NUNAMI STANTEC

APEX RIVER SUPPLEMENTARY PUMPING 2018: EROSION AND SEDIMENTATION CONTROL PLAN

PURPOSE

This Erosion and Sedimentation Control Plan provides guidance and mitigation to the City of Iqaluit (the City) and its contractor, Kudlik Construction, avoid or prevent erosion or sedimentation from activities related to the City's emergency withdrawal of water from the Apex (Niaqunguk) River for the purpose of supplementing the City's drinking water supply at Lake Geraldine (the Project). This ESCP was developed in accordance with the requirements of the City's *Fisheries Act* Authorization 18-HCAA-01025, issued by Fisheries and Oceans Canada under Emergency Circumstances for the Project.

APPROACH

This plan uses DFO pathways of effects, measures to avoid or mitigate against serious harm to fish, and professional judgement to determine where effects from erosion and sedimentation might occur and the appropriate mitigation measures to avoid or reduce these effects. This ESCP is in effect during all phases of the Project, from the start of project set-up (including mobilization of equipment), through to the demobilization of project equipment. On-site activities, subsequent potential effects from these, and proposed mitigations measures for the Project are outlined in Table 1.

Table 1: Project Activities, Potential Effects, and Proposed Mitigation Measures

Activity	Potential effect	Mitigation Measures
Placement, removal, and operation of pumps	The placement of the water intake pumps using machinery, and the maintenance of the pumps, may cause bank and bed erosion leading to increased sediment entering the watercourse.	1. Disturbance to the riparian vegetation will be minimized. Use existing roads and trails wherever possible. 2. The removal of rocks, sand or other materials from the banks, the shore and shoreline, or the bed of the waterbody, below the ordinary high-water mark, will be minimized. If material is removed from the waterbody, it will be set aside and returned to the original location once construction activities are completed. 3. Site isolation measures (e.g., silt boom, silt curtain, silt fencing) for containing suspended sediment where in-water work is required, and downgradient of erosion-prone on-shore work areas. 4. Measures for containing and stabilizing waste material (e.g., construction waste and materials, accumulated debris) above the high-water mark of the Apex River to prevent re-entry. 5. Regular inspection and maintenance of erosion and sediment control measures and structures will be conducted during the course of operations. 6. If on-shore work areas, the shoreline or banks are destabilized, re-stabilize them immediately to prevent erosion and/or sedimentation. 7. If replacement rock reinforcement/armouring is required to stabilize eroding or exposed areas, use appropriately-sized, clean rock. The rock will be installed at a similar slope to maintain a uniform bank/shoreline and natural stream/shoreline alignment. 8. All pumping materials will be removed from site upon project completion.
On-shore activities in work areas that are prone to erosion	On-shore activities, such as driving or maintenance activities in work areas prone to erosion (e.g., on sand or fine materials), may cause erosion leading to increased sediment entering the watercourse	

Table 1: Project Activities, Potential Effects, and Proposed Mitigation Measures

Activity	Potential effect	Mitigation Measures
Use of machinery in water	The use of machinery in water can lead to the deposit of deleterious substances (e.g., grease, oil) into the water which may affect fish health.	1. Machinery on-site will be in a clean condition and maintained free of fluid leaks, invasive species and noxious weeds. 2. Machinery used in the watercourse will be limited to placing and removing the intake pump. 3. Machinery will not be left in the watercourse. 4. Washing, refueling and servicing machinery and storage of fuel and other materials for machinery will be conducted above the high-water mark and in a manner to prevent any deleterious substances from entering the water.
Discharging water from Unnamed Lake into Apex River	Water discharged from Unnamed Lake into the Apex River could cause erosion of the stream bank and bed (scouring) leading to sediment release, if it exceeds natural flow conditions.	1. Discharged water from Unnamed Lake will be directed towards of the center of the watercourse and at or near the water surface.