



3 December 2009

Ms. Phyllis Beaulieu
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, Nunavut
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Dear Phyllis

ANNUAL GEOTECHNICAL INSPECTION
TAILINGS CONTAINMENT FACILITY PERIMETER DAMS
LUPIN MINE, WATER LICENSE # LUP-2AM-LUP0914

Please find enclosed a copy of the 2009 geotechnical inspection report for the perimeter dams at the Lupin Mine. The report presents several recommendations for maintenance and repair actions that will largely be undertaken between April and September of 2010.

Our work plan for these items is as follows:

Dam 1A – The main embankment of the dam was found to be in good working order and in need of no maintenance or repair actions. There is a road embankment along the downstream toe of the main dam that was installed presumably to provide access to the outlet valves for the siphons. This road embankment extends outwards into the wetland that forms the headwaters of Seep Creek with the gravel slope extending below the level of the pond at this location. Because the embankment continues under water, it has been subjected to wave erosion and with the loss of sandy materials into the deeper parts of the pond, the slope has become unstable, material has sloughed off into the pond and the area will require remedial work for stability. In addition to this occurrence, we have found that the actuator rods on some of the siphon outlet valves have become seized over time and the valves will require maintenance and repair work if they are to remain operable.

Our plan of action is to excavate the areas around the siphon pipes to expose the outlet valves and hoist the siphon pipes up so that the valves can be serviced and repaired as needed. The pipes will then be reinstalled in their original positions and the area backfilled to restore the access road and pipe bedding.

The new slope will be constructed at a maximum attitude of 3h:1V and the wetted surface will be armoured with riprap obtained from waste rock at the mine site. A series of wooden platforms will be installed to permit safe and reliable access to the hand wheels at the top of the actuator rods.

This work will be undertaken in 2010 as soon as site conditions permit, prior to discharge of water through the siphons. It is estimated that with the workforce and equipment available on site it will require approximately 3 weeks time to complete these measures. The work will be tentatively scheduled for the last week of June and first two weeks of July to precede the expected start of the effluent discharge on July 15th for 2010.

Dam 1C – The embankment for Dam 1C displayed the effects of minor settlements, possibly brought on by thaw-induced subsidence due to the high water level in the pond this past summer. The level of the pond was substantially reduced this year and will be maintained at a lower elevation in future years, so long as the site is on care and maintenance. This will limit the potential for subsidence in the future.

To address the minor cracking issue observed in the upstream face, we propose to place a low berm of sand and gravel material along the toe of the dam's upstream slope and subsequently cover this with rip rap using waste rock from the mine site. Final grades will be contoured back into the existing slope to provide a flatter attitude and more stable foundation frost conditions.

It is likely that the area in the immediate upstream vicinity of the dam will be free of standing water following this year's effluent discharge program. It will be advantageous to have the area covered with gravel while there is still frost in the ground; therefore, this work will be scheduled for the spring of 2010 and carried out in either late April or Early May, depending on the accessibility of gravel borrow materials.

Dam 2 – Due to the high water level in Pond 2 this year, some erosion damage was suffered along the upstream side of the dam. The water level has since been lowered substantially, which will provide ready access to the affected area for repair work. The work will consist of restoring the original profile of the slope utilizing rip rap derived from waste rock obtained from the mine site. This work will be carried out in the summer of 2010. It is estimated that it will require about 2 weeks to complete the work and it has been scheduled tentatively for the second two weeks of July.

Dam 3 – A runoff diversion channel along the west or upstream side of the crest of Dam 3 suffered some erosion damage and the outlet spillway has been undermined and needs repair. From this occurrence, it is evident that the channel design will need some improvement to reduce the potential for future damage and ongoing maintenance and repair work. To address this need, an engineering design will be undertaken to define the slope and cross section of the channel and to specify appropriate rip rap size and installation procedures. Following this design the channel will be reconstructed. It is expected that this can be completed in the summer of 2010 and will require a construction period of approximately 3 weeks duration. This work is tentatively scheduled for July and August of 2010.

Dam 4 – The inspection revealed some potential for seepage beneath the westerly end of the dam near the abutment, in an area where a coffer dam was used to construct the embankment. The engineering inspection report recommended that a geotechnical investigation be carried out in 2010 and that the recommendations from this investigation be implemented in 2011. We expect that the investigation can be carried out once the area is free of snow and that the recommendations from this work be available shortly thereafter.

For 2010 we propose to lower the level of the water in Cell 4 and to backfill the area between the coffer dam and the main dam embankment on the downstream side to remove the pond of water from the toe of the slope of the dam. In 2011 we would carry out whatever permanent work arose from the recommendations following the geotechnical investigation. The investigative work would be scheduled for late June or early July of 2010. The earthworks would be carried out in August and September of 2010 and the final repairs scheduled for 2011.

We trust the above provides the information you require with respect to the geotechnical inspection for 2009 at the Lupin Tailings Containment Facility. If you have any questions, please do not hesitate to contact me.

Yours truly

A handwritten signature in black ink that reads "Andrew Mitchell". The script is cursive and fluid, with the first name and last name clearly distinguishable.

Andrew Mitchell

Development Manager

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cc Ms. Dionne Filiatrault P. Eng. - Nunavut Water Board
Dave Honstein - Nunavut Water Board
Martin McFarlane - MMG Resources

enc 2009 Geotechnical Inspection Report