APPENDIX F

Dust Management Plan

Dust Management Plan

for the

Remediation of the Old Town Site, Clyde River, NU

Department of Community & Government Services,

Government of Nunavut

August 2012

Introduction

The following details the dust management plan (DMP) prepared for the remediation of the Old Town Site, situated east of the Hamlet of Clyde River, Nunavut. The purpose of this DMP is to provide details about the procedures used to manage potential dust emissions arising from activities associated with remediation of the Old Town Site. These activities include construction of the access road, landfill containment cell, staging area and landfarm; operation of borrow sources; and, excavation of wastes and impacted soils.

Background

The community of Clyde River was originally established on the east side of Patricia Bay, approximately 5 km east of the present day community Known locally as “Old Town”, the original settlement was occupied from 1923 until 1970 when the new community was established. The Site formerly included a weather station, school, electrical generating plants and residences. Residents of Clyde River currently camp in the Old Town area during the summer and collect drinking water from the streams running through the area.

Nunami Stantec Limited (Nunami) has been retained by the Department of Community and Government Services (GN-CGS) of the Government of Nunavut (GN) to complete the planning, design, construction supervision, and monitoring for the remediation of the Old Town Site.

The remediation work will include the development of granular resource sites (borrow sources) to allow for construction of the access road, landfill containment cell and landfarm. Eight granular deposits were identified in the vicinity of the Hamlet in a geotechnical assessment conducted in 2011 by Nunami and final design for the road and containment cells was completed in December 2011. The remediation project is planned over two summers, beginning in July 2013. Soil treatment at the landfarm is expected to continue until the fall of 2016.

Construction and operation of the containment cells and borrow sources could have an adverse effect on local air quality, vegetation, water quality and fish habitat within and adjacent to the project area due to the potential for fugitive dust in the area. Increased dust will only be a concern during the summer months (primarily June to September) when the road surface will be dry and snow free. Dust generation is primarily expected from excavation, stockpiling, and transport activities since no blasting, crushing or screening activities will be occurring within the borrow sources. Fugitive dust may also be generated by use of the access road by ATV, light and heavy equipment.

Procedure

Access Road and On-site Trails

In the dry summer months, dust arising from the access road and on-site trails will be primarily controlled by watering. Recommended vehicle speeds will also posted along the access road and on-site; these speeds will be enforced to limit vehicle speed for safety reasons, and to reduce fugitive dust by vehicle traffic. Lower speed limits will also be imposed on heavy equipment traffic using the access road to further reduce dust emissions.

Road watering will be carried out by the remedial contractor. Water will be obtained from Patricia Bay and be applied with the use of a water truck and attached spray bar. The use of marine water (i.e., saltwater) has been shown to adhere better to the road surface than freshwater, resulting in less road watering; this practice has been used in Iqaluit (R. Eno, *pers. comm.*) and Pond Inlet (Enook 2011). The application rate will be monitored to ensure adequate coverage of the road surface without causing pooling or runoff. The access road will typically be watered once per week during the summer months. This frequency may be increased or decreased depending on the road surface and weather conditions (e.g., temperature, precipitation), at the discretion of the contractor.

Other dust suppression techniques, such as the use of dust suppression products, will be further investigated if the proposed road watering technique proves ineffective or impractical. Only dust suppression products approved for use in Nunavut (i.e., calcium chloride, Bunker C or DL 10) will be considered if this option is explored for future use on the access road. Application of any of these products will follow those procedures outlined in the Government of Nunavut's *Environmental Guideline for Dust Suppression* (2002).

Borrow Sources and Excavations

Unpaved roads within borrow pits, site excavations and other remedial activities can be a large source of dust emissions. The above procedures described for the access road will also be employed on the small access roads to the borrow sources to control fugitive dust.

Dust emissions from within the borrow sources and containment cells are expected to be minimal as no blasting, crushing or screening activities will be occurring. However, the following practices will be implemented to further reduce the potential for fugitive dust from within the borrow sources:

- All material piles will be sloped with a minimum 2:1 horizontal to vertical ratio to reduce wind erosion;
- Pit faces will be oriented with consideration to prevailing winds to direct any generated dust away from the community;
- Borrow source excavation activities will be halted on high-wind days; and,
- Limit speeds of heavy equipment and/or haul/dump trucks to reduce fugitive dust generated during material transport.
- Dump trucks hauling material will use fabric dust covers over top of the truck bed to prevent dust from blowing onto the site surfaces.
- Watering of the landfarm to minimize dust during periods of soil rotation;

If the above mitigation measures prove to be inadequate to control dust generation from the borrow sources, watering of the pit floor can also be employed to control fugitive dust. Similar to the access road, the application rate will be monitored to ensure adequate coverage of the floor without causing pooling or runoff. Watering of the pit floor is not expected to be routinely required and will only occur on an as-needed basis based on local conditions.

Therefore with applied mitigation, adverse environmental effects of construction and operation of the access road and borrow sources on air quality are considered mitigable and not significant. Residual effects are not expected.

References & Personal Communications

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