Qikiqtaaluk environmental
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WATER MANAGEMENT PLAN

Prepared for:

IQALUIT INTERNATIONAL AIRPORT IMPROVEMENT PROJECT "IIAIP"

BBC-SINTRA JOINT VENTURE

January 2015

Final – Rev 1.0

O/Ref.: QE14-214-11

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BBC-SINTRA JOINT VENTURE

Prepared and reviewed by:

Greg Johnson, M.Sc.A, P.Eng.
Project Director – Northern Projects

Approved by:

Sylvain Laberge
Director – Northern Projects

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1. WATER MANAGEMENT OBJECTIVES

The purpose of this water management plan is to reduce and minimize, to the fullest extent possible, during the Construction Period the impacts on groundwater quality and on the aquatic ecosystem of any fish bearing waters adjacent to the Airport. This will be done by:

- Minimizing the amount of surface water that is used by the IIAP;
- Recycling surface runoff water at the Airport site; and,
- Collection, storage and treatment of any contaminated waters found at the Airport.

Water use at the Airport will be limited to the following activities:

- Use of water surface runoff for dust suppression at the work site;
- Dewatering of work areas where soils are highly saturated; and
- Management of storm and snowmelt water.

Water is planned be used by the workers camp where itinerant workers will be lodged. The water used for this purpose is to be provided by the City of Iqaluit including the collection of waste water. Quantities of provided fresh water and disposed waste water will be monitored. As such the management of this water will not be discussed further in this plan.

2. WATER USAGES AND MITIGATION MEASURES

2.1 Use of water for dust suppression at the work site

2.1.1 Surface runoff waters from the inner-field located within the work site. The hose will be equipped with an inlet screen that respects the Freshwater Intake End-of-Pipe Fish Screen Guideline from Fisheries and Oceans Canada.

2.1.2 Water will only be collected from sources known not to contain contamination.

2.1.3 Water will be either sprayed or allowed to trickle from the back of a water truck using a pipe that allows an even distribution of the water over the entire width of the truck and a sufficient amount of water to coat the exposed earthworks surfaces without having any surface run-off.

2.1.4 Should an area become saturated with water, then the application of the water will be stopped immediately until dust begins to be generated.

2.2 Dewatering of work areas where soils are highly saturated

2.2.1 Any saturated soils encountered during excavation will be stockpiled and allowed to drain prior to use. These soils will be located in an area 30 m from any water body to prevent the introduction silt or sediments into the water body.

2.2.2 During backfill operations, water will be directed towards the natural drainage feature.

2.2.3 Sedimentation ponds will be used when emptying backfill areas to prevent the introduction of additional sediment into drainage paths.

2.2.4 Where necessary, dewatering will be done using pumps that will discharge water onto a rocky surface to reduce erosion of the land, at a point 30 m from any water body.

2.2.5 If there is a large amount of sediment in the water to be pumped, dewatering bags will be used to remove the sediment from the water.

2.3 Management of storm and snowmelt waters

2.3.1 Where feasible, drainage will be redirected to prevent rain water and runoff to enter any of the excavation or backfill areas. Should a significant amount of water accumulate in an excavation that cannot be managed by isolation in one section of the excavation it will be pumped on to the land, in a rocky area, if possible to prevent erosion, at a point 30 m from any water body.

2.3.2 Stockpile areas will be left in a tidy, well drained condition, free of standing surface water. Any unused aggregates will be left in neat compact stockpiles.

2.3.3 A crowned surface will be maintained on all horizontal surfaces to allow for water runoff. Material will not be placed in free standing water. Low areas will be drained before placing material.

2.3.4 All excavations will be kept free of water while work is in progress. Open excavations will be protected against flooding and damage due to surface run-off. Water will be discharged so as not to affect continuing, or completed work.

2.3.5 Flow of surface drainage or natural water courses will not be obstructed, unless required by the work.

2.3.5.1 When working within and/or in the vicinity of a drainage course or a body of water, silt fences, floating silt curtains and/or sedimentation ponds will be erected to prevent the release of sediment or deleterious materials into the water.

2.3.5.2 At the end of each work season the site will be left in a condition to prevent any erosion and/or ponding of water.

3. MINIMIZATION OF WATER VOLUMES AND PREVENTION OF RUNOFF

3.1 The following measures will be put into place to reduce the amount of water used at the Airport during construction and to reduce the amount of waste water generated:

3.1.1 Prevent surface water from entering excavated and backfill areas by erecting containment or diversion berms prior to starting excavation and or backfill operations.

3.1.2 Minimize the length of time open excavations are exposed to atmospheric conditions.

3.1.3 Promote the use of hand tools (brooms and shovels) and pressurized equipment (pressure washers) which need and generate less water during cleaning.

3.1.4 In any areas where contaminated soil is found, dewater excavations or backfill areas promptly to minimize the generation of contact water.

3.1.5 Any snow accumulated on top of work areas will be managed by removal of the snow prior to the start of work. The snow will be placed in an area where it will flow into natural drainage paths as it melts.

4. CONTAMINATED WATER

4.1 Any water generated in areas where there is known or suspected soil contamination will be tested, and treated to respect the discharge criteria of the Nunavut Water Board, if necessary, prior to discharge.

4.2 Authorisation will be obtained from an Aboriginal Affairs and Northern Development Canada Water Resource Officer prior to starting any discharge, when required.

4.3 Wastewater may be temporarily stored in existing tanks or lined berm areas while awaiting test results. The volume of wastewater storage in any tank or berm area during winter months shall not exceed 50% of the total capacity of the tank or berm area.