

November 7, 2014

Helga Harlander
Land and Water Tech
Gwich'in Land and Water Board
P.O. Box 2018
Inuvik, NT
X0E 0T0

Dear Ms. Harlander,

**Re: DOT GNWT
Land Use Permit Application – G13H004
Preliminary Remediation Plan Review
Request for Review and Comments**

The Department of Environment and Natural Resources has reviewed the plan at reference based on its mandated responsibilities under the *Environmental Protection Act*, the *Forest Management Act*, the *Forest Protection Act*, *Waters Act* and the *Wildlife Act* and has the following comments and recommendations for consideration by the Board.

Topic 1: Groundwater Treatment

Comment(s):

The Remediation plan noted that the treatment of groundwater would be based on recommendations through the review process, seeing as a treatment facility to treat other contaminated water will be on site, treatment of additional 50m³ should be feasible.

Recommendation(s):

- 1) Treat the contaminated ground water (~50m³) to the Canadian Council of Ministers of Environment criteria for the protection of aquatic life.
- 2) Please provide a Groundwater Monitoring Plan that includes SNP stations and piezometers on the site diagram for reference. This should also include a narrative on how they are used to mitigate impacts to the surrounding environment.

Topic 2: Bioremediation Options

Comment(s):

The bioremediation technique proposed is through traditional land farming techniques. Successful soil bioremediation technologies have included land farming, bio-piles and in-situ bioventing. Nutrient addition (bio-stimulation) have been shown to generally be effective

Recommendation(s):

- 1) Other bioremediation approaches and applications for groundwater could be explored, as moderate petroleum concentrations can be lowered at a higher biodegrading rate in arctic climates over a short time frame when an aggressive tilling program and bioventing techniques are applied.

Comments and recommendations were provided by ENR technical experts in the Environment Division and the Inuvik Region and were coordinated and collated by the Environmental Assessment and Monitoring Section (EAM).

If you have any questions or concerns, please do not hesitate to contact Patrick at 920-6118 or patrick.clancy@gov.nt.ca.

Sincerely,



Patrick Clancy
Environmental Regulatory Analyst
Environmental Impact Assessment Section
Conservation, Assessment and Monitoring Division
Department of Environment and Natural Resources
Government of the Northwest Territories