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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI

File: 2BE-HIG

DRAFT

March 28, 2007

Mr. Andrew Mitchell
Project Manager
Wolfden Resources Inc.
403–1113 Jade Court
Thunder Bay, ON
P7B 6M7

Subject: **NWB review of the submitted Water Licence Application for the Renewal of High Lake Exploration Operations, Licence N$^{o.}$NWB2HIG0305**

Dear Mr. Mitchell:

The following presents a response to the above-noted file.

The Nunavut Water Board (NWB) requests further clarity on issues related to the Water Licence Application for the renewal of exploration activities at the High Lake property, including the operation of three diamond drill units, geophysical surveying, and the operation of a 35 person camp. The following documents were consulted for the review.

i. **Water Licence Renewal Application Form** – Wolfden Resources Inc. – *High Lake Project* (dated: January 31, 2006 [sic]; received: February 9, 2007)
ii. **Exploration/Remote Camp Supplementary Information Request (Licence N$^{o.}$ NWB2HIG0305)** – Wolfden Resources Inc. – *High Lake Project* (undated; received: February 9, 2007)
iii. **High Lake Project Spill Contingency Plan** – Wolfden Resources Inc. – *High Lake Project* (dated: January 19, 2007; received: February 9, 2007)
iv. **High Lake Project Abandonment and Restoration Plan** – Wolfden Resources Inc. – *High Lake Project* (dated: January 19, 2007; received: February 9, 2007)

The NWB requests additional information regarding the following listed items.

Renewal Application Form and Supplementary Information Request

1. **General –** There are a number of apparent inconsistencies between the *Water Licence Renewal Application Form* and the *Exploration/Remote Camp Supplementary Information Request.* Clarification is requested regarding the following:

    a. The *Exploration/Remote Camp Supplementary Information Request* states that the estimated domestic water use for the camp will be 100L/day/person (for a 35 person camp this works out to 3.5 cubic metres per day); the *Water Licence Renewal Application Form* states that approximately 5 cubic metres of greywater will be produced daily. How is this volume balance possible? Is there more water to be used by the camp than only for domestic purposes?

    b. The *Exploration/Remote Camp Supplementary Information Request* states that the estimated volume of water to be used by the drilling units is 180,000L/day (180 cubic metres per day); however, the *Water Licence Renewal Application Form* states that three

drilling units will consume approximately 75 cubic metres of water daily altogether. Please provide clarification regarding this discrepancy.

c. The *Exploration/Remote Camp Supplementary Information Request* states that the greywater sump will be located 300 metres from any water body; however, the *Water Licence Renewal Application Form* states that this distance will be 100 metres. Furthermore, on the figure provided with the application, entitled *Camp Location and Water Resources,* the sump location indicated appears to be less than 100 metres away from the nearest water body, as per the scale shown on the figure. Is the proponent committing to a minimum set-back distance for the sump in relation to all water bodies of 100 metres?

d. It is unclear what happens to settled solids from the greywater tanks and to incinerator ash during the course of camp operations. The NWB understands that both non-combustible and combustible forms of waste are loosely defined in the application materials, however, these definitions do not specifically include greywater sludge and incinerator ash. Will the settled solids be treated as combustible waste and incinerated? Will the ash be treated as non-combustible waste and flown off-site?

Spill Contingency Plan

1. **General –** The *Spill Contingency Plan* provided with the application materials generally follows the *Northwest Territories Water Board Guidelines for Contingency Planning*. It provides a clear set of procedures for responding to accidental spills of petroleum products and other chemicals. The NWB understands that this plan is to act as a reference guide for site personnel in the event that an emergency spill situation arises during the course of exploration and/or camp operations. The plan forms only a part of the overall spill response program. Training in spill response procedures and drill in the use of spill response equipment are valuable components of this program and help ensure that spills are responded to in a timely and efficient manner, and according to the procedures detailed in the plan. Does the proponent believe that it is necessary to drill the spill response team to ensure that spills are responded to in a timely and efficient manner? If not, why not? Does the proponent intend to train the members of the response team in the proper use of the spill response equipment? Clarification is requested regarding the intent to include or exclude training exercises for emergency spill response as part of the *Spill Contingency Plan.*

2. **Section 3: Site Description –** This section provides a description of the camp location and the camp layout, with particular emphasis on the fuel storage areas. However, there is no spill containment structure identified or described for the approximately 461,250L (2,250 X 205L drums) of petroleum products to be stored on-site at the three fuel caches identified. Do the fuel caches identified incorporate spill containment elements into their design, such as geomembrane liners and containment berms? If not, what mitigation measures are in place to minimize the impact of a potential fuel spill at each of the fuel caches identified? How does the proponent intend to contain a potential spill within the area of the fuel caches?

3. **Section 11: Hazardous Material Information –** This section provides a description of the chemical characteristics, health effects, and response procedures on land, water, and ice, for a variety of hazardous materials to be stored on-site. Additional detail and discussion is requested to address each of the following:

    a. Will all of the materials listed under this section be stored at the fuel caches identified on the site plan? If not, where will each substance be stored?

    b. For several of the materials identified in this section, a procedure for managing hydrocarbon impacted soil is provided that includes excavating the impacted soil and placing it into sealed drums. However, it is unclear whether these drums will subsequently be removed from the site. Although this material would fall under the category of non-combustible waste, as per the application forms, hydrocarbon impacted soil is not specifically identified under the definition for this waste type provided in the renewal application. A clarification of this procedure is requested.

4. **Camp Layout/Orientation –** This figure shows the general layout of the camp structures, including domestic facilities, fuel caches, and core shack, all in relation to nearby water bodies surrounding the camp site. As noted above, the plan is to act as a reference guide for site personnel. Should the locations of the spill kits be identified on the site plan to allow quick referencing in the event of an emergency spill situation?

Abandonment and Restoration Plan

1. **Preamble and Schedule –** There seems to be a discrepancy as to how long the camp will be open each season; the dates given for seasonal camp closure are mid-October and mid-September. Clarification is requested regarding the proposed seasonal camp closure date.

2. **Section 1: Final Abandonment and Restoration Plan and Section 2: Seasonal Shutdown and Restoration Plan – General Comments –** The following questions and comments concern issues that recur in multiple sections of this document. Additional detail and discussion is requested to address each of the following:

    a. During final closure, all combustible components of the camp and facilities (that are not salvaged or reused) will be burned; it is unclear whether the incinerator will be used for this purpose. It should be noted that open burning of wastes will cause a much larger impact to water than proper incineration. The NWB requests clarification regarding abandonment procedures involving burning of camp components.

    b. Inspection for hydrocarbon impacted soil will be a part of both the seasonal and final abandonment and restoration procedures; however, it is unclear what actions will be taken in the event that hydrocarbon impacted soil is identified. Will the impacted soil be excavated and removed from the site with a corresponding remediation verification report provided by a qualified environmental engineer? Appropriate reference to the Spill Contingency Plan may also help clarify this procedure.

    c. Under both the seasonal and final closure sections for the camp site it is stated that areas exhibiting “too much wearing” will be covered with a layer of peat moss and lightly fertilized to promote natural regeneration. What constitutes “too much wearing”? How thick of a layer of peat moss is adequate to promote natural regeneration and to prevent surface erosion? What is an adequate application rate of fertilizer to promote natural regeneration yet minimize excessive nutrient run-off?

    d. Under both the seasonal and final closure sections for drill sites it is stated that these sites will be restored. However, a description of the restoration methods is not provided, as per the camp restoration methods noted above. Will similar restoration methods be employed at each drill site as at the camp site? What mitigation and preventive measures are proposed to minimize damage to the vegetation and terrain at the drill sites?

3. **Section 1.9: Camp Site –** It is stated in this section that “Drill core to be left on site will be properly stored and secured”; however, no further explanation as to what constitutes proper storage and what it means to be secured is provided. Additional detail and explanation is requested to define these terms.

4. **Section 1.11: Documentation and Inspection –** It is stated in this section that “Monitoring will be done during the occupancy and photos taken”; however, there is no further explanation or description of proposed monitoring activities provided. How often will photos be taken? What is the monitoring schedule? What is monitoring comprised of: visual inspection; photos; sampling; field tests?

In summary, the Board requests a formal response to each of the above stated provisions. Sufficient detail and an avoidance of ambiguity should be followed in submitting response materials to the listed provisions. If you require any assistance whatsoever, please feel free to contact Matthew Hamp at (416) 434-8027 or tech5@nunavutwaterboard.org.

Sincerely,

Original signed by:
Matthew Hamp, B.Sc.
Technical Advisor