Appendix 2: 2012 Inspection Report and Follow Up

INDUSTRIAL WATER USE INSPECTION REPORT

DATE: July 5+6, 2012 COMPANY REP.: Dave Vokey

LICENSEE: Elgin LICENCE #: 2AM-LUP0914
2BS-LEP1217

WATER SUPPLY

Source: Cantway to Lake Quantity Used: _____ Meter Rdg.: N/A

Indicate: **A - Acceptable** **U - Unacceptable** **N/A - Not Applicable** N/I = Not Inspected

Intake Facilities	A	Storage Structures	A	Treatment Systems	A	Recycling	N/I
Flow Meas. Device	A	Conveyance Lines	A	Pumping Stations	N/I	Modifications	N/A

Comments: Water currently trucked and treated. Facility acceptable. Check order of treatment: UV before Chlorine. Truck loads recorded and logged.

WASTE DISPOSAL

Tailings: Tailings Pond ☑ (U) Natural Lake ☐ Underground ☐

Sewage: ~~N/I~~ Sewage Treat. System ☐ Tailings Pond ☐ Natural Water Body ☐
Continuous Discharge ☐ Inter. Dischg. ☑ 2 Pond system. (A)

Solid Waste: Open Dump ☐ Landfill ☐ Burn & Bury ☐ Incinerate ☑ (A) Underground ☐

Indicate: **A - Acceptable** **U - Unacceptable** **N/A - Not Applicable**

Discharge Quality	Sampled	Conveyance Lines	N/I	Disch. Meas. Dev.	N/I	Freeboard	A
Decant Structures	A	Pond Treatment	A	Dams, Dykes	N/I	Seepages	N/I
Dyke Inspections	N/I	Runoff Diversion	N/I	Erosion	Some	Spills	U

Effluent Discharge Rate: N/I Samples Collected: disch. from sewage lagoon, Boomerang Lake

Comments: Old burn pit being used as sorting area. Salt spill to be cleaned up immediately. Much legacy waste; barrels buried in berm walls. Old landfill is exposed - metal waste apparent off sides. Water ponding → see p2

GENERAL CONDITIONS

Indicate: **A - Acceptable** **U - Unacceptable** **N/A - Not Applicable**

Ore & Waste Rock Stockpiles	U	Records & Reporting	A	Surv. Net. Prog.	A
Geotechnical Inspection	A	Posting, Signage	A	Contingency Plan	N/I
Restoration Activities	U	New Construction	N/A	Fuel Storage	U
Mine Water Discharge	N/I	Chemical Storage	A	Annual Report	A

Comments: See attached sheets.
Please submit geotechnical inspection report to inspector upon receipt.

Violations of Act or Licence: See attached Sheets.

General Comments: Elgin has a lot of legacy hazards and contamination to be addressed to bring this site into compliance. A compliance plan will be necessary to identify risks and priorities for action. Good Luck!

Page 2 attached ☐ Yes ☐ No

+ 3.

Date: July 5+6, 2012

ENVIRONMENTAL INSPECTION REPORT

Permit/License# 2AM-LUP0914, 2BE-LEP1217

(Waste) below; sampling for leachcate required and delineation of contamination.

Tailings Mgmt: Windblown material is creeping outside perimiter. Sampled soil off Dam6. Erosion of road also noted at Dam6. Cover material on tailings is thin inplaces or entirely absent. This is unacceptable and is to be addressed through upcoming geotech assessment. Wildlife use of the tailings area presents a risk to animal health.

Drill Mgmt: Good use of sling basket for drill salts + hazardous materials. Secondary containment of fuel tanks is to be considered mandatory, and use of drip trays for all fuel transfer activities. Drill cuttings shall be deposited in a properly constructed sump or natural depression as per Part F item 2 of 2BE-LEP1217. Drl 25A9 was releasing cuttings in uncontrolled/undirected manner which resulted in cuttings flowing 50 m+ in direction of a water body. Fuel tank was tilted and signs of overfilling present. Hydrocarbon contamination is a significant issue throughout the site. Where liners are present they are exposed, punctured, and generally suspect. Heavy contamination is noted in most berms and the Satellite Tank Farm obviously overtopped and released contamination to the outside environment. The haz- →

see p. 3.

Representative's Signature

Inspector's Signature

RMO Initials

Acting Environmental Coordinator
Representative's Title

District Mgr. Initials

Indian and Northern Affairs Canada | Affaires Indiennes et du Nord Canada

Date: July 5th 2012

ENVIRONMENTAL INSPECTION REPORT

Permit/License# 2AM-LUP0914; 2BE-LEP1217

waste ~~from~~ storage area has open/exposed barrels and heavy contamination. Sampling in pond beneath this area is required.

→ For immediate action:- drill management practices to be adjusted as described
- salt spill in burn pit to be cleared up
- fuel transfer to occur over containment throughout site.

→ Before the end of this field season:- September 15th, 2012
- A risk assessment is to be conducted to identify highest risks to the outside/receiving environment. Delineation of contamination through sampling is to be included, not limited to those suggested here.

→ By October 31: A draft compliance plan that outlines every article in the licences in non-compliance and suggests actions and timelines. Priority is to be placed on preventing further contamination and containing contamination within the site. This plan will be ~~approved~~ submitted to the inspector and final plan to be approved by Dec 31, 2012

A follow-up report will be submitted to Eldin following review of of photographs and pertinent documents by the inspector.

Representative's Signature

Inspector's Signature

RMO Initials

Acting Environmental Co-ordinator
Representative's Title

District Mgr. Initials

Copy 1 - Inspector's File Copy 2 - Field Rep. Copy 3 - Permittee Head O. Copy 4 - District

Lupin Mines Incorporated

(a subsidiary of Elgin Mining Inc.)

27 July 2012

Ms. Eva Paul
Water Resources Officer
Aboriginal Affairs and Northern Development Canada
Nunavut Regional Office
Building 918, PO Box 100
Iqaluit, NU X0A 0H0

Dear Ms. Paul,

RE: Update on Action Items from July 5 – 6, 2012 Inspection
Lupin Mine, Nunavut, License Number 2AM-LUP0914; and 2BE-LEP1217

Thank you for the inspection you conducted at the Lupin mine and exploration sites July 5 – 6, 2012. The purpose of this letter is to give you an update on the actions we have taken in response to your inspection findings.

Items that you identified as requiring immediate attention:

2BE-LEP1217

- *"Secondary containment on fuel tanks at drills"* – The fuel tanks have been fitted with a secondary containment **(photo # 1)**. Contractor has been advised this is the standard for this site.
- *"Drip Tray use during fuel transfer activities"* – The Contractor has been advised that this is the standard for this site.
- *"Drill cuttings shall be deposited in a properly constructed sump or natural depression"* – Contractor has been advised that natural depressions shall be used and cuttings run-off is to be directed to this area **(photo # 2)**. If a natural depression does not exist, a properly constructed containment area with coconut matting, sandbags, and /or silt fencing will be used.

2AM-LUP0914

- *"Salt spill in burn pit to be cleaned up"* – The area of the salt spill was cleaned up on July 7, 2012 **(Photo #3)**.
- *"Fuel transfer to occur over containment throughout site"* – Drip pans have been put into service for all fuel transfers **(Photo #** 4). All site workers have been advised that it is a site requirement effective immediately.
- *"Hydrocarbon contamination is a significant issue throughout the site. Where liners are present they are exposed, punctured, and generally suspect. Heavy contamination is noted in most berms and the satellite tank farm obviously overtopped and released contamination to the outside environment. The hazardous waste storage area has open/exposed barrels and heavy contamination. Sampling in pond beneath this area is required."* – Hydrocarbon contamination in the areas identified are considered legacy spills and occurred for the most part, before Lupin Mines Inc. obtained the property. An

Lupin Mines Incorporated
#201-750 West Pender St.
Vancouver, BC Canada V6C 2T8
Phone: +1 (604) 682.3366 Fax: +1 (604) 682.3363

assessment of all contaminated areas will be undertaken during 2013 and a remediation developed to address this concern. The open / exposed barrels at the hazardous waste storage area have been removed from the area, covered and placed inside cold storage pending off-site disposal on the next available back-haul. Contaminated soil recovery will be undertaken during a contaminated soil recovery program expected to commence in 2013. With respect to the satellite tank farm berm overtopping; a legacy spill report has been filed with NT – NU Spill Line **(Attachment 2)**. The tank farm is being monitored for any water accumulation, and the tanks are inspected daily for any signs of leaks. Lastly; a soil sample was obtained from the area where some ponding had occurred immediately downstream of the hazardous waste storage area on July 24, 2012. Upon receipt of the data, it will be forwarded to you.

Before the end of this field season – September 15th, 2012:

- *"A Risk Assessment is to be conducted to identify highest risks to the outside / receiving environment"* – Lupin Mines Inc. will undertake this Risk Assessment and provide to AANDC within the timeframe outlined.

By October 31, 2012:

"A Draft Compliance Plan that outlines every article in the licences in non-compliance and suggests actions and timelines. Priority is to be placed on preventing further contamination and containing contamination within the site. This plan will be submitted to the inspector and the final plan to be approved by December 31, 2012." – Lupin Mines Inc. will prepare a Compliance Plan and submit to the inspector within the timelines outlined.

Should you have any questions regarding this discharge, don't hesitate to contact the undersigned.

Sincerely,
Lupin Mines Incorporated.

Patrick Downey
President & CEO

Cc David Vokey, Health, Safety, and Environment Coordinator
Vivian Park, Manager, Exploration

Lupin Mines Incorporated

(a subsidiary of Elgin Mining Inc.)

October 31, 2012

Eva Paul
Water Resources Officer
Aboriginal Affairs and Northern Development Canada
Nunavut Regional Office
Building 918, PO Box 100
Iqaluit, NU X0A 0H0
Via email: eva.paul@aandc.gc.ca

Subject: **Plan for Compliance for Lupin Mine and Exploration Project, Water Licence 2AM-LUP0914 and 2BE-LEP1217**

Dear Ms. Paul

On July 5 and 6, 2012, Aboriginal Affairs and Northern Development Canada's (AANDC) Water Resource Officers conducted a water use inspection of the Lupin Mine site and provided Lupin Mines Incorporated (LMI) with its field inspection report (see attachment 1). On page 3 of this report, AANDC Water Resource Officer requested the following:

> *"By October 31, 2012: A draft compliance plan that outlines every article in the licences in non-compliance and suggests actions and timelines. Priority is to be placed on preventing further contamination and containing contamination within the site. This plan will be submitted to the inspector and final plan to be approved by Dec 31, 2012"*

As requested, LMI is pleased to submit its DRAFT Plan for Compliance (Plan), dated October 31, 2012 (see attachment 2). In preparing this Plan, LMI followed the format presented in the Nunavut Water Board's (NWB or Board) Draft Document for Review *NWB Guide: Development of a Plan for Compliance*, dated June 2010, as well as guidance provided by the AANDC Water Resource Officers via email correspondence. The Plan addresses compliance issues identified in the aforementioned 2012 field inspection report prepared by Ms. E. Paul, as well as the 2011 water use inspection prepared by Mr. A. Keim, dated July 9, 2011 (note that inspection report incorrectly dated 2010) (see attachment 3) with respect to the following water licences:

- LMI's Type A water licence 2AM-LUP0914 for the Lupin Mine including Amendment 1; and

- LMI's Type B water licence 2BE-LEP1217 for the Lupin Exploration Project including Amendments 1 and 2.

A summary of the main issues of non-compliance with the Type A 2AM-LUP0914 water licence and LMI's corresponding action plans and timelines are as follows:

B,1: Submission of water use fees

Background

June 20, 2011: NWB distributed water use fee calculator to be implemented as of June 20, 2011.

January 13, 2012: MMG emailed NWB acknowledging outstanding water use fee for 2011 based on the NWB fee calculator for the amount of $23,050.00. MMG requested on behalf of MMG and Elgin that the case be reviewed due to the substantial fee increase from $63.14. It was suggested that as no notification of error in payment was received by MMG, and that corrections were implemented after receipt of the 2011 payment, that the 2011 fee be considered 'paid' and the newly calculated fee amount be applied for the 2012 payment. MMG also asked that the "Care and Maintenance" status of the Lupin site should be considered as warranting a lesser fee.

January 19, 2012: NWB emailed MMG after reviewing the file. The NWB noted that the fee received in 2011 was considered as the outstanding fee for 2010. The NWB also noted that licensees are responsible to pay full fees for the authority to use water, not the amount actually used.

February 2, 2012: NWB requested via email a breakdown of payments for the Lupin licence since 2001 from AANDC.

February 3, 2012: AANDC provided the NWB via email the requested breakdown noting that no record of payment was on file for 2009.

March 1, 2012: NWB emailed MMG the results of the fee assessment noting that the 2009 fee of $63.14 was not received and that the next due date for payment is May 25, 2012 for $23,050.00 in accordance with the new water use fee calculator.

Compliance Status

Water use fees are based on 1,700,000m^3 of authorized water use per year. Water use fee for 2009 is owed in the amount of $63.14. Payment for 2010 is up to date. Payment for 2011 was paid in the amount of $63.14; however new water use fee calculator determined that $23,050.00 is owed. Correspondence between NWB, AANDC, and MMG indicates that 2011

water use fee discrepancy is unresolved. Payment for 2012 was due May 25, 2012 for the amount of $23,050.00.

LMI is currently reviewing its plan for compliance for this condition.

D,4: Weekly inspections of all water management structures during periods of flow and maintenance of records

Although this requirement has been incorporated into the Care and Maintenance Plan, 2012 Section 4.2 and the Fuel Containment Management Strategy, 2012 Section 3.1.4, observations, photos, miscellaneous inspection records and findings for 2012 need to be consolidated with ongoing implementation of Plans in accordance with NWB approval.

See compliance status of Part E Item 6 (f) regarding frequency of Tailings Containment Area inspection.

E,4: Notice to the Inspector prior to any planned discharge from any facilities

Notification prior to discharge from LUP-27 in June 2010 was missed as were discharges of effluent from LUP-14 between Sept 23 and Oct 10, 2011 and from LUP-27 between Sept 20 and 23, 2011. The inspector was not provided the analytical results prior to these discharges; however the 2011 discharge events were reported in the October 2011 monthly report and all effluent was tested to determine that it met the discharge limits prior to and during discharge.

Also, notification was not provided prior to discharge from LUP-14 in 2012; however, verbal notification was provided immediately upon discovery of the unauthorized discharge on June 2, 2012 followed by written notification on June 15, 2012. The June 2012 monthly monitoring report provides sampling results which show that the water licence effluent quality limits were not exceeded.

LMI has incorporated this licence requirement into its operational plan *Discharge Procedure: Tailing Containment Area and Sewage Lakes Disposal Facility (Care and Maintenance)*, March 2012, and will further incorporate the requirement into its operational plan *Liquid Waste and Stormwater Management Plan (Care and Maintenance)* and *Fuel Containment Management Strategy (Care and Maintenance)*. These Plans will be resubmitted as part of LMI's 2012 Annual Report by March 31, 2013. In addition LMI will maintain updated copies of its operational plans on-site and they will be reviewed during the orientation of new site management staff.

E,6(a): Operation and maintenance of the tailings containment facility – Freeboard

The 2011 AANDC inspection report noted high water levels at Dam J and insufficient freeboard. In 2012 LMI treated and discharged water from Ponds 1 and 2 thereby reducing water levels. LMI will continue to monitor freeboard and treat and discharge water as required.

E,6 (b): Operation and maintenance of the tailings containment facility – Seepage

During the 2011 Annual Geotechnical Inspections of Perimeter Dams noted a small seepage zone at Dam 2 was observed and possible areas of seepage at the toe of Dam 4 and Dam 6 were noted. No seepage from the TCA was observed during the 2012 Annual Geotechnical Inspection.

Measures to address seepage issues noted along Dam 4 in 2009 were carried out in 2010. In addition, in 2011 erosion gullies and loose fill were placed between the dam and coffer dam for seepage control at Dam 4. Measures carried out in 2012 to address seepage issues at Dam 2 included establishment of a coffer dam to collect seepage.

LMI will continue to monitor for seepage on an on-going basis and conduct surface maintenance and repairs to Dam 2 during the 2013 field season.

E,6 (c): Operation and maintenance of the tailings containment facility – Seepage Return

The 2009 Annual Geotechnical Inspection Report recommended returning seepage from Dam 4 back to the TCA. The 2010 and 2011 Annual Geotechnical Inspection Reports both recommended returning seepage from Dam 2 back to TCA upon confirmation sampling. These reports confirm the observations noted in the 2011 AANDC inspection report of standing/ponded water.

Measures to address seepage issues noted along Dam 4 in 2009 were carried out in 2010. Measures carried out in 2012 included placement of a coffer dam at the toe of Dam 2 to collect the seepage to be pumped back into Pond 2 when it is pooled.

LMI will regularly monitor for seepage at all Dams, particularly Dams 2, and pump any collected seepage from Dam 2 back to Pond 2.

E,6 (d): Operation and maintenance of the tailings containment facility – Erosion

The 2009 to 2011 Annual Geotechnical Inspection Reports noted minor erosion issues, worsening along the downstream slopes in 2010. The 2012 Annual Geotechnical Inspection Report noted minor erosion issues with perimeter dams with more serious erosion at Dam 1A. A breach in the "storm ditch" constructed on the crest of Dam 3 was also noted. The internal dams were noted in good condition with the exception of Dams M and L.

The 2011 AANDC inspection report noted erosion and sloughing of the sides of Dam J and the 2012 AANDC inspection report noted erosion of the road at Dam 6.

In 2012 LMI repaired the breach at Dam 3; avoided vehicle traffic on the eroded section of Dam M and monitored regularly to determine if cracking was progressing at Dam M.

In 2013 LMI will carry out surface maintenance, repair and erosion protection measures on all dams as needed. Regular monitoring will continue with heightened frequency during May and

June. See compliance status of Part E Item 6 (f) regarding frequency of Tailings Containment Area inspection.

In 2013 LMI will carry out mitigation measures to address the tension crack in Dam M including a monitoring program to identify the rate of movement and time of year. Depending on monitoring results, a buttress will be constructed from compacted well graded esker material.

An assessment of the geochemical consequences of Dam L and M failures has been initiated as part of a risk assessment requested by AANDC during the 2012 inspection. See compliance status of Part H Item 3 for more details.

E,6 (e): Operation and maintenance of the tailings containment facility – Tailings Cover

The 2011 AANDC inspection report noted that sections within the tailings area had low water levels and approximately 5-10 hectares of exposed tailings. The inspector required LMI to undertake such measures as are required to address the exposed tailings in the pond southeast of Dam J (Cell 3) within sixty (60) days of receipt of the inspection form. The 2012 AANDC inspection report noted thin to absent tailings cover as well as windblown tailings at Dam 6 (Cell 3). Samples from the toe of Dam 6 indicate elevated concentrations of arsenic.

The Annual Geotechnical Inspections have not addressed tailings cover.

LMI has initiated geochemical and geotechnical assessments to address operational issues associated with the TCA including tailings cover. In addition a water balance assessment will be initiated to augment this work. The results of these assessments will be available in 2013. Based on the results of the geochemical, geotechnical and water balance assessments, LMI will update the Interim Abandonment and Restoration Plan in 2014 to minimize risks and determine options for reactivation of the TCA should a decision be made to take the mine off care and maintenance and into production.

Windblown tailings will be addressed by the risk assessment requested by the AANDC inspector in its 2012 inspection report. See compliance status of Part H Item 3 for more details.

E,6 (f): Operation and maintenance of the tailings containment facility – Inspection Frequency

With respect to the required weekly inspections, weekly inspections proved particularly difficult to do when the site was not occupied. Since acquiring the site LMI has not carried out formal inspections, however when water is transferred from one area to another, a general observation is made to determine any anomalies (e.g. crew working at the tailings pond will conduct a general assessment of conditions along the dams as the water level is being lowered).

LMI has not carried out weekly inspections on the catchment basins and the tailings line. The tailings line is not in use during care and maintenance and therefore has not been inspected.

LMI will consolidate photos; miscellaneous inspection records; and findings for 2012.

Geotechnical Inspection reports since 2007 have recommended reductions to the inspection schedule including weekly inspections from May to June and every two weeks from July to October. Monthly inspections from November to April have been noted as helpful but not critical depending on the water levels in the TCA.

LMI will request Board approval to revise the inspection schedule as recommended in the Annual Geotechnical Inspection Reports. Upon Board approval, LMI will implement a reduced frequency of inspection. LMI will also update its Care and Maintenance Plan with the reduced inspection schedule and record keeping requirements for submission to the NWB as part of its 2012 Annual Report by March 31, 2013.

E,14: Hazardous waste removal

The 2011 AANDC inspection report noted waste oil and barrels within the secondary containment area south of the main tank farm. The 2012 AANDC inspection report noted open barrels and contamination in the hazardous waste storage area. It also noted buried drums in the burn pit berm walls and exposed metal debris in the landfill.

In response to the 2011 AANDC inspection report, it is noted that the secondary containment area south of the main tank farm is for the purpose of lubricant oil storage. In response to the 2012 AANDC inspection report all open barrels were removed from site during the 2012 field season. Any contamination will remain contained within the industrial site and will be monitored for seepage. Also see status of compliance under Part H Item 3.

LMI implemented a program to routinely remove unusable fuels and lubricants to approved off-site hazardous waste disposal facilities in 2012. During the 2013 field season LMI will continue seepage monitoring on an ongoing basis.

Over the long term, LMI will manage hazardous wastes in accordance with the Board approved Waste Management Plan submitted March 2012 and legacy contamination issues will be addressed as part of the Final Abandonment and Restoration Plan upon approval of the Plan by the Board.

H,3: Prevention of waste from entering any water body

The 2012 AANDC inspection report noted a salt spill in the burn pit as well as legacy hazards and contamination issues that need to be addressed through a risk assessment.

LMI has cleaned up the salt spill identified by AANDC and will provide an addendum to the Lupin Environmental Site Assessment (ESA) dated 2006 to address AANDC's request for a risk assessment of legacy hazards and contamination issues. This assessment will prioritize risks to the receiving environment; determine the mechanisms that could cause contamination to leave

the site footprint; assess whether or not contamination is present or occurring; and determine mitigation measures to prevent further contamination. LMI will submit the ESA addendum as part of the 2012 Annual Report by March 31, 2013.

In addition, LMI will update its Care and Maintenance Plan to include mitigation measures identified in the Environmental Site Assessment, also for submission as part of the 2012 Annual Report.

In 2013, LMI will carry out mitigation measures outlined in the updated Care and Maintenance Plan and identify mitigation measures to be addressed in the Final Abandonment and Restoration Plan to be submitted to the Board in accordance with Part I Item 5.

H,5: Operation of Bulk Fuel Storage Facilities

The 2011 AANDC inspection report noted that the Bulk Fuel Storage Facilities did not appear to be registered. At that time the tanks in the Bulk Fuel Storage Facilities were registered, but no placards in place to identify them as being so.

In 2011 LMI undertook repairs and maintenance of the Bulk Fuel Storage Facilities to ensure the safety of the fuel system over winter. A plan to update the Bulk Fuel Storage Facilities is currently being developed by a third party engineer.

LMI will update its Fuel Containment Management Strategy for submission with its 2012 Annual Report by March 31, 2013.

H,6: Weekly inspections of fuel containment facilities

Although this requirement has been incorporated into the Fuel Containment Management Strategy, 2012 Section 3.1.4, observations, photos, miscellaneous inspection records and findings for 2012 currently need to be consolidated into readily accessible files. Ongoing implementation of Plans in accordance with NWB approval is a priority for LMI.

I,3: Submission of updated assessment of the current mine reclamation liability

In 2011, LMI had limited snow-free time during which to access the site and complete the reclamation liability estimate.

LMI is currently reviewing its plan to comply with this condition in their 2012 Annual Report.

J,7: Submission of a revised, Quality Assurance/Quality Control (QA/QC) Plan

LMI has contracted a consultant to aid their site environmental managers with the development of the required QA/QC Plan. They will obtain a covering letter from its accredited laboratory confirming acceptance of the Plan. LMI will submit the required QA/QC Plan and covering letter to the Board with the 2012 Annual Reportand review the Plan on an annual basis for required updates.

A summary of the main issues of non-compliance with the Type B 2BE-LEP1217 water licence and LMI's corresponding action plans and timelines are as follows:

F,2: Drill waste disposal

The 2012 AANDC inspection report noted that Drill 25A9 was releasing cuttings in an uncontrolled manner. Following the inspection, LMI established a cuttings management program whereby cuttings were disposed in natural depressions in close proximity to the drills.

To mitigate the incident reported by the inspector, LMI pumped the drill cuttings to another location in accordance with the licence condition.

H,3: Prevention of waste from entering any water body

The 2012 AANDC Inspection Report noted that secondary containment of fuel tanks is to be considered mandatory. Following the inspection, secondary containment was provided as reported in the 2AM-LUP0914 July monthly monitoring report.

H,4: Equipment maintenance

The 2012 AANDC inspection report noted that the use of drip pans for all fuel transfer activities is considered mandatory. Following the inspection, drip pans were provided at fuel transfer stations as reported in the 2AM-LUP0914 July monthly monitoring report.

LMI will revise its Spill Contingency Plan to require the use of drip pans for all fuel transfer activities and submit the revised Plan as part of its 2012 Annual Report by March 31, 2013.

For a more detailed assessment of the compliance status of each condition of the water licences, please see the attached Plan for Compliance table. If you have any questions please contact David Vokey at Tel: 778-372-3272, or dvokey@elginmining.com .

Sincerely,
Lupin Mines Incorporated.

James (Jim) Currie, P.Eng
Chief Operating Officer

Attachments:

1. 2010 Inspection Report
2. 2012 Inspection Report (Field Report)
3. Plan for Compliance – 2AM-LUP-0914
4. Plan for Compliance – 2BE-LEP1217

Distribution: Vivian Park, Manager Exploration
Wayne Osborne, Mine Manager
David Vokey, Health, Safety & Environment

		Licence Condition	Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
PART A - SCOPE, ENFORCEMENT, DEFINITIONS							
Scope							
1	a	This Licence authorizes Lupin Mines Incorporated (“LMI” or “Licensee”) to use Water and dispose of Waste associated with Mining and Milling undertakings in accordance with Schedule V of the Regulations at the Lupin Mine, located on the west shore of Contwoyto Lake, within the Kitikmeot Region, Nunavut (approximate Latitude 65°46’N and Longitude 111°14’W), as outlined in the Water Licence Renewal Application. LMI may conduct mining, milling and associated activities at the Lupin Mine located on the west shore of Contwoyto Lake, Nunavut, (65 46’N, 111 14’W) including, in general, as follows: ● Use of water for Mining and Milling and associated activities; ● Deposit of tailings slurry into the Tailings Containment Area (TCA); ● Deposit of tailings paste into underground works; ● Deposit and treatment of Sewage into Sewage Disposal Facilities; ● Discharge of effluent from TCA; ● Discharge of effluent from Sewage Disposal Facilities; ● Progressive Abandonment and Reclamation of Mine facilities; ● Care and Maintenance of facilities ● Monitoring Program; ● Operations of site infrastructure including: o Mining and Milling structures; o Water intake and supply facilities; o Mine site camp facilities; o Tailings Containment Area; o Tailings Line and associated facilities; o Sewage Disposal Facilities; o Mine site roads; o Mine site airstrip; o Breakwater and Causeway; o Fuel Storage Facilities;	Compliant				

		Licence Condition	Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
	b	This Licence is issued subject to conditions contained herein with respect to the taking of Water and the depositing of Waste of any type in any Waters or in any place under any conditions where such Waste or any other Waste that results from the deposits of such Waste may enter any Waters. Whenever new Regulations are made or existing Regulations are amended by the Governor in Council under the Act, or other statutes imposing more stringent conditions relating to the quantity, type or manner under which any such Waste may be so deposited, this Licence shall be deemed to be subject to such requirements.	Compliant				
	c	Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with all applicable legislation, guidelines and directives.	Under Review				
Enforcement							
2	a	Failure to comply with this Licence will be a violation of the Act, subjecting the Licensee to the enforcement measures and the penalties provided for in the Act.	See AANDC Water Use Inspection Forms dated July 5&6, 2012 by Eva Paul (field form received, formal report not yet received) and July 9, 2011 by A. Keim. No Water Use Inspection Forms are on file for 2009 or 2010. Since issuance of the Licence renewal, no enforcement measures or penalties have been incurred.				
	b	All inspection and enforcement services regarding this Licence will be provided by Inspectors appointed under the Act.					
	c	For the purpose of enforcing this Licence and with respect to the use of Water and deposit or Discharge of Waste by the Licensee, Inspectors appointed under the Act, hold all powers, privileges and protections that are conferred upon them by the Act or by other applicable law.					
Definitions							
3	a	The Licensee shall refer to Schedule A for definitions of terms used in this Licence.	Compliant				

		Licence Condition	Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
PART B - GENERAL CONDITIONS							
1		The amount of Water use fees shall be determined in accordance with the section 9(b) of the Regulations. Payment of fees shall be made in accordance with section 9(6)(b) of the Regulations.	Water use fees are based on 1,700,000 m3 of authorized water use per year. Water use fee for 2009 is owed in the amount of $63.14. Payment for 2010 is up to date. Payment for 2011 paid in the amount of $63.14; however new water use fee calculator determined that $23,050.00 is owed. Correspondence between NWB, AANDC, and MMG indicates that 2011 water use fee discrepany is unresolved. Payment for 2012 was due May 25, 2012 for the amount of $23,050.00.	Under review	TBD	TBD	TBD
		The Licensee shall file an Annual Report with the Board, not later than March 31st of the year following the calendar year reported and shall be developed in accordance with Schedule B.					
	Schedule B Item 1	The Annual Report referred to in Part B, Item 2, shall include:					
	a	The monthly and annual quantities in cubic metres of water pumped from Contwoyto Lake at Station Number LUP-01;					
	b	The monthly and annual quantities in cubic metres of treated Tailings effluent discharged at Station Number LUP-10;					
	c	The monthly and annual quantities in cubic metres of Minewater discharged at Station Number LUP-11;					

Licence Condition			Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
2	d	The monthly and annual quantities in cubic metres of treated Sewage effluent discharged at Station Number LUP-14;	Compliant. 2011: Annual report received by NWB March 31,2012 2010: Annual report received by NWB April 8, 2011 2009: Annual report received by NWB April 19, 2010				
	e	Tabular summaries of all data generated under the "Monitoring Program";					
	f	A summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector.					
	g	A summary of modification and/or major maintenance work carried out on the water supply and the waste disposal facilities, including all associated structures;					
	h	A list and description of all unauthorized discharges including volumes, spill report line identification number and summaries of follow-up action taken;					
	i	Where applicable, revisions as Addendums, with an indication of where changes have been made, for Plans, Reports, and Manuals;					
	j	For Care and Maintenance, provide an updated status of any progressive reclamation as it relates to tailings cover remediation and justification for not proceeding to full reclamation under Part I, Item 5;					
	k	A summary of public consultation and participation with local organizations and the residents of the nearby communities, including a schedule of upcoming community events and information sessions.					
	l	A summary of any abandonment and reclamation work completed during the year and an outline of any work anticipated for the next year;					
	m	An updated assessment of the current mine reclamation liability using the most current version of RECLAIM as required by Part I, Item 3;and					
	n	Any other details on water use or waste disposal requested by the Board by November 1st of the year being reported.					
3		The compliance dates specified in the Licence may be modified at the discretion of the Chief Executive Officer.	Compliant.				
4		Metres, devices or other such methods used for measuring the volumes of water used and waste discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.	Compliant.				
5		The Licensee shall maintain, to the satisfaction of the Inspector, all the signs necessary to identify the stations of the annexed "Monitoring Program".	Compliant.				
6		The Licensee shall ensure a copy of this Licence is maintained at the site of operation at all times in English, Inuktitut and Inuinnaqtun.	Compliant.				

		Licence Condition	Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
7		Any communication with respect to this Licence shall be made in writing to the attention of: Manager of Licensing Nunavut Water Board P. O. Box 119 Gjoa Haven, NU X0B 1J0 Telephone: (867) 360-6338 Fax: (867) 360-6369 Email: licensing@nunavutwaterboard.org	Compliant.				
8		Any notice made to an Inspector shall be made in writing to the attention of: Water Resources Officer Nunavut District, Nunavut Region P.O. Box 100 Iqaluit, NU X0A 0H0 Telephone: (867) 975-4295 Fax: (867) 979-6445	Compliant.				
9		The Licensee shall submit one (1) paper copy and one (1) electronic copy of all reports, studies, and plans to the Board, or as otherwise requested by the Board. Reports or studies submitted to the Board by the Licensee shall include an executive summary in English and Inuktitut.	Compliant.				
10		This Licence is assignable as provided in section 44 of the Act.	Compliant				
11		The Licensee shall ensure that any document(s) or correspondence submitted by the Licensee to the Board is received and acknowledged by the Manager of Licensing.	Compliant				
12		The Licensee shall, for all Plans submitted under this Licence, include a proposed timetable for implementation. Plans submitted, cannot be undertaken without subsequent written Board approval and direction. The Board may alter or modify a Plan if necessary to achieve the legislative objectives and will notify the Licensee in writing of acceptance, rejection or alteration of the Plan.	The following plans were submitted to the Board for approval with 2011 annual report: Spill Contingency Plan (H,1); Fuel Management Plan (2011 Inspection report); Interim Abandonment and Restoration Plan (I,1); and Care and Maintenance Plan (I,2).	LMI requests NWB approval of the submitted plans.	As per NWB review process	Ongoing implementation of Plans in accordance with NWB approval.	Upon receipt of NWB approval of Plans.
13		In the event that a Plan is not found acceptable to the Board, the Licensee shall provide a revised version to the Board for review within thirty (30) days of notification by the Board.					
14		The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board.					

		Licence Condition	Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
15		Every Plan to be carried out pursuant to the terms and conditions of this Licence shall become a part of this Licence, and any additional terms and condition imposed upon approval of a Plan by the Board become part of this Licence. All terms and conditions of the Licence should be contemplated in the development of a Plan where appropriate.	Compliant.				
16		The Licensee shall review the Plans or Manuals referred to in this Licence as required by changes in operation and/or technology and modify the Plans or Manuals accordingly. Revisions to the Plans or Manuals are to be submitted in the form of an Addendum to be included with the Annual Report required by Part B, Item 2, complete with a revisions list detailing where significant content changes are made.	Compliant. Addressed in Section 6 of 2011 Annual Report				
17		The expiry or cancellation of this Licence does not relieve the Licensee from any obligation imposed by the Licence, or any other regulatory requirement.	Compliant.				
PART C - CONDITIONS APPLYING TO SECURITY							
1		The Licensee shall furnish and maintain security with the Minister, in the amount of $25.5 million dollars, in the form that is satisfactory to the Minister.	Compliant.				
2		The Licensee shall furnish and maintain such further or other amounts as may be required by the Board based on annual estimates of current mine reclamation liability.	NA Since issuance of the Licence renewal, the Board has not required any further or other amounts of security.				
3		The Licensee may submit to the Board for approval, a request for a reduction to the amount of security. The submission shall include supporting evidence to justify the request.	NA No requests for reduction in the amount of security have been requested.				
4		The security referred to in Part C, Item 1 shall be maintained until such time as it is fully or in part refunded by the Minister pursuant to section 76(5) of the Act. This clause shall survive the expiry of this Licence or renewals thereof and until full and final reclamation has been completed to the satisfaction of the Minister.	NA Since issuance of the Licence renewal, no part of security has been refunded by the Minister.				

		Licence Condition	Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
PART D - CONDITIONS APPLYING TO WATER USE							
1		The Licensee shall obtain all fresh Water for mining, milling and associated uses from Contwoyto Lake, at monitoring station LUP-01 using the Water Supply Facilities or as otherwise approved by the Board in writing.	Compliant. 2011 AANDC Inspection report noted that the water supply facility was not accessible for inspection and that fuel barrels marked WSC (Water Survey Canada) were located in the lake and on the shoreline. The inspector collected water samples from the shoreline adjacent to the intake pipe. Results of sample indicated aluminum concentration of 19 ug/L (slightly above CCME FWAL guideline of 5 ug/L for pH < 6.5) and pH of 6.45 (slightly below CCME FWAL guideline of between 6.5 and 9). 2012 AANDC Inspection Report indicates that the water supply facility is acceptable, and no issues were reported.	Barrels identified in 2011 AANDC Inspection were removed to a bermed area >30 m beyond the high water mark of Contwoyto Lake.	Completed early 2012	Maintain housekeeping procedures for third parties	Effective immediately
2		The annual quantities of water withdrawn from Contwoyto Lake for all uses, shall not exceed 1,700,000 cubic metres.	Compliant. 2009 annual report indicates that a total of 123, 100 Litres (123.1 m3) of water was collected from Contwoyto Lake in 2009. 2010 annual report indicates that a total of 272.13 m3 of water was collected from Contwoyto Lake in 2010. 2011 annual report indicates that a total of 439.5 m3 of water was collected from Contwoyto Lake in 2011.				
3		The Licensee shall equip the fresh water intake with a screen of an appropriate mesh size to ensure that fish are not entrained and shall withdraw water at a rate such that fish do not become impinged on the screen.	Compliant.				

		Licence Condition	Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
4		The Licensee shall carry out weekly inspections of all water management structures during periods of flow and maintain records of the inspections and findings, for review upon the request of the Board.	This Licence requirement has been incorporated into the Care and Maintenance Plan, 2012 Section 4.2 and the Fuel Containment Management Strategy, 2012 Section 3.1.4. See compliance status of Part E Item 6 (f) regarding frequency of TCA inspection.	Photos and miscellaneous inspection records and findings for 2012 to be consolidated	Ongoing	Ongoing implementation of Plans in accordance with NWB approval.	Immediately and as modifed during NWB approval of Plans.
5		The Licensee shall implement measures to prevent the generation and deposition of dust and/or sediment into Water arising from road use.	NA Road use is limited during care and maintenance.				
PART E- CONDITIONS APPLYING TO WASTE DISPOSAL							
1		The Licensee shall discharge all Tailings into the Tailings Containment Area, underground as Backfill or to other locations in accordance with the Guide to the Management of Tailings Facilities (Mining Association of Canada September 1998), or as otherwise approved by the Board in writing.	NA No tailings have been generated or discharged during the term of the Licence renewal.				
2		The discharge from the Tailings Containment Area at Monitoring Station LUP-10 shall commence no sooner than July 15 of any calendar year unless otherwise approved by the Board in writing.	Compliant. Licence requirement is incorporated into site operational plan "TCA Discharge Procedures" submitted with 2009 annual report. Discharge occurance in 2009 and 2012. No dishcarge in 2010 or 2011.				
3		The discharge rate from the Tailings Containment Area shall not exceed 70,000 cubic metres per day, unless otherwise approved by the Board in writing.	Compliant				

Licence Condition			Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
4		The Licensee shall provide at least ten (10) days notice to the Inspector prior to any planned Discharge from any facilities. The notice shall include an estimated volume proposed for Discharge and the receiving location.	Notification provided prior to discharge from LUP-10 in 2009 (dated Aug 24, 2009) Notification provided prior to discharge from LUP-14 in 2009 (dated Aug 11, 2009) Notification prior to discharge from LUP-27 in June 2010 missed. Notification prior to discharge of effluent from LUP-14 between Sept 23 and Oct 10, 2011 and from LUP-27 Sept 20 to 23, 2011 was missed. Inspector was not provided the analytical results prior to discharge. Notification provided prior to discharge from LUP-27 in 2012 (June 8, 2012) Notification provided prior to discharge from LUP-10 in 2012 (dated Aug 27, 2012) Notification not provided prior to discharge from LUP-14 in 2012. Verbal notification provided immediately upon discovery of unauthorized discharge on June 2, 2012 followed by written notification on June 15, 2012.	2011 unauthorized discharge events were reported in the October 2011 monthly report. All effluent was tested to determine that it met the discharge limits prior to and during discharge. 2012 unauthorized discharge reported immediately upon discovery. Also see June monthly monitoring report for water sampling results. Water licence effluent quality limits were not exceeded. Incorporate requirement into operational plan *Discharge Procedure: Tailing Containment Area and Sewage Lakes Disposal Facility (Care and Maintenance)* , March 2012	Completed	Incorporate licence requirement into operational plan: *Liquid Waste and Stormwater Management Plan (Care and Maintenance)* March 2012 and *Fuel Containment Management Strategy (Care and Maintenance)* , 2012 Maintain copies of operational plans on-site amd review plans during orientation of new site management staff.	LMI will submit updated copies of operational plans as part of 2012 annual report

		Licence Condition	Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
5		All Effluent discharged from the Tailings Containment Area shall not exceed the following effluent quality limits at Monitoring Program station LUP-10: Parameter / Max Avg Concentration (mg/L) / Concentration of any Grab Sample (mg/L) Total Arsenic: 0.50 / 1.00 Total Copper: 0.15 / 0.30 Total Cyanide: 0.80 / 1.60 Total Lead: 0.10 / 0.20 Total Nickel: 0.20 / 0.40 Total Zinc: 0.40 / 0.80 TSS: 15 / 30 Oil and Grease: Visual Sheen The Waste discharged shall have a pH between 6.0 and 9.5	Compliant. Effluent discharged from LUP-10 from August 25, 2009 until the end of September, 2009. Effluent discharged from LUP-10 from September 8, 2012 until September 29, 2012				
		The Tailings Containment Area shall be constructed, operated and maintained to engineering standards such that:	See sub-items (a) - (g)				
	a	A freeboard limit of 1.0 metre shall be maintained at all times or as recommended by a Geotechnical Engineer and as approved by the Board in writing;	2011 AANDC inspection report noted high water levels at Dam J and insufficient freeboard. Inspector required Elgin to undertake such measures as are required to address high water levels at Dam J within sixty (60) days of receipt of the inspection report. 2012 AANDC inspection report noted freeboard as "Acceptable". 2009 to 2012 Geotechnical Inspection reports note freeboards greater than 1 m on all perimeter dams. 2012 Geotechnical Inspection report notes freeboard less than 1 m on some internal dams.	Work carried out in 2012 to address condition included: Treating and discharging water during and since the 2012 site inspections. Pond 1 and 2 water levels have been reduced.	Completed	Continue to monitor freeboard and treat and discharge water as required.	Monitoring to continue on an on-going bases. Treatment and discharge of water as needed.

	Licence Condition	Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
b	Seepage from the Tailings Containment Area is minimized;	2011 and 2012 AANDC Inspection reports did not note any seepages. 2009 Annual Geotechnical Inspection of Perimeter Dams noted seepage at toe of Dam 4. 2010 Annual Geotechnical Inspection of Perimeter Dams noted a small seepage zone at Dam 2. 2011 Annual Geotechnical Inspection of Perimeter Dams noted seepage at Dam 2 and possible seepage at Dam 6. No seepage from the TCA was observed during the 2012 Annual Geotechnical Inspection.	Measures to address seepage issues noted along Dam 4 in 2009 were carried out in 2010. In 2011 it was observed that erosion gullies and loose fill had been placed between the dam and coffer dam for seepage control at Dam 4. Measures carried out in 2012 to address seepage issues at Dam 2 included establishment of coffer dam to collect seepage.	Completed	Dam 2: Surface maintenance. Monitoring regularly to pump any collected seepage back into Pond 2. Dam 6: Monitor regularly for potential seepage. All Dams: Regular monitoring	Monitoring to commence immediately and continue on an on-going basis. Surface maintenance and repairs to continue during 2013 field season.
c	Any Seepage that occurs is collected and returned immediately to the Tailings Containment Area;	2011 AANDC inspection report notes evidence of standing/ponded water. 2009 geotechnical inspection report recommended returning seepage from Dam 4 back to TCA. 2010 and 2011 geotechnical inspection reports both recommend returning seepage from Dam 2 back to TCA upon confirmation sampling.	Measures carried out in 2012 included placement of a coffer dam at the toe of Dam 2 to collect the seepage to be pumped back into Pond 2 when it is pooled.	Completed	Dam 2: Monitor regularly to pump the collected seepage back into Pond 2. All Dams: Monitor regularly	Monitoring to commence immediately and continue on an on-going basis.

Licence Condition			Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
6	d	Erosion of constructed facilities is addressed immediately;	2011 AANDC inspection report notes erosion and sloughing of the sides of Dam J. 2012 AANDC inspection report notes erosion of road at Dam 6. 2009 to 2011 geotechnical inspection reports note minor erosion issues, worsening along downstream slopes in 2010. 2012 geotechnical inspection report notes minor erosion issues with more serious erosion at Dam 1A. A breach in “storm ditch” constructed on crest of Dam 3 was also noted. Internal dams noted in good condition with the exception of Dams M and L.	Measures carried out in 2012 included: Dam 3: Breach repaired Dam M: Avoidance of vehicle traffic on eroded section and monitoring regularly to determine if cracking is progressing.	Completed	(1) Surface maintenance, repair, erosion protection, and regular monitoring as needed on all dams. (2) Detailed mitigation to address tension crack failure in Dam M including a monitoring program to identify the rate of movement and time of year. Depending on monitoring results, construction of a buttress from compacted well graded esker material. (3) Assessment of geochemical consequences of Dam L and M failures as part of risk assessment requested by AANDC during 2012 inspection. See compliance status of Part H Item 3.	(1) Maintenance and repair to commence in 2013 field season. Monitoring to commence immediately and continue on an ongoing basis. (2) Construction of the buttress for Dam M in 2013. (3) Assessment has been initiated. To be finalized in 2013.

Licence Condition			Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
	e	The solids fraction of the mill Tailings shall be permanently contained within the Tailings Containment Area or underground as Backfill;	2011 AANDC inspection report noted that sections within the tailings area had low water levels and approx. 5-10 hectares of exposed tailings. Inspector required LMI to undertake such measures as are required to address the exposed tailings in the pond southeast of Dam J (Cell 3) within sixty (60) days of receipt of the inspection form. 2012 AANDC inspection report noted thin to absent tailings cover as well as windblown tailings at Dam 6 (Cell 3). Samples from the toe of Dam 6 indicate elevated concentrations of arsenic. Annual Geotechnical Inspections have not addressed tailings cover.	Geochemical and geotechnical assessments have been initiated to address operational issues associated with the TCA including tailings cover. Water balance assessment to be initiated as well. Windblown tailings will be addressed by the risk assessment requested by the AANDC inspector in its 2012 inspection report. See compliance status of Part H Item 3 for more details.	Results of geochemical, geotechnical and water balance assessments will be available in 2013.	Based on the results of the geochemical, geotechnical and water balance assessments update the Interim Abandonment and Restoration Plan to minimize risks and determine options for reactivation of the TCA should a decision be made to take the mine off care and maintenance and into production.	2014

Licence Condition			Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
	f	Weekly inspections of the dam(s), Tailings line(s), and catchment basin(s) shall be carried out and records of these inspections shall be kept for review upon the request of an Inspector, or as otherwise approved by the Board. More frequent inspections shall be performed at the request of an Inspector; and	With respect to the required weekly inspections, LMI has not carried out formal inspections, however when water is transferred from one area to another, a general observation is made to determine any anomalies (e.g. crew working at the tailings pond will conduct a general assessment of conditions along the dams as the water level is being lowered). LMI has not carried out inspections on the catchment basins and the tailings line. The tailings line is not in use during care and maintenance and therefore has not been inspected. Geotechnical Inspection report recommends the following revisions to the inspection schedule: · May to June – weekly · July to October – every two weeks.	Request Board approval to revise inspection schedule as recommended in annual Geotechnical Inspection reports. Photos and miscellaneous inspection records and findings for 2012 to be consolidated	As per NWB review process	Implement reduced frequency of inspection. Update Care and Maintenance Plan to include revised inspection schedule and record keeping	Implement revised inspection schedule upon NWB approval. Provide updated Care and Maintenance Plan as part of 2012 Annual Report
	g	An inspection of the Tailings Containment Area shall be carried out annually during ice free, open water conditions by a Geotechnical Engineer. The Engineer's report shall be submitted to the Board within sixty (60) days following the inspection, and shall include a covering letter from the Licensee outlining an implementation plan to respond to the Engineer's recommendations.	Compliant. Annual Geotechnical inspection reports and cover letters were submitted for 2009, 2010 and 2011 of the TCA perimeter dams.				
7		The Licensee shall discharge all Sewage to the Sewage Lakes Disposal Facilities or as otherwise approved by the Board in writing.	Compliant.				

<table>
<tr><th colspan="3">Licence Condition</th><th>Status of Compliance</th><th>Short Term Plan for Compliance</th><th>Schedule for Implementation of Short Term Plan for Compliance</th><th>Long Term Plan for Compliance</th><th>Schedule for Implementation of Long Term Plan for Compliance</th></tr>
<tr><td>8</td><td></td><td>All Effluent discharged from the Sewage Lakes Disposal Facilities shall not exceed the following effluent quality limits at Monitoring Program monitoring station LUP-14:

<table><tr><th>Parameter</th><th>Concentration of any Grab Sample (mg/L)</th></tr><tr><td>Total Arsenic</td><td>0.05</td></tr><tr><td>Total Copper</td><td>0.20</td></tr><tr><td>Total Lead</td><td>0.05</td></tr><tr><td>Total Nickel</td><td>0.30</td></tr><tr><td>Total Zinc</td><td>0.50</td></tr><tr><td>TSS</td><td>35</td></tr><tr><td>BOD5</td><td>30</td></tr><tr><td>Faecal Coliforms</td><td>1000 colony forming units 100 mL</td></tr><tr><td>Oil and Grease</td><td>Visual Sheen</td></tr><tr><td>pH</td><td>6.0 to 9.5</td></tr></table></td><td>Compliant

Effluent was discharged from LUP-14 from August 11, 2009 to September 24, 2009.

Effluent was discharged from LUP-14 from September 23, 2011 to October 10, 2011.

Effluent was discharged from LUP-14 from June 30, 2012 until July 27, 2012.</td><td></td><td></td><td></td><td></td></tr>
<tr><td>9</td><td></td><td>All Effluent discharged from the Bulk Fuel Storage Facility at Monitoring Program station LUP-27 shall not exceed the following effluent quality limits

<table><tr><th>Parameters</th><th>Max Avg Concentration (mg/L)</th><th>Max Concentration Grab Sample (mg/L)</th></tr><tr><td>pH</td><td>6-9</td><td></td></tr><tr><td>TSS</td><td>15</td><td>30</td></tr><tr><td>Total Oil and Grease</td><td>5 and no visible sheen</td><td>10</td></tr><tr><td>Total Ammonia</td><td>2.0</td><td>4.0</td></tr><tr><td>Total Lead</td><td>0.01</td><td>0.02</td></tr><tr><td>Benzene</td><td>0.37</td><td>-</td></tr><tr><td>Toluene</td><td>0.002</td><td>-</td></tr><tr><td>Ethyl Benzene</td><td>0.090</td><td>-</td></tr></table></td><td>Compliant.

Effluent was discharged from LUP-27 on June 10, 2010.

Effluent was discharged from LUP-27 on September 20 and 23, 2011.

Effluent was discharged from LUP-27 on June 23, 2012.</td><td></td><td></td><td></td><td></td></tr>
<tr><td>10</td><td></td><td>The Licensee shall confirm compliance with Effluent quality limits in Part E, Items 5, 8 and 9 prior to Discharge.</td><td>Compliant</td><td></td><td></td><td></td><td></td></tr>
<tr><td>11</td><td></td><td>The Licensee shall Discharge all Minewater to the Tailings Containment Area or to the Sewage Lakes Disposal Facilities, except as specified in Part E, Item 12.</td><td>NA

No minewater discharged during term of renewal Licence.</td><td></td><td></td><td></td><td></td></tr>
<tr><td>12</td><td></td><td>The Licensee shall submit to the Board for approval, a proposal for the disposal of Minewater should a location other that those specified in Part E, Item 11 be considered. The proposal shall describe options for the Discharge of Minewater, data on the quantity and quality of the Minewater, and the options for Minewater treatment and disposal.</td><td>NA

No alternate minewater disposal has been proposed.</td><td></td><td></td><td></td><td></td></tr>
<tr><td>13</td><td></td><td>The proposal specified in Part E, Item 12, shall be implemented as approved by the Board in writing.</td><td>NA.</td><td></td><td></td><td></td><td></td></tr>
</table>

Licence Condition			Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
14		The Licensee shall remove from the project site, all hazardous Wastes generated through the course of the Operation, for disposal at an approved hazardous waste disposal facility.	2011 AANDC inspection report noted waste oil and barrels within the secondary containment area south of the main tank farm. 2012 AANDC inspection report notes open barrels and contamination in hazardous waste storage area. It also notes buried drums in the burn pit berm walls and exposed metal debris in the landfill.	In response to the 2011 AANDC inspection report, it is noted that the secondary containment area south of the main tank farm is for the purpose of lubricant oil storage. In response to the 2012 AANDC inspection report all open barrels were removed from site during the 2012 field season. Any contamination will remain contained within the industrial site and will be monitored for seepage. Also see status of compliance under Part H Item 3.	A program to routinely remove unusable fuels and lubricant to approved off-site hazardous waste disposal facilities was implemented in 2012. Seepage monitoring will continue during 2013 field season and will be ongoing.	Manage hazardous wastes in accordance with Board approved Waste Management Plan submitted March 2012. Legacy contamination issues will be addressed as part of the Final Abandonment and Restoration Plan.	Upon approval of Plans by the Board.
15		The Licensee shall maintain records of all Waste backhauled and confirmation of proper disposal through the use of Waste manifest tracking systems and registration with the Government of Nunavut, Department of Environment.	Compliant.				

		Licence Condition	Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
PART F - CONDITIONS APPLYING TO MODIFICATIONS							
1		The Licensee may, without written consent from the Board, carry out Modifications provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:	NA No modifications have been carried out during the term of the Licence renewal.				
	a	The Licensee has notified the Board in writing of such proposed Modifications at least sixty (60) days prior to beginning the Modifications, that includes the requirements of Part F, Item 3;					
	b	Such modifications do not place the Licensee in contravention of the Licence or the Act;					
	c	Such Modifications are consistent with the NIRB Project Certificate;					
	d	The Board has not, within sixty (60) days following notification of the proposed Modifications informed the Licensee that review of the proposal will require more than sixty (60) days; and					
	e	The Board has not rejected the proposed Modifications.					
2		Modifications, for which all of the conditions referred to in Part F, Item 1 have not been met, may be carried out only with approval of the Board in writing.					
3		Applications for modifications shall contain:					
	a	A description of the facilities and/or works to be constructed;					
	b	The proposed location of the structure(s);					
	c	Identification of any potential impacts to the Receiving Environment;					
	d	A description of any monitoring required, including sampling locations, parameters measured and frequencies of sampling;					
	e	Schedule for construction;					
	f	Drawings of engineered structures stamped by a Professional Engineer; and					
	g	Proposed sediment and erosion control measures.					
4		The Licensee shall provide as-built plans and drawings of the Modifications referred to in this Licence within ninety (90) days of completion of the Modification. These plans and drawings shall be stamped by an Engineer.					

		Licence Condition	Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
PART G - CONDITIONS APPLYING TO CONSTRUCTION							
1		All new final design and construction drawings, submitted as required by Licence 2AMLUP0914, shall be stamped and signed by a Professional Engineer.	NA No facilities have been designed or constructed during the term of the Licence renewal. The only earthworks conducted include the maintenance work recommended by the Geotechnical Engineer in the 2009 inspection report which was undertaken in 2010.				
2		Prior to construction of any dams, dykes or structures intended to contain withhold, divert or retain water or wastes other than as contemplated in the Contingency Plan, the Licensee shall submit to the Board, for approval, final design and construction drawings signed and stamped by an Engineer.					
3		As-built drawings of the dams, dykes or structures shall be stamped by a Geotechnical Engineer and submitted to the Board within ninety (90) days of completion of the structures.					
4		The construction of engineered earthworks shall be supervised and field checked by a qualified Engineer. Construction records shall be maintained and made available at the request of the Board.					
5		The Licensee shall submit a Construction Summary Report to the Board for review, within ninety (90) days following the completion of all new structures designed to contain, withhold, divert or retain Waters or Wastes. The Construction Summary Report shall be prepared by a qualified Engineer(s) in accordance with Schedule G, Item 1.					
6		The Licensee shall use fill material for construction from an approved source, which has been demonstrated not to produce Acid Rock Drainage and to be non-Metal Leaching.	NA No fill required for construction during term of Licence renewal.				
7		The Licensee shall implement sediment and erosion control measures prior to and during Construction, and Operations where necessary, to prevent entry of sediment into Water.					

Licence Condition			Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
8		The Licensee shall inspect daily, all construction activities for signs of erosion.	Compliant. Conditions also addressed in Liquid Waste and Stormwater Management Plan (Care and Maintenance), March 2012 (submitted to the NWB as part of 2009 annual report)				
9		The Licensee shall minimize disturbance to terrain, permafrost and drainage during movement of the Licensee's and its contractor's equipment and personnel around the site during construction activities.					
10		The Licensee shall not store material on the surface of frozen streams or lakes except what is for immediate use.					
11		The Licensee shall locate new equipment storage areas on gravel, sand or other durable land, a distance of at least thirty (30) metres above the ordinary high Water mark of any Water body in order to minimize impacts on surface drainage and Water quality.					
12		The Licensee shall undertake necessary corrective measures to mitigate impacts on surface drainage resulting from the Licensee's activities.					
13		The Licensee shall limit any in-stream activity to low Water periods. In-stream activity is prohibited during fish migration.	NA. No in-stream activities have been conducted during open water				
14		For the purposes of culvert and bridge installations, the Licensee shall not encroach on the natural channel width by the placement of abutments, footings or armoring below the ordinary high Water mark of any water body.	NA. No culverts or bridges have been installed during the term of this Licence renewal.				

		Licence Condition	Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
PART H - CONDITIONS APPLYING TO EMERGENCY RESPONSE AND CONTINGENCY PLANNING							
1		The Licensee shall submit to the Board for approval, no later than thirty (30) days following approval of the Licence by the Minister, an updated "Spill Contingency Plan, Lupin Operations". The Spill Contingency Plan shall be prepared in accordance with Schedule H, Item 1.	Compliant. See updated and revised Spill Contingency Plan dated March 2012, submitted with 2011 annual report. Spill Contingency Plan will be revised as part of 2012 Annual Report to address sub-items (e) and (h)				
	Schedule H, Item 1	The Contingency Plan referred to in Part H, Item 1 shall be a revised version of the Plan "Spill Contingency Plan, Lupin Operations" submitted with the application, prepared following GN-DOE's Spill Contingency Planning and Reporting Regulations, and Contingency Planning and Spill Reporting in Nunavut: a Guide to the New Regulations, and include:					
	a	A site 24 hour per day contact number;					
	b	A description on how to manage large quantities of oil-soaked snow;					
	c	Detailed information on spill response measures under the Training and Exercises section;					
	d	Provide new contact information as submitted by parties during the written hearing process;					
	e	Include Part 2 of the Spill Report form that discusses the instructions for completing and submitting the Report;					
	f	Provide updated, detailed topographical maps showing all facilities and their relationship to surrounding water bodies;					
	g	More clarity on the quantities and locations of Jet A and Jet B fuel on site (currently under the same line item in Table 1, Appendix III;					
	h	information on the proper storage of all hazardous materials including types, volumes and location;					
2		The Licensee shall keep a copy of the Spill Contingency Plan at each site of operation.	Compliant				

Licence Condition			Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
3		The Licensee shall prevent any chemicals, fuel or wastes associated with the undertaking from entering any Water body.	LMI has implemented prevention measures as outlined in its Care and Maintenance Plan, 2012. 2012 AANDC inspection report noted a salt spill in the burn pit as well as other legacy hazards and contamination issues that need to be addressed through a risk assessment.	Salt spill identified during 2012 AANDC inspection was cleaned up. Provide an addendum to Lupin Environmental Site Assessment dated 2006 to address AANDC's request for a risk assessment of legacy hazards and contamination issues. This assessment will prioritize risks to the receiving environment; determine the mechanisms that could cause contamination to leave the site footprint; assess whether or not contamination is present or occurring; and determine mitigation measures to prevent further contamination. Update the Care and Maintenance Plan to include mitigation measures identified in the Environmental Site Assessment.	ESA addendum and updated Care and Maintenance Plan will be submitted as part of 2012 Annual Report by March 31, 2013	(1) Carry out mitigation measures outlined in Care and Maintenance Plan. (2) Identify mitigation measures to be addressed in the Final Abandonment and Restoration Plan	(1) 2013 field season (2) Final Abandonment and Restoration Plan will be submitted in accordance with Part I Item 5.
4		The Licensee shall provide secondary containment for fuel and chemical storage as required by applicable standards and acceptable industry practice.	2012 AANDC inspection report notes that where liners are present, they are exposed, punctured, and generally suspect. Report also notes that satellite tank farm obviously overtopped and released contamination.	In 2012 LMI maintained all secondary containment areas dry and free of debris; disposed of accumulated water; completed inspections; and installed temporary secondary containment at fuel dispensing area. Replacement of active individual day tanks has been initiated and is ongoing. Secondary containment areas are being assessed by Engineer and remedial work plan will be developed.	Remedial Work Plan will be outlined in 2012 Annual Report.	Carry out measures identified in Remedial Work Plan	To commence as recommended by Engineer.

Licence Condition			Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
5		Licensee shall operate the Bulk Fuel Storage Facilities in accordance with all applicable legislation, guidelines and practices, including:	2011 AANDC inspection report notes that the Bulk Fuel Storage Facilities did not appear to be registered. The tanks in the Bulk Fuel Storage Facalities were registered at that time, but no placards were in place to identify them as being so.	In 2011 LMI undertook repairs and maintenance of the Bulk Fuel Storage Facilities to ensure the safety of the fuel system over winter. In 2012 placards identifing the registered tanks were erected. A plan to update the Bulk Fuel Storage Facilities is currently being developed by a third party engineer.	TBD	Update Fuel Containment Management Strategy	To be submitted as part of 2012 Annual Report.
	a	Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products, 2003; CCME;					
	b	National Fire Code, 1995, and					
	c	Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations, SOR/2008-197, June 12, 2008.					
6		The Licensee shall perform, at a minimum, weekly inspections of fuel containment facilities for leaks and settlement and shall keep a written log of inspections to be made available to an Inspector upon request, or as otherwise approved by the Board in writing.	Requirement has been incorporated into Fuel Containment Management Strategy, 2012	Photos and miscellaneous inspection records and findings for 2012 to be consolidated into readily accessible files.	Ongoing	Ongoing implementation of Plans in accordance with NWB approval.	Immediately and as modifed during NWB approval of Plans.
7		The Licensee shall conduct emergency maintenance and servicing on equipment, in designated areas, and shall implement measures to collect motor fluids and other Waste and prevent and contain spills.	Compliant				
		If, during the term of this licence, an unauthorized Discharge of Waste and or Effluent occurs, or if such a discharge is foreseeable, the Licensee shall:	Compliant. Licence requirement is incorporated into Spill Contingency Plan, 2012. As noted in the 2011 annual report, there was an unauthorized discharge of effluent from LUP-14 (Sewage Lakes Disposal Facility) and an unauthorized discharge of from LUP-27 (Bulk Fuel				
	a	Employ as required, the contingency Plan referred to in Part H, Item 1;					
	b	Report the incident immediately via the 24-Hour Spill Reporting Line at (867) 920-8130 and to the Inspector at (867) 975-4295; and					

Licence Condition			Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
8	c	For each spill occurrence, submit a detailed report to the Inspector, no later than thirty (30) days after initially reporting the event, which includes the amount and type of spilled product, the GPS location of the spill, and the measures taken to contain, clean up and restore the spill site.	Storage Facility). These events were reported in the October monthly report to the NWB. All effluent was tested to determine that it met the discharge limits prior to and during discharge, however the Inspector was not provided the analytical results prior to discharge. As noted in July 2012 monthly monitoring report an unauthorized discharge occured from LUP-14 on June 2, 2012. Spill report was submitted with July monthly monitoring report.				

		Licence Condition	Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
PART I - CONDITIONS APPLYING TO ABANDONMENT, RECLAMATION AND CLOSURE PLANNING							
1		The Licensee shall, no later than thirty (30) days following approval of the Licence by the Minister, submit to the Board for approval, an updated Interim Abandonment, Reclamation and Closure Plan, prepared in accordance with Schedule I, Item 1.	Compliant. See updated and revised Interim Abandonment and Restoration Plan dated March 2012, submitted with 2011 annual report. LMI will be submitting another revision of this Plan to the NWB as part of the 2012 annual report to incorporate the following references: Letter from M. Tansey, Kinross, to D. Filiatrault, NWB, and S. Dewar, INAC, Re: Response to Technical Review Comments on Lupin TCA A&R Plan, dated March 31, 2006; Report by I. Holubec, Holubec Consulting Inc, Geotechnical Seepage and Water Balance, Volume I of Seepage and Water Quality for Reclaimed Tailings Containment Area Lupin Operation, dated March 2006; Report by I. Holubec, Holubec Consulting Inc, Water Management After Closure, Volume II of Seepage and Water Quality for Reclaimed				
	Schedule 1, Item 1	The Interim Abandonment, Reclamation and Closure Plan referred to in Part I, Item 1 shall be prepared in accordance with the Mine Site Reclamation Guidelines for the Northwest Territories, 2007 and consistent with the INAC Mine Site Reclamation Policy for Nunavut, 2002. The Plan shall include the following:					
	a	Disposal information for unsold accommodation facilities;					
	b	Disposal of contaminated soils;					
	c	Inspections for fuel/oil spills and inspections of fuel containment facilities;					
	d	Information on the geotechnical requirements, slope and the placement of rip rap along the downstream side of Dam 4;					
	e	Detailed drawings, activities, construction schedules and techniques for the breakwater and causeway; and					

Licence Condition			Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
	f	Justification for not proceeding to full reclamation under Part I, Item 5.	Tailings Containment Area Lupin Operation, dated March 2006; Report by EcoMetrix Incorporated, Geochemistry and Water Quality, Volume III of Seepage and Water Quality for Reclaimed Tailings Containment Area Lupin Operation, dated March 2006; and Correspondence leading up to and following April 2006 Technical Meeting to Discuss Lupin TCA A&R Plan including comments from EC, DFO, GN-DOE, and INAC.				
2		The Licensee shall, no later than thirty (30) days following approval of the Licence by the Minister, submit to the Board for approval, a Care and Maintenance Plan that shall be prepared in accordance with Schedule I, Item 2.	Compliant. See updated and revised Care and Maintenance Plan dated March 2012, submitted with 2011 annual report.				
	Schedule I, Item 2	Care and Maintenance Plan referred to in Part I, Item 2 shall include:					
	a	Water and wastewater management plans including measures to avoid the accumulation of run-off water, wastewater retention and release, and Sewage Disposal Facility operation;					
	b	Inspections for fuels, chemicals, all hazardous materials and spills;					
	c	Details on tailings management and monitoring;					
	d	Details on the continued storage of Petroleum products including Bulk Fuel Storage;					
	e	Details on the plans to be implemented for mitigation of exposed tailings and a schedule, including assessment of alternatives; and					
	f	Justification for not proceeding to full reclamation under Part I, Item 5					

Licence Condition			Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
3		The Licensee shall submit to the Board annually, an updated assessment of the current mine reclamation liability using the most current version of RECLAIM, its equivalent or other method acceptable to the Board.	In 2011, LMI had limited snow-free time during which to access the site and complete the reclamation liability estimate.	Under review	LMI will submit an updated estimate with the 2012 Annual Report to the NWB.	Under review	LMI will submit updated estimates with annual reports as required by Part B Item 2 (m)
4		The Licensee shall notify the Board in writing, at least sixty (60) days prior to any intent to achieve Recognized Closed Mine status.	NA. The site is currently in care and maintenance and an exploration program is currently underway.				
5		The Licensee shall submit to the Board for approval, a Final Abandonment, Reclamation and Closure Plan, at least two (2) years prior to the final abandonment of the mine. The Final Plan shall be prepared in accordance with Schedule I, Item 2.	NA. The site is currently in care and maintenance and an exploration program is currently underway.				
	Schedule 1, Item 3	The Final Abandonment, Reclamation and Closure Plan referred to in Part I, Item 5 shall, in addition to Item 1 of Schedule I, include:					
	a	Incorporation of recommendation made in the report entitled "Closure Cost Estimate and Scoping of Mine Closure Issues, Lupin Mine NWT," (Golder Associates, 1997).					
	b	An outline of methods to contain potential pore water expulsion from the TCA;					
	c	Identification of contaminated soil sites at the mine site;					
	d	A summary of existing data for background levels of metals in the area, and identification of needs for verification of data or reassessment with modern detection limits;					
	e	Soil Quality Remediation Objectives along with CCME Guidelines and the Government of Nunavut Environmental Guideline for Site Remediation;					
	f	Environmental Site Assessment plans in accordance Canadian Standards Association (CSA) criteria;					
	g	An evaluation of the Human Health and Ecological Risk associated with closure options; and					

Licence Condition			Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
	h	Description of reclamation activities outlined in the Interim Abandonment, Reclamation and Closure Plan.					
	i	An implementation schedule for the completion of reclamation; and					
	j	A detailed monitoring program.					
6		The Licensee shall, in addition to Part B, Item 16, review the Plans referred to in this Part as required by changes in operation and/or technology and modify the Plan accordingly. Revisions to the Plan should incorporate design changes and adaptive engineering required and implemented during Operations or Care and Maintenance, and on the basis of actual site conditions and monitoring results over the life of the project.	Compliant				
7		The Licensee shall notify the Board in writing, as soon as is practically possible, of any change in the status of the mine operations. This notice shall include a summary of Plans and a Schedule for anticipated activities related to the Care and Maintenance or the Final Closure of the Mine and associated infrastructure.	Compliant				
8		The Licensee shall notify the Board in writing, at least sixty (60) days prior to recommencement of the mining and milling undertaking on site. This notice shall include a summary of Plans and a Schedule for anticipated activities related to the change in status.	NA. LMI has not recommenced mining and milling operations.				
9		Notwithstanding the time schedule referred to in the Abandonment, Reclamation and Closure Plan, the Licensee shall implement Progressive Reclamation, including progressive covering of the tailings and revegetation, as soon as is realistically possible.	LMI has outlined planned reclamation activities in its Interim Abandonment and Reclamation Plan, March 2012				

		Licence Condition	Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
PART J - CONDITIONS APPLYING TO MONITORING							
1		The Licensee shall carry out the Monitoring Program as per Table 1 of Schedule J.	Generally compliant. Missed monitoring events include (as per annual reports): -2009 LUP-10 daily quantities of treated effluent measured and recorded in cubic meters; -2009 LUP-10 24 ICP-MS on first day of discharge and monthly thereafter; -2009 LUP-10 Static Pass/Fail Bioassay (not required by Inspector in email dated Sept 2, 2009); -2009 LUP-14 cadmuim results; -2011 LUP-14 sample results are from 4th day of discharge, not first day of discharge as required;				
2		The Licensee shall provide the GPS co-ordinates, in degrees, minutes and seconds of latitude and longitude, of all locations where sources of water are utilized for all purposes.	Compliant. Provided in Interim Abandonment and Restoration Plan, March 2012. Sampling Procedure: Tailings Containment Area and Sewage Lakes Disposal Facility , March 2012 will be updated and submitted as part of 2012 annual report to include GPS coordinates of sample stations and map				

Licence Condition			Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
3		The Licensee shall determine the GPS co-ordinates, in degrees, minutes and seconds of latitude and longitude, of all locations where wastes associated with camp operations and drilling operations are deposited.	Compliant. GPS coordinate of waste deposit locations are provided in the Interim Abandonment and Restoration Plan, March 2012. Sampling Procedure: Tailings Containment Area and Sewage Lakes Disposal Facility, March 2012 will be updated and submitted as part of 2012 annual report to include GPS coordinates of sample stations and map. Drilling operation GPS coordinates will be provided in the 2012 annual report for 2BE-LEP1217.				
4		The quantity of ore milled shall be measured in tonnes and recorded monthly. The total volume and the solids/solution ratio of waste discharged to the Tailings Containment Area and underground disposal as paste Backfill shall be recorded monthly.	NA. Ore has not been milled during the term of the Licence renewal.				
5		All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of Standard Methods for the Examination of Water and Wastewater, or by such other methods approved by the Board in writing.	Compliant.				
6		All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.	Compliant				
7		The Licensee shall submit to the Board a revised, Quality Assurance/Quality Control (QA/QC) Plan. The Plan shall be modifed to include up to date sampling methods to all applicable standards, acceptable to an accredited laboratory as required by Part J, Item 5 and Part J, Item 6. The Plan shall include a covering letter from the accredited laboratory confirming acceptance of the Plan for analyses to be performed under this Licence.	Not on file.	LMI has contracted a consultant to aid with the development of the required QA/QC Plan. LMI will obtain a covering letter from its accredited lab confirming acceptance of the Plan.	LMI will submit the required QA/QC Plan and covering letter to the Board as part of the 2012 Annual Report.	Review and update the QA/QC Plan as required	Annually

Licence Condition			Status of Compliance	Short Term Plan for Compliance	Schedule for Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule for Implementation of Long Term Plan for Compliance
8		Additional monitoring requirements may be requested by the Inspector.	Compliant. On September 2, 2009 the AANDC Inspector requested additional sampling for TCA Pond 2 (LUP-10). During the AANDC inspection of July 5 – 6, 2012, the inspector requested analysis of soil immediately downslope of the main tank farm hazardous waste storage area.				
9		The Licensee shall include in the Annual Report required under Part B, Item 2, all data, monitoring results and information required by this Part and the associated Schedule.	Compliant				
10		The NWB may modify the Monitoring Program without a public hearing. Requests for changes to the Monitoring Program should be forwarded to the NWB in writing, and should include the justification and appropriate evidence to support the change.	NA No modifications to the monitoring program have been requested during the term of the Licence renewal.				
11		The Licensee is responsible for the monitoring during Care and Maintenance as set out in this Part. In the event the Licensee fails to carry out monitoring requirements set out in this Part that are essential to ensuring the integrity of significant site components, including fuel storage, general site deterioration, tailings containment, and site water and sewage management, Canada shall carry out such monitoring during periods of highest risk to fresh water.	See Compliance Status for Part J Item 1				

AANDC, Nunavut District Office
Box 100
Iqaluit, NU, X0A 0H0

November 28, 2012

Patrick Downey, President
c/o Karyn Lewis, EA
Lupin Mines Inc. (Elgin Mining Inc.)
201-750 West Pender St.
Vancouver, BC V6C 2T7
Email: klewis@elginmining.com

RE: Inspection of 2AM-LUP0914 and 2BE-LEP1217 July 5 and 6, 2012

Please find attached the report on the Water License Inspection conducted at the Lupin Mine site and associated exploration activities on July 5 and 6, 2012. Included at the end of the report is a summary of observations made during the inspection with respect to issues of non-compliance or non-conformity with the issued Water License or the Nunavut Water and Nunavut Surface Rights Tribunals Act, and the actions required of LMI as a result.

The role of Aboriginal Affairs and Northern Development in issues related to the use of water or deposit of waste in Nunavut is one of compliance monitoring and enforcement. AANDC's preferred option is to work with clients to address instances of non-compliance with their authorizations or the Act and risks to the environment.

Should you require more information or clarification on any aspect of the enclosed report please contact the undersigned at the coordinates listed below. I look forward to continuing to work with you and your staff. If you have any questions please do not hesitate to contact our office here in Iqaluit.

Sincerely,

Eva Paul
Water Resources Officer
Aboriginal Affairs and Northern Development Canada
Nunavut Regional Office
Building 918, PO Box 100
Iqaluit, NU X0A 0H0

Phone | Tél. : 867-975-4548
Cell | Mobile: 867-222-6490
Fax | Téléc. : 867-979-6445
Eva.Paul@aandc-aadnc.gc.ca

Attachments:

Cc: Phyllis Beaulieu – Manager licensing – Nunavut Water Board
Dave Vokey – Interim Site Manager

License #: **2AM-LUP0914**

Inspector: **Eva Paul**

Inspection Date: **July 5 and 6, 2012**

CIDMS # **606406**

Client	Lupin Mines Inc. (LMI), a subsidiary of Elgin Mining Inc.		
Mailing Address	201-750 West Pender St. Vancouver, BC V6C 2T7		
Inspection site location	Lupin Mine and Lupin Exploration Project		
Contact name	Patrick Downey	Title	President
Last inspection date	July 9, 2011		
Region	Kitikmeot		

AANDC, Nunavut District Office
Box 100
Iqaluit, NU, X0A 0H0

November 28, 2012

Patrick Downey, President
c/o Karyn Lewis, EA
Lupin Mines Inc. (Elgin Mining Inc.)
201-750 West Pender St.
Vancouver, BC V6C 2T7

RE: Inspection of 2AM-LUP0914 and 2BE-LEP1217 July 5 and 6, 2012

The Lupin Mine site is located generally at Latitude 65°46'N Longitude 111°14'W in the Kitikmeot Region of Nunavut. LMI holds a type 'A' mining and milling water licence, 2AM-LUP0914 and a type 'B' exploration licence 2BE-LEP1217. This site is currently in Care and Maintenance, with only a portion of the camp re-opened to support exploration activities under the licence 2BE-LEP1217. Lupin was purchased by Elgin Mining Inc. from MMG in 2011.

There are several AANDC lands authorizations associated with the project:

Leases: 76E/11-3-4 (Waterlot)
76E/14-1-9(2) (Mine site)
76E/14-2-10 (Airport)
76E/14-10-3 (Navigational Aid Site)
76E/11-2-4 (Quarry)
LUP: N2011C0026

On July 5 and 6, 2012 a compliance inspection was carried out at the Lupin site. AANDC Inspectors Eva Paul and Melissa Joy were accompanied by Dave Vokey, Interim Site Manager. An Inspection Report Form was left on-site following the inspection and signed by Arlene Laudrum of SRK consulting in Dave's absence. This form outlined the following compliance issues to be addressed:

- Legacy hydrocarbon contamination.
- Legacy waste.
- Tailings management.
- Secondary containment of fuel tanks and use of drip trays for all fuel transfer activities.
- Drill cuttings management.
- Salt spill in the burn pit.
- Open/exposed hazardous waste.
- Risk assessment to identify highest risks to the outside/receiving environment.
- Delineation of contamination (particularly outside the site footprint).
- Compliance Plan.
- Submission of geotechnical inspection to the Inspector.

On July 30, LMI provided an update to address several of the items identified in the inspection:

- Secondary containment and drip trays were implemented.
- Drill cuttings would be managed properly.
- Salt spill was cleaned up.
- Open barrels of hazardous waste were moved to cold storage.
- Results of the July 24th soil sample would be forwarded to the Inspector.
- A risk assessment would be carried out by September 15th.
- A draft compliance plan would be submitted by October 31st.
- Hydrocarbon contamination assessment to be conducted in 2013 and a remediation plan developed.

This report includes a detailed administrative review, a review of all notes and photographs taken during the July inspection, and reflects those compliance issues which have been addressed and reported on since the inspection.

Part A: Scope, Definitions and Enforcement

At the time of the inspection and of this writing, the Licensee holds current authorizations (Water Licences).

Part B: General Conditions

Annual reports have been submitted as required, and can be found on the NWB FTP site.

In reviewing the 2011 Annual Report, it was noted that water usage for drilling activities was reported for 2011 under 2AM-LUP0914 as LMI's exploration licence was not issued until 2012. All water use and waste disposal must be fully described. If the water was drawn from a location other than the potable intake (LUP-01), GPS locations must be given where the water was drawn for drilling. Please show water used for camp and water used for drilling purposes separately. The 2011 Annual Report is to be amended to reflect this activity and resubmitted by March 31, 2013.

Part C: Conditions Applying to Security (2AM-LUP0914)

The Inspector is unaware of non-compliance with respect to the security requirements.

Part D: (2AM-LUP0914) / Part C: (2BE-LEP1217) Conditions Applying to Water Use

Early in 2012, it was determined that water usage for drilling under the licence 2BE-LEP1217 was greatly exceeding the licensed amount of 45 m^3/day, putting LMI in non-compliance. LMI applied for and received an amendment to the licence on June 11 2012, increasing the licensed amount to 240 m^3/day. Water can be drawn from Contwoyto Lake or water sources proximal to the drilling activity.

The water intake and water treatment facility at Contwoyto Lake were found to be satisfactory at the time of the inspection. A water sample was taken from shore beside the water intake line for background information.

Part E: (2AM-LUP0914) / Part D: (2BE-LEP1217) Conditions Applying to Waste Disposal

A waste management plan was submitted with the 2AM-LUP0914 2011 Annual Report as part of the Care and Maintenance Plan, however, these plans were circulated for information and not for review, and as such a full review was not undertaken. It is unclear whether these plans have been approved. Please follow up with the Board regarding this matter. The following comments shall be incorporated into the next revision, by March 31, 2013:

- Incineration logs: should be part of the plan and should be updated to include the type of waste, the quantity, and the person responsible.
- Oil filters are not to be incinerated. 2BE-LEP1217 Part D Item 3 specifies "acceptable food waste, paper waste, and untreated wood products". Other products are not acceptable.
- Landfill has not (to the Inspector's understanding) been approved, and therefore use of the landfill or stockpiling of materials for later landfilling is contrary to the licence. The 'B' licence explicitly prohibits landfilling of waste.
- Please provide a detailed description of how materials contaminated with petroleum products are to be remediated on-site. There is currently no plan or authorization for a landfarm; although LMI could apply for an amendment to include this activity. Until that time, they should be removed from site as hazardous waste.
- Please clarify which remediation standards item 7.2 follows and how this activity is supported in the licence.
- Please clarify which remediation standards item 7.3 follows and how this activity is supported in the licence.
- Batteries shall be backhauled to an approved hazardous waste disposal facility.
- LMI must receive from their hazardous waste disposal facility a receipt for the final disposal of hazardous wastes.

While the incinerator is not currently included under the 'A' licence, the 'B' licence stipulates that appropriate waste be disposed of by incineration. At the time of the inspection, camp waste was burned in an incinerator, and logs maintained. Materials not approved for burning in an incinerator (metals) were noted in the ashes. Better waste sorting prior to incineration is recommended. The log should be updated to include the information described above, to improve accountability.

Tailings management is an ongoing issue as identified in the 2007 and 2011 inspection reports. While the 2011 Annual Report mentions that an implementation plan was prepared with respect to the recommendations from the geotechnical inspection and submitted to the Board, this plan is not in evidence on the FTP site. The Inspector requests a copy of the 2011 implementation plan without delay. Works undertaken to address these recommendations should be documented in the 2012 Annual Report.

During the inspection, erosion of Dam 6 and windblown material outside of the Tailings Containment Area (TCA) were noted, as well as thinning or absent tailings cover in Cell 3. Soil samples taken during the inspection indicate elevated levels of arsenic in the soil blown over Dam 6. The issue of tailings outside of the TCA is technically a spill, as it is an unauthorized release of a contaminant to the environment. As per the Spill Contingency Plan: "any tailings solids that have escaped from the containment areas onto surrounding tundra shall be removed and disposed of at the tailings containment area…". Measures to prevent the migration of tailings outside of TCA are to be implemented.

An authorized discharge to lower the water levels of Pond 2 was carried out following the inspection.

Mr. Vokey mentioned that Lower Sewage Lake had overtopped the dam during freshet this year. An authorized discharge from the lake was happening at the time of the inspection, to lower the levels. A water sample was

taken during the inspection at LUP-14. These results were compliant with the discharge criteria outlined in the licence.

It's evident that effort was put into collecting hazardous waste in one area, and identifying and labelling the waste. However, the hazardous waste storage area was noted to contain open and leaking drums, and the area is heavily contaminated. Hazardous waste should be stored in closed containers so as not to increase the volume of contaminated material or cause overflowing. Following the inspection, the Inspector was informed that the open containers were removed and placed within covered storage to await backhaul.

Parts F&G: (2AM-LUP0914) / Part G: (2BE-LEP1217) Conditions Applying to Modifications / Construction

No modifications or construction were noted at the time of the inspection. The licensee is to ensure that all as-built plans and drawings of modifications or construction, *including works undertaken on the TCA as a result of geotechnical inspections*, are filed with the Board without delay. These are to be copied also to the Inspector.

Part H: Conditions Applying to Emergency Response and Contingency Planning

It is unclear from the NWB FTP site whether the Spill Contingency Plan submitted with the 2011 Annual Report has been approved by the Board. The Plan appears to be comprehensive but will require that contact numbers be updated (LMI as well as Regulators).

It was noted during the inspection that most containment berms have some degree of contamination, some severe. It was determined that the berm of the Satellite Tank Farm had either leaked, or filled and overtopped since the last inspection, leaving evidence of contamination around the berm. LMI filed a Spill Report at the request of the Inspector (Spill #12-306). To prevent this from recurring, water collecting within all berms must be routinely monitored, and, due to the legacy contamination of the berms, must be tested and/or treated prior to release. The discharge must conform to the parameters established in Part E item 9 (2AM-LUP0914).

As a result of the legacy hazards and contamination visible throughout the site (hydrocarbon, tailings etc.), LMI was directed to conduct a risk assessment to prioritize risks to the receiving environment, delineate contamination, and determine mitigation measures to prevent further contamination. This was to be completed by September 15th. This assessment has not yet been provided to the Inspector.

Berm liners at the Satellite Tank Farm and at the Oil tanks are exposed or ripped. LMI committed to conduct an engineer's assessment of secondary containment areas, and to submit a work plan by March 31, 2013.

During the inspection of the drill, the fuel tank was found to be placed on uneven ground, with the fill end down-slope, and signs of overfilling/leaking were present. The tank was placed in secondary containment within a sling basket following the inspection. It was noted that LMI/Foraco was already employing sling baskets as containment for drill salts and hazardous materials.

LMI was informed during the inspection that liners or drip trays are required at all fuel transfer areas. Procedures were adjusted, and LMI provided a report following the inspection that showed acceptable secondary containment subsequently in use at the drill site.

As discussed above, all unauthorized discharges are considered spills, and LMI is expected to respond according to the approved Spill Contingency Plan.

Part I: Conditions Applying to Abandonment and Reclamation and Closure Planning

The site remains in Care and Maintenance status, with part of the site operational for the exploration program.

Updates to the Abandonment and Reclamation Plan, as well as the Care and Maintenance Plan were submitted with the 2011 Annual Report. No update to the RECLAIM estimate was submitted, but LMI has committed to submitting the revised estimate with the 2012 Annual Report.

2AM-LUP0914 Part I Item 9 *requires* that the licensee implement progressive covering of the TCA while in Care and Maintenance. No reclamation activities were conducted in 2011, as per the 2011 Annual Report. This is understandable, as LMI purchased the site in 2011. The March 2012 **Care and Maintenance Plan (CMP)**, submitted with the 2011 Annual Report, under sec. 4.3, generally discusses the completion of the tailings cover as was committed to by MMG in 2010. However, the **Interim AR Plan** submitted as part of that plan does not give any indication of a timeline for this activity. The **Annual Report** states the following: "LMI is currently investigating options to restart mine operations. Until such time as this work is advanced, the property will remain under care and maintenance; formal reclamation works will not be initiated." Neither the CMP nor the Interim AR Plan adequately address progressive reclamation of the tailings, which is a requirement of the licence under Part I Item 9 and Schedule I item 2(e). These plans shall be updated to include the required details and timeline, and submitted to the Board, by March 31, 2013.

Part J: Conditions Applying to Monitoring

2AM-LUP0914 Part J Item 7 required that a revised QA/QC plan be submitted to the Board. A reminder was issued to MMG on October 7, 2010. The plan was not submitted under MMG ownership, however, LMI has committed to submitting this plan with the 2012 Annual Report.

Part E: (2BE-LEP1217) Conditions for Camps, Access Infrastructures and Operations

No non-compliances were noted under this Part.

Part F: (2BE-LEP1217) Conditions Applying to Drilling Operations

At the time of the inspection, drill wastes were pooling under the drill, and water discharged to the tundra an uncontrolled manner toward a wetland. It is also evident from the photos that a nearby hole was treated in the same manner: the cuttings were permitted to pool under the drill. This is an unacceptable practice as the drilling activity combined with the pooling of saline water poses a risk to permafrost integrity (subsidence of the permafrost and slumping). LMI was directed at the time to control drill cuttings to a sump or natural depression as per Item 2 under this part. LMI provided a report following the inspection, indicating that cuttings would be managed as per licence requirements.

General Comments:

The risk assessment remains outstanding. LMI did not complete the risk assessment by the agreed-upon date, and has proposed to submit it March 31, 2013 with the Annual Report. As this document was intended to inform the final Compliance Plan, due December 31, 2012, it cannot come after.

LMI submitted the draft Compliance Plan on October 31st, as required. In a telephone call on November 28, 2012, this draft Plan was discussed with Mr. Vokey. Mr. Vokey is to update the Inspector on the progress of the risk assessment, and then a revised submission date will be agreed upon for the two documents.

Non-Compliance:
Issues where there is a known or suspected violation of a requirement of the Water license or Act:

2AM-LUP0914
Part E (6)(e). Failure to immediately address erosion of the TCA.
Part E (6)(e). Failure to permanently contain tailings within the TCA.

2BE-LEP1217
Part D (3). Burning of unacceptable materials in an incinerator.
Part F (2). Failure to direct drill waste to a sump.

Summary of Action Required:

- A copy of the 'implementation plan' developed from the geotechnical inspection is to be submitted to the Inspector immediately.
- Submit risk assessment to Inspector.
- The 2011 Annual Report is to be amended to reflect 2011 drilling activity and resubmitted by March 31, 2013.
- Update the Care and Maintenance Plan, Waste Management Plan, and Interim Abandonment and Reclamation Plan to reflect the Inspector's comments by March 31, 2013.
- Determine why Board has not approved 2012 plans.
- Prevent windblown migration of tailings from TCA; conduct progressive reclamation of the TCA.
- As-built plans and drawings of modifications or construction, including works undertaken on the TCA are to be filed with the Board and copied to the Inspector.
- Engineer's assessment of secondary containment areas, and the submission of a work plan by March 31, 2013.
- QA/QC plan submitted to the Board by March 31, 2012.

Failure to undertake the actions required as described in this inspection report, and to the satisfaction of the Inspector, may result in enforcement action(s) being undertaken pursuant to the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*.

Eva Paul
Inspector's Name

Inspector's Signature

Cc: Phyllis Beaulieu – Manager of Licensing – Nunavut Water Board
Dave Vokey – Interim Site Manager

Lupin Mines Incorporated

(a subsidiary of Elgin Mining Inc.)

December 27, 2012

Eva Paul
Water Resources Officer
Aboriginal Affairs and Northern Development Canada
Nunavut Regional Office
Building 918, PO Box 100
Iqaluit, NU X0A 0H0
Via email: eva.paul@aandc.gc.ca

Subject: **Response to AANDC Inspection Report for Water Licences 2AM-LUP0914 and 2BE-LEP1217, dated November 28, 2012**

Dear Ms. Paul

On November 28, 2012, Lupin Mines Incorporated (LMI) received your report for the Water License Inspection conducted at the Lupin Mine site and associated exploration activities on July 5 and 6, 2012. LMI takes this opportunity to respond to the "Summary of Actions Required" as listed at the end of your report to keep Aboriginal Affairs and Northern Development Canada (AANDC) informed of LMI's ongoing efforts to achieve compliance with its water licences.

1. **A copy of the 'implementation plan' developed from the geotechnical inspection is to be submitted to the Inspector immediately.**

   The "General Recommendations" from the 2012 Geotechnical Report (Section 4.2) were addressed in LMI's Plan for Compliance, dated October 2012 (Part E Item 6 (a) – (g)) including implementation schedule as follows:

Table 1: Geotechnical Implementation Plan

Part E Item 6 **The Tailings Containment Area shall be constructed, operated and maintained to engineering standards such that:**	**Status of Compliance**	**Short Term Plan for Compliance**	**Schedule of Implementation of Short Term Plan for Compliance**	**Long Term Plan for Compliance**	**Schedule of Implementation of Long Term Plan for Compliance**
(a) A freeboard limit of 1.0 metre shall be maintained at all times or as recommended by a Geotechnical Engineer and as approved by the Board in writing;	2011 AANDC inspection report noted high water levels at Dam J and insufficient freeboard. Inspector required Elgin to undertake such measures as are required to address high water levels at Dam J within sixty (60) days of receipt of the inspection report. 2012 AANDC inspection report noted freeboard as "Acceptable". 2009 to 2012 Geotechnical Inspection reports note freeboards greater than 1 m on all perimeter dams. 2012 Geotechnical Inspection report notes freeboard less than 1 m on some internal dams.	Work carried out in 2012 to address condition included: Treating and discharging water during and since the 2012 site inspections. Pond 1 and 2 water levels have been reduced.	Completed	Continue to monitor freeboard and treat and discharge water as required.	Monitoring to continue on an on-going bases. Treatment and discharge of water as needed.
(b) Seepage from the Tailings Containment Area is minimized;	2011 and 2012 AANDC Inspection reports did not note any seepages. 2009 Annual Geotechnical Inspection of Perimeter Dams noted seepage at toe of Dam 4. 2010 Annual Geotechnical	Measures to address seepage issues noted along Dam 4 in 2009 were carried out in 2010. In 2011 it was observed that erosion gullies and loose fill had been placed between the dam and coffer dam for seepage control at Dam 4.	Completed	Dam 2: Surface maintenance. Monitoring regularly to pump any collected seepage back into Pond 2. Dam 6: Monitor regularly for potential seepage.	Monitoring to commence immediately and continue on an on-going basis. Surface maintenance and repairs to continue during 2013 field season.

Part E Item 6 The Tailings Containment Area shall be constructed, operated and maintained to engineering standards such that:	Status of Compliance	Short Term Plan for Compliance	Schedule of Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule of Implementation of Long Term Plan for Compliance
	Inspection of Perimeter Dams noted small seepage zone at Dam 2. 2011 Annual Geotechnical Inspection of Perimeter Dams noted seepage at Dam 2 and possible seepage at Dam 6. No seepage from the TCA was observed during the 2012 Annual Geotechnical Inspection.	Measures carried out in 2012 to address seepage issues at Dam 2 included establishment of coffer dam to collect seepage.		All Dams: Regular monitoring	
(c) Any Seepage that occurs is collected and returned immediately to the Tailings Containment Area;	2011 AANDC inspection report notes evidence of standing/ponded water. 2009 geotechnical inspection report recommended returning seepage from Dam 4 back to TCA. 2010 and 2011 geotechnical inspection reports both recommended returning seepage from Dam 2 back to TCA upon confirmation sampling.	Measures carried out in 2012 included placement of a coffer dam at the toe of Dam 2 to collect the seepage to be pumped back into Pond 2 when it is pooled.	Completed	Dam 2: Monitor regularly to pump the collected seepage back into Pond 2. All Dams: Monitor regularly	Monitoring to commence immediately and continue on an on-going basis.
(d) Erosion of constructed facilities is addressed immediately;	2011 AANDC inspection report notes erosion and sloughing of the sides of Dam J. 2012 AANDC inspection report notes erosion of road at Dam 6.	Measures carried out in 2012 included: Dam 3: Breach repaired Dam M: Avoidance of vehicle traffic on eroded section and	Completed	(1) Surface maintenance, repair, erosion protection, and regular monitoring as needed on all dams.	(1) Maintenance and repair to commence in 2013 field season. Monitoring to commence immediately and continue on an ongoing

Part E Item 6 The Tailings Containment Area shall be constructed, operated and maintained to engineering standards such that:	Status of Compliance	Short Term Plan for Compliance	Schedule of Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule of Implementation of Long Term Plan for Compliance
	2009 to 2011 geotechnical inspection reports note minor erosion issues, worsening along downstream slopes in 2010. 2012 geotechnical inspection report notes minor erosion issues with more serious erosion at Dam 1A. A breach in "storm ditch" constructed on crest of Dam 3 was also noted. Internal dams noted in good condition with the exception of Dams M and L.	monitoring regularly to determine if cracking is progressing.		(2) Detailed mitigation to address tension crack failure in Dam M including a monitoring program to identify the rate of movement and time of year. Depending on monitoring results, construction of a buttress from compacted well graded esker material. (3) Assessment of geochemical consequences of Dam L and M failures as part of risk assessment requested by AANDC during 2012 inspection. See compliance status of Part H Item 3.	basis. (2) Construction of the buttress for Dam M in 2013. (3) Assessment has been initiated. To be finalized in 2013.
(e) The solids fraction of the mill Tailings shall be permanently contained within the Tailings Containment Area or underground as Backfill;	2011 AANDC inspection report noted that sections within the tailings area had low water levels and approx. 5-10 hectares of exposed tailings. Inspector required LMI to undertake such measures as are required to address the exposed tailings in the pond southeast of Dam J (cell 3) within sixty (60) days of receipt of the inspection form.	Geochemical and geotechnical assessments have been initiated to address operational issues associated with the TCA including tailings cover. Water balance assessment to be initiated as well. Windblown tailings will be addressed by the risk assessment requested by the AANDC inspector in its 2012	Results of geochemical, geotechnical and water balance assessments will be available in 2013.	Based on the results of the geochemical, geotechnical and water balance assessments update the Interim Abandonment and Restoration Plan to minimize risks and determine future operational plans to reactivate the TCA should a decision be made to take the mine off care	2014

Part E Item 6 The Tailings Containment Area shall be constructed, operated and maintained to engineering standards such that:	Status of Compliance	Short Term Plan for Compliance	Schedule of Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule of Implementation of Long Term Plan for Compliance
	2012 AANDC inspection report noted thin to absent tailings cover as well as windblown tailings at Dam 6 (cell 3). Samples from the toe of Dam 6 indicate elevated concentrations of arsenic. Annual Geotechnical Inspections have not addressed tailings cover.	inspection report. See compliance status of Part H Item 3 for more details.		and maintenance and into production.	
(f) Weekly inspections of the dam(s), Tailings line(s), and catchment basin(s) shall be carried out and records of these inspections shall be kept for review upon the request of an Inspector, or as otherwise approved by the Board. More frequent inspections shall be performed at the request of an Inspector; and	With respect to the required weekly inspections, LMI has not carried out formal inspections, however when water is transferred from one area to another, a general observation is made to determine any anomalies (e.g. crew working at the tailings pond will conduct a general assessment of conditions along the dams as the water level is being lowered). LMI has not carried out inspections on the catchment basins. The tailings line is not in use during care and maintenance and therefore has not been inspected. Geotechnical Inspection report recommends the following	Request Board approval to revise inspection schedule as recommended in annual Geotechnical Inspection reports. Photos and miscellaneous inspection records and findings for 2012 to be consolidated	As per NWB review process	Implement reduced frequency of inspection. Update Care and Maintenance Plan to include revised inspection schedule and record keeping	Implement revised inspection schedule upon NWB approval. Provide updated Care and Maintenance Plan as part of 2012 Annual Report

Part E Item 6 The Tailings Containment Area shall be constructed, operated and maintained to engineering standards such that:	Status of Compliance	Short Term Plan for Compliance	Schedule of Implementation of Short Term Plan for Compliance	Long Term Plan for Compliance	Schedule of Implementation of Long Term Plan for Compliance
	revisions to the inspection schedule: · May to June – weekly · July to October – every two weeks.				
(g) An inspection of the Tailings Containment Area shall be carried out annually during ice free, open water conditions by a Geotechnical Engineer. The Engineer's report shall be submitted to the Board within sixty (60) days following the inspection, and shall include a covering letter from the Licensee outlining an implementation plan to respond to the Engineer's recommendations.	Compliant. Annual Geotechnical inspection reports and cover letters were submitted for 2009, 2010 and 2011 of the TCA perimeter dams.				

2. Submit risk assessment to Inspector.

Following the July 2012 Inspection, SRK Consultants, on behalf of LMI, contacted AANDC for clarification regarding AANDC's request for a risk assessment by September 15, 2012. On August 24, 2012, AANDC clarified via email its expectation that the assessment go beyond that of a paper exercise to include actual sampling and verification of any areas where contamination may be leaving the footprint of the mine site.

To adequately satisfy AANDC's request for a risk assessment of legacy hazards and contamination issues, LMI agreed to provide an addendum to the Lupin Environmental Site Assessment (ESA) dated 2006 as noted in its Plan for Compliance, dated October 2012 (Part H, Item 3). This assessment will prioritize risks to the receiving environment; determine the mechanisms that could cause contamination to leave the site footprint; assess whether or not contamination is present or occurring; and determine mitigation measures to prevent further contamination.

Due to the amount of work involved to satisfy the risk assessment requirement it was not logistically possible to complete it by September 15, 2012 or in advance of the October 31, 2012 Plan for Compliance deadline to inform the Plan for Compliance. As such, LMI focussed its immediate attention on timely completion of the requested Plan for Compliance and agreed to submit the ESA addendum as part of the 2012 Annual Report by March 31, 2013. LMI has contracted this work to its consultants who are actively working towards the March 31, 2013 submission date.

In addition, LMI will update its Care and Maintenance Plan to include mitigation measures identified in the ESA, also for submission as part of the 2012 Annual Report.

In 2013, LMI will carry out mitigation measures outlined in the updated Care and Maintenance Plan and identify mitigation measures to be addressed in the Final Abandonment and Restoration Plan to be submitted to the Board in accordance with Part I Item 5.

3. The 2011 Annual Report is to be amended to reflect 2011 drilling activity and resubmitted by March 31, 2013.

LMI will amend its 2011 Annual Report for water licence 2AM-LUP0914 to report water used for camp and drilling purposes separately and will resubmit the amended 2011 Annual Report as part of the 2012 Annual Report by March 31, 2013.

4. Update the Care and Maintenance Plan, Waste Management Plan, and Interim Abandonment and Reclamation Plan to reflect the Inspector's comments by March 31, 2013.

LMI will update its Spill Contingency Plan, Fuel Management Plan, Care and Maintenance Plan, Waste Management Plan, and Interim Abandonment and Restoration Plan as outlined in its Plan for Compliance, dated October 2012 and to reflect the Inspector's comments, by March 31, 2013.

5. **Determine why Board has not approved 2012 plans.**

As noted in its Plan for Compliance, dated October 2012 (Part B, Items 12-14), LMI submitted the following plans to the Board for approval with its 2011 Annual Report: Spill Contingency Plan; Fuel Management Plan; Interim Abandonment and Restoration Plan; and Care and Maintenance Plan. Plan approvals are currently subject to the Board's review process. LMI contacted the Board on December 20, 2012 requesting an update regarding the status of the Plan approvals, and are awaiting their response. As soon as there is information available, we will forward it on to AANDC.

6. **Prevent windblown migration of tailings from TCA; conduct progressive reclamation of the TCA.**

As noted in the Plan for Compliance, dated October 2012 (Part E, Item 6 (e)) geochemical, geotechnical, and water balance assessments have been initiated to address windblown migration of tailings from the TCA. Results of the geochemical, geotechnical and water balance assessments will be available in 2013 and based on the results of the assessments LMI will update the Interim Abandonment and Restoration Plan in 2014 to minimize risks and determine options for reactivation of the TCA should a decision be made to take the mine off care and maintenance and into production.

The issue will be further addressed by the risk assessment discussed in item 2 above. Various options are being considered by LMI to manage tailings from the TCA such as snow fencing, berms, and encrusting agents. LMI will conduct a pros and cons assessment of such options as part of its risk assessment.

7. **As-built plans and drawings of modifications or construction, including works undertaken on the TCA are to be filed with the Board and copied to the Inspector.**

LMI will ensure that any as-built plans and drawings of any works undertaken on the TCA are filed with the Board and copied also to the Inspector.

8. **Engineer's assessment of secondary containment areas, and the submission of a work plan by March 31, 2013.**

As noted in its Plan for Compliance, dated October 2012 (Part H, Item 4) LMI has contracted an Engineering Assessment of the secondary containment areas including the development of a Remedial Work Plan. The Remedial Work Plan will be outlined in the 2012 Annual Report to be

submitted by March 31, 2013. Remedial measures identified in the Work Plan will be carried out as recommended by the Engineer.

9. QA/QC plan submitted to the Board by March 31, 2012.

As noted in its Plan for Compliance, dated October 2012 (Part J, Item 7) LMI has contracted a consultant to aid with the development of the required QA/QC Plan. LMI will obtain a covering letter from its accredited laboratory confirming acceptance of the Plan and will submit the required QA/QC Plan and covering letter to the Board as part of the 2012 Annual Report by March 31, 2013.

LMI trusts that you will find this response and associated plan for achieving and maintaining compliance acceptable. If you have any questions please contact Dave Vokey at: (778) 372-3272 or,david.vokey@elginmining.com

Sincerely,

Lupin Mines Incorporated

Wayne Osborne
Project Manager

Cc: J. Currie, P. Eng
D. Vokey

Lupin Mine Site
2012 Geotechnical Inspection Follow-Up Risk Assessment and Water Quality Review

Prepared for

Lupin Mines Incorporated

Prepared by

SRK Consulting (Canada) Inc.
1CL008.000
April 2013

Lupin Mine Site
2012 Geotechnical Inspection Follow-Up Risk Assessment and Water Quality Review

April 2013

Prepared for

Lupin Mines Incorporated
201 – 750 West Pender Street
Vancouver, BC V6C 2T8

Tel: +1 604 682 3366
Web: www.elginmining.com

Prepared by

SRK Consulting (Canada) Inc.
2200–1066 West Hastings Street
Vancouver, BC V6E 3X2
Canada

Tel: +1 604 681 4196
Web: www.srk.com

Project No: 1CL008.000

File Name: 1CL008.000_2012 Annual Geotechnical Inspection Follow-Up Risk Assessment and Water Quality Review_20130412_JC_AT_AL.docx

srk consulting

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1 Introduction

Nunavut Water Board Licence 2AM-LUP0914, issued February 25, 2009, as amended May 25, 2009, (the Water Licence) for care and maintenance at the Lupin Gold Mine site (the site) authorizes Lupin Mines Incorporated, a wholly owned indirect subsidiary of Elgin Mine Inc. to use Water and dispose of waste associated with Mining and Milling undertakings, including the following, and subject to conditions specified in the Water Licence:

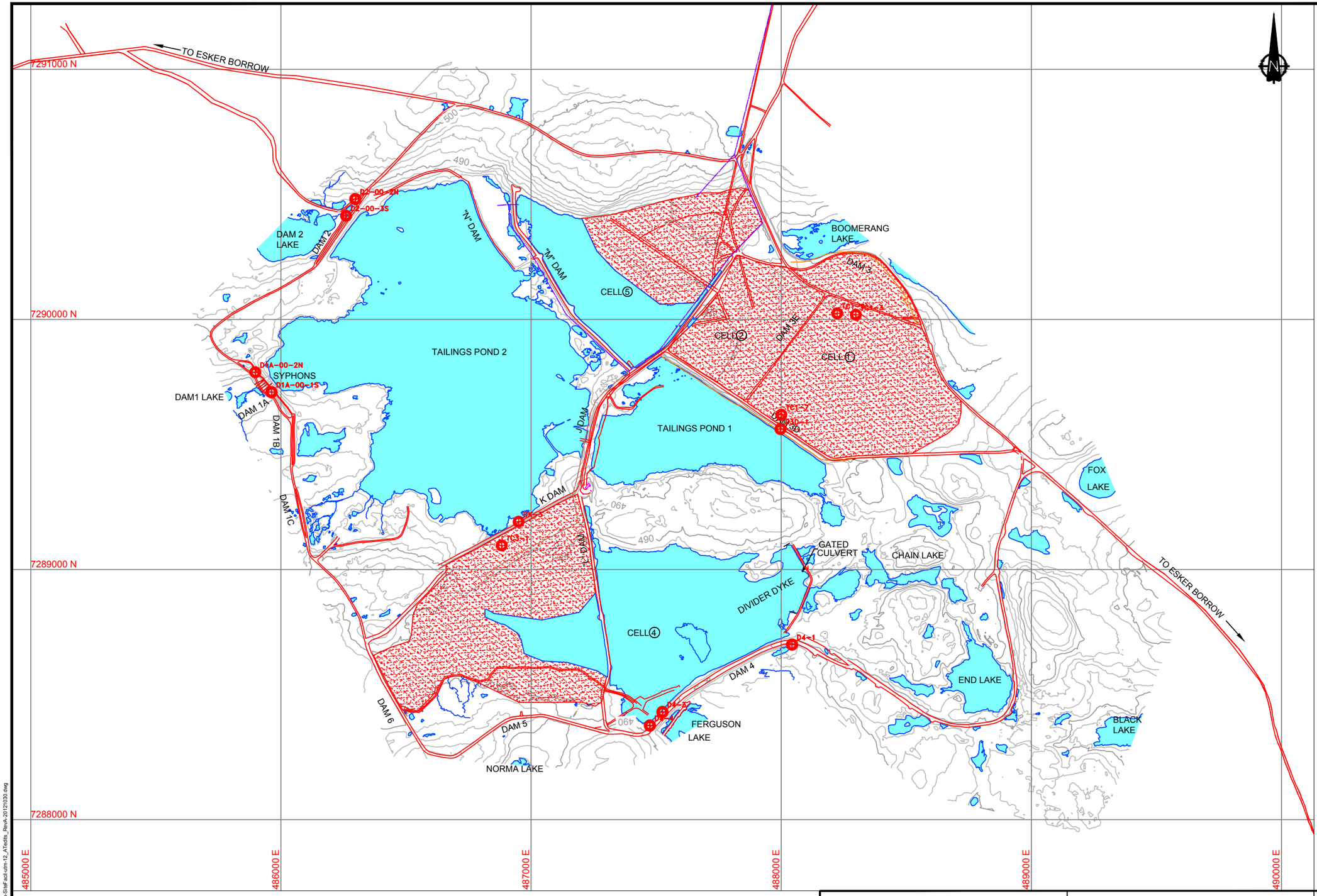
- Discharge of effluent from the Tailings Containment Area (TCA),
- Emergency response and contingency planning,
- Progressive abandonment and reclamation of mine facilities,
- Care and maintenance of facilities,
- Geotechnical and water quality monitoring program. and
- Operations of site infrastructure including the TCA.

As part of the Water Licence requirements, an annual geotechnical inspection is required on the TCA and any seepage from the TCA. The Water Licence stipulates that erosion of constructed facilities be addressed immediately.

Geotechnical inspections were completed from September 12 to 14, 2012, and it was observed that the TCA retaining dams were generally in good condition, with the exception of two interior dams – L Dam and M Dam.

A substantial internal erosion breach was observed at the south end of L Dam. The erosion was likely due to raised water levels in Cell 3 during freshet that breached the lowest point in L Dam and discharged to Cell 4. The consequences, in terms of water quality, of uncontrolled drainage flowing from Cell 3 to Cell 4 are reviewed in this report, assuming the integrity of L Dam remains intact. The location of the dams and cells are illustrated on Figure 1.

A significant series of tension cracks were observed on M Dam, indicating a failure in portion of the dam which could lead a breach in the Dam. While a system to monitor the cracks was recommended for M Dam in the short term, the plans for the construction of a buttress in the early spring of 2013, preferably before freshet, was recommended, it is unlikely that reinforcement of the dam will be possible within this time period. This report provides a risk assessment of the potential failure of M Dam during the interim period.



LEGEND

- Water Body
- Granular Tailings Cover
- Lake Shore, Drainage
- Tailings Line Route (Not in Use)
- Contour 1 m
- Contour 5 m
- Roads
- Berm Area
- Thermistor

NOTES

1. Topographic information and facilities outline provided by Lupin Mine Inc. on August 13, 2012.

0 100 200 300 400 500
Scale in Metres

Coordinate System: Nad_1983_UTM_Zone_12N
NTS Map Sheets 076E11 and 076E14

srk consulting

SRK JOB NO.: —

FILE NAME: Lupin–SiteFacil–utm–12_ATedits_RevA–20121030.dwg

Lupin Mine Inc.

Lupin Mine Incorporated

LUPIN MINE

Tailings Containment Area

DATE:	APPROVED:	FIGURE:
October 2012		1

J:\01_SITES\Lupin\040_AutoCAD\Lupin-Site\Facil-utm-12_ATedits_RevA-20121030.dwg

1.1 Risk Assessment Approach

Dam safety in Nunavut is regulated through the Federal Nunavut Waters and Nunavut Surface Right Tribunal, and implemented through the Nunavut Water Board. The conditions of operation of the mine site are set out in the Water Licence.

A qualitative approach to assess the risk of failure of M Dam posed by the identified geotechnical deficiencies is used.

1.1.1 Framework

M Dam is internal to the TCA and therefore release of waters / tailings would be to water bodies contained within the TCA, and not to the receiving environment.

The incremental consequences of failure of the Lupin TCA dams were evaluated as part of a *2004 Dam Safety Review* (Golder, 2004). Both L Dam and M Dam were classified in the very low consequence category, as the dams retained largely frozen tailings, with no ponded water, because damages were limited to within the TCA and because no fatalities were likely as a consequence of dam failure. Golder noted that for dams that have been rated as very low consequence, the Dam Safety Guidelines do not generally apply. It is required that the consequences of failure be reviewed at intervals and update the category where necessary.

The *Dam Safety Guidelines* (CDA 2007) have since been revised and the consequence categories redefined. While the consequences of failure of L Dam and M Dam have not been re-evaluated since 2004, it is likely that the consequences would likely be classified as low under the revised *Dam Safety Guidelines* (CDA 2007) since:

- There is no possibility for loss of life other than through unforeseeable misadventure.
- There would be minimal short-term loss or deterioration and no long-term loss or deterioration of:
  - Fisheries habitat or wildlife habitat;
  - Fare or endangered species; or
  - Unique landscapes or sites of cultural significance.
- There would be minimal economic losses mostly limited to the dam owner's property, with virtually no pre-existing potential for development within the dam inundation zone.

It is possible that the risk assessment process shows that failure of the internal dams results in the identification of a hazard to dams external to the TCA. The *2004 Dam Safety Review* of the Perimeter Tailings Dams, classified the consequences of failure (based on the classification structure at that time) of the dams containing Pond 2 as follows:

- Low consequence: Dams 1A and 2, and
- Very Low consequence: Dams 1B and 1C.

The following assessment provides a description of the hazard and potential failure modes, a subjective judgement of the likelihood of failure, and an estimation of the consequences of failure. Recommendations to mitigate the issues identified and/or to prepare for response are also identified.

2 M Dam

2.1 Background

M Dam retains tailings and water in the partially covered Cell 5, and prevents drainage of supernatant from Cell 5 to Pond 2.

As noted in the Closure Plan for Tailings Containment Area (Holubec, 2005):

> *Cell 5 has the most varied use history of the four main tailings cells. It was the main tailings storage area during the startup years from 1982 to 1984. During this period, Lupin operated the TCA as a single storage pond with the tailings being discharged from the northern perimeter of the TCA. About one third of the tailings stored in this cell were discharged in the first 3 years. From 1985, the TCA operation changed to storing the tailings within discreet cells and improving the decant water quality by means of extended storage in two polishing ponds.*
>
> *Storage in Cell 5 did not restart until 1993. From this point on, the cell was mainly used during the wintertime because of its proximity to the plant. Tailings have been discharged into this area until 2004. Aside from the proximity of this cell, tailings also have been discharged to level the cell for a final cover and to cover the older tailings with fresh tailings.*
>
> *Cell 5 is generally sloping towards the south and previously contained several small lakes that increased its storage capacity. The cell was created by the construction of M Dam, which is about 5 m high with the exception of a section across the outlet of the closest former lake, where the dam height is about 8m.*

M Dam was constructed in 1992 on a base of silty sand till, of gravelly sand esker material, with a tailings beach on the upstream face to create low permeability. The downstream face was armoured with a thick layer of mine rock rip rap. While liners were applied to the upstream face of TCA external dams, liners were not installed in the internal dams. The M Dam crest was raised in the interval from 2000 to 2002 to an elevation of 488.5 (Holubec, 2005, Figure B20) While there are no thermistors installed in M Dam, it is likely that the dam is currently frozen below an average depth of approximately 2.5 m (2.1 to 3 m range), based on the thaw depth as measured in other dams at the site.

As of the end of the 2004, it was estimated that approximately 1,544,000 m^3 of tailings were retained in Cell 5 (Holubec, 2004).

Abandonment and closure planning for Cell 5 included covering the tailings completely, and reinforcing the downstream slope of M Dam which would then act as an earth buttress. A small portion of Cell 5 was covered by a minimum of 1.0 m of esker gravel, in the summer of 2004. A major portion of Cell 5 was covered with a minimum of 1.0 m of esker gravel, in the summer of 2005. The premature shut down of the winter road in 2006 resulted in insufficient fuel for the completion of tailings cover operations to take place in 2006, and to date some water is still retained behind M Dam.

Stability of M Dam was evaluated as part of abandonment and closure planning, with the assumption that over time the dams would thaw. As the dam was expected to act as an earth buttress, it was not expected that the dam would be required to meet *Dam Safety Guidelines*, which apply to dams that are 2.5 m in height or greater, and which retain 30,000 m3 of water or more. Stability analyses for M Dam showed that if the dam were reinforced on the downstream face with a rock berm with a slope of 2.5H:1V, a dam safety factor of 1.81 would result (including consideration of earthquakes). M Dam would therefore meet the *Dam Safety Guidelines* requirements of a minimum safety factor of 1.5, despite being a dam internal to the TCA, and despite it not being required for an earth buttress. The revised *2008 Abandonment and Closure Plan* (Zinfex 2007) aimed to reinforce the downstream slope of M Dam to between and 2V:1H and 2.5V:1H, depending on the capabilities of available equipment.

2.2 M Dam Failure Scenario

2.2.1 Failure Mode

A series of major tension cracks in M Dam were observed over approximately 15 m to be more than 0.30 m deep and as long as 6 m. Possible causes, as reported in the *2012 Annual Geotechnical Inspection – Lupin Mine Tailings Containment Area, Nunavut* (SRK 2012) report, could be a combination of pore water pressure from Cell 5, undercutting of the toe from wave action in Pond 2 and/or foundation “creep” (movement between the active layer and permafrost). The observed cracks are likely to deepen and widen, increasing the slope failure on the downstream face. The slope failure may increase in severity due to thawing of the dam in the area of the failure.

As the base of Cell 5 was above the water level elevation of Pond 2 during the geotechnical inspection in 2012, the potential exists for the Cell 5 supernatant to drain almost completely to Pond 2 in the event of dam failure. While it is more likely that partial breach of the dam would occur and some water would be retained within Cell 5, the conservative scenario of complete breach is considered in this risk assessment.

As M Dam was constructed with a tailings beach on the upstream slope, and that tailings slurry was deposited in Cell 5 until 2004, it is likely that breaching of M Dam would result in some tailings being deposited in Pond 2.

2.2.2 Hazard and Load

Water Volume Retained in Cell 5

Insufficient recent data exists to accurately quantify the volume of water currently contained within Cell 5. A maximum capacity in Cell 5 of approximately 323,000 m^3 is conservatively estimated from historical records. More recent aerial images and an estimated maximum water depth of 3 to 4 m during the fall 2012 geotechnical inspection suggest that the volume of water currently stored in this cell is likely significantly lower than this amount - approximately in the 250,000 m^3 range.

As previously noted, Pond 2 is the pond to which water from Cell 5 would drain in the event of the failure of M Dam. Water from Pond 2 is discharged to the receiving environment via syphons at Dam 1A when needed. While discharges from Pond 2 did not occur in 2010 and 2011, approximately 1,100,000 m^3 of water was discharged to the receiving environment in September 2012 (Lupin Mines Inc., 2012). Based on records from 1982 to 2004, it was calculated that Pond 2 accumulated water at a mean annual rate of 212,600 m^3 (i.e. excluding water discharged to Pond 2; including precipitation and drainage gains; including evaporation losses) (Igor Holubec, 2005). The water levels in Pond 2 were therefore likely to have been lowered sufficiently that a complete discharge from Cell 5 could be accommodated in terms of capacity, without threatening the integrity of the external containments.

The additional water volume added to Pond 2 would over the longer term result in a reduction in time before a discharge of water from Pond 2 would again be required.

Water Quality

Prior to the construction of the dams internal to the TCA, tailings were discharged to the larger TCA, and tailings make up a component of the sediment in parts of Pond 2. After the construction of the internal dams, tailings were deposited in cells created by the internal dams, and direct deposition to what is now Ponds 1 and 2, ceased.

As previously noted, the tailings deposited in Cell 5 have largely been covered with esker materials. The cover was applied as part of the reclamation process to reduce tailings oxidation and minimise negative impacts to water quality.

A water sample was collected in Cell 5 on August 3, 2012 and is reflective of water quality in the cell after application of the cover. The sample was collected in the top meter of water in the cell, and while it is possible that water quality at depth may differ from surface water quality, as there is some evidence of a thermocline in Pond 2 while under ice, the relatively shallow depth of water in Cell 5, suggests that stratification in the pond is unlikely. In addition, should M Dam breach, flow from the depths of Cell 5 is less likely than from the top 3 m, to Pond 2. Table 2-1 shows the results of sample testing, along with water quality in Pond 2 and the discharge criteria set in the Water Licence.

Table 2-1: Lupin Tailings Containment Area – 2012 Water Quality in Pond 2 and Cell 5.

				Pond 2										Cell 5
				POND2-A-TOP-ICE[2]	POND2-A-BOT-ICE[2]	POND2-A-TOP	Pond2-A1	Pond2-A2	Pond2-A3	Pond2-B1	Pond2-C1	TP2	JTP2	Cell 5-M
			Easting:	486859	486859	486859	486055	486055	486055	486149	486347		487221	487069
			Northing:	7289540	7289540	7289540	7289834	7289834	7289834	7289840	7289845		7289514	7290207
			Depth of Sample (below surface):	top of ice	bottom of ice	top of water column	1.76 m	3.00 m	5.00 m	1.62 m	1.60 m	near surface	near surface	near surface
		Water Licence Limits		L1117808-1	L1117808-2	L1117808-3	L1152694-6	L1152694-7	L1152694-8	L1152694-10	L1152694-11	L1189305	L1189317-2	L1189317-5
		for Discharge to Env [1]		2/23/2012 3:35:00 PM	2/23/2012 3:35:00 PM	2/23/2012 3:35:00 PM	24-May-12	25-May-12	25-May-12	25-May-12	25-May-12	2-Aug-12	3-Aug-12	3-Aug-12
Analyte	**Units**	**Average**	**Max. Grab**	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Field Parameters														
ORP	mV												321.40	314.20
pH	pH	6.0 to 9.5	6.0 to 9.5										4.48	3.31
General Parameters														
Acidity (as CaCO3)	mg/L												5.6	44.7
Alkalinity, Total (as CaCO3)	mg/L			<5.0	<5.0	<5.0	<5.0	<5.0	<5.0				<5.0	<5.0
Ammonia, Total (as N)	mg/L						<0.050	0.132	0.099				0.085	1.39
Chloride	mg/L			<0.50	<0.50	64.0	22.7	68.0	68.8				46.5	12.8
Conductivity	µS/cm			1.48	1.49	924								
Cyanide, Total	mg/L	0.8	1.6				<0.0050	<0.0050	<0.0050				<0.0050	0.0171
Hardness (as CaCO3)	mg/L			<1.0	<1.0	218	64.6	249	252					
Hardness, Calculated	mg/L			<1.0	<1.0	258	071	255	262			185	177	120
Nitrate	mg/L			<0.050	<0.050	3.24	1.09	3.56	3.65				2.15	<0.050
Nitrate and Nitrite	mg/L			<0.071	<0.071	3.24							2.15	<0.071
Nitrite	mg/L			<0.050	<0.050	<0.050							<0.050	<0.050
Oil and Grease	mg/L						<1.0	<1.0	<1.0					
pH	pH	6.0 to 9.5	6.0 to 9.5	5.69	5.45	4.49	5.36	5.02	5.03				4.70	3.47
Sulphate	mg/L			<0.50	<0.50	310	93.3	327	329				228	169
Total Dissolved Solids, Calculated	mg/L			<1.0	<1.0	549								
Total Suspended Solids	mg/L						<3.0	<3.0	<3.0				<3.0	<3.0
Alkalinity Parameters														
Bicarbonate	mg/L			<5.0	<5.0	<5.0								
Carbonate	mg/L			<5.0	<5.0	<5.0								
Hydroxide	mg/L			<5.0	<5.0	<5.0								

Table 2-2: Lupin Tailings Containment Area – 2012 Water Quality in Pond 2 and Cell 5.

				Pond 2										Cell 5
				POND2-A-TOP-ICE[2]	POND2-A-BOT-ICE[2]	POND2-A-TOP	Pond2-A1	Pond2-A2	Pond2-A3	Pond2-B1	Pond2-C1	TP2	JTP2	Cell 5-M
			Easting:	486859	486859	486859	486055	486055	486055	486149	486347		487221	487069
			Northing:	7289540	7289540	7289540	7289834	7289834	7289834	7289840	7289845		7289514	7290207
			Depth of Sample (below surface):	top of ice	bottom of ice	top of water column	1.76 m	3.00 m	5.00 m	1.62 m	1.60 m	near surface	near surface	near surface
		Water Licence Limits		L1117808-1	L1117808-2	L1117808-3	L1152694-6	L1152694-7	L1152694-8	L1152694-10	L1152694-11	L1189305	L1189317-2	L1189317-5
		for Discharge to Env [1]		2/23/2012 3:35:00 PM	2/23/2012 3:35:00 PM	2/23/2012 3:35:00 PM	24-May-12	25-May-12	25-May-12	25-May-12	25-May-12	2-Aug-12	3-Aug-12	3-Aug-12
Analyte	**Units**	**Average**	**Max. Grab**	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Total Metals														
Aluminum (Al)-Total	mg/L			0.0086	0.0166	0.462	0.124	0.455	0.434			0.396	0.377	1.760
Antimony (Sb)-Total	mg/L			0.00012	0.00023	<0.00010	<0.00010	<0.00010	<0.00010			<0.00040	<0.00040	<0.00040
Arsenic (As)-Total	mg/L	0.5	1.0	0.0032	0.00044	0.0157	0.00379	0.00623	0.00463			0.0112	0.0203	0.152
Barium (Ba)-Total	mg/L			0.000971	0.00111	0.021	0.00689	0.0187	0.0192			0.0152	0.0142	0.0161
Beryllium (Be)-Total	mg/L			<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050			<0.0010	<0.0010	<0.0010
Bismuth (Bi)-Total	mg/L			<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050					
Boron (B)-Total	mg/L			<0.0020	<0.0020	0.0859	0.026	0.086	0.087			0.065	0.069	<0.050
Cadmium (Cd)-Total	mg/L			0.000015	0.000038	0.000369	0.000096	0.000317	0.000335			0.000275	0.000296	0.000174
Calcium (Ca)-Total	mg/L			0.041	0.137	89.4	24.0	85.9	88.9			63.2	59.8	39.7
Chromium (Cr)-Total	mg/L			0.00012	0.00053	<0.00010	0.00108	0.00110	0.00093			<0.0050	<0.0050	<0.0050
Cobalt (Co)-Total	mg/L			<0.00010	<0.00010	0.0483	0.0134	0.0489	0.0488			0.0355	0.0351	0.0278
Copper (Cu)-Total	mg/L	0.15	0.30	0.00051	0.00108	0.0122	0.00373	0.0125	0.0119			0.0159	0.0109	0.0135
Iron (Fe)-Total	mg/L			0.044	0.043	0.156	0.121	0.102	0.070			0.445	0.750	4.76
Lead (Pb)-Total	mg/L	0.1	0.2	0.000243	0.000773	0.000207	0.000413	0.000061	0.000068			0.00075	0.00015	0.0433
Lithium (Li)-Total	mg/L			<0.0050	<0.0050	0.0304	0.0098	0.0326	0.0320			0.026	0.024	0.025
Magnesium (Mg)-Total	mg/L			0.0068	0.021	8.43	2.78	9.73	9.84			6.60	6.76	5.11
Manganese (Mn)-Total	mg/L			0.000719	0.00205	0.95	0.286	1.08	1.07			0.744	0.757	0.487
Mercury (Hg)-Total	mg/L											<0.00010	<0.00010	<0.00010
Molybdenum (Mo)-Total	mg/L			<0.000050	0.000356	<0.000050	<0.000050	<0.000050	0.000053			<0.0050	<0.0050	<0.0050
Nickel (Ni)-Total	mg/L	0.2	0.4	0.00028	0.00538	0.116	0.0348	0.124	0.125			0.0861	0.0863	0.0812
Phosphorus (P)-Total	mg/L			<0.30	<0.30	<0.30	<0.30	<0.30	<0.30					
Potassium (K)-Total	mg/L			<0.050	<0.050	6.37	2.47	7.18	7.23			5.08	4.88	3.74
Selenium (Se)-Total	mg/L			<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010			<0.00040	<0.00040	<0.00040
Silicon (Si)-Total	mg/L			<0.050	<0.050	3.54	0.935	3.79	3.79					
Silver (Ag)-Total	mg/L			<0.000010	0.000024	<0.000010	<0.000010	<0.000010	<0.000010			<0.00010	<0.00010	<0.00010
Sodium (Na)-Total	mg/L			0.052	0.152	67.4	23.4	74.0	74.5			59.4	51.2	15.2
Strontium (Sr)-Total	mg/L			0.00014	0.0004	0.329	0.107	0.374	0.377					
Thallium (Tl)-Total	mg/L			<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050			<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	mg/L			<0.00010	<0.00010	<0.00010	0.00047	<0.00010	<0.00010			<0.050	<0.050	<0.050
Titanium (Ti)-Total	mg/L			<0.00030	0.00054	<0.00030	0.00065	<0.00030	<0.00030			<0.0010	<0.0010	<0.0010
Uranium (U)-Total	mg/L			<0.000010	<0.000010	0.000078	0.000015	0.000063	0.000056			<0.00010	<0.00010	0.0006
Vanadium (V)-Total	mg/L			<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010			<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	mg/L	0.4	0.8	0.0034	0.0086	0.384	0.114	0.401	0.405			0.254	0.286	0.16

Table 2-3: Lupin Tailings Containment Area – 2012 Water Quality in Pond 2 and Cell 5.

				Pond 2										Cell 5
				POND2-A-TOP-ICE[2]	POND2-A-BOT-ICE[2]	POND2-A-TOP	Pond2-A1	Pond2-A2	Pond2-A3	Pond2-B1	Pond2-C1	TP2	JTP2	Cell 5-M
			Easting:	486859	486859	486859	486055	486055	486055	486149	486347		487221	487069
			Northing:	7289540	7289540	7289540	7289834	7289834	7289834	7289840	7289845		7289514	7290207
			Depth of Sample (below surface):	top of ice	bottom of ice	top of water column	1.76 m	3.00 m	5.00 m	1.62 m	1.60 m	near surface	near surface	near surface
		Water Licence Limits		L1117808-1	L1117808-2	L1117808-3	L1152694-6	L1152694-7	L1152694-8	L1152694-10	L1152694-11	L1189305	L1189317-2	L1189317-5
		for Discharge to Env [1]		2/23/2012 3:35:00 PM	2/23/2012 3:35:00 PM	2/23/2012 3:35:00 PM	24-May-12	25-May-12	25-May-12	25-May-12	25-May-12	2-Aug-12	3-Aug-12	3-Aug-12
Dissolved Metals	mg/L													
Aluminum (Al)-Dissolved	mg/L						0.109	0.451	0.421	0.222	0.209		0.403	1.86
Antimony (Sb)-Dissolved	mg/L						<0.00010	<0.00010	<0.00010	<0.00040	<0.00040		<0.00040	<0.00040
Arsenic (As)-Dissolved	mg/L						0.00269	0.00390	0.00279	0.00882	0.00379		0.00452	0.159
Barium (Ba)-Dissolved	mg/L						0.00562	0.0173	0.0173	0.0156	0.00995		0.0143	0.0164
Beryllium (Be)-Dissolved	mg/L						<0.00050	<0.00050	<0.00050	<0.0020	<0.0020		<0.0010	<0.0010
Bismuth (Bi)-Dissolved	mg/L						<0.000050	<0.000050	<0.000050	<0.00020	<0.00020			
Boron (B)-Dissolved	mg/L						0.037	0.106	0.108	0.163	0.127		0.07	<0.050
Cadmium (Cd)-Dissolved	mg/L						0.000084	0.000329	0.000321	0.000247	0.000155		0.00028	0.000178
Calcium (Ca)-Dissolved	mg/L			<0.50	<0.50	72.8	25.0	92.5	88.7	56.7	36.3		59.4	39.3
Chromium (Cr)-Dissolved	mg/L						0.00066	0.00076	0.00080	0.00542	0.00368		<0.0050	<0.0050
Cobalt (Co)-Dissolved	mg/L						0.0118	0.0465	0.0460	0.0253	0.0174		0.0348	0.0278
Copper (Cu)-Dissolved	mg/L						0.00244	0.0117	0.0110	0.00628	0.00517		0.0109	0.0138
Iron (Fe)-Dissolved	mg/L						0.088	0.064	0.036	0.503	0.231		0.541	4.61
Lead (Pb)-Dissolved	mg/L						0.000103	0.000069	0.000059	0.00030	0.00024		<0.00010	0.044
Lithium (Li)-Dissolved	mg/L						0.0095	0.0352	0.0357	<0.020	<0.020		0.0267	0.0283
Magnesium (Mg)-Dissolved	mg/L			<0.10	<0.10	8.74	2.71	9.56	8.60	5.85	4.42		6.85	4.91
Manganese (Mn)-Dissolved	mg/L						0.253	1.08	1.02	0.539	0.394		0.758	0.475
Mercury (Hg)-Dissolved	mg/L												<0.00010	<0.00010
Molybdenum (Mo)-Dissolved	mg/L						<0.000050	<0.000050	<0.000050	0.00103	<0.00020		<0.0050	<0.0050
Nickel (Ni)-Dissolved	mg/L						0.0270	0.110	0.111	0.0676	0.0479		0.0874	0.0818
Phosphorus (P)-Dissolved	mg/L						<0.30	<0.30	<0.30	<1.2	<1.2			
Potassium (K)-Dissolved	mg/L			<0.50	<0.50	7.43	2.11	6.69	6.63	3.44	2.49		4.98	3.69
Selenium (Se)-Dissolved	mg/L						<0.00010	<0.00010	<0.00010	<0.00040	<0.00040		<0.00040	<0.00040
Silicon (Si)-Dissolved	mg/L						0.720	3.42	3.35	0.55	1.00			
Silver (Ag)-Dissolved	mg/L						<0.000010	<0.000010	<0.000010	<0.000040	<0.000040		<0.00010	<0.00010
Sodium (Na)-Dissolved	mg/L			<1.0	<1.0	72	20.1	70.1	70.9	38.4	28.3		51.2	14.8
Strontium (Sr)-Dissolved	mg/L						0.0952	0.365	0.368	0.215	0.143			
Thallium (Tl)-Dissolved	mg/L						<0.000050	<0.000050	<0.000050	<0.00020	<0.00020		<0.00010	<0.00010
Tin (Sn)-Dissolved	mg/L						<0.00010	<0.00010	<0.00010	<0.00040	<0.00040		<0.050	<0.050
Titanium (Ti)-Dissolved	mg/L						<0.00030	<0.00030	<0.00030	<0.0012	<0.0012		<0.0010	<0.0010
Uranium (U)-Dissolved	mg/L						0.000016	0.000066	0.000061	<0.000040	<0.000040		<0.00010	0.0006
Vanadium (V)-Dissolved	mg/L						<0.00010	<0.00010	<0.00010	<0.00040	<0.00040		<0.0010	<0.0010
Zinc (Zn)-Dissolved	mg/L						0.101	0.377	0.373	0.216	0.159		0.289	0.165
Notes:														
(1) Water from Pond 2 is treated with lime to meet Water Licence limits prior to discharge								Detection Limit Adjusted for Sample Matrix Effect						
(2) Samples collected at the top and bottom of ice diluted by snow and ice														

In general, the water quality in Cell 5, while showing metals concentrations roughly one order of magnitude higher for several parameters than in Pond 2, meets the discharge criteria set in the Water Licence for discharge to the receiving environment for Pond 2, with the exception of pH. Pond 2 water quality in 2012 also meets the discharge criteria set in the Water Licence for discharge to the environment for all parameters with the exception of pH and therefore lime buffering is applied to Pond 2 prior to discharge. (Note that the Water Licence discharge limit for pH is higher than the pH of the receiving environment in general.)

Failure of M Dam would likely result in the discharge of water from Cell 5 to Pond 2. Cell 5 is located to the east of Pond 2, and the discharge location of Pond 2 is from the west side of the pond, and there is a topographic high in the bottom of Pond 2 that would reduce short circuiting and increase mixing of the flow from Cell 5 towards the Pond 2 discharge location. While release of water from Cell 5 to Pond 2 would worsen the water quality of Pond 2, the water quality in Pond 2 for the short term would likely continue to meet the discharge criteria set in the Water Licence for discharge to the environment for all parameters with the exception of pH.

In the event that M Dam did breach, and a discharge of Pond 2 was to take place an increased effort to treat the water may be required for water quality to meet discharge standards.

Drainage of water from Cell 5 would result in a lowering of the level of saturation in the tailings / cover within Cell 5, and this may result in poorer water quality in Cell 5 over time due, should the tailings / cover remain unsaturated.

Tailings

In the event of a breach of M Dam, it is likely that some quantity of tailings would be mobilised from Cell 5 to Pond 2, especially given that a tailings beach was applied to the upstream slope of M Dam as part of the design of the dam. While this is not of immediate concern, should the tailings remain exposed along the shore of Pond 2, tailings oxidation could occur over time and this would be expected to worsen the water quality in Pond 2. Note that some tailings are currently exposed in Pond 2 in the area near K Dam.

It is recommended that efforts to contain tailings within Cell 5 be prioritized to minimize clean-up efforts that would be required after dam failure and to maintain water quality in Pond 2 over time.

2.2.3 Probability of Failure

The likelihood of failure of the dams was assessed based on the categories included in the *Dam Safety Guidelines* (CDA 2007).

Based on professional judgement of the geotechnical engineer who inspected the dams in 2012, the likelihood of dam failure of M Dam is high.

The likelihood of breach could be reduced in the short term by:

- Preventing driving on the dam crest, especially in the spring, as recommended in the 2012 geotechnical report;
- Drawing down water levels in Cell 5 through controlled discharge to Pond 1 as early as possible in 2013;
- Repairing cracks to slow deepening and widening of cracks through water infiltration from the surface;

Over the long term, it is recommended that the downstream slope of M Dam be re-enforced with a buttress built to a slope of between 2V:1H and 2.5V:1H, up to half of the height M Dam and a crest width around 3 to 5 meters, depending on the capabilities of available equipment, as described in abandonment and closure plans for the site. Note that this would require that water levels in Pond 2 be lowered as much as possible – down to 2 to 3 m ideally. As the surface area of Pond is large, lowering the water level in Pond 2 may require the discharge of 2 to 3 million cubic meters of water – or two to three times as much water as was discharged from Pond 2 in 2012.

Closure and abandonment planning for Cell 5 included filling the cell and applying cover over the entire cell. It is recommended that consideration be given to implementing this aspect of the plan in the near future.

2.3 Contingency Planning

As the volume of water in Cell 5 can be contained within Pond 2, and as the water quality in Cell 5 is not expected to worsen Pond 2 water quality to the point where it cannot be discharged, it is not likely that an emergency discharge of water from Cell 5 would be required.

Steps to prepare for discharge of water from Cell 5 to Pond 1 as early as possible in 2013 are recommended.

2.4 Summary

The length and depth of tension cracks observed in Dam M as part of the September 2012 annual dam inspection, suggested the possibility for the breach of M Dam, and a risk assessment of the failure was undertaken. A very conservative qualitative assessment, assuming complete dam failure, was completed using available data, and the following summarises the results.

While the likelihood of failure of M Dam is high, the consequences of breach in the short term will be a reduction in water quality in Pond 2. It is expected that the resulting water quality in Pond 2 would not prevent discharge from Pond 2 to the receiving environment. However, lime treatment may have to be increased with respect to previous rates of lime addition, so that Pond 2 water quality meets discharge criteria set out in the Water Licence. In addition, a discharge from Pond 2 to the receiving environment would be needed earlier than previously foreseen due to the volume of water added to Pond 2 from Cell 5.

It is recommended that steps to prevent the failure of M Dam be prioritized in 2013, including:

- Preventing driving on the dam crest, especially in the spring, as recommended in the 2012 geotechnical report;
- Drawing down water levels in Cell 5 through controlled discharge to Pond 1 as early as possible in 2013 (note that saturation of tailings in Cell 5 is still recommended and that complete dewatering of the cell is not recommended); and
- Repairing cracks to slow deepening and widening of cracks through water infiltration from the surface.

In addition to monitoring the tension cracks as recommended in the 2012 geotechnical report, it is also recommended that:

- Water elevations in Pond 2 and Cell 5 be monitored,
- Water quality in Cell 5 be monitored, including one sample at depth, and
- An improved estimate of the existing storage capacity of Cell 5 and of the volume of water stored within the cell be determined.

Over the longer term, it is recommended that water levels in Pond 2 be sufficiently drawn down to reinforce the downstream slope of M Dam to a final slope of between 2V:1H and 2.5V:1H, depending on the capabilities of available equipment, as described in abandonment and closure plans for the site. Slope re-enforcement will require lowering water levels in Pond 2 by 2 to 3 m, which may require the discharge of 2 to 3 times the volume of water that was discharged from Pond 2 in 2012. It is also recommended that closure and abandonment plans for Cell 5 which include filling the cell, rendering M Dam an earth buttress be implemented and/or raised in priority level.

In the event that despite efforts to prevent failure, that M Dam does breach, it is recommended that the efforts to minimise the mobilisation of solids / tailings from Cell 5 to Pond 2 be prioritized to minimise repair and clean-up efforts, post-failure, and to reduce the potential for reduction of water quality in Pond 2 over the long term due oxidation of exposed tailings.

3 L Dam

3.1 Background

L Dam retains tailings and water in the partially covered Cell 3, along with Dam K, and limits drainage of supernatant from Cell 3 to Cell 4.

As noted in the Closure Plan for Tailings Containment Area (Igor Holubec, 2005):

> *Cell 3 was developed in 1990 by the construction of internal Dam K. In this case, as the tailings were settled out in Cell 3, water was allowed to flow into Cell 4 from where it*

progressed into Ponds 1 and 2. Cell 4 provided an additional clarification pond. A small dike and a gated culvert at its north perimeter controlled water level, before discharging excess into a natural channel and small lake flowing into Pond 1.

In 1992, internal Dam L was constructed to prevent tailings in Cell 3 from contaminating Cell 4 as Cell 3 was being filled.

Dam L was built from esker materials with tailings on the upstream side. Crest elevation was 490.8, and the dam height was 11.0m. The dam was constructed in two stages from esker material. Upstream and downstream slopes of this dam were protected by mine rock riprap. The difference between water levels in Cell 3 and Cell 4 is small.

The Cell 3 area contained a large lake, identified in documentation as Lake 'h', that enhanced its storage capacity. While K Dam is about 9m high, the depression of Lake 'h' created a sizeable bowl where up to 10m of tailings could be stored. Two subcells, 3a and 3b, were constructed predominantly from settled tailings along the berm upstream of K Dam, and were subsequently filled with tailings.

Cell 4, was never used for tailings storage and acts as a polishing pond for the decant water received from Cell 3. Starting in 2000 and through to 2004, inclusive, excess precipitation and tailings water from Cell 3 was siphoned over L Dam into Cell 4 from where it was allowed to flow under controlled conditions into the adjacent small un-named lake system that directed the water into Pond 1.

As of the end of 2004, it was estimated that Cell 3 contains a volume of 1,724,000 m^3 of tailings, the greatest volume of tailings stored of all the cells within the TCA.

Reclamation of the Cell 3 started during the period from August 5 and September 23, 2003, with an area of approximately 62,350 m^2 over Cells 3a and 3b covered with a minimum of 1 m depth of esker sands and gravels. Covering of Cell 3 continued with esker materials applied to a major portion of the cell in the period from July 6 to September 19, 2004, and with another portion of the cell covered in the period from June 23 to September 28, 2005. To date, a portion of Cell 3 remains to be covered and water has ponded in this area of Cell 3.

Abandonment and closure plans for L Dam include breaching the dam, if necessary, and Cell 4 would then control the water level of any remaining Cell 3 ponded water.

3.2 Review of Current Conditions at Internal L Dam, Cells 3 and 4

During the September 2012 annual geotechnical inspection, a substantial erosion breach, that it is assumed was caused by the freshet where the water from the uncovered portion of Cell 3 breached into Cell 4, was observed at the south end of L Dam, at the lowest point of the dam. In addition, seepage at an approximate rate of 0.5 L/min was observed below the breach.

While insufficient recent data exists to accurately quantify the volume of water currently contained within Cell 3, a conservative estimate, based on available drawings, and assuming an average pond depth of 1 m, suggests a maximum volume in the range of 100,000 m^3.

3.2.1 Water Quality

Table 3-1 below, shows the results of water quality testing completed in 2012 from samples collected in Cells 3 and 4 on August 3. The samples were collected upstream and downstream of L Dam during a period when there was no water flowing over the dam

The results show that for most parameters tested, the water quality in Cell 3 is in the same order of magnitude as in Cell 4, with the notable exception of zinc, where, contrary to what would be expected, the concentrations are an order of magnitude higher in Cell 4 than in Cell 3. The pH in Cell 3 (2.84) was slightly lower in than in Cell 4 (3.44); both are in the range where metals mobilisation is generally observed.

Based on these two 2012 grab samples, the consequences over the short-term, in terms of water quality, of decant from Cell 3 draining to Cell 4, assuming the integrity of L Dam remains intact, are negligible.

It is recommended that further monitoring be completed to verify the water quality in Cells 3 and 4, with the sample in Cell 4 collected near the discharge location (east side) of the cell.

3.3 Contingency Planning

It was recommended that surface maintenance be considered, and that L Dam be monitored regularly to ensure dam toe is not undercut and that riprap be placed at the problematic area for protection if it was. It was also recommended that the breached section to be repaired with compacted well-graded esker material.

It was also recommended that water in Cell 3 be monitored and managed to prevent overflow.

It is recommended that measures to permit drainage from Cell 3 to Cell 4, without threatening the overall integrity of the dam, be evaluated, especially considering that breach of this dam is planned as part of closure and abandonment activities.

Table 3-1: Lupin Tailings Containment Area – 2012 Water Quality in Cells 3 and 4

		CELL3	CELL4-T
Easting:		487302	487329
Northing:		7288560	7288598
Depth of Sample (below surface):		near surface	near surface
Lab ID:		L1189317-4	L1189317-3
Date and Time:		8/3/2012 10:30:00 AM	8/3/2012 9:30:00 AM
Analyte	**Units**	Water	Water
Field Parameters			
Field ORP	mV	312.0	341.0
Field pH	pH	2.85	3.44
General Parameters			
Acidity (as CaCO3)	mg/L	115	30.4
Alkalinity, Total (as CaCO3)	mg/L	<5.0	<5.0
Ammonia, Total (as N)	mg/L	<0.050	4.16
Chloride (Cl)	mg/L	6.51	79
Cyanide, Total	mg/L	-	0.0081
Hardness, Calculated	mg/L	255	255
Nitrate (as N)	mg/L	<0.050	<0.050
Nitrate and Nitrite (as N)	mg/L	<0.071	<0.071
Nitrite (as N)	mg/L	<0.050	<0.050
pH	pH	3.01	3.66
Sulfate (SO4)	mg/L	386	348
Total Suspended Solids	mg/L	<3.0	<3.0

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Table 3-2: Lupin Tailings Containment Area – 2012 Water Quality in Cells 3 and 4

		CELL3	CELL4-T
Easting:		487302	487329
Northing:		7288560	7288598
Depth of Sample (below surface):		near surface	near surface
Lab ID:		L1189317-4	L1189317-3
Date and Time:		8/3/2012 10:30:00 AM	8/3/2012 9:30:00 AM
Analyte	**Units**	Water	Water
Total Metals			
Aluminum (Al)-Total	mg/L	7.01	2.34
Antimony (Sb)-Total	mg/L	<0.00040	<0.00040
Arsenic (As)-Total	mg/L	0.117	0.144
Barium (Ba)-Total	mg/L	0.0178	0.0237
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010
Boron (B)-Total	mg/L	<0.050	0.126
Cadmium (Cd)-Total	mg/L	0.000537	0.000266
Calcium (Ca)-Total	mg/L	73.5	85.4
Chromium (Cr)-Total	mg/L	<0.0050	<0.0050
Cobalt (Co)-Total	mg/L	0.0692	0.0513
Copper (Cu)-Total	mg/L	0.0459	0.0886
Iron (Fe)-Total	mg/L	11.1	3.89
Lead (Pb)-Total	mg/L	0.0233	0.0241
Lithium (Li)-Total	mg/L	0.085	0.072
Magnesium (Mg)-Total	mg/L	17.4	10.2
Manganese (Mn)-Total	mg/L	1.28	1.23
Mercury (Hg)-Total	mg/L	<0.00010	<0.00010
Molybdenum (Mo)-Total	mg/L	<0.0050	<0.0050
Nickel (Ni)-Total	mg/L	0.199	0.186
Potassium (K)-Total	mg/L	4.88	8.19
Selenium (Se)-Total	mg/L	<0.00040	<0.00040
Silver (Ag)-Total	mg/L	<0.00010	<0.00010
Sodium (Na)-Total	mg/L	9	71.7
Thallium (Tl)-Total	mg/L	<0.00010	<0.00010
Tin (Sn)-Total	mg/L	<0.050	<0.050
Titanium (Ti)-Total	mg/L	<0.0010	<0.0010
Uranium (U)-Total	mg/L	0.00189	0.00074
Vanadium (V)-Total	mg/L	<0.0010	<0.0010
Zinc (Zn)-Total	mg/L	0.512	1.34

Table 3-3: Lupin Tailings Containment Area – 2012 Water Quality in Cells 3 and 4

		CELL3	CELL4-T
Easting:		487302	487329
Northing:		7288560	7288598
Depth of Sample (below surface):		near surface	near surface
Lab ID:		L1189317-4	L1189317-3
Date and Time:		8/3/2012 10:30:00 AM	8/3/2012 9:30:00 AM
Analyte	**Units**	Water	Water
Dissolved Metals			
Aluminum (Al)-Dissolved	mg/L	7.29	2.39
Antimony (Sb)-Dissolved	mg/L	<0.00040	<0.00040
Arsenic (As)-Dissolved	mg/L	0.118	0.0539
Barium (Ba)-Dissolved	mg/L	0.0174	0.0231
Beryllium (Be)-Dissolved	mg/L	<0.0010	<0.0010
Boron (B)-Dissolved	mg/L	0.054	0.138
Cadmium (Cd)-Dissolved	mg/L	0.000618	0.000295
Calcium (Ca)-Dissolved	mg/L	73.5	84
Chromium (Cr)-Dissolved	mg/L	<0.0050	<0.0050
Cobalt (Co)-Dissolved	mg/L	0.0674	0.0495
Copper (Cu)-Dissolved	mg/L	0.0482	0.0912
Iron (Fe)-Dissolved	mg/L	10.9	3.58
Lead (Pb)-Dissolved	mg/L	0.0228	0.0225
Lithium (Li)-Dissolved	mg/L	0.0815	0.0671
Magnesium (Mg)-Dissolved	mg/L	17	9.75
Manganese (Mn)-Dissolved	mg/L	1.26	1.2
Mercury (Hg)-Dissolved	mg/L	<0.00010	<0.00010
Molybdenum (Mo)-Dissolve	mg/L	<0.0050	<0.0050
Nickel (Ni)-Dissolved	mg/L	0.202	0.189
Potassium (K)-Dissolved	mg/L	5.08	8.33
Selenium (Se)-Dissolved	mg/L	<0.00040	<0.00040
Silver (Ag)-Dissolved	mg/L	<0.00010	<0.00010
Sodium (Na)-Dissolved	mg/L	9.1	71.6
Thallium (Tl)-Dissolved	mg/L	<0.00010	<0.00010
Tin (Sn)-Dissolved	mg/L	<0.050	<0.050
Titanium (Ti)-Dissolved	mg/L	<0.0010	<0.0010
Uranium (U)-Dissolved	mg/L	0.00189	0.00069
Vanadium (V)-Dissolved	mg/L	<0.0010	<0.0010
Zinc (Zn)-Dissolved	mg/L	0.512	1.34

4 Conclusions

The likelihood of dam failure of M Dam is considered high. The volume of water in Cell 5 can be contained within Pond 2, and the water quality in Cell 5 is not expected to worsen Pond 2 water quality to the point where it cannot be discharged to the environment. In the event that M Dam does breach, it is recommended that the efforts to minimise the mobilisation of solids / tailings from Cell 5 to Pond 2 be implemented to reduce the potential for reduction of water quality in Pond 2 over the long term due oxidation of exposed tailings. It is also recommended that water from Cell 5 be transferred to Pond 1 as early as possible in 2013 to lower the pressure on M Dam.

It is recommended that measures to permit drainage from Cell 3 to Cell 4, without threatening the overall integrity of the L Dam, be evaluated.

This report, Lupin Mine Site, 2012 Geotechnical Inspection Follow-Up Risk Assessment and Water Quality Review, was prepared by

Jay Cherian, BSc (H)

Environmental Scientist

and reviewed by

Alvin Tong, PEng

Senior Consultant

All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

5 References

BGC Engineering Inc. 2003. *2003 Geotechnical Inspection of Perimeter Tailings Dams and Waste Containment Dikes, Lupin Mine, Nunavut.* Report Prepared for Kinross Gold Corporation. September 2003

BGC Engineering Inc. 2005. *2004 Geotechnical Inspection, Internal Tailings Dams and Various Retention Dikes, Lupin Mine, Nunavut.* Report Prepared for Kinross Gold Corporation. April 2005.

Canadian Dam Association, 1999. *Dam Safety Guidelines*, January 1999.

Canadian Dam Association, 2007. *Dam Safety Guidelines*

Golder Associates. 2004a. *2004 Dam Safety Review, Perimeter Tailings Dams, Lupin Mine, Nunavut.* Report Submitted to Kinross Gold Corporation. December 2004.

Golder Associates. 2004b. *Studies Related to Water Licence Requirements and in Support of Reclamation Planning.* Report Submitted to Kinross Gold Corporation. December 2004.

Golder Associates. 2004c. *Ecological Risk Assessment for the Lupin Mine Tailings Containment Area.* Report Submitted to Kinross Gold Corporation. December 2004.

Igor Holubek Consulting. 2005. *Closure Plan for Lupin Tailings Containment Area*. Report Prepared for Kinross Gold Corporation, Lupin Operation. January 2005

Igor Holubek Consulting. 2006. Water Management After Closure, Seepage and Water Quality for Reclaimed Tailings Containment Area, Lupin Operation, Volumes I, II and III. Report Prepared for Kinross Gold Corporation. March 2006.

Kinross Gold Corporation. 2003. *Dam 6, Site Investigation and Raise Design.* DRAFT Report. June 2003.

Kinross Gold Corporation. 2005a. *2004 Final Abandonment and Restoration Plan, Lupin Tailings Area, Water Licence NWB1LUP0008, Lupin Mine, Nunavut.* February 2005.

Kinross Gold Corporation. 2005b. *2005 Abandonment and Restoration Plan, Lupin Tailings Area, Water Licence NWB1LUP0008, Lupin Mine, Nunavut.* June 2005.

Lupin Mines Incorporated (A subsidiary of Elgin Mines Inc.). 2012. Letter to Nunavut Water Board re: *Monthly Report for September 2012, Lupin Mine, Nunavut, Licence Number 2AM-LUP0914.* Correspondence dated October 18, 2012.

[NWB] Nunavut Water Board. 2009. Water Licence. Gjoa (NU): Nunavut Water Board Licence No.: 2AM-LUP0914. Type “A”. Issued to Lupin Mines Incorporated. Dated February 25, 2009, as amended May 25, 2009.

SRK Consulting. 2012. *2012 Annual Geotechnical Inspection – Lupin Mine Tailings Containment Area, Nunavut.* Report Prepared for Lupin Mine Incorporated. November 2012.

TBT Engineering Consulting Group. 2009. *2009 Annual Geotechnical Inspection, Perimeter Dams Tailings Containment Area, Lupin Mine, Nunavut*. Report Prepared for MMG Resources Inc. December 2009.

TBT Engineering Consulting Group. 2011. *2011 Annual Geotechnical Inspection, Perimeter Dams, Tailings Containment Area, Lupin Mine, Nunavut*. Report Prepared for Elgin Mining Inc. November 2011.

Zinifex. 2007. *2008 Abandonment and Restoration Plan, Lupin Mine, Nunavut, Canada*. November 2007.