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

CIDM# 427612

WATER USE INSPECTION REPORT

Date: June 8, 2010	**Licensee Rep.** (Name/Title)**:** PWGSC/INAC (Care and Maintenance status)
Licensee: Tahera Diamond Corp./Benachee Resources Inc.	**Licence No.: 2AM-JER0410**

The Jericho site has been under the Care and Maintenance of Indian and Northern Affairs Canada (INAC) as of 2009 and is managed by Public Works and Government Services Canada (PWGSC) on behalf of INAC. At the time of inspection, no amendments to the water licence are known of that reflect the change in activities (i.e.: care and maintenance) which have occurred at the site.

On June 8, 2010, Water Resource Officers Bryan Rayner and Melissa Joy met PWGSC contracted employees, Andrew Coster (former Tahera employee) and Andrew Kameemamik, on site. Mr. Coster provided us with updates regarding site conditions and any issues they had experienced during their stay on site.

They were based out of the trailer located at the main airstrip and withdrawing water from Carat Lake as needed. They had experienced issues with the incinerator, but had it working again at the time of inspection.

Freshet has not yet occurred: it was really just starting. They had recently received 3-4 inches of snow, which had started to melt. Mr. Coster provided that Public Works had hoped to postpone dewatering of the dam areas/cells this year; another site visit had not been planned for at this time. There was concern based on the volume discharge restrictions of the water licence and the delayed freshet.

As no major remediation or repair work has yet occurred on site, the status of most of the infrastructure remains the same as of the last inspection, though conditions continue to degrade. Updates and items of specific concern are noted below.

Waste Rock Area

- "Seepage Pond #2" (located behind the waste rock area) was previously dewatered via pump into the pit: there is a lot of silt in the overburden, which washes into the seepage pond and eventually drains into Lynne Lake. This will require future management.

Solid Waste and Sludge Deposition Area

- Ash from the incinerator is deposited here; no sludge has been deposited since the Sewage Treatment Plant was decommissioned
- Incinerator area: some staining of the ground, otherwise area is fairly clean.

East Dam

- Grading to the proper design level was never completed
- Too much ice in the PKCA area; level comes very close to the top of the dyke wall
- There is a ponding area on the east side of the East Dam wall which is not part of the monitoring plan

PKCA/Polishing Pond wall

- Second wall is still in place
- There is free movement of water visible (the ice has started to open up in the last 24 hours according to Mr. Coster).

Saddle Dam

- A large pond area is developing due to surface run-off, which normally drains into the polishing pond.

West Dam

- Some erosion has occurred on the west side of the dam wall, possibly due to previous discharge events.

Sewage Treatment Plant Area

- Two black barrels located between the shacks contain an unknown green liquid (possibly glycol)

Fuel Tank Farm and Refuelling Stations

- The first phase of the tank farm berm was constructed with esker material, which is slumping and eroding, exposing the liner in many areas. Liner is also ripped in several places.
- The second phase of the tank farm berm, constructed with crushed gravel material, is observed to be much more durable, though there is some liner exposure along the berm wall.
- Substrate in the berms is heavily contaminated with fuel and standing water is present.
- Tanks need to be re-levelled; flex piping at several connection points is oddly bent/curved.
- Only tank bottoms (i.e.: solids) are left: all tanks were run through the blue Day tank (located in phase one at one end of the tank farm, in esker material), then through the refuelling station.
- The blue Day tank contains fuel and has no flex piping on its connections. The back end of the tank is slumping, placing pressure on joint and valve connections: this tank must be re-levelled/repaired as soon as possible or a spill will occur.
- Very heavy hydrocarbon staining and smell in this area of the tank farm (from previous spills).

Generator Fuel Tank

- Fuel status is unknown/unconfirmed.
- Esker material was used for this steeply graded berm; gradient seems too steep to be of proper specifications. The liner is exposed.
- Hydrocarbon sheen present on standing water in berm; some staining along berm wall.

Waste Transfer Area –Cell 1

- This area has become an indefinite waste storage area
- One corner of the liner was replaced (drive-in access point) and was moved over by several feet.
- Berm was constructed of esker material: erosion has caused the liner to be exposed.
- Liner is exposed and torn at the divider to Cell 2.
- Cells are susceptible to snow and rain water accumulation

Waste Transfer Area –Cell 2

- Drums of contaminated soil and substrate have been filling up/overflowing from snow melt and rain water
- A water-line along cell wall indicates how high the water level was: Mr. Coster stated that barrels were floating at one point due to the high water level in the cells.
- Contaminated water and substrate inside the containment structure.
- Large, tarped piles of contaminated substrate are mostly secure; there is minor tearing of the cover that will need to be monitored (and possibly replaced at the end of the season).
- Large blue tank contains a mixture of various unknown liquids: contents will need to be characterized for proper disposal.

Laydown Area

- Area contains mega totes holding ferrous silicate

Airport Fuel Tanks

- Berms still in the same condition as previous inspection: heavy hydrocarbon odour and sheen visible in standing water.
- Berm constructed from esker material; tanks need to be re-levelled and liner condition confirmed.

Lynne Lake and Emulsion Plant area

- The cement pad was built in a natural drainage area with no culverts installed to direct run-off; this area may require maintenance before the end of the season.
- Emulsion plant sprung has been damaged.
- Fuel stained substrate near fuel tank had not been cleaned up; fuel tank is now empty.
- The generator in the nearby seacan has been removed; there is a large stain on the ground where it was previously located.

Other

- Most access roads were in satisfactory condition at time of inspection, despite the lack of a grader on site.
- Lots of wildlife on site as observed by PWGSC (mainly bear and caribou); recent bear tracks were seen.
- Large tires have been placed around the perimeter of the Pit as safety markers.
- There has been some vandalism on site: someone broke into the processing plant over the winter.
- Several culverts were replaced last season, but there is concern that some areas on site will be prone to washouts later this year.
- Berms: erosion control, substrate used in construction, gradient specifications and liner condition/exposure.
- Silt/fines management
- Lack of signage for monitoring stations
- Lack of standard operating procedures/active management plan for care and maintenance activities.
- Site monitoring should be occurring at least once per month, especially during the summer season.
- Contaminated water/wastewater and substrate captured in berms and storage cells: requires approved method of treatment and/or disposal options
- Dewatering is highly recommended for 2010 season: dam/dyke walls were never completed to specifications and when combined with erosion/degradation of site may contribute to a potential compromise of the dam structures.

Outstanding issues to be addressed for 2AM-JER Water Licence Renewal

- Geotechnical inspection outstanding: dam/dyke walls were never completed to specifications.
- Many “as-built” drawing were never submitted to the NWB
- Inconsistencies between the Jericho Spill Contingency Response Plan and conditions within the water licence
- Fuel berm and fuel/chemical secondary containment: management and maintenance plan(s)
- A comprehensive leak detection program for fuels and wastes stored at the site
- Management and remediation or removal plan for hydrocarbon contaminated soils currently on site (which would also minimize the generation of contaminated wastewater)
- Appropriate procedure for treating and testing water coming into contact with hydrocarbon contaminated substrate (or any other known waste on site) before being discharged to the PKCA.
- Additional sample monitoring within the East Cell to include BTEX compounds and F1-F4 compounds, due to the continued deposit of this material to the PKCA.

M. Joy	Sent by E-mail
Inspector’s Name	**Inspector’s Signature**

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