



Nunavut Impact Review Board 2013 Site Visit Report for the Jericho Diamond Mine Project



June 2013

NIRB File No. 00MN059

Jericho Project Certificate [No. 002]

Report Title: Nunavut Impact Review Board 2013 Site Visit Report for the Jericho Diamond Mine Project

Project: Jericho Diamond Mine
Project Location: Kitikmeot Region, Nunavut

NIRB File No.: 00MN059
Jericho Project Certificate [No. 002]

Project Owner: Shear Diamonds (Nunavut) Corp.
Suite 220, 6 Adelaide Street East, Toronto, ON M5C 1T6

Contact: 1-866-298-9695

Visit conducted by: Tara Arko, Monitoring Officer, Nunavut Impact Review Board
Contact: (867) 983-4611 or tarko@nirb.ca

Site visit dates: June 11, 2013
Last site visit: August 28 – 30, 2012

Photos by: Tara Arko, Nunavut Impact Review Board

Cover photo: Mine pit viewed over berm, Jericho Mine Site

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1. Introduction & File History

The Jericho Project is a diamond mine situated in the West Kitikmeot region of Nunavut, about 430 kilometres (km) southwest of Cambridge Bay and 240 km southeast of Kugluktuk.

Following its environmental assessment of the proposed project, the Nunavut Impact Review Board (NIRB or Board) issued Project Certificate [002] to Tahera Corporation Limited (Tahera) in July 2004 for the development of the Jericho Diamond Mine project (Jericho; the Project) pursuant to Section 12.5.12, Article 12 of the Nunavut Land Claims Agreement (NLCA). Tahera then requested that the Project Certificate be reissued to reflect the new project ownership, and on January 19, 2005 the NIRB issued¹ Amendment #1 of the Jericho Project Certificate in the name of Benachee Resources Inc., a wholly owned subsidiary of Tahera. Construction of the mine commenced in March 2005 and full mine operations began in July 2006.

Tahera filed for creditor protection in January 2008 citing insufficient funds to operate, and the Jericho Mine Site was placed into care and maintenance. Indian and Northern Affairs Canada (INAC, now Aboriginal Affairs and Northern Development Canada or AANDC) intervened² in December 2008 to assume control of the Jericho Mine site, and to complete temporary closure of the site to regulatory standards.

Shear Diamonds (Nunavut) Corp. (Shear; formally Shear Minerals Ltd.) completed the purchase of the Jericho Diamond Mine in August 2010, and subsequently requested³ that the NIRB reassign the Project Certificate to reflect the new ownership. On August 23, 2011 the NIRB issued Amendment #2 to the Jericho Diamond Mine Project Certificate [002]⁴ to Shear.

The site remained in care and maintenance during the following year under the stewardship of Shear as it evaluated the site's mineral resource and updated permitting. On September 4, 2012 the NIRB received notice from Shear announcing changes to site activities as a result of lower market prices for diamonds. In October 2012, a temporary closure plan was available on the Nunavut Water Board public registry indicating that the site was placed into temporary shut down and that all personnel had been moved off site. No further correspondence or reporting from Shear has been received by the NIRB from this point up to the 2013 site visit.

¹ Project Certificate [No.: 002] Amendment #1, Stephanie Briscoe, Executive Director, Re: *Proponent Name Change to Project Certificate for the Jericho Diamond Mine Project [002]*. Letter dated January 19, 2005.

² Pursuant to Section 89 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (S.C. 2002, c. 10), Last amended January 2, 2010.

³ Pamela Strand [Shear Diamonds (Nunavut) Corporation], then-President, Re: *Request to assign the Jericho Diamond Mine Project Certificate (No. 002) to Shear Diamonds (Nunavut) Corp.* Letter dated June 3, 2011.

⁴ Project Certificate [No.: 002] Amendment #2, Ryan Barry, Executive Director, Re: *Proponent Name Change to Project Certificate for the Jericho Diamond Mine Project [002]*. Letter dated August 23, 2011.

2. Objectives & Purpose of Site Visit

In accordance with sections 12.7.1 and 12.7.2 of the NLCA and Project Certificate [No. 002], the NIRB is responsible for monitoring the Project. One objective of the NIRB's site visit is to determine whether and to what extent the land or resource use in question is being carried out within the predetermined terms and conditions [NLCA, Subsection 12.7.2(b)] as outlined in the NIRB Project Certificate. Where possible, observations made from the site visit shall be incorporated into the measurement of relevant effects of the project.

Prior to the 2013 site visit, the following items were considered by the NIRB's Monitoring Officer:

- NIRB Project Certificate [No. 002], 2012 board recommendations, and site visit reports,
- Correspondence from Shear dated June 3, 2011 regarding company expectations to address Project Certificate terms and conditions,
- 2011 document submissions from Shear:
 - Aquatic Effects Monitoring Plan,
 - *draft* Air Quality Monitoring Program,
 - General Monitoring Plan,
- 2012 AANDC Inspection Report⁵ and Shear's response⁶, and
- 2013 AANDC Inspectors Direction⁷.

As a result, the site visit focused upon the following parameters:

- General observations - condition of site in temporary closure,
- Update on clean-up of fine processed kimberlite from processed kimberlite containment area (PKCA) and methods in place to mitigate future spill potential, and
- Provide observations related to Jericho Project Certificate terms and conditions.

3. 2013 Site Visit

On June 11, 2013 the NIRB Monitoring Officer accompanied representatives of Aboriginal Affairs and Northern Development Canada on a day trip from Yellowknife, NWT to the Jericho Mine site. There were no other personnel at the site. Upon arrival to the Jericho site, the group established a tentative schedule for the day based on the group's priorities, assessed the resources at the shelters located by the airstrip, and decided on procedures for the day to ensure health and safety. The NIRB's assessment of the site included visual observation of the following features:

⁵ Eva Paul (Aboriginal Affairs and Northern Development Canada), Water Resources Officer, *September 24, 2012, RE: Inspection of September 13th, 2012*, [available online via the NWB public registry](#).

⁶ Unknown author, *2AM-JER1119 Compliance Plan*, September 30, 2011. [available online via NWB public registry](#)

⁷ Eva Paul (Aboriginal Affairs and Northern Development Canada), Water Resources Officer, *March 8, 2013, RE: Nunavut Waters and Nunavut Surface Rights Tribunal Act, 2002 Inspector's Direction*, [available online via the NWB public registry](#).

- airstrip, roads, pump stations, and fuel storage areas;
- hazardous waste areas located by airstrip and beside landfill;
- landfill and incinerator seacans;
- stockpiles and waste rock piles;
- mine pit and berm;
- water pumps, process plant outflow, outflow diffuser, and discharge area to Carat Lake;
- dams and water diversion structures;
- the PKCA; and
- dust monitoring stations.

3.1 General Observations

The Monitoring Officer noted that at the time of the 2013 site visit, the Jericho site was unmanned, generally free of debris, and that building doors were unlocked and in some cases open.

3.2 Project Certificate terms and conditions

Due to the Jericho site being unmanned at the time of the 2013 site visit, and given that the Board had received no correspondence from Shear since December 19, 2011 or communication since September 4, 2012, the following discussion of terms and conditions within the Jericho Project Certificate are considered only as could be verified by direct observation.

3.2.1 Atmospheric Monitoring

Condition 5 of the Jericho Project Certificate states:

“The installation of an atmospheric monitoring station to be funded and installed by Tahera, to obtain site-specific meteorological data. This station shall meet the requirements of Environment Canada air quality experts and focus if possible on dust from roads and blasting, and windblown dust from stockpiles.”

As the site was unmanned and not powered at the time of the 2013 site visit, the NIRB Monitoring Officer could not verify if the meteorological station was functioning. Dustfall stations remained in the same locations as previously observed around the site, through it is unclear if they are being monitored.

Photo 1: Dust fall monitoring station at west dam, on side opposite road, looking toward cell B/C



3.2.2 Noise Monitoring and Mitigation

Condition 8 of the Jericho Project Certificate states:

“For noise abatement, Tahera shall employ industry best practices to protect people and wildlife from mine activity noise, including vehicles and aircraft. The final noise abatement plan shall be filed with NIRB’s Monitoring Agent. Industry requirements for low-level flying should be maintained.”

As the site remained in temporary closure and was unmanned during the 2012-2013 reporting period, the Monitoring Officer has no details pertaining to vehicle and aircraft traffic to and around the site. No vehicular movements transpired on site during the 2013 visit except for the inspection/site-visit commissioned chartered aircraft.

3.2.3 Wildlife Monitoring and Mitigation

Conditions 3 and 9-18 of the Jericho Project Certificate outline requirements for consideration at site and monitoring with regards to wildlife and birds. During the 2013 site visit the NIRB Monitoring Officer did not observe monitoring activities taking place, and has not received any monitoring data during the 2012-2013 reporting period.

Condition 15 of the Jericho Project Certificate states:

“For the greater protection of wildlife, wildlife must have the right of way, and this principle must be strictly enforced. This means all activity including construction, drilling, blasting, and traffic movements, be stopped in the presence of susceptible raptors, ungulates, and carnivores.”

Personnel associated with the 2013 site visit agreed by verbal consensus that wildlife be given the right-of-way if encountered, but aside from observing and noting wildlife scat, there was no direct observation of wildlife at the site.

3.2.4 Blasting Activities and Impacts Mitigation

Conditions 9 and 26-28 of the Jericho Project Certificate outline requirements for activities relating to blasting and to the use and storage of explosives at site. During 2012, Shear maintained the site in care and maintenance and noted no plans to begin blasting activities on site. In the temporary shutdown notice provided by Shear, there was no indication that blasting would occur at site, and the Monitoring Officer noted no evidence of blasting activities during the 2013 site visit.

3.2.5 Winter/Seasonal Roads

Conditions 32 and 33 of the Jericho Project Certificate outline requirements in relation to winter roads and materials movement. Previously, Shear indicated that it had no plans to construct any winter or ice roads. The NIRB has received no further clarification on this since the site moved into temporary closure.

3.2.6 Fuel Storage

Condition 34 of the Jericho Project Certificate states:

“All fuel storage areas shall be bermed and meet regulatory requirements.”

The main fuel tank farm was enclosed in a completed berm as well as some of the caches of barreled fuel (see **Photo 2**), but other caches like the barrels at the airstrip (see **Photo 3**) were not. The berms that were incomplete as a result of upgrades taking place during the NIRB 2012 site visit were re-established and observed to be completely enclosing the bulk fuel storage areas during the NIRB 2013 site visit.



Photo 2: Barreled fuel found in cache by helipad and spill kits



Photo 3: Fuel stores at airstrip

Areas previously suspected of fuel contamination during the 2009, 2011, and 2012 NIRB site visits remained within bermed areas; however, the bermed areas also contained puddles of sitting water (see **Photo 4**) as well as groups of open drums filled with mixed wastes (see **Photo 5**).



Photo 4: Melt water puddle in bermed area of main fuel tank farm



Photo 5: Barrels of waste material found within bermed area of main fuel tank farm



Photo 6: Hydrocarbon sheen on puddle within berm of Main Fuel Tank Farm



Photo 7: Soil staining within berm of Main Fuel Tank Farm



Photo 8: Meltwater in Main Fuel Tank Farm



Photo 9: Main Fuel Tank Farm

Areas affected by fuel spills at the main fuel tank farm and waste storage areas which had been noted during previous site visits remained untreated during the 2013 site visit.

3.2.7 Processed Kimberlite Containment Area



Photo 10: Processed Kimberlite Containment Area panorama

At the time of the 2013 site visit, any steps that Shear had previously undertaken to monitor or contain the fine processed kimberlite in the PKCA ceased (see **Photo 10**). The NIRB Monitoring Officer also observed that the surface of the PKCA was dry and in certain places, developing cracks (see **Photo 11**). The dust fall monitoring stations previously installed around the PKCA were still present (see **Photo 1**), but due to the site's temporary closure, it was unclear whether these stations would continue to be maintained and monitored.



Photo 11: PKCA after spring freshet, top dry, slumping, and developing cracks

Condition 31 of the Jericho Project Certificate states:

“Further detailed study by Tahera to ensure that water quality exiting the PKCA meets receiving water standards, including further study on the option of a divider/barrier or dyke in the PKCA to improve water quality. This information is to be provided to NIRB’s Monitoring Agent, DFO, NWB and EC.”

As evident in the photos of cell A of the PKCA, the majority of the surface of this area appeared to be dry, and therefore no short term need for water discharge from this cell (see **Photo 11**).

Condition 38 of the Jericho Project Certificate states:

“That Spray Irrigation, it if is incorporated as a project component in the future, is referred back to NIRB with further design detail to be dealt with under NLCA Article 12.4.3”

No use of spray irrigation was apparent during the 2013 site visit, and cracks appeared to be forming on the surface of the PKCA which looked to be dry.

3.2.8 Water Quality and Aquatic Monitoring

Conditions 4, 6, 20, 29 and 30 of the Jericho Project Certificate require the Proponent to establish and participate in a water quality monitoring program. As the site remained unmanned by Shear at the time of the 2013 site visit, the NIRB has no additional information in relation to ongoing water quality monitoring at the Jericho site.

3.2.9 Water Diversion and Impacts to Fish Populations

Conditions 7, 19, and 21-25 of the Jericho Project Certificate outline requirements of the Proponent in relation to site water management and recommendations for reducing impacts to

fish populations in areas surrounding project activities. During the 2013 site visit, the water level of cell B/C was observed to be at or above levels observed during previous site visits (see **Photo 13**) as evidenced by the amount of surface vegetation under water.

Due to the discontinuance of water discharge by Shear, the discharge area and outflow diffuser could be more thoroughly inspected (see **Photo 14** and **Photo 15**). The outflow diffuser consisted of a plate welded to the end of the hose on the metal fitting. Some evidence of surface erosion was present around the discharge area, but due to regrowth of vegetation in the area, the erosion was most likely not caused by discharge that occurred during the last growing season.



Photo 12: View of cell B/C from west dam



Photo 13: Cell B/C showing flooded vegetation



Photo 14: Discharge area from cell B/C



Photo 15: Outflow diffuser and impact area

3.2.10 Waste Management

Condition 35 of the Jericho Project Certificate states:

“Waste management must be controlled in such a way that reduces or eliminates the attraction to carnivores or raptors. Fencing and other suitable deterrents shall be employed in all landfills and waste storage areas. A final waste management plan shall be filed with regulatory authorities including the NWB and NIRB’s Monitoring Agent.”

Condition 40 of the Jericho Project Certificate states:

“Tahera shall enter into written arrangements with its contractors to ensure all site debris is cleaned up off the lands including wind-blown debris.”

During the 2013 site visit it was noted that the incinerator seacan remained closed and locked (see **Photo 17**). Waste materials such as food items as well as wood, plastic, and metal debris were found in open-top, uncovered metal waste bins located by the machine shop and office buildings (see **Photo 18**).



Photo 16: Incinerator seacan (2012)




Photo 17: Incinerator seacan area



Photo 18: Waste bins at main camp

4. Findings and Summary

The Jericho Project Certificate contains terms and conditions which require that Shear meet specific requirements for ongoing site operation and maintenance. At the time of the NIRB's 2013 site visit, the Jericho Mine Site was unmanned and the NIRB had not received any notice that Shear had conducted the activities proposed in the Temporary Shut Down Plan. The NIRB Monitoring Officer observed that the site remained in a similar condition to that witnessed during the previous site visit, but did not conduct inspections inside of the buildings owing to health and safety concerns. The Proponent remains non-compliant to Condition 35 which requires the Proponent install fencing or other suitable deterrent around all landfill and waste storage areas. Bulk fuel storage tanks were observed to be within completed berms; however while some caches of barreled fuel were found within secondary containment, others were not. The NIRB Monitoring Officer observed no evidence of monitoring activities being undertaken by the Proponent at the Jericho site during the 2013 visit.

Prepared by: Tara Arko
Title: Technical Advisor/Monitoring Officer
Date: October 21, 2013
Signature: 

Reviewed by: Amanda Hanson
Title: Director, Technical Services
Date: October 21, 2013
Signature: 