Environment Canada Environnement Canada

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16 September 2010

EC file: 4105 006 410
NWB file: 1BR-BEA1015

Richard Dwyer
Licensing Administrator
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0

Via email:licensingadmin@nunavutwaterboard.org

RE: 1BR-BEA1015 Operations and Maintenance Plan for the Sewage Disposal Facilities

Environment Canada (EC) has reviewed the information submitted to the Nunavut Water Board (NWB). The following specialist advice has been provided pursuant to the *Canadian Environmental Protection Act*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

Indian and Northern Affairs Canada (INAC) has submitted an Operations and Maintenance Plan for the Sewage Disposal Facilities to the NWB as a requirement of Part E, Item 1 of water license 1BR-BEA1015 for the Bear Island Mid-Canada Line Radar Station Remediation Project.

EC provides the following comments and recommendations for the NWB's consideration:

- The proponent must ensure that any effluent discharged must be in compliance with Section 36(3) of the Fisheries Act. The proponent shall not deposit, nor permit the deposit of any wastes, chemicals or sediment into any water body. According to the *Fisheries Act*, Section 36(3), the deposition of deleterious substances of any type in water frequented by fish, or in any place under any conditions where the deleterious substance, or any other deleterious substance that results from the deposit of the deleterious substance, may enter any such water, is prohibited.
- The proponent must ensure that all construction activities on the sewage lagoon do not result in sedimentation of any surrounding water bodies. Preventative measures, such as the use of silt curtains/fences should be used to help mitigate any potential impacts. Any stockpiled material should be stored above the high water mark of any water body and in such a manner as to prevent sedimentation of surrounding water bodies.
- EC recommends that sludges are characterized prior to disposal to ensure disposal options are appropriate.

Comments previously submitted by C. Spavor on 5 March 2009 on behalf of EC would spill apply to this project (see attached). If there are any changes in the proposed project, EC should be notified, as further review may be necessary. Please do not hesitate to contact the undersigned

with any questions or comments with regards to the foregoing at (867) 975-4631 or by email at Paula.C.Smith@ec.gc.ca.

Yours truly,

Paula C. Smith
Environmental Assessment Coordinator

cc: Carey Ogilvie (Head, Environmental Assessment-North, EPO, EC, Yellowknife, NT)
Ron Bujold (Environmental Assessment Technician, EPO, EC, Yellowknife, NT)

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March 5, 2009

Our file: 4517 000 045
NWB file: 1BR-BEA

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RE: NWB 1BR-BEA- INAC Bear Island Project New Water Licence Application

On behalf of Environment Canada (EC), I have reviewed the information submitted with the above-mentioned application. The following specialist advice has been provided pursuant to the *Canadian Environmental Protection Act*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act,* and the *Species at Risk Act*.

The Department of Indian and Northern Affairs Canada (INAC), has applied for a water license for the clean-up of federally owned contaminated sites. The Bear Island Mid-Canada Line Radar Station is located on Bear-Island approximately 160 km northwest of Chisasibi, Quebec and 300 km south of Sanikiluaq, Nunavut. The site consists of four main areas including two abandoned Mid-Canada Line Radar Stations (Sites 412 and 413), Beach Area, and Airstrip.

Proposed remediation activities include:

- Demolishing remaining site infrastructure;
- Segregating waste materials into hazardous and non hazardous piles. Hazardous waste will be packaged and shipped south for proper disposal, and non hazardous wastes will be buried in the new landfill;
- Remediation of existing landfills,
- Metal, polychlorinated biphenyls (PCB) and petroleum hydrocarbon (PHC) contaminated soils will be excavated and properly disposed of at on off-site licensed facility;
- Consolidation and disposal of approximately 4300 barrels. Those barrels with unknown contents will be tested and either incinerated or shipped off-site for disposal. Empty barrels will be crushed and buried at the landfill;
- Reconstruction of roads and airstrip as needed; and,
- Use of borrow sources for construction of the new landfill and general site grading.

In support of the remediation activities, the proponent proposes to establish a seasonally occupied camp from June 15th to September 15th. The camp is expected to have approximately 35 people with a maximum occupancy of 50 people. The camp will be located in a previously disturbed area, west of the barrel cash. Water will be pumped from either the Freshwater Reservoir or from shallow lakes in the vicinity. Water will be tested to meet health Canada Guidelines for Canadian Drinking Water Quality prior to consumption. Two temporary independently operated sewage lagoons are proposed to be installed for camp sewage. The lagoons will each have a capacity of 45 days or one half of the

duration of the construction season, whichever is more. The exact location of the sewage lagoons has not yet been determined.

Environment Canada recommends that the following conditions be applied throughout all stages of the project:

General

- The proponent shall not deposit, nor permit the deposit of any fuel, chemicals, wastes, or sediment into any water body. According to the Fisheries Act, Section 36(3), the deposition of deleterious substances of any type in water frequented by fish, or in any place under any conditions where the deleterious substance, or any other deleterious substance that results from the deposit of the deleterious substance may enter any such water is prohibited.
- Environment Canada recommends that the proponent take measures to prevent erosion and sedimentation during site grading, excavation, and the removal of culverts, especially when near waterbodies.
- The proponent shall not deposit, nor permit the deposit of sediment into any water body. It is recommended that an undisturbed buffer zone of at least 100 metres be maintained between any proposed borrow source operations and the normal high water mark of any water body.
- Any sumps shall be located above the high water mark of any water body and in such a manner as to prevent the contents from entering any water body frequented by fish. Further, all sumps shall be backfilled upon completion of the field season and contoured to match the surrounding landscape.

Waste Management

- Environment Canada requests that additional information be provided regarding the proposed disposal and/or treatment of the water used to flush and clean the barrels prior to their demolition.
- The proponent is considering onsite incineration as another waste disposal option. EC is developing a Technical Document for Batch Waste Incinerators. The technical aspects of the document focus on appropriate incineration equipment and best management practices required to achieve the Canada-Wide Standards for dioxins/furans and mercury. To assist the board, a draft copy of the executive summary of the technical document is provided. The board and the proponent are encouraged to contact EC for further information regarding the technical document.
- The proponent is proposing to dispose of PHC contaminated soils, lead painted products, and DCC Tier II contaminated soils at off-site at an unspecified licensed disposal facility. The *Remedial Action Plan Revised Sept 2008*, considers the municipal landfill at Chisasibi, Quebec as an option for PHC contaminated soils. Is this community landfill designed to take this type of waste and does the landfill have the sufficient capacity to accommodate waste from these camps?
- Environment Canada requests clarification on the planned disposal method of asbestos. In the *Water Licence Application Form*, page 1, Question 4, states that “All hazardous materials and soil will be disposed of at an off-site licensed disposal facility.” However, on page 7 of the *Remedial Action Plan-Revised Sept 2008*, it states that “In general, all hazardous materials will be shipped off site to a licensed hazardous waste disposal facility. Exceptions include asbestos, which is to be double bagged and disposed in an engineered landfill onsite, in accordance to local regulations.” Additionally, on page 18 of the same report it is stated that “All asbestos debris shall be abated and placed in a sealed, airtight container, clearly labeled "ASBESTOS".” Could the proponent please clarify the proposed disposal location and the method of disposal (i.e. double bagged or sealed, airtight container) proposed for asbestos waste.
- Environment Canada has developed the “*Industrial Treated Wood Users Guidance Document*” (2004) which includes a hierarchy of end of use options for creosote-treated

wood, listing disposal as the last option. If disposal is deemed to be the only viable option, Environment Canada recommends that creosote treated lumber should be transported off-site to an approved facility.

- The Remedial Action Plan submitted with the water license application indicates that the majority of hydrocarbon contaminated soils are being excavated and shipped off-site for disposal. However, 31.9m^3 of hydrocarbon contaminated soils have been selected to be scarified to 0.3m at the Beach Bulldozer and Garage areas. Scarification is the recommended remedial option for Type A soil (non mobile, F3 and F4 hydrocarbons with <10% slope) as selected by the Abandoned Military Site Remediation Protocol, adapted by INAC from the DCC DCLU. However, the presence of co-contaminants in the soil should give cause to re-examine scarification as an appropriate remedial option. Metals and PCBs have been identified as co-contaminants at the Beach Bulldozer and Garage sites; according to the INAC protocol, the presence of co-contaminants must be confirmed or disproved in type A hydrocarbon impacted soil, and the "most stringent requirements" applied. It is therefore unclear why scarification has been selected as the best remedial option for these two areas. Environment Canada recommends that the proponent consider removing co-contaminated soils for off-site treatment and disposal in favor of scarification.

Sewage Treatment

- The proponent's site remediation plan does not provide operation procedures for its sewage lagoons. The lagoons' location, final discharge points (including a general description and geo-referenced locations), monitoring program and sludge management program should be submitted for review.
- Environment Canada would like to remind the proponent of the "Guidelines for Effluent Quality and Wastewater Treatment at Federal Establishments" that were published by EC, and it is recommended that these guidelines be mirrored in the water license.
- Environment Canada recommends that the location of the sewage lagoons be indicated with appropriate signage.
- Environment Canada recommends that the proponent maintain a minimum of a 1 metre freeboard in the sewage lagoon at all times.
- An Abandonment and Reclamation Plan for the sewage lagoons should be submitted for approval as a condition of the water licence.

Spill Contingency

- Environment Canada recommends the use of secondary contaminant, such as self-supporting insta-berms, when storing barreled fuel on location rather than relying on natural depressions. Additionally, fuel caches shall be located above the high water mark of any water body, and in such a manner as to prevent the contents from entering any water body frequented by fish.
- Environment Canada recommends the use of drip pans, or other similar preventative measures, when refueling equipment on site.
- In Appendix 7, Part 6, Section 1.7, the 24hr number for Environment Canada Environmental Emergencies should be listed as 1-866-845-6037 and for Environmental Enforcement listed as 1-867-766-3737. Also in Table C.1, the contact information for Curtis Didham, Enforcement Officer should be changed to:

    - Work: 867-975-4644
    - Cell: 867-222-1925
    - Fax: 867-975-4594

Wildlife and Species at Risk

The Canadian Wildlife Service (CWS) of Environment Canada has reviewed the above-mentioned submission and makes the following comments and recommendations pursuant to the *Migratory Birds Convention Act* (the *Act*) and *Migratory Birds Regulations* (the *Regulations)*, and the *Species at Risk Act* (SARA).

- Section 6 (a) of the *Migratory Birds Regulations* states that no one shall disturb or destroy the nests or eggs of migratory birds. In order to minimize the risk of accidentally disturbing or destroying nests or eggs of migratory birds during demolition or remediation activities, Environment Canada recommends the following mitigation measures for migratory birds:
    a. Remediation work in known nesting areas should be undertaken either before or after the nesting season. Structures with known nests should be taken down either before or after the nesting season.
    b. If other demolition or remediation work occurs during the nesting season, these areas should be inspected for active nests before any demolition or remediation work starts.
    c. If active nests (i.e., nests containing eggs or young) are discovered, the proponent should delay any work in the area until nesting is complete (i.e., the young have left the nest).
- Section 5.1 of the *Migratory Birds Convention Act* prohibits persons from depositing substances harmful to migratory birds in waters or areas frequented by migratory birds or in a place from which the substance may enter such waters or such an area.
- Environment Canada recommends that food, domestic wastes, and petroleum-based chemicals (e.g., greases, gasoline, glycol-based antifreeze) be made inaccessible to wildlife at all times. Such items can attract predators of migratory birds such as foxes, ravens, gulls, and bears. Although these animals may initially be attracted to the novel food sources, they often will also eat eggs and young birds in the area. These predators can have significant negative effects on the local bird populations.
- In order to reduce aircraft disturbance to migratory birds, Environment Canada recommends the following:
    - Fly at times when few birds are present (e.g., early spring, late fall, winter)
    - If flights cannot be scheduled when few birds are present, plan flight paths that minimize flights over habitat likely to have birds and maintain a minimum flight altitude of 650 m (2100 feet).
    - Minimize flights during periods when birds are particularly sensitive to disturbance such as migration, nesting, and moulting.
    - Plan flight paths to avoid known concentrations of birds (e.g., bird colonies, moulting areas) by a lateral distance of at least 1.5 km. If avoidance is not possible, maintain a minimum flight altitude of 1100 m (3500 feet) over areas where birds are known to concentrate.
    - Avoid the seaward side of seabird colonies and areas used by flocks of migrating waterfowl by 3 km.
    - Avoid excessive hovering or circling over areas likely to have birds.
    - Inform pilots of these recommendations and areas known to have birds.

- The following comments are pursuant to the Species at Risk Act (SARA), which came into full effect on June 1, 2004. Section 79 (2) of SARA, states that during an assessment of effects of a project, the adverse effects of the project on listed wildlife species and its critical habitat must be identified, that measures are taken to avoid or lessen those effects, and that the effects need to be monitored. This section applies to all species listed on Schedule 1 of SARA. However, as a matter of best practice, Environment Canada suggests that species on other Schedules of SARA and under consideration for listing on SARA, including those designated as at risk by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), be considered during an environmental assessment in a similar manner.

  Impacts could be disturbance and attraction to operations.

In the Environmental Screening report, the proponent has identified Species at Risk that could be potentially found in the project area.

Environment Canada recommends:

- If Species at Risk are encountered or affected, the primary mitigation measure should be avoidance. The proponent should avoid contact with or disturbance to each species, its habitat and/or its residence.
- Monitoring should be undertaken by the proponent to determine the effectiveness of mitigation and/or identify where further mitigation is required. As a minimum, this monitoring should include recording the locations and dates of any observations of Species at Risk, behaviour or actions taken by the animals when project activities were encountered, and any actions taken by the proponent to avoid contact or disturbance to the species, its habitat, and/or its residence. This information should be submitted to the appropriate regulators and organizations with management responsibility for that species, as requested.
- For species primarily managed by the Territorial Government, the Territorial Government should be consulted to identify other appropriate mitigation and/or monitoring measures to minimize effects to these species from the project.
- Mitigation and monitoring measures must be taken in a way that is consistent with applicable recovery strategies and action/management plans.

- All mitigation measures identified by the proponent, and the additional measures suggested herein, should be strictly adhered to in conducting project activities. This will require awareness on the part of the proponents' representatives (including contractors) conducting operations in the field. Environment Canada recommends that all field operations staff be made aware of the proponents' commitments to these mitigation measures and provided with appropriate advice / training on how to implement these measures.
- Implementation of these measures may help to reduce or eliminate some effects of the project on migratory birds and Species at Risk, but will not necessarily ensure that the proponent remains in compliance with the *Migratory Birds Convention Act*, *Migratory Birds Regulations*, and the *Species at Risk Act*. The proponent must ensure they remain in compliance during all phases and in all undertakings related to the project.

If there are any changes in the proposed project, EC should be notified, as further review may be necessary. Please do not hesitate to contact me with any questions or comments with regards to the foregoing at (867) 975-4631 or by email at carrie.spavor@ec.gc.ca.

Yours truly,

Original signed by

Carrie Spavor
Environmental Assessment Coordinator

cc: Carey Ogilvie (Head, EA-North, Environment Canada, Yellowknife, NT)
Jody Klassen (Head, Contaminated Sites, Environment Canada, Edmonton, AB)
Anne Wilson (Water Pollution Specialist, Environment Canada, Yellowknife, NT)
Myra Robertson (EA Coordinator, Canadian Wildlife Service, Environment Canada, Yellowknife, NT)
Dave Fox (Air Issues Specialist, Environment Canada, Yellowknife, NT)