



WATER LICENCE INSPECTION FORM

☒ Original  
☐ Follow-Up Report

|  |  |  |                                       |
|--|--|--|---------------------------------------|
| Licensee                                       |  | Licensee Representative                          |                                       |
| Lupin Mines Inc.                               |  | Karyn Lewis                                      |                                       |
| Licence No. / Expiry                           |  | Representative's Title                           |                                       |
| 2AM-LUP0914(expired)(amended)                  |  |  |                                       |
| Sewage Lakes discharge only to August 19, 2015 |  |  |                                       |
| Land / Other Authorizations                    |  | Land / Other Authorizations                      |                                       |
| 8WLC-LUP1516 (June 10, 2016)                   |  |  |                                       |
| Date of Inspection                             |  | Inspector  |                                       |
| 14/07/2015                                     |  | Eva Paul   |                                       |
| Activities Inspected                           |  |  |                                       |
| <input checked="" type="checkbox"/> Camp       | <input type="checkbox"/> Drilling  | <input checked="" type="checkbox"/> Mining       | <input type="checkbox"/> Construction |
| <input type="checkbox"/> Roads/Hauling         | <input checked="" type="checkbox"/> Other: Monitoring and water management | <input type="checkbox"/> Other:                  | <input type="checkbox"/> Reclamation  |
|  |  | <input checked="" type="checkbox"/> Fuel Storage |                                       |

| Conditions:  | A - Acceptable |         | C - Concern  |           | U - Unacceptable |                       | NA – Not Applicable |         | NI – Not Inspected |  |
|--|----------------|---------|--|-----------|------------------|-----------------------|---------------------|---------|--------------------|--|
| Water Use  | Condition      | Comment | Site Conditions  | Condition | Comment          | Haz/Mat Management    | Condition           | Comment |                    |  |
| Intake/Screen  | NA             |         | Water Management Structures  | U         | 4                | Storage               | A                   |         |                    |  |
| Flow Measure. Device   | NA             |         | Culverts / Bridges   | A         |                  | Spills                | U                   | 8       |                    |  |
| Source:  | NA             |         | Drainage   | A         |                  | Spill Plan            | NI                  |         |                    |  |
| Water Use:   | NA             | 1       | Erosion / Sediment   | U         | 5                |                       |                     |         |                    |  |
| Recirculation ( y /n)  | NA             |         | Mitigation Measures  | U         | 3                | Administrative        |                     |         |                    |  |
|  |                |         | Reclamation Activities   | U         | 3                | Records               | NI                  |         |                    |  |
|  |                |         | Materials Storage  | A         |                  | Reports               | C                   | 3       |                    |  |
| Waste Disposal   |                |         | Signage  | U         | 6                | Plans                 | U                   | 7       |                    |  |
| Waste Water  | U              | 2       |  |           |                  | Notifications         | U                   |         |                    |  |
| Solid Waste  | A              |         | Monitoring   |           |                  | Other                 |                     |         |                    |  |
| Hazardous Waste  | U              | 3       | Sample Collection / Analysis   | U         | 7                | Inspection Reports    | U                   | 9       |                    |  |
|  |                |         |  |           |                  | Inspector’s Direction | U                   | 10      |                    |  |
| *The number in the comments field will correspond with specific comments provided below. |                |         |  |           |                  |                       |                     |         |                    |  |
| Samples taken by Inspector:  |                |         | Location(s): LUP-1 (water intake), LUP-10 (TCA Pond 2), LUP-14 (Effluent from LSL) |           |                  |                       |                     |         |                    |  |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                      |                |         |  |           |                  |                       |                     |         |                    |  |

| SECTION 1   | <input checked="" type="checkbox"/> Comments (s.1) | <input checked="" type="checkbox"/> Non-Compliance with Act or Licence (s.2) | <input checked="" type="checkbox"/> Action Required (s.3) |
|---|--|--|---|
| <p>An inspection was conducted on July 14 2014 to assess compliance at the Lupin Mine Site with LMI's several authorizations and an outstanding Direction. Currently, the Type 'A' water licence for the Lupin Mine is expired and as such LMI had no authorization to use water or deposit waste in relation to the Mine, although the obligations in the licence persist until such time as a renewal licence is approved. In order to conduct monitoring and site management, LMI sought an Emergency Amendment to the licence (valid to August 19, 2015) in order to decant the Sewage Lakes Facility, and an Approval without a Licence (NWB 8WLC-LUP1516) in order to use water for domestic purposes and deposit human waste. Additionally, a Direction was issued on September 8, 2014 to LMI to maintain the sewage lakes at a level that is consistent with safe operation, and to implement the recommendations in the 2014 geotechnical engineer's report. LMI has not built the camp that was authorized under 8WLC-LUP1516, and were conducting day trips only to site, as use of the water and waste facilities licensed under 2AM-LUP0914 was prohibited. Following this inspection, on an additional Direction was issued (2015-KIT002-EP) to decant the TCA.</p> <p>I was joined on-site by Karyn Lewis of LMI, and Mathieu Beaudouin of Discovery Mining Services.</p> <ol style="list-style-type: none"><li>At the time of the inspection no water was being used, as no camp facilities were in operation.</li><li>At the time of the inspection, waste water (effluent) from the sewage lagoon was trickling over a compromised section of the Lower Sewage Dam, and flowing freely around the south end of the dam due to high levels within the facility and lack of repairs to the dam [see Photos 1-3]. This is a recurring issue since 2012, indicating that this facility is not being operated or maintained satisfactorily. This is contrary to the Direction issued in 2014 and to the Emergency Amendment. As the peak of freshet had passed by the time I was on site, I believe that greater flow happened prior to my arrival on-site, and may have caused the small wash-out that was in evidence (the "compromised section"). It's also possible that it was caused by ice scouring. Organic matter from within Lower Sewage Lake (LSL) was piled up at this area. LMI (or their agent) was on site July 9, 2015 in order to sample from the lagoon; notice of the extreme level in the lagoon should have been reported at that time.</li><li>A portion of the tailings remains uncovered [Photos 4-7]. Despite the high water levels from freshet and precipitation (prompting LMI to notify the Minister indicating that the facility was in imminent need of decanting), the surface area of exposed tails in the unremediated portion of the TCA that is not covered by water remained essentially unchanged from last year. Also, the exposed tails remain solid enough to walk on, and in some areas the surface is cracked and flaking. To my knowledge, no mitigation measures have been put in place to cover the exposed tailings, whether temporarily or permanently. LMI's care and maintenance plan indicates that a binding agent will be applied to the exposed tails in Cells 3 and 5. It is also noted that the diagram of the TCA provided in the 2014 Geotechnical Inspection does not show the exposed tailings; the diagram shows the whole area as either covered or underwater which is not accurate.</li><li>A) The Lower Sewage Dam was not repaired nor decanted in a timely manner, contrary to the Inspector's Direction,</li></ol> |  |  |   |



resulting in a failure to contain effluent within the facility. The Upper Sewage Dam long, lengthwise cracks; one appears to be greater than 0.5 m in depth. These cracks were not noted in 2014. Slumping is noted on the west side of the dam. [Photos 8-10]

B) At the time of the inspection there remained approximately 1.5 m freeboard in the TCA Pond 2. Mr. Beaudoin indicated at the lowest point in the pond wall there was approximately 1.2 m freeboard. 1 m of freeboard is required to be maintained in the facility, and the levels have increased more than 1 m from last year. [Direction 2015-KIT002-EP was issued on July 22 to decant the TCA]. [Photo 11]

C) My observations at the main fuel farm are contrary to those of LMI's consultant in 2014 (*2014 Lupin Fuel Tank Farm Inspection*). Mr. Tong observed water ponding in the main tank farm, and did not observe active seepage at the time of his visit (August 19, 2014). Conversely, I noted that one berm (the cell with two orange tanks, immediately south of the largest berm) contained no ponding water while the berms on either side of it contained significant ponded water. Further, there was a clear seepage channel at the toe of that berm, with water flowing west toward the airstrip. I did not note any other obvious source for the flow of water. [Photos 12-16]

- 5. Erosion of the Lower Sewage Dam, Upper Sewage Dam, and the Tailings Containment structures [Photo 17] was evident at the time of the inspection.
- 6. No signage identifying the monitoring stations was noted.
- 7. Mathieu Beaudouin collected confirmatory water samples on behalf of LMI during the inspection, at the same locations I sampled. I noted that he forgot to wear gloves when he began sampling at LUP-1. LMI has not adhered to the timelines as outlined in the Liquid Waste Management Plan (2013), which has contributed to delays in decanting the facilities.
- 8. No spill report has been filed for the discharge of effluent from the Sewage Lakes prior to decant approval.
- 9. Several items were not addressed in 2014 with respect to the findings of the 2014 inspection. At the time of the 2015 inspection, these requirements have not yet been addressed. They are itemized below.
- 10. The geotechnical inspection occurred on September 15, 2014. LMI had not, at the time of this inspection, implemented the recommendations from the report, despite a Direction that was issued to the company indicating that any recommended repairs were to be carried out 'without delay'. At the time of this inspection, there was a failure of the dam to contain the effluent within Lower Sewage Lake.

SECTION 2



Comments



Non-Compliance with Act or Licence



Action Required

**Non-comprehensive list – prioritized for the matters most relevant and requiring to be addressed immediately.**

**2AM-LUP0914:**

- Part B Item 14: Failure to observe the Liquid Waste Management Plan.
- Part D Item 4: Failure to carry out adequate inspections of water management structures.
- Part E Item 6(d): Failure to immediately address erosion of the TCA.
- Part H Item 8: Failure to report an unauthorized discharge of effluent.
- Part J Item 8: Failure to undertake additional monitoring as requested by the Inspector.

**NWB Emergency Amendment motion 2014-P11-12-03:**

To "...preserve the necessary freeboard space and maintain the integrity of the Facilities, before and/or during 2015 freshet period, in accordance with the terms and conditions of Part E, Items 8 and 10 in Licence 2AM-LUP0914 and all associated monitoring and reporting obligations."

**Inspector's Direction Dated September 8, 2014:**

- 1. Failure to maintain the facility at a level that is consistent with safe operation.
- 2. Failure to implement recommendations of the 2014 Geotechnical Inspection with respect the Sewage Lakes Facilities.

**Nunavut Waters and Nunavut Surface Rights Tribunal Act, 2002**

- 12(1) Deposit of waste in contravention of a licence.
- 12(3) Failure to report a deposit of waste to an inspector.
- 86(4) Failure to furnish information as requested by an inspector for purposes of an inspection.
- 90(1) Failure to comply with a direction.
- 90(2)(a) Contravention of a Type A licence.



|  |                                   |   |   |
|--|-----------------------------------|---|---|
| SECTION 3  | <input type="checkbox"/> Comments | <input type="checkbox"/> Non-Compliance with Act or Licence | <input checked="" type="checkbox"/> Action Required |
| <p>Outstanding requirements from 2014 Inspection:</p> <ol style="list-style-type: none"><li>1. Hazardous Waste Inventory – <b>August 31 2015</b> (As per LMI’s commitment of February 23, 2015).</li><li>2. Sampling outside TCA: documentation and assessment showing that the material outside the TCA is esker material and not tailings – report to be received by Inspector by <b>September 30, 2015</b>. Confirmation that this work has been/is being conducted and that LMI will provide the report by September 30, 2015 is requested by <b>August 31, 2015</b>.</li><li>3. Geotechnical inspection of Waste Containment Areas – report to be received by Inspector by <b>October 31, 2015</b>.</li><li>4. Cleanup of Spill 12-306 (Satellite Tank Farm) - LMI is to complete removal of contaminated material by <b>August 31, 2015</b> and provide a report to the Inspector detailing its 2015 activities by <b>September 30, 2015</b> (As per LMI’s commitment of February 23, 2015).</li></ol> <p>Let it be noted that these deadlines have now been extended by a year, with the exception of no.2 which is outstanding since <u>2012</u>. I am confused by LMI’s approach to site maintenance and compliance issues. While last year LMI focussed on the risks to the Sewage Lakes facility, this year while the situation was much worse, there was no urgency in LMI’s actions to address the overtopping and the degradation of the facility. While LMI has chosen to only visit the site for day-trips until full use of the camp is secured, this does not excuse LMI of the responsibility of carrying out any and all obligations of the licence, past inspections, and the Directions. Additionally, LMI should ensure to undertake the activities earlier than last year, in order to avoid another year’s delay due to snowfall. I made it very clear to Ms. Lewis while on-site that the sampling outside the TCA was to be completed this year with no excuses. Let it also be noted that as per Part H, item 8 of the licence, any spills or imminent risk of spills/unauthorized discharges are to be reported to the inspector immediately and the Spill Contingency Plan is to be implemented.</p> <p>Additional requirements for 2015 include the fulfilment of the 2014 Inspector’s Direction and the recent 2015 Direction (2015-KIT002-EP) dated July 22, 2015; and full compliance with the monitoring requirements of 2AM-LUP0914, particularly with respect to both the Sewage Lakes Facilities and the Tailings Containment Area discharges. Failure to meet other requirements of the licence and approved plans will be addressed in due course.</p> |                                   |   |   |

|                            |                            |
|----------------------------|----------------------------|
| Licensee or Representative | Inspector’s Name           |
| -                          | Eva Paul                   |
| Signature                  | Signature                  |
| -                          | <i>Sent electronically</i> |
| Date                       | Date                       |
| -                          | 05/08/2015                 |

Att: Photo Log

CC: Phyllis Beaulieu, Manager of Licensing, NWB  
Erik Allain, Manager of Field Operations, AANDC  
Tracey McCaie, Manager, Lands Administration, AANDC  
Baba Pedersen, Kitikmeot RMO, AANDC





PHOTO LOG

| Date             | Camera         | Inspector                     | Authorization            |
|------------------|----------------|-------------------------------|--------------------------|
| 14/07/2015       | SONY DSC-HX50V | Eva Paul                      | 2AM-LUP0914/8WLC-LUP1516 |
| Photo Log # 1    |                | Location (NAD 83 DD MM SS.SS) |                          |
| Photo # DSC02950 |                | (taken while flying)          |                          |



**Description:** Aerial view of south end of Lower Sewage Dam. Arrows demonstrating flow of effluent are added for illustrative purposes.

|                  |                               |
|------------------|-------------------------------|
| Photo Log # 2    | Location (NAD 83 DD MM SS.SS) |
| Photo # DSC03122 | N65°45'28.96" W111°12'55.92"  |



**Description:** Compromised section of Lower Sewage Dam. Effluent was trickling over this section at the time of the inspection in the direction of the arrow. It is suspected that the flow was greater prior to the inspection. Contents of LSL are pushed onto the berm (circled area).





Photo Log # 3

Photo # DSC03126

Location (NAD 83 DD MM SS.SS)

N65°45'27.55" W111°12'26.41"



**Description:** South end of Lower Sewage Dam looking south. Effluent is flowing around the end of the dam.

Photo Log # 4

Photo # DSC02924

Location (NAD 83 DD MM SS.SS)

(taken while flying)



**Description:** Aerial view of Cell 3 looking roughly north. Uncovered and exposed tailings shown in outlined area. Yellow marker denotes approximate location where Photo 5 was taken.





Photo Log # 5

Location (NAD 83 DD MM SS.SS)

Photo #DSC03099

N65°43'20.99" W111°17'01.49"



**Description:** View of the uncovered tailings taken from the north side near K Dam, looking south-east. Approximate location shown in Photo 4. I proceeded to walk across the tails southwards towards the water.

Photo Log # 6

Location (NAD 83 DD MM SS.SS)

Photo # DSC03101

Unrecorded



**Description:** Cracked surface of tailings. Numerous animal tracks were visible.





Photo Log # 7

Location (NAD 83 DD MM SS.SS)

Photo # DSC03103

N65°43'14.27" W111°16'49.48"



Description: Shiny metallic flakes visible on the surface of the exposed tailings.

Photo Log # 8

Location (NAD 83 DD MM SS.SS)

Photo # DSC03111

Unrecorded



Description: View of Upper Sewage Dam facing southward away from the mine site. Cracks visible in dam that were not noted in 2014.





Photo Log # 9

Photo # DSC03113

Location (NAD 83 DD MM SS.SS)

N65°45'34.59" W111°13'56.63"



Description: Close-up of large crack in Upper Sewage Dam estimated to be greater than 0.5 m deep.

Photo Log # 10

Photo # DSC03115

Location (NAD 83 DD MM SS.SS)

N65°45'34.68" W111°13'57.11"



Description: Upper Sewage Dam looking north towards mine site. Slumping visible on the west (left) side of the dam.





Photo Log # 11

Photo # DSC02936

Location (NAD 83 DD MM SS.SS)

(taken while flying)



**Description:** Aerial view of "N" Dam and Pond 2 looking south-west. Pondwater from Pond 2 has surpassed "N" Dam (circled in red).

Photo Log # 12

Photo # DSC03153

Location (NAD 83 DD MM SS.SS)

N65°45'49.73" W111°14'14.18"



**Description:** Main tank farm berm, looking west. South-most cell is holding water, the central cell (shown on right) is not.





Photo Log # 13

Location (NAD 83 DD MM SS.SS)

Photo # DSC03167

N65°45'49.74" W111°14'20.10"



**Description:** West berm of the fuel farm looking roughly North. Note dry cell in foreground and water ponded in the larger cell (orange reflection of tanks off water). Note the orange spray paint down-slope to the left for reference in Photos 14 and 15.

Photo Log # 14

Location (NAD 83 DD MM SS.SS)

Photo # DSC03168

N65°45'49.90" W111°14'20.10



**Description:** Note the flow path of water down-hill from the orange paint. The area is otherwise dry. Photos 15 and 16 are taken from point 't'.





Photo Log # 15

Location (NAD 83 DD MM SS.SS)

Photo # DSC03170

N65°45'50.34" W111°14'19.79"



Description: Flow of water down-slope from point 't'.

Photo Log # 16

Location (NAD 83 DD MM SS.SS)

Photo #DSC03169

N65°45'50.34" W111°14'19.79"



Description: Looking into the berm from point 't'.





Photo Log # 17

Location (NAD 83 DD MM SS.SS)

Photo #DSC03073

N65°43'27.56" W111°18'11.73"



Description: View of eroded internal TCA dam.