered, and therefore do require screening, are listed below.

Camp:

- 49 person (12 sleep tents)

Waste:

- Pacto toilets used for sewage and incinerated daily in sealed bags

Fuel storage:

- Additional fuel storage listed in the Applications⁷ associated with the larger camp and drilling exploration program

Equipment:

- Additional equipment listed in the Applications⁸ associated with the larger camp and drilling exploration program

Scope:

- Withdrawal of Water for exploration drilling and operation of a camp

⁷ See MVLWB Online Registry (www.mvlwb.com) for Slave Lake Zinc – Cover Letter – Permit Amendment Request – Jun18_21 ([hyperlink](#)).

⁸ *Ibid.*

2.2 Public Record and Regulatory Proceeding:

To assist the Board in its preliminary screening determination for the Project, the Board distributed the Applications and a draft Licence and Permit for public review on June 28, 2021, inviting reviewers to provide comments and recommendations on the Applications and the preliminary screening (e.g., on impacts and mitigation measures) using the Online Review System (ORS). On July 14, 2021, Board staff granted an extension request from the CIRNAC Inspector for a two week extension to the review comment deadline for additional time to conduct a review of Slave Lake Zinc's Type B Licence Application and Permit Amendment in order to work with the Applicant on the security estimate.⁹ Comments were due August 9, 2021, with responses from the Applicant due August 16, 2021. The Board received comments and recommendations from the CIRNAC Inspectors, Government of the Northwest Territories Department of Environment and Natural Resources (GNWT-ENR), and Board staff.¹⁰

Since there were no requests to extend the reviewer comment deadline from First Nations, the Board is satisfied that a reasonable period of notice was given to affected communities and First Nations, as required by subsection 63(2) of the MVRMA.

Pursuant to Schedule 4.1 of the Northwest Territory Métis Nation (NWTMN) Interim Measures Agreement, the Board 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 Applications.

Pursuant to subsection 1.6, paragraphs (a) and (b) of the Akaitcho Territory Dene First Nations (ATDFN) Interim Measures Agreement, the Board 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 Applications.

3.0 Potential Impacts and Proposed Mitigations

Table 1 below summarizes:

- the potential impacts of the proposed changes to the Project;
- the concerns that were identified during the regulatory proceeding and how the Applicant addressed those concerns;
- the proposed and potential mitigations for the potential impacts; and
- the Board's analysis of the potential impacts and proposed mitigations.

⁹ See MVLWB Online Registry for SLZ – Type B Licence Application and Permit Amendment – Extension to Review Comment Deadline – Approved – Jul14_21 ([hyperlink](#)).

¹⁰ See MVLWB Online Registry for SLZ – Type B Licence Application and Permit Amendment - Review Summary Table – Aug16_21 ([hyperlink](#)).

Table 1: Potential Impacts and Proposed Mitigations for the Proposed Changes to the Project

Potential Impact	Activity	<p align="center">Proposed Mitigations</p> <p align="center"><i>Description of measures to reduce potential impacts, including consideration of cumulative impacts and climate change.</i></p>	Board Analysis and Determination
Soil Contamination	Use of fuel	<ul style="list-style-type: none"> • The Applicant proposed the following mitigations in the Applications: <ul style="list-style-type: none"> ○ Fuel will be stored in secondary containment and drip pads will be used. Every effort will be made to avoid fuel spills. • The Board has standard permit and licence conditions that are typically used to mitigate the described impacts. These standard conditions include:¹¹ <ul style="list-style-type: none"> Permit <ul style="list-style-type: none"> ○ REPORT SPILLS ○ WASTE PETROLEUM DISPOSAL ○ CHECK FOR LEAKS ○ FUEL CACHE SECONDARY CONTAINMENT ○ SECONDARY CONTAINMENT – REFUELING ○ FUEL CONTAINMENT ○ FUEL ON LAND ○ SEAL OUTLET ○ SPILL CONTINGENCY PLAN ○ SPILL RESPONSE ○ DRIP TRAYS ○ CLEAN UP SPILLS Licence <ul style="list-style-type: none"> ○ SPILL CONTINGENCY PLAN ○ REPORT SPILLS ○ SPILL PREVENTION AND RESPONSE EQUIPMENT ○ CLEAN UP SPILLS 	Based on the described mitigations, it is the Board’s opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.

¹¹ See the MVLWB Policies and Resources webpage to access the MVLWB [Standard Water Licence Conditions Template](#) and MVLWB [Standard Land Use Permit Conditions Template](#).

Soil Compaction	Camp construction and occupancy	<ul style="list-style-type: none"> • The Applicant described that the camp is temporary. • The Board has standard permit conditions that are typically used to mitigate the described impacts. These standard conditions include: <ul style="list-style-type: none"> ○ CAMP LOCATION ○ EXISTING CAMP 	Based on the described mitigations, it is the Board's opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.
Water flow or level changes	Use of water from O'Connor Lake	<ul style="list-style-type: none"> • The Applicant described that the water use from O'Connor Lake will be seasonal and temporary in nature. • The Board has standard licence conditions that are typically used to mitigate the described impacts. These standard conditions include: <ul style="list-style-type: none"> ○ WATER SOURCE AND MAXIMUM VOLUME ○ MAXIMUM UNDER ICE WATER WITHDRAWAL VOLUME 	Based on the described mitigations, it is the Board's opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.
Changes in air quality and increased greenhouse gases	Equipment exhaust	<ul style="list-style-type: none"> • The Applicant described that equipment use will be temporary and short term during seasonal exploration activities and proposed the following mitigation in the Application: <ul style="list-style-type: none"> ○ Avoid idling. 	Based on the described mitigations, it is the Board's opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.
Direct loss of vegetation	Removal of branches and scrub for mineral exploration activities and heli- pad construction	<ul style="list-style-type: none"> • The Applicant described that the activity will be temporary during season exploration activities. • The Board has standard permit and licence conditions that are typically used to mitigate the described impacts. These standard conditions include: <ul style="list-style-type: none"> Permit <ul style="list-style-type: none"> ○ BRUSH DISPOSAL/TIME ○ MINIMIZE AREA CLEARED ○ FINAL CLEANUP AND RESOTRATION ○ NATURAL REVEGETATION ○ PROGRESSIVE RECLAMATION Licence <ul style="list-style-type: none"> ○ CLOSURE AND RECLAMATION PLAN ○ PROGRESSIVE RECLAMATION 	Based on the described mitigations, it is the Board's opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.

Direct loss or removal of habitat, dens, or nests	Construction and operation of a camp, mineral exploration activities	<ul style="list-style-type: none"> • The Applicant proposed the following mitigations in the Applications: <ul style="list-style-type: none"> ○ A 50 m buffer zone around all known nesting areas of migratory birds will be established. ○ All work or camp activities within the buffer zone will be curtailed until the young have abandoned the nest. • The Board has a standard permit condition that is typically used to mitigate the described impacts: <ul style="list-style-type: none"> ○ HABITAT DAMAGE 	Based on the described mitigations, it is the Board's opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.
Loss or removal of keystone species and/or Species at Risk habitat	Construction and operation of a camp, mineral exploration activities	<ul style="list-style-type: none"> • The Project overlaps with the ranges of the following NWT-listed and/or pre-listed species: Norther Leopard Frog; Wood Bison; Barren-ground Caribou; Little Brown Myotis.¹² • The Board has a standard permit condition that is typically used to mitigate the described impacts: <ul style="list-style-type: none"> ○ HABITAT DAMAGE 	Based on the described mitigations, it is the Board's opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.
Effects on wildlife health (toxins, metals, etc.)	Use of fuel and generation and management of waste associated with construction and operation of a camp and mineral exploration activities	<ul style="list-style-type: none"> • The Applicant proposed the following mitigations in the Applications: <ul style="list-style-type: none"> ○ Ensure Spill Contingency Plan and Waste Management Plans are effective to avoid unnecessary impacts. • The Board has standard permit and licence conditions that are typically used to mitigate the described impacts. These standard conditions include: <ul style="list-style-type: none"> Permit <ul style="list-style-type: none"> ○ REPORT SPILLS ○ WASTE PETROLEUM DISPOSAL ○ CHECK FOR LEAKS ○ FUEL CACHE SECONDARY CONTAINMENT ○ SECONDARY CONTAINMENT – REFUELING ○ FUEL CONTAINMENT ○ FUEL ON LAND ○ SEAL OUTLET ○ SPILL CONTINGENCY PLAN ○ SPILL RESPONSE 	Based on the described mitigations, it is the Board's opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.

¹² See MVLWB Online Registry for SLZ – Type B Licence Application and Permit Amendment - Review Summary Table – Aug16_21, GNWT-ENR, comment 22 ([hyperlink](#)).

		<ul style="list-style-type: none"> ○ DRIP TRAYS ○ CLEAN UP SPILLS ○ WASTE MANAGMENT PLAN ○ REMOVE GARBAGE ○ GREYWATER DISPOSAL – SUMP <p>Licence</p> <ul style="list-style-type: none"> ○ SPILL CONTINGENCY PLAN ○ REPORT SPILLS ○ SPILL PREVENTION AND RESPONSE EQUIPMENT ○ CLEAN UP SPILLS ○ WASTE MANAGEMENT PLAN 	
Human-wildlife conflicts	Operation of a camp and mineral exploration activities	<ul style="list-style-type: none"> • The Applicant proposed the following mitigations in the Applications: <ul style="list-style-type: none"> ○ A local wildlife monitor will be hired to monitor all wildlife (report and record the information in the annual report to the Board) <p>Ensure that the Waste Management plan is effectively been used to eliminate and avoid all wildlife attractants.</p> • The Board has standard permit and licence conditions that are typically used to mitigate the described impacts. These standard conditions include: <p>Permit</p> <ul style="list-style-type: none"> ○ WASTE MANAGMENT PLAN ○ REMOVE GARBAGE <p>Licence</p> <ul style="list-style-type: none"> ○ WASTE MANAGMENT PLAN 	Based on the described mitigations, it is the Board’s opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.
Increased human health hazard and risk	Personnel onsite for mineral exploration activities	<ul style="list-style-type: none"> • The Applicant proposed the following mitigations in the Applications: <ul style="list-style-type: none"> ○ Fence off old headframe area. 	Based on the described mitigations, it is the Board’s opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.
Economic opportunities or loss (employment, training)	Mineral exploration activities	<ul style="list-style-type: none"> • The Applicant proposed the following in the Applications: <ul style="list-style-type: none"> ○ Hire local employees and use local contractors when available and it makes economic sense. 	Based on the described mitigations, it is the Board’s opinion that the proposed activities will not have a significant adverse impact on the environment or will not be a cause of public concern.

4.0 Consideration of Potential Impacts

Based on the potential impacts and proposed mitigations identified above in Table 1, the Board considered whether the changes to the Project might have a significant adverse impact on the environment. In general, impacts of the changes to the Project on the environment can be mitigated through conditions in the existing Permit and the use of standard licence conditions established by the Board as per the MVLWB [Standard Process for Creating New Conditions](#). These conditions include requirements for management and monitoring plans that provide detailed information regarding the implementation of mitigation measures and the evaluation of their effectiveness.

A draft Licence and Permit were circulated for review during the regulatory proceeding, and all Parties were given the opportunity to provide comments and recommendations on the draft conditions. In finalizing the conditions, the Board considered all of the evidence provided through the regulatory proceeding.

5.0 Consideration of Public Concern

In addition to considering the potential impacts of the changes to the Project, the Board considered whether the changes to the Project might be a cause of public concern.

Based on the evidence provided during the regulatory proceeding, the Board did not identify any comments or issues that indicate that the Project is a cause of public concern.

6.0 Conclusion

The Board completed a preliminary screening of the Project on March 3, 2017;¹³ however, the Applications include proposed changes to the Project. Accordingly, the Board has determined that Project activities that have already been subject to Part 5 of the MVRMA are exempt from preliminary screening under Part 1, Schedule 1, section 2.1 of the Exemption List Regulations to the MVRMA. The Board has conducted a preliminary screening of the proposed changes to the Project.

The Board has reviewed all the evidence received during the regulatory process with respect to the Preliminary Screening of the proposed changes to the Project. Based on the evidence, it is the Board's opinion that the proposed changes to the Project will not have a significant adverse impact on the environment or be a cause of public concern, as set out in paragraph 125(1)(a) of the MVRMA. The Board has therefore decided not to refer the proposed changes to the Project to Environmental Assessment

¹³ See MVLWB Online Registry for MV2016C0037 – Slave Lake Zinc – Type A LUP – Preliminary Screening – Mar3-17 ([hyperlink](#)).

If the Board does not receive a notice of referral to environmental assessment by September 20, 2021 the Board will issue the amended Permit and Licence on September 21, 2021.

SIGNATURE



Mavis Cli-Michaud
Chair, Mackenzie Valley Land and Water Board

September 9, 2021

Date