



April 3, 2012

Tracking Number: 218494
Authorization Number: 105719

REGISTERED MAIL

Chieftain Metals Inc.
c/o Terry Chandler, Executive Vice President
Unit 118, 1515 Broadway St
Port Coquitlam BC V3C 6M2

Dear Permittee:

Enclosed is Permit 105719 issued under the provisions of the *Environmental Management Act*. Your attention is respectfully directed to the terms and conditions outlined in the permit. An annual fee will be determined according to the Permit Fees Regulation.

This permit does not authorize entry upon, crossing over, or use for any purpose of private or Crown lands or works, unless and except as authorized by the owner of such lands or works. The responsibility for obtaining such authority rests with the permittee. This permit is issued pursuant to the provisions of the *Environmental Management Act* to ensure compliance with Section 120(3) of that statute, which makes it an offence to discharge waste, from a prescribed industry or activity, without proper authorization. It is also the responsibility of the permittee to ensure that all activities conducted under this authorization are carried out with regard to the rights of third parties, and comply with other applicable legislation that may be in force.

This decision may be appealed to the Environmental Appeal Board in accordance with Part 8 of the *Environmental Management Act*. An appeal must be delivered within 30 days from the date that notice of this decision is given. For further information, please contact the Environmental Appeal Board at (250) 387-3464.

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Administration of this permit will be carried out by staff from the Northern Region - Skeena. Plans, data and reports pertinent to the permit are to be submitted to the Regional Manager, Environmental Protection, at Ministry of Environment, Regional Operations, Northern Region - Skeena, Bag 5000, Smithers, BC V0J 2N0.

Yours truly,

A handwritten signature in black ink that reads "M. Love". The signature is written in a cursive style with a large initial "M" and a long, sweeping tail.

Mark P. Love P.Ag.
for Director, *Environmental Management Act*
Northern Region - Skeena

Enclosure

cc: Taku River Tlingit First Nation
Ministry of Energy and Mines
Environment Canada



**MINISTRY OF
ENVIRONMENT**

PERMIT

105719

Under the Provisions of the Environmental Management Act

Chieftain Metals Inc.

**Unit 118, 1515 Broadway St
Port Coquitlam BC V3C 6M2**

is authorized to discharge site runoff and effluent from the Tulsequah Chief Mine Site in the Tulsequah River Valley, British Columbia, subject to the conditions listed below. Contravention of any of these conditions is a violation of the *Environmental Management Act* and may result in prosecution.

1. AUTHORIZED DISCHARGES

1.1. Interim Acid Water Treatment Plant

This section applies to the discharge of treated effluent from an interim acid water treatment plant. The site reference number for this discharge is E287049.

1.1.1 The maximum authorized rate of discharge is 2640 m³/day. The average rate of discharge is 1200 m³/day.

1.1.2 The authorized discharge period is continuous.

1.1.3 The characteristics of the discharge shall not exceed:

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| Parameter | Limit* |
|---|---|
| Aluminum _(dissolved) | 0.5 mg/L |
| Arsenic _(dissolved) | 0.05 mg/L |
| Copper _(dissolved) | 0.05 mg/L |
| Lead _(dissolved) | 0.05 mg/L |
| Zinc _(dissolved) | 0.2 mg/L |
| Total Suspended Solids | 30.0 mg/L |
| pH | 6.0 to 9.5 pH units |
| Rainbow Trout 96 hr Acute Lethality, Single Concentration | 50% Survival in 100% Concentration, Minimum |

*Maximum allowable concentration in any grab sample

1.1.4 The sources of effluent include:

- Mine drainage from the 5200, 5400 and 5900 level portals
- Site runoff, including drainage from the HPAG/OPAG facilities once waste rock relocation has commenced.

1.1.5 The authorized works include, but are not limited to, a water collection and conveyance system, pumps, an acid water treatment plant which includes a neutralization chamber, rapid mix tank, flocculant tank, inclined plate-type separator/thickener, filters and holding tanks, a discharge line, outfall to the Tulsequah River, and related appurtenances approximately located as shown on Site Plan A.

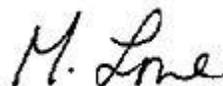
1.1.6 The location from which the discharge originates is on mineral tenures 513812 and 513813.

1.1.7 The location of the point of discharge is approximately 58° 43' 33" N 133° 35' 53" W.

1.2. Interim Acid Water Treatment Plant Sludge Storage Pond

This section applies to the discharge of effluent to the ground from the treatment plant sludge storage pond. The site reference number for this discharge is E272523.

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1.2.1 The maximum authorized rate of discharge of effluent to the ground from exfiltration is indeterminate. The average rate of discharge of water treatment plant sludge to the pond is 2000 m³/year (normal plant operations with 5% solids sludge quality).

1.2.2 The characteristics of the effluent discharge shall be typical of filtrate from stable high density water treatment plant sludge.

1.2.3 The authorized works include an exfiltration storage pond that is lined with a filter cloth, adjacent to the airstrip, and related appurtenances.

1.2.4 The location from which the discharge originates is on mineral tenures 513812 and 513813.

1.2.5 The location of the point of discharge is approximately 58° 44' 4" N, 133° 36' 6" W.

2. GENERAL REQUIREMENTS

2.1. Bypasses

Any bypass of the authorized works is prohibited unless the approval of the Director is obtained and confirmed in writing.

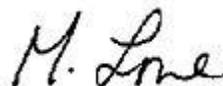
2.2. Process Modifications

The Director shall be notified prior to implementing changes to any process that may adversely affect the quality and/or quantity of the discharge. Despite notification under this section, permitted levels must not be exceeded.

2.3. Maintenance of Works and Emergency Procedures

The authorized works must be inspected regularly and maintained in good working order. In the event of an emergency or condition beyond the control of the Permittee which prevents effective operation of the authorized works or leads to an unauthorized discharge, the Permittee must take appropriate remedial action and notify the Director immediately. The Director may reduce or suspend operations to protect the environment until the authorized works have been restored, and/or corrective steps taken to prevent unauthorized discharges.

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2.4. Construction of Water Management and Pollution Control Works

The water management and pollution control works, including ditches, sediment control works, and ponds shall be designed, constructed, maintained and modified (as necessary) by a qualified professional who is knowledgeable in water management and pond construction/maintenance techniques. Ditches and structures shall be armoured or designed to prevent erosion of sediment into the environment / water course.

2.5. Construction of Treatment Plant Sludge Storage Pond

The treatment plant sludge pond shall be designed, constructed, maintained and modified (as necessary) by a qualified professional who is knowledgeable in mine water treatment plant sludge management. The works shall be located at least one metre above the high water table, 30 m from the nearest water body and constructed in a manner that prevents the escape of sludge.

2.6. Other Agency Requirements

This permit does not relieve the Permittee from complying with requirements of federal, provincial, regional district or municipal authorities.

2.7. Transfer of Authorization

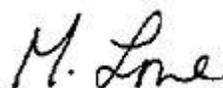
A transfer of a permit is without effect unless the Director has consented in writing to the transfer.

3. OPERATIONAL REQUIREMENTS

3.1. Operating Plans and Procedures

Detailed operating plans for the water treatment plant and for sludge management shall be completed and retained on site for inspection. The operating plan shall be prepared by a qualified professional who has expertise in mine water treatment systems. The operating plan shall include but not be limited to: the proper operation and maintenance of the facilities, emergency procedures (including procedures that should be enacted during and after Jokulhlaup events), facility monitoring, operator training requirements and sludge handling.

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3.2. Flow Measurement

Provide and maintain a suitable flow measuring device and record daily the effluent volume discharged over a 24-hour period to the outfall.

3.3. Sludge Storage Pond

The pond must be operated such that:

There is no overflow from the ponds to the surrounding environment,

Surface drainage is diverted away from the ponds,

The sludge is handled in accordance with the sludge management plan required under section 3.1.

3.4. Sludge Pond Quantity

Provide and maintain suitable measuring devices and record the sludge volume discharged on a monthly basis, in cubic metres per month.

3.5. Sludge Pond Quality

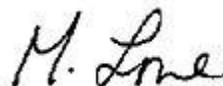
The Permittee shall undertake a sludge characterization program that is to the satisfaction of the Director, Environmental Protection. The characterization program shall be submitted to the Director within 30 days of issuance of the permit. The Permittee monitoring requirements may be extended or altered by the Director based on results of the monitoring program as well as any other data obtained by Ministry of Environment – Environmental Protection in connection with this site.

3.6. Neutral pH Water Diversion from the Underground

3.6.1 Uncontaminated groundwater from underground drill holes with characteristics better than or equal to that specified in section 1.1.3, may bypass the treatment plant and be diverted to Portal Creek.

3.6.2 Should water quality monitoring indicate that limits in section 1.1.3 are exceeded; the flows must be directed to the water treatment system. The diversion may recommence once there are three consecutive water quality sampling results below limits specified in section 1.1.3.

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3.7. Groundwater Monitoring

The Permittee shall install groundwater wells and monitor groundwater quality in the vicinity of the sludge disposal area. The well locations and monitoring frequency are subject to approval by the Director. The Permittee monitoring requirements may be extended or altered by the Director based on results of the monitoring program as well as any other data obtained by Ministry of Environment – Environmental Protection in connection with this site.

3.8. Groundwater Quality

In the event that measured groundwater quality in the vicinity of the sludge ponds exceed standards in Schedule 6 of the Contaminated Sites Regulation and in consideration of the monitoring results established for a background groundwater wells, the Director may require the submission of an impact assessment report and/or the implementation of mitigation measures by the Permittee

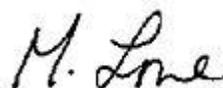
4. MONITORING REQUIREMENTS

4.1. Discharge and Receiving Environment Water Monitoring Program

The Permittee shall undertake the following water quality and quantity sampling and analyses:

| <i>Location</i> | <i>Site I.D.</i> | <i>Parameter</i> | <i>Frequency</i> |
|---|------------------|---|---|
| Interim Water Treatment Plant Discharge | E272507 | <p>Field: pH, Conductivity, Turbidity, Temperature,</p> <p>Lab: Total and Dissolved Metals (ICP/ICPMS) including Mercury*</p> <p>Lab: pH, Conductivity, Turbidity, Total Suspended Solids, Hardness, Alkalinity</p> <p>Flow</p> <p>Toxicity:</p> <ul style="list-style-type: none"> • Rainbow Trout 96 hr LC 50 • <i>Ceriodaphnia dubia</i> reproduction and survival test (Reference Method EPS 1/RM/21) | <p>Daily</p> <p>Weekly for first 5 weeks, then monthly</p> <p>Monthly</p> <p>Continuous Data-logger (hourly sampling interval)¹</p> <p>Monthly for three months (first sample within 24 hours of commencement of discharge), then quarterly.</p> |

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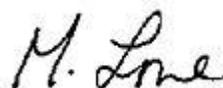
| Location | Site I.D. | Parameter | Frequency |
|---|-------------------------------|--|---|
| Neutral pH Mine Water | E277509 | <p>Field: pH, Conductivity, Turbidity, Temperature,</p> <p>Lab: Total and Dissolved Metals (ICP/ICPMS) including Mercury*</p> <p>Lab: pH, Conductivity, Turbidity, Total Suspended Solids, Hardness, Alkalinity</p> <p>Flow</p> <p>Toxicity:</p> <ul style="list-style-type: none"> • Rainbow Trout 96 hr LC₅₀ • Rainbow Trout (<i>Oncorhynchus mykiss</i>) Embryo development Test (Reference Method EPS 1/RM/28) • Algal growth inhibition test using <i>Pseudokirchneriella subcapitata</i> (Reference Method EPS 1/RM/25) • Macrophyte growth inhibition test using <i>Lemna minor</i> (Reference Method EPS 1/RM/37) | <p>Daily</p> <p>Weekly for first 5 weeks, then monthly</p> <p>Monthly</p> <p>Continuous Data-logger¹ (hourly sampling interval)</p> <p>Monthly for three months (first sample within 24 hours of commencement of discharge), then quarterly.</p> <p>Annually</p> <p>Annually</p> <p>Annually</p> |
| Tulsequah River Upstream Mine Site (W10) | E272544 | Total and Dissolved Metals (ICP/ICPMS) including Mercury*; pH, Conductivity, Turbidity, Total Suspended Solids, Hardness, Alkalinity | Monthly ² |
| Tulsequah River IDZ (W46) | E272548 | Total and Dissolved Metals (ICP/ICPMS) including Mercury*; pH, Conductivity, Turbidity, Total Suspended Solids, Hardness, Alkalinity | Monthly ² |
| Tulsequah River Near Field Downstream (W51) | E272547 | Total and Dissolved Metals (ICP/ICPMS) including Mercury*; pH, Conductivity, Turbidity, Total Suspended Solids, Hardness, Alkalinity | Quarterly ² |
| Tulsequah River Far Field Downstream (W32) | E272546 | Total and Dissolved Metals (ICP/ICPMS) including Mercury*; pH, Conductivity, Turbidity, Total Suspended Solids, Hardness, Alkalinity | Monthly ² |
| Sludge Pond Monitoring Wells (SP1-3) | E287309 E287310 E287311 | Dissolved Metals (ICP/ICPMS) including Mercury*; pH, Conductivity, Turbidity, Hardness, Alkalinity | Quarterly |

*Mercury sampling will be monthly for 12 months. The need for continued monitoring will be evaluated based on sample results.

¹Hourly data must be retained on site, only daily volumes will be reported.

² Weather and freezing conditions may prevent the collection of a monthly sample. The Permittee must notify the Regional Manager in the event that samples cannot be collected.

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4.2. Monitoring Procedures

4.2.1 Sampling Procedures

Sampling is to be carried out in accordance with the procedures described in the most recent edition of the "British Columbia Field Sampling Manual for Continuous Monitoring Plus the Collection of Air, Air-Emission, Water, Wastewater, Soil, Sediment, and Biological Samples", or by suitable alternative procedures as authorized by the Director.

A copy of the above manual may be purchased from the Queen's Printer Publications Centre, P. O. Box 9452, Stn. Prov. Gov't. Victoria, British Columbia, V8W 9V7 (1-800-663-6105 or 250-387-6409). A copy of the manual is also available for inspection at all Environmental Protection offices.

4.2.2 Analyses

Water analyses and toxicity testing procedures are to be carried out in accordance with procedures described in the most recent edition of the "British Columbia Laboratory Methods Manual for the Analysis of Water, Wastewater, Sediment, Biological Materials and Discrete Ambient Air", or by suitable alternative procedures as authorized by the Director.

A copy of the above manual may be purchased from the Queen's Printer Publications Centre.

4.2.3 Quality Assurance

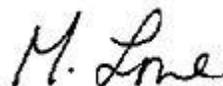
All data analysis requirements shall be conducted by a laboratory acceptable to the Director. At the request of the Director, the Permittee shall provide the laboratory quality assurance data, associated field blanks and duplicate analysis results along with the submission of data required under Section 4.1 of the approval.

5. REPORTING REQUIREMENTS

5.1. Reporting of Monitoring Results

Field and lab monitoring results, including a summary of non-compliances and corrective actions taken, shall be submitted to the Regional Manager,

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Environmental Protection or designate within 30 days of the end of the month in which the monitoring occurred. Submissions are to be in tabulated and/or graphical formats approved by the Director, and will include interpretation comments.

5.2. Non-Compliance Reporting

The Permittee shall immediately notify the Regional Manager, Environmental Protection, or designate of any non-compliance with the requirements of this permit and take appropriate remedial action. Written confirmation of all non-compliance events, including available test results, is required within 24 hours of the original notification unless otherwise directed by the Regional Manager, Environmental Protection.

5.3. Non-Compliance Follow-up

For any non-compliance with the requirements of this permit, the Permittee shall submit to the Regional Manager, Environmental Protection, a written report within 30 days of the non-compliance occurrence. The report shall include, but not necessarily be limited to, the following:

- All relevant test results related to the non-compliance;
- An explanation of the most probable cause(s) of the non-compliance; and
- Remedial action planned and/or taken to prevent similar non-compliance(s) in the future.

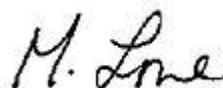
5.4. Non-Compliance Reporting Of Toxicity

Immediately notify the Regional Manager, Environmental Protection, of any toxicity failure. For the purpose of this section, a sample is considered to have failed if more than 50% of the test fish die in 100% effluent solution.

5.5. Monitoring following an Acute Toxicity Non-Compliance.

For the discharge described in section 1.1, rainbow trout toxicity testing must be increased from once per quarter to once per week if a sample of effluent fails the rainbow toxicity test. Samples must continue to be collected and tested at a frequency of once per week until three

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consecutive tests results pass, at which time the frequency shall revert back to quarterly.

5.6. Spill Reporting

All spills to the environment (as defined in the Spill Reporting Regulation) must be reported immediately in accordance with the Spill Reporting Regulation. Notification shall be via the Provincial Emergency Program at 1-800-663-3456.

5.7. Annual Report

The Permittee shall submit an annual report by March 31st of each year, with the first report submitted on March 31, 2013. The annual report shall include, but not limited to:

- summaries of the operation of the treatment facilities and other pollution control works,
- the discharge quality and quantity,
- sludge quality and quantity,
- sampling and analytical requirements,
- analysis and interpretation of trends in environmental monitoring data, and
- recommendations for improvements to water management and pollution control works and monitoring programs.

The format of the annual report shall be suitable for review by the public and copies shall be made available for the Ministry of Energy and Mines, and for the Taku River Tlingit First Nation.

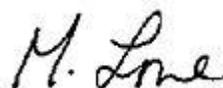
6. ENVIRONMENTAL EFFECTS MONITORING

6.1. Environmental Effects Monitoring Program Objectives

The design of the Environmental Effects Monitoring program shall be such that it addresses, at a minimum, the following:

Provision of detailed and reliable characterization of the baseline conditions in the background and potentially affected aquatic environment;

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Systematic collection of data for biological parameters sufficient to detect mine-related changes in the aquatic environment;

Analysis on at least an annual basis of the monitoring data and a determination of whether or not mine-related changes are occurring;

Verification of whether the original impact predictions are accurate; and

Utilization of the EEM findings to guide the development and implementation of effective adaptive management plans for addressing unacceptable mine related impacts to the aquatic environment.

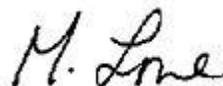
6.2. Environmental Effects Monitoring Program Implementation

The Permittee shall implement the EEM Program as approved by the Director, Environmental Protection and shall submit results of the program to the Regional Manager, Environmental Protection, as a component of the Annual Report. Based on the results of this monitoring program, the permittee monitoring requirements may be extended or altered by the Director.

7. ENVIRONMENTAL IMPACT

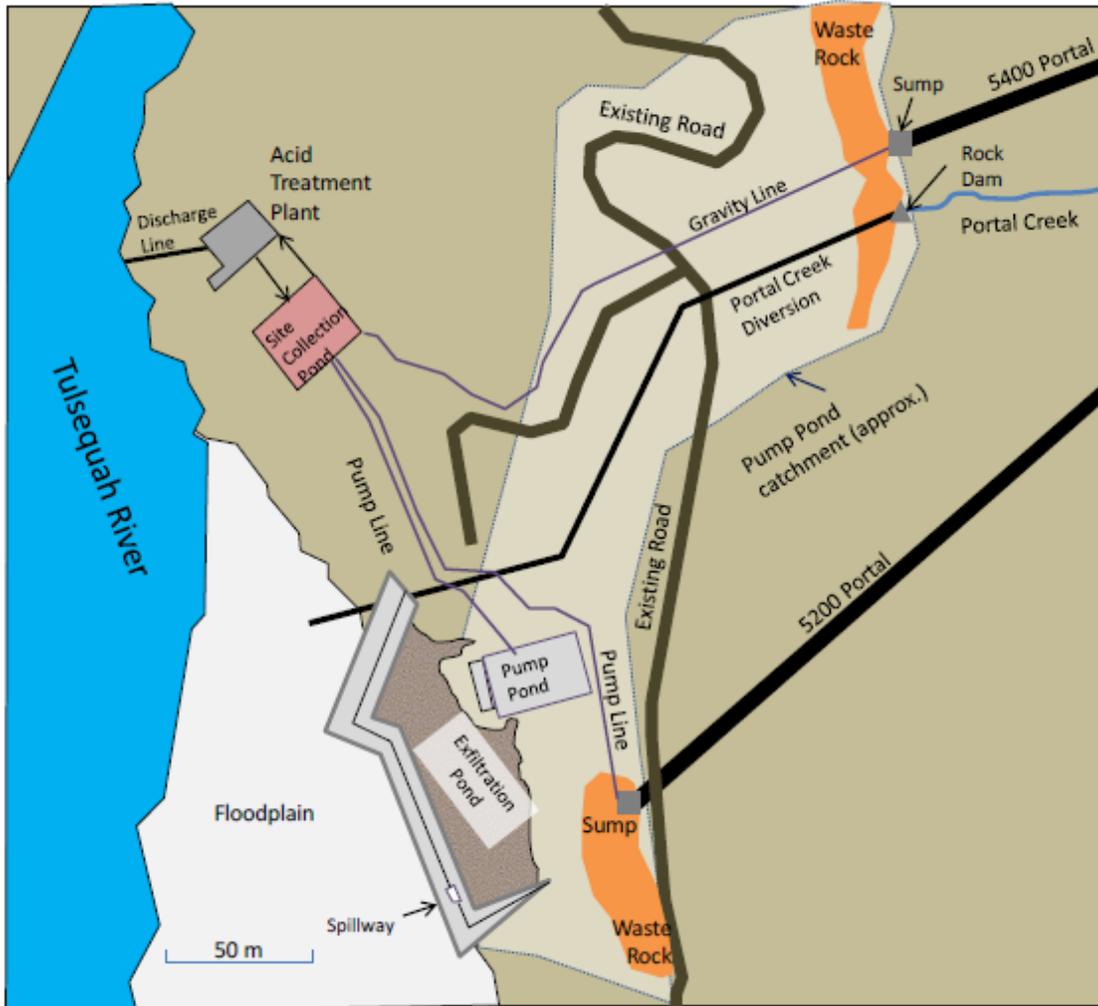
Environmental Protection Division personnel, as a part of the routine permit inspection procedure, will carry out inspections of the discharge. Based on these inspections and any other information available to the Director on the effect of the discharge on the receiving environment, the Permittee may be required to undertake additional monitoring, additional studies and/or install additional pollution control works.

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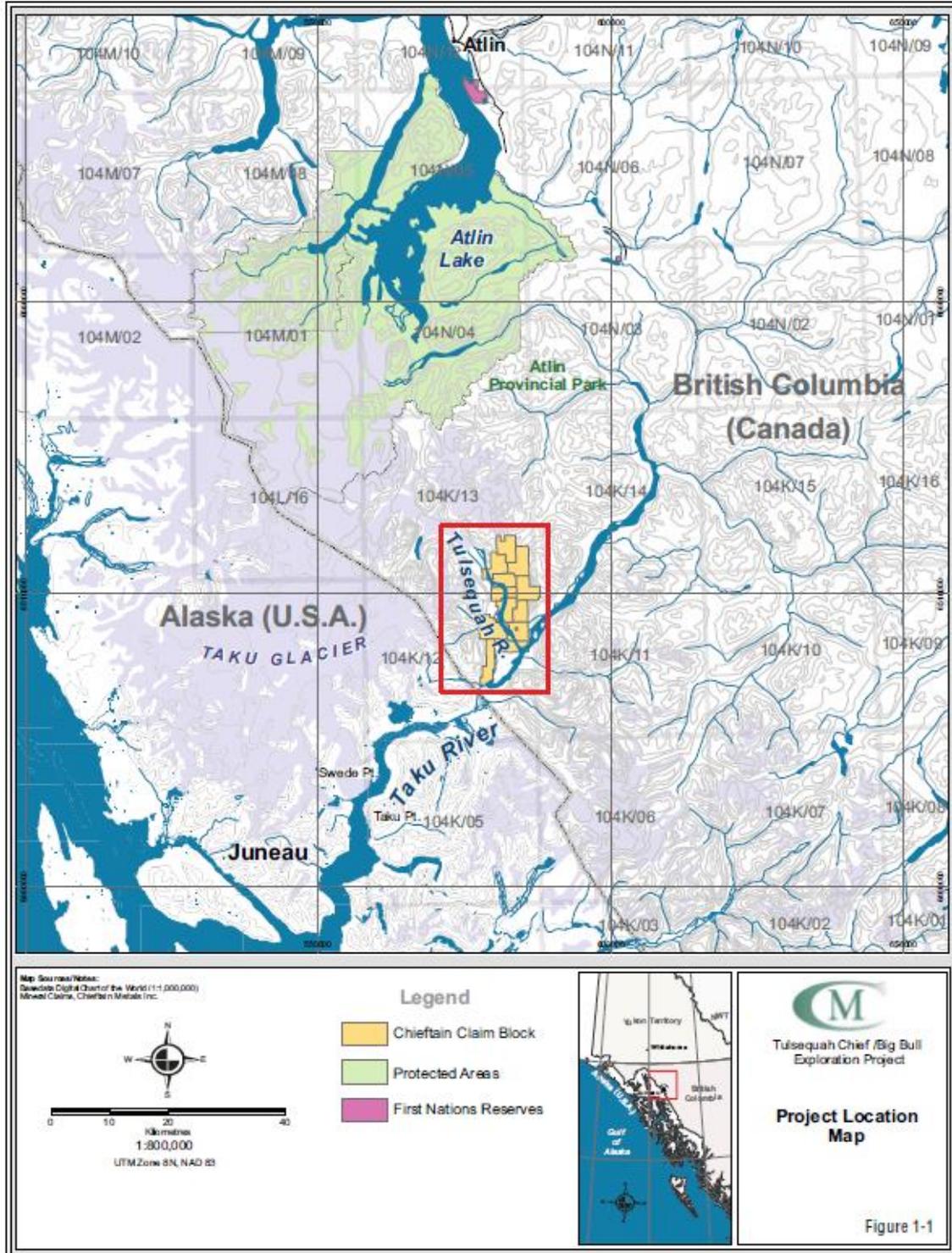
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SITE PLAN A



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