



May 19, 2017

Tracey McCaie
Manager, Land Administration
Indigenous and Northern Affairs Canada
P.O. Box 2200
Iqaluit NU X0A 0H0

RE: AMENDMENTS TO JERICHO MINE SITE STABILIZATION PROJECT

The following are two proposed project amendments related to the Jericho Site Stabilization Project:

- 1) INAC on behalf of DFO proposes to remove the jetty which is in Carat Lake. The objective of this is to create approximately 1,207 m² fish habitat of Carat Lake through the development of an underwater rock shoal by excavating the existing causeway to at least 2 meter below normal summer water levels. All infrastructure associated with the water intake jetty will first be removed before excavations will commence. The reclamation of the causeway will be based on Tahera Diamond Corporation's design plan found in their Closure and Reclamation Plan Update Report (April 2007). Appendix 1 contains this document for your reference. In the report, the causeway is suggested to be "cut to 2m below the normal summer water level from the northern extent back to a water depth of 3.5m. From 3.5m water depth to 1m the causeway will taper up. The reclaimed causeway will intersect surface near the shoreline." This work will be conducted between July 1 to Aug 31 so as to not have any adverse impacts on the aquatic ecosystem. To isolate the jetty from the lake during the construction, silt booms and/or silt curtains will be used as sediment and erosion control measures. Additional sediment and erosion control measures that will be considered during in water workings are available on the DFO website at <http://www.dfompo.gc.ca/pnwppc/measures-mesures/measures-mesures-eng.html> . A qualified biologist or environmental inspector will be on site during all in-water restoration/construction works .

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- 2) As a contingency measure to aid in the removal of the frozen core West Dam, explosives may be used. The details of this can be found in the attached Appendix 2 prepared by Outcome Consultants and Rowes Construction.

If you have any further questions or require additional information, please contact myself at (819) 934-1188 or via email at mark.yetman@aandc-aadnc.gc.ca.

Sincerely,



Mark Yetman
Senior Project Advisor

Appendix 1

Tahera's Closure and Reclamation Plan Update

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Toronto, ON M5K 1P2
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Closure and Reclamation Plan Update
Jericho Diamond Mine, Nunavut

Submitted to:

Nunavut Water Board
Gjoa Haven, Nunavut

Submitted by:
Tahera Diamond Corporation
Toronto, Ontario

April 2007

Water Licence 2AM-JER0410

6.4.10 Airstrip

6.4.10.1 Final Configuration

The airstrip will be scarified or ripped and vegetated when no longer required, pursuant to probable success as shown in reclamation trials. However, the strip will be left for others to use, if requested by government agencies or by a third party willing to assume the airstrip land lease. The airstrip will be kept open until final closure for use by Tahera Diamond Corporation reclamation personnel.

6.4.10.2 Alternatives Considered

Other than transfer of the lease for the airstrip to an interested third party, no alternatives to the proposed reclamation were considered.

6.4.10.3 Long-term Stability

Long-term stability concerns for the airstrip include erosion from runoff and wind. The airstrip is located on an esker and no erosion issues were evident on the existing strip which was constructed in 1998. In 2006 the airstrip was lengthened to the north (Drawing 1, Appendix A). The airstrip is not proximate to any water body and no drainages cross the strip. Revegetation, if feasible, will address any stability issues for the airstrip. Because the airstrip is located on an esker vegetation will re-establish in time naturally if short-term vegetation trials prove unsuccessful. Armouring will not be used except in areas that indicate propensity to erode over the life of the airstrip. Armouring will only serve to prevent or greatly slow the revegetation process.

6.4.11 Freshwater Intake Causeway

6.4.11.1 Final Configuration

The causeway will be cut to 2m below the normal summer water level from the northern extent back to a water depth of 3.5m. From 3.5m water depth to 1m the causeway will taper up. The reclaimed causeway will intersect surface near the shoreline.

6.4.11.2 Alternatives Considered

The causeway construction rock has the potential to provide fish habitat if left in the lake as indicated above. Recycling of the rock in this manner will require approval from DFO and will be discussed with the Department one year prior to closure. Alternately, the rock will be pulled back on shore and placed in the waste rock dump.

6.4.11.3 Long-term Stability

Not applicable; the causeway will be largely removed or recycled as fish habitat.

6.4.12 C1 Diversion

6.4.12.1 Final Configuration

The current plan calls for removal of the diversion once the open pit fills and water is found to be of sufficient quality for direct release back into Stream C1. Should this be the case, the head of the diversion will be blocked once the freshwater intake access road is removed and Stream C1 will be re-established in its natural drainage location.

Appendix 2

Use of Explosives as a Contingency Measure



May 15, 2017

Northern Contaminated Sites Program Branch, Project Technical Office
Indigenous and Northern Affairs Canada
25 Eddy Street
Gatineau, Quebec K1A 0H4

Attention: Mr. Michael Westlake, Project Analyst

Subject: Update to Land Use Permit #N2016U0013

Dear Mr. Westlake,

On January 12, 2017 Indigenous and Northern Affairs Canada – Land Administration (INAC-Land Administration) granted a Land Use Permit (LUP) for Site Remediation in the Contwoyto Lake Area (N2016U0013) pursuant to an application submitted by Indigenous and Northern Affairs Canada – Northern Contaminated Sites Program Branch (INAC-NCS) on September 9, 2016.

Rowe's Outcome Joint Venture (ROJV) was awarded PWGSC Contract No. EW699-171068/001/NCS ("Contract") on May 4, 2017 to implement the remediation project at the former Jericho mine as outlined in the LUP. The proposed methodology of ROJV contains a contingency element not anticipated in the LUP application: a controlled blast to assist with the removal of the West Dam frozen core fill materials. The purpose of this letter is to provide the necessary information such that INAC-NCS may submit an application to amend the LUP to permit this planned use of explosives.

Background

As part of the Contract, the frozen core West Dam must be partially removed to allow for drawdown of the Processed Kimberlite Containment Area. According to previous reports, the core material of the dam is material frozen year-round to prevent water seepage from upgradient sources. The frozen

saturated gravel and clay that make up the dam are expected to be time-consuming and difficult to excavate.

In the proposal for the work, ROJV planned a minor controlled blast to break up the the dam core as a contingency measure to facilitate the excavation and removal process. ROJV plans to subcontract Break-Away Drilling and Blasting Ltd. (Break-Away) to carry out the controlled blast work. This will involve advancing boreholes within the frozen core dam and placing a robust, booster sensitive explosive and nonelectric initiation system within each hole. In this fashion, Break-Away will safely break up the frozen material such that it can be excavated and removed by ROJV.

Updated Land Use Permit Submission

The following narrative provides the information that is deemed necessary for submission to Nunavut Impact Review Board (NIRB) for referral to INAC-Land Administration for an update to the LUP. For convenience, the information below has been organized in the same way as that contained in the original LUP application submitted by INAC-NCS.

Personnel

On behalf of Indigenous and Northern Affairs Canada – Northern Contaminated Sites Program Branch (INAC-NCS), Public Works and Government Services Canada (PWGSC) awarded a contract on May 4, 2017 to Rowe's-Outcome Joint Venture (ROJV) for the Jericho Mine Site Stabilization project. ROJV will retain Break-Away Drilling and Blasting Ltd. as a specialist subcontractor to carry out the controlled blasting work. Break-Away Drilling will established a controlled work area within which a seven man crew will carry out the work.

Qualifications

As in the original submission, INAC's eligibility for a Land Use Permit is under Section 21 (c) of the *Territorial Land Use Regulations* (C.R.C., c. 1524).

Summary of New Operations

The West Dam is a frozen core dam that must be partially removed to allow for drawdown of the Processed Kimberlite Containment Area. The core material of the dam is frozen year-round to prevent water seepage from upgradient sources. Excavation of the frozen saturated gravel and clay liner may not be practical with heavy equipment alone within the project constraints.

As a contingency measure, ROJV has proposed a controlled blast to assist with the removal of the West Dam frozen core fill materials. The controlled blast itself will not physically displace the West Dam fill materials. Instead, it will break up the frozen clay and gravel to allow for safe and efficient excavation and removal to meet the final design grade elevations of the Contract.

The controlled blasting will be completed by Break-Away and will be facilitated by placing and igniting explosives within boreholes advanced for this purpose. A track mounted drill rig will advance boreholes over the surface area of the West Dam (on a grid with each borehole approximately 3.6m apart) where excavation is necessary to achieve the final design grade elevations. The boreholes will be drilled to a depth of 1-m greater than the final engineered channel base elevation (based on the design drawings of the Contract). Each borehole will be surveyed and included within the project record.

Pre-packaged emulsion explosives will be transported to the site via aircraft in heavy duty corrugated cardboard containers on pallets. When the aircraft arrives at the site, the pallets will be transported immediately to the work area, and the explosive material will be removed from the containers and placed in boreholes. The explosives will be under constant supervision of the installation team during placement, which is expected to take approximately 48 hours.

The blasting contractor will connect the explosives to a nonelectric initiation system. The trigger system will be located outside of a 400 metre diameter safe work area, from which all personnel will be excluded during the blasting event in accordance with Break-Away's strict safe work procedure (SWP).

The preparatory activities for the placement of the explosives will be carried out continuously over approximately 48 hours. The explosives will be delivered to site immediately before the materials are required for placement.

After the controlled blasting is complete, excavation of the West Dam will be conducted as originally planned.

Updated Summary of Potential Environmental and Resource Impacts

ROJV provides the following update on potential environmental and resource impacts for controlled blasting. Categories are based on those submitted in the Environmental Screening Report¹ (ESR) prepared for the initial Land Use Plan.

Impacts on Air Quality

ROJV does not anticipate any changes in air quality impacts or mitigations for the blasting program.

Impacts on Hydrology and Hydrogeology

ROJV does not anticipate any changes with respect to hydrology or hydrogeology impacts or mitigations for the blasting program.

¹ *Environmental Screening Report, Jericho Mine Site Stabilization Plan*. Matrix Solutions Inc. August, 2016.

Impacts on Aquatic Ecology

As noted in the ESR, breaching the West Dam could result in increased runoff and surface erosion contributing to sediment loading of the watercourses and water bodies at the site. In order to mitigate this impact, ROJV and its subcontractor will install erosion and sediment control measures around areas that have the potential to drain into surrounding water bodies and watercourses.

Impacts on Soils and Terrain

As noted in the ESR, a positive impact to terrain is expected from breaching the West Dam and directing water along the original flow path. No changes are anticipated from using the controlled blasting methodology described herein.

Impacts on Vegetation

No changes to impacts or mitigations for vegetation are anticipated. The West Dam will be removed, allowing for natural drainage to be restored, fostering natural revegetation.

Impacts on Wildlife

The original Environmental Effects Assessment (EEA) of the Jericho mine² included information on the presence of wildlife at the site. According to the EEA, “[h]igh densities of caribou are probable for short durations (less than 24 hours) several times per year.”

The EEA notes that caribou are likely present at the site “continuously during spring migration for most of May. They should also be expected in large numbers for very brief periods any time from late June through to mid-August (post-calving period, and late summer).” In order to minimize impacts on the caribou herd, this proposed amendment to the LUP requests permission for blasting only for the period August 15 through September 30, 2017.

The mitigation plans included in the ESR submitted with the original LUP application will be updated as follows:

- Wildlife Monitors will be on-site and will advise ROJV and Break-Away if caribou are in the vicinity and, and if so, blasting will not occur until they have migrated further than 1000 m of the West Dam location;
- The drill rig and other equipment will be maintained in good working condition, turned off when not in use, and mufflers will be used to reduce noise;
- All explosives will be under visual guard 24 hours a day while on site;

² *Jericho Diamond Project, Environmental Effects Assessment on Wildlife*. Hubert and Associates Ltd. November, 2002.

- To minimize the duration, preparation for blasting will be conducted in a very short period due to the continuous operation approach and the actual blast event is instantaneous; and
- As part of the safety orientation training provided to all workers, Wildlife Awareness training is included for dealing with wildlife.

Update to Proposed Restoration Plans

Restoration plans are unchanged from the initial application.

Additional Licenses and Permits

ROJV has consulted with both Natural Resources Canada and the Workers' Safety and Compensation Commission of Nunavut (WSCC). It has been determined that WSCC has the authority to regulate the storage, handling and use of explosives under the *Mine Health and Safety Act* (SNWT (Nu) 1994, c 25) and the *Consolidation of Explosives Use Act* (RSNWT 1988,c.E-10).

According to the *Mine Health and Safety Regulations* (NWT Reg (Nu) 125-95), Section 14.11 (5), "[w]here explosives loading operations are conducted continuously over successive shifts, the quantity of explosives required for the completion of the operation may be stored near the loading site without a permit." As such, no permit for storage of explosives will be required as part of the planned new operations described herein.

Transport of explosives and initiation system to the site will be in accordance with federal and territorial Transportation of Dangerous Goods Regulations.

Additional Disposal Required

No additional disposal will be required for the proposed additional work. Any material remaining after the program is complete will be removed from the site for future use.

Additional Equipment Required

The additional work proposed will require the use of a track-mounted CME 850 drill rig.

Period of Operation for Additional Work

If necessary, the additional work will be conducted between August 15, 2017 and September 30, 2017. This is within the currently-planned period of work at the site.

Period of Permit

No changes are proposed to the period of the permit.

Location of Activities

No changes are proposed to the location of activities at the site.

Closure

If you have any questions on the information presented herein, please do not hesitate to contact Michael Billowits who can be reached at 613.729.2402 or mbillowits@outcomeinc.ca or Jack Rowe who can be reached at 867.874.3243 or jrowe@rowes.ca.

Respectfully,



Jack Rowe
President, Rowe's Construction Ltd.



Michael Billowits, M.Sc.(Eng.), P.Eng.
President, Outcome Consultants Inc.