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September 19, 2022

Richard Dwyer
Manager of Licensing
Nunavut Water Board
PO Box 119
Gjoa Haven, NU
X0B 1J0

RE: Application for Renewal with Amendment of Water Licence 2BE-HIG1722

Dear Richard,

MMG Resources Inc. (MMG) is requesting a renewal with amendment of water licence 2BE-HIG1722 (the Licence) for the High Lake Project (the Project), which expired on August 3, 2022. The renewal request is for a further 5 years to allow continued field activities in this area.

The requested amendment will allow flexibility in the allocation of water and the provision of sufficient water for the High Lake Camp. MMG is requesting that the total water allotment for this licence (100 m^3/day) not be partitioned into 'drilling' and 'domestic' uses.

The Project has been in long-term care and maintenance since 2015. The Project has been reduced to the Crown Indigenous Relations and Northern Affairs Canada (CIRNAC) surface lease 76M/7-1-11 footprint underlying the High Lake Camp. The High Lake Camp currently consists of five temporary plywood structures; all other structures have been removed as part of progressive reclamation activities. All hazardous materials have been removed from site, including all salt, chemicals and fuel, and bulk fuel tanks have been cleaned and taken out of service. High Lake Camp has been secured for long-term suspension of activities. MMG conducts routine site inspections to confirm site stability and address maintenance issues. MMG last inspected the site in August of 2021 and August 2022 to undertake site maintenance and reclamation activities.

As indicated during the previous renewal of this Licence, and noted within the Licence, MMG intends to retain use of the camp and water licence 2BE-HIG1722.

At present, the Licence states that "*The Licensee shall obtain all water for domestic use from High Lake, not exceeding five (5) cubic meters per day. Water use for drilling and associated uses shall be obtained as required from sources proximal to the drilling targets and shall not exceed 95 cubic metres per day. The total volume of water for all purposes under this Licence shall not exceed 100 cubic meters per day*."

This application is requesting that this condition be revised to state simply that "*The Licensee shall obtain all water for domestic use from High Lake~~, not exceeding five (5) cubic meters per day~~. Water use for drilling and associated uses shall be obtained as required from sources proximal to the drilling targets ~~and shall not exceed 95 cubic metres per day~~. The total volume of water for all purposes under this Licence shall not exceed 100 cubic meters per day*." This amendment would not alter total water use or water sources being used.

The reasons and support for this request are summarized below:

1. Total water usage would remain below 100 cubic metres per day (m^3/day) (no change total water use)
2. Water usage would be withdrawn from the same waterbody as originally assessed and currently permitted for domestic and drilling purposes (no change in water source)
3. 5 m^3/day for domestic use is insufficient for the approved Project activities (which include exploration as well as supporting baseline and monitoring programs and reclamation activities)
4. As these allotments are also regulated on a daily basis (unlike Type A water licences) the ability to fully use this water is further constrained as these amounts cannot be averaged over even a week or month
5. Project activities are seasonal and, even in a high-activity year, rarely occur for more than one season
6. While the camp is open, water use will often be less than 100 m^3/day
7. High Lake has an approximate volume of 7.3 million cubic metres; if all withdrawals were from High Lake and the full 100 m^3/day allotment was withdrawn every day of the year, total annual withdrawal would be less than 1% of High Lake's volume
8. It is also noted that this Project has been in long-term care and maintenance since 2015

This application has been developed to address all Nunavut Water Board (NWB) requirements for a renewal with amendment. An overview of pertinent application information is provided below.

Application Form

A completed application form is included as Attachment 1. A map showing the Project location is included as Attachment 2.

Scope of Activities Proposed Under the Water Licence Renewal and Amendment

Activities and total water use will be consistent with current authorizations and water licence 2BE-HIG1722. This application does not represent a change in scope for the Project with the exception that total water use not be subdivided into 'domestic' and 'drilling' allocations.

Previous Land Use Planning Conformity and NIRB Screenings

As per the requirements of the *Nunavut Planning and Project Assessment Act*, this application has been submitted to the Nunavut Planning Commission (NPC) for a determination of whether a land use plan conformity review and a screening by Nunavut Impact Review Board (NIRB) is required. This Project was last reviewed by the NPC during the 2017 renewal of this Licence. An NPC determination concluding that the Project was outside the area of an applicable land use plan and that it was exempt from screening by the NIRB was issued on June 20, 2017 (Attachment 3; NPC File # 148606).

The first Type B Water Licence for the High Lake Project was issued in 2001 and has undergone multiple renewals and amendments since that time. The Licence was last renewed without amendment in 2017. The NIRB has conducted multiple screenings in relation to the High Lake Project over the years, under file numbers:

- 12MN043 (Izok Corridor)
- 06EN048 (High Lake)
- 12YA007 (Izok and High Lake Project 2012 Environmental Baseline Program)
- 08EN067 (High Lake Project – Canoe Lake Area
- 07YN055 (Biophysical Baseline Study Program for the Izok to High Lake Road Project)
- 06MN082 (High Lake)

- 04YN073 (Baseline Study Program for the High Lake)
- 03EN053 (High Lake Project)
- 01WN021 (High Lake Property)

All Screening Decision Reports can be found on the NIRB public registry. Screening Decision Reports for NIRB File No. 06EN048 (mineral exploration - licence renewal) and 12YA007 (Baseline activity) have been included here as Attachments 4 and 5 respectively as examples of the most recent and relevant decisions.

MMG notes that the High Lake Project remains located outside of a planning region with an approved regional land use plan. Additionally, both total water use and water sources will remain the same at those previously considered by the NIRB. As a result, it is anticipated that neither an NPC conformity review nor an additional NIRB screening will be required.

Updated Plans

MMG's environmental management plans for the High Lake Project Water Licence have recently been reviewed and updates were submitted to the NWB with the 2021 Annual Report required by Part B, Item 2, of the Licence. The Spill Contingency Plan and Abandonment and Restoration Plan will be included as Attachments 6 and 7.

Updated Security Assessment

MMG has updated the liability estimate for the Project and it will be included within the Abandonment and Restoration Plan in Attachment 7.

Updated Financial Statement

MMG Resources Inc. is a subsidiary of MMG Ltd. MMG Ltd.'s most recent financial statements can be found on its website at https://www.mmg.com/annual-report. The 2021 annual financial results indicate that MMG had cash and cash equivalents of $1.255 million USD as of December 31, 2021. More information is available at: https://www.mmg.com/wp-content/uploads/2022/04/MMG_AR_2021.pdf

Compliance Assessment / Status Reports

The CIRNAC Water Resources Inspector inspection reports can be found on the NWB public registry, along with annual reports documenting all activities and monitoring related to water use and waste disposal. No CIRNAC inspections were conducted under this licence during the licence term, nor did any spills occur during this period of long-term care and maintenance. MMG is actively undertaking Project site maintenance and progressive reclamation activities during annual site visits. A plan for historic drill site inventory and reclamation has been discussed with CIRNAC and will be implemented over the next licence term.

English and Inuktitut Summaries of Renewal Application

An English plain language summary has been provided in Attachment 8. An Inuktitut translation will be provided once completed.

Application Fee and Water Use Deposit

The renewal application fee was paid to the NWB on June 3, 2022. Water use fees are up-to-date.

Supplemental Information Guideline Concordance Table

A Supplemental Information Guideline Concordance Table focused on amendment request changes and impacts is provided in Attachment 12 of this application.

Should you have any questions or concerns please contact Sarah Hasek, Tenement Officer, MMG Resources Inc. sarah.hasek@mmg.com Ph: 603-358-8155, who is the MMG representative regarding this renewal.

Regards,

Mario Car

Head of Projects, MMG Ltd.
mario.car@mmg.com

Enclosed:

Attachment 1 – Application Form
Attachment 2 – Project Map
Attachment 3 – NPC Conformity Determination
Attachment 4 – Screening Decision Report for NIRB File No. 06EN048 (High Lake Licence Renewal)
Attachment 5 – Screening Decision Report for NIRB File No. 12YA007 (Baseline)
Attachment 6 – Exploration Spill Contingency Plan
Attachment 7 – Abandonment and Restoration Plan
Attachment 8 – Non-Technical Summaries
Attachment 9 – Authorization Letter
Attachment 10 – List of Leases, Permits and Authorizations
Attachment 11 – Certificate of Amalgamation
Attachment 12 – Advanced Exploration SIG Concordance Tables

ATTACHMENT 1

Application for Water Licence Amendment

Document Date: April 2013

Application Submission Date:
__September 14, 2022____
Month/Day/Year

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OFFICE DES EAUX DU NUNAVUT

DOCUMENT MANAGEMENT

Original Document Date: April 2010

DOCUMENT AMENDMENTS

	Description	Date
(1)	Updated for public distribution as separate document from NWB Guide 7	June 2010
(2)	Updated NWB logos and reformatted table to allow rows to break across page	May 2011
(3)	New NWB logo; request for background information; and change to Block 24	April 2013
(4)		
(5)		
(6)		
(7)		
(8)		
(9)		
(10)		

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APPLICATION FOR WATER LICENCE AMENDMENT

The applicant is referred to the NWB's Guide 7: *Licensee Requirements Following the Issuance of a Water Licence* for more information about this application form.

Where possible, provide background information regarding the original licence application or attach previously submitted information.

EXISTING LICENCE NO: *2BE-HIG1722*

1. LICENSEE CONTACT INFORMATION

Is the licensee the same as that referred to on the existing licence?

☑ Yes ☐ No

If No, a licence assignment must be completed and approved by the NWB. **An amendment will only be issued in the name of the current licensee in the absence of assignment of the licence.**

If the licensee is the same, but the name of the licensee has changed, attach a certificate of name change.

Name: *MMG Resources Inc.*

Address: *PO Box 91460, West Vancouver, BC, V7V 3P1*

Phone: *604-358-8155*
Fax:
e-mail: _AmericasTenements@mmg.com-

2. LICENSEE REPRESENTATIVE CONTACT INFORMATION – If different from Block 1.

Name: *Sarah Hasek, Tenement Officer – Americas, MMG Resources Inc.*

Address:
PO Box 91460, West Vancouver, BC, V7V 3P1

Phone: *604-358-8155*
Fax:
e-mail: *sarah.hasek@mmg.com*

(*See Attachment 9 for Authorization Letter.)*

3. NAME OF PROJECT

Has the name of the project changed?

☐ Yes ✔ No

If Yes, indicate the name of the project including the name of the location: _____

4. LOCATION OF UNDERTAKING

Does the proposed amendment change the location of the amended undertaking?

☐ Yes ✔ No

Provide the project extents and camp locations. Identify proposed changes.

Project Extents

NW:	*Latitude: (68° 00' 00" N)*	*Longitude: (111° 30' 00" W)*
NE:	*Latitude: (68° 00' 00" N)*	*Longitude: (109° 30' 00" W)*
SE:	*Latitude: (66° 45' 00" N)*	*Longitude: (109° 30' 00" W)*
SW:	*Latitude: (66° 45' 00" N)*	*Longitude: (111° 30' 00" W)*

Camp Location(s)

High Lake Camp Latitude: (67° 22' 45" N) Longitude: (110° 50' 37" W)

No proposed changes to Project extents or camp location.

Distance to nearest communities:
Kugluktuk – approximately 185 km NW of Project
Cambridge Bay – approximately 300 km NE of Project
Yellowknife – approximately 570 km SW of Project

5. MAP

Does the proposed amendment change the locations of any of the main components of the undertaking?

☐ Yes ✔ No

Attach a topographical map, indicating the main components of the undertaking. Identify proposed changes.
See Figure 1 – Location of Project and Mineral Claims (Attachment 2)

NTS Map Sheet No.: __*76M/76N*__ Map Name: _*Hepburn Island*__ Map Scale: _*1:150,000*_

6. NATURE OF INTEREST IN THE LAND

Does the proposed amendment change the nature of the interest in the land?

☐ Yes ✔ No

If Yes, indicate changes. _____

Check any of the following that are applicable to the proposed undertaking (at least one box under the 'Surface' header must be checked).

Sub-surface

✔ Mineral Lease from Nunavut Tunngavik Incorporated (NTI)
Date (expected date) of issuance: January 1, 2022_____ Date of expiry: __December 31, 2041_____

✔ Mineral Lease from Indian and Northern Affairs Canada (INAC)
Date (expected date) of issuance: _____ Date of expiry: _____

Surface

☐ Crown Land Use Authorization from Indian and Northern Affairs Canada (INAC)
Date (expected date) of issuance: _____ Date of expiry: _____

☐ Inuit Owned Land (IOL) Authorization from Kitikmeot Inuit Association (KIA)
Date (expected date) of issuance: _____ Date of expiry: _____

☐ IOL Authorization from Kivalliq Inuit Association (KivIA)
Date (expected date) of issuance: _____ Date of expiry: _____

☐ IOL Authorization from Qikiqtani Inuit Association (QIA)
Date (expected date) of issuance: _____ Date of expiry: _____

☐ Commissioner's Land Use Authorization
Date (expected date) of issuance: _____ Date of expiry: _____

✔ Other *CIRNAC Surface Lease 76M/7-1-11 (0.947 hectares) Expiry December 31, 2047. See Attachment 10.*

Date (expected date) of issuance: _____ Date of expiry: _____

A summary of sub-surface mineral leases and land use authorizations held by MMG and associated with this Water Licence is provided in Attachment 10.

NOTE: Land Use Authorization KTL308C008 previously held with the Kitikmeot Inuit Association for IOL has received approval for closure.

Is the name of the entity(s) holding authorizations the same as that considered in the existing water licence?

✔ Yes ☐ No

If No, a licence assignment must be completed and approved by the NWB.

Name of entity(s) holding authorizations: *MMG Resources Inc.*

7. NUNAVUT PLANNING COMMISSION (NPC) DETERMINATION

Indicate the land use planning area in which the existing project is located.

- ☐ North Baffin
- ☐ South Baffin
- ☐ Akunniq
- ☐ Keewatin
- ☐ Sanikiluaq
- ✔ West Kitikmeot

Does the proposed amendment change the land use planning area?

☐ Yes ✔ No

If yes, indicate the land use planning area in which the amended undertaking is located.

- ☐ North Baffin
- ☐ South Baffin
- ☐ Akunniq
- ☐ Keewatin
- ☐ Sanikiluaq
- ☐ West Kitikmeot

Was a land use plan conformity determination required from NPC prior to the issuance of the existing water licence?

✔ Yes ☐ No

If Yes, indicate date issued and attach copy. __*June 20, 2017; NPC File No. 148606 (Attachment 3)*__

Does the proposed amendment change the original NPC conformity determination or the need to obtain one?

✔ Yes ☐ No

If Yes, indicate date issued (or expected) and attach a copy. *This application has been provided to the NPC for a conformity determination. A determination is anticipated in within 45 days of this submission. This Project Proposal lies outside of a planning region with an approved regional land use plan.*

If No, provide written confirmation from NPC confirming that a land use plan conformity review is not required.

8. NUNAVUT IMPACT REVIEW BOARD (NIRB) DETERMINATION

Was a screening determination required from NIRB prior to the issuance of the existing water licence?

☐ Yes ✔ No

If Yes, indicate date issued and attach copy. *See cover letter of this application for list of applicable NIRB file numbers and Attachment 4 and 5 for screening decision reports.*

Does the proposed amendment change the original NIRB screening determination or the need to obtain one?

☐ Yes ✔ No

If Yes, indicate date issued (or expected) and attach a copy. _____
If No, provide written confirmation from NIRB confirming that a screening determination is not required. *This application has been provided to the NPC who will make a determination on whether a screening is required by the NIRB. This determination is anticipated to occur within 45 days of submission. As there is no change in total water use or in water sources, no requirements for additional NIRB screening is anticipated.*

9. DESCRIPTION OF UNDERTAKING

Does the proposed amendment change the description of the undertaking?

☐ Yes ✔ No

List and attach plans and drawings or project proposal. Identify proposed changes.

See the non-technical summary (Attachment 8), as well as the environmental management plans which will be provided in Attachments 6 and 7. The only change requested is that there be flexibility in water allocation between 'camp' and 'drilling'. No additional water is requested (total allocated water would remain 100 m^3/day) and water source would remain the same.

10. OPTIONS

Does the proposed amendment change any of the alternative methods and locations that were considered to carry out the project?

☐ Yes ✔ No

Provide a brief explanation of the alternative methods or locations that were considered to carry out the project. Identify proposed changes.
At this time, no further no changes to this already-established Project have been identified as necessary or beneficial.

11. CLASSIFICATION OF PRIMARY UNDERTAKING

Indicate the primary classification of undertaking for the existing licence by checking one of the following boxes:

- ☐ Industrial
- ☐ Agricultural
- ✔ Mining and Milling (includes exploration/drilling/exploration camps)
- ☐ Conservation
- ☐ Municipal (includes camps/lodges)
- ☐ Recreational
- ☐ Power
- ☐ Miscellaneous (describe below):

_____

Does the proposed amendment change the classification of primary undertaking?

☐ Yes ✔ No

If Yes, indicate the primary undertaking of the amendment:_____

Information in accordance with applicable Supplemental Information Guidelines (SIG) must be updated and submitted with an Application for Amendment. Indicate which SIG(s) are applicable to your application.

- ☐ Hydrostatic Testing
- ☐ Tannery
- ☐ Tourist / Remote Camp
- ☐ Landfarm & On-Site Storage of Hydrocarbon Contaminated Soil
- ☐ Onshore Oil and Gas Exploration Drilling
- ☐ Mineral Exploration / Remote Camp
- ☐ Advanced Exploration
- ☐ Mine Development
- ☐ Municipal
- ☐ General Water Works
- ☐ Power

12. WATER USE

Indicate, using the boxes below, the types of water use(s) approved in the existing licence.

- ✔ To obtain water for camp/ municipal purposes
- ✔ To obtain water for industrial purposes
- ☐ To cross a watercourse
- ☐ To alter the flow of, or store water
- ☐ Other: _____
- ☐ To divert a watercourse
- ☐ To modify the bed or bank of a watercourse
- ☐ Flood control

Does the proposed amendment change the type(s) of water use(s)?

☐ Yes ✔ No

If Yes, indicate using the boxes below, the proposed change(s) to the type(s) of water use(s) noting any water use(s) that are to be added, continued, or removed.

- ☐ To obtain water for camp/ municipal purposes
- ☐ To obtain water for industrial purposes
- ☐ To cross a watercourse
- ☐ To alter the flow of, or store water
- ☐ Other: _____
- ☐ To divert a watercourse
- ☐ To modify the bed or bank of a watercourse
- ☐ Flood control

13. QUANTITY OF WATER INVOLVED

Does the proposed amendment change the source of water? ☐ Yes ✔ No

Indicate the water source(s). Identify proposed changes.:
The principal source for domestic usage is High Lake. Specific water sources for drilling vary depending on drill target locations in years of exploration activity. No water source changes are requested.

(show location(s) on map) *See Attachment 2.*

Does the proposed amendment change the quality of the water source and/or its available capacity? ☐ Yes ✔ No

Describe the quality of the water source(s) and the available capacity(s). Identify any changes: *No changes are anticipated. High Lake is the principal source for the High Lake camp. High Lake contains approximately 7.3 million cubic meters of water. Based on existing water quality data, High Lake is naturally enriched with trace metals, with cadmium, copper, and zinc 20 to 100 times the Canadian guidelines for the protection of aquatic life and is acutely toxic to fish. Manganese and pH also periodically exceed drinking water guidelines. Potable water will be flown to camp until water quality can be confirmed for consumption. Per the Licence, water for drilling purposes is obtained from sources proximal to the drilling targets.*

Does the proposed amendment change the overall quantity of water to be used? ☐ Yes ✔ No

Provide the overall estimated quantity to be used. Identify proposed changes: *The permitted usage of 100 m^3/day is being retained. No change in overall estimated water quantity is being requested.*

Does the proposed amendment change the quantity of water to be used from each source?

☐ Yes ✔ No

Provide the estimated quantity(s) of water to be used from each source. Identify proposed changes:
Water Licence 2BE-HIG1722 permits the withdrawal of water from High Lake for camp use and from "sources proximal to drilling targets" for "drilling and associated uses", which may include High Lake. No significant changes to quantities of water to be used from each source are anticipated and total water usage under this licence would remain limited to a maximum of 100 m^3/day.

Does the proposed amendment change the quantity of water to be used for each purpose?

✔ Yes ☐ No

Provide the estimated quantities to be used for each purpose (camp, drilling, etc.). Identify proposed changes.:

This amendment requests that there be flexibility in how much of this total 100 m^3/day allocated is used for camp use vs drilling use. The cumulative water allocation (100 m^3/day) remain the same as currently permitted.

The constraint that camp use only be 5 m^3/day of this total 100m^3/day is prohibitively restrictive. When only exploration activities are underway it is possible that average camp water usage can remain under 5m^3/day and the remaining 95 m^3/day be used for drilling. However, when baseline and/or reclamation programs occur in parallel with exploration (as is routinely the case), camp water usage may increase to as much as 15 m^3/day and drill usage be reduced as required accordingly. During periods of only scientific research and/or reclamation activities no water would be used for drilling. During care and maintenance frequently no camp or drill water is used at all.

Due to the requirement that Type B Water Licences adhere to a daily allotment (as opposed to an annual allotment for Type A Water Licences), annual Type B water usage is typically lower than the full allocated amount; water usage is at or below the daily allowance and only used seasonally.

Does the proposed amendment change the method(s) of extraction? ☐ Yes ✔ No

Describe the method(s) of extraction. Identify proposed changes:

No changes are anticipated. Submersible electric pumps with screened intakes are employed for domestic water usage in camp applications, and a diesel or gas-powered pump is normally used for extraction of water from adequate local sources proximal to areas of activity during drilling. Combustion motor operated pumps are used in conjunction with spill trays and spill containment equipment, and are set back from the water bodies they are drawing from. Sources are evaluated to check that their volumes will be sufficient to support drilling activities without impacting the local water balance. Intakes are equipped with fish screens meeting the DFO water intake guidelines.

Does the proposed amendment change the quantity(s) of water returned to source(s)? ☐ Yes ✔ No

Estimated quantity(s) of water returned to source(s). Identify proposed changes: *0 m^3/day*

No water is directly returned to sources.

14. WASTE

Check the appropriate box(s) to indicate the types of waste(s) approved in the existing licence.

- ✔ Sewage
- ✔ Solid Waste
- ✔ Hazardous
- ✔ Bulky Items/Scrap Metal
- ☐ Animal Waste
- ✔ Other (food)
- ✔ Waste oil
- ✔ Greywater
- ✔ Sludges
- ✔ Contaminated soil and/or water

Does the proposed amendment change the type(s) of waste(s) to be generated or deposited?

☐ Yes ✔ No

If Yes, indicate using the boxes below, the proposed change(s) to the type(s) of waste(s) to be generated and/or deposited noting the addition, removal or continued generation and/or disposal of waste(s).

- ☐ Sewage
- ☐ Solid Waste
- ☐ Hazardous
- ☐ Bulky Items/Scrap Metal
- ☐ Animal Waste
- ☐ Other (describe):_____
- ☐ Waste oil
- ☐ Greywater
- ☐ Sludges
- ☐ Contaminated soil and/or water

15. QUANTITY AND QUALITY OF WASTE INVOLVED

Does the proposed amendment change the quantity(s) of the types of wastes involved? ☐ Yes ✔ No

Does the proposed amendment change the composition(s) of the types of wastes involved? ☐ Yes ✔ No

Does the proposed amendment change the method(s) of treatment for the types of waste involved? ☐ Yes ✔ No

Does the proposed amendment change the method(s) of disposal for the types of waste involved? ☐ Yes ✔ No

If Yes to any of the above, describe the proposed changes: _____*Not Applicable*_____

For each type of waste indicated in Block 14, describe its composition, quantity in cubic meters/day, method of treatment and method of disposal.

Type of Waste	Composition	Quantity Generated	Treatment Method	Disposal Method
Sewage	Human waste	1 m^3/day	Deposit in Pacto® toilet then incineration, or use of latrine pit	Incinerator Ash Backhauled for approved disposal at approved facility
Burnable Solid Waste	Paper, plastic, wood, burlap, absorbent material, food wastes	20 bags a day	Incineration and/or Open burning (excluding materials listed in Licence Part D Item 1)	Ash Backhauled for disposal
Drill cuttings/waste	Rock dust and water/brine	1 m^3/day when drilling	Consolidated in sump	Per Licence, Part F, Item 2
Other Solid wastes	Plastic packaging or bottling, scrap metal, treated wood products Empty drums, building materials	Variable	Separation, removal of liquids, crushed and strapped or shipped whole	Backhauled for disposal
Hazardous	Batteries, contaminated materials, used filters, aerosol spray cans	Variable	Backhauled to Yellowknife	Backhauled for disposal
Bulk Items/ Scrap Metal	Empty drums, building materials	Variable	Drained, crushed and strapped or shipped whole	Backhauled for disposal
Waste Oil	Waste Oil	Variable	Backhauled to Yellowknife/burned in on site waste oil furnaces	Backhauled for disposal
Greywater	Kitchen, bathing, sinks and laundry water	5 m^3/d	Kitchen grease trap, natural attenuation via sumps	Collection sump >31 m from high water mark which allows natural filtration through sand/ gravel

16. OTHER AUTHORIZATIONS

Does the proposed amendment change the need for other authorizations in addition to the sub-surface and surface land use authorizations provided in Block 6?

☐ Yes ✔ No

If Yes, indicate any additional authorizations required, which authorizations are no longer required, and which authorizations continue to be required.

For each provide the following:

Authorization: _____

Administering Agency: _____

Project Activity: _____

Date (expected date) of issuance: _____ Date of expiry: _____

A full list of authorizations associated with the High Lake Project is provided in Attachment 10.

17. PREDICTED ENVIRONMENTAL IMPACTS OF UNDERTAKING AND PROPOSED MITIGATION MEASURES

Does the proposed amendment change the predicted environmental impacts of the undertaking or the mitigation measures? ☐ Yes ✔ No

Describe direct, indirect, and cumulative impacts related to water and waste. Identify any changes.

The Project is in long-term Care and Maintenance. However, should activity resume, potential environmental impacts related to the use of water and the disposal of waste from camp operation and drilling and mitigation measures would remain the same as previously approved, and include:

- *Water for the camp water supply is derived from High Lake, which has sufficient capacity for permitted use*
- *Camp waste is incinerated and/or removed from site*
- *Greywater is discharged to a sump located more than 31 m from the nearest high water mark*
- *Drills and drilling supplies are positioned using helicopters to minimize ground disturbance when the ground is unfrozen*
- *When drilling in permafrost, salt (calcium chloride) is added to drill water to keep the drill rods from freezing in the hole and water may be heated. This water is recirculated.*
- *Water from drilling operations is recirculated to minimize the quantity of both water and salt used and to minimize runoff near the drill site.*
- *Drill cuttings are collected and subsequently deposited in a sump*
- *Drilling in lake bottom areas occurs within a casing to minimize sedimentation.*

Cumulative impacts of drilling are reduced because of the above mitigation measures, as well as progressive reclamation of drill holes.

18. WATER RIGHTS OF EXISTING AND OTHER WATER USERS

Was compensation paid and/or an agreement(s) for compensation been entered into with any existing or other users of water during consideration of the existing licence?

☐ Yes ✔ No

If Yes, provide the names, addresses and the nature of water use by those persons or properties.

Does the proposed amendment adversely affect any known persons or property including those that hold licences for water use in precedence to the application, domestic users, in-stream users, authorized waste depositors, owners of property, occupiers of property, and/or holders of outfitting concessions, registered trapline holders, and holders of other rights of a similar nature?

☐ Yes ✔ No

If Yes, provide the names, addresses and the nature of water use of those persons or properties.

Advise the Board if compensation has been paid and/or an agreement(s) for compensation has been reached with any existing or other water users with respect to the proposed amendment.

19. INUIT WATER RIGHTS

Was compensation paid/ or an agreement(s) for compensation been entered into with any Designated Inuit Organization (DIO) during consideration of the existing licence?

☐ Yes ✔ No

If Yes, which DIO(s) _____

Does the proposed amendment substantially affect the quality, quantity or flow of waters flowing through Inuit Owned Land (IOL)?

☐ Yes ✔ No

If Yes, advise the Board if negotiations have commenced or an agreement to pay compensation for any loss or damage has been reached with one or more DIO(s) with respect to the proposed amendment.

No substantial effects to the quality, quantity, or flow of waters through IOL is expected to occur from water use and waste disposal contemplated in this licence renewal.

20. CONSULTATION - Provide a summary of any consultation meetings including when the meetings were held, where and with whom. Include a list of concerns expressed and measures to address concerns.

Prior to Care and Maintenance engagement was carried out with nearby communities and relevant regulators regarding the High Lake Project and the related Izok Corridor project. A summary can be found on the NIRB public registry, File No. 12MN043, Project Proposal – Volume 1 – Section 3.

21. SECURITY INFORMATION

Does the proposed amendment change the financial security assessment?

☐ Yes ✔ No

Does the proposed amendment change the estimate of the total financial security for final reclamation?

☐ Yes ✔ No

Provide an estimate of the total financial security for final reclamation equal to the total outstanding reclamation liability for land and water combined sufficient to cover the highest liability over the life of the undertaking. Estimates of reclamation costs must be based on the cost of having the necessary reclamation work done by a third party contractor if the operator defaults. The estimate must also include contingency factors appropriate to the particular work to be undertaken. Identify any changes in the financial security assessment resulting from the proposed amendment.

Where applicable, the financial security assessment should be prepared in a manner consistent with the principals respecting mine site reclamation and implementation found in the *Mine Site Reclamation Policy for Nunavut,* Indian and Northern Affairs Canada, 2002.

An up-to-date security estimate will be provided with this application in the Abandonment and Restoration Plan provided in Attachment 7.

22. FINANCIAL INFORMATION

Is the statement of financial security the same as that considered in the existing water licence?

☐ Yes ✔ No

Provide an updated statement of financial security.

MMG Resources Inc. is a subsidiary of MMG Ltd. MMG Ltd.'s most recent financial statements can be found on its website at https://www.mmg.com/annual-report. 2021 annual financial results indicate that MMG Ltd. had cash and cash equivalents of $1.255 million USD as of December 31, 2021. More information is available at: https://www.mmg.com/wp-content/uploads/2022/04/MMG_AR_2021.pdf

If the applicant is a business entity please answer the questions below:

Is the list of the officers of the company the same as those considered in the existing water licence?

☐ Yes ✔ No

Provide a list of the officers of the company.

MMG Resources Officers:
Alvaro Javier Ossio - Director
Ross Carroll - Director

Is the Certificate of Incorporation or evidence of registration of the company name the same

✔ Yes ☐ No

Attach a copy of the Certificate of Incorporation or evidence of registration of the company name.

See Attachment 11.

23. STUDIES UNDERTAKEN TO DATE

List and attach updated studies, reports, research etc.

Provide a compliance assessment and status report including a response to any inspector's reports. The licensee must contact the NWB for licence specific direction in completing the assessment and report.

If in non-compliance, a licence may not be issued until compliance is achieved. If in non-compliance, attach plans/reports for consideration. Application will not be processed if significant issues of non-compliance exist.

Prior to the Care and Maintenance phase, extensive studies were conducted in relation to the High Lake Project and the associated Izok Corridor Project. A summary of these studies can be found in the Izok Corridor Project Proposal, found on the NIRB public registry under file number 12MN043. A summary of environmental studies conducted can be found in the Project Proposal – Volume 1 – Section 5.

No Water Resources Inspector inspections have been conducted over the term of this Licence. However, MMG and the Inspector have been in contact regarding reclamation of historic drill sites and conducting routine site visits and ongoing care and maintenance activities. MMG retained the services of Discovery Mining Services in 2021 to conduct a site inspection and address site repairs in 2021 (as reported in the 2021 Annual Report) and 2022 (which will be reported in the 2022 Annual Report).

24. PROPOSED TIME SCHEDULE

When are proposed amendments scheduled to be undertaken: _____

Does the proposed amendment change the time schedule considered in the existing licence for any phase of development?

☐ Yes ✔ No

Indicate the start and completion dates for each applicable phase of development (construction, operation, closure, and post closure). Identify proposed changes.

Construction
Proposed Start Date: *Already Constructed* (month/year) Proposed Completion Date: _____ (month/year)

Operation
Proposed Start Date: *September 2022* (month/year) Proposed Completion Date: *September 2027* (month/year)

This Project is currently in long-term care and maintenance. Should exploration activities be resumed, they would take place seasonally, typically during the open water season (but occasionally during winter if on-ice drilling targets are identified). Closure is not currently planned; as indicated in the 2017 renewal application and Licence 2BE-HIG1722, the camp is being retained as a base for environmental or engineering studies related to the Grays Bay road project if requested by the Kitikmeot Inuit Association, and in case exploration activities are resumed in future.

Closure
Proposed Start Date: _____ (month/year) Proposed Completion Date: _____ (month/year)

Post - Closure
Proposed Start Date: _____ (month/year) Proposed Completion Date: _____ (month/year)

For each applicable phase of development indicate which season(s) activities occur.

Construction
☐ Winter ☐ Spring ☐ Summer ☐ Fall ☐ All season

Operation
☐ Winter ☐ Spring ☐ Summer ☐ Fall ✔ All season

Closure
☐ Winter ☐ Spring ☐ Summer ☐ Fall ☐ All season

Post - Closure
☐ Winter ☐ Spring ☐ Summer ☐ Fall ☐ All season

25. PROPOSED TERM OF LICENCE

On what date does the existing licence expire? ____*August 3, 2022*_____

Is the Licensee applying for a combined renewal and amendment of the existing licence?

☑ Yes ☐ No

If Yes, indicate the proposed term of the renewal (maximum of 25 years): __*5 years*_____

Requested date of renewal issuance: __*September 2022*__ (month/year) Requested Expiry Date: __*September 2027*__ (month/year)

(The requested date of renewal issuance must be at least three (3) months from the date of application for a type B water licence and at least one (1) year from the date of application for a type A water licence, to allow for processing of the water licence application. These timeframes are approximate and do not account for the time to complete any pre-licensing land use planning or development impact requirements, time for the applicant to prepare and submit a water licence application in accordance with any project specific guidelines issued by the NWB, or the time for the applicant to respond to requests for additional information. See the NWB's *Guide 5: Processing Water Licence Applications* for more information)

26. ANNUAL REPORTING

Will the proposed amendment change the content of annual reports or the annual report template?

☐ Yes ☑ No

If not using the NWB's *Standardized Form for Annual Reporting*, provide details regarding the content of annual reports and a proposed outline or template of the annual report.

27. CHECKLIST

The following must be included with the application for Amendment for the water licensing process to begin.

Completed Application for Water Licence Amendment form.

x Yes ☐ No If no, date expected _____

Information addressing Supplement Information Guideline (SIG), where applicable (see Block 11)

x Yes ☐ No If no, date expected _____

Compliance Assessment / Status Report (see Block 23).

x Yes ☐ No If no, date expected _____

Indication of Renewal Requirement (see Block 26)

x Yes ☐ No If no, date expected _____

English Summary of Amendment Application.

x Yes ☐ No If no, date expected _____

Inuktitut and/or Inuinnaqtun Summary of Amendment Application.

☐ Yes x No If no, date expected __October 2022_____

Application fee of $30.00 CDN (Payee Receiver General for Canada).

x Yes ☐ No If no, date expected _____

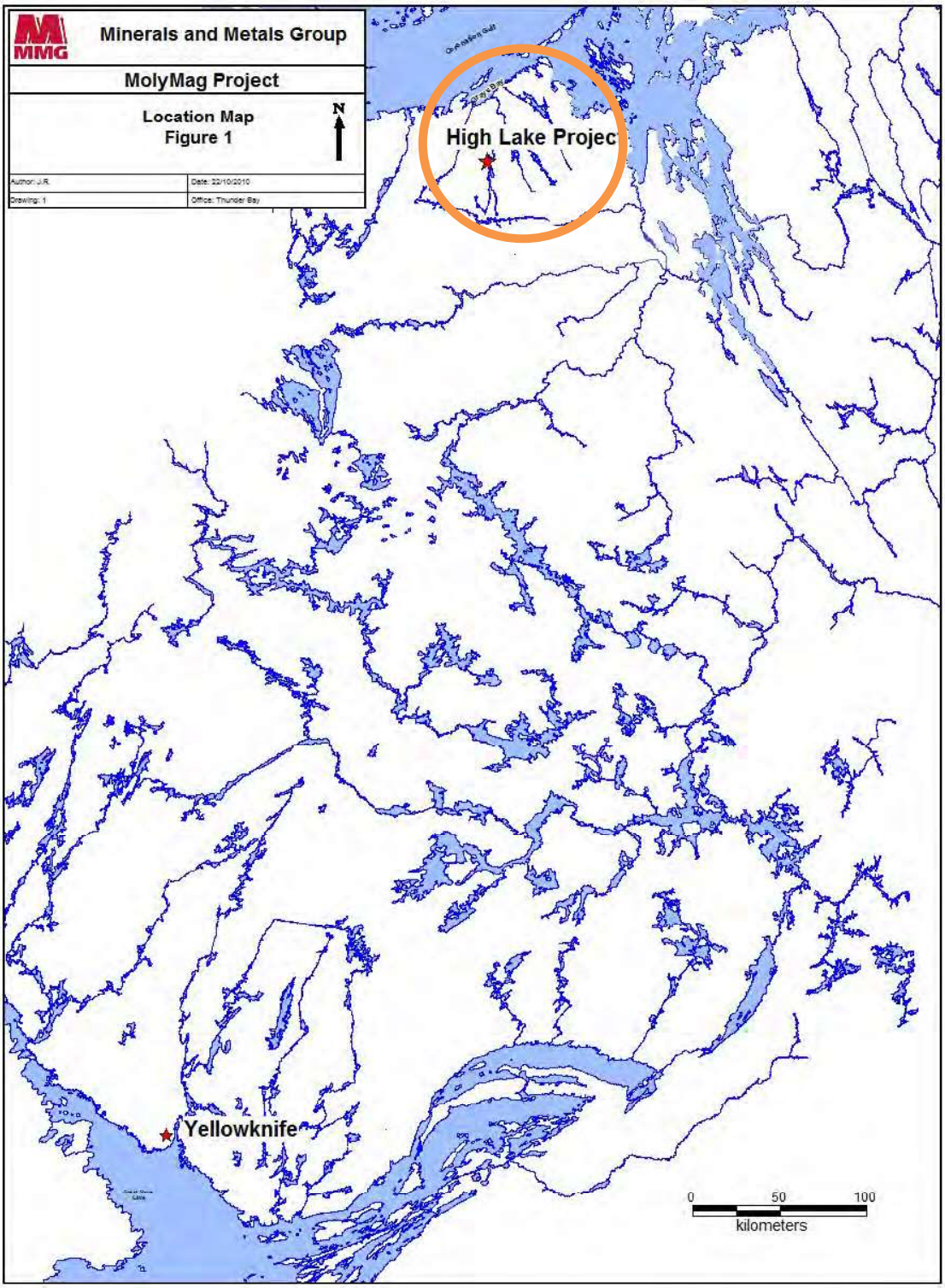
Water Use Fee Deposit of $30.00 CDN (Payee Receiver General for Canada). The actual water use fee will be calculated by the NWB based upon the amount of water authorized for use in accordance with the Regulations at the time of issuance of the licence.

28. SIGNATURE

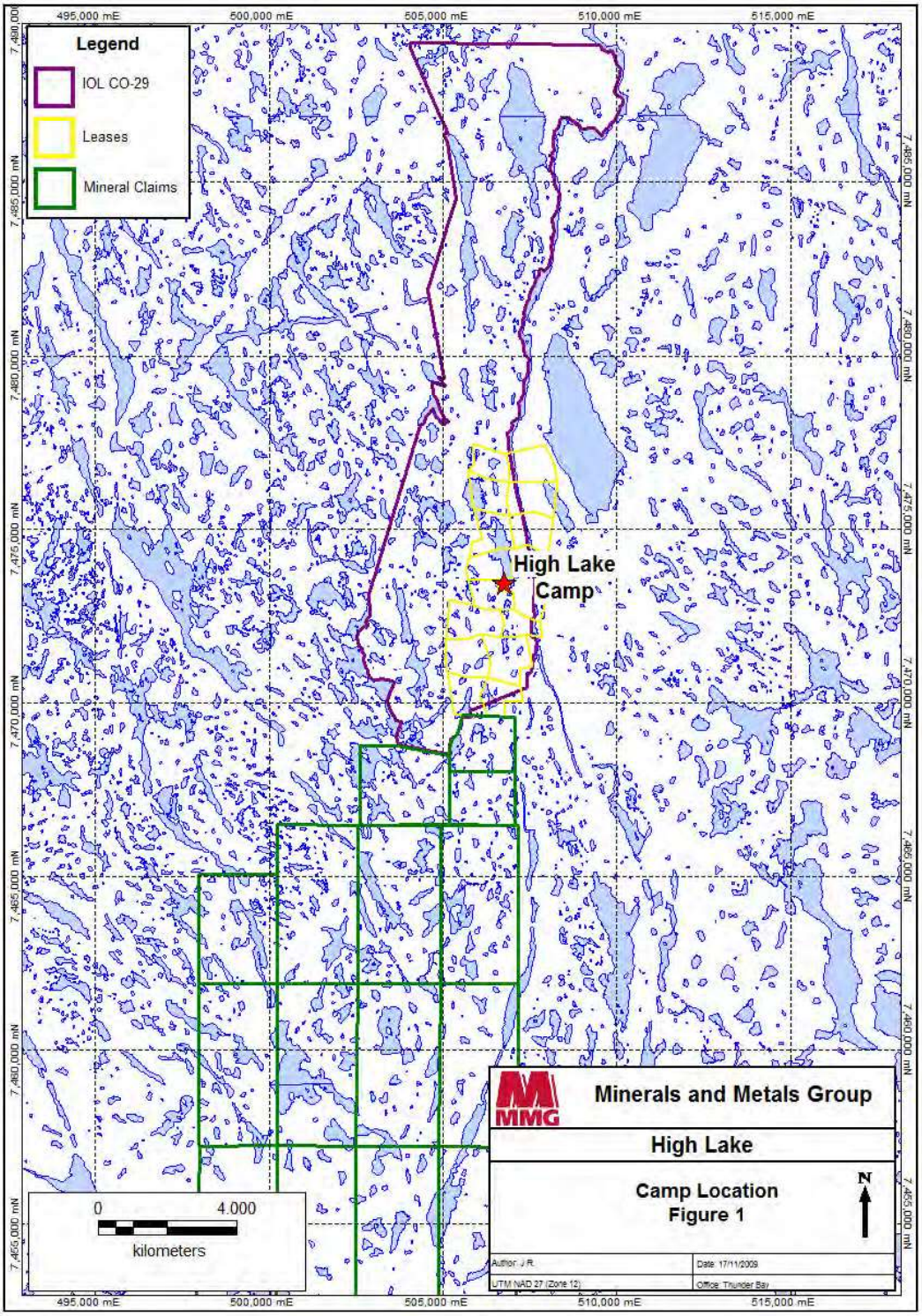
Mario Car	Head of Projects.	[signature]	19 Sep 2022
Name (Print)	**Title (Print)**	**Signature**	**Date**

ATTACHMENT 2 - PROJECT MAP

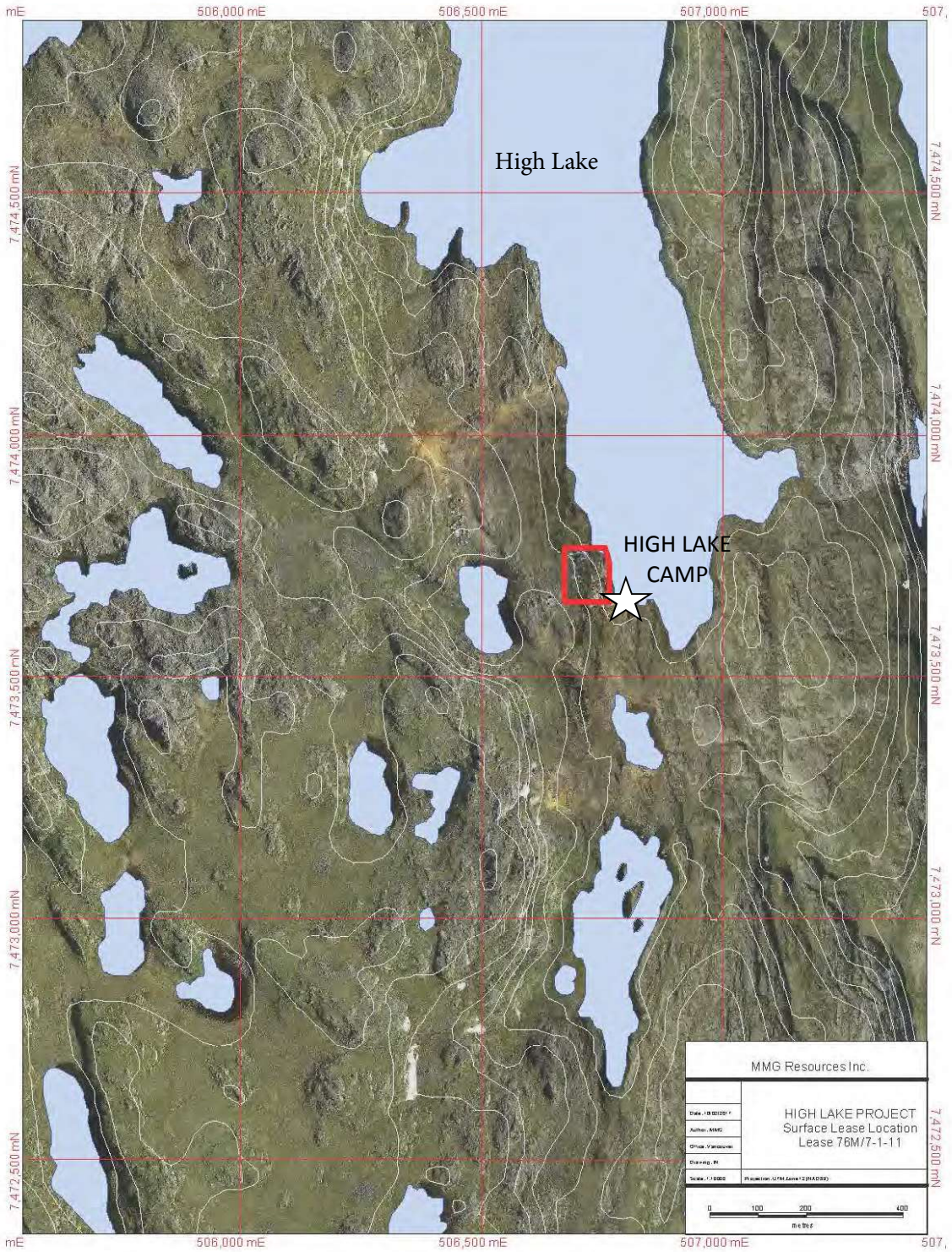
General Location Map



Detailed Map Showing Leases and IOL Ground



Map of Annexed Surface Lease at High Lake Camp Location



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Nunavunmi Parnaiyiit
Nunavut Planning Commission
Commission d'Aménagement du Nunavut

June 20, 2017

Jaida Ohokannoak
Manager, Technical Administration
Nunavut Impact Review Board (NIRB)
P.O. Box 1360, Cambridge Bay, NU X0B 0C0
By email: info@nirb.ca

Karén Kharatyan
Manager of Licensing
Nunavut Water Board (NWB)
P.O. Box 119, Gjoa Haven, NU X0B 1J0
By email: licensing@nwb-oen.ca

Tracey McCaie
Indigenous and Northern Affairs Canada
P.O. Box 100, Iqaluit, NU X0A 0H0
By email: tracey.mccaie@aandc.gc.ca

Geoff Clark
Director, Lands, Environment & Resources
Kitikmeot Inuit Association
P.O. Box 360, Kugluktuk, NU X0B 0E0
By email: dirlands@kitia.ca; srlands@kitia.ca

Nunavut Parks and Special Places
P.O. Box 1000, Stn. 1340
Iqaluit, NU X0A 0H0
By email: parks@gov.nu.ca

Theodore Muraro
MMG
P.O. Box 91460, West Vancouver, BC V7V 3P1
By email: Theodore.muraro@mmg.com

Dear Ms. Ohokannoak, Mr. Kharatyan, Ms. McCaie, Mr. Clark, Mr. Muraro:

RE: NPC File # 148606 High Lake

The following works and activities have been proposed in the above-noted project proposal:

1. Mineral Exploration, Transportation and/or Communications Corridor:
    a. Renewal of water licence 2BE-HIG1217
2. Location: Kitikmeot Region

A complete description of the project proposal reviewed by the NPC can be accessed online using the link below.

The Nunavut Planning Commission (NPC) has determined that this project proposal is outside the area of an applicable regional land use plan, and the works and activities listed above were previously screened by the Nunavut Impact Review Board (NIRB FILE NO.: 08EN067). This project proposal is exempt from the *Nunavut Planning and Project Assessment Act* (NUPPAA) under section 235 of that Act. The above-noted project proposal is exempt from screening by the NIRB because the NPC is of the understanding that it does not change the general scope of the original or previously amended project activities, and the exceptions noted in Section 12.4.3 (a) and (b) of the Nunavut Agreement do not apply.

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ᐅᖃᓘᑎᖓ 867-983-4625
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P.O. Box 2101
Cambridge Bay, NU X0B 0C0
☎ 867-983-4625
🖷 867-983-4626

P.O. Box 2101
Ikaluktutiak, NU X0B 0C0
☎ 867-983-4625
🖷 867-983-4626

By way of this letter, the NPC is forwarding the project proposal to the regulatory authorities identified by the proponent. Project materials are available at the following address:
http://npc.strata360.com/portal/project-dashboard.php?appid=148606&sessionid=

This decision applies only to the above noted project proposal as submitted. Proponents may not carry out projects and regulatory authorities may not issue licenses, permits and other authorizations in respect of projects if a review by the NPC is required.

If you have any questions, please do not hesitate to contact me at (867) 983-4634.

Sincerely,

Alana Vigna
Senior Planner,
Nunavut Planning Commission

SCREENING DECISION REPORT
Wolfden Resources Inc. High Lake Re-Licensing

NIRB File No.: 06EN048

August 11, 2006

Hon. Jim Prentice
Minister of Indian affairs and Northern Development
Ottawa, ON

Vía email: minister@inac.gc.ca

Dear Hon. Prentice:

Authority:

Section 12.4.4 of the Nunavut Land Claim Agreement states:

Upon receipt of a project proposal, NIRB shall screen the proposal and indicate to the Minister in writing that:

a) the proposal may be processed without a review under Part 5 or 6; NIRB may recommend specific terms and conditions to be attached to any approval, reflecting the primary objectives set out in Section 12.2.5;
b) the proposal requires review under Part 5 or 6; NIRB shall identify particular issues or concerns which should be considered in such a review;
c) the proposal is insufficiently developed to permit proper screening, and should be returned to the proponent for clarification; or
d) the potential adverse impacts of the proposal are so unacceptable that it should be modified or abandoned.

Primary Objectives:

The primary objectives of the Nunavut Land Claims Agreement are set out in section 12.2.5 of the Land Claims Agreement. This section reads:

In carrying out its functions, the primary objectives of NIRB shall be at all times to protect and promote the existing and future well-being of the residents and communities of the Nunavut Settlement Area, and to protect the ecosystemic integrity of the Nunavut Settlement Area. NIRB shall take into account the well-being of the residents of Canada outside the Nunavut Settlement Area.

The decision of the Board in this case is 12.4.4 (a) **the proposal may be processed without a review under Part 5 or 6; NIRB may recommend specific terms and conditions to be attached to any approval, reflecting the primary objectives set out in Section 12.2.5;**

Reasons for Decision

NIRB's decision is based on specific considerations that reflect the primary objectives of the Land Claims Agreement. The considerations in making this decision included:

- the impact of exploration activities on the ecosystem;
- the impact of project components on permafrost;
- impact to water quality, aquatic habitat and wildlife and fish populations from chemicals, drill waste, drill fluids and potential fuel spills;
- storage and disposal of chemicals, fuel, garbage, sewage, and gray water, and impact of these on the ecosystem;
- the impact of noise from exploration activities and their disturbance to wildlife and traditional users of area;
- the potential impact of aircraft on wildlife;
- the impact of camps and equipment on terrain;
- the impact of exploration activities and infrastructure on archaeological sites or cultural landmarks in the area; and
- clean up/restoration of the camp site and sample locations upon abandonment;

Terms and Conditions:

That the terms and conditions attached to this screening report will apply.

General

1. Wolfden Resources Inc. (proponent) shall maintain a copy of the Project Terms and Conditions at the site of operation at all times.

2. The proponent shall forward copies of all permits to the NIRB obtained and required for this project prior to the commencement of the project.

3. The NIRB shall be notified of any changes in operating plans or conditions associated with this project prior to any such change.

4. The proponent shall prepare and submit 2 reports, one to Environment Canada (EC) and one to the Department of Fisheries and Oceans Canada (DFO) that address all concerns/comments listed in correspondence dated July 25, 2006 (EC) and July 24, 2006 (DFO) (attached Appendix #1 and #2). Copies of the reports shall be submitted to the NIRB. The reports must be submitted and concerns addressed prior to the commencement of the project.

5. The proponent shall adhere to conditions stated in attached Appendix #3 "Archaeological and Palaeontological Resources – Terms and Conditions for Land Use Permit Holders", dated June 5, 2006 to ensure preservation and protection of archaeological sites encountered as a result of this

project. Condition # 9 of this document must be noted by the proponent.

6. The Proponent shall operate the project in a manner consistent with all commitments stated in all correspondence provided to the NIRB from the period commencing May 1, 2006 thru July 24, 2006 and it is understood that any components of this project, approved by this screening, that are part of any future mine or mining activity at High Lake, could be subject to any Article 12, Nunavut Land Claims Agreement review that may be required as a result of such a mining proposal submitted to the NIRB.

7. The Proponent shall submit an annual report with copies provided to the NIRB, Indian and Northern Affairs Canada (INAC), and the Kitikmeot Inuit Association (KIA), by January 31 each year that the project is in operation commencing January 31, 2007. The report must contain, but not be limited to, the following information,

    a. A summary of activities undertaken for the year, including the amount of drilling;
    b. A work plan for the following year;
    c. The results of environmental studies undertaken and plans for future studies;
    d. Wildlife encounters and actions/mitigation taken;
    e. A summary of local hires and initiatives;
    f. A summary of community consultations undertaken and the results;
    g. A summary of site-visits by inspectors with results and follow-up actions (copies to be submitted to the NIRB)
    h. The number of take-offs & landings from an airstrip with approved flight path with date and location;
    i. The number of helicopter touch-downs on the land with date and location (provide unless confidential);
    j. Site photos;
    k. Revisions to the Abandonment and Restoration Plan;
    l. Progressive reclamation work undertaken; and
    m. A summary of how the proponent has complied with all project terms and conditions and how the terms and conditions are achieving their purpose.
    n. Amount of waste removed from the site and location of disposal site.

Drill Sites

8. The Proponent shall not conduct any land based drilling within thirty (31) metres of the normal high water mark of a water body.

1. The Proponent shall conduct any lake-based winter drilling, in accordance with the Interim Guidelines for On-Ice drilling.

2. The Proponent shall ensure that drill muds and additives are not used in connection with holes drilled through lake ice unless they are re-circulated or contained such that they do not enter the water.

3. The Proponent shall ensure that all drill cuttings are removed from ice surfaces.

4. The Proponent shall not use drilling muds or additives in connection with drill holes unless they are recirculated or contained such that they do not enter the water, or are certified to be non-toxic. Further, the Proponent is hereby informed that the Canadian Environmental Protection Act has recently listed CaCl as a toxic substance. If CaCl is to be used as a drill additive, the proponent shall ensure that all sumps containing CaCl are properly constructed and located in such a manner as to ensure that the contents will not enter any water body.

5. The Proponent shall ensure that if "on-ice drilling", the return water released must be non-toxic, and not result in an increase in total suspended solids in the immediate receiving waters above the Canadian Council of Ministers for the Environment (CCME) Guidelines for the Protection of Freshwater Aquatic Life (i.e. 10 mg/L for lakes with background levels under 100 mg/L, or 10% for those above 100 mg/L).

6. The Proponent shall ensure that any drill cuttings and waste water that cannot be re-circulated be disposed of in a properly constructed sump or an appropriate natural depression that does not drain into a water body. The use of biodegradable, salt free drill additives is encouraged over non-biodegradable types. The sump shall be backfilled upon completion of the hole.

7. The Proponent shall ensure that the sump/depression capacity is sufficient to accommodate the volume of waste water and any fines that are produced so that there will be no additional impacts.

8. The Proponent shall not locate any sump within thirty (30) meters of the normal high water mark of any water body.

9. The Proponent shall ensure that disturbance of vegetation from deposit of drill fluids/cuttings is restricted to the area of the sump and the ground prepared for revegetation upon abandonment.

10. The Proponent shall not use mechanized clearing within 30 meters of the normal high water mark of a watercourse in order to maintain a vegetative mat for bank stabilization.

11. The Proponent shall, where flowing water from bore holes is encountered, plug the bore hole in such a manner as to permanently prevent any further outflow of water. The occurrence shall be reported to the Nunavut Water Board and Land Use Inspector within 48 hours.

12. The Proponent shall inspect each drill sites for contamination before moving to the next drill site and immediately clean up any contamination.

13. The Proponent will restore drill sites immediately after the drill has been moved to the next site.

Water

14. The Proponent shall only use the specified volume of water from sources approved by the Nunavut Water Board. The Proponent shall verify that an amendment to the water license is required for the operation of the water and wastewater treatment facilities at the proposed Weatherhaven and Sand Lake construction camps and copy NIRB on the correspondence.

15. The Proponent will ensure that effluent discharged to Lake L20 is protective of the receiving environment and meets all requirements imposed by the Nunavut Water Board.

16. The Proponent shall ensure that all water intake hoses are equipped with a screen with an appropriate mesh size to ensure that there is no entrapment of fish; that the rate of water withdrawal is such that no fish become impinged on the screen; the fish guard or screen is properly maintained; and that during fish guard or screen repair, the entrance of the water intake is closed.

17. Prior to construction and quarry development, the Proponent shall submit to NIRB, INAC and the KIA for review, a plan for testing the acid generated and metal leaching potential of quarried rock used in road and infrastructure construction. The plan must also contain measures that will prevent any ARD materials from adversely impacting the surrounding environment including any water and/or watercourses.

Fuel and Chemical Storage

18. The Proponent shall have an Emergency Response & Spill Contingency Plan approved by the Nunavut Water Board prior to commencing on-site activities. The Plan should include a map outlining the location of fuel caches on site, and related spill kits.

19. All fuel shall be stored in accordance with Wolfden's July 18 and 24, 2006 correspondence to NIRB Manager of Environmental Screening, Kevin Buck. Specifically the fuel storage at Sand Lake shall not exceed 500,000 liters and the fuel supply and storage at the Weatherhaven Camp shall not exceed 50,000 liters. All fuel shall be stored in double – wall tanks and/ or in accordance with Regulations made under the Canadian Environmental Protection Act.

20. The Proponent shall locate fuel caches and other hazardous materials away from the high water mark of any water body and in such a manner as to prevent their release into the environment. Written justification must be provided to NIRB prior to commencement of project activity as to why the fuel storage tanks at Sand Lake are not located further from the Kennarctic River.

21. The Proponent shall use self supporting insta-berms when storing barreled fuel on location, rather than relying on natural depressions.

22. The Proponent shall examine all fuel and chemical storage containers immediately upon delivery and daily for leaks. All leaks should be repaired immediately.

23. The Proponent shall seal all container outlets except the outlet currently in use.

24. The Proponent shall mark all fuel containers with the Proponent's name.

25. The Proponent shall ensure that all activities, including maintenance procedures and refueling, are controlled to prevent the entry of petroleum products or other deleterious substances into the water or onto the land.

26. The Proponent shall ensure that all on site personnel are properly trained in fuel and hazardous waste handling procedures as well as spill response procedures.

27. The Proponent shall maintain a supply of spill kits, shovels, barrels, sorbents, and pumps on-site at the camp, the main fuel cache, the drill site, and at the camp.

28. The Proponent shall use drip pans when refueling equipment.

29. Chemicals containing salts, which may attract wildlife to the site, should be stored so that they are inaccessible to wildlife.

30. The Proponent shall ensure that **all** spills are documented and reported to the 24 hour Spill Report Line at 867-920-8130.

31. The proponent shall ensure that spill response measures are otherwise conducted in accordance with the revised Spill Contingency Plan submitted to the NIRB as part of this project proposal.

Wildlife

32. The Proponent shall ensure that there is minimal disturbance to any nesting birds and wildlife in the area. Harassment of wildlife is prohibited. This includes persistently worrying or chasing animals, or disturbing large groups of animals.

33. The Proponent shall conduct baseline wildlife survey(s) in the affected areas of the project activity, using acceptable methodology, prior to construction activity, which must form part of a cumulative effects (as a result of this project activity) study, and must include mitigative measures undertaken, to be updated on a yearly basis and included in the annual report submitted to the NIRB, INAC, and the KIA.

34. The Proponent shall ensure that aircraft pilots adhere to flight altitudes of greater than 610 m above ground level, unless there is a specific need for low-level-flying which does not to disturb wildlife.

35. The Proponent shall not feed wildlife.

36. The Proponent shall ensure that the drill sites avoid known environmentally sensitive areas (denning, nesting etc.) by a minimum of 250 meters.

37. The Proponent shall not conduct any activity associated with the land use operation if critical periods of wildlife cycles are observed (e.g. caribou migration, calving, fish spawning or raptor nesting).

38. That the Proponent shall ensure that there is no hunting by employees of the company or any contractors hired unless proper Nunavut authorizations have been obtained.

39. The Proponent shall contact in advance, the Regional Biologist to identify areas which should be avoided.

40. The Proponent shall ensure that all field personnel are made aware of the measures to protect wildlife including migratory birds, and are provided with training and/or advice on how to implement these measures.

Birds

41. Pursuant to the Migratory Bird Convention Act Regulations the Proponent shall not disturb or destroy the nests or eggs of migratory birds. The period from May 15 to July 31 is the general migratory bird breeding season, it is recommended that activities be conducted outside of these dates, particularly in the vicinity of known migratory bird colonies.

42. The Proponent shall confirm there are no active nests (i.e. nests containing eggs or young) in the vicinity before activities commence. If active nests of migratory birds are encountered, the Proponent/ Licensee shall avoid these areas until nesting is complete and the young have left the nest.

43. The period from mid June to mid August is the general molting period when geese are temporarily flightless while they lose their flight feathers and grow new ones. During this time they are particularly sensitive to disturbance. All molting flocks shall be avoided.

44. The Proponent ensure that aircraft maintain a vertical distance of 1000 meters and a horizontal distance of 1500 meters from any observed groups (colonies) of migratory birds.

45. The Proponent shall ensure compliance with Section 35 the *Migratory Birds Convention Act* and *Migratory Birds Regulations* which states that no person shall deposit or permit to be deposited, oil, oil wastes, or any other substance harmful to migratory birds in any waters or any areas frequented by migratory birds. The Proponent shall ensure compliance the *Migratory Birds Convention Act* and *Migratory Birds Regulations* during all phases and in all undertakings related to the project.

Bears

46. The Proponent shall follow procedures outlined in the "Safety in Bear Country Manual", and should contact the Regional Biologist or the Wildlife manager for information and advice on measures which should be taken to minimize the possibility of conflicts/interactions with bears. Consideration should be given to setting up an electric fence around the camp.

Caribou

47. The Proponent shall not locate any operation so as to block or cause substantial diversion to migration of caribou.

48. The Proponent shall not construct any camp, cache any fuel or conduct blasting within 10 km, or conduct any drilling operation within 5 km, of any “designated caribou crossing”. The Regional/Area Biologist should be contacted for known crossings.

49. From **May 15 to July 15**, the Proponent shall cease activities that interfere with caribou migration or calving, such as the movement of equipment, drilling activities and ATV or snowmobile use until the caribou and their calves have vacated the area.

50. From **May 15 to July 15**, the Proponent shall not conduct flights below 300m and airborne geophysics surveys if caribou are present in the area. These activities may interfere with migration and/or calving.

Fish

51. The Proponent shall ensure compliance with Section 36 of the *Fisheries Act* which requires that no person shall deposit or permit the deposit of a deleterious substance on any type in water frequented by fish or in any place under any conditions where the deleterious substance may enter such a water body.

52. The proponent shall ensure that any blasting activity does not affect any fish habitat.

53. The Proponent shall ensure that there is no hunting or fishing by employees of the company or any contractors hired unless proper permits are obtained.

Waste Disposal

54. The Proponent shall not store hazardous waste, including waste fuel and oil, or non-combustible waste on site. All waste, except that which can be incinerated in accordance with condition 62, shall be removed on a monthly basis and completely at the end of each field season. Disposal shall take place at an approved facility off site.

55. The Proponent shall use a CCME compliant incinerator for the disposal of combustible camp wastes. Non-combustible wastes shall be removed from site and disposed of properly at an approved facility off site.

56. The Proponent shall incinerate all combustible and food wastes daily.

57. The Proponent shall keep all ash in a covered metal container until it is disposed of at an approved facility off site.

58. The Proponent shall keep all non-combustible garbage and debris in a covered metal container until disposed of at an approved facility off site.

59. The Proponent shall deposit all scrap metal, discarded machinery and parts, barrels and kegs, at an approved disposal facility off site.

60. The proponent shall otherwise store, handle and dispose of waste material in accordance with any license issued by the Nunavut Water Board as well as with any waste regulations applicable within the Nunavut Territory for this relicensing project.

Physical Environmental

61. The Proponent shall submit to the NIRB, INAC, Nunavut Department of Environment, and the KIA, for review, prior to construction, the foundation design thickness for the 12-km all-weather road and camp building pad. The design must ensure preservation of permafrost conditions.

62. The Proponent shall ensure that the land use area is kept clean at all times.

63. The Proponent shall not cause erosion of the banks of any body of water on or adjacent to the land and shall implement necessary controls to prevent such erosion.

64. The Proponent shall be required to undertake corrective measures in the event of any damage to the land or water as a result of the Proponent's operation.

65. The Proponent shall not move any equipment or vehicles unless the ground surface is in a state capable of fully supporting the equipment or vehicles without rutting or gouging. The Proponent shall suspend overland travel of equipment or vehicles if rutting occurs. This is especially critical for the winter trail (between Ulu and High Lake) construction and use.

66. As the Proponent states in the Project Description, traffic on the Winter Trail from Ulu to High Lake shall be limited to 40 trips. A log book shall be kept and the information submitted in the required annual report.

67. No quarry activity shall be conducted below the groundwater table.

Structure & Storage Facilities

68. The Proponent shall not erect structures or store material on the surface ice of lakes or streams, except that for which is of immediate use.

69. The Proponent shall locate all structures and storage facilities on gravel, sand or other durable land.

Camps

70. The Proponent shall locate all camps on gravel, sand, or other durable land.

Reclamation

71. The Proponent shall complete all clean-up and restoration of the lands used prior to the expiry date of the permit.

72. The Proponent shall undertake ongoing restoration for any land which is no longer required for the Proponent's operation on the land.

73. The Proponent shall plug or cap all bore holes and cut off any drill casings that remain above ground to ground level upon abandonment of the operation.

74. The Proponent shall restore the land to as near as natural conditions as possible

Other Recommendations

75. NIRB would like to encourage the proponent to hire local people and services, to the greatest extent possible.

76. NIRB strongly advises proponents to consult with local residents including the Elders, Youth, and Hunters and Trappers, regarding their activities in the region, and to keep the communities informed.

77. Any activity outside the original scope of the project application as described will be considered a new project and will need to be submitted to NIRB for screening.

78. NIRB encourages the proponent to collect baseline data on valued ecosystem components (VECs) as identified through community consultation.

Validity of Land Claims Agreement

Section 2.12.2
Where there is any inconsistency or conflict between any federal, territorial and local government laws, and the Agreement, the Agreement shall prevail to the extent of the inconsistency or conflict.

Dated ___August 11, 2006____ at Cambridge Bay, NU

_____ _____
Elizabeth Copland, A/Chairperson

APPENDIX ONE

Environment Canada **Environnement Canada**

Environmental Protection Operations
Qimugjuk Building 969 P.O. Box 1870
Iqaluit, NU X0A 0H0
Tel: (867) 975-4639
Fax: (867) 975-4645

July 25, 2006 Our file: 4703 001 032

Kevin Buck
Manager of Screening
Nunavut Impact Review Board
P.O. Box 1360
Cambridge Bay, NU X0B 0C0
Tel: (867) 983-4612
Fax: (867) 983-2594 *Via email at kbuck@nirb.nunavut.ca*

RE: NIRB 06EN048 - Wolfden Resources Ltd. – High Lake Project – Amendment to Relicencing Program

On behalf of Environment Canada (EC), I have reviewed the information submitted with the above-mentioned application. The following specialist advice has been provided pursuant to Environment Canada's mandated responsibilities for the enforcement of the *Canadian Environmental Protection Act*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act,* and the *Species at Risk Act*.

Environment Canada has recently been made aware of the July 6, 2006 response by Wolfden Resources Ltd. (Wolfden) to the recommendations made by EC in our June 27/06 letter to the Nunavut Impact Review Board (NIRB). Wolfden also responded to the other interveners in a letter dated July 5, 2006. Environment Canada has since reviewed this information, and is pleased to provide the following revised comments to the NIRB for the consideration. The requests for clarification contained in this letter supercede those that were submitted to the NIRB on July 24, 2006.

After reviewing the new information submitted on July 5, July 6 and July 18, 2006, EC notes that a number of concerns identified in our review of the original application remain outstanding. The original numbering scheme from EC's June 27/06 letter has been retained for ease of comparison. Those issues that are no longer applicable have been removed. All of the recommended terms and conditions included in EC's original letter are still valid and relevant.

Environment Canada requests that Wolfden provide the following information in order to facilitate EC's review of potential environmental impacts:

1. It is mentioned that treated domestic and grey water effluent from the camp at Weatherhaven will be discharged to Lake L20, which is a non-fish bearing waterbody. The proponent is requested to clarify the discharge rates and water quality (i.e. TDS, TS, nutrients)?
2. The proponent is requested to clarify the following points in regards to the incineration of camp waste:
    b. The training that the incinerator operator has/will complete;
    c. The volume of waste to be incinerated;

5. The terminus of the airstrip is within how many metres of Sand Lake, and what mitigation does the Proponent suggest to prevent the release of deleterious substance into Sand Lake from run-off, spills, accidents and natural drainage?
6. Can the Proponent please clarify why the fuel storage site was chosen at the present suggested location instead of on the other side, away from the Kennarctic River?
7. What mitigation measures will be implemented during the construction of the all-season road to prevent permafrost degradation, subsidence and an increase in the active-layer over time?

10. In the Proponent's summary Table 1, it is indicated that the *disturbance of land and marine habitat in event of accidental spill/mishap* requires no mitigation as the *shallow nearshore waters contain only small, mobile fauna (amphipods) because of the presence of landfast ice in winter*. This statement is not showing due diligence on the part of the Proponent, and the Proponent is reminded of Section 36 (3) in the *Fisheries Act.* The Proponent is requested to please indicate how such a spill/mishap will be prevented and mitigated.
11. The Proponent indicates under the *temporary storage of equipment* that proposed mitigation for accidental spill/mishap is proper site preparation with grading to ensure *minimal* contaminant drainage to the marine environment. The Proponent is again reminded of Section 36(3) under the *Fisheries Act,* and is asked to please clarify how grading will prevent the introduction of deleterious substances into the marine environment.
12. The Proponent is asked to clarify how run-off from the airstrip will be dealt with and controlled.

14. Construction of Weatherhaven camp fails to include discussions of the affect to permafrost. The proponent is requested to please clarify effects and mitigation.
15. The construction of quarry pits indicates that sediment from run-off will be subject to proper drainage control to *minimize* drainage to fish bearing waters. The Proponent again is reminded of Section 36(3) under the *Fisheries Act,* and is asked to please clarify how grading will prevent the introduction of deleterious substances into the marine environment.

17. In the *Revegetation Plan,* revegetation is discussed. The Proponent is asked to clarify which seed mixes will be used, and if they will be native seed mixes (i.e. seeds collected prior to construction) or if they will be southern blended mixes.
18. The Proponent is asked to please identify where on the map the pump house for Lake L22 is located. Is it within the Weatherhaven campsite, or is it on the shores of Lake L22?
19. At the decommissioning phase of the project, the Proponent mentions that remaining fuel in the diesel tanks will be drained; where will these remaining fuels be drained into?

In regards to Wolfden's letter of July 5, 2006, EC has reviewed the proponent's responses to the recommendations made in EC's June 27/06 letter to the NIRB. In general, EC is pleased that Wolfden is willing to implement the recommendations that were made. In regards to the suggestion that an elevation of 300 m is sufficient to minimize disturbance to nesting birds, EC offers the following comments for consideration by the NIRB and Wolfden:

Wolfden Response

#2 In order to reduce disturbance to nesting birds, CWS recommends that aircraft used in conducting project activities maintain a flight altitude of at least 610 m during horizontal (point to point) flight.

We note that the 610m (2000 ft) is a relatively new recommendation from CWS and suggest that 300m is appropriate for minimizing disturbance to nesting birds. Fixed wing aircraft can maintain the 610 m clearance on flights in to and out of the airstrip. For helicopter operations in the area, a significant amount of extra fuel (also an environmental concern) will be used up climbing to 610m for helicopter flights in the

area. Helicopter operations can be modified as needed to fly around sensitive areas where possible.

While the 610 m flight recommendation is not a relatively new recommendation from the Canadian Wildlife Service of Environment Canada (CWS), it is only recently that EC has begun to focus on trying to encourage higher flight height altitudes for activities in Nunavut. In 2002, the Inuvialuit Game Council (IGC) released guidelines to reduce the impact of flights on wildlife in the Inuvialuit Settlement Region (ISR), which included minimum flight altitudes of 610-650 m when wildlife such as birds are present (see attached document from the IGC). The CWS contributed to the development of these guidelines. These guidelines were developed to minimize disturbance to wildlife above the tree-line, and would also be applicable in Nunavut. Given the increased development activity in Nunavut and the potential for impacts to wildlife from cumulative effects, EC would like to see Nunavut adopt similar flight recommendations as have been adopted in the ISR.

In order to provide Wolfden with background information as to how these minimum altitudes were determined, the attached document, prepared by the CWS for the IGC on this topic, are attached for the proponent's reference. The results of this literature review on aircraft disturbance on birds would also be applicable in Nunavut.

Environment Canada is pleased that Wolfden will have fixed wing aircraft maintain the 610 m clearance on flights in to and out of the airstrip, and that helicopter operations can be modified to fly around sensitive areas. Environment Canada also encourages Wolfden to have helicopters maintain at least 610 m in altitude over areas likely to have birds.

Environment Canada appreciates the opportunity to provide input into the NIRB's decision-making process for the High Lake Relicensing Program. Environment Canada recommends that if the NIRB decides to approve the proposed project, the recommendations contained within EC's original letter be incorporated into the screening decision to help ensure compliance. Environment Canada apologizes for the confusion caused by the delayed receipt and subsequent review of Wolfden's responses to the intervener comments. Please do not hesitate to contact me with any questions or comments with regards to the foregoing at (867) 975-4639 or by email at colette.spagnuolo@ec.gc.ca.

Yours truly,

Original signed by

Colette Spagnuolo
Environmental Assessment / Contaminated Sites Specialist

cc: (Stephen Harbicht, Head, Assessment and Monitoring, Environment Canada, Yellowknife)
(Jen Anthony, Environmental Assessment Specialist, Environment Canada, Yellowknife)

Inuvialuit Game Council

INUVIALUIT GAME COUNCIL

August 2, 2002

see distribution list

To whom it may concern:

RE: Flight altitudes/routes and interference with Inuvialuit harvesting

The Inuvialuit Game Council(IGC) represents the collective Inuvialuit interest in wildlife and wildlife habitat in the Inuvialuit Settlement Region(ISR). With the increase in development activity from seismic exploration and tourism in recent years, the IGC has been hearing more and more complaints from harvesters regarding helicopters and fixed wing aircraft. Some of these complaints center around incidental overflights that are flying low enough to affect their harvesting practices. Some have observed aircraft that have deliberately gone off course to "get a closer look" at wildlife that they may have observed from the appropriate flight altitude. Others are saying that the amount of air traffic over particular areas is preventing them from harvesting in their traditional hunting range. There have also been complaints from beluga harvesters of unnecessary overflights that are impacting on their harvesting.

These are complaints that the IGC takes very seriously. While everyone would agree that the increase in air traffic is inevitable during this period of development, the IGC feels that there are mitigative measures that are not always being followed by some pilots/aviation companies.

The IGC would like to provide the following suggestions to help mitigate the impacts of air traffic on harvesters and wildlife:

1. All flights, unless they have been given special authorization, are to follow the minimum flight altitudes that have been provided to all proponents and aviation companies. A copy has been attached.

2. Where there are several flights to the same location/area, the best possible flight corridor should be selected and used for all flights. This flight corridor should be selected based on avoidance of harvesters and concentrations of wildlife.

3. When wildlife is observed, the pilot is not to go off course "to get a closer look." This is considered harassment of wildlife, puts undue stress on the animal(s), and may affect harvesting.

The Joint Secretariat - Inuvialuit Renewable Resource Committees
P.O. Box 2120 Inuvik, Northwest Territories, Canada X0E 0T0
tel: (867) 777-2828 fax: (867) 777-2610 email: igc-js@jointsec.nt.ca

4. During the months of June, July, August and September, beluga zones 1(a) and 1(b) should be avoided by aircraft. A map has been provided identifying these zones which are areas where beluga congregate during summer months and are also important traditional harvesting areas for the Inuvialuit.

Where possible, all observed flights over particular areas are being recorded along with the company that owns/operates the aircraft. Over time this will give a better picture of which companies are causing the most disturbances. Any documented flights of harassment will be reported to the appropriate authorities.

The IGC would like to thank you in advance for respecting the wishes of Inuvialuit harvesters whose harvesting rights are protected under the Inuvialuit Final Agreement.

Respectfully,

Duane Smith
Chair, Inuvialuit Game Council

cc Wildlife Management Advisory Council(NWT)
Wildlife Management Advisory Council(NS)
Environmental Impact Screening Committee
Environmental Impact Review Board
Inuvialuit Development Corporation
Oil and Gas Companies

Distribution List

Adlair Aviation (1983) Ltd.
Air Inuit Ltd.
Air North
Air Nunavut
Air Thelon Ltd.
Air Tindi Ltd.
Aklak Air
Arctic Air
Arctic Excursions Ltd.
Arctic Sunwest
Arctic Tern Aviation Ltd.
Arctic Wings Ltd.
Aurora Market
Beaudel Air Ltd.
Big River Air Ltd.
Buffalo Air Express
Buffalo Airways Ltd.
Calm Air International Ltd.
Canadian Helicopters Ltd.
Custom Helicopters Ltd.
Deh Cho Air Ltd.
Deh Cho Helicopters
Denendeh Helicopters Ltd.
First Air
Great Slave Helicopters Ltd.
Highland Helicopters Ltd.
Hudson Bay Helicopters Ltd.
Ken Borek Air Ltd.
Kivalliq Air
Midwest Helicopters Ltd.
North Cariboo Air
North-Wright Airways Ltd.
Northwestern Air Lease Ltd.
Northwest International Airways Ltd.
Numasi Helicopters Inc.
Sahtu Helicopters
Simpson Air
Skyward Aviation Ltd.
South Nahanni Airways
Summit Air Charters Ltd.
Thebacha Helicopters Ltd.
Trans North Helicopters
Ursus Aviation
Wolverine Air

SUMMARY OF ADVICE RECEIVED BY EISC FROM THE CO-MANAGEMENT GROUPS FOR RECOMMENDED ENVIRONMENTALLY ACCEPTABLE MINIMUM FLIGHT ALTITUDES

Aircraft Type	Species / Situation	Recommended Altitude	Source
Not specified	Over areas likely to have birds	>650 m (2100 ft)	CWS [WMAC(NWT)]
Not specified	Over areas where birds are known to concentrate (Sanctuaries, colonies, moulting areas)	>1100 m (3500 ft)	CWS [WMAC(NWT)]
Subsonic Aircraft	Over large mammals during ferry flights	>300 m (975 ft)	DRWED [WMAC(NWT)]
Subsonic Aircraft	During wildlife surveys	>100 m (325 ft)	DRWED [WMAC(NWT)]
Subsonic Aircraft	Aeromagnetic surveys in areas with large mammals	Timing should be restricted rather than altitude	DRWED [WMAC(NWT)]
Not specified	When flying point to point in vicinity of caribou and other wildlife species	>610 m (2000 ft)	Transport Canada [WMAC(NS)]
Not specified	Over parks, reserves, and refuges	>610 m (2000 ft)	Transport Canada
Not specified	Over areas where there are belugas and bowhead whales	>300 m (975 ft)	FJMC
Not specified	Zone 1	>760 m (2500 ft)	Tourism Guidelines Beluga Management Plan [FJMC]
Not specified	Zone 2	>610 m (2000 ft)	Tourism Guidelines Beluga Management Plan [FJMC]

General Advice

- Minimize the number of flights whenever possible
- Fly at times when few birds are present (e.g., early spring, late fall, winter)
- Avoid large concentrations of birds (e.g., Migratory Bird Sanctuaries, breeding colonies, moulting areas)
- Avoid especially sensitive areas such as seabird colonies and raptor nesting sites
- Plan routes that minimize flights over habitats likely to have birds
- Use small aircraft rather than large aircraft whenever possible
- Use fixed-wing aircraft rather than helicopters whenever possible
- Inform pilots of these recommendations and areas known to have birds

- Hovering or circling may greatly increase disturbance and must be avoided.
- Caribou calving grounds should be avoided whenever possible.
- Aeromagnetic surveys should be controlled to prevent disturbance to large mammals by restricting the timing of the surveys rather than the elevation. These surveys should not take place near or on calving and post-calving areas during the period of May 25 to July 15. After July 15 they should avoid any areas know to have large aggregations of caribou.

- Animals reactions will depend on a variety of situations including aircraft type, noise levels, speed of travel, overflight frequency, and animal activity (e.g., loafing, feeding, traveling) and its surroundings (water depth and clarity, substrate). The EISC may have to consider the circumstance of the activity on a case by case basis.
- DFO often recommends a minimum altitude of 400 m (1200 ft) for flights over marine mammal habitat in this region. Recommended or required minimum altitudes may be higher in areas of particularly intense aircraft activity, and in cases where flights are over marine mammal concentrations areas, or at particularly sensitive times of their life cycle.

- Exceptions to these recommendations may be warranted for scientific studies (e.g., wildlife surveys) in which the benefits for conservation clearly outweigh the risks and should be evaluated on a case by case basis.

Acronyms

CWS	Canadian Wildlife Service
DFO	Department of Fisheries and Oceans
DRWED	Department of Resources, Wildlife and Economic Development
EISC	Environmental Impact Screening Committee
FJMC	Fisheries Joint Management Committee
WMAC(NS)	Wildlife Management Advisory Committee (North Slope)
WMAC(NWT)	Wildlife Management Advisory Committee (Northwest Territories)

Recommended Minimum Altitudes for Aircraft Flying near Birds in the Inuvialuit Settlement Region

Introduction

This report was written in response to the request by the Inuvialuit Wildlife Management Advisory Council (N.W.T.) for recommendations on minimum flight altitudes for aircraft in areas where birds are present. It is our understanding that these recommendations will be used to provide the Environmental Impact Screening Committee with environmentally acceptable and defensible minimum flight altitudes for developments subject to screening in the Inuvialuit Settlement Region. Our recommendations are based on a literature review of scientific studies on aircraft disturbance as well as our own observations of the response of birds to aircraft.

Effects of Disturbance

Most birds alter their behaviour when an aircraft is flying in the vicinity. Typically, the first response of birds to aircraft is the "alert" posture in which birds raise their heads and straighten their necks. This can occur when the aircraft is 10 km or more away. Flocked birds may also mass together (move together in a tight group without flying). If the aircraft continues to approach, birds may fly and circle their previous location, or they may fly to a new location. Waterfowl that are flightless because they are moulting usually swim or run away from the aircraft. The response of birds to aircraft can depend on a number of factors such as aircraft type, distance from birds (both horizontal and vertical), reproductive status of the birds, time of year, frequency of flights, species, flock size, and individual differences among birds (Table 1). Thus, the aircraft altitude at which birds will be disturbed is a difficult value to determine.

Aircraft or other forms of human-induced disturbance can negatively affect birds in a number of different ways. Disturbance during the breeding season may result in nest abandonment and increased mortality of eggs and young from predation, exposure to adverse weather conditions, and accidental damage or injury. Disturbance that disrupts feeding can lead to low-weight birds that may have reduced survival and reproductive success. As well, birds may avoid disturbed areas, resulting in short- or long-term changes in population distributions and potentially reduced opportunities for harvesting birds.

A summary of a broad range of studies of the impacts of aircraft on birds is presented in Appendix 1. Most of these studies were done in the Arctic with small helicopters and planes that are similar to aircraft used in the Inuvialuit Settlement Region.

A number of these studies present information on flight altitudes at which birds show a significant change in behaviour in response to aircraft. A smaller subset of the studies recommend minimum flight altitudes. Recommended flight altitudes in most studies were aircraft altitudes at which the majority of birds did not fly or otherwise move away from approaching aircraft.

Recommendations

We found that there was much variation in the results of studies on the effects of aircraft disturbance on birds. Recommended minimum altitudes in 10 studies that we reviewed ranged from as low as 153 m (500 feet) to as high as 1070 m (3500 feet). Most of the recommended altitudes were between 400 and 600 m (1300-2000 feet) (Figure 1).

From 16 studies in our literature review, we were able to determine aircraft altitudes above which birds no longer showed significant reactions to aircraft disturbance (Figure 2). There was a large drop between 450 m (1500 feet) and 650 m (2100 feet) in the number of studies that showed a reaction by birds to aircraft. Birds reacted to aircraft in 69% of the studies when the aircraft was above 450 (1500 feet), whereas birds reacted in only 25% of the studies when aircraft was above 650 m (2100 feet). Thus, a minimum aircraft altitude of 650 m (2100 feet) would minimize much of the disturbance. This agrees with our own observations that in most situations birds are unlikely to change their behaviour when an aircraft at 650 m (2100 feet) flies over them. The 4 studies in which birds flew when the aircraft was >650 m were all situations in which geese were in large moulting or migration flocks. Therefore, higher aircraft altitudes may be required to minimize disturbance when birds are in large concentrations.

We recommend that aircraft maintain a minimum altitude of 650 m (2100 feet) whenever flying over areas likely to have birds.

Flight altitudes above 1100 m (3500 feet) should be maintained near areas where birds are known to concentrate (e.g., Migratory Bird Sanctuaries, breeding colonies, moulting areas).

Because aircraft disturbance also depends on other factors in addition to altitude, we also recommend the following:

- Minimize the number of flights whenever possible.
- Fly at times when few birds are present (e.g., early spring, late fall, winter).
- Avoid large concentrations of birds (e.g., Migratory Bird Sanctuaries, breeding colonies, moulting areas).
- Avoid especially sensitive areas such as seabird colonies and raptor nesting sites.
- Plan routes that minimize flights over habitats likely to have birds.
- Use small aircraft rather than large aircraft whenever possible.
- Use fixed-wing aircraft rather than helicopters whenever possible.
- Inform pilots of these recommendations and areas known to have birds.

Exceptions to these recommendations may be warranted for scientific studies (e.g., wildlife surveys) in which the benefits for conservation clearly outweigh the risks.

Jim Hines and Myra Wiebe
Canadian Wildlife Service, Box 2970
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Table 1. Some factors that influence the response of birds to aircraft disturbance. (See Appendix 1 for summaries of the various studies).

Factor	Comment
Aircraft type	Helicopters usually cause more disturbance than planes.
Aircraft size	Large aircraft cause more disturbance than small aircraft.
Altitude of aircraft	Low-altitude flights cause more disturbance than high-altitude flights.
Distance of aircraft	Aircraft flying close to birds cause more disturbance than aircraft flying further away.
Reproductive status	Birds are often less likely to fly away from aircraft during nesting.
Frequency of flights	Frequent flights can cause birds to abandon area.
Species	Geese are generally less tolerant of aircraft disturbance than ducks and swans.
Flock size	Large flocks of birds are more likely to react to aircraft than small flocks.
Individual differences	Some individuals are more tolerant of disturbance than other individuals.

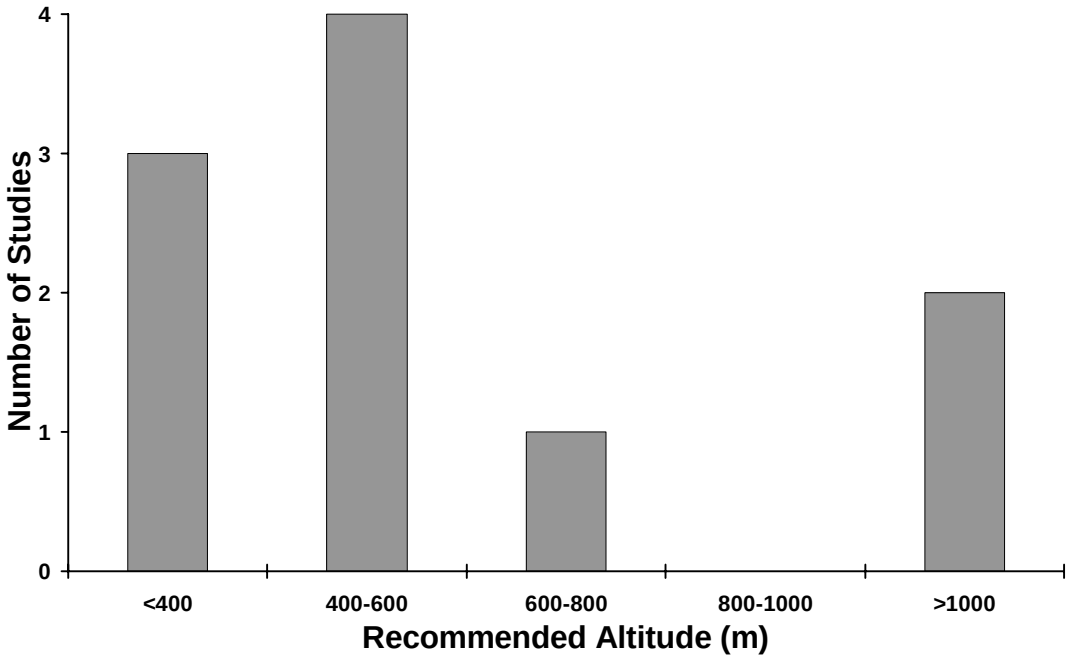

Figure 1. Range of recommended minimum altitudes for minimizing aircraft disturbance on birds.

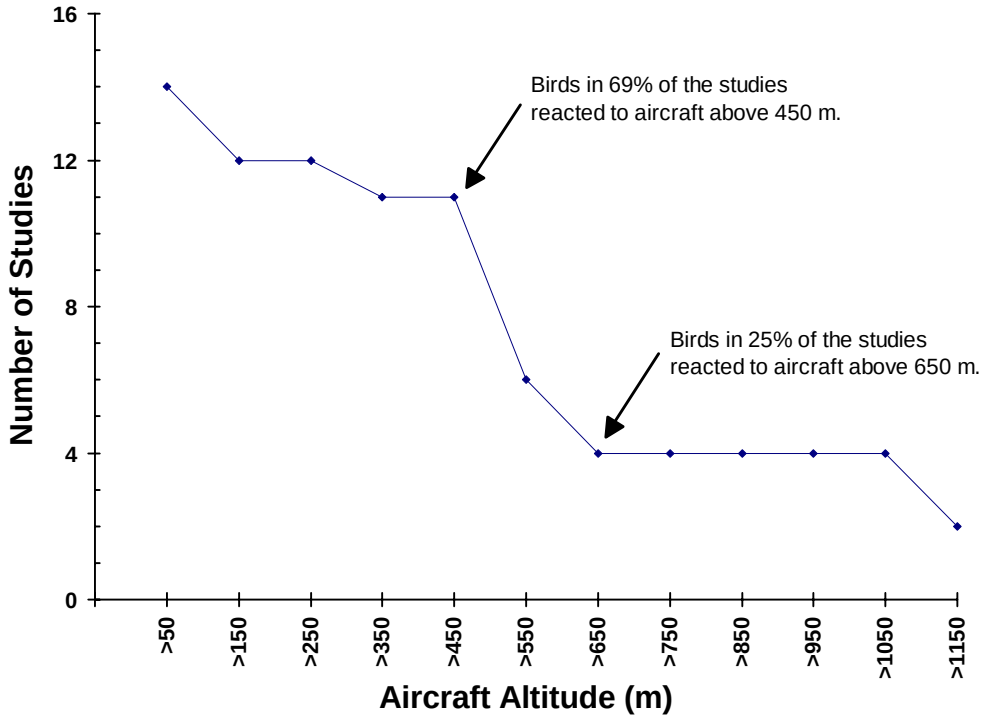

Figure 2. Altitudes at which birds showed reactions to aircraft disturbance, based on 16 studies in our literature review.

Appendix 1. Results of studies of responses of birds to aircraft and recommended aircraft flight altitudes (table continued on next 3 pages).

Aircraft Type	Species (season)	Response	Recommended Altitude	Source
Helicopter (Bell 206)	Brant (moulting flocks in Alaska)	Response of Brant varied with altitude and lateral distance. Large flocks (> 100) reacted longer than small flocks. Disturbed Brant moved more between sites.	> 1070 m	Jensen 1990
Helicopter	Brant (moulting flocks in Alaska)	Results based on simulation model.[1] Slightly altering flight paths greatly reduced the number of geese with heavy weight loss. Large helicopters (Bell 412) caused 15% more weight loss than the small ones (Bell 206). Increasing flight frequency increased weight loss. Weight loss reduced if helicopters fly only when most Brant in 2nd week of moult.	> 1065 m	Miller et al. 1994, Miller 1994
Fixed-wing < 1524 m	Brant (flocks in Alaska in fall)	68% of flocks flew when plane low (< 610 m) and nearby (< 0.8 km), which was 2x more than when plane higher and further away.	> 610 m and 0.8 km away	Ward et al. 1994
Aircraft	Snow Geese (flocks in Quebec in fall and spring)	Over half of the geese in a flock reacted to aircraft. Geese flew longer and took longer to resume feeding compared to most other disturbances (e.g., gun shots, vehicles, pedestrians, ferry boats, other animals). Less geese the next day after high rates of disturbance.	> 500 m	Bélanger and Bédard 1989
Aircraft	Brant (flocks wintering in Britain)	86% of flock disturbed (“alert” posture and most flew). Birds flew longer compared to other disturbances (e.g., gunshots, vehicles, pedestrians, other animals).	> 500 m	Riddington et al. 1996
Aircraft	Brant (flocks wintering in Britain)	Any aircraft < 500 m and < 1.5 km away could put birds into flight, especially slow, noisy aircraft. Helicopters caused “widespread panic”.	> 500 m	Owens 1977

[1] Previous field work was used to develop a model to study the effects of helicopters on moulting Brant near Teshekpuk Lake, Alaska. Helicopters were simulated to fly along different flight lines at various altitudes and frequencies. The model predicted the responses of Brant to the helicopters and the resulting weight loss of the birds at the end of the moult.

Aircraft Type	Species	Response	Recommended Altitude	Source
Helicopter	Brant, Glaucous Gull, Arctic Tern, Common Eider (nesting in Yukon)	Normal incubation behaviour of Brant, Glaucous Gulls and Arctic Terns was affected. No Glaucous Gulls flew when helicopter was at 763 m, some flew at 610 m, and all flew at 153 m. All Arctic Terns flew when helicopter < 305 m but none flew when > 458 m. Many Arctic Terns in disturbed areas abandoned their nests. Common Eiders showed no response.	> 458 m	Gollop et al. 1974a
Helicopter (Bell 206)	Oldsquaw and Surf Scoters (moulting flocks on Herschel Island, Yukon)	Some ducks moved off land and swam away if helicopter at < 229 m, all moved if < 92 m. Some ducks dove if helicopter at < 153 m, all dove if < 31 m. Normal behaviour quickly resumed. Scoters more sensitive than oldsquaw. Similar numbers of ducks in area for two years despite disturbance.	> 305 m If flight > 229, maintain normal cruising speed (193 km/hr)	Gollop et al. 1974b, Ward and Sharp 1974
Helicopter	Waterfowl (brood rearing at the Mackenzie Delta)	Non-breeding White-fronted Geese flew in response to helicopters and most of these birds left area after 2 days of disturbance. White-fronted Geese with broods on land moved to water and ones on water moved to land. Other waterfowl species generally did not show much response when helicopter at 61-153 m. At 31 m, American Wigeon and Northern Pintails swan rapidly away.	> 153 m	Anonymous 1972
Fixed-wing	Glaucous Gull, Arctic Tern, Common Eider (flocks in Yukon in summer)	All Arctic Terns flew when plane < 153 m. All Glaucous Gulls and Common Eiders flew when plane < 76 m.	> 153 m	Gollop et al. 1974a
Fixed-wing (Cessna 185)	Snow Geese (flocks on Yukon-Alaska north slope in Sept)	Geese flew when plane 3050 m or lower. Geese flew at greater distances when plane < 305 m. Geese flew when plane up to 15 km away. Frequent low flights caused geese to abandon area.	No recommended height. Avoid areas with geese from Aug 15 - Sept 30.	Salter and Davis 1974

Aircraft Type	Species	Response	Recommended Altitude	Source
Fixed-wing	Herring Gulls (nesting and loafing in eastern U.S.A.)	No effects for subsonic planes. Supersonic planes caused more nesting gulls to fly and gulls engaged in more fights when they landed, which resulted in eggs being damaged.	More studies needed	Burger 1981
Float Plane (Cessna 185)	Waterfowl (Yukon in summer)	60% reaction in birds on a small lake after 4 days of disturbance from float plane landing on lake	More studies needed	Schweinsburg 1974
Helicopter < 1524 m	Brant (flocks in Alaska in fall)	Birds flew longer compared to responses for other aircraft. 83% of flocks left area.	More studies needed	Ward et al. 1994
Aircraft	Brant, Emperor Geese, and Canada Geese (flocks in Alaska in fall)	Response depended on aircraft type and proximity to flock. Brant and Emperor Geese were more likely to show “alert” posture and fly compared to Canada Geese. Response of Brant to helicopters did not decrease with increasing altitude up to 610 m.	No recommendations	Ward and Stehn 1989
Fixed-wing (Cessna 185) and Helicopter (Bell 206 - B)	Snow Geese (flocks on Yukon-Alaska north slope in Sept)	Aircraft flying at 153 m and up to 7 km away caused some flocks to fly. Some geese flew when aircraft altitude was 2440 - 3050 m. Geese reacted slower but spent more time in flight from planes compared to helicopters. No difference in the distance that geese reacted to small and large planes. Geese usually flew greater distances for large planes than small.	No recommendations	Davis and Wiseley 1974
Fixed-wing < 615 m	Trumpeter Swans (nesting in Alaska)	Most swans showed “alert” posture but none left nest during normal aircraft overflights. Incubating females rapidly left nest on 2 occasions when plane circled nest at 60 m.	No recommendations	Henson and Grant 1991
Fixed-wing at 92 m	Waterfowl (flocks at the Mackenzie Delta in Sept)	American Wigeon and Northern Pintails showed “alert” posture and some flew.	No recommendations	Anonymous 1972
Float Plane (Cessna 185)	Waterfowl (Mackenzie valley, NT in Aug)	Birds without young generally flew. Almost all birds on one lake left after 4 days of disturbance. Broods generally swam away or dove if plane close.	No recommendations	Schweinsburg et al. 1974
Float Plane	Waterfowl (Norman Wells, NT in summer)	Scaup, Red-necked Grebes, and Arctic Loons showed little change in behaviour when planes landed at float base.	No recommendations	Schweinsburg et al. 1974

Aircraft Type	Species	Response	Recommended Altitude	Source
Helicopter	Pink-footed Geese and Barnacle Geese (moulting flocks in Greenland)	Some flocks reacted to helicopters 10 km or more away. Geese were more likely to react to large helicopters (Bell 212) than to small helicopters (Bell 206). Pink-footed Geese were more affected by helicopters than Barnacle Geese	No recommendations	Mosbech and Glahder 1991
Helicopter at 15 m	Lapland Longspurs and ptarmigan (nesting in Yukon)	More Lapland Longspur young fledged in undisturbed compared to disturbed areas. Ptarmigan flew in response to low-flying helicopters.	No recommendations	Gollop et al. 1974c

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APPENDIX TWO

Fisheries and Oceans Canada | Pêches et Océans Canada

Eastern Arctic Area
P.O. Box 358
Iqaluit, NU X0A 0H0
Phone: (867) 979-8000
Fax : (867) 979-8039

Secteur de l'Arctique de l'est
Boîte postale 358
Iqaluit, NU X0A 0H0
Tél: (867) 979-8000
Télécopieur: (867) 979-8039

Your file *Votre référence*

July 24, 2006

Our file *Notre référence*
NU-06-0042

Mr. Kevin Buck
Manager of Environmental Screenings
Nunavut Impact Review Board
P.O. Box 1360
Cambridge Bay, NU
X0B 0C0

Dear Mr. Buck:

Subject: High Lake Re-licensing Program

On July 11, 2006, Fisheries and Oceans Canada (DFO) responded to a request from the Nunavut Impact Review Board (NIRB) to comment on the re-licensing program for the High Lake Project as proposed by Wolfden Resources Inc. (hereafter referred to as Wolfden). In our response, DFO made a number of recommendations and requests for additional information related to those aspects of the development proposal that could impact on fish and fish habitat.

On July 18, 2006, Wolfden amended their development proposal and a number of program components were removed from the proposal including:

- The explosives storage areas;
- The 1800m^2 landfill;
- The Gray's Bay barge landing;
- The winter trail from Gray's Bay to Sand Lake;
- 2 of the 4 proposed quarries;

In light of the modifications to the proposed development proposal, the recommendations and information requests from our July 11th letter related to the winter road construction and Grays Bay barge landing are no longer applicable. However, the remaining comments provided in the letter remain valid and still apply to the current amended application. Responses to the remaining applicable information requests and recommendations will be necessary for us to be able to continue our review of this proposal.

I trust the information provided will be of assistance in the NIRB's continued assessment of the High Lake Re-licensing program. If you or the proponent have any questions

Canada

concerning the above, or if my understanding of the proposal is either incorrect, incomplete, or if there are changes to the proposed work, please contact me directly by telephone at 867-979-8007, or fax at 867-979-8039, or by e-mail at gordaniert@dfo-mpo.gc.ca.

Yours Sincerely,

Original Signed By:

Tania Gordanier
Habitat Management Biologist

Cc: Andrew Mitchell, Project Manager, Wolfden Resources
Bev Ross, Fisheries and Oceans Canada
Ed DeBruyn, Fisheries and Oceans Canada
Keith Pelley, Fisheries and Oceans Canada

APPENDIX THREE

ARCHAEOLOGICAL AND PALAEONTOLOGICAL RESOURCES TERMS AND CONDITIONS FOR LAND USE PERMIT HOLDERS

BACKGROUND

Archaeology

As stated in Article 33 of the Nunavut Land Claims Agreement:

The archaeological record of the Inuit of Nunavut is a record of Inuit use and occupancy of lands and resources through time. The evidence associated with their use and occupancy represents a cultural, historical and ethnographic heritage of Inuit society and, as such, Government recognizes that Inuit have a special relationship with such evidence, which shall be expressed in terms of special rights and responsibilities. [33.2.1]

The archaeological record of Nunavut is of spiritual, cultural, religious and educational importance to Inuit. Accordingly, the identification, protection and conservation of archaeological sites and specimens and the interpretation of the archaeological record is of primary importance to Inuit and their involvement is both desirable and necessary. [33.2.2]

In recognition of the cultural, spiritual and religious importance of certain areas in Nunavut to Inuit, Inuit have special rights and interests in these areas as defined by Article 33 of the Nunavut Land Claims Agreement. [33.2.5]

Palaeontology

Under the Nunavut Act[1], the federal government can make regulations for the protection, care and preservation of palaeontological sites and specimens in Nunavut. Under the *Nunavut Archaeological and Palaeontological Sites Regulations*[2], it is illegal to alter or disturb any palaeontological site in Nunavut unless permission is first granted through the permitting process.

Definitions

As defined in the *Nunavut Archaeological and Palaeontological Sites Regulations*, the following definitions apply:

> "archaeological site" means a place where an archaeological artifact is found.

[1] s. 51(1)
[2] P.C. 2001-1111 14 June, 2001

"archaeological artifact" means any tangible evidence of human activity that is more than 50 years old and in respect of which an unbroken chain of possession or regular pattern of usage cannot be demonstrated, and includes a Denesuline archaeological specimen referred to in section 40.4.9 of the Nunavut Land Claims Agreement.

"palaeontological site" means a site where a fossil is found.

"fossil" includes:

(a) natural casts
(b) preserved tracks, coprolites and plant remains; and
(c) the preserved shells and exoskeletons of invertebrates and the eggs, teeth and bones of vertebrates.

Terms and Conditions

1) The permittee shall not operate any vehicle over a known or suspected archaeological or palaeontological site.

2) The permittee shall not remove, disturb, or displace any archaeological artifact or site, or any fossil or palaeontological site.

3) The permittee shall immediately contact the Department of Culture, Language, Elders and Youth (867) 934-2046 or (867) 975-5500 or 1 (866) 934-2035 should an archaeological site or specimen, or a palaeontological site or fossil be encountered or disturbed by any land use activity.

4) The permittee shall immediately cease any activity that disturbs an archaeological or palaeontological site encountered during the course of a land use operation, until permitted to proceed with the authorization of the Department of Culture, Language, Elders and Youth, Government of Nunavut.

5) The permittee shall follow the direction of the Department of Culture, Language, Elders and Youth and DIAND in restoring disturbed archaeological or palaeontological sites to an acceptable condition.

6) The permittee shall provide all information requested by the Department of Culture, Language, Elders and Youth concerning all archaeological sites or artifacts and all palaeontological sites and fossils encountered in the course of any land use activity.

7) The permittee shall make best efforts to ensure that all persons working under authority of the permit are aware of these conditions concerning archaeological sites and artifacts, and palaeontological sites and fossils.

8) The permittee shall avoid the known archaeological and/or palaeontological sites listed in Attachment 1.

9) The permittee shall have an archaeologist or palaeontologist perform the following functions, as required by the Department of Culture, Language, Elders and Youth:

   a) survey
   b) inventory and documentation of the archaeological or palaeontological resources of the land use area
   c) assessment of potential for damage to archaeological or palaeontological sites
   d) mitigation
   e) marking boundaries of archaeological or palaeontological sites
   f) site restoration

The Department of Culture, Language, Elders and Youth shall authorize by way of a Nunavut Archaeologist Permit or a Nunavut Palaeontologist Permit, all procedures subsumed under the above operations.

SCREENING DECISION REPORT
NIRB FILE NO.: 12YA007

GN-DoE File No.: WL 006891
NRI File No.: #0400708N-M
DFO File No.: S-07/08-1035-NU
NWB File No. 2BE-HIG0712, 2BE-IZO0712
AANDC File No.: N2011C0033, N2012C0005
KIA File No.: KTL310C001, KTL308C008, KTL306C019

March 29, 2012

The Honourable Dan Shewchuk
Minister Responsible for Nunavut Arctic College
Box 2410
Iqaluit, NU
X0A 0H0

Via email: dshewchuk@gov.nu.ca or thughes@gov.nu.ca

Re: <u>Screening Decision for Minerals and Metals Group's (MMG) "Izok and High Lake Project 2012 Environmental Baseline Program" Project Proposal, NIRB File No. 12YA007</u>

Dear Mr. Dan Shewchuk:

The primary objectives of the Nunavut Impact Review Board (NIRB) are set out in Section 12.2.5 of the Nunavut Land Claims Agreement (NLCA) as follows:

> *"In carrying out its functions, the primary objectives of NIRB shall be at all times to protect and promote the existing and future well-being of the residents and communities of the Nunavut Settlement Area, and to protect the ecosystemic integrity of the Nunavut Settlement Area. NIRB shall take into account the well-being of the residents of Canada outside the Nunavut Settlement Area."*

Section 12.4.4 of the NLCA states:

> *"Upon receipt of a project proposal, NIRB shall screen the proposal and indicate to the Minister in writing that:*

a) *the proposal may be processed without a review under Part 5 or 6; NIRB may recommend specific terms and conditions to be attached to any approval, reflecting the primary objectives set out in Section 12.2.5;*
b) *the proposal requires review under Part 5 or 6; NIRB shall identify particular issues or concerns which should be considered in such a review;*
c) *the proposal is insufficiently developed to permit proper screening, and should be returned to the proponent for clarification; or*
d) *the potential adverse impacts of the proposal are so unacceptable that it should be modified or abandoned."*

NIRB ASSESSMENT AND DECISION

After a thorough assessment of all material provided to the Board (please see *Procedural History* and *Project Activities* in **Appendix A**), in accordance with the principles identified within Section 12.4.2 of the NLCA, the decision of the Board as per Section 12.4.4 of the NLCA is:

> **12.4.4 (a)**: the proposal may be processed without a review under Part 5 or 6; NIRB may recommend specific terms and conditions to be attached to any approval, reflecting the primary objectives set out in Section 12.2.5.

RECOMMENDED PROJECT-SPECIFIC TERMS AND CONDITIONS (pursuant to Section 12.4.4(a) of the NLCA)

The Board is recommending that the following or similar project-specific terms and conditions be imposed upon the Proponent through all relevant legislation:

General

1. Minerals and Metals Group (the Proponent) shall maintain a copy of the Project Terms and Conditions at the site of operation at all times.
2. The Proponent shall forward copies of all permits obtained and required for this project to the Nunavut Impact Review Board (NIRB) prior to the commencement of the project.
3. The Proponent shall operate in accordance with all commitments stated in correspondence provided to the NIRB (Scientific Research Licence, February 9, 2012).
4. The Proponent shall operate the site in accordance with all applicable Acts, Regulations and Guidelines.

Water Use

5. The Proponent shall not extract water from any fish-bearing waterbody unless the water intake hose is equipped with a screen of appropriate mesh size to ensure that there is no entrapment of fish. Small lakes or streams should not be used for water withdrawal unless approved by the Nunavut Water Board.

Waste Disposal

6. The Proponent shall keep all garbage and debris in bags placed in a covered metal container or equivalent until disposed of at an approved facility. All such wastes shall be kept inaccessible to wildlife at all times.

Wildlife - General

7. The Proponent shall ensure that there is no damage to terrestrial or marine wildlife habitat in conducting this operation.
8. The Proponent shall not harass terrestrial or marine wildlife. This includes persistently worrying or chasing animals, or disturbing large groups of animals. The Proponent shall not hunt or fish, unless proper Nunavut authorizations have been acquired.
9. The Proponent shall ensure that all project personnel are made aware of the measures to protect wildlife and are provided with training and/or advice on how to implement these measures.

Migratory Bird and Raptor Disturbance

10. The Proponent shall not disturb or destroy the nests or eggs of any birds. If nests are encountered and/or identified, the Proponent shall take precaution to avoid further interaction and or disturbance (e.g., a 100 metre buffer around the nests). If active nests of any birds are discovered (i.e. with eggs or young), the Proponent shall avoid these areas until nesting is complete and the young have left the nest.

Aircraft Flight Restrictions

11. The Proponent shall restrict aircraft/helicopter activity related to the project to a minimum altitude of 610 metres above ground level unless there is a specific requirement for low-level flying, which does not disturb wildlife and migratory birds.
12. The Proponent shall ensure that aircraft maintain a vertical distance of 1000 metres and a horizontal distance of 1500 metres from any observed groups (colonies) of migratory birds. Aircraft should avoid critical and sensitive wildlife areas at all times by choosing alternate flight corridors.
13. The Proponent shall ensure that aircraft/helicopter do not, unless for emergency, touch-down in areas where wildlife are present.
14. The Proponent shall advise all pilots of relevant flight restrictions and enforce their application over the project area, including flight paths to/from the project area.

Caribou and Muskoxen Disturbance

15. The Proponent shall cease activities that may interfere with the migration or calving of caribou or muskox, until the caribou or muskox have passed or left the area.
16. The Proponent shall not block or cause any diversion to caribou migration, and shall cease activities likely to interfere with migration such as surveys or movement of equipment or personnel until such time as the caribou have passed.

Physical Environment

17. The Proponent shall ensure that the land use area is kept clean and tidy at all times.

Restoration

18. The Proponent shall ensure that all disturbed areas are restored to a stable or pre-disturbed state as practical as possible upon completion of field work.
19. The Proponent shall remove all garbage, fuel and equipment upon abandonment.
20. The Proponent shall complete all clean-up and restoration of the lands used prior to the end of each field season and/or upon abandonment of site.

Other

21. All field operations staff should be made aware of the proponents' commitments to the committed mitigation measures and be provided with appropriate training prior to commencement of the project.
22. The Proponent should, to the extent possible, hire local people and consult with local residents regarding their activities in the region.

MONITORING AND REPORTING REQUIREMENTS

In addition, the Board is recommending the following:

Annual Report

1. The Proponent shall submit a comprehensive annual report with copies provided to the Nunavut Impact Review Board by March 31 of each year of permitted activities. The annual report must contain, but not limited to, the following information:
    a) A summary of activities undertaken for the year, including:
        i) a map showing the sampling locations;
        ii) timing of sampling, and
        iii) sampling methodology.
    b) A summary of the data collected;
    c) A wildlife summary monitoring report, including the following information:
        i) Wildlife (including marine wildlife) species encountered and observed;
        ii) Locations (i.e., latitude and longitude), number of animals, gender and age if possible to identify;
        iii) Activity, including critical life events (i.e., feeding, mating, calving, migration, social gathering) within the project areas;
        iv) Behaviour or actions of wildlife when encountered; and
        v) A discussion of issues related to wildlife and environmental monitoring, including the number of cease-work orders required as a result of proximity to caribou;
    d) A summary of local hires and initiatives;
    e) A summary of community consultations undertaken and how the results of these meetings have informed project activities, mitigation measures, adaptive management, or future development plans; and,
    f) A work plan for the following year, if applicable.

Wildlife Log/Record of Observations

2. The Proponent shall maintain a record of wildlife observations while operating within the project area. The reports should include locations (i.e., latitude and longitude), species, number of animals, a description of the animal activity, and a description of the gender and age of animals if possible. Prior to conducting project activities, the Proponent should map the location of any sensitive wildlife sites such as denning sites, calving areas, caribou crossing sites, and raptor nests in the project area, and identify the timing of critical life history events (i.e., calving, mating, denning and nesting). Additionally, the Proponent should indicate potential impacts from the project, and ensure that operational activities are managed and modified to avoid impacts on wildlife and sensitive sites.

   A copy of this wildlife record or report should be submitted annually at the end of the operational season to the following Government of Nunavut contacts:
   a) Michael Mifflin, Manager of Land Use & Environmental Assessment Environmental Protection Service mmifflin@gov.nu.ca.
   b) Mathieu Dumond, Manager Wildlife, mdumond@gov.nu.ca.

OTHER NIRB CONCERNS AND RECOMMENDATIONS

In addition to the project-specific terms and conditions, the Board is recommending the following:

Bear and Carnivore Safety

1. The Proponent review the bear/carnivore detection and deterrent techniques outlined in "Safety in Grizzly and Black Bear Country" which can be down-loaded from this link: http://www.enr.gov.nt.ca/_live/documents/content/Bear_Safety.pdf. Note that some recommendations in this manual are also relevant to polar bears. There is a DVD about polar bears and safety available from Nunavut Parks at the following link http://www.nunavutparks.com/english/visitor-information/suggested-resources.html and a "Safety in Polar Bear Country" pamphlet from Parks Canada at the following link http://www.pc.gc.ca/eng/pn-np/nu/auyuittuq/visit/visit6/d/i.aspx.
2. Any problem wildlife or any interaction with carnivores should be reported immediately to the local Government of Nunavut, Department of Environment Conservation Office (Conservation Officer of Kugluktuk, Monica Angohiatok, phone: 867-982-7450, email: mangohiatok@gov.nu.ca).

Species at Risk

3. The Proponent review Environment Canada's "Environment Assessment Best Practice Guide for Wildlife at Risk in Canada", available at the following link: http://www.ec.gc.ca/Publications/default.asp?lang=En&xml=5407909E-10F6-4AFE-ACDF-75B9E820B4A1. The guide provides information to the Proponent on what is required when Wildlife at Risk, including *Species at Risk*, are encountered or affected by the project.

Change in Project Scope

4. All Authorizing Agencies shall notify the NIRB of any changes in operating plans or conditions associated with this project prior to any such change.

Previously Issued Terms and Conditions

5. The is advised that all terms and conditions previously issued by the NIRB continue to apply to activities as previously screened within the scope of NIRB File Nos. 06EN048 and 06EN066.

REGULATORY REQUIREMENTS

The Proponent is also advised that the following legislation may apply to the project:

Acts and Regulations

1. The *Fisheries Act* (http://laws-lois.justice.gc.ca/eng/acts/F-14/index.html).
2. The *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (http://www.canlii.org/ca/sta/n-28.8/whole.html).
3. The *Migratory Birds Convention Act* and *Migratory Birds Regulations* (http://laws.justice.gc.ca/en/showtdm/cs/M-7.01).
4. The *Species at Risk Act* (http://laws.justice.gc.ca/en/showtdm/cs/S-15.3). Attached in **Appendix B** is a list of Species at Risk in Nunavut.
5. The *Wildlife Act* which contains provisions to protect and conserve wildlife and wildlife habitat, including specific protection measures for wildlife habitat and species at risk.
6. The *Nunavut Act* (http://laws.justice.gc.ca/en/showtdm/cs/N-28.6). The Proponent must comply with the proposed terms and conditions listed in the attached **Appendix C**.
7. The *Aeronautics Act* (http://laws.justice.gc.ca/en/A-2/).

Validity of Land Claims Agreement

Section 2.12.2
Where there is any inconsistency or conflict between any federal, territorial and local government laws, and the Agreement, the Agreement shall prevail to the extent of the inconsistency or conflict.

Dated _____March 29, 2012_____ at Arviat, NU.

Elizabeth Copland, Acting Chairperson

Attachments: Appendix A: Procedural History and Project Activities
Appendix B: Species at Risk in Nunavut
Appendix C: Archaeological and Palaeontological Resources Terms and Conditions for Land Use Permit Holders

Appendix A
Procedural History and Project Activities

Procedural History

On February 9, 2012 the Nunavut Impact Review Board (NIRB or Board) received Minerals and Metals Group's (MMG) "Izok and High Lake Project 2012 Environmental Baseline Program" project proposal from the Nunavut Research Institute (NRI). This project proposal did not require a conformity determination from the Nunavut Planning Commission as the proposal would be located in a region with no approved land use plan (Kitikmeot region). The NIRB assigned this project proposal file number 12YA007.

This project proposal was distributed to community organizations in Bathurst Inlet, Kugluktuk and Cambridge Bay, as well as to relevant federal and territorial government agencies, and Inuit organizations. The NIRB requested that interested parties review the proposal and the NIRB's *proposed* project-specific terms and conditions and provide the Board with any comments or concerns by March 19, 2012 regarding:

- Whether the project proposal is likely to arouse significant public concern; and if so, why;
- Whether the project proposal is likely to cause significant adverse eco-systemic and socio-economic effects; and if so, why;
- Whether the project is of a type where the potential adverse effects are highly predictable and mitigable with known technology, (providing any recommended mitigation measures); and
- Any matter of importance to the Party related to the project proposal.

On or before March 19, 2012, the NIRB received comments from the following interested parties (see Comments and Concerns section below):

- **Environment Canada (EC)**
- **Kitikmeot Inuit Association (KIA)**

All comments provided to NIRB regarding this project proposal can be viewed on NIRB's ftp-site, at the following location:

http://ftp.nirb.ca/SCREENINGS/COMPLETED%20SCREENINGS/

Project Activities

The proposed project is located within the Kitikmeot region, approximately 280 kilometres southeast of Kugluktuk. The Proponent intends to conduct baseline field programs in order to gather information for the preparation of a project proposal that would potentially include an open pit and underground mine at both the High Lake and Izok Lake sites. The information gathered would also help MMG understand and document the potential environmental effects of a future project. The baseline field programs are proposed to take place beginning in April 2012 and continue to September 2012.

The activities/components associated with this proposal include:

- Baseline field programs to occur at the present site of the Izok Lake property, the High Lake property, and at Gray's Bay, as well as along the proposed future site of an all season road between Izok Lake and Grays' Bay. The programs would include the following:
    - Water and sediment sampling in streams and lakes – up to four site visits to the project sites as well as other lakes, streams, and rivers downstream of the project are planned
    - Marine environment surveys, including characterization of the proposed port area
    - Snow surveys, including snow depth measurements during spring
    - Stream flow and water level measurements, including the set-up of data logger and gauging stations with subsequent site visits to collect water measurements
    - Soil surveying, including soil sampling with a shovel
    - Vegetation and habitat mapping, including the collection of plant specimen
    - Wildlife surveys
    - Archaeological surveys
    - Fish and aquatic organism sampling and fish habitat mapping
- Use of helicopters and small fixed wing aircraft to move field crew from site to site;
- Use of small boats to complete surveys;
- Use of existing accommodations and facilities at both Izok and High Lake sites (previously screened and allowed to proceed per NIRB File Nos. 06EN066 and 06EN048);
- Staff to be transported to camp sites in fixed wing aircraft from Yellowknife; and,
- Summary of data collected including sampling locations, times and methodology, to be submitted to the NRI at the completion of the field programs.

Appendix B
Species at Risk in Nunavut

This list includes species listed on one of the Schedules of SARA (*Species at Risk Act*) and under consideration for listing on Schedule 1 of SARA. These species have been designated as at risk by COSEWIC (Committee on the Status of Endangered Wildlife in Canada). This list may not include all species identified as at risk by the Territorial Government.

- Schedule 1 is the official legal list of Species at Risk for SARA. SARA applies to all species on Schedule 1. The term "listed" species refers to species on Schedule 1.
- Schedule 2 and 3 of SARA identify species that were designated at risk by the COSEWIC prior to October 1999 and must be reassessed using revised criteria before they can be considered for addition to Schedule 1.
- Some species identified at risk by COSEWIC are "pending" addition to Schedule 1 of SARA. These species are under consideration for addition to Schedule 1, subject to further consultation or assessment.

Schedules of SARA are amended on a regular basis so it is important to periodically check the SARA registry (www.sararegistry.gc.ca) to get the current status of a species.

Updated: October 2010

Species at Risk	**COSEWIC Designation**	**Schedule of SARA**	**Government Organization with Lead Management Responsibility** [1]
Eskimo Curlew	Endangered	Schedule 1	EC
Ivory Gull	Endangered	Schedule 1	EC
Ross's Gull	Threatened	Schedule 1	EC
Harlequin Duck (Eastern population)	Special Concern	Schedule 1	EC
Rusty Blackbird	Special Concern	Schedule 1	Government of Nunavut
Felt-leaf Willow	Special Concern	Schedule 1	Government of Nunavut
Peregrine Falcon (*anatum-tundrius* complex)	Special Concern	Schedule 1 (*anatum*) Schedule 3 (*tundrius)*	Government of Nunavut
Short-eared Owl	Special Concern	Schedule 3	Government of Nunavut
Peary Caribou	Endangered	Pending	Government of Nunavut
Beluga Whale (Eastern Hudson Bay population)	Endangered	Pending	DFO

Species at Risk cont.	COSEWIC Designation cont.	Schedule of SARA cont.	Government Organization with Lead Management Responsibility cont. [1]
Red Knot (*rufa* subspecies)	Endangered	Pending	EC
Beluga Whale (Cumberland Sound population)	Threatened	Pending	DFO
Atlantic Cod (Arctic population)	Special Concern	Pending	DFO
Beluga Whale (Western Hudson Bay population)	Special Concern	Pending	DFO
Beluga Whale (Eastern High Arctic – Baffin Bay population)	Special Concern	Pending	DFO
Bowhead Whale (Eastern Canada – West Greenland population)	Special Concern	Pending	DFO
Killer Whale (Northwest Atlantic / Eastern Arctic populations)	Special Concern	Pending	DFO
Porsild's Bryum	Threatened	Pending	Government of Nunavut
Atlantic Walrus	Special Concern	Pending	DFO
Narwhal	Special Concern	Pending	DFO
Red Knot (*islandica* subspecies)	Special Concern	Pending	EC
Horned Grebe (Western population)	Special Concern	Pending	EC
Atlantic Cod, Arctic Lakes	Special Concern	No schedule	EC
Barren-ground Caribou (Dolphin and Union population)	Special Concern	Pending	Government of Nunavut
Grizzly Bear	Special Concern	Pending	Government of Nunavut
Polar Bear	Special Concern	Pending	Government of Nunavut
Wolverine (Western Population)	Special Concern	Pending	Government of Nunavut

[1] Environment Canada (EC) has a national role to play in the conservation and recovery of Species at Risk in Canada, as well as responsibility for management of birds described in the Migratory Birds Convention Act (MBCA). Day-to-day management of terrestrial species not covered in the MBCA is the responsibility of the Territorial Government. Populations that exist in National Parks are also managed under the authority of the Parks Canada Agency. The Department of Fisheries and Oceans (DFO) has responsibility for management of aquatic species.

Appendix C
Archaeological and Palaeontological Resources Terms and Conditions
for Land Use Permit Holders

INTRODUCTION

The Department of Culture, Language, Elders and Youth (CLEY) routinely reviews land use applications sent to the Nunavut Water Board, Nunavut Impact Review Board and the Department of Indian and Northern Affairs Canada. These terms and conditions provide general direction to the permittee/proponent regarding the appropriate actions to be taken to ensure the permittee/proponent carries out its role in the protection of Nunavut's archaeological and palaeontological resources.

TERMS AND CONDITIONS

1) The permittee/proponent shall have a professional archaeologist and/or palaeontologist perform the following **Functions** associated with the **Types of Development** listed below or similar development activities:

	Types of Development (See Guidelines below)	**Function** (See Guidelines below)
a)	Large scale prospecting	Archaeological/Palaeontological Overview Assessment
b)	Diamond drilling for exploration or geotechnical purpose or planning of linear disturbances	Archaeological/ Palaeontological Inventory
c)	Construction of linear disturbances, Extractive disturbances, Impounding disturbances and other land disturbance activities	Archaeological/ Palaeontological Inventory or Assessment or Mitigation

Note that the above-mentioned functions require either a Nunavut Archaeologist Permit or a Nunavut Palaeontologist Permit. CLEY is authorized by way of the *Nunavut and Archaeological and Palaeontological Site Regulations*[1] to issue such permits.

[1] P.C. 2001-1111 14 June, 2001

2) The permittee/proponent shall not operate any vehicle over a known or suspected archaeological or palaeontological site.

3) The permittee/proponent shall not remove, disturb, or displace any archaeological artifact or site, or any fossil or palaeontological site.

4) The permittee/proponent shall immediately contact CLEY at (867) 934-2046 or (867) 975-5500 should an archaeological site or specimen, or a palaeontological site or fossil, be encountered or disturbed by any land use activity.

5) The permittee/proponent shall immediately cease any activity that disturbs an archaeological or palaeontological site encountered during the course of a land use operation until permitted to proceed with the authorization of CLEY.

6) The permittee/proponent shall follow the direction of CLEY in restoring disturbed archaeological or palaeontological sites to an acceptable condition. If these conditions are attached to either a Class A or B Permit under the Territorial Lands Act INAC's directions will also be followed.

7) The permittee/proponent shall provide all information requested by CLEY concerning all archaeological sites or artifacts and all palaeontological sites and fossils encountered in the course of any land use activity.

8) The permittee/proponent shall make best efforts to ensure that all persons working under its authority are aware of these conditions concerning archaeological sites and artifacts and palaeontological sites and fossils.

9) If a list of recorded archaeological and/or palaeontological sites is provided to the permittee/proponent by CLEY as part of the review of the land use application the permittee/proponent shall avoid the archaeological and/or palaeontological sites listed.

10) Should a list of recorded sites be provided to the permittee/proponent, the information is provided solely for the purpose of the proponent's land use activities as described in the land use application, and must otherwise be treated confidentially by the proponent.

LEGAL FRAMEWORK

As stated in Article 33 of the *Nunavut Land Claims Agreement*:

Where an application is made for a land use permit in the Nunavut Settlement Area, and there are reasonable grounds to believe that there could be sites of archaeological importance on the lands affected, no land use permit shall be issued without written consent of the Designated Agency. Such consent shall not be unreasonably withheld. [33.5.12]

Each land use permit referred to in Section 33.5.12 shall specify the plans and methods of archeological site protection and restoration to be followed by the permit holder, and any other conditions the Designated Agency may deem fit. [33.5.13]

Palaeontology and Archaeology

Under the *Nunavut Act*[2], the federal government can make regulations for the protection, care and preservation of palaeontological and archaeological sites and specimens in Nunavut. Under the *Nunavut Archaeological and Palaeontological Sites Regulations*[3], it is illegal to alter or disturb any palaeontological or archaeological site in Nunavut unless permission is first granted through the permitting process.

Definitions

As defined in the *Nunavut Archaeological and Palaeontological Sites Regulations*, the following definitions apply:

"archaeological site" means a place where an archaeological artifact is found.

"archaeological artifact" means any tangible evidence of human activity that is more than 50 years old and in respect of which an unbroken chain of possession or regular pattern of usage cannot be demonstrated, and includes a Denesuline archaeological specimen referred to in section 40.4.9 of the Nunavut Land Claims Agreement.

"palaeontological site" means a site where a fossil is found.

"fossil" includes:
Fossil means the hardened or preserved remains or impression of previously living organisms or vegetation and includes:

(a) natural casts;
(b) preserved tracks, coprolites and plant remains; and
(c) the preserved shells and exoskeletons of invertebrates and the preserved eggs, teeth and bones of vertebrates

[2] s. 51(1)
[3] P.C. 2001-1111 14 June, 2001

GUIDELINES FOR DEVELOPERS FOR THE PROTECTION OF ARCHAEOLOGICAL RESOURCES IN THE NUNAVUT TERRITORY

(**NOTE:** Partial document only, complete document at: http://gov.nu.ca/cley/english/arch.html)

Introduction

The following guidelines have been formulated to ensure that the impacts of proposed developments upon heritage resources are assessed and mitigated before ground surface altering activities occur. Heritage resources are defined as, but not limited to, archaeological and historical sites, burial grounds, palaeontological sites, historic buildings and cairns Effective collaboration between the developer, the Department of Culture, Language, Elders and Youth (CLEY), and the contract archaeologist(s) will ensure proper preservation of heritage resources in the Nunavut Territory. The roles of each are briefly described.

CLEY is the Nunavut Government agency which oversees the protection and management of heritage resources in Nunavut, in partnership with land claim authorities, regulatory agencies, and the federal government. Its role in mitigating impacts of developments on heritage resources is as follows: to identify the need for an impact assessment and make recommendations to the appropriate regulatory agency; set the terms of reference for the study depending upon the scope of the development; suggest the names of qualified individuals prepared to undertake the study to the developer; issue an archaeologist or palaeontologist permit authorizing field work; assess the completeness of the study and its recommendations; and ensure that the developer complies with the recommendations.

The primary regulatory agencies that CLEY provides information and assistance to are the Nunavut Impact Review Board, for development activities proposed for Inuit Owned Lands (as defined in Section 1.1.1 of the Nunavut Land Claims Agreement), and the Department of Indian and Northern Affairs, for development activities proposed for federal Crown Lands.

A developer is the initiator of a land use activity. It is the obligation of the developer to ensure that a qualified archaeologist or palaeontologist is hired to perform the required study and that provisions of the contract with the archaeologist or palaeontologist allow permit requirements to be met; i.e. fieldwork, collections management, artifact and specimen conservation, and report preparation. On the recommendation of the contract archaeologist or palaeontologist in the field and the Government of Nunavut, the developer shall implement avoidance or mitigative measures to protect heritage resources or to salvage the information they contain through excavation, analysis, and report writing. The developer assumes all costs associated with the study in its entirety.

Through his or her active participation and supervision of the study, the contract archaeologist or palaeontologist is accountable for the quality of work undertaken and the quality of the report produced. Facilities to conduct fieldwork, analysis, and report preparation should be available to this individual through institutional, agency, or company affiliations. Responsibility for the curation of objects recovered during field work while under study and for documents generated in the course of the study as well as remittance of artifacts, specimens and documents to the

repository specified on the permit accrue to the contract archaeologist or palaeontologist. This individual is also bound by the legal requirements of the *Nunavut Archaeological and Palaeontological Sites Regulations*.

Types of Development

In general, those developments that cause concern for the safety of heritage resources will include one or more of the following kinds of surface disturbances. These categories, in combination, are comprehensive of the major kinds of developments commonly proposed in Nunavut. For any single development proposal, several kinds of these disturbances may be involved

- *Linear disturbances: including the construction of highways, roads, winter roads, transmission lines, and pipelines;*
- *Extractive disturbances: including mining, gravel removal, quarrying, and land filling;*
- *Impoundment disturbances: including dams, reservoirs, and tailings ponds;*
- *Intensive land use disturbances: including industrial, residential, commercial, recreational, and land reclamation work, and use of heritage resources as tourist developments.*
- *Mineral, oil and gas exploration: establishment of camps, temporary airstrips, access routes, well sites, or quarries all have potential for impacting heritage resources*.

Types of Studies Undertaken to Preserve Heritage Resources

Overview: An overview study of heritage resources should be conducted at the same time as the development project is being designed or its feasibility addressed. They usually lack specificity with regard to the exact location(s) and form(s) of impact and involve limited, if any, field surveys. Their main aim is to accumulate, evaluate, and synthesize the existing knowledge of the heritage of the known area of impact. The overview study provides managers with baseline data from which recommendations for future research and forecasts of potential impacts can be made. A Class I Permit is required for this type of study if field surveys are undertaken.

Reconnaissance: This is done to provide a judgmental appraisal of a region sufficient to provide the developer, the consultant, and government managers with recommendations for further development planning. This study may be implemented as a preliminary step to inventory and assessment investigations except in cases where a reconnaissance may indicate a very low or negligible heritage resource potential. Alternately, in the case of small-scale or linear developments, an inventory study may be recommended and obviate the need for a reconnaissance.

The main goal of a reconnaissance study is to provide baseline data for the verification of the presence of potential heritage resources, the determination of impacts to these resources, the generation of terms of reference for further studies and, if required, the advancement of

preliminary mitigative and compensatory plans. The results of reconnaissance studies are primarily useful for the selection of alternatives and secondarily as a means of identifying impacts that must be mitigated after the final siting and design of the development project. Depending on the scope of the study, a Class 1 or Class 2 Permit is required for this type of investigation.

Inventory: A resource inventory is generally conducted at that stage in a project's development at which the geographical area(s) likely to sustain direct, indirect, and perceived impacts can be well defined. This requires systematic and intensive fieldwork to ascertain the effects of all possible and alternate construction components on heritage resources. All heritage sites must be recorded on Government of Nunavut Site Survey forms. Sufficient information must be amassed from field, library and archival components of the study to generate a predictive model of the heritage resource base that will:

- allow the identification of research and conservation opportunities;
- enable the developer to make planning decisions and recognize their likely effects on the known or predicted resources; and
- make the developer aware of the expenditures, which may be required for subsequent studies and mitigation. A Class 1 or 2 permit is required

Assessment: At this stage, sufficient information concerning the numbers and locations of heritage resources will be available, as well as data to predict the forms and magnitude of impacts. Assessments provide information on the size, volume, complexity and content of a heritage resource, which is used to rank the values of different sites or site types given current archaeological knowledge. As this information will shape subsequent mitigation program(s), great care is necessary during this phase.

Mitigation: This refers to the amelioration of adverse impacts to heritage resources and involves the avoidance of impact through the redesign or relocation of a development or its components; the protection of the resource by constructing physical facilities; or, the scientific investigation and recovery of information from the resource by excavation or other method. The type(s) of appropriate mitigative measures are dictated by their viability in the context of the development project. Mitigation strategies must be developed in consultation with, and approved by, the Department of Culture, Language, Elders and Youth. It is important to note that mitigation activities should be initiated as far in advance of the construction of the development as possible.

Surveillance and monitoring: These may be required as part of the mitigation program.

Surveillance may be conducted during the construction phase of a project to ensure that the developer has complied with the recommendations.

Monitoring involves identification and inspection of residual and long-term impacts of a development (i.e. shoreline stability of a reservoir); or the use of impacts to disclose the presence of heritage resources, for example, the uncovering of buried sites during the construction of a pipeline.

SPILL CONTINGENCY PLAN

EXPLORATION OPERATIONS

HIGH LAKE PROPERTY

NUNAVUT, CANADA

For:
Crown-Indigenous Relations and Northern Affairs Canada
Land Administration File
76M/7-1-11 High Lake

Prepared: December 2009
Revised: August 2021

MMG Resources Inc.
PO Box 91460, STN West Vancouver, West Vancouver, BC V7V 3P1

TABLE OF CONTENTS

1. PREAMBLE

This Spill Contingency Plan has been compiled with respect to the requirements within the Spill Contingency Planning and Reporting Regulations in Northwest Territories as adopted by the Government of Nunavut. The Spill Contingency Plan applies to the High Lake Project operated by MMG Resources Inc. in the Kitikmeot District of Nunavut (Figure 1). The Spill Contingency was originally in place for seasonal exploration operations from 2010 to 2013. The High Lake camp was not opened in 2014 and in 2015 saw a short period of limited occupancy to support reclamation of 10 wood frame tents and one plywood clad structure. Following this reclamation work the site was placed on long term care and maintenance.

All fuel and lubricants have now been removed from site. The Spill Contingency plan is to be revised, and the Contacts (4.0) updated, at the re-commencement of exploration activities and/or any time during operations. The revision date will be noted on the title page of the plan.

2. INTRODUCTION

This Spill Contingency Plan is to provides a plan of action for reasonably foreseeable spill events at the High Lake camp considering the nature of the fuels and other hazardous materials that will be handled during the Company's operations The plan defines the responsibilities of key response personnel and outlines the procedures for responding to spill in a way that will act to minimize potential health and safety hazards, environmental damage and remediation costs. The plan has been prepared to provide ready access to all the information needed in dealing with a spill.

The objectives of the Plan are to:

- Define the reporting procedures and communication network to be used in the event of a system failure or material spill.
- Define procedures for the safe and effective containment and clean-up/disposal of a system failure or material spill.
- Define specific individuals and their responsibilities with respect to responding to a spill.

It is MMG Resources Inc. policy to comply with all existing laws and regulations to help ensure the protection of the environment, to provide such protection of the environment as is technically feasible, to cooperate with other groups working on protection of the environment and to keep employees, government officials and the public informed.

Personnel will be instructed on the plan upon arrival in camp. Instruction will also be given on how to properly manipulate and store fuel and other hazardous substances and on the location of emergency equipment. A more graphical representation of this plan will be posted in common camp areas.

2.1. ENVIRONMENTAL POLICY

MMG aims to achieve a high standard of care for the natural environment in all the activities in which we engage. MMG undertakes to minimize our impact on the environment

MMG will:

- conduct our operations in compliance with all relevant environmental regulations, licenses and legislation as a minimum condition
- identify, monitor and manage environmental risks arising from our operations
- seek continuous improvement in environmental performance, production processes, waste management and the use of resources
- provide appropriate training and awareness for all employees on environmental issues
- communicate regularly with employees about our aim and about individual responsibilities
- inform our customers and suppliers of our aim and of their responsibilities in relation to our business
- communicate with stakeholders, the community and governments about our environmental performance, and contribute to the development of laws and regulations which may affect our business

3. SITE DESCRIPTION

The High Lake Camp has historically been used as a base of operations for mineral exploration programs within the High Lake Project area on a seasonal basis between March 1 and September 31. The camp is located approximately 550 km north-northeast of Yellowknife (Figure 1). Access is restricted to fixed wing aircraft of limited capacity on a year-round basis, with larger aircraft capacity seasonally operating from the frozen lake surface. The camp is located on the sloping southwest shore of High Lake and consists of a mix of plywood clad and canvass covered wooden frame structures offering accommodations for up to 40 people (Figure 2 and 3). The camp can support a population of up to 40 people.

Fuel is transported to site seasonally using the frozen lake surface to allow Hercules operations and is then shuttled with a helicopter into the two (North and South) fuel caches on the high ground behind the camp. On site fuel is stored in 205L drums that are stacked no more than 3 high in secondary containment berms. Bungs are positioned to allow inspection of the drums and to avoid leakage. The fuel caches allow for the storage of up to 800 drums on site. All fuel tanks, drums and containers are to be inspected at camp start up. Where not already in place, secondary containment is to be added upon use.

Propane is to be stored in 100lb cylinders within a designated area away from camp. These will be secured to prevent accidental tipping of propane cylinders. Propane is brought to site continually on re-supply flights, with a total number of cylinders stored on site not exceeding 30.

Each of the tents will have a drum of fuel supported on wooden crib. A plastic spill container will be placed below each drum and absorbent matting will be fixed around each bung/fuel supply assembly.

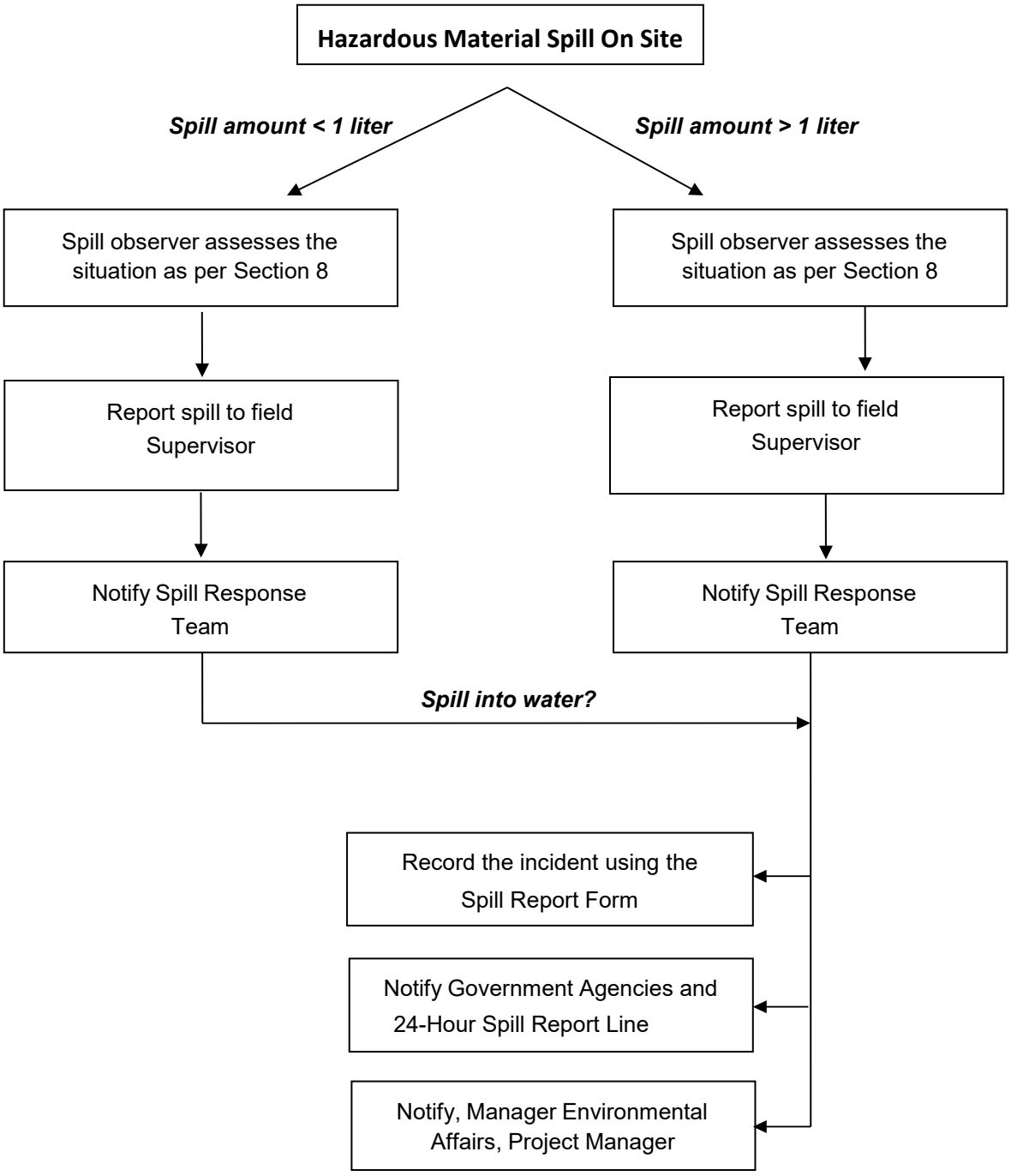
Other chemicals will be securely stored in the camp area, primarily within the drill foreman’s work area.

4. CONTACTS

Project Manager	TBA	
Operations Manager	TBA	
Development Manager	TBA	
Exploration Manager	TBA	
Kitikmeot Inuit Association		(867) 983-2458
Nunavut Water Board	Richard Dwyer	(867) 360-6338 (867) 360-6369 (fax)
24-Hour Spill Report Line, Government of Nunavut	(867)-920-8130 (phone) (867)-873-6924 (fax) spills@gov.nt.ca (email)	
Government of Canada – Department of Environment and Natural Resources, Government of the Northwest Territories		(867) 920-8130
Resource Management/Water Resource Officer CIRNAC – Kitikmeot Region	Baba Pedersen	(867) 222-2839
WSCC 24-Hour Incident Reporting line		1-800-661-0792
WorkSafe BC Prevention Information Line		1-888-621-7233
Kugluktuk Health Centre		(867) 982-4531
Kugluktuk RCMP	Emergency line Non-emergency	(867) 982-1111 (867) 982-0123

5. RESPONSE ORGANIZATION

The following is a flow chart to illustrate the sequence of events if a hazardous material spill occurs at the High Lake Project site.



6. SPILL RESPONSE TEAM

All personnel will be informed of the contents of the Spill Contingency Plan and trained in the safe use of relevant spill prevention and clean up equipment. The Field Supervisor will appoint and train two persons to be the Spill Response Team. They will also be responsible to carry out the daily inspections of the fuel storage areas and equipment. Personnel on site will be limited, so for any large spill more people will be brought in to help, from surrounding exploration operations primarily from the IZOK Lake Camp located 200km South of the High Lake Camp and secondly from Yellowknife (Figure 1).

Spill Response Team Responsibilities

- Perform daily inspections at the Camp fuel and chemical storage areas and fuel hoses.
- Report any spill to Project Manager or designate.
- Containment of the spill and site remediation.

Field Supervisor Responsibilities

- Assume complete authority over the spill scene and coordinate all personnel involved.
- Evaluate spill situation and develop overall plan of action.
- Activate the spill contingency plan
- Immediately report the spill to the 24-Hour Spill Report Line and regulatory agencies. (For spill greater than 10 litres)
- Fill out the Spill Report Form (for spill greater than 10 litres)
- Report the spill to the Project Manager. (for spill greater than 1 litre)
- If required, obtain additional manpower, equipment, and material if not available on site for spill response.

Manager, Environmental Affairs Responsibilities

- Provide regulatory agencies and MMG Resources Inc. management with information regarding the status of the clean-up activities.
- Prepare and submit a report on the spill incident to regulatory agencies within 30 days of the event.

7. SPILL PREVENTION

The first line of defence against spills is spill prevention. All efforts to avoid spills will be made by prioritizing preventative measures in the following manner.

7.1. SPILL OF FUEL ON LAND

Steel drums will be stored in such a manner that they will not be susceptible to tipping over, rolling or otherwise being unstable. Care will be exercised so that nothing can cause damage to steel fuel drums by falling or rolling onto or into them. When unloading steel fuel drums from aircraft, the use of a ramp or a cushion (automotive tire) will ensure that the drums are not damaged.

7.2. LEAK OF FUEL FROM RESERVOIR AND DISTRIBUTION LINES

Stability of all reservoir and distribution assemblies is of utmost importance to ensure that the risk of damage is minimized. All stands for reservoirs will be constructed to strength standards beyond those required. Distribution lines from reservoirs to appliances will be fitted with an appropriate shut-off valve immediately downstream from the reservoir. The line will be installed in such a way to prevent being chafed in the wind, chewed on by animals or tripped on by humans. This will be done by securing it to rigid structures, encasing it in armour or any other effective manner. These measures apply broadly to heating oil, gasoline and propane set-ups.

7.3. SPILL OF FUEL ON WATER

Liquid fuel in steel drums will be stored at least 30m back from the lakeshore on hard ground. All care shall be taken when refuelling float planes at the float dock. Fuel will only be brought down to the dock when fuelling is imminent. Partially used drums will be removed from the dock immediately upon completion of fuelling. Absorbent pads will be used both around the rim of the fuel drum and the rim of the aircraft's fuel tank to ensure that any overflow does not enter the body of water. Any spill into a water body, regardless of volume, will be reported immediately.

7.4. RELEASE OF PROPANE

Propane will be stored in appropriate, certified containers. Propane containers will be inspected and monitored on a regular basis for any signs of deterioration or corrosion. Containers will be secured and fastened in an upright position to ensure there is no danger of tipping and eliminating the risk of damage to the regulator in the event of a fall.

7.5. SPILL OF BATTERY ACID

All batteries will be protected from damage by fastening them into the space designed for them when in use and stored safely when not in use. Batteries will be transported in appropriate containers as stipulated under the dangerous goods requirements. Batteries that no longer hold a charge will be flown out and disposed of in the appropriate facilities.

8. INITIAL ACTION

These instructions are to be followed by the first person on the spill scene.

1. Always be alert and consider your safety first.
2. Wear personal protective equipment
3. Do not smoke and eliminate all source of ignition
4. Assess the hazard to people in the vicinity of the spill.
5. If possible control danger to human life
6. Do not touch, smell, taste or get close to unknown substance.
7. If substance has been identified and if possible and safe to do so, try to stop the flow of material.
    - If filling is in progress, stop at once

- If seeping through a small hole, use a patch kit if practical to do so.
- If necessary and practical, pump the fuel from the leaking container into a refuge container

8. Immediately report the spill to the Field Supervisor and Spill Response Team by radio, satellite phone or in person.
9. Resume any effective action to contain, mitigate, or terminate the flow of the spilled material.
10. If in doubt about cleaning procedures or for a very large spill, regulatory agencies can help.

9. REPORTING

The person who notices the spill must immediately notify the Field Supervisor. As soon as possible the Field Supervisor will report the spill to:

- The 24-Hour Spill Report Line Phone (867) 920-8130, Fax (867) 873-6924
- Complete and submit the NT NU Spill Report Form – See Appendix I
- Notify permitting authorities (Nunavut Water Board, Kitikmeot Inuit Association)

10. RESOURCE INVENTORY

A spill kit with a capacity of 240 litres will be located at the fuel tank area and will contain:

1 – 360 litre/79 gallon polyethylene drum
4 – oil absorbent booms (5” X 10’)
100 – oil absorbent sheets (16.5” X 20” X 3/8”)
1 – drain cover (36” X 36” X 1/16”)
1 – Caution tape (3” X 500’)
1 – 1 lb plugging compound
2 – pair Nitrile gloves
2 – pair Safety goggles 2 – pair Tyvek coveralls 1 – instruction booklet
10 – printed disposable bags (24” X 48”) 1- shovel (in remote spill kit only)
1- plastic tarp

Shovels, water pump, plastic pails, garbage bags, extra absorbent pad, drip pans will be placed on the side of the wall at the main office and the kitchen. Fire extinguishers are available throughout the camp facility.

Drill Spill Kits with a capacity of 25 L will contain the following:

10 - Pads (17”x19”x2/8”)
3 -Socks (3”x4’)
1 -Pair of Gloves
1 -Disposal Bags
1 -Warning Sign
1 -Literature (Inventory List, MSDS, Instructions)

11. HAZARDOUS MATERIAL INVENTORY

This following section lists for each hazardous substance present on the project area, health hazards, spill procedure and disposal procedures. For more detailed information, refer to the MSDS sheets.

11.1. DIESEL FUEL, JET-B, GASOLINE

DIESEL, JET-B AND GASOLINE ARE HIGHLY FLAMMABLE

11.1.1. GENERAL PRECAUTIONS

- Do not smoke
- Will be easily ignited by heat, sparks or flames
- Gasoline and Jet-B are more volatile than diesel
- Explosion hazard indoors, in confined spaces and outdoors
- Vapours may form explosive mixtures with air
- Vapours may travel to source of ignition and flash back
- Most vapours are heavier than air. They will spread along ground and collect in low or confined areas.
- Keep pump or electrical equipment far away, be very careful with metallic tools that could sparks on rocks, wait for vapours to dissipate
- Inhalation may cause central nervous effects
- Aspiration into lungs may cause pneumonitis which can be fatal
- Eye and skin irritation
- Prolonged exposure has caused cancers in laboratory animals

11.1.2. SPILL ON LAND

- Build a containment berm, downslope, using, peat, moss, and soil material, bags filled with sand or rocks and place a plastic tarp at the foot of the berm to pool the spill. Spill can be pumped if in a large amount
- Soak up spilled substance by using absorbent pads
- Excavate the surface soil if necessary. If large excavation is needed, first contact regulatory agencies for approval.
- Remove spill substance splashed on vegetation by applying a thin dusting of Spag-zorb or other ultra-dry absorbent.
- Dispose hydrocarbons, absorbent pad, contaminated soil and cleaning material in an empty drum, seal it and label it.
- On marshy zones, don’t destroy vegetal cover, limit personnel and equipment. Remove pooled oil with absorbent pads and/or skimmer.

11.1.3. SPILL ON WATER

- Contain spill as close to release point as possible
- On small spill, deploy hydrophobic absorbent pads

- On larger spill and weather conditions permitting, use containment boom to limit fuel dispersion. Use a skimmer, pump or hydrophobic absorbent pads to remove fuel inside the boom.
- Dispose hydrocarbons, absorbent pad, contaminated soil and cleaning material in an empty drum, seal it and label it.

11.1.4. SPILL ON RIVERS AND STREAMS

- Prevent entry into water, if possible, by building a berm or trench.
- Intercept moving slicks in quiet areas using (absorbent) booms.
- Do not use absorbent booms/pads in fast currents and turbulent water.

11.1.5. SPILL ON ICE AND SNOW

- Build a containment berm of compacted snow around spill.
- If hydrocarbons are pooling on ice, pump large amount or use hydrophobic absorbent pads.
- Don't delay removing the spill as hydrocarbons could seep through cracks into the water.
- Scrape ice, shovel all contaminated snow in plastic buckets with lids or in drums. Dispose absorbent pads and other contaminated equipment in separated containers. Label and seal the containers.

11.1.6. SPILL DISPOSAL

- Contact Federal and Territorial regulatory agencies to identify appropriate disposal methods before disposing of contaminated material.

11.2. PROPANE

EXTREMELY FLAMMABLE

11.2.1. GENERAL PRECAUTIONS

- Do not smoke
- Cylinders may explode when heated
- Cylinders may rocket if ruptured
- Will be easily ignited by heat, sparks or flames
- Explosion hazard indoors, in confined spaces and outdoors
- Vapours may form explosive mixtures with air
- Vapours may travel to source of ignition and flash back
- Vapours from liquefied gas are initially heavier than air and spread along ground.
- Contact with gas or liquefied gas may cause burns, severe injuries and/or frostbite
- Keep pump or electrical equipment far away, be very careful with metallic tools that could sparks on rocks, wait for vapours to dissipate
- Liquid may cause frostbites and blisters
- Blurred vision if goes in the eyes
- Narcotic asphyxiation
- Dizziness, disorientation, excitation, headache, vomiting, unconsciousness if inhaled

11.2.2. SPILL ON LAND, WATER, ICE AND SNOW

- Eliminate all source of ignition
- Do not attempt to contain the propane release if not absolutely sure on what to do.
- Do not touch or walk through spilled material
- Stop leak if can be done without risk
- If possible, turn container so that gas escapes rather than liquid.
- Water spray can be used to knock down vapors but don't direct water at spill or source of leak
- Prevent spreading of vapors in confined areas
- If or when possible, confine spill with confinement berm. Throw absorbent pads into spill, retrieved them with gaffs or pitchforks.
- Small fire can be extinguished with dry chemical or CO_2.
- Dispose contaminated materials in a labelled drum.

11.2.3. SPILL DISPOSAL

- Contact Federal and Territorial regulatory agencies to identify appropriate disposal methods for defective equipment that resulted in the release.

11.3. MOTOR OIL, HYDRAULIC OIL, TRANSMISSION FLUID

11.3.1. GENERAL PRECAUTIONS

- Avoid breathing mists, may cause lung irritation
- On skin may cause mild irritation

11.3.2. SPILL ACTION

- Soak up with absorbent material
- Disposed contaminated soil and material in sealed and labelled container
- Small amount can be incinerated
- Large amount to be disposed as hazardous waste.

11.4. ANTIFREEZE

11.4.1. GENERAL PRECAUTIONS

- Respiratory irritation with prolonged exposure.
- Kidney, liver and bladder problems reported in animals

11.4.2. SPILL ON LAND

- Soak up by using absorbent pads
- Dispose antifreeze, absorbent pad, contaminated soil and cleaning material in an empty drum, seal it and label it.
- On marshy zones, don't destroy vegetal cover, limit personnel and equipment. If possible remove pooled antifreeze with absorbent pads.

11.4.3. SPILL ON RIVERS AND STREAMS

- Prevent entry into water, if possible, by building a berm or trench.

11.4.4. SPILL ON ICE AND SNOW

- Build a containment berm of compacted snow around spill.
- If pooling on ice, pump large amount or use absorbent pads.
- Don't delay removing the spill as it can seep through cracks into the water.
- Scrape ice, shovel all contaminated snow into plastic buckets with lids or in drums.
- Dispose absorbent pads and other contaminated equipment in separated containers. Label and seal the containers.

11.4.5. SPILL DISPOSAL

- Contact Federal and Territorial regulatory agencies to identify appropriate disposal methods before disposing of contaminated material.

11.5. BATTERY ACID

11.5.1. GENERAL PRECAUTIONS

- Fire and explosion hazard
- Can be extinguished with dry chemical fire extinguisher.
- Ventilate area
- Remove combustible materials
- Mist inhalation hazard when being charged or spilled
- Acid burns to skin and eyes irritation

11.5.2. SPILL ACTION

- Neutralize with soda or lime
- Dispose battery and neutralized contaminated material in a sealed and labelled container
- Dispose as an hazardous waste

11.6. POLY-DRILL DR-133

11.6.1. GENERAL PRECAUTIONS

- May cause skin and eye irritation

11.6.2. SPILL ACTION

- Soak up with absorbent pad
- Dispose residue, contaminated soil and material in labelled containers. Solidify with sand.
- Small amount can be incinerated, otherwise dispose as hazardous waste.

11.7. 550-X POLYMER

11.7.1. GENERAL PRECAUTIONS

- Prolonged skin contact may cause irritation
- Possible eye irritation
- Ingestion may cause nausea, vomiting, cramps, diarrhea

1.1.1. SPILL ACTION

- Clean up spill with gloves.
- Scrape soil or surface and disposed in labelled containers
- Dispose as hazardous waste

12. APPENDIX – SPILL REPORT FORM

Northwest Territories | Nunavut | Canada

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE
TEL: (867) 920-8130
FAX: (867) 873-6924
EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR	REPORT TIME	☐ ORIGINAL SPILL REPORT, OR	REPORT NUMBER	
B	OCCURRENCE DATE: MONTH – DAY – YEAR	OCCURRENCE TIME	☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	____-_____	
C	LAND USE PERMIT NUMBER (IF APPLICABLE)	WATER LICENCE NUMBER (IF APPLICABLE)			
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION	REGION ☐ NWT ☐ NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN			
E	LATITUDE DEGREES MINUTES SECONDS	LONGITUDE DEGREES MINUTES SECONDS			
F	RESPONSIBLE PARTY OR VESSEL NAME	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION			
G	ANY CONTRACTOR INVOLVED	CONTRACTOR ADDRESS OR OFFICE LOCATION			
H	PRODUCT SPILLED	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER		
	SECOND PRODUCT SPILLED (IF APPLICABLE)	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER		
I	SPILL SOURCE	SPILL CAUSE	AREA OF CONTAMINATION IN SQUARE METRES		
J	FACTORS AFFECTING SPILL OR RECOVERY	DESCRIBE ANY ASSISTANCE REQUIRED	HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT		
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS				
L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE

REPORT LINE USE ONLY

N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130

LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC | SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN | FILE STATUS ☐ OPEN ☐ CLOSED

AGENCY	CONTACT NAME	CONTACT TIME	REMARKS
LEAD AGENCY			
FIRST SUPPORT AGENCY			
SECOND SUPPORT AGENCY			
THIRD SUPPORT AGENCY			

PAGE 1 OF _____

13. APPENDIX – FIGURES

Figure 1 – Regional Overview Map

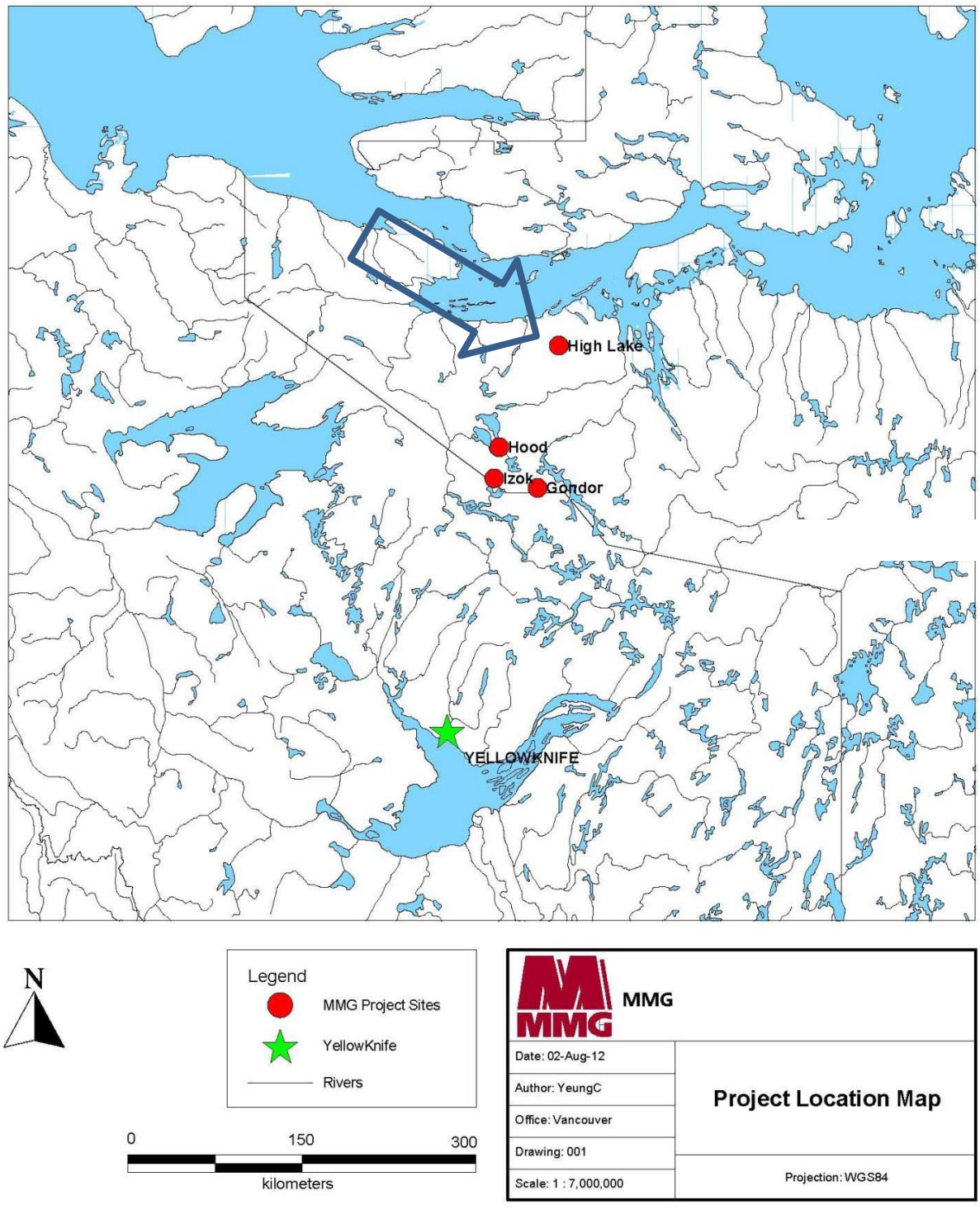


Figure 2 – Historic Layout High Lake Camp

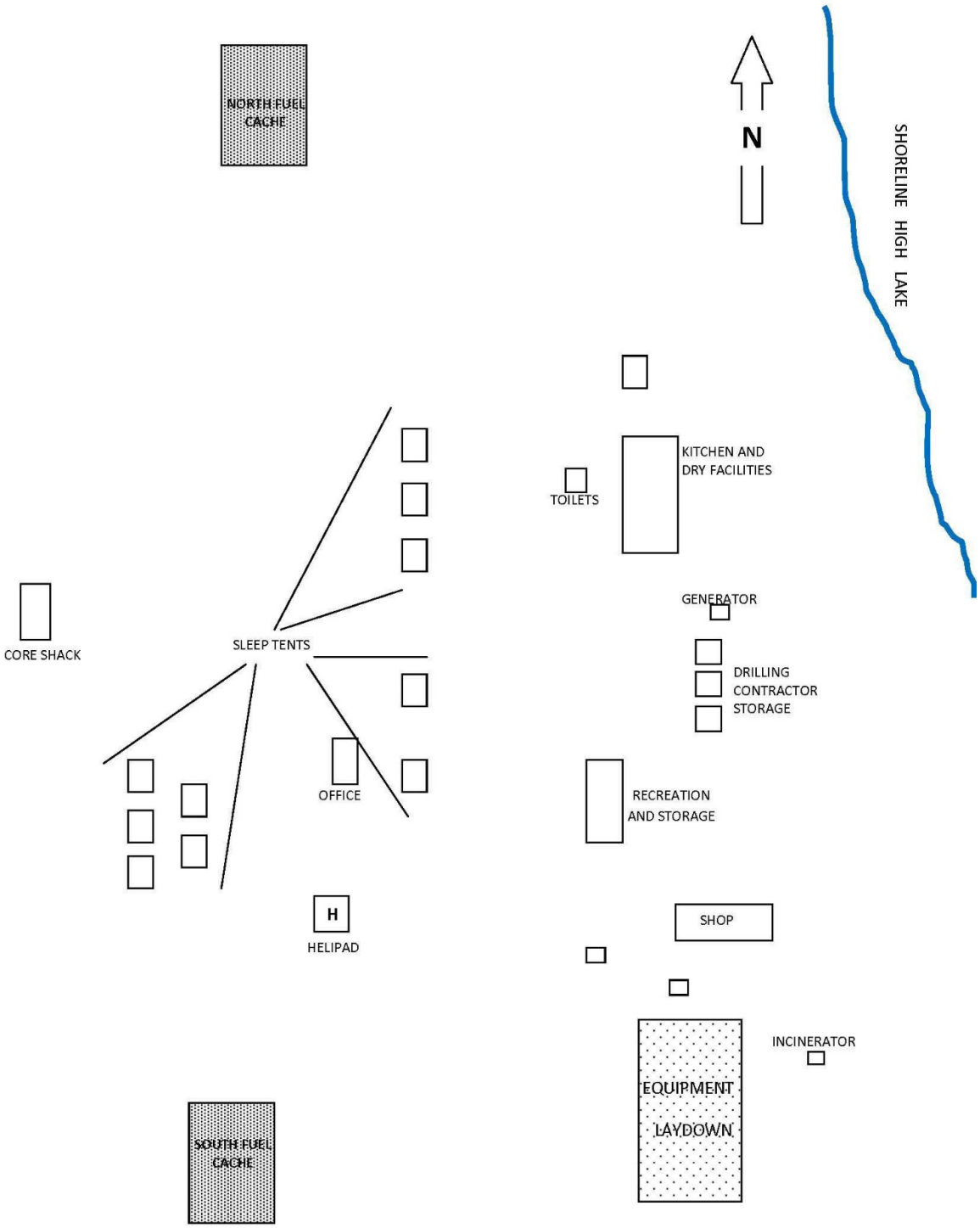


Figure 3 - High Lake Camp site August 2013

14. APPENDIX – MSDS SHEETS

2 Cycle Motor Oil
Antifreeze
Aviation Gas
Barimol Grease
Dexron
Diesel Fuel
Drill Rod Grease
Duratran Engine Oil
Fuel Oil – Gasoline
Fuel Oil – Jet B
Fuel Oil – Kerosene
Linseed Soap
Pellets CaCl
Poly Drill 1330
Poly Drill 133 x
Poly Drill OBX
Propane
Stove Oil
Transmission Fluid
Unleaded Gasoline

A complete set of MSDS information is kept in hardcopy on site. To be provided on request.

Appendix C Closure and Reclamation Plan

CLOSURE AND RECLAMATION PLAN
EXPLORATION OPERATIONS
HIGH LAKE PROPERTY
NUNAVUT, CANADA

Prepared: December 2009
Revised: November 2022

MMG Resources Inc.
PO Box 91460, STN West Vancouver, West Vancouver, BC V7V 3P1

1.0 PREAMBLE

This Closure and Reclamation Plan (the Plan) is for the High Lake Project (the Project) operated by MMG Resources Inc. (MMG) in the Kitikmeot District of Nunavut (see location map). The Plan was in effect for seasonal exploration operations from 2010 to 2013. Land Use Permits were issued by the Kitikmeot Inuit Association (KIA) and Nunavut Impact Review Board (NIRB), and the camp was operated under Land Use Permit 2007C0009. The High Lake Camp was not opened in 2014. In 2015 there was a short period of limited occupancy to support reclamation of 10 wood frame tents and one plywood clad structure. In September 2017 a site visit was conducted to address observations related to closure of Land Use Permit N2011C0033. A planned site visit in 2018 was suspended due to early freezing conditions during the month of September across the Western Arctic. In August 2019 a site visit was conducted to address wildlife disturbance at the dock and camp structures. No site visit was conducted in 2020 due to the COVID-19 pandemic. In August 2021 a site visit was conducted to confirm that the camp was in a stable and secure state and to conduct necessary opportunistic maintenance. In August 2022 a site visit was completed to follow up on compliance items previously identified by Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) during an inspection in 2017.

This Closure and Reclamation Plan includes applicable planning for three different scenarios:

Table 1: Closure and Reclamation Plan- Site Closure Scenarios

Long term care and maintenance	The facilities have been placed into long term care and maintenance with the removal of all fuel and lubricants and preparation of facilities without occupancy.
Seasonal closure	Annual closure activities in the event field activities resume.
Final closure	Applicable if facilities are abandoned and no further field work anticipated.

The High Like Camp is currently in long term care and maintenance without occupancy. This Closure and Reclamation Plan will be revised at the re-commencement of exploration activities and/or any time during operations. The revision date will be noted on the title page of the plan.

2.0 INTRODUCTION

The High Lake Camp has historically been used as a base of operations for mineral exploration programs within the High Lake Project area on a seasonal basis between March 1 and September 31. The camp is located approximately 550 km north-northeast of Yellowknife. Access is restricted to fixed wing aircraft of limited capacity on a year-round basis, with larger capacity aircraft seasonally operating from the frozen lake surface. The High Lake Camp has the capacity to accommodate up to 40 people. This Closure and Reclamation Plan has been prepared to address the three scenarios in Table 1.

3.0 SCHEDULE

The seasonal shutdown of the camp site is estimated to take 5 days to complete and will be carried out after all exploration activities have ceased. Seasonal shutdowns are proposed to be conducted no later than the end of September. The Plan will be applied by Project personnel under the supervision of the field supervisor and project manager.

4.0 SITE INFRASTRUCTURE

The High Lake Camp site has the following infrastructure in place:

- 1 Kitchen / Dry Facility that is wood framed and plywood clad
- 1 Accommodations / Recreation Facility that is wood framed and plywood clad
- 1 Shop and Storage Facility that is wood framed and plywood clad
- 1 Office Building that is wood framed and plywood clad
- 2 Storage Facilities that are wood framed and plywood clad
- 2 Accommodation Tents that are wood framed and plywood clad
- 1 Core Shack that is wood framed and plywood clad
- 1 Generator Shed that is wood framed and plywood clad
- 1 Bathroom Facility that is wood framed and plywood clad

5.0 LONG TERM CARE AND MAINTENANCE

The long term care and maintenance program (current site condition) is intended to be implemented for extended periods of time to make sure that the site remains safe, secure, and is not adversely impacting the environment. The site remains closed except for short periods of time during the summer to support site maintenance and annual site inspections. During long term care and maintenance, the conditions are maintained similar to the seasonal closure scenario (Table 1) of the Closure and Reclamation Plan, such that the site remains available to support potential future field activities.

6.0 SEASONAL CLOSURE AND RECLAMATION PLAN

6.1. BUILDINGS AND CONTENT

All equipment will be stored inside the wooden buildings to make sure they will withstand the winter season. Canvas tents will be secured and braced internally so that they will withstand snow and wind loads. Tarps over tents will be inspected and replaced on a seasonal basis.

6.2. WATER SYSTEM

Pump, tanks and hoses will be drained and dismantled. Rented equipment will be flown out and returned to the owner. Hoses will be rolled and stored in the tents over the winter.

6.3. ELECTRICAL SYSTEM

The Generator Shed will be inspected for remaining hazardous waste (e.g., oil, grease) and the generator will be drained of fuel. Remaining waste fuel and oil will be collected in the containers labeled for that usage. These containers will be sealed and removed from site for proper handling and disposal in Yellowknife (at KBL Environmental). The generator will be winterized and prepared for startup in spring. The soil surrounding the Generator Shed will be inspected for contamination. Any contaminated soil will be collected as outlined in the MMG Spill Contingency Plan Exploration Operations High Lake Property (MMG Resources Inc., 2021) (MMG Spill Contingency Plan) and removed from site for proper disposal. Electrical wires, plugs and sockets will be stored in the Kitchen/Dry Facility.

6.4. FUEL AND CHEMICAL STORAGE FACILITIES

An inventory of remaining fuel will be made, and full drums will be inspected and secured for the winter. Empty fuel drums and propane cylinders will be flown out for disposal in Yellowknife. Chemicals stored on site include drill additives, oil, grease, and household cleaners. All drill additives will be stored in, or adjacent to, the Drill Foreman Shed and secured for the winter. Household cleaners will be stored in the Kitchen/Dry Facility. Empty containers will be disposed of with regular garbage if deemed safe for on site incineration. The soil of the fuel and chemical storage areas will be inspected for contamination. Any contaminated soil will be collected as outlined in the MMG Spill Contingency Plan and removed from site for proper disposal.

6.5. WASTE AND INCINERATOR FACILITY

The site has forced air, diesel-fired incinerators that are used on a daily basis to dispose of burnable domestic and industrial waste products. Once the camp is dismantled, and remaining buildings secured, all remaining combustible waste stored at this site will either be burned, or flown out to Yellowknife for disposal depending on the type of waste (to either the City of Yellowknife Solid Waste Facility or KBL Environmental). The incinerator will be cleaned and winterized. The soil surrounding the Waste and Incinerator Facility will be inspected for contamination. Any contaminated soil will be collected as outlined in the MMG Spill Contingency Plan and removed from site for proper disposal.

6.6. GREYWATER SUMP

The Kitchen/Dry Facility Greywater Sump will be cleaned out and wood cover will be secured for winter.

6.7. BLACKWATER SUMP

Not Applicable. Human waste is collected and incinerated in a forced air diesel fired incinerator. The camp toilets are “pacto” style toilets where waste is collected in a plastic bag lined container. The bags are collected and burned on a daily basis in the forced air incinerator located onsite. Pactos will be cleaned and the Bathroom Facility buildings sealed for winter.

6.8. HELICOPTER PAD

The helicopter pad consists of a wooden platform built of a 2x4 base with plywood cover. Soil around the helicopter pad will be inspected for contamination. Any contaminated soil will be collected as outlined in the MMG Spill Contingency Plan and removed from site for proper disposal.

6.9. CAMP SITE

Soil contaminated by hydrocarbons will be collected as outlined in the MMG Spill Contingency Plan and removed from site for proper disposal. Drill core that is to be left on site will be properly stored and secured in cross stacked piles or wooden cores racks.

6.10. FLOAT DOCK AND TUNDRA AIRSTRIP

The Float Dock will be pulled from the location on High Lake and stored above the high-water mark for use in subsequent field seasons. No materials will be left in the water or below high water mark in periods of inactivity. All materials will be stored in closed buildings or anchored to the ground to reduce windblown disbursement. The Tundra Airstrip will be marked by anchored cones to designate a safe taxiway for off-strip aircraft. The cones will be left in place for safe operation of mobilization flights in subsequent field seasons.

6.11. DRILLING AREAS RESTORATION

The drill will be dismantled into its main components as per the drilling contractor procedure, packaged and secured along with its ancillary equipment and rods. The drill will be left on solid ground until the following season. All drill sites will be inspected for soil contamination. Any contaminated soil will be collected as outlined in the MMG Spill Contingency Plan and removed from site for proper disposal. Any remaining waste will be taken to camp to be burned and/or flown out to Yellowknife for disposal depending on the type of waste (to either the City of Yellowknife Solid Waste Facility or KBL Environmental). Sumps will be backfilled and graded to natural contours. As much as possible, drill sites will be restored as soon as possible after the drill has been moved to the next site and sumps have drained enough to be backfilled and graded.

6.12. DOCUMENTATION

Equipment and buildings left on site will be inventoried. Before and after photos will be taken of all camp and drill sites. Monitoring will be done during occupancy and photos taken. Once the site has been secured for the winter, it will again be documented with photos.

7.0 FINAL CLOSURE AND RECLAMATION PLAN

7.1. BUILDINGS AND CONTENT

All the reusable equipment such as tents, tent metal frames, stoves, kitchen stove, refrigerator, kitchen appliances and equipment, showers, hot water tank, etc. will be packaged and flown out from the camp site to Yellowknife. Wood structures such as outhouses, pump shack, sheds and tent wooden floors, beds and tables will be dismantled and burned or flown out to Yellowknife for disposal. Nails, screws, anchors and other non-combustible parts will be recovered, packaged and flow out for disposal. Only paper products, paperboard packing and untreated wood wastes shall be designated for open burning. Open burning will be conducted, if possible, on a bedrock or other surface intended to reduce scorching of the tundra. Open burning will only be conducted when permits are obtained where required.

7.2. WATER SYSTEM

Pumps, tanks, and hoses will be drained, dismantled, packaged and flown out to Yellowknife. The wooden pump shack built to protect the pump will be burned or flown out to Yellowknife for disposal. Only paper products, paperboard packing and untreated wood wastes shall be designated for open burning. Open burning will be conducted on a surface intended to reduce scorching of the tundra. Open burning will only be conducted after any required permits have been obtained.

7.3. ELECTRICAL SYSTEM

The Generator Shed will be inspected for remaining hazardous waste (oil, grease) and the generator will be drained of its fuel. Remaining waste fuel and oil will be collected, sealed in containers and flown out to Yellowknife for disposal (at KBL Environmental). The shed will be dismantled and burned or flown out to Yellowknife for disposal. The soil in the Generator Shed area will be inspected for contamination and any contaminated soil will be collected as outlined in the MMG Spill Contingency Plan and removed from

site for proper disposal. Electrical wires, sockets, etc. will be taken down and returned with camp materials to Yellowknife. Only paper products, paperboard packing and untreated wood wastes shall be designated for open burning. Open burning will be conducted on a surface intended to reduce scorching of the tundra. Open burning will only be conducted when permits are obtained where required.

7.4. FUEL AND CHEMICAL STORAGE FACILITIES

The Fuel Storage Area consists of segregated groups of drums with empties separate from full drums. At final closure an inventory of all remaining fuel will be conducted, and fuel drums will be inspected. Full and empty drums will be flown out for disposal or sale in Yellowknife. Propane cylinders will be flown out for disposal or sale in Yellowknife. Remaining waste fuel, stored in properly labeled drums, will be flown out to a fuel outlet or discharge that accepts this type of fuel. Unused drilling additive, oil or grease will be flown out and returned to the drilling company. Half empty containers will be taken off site to be properly disposed in an approved facility in Yellowknife. Empty containers will be collected, flown out to Yellowknife and disposed of with regular garbage at the City of Yellowknife Solid Waste Facility. Any contaminated soil will be collected as outlined in the MMG Spill Contingency Plan and removed from site for proper disposal.

7.5. WASTE FACILITY AND INCINERATOR

Once the camp is entirely dismantled, all remaining combustible waste stored at this site will be burned or flown out to Yellowknife for disposal. The incinerator (if present) will be dismantled, reusable parts will be returned to Yellowknife and the waste discarded (to either the City of Yellowknife Solid Waste Facility or KBL Environmental). Only paper products, paperboard packing, and untreated wood wastes shall be designated for open burning. Open burning will be conducted on a surface intended to reduce scorching of the tundra. Open burning will only be conducted when permits are obtained where required. Any contaminated soil will be collected as outlined in the MMG Spill Contingency Plan and removed from site for proper disposal

7.6. GREYWATER SUMP

The Kitchen/Dry Facility Greywater Sump will be backfilled and graded to blend in with the surrounding topography.

7.7. BLACKWATER SUMP

Not Applicable. Human waste is collected and incinerated in a forced air diesel fired incinerator. The camp toilets are “pacto” style toilets where waste is collected in a plastic bag lined container. The bags are collected and burned on a daily basis in the forced air incinerator located onsite. For final closure, all remaining waste bags will be burned in the incinerator, the pacto toilets will be cleaned and removed from site. If an outhouse was used, it will be limed and backfilled. Although not historically employed, if a blackwater sump was constructed and used, it would be limed and backfilled.

7.8. HELICOPTER PAD

Soil around the helicopter pad will be inspected for contamination. The wood will be burned or flown out to Yellowknife for disposal (to either the City of Yellowknife Solid Waste Facility or KBL Environmental). Only paper products, paperboard packing, and untreated wood wastes shall be designated for open burning. Open burning will be conducted in designated burn barrels in order to avoid scorching of the tundra. Open burning will only be conducted when permits are obtained where required.

7.9. CAMP SITE

After all materials, facilities and structures have been dismantled and removed, the camp site will have a final inspection. Soil contaminated by hydrocarbons will be collected as outlined in the MMG Spill Contingency Plan and removed from site for proper disposal. Disturbed areas where there is no vegetation cover will be scarified to create a rough and loose surface that will create microsites for natural seed deposition and plant establishment, and loosen the ground material to enable root growth. The scarified areas will conform to the natural topography. Drill core to be left on site will be properly stored and secured.

7.10. FLOAT DOCK AND TUNDRA AIRSTRIP

Where employed, the float dock will be pulled from water and all anchors to shore will be removed. The floatation chambers will be recovered from the structure and flown to Yellowknife. Any wooden frame materials will be dismantled and burned. All markers designating the Tundra Airstrip will be removed and all effects of aircraft landings will be removed, restoring the area to its natural state.

7.11. DRILLING AREAS RESTORATION

The drill will be dismantled into its main components as per the drilling contractor procedure, packaged and secured along with its ancillary equipment and rods. The drill will be flown out to a location designated by the drilling contractor. All drill sites will be inspected for soil contamination and any contaminated soil will be collected as outlined in the MMG Spill Contingency Plan and removed from site for proper disposal. Any remaining waste will be taken to camp to be burned, if possible, or to be flown out to Yellowknife for disposal at an approved facility (to either the City of Yellowknife Solid Waste Facility or KBL Environmental). Greywater and sludge sumps will be backfilled and graded. As much as possible, drill sites will be restored as soon as possible after the drill has been moved to the next site and sumps have drained enough to be back-filled and graded. Following completion of exploration activities, remaining drill pipe collars or drilling pipe steel casings that are above ground surface on land and do not contain instrumentation (e.g., thermistors), will be removed. The collars/casings will be cut off as close to the ground surface as possible. The remaining below grade portions of the collars/casings will be filled with cement and capped with soil raked in from the surrounding area to cover the remaining collars/casings. The capping material and adjacent drilling area will be graded and contoured to blend in with the surrounding topography and surface will be left in a rough and loose condition that will promote natural vegetation establishment. The cut off portions of the collars/casings will be collected and flown to an approved disposal or recycling facility in Yellowknife.

7.12. DOCUMENTATION AND INSPECTION

Photos of the camp and drill sites will be taken prior to building or drilling. During the exploration and closure phases, monitoring of the sites will be undertaken by inventorying and photographing materials, facilities and structures present on site. Upon completion of final closure activities, site conditions will be documented with photos. A final site inspection with community representatives, the Nunavut Land Use Inspector and Nunavut Water Board staff will be organized by MMG.

8.0 REFERENCES

MMG Resources Inc., 2021. MMG Spill Contingency Plan, Exploration Operations, High Lake Property, Nunavut, Canada. Latest Revision August 2021.

HIGH LAKE RECLAMATION ESTIMATE - October 2022

ACTIVITY/MATERIAL	UNITS	QUANTITY	UNIT COST	COST	TOTALS
SUMMER					
Drilling Decommissioning					
DRILLHOLE DECOMMISSIONING					
Drillhole quantity	DDH	50			
Personnel - cut casing below grade, fill casing w/ cement, backfill/cover casing	Staff Days	15	$ 700	$ 10,500	
Helicopter support	Hours	12	$ 2,650	$ 31,800	
Grinder	Days	6	$ 25	$ 150	
Generator	Days	6	$ 37	$ 222	
Cement	Bags	100	$ 10	$ 1,000	
RECLAMATION TREATMENTS - Drilling collar sites					
Personnel (Reclamation Treatments) - Rake/scarify/loosen ground surface.	Staff Days	5	$ 700	$ 3,500	
Helicopter support (drilling collar sites)	Hours	4	$ 2,650	$ 10,600	
Subtotal Drillhole Decommissioning				**$ 57,772**	**$ 57,772**
Buildings and Equipment					
BUILDINGS/EQUIPMENT DECOMMISSIONING					
Personnel- disassemble buildings, burn wood, sort and pile materials.	Staff Days	50	$ 700	$ 35,000	
ATV & trailer support (Exploration camp sites)	Days	10	$ 300	$ 3,000	
RECLAMATION TREATMENTS - Exploration Site					
Personnel (Reclamation Treatments) - Rake/scarify/loosen ground surface.	Staff Days	10	$ 700	$ 7,000	
ATV & harrows support (Exploration camp sites)	Days	2	$ 300	$ 600	
Subtotal Buildings and Equipment				**$ 45,600**	**$ 45,600**
Mobilization and Camp Operation					
MOBILIZE/DEMOBILIZE TO SITE					
Personnel - Overland Transport	Travel Days	12	$ 700	$ 8,400	
Twin Otter Flight	Flights	2	$ 12,000	$ 24,000	
CAMP OPERATION					
Personnel/staff- camp cook/medic	Cook Days	16	$ 700	$ 11,200	
Fuel (propane)	Lump sum	1	$ 1,000	$ 1,000	
Food/materials	Staff/Cook Days	96	$ 120.60	$ 11,578	
Subtotal Mobilization and Camp Operation				**$ 56,178**	**$ 56,178**
WINTER					
PREPARATION					
Personnel - set up/build ice airstrip for Dash 7	Staff Days	30	$ 700	$ 21,000	
Building and Equipment					
EQUIPMENT AND BUILDINGS					
Personnel - Load materials for transport off site, disassemble and packup remaining materials and buildings, burn remaining wood	Staff Days	60	$ 700	$ 42,000	
Personnel - repair D6 dozer to make operable	Staff Days	1	$ 800	$ 800	
Personnel - walk the to Blue Star Gold Corp. Ulu Gold Property	Staff Days	12	$ 700	$ 8,400	
SUPPORT/CARGO					
Diesel fuel for CAT D6 bulldozer	Litres	1000	$ 3	$ 3,000	
Dash 7 cargo flights	Lump sum	1	$ 275,650	$ 275,650	
Hercules C130 cargo flight (for D6 bulldozer)	Lump sum	1	$ 50,000	$ 50,000	
Subtotal Buildings and Equipment				**$ 400,850**	**$ 400,850**
Mobilization and Camp Operation					
MOBILIZE/DEMOBILIZE TO SITE					
Personnel - Overland Transport	Travel Days	10	$ 700	$ 7,000	
Twin Otter Flight	Flights	2	$ 12,000	$ 24,000	
CAMP OPERATION					
Personnel/staff - camp cook/medic	Cook Days	25	$ 700	$ 17,500	
Fuel (propane)	Lump sum	1	$ 2,000	$ 2,000	
Food/materials	Staff/Cook Days	128	$ 120.60	$ 15,437	
Subtotal Mobilization and Camp Operation				**$ 65,937**	**$ 65,937**
DISPOSAL COSTS					
Chemicals, Contaminated Soils, and Waste Materials					
FUEL					
Disposal once off-site: diesel, Jet A/B, aviation gas	Litres	1,022	$ 0.50	$ 511	
WASTE OIL					
Oils/lubricants - disposal once off-site	Litres	1,022	$ 0.50	$ 511	
OTHER CHEMICALS					
Antifreeze, refrigerant, cleaners, drilling chemicals, etc.	Litres	408	$ 0.50	$ 204	
CONTAMINATED SOIL					
Potential contaminated soil from helicopter pads, fuel & chemical storage areas, generators, etc.	m3	5	$ 76.25	$ 381	
GENERAL WASTE MATERIALS/GARBAGE					
Waste material that cannot be burnt, but are not contaminated/special waste.	kg	8,159	$ 0.173	$ 1,412	
Ash Waste (drums from incinerator)	drum	20	$ 400	$ 8,000	
Subtotal Chemicals and Contaminated Soils				**$ 11,018**	**$ 11,018**

HIGH LAKE RECLAMATION ESTIMATE - October 2022

CLOSURE							
PERMITTING & CLOSE OUT REPORT		Lump sum	1	$ 25,000	$ 25,000		
	Subtotal Closure Costs				**$ 25,000**	**$**	**25,000**
	Subtotal Capital Costs to Close					**$**	**662,354**
	PROJECT MANAGEMENT (Assumes Third Party Costs)				5% of subtotal	$	33,118
	CONTINGENCY				10% of subtotal	$	66,235
	GRAND TOTAL - CAPITAL COSTS					**$**	**761,708**

NOTES: 2022 Assumptions

- Assumes High Lake Site is closed and reclaimed as final closure for the site.
- That leaving the site will be "phased" exit with more than one season available to complete.
- Phases of reclamation work (3 phases):

1. Summer - Drilling decommissioning; buildings and materials decommissioning; reclamation activities.
2. Winter - Buildings and materials decommissioning and removal from site; heavy equipment (D6) removal
3. Closure reporting.

- That all improvements and assets will be removed and site returned to stable conditions.
- Every effort will be taken to minimize time to complete.
- The estimated weight of materials and equipment to be removed from High Lake Site approximates ~180,000 lbs.
- The salvage value of materials and equipment was not used to offset the reclamation security amount.
- All inflight and return flights will be utilized utilized to deliver or remove materials and optimize transport efforts.
- Unit cost sources are outlined in spreadsheet and, where available, recent and appropriate site-specific data is used.
- Mobilization of staff on/off-site will be principally via Twin Otter to Yellowknife.
- Backhaul removal of materials will be principally completed with Dash-7 aircraft for disposal in Yellowknife. Assumed multiple aircraft available to complete 2 trips/day.
- Work is based on current inventory of diesel fuel at site; assumes that excess fuel will be disposed of off-site.
- 1 staff day = 1 person for 12 hour workday
- Assumed cook is also a trained medic personnel.
- Drill collars removal: quantity based on information provided in September, 2022. Estimate 50 drill collars to remove.

-Summer program: cut steel drill collars and waste materials from drilling collar sites will be slung by helicopter to the exploration camp and stored in piles adjacent to High Lake for later shipping out during the winter program.

-Summer program at the exploration camp: equipment and waste materials will be collected and stored in secure piles adjacent to High Lake for later shipping during the winter program. The majority of the plywood sided buildings and wood material will be burned in place and the ashes/nails collected for disposal in Yellowknife. One or two buildings with heat will be retained for the winter program.

-Winter program: waste materials and equipment stored adjacent to High Lake will be hauled to the aircraft using snowmobiles and the D6 bulldozer. Materials and equipment will be manually loaded into the aircraft.

-Once the winter program is completed, the remaining plywood sided buildings and wood materials will be burned and the ashes/nails collected for disposal in Yellowknife.

- After completion of the winter reclamation program, heavy equipment (CAT D6 bulldozer) will be driven to the BlueStar Gold Corp. Ulu Gold Property. The D6 bulldozer will be transported back to Yellowknife via Hercules C130 aircraft using Ulu's all season airstrip.
- Assumed that MMG will seek and receive any necessary approvals and/or permissions to open burn plywood materials on site.
- Project management cost follows guidance from RECLAIM Costing Model (version 7.0).
- Contingency percentage based on recent reclamation cost estimates for Nunavut mine projects.

Non-Technical Summary

Renewal with Amendment of Type B Water Licence 2BE-HIG1722

The High Lake Project (Project) is an exploration camp located in the West Kitikmeot region of Nunavut. The Project is located approximately 550 km north of Yellowknife, and 175 km southeast of Kugluktuk. The site is 45 km from the Coronation Gulf area of the Arctic coast. The Project is owned and operated by MMG Resources Inc., a subsidiary of MMG Ltd. The Project includes a small seasonal camp (High Lake Camp) that has been in long-term care and maintenance since 2015. In the future, the High Lake Camp may be used to support engineering and scientific field studies and mining exploration activities related to potential future mine development. The facilities may also be used to support studies for nearby projects, such as the Izok Corridor Project and Grays Bay Road and Port Project. Exploration activities would be similar as those previously undertaken. During the long-term care and maintenance phase MMG will continue to monitor and maintain the Project site.

As the current Project exploration water licence 2BE- HIG1722 expired on August 3, 2022, MMG is applying for a five year renewal. There are no changes proposed to the existing water licence regarding the total water allowed to be taken under the licence (100 cubic metres per day). However, MMG requests that this total volume be available for both domestic (camp) and drilling purposes as necessary to allow for flexibility in camp use and permitted Project activities and priorities. This application for renewal with amendment is being submitted to the both the Nunavut Planning Commission (who will decide if it also needs to go to the Nunavut Impact Review Board) and the Nunavut Water Board.

The scope of activities will not change from those authorized under the current licence, which include:

- Continued use of up to 100 cubic meters of water daily, to be taken from High Lake and other water sources
- Continuation of field work and related activities including drilling, field investigations and environmental baseline studies
- Continued use of the camp infrastructure during care and maintenance and for future field studies and exploration work
- Progressive reclamation of the project site associated with field activities.

These activities have been previously evaluated by the Nunavut Impact Review Board, the Nunavut Planning Commission, and the Nunavut Water Board.

ᓄᓗᓄᓗᐊᖅᑎᑐᑦ ᓄᐃᓕᒥᐊᖅᓯᒪᔪᖅ

ᓄᓪᒋᐯᖅᑎᑕᐅᓂᖅ ᐊᖏᑭᐊᖅᑕᐅᓗᓂᓗ ᖃᓄᐃᕐᑐᓂᖅ B ᐃᒥᐅᑦ ᓯᐃᓴᖅ 2BE-HIG1722

ᖃᓄᑎᖅᑐᑦ ᑕᓯᖅ ᐱᓕᕆᐊᖅᐻ (ᐱᓕᕆᐊᖅ) ᐅᓴᖏᓂᒋᐊᕐᓇᐅᔪᖅ ᐱᓕᕆᔨᕐᓴᖅ ᑭᖑᓪᓕᐅᓂ ᖃᑎᖏᑦᐅᐅᑦ ᓄᓇᕗᓪᓕ. ᐱᓕᕆᐊᖅᐻᔪᖅ ᖃᓄᓂᑲᖏᓐᓂᓂ 550 ᑭᓕᒥᑐ ᖃᓄᖏᓐᓂᓂ ᔨᐊᓗᓇᐃ, ᐊᓕᒪ 175 ᑭᓕᒥᑐ ᓂᒋᐊᓂᓂ ᖃᓄᖅᑐᑦ. ᐱᓕᕆᔨᕐᓴᖅ 45 ᑭᓕᒥᑐ ᑯᕈᐃᓴᓴᓂ ᑕᕆᐅᖏᓐᓂ ᐅᑭᐅᖏᓐᓂᑐᑦ ᑕᕆᐅᖏᓐᓂᓂ. ᐱᓕᕆᐊᖅ ᓇᖏᒥᓂᕆᔨᐅᔪᖅ ᐃᓕ.ᔨ.ᐃᓕ ᐅᓴᖏᓂᒋᐊᖅᑎᓄᓂ ᑕᐸᑯᐊ ᐃᓕᓐᓄᔨᐅᔪᓂ MMG ᓕᒥᑎᔪᑯᓂᓄᓂ ᒥᑭᔪᒥᐅ ᐊᐅᓴᒥ ᐱᓕᕆᓕᖅᑐᑦ (ᖃᓄᖅᑐᑦ ᑕᓯᖏᑦ) ᒥᐊᓂᕆᓴᐅᔨᐸᓂᓂ ᑕᐃᒪᖏᓐᑦ 2015. ᓯᐅᓂᖏᑦ, ᖃᓄᑎᖅᑐᑦ ᑕᓯᖅ ᐱᓕᕆᐊᖏᓐ ᐊᑐᑌᐅᓂᐊᖅᐳᖅ ᖃᐅᔨᓴᖏᐊᓂᓂ ᐊᖏᒪ ᐅᓴᖅᑕᕆᕆᐊᖏᐊᓂᓂ ᐃᓱᒪᔨᓗᑎᒃ ᒪᒋᑎᓯᓱᒪᔨᓗᑎᓗ ᐅᓴᖅᑕᕆᕆᐊᖏᖅᑎᑦ. ᐱᓕᕆᔨᑎᑎᑦ ᐊᑐᑌᐅᔨᓗᐊᖅᐳᖅ ᖃᐅᔨᓴᖏᓐᓂᓂᖅᓯᒪᑦ ᖃᓄᐅᓴᖏᓐᓂᓂ ᐊᖏᒪ ᑐᓭᓇᖏᓐᓂᓂ ᐊᖏᒪ ᑐᓪᒡᓇᖏᓐᓂᓂ. ᖃᓄᖅᑎᖏᓂᐊᕐᓇᖅᑐᖅ ᐊᔨᑎᓂᐊᖅᑕᖏᓐᓂ ᓯᓄᖅᑐᖏᓐᓂᓂ ᖃᓄᖅᑎᖏᓂᑕᓂᕐᒪᑦ ᐊᑭᑐᐊᖅᓂ. ᐅᑭᐅᓂ ᐊᒥᓯᓂ ᒥᑭᔪᒥᐅᑕᕆᐊᖅᑎᑦ ᐱᓕᕆᐊᖅᐻᑦ MMG ᖃᐅᔨᓴᕆᐅᓪᓗᓂᓂ ᐊᖏᒪ ᐊᖑᑭᐅᒪᑎᑕᐅᓪᓗᓂᓂ ᐱᓕᕆᔨᐃᐅᔪᖅ.

ᒪᓂᓇ ᐅᓴᖅᑐᓂᐊᖅᓂᕐᒪᑦ ᐃᒥᐅᑦ ᓯᐃᓴᖅ 2BE-HIG1722 ᐃᓯᓕᓂᐅᕐᒪᑦ ᐊᐅᔪᓯ 3, 2022 MMG ᐊᕆᔪᓂᓄᑦ 5–ᓄᑦ ᐅᓂᑐᖃᓂᓂᖅᑐᑦ ᓄᓪᒋᐯᖅᑎᑦᐸᔨᓗᓂᓂ. ᐊᓯᐊᐃᖅᑐᑦᖃᑕᖏᑐᑦ ᐱᓕᕆᐊᖅᓂᒃ ᐃᒥᐅᑦ ᓯᐃᓴᖅᑎᓂᓂ ᑕᓯᑎᑕᐅᓗᓂᒃ ᐃᒥᖅ ᐱᓴᐅᑕᖅᓂᐊᕐᒪᑦ ᓯᐅᔪᓂᒃ (100 ᑭᐅᐱᒃ ᒡᑐᔨ ᐅᓪᓗᑕᒧᑦ). ᑭᓯᐊᓂᓂ, MMG ᑐᓂᓯᖏᓐᓂᑦ ᐊᑐᐃᓂᓇᐅᖏᑦᐸᔨᓗᓂᓂ ᖃᓄᑕᐅᓯᒪᔪᓂᒃ (ᐱᓕᕆᔨᓇᖏᒥ) ᐊᖏᒪ ᐃᑯᑕᖏᓂᒥ ᖃᑎᖓᓂᐃᓂᓇᖅ ᐱᓕᕆᔨᓇᖏᑦᑐᑦ ᐊᑕᓂᓂ ᐊᑐᖅᑕᐅᓯᒪᓕᓂᓂ ᐱᓕᕆᐊᑦ ᐊᖏᒪ ᓯᐅᑕᐅᓴᕆᐊᓪᓚᑦ. ᑕᒪᓇ ᑐᓂᓯᖏᐅᑦ ᓄᓪᒋᐯᖅᑎᑕᐅᔨᒪᓂᖅ ᐊᖏᑭᐊᖅᓯᒪᓕᓂᓂ ᑐᓂᓕᐅᔨᔪᖅ ᑕᒪᐃᓂᓄᑦ ᓄᓇᕗᒥ <ᖃᓇᐃᔨᓂᓄᑦ (ᐃᓯᒪᓕᐅᖏᓂᐊᖅᑐᑦ ᓄᓇᕗᓪᓕ ᐊᐅᑎᑕᓇᔨᑦ ᑲᑎᒪᔨᖅᓯᓂᓄᑦ ᑐᓂᓴᐅᑎᓂᒃᑯᑦ) ᐊᖏᒪ ᓄᓇᕗᓪᓕ ᐃᒪᓕᓇᔨᑦ ᑲᑎᒪᔨᖅᓯᓂᓄᑦ.

ᑐᖃᖅᑕᖓᓗ ᐱᓕᕆᐊᑦ ᐊᓯᐊᖓᒍᖅᑐᑦ ᐊᖑᑭᐊᖅᑕᐅᓯᒪᔪᓂᑦ ᐊᑕᓂᓂ ᐊᑐᖃᖅᑕᐅᔨᔪᓂᑦ ᓇᐃᒪᔪᖅ, ᐅᓄᐊᖓᔪᓂᒃ ᐊᑐᖃᖅᑕᐅᔨᔪᓂᑦ:

- ᑲᔪᓯᖏᓐᓂᖅᑐᑦ ᑎᑭᓗᒍ 100 ᑭᐅᐱᒃ ᒥᑐᑦ ᐃᒥᖅᓯᒃ ᐅᓪᓗᑕᒧᑦ, ᖃᓄᑎᖅᑐᑦ ᑕᓯᖅᑎᑦ ᐊᓯᖏᑦᑐᓗ ᑕᓯᖅᓂᑦ
- ᓄᓇᕗᓪᓕ ᐱᓕᕆᑐᐃᓂᓇᖅᑐᑦ ᐃᓅᓯᑕᓂᒃ, ᓄᓇᕗᓪᓕ ᖃᑲᐅᔨᔪᓂᒃ ᐊᖏᒪ ᐊᖑᑎᓯᓃᒃ ᖃᑲᐅᔨᔪᓂᒃ
- ᑲᔪᓯᖏᓐᓂᖅᑐᑦ ᒪᑭᒪᔪᑎᓂᓂᒃ ᐱᓕᕆᔨᖏᓐᓇᒥ ᒥᑭᔪᒥᐅᑕᕆᐊᖅᑐᑦ ᐊᑲᑭᐅᒪᑎᑕᐅᓗᓂᓗᓂ ᓄᓇᕗᓪᓕ ᖃᑲᐅᔨᔪᓂᖅᓯᒥᑦ ᐊᖏᒪ ᐅᓴᖅᑐᓂᐊᖅᑎᑦ
- ᓄᓇᕗᓪᓕ ᐃᓕᓴᐃᓯᖓᓄᓂ ᐅᑎᖅᑎᐅᑐᓂᐊᖅᑐᑦ ᐱᓕᕆᐊᖅᓯᒪᓂᒃ ᐊᑐᓂᓗᓂᒃᐸᑦ.

ᐱᓕᕆᐊᖅᓯᒪᔪᓂᑦ ᓯᐅᓂᖏᓐᓂᓂ ᖃᑲᐅᔨᔪᓂᐅᓕᕆᓕᒡᓕ ᓄᓇᕗᓪᓕ ᐊᖑᑎᓯᓃᒃ ᐊᑕᓂᓂ, ᓄᓇᕗᓪᓕ <ᖃᓇᐃᔨᓂᓄᑦ ᐊᖏᒪ ᓄᓇᕗᓪᓕ ᐃᒪᓕᓇᔨᑦ ᑲᑎᒪᔨᖅᓯᓂᓄᑦ.

ATTACHMENT 9 – AUTHORIZATION LETTER

MMG
PO Box 91460
STN West Vancouver
West Vancouver, BC
V7V 3P1

info@mmg.com
www.mmg.com

July 6, 2022

Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU
X0B 1J0

RE: Authorization for Representation for Purposes of Water Licence Renewal

To Whom It May Concern,

I, Mario Car, Head of Projects, MMG Ltd. (MMG), am hereby providing authorization for Sarah Hasek, Tenement Officer – Americas, MMG Resources Inc. (an MMG Ltd. subsidiary), to act as Licensee Representative with regards to the application for renewal of MMG's Water Licences in Nunavut.

Sincerely,

Mario Car
Head of Projects

MMG Limited
HKEx: 1208

Level 23/28 Freshwater Place
Southbank VIC Australia 3006
T +61 3 9284 4802 **M** +61 419 212 116

mario.car@mmg.com **www.mmg.com**

List of Leases, Permits and Authorizations Applicable to the High Lake Project

Name	Type	Govt Office	Grant Date	Expiry Date
2BE-HIG1722	Water Licence	Nunavut Water Board	04-Aug-17	03-Aug-22
CO29-22-001	Agreement - NTI IOL MEA	Nunavut Tunngavik Inc	01-Jan-22	31-Dec-41
76M/7-1-11	Surface Lease	CIRNAC-Land Administration-Nunavut	01-Jan-18	31-Dec-47
076M07002	Surface Lease Application	CIRNAC-Land Administration-Nunavut		
N2011C0033	Land Use Permit	CIRNAC-Land Administration-Nunavut	30-Jan-12	29-Jan-14
L-2372	Mining Lease	CIRNAC-Mining Recorder's Office-Nunavut	16-Apr-92	15-Apr-34
L-2373	Mining Lease	CIRNAC-Mining Recorder's Office-Nunavut	16-Apr-92	15-Apr-34
L-2374	Mining Lease	CIRNAC-Mining Recorder's Office-Nunavut	16-Apr-92	15-Apr-34
L-2375	Mining Lease	CIRNAC-Mining Recorder's Office-Nunavut	16-Apr-92	15-Apr-34
L-2376	Mining Lease	CIRNAC-Mining Recorder's Office-Nunavut	16-Apr-92	15-Apr-34
L-2377	Mining Lease	CIRNAC-Mining Recorder's Office-Nunavut	16-Apr-92	15-Apr-34
L-2378	Mining Lease	CIRNAC-Mining Recorder's Office-Nunavut	16-Apr-92	15-Apr-34
L-2379	Mining Lease	CIRNAC-Mining Recorder's Office-Nunavut	16-Apr-92	15-Apr-34
L-2380	Mining Lease	CIRNAC-Mining Recorder's Office-Nunavut	16-Apr-92	15-Apr-34
L-2381	Mining Lease	CIRNAC-Mining Recorder's Office-Nunavut	16-Apr-92	15-Apr-34
L-2382	Mining Lease	CIRNAC-Mining Recorder's Office-Nunavut	16-Apr-92	15-Apr-34
L-2383	Mining Lease	CIRNAC-Mining Recorder's Office-Nunavut	16-Apr-92	15-Apr-34
L-2384	Mining Lease	CIRNAC-Mining Recorder's Office-Nunavut	16-Apr-92	15-Apr-34
L-2385	Mining Lease	CIRNAC-Mining Recorder's Office-Nunavut	16-Apr-92	15-Apr-34
L-3290	Mining Lease	CIRNAC-Mining Recorder's Office-Nunavut	08-Nov-89	07-Nov-31
L-5787	Mining Lease	CIRNAC-Mining Recorder's Office-Nunavut	26-Sep-18	25-Sep-39
L-5788	Mining Lease	CIRNAC-Mining Recorder's Office-Nunavut	02-May-18	01-May-39
L-5789	Mining Lease	CIRNAC-Mining Recorder's Office-Nunavut	05-May-18	04-May-39

ATTACHMENT 11 – CERTIFICATE OF AMALGAMATION

CERTIFICATE OF INCORPORATION:

BRITISH COLUMBIA

Number: BC1102339

CERTIFICATE
OF
AMALGAMATION

BUSINESS CORPORATIONS ACT

I Hereby Certify that MMG CANADA EXPLORATION INC., incorporation number BC0866493, and MMG CANADA MANAGEMENT INC., incorporation number BC0790203, and MMG CANADA OPERATIONS INC., incorporation number BC0785573, and MMG RESOURCES INC., incorporation number C1031876 were amalgamated as one company under the name MMG RESOURCES INC. on January 1, 2017 at 12:01 AM Pacific Time.

Issued under my hand at Victoria, British Columbia
On January 1, 2017

CAROL PREST
Registrar of Companies
Province of British Columbia
Canada

ELECTRONIC CERTIFICATE

2.0 Minimum Application Requirements (Application Checklist)

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	NWB Concordance Assessment
Minimum Application Requirements	1	General Water Licence Application Form (see the NWB's *Guide 4: Completing and Submitting a Water Licence Application for a New Licence*) or Application for Water Licence Amendment Form, if appropriate (see NWB's *Guide 7: Licensee Requirements Following the Issuance of a Water Licence*).	Y		2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1	
	2	Information required to satisfy the requirements of the SIG including plans, reports and designs.	Y		2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	See relevant references in SIG Concordance table	
	3	Executive summary in english.	Y		2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 8	
	4	Translated executive summary in appropriate language and dialect.	Y		2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 8	
	5	Application fee.	Y		Submitted to CIRNAC			
	6	Water use fee.	Y		Submitted to CIRNAC			
	7	A table indicating concordance of the application and supporting documents to the Guidelines. These generic Guidelines are provided in excel as a tool for applicants to provide the necessary concordance table.	Y		2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 8	

Qualifications:

1 Applications that do not include all of the items listed above will be returned to the applicant as incomplete with a request for the deficient information.

2 If more than one licensable activity or facility is proposed that requires a water licence (eg. multiple water sources, waste deposits, structures, crossings, etc.) the required information must be provided for each activity or facility.

3 Information between all documents that make up the application package must be consistent and must be accurately cross referenced.

4 The application must distinguish between recommendations or options and actual commitments to chosen alternatives.

5 For additional guidance regarding the submission of electronic documentation, see the NWB's *Guide 6: Electronic Documentation: Submissions and Registry* .

6 The applicant, where practical, may combine components of the information requested in the SIG into more concise plans to provide clarity and eliminate duplication. If this practice is considered, then the applicant must clearly outline, through proper referencing and clearly detailed statements, how the NWB should consider the documents that have combined elements of information. Information management is the responsibility of the applicant.

7 The applicant must submit a concise executive summary of the application package. In addition, the Applicant shall submit an executive summary for each separate supporting document, report or study. All executive summaries shall be provided in English, Inuktitut and/or Inuinnaqtun (where applicable).

The applicant must complete the yellow columns of the worksheet(s). Blue columns are for NWB use only.

3.0 General Water Licence Application

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
Applicant	**1**	Provide the full name of the applicant and contact person including contact information (position, phone number, address, fax number and email address).	Y		2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
Applicant Representative	**2**	Provide the name and contact information of any party submitting the application on behalf of the applicant (including position, phone number, address, fax number and email address).	Y		2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
	3	Provide a signed letter authorizing a party to be the applicant's representative in the licensing process.	Y		2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 9		
Name of Project	**4**	Provide the name of the project.	Y		2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
Location of Undertaking	**5**	Provide coordinates of the project extents taking into account the Local Project Area (LPA) and the Regional Project Area (RPA), where applicable.	Y		2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
		Provide location by Latitude and Longitude.	Y		2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
		Provide location by UTM coordinates, if available.	Y						
		Provide the distances to the nearest communities.	Y		2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
	6	Indicate whether the drainage basin, in which the project is located, is shared with any other jurisdiction. If applicable, indicate which jurisdiction.	Y						
Map	**7**	Provide a map at a 1:50,000 scale based on the National Topographic Series indicating the location of the undertaking, watercourses and the location of waste deposits. Additional maps at various scales may be provided if those maps will provide additional information or clarification. All additional maps must indicate the scale, map sheet number, and location of north.	Y		2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1 (for NTS map sheet #)/Attachment 2 for Project map		
Nature of Interest in the Land	**8**	Provide the nature of the interest in the land associated with the proposed undertaking, including:	Y		2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
		Sub-surface leases from Nunavut Tunngavik Incorporated (NTI) and/or Indian and Northern Affairs Canada (INAC) as well as surface authorizations from INAC for crown land use, a Designated Inuit Organization (DIO) for Inuit Owned Land (IOL) use, or the Government of Nunavut for Commissioner's land use. Provide the	Y		2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
		The date or expected date of issuance of any authorization and the date of expiry.	Y		2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
	9	Indicate whether the applicant is the name of the entity holding the authorization for the interest in the land and if not, provide the name of the entity holding the authorization.	Y		2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
NPC Determination	**10**	Provide written confirmation from the NPC confirming that NPC's requirements under the NLCA regarding land use plan conformity (Article 11 of the NLCA) have been addressed.	Y					Application has been submitted to the NPC for issuance of a determination	
NIRB Determination	**11**	Provide written confirmation from the NIRB confirming that NIRB's requirements under the NLCA regarding development impact assessment (Article 12 of the NLCA) have been or are in the process of being addressed. Documentation may include:	N/A	NIRB has previously screened this application and the minor amendemnet requested here is not anticipated to necessitate additional screening as total water use remains within that pervious evaluated and approved.					

3.0 General Water Licence Application

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
		Written confirmation from NIRB that the project proposal does not require screening;	N/A	It is anticipated that the NPC will determien that further NIRB screenign is not required as total water useage remains within what the NIRB has previously screened					
		NIRB's screening determination;	Y		2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Historical NIRB Screening info provided in Cover letter; Attachment 1, 4 & 5		
		If a review is required, NIRB's recommendation to the Minister regarding the type of review;	N/A	See above and previous NIRB SDRs					
		If a review is required, the Minister's written decision regarding the review of the development proposal;	N/A	See above and previous NIRB SDRs					
		If a review is required, NIRB's project certificate;	N/A	See above and previous NIRB SDRs					
	12	List of activities requested for exception in accordance with NLCA s. 12.10.2;	Y		2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
	13	Indicate whether any Type B water licence application is for an activity to be considered for interim, short term approval in accordance with NLCA s. 13.5.5.	N/A	Application if for a 5 year renewal of the Licence with amendment					
Description of Undertaking	14	See section 4 of this SIG for specific requirements.							
Other Applicable Supplemental Information Guidelines	15	Indicate whether any other Supplemental Information Guidelines apply to the undertaking including the following:							
	a	Hydrostatic testing	N/A						
	b	Tannery	N/A						
	c	Tourist / remote camp	N/A						
	d	Landfarm and on-site storage of hydrocarbon contaminated soil	N/A						
	e	Onshore oil and gas exploration drilling	N/A						
	f	Mineral exploration/ remote camp	N/A						
	g	Advanced exploration	Y		2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Full application, including these SIGs		
	h	Mine development	N/A						
	i	Municipal	N/A						
	j	General Water Works	N/A						
	l	Power	N/A						
Options (Alternatives)	16	Provide a brief explanation of the alternative methods or locations that were considered to carry out the project.	N/A	Project is already established	2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
Water Use	17	See section 6 of this SIG for specific requirements			2BE-HIG1722 WL	2BE-HIG1722 WL Renewal w	Attachment 1		
Water Use: Quality and Quantity	18	See section 6 of this SIG for specific requirements			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
Waste Disposal	19	See section 7 of this SIG for specific requirements			2BE-HIG1722 WL	2BE-HIG1722 WL Renewal w	Attachment 1		
Waste Disposal: Quality and Quantity	20	See section 7 of this SIG for specific requirements			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		

3.0 General Water Licence Application

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Other Authorizations	**21**	Provide a list of any authorizations required in relation to the project in addition to the water licence. For each additional authorization required for the project, provide the name of the authorization, the administering agency, the project activity requiring the authorization, the date or expected date of issuance and the date of expiry. Provide a description of how those authorizations may affect the NWB's water licensing process.			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
	22	Indicate whether an authorization has been obtained or sought from the Department of Fisheries and Oceans for dewatering or using any waterbodies for containment of waste	N/A	No authorization required					
	23	Provide formal applications to the Navigable Waters Protection Program (NWPP) for any works.	N/A	No authorization required					
	24	Provide a timetable for filing the appropriate plans and procedures required by government parties.	N/A	All relevant plans have been included in this application					
	25	Indicate whether the applicant/ licensee holds any existing water licences. If applicable, provide the licence number and expiry date of any existing water licences.			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1 & 10		
Predicted Environmental Effect and Proposed mitigation measures	**26**	Identify the potential effect of water use and waste disposal on the following components:							
		Groundwater and Surface Water including:	N/A	No change from what is currently permitted					
		changes in flow (including seasonal rate of flow)							
		quantity							
		quality							
		Land including:	N/A	No change from what is currently permitted					
		geologic structure change							
		soil contamination							
		compaction, settling and erosion							
		alteration of the permafrost regime							
		riparian zone loss							
		Vegetation including:	N/A	No change from what is currently permitted					
		species composition and abundance							
		non-native species introduction							
		accumulation of toxins and heavy metals (in relation to remediation objectives for closure)							
		Aquatic Ecosystems including:	N/A	No change from what is currently permitted					
		fish							
		benthic invertebrates							
		plankton							
	27	Identify effects separately for each project phase.	N/A	No change from what					
	28	Provide a description of the methods used to predict effects.	N/A	No change from what is currently permitted					
	29	Provide a cumulative effects assessment of the project's water use and waste disposal activities in relation to other activities in the same drainage basin.	N/A	No change from what is currently permitted					
	30	Identify effects arising from accidental events or malfunctions.	N/A	No change from what is currently permitted					
	31	Provide a description of all proposed mitigation, management and monitoring programs to mitigate adverse impacts.	N/A	No change from what is currently permitted					

3.0 General Water Licence Application

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	32	Provide a description of the measures to be taken to mitigate impacts on historical resources or traditional uses of water and procedures to be followed should artifacts be discovered.	N/A	No change from what is currently permitted					
	33	If applicable, provide a description of any potential transboundary effects.	N/A	No change from what is currently permitted					
	34	See sections 5, 6, 7, and 8 of this SIG for additional information requirements							
Existing and Other User Water Rights	**35**	Provide the names, addresses, and nature of use for any known persons or properties that may be adversely affected by the proposed undertaking, including those that that hold licences for water use in precedent to the application, domestic users, in-stream users, authorized waste depositors, owners of property, occupiers of property, and/or holders of outfitting concessions, registered trapline holders, and holders of other rights of a similar nature.			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
	36	Provide a description of any potential effects of the project on the persons or properties identified in item 35 of this section.			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
	37	Provide a description of the measures incorporated into the project design to mitigate effects of the project on the persons or properties identified in item 35 of this section.			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
	38	Indicate whether compensation has been paid and/or agreement(s) for compensation have been reached with any existing or other users.			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
Inuit Water Rights	**39**	Provide a description of any potential effects of the project on the quality, quantity, or flow of waters flowing through Inuit Owned Land (IOL).			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
	40	Provide a description of the measures incorporated into the project design to mitigate effects of the project on the quality, quantity, or flow of waters flowing through IOL.			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
	41	Indicate wheter an agreement to pay compensation for any loss or damage has been reached with one or more Designated Inuit Organization (DIO); or if the parties have			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
Consultation	**42**	Provide a summary of any consultation meetings including when the meetings were held, where and with whom.			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
	43	Provide a summary of the results of consultation meetings including a list of concerns expressed and measures proposed to address concerns.			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
Security	**44**	Provide a financial security assessment that is prepared in a manner consistent with principals respecting mine site reclamation and implementation found in the *Mine Site Reclamation Policy for Nunavut*, Indian and Northern Affairs Canada, 2002. The financial security assessment must include:			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1, 7		
		An estimate of the total financial security for final reclamation equal to the total outstanding reclamation liability for land and water combined sufficient to cover the highest liability over the life of the undertaking;							
		The cost of having the necessary reclamation work done by a third-party contractor if the operator defaults;							
		Contingency factors appropriate to the particular work to be undertaken.							
Abandonment and Restoration	**45**	Provide plans for the abandonment and restoration of the project. Detail the costs to carry out the plan, and a proposal for financial assistance which covers the costs to carry out the plan.			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 7		

3.0 General Water Licence Application

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	46	Provide a list and description of any existing abandoned or restored site facilities.			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 7		
Financial Information	**47**	Provide a statement of financial responsibility.			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
	48	If the applicant is an entity for which audited financial statements are issued, a copy of the most recent audited financial statements must be attached to the statement of financial responsibility.			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
	49	Provide the name of the corporation, limited company or other business entity, with a list of the officers of the company and a copy of the Certificate of Incorporation or evidence of registration of the company name.			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
Studies and Designs	**50**	Provide a list of studies, reports and plans relevant to the application that have been undertaken to date including:			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
		Design rational, design requirements, design criteria, design parameters, design standards/analysis/method;							
		Design assumptions and the limitations associated with such design assumptions;							
		The inclusion of clear, definable engineering qualifiers with all design drawings and reports;							
		Site specific data and analysis to support the design and management decisions made;							
		Materials that appropriately delineate the particulars of a design or plan.							
	51	Provide construction methods and procedures regarding how infrastructure will be put in place on-site.	N/A	No infrastructure change requested					
	52	Provide a timetable for submission of preliminary and final-for-construction engineered designs (note: for construction designs are required for NWB approvals).	N/A	No infrastructure change requested					
	53	See sections 5, 6 and 7 of this SIG for additional information requirements							
Proposed Time Schedule	**54**	Provide the proposed start and completion dates for each phase of development (construction, operation, closure and post closure) and any anticipated periods of seasonal shut down.			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
Proposed Term of Licence	**55**	Provide a proposed term of licence including the expected date of licence issuance and the expected date of licence expiry.			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
Annual Reporting	**56**	Provide detailed information regarding the content of annual reports and a proposed outline or template of the annual report. The annual report should include the following:			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		
		Water related monitoring results;							
		Comparison of water quality and quantity monitoring data with the water quality and quantity predictions presented in the application;							
		A description of how the conditions in the NIRB project certificate related to the NWB mandate have been implemented;							
		Project changes under adaptive management;							
		Any actions taken in response to direction provided by the Inspector.							
Renewals and Amendments	**57**	If the application is for a renewal or amendment of an existing licence provide the water licence number and the date of water licence expiry.			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Attachment 1		

3.0 General Water Licence Application

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
	58	If the application is for a renewal or amendment of an existing licence, provide a compliance assessment/status report. This report must document the status of compliance for each condition of the existing water licence taking into consideration inspector dialogues and inspector directions, responses to inspector dialogues and inspector directions, spills that may have occurred, and any reporting requirements. The report must indicate when facilities were inspected by regulatory agencies and list any spills that may have occured including a description, location shown on a map, and the action taken to address the affected area.			2BE-HIG1722 WL Renewal w Amendment	2BE-HIG1722 WL Renewal w Amendment.pdf	Cover Letter; Attachment 1		

4.0 Project Description

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
Description of Undertaking	**1**	Provide a complete description of the undertaking with detailed site plan(s) of all project infrastructure for the Local Project Area (LPA) and/or the Regional Project Area (RPA), where applicable. Include maps and/or aerial photos with scales that allow the determination of distances between the objects depicted. Differentiate any temporary components from permanent components. Consider the following in providing the description:	N/A	No proposed changes to the undertaking or any of the below					
		Raw water intake;							
		Water storage and treatment facilities including distribution systems;							
		Existing water bodies/courses and any changes to these water bodies/courses that may have or may occur as a result of water use or waste disposal facilities. Provide an outline of the drainage basin and drainage patterns within the RPA;							
		Location of receiving water bodies and drainage pathways;							
		Transportation access routes and details of water course crossings;							
		Locations of environmental monitoring sites;							
		Traditional water use and land use areas that may be impacted by the project;							
		Sewage treatment facilities;							
		Wastewater treatment area and discharge outlet locations;							
		Solid waste disposal areas and drainage patterns;							
		Incinerators							
		Landfarm (see the NWB's SIG for Landfarm and on-site storage of hydrocarbon contaminated soil (I3));							
		Waste rock piles (PAG and non-PAG);							
		Stockpiles;							
		Mill or processing plant							
		Tailings containment areas;							
		Laydown areas;							
		Quarries;							
		Hazardous waste disposal area;							
		Waste discharge distribution lines;							
		Fuel and chemical storage;							
		Explosives manufacturing and storage;							
		Abandoned and/or restored facilities;							
		Existing on site infrastructure							
		Others:							
Exploration Activities	**2**	Indicate the status of the exploration activity on the date of application as one of the following	N/A	No change. Current status is Care and Maintenance					
		Design							
		Under construction							
		In operation							
		Suspended							
		Care and maintenance	Y						
		Abandoned							
		Other:							
	3	If a change in the status of the exploration activity is expected, indicate the nature and anticipated date of such change.	N/A	No change. Current status is Care and Maintenance. Notification would be provided prior to status change.					

4.0 Project Description

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	4	Indicate the type (or proposed type) of exploration operation and provide a description of the method.	N/A	No change proposed					
		Reverse circulation to obtain bulk sample							
		Trenching							
		Conventional open pit							
		Decline							
		Conventional underground							
		Strip mining activity							
		Other: (describe)							
	5	Indicate the size (in tonnes) and number of samples that will be obtained. Indicate whether smaller samples are to be collected from different locations to form one large bulk sample and provide the location of each sample.	N/A	No change proposed					
	6	Indicate the present (or proposed) average rate of exploratory production from all mineralized sources in tonnes of ore / day.	N/A	No change proposed					
Milling/ Processing Activities	**7**	Provide a copy of the mill or processing plant flow sheet. Indicate the points of addition of the various reagents (chemicals) that will be used.	N/A	not applicable					
	8	Indicate the capacity of the mill	N/A	not applicable					
	9	Indicate the proposed rate of milling (tonnes/day)	N/A	not applicable					
	10	If applicable, indicate whether the (proposed) milling circuit is in whole or in part based on autogenous grinding.	N/A	not applicable					
Camp	**11**	Classify the camp as one of following:	N/A	No change proposed					
		Mobile (self propelled)							
		Temporary							
		Seasonally occupied							
		Permanent							
		Other: (describe)							
	12	Provide the design, maximum and average populations of the camp	N/A	No change proposed					
	13	Provide a description of how the location of the camp was selected. Indicate whether assistance from the Regional Inuit Association Land Manager was obtained in selecting the site.	N/A	No change proposed					

6.0 Water Use: Quality, Quantity, Predicted Environmental Impact and Proposed Mitigation Measures

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
Water Use	**1**	Provide a detailed description of all types of water uses including: (See the NWB definition of "use" in the NWB Guide 2: Terminology and Definitions). Categorize water consumption use(s) as either mining/industrial use and/or domestic use.	Y		2BE-HIG1722 WL Renewa	2BE-HIG1722 WL Renewa	Cover Letter; Attachment 1		
		Obtain water for domestic purposes							
		Obtain water for industrial purposes							
		drilling							
		mill or processing plant							
		ice road construction							
		other: (describe)							
		To cross a water course							
		To alter the flow of water, or store water							
		Flood control							
		To divert a watercourse							
		To modify the bed or bank of a watercourse							
		Others:							
Water Use: Quality and Quantity *Water Intake* **Identify uses as either domestic or industrial**	**2**	Provide the name of the primary water source(s) as well as the name of any alternative water source(s).	N/A	No change proposed					
	3	Provide a description of the source(s) of water and the location of the water source(s) as shown on a map.	N/A	No change proposed					
	4	Indicate the type of water source(s) as lake, river, well, or other type.	N/A	No change proposed					
	5	Provide a description of the quality of the water from the source(s) for each season (summer, fall, winter, spring).	N/A	No change proposed					
	6	Provide the capacity of the water source(s).	N/A	No change proposed					
	7	Provide the acquisition rate in cubic metres per day and cubic metres per year from each water source.	N/A	No change proposed					
	8	Provide a description of the water intake method(s) including the intake facility, the operating capacity of the pump used, the details of any screening to exclude fish, and the distance the pump will be placed from the ordinary high water mark of the watercourse.	N/A	No change proposed					
	9	Provide a description of the general condition of any existing water intake facility. Rate the condition of the facility as satisfactory or unsatisfactory and explain the rating.	N/A	No change proposed					
	10	Indicate whether water is drawn from the source(s) intermittently or continuously and if intermittently indicate during what months it is drawn and for what period it is drawn (days/weeks/months).	N/A	No change proposed					
	11	Indicate the amount of water to be returned to the source.	N/A	No change proposed					
	12	Provide a description of the methods to ensure water returned to any source is of an acceptable quality.	N/A	No change proposed					
	13	Provide a description of any hydrostatic testing programs, including water sources, and treatment/disposal requirements. If applicable, refer to the NWB's SIG for Hydrostatic Testing.	N/A	No change proposed					
	14	Indicate the quantities of water required for ice road construction and provide a description of the methods of ice road construction.	N/A	No change proposed					
	15	Provide a description of any measures to reduce water consumption.	N/A	No change proposed					
Water Storage	**16**	Provide a description of any water storage facilities including the type (reservoir/pond, storage tank), location, design, and the water storage volume in cubic meters.	N/A	No change proposed					
	17	If the water storage facility is a reservoir, indicate whether the reservoir is lined, the type of liner and when it was or will be installed.	N/A	No change proposed					

6.0 Water Use: Quality, Quantity, Predicted Environmental Impact and Proposed Mitigation Measures

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
	18	Indicate whether a storage reservoir is created in a natural channel. If applicable, provide plan and profile drawings of the reservoir including the size of the drainage basin upstream of the reservoir, topographical plan showing the drainage area boundary, number of hectares flooded, surface area of the reservoir at full capacity, storage capacity, and details of shoreline protection.	N/A	No change proposed					
	19	Provide a plan showing representative cross sections of the reservoir.	N/A	No change proposed					
	20	Provide a description of the general condition of any existing water storage facility and provide an explanation if it is unsatisfactory.	N/A	No change proposed					
Water Distribution	**21**	Provide a description of water distribution systems (ie. piped water, trucked).	N/A	No change proposed					
	22	Provide a description of the general condition of any existing water distribution system and provide an explanation if it is unsatisfactory.	N/A	No change proposed					
Watercourse Crossings	**23**	Provide a description of any watercourse crossings including pipelines, bridges, culverts or roads and its purpose.	N/A	No change proposed					
	24	Provide a plan of any watercourse crossing showing cross section and elevations	N/A	No change proposed					
Watercourse Trainings	**25**	Provide a description of any watercourse trainings including channel and bank alterations, culverts, spurs, erosion control, and artificial accretion, and its purpose.	N/A	No change proposed					
Flood Control	**26**	Provide a description of any flood control structures and its purpose.	N/A	No change proposed					
Diversions	**27**	Provide a description of any diversions including ditches and dikes and its purpose.	N/A	No change proposed					
Alterations in flow	**28**	Provide a description of any activities or structures that could alter the flow of a watercourse including dams, spillways, berms, cofferdams, and dikes, and its purpose.	N/A	No change proposed					
	29	Indicate whether the natural storage capacity or water level of any lake or pond will be altered.	N/A	No change proposed					
	30	If the alteration involves a dam, provide a plan showing the length, height, cross section and elevations of the dam and the location and preliminary designs of spillways, canals, sluice pipes, and any other outlet work.	N/A	No change proposed					
Dewatering	**31**	Provide a description of dewatering programs, if planned, including estimated quantities, qualities, dewatering flow rates, methods and schedule of withdrawl, end use or discharge location.	N/A	No change proposed					
Identification	**32**	Indicate whether there are any signs identifying past or present water intake, storage, distribution systems and/or waterwork structures presently in the project area.	N/A	No change proposed					
Modifications	**33**	Indicate whether any changes are planned for the water intake, storage, distribution systems and/or waterwork structures. If applicable, see item 36 of this section.	N/A	No change proposed					
Proposed Water Works	**34**	For each water work component provide the design plans stamped for construction. Design plans shall consider the following:	N/A	No change proposed					
		Name of the water body(s) affected.							
		Site photos, site map, or air photos of the location.							
		Description of the existing condition of the site (see Section 5)							
		Indicate whether any structure will be placed in water on a temporary, seasonal or permanent basis and provide a description of when and how the structure will be removed.							
		The design flood flow in cubic metres per second and its return period for the type of structure proposed.							
		An explanation of the rationale for the selected design flow flood and its return period.							
		Design drawings in plan and profile, drawn to scale, including all relevant dimensions.							

6.0 Water Use: Quality, Quantity, Predicted Environmental Impact and Proposed Mitigation Measures

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
		Detaills of design parameters including seismic design criteria if applicable.							
		In water work timing restriction for fisheries.							
		Start and completion dates for construction.							
		Construction schedule and sequence taking into account any timing restrictions.							
		Construction methods.							
		Equipment to be used.							
		A description of the source, type, and composition of material used in construction.							
		The quantity of material to be either placed into or removed from the watercourse.							
		Sedimentation and erosion control measures.							
		Construction monitoring plans.							
		Construction quality assurance and quality control measures.							
		Assessment of impacts to fish and fish habitat (see item 43 of this Section).							
		Bank stabilization measures (including the size range of material if applicable).							
		Operation and maintenance plans including instrumentation, monitoring and inspection requirements.							
		Contingency plans.							
		Re-vegetation plans							
		Proposed post construction monitoring (photos taken of the site before construction, during construction, and after construction; photos should be taken from the same reference point for easy comparison)							
		Abandonment and restoration plans (see items 45-46 of Section 3).							
	35	Final plans and drawings for construction must be stamped by a Professional Engineer licensed to practice in Nunavut. (See Section 7 of the NWB's Guide 4: Completing and Submitting a Water Licence Application for more information regarding design drawings).	N/A	No change proposed					
	36	If geotextile is used or a similar material to prevent the transport of sediment into a watercourse, provide the technical specifications for the proposed material as well as the location, extent and placement method for the material.	N/A	No change proposed					
	37	If rip rap is used or a similar material for erosion protection, provide information regarding the minimum and maximum sizes of the material and the gradation between those limits. Indicate the quantity to be used and its source.	N/A	No change proposed					
Predicted Environmental Effects and Proposed mitigation measures	**38**	Provide a description of the effects of water usage on the source from which water will be drawn including the potential for drawdown.	N/A	No change proposed. Total water useage will remain within that previously assessed and approved and does not impact lake water levels.					
	39	Provide a description of any expected changes in surface water flow or storage including changes downstream of the project.	N/A	No change proposed					
	40	If the cross-section of any watercourse is changed, provide a description of the change and its effect on the flow capacity of the channel.	N/A	No change proposed					
	41	If the course of any channel is changed, provide a description of measures to maintain stream bed and bank stability.	N/A	No change proposed					

6.0 Water Use: Quality, Quantity, Predicted Environmental Impact and Proposed Mitigation Measures

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
	42	Provide a description of measures of preventing surface water from coming into contact with waste and measures of managing surface water that does come into contact with waste (surface water management plan).	N/A	No change proposed					
	43	Provide a description of measures of preventing groundwater from coming into contact with waste and measures of managing groundwater that does come into contact with waste (groundwater management plan).	N/A	No change proposed					
Fisheries	**44**	If applicable, provide a description of any potential impacts to fish and/or fish habitat. (Indirect effects may include project effects, water quality, or aquatic organisms. Direct effects may include degradation or alteration of fish habitat). The applicant is advised to consult with DFO regarding fish and fish habitat related issues and to visit DFO's website at http://www.dfo-mpo.gc.ca/habitat/habitat-eng.htm.	N/A	No change proposed. Total water useage will remain within that previously assessed and approved and does not impact lake water levels.					
		Potential effects on fish or fish habitat;							
		The area in square metres to be impacted;							
		Measures to avoid sensitive periods and habitat areas (i.e., spawning beds, migration corridors);							
		Measures to avoid physical impacts on habitat;							
		Measures to maintain flows and fish passage;							
		Measures to avoid sedimentation;							
		Measures to avoid spills;							
		Detailed habitat no-net-loss plan and site restoration plan;							
Studies	**45**	Provide a list of studies, reports and plans relevant to the application that have been undertaken to date, including:	N/A	No change proposed					
		Options analysis;							
		Water management plan including water balance analysis;							
		Fisheries assessment;							
		Construction plan and construction schedule for water works;							
		Implementation schedule for construction of works.							
		Construction quality assurance and quality control plans;							
		Operation and maintenance plan;							
		Preliminary abandonment and reclamation plans for existing and proposed facilities;							
		Final abandonment and reclamation plans for facilities to be closed;							
		Monitoring plans (See Section 8).							

7.0 Waste Disposal: Quality, Quantity, Predicted Environmental Impact and Proposed Mitigation Measures

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
Waste Disposal	**1**	Provide a detailed description of all types of waste and all forms of waste disposal including: (see the NWB definition of Waste in the NWB *Guide 2: Terminology and Definitions*)	N/A	No change proposed to waste types or forms. Greywater discharge quanity may increase and that this may correlate with a reduction in drill water discharge when approaching cumulative daily water use allotment.					
		Sewage							
		Grey water							
		Solid waste							
		Sludge							
		Hazardous waste including waste oil							
		Contaminated soil, snow, ice and/or water							
		Bulky items/ scap metal							
		Mill or processing plant waste							
		Mine water							
		Discharge from dewatered areas							
		Other: (describe)							
Waste Disposal: Quality and Quantity	**2**	For each type of waste, provide the composition, chemical characteristics and quantity generated. Also provide the location, rate, timing, frequency and duration of the deposit.	N/A	No change proposed					
	3	For each type of waste, provide the proposed methods and processes for collecting, storing, treating and discharging the waste. Indicate the capacity of these facilities.	N/A	No change proposed					
	4	Provide a description of any measures to minimize the production of wastes.	N/A	No change proposed					
Identification	**5**	Indicate whether there are signs identifying any past or present wastewater disposal sites, solid waste disposal sites, or any other waste disposal sites presently in the project area.	N/A	No change proposed					
Modifications	**6**	Indicate whether any changes are planned for the wastewater, solid waste, or any other waste facilities. If applicable, see item 7 of this Section.	N/A	No change proposed					
Proposed waste facilities	**7**	For each proposed waste facility provide design plans. The designs shall consider the following:	N/A	No change proposed					
		Site photos, site map, or air photos of the site.							
		Description of the existing condition of the site (see Section 5).							
		A description of the types of waste entering the facility (if applicable, provide a description of the source, type, and quantity of the waste);							
		The concentration of waste entering the facility;							
		The geochemical characterization of waste entering the facility, where applicable;							
		Distance of the facility from watercourses and fish bearing waters.							
		All sources of seepage encountered near watercourse and fish bearing waters as well as the volumes (m3/day) and direction of any seepage;							
		Existing and proposed drainage modifications.							
		Details of retaining structures.							
		Level of treatment (primary, secondary or tertiary).							
		By products of treatment which may require further treatment, characterization, handling and disposal.							
		Capacity and retention time of the facility;							
		Identification of final discharge point (last point of control).							
		Method and type of discharge (seasonal, annual, continuous) including details of all decant, siphon mechanisms etc.							

7.0 Waste Disposal: Quality, Quantity, Predicted Environmental Impact and Proposed Mitigation Measures

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
		Estimated rates for discharge.							
		Restrictions on discharge.							
		Discharge effluent criteria proposed;							
		Receiving water quality objectives.							
		Capacity of the receiving environment;							
		Details regarding direction and path of wastewater flow from the area or infrastructure.							
		Design drawings in plan and profile, drawn to scale, including all relevant dimensions.							
		Details of design parameters including seismic design if applicable.							
		Start and completion dates for construction.							
		Construction schedule and sequence taking into account any timing restrictions.							
		Construction methods.							
		Equipment to be used.							
		A description of the source, type, and composition of the material to be used in construction.							
		Construction monitoring plans.							
		Construction quality assurance and quality control measures.							
		Operation and maintenance plans.							
		Contingency plans.							
		Abandonment and restoration plans (see items 45-46 of Section 3).							
	8	Final plans and drawings for construction must be stamped by a Professional Engineer licensed to practice in Nunavut. (See Section 7 of the NWB's *Guide 4: Completing and Submitting a Water Licence Application* for more information regarding design drawings).	N/A	No change proposed					
	9	Provide an assessment of alternatives for any proposed tailings containment facility.	N/A	No change proposed					
	10	Provide a description of the general condition of any existing waste facilities and provide an explanation if it is unsatisfactory.	N/A	No change proposed					
Predicted Environmental Effects and Proposed mitigation measures	**11**	Provide detailed treatment plans for discharges from any tailings containment area, attenuation pond, reclaim pond, sewage disposal area, sumps or dewatered area. Water treatment plans should include estimates of treatment efficiency for each parameter of concern and a description of pH adjustment methods.	N/A	No change proposed					
	12	Clearly outline proposed discharge criteria, how the criteria were developed, standards to be applied, and how these criteria will be used to prevent ecological effects in the receiving environment.	N/A	No change proposed					
	13	If waste is expected to infiltrate into the ground, provide a description of the sub-surface soil compositions and provide information on groundwater elevations for the project area. Also provide the proximity between the proposed waste disposal system and the groundwater elevation.	N/A	No change proposed					
	14	Provide detailed contingency plans for the treatment of turbid water during dewatering activities and/or increased suspended solids during any rewatering activities.	N/A	No change proposed					
Operations and Maintenance	**15**	Provide operation and maintenance plans for any tailings containment areas.	N/A	No change proposed					
	16	If the project includes sewage and/or solid waste disposal, provide an Operations and Maintenance Manual in accordance with the "Guidelines for the Preparation of an Operations and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories, 1996".	N/A	No change proposed					

7.0 Waste Disposal: Quality, Quantity, Predicted Environmental Impact and Proposed Mitigation Measures

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
Hazardous Materials	**17**	Provide a description of the type and quantities of drill additives, mill reagents, petroleum products, chemicals and/or hazardous materials on site. (MSDS sheets are not required to be submitted as part of the water licence application).	N/A	No change proposed					
	18	Provide details regarding the handling and storage of hazardous or potentially hazardous materials.	N/A	No change proposed					
Emergency Response and Spill Contingency	**19**	Provide designs for the fuel tank farm facilities including a description of the nearest water bodies. Provide an evaluation of impacts and mitigation measures in case of a fuel spill.	N/A	No change proposed					
	20	Provide an Emergency Response and Spill Contingency Plan (ERSCP) that includes mechanisms and processes for addressing potential or actual failure of structures, response equipment and material storage, and programs for providing appropriate training to workers. The plan shall address all licensed facilities.	N/A	No change proposed					
	21	Plan(s) shall address phases of the project including construction, operation, and care & maintenance.	N/A	No change proposed					
	22	Provide an explanation of how the applicant will ensure project contractors meet the applicant's due diligence standards with respect to oil and hazardous material spill prevention, preparedness, response, and restoration.	N/A	No change proposed					
Studies	**23**	Provide a list of studies, reports and plans relevant to the application that have been undertaken to date including design and management decisions. Studies, reports and plans may include:	N/A	No change proposed					
		Options analysis;							
		Wastewater treatment assessment;							
		Geotechnical and geothermal assessment;							
		Snow drift assessment;							
		Weather data for purposes of design;							
		Wastewater management;							
		Solid waste management;							
		Contaminated soil and/or water management							
		Quarry Management;							
		Hazardous waste management;							
		Operation and maintenance plan;							
		Spill contingency and emergency response plans;							
		Construction plan and construction schedule for waste management infrastructure;							
		Implementation schedule for construction of works;							
		Preliminary abandonment and reclamation plans for existing and proposed facilities;							
		Final abandonment and reclamation plans for facilities to be closed;							
		Monitoring plans (see Section 8);							

8.0 Monitoring

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
Monitoring	**1**	Provide a Monitoring Plan including a description of the methods, procedures, standards, and schedules proposed. Monitoring may be required for water use; effluent; surface and/or groundwater water quality, quantity, or flow; ground temperature; ground settlement; etc.	N/A	No change proposed					
	2	Indicate who is responsible for sampling including that person's position, contact information and level of training.	N/A	No change proposed					
	3	Indicate the name and contact information of the certified laboratory performing the analysis of samples.	N/A	No change proposed					
	4	Provide an Inspection Plan including a description of the methods, procedures, standards, and schedules proposed. Inspections may be required for engineered facilities related to the management of water and waste as well as spills.	N/A	No change proposed					
	5	Provide a Quality Assurance/ Quality Control (QA/QC) Plan that addresses both field sampling and laboratory analyses.	N/A	No change proposed					
	6	Provide a summary table that details the monitoring plan. The table should include stations numbers, location, parameter(s) and frequency. Provide a map detailing the location of monitoring sites.	N/A	No change proposed					