

## **SECTION 10.0 - TRANSBOUNDARY EFFECTS**

### **10.1 DEFINITION AND APPROACH**

A transboundary effect can occur when animals move across jurisdictional boundaries (e.g. caribou and birds migrating) or when project activities themselves, or their zone of influence, cross jurisdictional boundaries (e.g. transportation and air quality). The focus of Baffinland's transboundary effects assessment is on the latter, as impacts to migratory VECs occurring within Nunavut are considered and fully assessed in the both the component specific and cumulative effect assessments.

In accordance with the definition and guidance provided by NIRB, the transboundary effects assessment for the Project identifies if the effects from Project activities occur across provincial, territorial and international boundaries. The Project, including the proposed Canadian shipping route, is located entirely within the NSA and therefore only the resulting zone of influence of Project activities could potentially result in transboundary effects.

There are two jurisdictional boundaries that border the Qikiqtani region of Nunavut. To the south of Baffin Island and across Hudson Strait is the Nunavik Inuit Settlement Area, which forms part of northern Quebec, and to the east of Baffin Island and across Davis Strait is Greenland. The Project does not directly cross into these jurisdictions.

The Project activities that could cause transboundary effects are shipping and air emissions. All other activities and VECs are not a transboundary concern based on the geographical location of the Project and the limited range of any possible or detectable effects. Transboundary socio-economic effects are not identified as a concern for the Project as employees from points of hire outside of Nunavut are accustomed to the wage economy.

The transboundary effect assessment is based on proximity to jurisdictional boundaries and possible long-range effects of contaminant deposition and shipping activities.

### **10.2 SHIPPING**

There are three types of events that could cause transboundary effects resulting from the Project's shipping activity:

- A fuel spill along the shipping lane;
- Marine mammals; and
- The introduction of invasive species.

### 10.2.1 Large Fuel Spill Along the Shipping Lane

Large diesel spill scenarios along the shipping lanes were modeled to predict the trajectory of a diesel spill and the coast line that could be impacted by such a spill. The purpose of this modeling was for estimating the marine and coastal areas potentially affected by such an event and the initial weathering fate of the diesel fuel. In most cases, the modeling indicates that the worst case diesel spill of 5 ML is likely to have a relatively short duration, in the order of days to weeks. In addition, it is likely that a swath of 15 km on either side of the shipping lane is likely to contain 98% of the possible trajectories for an open-water diesel spill (Appendix 9C). Given the distance of the shipping lane from other jurisdictions, it is unlikely that such a spill would reach into other Canadian jurisdictions.

### 10.2.2 Marine Mammals

The impact assessment (Volume 8) indicates that the Project will have no significant residual effects on the marine mammal population within the Project area or along the shipping lanes. For this reason, current marine mammals' migration patterns should not be impacted and no transboundary effects are anticipated.

### 10.2.3 Introduction of Invasive Species

The introduction of an invasive marine species is a more likely outcome of a transboundary effect. In this scenario, an invasive species would be introduced to the Port areas via the ship ballast water or by adherence to the ship hull.

To minimize the risk of introduction of such species, ballast water will be exchanged in the mid-North Atlantic Ocean, which is part of the same ocean regime as Steensby Port. Upon arrival at the port, the ships will discharge ballast water to allow for filling the ship with ore. During winter the full ballast is required to assist in ice breaking and so the entire amount of ballast water (approximately 185,000 m<sup>3</sup>) will be discharged at the ore dock. During summer, the ships may discharge ballast water along the shipping route before arriving at the dock. In such cases only a partial load of ballast (in the order of 70,000 m<sup>3</sup>) will be discharged at the ore dock. To date, there is no compelling evidence to suggest that the release of ballast water at Port will adversely affect the marine environment.

With respect to antifouling coating for the ships, the dedicated ore carriers (190,000 DWT) will have no antifouling, but if the project is supported by market ships, there may be (regulatory compliant) coatings in use. Smaller ore carriers will be taken from the market and will comply with international regulations prevailing at the time. Under the [Canada Shipping Act](#), the [Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals](#) apply to all ships in Canadian waters and to all Canadian ships everywhere. Division 7 requires ships of 400 tons gross tonnage or more to have on board an anti-fouling certificate and those that are under 400 tons gross tonnage but 24 m or more in length to have on board a self-declaration. This Division bans the use of TBTs as an anti-fouling system on all ships. The regulations require the removal or encapsulation of coatings containing TBTs by 2008. These regulations stop

Canadian operators from having the coating applied outside of Canada and putting the ship into service in Canadian waters.

### 10.3 AIR EMISSIONS

The assessment of effects on air quality is presented in Volume 5 of the EIS. The air dispersion modeling carried out as part of the impact assessment shows that residual effects will not extend beyond 3 km from the Project site. As a result and given the location of the Project no transboundary air quality effects are possible.

In addition to local air quality, the Project will emit greenhouse gases (GHG) into the atmosphere as diesel generators are the only current viable and available source of energy, which is required to operate the mine and support facilities. GHG emissions contribute to global warming, which is an issue of global concern that crosses all borders and affects all jurisdictions, particularly circumpolar countries. Baffinland acknowledges that GHG emissions are a broad scale transboundary issue for which there is presently no viable alternative in Nunavut.

At the Project level Baffinland will report annually on performance indicators, including energy use and GHG emissions management. The report will help to show Nunavummiut and other Canadians what the Company's current performance is and how it can be improved. Baffinland will also explore ways of conserving energy as the Project moves through development and will adapt accordingly.