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NWB file: 1BR-DPI----

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Via email: licensing@nunavutwaterboard.org

RE: 120430 1BR-DPI---- New Application – Durban & Padloping Remediation – Qikiqtani Region

Environment Canada (EC) has reviewed the above-mentioned new water license application 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*.

Aboriginal Affairs and Northern Development Canada, Contaminated Sites Division is applying for a new Type B water license in support of a remediation project on Durban and Padloping Islands, located approximately 100 km and 75 km southeast of Qikiqtarjuaq, respectively. Proposed activities include the remediation of the former intermediate DEW Line site FOX-E on Durban Island and the former weather station and settlement area on Padloping Island. A main camp will be constructed on Durban Island with a secondary camp on Padloping Island to house a total of 50 personnel between the two camps. Hazardous and non-hazardous waste will be removed via sealift and landfarms will be constructed on both islands. Equipment and materials are proposed to be mobilized to site via sealift/barge with crews accessing sites via helicopter. Remediation activities are proposed to occur in the summer between 2012 and 2014.

Based on a review of the water license application, EC provides the following comments for the NWB's consideration:

General

- The proponent shall not deposit, nor permit the deposit of chemicals, sediment, wastes, or fuels associated with the project 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 deleterious substance that results from the deposit of the deleterious substance, may enter any such water, is prohibited.
- In the project description, it's noted that 200 000 L of diesel and 50 000 L of gasoline will be needed to complete the remediation work. EC encourages the proponent, as a best practice,

to implement an anti-idling policy on-site to conserve fuel and reduce greenhouse gas and criteria air contaminant emissions associated with combustion of these fuels.

Waste Disposal

- The burning of waste products releases numerous contaminants to the air, many of them persistent, bio-accumulative and toxic (e.g. polycyclic aromatic hydrocarbons - PAH's - heavy metals, chlorinated organics – dioxins and furans). These contaminants can result in harmful impacts to human and wildlife health through direct inhalation and they can also be deposited to land and water, where they bio-accumulate through food chains affecting wildlife and country foods. Therefore, burning should only be considered after all other alternatives for waste disposal have been explored and the devices used for incineration meet the emission limits established under the CCME Canada-wide Standards (CWS) for Dioxins and Furans and the CWS for Mercury Emissions. The Government of Canada, the Governments of the Northwest Territories, Nunavut and the Yukon are signatories to these standards and are required to implement them according to their respective jurisdictional responsibilities.
- EC recommends the use of an approved incinerator for the disposal of combustible camp wastes. EC has developed a Technical Document for Batch Waste Incineration, and is available at the following web link:
  http://www.ec.gc.ca/gdd-mw/default.asp?lang=En&n=F53EDE13-1
  The technical document provides information on appropriate incineration technologies, best management and operational practices, monitoring and reporting. This information should be incorporated into an incineration management plan for the camp. EC would like the opportunity to review this plan prior to implementation.
- The proponent states that non-combustible and hazardous waste will be shipped off-site for disposal. EC suggests that confirmation and authorization be obtained from the intended community landfill prior to shipment.
- Used absorbent materials oily or greasy rags, and equipment servicing wastes (such as used engine oil, antifreeze, hydraulic oil, lead acid batteries, brake fluid, and other lubricants) should be safely stored and transported in sealed containers (odour-free to prevent animal attraction) and safely transported to a facility that is authorized for the treatment and disposal of industrial hazardous wastes.

Landfarming

- The Federal Guidelines for Landfarming Petroleum Hydrocarbon Contaminated Soils (SAIC, 2005) should be consulted as they contain landfarming specifics including minimum distances from landfarms to surface waters (500 m). Reference: SAIC Canada. 2005. Federal guidelines for landfarming petroleum hydrocarbon contaminated soils.

Spill Contingency Plan

- EC recommends that a Spill Contingency Plan be in place for any fuel storage or transfer location, outlining a clear path of response in the event of a spill and address the key areas of prevention, preparedness, response and recovery.
- Spills are to be documented and reported to the NWT/NU 24 hour Spill Line at (867)920-8130. EC recommends that all releases of harmful substances, regardless of quantity, are immediately reported where the release:
  - is near or into a water body;
  - is near or into a designated sensitive environment or sensitive wildlife habitat;
  - poses an imminent threat to human health or safety; or,
  - poses an imminent threat to a listed species at risk or its critical habitat.

Quarrying and Road Construction

- In order to lessen the overall footprint of project activities, EC strongly urges the proponent to minimize the width of transportation corridors in association with remediation activity. The creation of trails and camps impact the arctic and subarctic environment: the vegetative mat may be damaged, soils may be compacted and permafrost may melt, resulting in subsidence and erosion.
- It is recommended that an undisturbed buffer zone of at least 100 metres be maintained between any quarrying that may occur and the normal high water mark of any water body.
- The proponent shall ensure that silt fences/curtains are installed down gradient of any quarrying activities.
- No disturbance of the stream bed or banks of any definable watercourse is permitted; clearing adjacent to streams/lakes should be done without disturbing the organic layer.
- EC recommends that an Abandonment and Restoration Plan be prepared for the proposed quarry sites. This Plan should communicate the proponent's reclamation objectives and procedures for the area affected by excavation activities.
- The Proponent shall ensure that quarry activities do not result in the contamination of groundwater. Excavation and/or removal of material from the quarry should only take place to within one metre of the high water mark above the ground water table.
- Abutment construction materials shall be clean and contaminant free; gravel/construction materials are not to be gathered from below the high water mark of any watercourse.
- Suitable erosion control measures shall be implemented. The proponent shall not deposit nor permit the deposit of sediment into any fish bearing waters. Stream bank disturbances must be minimized and all disturbed areas stabilized upon completion of the project

Wildlife and Species at Risk

- Section 6 (a) of the *Migratory Birds Regulations* states that no one shall disturb or destroy the nests or eggs of migratory birds. The best mitigation measure to ensure compliance is to conduct activities with a risk of disturbing or destroying nests or eggs outside of the migratory bird nesting season. High risk activities include disturbance of large amounts of habitat during the nesting season or conducting activities in areas with large concentrations of nesting birds.

  In the northern Arctic region of the Northwest Territories and Nunavut (Figure 1), migratory birds may be found incubating eggs from May 31 until August 4, and young birds can be present in the nest until August 28.

  Other mitigation measures may help reduce the risk of accidental disturbance or destruction of nests or eggs during the nesting season, but will not necessarily completely eliminate the risk. Flushing nesting birds also increases the risk of predation of the eggs or young, or may cause the parent bird to abandon its nest. If project activities are conducted during the nesting season, areas should be checked for nests before work begins and all crew members should be trained on how to recognize signs that a bird might be nesting in the area. If an active nest is found, the area should be avoided until nesting is completed (i.e. the young have left the vicinity of the nest).

  The following setback distances are recommended to minimize disturbance to nests for different bird groups nesting in tundra habitat (see footnotes for adjustments to setbacks for sensitive species and species at risk):

Species Group	Pedestrians /ATVs (m)	Roads / Construction / Industrial Activities (m)
Songbirds	30	100
Shorebirds	50[a]	100[a]
Terns/Gulls	200[b]	300[b]
Ducks	100	150
Geese	300	500
Swans/Loons/Cranes	500	750

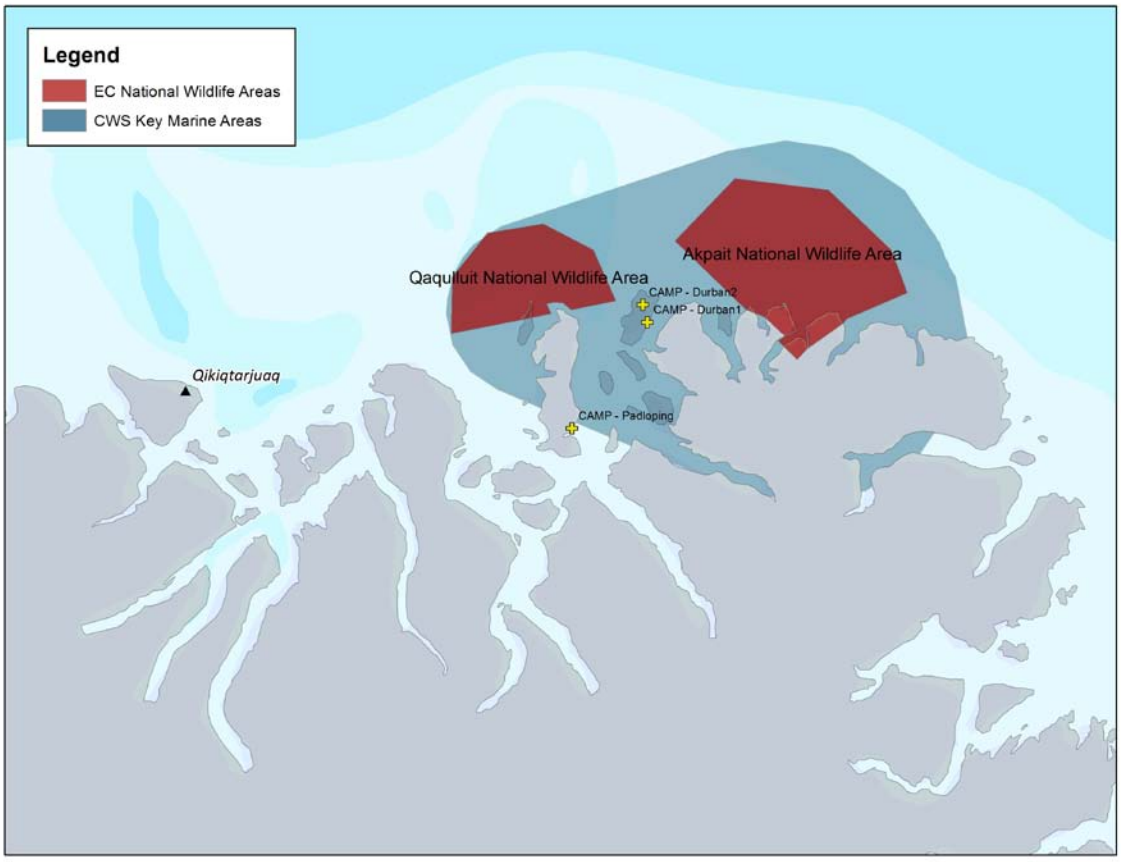
[a] If project activities are within the breeding ranges of American Golden Plover or Ruddy Turnstone, these setbacks should be increased to 150 m for Pedestrians/ATVs and 300 m for Roads/Construction/Industrial Activities respectively. If project activities are within the breeding ranges of Black-bellied Plover, Whimbrel or Red Knot (a Species at Risk), these setbacks should be increased to 300m for Pedestrians/ATVs and 500m for Roads/Construction/Industrial Activities. If field crew are trained in the identification of these species then these higher setbacks need only apply to these more sensitive species, and lower setbacks can be used for the remaining shorebird species. In areas where several species are nesting in proximity, setbacks for the most sensitive species should be used.

[b] If project activities are in proximity to breeding colonies of Ross's Gull (a Species at Risk) these setbacks should be increased to 500m Pedestrians/ATVs and 750m for Roads/Construction/Industrial Activities. For Ivory Gull (a Species at Risk) a buffer of 2 km around breeding colonies should be used for all activities.

- EC 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.
- 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.
- Marine birds are vulnerable to oil spills and to pollution of their feeding areas. Environment Canada recommends that the proponent consider what steps would be taken to protect wildlife (including marine birds) in the event of a spill. This information could be incorporated into an existing emergency response and/or spill response plan. This could include specific measures to keep wildlife out of a contaminated area, equipment available to do this, what measures would be taken if animals do come in contact with the spill, and when such procedures should be used. Having this information outlined not only benefits wildlife, but also gives clear direction to the field crew on what to do in a spill situation if wildlife is nearby.
- **Durban and Padloping** Islands are located close to the **Qaqulluit** and **Akpait National Wildlife Areas** (see Figure 1 below). Both of these sites, and the surrounding marine environment are considered as Key Terrestrial and Marine Habitat Sites for migratory birds because they contain >1% of the Canadian population of at least one species of migratory bird. Cape Searle, located on the northeastern tip of Qaqulluit Island, has one of Canada's larges colonies of Northern Fulmars, estimated at roughly 40,000 breeding pairs (22% of the Canadian population). The Akpait NWA has one of Canada's largest Thick-billed Murre colonies, estimated at 133,000 breeding pairs (10% of the Canadian population). Northern Fulmars also occupy about 20,000 breeding sites (10% of the Canadian population). Black-legged Kittiwakes, Glaucous Gulls, Iceland Gulls and Black Guillemots may also be found breeding at these sites. The marine area around these colonies is used by seabirds from mid-April through October. Most birds forage within 10 km of the colony, although fulmars may forage up to 80 km offshore. Nesting seabirds are vulnerable to disturbance from both aircraft and marine traffic near the colony, as well as pollution of their feeding areas due to

accidental spills.

EC recommends the Proponent avoid aircraft overflights of these two National Wildlife Areas (NWA), especially to the seaward side of the bird colonies. Barge and marine traffic associated with the project should also avoid entering the boundaries of the NWA's. Any activity that occurs in a NWA requires a Canadian Wildlife Service (CWS) permit. Permit applications to do an activity in Qaqulluit and Akpait NWA are reviewed by CWS and the Qikiqtarjuaq Area Co-management Committee.



- 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. The Table below lists species that may be encountered in the project area that have been assessed by COSEWIC as well as their current listing on Schedules 1-3 of SARA (and designation if different from that of COSEWIC). Project impacts could include species disturbance, attraction to operations, and destruction of habitat.

Terrestrial Species at Risk potentially within project area [1]	COSEWIC Designation	Schedule of SARA	Government Organization with Primary Management Responsibility [2]
Polar Bear	Special Concern	Schedule 1	Government of Nunavut
Wolverine (Western population)	Special Concern	Pending	Government of Nunavut
Ivory Gull	Endangered	Schedule 1	EC
Red Knot (*rufa* subspecies)	Endangered	Pending	EC

[1] The Department of Fisheries and Oceans has responsibility for aquatic species.
[2] Environment Canada (EC) has a national role to play in the conservation and recovery of Species at Risk in Canada, as well as responsibility for management of birds described in the Migratory Birds Convention Act (MBCA). Day-to-day management of terrestrial species not covered in the MBCA is the responsibility of the Territorial Government. Populations that exist in National Parks are also managed under the authority of the Parks Canada Agency.

- For any Species at Risk that could be encountered or affected by the project, the proponent should note any potential adverse effects of the project to the species, its habitat, and/or its residence. All direct, indirect, and cumulative effects should be considered. Refer to species status reports and other information on the Species at Risk registry at www.sararegistry.gc.ca for information on specific species.
- 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.

- Environment Canada notes that the Red Knot (*rufa* subspcies) (a shorebird) was designated as

Endangered by COSEWIC in April 2007. The Red Knot (*rufa* subspecies) breeding range overlaps with the location of the proposed project area. Although the major threats to Red Knot relate to habitat degradation in the wintering areas and decreases in food resources during spring migration, the proponent should ensure that extra precautions are taken to avoid any disturbance to the Red Knot or its habitat during the breeding season. Red Knots nest on barren habitats (often less than 5% vegetation) such as windswept ridges, slopes or plateaus. Nest sites are usually in dry, south-facing locations, and may be located near wetlands or lake edges, where the young are led after hatching. Nests are simple scrapes on the ground in small patches of vegetation. Nesting will occur in June with hatching in early July. If an active Red Knot nest is encountered during project activities, or observations of Red Knot in the area suggest that a nest could be nearby, the proponent should avoid all activities in the area until nesting is complete (i.e., likely only resume activities in the area until after mid-July).

- The Canadian Wildlife Service of Environment Canada is interested in observations of birds, especially observations of birds identified as Species at Risk (e.g., Red Knot, Ivory Gull). Observations can be reported through the NWT/NU Bird Checklist program.

  NWT/NU Bird Checklist Survey
  Canadian Wildlife Service, Environment Canada
  5019 - 52 Street, 4th Floor
  P.O. Box 2310
  Yellowknife NT, X1A 2P7
  Phone: 867.669.4771
  Email: NWTChecklist@ec.gc.ca

  Blank checklist survey forms are available at:
  http://www.ec.gc.ca/reom-mbs/default.asp?lang=En&n=D19D8726-1
- 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 additional 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,

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