ENVIRONMENTAL MANAGEMENT PLAN

CHAR LAKE PUMP HOUSE AND
SIGNAL HILL WATER TREATMENT PLANT
RESOLUTE BAY, NUNAVUT

Document prepared for:
Tower Arctic Ltd.
P.O. Box 717
Iqaluit, Nunavut X0A 0H0

August 7, 2020

O/Ref.: QE18-182-2

FINAL PLAN

Qikiqtaaluk environmental

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1. INTRODUCTION

The present Environmental Management Plan (EMP) was developed to assist Tower Arctic Ltd. (Tower) with implementing measures to protect the environment and minimize environmental impacts during the Resolute Bay Water System Phase 2 Project at the Char Lake Pump House ("Char Lake") and Signal Hill Water Treatment Plant ("Signal Hill) in Resolute Bay, Nunavut.

Char Lake is located northwest of Resolute Bay, and the Char Lake pumping station is situated south of the lake, approximately 10 m from the lakeshore. The surface slopes toward the lake and the predominant soils on the site are sandy to sandy gravel. The pump house will be decommissioned in 2021, after the construction of the new pump house in 2020. The aerial view of the Char Lake Pump House is presented in Appendix A.

The Signal Hill Water Treatment Plant is located north of the Community, and the predominant soils at the site are also sandy to sandy gravel. The water treatment plant at Signal Hill will be partially decommissioned and updated in 2020. The aerial view of the Signal Hill Water Treatment Plant is presented in Appendix B.

Due to the proximity of the pump house and water treatment plant to the lakes, control measures must be implemented to prevent movement of contaminants into the water caused by disturbing the soils and structure dismantling. Char Lake is the main source of freshwater for the Community, and aquatic life inhabits the lake. Therefore, it is essential that the control measures listed in the *Environmental Management Plan* are respected, to minimize the impacts of the work on the aquatic environment.

The protective measures described within this document shall be implemented by Tower to avoid or minimize adverse environmental impacts. The procedures outlined in the following plan were carefully designed per QE's understanding of the existing Site conditions and environment. If certain procedures or protective measures prove to be impractical, imprudent, or ineffective in the field, the Site Supervisor will propose appropriate modifications for approval by the GN representative.

This EMP includes measures for Spill Contingency, as well as Erosion and Sediment Control.

In addition to the Site-specific protective measures outlined in the present EMP, Tower will comply with the applicable laws, regulations, and requirements of authorities having jurisdiction (AHJ). Tower will acquire and comply with required permits, approvals and authorizations.

The EMP is drawn from a variety of applicable policies and regulations including, but not limited to:

- Nunavut's *Environmental Protection Act*[1],
- The *Fisheries Act*[2];
- The *Species at Risk Act*[3];
- The *Canadian Environmental Protection Act*[4].

1 Environmental Protection Act, R.S.N.W.T. 1988, c.E-7 (current to July 24, 2013)
2 Fisheries Act, R.S.C., 1985, c. F-14 (last amended on 2016-04-05)
3 Species at Risk Act, S.C. 2002, c. 29 (last amended on 2019-05-22)
4 Canadian Environmental Protection Act S.C. 1999, c. 33 (last amended on 2019-05-06)

2. REGULATORY REQUIREMENTS

The EMP is to be implemented to ensure that applicable laws, regulations and requirements of authorities having jurisdiction are followed. Tower will comply with permits, approvals and authorizations required for the operations. The following applicable regulations and documents constitute an integral part of the EMP:

- Federal Legislation:
  - The *Nunavut Restricted Activity Timing Windows for the Protection of Fish and Fish Habitat* restricts activities in or near waterbodies in Nunavut so as to protect fish during spawning and incubation periods when spawning fish, eggs and fry are vulnerable to disturbances or sediments. Work will be conducted outside of the Zone 1 spawning period, which is from September 1 to June 30;
  - The purposes of the *Species at Risk Act* are to prevent wildlife species in Canada from disappearing, to provide for the recovery of wildlife species that are extirpated (no longer exist in the wild in Canada), endangered, or threatened as a result of human activity, and to manage species of special concern to prevent them from becoming endangered or threatened. No endangered species have been identified in this area;
  - The *Canadian Environmental Protection Act* is aimed at preventing pollution and protecting the environment by controlling hazardous substances from production and/or import, as well as their consumption, storage and/or disposal, more specifically, the *PCB Regulations* SOR/2008-273 apply in this case;
  - The *Nunavut Waters and Nunavut Surface Rights Tribunal Act* provides for the conservation and utilization of waters in Nunavut, in a manner that will provide the optimum benefit to the residents of Nunavut;
- Territorial Legislation:
  - The Government of Nunavut *Environmental Protection Act* governs the protection of the environment from contaminants. The act defines offences and penalties, as well as the powers of government inspectors;
- Guidelines and Policies:
  - The *Guidelines for Preparation of Hazardous Material Spill Contingency Plans* describes parameters that should be considered in the development of hazardous materials spill emergency plans. It also defines the information that should be incorporated into a comprehensive contingency plan;
  - The *Nunavut Spill Contingency Planning and Reporting Regulations* describe the requirements for spill reporting and emergency planning;
  - The Government of Nunavut *Environmental Guideline for Mercury-Containing Products and Waste Mercury* describes the requirements for the proper handling and disposal of waste mercury-containing articles in Nunavut;
  - WSCC's *Codes of Practice, Asbestos Abatement*, September 2018, Section 5.2 - Low-Risk Abatement Activities;
  - WSCC's *Codes of Practice, Working with Lead Guideline*, May 2017;

- Government of Nunavut's *Environmental Guideline for Waste Asbestos*, January 2011.

3. SURFACE WATER AND FISH HABITAT

No fish or other marine fauna were observed near the Site. However, the following procedures will be implemented and followed to prevent adverse effects to fish habitats and/or the degradation of surface water quality:

- All personnel must know the appropriate safety measures for refuelling, accidental spills, etc.;
- Heavy machinery will be parked and refuelled shall be made in a designated area, away from the waterbodies;
- Heavy machinery working at a distance of 10 meters or less must use biological oil. All machinery must arrive on-site in a clean condition and be maintained free of fluid leaks;
- All personnel must also be trained in proper spill prevention and response measures to avoid any accidentally released product from flowing toward fish-bearing waters;
- All personnel on-site will be informed of the importance of wildlife and wildlife habitat protection;
- Borrow materials shall not be taken from riverbeds;
- Construction activities near watercourses not identified in the Scope of Work shall be minimized wherever possible;
- Waste, excavated fill and/or debris shall not be disposed of in waterbodies;
- Waterbodies supporting fish will be protected from siltation during construction activities using silt fences, and/or other appropriate control devices;
- Plan activities so that materials, such as degreaser, blasting abrasives and other chemicals do not enter the water.

4. EROSION, DRAINAGE AND SEDIMENT CONTROL

The following section describes the measures to be implemented during construction activities to protect nearby waterbodies. Effective erosion and sediment control techniques are essential to preventing sediments from damaging receiving water ecosystems.

4.1 Avoiding Impacts and Reducing Erosion

The most effective form of sediment control is to ensure work is designed to reduce erosion at the source. The following best practices will be applied throughout the Project:

- Wherever possible, construction work will be executed under dry conditions;
- The volume of bare soils exposed at any given time will be minimized to the extent possible; disturbed soils will be stabilized as quickly as practicable;
- Existing vegetation will be preserved, unless it must be removed for construction activities;
- Construction equipment will not be operated in waterways;
- Waterway beds will not be used for borrow materials; there will be no dumping of excavated fill, waste materials, or debris in waterbodies;
- If necessary, temporary crossings and access roads may be designed and constructed to minimize erosion to waterways.

4.2 Minimizing Impacts - Erosion and Siltation Controls

4.2.1 Silt fences

Silt fences will be installed as per manufacturer's instructions between both old and new pump houses and Char Lake for effective run-off control. The silt fences will be inspected and repaired, as required, prior to, and immediately following large precipitation events. Silt will be cleared once it reaches one-third the height of the fence.

Detailed specifications and installing procedures of the silt fence are presented in drawing number C-103 prepared by EXP and included in Tender #172620-00474.

4.2.2 Turbidity curtains

Turbidity curtains will be installed beyond the lateral limits of the construction site for the intake line of the new pump house at Char Lake to prevent the migration of silt from the worksite into Char Lake.

Once the construction of new intake line completed, the turbidity curtains will be carefully removed from the site and installed beyond the lateral limits of the old intake line and maintained in place for the duration of the work, until its decommissioning is completed.

Work will be carried out using methods to minimize silt dispersion:

- They will be installed only when the lake is completely thawed so the curtains could not be damaged by the icebergs moved by winds;

- They will be firmly anchored in place, and the alignment should be set as close to the work area as possible but not so close as to be disturbed by applicable construction equipment;
- The height of the curtain shall be 10 % percent greater than the depth of the water to allow for water level fluctuations;
- The area protected by the turbidity curtain shall not contain large culverts or drainage areas that could cause a breach or could cause the curtain to lose contact with the bottom surface if flows occur behind the curtain;
- The area of proposed installation of the curtain shall be inspected for obstacles and impediments that cold damage the curtain or impair its effectiveness to retain sediment;
- Shallow installation can be made by securing the curtain by staking rather than using a flotation system;
- Supplemental anchors of the turbidity curtain toe shall be used as needed, depending on water surface disturbances such as wave action by winds;
- The turbidity curtain shall be inspected daily and repaired or replaced immediately;
- It is not normally necessary to remove sediment deposited behind the curtain but, when necessary, removal is usually done by hand prior to removal of the barrier. All removed silt is stabilized away from the waterbody;
- The curtain shall be removed carefully, pulling it toward the construction site to minimize the release of attached sediment. Any floating construction or natural debris shall be immediately removed to prevent damage to the curtain;
- If the curtain is oriented in a manner that faces the prevailing winds, frequent checks of the anchorage shall be made.

Detailed specifications and installing procedures of the turbidity curtain are presented in drawing number C-103 prepared by EXP and included in Tender #172620-00474.

4.3 Dust, Particulate, and Pollution Controls

Tower will ensure that emissions from equipment meet the emissions requirements of the AHJ.

Work will be carried out using methods to minimize dust dispersion:

- Wherever possible, vegetation will be preserved to prevent erosion and dust dispersion;
- Lower speed limits will be enforced on unsealed roads to minimize dust dispersion. For example, reducing speeds from 60 to 30 km/hr can reduce dust emissions by 65%;
- The supervisor will be responsible for monitoring and performing visual inspections during dry periods to determine whether the presence of dust and particulates requires mitigation measures;
- Work will be halted if dust and particulate controls are inadequate for worker exposure.

4.4 Drainage

To ensure proper Site drainage, the following measures will be implemented:

- Temporary drainage and pumping will be conducted to ensure excavations and Site are as free from water as possible;
- Water that is pumped or released into waterways, sewer or drainage systems will be free of suspended solids;
- Disposal of runoff water containing suspended solids or other substances will be controlled in accordance with local authority requirements.

5. HAZARDOUS MATERIALS MANAGEMENT DURING DECOMMISSIONING

To protect human health and minimize environmental impacts, the decommissioning activities must take place in the following order:

5.1 Above ground fuel tank removal

The existing aboveground storage tank (AST) will be inspected, securely removed and disposed of following the procedure presented below:

- Perform a complete inspection of the AST;
- If it is not empty, safely transfer the contents to a temporary storage tank by gravity, if possible, or by using a pump;
- Measure gas concentrations with a 4-gas detector to assess explosive limits - ventilate as required to eliminate explosive vapours and record the data;
- Enlarge the tank opening using a reciprocating saw or by contact with the tank while monitoring the explosive limits;
- Clean and wash the tank using a vacuum truck;
- Visual inspection of the AST;
- Remove the AST from the Site;
- Disposal of the AST at the community metal landfill.

5.2 Mercury-containing Equipment Collection and Disposal

Approximately 42 T12 fluorescent light tubes (14 at Char Lake and 28 at Signal Hill) will be securely collected and disposed of at an authorized recycling facility.

As per the Government of Nunavut's *Environmental Guideline for Mercury-Containing Products and Waste Mercury*, November 2010, the local governments have control over community landfills. Unwanted waste may be deposited into municipal landfill sites and sewage lagoons only with the consent of the local government.

When fluorescent and other mercury-containing lamps burn out, much of the mercury tends to be absorbed by other lamp materials such as phosphorous and glass. However, small quantities of mercury still remain in vapour form. Unwanted and/or end-of-life mercury-containing products should always be safely removed and stored until they can be transported to a registered hazardous waste receiver who is licensed to recycle or dispose of mercury.

5.3 PCB-Containing Equipment Collection and Disposal

Approximately 10 light fixture ballasts possibly containing PCB-bearing oils (3 at Char Lake and 7 at Signal Hill) will be securely collected, stored and disposed of as specified in the Federal Regulations SOR/2008-273.

When the fluorescent light ballasts are to be removed from service, they will be stockpiled and assessed for PCB content by comparing the coding on the surface of each ballast with the Environment Canada (publication EPS 2/CC/2 entitled "Identification of Lamp Ballasts Containing PCBs", revised August 1991).

Ballasts that are found to be PCB-containing will be separated from non-PCB-containing ballasts and then sent to a licensed PCB destruction facility. Ballasts should be considered to contain PCBs if they were manufactured prior to July 1, 1980, do not have any marking to indicate their date of manufacture, or do not have any wording to indicate they do not contain PCBs.

5.4 Asbestos-Containing Materials Collection and Disposal

The black non-friable firestop putty observed at Signal Hill which is used in the wall openings for electrical wiring was determined to contain 10% chrysotile asbestos, and will be securely removed and disposed of following Low-Risk procedures in accordance with the WSCC's *Code of Practice, Asbestos Abatement*, September 2018, Section 5.2 - Low-Risk Abatement Activities.

Removal of asbestos-containing black non-friable firestop putty will be performed with manual tools, and no power tools or abrasive methods will be used during the abatement. A decontamination facility will be constructed adjacent to the work area for workers to don and doff their Personal Protection Equipment (PPE), and for asbestos debris to be removed from the work area.

Disposal of the firestop putty must conform with Government of Nunavut's *Environmental Guideline for Waste Asbestos*, January 2011. Bags containing ACMs will be stored in a locked intermodal container with proper asbestos warning labels and proper protection in Resolute Bay until marine transport to the Province of Quebec for disposal at an authorized facility.

Please refer to the "*Decommissioning Plan- Char Lake Pump House and Signal Hill Water Treatment Plant – Resolute Bay, Nunavut*" as well as the "*ACM Abatement – Signal Hill Water Treatment Plant – Resolute Bay, Nunavut*", for additional details and procedures.

5.5 Lead-Based Paints and Lead-Containing Materials Collection and Disposal

The analytical results of all the samples collected for Lead-Based Paints and Lead-Containing Materials confirm that the lead content is not considered dangerous for human health nor the environment.

Therefore, no special precautions need to be put in place when manipulating the construction materials previously presumed to contain Lead.

6. SOIL REMEDIATION AND WATER TREATMENT

Based on the results of the field investigations conducted to date, the bulk of the soil impacted by petroleum hydrocarbons (PHC) is located on the west side of the Char Lake pump house peninsula. The approximate areal extent of the PHC contamination is 500 m^2. The contaminated soil depth is generally between 1.2 m and 1.5 m, resulting in a volumetric range of 600 m^3 to 750 m^3 of PHC-impacted soil.

During the excavation of PHC-impacted soil, material segregation should be conducted to reduce the quantity of potentially clean soil from being shipped off-Site and to reduce costs.

Impacted soils will be transported to a predetermined, authorized soil remediation facility. Non-impacted soil should be stockpiled on an alternate site for potential reuse as fill elsewhere in the Hamlet.

A portable water treatment system consisting of, as a minimum, particulate filtration and granular activated carbon vessels of suitable size, will be in place at the time of the site remedial activities.

The purpose of the water treatment system is to treat potential PHC-contaminated groundwater that enters the site excavations, thereby preventing this groundwater from adversely impacting Char Lake.

Please refer to the "*Decommissioning Plan- Char Lake Pump House and Signal Hill Water Treatment Plant – Resolute Bay, Nunavut*" for additional details and procedures.

7. SPILL RESPONSE PROCEDURES

A spill is defined as the discharge of a hazardous product from its containment into the environment. Potentially hazardous to humans, vegetation, and wildlife, they vary in severity, depending on several factors, including the nature of the material, the volume spilled, the location, and season. Oil and fuel are the main products that may be spilled during the course of this work; therefore, spill response procedures will focus on this type of hazardous material.

Site personnel will be briefed on the procedures to be followed to report a spill and initiate spill response. The first person to notice a spill will take the following steps:

1. Immediately warn other personnel working near the spill area;
2. As long as it is safe to approach the spill, take any safe and reasonable measures to stop, contain and identify the nature of the spill.

All spill response interventions carried out by the Spill Response Team will follow these general procedures:

- **Source Control:** Reduce or stop the flow of product without endangering anyone. This may involve very simple actions, such as sealing a puncture hole with whatever is at hand (e.g., a rag, a piece of wood, tape, etc.), re-positioning a leaking container such that the puncture hole is facing up, or transferring fluid from leaking containers;
- **Control of Free Product:** Prevent or limit the spread of the spilled material. Accumulate/concentrate the spilled product in an area to facilitate recovery. Barriers positioned downgradient of the spill will slow or stop the progression of the spill. Barriers can consist of absorbent booms, dykes, berms, or trenches dug in the ground;
- **Protection:** Evaluate the potential dangers of the spill to protect sensitive ecosystems and natural resources. Contain or divert the spilled material away from sensitive receptors. This can also be achieved by using varying types of barriers;
- **Clean Up the Spill:** Recover and containerize as much free product as possible. Recover and containerize/treat contaminated soils or water;
- **Report the Spill:** Provide basic information, such as the date and time of the spill, the type and volume of product discharged, the location and approximate size of the spill, the actions already taken to stop and contain the spill, the meteorological conditions, and any perceived threat to human health or the environment. Reporting requirements are presented in Section 10 of the present document.

Specific response procedures for spills on land and in water are presented in the following sections. Because the quantity of liquids contained in the heavy equipment is relatively small, the spill of liquids will likely not reach the watercourse.

7.1 Hazardous Liquids Found On-site and Storage Capacity

Fuels and oils will be used during this Project. The greatest volumes involved consist of diesel fuel contained in heavy equipment as well as a 450-liter tank installed in the box of a pick-up truck. Other substances, such as lubricating oils, hydraulic fluids, antifreeze, fuel additives, gasoline, and engine coolants are used, but their volumes are much less than the volume of diesel fuel on-site. These products are all to be considered as potential environmental and safety hazards.

As a preventive measure, heavy equipment operators shall complete a daily inspection checklist to identify hydraulic line problems and/or other issues.

Heavy machinery parking and refueling activities will be conducted a minimum of 30 m from any watercourse on-site.

7.2 Spill Response Equipment

Emergency spill response equipment (i.e. spill kits) will remain on-site during the course of the work. The minimum contents of the spill kits will be as follows:

- 10’ x 5” diameter hydrophobic booms;
- Bales of 100 sorbent sheets;
- Safety glasses;
- Nitrile gloves;
- 1 bag of granular absorbent;
- 1 roll of polyethylene sheeting;
- 1 hand shovel.

Spill kits will be inspected and maintained on a regular basis.

Appropriate fire extinguishers will also be placed in each vehicle.

Minimum 2 spill kits per site should be available and placed at sight in strategic spots where spills are most likely to occur.

7.3 Spills on Land

Response to spills on land will include the previously detailed general procedures. The main spill control techniques involve the use of 2 types of barriers: dykes and trenches. Barriers should be placed on the downgrade (downslope) from the source of the spill, and as close as possible to the source of the spill. Barriers will slow the progression of the petroleum product and will also serve as containment to allow recovery of the fluids.

Depending on the volume spilled, the site of the spill, as well as available materials, a dyke may be built with soil, booms, lumber, snow, etc. A plastic liner should be placed at the foot of and over the dykes to protect the underlying soils, or other materials, and to facilitate recovery of the fuel. Construct dykes in such a way as to accumulate a thick layer of free product in a single area (V-shaped or U shaped).

Trenches are useful in the presence of permeable soils and when the spilled fluid is migrating below the ground surface. A plastic liner should be placed on the downgrade edge of the trench to protect the underlying soils. Liners should not be placed at the bottom of the trench so as to allow water to continue flowing underneath the layer of floating oil.

The use of large quantities of absorbent materials to recover important volumes of fluid should be avoided. Large volumes of free product shall be recovered, as much as possible, by using vacuums and pumps, then containerized. Mixtures of water and oil may be processed through an oil-water separator. Absorbent sheets should be used to soak up residual oil on water, on the ground (soil and rock), and vegetation. Peat moss may also be sprinkled on vegetation to absorb films of petroleum products.

7.4 Spills on Snow

In general, snow and ice will slow the movement of hydrocarbons. The presence of snow may also hide the oil slick and make it more difficult to follow its progression. Snow is generally a good natural sorbent, as hydrocarbons will tend to be soaked up by snow through capillary action. However, the use of snow as a sorbent material shall be limited as much as possible. Snow and frozen ground will also prevent hydrocarbons from migrating down into soils, or at minimum slow the migration process.

Response to spills on snow and ice will include the previously detailed general procedures. Most response procedures for spills on land may be used for spills on snow and ice. The use of dykes (i.e., compacted snow berms lined with plastic sheeting) will slow the progression of the oil and will also serve as containment to allow recovery of the oil.

Free product shall be recovered by using a vacuum, a pump, or sorbent materials. Contaminated snow and ice will be scraped up manually or using heavy equipment, depending on volumes. The contaminated snow and ice will be placed in containers. Once melted, the oily water must be treated.

7.5 Spills on Water

Spills on water are more difficult to contain as the spill can spread quite rapidly depending on the current and the temperature of the water. Eliminating the source of the spill and skimming, absorbing, and vacuuming will reduce the initial impact of the spill.

Hydrophobic absorbent booms are to be installed with the sediment curtains, on the side where the work is conducted.

7.6 Disposal of Materials Impacted by Spills

Bulk bags of one cubic meter capacity will be used to contain used sorbent materials for transport by sealift to an authorized disposal facility in the south.

PHC-impacted soil will be transferred into $1m^3$ bags and transport by sealift to an authorized disposal facility in the south.

Snow and/or water may be transferred into temporary containment, treated in place, brought to one of the two authorized treatment facilities in Iqaluit, or may be stored in drums and/or wranglers and transported by sealift to authorized disposal facilities in the south.

8. TRAINING

Site personnel shall be informed that any spill of hazardous liquids or solids, whatever the extent, must be immediately reported to the Site Supervisor.

Crew members will be trained in emergency spill response and environmental protection procedures. Training will include knowledge of the following:

- Properties of the hazardous materials stored on-site;
- Common causes of spills;
- Environmental effects of spills;
- Worker health and safety during emergency interventions;
- PPE[1] and clothing;
- Spill response equipment and materials.

1 Personal protective equipment

9. DUTIES AND RESPONSIBILITIES

As part of the emergency spill response plan, Tower is responsible for implementing, through its management team, the following procedures:

- Train Site personnel in spill response procedures and the proper use of response equipment and materials;
- In the event of a spill, mobilize all available Site personnel, equipment and tools, as required;
- Implement required health and safety procedures at the spill location;
- Eliminate all fire hazards and potential ignition sources near the spill area;
- Control the source of the spill (i.e. reduce or stop product discharge);
- Contain the spilled product using the most appropriate methods and equipment (i.e. dykes, ditches, sorbent materials, containment booms, and other barriers);
- Evaluate the possibility of recovering the spilled materials;
- Obtain, if required, assistance from government agencies such as the Government of Nunavut Department of Environment (GN DoE) and/or Environment and Climate Change Canada;
- Comply with applicable guidelines and regulations;
- Conduct a preliminary assessment of the environmental impacts;
- Within 24 hours of the event, report the spill to the Government of Nunavut Spill Report Line and submit a written spill report using the appropriate form.

10. REPORTING REQUIREMENTS

Volumes of spilled hazardous substances requiring reporting are listed in Schedule B of the *Nunavut Spill Contingency and Reporting Regulation*. For example, for all flammable liquids (Class 3), spills of volumes equal to or greater than 100 L must be reported.

In addition, all releases of harmful substances, regardless of volume, are to be reported to the Spill Report Line if the release is near or into a waterbody.

After the initial field emergency response to the spill event, the spill will be reported to the 24-hour Spill Report Line:

24-Hour Spill Report Line

Tel. 867 920-8130

or

Fax: 867 873-6924

or

email: spills@gov.nt.ca

Failure to report a spill can lead to fines. It is the responsibility of the Site Supervisor to prepare the proper reports and transmit them to the regulatory authorities. Table 1 presents an additional contact list for spill reporting.

TABLE 1
Contact List for Spill Reporting

Department	Telephone
GN DoE	867 975-5428
RCMP – Resolute Bay	867 252-1111
Health Center – Resolute Bay	867 979-3844
ATCO – Resolute Bay	867 252-3737
Tower Project Manager: Gordon Patterson	514 896-6900
QE Project Manager: Catalin Cenan	867-222-8194
EXP Project Manager : Tony Whalen	506-999-6284

Afterwards, the spill event will be reported in writing using the standard Spill Report Form presented in Appendix C.

The written report will include the following information:

- Date and time of the incident;
- Location or map coordinates and direction of spill movement, if not at steady state;

- Party responsible for the spill;
- Type and estimated quantities of spilled contaminant(s);
- The specific cause of the incident, if known;
- Status of the spill, indicating if spilled materials are still moving or have reached steady state;
- Approximate surface area of the contaminated zone;
- Factors affecting spill or recovery, such as temperature, wind, etc.;
- Status on containment actions, indicating whether:
  - Naturally,
  - Booms, dykes or other,
  - No containment has been implemented;
- Corrective action taken, or proposed, to clean, contain or dispose of the spilled material;
- Whether assistance is required, and in what form;
- Whether the spill poses a hazard to humans or property (i.e. fire, drinking water);
- Comments and recommendations;
- The name, position and employer of the person reporting the spill; and,
- The name, position and department of the person to whom the spill is reported.

APPENDIX A

Aerial View of Char Lake Pump House

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ENVIRONMENTAL MANAGEMENT PLAN

Property located:

CHAR LAKE PUMP HOUSE AND
SIGNAL HILL WATER TREATEMENT PLANT
RESOLUTE BAY, NUNAVUT

Presented to:

TOWER ARCTIC LTD

APPENDIX A

Aerial view of Char Lake Pump House.

APPENDIX B

Aerial View of Signal Hill Treatment Plant

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ENVIRONMENTAL MANAGEMENT PLAN

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Presented to:

TOWER ARCTIC LTD

APPENDIX B

Aerial view of Signal Hill Water Treatment Plant.

APPENDIX C

Standard Nunavut Spill Report Form

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE
TEL: (867) 920-8130
FAX: (867) 873-6924
EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR	REPORT TIME	☐ ORIGINAL SPILL REPORT, OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER ____-_____
B	OCCURRENCE DATE: MONTH – DAY – YEAR	OCCURRENCE TIME		

C	LAND USE PERMIT NUMBER (IF APPLICABLE)	WATER LICENCE NUMBER (IF APPLICABLE)
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION	REGION ☐ NWT ☐ NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN
E	LATITUDE DEGREES MINUTES SECONDS	LONGITUDE DEGREES MINUTES SECONDS

F	RESPONSIBLE PARTY OR VESSEL NAME	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION	
G	ANY CONTRACTOR INVOLVED	CONTRACTOR ADDRESS OR OFFICE LOCATION	
H	PRODUCT SPILLED	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER
	SECOND PRODUCT SPILLED (IF APPLICABLE)	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER
I	SPILL SOURCE	SPILL CAUSE	AREA OF CONTAMINATION IN SQUARE METRES
J	FACTORS AFFECTING SPILL OR RECOVERY	DESCRIBE ANY ASSISTANCE REQUIRED	HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS		

L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE

REPORT LINE USE ONLY

N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130

LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC

SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN

FILE STATUS ☐ OPEN ☐ CLOSED

AGENCY	CONTACT NAME	CONTACT TIME	REMARKS
LEAD AGENCY			
FIRST SUPPORT AGENCY			
SECOND SUPPORT AGENCY			
THIRD SUPPORT AGENCY			

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