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Your file - Votre référence
1BR-FOX

Our file - Notre référence
9545-3-5FOXG / CIDMS #80011

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Via Email

Re: 1BR-FOX - Defence Construction Canada - FOX-4 Cape Hooper DEW-Line Site - Monitoring Report

On behalf of Indian and Northern Affairs Canada (INAC) I have reviewed the above-mentioned application. The following specialist advice has been provided pursuant to INAC's mandated responsibilities for the enforcement of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NW&NSRT), *Arctic Waters Pollution Prevention Act* (AWPPA), and the *Department of Indian Affairs and Northern Development Act* (DIAND Act).

Nunatta Environmental Services Inc. (Nunatta) has submitted the FOX-4 Cape Hooper DEW-Line Site's 2005 Monitoring Report on behalf of Defence Construction Canada (DCC). This no-longer operational DEW-Line Site is situated in the Qikiqtani Region, having a coordinate of 68°26"N, 66°44"W. A project-specific Monitoring Program has been designed to assess the performance of site landfills in accordance with geotechnical and environmental analyses.

Indian and Northern Affairs Canada recommends that the Nunavut Water Board consider the following comments when reviewing the submitted Monitoring Report:

INAC recommends that copies of the project's Monitoring Plan be included in all Annual Monitoring Reports. The Monitoring Plan should clearly identify the procedures that must be taken to determine whether completed project reclamation efforts are effective.

INAC recommends that the Annual Report be revised to include a table which lists monitoring site locations. This table should group together monitoring sites by the project areas they serve, their global positioning system (GPS) points, their monitoring functions (i.e., ground water, soil, or thermal analysis), and their date of establishment.

INAC suggests that copies of the original soil and groundwater sample results prepared by the Bodycote, Montreal (division of Nunasi Environmental Corp.) and Maxxam Analytics Inc. laboratories be appended to the Monitoring Plan for review.

INAC recommends that future submissions of the project Monitoring Reports include all referenced figures, tables, and inspection reports. Furthermore, Nunatta is encouraged to submit its Monitoring Reports in Adobe Acrobat format to facilitate their review.

INAC advises the Board to notify the proponent that sample data must be analysed to determine the effectiveness of completed project reclamation activities. The submitted report does not

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provide a detailed level of analysis, rather, it summarizes observations made during an August 2005 site visit. According to INAC's understanding, the purpose of conducting a Monitoring Report is to communicate whether the quality of water in the affected project area will not harm the integrity of the receiving environment. The proponent should indicate whether groundwater and soil quality samples will be compared to their natural occurring properties in the project area or to accepted standards such as the Canadian Water Quality Guidelines for the Protection of Aquatic Life in Freshwater Environments and the Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health for Industrial Land-use as set by the Canadian Council of Ministers of the Environment. Furthermore, INAC recommends that future Monitoring Reports provide some form of comparison between collected data and those which were collected in previous years to allow for the monitoring of temporal change in water quality within the project area.

INAC recommends that the proponent be required to provide the Board with its plan to address the presence of frozen groundwater in monitoring wells. Perhaps an evaluation for the need of having such wells can be re-evaluated if it can be confirmed that frost is originating from the surrounding ground, i.e., the landfills are being encapsulated in permafrost. Other methods of dealing with this issue would be to ensure that the wells are properly capped and insulated to prevent frost encroachment from the ground's active layer, or begin to monitor the presence of ground water at a lesser depth.

INAC suggests that the proponent be directed to remove bentonite located in its groundwater monitoring wells to enable the collection of samples. All monitoring wells must be properly capped when samples are not being collected.

Having reviewed the submitted 2005 Annual Monitoring Program, INAC requests that Nunatta revise its report to ensure that all visual inspection report's (report), visual inspection checklist's (checklist), and preliminary stability assessments are consistent with each other and provide an adequate level of information. The following discrepancies in data presentation have been identified:

a) barrel dump

- erosion: the checklist notes that erosion was not observed yet the report and preliminary stability assessment indicate that erosion had occurred
- frost action: the checklist notes that frost action was not observed yet the presence of this issue is identified in the report and preliminary stability assessment. Furthermore, the preliminary stability assessment states that frost action had an "acceptable" severity rating a frost extent of zero (there must be some form of extent).
- staining: the checklist notes that staining was not observed yet its presence is identified in the report and preliminary stability assessment.
- seepage points: the checklist notes that seepage points were not observed yet their presence is identified in the report and preliminary stability assessment.
- debris: the checklist and preliminary stability assessment note that debris was not observed yet their presence is identified in the report.

b) station area landfill

- settlement: the preliminary stability assessment notes that settlement was not observed yet its presence is identified in the report and checklist.
- erosion: the checklist notes that erosion was not observed yet its presence is identified in the report and preliminary stability assessment.
- frost action: the checklist identifies the presence of frost action near monitoring wells (MW) MW-8 and MW-9 while the report states that frost action was observed near MW-7 and MW-9. The proponent should confirm where frost action occurred.

c) lower site and DCC Tier II Soil Disposal Area

- settlement: the checklist and preliminary stability assessment note that there is no settlement yet its presence is identified in the report.
- erosion: the checklist notes that erosion was not observed yet its presence is identified in the report. The preliminary stability assessment lists an 'acceptable' severity rating for erosion but does not confirm its extent, i.e., extent = none.
- staining: the checklist and report specify different areas of stained soil.
- seepage points: the checklist notes the presence of seepage but does not provide any descriptive information.

d) Airstrip Landfill

- settlement: the report and checklist note that settlement was observed yet its presence is not identified in the preliminary stability assessment. Furthermore, the checklist does not provide a detailed description of this settlement.
- debris: the checklist notes that debris was observed but does not provide any detailed description.

e) Tanner Bay

- settlement: the report notes that settlement was not observed yet it was identified in the checklist and preliminary stability assessment
- vegetation: the checklist identifies that re-vegetation is taking place but provides no descriptive information.
- staining: the checklist notes that stained soil was observed soil sample F4-10 while the report states that staining is present near sites F4-11, F4-12, and F4-13.
- seepage: the checklist notes that seepage was observed yet the presence of this issue is not identified in the report and preliminary stability assessment.
- debris: the checklist notes that debris was not observed yet its presence is identified in the report and preliminary stability assessment.

Indian and Northern Affairs Canada requests notification of any changes in the proposed project, as further review may be necessary. Please do not hesitate to contact me if you have any questions or comments with regards to the foregoing.

Sincerely,

Original signed

David W. Abernethy
Water Resources Coordinator

cc. Jim Rogers - Manager of Water Resources, Indian and Northern Affairs Canada, Iqaluit