PART VI REPORTS

PART VI – REPORTS
GEOTECHNICAL REPORT
ENVIRONMENTAL ASSESSMENT REPORT



Geotechnical Investigation

Lift Station #1, Septage Receiving Station and Lower Iqaluit Sewer Upgrades Iqaluit, Nunavut

Prepared for: City of Iqaluit

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Project No. 1101000074

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1.0 INTRODUCTION

Stantec Architecture Ltd. (Stantec) was contracted by the City of Iqaluit (City) to complete the detailed design of a sanitary lift station, expansion and replacement of an existing gravity sanitary line in Lower Iqaluit, as well as a new sanitary discharge station (SDS) adjacent to the existing Iqaluit Wastewater Treatment Plant (WWTP). Field investigations were required as part of this design and included a topographic survey, Phase I and II Environmental Site Assessments (ESA), and a geotechnical investigation.

This report has been prepared specifically and solely for the project described herein. It presents a summary of available information and geotechnical comments specific to the site and a Statement of General Conditions for the report is attached in Appendix A.

1.1 PROPOSED UPGRADES

The proposed upgrades include the following:

- A new below grade wet well located adjacent to the existing lift station. The bottom of the wet well will be approximately 5 to 6 m below grade.
- A new building addition over the wet well. The approximate footprint of the building addition is 11 m x 7 m. The building addition is planned to be supported on pipe piles.
- A new sanitary sewer extending from Lift Station #1 to structure PTA2 for an approximate distance of 500 m. The alignment is adjacent to a gravel access road.
- Minor gravel road widening adjacent to the new lift station footprint.

2.0 SITE LOCATION, GEOLOGY, CLIMATE AND PERMAFROST CONDITIONS

2.1 SITE LOCATION

Lift Station #1 is located to the south of Iglulik Road in the City of Iqaluit at approximate coordinates latitude 63.74542° and longitude -68.52299°. Iqaluit is located at the head of Frobisher Bay in the southern region of Baffin Island, in the Territory of Nunavut.

The site location is shown on Drawing 1 in Appendix B.

2.2 GEOLOGY

Iqaluit is located within the Canadian Shield with predominately granitic gneiss or granodiorite bedrock of the Archean Eon (Harrison et. al., 2011).



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Canadian Geoscience Map 64 -2012 prepared by the Geological Survey of Canada (Allard, et. al., 2012) indicates littoral and nearshore marine sediments overlying shallow bedrock. The overburden is described as sand, silty sand, gravelly sand, and gravels generally stratified and well sorted. Ice wedges may be occasionally present.

2.3 CLIMATE

The average daily mean temperature from the Iqaluit Airport from 1981 to 2010 is -9.3 °C (Environment Canada, 2016). The average annual precipitation is 403.7 mm with an average annual snowfall of 229.3 cm (Environment Canada, 2016). The average freezing and thawing indices between 1981 and 2010 have been 4052 degree-days below 0°C and 695 degree-days above 0°C, respectively. The rate of change in mean air temperature for northern Canada in the Eastern North region from 1978 to 2008 is 0.7°C/decade (CSA, 2010). For the period of 2011-2040 the average change in mean annual temperature was calculated to be 1.1°C for a moderate green-house gas scenario and 1.2°C for a high green-house gas scenario, based on the average mean seasonal temperature for the period of 1971 to 2000 (CSA, 2010).

2.4 PERMAFROST CONDITIONS

Permafrost mapping from the National Atlas of Canada shows Iqaluit is located within a continuous permafrost region (Natural Resources Canada, 1995). The Mean Annual Ground Temperature (MAGT) ranges between -5.6 °C to -7.9 °C (Smith, et. al., 2013).

The Journal of Applied Geophysics 2015 article titled "Geophysical characterization of permafrost terrain at Iqaluit International Airport, Nunavut" provides a summary of thermistor data collected at the Iqaluit International Airport. Results from two boreholes with thermistors, designated DH10-02 and DH11-07, measured mean annual permafrost temperatures of -4.6 to -5.5 °C at a depth of 10 m and active layer thicknesses of 1.4 m to 2.2 m. The temperature readings for the two boreholes from the article are presented below.

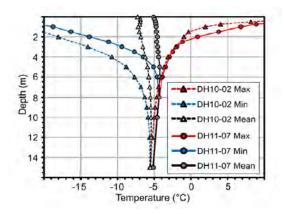


Figure 2.1: Thermistor data collected at the Iqaluit Airport as presented in the Journal of Applied Geophysics 2015 article.



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3.0 BACKGROUND DATA

Original Construction

The original Lift Station #1 building and wet well was constructed in the 1970's. Partial As-Built drawings indicate the wet well was founded several meters below grade on native soil, and a 3-inch-thick layer of polyurethane insulation was placed on the base and sides of the wet well. The building above the wet well was slab-on-grade construction placed on a granular fill pad.

Available As-Built drawings include a 10 inch diameter sanitary sewer and 6 inch diameter force main between manholes #1 to #6. The inverts of the pipes were founded approximately 7.5 ft to 10 ft below grade and the drawings indicate the trench excavations encountered permafrost.

Lift Station Expansion

In 2007 an expansion to the lift station was constructed; the works included upgrading the lift station mechanical systems and building an addition on the west side of the wet well. The Record Drawings prepared by Earth Tech indicate the building addition was founded on adfreeze pipe piles and the floor slab was elevated 500 mm above ground surface. The pile design was based on an allowable adfreeze strength of 30 kPa between 3 m to 6 m depth and 40 kPa below 6 m; resistance within the upper 3.0 m was ignored. The pile shaft lengths varied from 9 m to 17 m. Construction records indicate that the original foundation design was based on rock socketed piles; however bedrock was not intercepted, and the foundation design was revised to adfreeze piles.

4.0 SCOPE OF WORK

The scope of this Geotechnical Investigation included:

- Field investigation to characterize the soil and groundwater conditions at eight boreholes drilled throughout the site.
- Carry out laboratory tests including moisture content, grain size analysis, pH and sulphate testing on select soil samples.
- Prepare a Geotechnical Investigation Report which summarizes the results of the field investigation, laboratory results, and provides geotechnical recommendations for the design and construction of the proposed upgrades.



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5.0 FIELD INVESTIGATION METHODOLOGY

Borehole drilling was completed in September 2022 and consisted of drilling eight boreholes using a Gardner Denver air-track drill, model ATD3700, supplied and operated by Canadrill Ltd. The approximate borehole locations are shown on Drawing 1 in Appendix B.

Four (4) shallow boreholes were drilled along the length of the existing sanitary line to a depth of approximately 3.7 m. Four (4) additional boreholes were drilled around the existing Lift Station #1, two of which reached depths greater than 10 m. The boreholes were advanced by the percussion rotary air blast drilling method, with a 4.5-inch (114 mm) outside diameter drill bit. Drill cuttings were ejected out of the borehole by compressed air forced out at the drill bit face. Due to the drilling method employed for this investigation, collected soil samples are disturbed and as a result there is an inherent uncertainty of identifying soils in terms of soil classification. The boreholes were backfilled with drill cuttings.

The field work was conducted under the supervision of geotechnical personnel who observed and recorded the various soil strata conditions encountered during the investigation. The soils were classified in general accordance with the procedures outlined in the explanatory key: Symbol and Terms Used on Borehole and Test Pit Records included in Appendix C. Disturbed soil samples were obtained from the boreholes during the investigation. All soil samples were stored in moisture proof containers and taken to our laboratory in Ottawa, Ontario for further classification and testing. Selected samples were chosen for testing of soil gradation, and moisture content.

The approximate borehole locations were established in the field by our Stantec field representative. Borehole locations were measured in the field using a handheld GPS receiver.

6.0 SUBSURFACE CONDITIONS

In general, the subsurface conditions encountered within the boreholes included a sand layer with varying amounts of silt and gravel; bedrock was not intercepted in the boreholes. Frozen ground was encountered in several of the boreholes; however the depths were inconsistent.

Subsurface conditions observed in the boreholes are summarized in the subsections below and described in detail on the Borehole Records included in Appendix C.

6.1 SOIL CONDITIONS

6.1.1 Surface Conditions

The surface soils were comprised of brown sand with some gravel. Minimal vegetation was observed at the site.



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6.1.2 Subsurface Conditions

The subsurface soils at the site comprised of brown-grey sand with varying amounts of silt and gravel. Generally, the soils were described as sand with gravel to silty sand. Although not observed, cobbles and boulders may be present within the sand. The boreholes were terminated within the sand layer.

Due to the method employed in advancing the boreholes and the presence of permafrost/frozen soil conditions, a determination of the relative soil compactness/consistency was not possible.

A summary of laboratory grain size analyses performed on selected soil samples recovered from the boreholes is provided in Table 6.1. The grain size results are also presented on Figure 1 in Appendix D.

Table 6.1: Laboratory Testing Results

		Grain Size				
BH No.	Approximate Depth (m)	Gravel (%)	Sand (%)	Silty/Clay (%)	Unified Soil Classification	
BH22-5	0.6	27	69	4	Poorly-graded sand with gravel (SP)	
BH22-5	3.7	21	72	7	Poorly-graded sand with silt and gravel (SP-SM)	

Moisture contents conducted on all the recovered soil samples from boreholes BH22-4 and BH22-5 ranged from 2% to 12%.

6.2 BEDROCK

Bedrock was not encountered within the termination depths of the boreholes, which included a maximum depth of about 11.6 m in borehole BH22-8.

The 2007 Earth Tech Record Drawings show an adfreeze pile shaft length up to 17 m, which suggests bedrock was not encountered up to a depth of approximately 16.5 m below grade.

6.3 PERMAFROST CONDITIONS

Within boreholes BH22-1 through BH22-4, near the location of the proposed sewer, frozen soil was not observed within the borehole termination depths of approximately 3.7 m.

Within boreholes BH22-5 and BH22-8, near the location of Lift Station #1, frozen soil was observed at approximately 2.2 m to 2.5 m below grade.

It should be noted that the above site observations were visual and may not be an accurate representation of the active layer thickness.

6.4 GROUNDWATER CONDITIONS

The groundwater and moisture observations within the boreholes are summarized in Table 6.2. Fluctuations in the groundwater level due to seasonal variations or precipitation events should be



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anticipated. Groundwater will likely be encountered at or near the permafrost table and within the active layer during periods of thaw.

Table 6.2: Summary of Groundwater Observations

Borehole	Groundwater and Moisture Depths
BH22-1	Moisture at 3.3 m
BH22-2	Moisture at 2.1 m
BH22-3	Water at 2.7 m
BH22-4	Water at 2.4 m
BH22-5	Moisture at 2.4 m
BH22-6	Moisture at 0.6 m
BH22-7	Moisture at 2.4 m
BH22-8	Moisture at 2.1 m

6.5 CHEMICAL TEST RESULTS

Two representative soil samples were submitted to Paracel Laboratories Limited in Ottawa, Ontario for resistivity, pH, sulphate and chloride testing. The results of the testing are summarized in Table 6.3.

Table 6.3: Results of Chemical Analysis

Borehole	Depth (m)	рН	Sulphate (µg/g)	Chloride (µg/g)	Resistivity (Ohm•m)
BH22-4	2.4	7.73	7	10	86.4
BH22-5	2.1	7.61	23	19	96.0

7.0 DISCUSSION

The subsurface conditions encountered in the boreholes consisted of sand with varying amounts of gravel and silt. Frozen soil was observed in several of the boreholes; however the observations were inconclusive for the depth of the active layer. Based on the available thermistor data at the Airport and Stantec's knowledge of the area, the active layer is anticipated to be between 1.5 to 2.5 m below ground surface.

The proposed excavation for the wet well will intersect permafrost and the excavation for the sewer line may intersect permafrost. Depending on the time of year, the excavations may encounter groundwater. The native soils at the site are considered permeable; excavations carried out during spring thaw could encounter significant groundwater seepage and surface water infiltration, which could overwhelm sump and pump dewatering techniques.

Adfreeze piles are considered the preferred foundation type for the building addition as bedrock is likely over 16 m below ground surface based on previous construction drawings at the site.



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7.1 SHALLOW AND DEEP FOUNDATIONS ON ROCK

Bedrock was not intercepted within the maximum depth and is likely greater than 16 m below grade. Given the depth to bedrock at the proposed building location, shallow footings or rock socketed piles are not considered practical.

7.2 SURFACE PAD FOUNDATIONS

Surface pad foundations are possible; however considering the 2007 building expansion is supported on pile foundations we recommend supporting the new wet well building addition on piles to reduce differential settlement between the two buildings.

7.3 ADFREEZE PILES

The soil conditions at the site are suitable for adfreeze pipe piles for the proposed building addition. Typical pipe pile sizes for projects in northern communities are in the order of 114 mm to 141 mm outside diameter. The borehole data and thermistor data collected at the Iqaluit Airport indicate an active layer thickness of approximately 2.5 m. For the design piles we have assumed an active layer thickness of 3.0 m to account for an increase in the layer thickness due to climate change.

Allowable adfreeze bond strengths are included in the table below.

Table 7.1: Allowable Adfreeze Bond Strengths

Depth	Long Term Loading (kPa)	Long and Short Term Loading (kPa)	Minimum Pile Embedment (m)	
3 m to 6 m	30	30	0	
>6 m	30	40	8	

⁽¹⁾ Long term loads include dead load and sustained live loads and assumes 30 mm of settlement over 30 years with a future ground temperature of -5° C.

The allowable bond strengths for adfreeze piles include a factor of safety of 2. Slotted piles can be used if additional strength is required; however an increased embedment depth could provide additional strength at a lower cost. The use of slots will help to ensure that the sand slurry fills both the inside of the pile, as well as the annulus between the outside of the pile and the drilled borehole. Each slot should be a 50 mm wide by 100 mm high hole, cut on both sides of the pipe at about 500 mm on centre throughout the full adfreeze bond length. It is recommended the first set of holes be located about 500 mm below the active layer (approximately 3 m below finished grade).

The use of adfreeze steel pipe piles beneath heated structures requires that an air space of at least 0.5 m to 1 m be provided below the building to protect the permafrost. Although shorter air spaces can provide the required ventilation, snow drifting around the perimeter of the building can become an issue if air



⁽²⁾ Short term applies to loads generally less than 5 hrs in duration.

⁽³⁾ The minimum embedment length assumed a zero-resistance depth of 3 m and was calculated to resist a frost-jacking force of 150 kPa generated from a 2.5 m thick active layer, neglecting the self-weight of the pile.

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space less than 1 m is provided. The air space should be maintained and clear of any obstructions. Additionally, the individual exposed section of the pile above ground surface should be insulated and covered by a protective sheathing. Adfreeze piles in groups should be spaced at least 4 pile diameters, on-centre, apart.

7.3.1 Pile Installation

Full time monitoring of the pile installation must be carried out by a geotechnical engineer or a technician under the supervision of a geotechnical engineer.

It is recommended that adfreeze pile installations be carried out in spring while the active layer is still frozen and air temperatures are moderate during the day. The pre-drilled borehole should be at least 50 mm larger in diameter than the O.D. of the piles. Any deleterious material (i.e. snow, soil, grease, rust or scale, etc.) should be removed from the piles prior to installation.

The upper 2.5 m of each pile, located within the anticipated active layer, should be smeared with arctic grade grease and wrapped in multiple layers of construction grade plastic.

The bottom of each pile should be placed to the design depth below finished grade and backfilled with sand slurry. The sand used should have a maximum particle size of about 5 mm and contain less than 10 percent silt sized particles (fines). The sand slurry should have a pore water salinity of less than 5 ppt and be of a consistency similar to that of flowing paste. The temperature of the sand slurry should not exceed 10 °C during placement to minimize freeze-back times.

The sand slurry should be placed on the outside of the pile up to about 0.5 m above the permafrost table (about 2.0 to 1.5 m below finished grade). The inside of the pile should also be backfilled with sand slurry to within about 1.0 m of the cut off elevation. During placement of the sand slurry, the top of each pile should be vibrated with the drill hammer to assure the slurry is well consolidated and the pile has a good seat on the bottom of the borehole. The remainder of the outside of the pile can be backfilled to finished grade with sand.

Each pile should be checked for plumbness and wedged in place for several days during freeze back. No loading should be applied before the backfill is completely frozen (about 1 to 2 weeks). Several piles should be equipped with thermistors to monitor freeze-back temperatures.

7.4 SEISMIC CONSIDERATIONS

As outlined in the 2020 National Building Code of Canada, buildings and their foundations must be designed to resist a minimum earthquake force. In accordance with Table 4.1.8.4.-B of the 2020 National Building Code of Canada the seismic site response for the site can be considered Site Class (S) D which corresponds to stiff soil.



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7.5 FLOOR SLAB

The design of piles would include a structural floor slab supported on piles. The floor slab should be elevated above ground surface by approximately 0.5 m to 1.0 m to allow air flow beneath the building.

The site grades around the building should be sloped away from the building a minimum grade of 2%. The water should be directed toward ditches that drain water away from the buildings.

7.6 ROAD DESIGN

Actual traffic frequency and axle loading are not known at this time, however it is expected daily traffic will consist of a few light duty trucks and heavier vacuum trucks infrequently. The gravel structure provided in Table 7.2 is in line with typical minimum structures used for similar applications with similar traffic loading. Satisfactory performance of the road structures will require good surface water management practices at the subgrade and finished surface elevations. A minimum grade of 2% crown is recommended where possible.

Table 7.2: Gravel Road Design

Material	Thickness (mm)
Gravel surface – Granular A	200
Base layer – Granular B	300
Total	500

Periodic maintenance of the gravel road will be required. During and immediately following prolonged precipitation events and during spring thaw, it should be anticipated that the proposed structure may require increased maintenance.

7.6.1 Road Materials and Placement

Prior to new fill placement the subgrade should be proof-rolled, any soft spots observed during proof rolling should be sub excavated and replaced with compacted Granular B. All granular materials should be in accordance with the requirements of City's Specification. Both the surface and base layers should be compacted to 100% SPMDD.

7.7 THAW RELATED SETTLEMENT

The ambient temperature in the building and wet well will be maintained above freezing, therefore heat loss from the building and wet well could cause thawing of the overburden soils beneath the building. Thawing of the overburden soils and eventual development of a thaw bulb may cause settlement of the overburden; both vertical and horizontal movements could develop within the overburden. The movements could impact the performance of infrastructure in the area such as pipes, roads, and hard surfaces. The incorporation of a ventilated air space beneath the building will help mitigate the potential movements.



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To help reduce heat loss to the underlying soils we recommend installing a 100 mm thick layer of highload polystyrene insulation at the following locations:

- Beneath the new building where a ventilated air space is not possible, such as at the wet well connection.
- At the connection to the existing structure and foundations.
- · Surrounding the wet well sidewalls and base.

The highload rating of the insulation should be selected by the structural engineer based on the proposed loads and should include consideration for secondary creep.

7.8 CLIMATE CHANGE CONCERNS

Temperature trends indicate a warming trend of 0.7 °C per decade (CSA, 2010), which corresponds to about 1.4 °C increase over a 20 year design life. A warming climate could cause a change in depth of the active soil layer, which causes an increase in frost jacking. Frost jacking of piles, especially the leading edge piles, could cause movements that would damage the building foundations. For this reason, it is recommended to design with an increased active layer depth of 3 m.

The 2010 CSA Technical Guide titled "Infrastructure in Permafrost: A Guideline for Climate Change Adaption" provides guidance on assessing the potential impacts of climate change on infrastructure. The sensitivity of the site to climate change was assessed as "low" and the consequence of permafrost degradation is assessed to be "major". The assessed site sensitivity and consequence suggests a risk level of "C", which suggests a qualitative review should be completed. Assuming the building is designed with a structural floor slab supported on pile foundations, and insulation is provided at key heat loss zones, movements of the structure are anticipated to be within typical design tolerances.

7.9 CEMENT TYPE AND CORROSION POTENTIAL

The testing summarized in Table 6.3 of the report was completed to determine the potential for degradation of concrete in the presence of soluble sulphate and the potential for corrosion of exposed steel used in buried infrastructure.

The pH, resistivity and chloride concentration provide an indication of the degree of corrosiveness of the subsurface environment. The soil pH ranged from 7.7 to 7.6 which are within what is considered the normal range for soil pH of 5.5 to 9.0. The results are provided to aid in the selection of coatings and corrosion protection systems for buried steel objects.

The concentration of soluble sulphate provides an indication of the degree of sulphate attack that is expected for concrete in contact with soil and groundwater at the site. Soluble sulphate concentrations less than 1000 μ g/g generally indicate that a low degree of sulphate attack is expected for concrete in contact with soil and groundwater. Type GU (General Use) Portland Cement should therefore be suitable for use in concrete.



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7.10 EXCAVATION, DEWATERING AND BACKFILLING

7.10.1 Excavations

The subsurface conditions encountered in the boreholes consisted of sand with varying amounts of gravel and silt (granular soil). Based on the thermistor data at the Airport and Stantec's knowledge of the area, the active layer is anticipated to be between 1.5 to 2.5 m below ground surface.

The proposed excavation for the wet well will intersect permafrost and the excavation for the sewer line may intersect permafrost. The equipment used for construction should anticipate excavation in permafrost conditions.

Temporary excavation in native soils may be supported or should be no steeper than 1 horizontal to 1 vertical (1H:1V) from the base of the excavation. Excavations should be inspected regularly for signs of instability and flattened as per the requirement of the Nunavut Occupational Health and Safety Regulations. It is noted that as per the Regulations granular soils below the water table encountered on site are classified as a Type 4 soil unless they are adequately dewatered. Temporary excavation in Type 4 soils must be supported of be no steeper than 3 horizontal to 1 vertical (3H:1V) from the base of the excavation. If the excavation contains more than one type of soil, the soil must be classified as the soil type with the highest number.

7.10.2 Dewatering

Depending on the time of year, the excavations may encounter groundwater. The native soils at the site are considered permeable; excavations carried out during spring thaw could encounter significant groundwater seepage and surface water infiltration, which could overwhelm sump and pump dewatering techniques. The actual rate of groundwater inflow into excavations will depend on many factors including the rate of excavation, size of open excavation, the time of year at which the excavation is made, and rainfall events. If excavations are carried out during spring thaw, we recommend using a tightly interlocked excavation support system to reduce groundwater inflow into the excavation.

Dewatering is considered herein as pumping of groundwater to lower the groundwater table in advance of and during construction. Unwatering is considered herein as removal of perched, ponded, or standing water from an open excavation.

The design of the dewatering system would need to address the extent of unwatering required, the depth of intended excavation, and the soil and groundwater conditions that prevail at the intended excavation location. An evaluation of possible consequences of more extensive unwatering should be conducted in advance of construction.

Any dewatering program should contain a communication protocol with the regulatory agencies and the public, short term containment, sampling and analysis, permitting, disposal, and reporting requirements.

Percolation time (T) and coefficient of permeability (K) values are provided in Table 7.3, which can be used for the preliminary assessment of dewatering volumes and rates for temporary excavations.



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Table 7.3: Estimates of Percolation Time and Coefficients of Permeability

Native Soil Type	Estimated Percolation Time - T (minutes/cm)	Estimated Coefficient of Permeability - K (cm/sec)
Sand with Silt (SP-SM)	2 to 8	1x10 ⁻¹ to 1x10 ⁻³
Permafrost	0	Impermeable

The values in Table 7.3 are based on the Ontario Building Code (OBC) Supplementary Standard SB-6 Percolation Time and Soil Descriptions. The OBC states that "Field conditions such as soil density, structure and mineralogy will influence the actual T and K values and as such an anticipated range is provided for each of the soil types encountered". The OBC also states, in part, that "it must be emphasized that, particularly for fine grained soils, there is no consistent relationship (between coefficient of permeability and soils of various types) due to the many factors involved". Such factors as structure, mineralogy, density (compactness or consistency), plasticity, and organic content of the soil can have a large influence on the hydraulic conductivity; variations in excess of an "order of magnitude" are commonplace in this respect.

In consideration of the limitations stated above, the value provided should be considered only as an approximation of the field conditions.

Contractors must make their own independent assessment of the soil and groundwater conditions as reported herein for purposes of assessing the need and methods of possible dewatering and/or unwatering including requirements for withdrawal, handling, treatment, and discharge.

7.10.3 Backfilling

The 2005 City of Iqaluit Municipal Design Guidelines specifies the backfill material and compaction levels for sewer and watermain trench excavations. The design guidelines are considered appropriate for this project; silt (fine grained soil) was not encountered in the boreholes. The native soil is considered suitable for re-use as backfill material above the pipe bedding and cover material, provided the material does not include more than 10% fines and the specified level of compaction can be achieved.

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8.0 CLOSURE

Use of this report is subject to the Statement of General Conditions provided in Appendix A. It is the responsibility of the City of Iqaluit who is identified as "the Client" within the Statement of General Conditions, and its agents to review the conditions and to notify Stantec Consulting Ltd. should any of these not be satisfied. The Statement of General Conditions addresses the following:

- Use of the report
- · Basis of the report
- Standard of care
- · Interpretation of site conditions
- Varying or unexpected site conditions
- Planning, design or construction

Respectfully submitted,

STANTEC CONSULTING LTD.

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9.0 REFERENCES

- Allard, M., Doyon, J., Mathon-Dufour, V., LeBlanc, A.-M., L'Hérault, E., Mate, D., Oldenborger, G.A., and Sladen, W.E. 2012. Surficial geology, Iqaluit, Nunavut. Geological Survey of Canada, Canadian Geoscience Map 64 (preliminary version), scale 1:15 000. doi:10.4095/289503
- Andersland, O.B., and Ladanyi, B. 1994. An Introduction to Frozen Ground Engineering. Chapman & Hall Inc., New York, NY, USA.
- Canadian Geotechnical Society. 2006. Canadian Foundation Engineering Manual 4th Edition. BiTech Publishers Ltd. Richmond, BC, Canada
- Canadian Standards Association (CSA). 2010. Technical Guide Infrastructure in permafrost: A guideline for climate change adaptation. Canadian Standards Association, Mississauga, ON, Canada.
- City of Iqaluit Municipal Design Guideline. January 2005.
- Environment Canada. (2016, September 1) Canadian Climate Normals 1981–2010. Retrieved from http://climate.weather.gc.ca/climate_normals
- Environment Canada. Warming Trends °C/Decade, Based on homogenized temperature data the most recent 30 yr record (1981 2010); Environment Canada.
- Harrison, J.C., St-Onge, M.R., Petrov, O.V., Strelnikov, S.I., Lopatin, B.G., Wilson, F.H., Tella, S., Paul, D., Lynds, T., Shokalsky, S.P., Hults, C.K., Bergman, S., Jepson, H.F., and Solli, A. 2011.

 Geological map of the Arctic, Geological Survey of Canada, Map 2159A, scale 1:5 000 000.
- Leblanc, A-M., Mathon-Dufour, V., Allard, M., Oldenborger, G.A., Short, N., L'Hérault, E., and Sladen, W.E. 2013: Permafrost characterization at the Iqaluit International Airport, Nunavut, in support of decision-making and planning; *in* Summary of Activities 2012, Canada-Nunavut Geoscience Office, p. 131-142.
- National Research Council of Canada. 2015. National Building Code of Canada 2015. Ottawa, ON, Canada.
- Natural Resources Canada. 1995: Canada Permafrost; The National Atlas of Canada 5th Edition, scale 1:7 500 000.
- Northwest Territories Public Works, 1970's Partial As-Built Drawings; Sewage System Improvements Frobisher Bay, NWT
- Nunavut Occupational Health and Safety Regulations. April 1, 2016.
- S.L. Smith, D.W. Riseborough, M. Ednie and J. Chartrand. 2013. A map and summary database of permafrost temperatures in Nunavut, Canada. *Geological Survey of Canada Open File* 7393. doi: 10.4095/292615



APPENDIX A

A.1 STATEMENT OF GENERAL CONDITIONS



STATEMENT OF GENERAL CONDITIONS

<u>USE OF THIS REPORT</u>: This report has been prepared for the sole benefit of the Client or its agent and may not be used by any third party without the express written consent of Stantec Consulting Ltd. and the Client. Any use which a third party makes of this report is the responsibility of such third party.

<u>BASIS OF THE REPORT</u>: The information, opinions, and/or recommendations made in this report are in accordance with Stantec Consulting Ltd.'s present understanding of the site specific project as described by the Client. The applicability of these is restricted to the site conditions encountered at the time of the investigation or study. If the proposed site specific project differs or is modified from what is described in this report or if the site conditions are altered, this report is no longer valid unless Stantec Consulting Ltd. is requested by the Client to review and revise the report to reflect the differing or modified project specifics and/or the altered site conditions.

<u>STANDARD OF CARE</u>: Preparation of this report, and all associated work, was carried out in accordance with the normally accepted standard of care in the state or province of execution for the specific professional service provided to the Client. No other warranty is made.

<u>INTERPRETATION OF SITE CONDITIONS</u>: Soil, rock, or other material descriptions, and statements regarding their condition, made in this report are based on site conditions encountered by Stantec Consulting Ltd. at the time of the work and at the specific testing and/or sampling locations. Classifications and statements of condition have been made in accordance with normally accepted practices which are judgmental in nature; no specific description should be considered exact, but rather reflective of the anticipated material behavior. Extrapolation of in situ conditions can only be made to some limited extent beyond the sampling or test points. The extent depends on variability of the soil, rock and groundwater conditions as influenced by geological processes, construction activity, and site use.

<u>VARYING OR UNEXPECTED CONDITIONS</u>: Should any site or subsurface conditions be encountered that are different from those described in this report or encountered at the test locations, Stantec Consulting Ltd. must be notified immediately to assess if the varying or unexpected conditions are substantial and if reassessments of the report conclusions or recommendations are required. Stantec Consulting Ltd. will not be responsible to any party for damages incurred as a result of failing to notify Stantec Consulting Ltd. that differing site or subsurface conditions are present upon becoming aware of such conditions.

<u>PLANNING, DESIGN, OR CONSTRUCTION</u>: Development or design plans and specifications should be reviewed by Stantec Consulting Ltd., sufficiently ahead of initiating the next project stage (property acquisition, tender, construction, etc), to confirm that this report completely addresses the elaborated project specifics and that the contents of this report have been properly interpreted. Specialty quality assurance services (field observations and testing) during construction are a necessary part of the evaluation of sub-subsurface conditions and site preparation works. Site work relating to the recommendations included in this report should only be carried out in the presence of a qualified geotechnical engineer; Stantec Consulting Ltd. cannot be responsible for site work carried out without being present.



APPENDIX B

B.1 DRAWING NO. 1 – BOREHOLE LOCATION PLAN





BOREHOLE

300 - 1331 Clyde Avenue Ottawa, ON, Canada K2C 3G4 www.stantec.com

COORDINATE SYSTEM: NAD 1983 UTM ZONE 19N.
 IMAGERY: © 2022 GOOGLEEARTH.

CITY OF IQALUIT

LIFT STATION #1, SEPTAGE RECEIVING STATION AND LOWER IQALUIT SEWER UPGRADES, IQALUIT, NUNAVUT

BOREHOLE LOCATION PLAN

APPENDIX C

- C.1 SYMBOLS AND TERMS USED ON BOREHOLE RECORDS
- C.2 BOREHOLE RECORDS



SYMBOLS AND TERMS USED ON BOREHOLE AND TEST PIT RECORDS

SOIL DESCRIPTION

Terminology describing common soil genesis:

Rootmat	 vegetation, roots and moss with organic matter and topsoil typically forming a mattress at the ground surface
Topsoil	- mixture of soil and humus capable of supporting vegetative growth
Peat	- mixture of visible and invisible fragments of decayed organic matter
Till	- unstratified glacial deposit which may range from clay to boulders
Fill	- material below the surface identified as placed by humans (excluding buried services)

Terminology describing soil structure:

Desiccated	- having visible signs of weathering by oxidization of clay minerals, shrinkage cracks, etc.
Fissured	- having cracks, and hence a blocky structure
Varved	- composed of regular alternating layers of silt and clay
Stratified	- composed of alternating successions of different soil types, e.g. silt and sand
Layer	- > 75 mm in thickness
Seam	- 2 mm to 75 mm in thickness
Parting	- < 2 mm in thickness

Terminology describing soil types:

The classification of soil types are made on the basis of grain size and plasticity in accordance with the Unified Soil Classification System (USCS) (ASTM D 2487 or D 2488) which excludes particles larger than 75 mm. For particles larger than 75 mm, and for defining percent clay fraction in hydrometer results, definitions proposed by Canadian Foundation Engineering Manual, 4th Edition are used. The USCS provides a group symbol (e.g. SM) and group name (e.g. silty sand) for identification.

Terminology describing cobbles, boulders, and non-matrix materials (organic matter or debris):

Terminology describing materials outside the USCS, (e.g. particles larger than 75 mm, visible organic matter, and construction debris) is based upon the proportion of these materials present:

Trace, or occasional	Less than 10%	
Some	10-20%	
Frequent	> 20%	

Terminology describing compactness of cohesionless soils:

The standard terminology to describe cohesionless soils includes compactness (formerly "relative density"), as determined by the Standard Penetration Test (SPT) N-Value - also known as N-Index. The SPT N-Value is described further on page 3. A relationship between compactness condition and N-Value is shown in the following table.

Compactness Condition	SPT N-Value
Very Loose	<4
Loose	4-10
Compact	10-30
Dense	30-50
Very Dense	>50

Terminology describing consistency of cohesive soils:

The standard terminology to describe cohesive soils includes the consistency, which is based on undrained shear strength as measured by *in situ* vane tests, penetrometer tests, or unconfined compression tests. Consistency may be crudely estimated from SPT N-Value based on the correlation shown in the following table (Terzaghi and Peck, 1967). The correlation to SPT N-Value is used with caution as it is only very approximate.

Consistency	Undrained Sh	Approximate	
Consistency	kips/sq.ft.	kPa	SPT N-Value
Very Soft	<0.25	<12.5	<2
Soft	0.25 - 0.5	12.5 - 25	2-4
Firm	0.5 - 1.0	25 - 50	4-8
Stiff	1.0 - 2.0	50 – 100	8-15
Very Stiff	2.0 - 4.0	100 - 200	15-30
Hard	>4.0	>200	>30

ROCK DESCRIPTION

Except where specified below, terminology for describing rock is as defined by the International Society for Rock Mechanics (ISRM) 2007 publication "The Complete ISRM Suggested Methods for Rock Characterization, Testing and Monitoring: 1974-2006"

Terminology describing rock quality:

3 3 3	, , , , , , , , , , , , , , , , , , , ,
RQD	Rock Mass Quality
0-25	Very Poor Quality
25-50	Poor Quality
50-75	Fair Quality
75-90	Good Quality
90-100	Excellent Quality

Alternate (Colloquial) Rock Mass Quality			
Very Severely Fractured	Crushed		
Severely Fractured	Shattered or Very Blocky		
Fractured	Blocky		
Moderately Jointed	Sound		
Intact	Very Sound		

RQD (Rock Quality Designation) denotes the percentage of intact and sound rock retrieved from a borehole of any orientation. All pieces of intact and sound rock core equal to or greater than 100 mm (4 in.) long are summed and divided by the total length of the core run. RQD is determined in accordance with ASTM D6032.

SCR (Solid Core Recovery) denotes the percentage of solid core (cylindrical) retrieved from a borehole of any orientation. All pieces of solid (cylindrical) core are summed and divided by the total length of the core run (It excludes all portions of core pieces that are not fully cylindrical as well as crushed or rubble zones).

Fracture Index (FI) is defined as the number of naturally occurring fractures within a given length of core. The Fracture Index is reported as a simple count of natural occurring fractures.

Terminology describing rock with respect to discontinuity and bedding spacing:

Spacing (mm)	Discontinuities	Bedding
>6000	Extremely Wide	-
2000-6000	Very Wide	Very Thick
600-2000	Wide	Thick
200-600	Moderate	Medium
60-200	Close	Thin
20-60	Very Close	Very Thin
<20	Extremely Close	Laminated
<6	-	Thinly Laminated

Terminology describing rock strength:

Strength Classification	Grade	Unconfined Compressive Strength (MPa)
Extremely Weak	RO	<1
Very Weak	R1	1 – 5
Weak	R2	5 – 25
Medium Strong	R3	25 – 50
Strong	R4	50 – 100
Very Strong	R5	100 – 250
Extremely Strong	R6	>250

Terminology describing rock weathering:

Term	Symbol	Description
Fresh	W1	No visible signs of rock weathering. Slight discoloration along major discontinuities
Slightly	W2	Discoloration indicates weathering of rock on discontinuity surfaces. All the rock material may be discolored.
Moderately	W3	Less than half the rock is decomposed and/or disintegrated into soil.
Highly	W4	More than half the rock is decomposed and/or disintegrated into soil.
Completely	W5	All the rock material is decomposed and/or disintegrated into soil. The original mass structure is still largely intact.
Residual Soil	W6	All the rock converted to soil. Structure and fabric destroyed.

STRATA PLOT

Strata plots symbolize the soil or bedrock description. They are combinations of the following basic symbols. The dimensions within the strata symbols are not indicative of the particle size, layer thickness, etc.























Boulders Cobbles Gravel

Clay

Igneous Bedrock morphic **Bedrock**

Sedimentary Bedrock

SAMPLE TYPE

SS	Split spoon sample (obtained by performing the Standard Penetration Test)	
ST	Shelby tube or thin wall tube	
DP	Direct-Push sample (small diameter tube sampler hydraulically advanced)	
PS Piston sample		
BS	Bulk sample	
HQ, NQ, BQ, etc.	Rock core samples obtained with the use of standard size diamond coring bits.	

WATER LEVEL MEASUREMENT



measured in standpipe, piezometer, or well



inferred

RECOVERY

For soil samples, the recovery is recorded as the length of the soil sample recovered. For rock core, recovery is defined as the total cumulative length of all core recovered in the core barrel divided by the length drilled and is recorded as a percentage on a per run basis.

N-VALUE

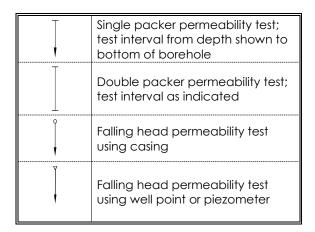
Numbers in this column are the field results of the Standard Penetration Test: the number of blows of a 140 pound (63.5 kg) hammer falling 30 inches (760 mm), required to drive a 2 inch (50.8 mm) O.D. split spoon sampler one foot (300 mm) into the soil. In accordance with ASTM D1586, the N-Value equals the sum of the number of blows (N) required to drive the sampler over the interval of 6 to 18 in. (150 to 450 mm). However, when a 24 in. (610 mm) sampler is used, the number of blows (N) required to drive the sampler over the interval of 12 to 24 in. (300 to 610 mm) may be reported if this value is lower. For split spoon samples where insufficient penetration was achieved and N-Values cannot be presented, the number of blows are reported over sampler penetration in millimetres (e.g. 50/75). Some design methods make use of N-values corrected for various factors such as overburden pressure, energy ratio, borehole diameter, etc. No corrections have been applied to the N-values presented on the log.

DYNAMIC CONE PENETRATION TEST (DCPT)

Dynamic cone penetration tests are performed using a standard 60 degree apex cone connected to 'A' size drill rods with the same standard fall height and weight as the Standard Penetration Test. The DCPT value is the number of blows of the hammer required to drive the cone one foot (300 mm) into the soil. The DCPT is used as a probe to assess soil variability.

OTHER TESTS

S	Sieve analysis	
Н	Hydrometer analysis	
k	Laboratory permeability	
Υ	Unit weight	
Gs	Specific gravity of soil particles	
CD	Consolidated drained triaxial	
CU	Cu Consolidated undrained triaxial with pore	
CU	pressure measurements	
UU	Unconsolidated undrained triaxial	
DS	Direct Shear	
С	Consolidation	
Qυ	Unconfined compression	
	Point Load Index (Ip on Borehole Record equals	
Ιp	$I_p(50)$ in which the index is corrected to a	
II .	reference diameter of 50 mm)	



Borehole #	Sample Depth (m)	Soil Description	Image
BH22-01	0 to 0.6	Coarse grained soil Sand with gravel Brown & light grey	
	0.6 to 2.4	Coarse grained soil Sand with gravel Brown	
	2.4 to 3.4	Coarse grained soil Sand with gravel Brown	

Borehole #	Sample Depth (m)	Soil Description	Image
	3.4 End of Borehole	Coarse grained soil Sand with gravel Brown Some moisture	
BH22-02	0 to 0.6	Coarse grained soil Sand with gravel Brown & light grey	N/A
	0.6 to 2.1	Coarse grained soil Sand with gravel Brown & light grey	
	2.1 to 3.7	Coarse grained soil Sand with gravel Brown & light grey Some moisture	

Borehole #	Sample Depth (m)	Soil Description	Image
	3.7 End of Borehole	Coarse grained soil Sand with gravel Brown & light grey Some moisture	
BH22-03	0 to 0.6	Coarse grained soil Sand with gravel Brown & light grey	
	0.6 to 2.1	Coarse grained soil Sand with gravel Brown & light grey	

Borehole #	Sample Depth (m)	Soil Description	Image
	2.1 to 2.7	Coarse grained soil Sand with gravel Brown & light grey Some moisture	
	2.7 End of Borehole	Coarse grained soil Sand with gravel Brown Water	SHOS mater
BH22-04	0 to 0.6	Coarse grained soil Sand with gravel Brown & light grey	On was

Borehole #	Sample Depth (m)	Soil Description	Image
	0.6 to 2.7	Coarse grained soil Sand with gravel Brown & light grey	SFOA SQ
	2.7 to 3.4	Coarse grained soil Sand with gravel Brown & light grey Water	N/A
	3.4 End of Borehole	Coarse- & Fine-grained soil Silty sand Brown & light grey Water	BH 04 II F4
BH22-05	0 to 0.6	Coarse grained soil Silty sand Brown & light grey	

Borehole #	Sample Depth (m)	Soil Description	Image
	0.6 to 2.1	Coarse grained soil Sand with gravel Brown & light grey	
	2.1 End of Borehole	Coarse grained soil Sand with gravel Brown & light grey	## \$ C O A S
BH22-05	0 to 0.6	Coarse grained soil Silty sand Brown & light grey	

Borehole #	Sample Depth (m)	Soil Description	Image
	0.6 to 2.1	Coarse grained soil Sand with gravel Brown & light grey	
	2.1 to 3.7	Coarse grained soil Sand with gravel Brown & light grey Frost between 2.4 – 3.6 m	HA SO AS
	3.7 to 5.5	Coarse grained soil Sand with gravel Brown & light grey Some moisture	Or and the second secon

Borehole #	Sample Depth (m)	Soil Description	Image
	5.5 End of Borehole	Coarse- & Fine-grained soil Silty sand Brown & light grey Water / frost	
BH22-06	0 to 0.6	Coarse grained soil Sand with gravel Brown & light grey	Towns gotton
	0.6 to 2.4	Coarse grained soil Sand with gravel Brown & light grey Some moisture	

Borehole #	Sample Depth (m)	Soil Description	Image
	2.4 to 4.3	Coarse grained soil Sand with gravel Light grey	
	4.3 to 5.2	Coarse grained soil Silty sand Light grey Moisture (possible start of frost, difficult to determine with air track)	
	5.2 to 7.0	Coarse grained soil Silty sand Light grey Moisture Frost likely between 5.2 – 7.0 m	N/A
	7.0 to 10.7	Coarse grained soil Silty sand Light grey Moisture	Str. Br.

Borehole #	Sample Depth (m)	Soil Description	Image
	10.7 End of Borehole	Coarse grained soil Silty sand Light grey & brown Moisture	
BH22-07	0.6 to 2.7	Coarse grained soil Sand with gravel Brown & light grey	
	2.7 to 3.8	Coarse grained soil Silty sand Red brown Some moisture	
	3.8 to 4.9	Coarse grained soil Silty sand Red brown Frost and moisture	N/A

Borehole #	Sample Depth (m)	Soil Description	Image
	4.9 End of Borehole	Coarse grained soil Silty sand Light grey & red/brown Water or melted frost	
BH22-08	0.6 to 2.1	Coarse grained soil Sand with gravel Brown & light grey	
	2.1 to 4.3	Coarse grained soil Sand with gravel Brown & light grey Moisture & cold Frost begins (air track likely melting)	

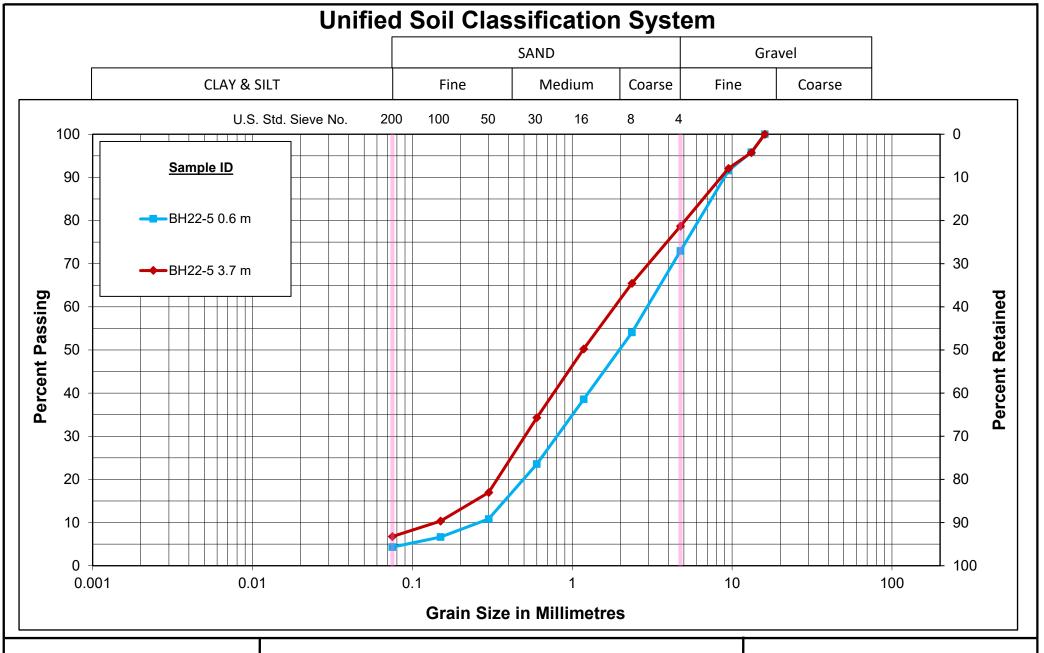
Borehole #	Sample Depth (m)	Soil Description	Image
	4.3 to 5.5	Coarse grained soil Silty sand Light grey Minimal moisture and cold	
	5.5 to 7.6	Coarse grained soil Silty sand Light grey More moisture	N/A
	7.6 to 11.6	Coarse grained soil Silty sand Olive grey More moisture	N/A
	11.6 End of Borehole	Coarse grained soil Silty sand Brown/red and Oliver Grey More moisture but still not saturated	N/A

GEOTECHNICAL INVESTIGATION

APPENDIX D

D.1 LABORATORY TEST RESULT







GRAIN SIZE DISTRIBUTION

City of Iqaluit, NU

Lift Station #1 Upgrades

Figure No. 1

Project No. 1101000074



Phase I/II Environmental Site Assessment

Lift Station No. 1, Septage Receiving Station, and Sewer Upgrades between PT.A2 to Lift Station No.1

March 1, 2023

Prepared for:

City of Iqaluit

Prepared by:

Stantec Consulting Ltd.

File: 1101000074

Lift Station No. 1, Septage Receiving Station, and Sewer Upgrades Between Pt.A2 To Lift Station No.1

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Lift Station No. 1, Septage Receiving Station, and Sewer Upgrades Between Pt.A2 To Lift Station No.1

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Lift Station No. 1, Septage Receiving Station, and Sewer Upgrades Between Pt.A2 To Lift Station No.1

Executive Summary

Stantec Consulting Ltd. (Stantec) conducted a Phase I/II Environmental Site Assessment (Phase I/II ESA) of the property located at Lift Station No.1 and the sewer line between Lift Station No.1 and manhole PT.A2 in Iqaluit, Nunavut, hereinafter referred to as the "Site". The Phase I/II ESA was conducted for the City of Iqaluit in support of an infrastructure upgrade program for the Site. The purpose of the Phase I/II ESA was to assess if evidence of potential or actual environmental contamination exists in connection with the Site, as a result of current or past activities on the Site or neighbouring properties.

The Site is located in a residential and commercial area of the City of Iqaluit, Nunavut. The Site is currently occupied by municipal services.

Based on the historical information gathered during the Phase I ESA, the Site was vacant until 1975. The Site has been occupied by Lift Station No.1 since 1975.

The following petroleum hydrocarbon release was reported at the Site:

A spill of 500 Litres (L) at Lift Station No.1 on January 29, 2010.

The following petroleum hydrocarbon releases were reported on adjoining properties:

- A spill of 20 L at Building 227 (located adjacent to the south and downgradient of the Site) on September 2, 2021.
- A spill reported as 0 L at Lower Base Near Houses 737-729 Iglulik Division (located approximately 50 metre (m) to the northeast and upgradient of the Site) on July 7, 2005.
- A spill of 1 L at House 734 (located adjacent to the north and upgradient of the Site) on August 2, 2010.
- A spill of 45 L at southside of House 728 (located adjacent to the north and upgradient of the Site) on July 29, 1985.
- A spill of 1,137 L at House 736 Lower Base (located approximately 60 m to the northeast and upgradient of the Site) on an unknown date.

The petroleum hydrocarbon spills listed on the Site and adjoining properties represent potential environmental concerns to the Site.

During the site visit, the site contact (Shane Turner) indicated that the area near Lift Station No. 1 was formerly used in support of sealift operations, that hydrocarbon impacts are common near such operations, and that during excavation work petroleum hydrocarbons can be observed. The historical use of the Site in support of sealift operations is an environmental concern to the Site.

Contamination was reportedly found during the 2019 construction of the sewer lines between manhole MH3-A and MW3-B. A liner was placed along the southern wall of the excavation and environmental sampling was completed (by others). Stantec was not provided with the report associated with this



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Lift Station No. 1, Septage Receiving Station, and Sewer Upgrades Between Pt.A2 To Lift Station No.1

contamination and therefore the presence or absence of contamination associated with this event cannot be confirmed. This represents an environmental concern to the Site.

The following surface staining was observed during the site visit:

- North side of Lift Station No. 1. The source of the stain is unknown.
- South of houses #734 and # 730 (approximately 2 m x 1 m)
- South of house # 728 (approximately 1 m diameter)
- South of NorthMart, along the swale, near manhole AV-3B (less than 1 m diameter)

The surface stains represent an environmental concern to the Site. During the site visit, a generator with a day tank was observed in Lift Station No. 1. The day tank is vented inside the building which is a concern for indoor air quality. The day tank should be vented outside the building or according to local/territorial codes and regulations.

The Phase I ESA identified the following environmental concerns:

- Spills reported on the Site and on adjoining properties
- Historical use of the Site in support of sealift operations
- Reported contamination during 2019 construction
- Observed surface staining on the Site and near the Site during the site visit

Stantec conducted a subsurface investigation as part of the Phase I/ II ESA. Concentrations of PHC F2 in three soil samples exceeded the applied guideline. The concentration of arsenic in one soil sample exceeded the applied guideline. Concentrations of PHC F2 in three groundwater/active zone water samples exceeded the applied guideline. The concentration of copper in two groundwater samples and the concentrations of lead and zinc in a third sample exceeded the applied guidelines.

Stantec recommends that should the infrastructure upgrade program generate excess soil, it be disposed of at an appropriate soil disposal facility. Further, should water accumulate in an excavation and require removal, it should be disposed of according to City of Igaluit by-laws.

The statements made in this Executive Summary are subject to the same limitations included in the Closure (**Section 4.0**) and are to be read in conjunction with the remainder of this report.



Lift Station No. 1, Septage Receiving Station, and Sewer Upgrades Between Pt.A2 To Lift Station No.1

Abbreviations

ACM Asbestos-containing Material AST Aboveground Storage Tank

BTEX Benzene, Toluene, Ethylbenzene and Xylenes

BV Labs Bureau Veritas Laboratories

CCME Canadian Council of Ministers of the Environment

CSA Canadian Standards Association

CWS Canada Wide Standards

°C degree Celsius

DQA Data Quality Objective

EPA Environmental Protection Act

ERIS Environmental Risk Information Services

ESA Environmental Site Assessment

F Fraction

FCSAP Federal Contaminated Sites Action Plan

FIGQG Federal Interim Groundwater Quality Guideline

GOC Government of Nunavut
GOC Government of Canada

HSSE Health, Safety, Security and Environment

L Litre m Metre

m bgs metre below ground surface
m BTOC metre below top of casing
NRC Natural Resources Canada

NU Nunavut

ODS Ozone-Depleting Substance
PCB Polychlorinated Biphenyl

PCOP Potential Contaminant of Concern

PHC Petroleum Hydrocarbon ppm_v Parts Per Million by Volume

PVC Polyvinyl Chloride

QA/QC Quality Assurance/ Quality Control

QEC Qulliq Energy Corporation
SOP Standard Operating Procedure

Stantec Stantec Consulting Ltd.

UFFI Urea Formaldehyde Foam Insulation

UST Underground Storage Tank
VOC Volatile Organic Compound



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1.0 INTRODUCTION

Stantec Consulting Ltd. (Stantec) conducted a combined Phase I/II Environmental Site Assessment (ESA) of the property located at Lift Station No.1 and the sewer line between Lift Station No.1 and manhole PT.A2 in Iqaluit, Nunavut (NU), hereinafter referred to as the "Site". The Phase I/II ESA was conducted for the City of Iqaluit in support of an infrastructure upgrade program for the Site. The purpose of the Phase I/II ESA was to assess if evidence of potential or actual environmental contamination exists in connection with the Site, as a result of current or past activities on the Site or neighbouring properties.

A site location plan (Figure 1) is included in **Appendix A** and selected photographs of the Site are included in **Appendix B**.

2.0 PHASE I ENVIRONMENTAL SITE ASSESSMENT

2.1 SCOPE OF WORK

The Phase I ESA carried out by Stantec on this Site was conducted in general accordance with Stantec's Proposal Number 2022-RFP-027 dated June 14, 2022 and the Canadian Standards Association's (CSA) Phase I Environmental Site Assessment Standard Z768-01 (R2022). The Phase I ESA consisted of the following:

- Records review including, but not limited to, publicly available city directories, aerial photographs, fire
- Insurance plans, geological and topographic maps
- Territorial government regulatory search
- Review of available environmental databases and records
- · Review of previous environmental reports and existing title searches, if made available
- · Interviews with persons having knowledge of the Site
- A site visit
- Evaluation of information and preparation of the report provided herein

A Phase I ESA does not include sampling or testing of air, soil, groundwater, surface water or building materials. For this Phase I ESA, no enhancements to the CSA standard were made.

This assessment did not include a review or audit of operational environmental compliance issues, or of any environmental management systems, which may exist for the Site. The assessment of the Site for the potential presence of hazardous building materials was based on the age of the building(s) and components, and a non-intrusive visual review of the Site. No sampling of materials was conducted. A Phase I ESA does not constitute a Hazardous Materials Survey or Designated Substances Survey.



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Lift Station No. 1, Septage Receiving Station, and Sewer Upgrades Between Pt.A2 To Lift Station No.1

The assessment of the Site for microbial contamination and moisture damage was made during the walk through of the building(s). This assessment was visual only and not every area was assessed. No sampling or intrusive investigation was conducted.

The professional qualifications of the project team are provided in **Appendix C**.

The site visit was conducted by Jules Richard, P.Tech, of Stantec, on September 27, 2022. The Site and readily visible and publicly accessible portions of adjoining and neighbouring properties were observed for the presence of potential sources of environmental contamination. Stantec was accompanied by Shane Turner of the City of Iqaluit during the site visit. Shane Turner has been associated with the Site since 2017.

Interviews were carried out to obtain or confirm information on the historic operations and activities on the Site. Shane Turner of the City of Iqaluit was interviewed during the course of the site visit.

2.2 REGULATORY FRAMEWORK

During a Phase I ESA samples are not collected, however, if there are previous soil or groundwater sample results available, the results are compared to applicable federal and provincial regulations and guidelines. For this combined Phase I/II ESA, a subsurface investigation was conducted, which included soil and groundwater/active zone water sampling and analysis (refer to **Section 3.0**).

The management and investigation of contaminated sites in Nunavut is regulated under the Environmental Guideline for the Management of Contaminated Sites (GN, 2014) by the Department of Environment, Government of Nunavut (GN). The federal government has jurisdiction over surface water and groundwater, and these bodies use a combination of criteria from the Canadian Council of Ministers of the Environment (CCME) and other regulatory jurisdictions. The territorial Environmental Protection Act (EPA) gives the GN, under the Minister of the Department of Environment, the authority to ensure protection of the environment pertaining to the release of substances in any amount that causes or may cause a significant adverse effect. When a release occurs, the release must be reported to the Department of Environment and remedial measures must be implemented. The EPA authorizes the Department of Environment to issue Closure reports when contaminated land has been remediated.

A Phase I ESA involves a review of any site buildings for the potential presence of hazardous materials related to building components and materials. Specific federal or provincial regulations, guidelines or codes of practice exist for these individual hazardous materials. Where required, this documentation was used to determine appropriate conclusions and formulate appropriate recommendations.



2.3 RECORDS REVIEW

2.3.1 Information Sources

The applicable search distance for the records review included the Site, properties immediately adjoining the Site and other neighbouring properties where activities considered to be potential sources of environmental contamination were apparent. Information sources obtained and reviewed as part of the records review are listed in **Table 2-1**. Supporting documentation is provided in **Appendix D**.

Table 2-1 Phase I ESA Information Sources

Source	Information/Contact
Aerial Photographs	ERIS (from National Air Photo Library): 1952, 1969, 1976, 1982, 1989 and 1993
	Google Earth imagery: 2003, 2006, 2009, 2011, 2015, 2016, 2017, 2018, 2019, 2020 and 2021
Fire Insurance Plans	No fire insurance plans were available for the Site and surrounding area.
City Directories	No city directories were available for the Site and surrounding area.
Previous Environmental Reports	No previous reports from the Site were made available.
Company Records	No company records from the Site were made available.
Geological and Geotechnical Reports	Fulton, R.J. (2009). Surficial Materials (Nunavut). Surficial Materials of Canada, Geological Survey of Canada, Map 1880A.
	Geology of Nunavut, de Kemp, E.A., Gilbert, C., and James, D.T., 2006.
Reportable Spill Occurrences	Nunavut Department of Environment and Natural Resources, Hazardous Materials Spill Database.
Other Available Information	An Ecolog ERIS search was not conducted as the Hazardous Materials Spill Database was searched.
Permafrost Map	Natural Resources Canada. (2009). Atlas of Canada 6 th Edition (archival version).

2.3.2 Previous Reports

No previous reports made available to Stantec.



Lift Station No. 1, Septage Receiving Station, and Sewer Upgrades Between Pt.A2 To Lift Station No.1

2.3.3 Regulatory Information

Available environmental databases and records were searched to determine if pertinent environmental records for the Site, adjacent, or neighbouring properties were available.

The Department of Environment and Natural Resources Database of Hazardous Materials Spills was searched to obtain information for spills occurring on the Site and adjoining properties. Spill records were available and accessed online. A total of 791 records dated between 1975 and 2022 were located in the City of Iqaluit, many of which did not include a specific location within the City. A total of 26 records reported wastewater (sewage, mine tailings) spilled on the Site or on adjoining properties. These wastewater spills do not represent an environmental concern to the Site.

The following petroleum hydrocarbon releases were reported at the Site:

• 500 Litres (L) spill at Lift Station No.1 on January 29, 2010.

The following petroleum hydrocarbon releases were reported on adjoining properties:

- 20 L spill at Building 227 (located adjacent to the south and downgradient of the Site) on September 2, 2021.
- 0 L spill at Lower Base Near Houses 737-729 Iglulik Division (located approximately 50 m to the northeast and upgradient of the Site) on July 7, 2005.
- 1 L spill at House 734 (located adjacent to the north and upgradient of the Site) on August 2, 2010.
- 5 L spill at southside of House 728 (located adjacent to the north and upgradient of the Site) on July 29, 1985.
- 1,137 L spill at House 736 Lower Base (located approximately 60 m to the northeast and upgradient of the Site) on an unknown date.

The petroleum hydrocarbon spills listed on the Site and adjoining properties represent a potential environmental concern to the Site.

2.3.4 Physical Setting

2.3.4.1 Surficial Geology

Based on The Atlas of Canada for Nunavut (Fulton, R.J., 2009), the native surficial soils consist of till.

Iqaluit is located within the continuous permafrost zone (90-100%) according to the Atlas of Canada Permafrost (NRC, 1993).

2.3.4.2 Surface Water Drainage

The surfaces of the Site consist of till and grass. Stormwater is anticipated to drain by infiltration and/or overland flow.



Lift Station No. 1, Septage Receiving Station, and Sewer Upgrades Between Pt.A2 To Lift Station No.1

2.3.4.3 Topography and Regional Drainage

Based on an available topographic map and the observed site topography, regional surface drainage (anticipated shallow groundwater flow direction) appears to be to the southwest towards Koojesse Inlet.

It should be noted that the direction of the shallow groundwater flow in limited areas can also be influenced by the presence of underground utility corridors and is not necessarily a reflection of regional or local groundwater flow or a replica of the Site or area topography.

2.3.4.4 Bedrock Geology

Based on the Geology of Nunavut (de Kemp, E.A. et. al., 2006), bedrock in the area is expected to consist of granulite-facies granitoids.

2.4 SITE DESCRIPTION

2.4.1 Property Information

The Site is Lift Station No.1 and the sanitary sewer between Lift Station No.1 and manhole PT.A2. The Site is located in a residential and commercial area of the City of Iqaluit, NU. The Site is owned by the City of Iqaluit. Power is supplied to the lift station by Qulliq Energy Corporation (QEC).

2.4.2 On-Site Buildings and Structures

The site building consists of a single storey pump station with no basement. The building was originally constructed in 1975 with renovation and additions in 1983 and 2005. The site building has steel siding and roof over wood framing and trusses. The wet well portion of the lift station has a concrete foundation. A portion of the building sits on piles. A summary of the building information is provided in **Table 2-2**.

Table 2-2 Building Information

Building ID	# of Levels	Basement	Area	Year Built	Building Use	General Construction
Lift Station No. 1	One	None	68.8 m ²	1975	Pump House for sewage system	Wood framed with metal siding and roofing.
						Concrete floor.
						Part of the building is on piles.

2.4.3 Historical Land Use

Historical land use for the Site was determined through historical records listed in **Section 2.3.1**. A summary of the historical information is presented below and in **Table 2-3**.



Lift Station No. 1, Septage Receiving Station, and Sewer Upgrades Between Pt.A2 To Lift Station No.1

During the site visit, Shane Turner indicated that the area near Lift Station No. 1 was formerly used in support of sealift operations, that hydrocarbon impacts are common near such operations, and during excavation work petroleum hydrocarbons can be observed. The historical use of the Site in support of sealift operations is an environmental concern to the Site.

Contamination was reportedly found during the 2019 construction of the sewer lines between manhole MH3-A and MW3-B. A liner was placed along the southern wall of the excavation and environmental sampling was completed (by others). Stantec was not provided with the report associated with this contamination and therefore the presence or absence of contamination associated with this event cannot be confirmed. This represents an environmental concern to the Site.

Table 2-3 Summary of Historical Land Use

Period/Date:	Land Use
1952	Undeveloped in the area around the Site.
1969	Residential properties are observed along Iglulik Drive to the north of the Site.
1976	Lift Station No.1 is present. Residential properties are observed along Iglulik Drive to the north of the Site.
1989; 1982	Lift Station No.1 is present, and the Site is surrounded by residential and commercial properties.
1993	Lift Station No.1 is present, and the Site is surrounded by residential and commercial properties.
2003, 2006, 2009	Lift Station No.1 is present, and the Site is surrounded by residential and commercial properties.
2011, 2015, 2016, 2017, 2018 and 2019	Lift Station No.1 is present, and the Site is surrounded by residential and commercial properties.
2020	Lift Station No.1 is present, and the Site is surrounded by residential and commercial properties.

2.5 SITE VISIT FINDINGS

2.5.1 Current Site Operations

The Site is currently occupied by Lift Station No.1 for the City of Iqaluit sewer system and vacant land over the sewer line between Lift Station No. 1 and Manhole PT.A2.

2.5.2 Waste Generation and Storage

2.5.2.1 Solid and Liquid Wastes

No hazardous waste generation or storage was identified to be conducted on the Site.

2.5.2.2 Drains, Sumps, Septic Systems and Oil Water Separators

Lift Station No. 1 has an overflow on the south side of the building that drains into Koojesse Inlet. There is a drain in the boiler room that is connected to the wet well of the site building.



Lift Station No. 1, Septage Receiving Station, and Sewer Upgrades Between Pt.A2 To Lift Station No.1

2.5.2.3 Air Discharges and Odours

A ventilation system is present and turned on while the generator is operating to control heat inside the site building. Vents are located on the exterior walls of the site building.

A generator with a day tank is located in Lift Station No. 1. The day tank is vented inside the building which is a concern for indoor air quality. The day tank should be vented outside the building or according to local/territorial codes and regulations.

2.5.3 Fuel and Chemical Storage

2.5.3.1 Underground Storage Tanks

No chemical or fuel storage underground storage tanks (USTs) were identified on the Site. Further, no vent or fill pipes indicating the potential presence of an abandoned or decommissioned UST were observed.

2.5.3.2 Aboveground Storage Tanks

A 2,275 L diesel double wall steel aboveground storage tank (AST) manufactured in 2005 is located on the exterior of the Lift Station No.1.

A backup generator with a day tank underneath the generator is located inside Lift Station No. 1 to operate the pumps during power outages. No staining was observed on the concrete floor in the area of the generator.

A 189 L glycol reservoir is located in the boiler room which is associated with the closed loop heating system. A 2,839 L potable water reservoir is located inside Lift Station No.1.

2.5.3.3 Other Storage Containers

Chemical storage consisting of a small quantity of cleaning chemicals, glycol and lube oil was observed on Site within Lift Station No. 1.

2.5.4 Building Systems/Equipment

2.5.4.1 Heating and Cooling Systems

Lift Station No. 1 is heated via two diesel powered furnace oil boilers and overhead radiators.

2.5.4.2 Hydraulic Equipment

No hydraulic equipment related to building systems was identified in the site building.



Lift Station No. 1, Septage Receiving Station, and Sewer Upgrades Between Pt.A2 To Lift Station No.1

2.5.5 Exterior Site Observations

2.5.5.1 Surface Features

The surfaces of the Site consist of till and grass. The following surface staining was observed during the site visit:

- North side of Lift Station No. 1. The source of the stain is unknown.
- South of houses #734 and #730 (approximately 2 metre [m] x 1m)
- South of house # 728 (approximately 1 m diameter)
- South of NorthMart, along the swale, near manhole AV-3B (less than 1 m diameter) The surface stains represent an environmental concern to the Site.

2.5.5.2 Fill Materials

No evidence of imported fill materials was observed. The Site generally appears to be at grade with the adjacent roadways and adjoining properties. Therefore, it is unlikely that significant quantities of fill materials were brought onto the Site.

2.5.5.3 Wells

No abandoned or existing wells (water, oil, gas or disposal) were identified on the Site. The wet well associated with Lift Station No.1 is not considered applicable in this section.

2.5.6 Hazardous Building Materials

2.5.6.1 Asbestos-Containing Materials

The common use of friable (crumbles easily by hand pressure) asbestos-containing materials (ACMs) in construction generally ceased voluntarily in the mid to late 1970s. Non-friable asbestos-containing products continued to be manufactured, imported and used in Canada until asbestos products were formally banned in December 2018. Asbestos was used in thousands of building products and the common uses of friable ACMs included boiler and pipe insulation, and spray-on fireproofing. Asbestos was also used in many manufactured products such as floor tiles, ceiling tiles, transite cement products and various other construction materials. Vermiculite used as insulation may be contaminated with asbestos fibres.

Based on the age of the site building, ACMs may be on the Site. Piping insulation for the hot water lines are canvas and fiberglass. ACMs were not suspected during the site visit. To confirm the presence or absence of ACMs, a hazardous building materials assessment would be required.



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2.5.6.2 Polychlorinated Biphenyls

From the 1930s to the 1970s, polychlorinated biphenyls (PCBs) were widely used as coolants and lubricants for electrical equipment, including transformers and capacitors, and in a number of industrial materials, including sealing and caulking compounds, inks and paint additives. The use of PCBs was prohibited in heat transfer and electrical equipment installed after September 1, 1977, and in transformers and capacitors installed after July 1, 1980. Regulations now require that PCB containing equipment be taken out of service prior to regulated deadlines.

Based on the age of the building, PCBs may be present. A dry type of transformer and fluorescent lighting was observed inside the site building.

Three pole mounted transformers were observed on the north side of Lift Station No. 1. A stain with an unknown source was observed on the north side of Lift Station No. 1.

2.5.6.3 Lead-Based Materials

In 1976, the lead content in interior paint was limited to 0.5% by weight under the federal Hazardous Products Act. Lead based water supply pipes were used greater than 50 years ago. Between 1930 and 1986, most buildings used copper pipe with lead-solder joints. Other lead-based products include wall shielding (x-ray rooms).

Based on the age of the site building, lead-based products may be on the Site. Paint was observed to be in good condition in Lift Station No.1.

2.5.6.4 Urea Formaldehyde Foam Insulation

Urea Formaldehyde Foam Insulation (UFFI) was used as an insulation product for existing houses between the mid-1970s and its ban in Canada in 1980. It was not commonly used for commercial or industrial buildings.

Based on the age of the site building, it is possible that UFFI may be on the Site. No evidence of the application of UFFI was observed during the site visit.

2.5.6.5 Ozone-Depleting Substances

Refrigeration and air conditioning equipment in place before 1998 may contain refrigerants containing Ozone-Depleting Substances (ODSs). Non-ODS refrigerants have been developed and are available to replace these materials in newer equipment.

No equipment containing ODSs was identified on the Site.



Lift Station No. 1, Septage Receiving Station, and Sewer Upgrades Between Pt.A2 To Lift Station No.1

2.5.7 Special Attention Items

2.5.7.1 Radon Gas

Radon is a radioactive gas associated with uranium rich black shale and/or granite bedrock. Radon emits alpha particles and produces several solid radioactive products called radon daughters. Harmful levels of radon and radon daughters can accumulate in confined air spaces, such as basements and crawl spaces.

Based on the geology of the area and construction of the Site building (i.e. no basement levels, concrete slab-on-grade floor and commercial ventilation equipment), radon gas accumulation is not expected to be a significant environmental concern at the Site.

2.5.7.2 Microbial Contamination (Mold) and Indoor Air Quality

The growth of mould in indoor environments is typically due to a moisture problem related to building envelope or mechanical systems deficiencies or design, and can produce adverse health effects. There is no practical way to eliminate all mould and mould spores in the indoor environment. The way to control mould is to control moisture.

Water stains that appeared old were observed on an overhead hot water supply line and around the chimney of a boiler. The site contact, Shane Turner, indicated these had occurred prior to his involvement at the Site and that he is not aware of the cause.

The stained material should be removed, and the source of the water should be corrected if ongoing.

2.5.7.3 Electromagnetic Frequencies

Electrical currents induce electromagnetic fields. No scientific data supports definitive answers to questions about the existence or non-existence of health risks related to electromagnetic fields.

No high-voltage transmission lines or electrical substations, which could generate significant electromagnetic fields, were identified on or adjacent to the Site.

2.5.7.4 Noise and Vibration

The effects of noise and vibration on human health vary according to the susceptibility of the individual exposed, the nature of the noise/vibration and whether exposure occurs in the working environment or in the home.

No major or persistent sources of noise and vibration were identified on the Site at the time of the site visit.

2.5.8 Adjoining Property Information

The current activities on neighbouring properties observed at the time of the site visit and a summary of historical information gathered through the records review are presented in **Table 2-4**. The site and surrounding properties are shown on **Figure 2**, **Appendix A**.



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Table 2-4 Adjoining Property Information

Direction From Site:	Relation to Property:	Current Use:	Across What
North	Adjoining	Residential and Commercial	N/A
Occupant Name:		Address:	
Residences, NorthMart, school		Various	

Current Activities:

Residential land use along Iglulik Drive. NorthMart grocery store to the north of the central portion of the Site.

A school and commercial building are located to the north of the eastern portion of the Site.

Several ASTs were observed on the adjoining properties to the north. A pad mounted transformer was observed to the west of NorthMart. No staining was observed near the ASTs or transformer, and they do not represent an environmental concern to the Site.

Historical Activities

Spills were reported on northern adjoining properties as follows:

- 0 L was spilled at Lower Base Near Houses 737-729 Iglulik Division (located approximately 50 m to the northeast and upgradient of the Site) on July 7, 2005.
- 1 L was spilled at House 734 (located adjacent to the north and upgradient of the Site) on August 2, 2010.
- 45 L was spilled at Southside of House 728 (located adjacent to the north and upgradient of the Site) on July 29, 1985.
- 1,137 L was spilled at House 736 Lower Base (located approximately 60 m to the northeast and upgradient of the Site) on an unknown date.

A portion of NorthMart (228 Queen Elizabeth Way) burned in 2018 and was reconstructed in 2019.

Potential Environmental Concerns:

The reported spills and historical fire on northern adjoining properties represent an environmental concern to the Site.

Direction From Site:	Relation to Property:	Current Use:	Across What
South	Adjoining	Residential, Commercial	
		and Vacant	
Occupant Name:		Address:	
Various		Various	
O (A . C . C			

Current Activities:

Vacant land to the south of the western portion of the Site. Elders' residence to the south of the central portion of the Site. Vacant and residential land use to the south of the eastern portion of the Site.

Historical Activities

A spill was reported on a southern adjoining property. 20 L was spilled at Building 227 (located adjacent to the south and downgradient of the Site) on September 2, 2021.

Several ASTs were observed on the adjoining properties to the south. No staining was observed near the ASTs, and they do not represent an environmental concern to the Site.

Potential Environmental Concerns:

The reported spill on the southern adjoining property represents an environmental concern to the Site.

2.5.9 Client-Specific Items

No specific client requests were made with respect to this Phase I ESA.



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2.6 PHASE I ESA CONCLUSIONS

The Phase I ESA identified the following environmental concerns:

- Spills reported on the Site and on adjoining properties
- Historical use of the Site in support of a sealift operation
- Reported contamination during 2019 construction
- Observed surface staining on the Site and near the Site during the site visit

Stantec conducted a subsurface investigation as part of the Phase I/ II ESA (refer to the following **Section 3.0**).

3.0 PHASE II ENVIRONMENTAL SITE ASSESSMENT

3.1 PHASE II ESA OBJECTIVE

The objective of the Phase II ESA was to assess soil and groundwater/active zone water quality with respect to potential environmental concerns identified in the Phase I ESA.

The following provides a summary of the scope of work:

- Preparation of a Health, Safety, Security and Environment (HSSE) plan.
- Attendance at the Site by environmental personnel to complete visual assessment of Site features, including areas of staining, and to layout sample locations.
- Environmental logging of four test pits, with three monitoring wells installed in test pits and a groundwater/active zone water sample collected from the test pit without the monitoring well installed (TP-03).
- Field screening of soil samples for combustible and organic vapours.
- Collection of four soil samples for grain size analysis for guideline determination.
- Submission of soil samples from test pits to an accredited laboratory for analysis of potential contaminants of concern (PCOCs) including benzene, toluene, ethylbenzene (BTEX), petroleum hydrocarbon fractions 1 to 4 (PHC F1 to F4), metals and volatile organic compounds (VOCs).
- Submission of one groundwater/active zone water sample from each monitoring well to an accredited laboratory for analysis of BTEX, PHC F1- F4, dissolved metals, and VOCs.
- Submission of one groundwater/active zone water sample from the excavation of TP-03 to an accredited laboratory for analysis of BTEX, PHC F1- F4, dissolved metals, and VOCs.



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3.2 SELECTION OF APPROPRIATE GENERIC STANDARDS

The GN's Environmental Guideline for Contaminated Site Remediation (GN, 2009) incorporates the CCME Canada Wide Standards (CWS) for PHC impacts in soil (CCME, 2008). These guidelines allow three management options for PHCs: Tier 1, Tier 2 and Tier 3. Remediation of a site under a Tier 1 involves the direct adoption of remediation criteria. Tier 2 allows for the consideration of site-specific conditions through the modification of the criteria-based (Tier 1) guidelines. Tier 3 involves the use of risk assessment, which involves risk management through exposure barriers or administrative controls based on site-specific risk assessment. Utilization of any of the three approaches is subject to the approval of the Department of Environment.

The guidelines presented in this document are for soil only. Where available, Tier I guidelines for a site with industrial land use, coarse-grained soil and non-potable groundwater use have been applied. Where no GN guidelines are available, the CCME Canadian Soil Quality Guidelines have been referenced (largely for VOCs).

Four soil samples were analyzed for particle size and the four soil samples were classified as coarse soil by Bureau Veritas Laboratories (BV Labs).

For groundwater/active zone water analytical results, the Federal Contaminated Sites Action Plan (FCSAP) Federal Interim Groundwater Quality Guidelines (FIGQG) (GOC, 2016) provide limits for contaminants in groundwater and have been applied (Tier 1 [lowest guideline] for commercial/industrial land use and coarse-grained soil). In general, these guidelines are intended to maintain, improve, and/or protect environmental quality and human health at contaminated sites.

Herein, these soil and groundwater guidelines are referred to as 'the applied guidelines'.

3.3 INVESTIGATION METHODOLOGY

The Phase II ESA carried out by Stantec on this property was conducted in general accordance with CSA's Phase II Environmental Site Assessment Standard Z769-00 (R2018) and Stantec's standard operating procedures (SOPs).

3.3.1 Service and Utilities Locates

Prior to any intrusive work, underground utility locates were completed by QEC, Uqsuq, Northwestel and by the City of Iqaluit.

3.3.2 Test Pits

Test pits were advanced by Pilitak Enterprises Ltd. using a backhoe until refusal. The test pits were advanced to a maximum depth of 2.29 m below ground surface (m bgs). Samples were collected from the shovel for logging the characteristics of the materials and for field monitoring for organic vapours.



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3.3.3 Vapour Monitoring

Field screening for the presence of combustible vapours was conducted using an MiniRae 3000 gas monitor calibrated with isobutylene. The results of this monitoring were used as a guide for the selection of soil samples for laboratory analysis.

The soil samples subjected to field vapour screening were transferred into laboratory supplied ziplock bags. The bags were filled approximately half full or with the available soil that was recovered to provide adequate headspace for the accumulation of released vapours. Samples were broken by hand to increase surface area and permit vapour release. The bags were left to stand upright and undisturbed for a period of at least five minutes at ambient air temperature. The concentration of accumulated vapours in the headspace was then measured by inserting the probe of the instrument into the headspace of the bag. The vapour concentrations were measured in parts per million by volume (ppm_v) and recorded on the field log for comparison with subsequent samples and boreholes.

3.3.4 Soil Logging

Materials retrieved from the test pits were logged by Stantec personnel. The texture and composition of materials and the presence of volatile hydrocarbon vapours or other indications of potential impacts were recorded.

3.3.5 Soil Sampling

Soil samples were collected manually from the backhoe shovel. To limit cross contamination, a new pair of nitrile gloves was worn by the sampler for each sample collection and samples were placed in laboratory-supplied glass jars for laboratory analysis.

3.3.6 Monitoring Wells

Three monitoring wells were installed in the three of the four test pits completed. The monitoring wells consisted of 0.99 m of pre-packed screen and varying amount of solid 2-inch diameter polyvinyl chloride (PVC). A 0.6 m layer of bentonite was then added approximately 0.3 m bgs to prevent vertical migration of surface spills. A flush mount cover was then installed flush to the original ground.

3.3.7 Static Elevations and Gradients

Groundwater/active zone water levels were measured in each monitoring well using a water level tape and checked with a bailer for free product. The tape was cleaned using a solution of water and biodegradable soap and rinsed with water between the measurement at each monitoring well.



3.3.8 Groundwater/Active Zone Water Sampling

Water samples were collected from each monitoring well after the well was purged dry with a dedicated bailer and/or waterra tubing. Each well was left to stabilize prior to collecting a sample. Samples were collected using the dedicated bailers and/or waterra tubing. Groundwater/active zone water samples were transferred directly to laboratory supplied containers, uniquely labeled, and stored in ice-chilled coolers prior to shipment to the laboratory under chain of custody documentation. The groundwater/active zone water sample collected from the fourth test pit was collected directly into laboratory-supplied bottles, with an effort made to prevent sediment entering the bottles.

3.3.9 Quality Assurance/ Quality Control (QA/QC)

All samples were collected following Stantec's SOPs. Samples were uniquely labelled, and control was maintained through the use of chain of custody forms. All samples were collected in laboratory supplied containers and preserved in insulated coolers.

3.3.10 Boreholes

Boreholes were not advanced at the Site. Test pit and monitoring well locations are shown on **Figure 3**, **Appendix A**. The rationale for each sampling location is as follows:

- TP-01-M Test pit with a monitoring well installed to assess soil and groundwater conditions downgradient of the developed portion of the Site.
- TP-02-M Test pit with a monitoring well installed to assess soil and groundwater conditions
 downgradient of the reported spills along Iglulik Drive and near spills observed to the south of Iglulik
 Drive.
- TP-03 Test pit with a groundwater/active zone water sample collected from the test pit excavation to
 assess soil and groundwater conditions downgradient of the reported spills along Iglulik Drive and
 near staining observed to the south of Iglulik Drive.
- TP-04-M Test pit with a monitoring well installed to assess soil and groundwater conditions downgradient of NorthMart.

3.3.11 Laboratory Analysis

Four soil samples from the subsurface investigation were summitted to BV Labs for BTEX, PHC F1 to F4, metals and VOC analysis.

Four groundwater/active zone water samples (one from each monitoring well, and one from the fourth test pit) were submitted to BV Labs for BTEX, PHC F1 to F4, metals and VOC analysis, with the exception of the sample collected from the test pit, which could not be field filtered and therefore was not analyzed for metals.



3.4 RESULTS OF THE INVESTIGATION

The results of the investigation are reported below.

3.4.1 Stratigraphy

Four test pits (TP-01-M, TP-02-M, TP-03, TP-04-M) were advanced on the Site as part of the Phase II ESA on September 28, 2022. Test pit TP-01-M was advanced to a maximum depth of 1.83 m bgs with the installation of a monitoring well. Test pit TP-02-M was advanced to a maximum depth of 2.13 m bgs with the installation of a monitoring well. Test pit TP-03 was advanced to a maximum depth of 2.29 m bgs. Test pit TP-04-M was advanced to a maximum depth of 2.29 m bgs with the installation of a monitoring well.

The Site stratigraphy at the test pits consisted of well-graded sand with gravel. Bedrock was not encountered in the test pits. All test pits terminated on permafrost.

A summary of Test Pit information is provided in **Appendix E**, and results of grain size distribution analyses are provided in the laboratory certificate of analysis in **Appendix F**.

3.4.2 Groundwater

Groundwater/active zone water monitoring and sampling was completed on September 28 and 29, 2022.

The groundwater/active zone water sampling program included three newly installed monitoring wells and a sample collected from TP-3. Each monitoring well was measured for depth to water. A summary of the monitoring results is provided below:

- Depth to groundwater/active zone ranged from 1.22 m below top of casing (m BTOC) in TP-02-M to 1.52 m BTOC in TP-01-M and TP-04-M.
- The estimated direction of shallow groundwater flow is southwest towards Koojesse Inlet.

3.4.3 Subsurface Vapour Readings

Field screening for the presence of combustible vapours was conducted for all soil samples collected. Vapour concentrations ranged from 0 ppm_v in TP-04 M to 56.7 ppm_v in TP-01-M.

3.4.4 Laboratory Analytical Results

Soil analytical results are provided in **Tables F-1** to **F-3**, **Appendix F**, for BTEX/PHC F1 to F4, metals and VOCs, respectively. Groundwater/active zone water analytical results are provided in **Tables F-4** to **F-6**, **Appendix F**, for BTEX/PHC F1 to F4, metals and VOCs, respectively.

Copies of the laboratory certificates of analysis are provided in **Appendix F**.



Lift Station No. 1, Septage Receiving Station, and Sewer Upgrades Between Pt.A2 To Lift Station No.1

3.4.4.1 Soil

Soil analytical results can be summarized as follows:

- Concentrations of PHC F2 exceeded the applied guideline for soil samples TP-01 (1.22-1.83), TP-02 (1.83-2.13) and TP-03 (1.22-1.98).
- The concentration of arsenic exceeded the applied guideline for soil sample TP-04 (1.22-1.83).

All other soil sample concentrations met the applied guidelines for the parameters analyzed.

3.4.4.2 Groundwater

Groundwater/active zone water analytical results can be summarized as follows:

- Concentrations of PHC F2 detected in the groundwater/active zone water collected from TP-01-M,
 TP-02-M and TP-03 exceeded the applied guideline.
- Concentrations of copper detected in the groundwater/active zone water collected from TP-01-M and TP-02-M exceeded the applied guideline.
- The concentrations of lead and zinc detected in the groundwater/active zone water collected from TP-04-M exceeded the applied guidelines.

All other concentrations met the applied guidelines for the parameters analyzed.

3.5 QUALITY ASSURANCE/QUALITY CONTROL RESULTS

A QA/QC program was conducted to assess data reliability. Soil and groundwater/active zone water samples were collected in general accordance with Stantec's SOPs, were uniquely labelled, and control was maintained using chain-of-custody procedures. The data quality objective (DQO) of the QA/QC program was to collect data that were reproducible, complete, and suitable for comparison with the applied guidelines.

3.5.1 Sample Containers

Samples were collected in the laboratory provided sample containers and appropriately preserved according to the parameters analyzed.

3.5.2 Temperature

Sample temperatures were recorded upon arrival at the laboratory by measuring up to three random sample container temperatures and calculating the average result to obtain a representative temperature. The ideal temperature should be approximately 4 °C. Samples that arrive at the laboratory with temperatures measured above 4 °C may have reported concentrations that are biased low as a result of the elevated sample temperatures. Although it is ideal to have sample temperatures below 4 °C, BV Labs has noted the difficulty in maintaining samples below 4 °C. As such, BV Labs considers a temperature range of 4 °C to 10 °C as acceptable.



Lift Station No. 1, Septage Receiving Station, and Sewer Upgrades Between Pt.A2 To Lift Station No.1

Three temperature readings were measured from the submitted sample coolers by BV Labs. One cooler had temperature readings of 5 °C, 4 °C and 7 °C and the second cooler had temperature readings of 2 °C, 4 °C and 10 °C. The average temperature of the coolers is considered within the acceptable temperature range.

3.5.3 Sample Hold Times

A review of sample hold times indicated that the samples were submitted within the recommended hold times for the parameters analyzed.

3.5.4 Field Duplicates

Field duplicate samples were not analyzed as part of this project.

3.5.5 Laboratory QA/QC

In addition to the Stantec QA/QC procedures, the laboratory analyzes and assesses method blanks, method spikes, and surrogate recoveries to monitor data quality. These results were considered acceptable and are presented as part of laboratory certificates of analysis in **Appendix F**.

3.5.6 QA/QC Summary

Based on the results of the assessment above, the DQO was considered to have been met and the data were considered valid.

3.6 PHASE II ESA DISCUSSION AND RECOMMENDATIONS

Stantec completed a Phase II ESA at Lift Station No.1 and the sewer line between Lift Station No.1 and manhole PT.A2 in Iqaluit, NU to assess potential environmental concerns identified by the Phase I ESA of the Site. The Phase II consisted of soil and groundwater/active zone water sampling and analysis.

3.6.1 Soil

Concentrations of PHC F2 in three soil samples exceeded the applied guidelines. The concentration of arsenic in one soil sample exceeded the applied guideline.

3.6.2 Groundwater/Active Zone Water

Concentrations of PHC F2 in three groundwater samples exceeded the applied guidelines. The concentration of copper in two groundwater samples and the concentrations of lead and zinc in a third exceeded the applied guidelines.

Stantec recommends that should the infrastructure upgrade program generate excess soil, it be disposed of at an appropriate soil disposal facility. Further, should water accumulate in an excavation and require removal, it should be disposed of according to City of Iqaluit by-laws.



4.0 CLOSURE

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential liabilities associated with the identified property.

This report provides an evaluation of selected environmental conditions associated with the identified portion of the property that was assessed at the time the work was conducted and is based on information obtained by and/or provided to Stantec at that time. There are no assurances regarding the accuracy and completeness of this information. All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

The opinions in this report can only be relied upon as they relate to the condition of the portion of the identified property that was assessed at the time the work was conducted. Activities at the property subsequent to Stantec's assessment may have significantly altered the property's condition. Stantec cannot comment on other areas of the property that were not assessed.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report and are based solely on the scope of work described in the report, the limited data available and the results of the work. They are not a certification of the property's environmental condition. This report should not be construed as legal advice.

This report has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities or claims, howsoever arising, from third party use of this report.

This report is limited by the following:

Historical records of the Site were not made available to Stantec.

The locations of any utilities, buildings and structures, and property boundaries illustrated in or described within this report, if any, including pole lines, conduits, water mains, sewers and other surface or subsurface utilities and structures are not guaranteed. Before starting work, the exact location of all such utilities and structures should be confirmed and Stantec assumes no liability for damage to them.

The conclusions are based on the site conditions encountered by Stantec at the time the work was performed at the specific testing and/or sampling locations, and conditions may vary among sampling locations. Factors such as areas of potential concern identified in previous studies, site conditions (e.g., utilities) and cost may have constrained the sampling locations used in this assessment. In addition, analysis has been carried out for only a limited number of chemical parameters, and it should not be inferred that other chemical species are not present. Due to the nature of the investigation and the limited



Lift Station No. 1, Septage Receiving Station, and Sewer Upgrades Between Pt.A2 To Lift Station No.1

data available, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire site. As the purpose of this report is to identify site conditions which may pose an environmental risk; the identification of non-environmental risks to structures or people on the site is beyond the scope of this assessment.

Should additional information become available which differs significantly from our understanding of conditions presented in this report, Stantec specifically disclaims any responsibility to update the conclusions in this report.



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Lift Station No. 1, Septage Receiving Station, and Sewer Upgrades Between Pt.A2 To Lift Station No.1

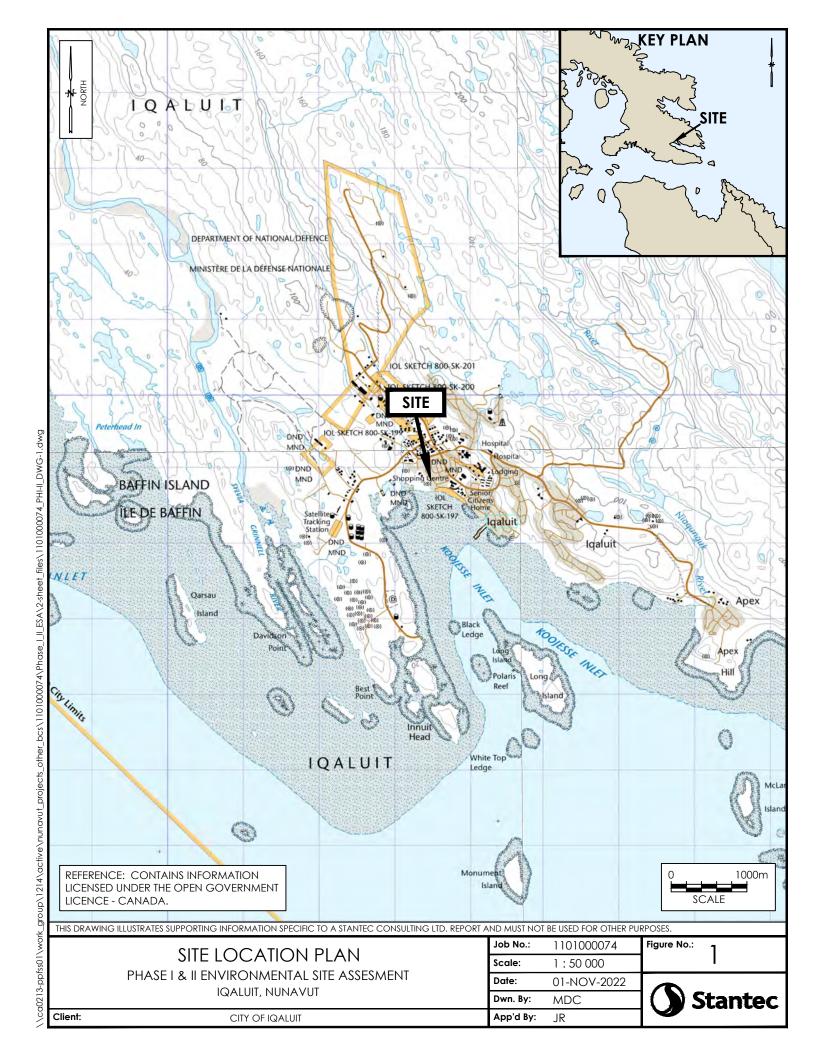
5.0 REFERENCES

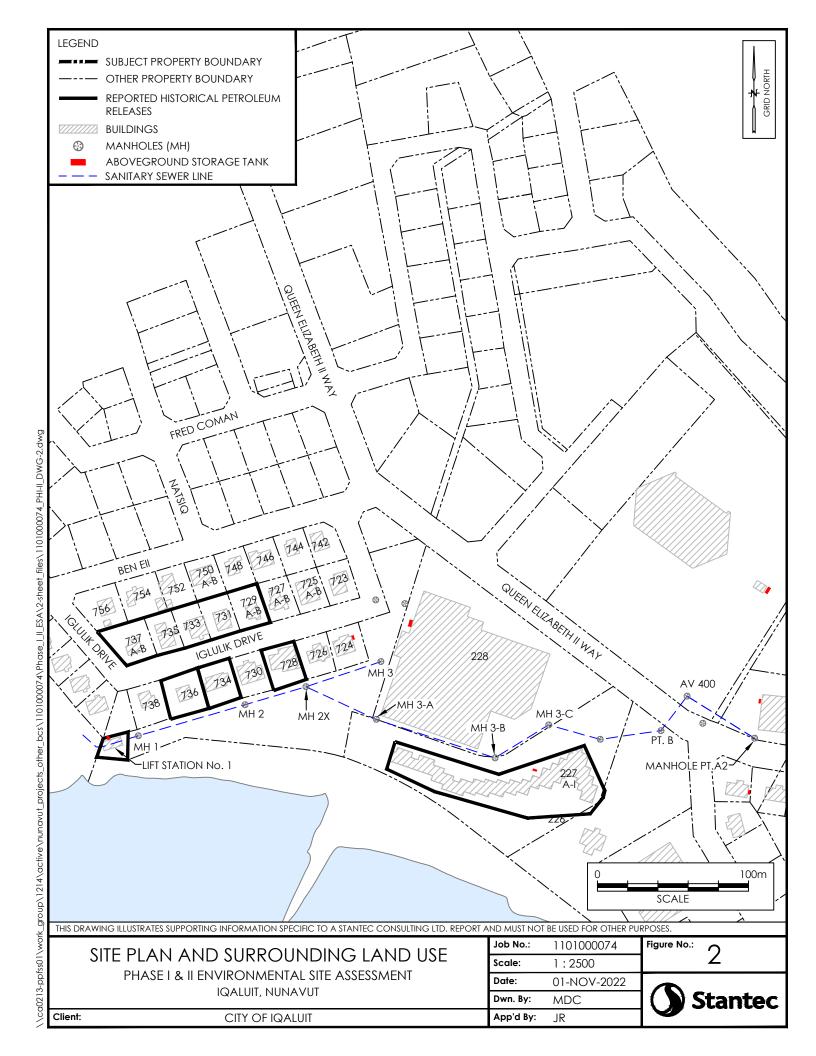
- CCME. (2008). Canada Wide Standards for Petroleum Hydrocarbons (PHC) in Soil.
- de Kemp, E.A. et. al. (2006). Kemp, E.A., Gilbert, C. and James, D.T. Geological Survey of Canada and Canada-Nunavut Geoscience Office. Geology of Nunavut, Scale 1:3,500,000, Map 79-2.
- Fulton, R.J. (2009). Surficial Materials (Nunavut). Surficial Materials of Canada, Geological Survey of Canada, Map 1880A.
- GN. (2009). Environmental Guideline for Contaminated Site Remediation. April 1999, last updated March 2009. Department of Environment, Government of Nunavut.
- GN. (2014). Environmental Guideline for the Management of Contaminated Sites. April 1999, last updated December 2014. Department of Environment, Government of Nunavut.
- GOC. (2016). Federal Contaminated Sites Action Plan (FCSAP): Federal Interim Groundwater Quality Guidelines (FIGQG). Government of Canada.
- NRC. (1993). Natural Resources Canada (NRC). Canada-Permafrost [map]. Fifth Edition, National Atlas of Canada.



APPENDIX A

Figures





APPENDIX B

Photographs





The north side of Lift Station No.1



Eastern adjoining properties





Inside Lift Station No.1



Water damage on pipe inside Lift Station No.1





Northern adjoining properties

APPENDIX C

Assessor Qualifications



Stantec Consulting Ltd.

130 Somerset Street, Saint John, NB E2K 2X4

Phase I/II Environmental Site Assessment (ESAs) Assessor Qualifications – Evelyn Bostwick

Evelyn Bostwick, M.Eng., P.Eng. Principal, Environmental Engineer

Fillicipal, Environmental Engine

Profile

Evelyn Bostwick, M.Eng., P.Eng. is a Principal with Stantec's Environmental Services in the Saint John, NB office. Ms. Bostwick has 30 years of environmental experience in phased environmental site assessments and large commercial transactional due diligence projects.

Education

M.Eng. (Water Resources) – Technical University of Nova Scotia (2000)

B.Eng. (Civil Engineering) - Technical University of Nova Scotia (1992)

B.Sc. (Mathematics) - Dalhousie University (1989)

Associations

Engineers of Nova Scotia

Association of Professional Engineers and Geoscientists of New Brunswick

Engineers PEI

Engineers Yukon

Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists (NAPEG)

Competencies

Senior Review



Stantec Consulting Ltd.

40 Highfield Park Drive, Dartmouth, NS B3A 0A3

Phase I/II Environmental Site Assessments (ESAs) Assessor Qualifications – Marilou Toole

Marilou Toole, P.Eng.

Environmental Engineer

Profile

Marilou Toole is an Engineer in the Dartmouth office. She has conducted numerous Phase I ESAs on residential and commercial properties throughout New Brunswick and Nova Scotia. She is a Phase II ESA, Remediation and Closure report author. She is experienced with the computer model GSI-RBCA Atlantic Risk Assessment Toolkit model for RBCA assessments and has completed Human Health Risk Assessments on several projects.

Education

B.Sc. Engineering (Civil Engineering), University of New Brunswick, 2001

Associations

P.Eng., Association of Professional Engineers and Geoscientists of New Brunswick and Association of Professional Engineers of Nova Scotia

Competencies

Reporting



Stantec Consulting Ltd.

1133 St. George Blvd., Moncton, NB E1E 4E1

Phase I/II Environmental Site Assessment (ESAs) Assessor Qualifications – Jules Richard

J tes Richard, P.Tech. Environmental Technician

Profile

Jules Richard a bilingual environmental technician with the Stantec office in Moncton, New Brunswick. Jules specializes in environmental and geotechnical engineering technology with focus on remediation of contaminated sites, and site testing and inspection. Among his duties, Jules is charged with all field aspects for Environmental Site Assessments (ESAs), contaminant delineation, providing on-site remediation management of numerous remediation projects, as well as writing technical reports for the sites on which he has worked. Jules has been an emergency responder on residential fuel oil spills for national insurance industry clients on more than 150 petroleum releases. He has also conducted hazardous materials assessments focusing on mould, asbestos containing materials and lead paint issues.

Education

Diploma in Civil Engineering Technology, New Brunswick Community College/ Civil Engineering Technology, Moncton, New Brunswick, 2005

Shell Petroleum Oriented Safety Training, Moncton, New Brunswick, 2017

Associations

Professional Engineering Technician #J10496, New Brunswick Society of Certified Engineering Technicians and Technologists

Competencies

Site Assessor Report Preparer

APPENDIX D

Supporting Information

Cnill	Occurance Spill Bogies	Location	Location Decoriation	Product Spilled	Quantity	Macaurament	Spill Cause	Lood Agency
Spili	Date Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spili Cause	Lead Agency
spill-2022468	14-Sep-22 Baffin	Iqaluit	Iqaluit Iqaluit Deep Sea Port - Stock Pile	Petroleum - lubricating oil (lube, hydraulic)		Litres	Fitting Leak	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2022457	9-Sep-22 Baffin	Iqaluit	Iqaluit Iqaluit Deep Sea Port - Small craft Harbour	Petroleum - lubricating oil (lube, hydraulic)		Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2022452	8-Sep-22 Baffin	Iqaluit	Iqaluit Iqaluit	Wastewater (sewage, mine tailings)	Unknown Quantity			GN - Government of Nunavut
spill-2022451	7-Sep-22 Baffin	Iqaluit, Community, Nunavut	Iqaluit Deep Sea Port	Petroleum - lubricating oil (lube, hydraulic)	4	Litres	Breakage	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2022449	4-Sep-22 Baffin	Iqaluit	Brevoort Island	Petroleum - lubricating oil (lube, hydraulic)) Litres	Breakage	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2022431	23-Aug-22 Baffin	Iqaluit, Community, Nunavut	Iqaluit	Wastewater (sewage, mine tailings)	Unknown Quantity		0 % 5 .	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2022428	21-Aug-22 Baffin	Iqaluit	IqaluitUnknownWWTP	Wastewater (sewage, mine tailings)	Unknown Quantity		Overflow Event	GN - Government of Nunavut
spill-2022375	22-Jul-22 Baffin	Iqaluit, Community, Nunavut	Iqaluit Iqaluit Deep Sea Port	Petroleum - lubricating oil (lube, hydraulic)	10	Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2022384	22-Jul-22 Baffin	Iqaluit	Iqaluit	Petroleum - lubricating oil (lube, hydraulic)	Unknown Quantity		Fitting Leak	GN - Government of Nunavut
spill-2022363	14-Jul-22 Baffin	Iqaluit, Community, Nunavut	2503 Igaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	Unknown Quantity		Unknown Cause	GN - Government of Nunavut
spill-2022362	14-Jul-22	Iqaluit	Iqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	Unknown Quantity		Other	GN - Government of Nunavut
spill-2022385	14-Jul-22 Baffin	Iqaluit	2503 Paumgaq StreetlqaluitHouse	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	200) Litres	Tank Leak	GN - Government of Nunavut
spill-2022355	7-Jul-22 Baffin	Iqaluit	503 Niaqunngusiariaqlqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	20) Litres	Unknown Cause	GN - Government of Nunavut
spill-2022343	24-Jun-22 Baffin	Iqaluit, Community, Nunavut	Latitude: 63 degrees 43 minutes 28 seconds Longitude: -68 degrees 31 minutes 38 seconds Iqaluit Deep Sea Port	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	20	Litres	Fitting Leak	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2022305	22-Jun-22 Baffin	Igaluit, Community, Nunavut	Igaluit Deep Sea Port	Petroleum - lubricating oil (lube, hydraulic)	3	Litres		CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2022294	21-Jun-22 Baffin	Iqaluit, Community, Nunavut	Coordinates in Geolocation tab (63.749887527851484, - 68.51472891477053) were estimated by ECCC NEEC LTa Between Highschool and 8 story	Petroleum - gasoline (aviation, turbo B, jet B)	Unknown Quantity		Other	GN - Government of Nunavut
spill-2022292	20-Jun-22 Baffin	Iqaluit, Community, Nunavut	Between the two buildings (2736-2738).	Petroleum - unknown	Unknown Quantity		Unknown Cause	GN - Government of Nunavut
spill-2022286	19-Jun-22 Baffin	Iqaluit, Community, Nunavut	Iqaluit Deep Sea Port	Petroleum - lubricating oil (lube, hydraulic)		Litres	Other	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2022284	18-Jun-22 Baffin	Iqaluit, Community, Nunavut	Iqaluit Deep Sea Port		2	2 Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2022277	16-Jun-22 Baffin	Iqaluit, Community, Nunavut	building 2604 Unit#B	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	50)	Other	GN - Government of Nunavut
spill-2022281	16-Jun-22 Baffin	Iqaluit, Community, Nunavut	Tower Arctic's Laydown and DSP Latitude: 63 degrees 43 minutes 48 seconds Longitude: 68 degrees 32 minutes 20 seconds	Petroleum - lubricating oil (lube, hydraulic)	1	Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2022275	16-Jun-22 Baffin	Igaluit, Community, Nunavut	PFH6+XCX Igaluit, Nunavut	Other	1	Litres	Other	GN - Government of Nunavut
spill-2022268	13-Jun-22 Baffin	Iqaluit, Community, Nunavut	Wrong coordinates provided with report (63 44 53N 63 30 22W).	Wastewater (sewage, mine tailings)	Unknown Quantity		Breakage	GN - Government of Nunavut
spill-2022265	12-Jun-22 Baffin	Iqaluit, Community, Nunavut	Iqaluit Deep Sea Port 63 43 47N 068 32 18W	Petroleum - lubricating oil (lube, hydraulic)	1	Litres	Breakage	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2022274	11-Jun-22 Baffin	Iqaluit, Community, Nunavut	2652 Qimmiq, Iqaluit, NU Residential house	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	Unknown Quantity		Tank Leak	GN - Government of Nunavut
spill-2022266	10-Jun-22 Baffin	Iqaluit, Community, Nunavut	Iqaluit Deep Port 63 43 47N 68 32 18W	Petroleum - lubricating oil (lube, hydraulic)	20	Litres	Breakage	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2022247	9-Jun-22 Baffin	Iqaluit, Community, Nunavut	No additional information provided	Wastewater (sewage, mine tailings)	Unknown Quantity			GN - Government of Nunavut
spill-2022234	7-Jun-22 Baffin	Iqaluit, Community, Nunavut	1531 Federal Rd, Iqaluit, NU X0A 0H0	Petroleum - waste oil (slops, sludge)	87	7	Collision or Crash	GN - Government of Nunavut
spill-2022226	2-Jun-22 Baffin	Iqaluit, Community, Nunavut	Building 901, Iqaluit	Wastewater (sewage, mine tailings)	Unknown Quantity		Other	GN - Government of Nunavut
spill-2022223	1-Jun-22 Baffin	Iqaluit, Community, Nunavut	Iqaluit Deep Sea Port (66.72186043586942, -68.5230548774700)	Unknown		Litres	Unknown Cause	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2022225	31-May-22 Baffin	Iqaluit, Community, Nunavut	Reheat One	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	10	Litres	Unknown Cause	GN - Government of Nunavut
spill-2022204 spill-2022219	23-May-22 Baffin 20-May-22 Baffin	Iqaluit, Community, Nunavut Iqaluit, Community, Nunavut	Iqaluit Deep Sea Port Latitude: 63 degrees 44 minutes 54 seconds	Petroleum - lubricating oil (lube, hydraulic) Wastewater (sewage, mine tailings)	Unknown Quantity		Breakage Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada GN - Government of Nunavut
	·	•	Longitude: 68 degrees 30 minutes 23 seconds	, , , , , , , , , , , , , , , , , , , ,	<u> </u>	N 1 1		
spill-2022181	15-May-22 Baffin	Iqaluit, Community, Nunavut	Co-Op Building 164	Petroleum - lubricating oil (lube, hydraulic)	100	Litres	Other	GN - Government of Nunavut
spill-2022174	9-May-22 Baffin	Iqaluit, Community, Nunavut	MH 69 63 44 53N 68 30 22W	Wastewater (sewage, mine tailings)	Unknown Quantity		Overflow Event	GN - Government of Nunavut
spill-2022159	2-May-22 Baffin	Iqaluit, Community, Nunavut	Building 1000, Iqualuit 63Ű44'43.9"N 68Ű31'20.8"W		Unknown Quantity		Breakage	GN - Government of Nunavut
spill-2022129	12-Apr-22 Baffin	Iqaluit, Community, Nunavut	Sewage treatment plant	Wastewater (sewage, mine tailings)	Unknown Quantity		Unknown Cause	GN - Government of Nunavut
spill-2022110	3-Apr-22 Baffin	Iqaluit, Community, Nunavut	63°44'50.0"N 68°30'41.0"W AV 53	Wastewater (sewage, mine tailings)	Unknown Quantity		Breakage	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2022107	31-Mar-22	Iqaluit, Community, Nunavut	AV 53 Latitude: 63 degrees 44 minutes 50 seconds Longitude: 68 degrees 30 minutes 41 seconds	Wastewater (sewage, mine tailings)	Unknown Quantity		Overflow Event	GN - Government of Nunavut
spill-2022093	23-Mar-22 Baffin	Iqaluit, Community, Nunavut	MH 23 b in behind lift # 2	Wastewater (sewage, mine tailings)	Unknown Quantity		Overflow Event	GN - Government of Nunavut
spill-2022092	22-Mar-22 Baffin	Iqaluit, Community, Nunavut	Iqaluit sewage treatment plant, Building 2000	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	50	Litres	Breakage	GN - Government of Nunavut
spill-2022090	20-Mar-22 Baffin	Iqaluit, Community, Nunavut	Latitude: 63 degrees 44 minutes 54 seconds Longitude: 68 degrees 30 minutes 23 seconds	Wastewater (sewage, mine tailings)	Unknown Quantity		Other	GN - Government of Nunavut
spill-2022080	17-Mar-22 Baffin	Iqaluit, Community, Nunavut	144 Nipisa St, Iqaluit, NU X0A 0H0	Wastewater (sewage, mine tailings)	Unknown Quantity		Pipe Leaks	GN - Government of Nunavut
spill-2022070	9-Mar-22 Baffin	Iqaluit, Community, Nunavut	No additional information available	Wastewater (sewage, mine tailings)	Unknown Quantity	1	Overflow Event	GN - Government of Nunavut
spill-2022046	22-Feb-22 Baffin	Igaluit, Community, Nunavut	Iqaluit Landfill	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	Unknown Quantity		Breakage	GN - Government of Nunavut
spill-2022044 spill-2022026	17-Feb-22 Baffin 3-Feb-22 Baffin	Iqaluit, Community, Nunavut Iqaluit, Community, Nunavut	Waste water treatment plant Aqsarniit Middle School Latitude: 63 Degrees 44 Minutes 19 Seconds	Wastewater (sewage, mine tailings) Petroleum - fuel oil (jet A, diesel, turbo A, heat)	Unknown Quantity Unknown Quantity		Other Fitting Leak	GN - Government of Nunavut GN - Government of Nunavut
spill-2022014	14-Jan-22 Baffin	Igaluit, Community, Nunavut	Longitude: 68 Degrees 28 Minutes 19 Seconds Frobisher Inn water supply.	<u>'</u>	Unknown Quantity		Unknown Cause	GN - Government of Nunavut
3piii-2022014	17-Vail-22 Dallill	Inquiant, Community, Numavut	p robionor filli water suppry.	<u> </u>	CHANGWII Quantity	1	CHRITOWN Cause	Or Coroninon or runtarus

Spill	Occurance	Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spill Cause	Lead Agency
	Date	1, 10		•					
				City of Iqaluit, NU Latitude: 63 degrees 75 minutes 69 seconds (wrong value)					
spill-2022010	12-Jan-22	Baffin	Igaluit, Community, Nunavut	Longitude: 68 degrees 53 minutes 45 seconds	Wastewater (sewage, mine tailings)	Unknown Quantity		Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
,] , , , , , , , , , , , , , , , , , , ,	The coordinates in "Geolocation†tab were estimated by ECCC		,			
1				NEEC Lta					
				QEC DHS Pipeline - Qikiqtani General Hospital, NU					
spill-2021480	30-Nov-21	Baffin	Iqaluit, Community, Nunavut	Coordinates in the "Geolocation" tab (63.750464929965645, -	Petroleum - other (bunker, asphalt, propane)	Unknown Quantity		Breakage	GN - Government of Nunavut
spill-2021490	22-Nov-21	Poffin	Igaluit, Community, Nunavut	68.50946254602971) were estimated by ECCC NEEC LTa. Igaluit Airport	Chemicals (including transformer oils)	1000) Litres	Breakage	GN - Government of Nunavut
spill-2021459	27-Oct-21		Igaluit, Community, Nunavut	Igaluit Nunavut building 3270 in Apex	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GN - Government of Nunavut
			1	Water Treatment Plant	<u> </u>			Other	GN - Government of Nunavut
spill-2021455	25-Oct-21	Ballin	Iqaluit, Community, Nunavut	63°45'54.0"N 68°31'44.0"W	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	Unknown Quantity		Other	GN - Government of Nunavut
				The coordinates in the Geolocation bar (63.75907057634274, -					
spill-2021446	18-Oct-21	Baffin	Iqaluit, Community, Nunavut	68.50329636079913) are estimated by ECCC NEEC LTa from the	Petroleum - unknown	Unknown Quantity		Unknown Cause	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
•				following description in the report: "south-central end of Lake Geraldine (just west of the dam).					
spill-2021444	17-Oct-21		Igaluit, Community, Nunavut	QALUIT Sealift beach (compound)	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	1:	2 Litres	Tank Leak	CCG/TCMSS - Canadian Coast Guard/Transport Canada, Marine Safety and Security
spill-2021430	5-Oct-21	Baffin	Igaluit, Community, Nunavut	Iqaluit Deep Sea Port	Petroleum - lubricating oil (lube, hydraulic)		2 Litres	Breakage	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2021427	4-Oct-21	Baffin	Iqaluit, Community, Nunavut	Iqualuit Deep Sea Port	Petroleum - lubricating oil (lube, hydraulic)		1 Litres	Other	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
				Iqaluit, NU					
spill-2021410	23-Sep-21	Baffin	Igaluit, Community, Nunavut	Lift station #2 overflow	Wastewater (sewage, mine tailings)	Unknown Quantity		Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
·				Latitude: 63 degrees 44 minutes 32 seconds Longitude: 68 degrees 30 minutes 35 seconds		· ·			
				63°43'16.88"N. 68°31'13.32"W					
spill-2021401	19-Sep-21	Baffin	Igaluit, Community, Nunavut	Igaluit Deep Sea Port, NU	Petroleum - lubricating oil (lube, hydraulic)		2 Litres	Breakage	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
	· ·		[Iqaluit Deep Sea project site				· ·	, and the second
spill-2021397	13-Sep-21		Iqaluit, Community, Nunavut	Iqaluit Deep Sea Port	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		2 Litres	Other	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2021390	10-Sep-21		Iqaluit, Community, Nunavut	Iqaluit Deep Sea Port	Petroleum - lubricating oil (lube, hydraulic)	;	3 Litres	Breakage	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2021385	7-Sep-21		Iqaluit, Community, Nunavut	Coast Guard Sealift Beach Iqaluit, NU			1 Litres	Other	GN - Government of Nunavut
spill-2021379 spill-2021376	2-Sep-21 1-Sep-21		Iqaluit, Community, Nunavut Iqaluit, Community, Nunavut	Building 227, NU Igaluit Deep Sea Port	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - lubricating oil (lube, hydraulic)	20	Litres Litres	Overflow Event Breakage	GN - Government of Nunavut CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2021369	27-Aug-21		Igaluit, Community, Nunavut	Apex Quick Stop	Petroleum - gasoline (aviation, turbo B, jet B)	3(Litres	Overflow Event	GN - Government of Nunavut
opiii 202 1000	27 / tag 21	Danin	iquiait, Community, Hunavat	Igaluit Deep Sea Port	gasomie (aviation, tarbe b, jet b)	0.	Elitoo	Overnow Event	ON CONTINUENT OF NAME AND ASSESSMENT OF THE SECOND OF THE
spill-2021368	26-Aug-21	Baffin	Iqaluit, Community, Nunavut	Latitude: 63 degrees 43 minutes 17 seconds	Petroleum - lubricating oil (lube, hydraulic)		1 Litres	Other	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
-				Longitude: 63 degrees 31 minutes 03 seconds					
				Iqaluit Deep Sea Port, NU					
				Latitude: 63 degrees 72 minutes 19 seconds					
spill-2021358	20-Aug-21	Baffin	Iqaluit, Community, Nunavut	Longitude: -68 degrees 52 minutes 27 seconds Coordinates in "Geolocation" field (63.74318121354154, -	Petroleum - lubricating oil (lube, hydraulic)		1 Litres	Other	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
				68.51316836502512) were estimated by ECCC NEEC LTa, as the					
				coordinates in the report are not applicable.					
spill-2021362	20-Aug-21	Baffin	Iqaluit, Community, Nunavut	Astro Creek near the WWF Office	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	Unknown Quantity		Unknown Cause	GN - Government of Nunavut
spill-2021356	19-Aug-21		Iqaluit, Community, Nunavut	House #2738, across Aqsarniit Ilinniarvik School	Petroleum - gasoline (aviation, turbo B, jet B)	170	Litres	Breakage	GN - Government of Nunavut
				The coordinates for the spill location (63.742451828892804, -					
				68.56870416406507) were estimated by ECCC NEEC LTa from					
				conversations with both callers (caller are independent from one another):					
	00 1:104	D - #5	landi Orani Norani	- The City of Iqaluit Landfill was spilling green sludge into the inlet	Halan area			11-1	OIDNIAC Commission of Deletions and North on Afficia Commission
spill-2021321	28-Jul-21	Baffin	Iqaluit, Community, Nunavut	nearby. The spill can be seen at the end of Hubbard Lane, where a river	Unknown	Unknown Quantity		Unknown Cause	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
				is coming from Sylvia Grinnel National Park into the inlet. At that point in					
				the inlet, the spill is visible. - The spill is coming from lagoon/holding tank from the City of Iqaluit					
				Landfill.					
				Spill report geolocation (63.75224717037464, -68.52874616635854)			+		
				was estimated by ECCC NEEC LTa from the verbal report of caller					
spill-2021307	20-Jul-21	Battin	Iqaluit, Community, Nunavut	indicating that the spill occurred behind building 1104 Å (Inuksugait	Unknown	4	1 Litres	Unknown Cause	GN - Government of Nunavut
				Plaza), Iqaluit, NU.					
spill-2021199	24-May-21	Baffin	Iqaluit, Community, Nunavut	Between building # 1093 (the Governor) and Caribou Cabs garage, the	Petroleum - waste oil (slops, sludge)	Unknown Quantity		Unknown Cause	GN - Government of Nunavut
spill-2021198	-		Igaluit, Community, Nunavut	Caribou Cabs property Wastewater Treatment Plant	Wastewater (sewage, mine tailings)	Unknown Quantity		Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2021178	14-May-21		Igaluit, Community, Nunavut	Laydown of Tower Arctic on Crystal road	Petroleum - lubricating oil (lube, hydraulic)		Litres	Breakage	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2021147			Igaluit, Community, Nunavut	3000 Apex	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	Unknown Quantity		Disanage	GN - Government of Nunavut
spill-2021137	28-Apr-21		Iqaluit, Community, Nunavut	Pentecostal Church, Iqaluit, NU building #761	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	700	Litres	Damage due to weather	GN - Government of Nunavut
spill-2021123		Baffin	Iqaluit, Community, Nunavut	MH9	Wastewater (sewage, mine tailings)	Unknown Quantity		Breakage	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2021120		Baffin	Iqaluit, Community, Nunavut	AV 332	Wastewater (sewage, mine tailings)	Unknown Quantity	+	Pipe Leaks	GN - Government of Nunavut
spill-2021115 spill-2021092		Baffin Baffin	Iqaluit, Community, Nunavut Iqaluit, Community, Nunavut	in front of House 1615 and 1613 . Exact location not given Waste Water Treatment Center	Wastewater (sewage, mine tailings)	Unknown Quantity Unknown Quantity	+	Breakage Overflow Event	GN - Government of Nunavut GN - Government of Nunavut
spill-2021092 spill-2021040		Baffin Baffin	Igaluit, Community, Nunavut	Waste Water Treatment Center Building 5062 on Plateau, Igaluit, NU	Wastewater (sewage, mine tailings) Petroleum - fuel oil (jet A, diesel, turbo A, heat)) Litres	Overflow Event	GN - Government of Nunavut
spill-2021049			Iqaluit, Community, Nunavut	Iqaluit Main Power Plant Yard	Mixed load	Unknown Quantity		Fitting Leak	GN - Government of Nunavut
spill-2021320		Baffin	Iqaluit, Community, Nunavut	MH 9A	Wastewater (sewage, mine tailings)	Unknown Quantity	<u> </u>	Breakage	GN - Government of Nunavut
spill-2021036		Baffin	Iqaluit, Community, Nunavut	Building 526	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	Unknown Quantity		Damage due to weather	GN - Government of Nunavut
spill-2021031		Baffin	Iqaluit, Community, Nunavut	Brown Building, building #505A	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	GN - Government of Nunavut
spill-2021030	3-Feb-21	Baπin	Iqaluit, Community, Nunavut	Iqaluit - Power plant. Nu.	Mixed load	300	Litres	Breakage	GN - Government of Nunavut

Spill	Occurance Date	Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spill Cause	Lead Agency
spill-2021014	16-Jan-21	Baffin	Iqaluit, Community, Nunavut	Iqaluit Housing, House 140	Wastewater (sewage, mine tailings)	50) Litres	Breakage	GN - Government of Nunavut
spill-2021001	1-Jan-21	Baffin	Iqaluit, Community, Nunavut	Latitude: * 63.74669300000001 Longitude: * -68.5169669	Wastewater (sewage, mine tailings)	Unknown Quantity	Litres	Breakage	GN - Government of Nunavut
spill-2020421	28-Oct-20	Baffin	Iqaluit, Community, Nunavut	Tower Arctic Laydown, Iqaluit, NU.	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	Ę	Litres	Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2020419	27-Oct-20		Iqaluit, Community, Nunavut	Iqaluit		Unknown Quantity		Other	GN - Government of Nunavut
spill-2020357	24-Sep-20	Baffin	Iqaluit, Community, Nunavut	Unit 422 Iqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	Unknown Quantity		Fitting Leak	GN - Government of Nunavut
spill-2020388	22-Sep-20	Baffin	Iqaluit, Community, Nunavut	Latitude 63.44.55 Longitude -68.3111 Iqaluit, NU			Cubic Meters	Other	GN - Government of Nunavut
spill-2020289	25-Aug-20	Doffin	Igaluit, Community, Nunavut	Between WWTP and AV 244 137 A Nipisa Street, Igaluit, NU X0A-0H0	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	40) Litres	Other	GN - Government of Nunavut
spill-2020285	20-Aug-20			Igaluit Deep Sea Port	Petroleum - lubricating oil (lube, hydraulic)		Litres	Breakage	GN - Government of Nunavut
spill-2020408	14-Aug-20		Igaluit, Community, Nunavut	YORK SOUND FROBISHER BAY	Totaloum labricating on (labo, myaradilo)	()	Drounago	CCG/TCMSS - Canadian Coast Guard/Transport Canada, Marine Safety and Security
spill-2020240	27-Jul-20		Iqaluit, Community, Nunavut	Deep Sea Port	Petroleum - lubricating oil (lube, hydraulic)	1	Litres	Breakage	GN - Government of Nunavut
spill-2020221	9-Jul-20		Iqaluit, Community, Nunavut	House 4062		Unknown Quantity			GN - Government of Nunavut
spill-2020218	6-Jul-20		Iqaluit, Community, Nunavut	Lift Station #1	Wastewater (sewage, mine tailings)	Unknown Quantity		Overflow Event	GN - Government of Nunavut
spill-2020201 spill-2020171	1-Jul-20 9-Jun-20		Iqaluit, Community, Nunavut Iqaluit, Community, Nunavut	Uqsuq Corporation Diesel Loading Rack Housing Furnicher Warehouse in Igaluit, West 40	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - fuel oil (jet A, diesel, turbo A, heat)	Unknown Quantity	Litres	Breakage	GN - Government of Nunavut GN - Government of Nunavut
spill-2020171	9-Jun-20 6-May-20			Frobisher Bay, Apt 2012 D, NU	Petroleum - Ideroli (Jet A, dieser, turbo A, fleat)	Unknown Quantity			GN - Government of Nunavut
spill-2020155	30-Apr-20			AV #5	Wastewater (sewage, mine tailings)	Unknown Quantity		Breakage	GN - Government of Nunavut
spill-2020096	6-Apr-20	Baffin	Iqaluit, Community, Nunavut	House 281	Wastewater (sewage, mine tailings)	Unknown Quantity		Ŭ	GN - Government of Nunavut
spill-2020099	6-Apr-20	Baffin	Iqaluit, Community, Nunavut	AV #5	Wastewater (sewage, mine tailings)	Unknown Quantity			GN - Government of Nunavut
spill-2020062	18-Feb-20		Iqaluit, Community, Nunavut	Nunavut Court of Justice	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	Unknown Quantity		Overflow Event	GN - Government of Nunavut
spill-2019464	17-Nov-19		Iqaluit, Community, Nunavut	in between MH82 and MH81	Wastewater (sewage, mine tailings)	Unknown Quantity		Decelor	GN - Government of Nunavut
spill-2019433 spill-2019432	21-Oct-19 20-Oct-19		Iqaluit, Community, Nunavut Iqaluit, Community, Nunavut	1552 Federal Rd. Seacan North Breakwater (Small Craft Arbour)	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - lubricating oil (lube, hydraulic)	129	Litres	Breakage Breakage	GN - Government of Nunavut GN - Government of Nunavut
spill-2019411	3-Oct-19			At the end of Akillia Road	Petroleum - lubricating oil (lube, hydraulic)		Litres	Fitting Leak	CCG/TCMSS - Canadian Coast Guard/Transport Canada, Marine Safety and Security
spill-2019408	1-Oct-19		Igaluit, Community, Nunavut	Igaluit end of Akillig road	Petroleum - lubricating oil (lube, hydraulic)		Litres	Breakage	GN - Government of Nunavut
spill-2019406	29-Sep-19	Baffin	Iqaluit, Community, Nunavut	At the equipment pad of TA, Crystal Road	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0.05	Litres	Damage due to weather	GN - Government of Nunavut
spill-2019393	21-Sep-19	Baffin	Iqaluit, Community, Nunavut	Unit 1000	Wastewater (sewage, mine tailings)	Unknown Quantity			GN - Government of Nunavut
spill-2019376	13-Sep-19		Iqaluit, Community, Nunavut	In front of Fire hall	Unknown	Unknown Quantity		Unknown Cause	GN - Government of Nunavut
spill-2019338	25-Aug-19			at the end of Akilliq Road in Iqaluit	Petroleum - lubricating oil (lube, hydraulic)	Unknown Quantity	N 1 1		CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2019315 spill-2019294	9-Aug-19 19-Jul-19		Iqaluit, Community, Nunavut Iqaluit, Community, Nunavut	Crystal Road	Petroleum - lubricating oil (lube, hydraulic) Other		Litres Litres	Breakage Breakage	GN - Government of Nunavut
spill-2019294 spill-2019266	19-Jul-19 1-Jun-19			akiliq road, iqaluit At the end of Akilliq Road	Petroleum - lubricating oil (lube, hydraulic)		Litres	Бтеакаде	GN - Government of Nunavut GN - Government of Nunavut
spill-2019220	27-May-19		Igaluit, Community, Nunavut	City of Igaluit	Wastewater (sewage, mine tailings)	30)		CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2019211	19-May-19		Iqaluit, Community, Nunavut	spillway into koojesse inlet	Wastewater (sewage, mine tailings)	Unknown Quantity		Overflow Event	GN - Government of Nunavut
spill-2019203	13-May-19	Baffin	Iqaluit, Community, Nunavut	CGS - Federal Warehouse Building	Wastewater (sewage, mine tailings)	Unknown Quantity		Breakage	GN - Government of Nunavut
spill-2019199	10-May-19		Iqaluit, Community, Nunavut	Iqaluit, NU, spillway into Koojesse Intet	Wastewater (sewage, mine tailings)	Unknown Quantity		Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2019178	28-Apr-19			house 430 I Iqualuit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	Unknown Quantity		Damage due to weather	GN - Government of Nunavut
spill-2019159 spill-2019149	10-Apr-19 1-Apr-19			House 140/144 AV 5	Wastewater (sewage, mine tailings) Wastewater (sewage, mine tailings)	50 Unknown Quantity)		GN - Government of Nunavut GN - Government of Nunavut
spill-2019148	29-Mar-19			AV 5	Wastewater (sewage, mine tailings)	Unknown Quantity			GN - Government of Nunavut
spill-2019138	28-Mar-19			Sewer Lift Station 1	Wastewater (sewage, mine tailings)	Unknown Quantity		Overflow Event	GN - Government of Nunavut
spill-2019140	23-Mar-19	Baffin	Iqaluit, Community, Nunavut	AV 340	Wastewater (sewage, mine tailings)	Unknown Quantity		Overflow Event	GN - Government of Nunavut
spill-2019141	23-Mar-19	Baffin	Iqaluit, Community, Nunavut	AV 340	Wastewater (sewage, mine tailings)	Unknown Quantity		Overflow Event	GN - Government of Nunavut
spill-2019137	23-Mar-19			AV 340	Petroleum - other (bunker, asphalt, propane)	Unknown Quantity		Overflow Event	GN - Government of Nunavut
spill-2019124	21-Mar-19		Iqaluit, Community, Nunavut	Toda Gilliania Zulia	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	Unknown Quantity		Overflow Event	GN - Government of Nunavut
spill-2019118 spill-2019134	19-Mar-19 18-Mar-19		Igaluit, Community, Nunavut	Flowing out from under unit 2713 Utilidor line servicing Inukshuk High School	Wastewater (sewage, mine tailings) Wastewater (sewage, mine tailings)	Unknown Quantity) Litres	Damage due to weather	GN - Government of Nunavut GN - Government of Nunavut
spill-2019139	17-Mar-19			MH 81	Wastewater (sewage, mine tailings)	Unknown Quantity	Littes	Overflow Event	GN - Government of Nunavut
spill-2019108	14-Mar-19		Iqaluit, Community, Nunavut	House 639, Iqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	Unknown Quantity		Fitting Leak	GN - Government of Nunavut
spill-2019086	4-Mar-19		Iqaluit, Community, Nunavut	Manhole 82	Wastewater (sewage, mine tailings)	Unknown Quantity			GN - Government of Nunavut
spill-2019085	1-Mar-19		Iqaluit, Community, Nunavut	Manhole 1	Wastewater (sewage, mine tailings)	Unknown Quantity		Breakage	GN - Government of Nunavut
spill-2019082	1-Mar-19		Iqaluit, Community, Nunavut	Manhole 1	Wastewater (sewage, mine tailings)	Unknown Quantity	1		CAL Covernment of Numeroust
spill-2019072 spill-2019062	22-Feb-19 18-Feb-19		Iqaluit, Community, Nunavut Iqaluit, Community, Nunavut	House 2643 Manhole #1	Wastewater (sewage, mine tailings)	Unknown Quantity Unknown Quantity	1	1	GN - Government of Nunavut GN - Government of Nunavut
spill-2019062	17-Feb-19			AV 356	Wastewater (sewage, mine tailings) Wastewater (sewage, mine tailings)	Unknown Quantity	1	 	GN - Government of Nunavut
spill-2019059	16-Feb-19			AV 415	Wastewater (sewage, mine tailings)	Unknown Quantity	Ì		GN - Government of Nunavut
spill-2019054	12-Feb-19			AV 337	Wastewater (sewage, mine tailings)	Unknown Quantity			GN - Government of Nunavut
spill-2019051	8-Feb-19			AV 337		Unknown Quantity			GN - Government of Nunavut
spill-2019135	5-Jan-19		Iqaluit, Community, Nunavut	140 Nipsa St	Wastewater (sewage, mine tailings)	Unknown Quantity		Unknown Cause	GN - Government of Nunavut
spill-2019008	4-Jan-19 28-Dec-18		Igaluit, Community, Nunavut	Apex quickstop	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Overflow Event	GN - Government of Nunavut
spill-2018485 spill-2018469	28-Dec-18 2-Dec-18		Iqaluit, Community, Nunavut Iqaluit, Community, Nunavut	Sewage lagoon dump station	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Wastewater (sewage, mine tailings)	Unknown Quantity) Kilograms	Overflow Event	GN - Government of Nunavut GN - Government of Nunavut
spill-2018449	11-Nov-18			End of akilliq road, Causeway	Petroleum - lubricating oil (lube, hydraulic)	Charles Quantity	Litres	Breakage	GN - Government of Nunavut
spill-2018448	10-Nov-18		Iqaluit, Community, Nunavut	Baffin Gas Bar	Petroleum - gasoline (aviation, turbo B, jet B)	20) Litres		GN - Government of Nunavut
spill-2018460	8-Nov-18			Northmart			Cubic Meters		GN - Government of Nunavut
spill-2018444	3-Nov-18		Iqaluit, Community, Nunavut	End of Akilliq Road, Causeway	Other		Litres	Breakage	GN - Government of Nunavut
spill-2018439	30-Oct-18			End of Akilliq Road, Causeway	Petroleum - lubricating oil (lube, hydraulic)		Litres	Breakage	GN - Government of Nunavut
spill-2018441	29-Oct-18		Igaluit, Community, Nunavut	Building 132-A	Detroloum Jubricating oil (lish a budgestile)		Litres	Fitting Leak	GN - Government of Nunavut
spill-2018428	18-Oct-18			End of Akilliq Road, Causeway	Petroleum - lubricating oil (lube, hydraulic)		Litres	Breakage	GN - Government of Nunavut
spill-2018426	16-Oct-18	Raffin	Igaluit, Community, Nunavut	Sewage Lagoon	Wastewater (sewage, mine tailings)	Unknown Quantity			GN - Government of Nunavut

Spill	Occurance	Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spill Cause	Lead Agency
spill-2018401	Date 26-Sep-18	R Raffin	Igaluit, Community, Nunavut		Petroleum - fuel oil (jet A, diesel, turbo A, heat)	Unknown Quantity	+	Fitting Leak	GN - Government of Nunavut
spill-2018386	19-Sep-18		Igaluit, Community, Nunavut		Petroleum - Ider on (jet A, dieser, turbo A, neat)	Unknown Quantity	+	Fitting Leak	CCG/TCMSS - Canadian Coast Guard/Transport Canada, Marine Safety and Security
spill-2018381	17-Sep-18		Iqaluit, Community, Nunavut		Petroleum - fuel oil (jet A, diesel, turbo A, heat)	Unknown Quantity		Fitting Leak	GN - Government of Nunavut
spill-2018340	23-Aug-18	8 Baffin	Iqaluit, Community, Nunavut	Unit 2684	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		0 Litres		Other
spill-2018349	20-Aug-18		Iqaluit, Community, Nunavut		Petroleum - lubricating oil (lube, hydraulic)		0 Litres		GN - Government of Nunavut
spill-2018314	6-Aug-18		Iqaluit, Community, Nunavut			Unknown Quantity		Unknown Cause	CCG/TCMSS - Canadian Coast Guard/Transport Canada, Marine Safety and Security
spill-2018226 spill-2018252	14-Jun-18 4-Jun-18		Iqaluit, Community, Nunavut Iqaluit, Community, Nunavut		Unknown	Unknown Quantity	0 Litres	Tank Leak	GN - Government of Nunavut
spill-2018252	24-May-18		Igaluit, Community, Nunavut		Petroleum - fuel oil (jet A, diesel, turbo A, heat)		0 Litres	Breakage	GN - Government of Nunavut GN - Government of Nunavut
spill-2018189	23-May-18		Igaluit, Community, Nunavut		Petroleum - fuel oil (iet A. diesel, turbo A. heat)		4 Litres	Overflow Event	GN - Government of Nunavut
spill-2018169	11-May-18	+	Igaluit, Community, Nunavut	1531 CGS Warehouse at Federal road	Wastewater (sewage, mine tailings)		0 Litres	Breakage	GN - Government of Nunavut
spill-2018129	19-Apr-18	8 Baffin	Iqaluit, Community, Nunavut		Wastewater (sewage, mine tailings)	100	0 Litres	Tank Leak	GN - Government of Nunavut
spill-2018126	17-Apr-18	8 Baffin	Iqaluit, Community, Nunavut		Petroleum - fuel oil (jet A, diesel, turbo A, heat)	350	0 Litres	Fitting Leak	GN - Government of Nunavut
spill-2018112	4-Apr-18	8 Baffin	Iqaluit, Community, Nunavut	Tank at unit 4001 was source of spill. Product migrated under Unit 4059	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	750	0 Litres	Damage due to weather	GN - Government of Nunavut
spill-2018125	2-Apr-18		Iqaluit, Community, Nunavut		Wastewater (sewage, mine tailings)	Unknown Quantity		Damage due to weather	GN - Government of Nunavut
spill-2018106	23-Mar-18		Iqaluit, Community, Nunavut		Wastewater (sewage, mine tailings)	Unknown Quantity		Other	GN - Government of Nunavut
spill-2018123	23-Mar-18	+	Iqaluit, Community, Nunavut	h 400	Wastewater (sewage, mine tailings)	Unknown Quantity		Other	GN - Government of Nunavut
spill-2018134 spill-2018086	18-Mar-18 13-Mar-18		Iqaluit, Community, Nunavut Iqaluit, Community, Nunavut	house 128	Wastewater (sewage, mine tailings) Petroleum - fuel oil (jet A, diesel, turbo A, heat)	Unknown Quantity	0 Litres	Breakage Pipe Leaks	GN - Government of Nunavut GN - Government of Nunavut
spill-2018078	9-Mar-18		Igaluit, Community, Nunavut		Wastewater (sewage, mine tailings)	Unknown Quantity	Littes	Damage due to weather	GN - Government of Nunavut
spill-2018069	7-Mar-18		Igaluit, Community, Nunavut	Igaluit Tank Farm (adjasent to tank 15)	Petroleum - fuel oil (iet A. diesel, turbo A. heat)		0 Litres	Fitting Leak	GN - Government of Nunavut
spill-2018077	4-Mar-18	8 Baffin	Iqaluit, Community, Nunavut		Wastewater (sewage, mine tailings)	Unknown Quantity		Damage due to weather	GN - Government of Nunavut
spill-2018074	4-Mar-18	8 Baffin	Iqaluit	Lift Station #1	Wastewater (sewage, mine tailings)	(0 Litres	Other	GN - Government of Nunavut
spill-2018080	3-Mar-18		Iqaluit, Community, Nunavut	Lift station 1	Wastewater (sewage, mine tailings)	Unknown Quantity		Other	GN - Government of Nunavut
spill-2018057	27-Feb-18		Iqaluit, Community, Nunavut	Iqaluit Creek, 63 45 03N 68 31 57W	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		0 Litres	Unknown Cause	GN - Government of Nunavut
spill-2018067	27-Feb-18		Iqaluit, Community, Nunavut	SEWER DUMP STN BY LAGOON	Wastewater (sewage, mine tailings)		0 Litres	Other	GN - Government of Nunavut
spill-2018068	24-Feb-18		Iqaluit, Community, Nunavut	SEWER DUMP STN BY LAGOON	Wastewater (sewage, mine tailings)		0 Litres	Other	GN - Government of Nunavut
spill-2018079	18-Feb-18		Iqaluit, Community, Nunavut	H 505	Wastewater (sewage, mine tailings)	Unknown Quantity	O Litra a	Damage due to weather	GN - Government of Nunavut
spill-2018075 spill-2018055	18-Feb-18 6-Feb-18		Iqaluit Iqaluit, Community, Nunavut	House 525 Federal Road	Wastewater (sewage, mine tailings) Petroleum - fuel oil (jet A, diesel, turbo A, heat)		0 Litres 0 Litres	Other Overflow Event	GN - Government of Nunavut GN - Government of Nunavut
spill-2018058	5-Feb-18		Igaluit	City of Igaluit Aquatic Center	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		5 Litres	Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2018054	3-Feb-18		Igaluit, Community, Nunavut	Behind RL Hanson's Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		0 Litres	Fitting Leak	GN - Government of Nunavut
spill-2017435	24-Nov-17		Igaluit	Sewage Line at AV 215 (Northwestel, Elizabeth Str)	Wastewater (sewage, mine tailings)		0 Litres	Pipe Leaks	GN - Government of Nunavut
spill-2017407	5-Nov-17	+	Iqaluit	Building 4100, Iqaluit, NU, 63 44 903N 68 29 302W	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	100	0 Litres	Overflow Event	GN - Government of Nunavut
spill-2017404	3-Nov-17	7 Baffin	Iqaluit	1121 Miuuik St. Iqaluit, NU	Petroleum - gasoline (aviation, turbo B, jet B)	100	0 Litres	Other	GN - Government of Nunavut
spill-2017397	26-Oct-17	7 Baffin	Iqaluit	1123 Mivvik St. 63 45 11N 68 31 96W	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	205	5 Litres	Other	GN - Government of Nunavut
spill-2017362	24-Sep-17		Iqaluit	SEWER DUMP STN BY LAGOON	Wastewater (sewage, mine tailings)		0 Litres	Overflow Event	GN - Government of Nunavut
spill-2017335	6-Sep-17	7 Baffin	Iqaluit	SEWER DUMP STN BY LAGOON	Wastewater (sewage, mine tailings)	(0 Litres	Overflow Event	GN - Government of Nunavut
spill-2017320	28-Aug-17		Iqaluit	Chidliak Project - 120 northeast of Iqaluit, Nu, 64 18 00N 66 29 39W	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		0 Litres	Other	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2017299	16-Aug-17		Iqaluit	Building 1601, Atungauyyait Drive, Iqaluit, NU Lot 785 Plan 1827	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		0 Litres	Pipe Leaks	GN - Government of Nunavut
spill-2017254	17-Jul-17		Iqaluit Iqaluit	Igaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		0 Litres	Pipe Leaks	CN. Covernment of Nunevust
spill-2017251 spill-2017245	12-Jul-17 7-Jul-17	+	Igaluit Igaluit	Iqaluit Upper Base Iqaluit Sea Lift, Beside coast quard building	Unknown Wastewater (sewage, mine tailings)		0 Litres 0 Litres	Other Other	GN - Government of Nunavut GN - Government of Nunavut
spill-2017243	6-Jul-17		Igaluit	Igaluit in the area of building 775	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		0 Litres	Other	GN - Government of Nunavut
spill-2017173			Igaluit	House 547, 63 45 751N 68 32 774	Petroleum - fuel oil (iet A. diesel, turbo A. heat)		0 Litres	Other	GN - Government of Nunavut
spill-2017148	8-May-17	7 Baffin	Iqaluit	Building 1336, Iqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	300	0 Litres	Other	GN - Government of Nunavut
spill-2017112	15-Apr-17	7 Baffin	Iqaluit	P.A.B DND FACILITY	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	25	5 Litres	Overflow Event	ECCC - Environment and Climate Change Canada
spill-2017079	13-Mar-17		Iqaluit	House 3601	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		0 Litres	Tank Leak	GN - Government of Nunavut
spill-2017086	5-Mar-17		Iqaluit	House 525	Wastewater (sewage, mine tailings)		0 Litres	Pipe Leaks	GN - Government of Nunavut
spill-2017060	27-Feb-17		Iqaluit	FOL Hanger #3 Building 357, Iqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		0 Litres	Other	ECCC - Environment and Climate Change Canada
spill-2017054 spill-2017047	24-Feb-17 19-Feb-17		Iqaluit Iqaluit	YFB - Cabinet Delta, 63 44 57N 68 32 08W Mechanic Room Between Unit 107 & 109	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		0 Litres 3 Litres	Overflow Event Tank Leak	GN - Government of Nunavut
spill-2017047	8-Feb-17		Igaluit Igaluit	1st road Crossing at causeway, Igaluit, Nunavut	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - fuel oil (jet A, diesel, turbo A, heat)		0 Litres	Fitting Leak	GN - Government of Nunavut GN - Government of Nunavut
spill-2017040	9-Jan-17		Igaluit	Igaluit	Wastewater (sewage, mine tailings)		0 Litres	Other	GN - Government of Nunavut
spill-2016431	23-Dec-16		Igaluit	Igaluit Gas Bar (Co-op)	Petroleum - gasoline (aviation, turbo B, jet B)		0 Litres	Fitting Leak	GN - Government of Nunavut
spill-2016423	9-Dec-16		Iqaluit	Lift station 1	Wastewater (sewage, mine tailings)		0 Litres	Unknown Cause	GN - Government of Nunavut
spill-2016408	22-Nov-16		Iqaluit	Building 5100, Iqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		5 Litres	Other	GN - Government of Nunavut
spill-2016396	8-Nov-16		Iqaluit	Bldg 541	Wastewater (sewage, mine tailings)		0 Litres	Other	GN - Government of Nunavut
spill-2016398	6-Nov-16		Iqaluit	Building 4002, Anuri St. Iqaluit, NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		0 Litres	Fitting Leak	GN - Government of Nunavut
spill-2016392	1-Nov-16	+	Iqaluit	04FB - Airport - Apron 1	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		7 Litres	Other	GN - Government of Nunavut
spill-2016400	1-Nov-16		Iqaluit Igaluit	Iqaluit Unit 1610	Petroleum - unknown		0 Litres	Unknown Cause	GN - Government of Nunavut
spill-2016370 spill-2016345	5-Oct-16 14-Sep-16		Iqaluit Iqaluit	Canadian North bldg airside Igaluit, NU	Unknown Petroleum - fuel oil (jet A, diesel, turbo A, heat)		0 Litres 0 Litres	Unknown Cause Other	GN - Government of Nunavut GN - Government of Nunavut
spill-2016359	8-Sep-16		Igaluit	Unit 206, Igaluit, 62 48 555N 092 05 158W	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - fuel oil (jet A, diesel, turbo A, heat)		0 Litres	Tank Leak	GN - Government of Nunavut
spill-2016295	15-Aug-16		Igaluit	Nanisivik Naval Facility,73 4 7.23N 84 33 6.53W	Petroleum - lubricating oil (lube, hydraulic)		1 Litres	Pipe Leaks	ECCC - Environment and Climate Change Canada
spill-2016294	14-Aug-16		Igaluit	Dead Dog Lake	Other		0 Litres	Deliberate Discharge	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2016273	23-Jul-16	+	Iqaluit	Northmart parking lot east side manhole	Wastewater (sewage, mine tailings)		0 Litres	Other	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2016260	13-Jul-16	6 Baffin	Iqaluit	Lift Station 1 - Lower Base (Iqaluit)	Wastewater (sewage, mine tailings)		0 Litres	Other	GN - Government of Nunavut
	00 1 10	6 Baffin	Igaluit	House 4037A, 68 29 729N 63 45 176W	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	150	0 Litres	Tank Leak	GN - Government of Nunavut
spill-2016237				,	• • • • • •				
spill-2016237 spill-2016236 spill-2016241		6 Deh Cho	Iqaluit Iqaluit	Iqaluit, 68 29 729N 63 45 176W Building 2007	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - unknown	100	0 Litres 0 Litres	Tank Leak Collision or Crash	GN - Government of Nunavut GN - Government of Nunavut

Spill	Occurance Date	Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spill Cause	Lead Agency
spill-2016224	16-Jun-16	Baffin	Igaluit	GN	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	C	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2016212	8-Jun-16		Iqaluit	Sewage lagoon dump station	Wastewater (sewage, mine tailings)	C	Litres	Overflow Event	GN - Government of Nunavut
spill-2016331	1-Jun-16			North mart Warehouse, Mivvik Street	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Overflow Event	GN - Government of Nunavut
spill-2016203	30-May-16		Iqaluit	Iqlauit, 64 44 10N 68 28 56W	Petroleum - lubricating oil (lube, hydraulic)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2016123	18-Apr-16		lqaluit lgaluit	Baffin Gas Bar	Petroleum - gasoline (aviation, turbo B, jet B)		Litres	Overflow Event	GN - Government of Nunavut
spill-2016115 spill-2016099	12-Apr-16 30-Mar-16		lgaluit	Manhole over flowed unit 643 2509 Paurngak Crescent Igaluit	Wastewater (sewage, mine tailings) Petroleum - lubricating oil (lube, hydraulic)		Litres Litres	Other Other	GN - Government of Nunavut GN - Government of Nunavut
spill-2016093	28-Mar-16		Igaluit	House 588	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2016087	21-Mar-16		Igaluit	Sewage Lagoon Dump STN	Wastewater (sewage, mine tailings)		Litres	Other	GN - Government of Nunavut
spill-2016086	19-Mar-16	Baffin	Iqaluit	IVAVIIK BLDG	Wastewater (sewage, mine tailings)	C	Litres	Fitting Leak	GN - Government of Nunavut
spill-2016088	19-Mar-16		Iqaluit	Behind Apex Quick Stop	Wastewater (sewage, mine tailings)	C	Litres	Other	GN - Government of Nunavut
spill-2016089	18-Mar-16		Iqaluit	Northmart	Wastewater (sewage, mine tailings)		Litres	Fitting Leak	GN - Government of Nunavut
spill-2016019	13-Jan-16			Nipisa Street, M.H.37	Wastewater (sewage, mine tailings)		Litres	Breakage	GN - Government of Nunavut
spill-2015509	23-Dec-15		Iqaluit	Iqaluit	Petroleum - gasoline (aviation, turbo B, jet B)		Litres	Overflow Event	GN - Government of Nunavut
spill-2015510 spill-2015481	23-Dec-15 26-Nov-15		lqaluit lgaluit	Nikku Lane and Queen Elizabeth Way Lift Station #1 Iglulik Drive Beach	Wastewater (sewage, mine tailings) Wastewater (sewage, mine tailings)	750000	Litres	Breakage Overflow Event	GN - Government of Nunavut GN - Government of Nunavut
spill-2015418	5-Oct-15			Apex, house 3222	Petroleum - waste oil (slops, sludge)		Litres	Other	GN - Government of Nunavut
spill-2015396	21-Sep-15		Igaluit	Sewage Truck dump station	Wastewater (sewage, mine tailings)		Litres	Other	GN - Government of Nunavut
spill-2015342	13-Aug-15			Koojesse Inlet, Frobisher Bay	Unknown		Litres	Unknown Cause	on ordination of the market
spill-2015314	20-Jul-15			AV202, Nunavut Drive	Wastewater (sewage, mine tailings)		Litres	Overflow Event	GN - Government of Nunavut
spill-2015281	29-Jun-15		'	Iqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	C	Litres	Breakage	GN - Government of Nunavut
spill-2015259	11-Jun-15	Baffin	Iqaluit	BCC	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	20	Litres	Tank Leak	GN - Government of Nunavut
spill-2015225	27-May-15		Iqaluit	Legion	Petroleum - gasoline (aviation, turbo B, jet B)		Litres	Collision or Crash	GN - Government of Nunavut
spill-2015213	21-May-15		Iqaluit	Iqaluit International Airport	Wastewater (sewage, mine tailings)		Litres	Unknown Cause	GN - Government of Nunavut
spill-2015178	4-May-15		•	Lift Station 1, M.H.1	Wastewater (sewage, mine tailings)		Litres	Other	GN - Government of Nunavut
spill-2015166	24-Apr-15			Nunavut Dr.	Wastewater (sewage, mine tailings)		Litres	Overflow Event	GN - Government of Nunavut
spill-2015167 spill-2015168	23-Apr-15 22-Apr-15		lqaluit lgaluit	Tasilik Street, AV341 Waste Water Treatment Plant Lagoon	Wastewater (sewage, mine tailings) Wastewater (sewage, mine tailings)		Litres Litres	Overflow Event Overflow Event	GN - Government of Nunavut GN - Government of Nunavut
spill-2015158	19-Apr-15		Igaluit	Sinaa Street M.H.23A	Wastewater (sewage, mine tailings)		Litres	Overflow Event	GN - Government of Nunavut
spill-2015140	28-Mar-15		Igaluit	Canadian North Igaluit Hangar Parking Lot	Petroleum - lubricating oil (lube, hydraulic)		Litres	Breakage	GN - Government of Nunavut
spill-2015064	24-Feb-15		Igaluit	House 1607	Wastewater (sewage, mine tailings)		Litres	Other	GN - Government of Nunavut
spill-2015056	13-Feb-15		Igaluit	Lot 3 1571 Iqualuit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Breakage	GN - Government of Nunavut
spill-2015052	6-Feb-15		Iqaluit	Water Treatment Plant	Petroleum - crude oil	C	Litres	Overflow Event	GN - Government of Nunavut
spill-2015059	6-Feb-15	Baffin	Iqaluit	Apex Quick Stop Iqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	C	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2015055	23-Jan-15	Baffin	Iqaluit	Iqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	50	Litres	Fitting Leak	GN - Government of Nunavut
spill-2015024	21-Jan-15		Iqaluit	Lot 3 near unit 1571 Iqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Breakage	GN - Government of Nunavut
spill-2015018	20-Jan-15		Iqaluit	Sewage truck dump station above sewage lagoon	Wastewater (sewage, mine tailings)		Litres	Overflow Event	GN - Government of Nunavut
spill-2014446	11-Dec-14		Iqaluit	Pit #2	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Other	GN - Government of Nunavut
spill-2014439 spill-2015027	7-Dec-14 6-Dec-14	Baffin Baffin		A.V. 243, sewage truck dump station 2719D Plan 3335, B1 213 Lt 9	Wastewater (sewage, mine tailings)	Unknown Quantity	Litres Litres	Overflow Event Pipe Leaks	GN - Government of Nunavut
spill-2014423	28-Nov-14			House 2647	Wastewater (sewage, mine tailings) Petroleum - fuel oil (jet A, diesel, turbo A, heat)	Unknown Quantity	Litres	Unknown Cause	GN - Government of Nunavut GN - Government of Nunavut
spill-2014383		Baffin	Igaluit	Building 778	Petroleum - lubricating oil (lube, hydraulic)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2014330	15-Sep-14		Igaluit	Palaugaa Drive, AV53	Wastewater (sewage, mine tailings)		Litres	Breakage	GN - Government of Nunavut
spill-2014273	25-Jul-14		Iqaluit	Iqaluit	Petroleum - lubricating oil (lube, hydraulic)	0.5	Litres	Pipe Leaks	Other
spill-2014270	22-Jul-14	Baffin	Iqaluit	Iqaluit Harbour in the bay	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0.7	Cubic Meters	Unknown Cause	
spill-2014247	3-Jul-14	Baffin	Iqaluit	Iqaluit Airport	Petroleum - gasoline (aviation, turbo B, jet B)		Litres	Deliberate Discharge	GN - Government of Nunavut
spill-2014231	21-Jun-14		. 4	Eureka, Nunavut	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	***	Litres	Pipe Leaks	ECCC - Environment and Climate Change Canada
spill-2014220	18-Jun-14		Iqaluit	Lift Station #2, Overflow at M.H.23	Wastewater (sewage, mine tailings)		Litres	Breakage	GN - Government of Nunavut
spill-2014218	17-Jun-14			Beach, Sanikiluaq	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Unknown Cause	GN - Government of Nunavut
spill-2014160	10-May-14		lqaluit lgaluit	2134 Igaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2014156 spill-2014143	10-May-14 6-May-14		Igaluit Igaluit	3134 Iqaluit Iqaluit - 1554	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres Litres	Tank Leak Tank Leak	GN - Government of Nunavut GN - Government of Nunavut
spill-2014143	30-Apr-14		Igaluit	Igaluit 1554	Wastewater (sewage, mine tailings)	Unknown Quantity	LIUCO	Pipe Leaks	GN - Government of Nunavut
spill-2014119	25-Apr-14			Igaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2014163	24-Apr-14			Unit 2664, Iqaluit	Petroleum - lubricating oil (lube, hydraulic)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2014107	14-Apr-14		'	DND-Hanger 3	Petroleum - gasoline (aviation, turbo B, jet B)	1800	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2014080	15-Mar-14	Baffin	Iqaluit, Community, Nunavut	Beach Row Man Hole 32A	Wastewater (sewage, mine tailings)	2000	Litres	Overflow Event	GN - Government of Nunavut
spill-2014073	10-Mar-14		Iqaluit	Building 4148	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2014064	4-Mar-14			AV301 on Queen's Way Road	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2013346	15-Oct-13		Iqaluit	Building 1123 - P50 Loading Rack	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	GN - Government of Nunavut
spill-2013350	14-Oct-13		Iqaluit	Coast Guard Compound	Chemicals (including transformer oils)		Litres	Breakage	GN - Government of Nunavut
spill-2013347	12-Oct-13		Iqaluit	Lift Station #1	Wastewater (sewage, mine tailings)		Litres	Overflow Event	GN - Government of Nunavut
spill-2013348 spill-2013344	12-Oct-13 9-Oct-13		'	Nipsia Street Lift Station #1	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Wastewater (sewage, mine tailings)		Litres Litres	Unknown Cause Overflow Event	GN - Government of Nunavut GN - Government of Nunavut
spill-2013344 spill-2013338	30-Sep-13			Sylvia Grinnel Park	Petroleum - gasoline (aviation, turbo B, jet B)		Litres	Vehicle Overturn	GN - Government of Nunavut
spill-2013234	30-Sep-13		Igaluit	Between Building 1825 and 1827 Ditch	Petroleum - waste oil (slops, sludge)		Litres	Unknown Cause	GN - Government of Nunavut
spill-2013234	27-Jun-13			Igaluit	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2013220	23-Jun-13		Igaluit	Lift Station 1	Wastewater (sewage, mine tailings)		Litres	Overflow Event	GN - Government of Nunavut
spill-2013219	20-Jun-13		Iqaluit	Building 412	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2013217	19-Jun-13		lqaluit	Buiding 1525	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2013215	18-Jun-13	Baffin	Iqaluit	Access Vault 301	Wastewater (sewage, mine tailings)	3000	Litres	Pipe Leaks	GN - Government of Nunavut
:II 204220E	11-Jun-13	Baffin	Iqaluit	City of Iqaluit	Wastewater (sewage, mine tailings)	2000	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2013205 spill-2013200	10-Jun-13		Igaluit	Unit 2559	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GN - Government of Nunavut

Spill	Occurance Date	Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spill Cause	Lead Agency
spill-2013199	9-Jun-13	Baffin	Igaluit	House 741	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Fitting Leak	GN - Government of Nunavut
spill-2013196	5-Jun-13		Iqaluit	Refueling Station lat D67 M32 S48 Long D64 M01 S34	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	23	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2013190	4-Jun-13	Baffin	Iqaluit	Behind BCC New Construcion Area Building 1538	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	200	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2013175	27-May-13		lqaluit	lqaluit, fill line to the tank at building 505	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	GN - Government of Nunavut
spill-2013169	25-May-13		Iqaluit	Downtown Four Points	Petroleum - lubricating oil (lube, hydraulic)		Litres	Tank Leak	GN - Government of Nunavut
spill-2013137	5-May-13		Iqaluit Igaluit	Building 4015	Petroleum - lubricating oil (lube, hydraulic)		Litres	Fitting Leak	GN - Government of Nunavut
spill-2013130 spill-2013141	25-Apr-13 17-Apr-13		Igaluit	House 1006 and 1008 Building 2600 D	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres Litres	Deliberate Discharge Tank Leak	GN - Government of Nunavut GN - Government of Nunavut
spill-2013114	14-Apr-13		Igaluit	House 2418	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2013110	9-Apr-13		Iqaluit	French School	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2013107	31-Mar-13	Baffin	lqaluit	Across from Arctic College, AV301	Wastewater (sewage, mine tailings)	2000	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2013101	26-Mar-13	Baffin		House 582	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	GN - Government of Nunavut
spill-2013095	23-Mar-13		Iqaluit	Iqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2013087	13-Mar-13			AV301, Niaqunngusiaq Road	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2013084 spill-2013063	11-Mar-13		Iqaluit Igaluit	Iqaluit	Wastewater (sewage, mine tailings)		Litres Litres	Pipe Leaks	GN - Government of Nunavut
spill-2013058	17-Feb-13 14-Feb-13		Igaluit	AV25A, next to Building 158 Beachrow. M.H.32A	Wastewater (sewage, mine tailings) Wastewater (sewage, mine tailings)		Litres	Overflow Event Pipe Leaks	GN - Government of Nunavut GN - Government of Nunavut
spill-2013059	13-Feb-13		Igaluit	Sewage Lagoon	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2013045	7-Feb-13		Igaluit	RCMP Detachment, 960 Federal Road, Igaluit, Nunavut, X0A 0H0	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	ECCC - Environment and Climate Change Canada
spill-2013035	31-Jan-13		Iqaluit	Building 107	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2012414	18-Oct-12		lqaluit	Iqaluit	Petroleum - gasoline (aviation, turbo B, jet B)		Litres	Collision or Crash	GN - Government of Nunavut
spill-2012310	27-Jul-12		lqaluit	Building 135C, Iqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Deliberate Discharge	GN - Government of Nunavut
spill-2012293	17-Jul-12			250 km from Iqaluit (on the ocean)	Petroleum - waste oil (slops, sludge)		Litres	Unknown Cause	
spill-2012258	17-Jun-12		Iqaluit	Iqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2012246	14-Jun-12		Iqaluit	Iqaluit Airport	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Collision or Crash	GN - Government of Nunavut
spill-2012229 spill-2012187	5-Jun-12 16-May-12		Iqaluit Igaluit	Lift Station 2 Overflow Building 782	Wastewater (sewage, mine tailings)		Litres Litres	Pipe Leaks Unknown Cause	GN - Government of Nunavut CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2012187	25-Apr-12		Igaluit	Igaluit	Wastewater (sewage, mine tailings) Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2012140	3-Apr-12		Igaluit	Iqaluit Airport	Petroleum - gasoline (aviation, turbo B, jet B)		Litres	Tank Leak	GN - Government of Nunavut
spill-2012110	3-Apr-12		Igaluit	City of Igaluit	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2012092	25-Mar-12			Igaluit	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2012091	24-Mar-12	Baffin	Iqaluit	Iqaluit	Wastewater (sewage, mine tailings)	1000	Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2012090	23-Mar-12	Baffin	Iqaluit	AV 341, 2700 Block, City of Iqaluit	Wastewater (sewage, mine tailings)	3000	Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2012055	27-Feb-12	Baffin		P50 Loading Rack, Building 1123, Iqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Overflow Event	GN - Government of Nunavut
spill-2012024	1-Feb-12			Iqaluit	Wastewater (sewage, mine tailings)		Litres	Unknown Cause	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2012003	8-Jan-12			House 2588, Iqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2011457		Baffin		House 2412	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres Litres	Tank Leak	GN - Government of Nunavut
spill-2011437 spill-2011427	11-Nov-11 2-Nov-11	Baffin Raffin	Iqaluit Igaluit	City Hall, Iqaluit NU Acess Vault 400, City of Iqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Wastewater (sewage, mine tailings)		Litres	Tank Leak Pipe Leaks	GN - Government of Nunavut CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2011390		Baffin	Igaluit	Manhole #9, City of Igaluit	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2011375	16-Sep-11		Igaluit	Unit 250-A Crawlspace, Igaluit NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2011264	6-Jul-11	Baffin	Iqaluit	House 2475, Igaluit NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	_	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2011259	4-Jul-11	Baffin	lqaluit	House 2626, Iqaluit NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0		Tank Leak	GN - Government of Nunavut
spill-2011234	14-Jun-11	Baffin	lqaluit	House 2402, Iqaluit NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	550	Litres	Tank Leak	GN - Government of Nunavut
spill-2011216		Baffin	Iqaluit	Building 4110A, Road to Nowhere	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Collision or Crash	GN - Government of Nunavut
spill-2011211		Baffin	Iqaluit	Manhole #86, City of Iqaluit	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2011177		Ba	Iqaluit	Iqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2011168 spill-2011180	21-May-11 21-May-11		Iqaluit Igaluit	House #2517, Iqaluit NU House # 2517, Iqaluit NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres Litres	Tank Leak Tank Leak	GN - Government of Nunavut GN - Government of Nunavut
spill-2011165	21-May-11 17-May-11		Igaluit	Apex Garage - Iqaluit NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2011103	29-Apr-11		Igaluit	Igaluit, NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2011116	21-Apr-11		Iqaluit	House # 2492, Iqaluit NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2011100	8-Apr-11		lqaluit	Between A.V 224 and 225, City of Iqaluit	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2011085	28-Mar-11	Baffin	lqaluit	Main Power Plant 1 NPC Hill	Chemicals (including transformer oils)	600	Litres	Collision or Crash	GN - Government of Nunavut
spill-2011066		Baffin	lqaluit	BLDG 1549 Federal Road	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2011056	12-Mar-11		Iqaluit	Sewage Truck Dump Station near Lagoon	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2011024	8-Feb-11		Iqaluit	Lift Station #2, Near Manhole #30, Iqaluit Nunavut	Wastewater (sewage, mine tailings)		Litres	Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2011002 spill-2011350	7-Jan-11 1-Jan-11	Baffin Raffin	Iqaluit Igaluit	House 3102, Angel Street, Iqaluit NU Building 4110, Road to Nowhere East, crawl space	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres Litres	Tank Leak Tank Leak	GN - Government of Nunavut GN - Government of Nunavut
spill-2011350 spill-2010471	1-Jan-11 27-Dec-10		Igaluit	Igaluit	Petroleum - fuel oil (jet A, diesel, turbo A, neat) Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2010471	27-Dec-10 22-Dec-10		Igaluit	Igaluit	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2010462	15-Dec-10		Igaluit	Igaluit - Between New Courthouse and Trigram Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	GN - Government of Nunavut
spill-2010446	26-Nov-10		Iqaluit	Iqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2010444	25-Nov-10	Baffin	Iqaluit	Building 2539, Iqaluit NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	75	Litres	Tank Leak	GN - Government of Nunavut
spill-2010442	19-Nov-10		lqaluit	House 2555 Iqaluit, NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2010425	18-Oct-10		lqaluit	Building 927, Iqaluit NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2010411	11-Oct-10		Iqaluit	Iqaluit, House #341	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2010415	11-Oct-10		Iqaluit	House #341, Iqaluit NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2010410	10-Oct-10 9-Sep-10		Iqaluit Iqaluit	Iqaluit, House #4024	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres Litres	Pipe Leaks Tank Leak	GN - Government of Nunavut
spill-2010367 spill-2010343	9-Sep-10 15-Aug-10			House 2627, Igaluit NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut GN - Government of Nunavut
	10-Aug-10			′ 1			Litres	Collision or Crash	GN - Government of Nunavut
spill-2010339	12-Aug-10	Baffin	Igaluit	House# 2523, Igaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	500			

Spill	Occurance Date	Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spill Cause	Lead Agency
spill-2010295	13-Jul-10		Iqaluit	Iqaluit, Nunavut	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2010289	11-Jul-10		Iqaluit	House 1692	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2010264 spill-2010262	30-Jun-10 28-Jun-10		Iqaluit Igaluit	House# 975, Iqaluit Nunavut House 409 Iqaluit, Nunavut	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak Unknown Cause	GN - Government of Nunavut GN - Government of Nunavut
spill-2010202	3-Jun-10		Igaluit	Arctic Winter Games Facility Igaluit, NU	Petroleum - fuel oil (jet A, diesel, turbo A, fleat)	•	Litres	Overflow Event	GN - Government of Nunavut
spill-2010214	3-Jun-10		Iqaluit	1074B Iqaluit Nunavut	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	ECCC - Environment and Climate Change Canada
spill-2010178	8-May-10	Baffin	Iqaluit	Unit 4002	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Tank Leak	GN - Government of Nunavut
spill-2010150	7-May-10		Iqaluit	Building 1057	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	GN - Government of Nunavut
spill-2010174	, , .	Baffin	Iqaluit	House 2467	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	GN - Government of Nunavut
spill-2010145 spill-2010084	23-Apr-10 23-Mar-10	Baffin Baffin	Iqaluit Igaluit	House# 2522 Manhole 1 beside Lift Station #1	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Wastewater (sewage, mine tailings)		Litres	Tank Leak Pipe Leaks	GN - Government of Nunavut
spill-2010083		Baffin	Igaluit	Government of Nunavut Airport Land	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut GN - Government of Nunavut
spill-2010003		Baffin	Igaluit	Manhole 63B. 32B. 32A & Lift Station #2	Wastewater (sewage, mine tailings)	•	Litres	Fitting Leak	GN - Government of Nunavut
spill-2010060	7-Mar-10		Igaluit	House 2532	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2010056	5-Mar-10	Baffin	Iqaluit	Sewage Lift Station #1	Wastewater (sewage, mine tailings)	1000) Litres	Overflow Event	GN - Government of Nunavut
spill-2010052	_	Baffin	Iqaluit	Sewage Lift Station #1	Wastewater (sewage, mine tailings)		Litres	Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2010037	13-Feb-10		Iqaluit	Lift Station #1	Wastewater (sewage, mine tailings)		Litres	Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2010008	29-Jan-10 19-Jan-10		Iqaluit Igaluit	Lift Station #1 Water Treatment Plant	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak Other	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada GN - Government of Nunavut
spill-2010281	20-Dec-09		Igaluit	Igaluit	Chemicals (including transformer oils) Petroleum - fuel oil (iet A. diesel, turbo A. heat)	•	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2009455	27-Sep-09		Igaluit	House 4066	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2009444	15-Sep-09		Igaluit	Crushing Site	Petroleum - fuel oil (jet A, diesel, turbo A, fleat)	•	Litres	Other	GN - Government of Nunavut
spill-2009429	6-Sep-09		Iqaluit	89 Stoneridge Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2009431	4-Sep-09		Iqaluit	West 40 Landfill	Wastewater (sewage, mine tailings)		Litres	Other	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2009424	1-Sep-09		Iqaluit	Innuit Head shore Manifold Re-supply Line	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2009406	25-Aug-09		Iqaluit	Airbase Garage	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2009401	17-Aug-09		Iqaluit Igaluit	The Northern Store	Petroleum - gasoline (aviation, turbo B, jet B)		Litres	Unknown Cause	GN - Government of Nunavut
spill-2009378 spill-2009363	3-Aug-09 22-Jul-09		lgaluit	House 5019 House 2450	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - fuel oil (iet A, diesel, turbo A, heat)		Litres	Pipe Leaks Tank Leak	GN - Government of Nunavut GN - Government of Nunavut
spill-2009303	8-Jul-09		Igaluit	P-50 Pipeline Near Justice Centre	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	GN - Government of Nunavut
spill-2009329	1-Jul-09		Igaluit, Community, Nunavut	Bldg. 2652	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2009274	5-Jun-09	Baffin	Iqaluit	House 4039 Road to Nowhere	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Tank Leak	GN - Government of Nunavut
spill-2009282	5-Jun-09	Baffin	Iqaluit	Bldg. 4039 West Side of Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	300	Litres	Tank Leak	GN - Government of Nunavut
spill-2009264	4-Jun-09		Iqaluit	Landfill Retention Pond	Wastewater (sewage, mine tailings)	•	Litres	Overflow Event	GN - Government of Nunavut
spill-2009243	29-May-09		Iqaluit	Building 951	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2009223	22-May-09		Iqaluit Igaluit	House 1684	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	•	Litres	Tank Leak	GN - Government of Nunavut
spill-2009212 spill-2009217	19-May-09 19-May-09		Igaluit	2707 Unit F Building 223	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Wastewater (sewage, mine tailings)		Litres	Tank Leak Pipe Leaks	GN - Government of Nunavut GN - Government of Nunavut
spill-2009217	4-May-09		Igaluit	Building 1091	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2009185	4-May-09		Igaluit	Building 2425	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	•	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2009174	29-Apr-09	Baffin	Iqaluit	A.V. 500	Wastewater (sewage, mine tailings)	2000	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2009207	27-Apr-09	Baffin	Iqaluit	937 Airport	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	23	Litres	Tank Leak	GN - Government of Nunavut
spill-2009167	27-Apr-09		Iqaluit	Utilidor Access Vault 500	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2009163	24-Apr-09		Iqaluit	1620 A & B	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Unknown Cause	GN - Government of Nunavut
spill-2009140 spill-2009146	8-Apr-09		Iqaluit Igaluit	House 2408 Unit 1010	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2009146	24-Mar-09 13-Mar-09		Igaluit	Igaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak Tank Leak	GN - Government of Nunavut GN - Government of Nunavut
spill-2009082	24-Feb-09		Igaluit	House 5135	Wastewater (sewage, mine tailings)		Litres	Other	GN - Government of Nunavut
spill-2009071	15-Feb-09		Igaluit	House 459 A & B	Wastewater (sewage, mine tailings)		Litres	Overflow Event	GN - Government of Nunavut
spill-2008227	1-Feb-09	Baffin	Iqaluit	512 House NW of Baffin Correctional Centre	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Unknown Cause	GN - Government of Nunavut
spill-2008601	26-Dec-08		Iqaluit	Main Power Plant	Chemicals (including transformer oils)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2008594	19-Dec-08		Iqaluit	Iqaluit	Petroleum - lubricating oil (lube, hydraulic)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2008549	19-Nov-08		Iqaluit	Main Power Plant	Chemicals (including transformer oils)		Litres	Other	GN - Government of Nunavut
spill-2008524 spill-2008515	28-Oct-08 25-Oct-08		Iqaluit Igaluit	YFB Airport Apron III at Delta Fueling Station F/V Go For Broke in Frobisher Bav	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Unknown		Litres	Overflow Event Grounding	GN - Government of Nunavut
spill-2008515	25-Oct-08 25-Oct-08		lgaluit	Building 2708, Unit 2	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2008327	8-Oct-08		Igaluit	4054 Anuri Street Road to Nowhere	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2008490	8-Oct-08		Iqaluit	Building 2220 Unit E	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2008479	2-Oct-08	Baffin	Iqaluit	Building 1342	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2008465	23-Sep-08		lqaluit	Manhole #9	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2008457	20-Sep-08		Iqaluit	Rear Side of the Sivumnut Building	Chemicals (including transformer oils)		Litres	Collision or Crash	GN - Government of Nunavut
spill-2008459	20-Sep-08		Iqaluit	House 4035	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2008453 spill-2008398	16-Sep-08 15-Aug-08		Iqaluit Igaluit	Bldg. 607 House 525	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Overflow Event Tank Leak	GN - Government of Nunavut GN - Government of Nunavut
spill-2008398 spill-2008374	3-Aug-08		lgaluit	Lift Station #1	Wastewater (sewage, mine tailings)		Litres	Overflow Event	GN - Government of Nunavut
spill-2008374	29-Jul-08		Igaluit	Bldg, 2223 (Ivavik Bldg) West Side	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2008356	20-Jul-08		Iqaluit	Building 197 North Side of Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2008327	13-Jul-08		Iqaluit	Bldg. 4012 Road to Nowhere	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2008345	11-Jul-08		Iqaluit	Upper Base DEW Line Road	Chemicals (including transformer oils)		Litres	Unknown Cause	GN - Government of Nunavut
spill-2008324	7-Jul-08			City Garage Apex	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Collision or Crash	GN - Government of Nunavut
spill-2008265	2-Jun-08		Iqaluit	House 2531	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2008314	1-Jun-08		Iqaluit	Duplex 557	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2008235	26-May-08	Battin	Iqaluit	Gas Bar	Petroleum - gasoline (aviation, turbo B, jet B)	2100	Litres	Overflow Event	GN - Government of Nunavut

Spill	Occurance Date	Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spill Cause	Lead Agency
spill-2008222	20-May-08	Baffin	Igaluit	Igaluit Gas Bar	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2008218	19-May-08		lqaluit	Young Offenders Centre	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	200	Litres	Other	GN - Government of Nunavut
spill-2008207	13-May-08	Baffin	lqaluit	Building 615 Queen Elizabeth Drive	Petroleum - lubricating oil (lube, hydraulic)		Litres	Unknown Cause	GN - Government of Nunavut
spill-2008202	12-May-08		Iqaluit	Arctic College Jewellry Shop Bldg. 619	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2008209	12-May-08		Iqaluit	House 567A	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Overflow Event	GN - Government of Nunavut
spill-2008194 spill-2008190	10-May-08 9-May-08		Iqaluit Igaluit	Vicinity of House 134C House 432B	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres Litres	Unknown Cause Tank Leak	GN - Government of Nunavut
spill-2008190	9-May-08 29-Apr-08		Igaluit	House 432B	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak Tank Leak	GN - Government of Nunavut GN - Government of Nunavut
spill-2008139	14-Apr-08		Igaluit	AV 400 Ring Road Near Northwestel Building	Wastewater (sewage, mine tailings)		Litres	Other	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2008123	8-Apr-08		Iqaluit	West 40 Sewage Dump Point	Wastewater (sewage, mine tailings)		Litres	Fitting Leak	GN - Government of Nunavut
spill-2008126	8-Apr-08	Baffin	lqaluit	House 974 South West Side of Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	150	Litres	Tank Leak	GN - Government of Nunavut
spill-2008072	18-Feb-08		lqaluit	2538 Iqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2008015	17-Jan-08		Iqaluit	White Row Housing	Wastewater (sewage, mine tailings)		Litres	Other	GN - Government of Nunavut
spill-2008002	3-Jan-08		Iqaluit	Main Power Plant	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	GN - Government of Nunavut
spill-2008003	2-Jan-08		Iqaluit Igaluit	2514 Iqaluit	Wastewater (sewage, mine tailings)		Litres Litres	Deliberate Discharge	GN - Government of Nunavut
spill-2007571 spill-2007518	31-Dec-07 16-Nov-07		Igaluit Igaluit	White Row Housing 1505 Federal Road	Wastewater (sewage, mine tailings) Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks Tank Leak	GN - Government of Nunavut GN - Government of Nunavut
spill-2007378	12-Oct-07		Igaluit	Navigator Inn Building 1036	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2007477	24-Aug-07		Igaluit	Bldg. 165 Union Door	Petroleum - fuel oil (jet A. diesel, turbo A. heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2007416	10-Aug-07		Igaluit	Frobisher Bay	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Sinking	
spill-2007367	29-Jul-07		Iqaluit	House 2662 West Side of Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2007330	13-Jul-07	Baffin	Iqaluit	Sealift Beach Area	Petroleum - other (bunker, asphalt, propane)	205	Litres	Other	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2007297	27-Jun-07		lqaluit	Building 659 West Side of Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	150	Litres	Tank Leak	GN - Government of Nunavut
spill-2007268	14-Jun-07		lqaluit	West 40 Landfill	Wastewater (sewage, mine tailings)		Litres	Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2007259	9-Jun-07		Iqaluit	West 40 Landfill	Wastewater (sewage, mine tailings)		Litres	Other	GN - Government of Nunavut
spill-2007242	2-Jun-07		Iqaluit	Building 1575	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2007185	26-Apr-07		Iqaluit	House 4019	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2007171	19-Apr-07		Iqaluit Igaluit	House 2635	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2007158 spill-2007167	6-Apr-07 13-Mar-07		Igaluit Igaluit	Building 4096 Lot 6, 10, & 11, Plan 224, Plan 3487 Nunatta Sunakkutaangit Museum Bldg. 212	Wastewater (sewage, mine tailings) Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres Litres	Overflow Event Tank Leak	GN - Government of Nunavut GN - Government of Nunavut
spill-2007167	21-Feb-07		Igaluit	Lower Lift Station #2	Wastewater (sewage, mine tailings)		Litres	Overflow Event	GN - Government of Nunavut
spill-2008037	8-Feb-07		Igaluit	Nunastar (AstroHill Complex) Between RCMP/CBC	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	GN - Government of Nunavut
spill-2007037	5-Feb-07		Igaluit	Lower Lift Station #2	Wastewater (sewage, mine tailings)		Litres	Other	GN - Government of Nunavut
spill-2007036	4-Feb-07		Igaluit	Lower Lift Station #1 Near the Bay	Wastewater (sewage, mine tailings)		Litres	Other	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2007024	24-Jan-07	Baffin	lqaluit	Nunavut Power Main Plant	Chemicals (including transformer oils)	200	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2007021	19-Jan-07	Baffin	Iqaluit, Community, Nunavut	Iqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	80	Litres	Other	GN - Government of Nunavut
spill-2007017	18-Jan-07	Baffin	lqaluit	Nunavut Power Main Plant	Chemicals (including transformer oils)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2006445	14-Dec-06		Iqaluit	Back of Building 155	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2006417	6-Nov-06		Iqaluit	Inner Harbour Iqaluit 63:42:16N 68:29:20W	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Sinking	
spill-2006418	6-Nov-06		Iqaluit	Unit #2245	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Other	GN - Government of Nunavut
spill-2006419 spill-2006408	6-Nov-06 27-Oct-06		Iqaluit, Community, Nunavut Igaluit	Unit #156 Airport First Air Maintenance Hanger Bldg. #1530	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - fuel oil (iet A, diesel, turbo A, heat)		Litres Litres	Other Other	GN - Government of Nunavut
spill-2006408	6-Oct-06		Igaluit	City Hall Rear Section (Arena)	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut GN - Government of Nunavut
spill-2006327	18-Aug-06		Igaluit	Igaluit Anchorage	Petroleum - lubricating oil (lube, hydraulic)		Litres	Pipe Leaks	GIV - Government of Ivaliavat
spill-2006260	25-Jun-06		Igaluit	Sewage Treatment Plant	Wastewater (sewage, mine tailings)		Litres	Other	GN - Government of Nunavut
spill-2006237	12-Jun-06		Igaluit	Building 918	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2006209	24-May-06		Iqaluit, Community, Nunavut	Beside Nunavut Power Garage	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	15	Litres	Tank Leak	GN - Government of Nunavut
spill-2006219	24-May-06	Baffin	Iqaluit	House 477	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Tank Leak	GN - Government of Nunavut
spill-2006192	11-May-06	Baffin	lqaluit	Navigator Hotel	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Tank Leak	GN - Government of Nunavut
spill-2006169	22-Apr-06		Iqaluit	Building 4021 Road to Nowhere	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Unknown Cause	GN - Government of Nunavut
spill-2006156	18-Apr-06		Iqaluit	Between 2225-2227	Wastewater (sewage, mine tailings)		Litres	Fitting Leak	GN - Government of Nunavut
spill-2006127	1-Apr-06			City Hall to Federal Garage	Petroleum - lubricating oil (lube, hydraulic)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2006122 spill-2006089	31-Mar-06 13-Mar-06		Iqaluit Igaluit	Government of Nunavut Compound Building 1516	Petroleum - gasoline (aviation, turbo B, jet B) Wastewater (sewage, mine tailings)		Litres Litres	Collision or Crash Tank Leak	GN - Government of Nunavut GN - Government of Nunavut
spill-2006089	7-Mar-06		Igaluit	House 117 Between Manhole #36 & #37	Wastewater (sewage, mine tailings) Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2006083	4-Mar-06		Igaluit	Office Fuel Tank	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
spill-2006078	1-Feb-06		Igaluit	100's Lower Igaluit	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2005496	19-Oct-05		Igaluit	Beach Sealift Cargo Operations Area	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Unknown Cause	
spill-2005477	5-Oct-05		Iqaluit	North 40 Pit	Petroleum - lubricating oil (lube, hydraulic)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2005349	7-Jul-05	Baffin	Iqaluit	Lower Base Near Houses 737-729 Iglulik Division	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Other	GN - Government of Nunavut
spill-2005328	2-Jul-05			House 665	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Collision or Crash	GN - Government of Nunavut
spill-2005302	14-Jun-05		Iqaluit	Manhole #71 In Front of House #543	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2005260	29-May-05			On Apex Road House #2736	Petroleum - lubricating oil (lube, hydraulic)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2005247	11-May-05		Iqaluit	Unit 4015-B Road to Nowhere Subdivision	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GN - Government of Nunavut
spill-2005225	6-May-05		Iqaluit	Main Power	Petroleum - waste oil (slops, sludge)		Litres	Collision or Crash	GN - Government of Nunavut
spill-2005091	24-Feb-05		Iqaluit Igaluit	AV403 Next to Northmart	Wastewater (sewage, mine tailings)		Litres Litres	Pipe Leaks	GN - Government of Nunavut
spill-2005086 spill-2005080	22-Feb-05 17-Feb-05		Igaluit Igaluit	House 2558 West Side of Northmart at AV403	Wastewater (sewage, mine tailings) Wastewater (sewage, mine tailings)		Litres	Pipe Leaks Pipe Leaks	GN - Government of Nunavut GN - Government of Nunavut
spill-2005080	17-Feb-05 17-Dec-04		Igaluit Igaluit	Nunavut Power Corp Federal Power Plant	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Overflow Event	GN - Government of Nunavut GN - Government of Nunavut
spill-2004688	17-Dec-04 17-Dec-04		Igaluit	Nunavut Power Corp Federal Plant	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Overflow Event	GN - Government of Nunavut
spill-2004660	7-Dec-04			Joamie Elementary School	Chemicals (including transformer oils)		Litres	Other	GN - Government of Nunavut
	6-Oct-04		Iqaluit	West 40 Dump near Scrap Metal Section	Chemicals (including transformer oils)		Litres	Deliberate Discharge	GN - Government of Nunavut
spill-2004620									

pill	Occurance Date	Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spill Cause	Lead Agency
pill-2004621	10-Aug-04	Baffin	Iqaluit, Community, Nunavut	North 40 Gravel Pit	Chemicals (including transformer oils)	0	Litres	Unknown Cause	GN - Government of Nunavut
pill-2004490	26-Jul-04	Baffin	Iqaluit, Community, Nunavut	Building 1325	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	20	Litres	Overflow Event	GN - Government of Nunavut
pill-2004365	10-Jun-04		Iqaluit	Federal Road in Front of Building 1320	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Other	GN - Government of Nunavut
pill-2004374	10-Jun-04		Iqaluit	Federal Road In Front of BBS Westward	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Other	GN - Government of Nunavut
pill-2004359	8-Jun-04		Iqaluit	Building 2425	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Overflow Event	GN - Government of Nunavut
pill-2004309 pill-2003718	22-May-04 1-Dec-03		lqaluit lgaluit	HS 3066 Apex Driveway Towards Main Road Main Plant by Warehouse	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Chemicals (including transformer oils)		Litres Litres	Collision or Crash Collision or Crash	GN - Government of Nunavut GN - Government of Nunavut
pill-20037 18	14-Nov-03			M.H. 23 behind Grind and Brew	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
pill-2003683	12-Nov-03			M.H 7 Ring Road in Front of NorthwesTel Building	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
pill-2003673	8-Nov-03	Baffin	† '	M.H 23 Beside Grind and Brew	Wastewater (sewage, mine tailings)	3000	Litres	Pipe Leaks	GN - Government of Nunavut
pill-2003611	10-Oct-03	Baffin	Iqaluit	House 4023 Road to Nowhere Subdivision	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	900	Litres	Deliberate Discharge	GN - Government of Nunavut
pill-2003580	18-Sep-03		Iqaluit	Airport Apron Area	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Other	GN - Government of Nunavut
pill-2003555	3-Sep-03		Iqaluit	Lift Station #1	Wastewater (sewage, mine tailings)		Litres	Other	GN - Government of Nunavut
pill-2003549	28-Aug-03			City Gravel Pit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Unknown Cause	GN - Government of Nunavut
pill-2003500 pill-2003501	20-Jul-03 20-Jul-03		lqaluit lgaluit	Lift Station #2 Lift Station #1	Wastewater (sewage, mine tailings) Wastewater (sewage, mine tailings)		Litres Litres	Other Overflow Event	GN - Government of Nunavut GN - Government of Nunavut
pill-2003301	8-Jun-03			House 1022	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
pill-2003393	28-May-03		Igaluit	Behind Pump House	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GN - Government of Nunavut
pill-2003194	24-Mar-03			Bank to Sewage Lagoon	Wastewater (sewage, mine tailings)		Litres	Other	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
pill-2003152	13-Mar-03	Baffin	Iqaluit	AV 331 across from Joamie School	Wastewater (sewage, mine tailings)	2273	Litres	Pipe Leaks	GN - Government of Nunavut
pill-2003150	12-Mar-03	Baffin	Iqaluit	Beach Row 109	Wastewater (sewage, mine tailings)	4546	Litres	Pipe Leaks	GN - Government of Nunavut
pill-2003116	23-Feb-03			M.H. 63A Behind House #273	Wastewater (sewage, mine tailings)		Litres	Other	GN - Government of Nunavut
oill-2003106	19-Feb-03		·	Lift Station #1 towards Ocean	Wastewater (sewage, mine tailings)		Litres	Overflow Event	GN - Government of Nunavut
oill-2003024	10-Jan-03			Tundra Valley	Petroleum - lubricating oil (lube, hydraulic)		Litres	Unknown Cause	GN - Government of Nunavut
oill-2003080	10-Jan-03		Iqaluit	Between Hospital and Inuksuk High School	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
oill-2002464 oill-2002459	10-Aug-02 1-Aug-02		lqaluit lgaluit	House 927	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - fuel oil (iet A, diesel, turbo A, heat)		Litres Litres	Overflow Event Other	GN - Government of Nunavut GN - Government of Nunavut
oill-2002459	26-Jul-02		Igaluit	135 Charlie	Petroleum - fuel oil (jet A, diesel, turbo A, fieat)		Litres	Tank Leak	GN - Government of Nunavut
oill-2002440	20-Jul-02		Igaluit	Lift Station #1. #2	Wastewater (sewage, mine tailings)		Litres	Collision or Crash	GN - Government of Nunavut
ill-2002427	17-Jul-02		Igaluit	By Sealift Compound on Beach	Wastewater (sewage, mine tailings)		Litres	Fitting Leak	GN - Government of Nunavut
ill-2002297	29-Apr-02		Igaluit	Between M.H. #89 and M.H. #91 Beside HS #405	Wastewater (sewage, mine tailings)	6000	Litres	Overflow Event	GN - Government of Nunavut
ill-2002250	5-Apr-02	Baffin	Iqaluit	Behind Catholic Church	Wastewater (sewage, mine tailings)	3000	Litres	Other	GN - Government of Nunavut
ill-2002240	3-Apr-02	Baffin	Iqaluit	Airport Outside Kenn Boerk's Hanger	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Pipe Leaks	GN - Government of Nunavut
ill-2002208	17-Mar-02	Baffin	Iqaluit	BCC Young Offenders AV4 To AV5	Wastewater (sewage, mine tailings)	4546	Litres	Overflow Event	GN - Government of Nunavut
ill-2002181	8-Mar-02		·	AV5 to AV4 Behind Young Offender B.C.C.	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
oill-2002160	1-Mar-02		† '	AV (?) on Ring Road Across From Northmart	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
oill-2002041	28-Jan-02		† '	House 1042A Behind Navigator Inn	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
oill-2002021 oill-2001380	21-Jan-02 16-Dec-01	Baffin	† '	AV-331 on Apex Road Across From Joamie School Building 451A	Wastewater (sewage, mine tailings) Wastewater (sewage, mine tailings)		Litres Litres	Overflow Event Overflow Event	GN - Government of Nunavut GN - Government of Nunavut
oill-2001363		Baffin	Igaluit	Baffin Regional Cultural Centre	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
oill-2001310	1-Oct-01			North Mart and Elders Home	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
oill-2001304		Baffin	Igaluit	Proposed First Air Hanger	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Other	ECCC - Environment and Climate Change Canada
oill-2001289	12-Sep-01	Baffin	Iqaluit	M.H 8 to M.H 9 Outside Arctic Ventures Store	Wastewater (sewage, mine tailings)	60000	Litres	Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
ill-2001288	11-Sep-01	Baffin	Iqaluit	Beside Government Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Tank Leak	GN - Government of Nunavut
ill-2001231		Baffin	Iqaluit, Community, Nunavut	Illagiittug Children's Group Home (Happey Valley)	Wastewater (sewage, mine tailings)		Litres	Overflow Event	GN - Government of Nunavut
oill-2001229			Iqaluit	Baffin Gas Bar Bldg 1057	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Overflow Event	GN - Government of Nunavut
ill-2001219	3-Jul-01		Iqaluit	Lift Station #1	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
ill-2001206 ill-2001200	27-Jun-01 24-Jun-01		lqaluit lgaluit	Main Plant Lift Station #2	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Wastewater (sewage, mine tailings)		Litres Litres	Overflow Event Other	GN - Government of Nunavut GN - Government of Nunavut
ill-2001200 ill-2001199	16-Jun-01		Igaluit	Lift Station #1	Wastewater (sewage, mine tailings) Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
ill-2001199	28-May-01			Airport North Ramp East on Taxiway	Petroleum - lubricating oil (lube, hydraulic)		Litres	Other	ECCC - Environment and Climate Change Canada
oill-2001176	15-Mar-01		'	Toonoonik Gas Bar	Petroleum - gasoline (aviation, turbo B, jet B)		Litres	Pipe Leaks	GN - Government of Nunavut
ill-2001078	15-Mar-01			Mot Beach Sealift Coast Guard Compound	Petroleum - gasoline (aviation, turbo B, jet B)		Litres	Unknown Cause	GN - Government of Nunavut
ill-2001027	3-Feb-01	Baffin	Iqaluit	Airport Apron Area	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	110	Litres	Pipe Leaks	ECCC - Environment and Climate Change Canada
ill-2000276	5-Oct-00			P50 Loading Rack, Bldg. 1123	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	GN - Government of Nunavut
ill-2000179	7-Jul-00		Iqaluit	House #1661	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Overflow Event	GN - Government of Nunavut
ill-2000078	30-Mar-00		Iqaluit	House 2230A	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GN - Government of Nunavut
ill-2000075	29-Mar-00 23-Mar-00		lqaluit lgaluit	Arctic College Nunatta Campus Town Sower and Water System AV 203 - AV 204	Wastewater (sewage, mine tailings)		Litres Litres	Pipe Leaks Other	GN - Government of Nunavut
ill-2000069 ill-2000003	7-Jan-00		Igaluit Igaluit	Town Sewer and Water System AV 203 - AV 204 Building #1123	Wastewater (sewage, mine tailings) Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Other Tank Leak	GN - Government of Nunavut GN - Government of Nunavut
ill-1999140	17-Oct-99		Igaluit	Roman Catholic Church	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Collision or Crash	GN - Government of Nunavut
ill-1999135	8-Oct-99			NWTPC Main Power Plant	Petroleum - waste oil (slops, sludge)		Litres	Overflow Event	GN - Government of Nunavut
II-1999114	11-Sep-99		Iqaluit	Airport (YFB)	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Overflow Event	GN - Government of Nunavut
ill-1999099	1-Aug-99		Iqaluit	House #3044 Apex Old Convenience Store	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GN - Government of Nunavut
ill-1999088	26-Jul-99	Baffin	Iqaluit	Pond - Beside Power Plant	Chemicals (including transformer oils)	2455	Litres	Pipe Leaks	GN - Government of Nunavut
ill-2000008	29-Jun-99		Iqaluit	Pooled Under Federal Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GN - Government of Nunavut
ill-1999074	19-Jun-99			Unit #2730A	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	GN - Government of Nunavut
ill-1999031	17-Mar-99		Iqaluit	Building #1123	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	200	Litres	Overflow Event	ECCC - Environment and Climate Change Canada
ill-1998185	3-Dec-98		•	Airport	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0		Collision or Crash	ECCC - Environment and Climate Change Canada
ill-1998086	29-May-98 24-Mar-98		lqaluit lgaluit	Nakasuk School Boardwalk MH6-MH7, Front of Northwestel Building	Wastewater (sewage, mine tailings)	0	Litres	Pipe Leaks Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
ill-1998039 ill-1998028	24-Mar-98 28-Feb-98			A.V. 223 - A.V. 224	Wastewater (sewage, mine tailings) Wastewater (sewage, mine tailings)		Litres	Other	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
III_TQUXIT7X		· CATTOOL	IIIIIIIIII	/ 1. v . LLV - /1. v . LLT	I T T GOLOWGIO TOO WALE. IIIII IC IQIIII IU D I	1000	LIUCO	O U I O I	Ton the Colown-inalgenous relations and Northern Analls Calidua

pill	Occurance Date	Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spill Cause	Lead Agency
oill-1997271	20-Dec-97		Iqaluit	MH 6 - MH 7, NorthwesTel Building	Wastewater (sewage, mine tailings)		Litres	Other	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
II-1997268	10-Dec-97		Iqaluit	Nakasuk Sewer Line - HS 650	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
-1997265	1-Dec-97		Iqaluit	Lift Station #1 along Municipal Beach to Ocean	Wastewater (sewage, mine tailings)		Litres	Other	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
-1997258	22-Nov-97		Iqaluit	Airport Apron	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Overflow Event	ECCC - Environment and Climate Change Canada
1997219	15-Sep-97		Iqaluit	Water Treatment Plant	Chemicals (including transformer oils)		Litres	Fitting Leak	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
-1997198	19-Aug-97		Iqaluit Igaluit	Atmospheric Environmental Services Bldg. Main Tank Farm	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres Litres	Deliberate Discharge	ECCC - Environment and Climate Change Canada
-1997193 -1997032	16-Aug-97 3-Jun-97		Igaluit	#1306 Malibu Grill Restaurant	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Wastewater (sewage, mine tailings)		Litres	Pipe Leaks Fitting Leak	GNWT - Department of Environment and Natural Resources GNWT - Department of Environment and Natural Resources
-1997032 -1997092	21-May-97		Igaluit	Behind Parnaivik Building	Petroleum - fuel oil (iet A. diesel, turbo A. heat)		Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
-1997092	5-May-97		Igaluit	Along Beach Between MH 63A and 63B	Wastewater (sewage, mine tailings)		Litres	Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
-1997070	4-May-97		Igaluit	Anglican Cathedral	Petroleum - fuel oil (iet A. diesel, turbo A. heat)		Litres	Fitting Leak	GNWT - Department of Environment and Natural Resources
-1997035	14-Mar-97		Igaluit	Airport Apron Area	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Other	ECCC - Environment and Climate Change Canada
1997031	11-Mar-97		Igaluit	Airport Apron #3	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	ECCC - Environment and Climate Change Canada
1997028	5-Mar-97		lgaluit	AV 300 to AV 203 - In Front of Firehall	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
1997029	2-Mar-97		lgaluit	Behind House 1000 - Sewage Lift Station #2	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
1996206	2-Oct-96		lgaluit	House #3007B	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources
1996165	27-Aug-96		lgaluit	Airport Between ATB & First Air Hanger	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Unknown Cause	ECCC - Environment and Climate Change Canada
1996194	14-Aug-96		lgaluit	Airport End of Runway	Petroleum - gasoline (aviation, turbo B, jet B)		Litres	Collision or Crash	ECCC - Environment and Climate Change Canada
1996153	13-Aug-96		lgaluit	Tank Farm Pumphouse	Petroleum - fuel oil (iet A. diesel, turbo A. heat)		Litres	Fitting Leak	GNWT - Department of Environment and Natural Resources
1996124	3-Jul-96		lgaluit	Airport Cabinet #1	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Overflow Event	ECCC - Environment and Climate Change Canada
996117	30-Jun-96		lgaluit	Behind Public Health Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Deliberate Discharge	GNWT - Department of Environment and Natural Resources
996097	11-Jun-96	Baffin	lgaluit	Airport Cabinet No. 1 Main Apron	Petroleum - fuel oil (iet A. diesel, turbo A. heat)	5	Litres	Overflow Event	ECCC - Environment and Climate Change Canada
996088	4-Jun-96		lgaluit	Airport Cabinet #1 Apron	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Unknown Cause	ECCC - Environment and Climate Change Canada
1996083	31-May-96	Baffin	lgaluit	Airport Fueling Cabinet	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Collision or Crash	ECCC - Environment and Climate Change Canada
1996048	31-Mar-96		lgaluit	Manhole #100 Top of One Way Road	Wastewater (sewage, mine tailings)	C		Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
1996043	22-Mar-96	Baffin	lgaluit	Airport Main Ramp	Petroleum - fuel oil (iet A. diesel, turbo A. heat)	15	Litres	Overflow Event	ECCC - Environment and Climate Change Canada
1996025	20-Feb-96		lgaluit	Boardwalk Behind Nakasuk School to Manhole #51	Wastewater (sewage, mine tailings)	2500	Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
1996015	1-Feb-96	Baffin	lgaluit	Airport Fuelling Cabinet #1	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Unknown Cause	ECCC - Environment and Climate Change Canada
1996006	23-Jan-96		lgaluit	Airport Apron Area #5 Fuelling Cabinet	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	40	Litres	Unknown Cause	ECCC - Environment and Climate Change Canada
996032	4-Jan-96		lgaluit	Nakasuk School West	Wastewater (sewage, mine tailings)	C	Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
995201	23-Dec-95		lgaluit	Airport Cabinet #1	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	30	Litres	Overflow Event	ECCC - Environment and Climate Change Canada
995186	19-Nov-95		lgaluit	Airport	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	10	Litres	Overflow Event	ECCC - Environment and Climate Change Canada
1995183	15-Nov-95		lgaluit	Airport Apron	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	10	Litres	Fitting Leak	ECCC - Environment and Climate Change Canada
1995179	7-Nov-95		lgaluit	Airport Shell Cabinet No. 1	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	30	Litres	Unknown Cause	ECCC - Environment and Climate Change Canada
1995175	31-Oct-95		lgaluit	Airport Cabinet #1	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	8	Litres	Other	ECCC - Environment and Climate Change Canada
1995173	25-Oct-95		lgaluit	Airport	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	68	Litres	Fitting Leak	ECCC - Environment and Climate Change Canada
1995132	18-Aug-95		lgaluit	Upper Base Site	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Other	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
-1995112	16-Jul-95		lgaluit	Apex	Petroleum - lubricating oil (lube, hydraulic)		Litres	Other	GNWT - Department of Environment and Natural Resources
1995093	23-Jun-95		lgaluit	Federal Building	Chemicals (including transformer oils)		Litres	Other	ECCC - Environment and Climate Change Canada
1995092	20-Jun-95		lgaluit	Apex House #3142	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	227	Litres	Tank Leak	GNWT - Department of Environment and Natural Resources
1995086	14-Jun-95		lgaluit	Apex Building 3042	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources
1995084	12-Jun-95	Baffin	lgaluit	Shell Compound	Petroleum - unknown		Litres	Fitting Leak	GNWT - Department of Environment and Natural Resources
1995050	24-Apr-95		lgaluit	Television Northern Canada Building 1085B	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	45	Litres	Fitting Leak	GNWT - Department of Environment and Natural Resources
1995029	22-Mar-95		lgaluit	Between House #105 & 107	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources
1995018	10-Feb-95		lgaluit	Behind Northern Store	Petroleum - other (bunker, asphalt, propane)		Litres	Collision or Crash	GNWT - Department of Environment and Natural Resources
1995009	24-Jan-95		lgaluit	Water Booster Station	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
1995003	16-Jan-95		lgaluit	Airport Building 2017 West 40	Petroleum - fuel oil (iet A. diesel, turbo A. heat)		Litres	Tank Leak	ECCC - Environment and Climate Change Canada
1996031	12-Jan-95	Baffin	Igaluit	Nakasuk School West	Wastewater (sewage, mine tailings)	0	Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
1994217	5-Dec-94		Igaluit	NWTPC	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
1994194	20-Oct-94		Igaluit	West 40 DPW&S Warehouse	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources
1994173	16-Sep-94		Igaluit	Near Byers Gas Bar	Petroleum - gasoline (aviation, turbo B, jet B)		Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
1994151	12-Aug-94		Igaluit	West 40 Site	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GNWT - Department of Environment and Natural Resources
1994150	9-Aug-94		Igaluit	Sea Lift Beach	Petroleum - gasoline (aviation, turbo B, jet B)		Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources
1994145	8-Aug-94		Igaluit	West 40 Storage Area	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	GNWT - Department of Environment and Natural Resources
1994127	21-Jul-94		Igaluit	Near Town Office Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources
1994115	27-Jun-94		Igaluit	IQ 71-4 Joamie School	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	GNWT - Department of Environment and Natural Resources
1994085	27-May-94	+	Igaluit	Near Building #1123	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Other	GNWT - Department of Environment and Natural Resources
1994044	16-Mar-94		Igaluit	Lift Station #2	Wastewater (sewage, mine tailings)		Litres	Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
1994032	25-Feb-94		Igaluit	Lift Station #2	Wastewater (sewage, mine tailings)		Litres	Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
1994028	6-Feb-94		Igaluit	Lift Station #2	Wastewater (sewage, mine tailings)	300000		Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
1994030	21-Jan-94		Iqaluit	Lift Station #2	Wastewater (sewage, mine tailings)	200000		Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
1993191	28-Dec-93		Iqaluit	House #70	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	GNWT - Department of Environment and Natural Resources
993161	27-Aug-93		Iqaluit	Airport East Side of First Air Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Collision or Crash	ECCC - Environment and Climate Change Canada
1993115	20-Jul-93		Igaluit	House #1600A	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Other	GNWT - Department of Environment and Natural Resources
1993080	9-Jun-93		Igaluit	Near Inukshuk High School	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	GNWT - Department of Environment and Natural Resources
-1993067	20-May-93		Igaluit	NWTPC Main Power Plant	Petroleum - waste oil (slops, sludge)		Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
1993019	26-Feb-93		Igaluit	Nakasuk Elementary School	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	GNWT - Department of Environment and Natural Resources
1993007	18-Jan-93		Igaluit	Behind Building158 on Lots 222 & 223	Wastewater (sewage, mine tailings)		Litres	Unknown Cause	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
1992213	24-Sep-92		Igaluit	Building #619	Wastewater (sewage, mine tailings)		Litres	Tank Leak	GNWT - Department of Environment and Natural Resources
1992177	10-Aug-92		Igaluit	g // V / V	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	2 Dopositions of Entire Information Hadard Hospitalous
1992179	10-Aug-92	+	Igaluit	In Front of Inuit Head in the Bay	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	
1992179	9-Jun-92		Igaluit	House #1682	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GNWT - Department of Environment and Natural Resources
.002111		Baffin	Igaluit	House #1002 House #126	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GNWT - Department of Environment and Natural Resources GNWT - Department of Environment and Natural Resources

oill	Occurance Date	Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spill Cause	Lead Agency
ill-1991221	10-Dec-91		Iqaluit, Community, Nunavut	Sewage Lagoon	Wastewater (sewage, mine tailings)	0	Litres	Unknown Cause	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
ill-1991220	8-Dec-91		Iqaluit	NWTPC Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GNWT - Department of Environment and Natural Resources
ill-1991197	9-Oct-91		Iqaluit	Behind NWTPC Plant	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
ill-1991158	19-Aug-91	1	Iqaluit Igaluit	Off-loading Beach Above Highwater	Petroleum - other (bunker, asphalt, propane)		Litres	Tank Leak	ECCC - Environment and Climate Change Canada
II-1991082 II-1991034		Baffin Baffin	Igaluit Igaluit	Sewage Lagoon Sewage Treatment Plant	Wastewater (sewage, mine tailings) Wastewater (sewage, mine tailings)	•	Litres Litres	Dyke Failure Fitting Leak	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
l-1991027	17-Mar-91	Baffin	Igaluit	Sewage Pump	Wastewater (sewage, mine tailings)	•	Litres	Fitting Leak	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
I-1991026		Baffin	Igaluit	Collapsed Sewer Line (SSW)	Wastewater (sewage, mine tailings)	•	Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
-1991025	8-Mar-91	Baffin	Iqaluit	Sewer Line and Manhole 81 (SSW)	Wastewater (sewage, mine tailings)	0	Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
-1991024	28-Feb-91	Baffin	Iqaluit	Frozen Sewer Main and Manholes 81 & 82	Wastewater (sewage, mine tailings)	6810	Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
-1991012	2-Feb-91		Iqaluit	Northeast Shore	Wastewater (sewage, mine tailings)		Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
1990215	17-Dec-90		Iqaluit	Airport, Creek Beside Airport	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
1990154 1990148	27-Aug-90 18-Aug-90		Iqaluit Igaluit	East Side of Frobisher Bay	Wastewater (sewage, mine tailings)		Litres Litres	Fitting Leak	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
-1990148	2-Aug-90		Igaluit	Building #1080 East Side of Frobisher Bay	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Wastewater (sewage, mine tailings)		Litres	Fitting Leak Pipe Leaks	GNWT - Department of Environment and Natural Resources CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
-1990143	5-Jan-90		Igaluit	House #661. Lot 47	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources
-1990001	3-Jan-90		Igaluit	Happy Valley #496	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GNWT - Department of Environment and Natural Resources
1989158	2-Oct-89		Igaluit	House #133A	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources
1989098	5-Jul-89	Baffin	Iqaluit	Airport in Creek Behind RCMP Hanger	Wastewater (sewage, mine tailings)	30000	Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
1989062	13-May-89	Baffin	Iqaluit	Metal Dump	Petroleum - waste oil (slops, sludge)	477	Litres	Deliberate Discharge	GNWT - Department of Environment and Natural Resources
1989040	7-Apr-89		Iqaluit	Shell Canada Facility	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources
1989017	8-Feb-89		Iqaluit	Federal Building to Airport Terminal	Wastewater (sewage, mine tailings)	113500		Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
1988169	6-Dec-88		Iqaluit	Lots 498 & 499	Wastewater (sewage, mine tailings)	•	Litres	Deliberate Discharge	GNWT - Department of Environment and Natural Resources
1988163	2-Nov-88		Iqaluit	House #1031	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Collision or Crash	GNWT - Department of Environment and Natural Resources
1988159 1988156	13-Oct-88 5-Oct-88		Iqaluit Igaluit	Tidal Flats Perking Let In Front of Town Office	Chemicals (including transformer oils) Petroleum - gasoline (aviation, turbo B, iet B)		Litres Litres	Unknown Cause	GNWT - Department of Environment and Natural Resources
-1988133	5-Oct-88 24-Aug-88		Igaluit	Parking Lot In Front of Town Office North Forty Dump	Petroleum - gasoline (aviation, turbo B, jet B) Petroleum - other (bunker, asphalt, propane)		Litres	Collision or Crash Other	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
1988068	7-Jun-88		Igaluit	Near Garage	Petroleum - lubricating oil (lube, hydraulic)		Litres	Deliberate Discharge	GNWT - Department of Environment and Natural Resources
1988066	6-Jun-88		Igaluit	Government Warehouse	Petroleum - fuel oil (iet A. diesel, turbo A. heat)	0	Linoo	Tank Leak	GNWT - Department of Environment and Natural Resources
1988172	3-May-88		Igaluit	21 Plex	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	2273	Litres	Unknown Cause	GNWT - Department of Environment and Natural Resources
1987119	16-Nov-87	Baffin	Iqaluit	Town Hall	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	3200	Litres	Tank Leak	GNWT - Department of Environment and Natural Resources
1987107	6-Oct-87	Baffin	Iqaluit	Happy Valley Area	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	350	Litres	Fitting Leak	GNWT - Department of Environment and Natural Resources
1987077	5-Jul-87		Iqaluit	Adjacent to House #691F	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0		Tank Leak	GNWT - Department of Environment and Natural Resources
1987061	23-Jun-87		Iqaluit	Upstream From Access Vault #211	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
1986116	3-Dec-86		Iqaluit	Lot #73	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	GNWT - Department of Environment and Natural Resources
1986110	18-Nov-86		Iqaluit	Sewer Main	Wastewater (sewage, mine tailings)		Litres	Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
1986041 1986031	19-May-86 14-Apr-86		Iqaluit Igaluit	House #435 Happy Valley	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres Litres	Fitting Leak Tank Leak	GNWT - Department of Environment and Natural Resources GNWT - Department of Environment and Natural Resources
1985074	29-Jul-85		Igaluit	Southside of House #728	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
1984072	6-Jul-84		Igaluit	House #588	Petroleum - waste oil (slops, sludge)		Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
1982100	20-Dec-82		Igaluit	Happy Valley Area	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
1982088	13-Oct-82	Baffin	Iqaluit	Upper Base Pole Vault Building T289	Chemicals (including transformer oils)	13.6	Litres	Fitting Leak	GNWT - Department of Environment and Natural Resources
1981001	24-Dec-80	Baffin	Iqaluit	Staff House	Wastewater (sewage, mine tailings)	13638	Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources
1981002	12-Dec-80	Baffin	Iqaluit	Pumphouse Area	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	20000	Litres	Fitting Leak	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
1977002	15-Jan-77		Iqaluit	Main Plant	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
1976010	26-Mar-76		Iqaluit	NCPC/IOL Pipeline	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	
1976009	24-Mar-76	Banni	Iqaluit	NODO Plant	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	
1975008 1974043	9-Jun-75 30-Oct-74		Iqaluit Igaluit	NCPC Plant Power Plant	Petroleum - waste oil (slops, sludge) Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres Litres	Other Overflow Event	
1974043	27-Jun-74		Igaluit	Upper Base	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Fitting Leak	
1972008	22-Aug-72		Igaluit	In Ditch	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Unknown Cause	
1990086	, .uy-12	Baffin	Igaluit	House #1085	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Unknown Cause	GNWT - Department of Environment and Natural Resources
2010293		Baffin	Iqaluit	House 3210 - Iqaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	•	Litres	Unknown Cause	GN - Government of Nunavut
1984053		Baffin	Iqaluit	Downhill From House 132 A & B	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	9010	Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources
2009181		Baffin	Iqaluit	1600B	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
2006412		Baffin	Iqaluit	Building 1043	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
1990087		Baffin	Iqaluit	North 40 Metal Dump	Petroleum - waste oil (slops, sludge)		Litres	Tank Leak	GNWT - Department of Environment and Natural Resources
2007253	ļ	Baffin		House #1082	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
1984057 2004339	 	Baffin Baffin	Iqaluit Igaluit	Kamotiq Inn Fuel Tank Duplex 4001	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres Litres	Other Pipe Leaks	GNWT - Department of Environment and Natural Resources GN - Government of Nunavut
995049		Baffin Baffin	Igaluit Igaluit	Building 900 East Side	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Mixed load		Litres	Unknown Cause	GNWT - Department of Nunavut GNWT - Department of Environment and Natural Resources
2013352	 	Baffin	Igaluit	Igaluit	Unknown		Litres	Unknown Cause	OTTT Department of Environment and Matural Nesources
2005104		Baffin	Igaluit	House 316	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
1990091		Baffin	Iqaluit	Apex Road Pump Station	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources
1996027		Baffin	Iqaluit	West Side of Nakasuk School Yard	Wastewater (sewage, mine tailings)	0		Unknown Cause	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
2014327		Baffin	Iqaluit	Building 2050	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Tank Leak	ECCC - Environment and Climate Change Canada
1996217		Baffin	Iqaluit	Airport Main Ramp (Taxiway "Charlie")	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Overflow Event	ECCC - Environment and Climate Change Canada
2017186		Baffin	Iqaluit	Qikiqtani General Hospital - Cold Warehouse	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Other	GN - Government of Nunavut
2018007		Baffin	Iqaluit	2238 Iqaluit	Petroleum - gasoline (aviation, turbo B, jet B)		Litres	Unknown Cause	GN - Government of Nunavut
1990095	-	Baffin	Iqaluit	Airport, First Air Cargo Building	Petroleum - unknown		Litres	Unknown Cause	ECCC - Environment and Climate Change Canada
2010122 2012227	1	Baffin Baffin	Iqaluit Igaluit	Building 176 House 4148	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres Litres	Unknown Cause Tank Leak	GN - Government of Nunavut GN - Government of Nunavut
LU 12221	ļ	Baffin	Igaluit	House #3044 in Apex near Igaluit	Petroleum - fuel oil (jet A, diesel, turbo A, heat) Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Pipe Leaks	GN - Government of Nunavut

oill	Occurance Date	Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spill Cause	Lead Agency
ill-1984102		Baffin	Iqaluit	DOT Tank	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	C	Litres	Unknown Cause	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
II-1988146		Baffin	Iqaluit	Near MOT Radio Beacon	Chemicals (including transformer oils)		Litres	Other	GNWT - Department of Environment and Natural Resources
-1992107		Baffin	Iqaluit	North 40 Storage Area	Petroleum - waste oil (slops, sludge)	450	Litres	Deliberate Discharge	GNWT - Department of Environment and Natural Resources
2011383		Baffin	Iqaluit	J & G Automotive Garage, Iqaluit Building 1104	Petroleum - waste oil (slops, sludge)	100	Litres	Tank Leak	GN - Government of Nunavut
2002348		Baffin	Iqaluit	Apex Road Turn Off to One Way Road MH100	Wastewater (sewage, mine tailings)	C	Litres	Pipe Leaks	GN - Government of Nunavut
1996034		Baffin	Iqaluit	Roch Lessard Garage West 40	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	C	Litres	Tank Leak	GNWT - Department of Environment and Natural Resources
-2016238		Baffin	Iqaluit	QEC Federal Road Power Plant	Chemicals (including transformer oils)	275	Litres	Other	GN - Government of Nunavut
2017244		Baffin	Iqaluit	Housing 2668 Driveway, Iqaluit, Nunavut	Petroleum - waste oil (slops, sludge)	108	Litres	Fitting Leak	GN - Government of Nunavut
1985096		Baffin	Iqaluit	Near NCPC Warehouse	Chemicals (including transformer oils)	50	Litres	Unknown Cause	ECCC - Environment and Climate Change Canada
-2006189		Baffin	Iqaluit	Federal Road Adjacent Building #1318	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	300	Litres	Pipe Leaks	GN - Government of Nunavut
2013227		Baffin	Igaluit	Building 1552	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	100	Litres	Tank Leak	GN - Government of Nunavut
2004394		Baffin	Igaluit	House 447	Wastewater (sewage, mine tailings)	C	Litres	Pipe Leaks	GN - Government of Nunavut
2009213		Baffin	Igaluit	House 736 Lower Base	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	1137	Litres	Tank Leak	GN - Government of Nunavut
2014444		Baffin	Igaluit	Directly Across Federal Rd 1553	Petroleum - fuel oil (iet A. diesel, turbo A. heat)		Litres	Tank Leak	GN - Government of Nunavut
1992124		Baffin	Igaluit	#516 Hospital	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
-2010151		Baffin	Igaluit	Building 1057	Totaloum luoi on your, aloool, tarbort, noaty			Unknown Cause	GN - Government of Nunavut
-2015207		Baffin	Igaluit	Igaluit 2556 or 2554 or 2558	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	180 27	Litres	Other	GN - Government of Nunavut
1974035	 	Baffin	Igaluit	NCPC Generator Station	Petroleum - waste oil (slops, sludge)		Litres	Deliberate Discharge	Or Covernment of Humavut
2005332		Baffin	Igaluit	North 40 J&G Garage	Petroleum - lubricating oil (lube, hydraulic)		Litres	Pipe Leaks	GN - Government of Nunavut
2003332		Baffin	Igaluit	Sealift Beach	Petroleum - other (bunker, asphalt, propane)		Litres	Unknown Cause	GN - Government of Nunavut
1998096		Baffin	Igaluit	House 802	Petroleum - fuel oil (iet A. diesel, turbo A. heat)		Lines	Tank Leak	GNWT - Department of Nuriavat
2006207		Baffin	Igaluit	Carney Creek Embankment Federal Road		455	Litres	Unknown Cause	GN - Government of Environment and Natural Resources
		Baffin	Igaluit		Petroleum - waste oil (slops, sludge)		Litres		
1996073				Airport Corner of Apron & Taxiway Delta	Petroleum - unknown			Unknown Cause	ECCC - Environment and Climate Change Canada
2015223		Baffin	Iqaluit	2558 Paurgnaq Street	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
-2005380		Baffin	Iqaluit	Grounds of Young Offender Facility	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
-1986089		Baffin	Iqaluit	Shell Station	Petroleum - waste oil (slops, sludge)	C	Litres	Deliberate Discharge	GNWT - Department of Environment and Natural Resources
-2013247		Baffin	Iqaluit	House 1012	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	C		Tank Leak	GN - Government of Nunavut
-2009257		Baffin	Iqaluit	2684 Dukaluk Street	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
2016169		Baffin	Iqaluit	Between Unit 2217 and 2219	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Unknown Cause	GN - Government of Nunavut
-2007439		Baffin	Iqaluit	House 3266 Apex	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Tank Leak	GN - Government of Nunavut
2005381		Baffin	Iqaluit	House 744 Lower Base	Unknown	C	Litres	Deliberate Discharge	GN - Government of Nunavut
-1986090		Baffin	Iqaluit	North 40 Dump	Petroleum - waste oil (slops, sludge)	C	Litres	Deliberate Discharge	GNWT - Department of Environment and Natural Resources
2013266		Baffin	Iqaluit	Iqaluit	Petroleum - lubricating oil (lube, hydraulic)	0.03	Litres	Unknown Cause	
2007048		Baffin	Iqaluit	Apex House 3051	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	C	Litres	Collision or Crash	GN - Government of Nunavut
2000193		Baffin	Iqaluit	Iqaluit Beach	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	10	Litres	Other	
2016179		Baffin	Iqaluit	Building 1034	Mixed load	C	Litres	Unknown Cause	GN - Government of Nunavut
2008399		Baffin	Iqaluit	Koojesse Inlet on Causeway	Petroleum - unknown	C	Litres	Unknown Cause	
2005382		Baffin	Igaluit	Along Takijug Street	Petroleum - unknown	C	Litres	Unknown Cause	GN - Government of Nunavut
2006221		Baffin	Igaluit	House 4026 into Snowmelt Creek	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	C	Litres	Pipe Leaks	GN - Government of Nunavut
2013303		Baffin	Igaluit	1557b Baffin Electronics	Unknown	C	Litres	Tank Leak	GN - Government of Nunavut
2009269		Baffin	Igaluit	Museum Building 212	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Unknown Cause	GN - Government of Nunavut
2010031		Baffin	Igaluit	House 3038 Apex	Wastewater (sewage, mine tailings)	0	Litres	Tank Leak	GN - Government of Nunavut
1997182		Baffin	Igaluit	Airport - Old US Air Force Tank Farm	Petroleum - unknown	0) I	Other	ECCC - Environment and Climate Change Canada
2010230		Baffin	Igaluit	2551 Igaluit Residence	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Tank Leak	GN - Government of Nunavut
2002490		Baffin	Igaluit	8 Plex	Chemicals (including transformer oils)		Litres	Collision or Crash	GN - Government of Nunavut
2015282	1	Baffin	Igaluit	Unit 2225	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		Litres	Unknown Cause	GN - Government of Nunavut
2015302		Baffin	Igaluit	End of Federal Road	Petroleum - lubricating oil (lube, hydraulic)		Litres	Unknown Cause	GN - Government of Nunavut
2013302	 	Baffin	Igaluit	933 Mivvik Street	Wastewater (sewage, mine tailings)		Litres	Unknown Cause	GN - Government of Nunavut
2005070	1	Baffin	Igaluit	AV403 Located Beside Northmart	Wastewater (sewage, mine tailings)		Litres	Pipe Leaks	GN - Government of Nunavut
2005070		Baffin	Igaluit		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		Litres	Tank Leak	
		Baffin Baffin	Igaluit Igaluit	Bldg. 1012 DFO Arctic Biological Station House #1415, Iqaluit NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat)				ECCC - Environment and Climate Change Canada
2011250			nosulit	THOUSE # 1415 IDAILIT NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	200	Litres	Pipe Leaks	GN - Government of Nunavut



Project Property: 1101000074 Phase I ESA

1101000074 Phase I ESA

Iqaluit NU X0A

Project No: 1101000074

Requested By: Stantec Consulting Ltd.

Order No: 22102800040

Date Completed: October 28, 2022

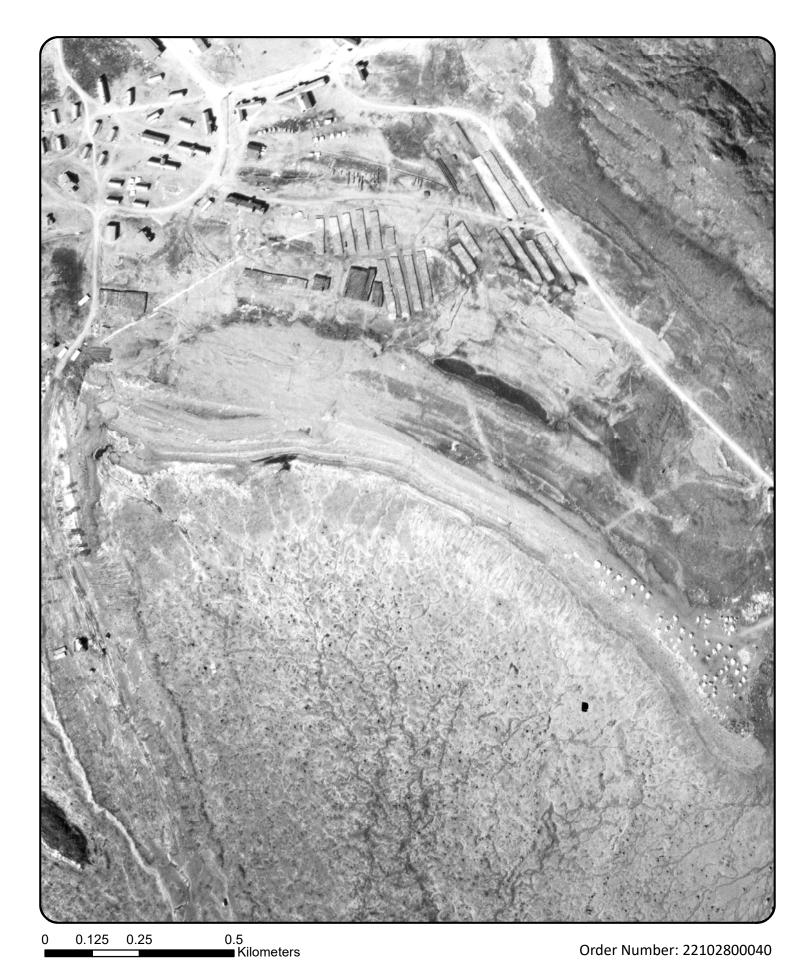
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1980	1982	20000	NAPL
1990	1993	20000	NAPL

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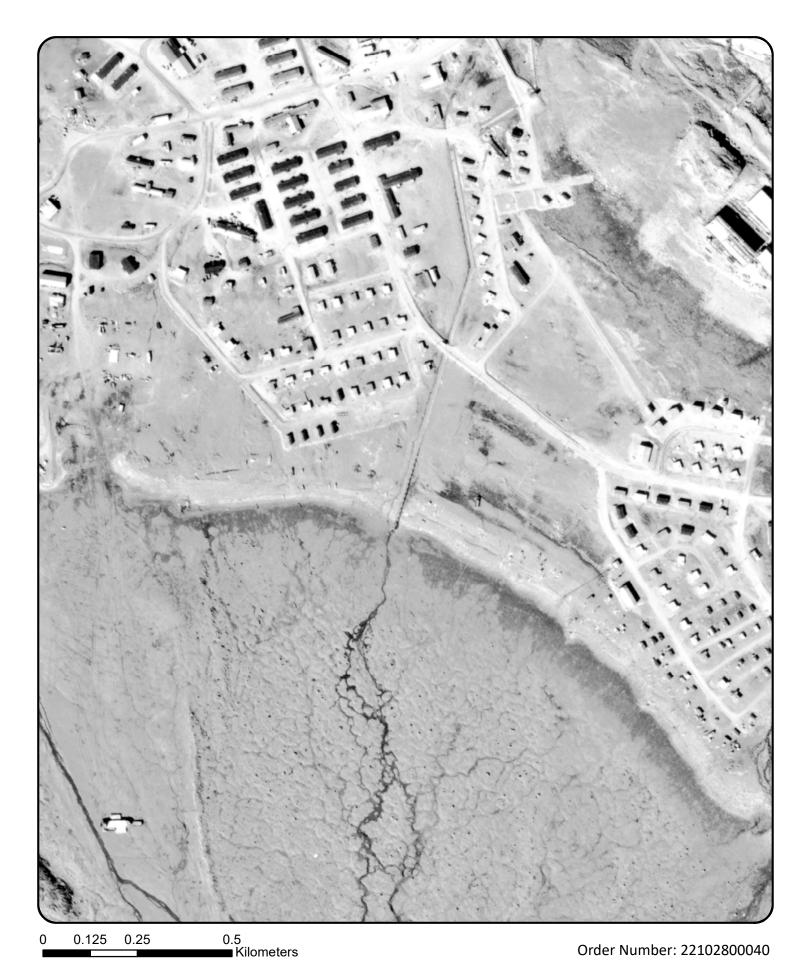
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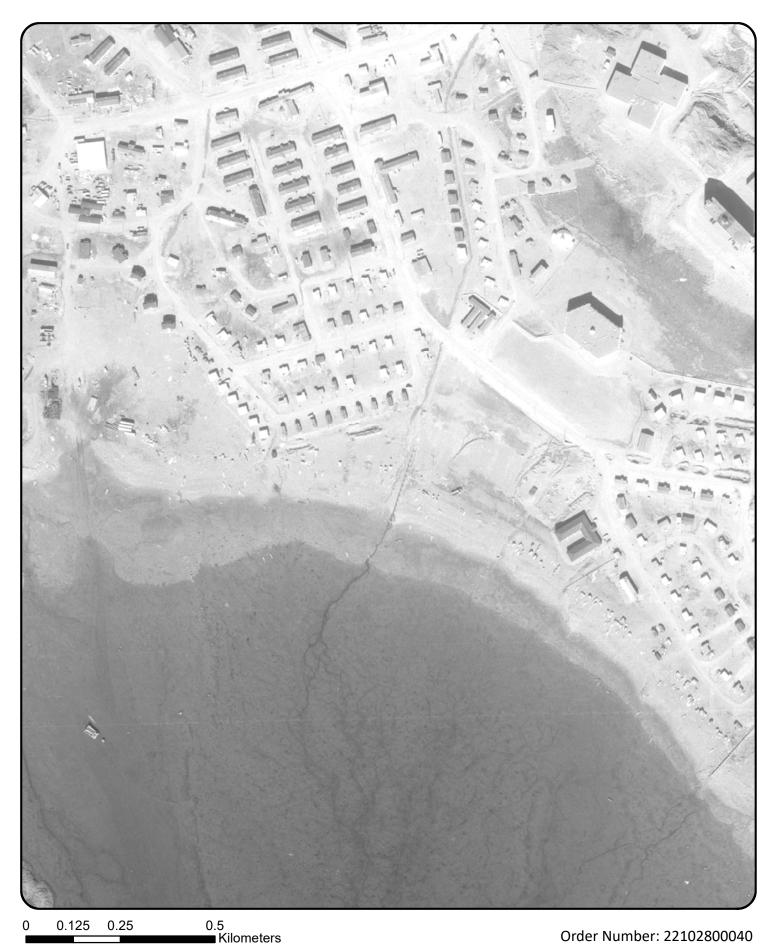
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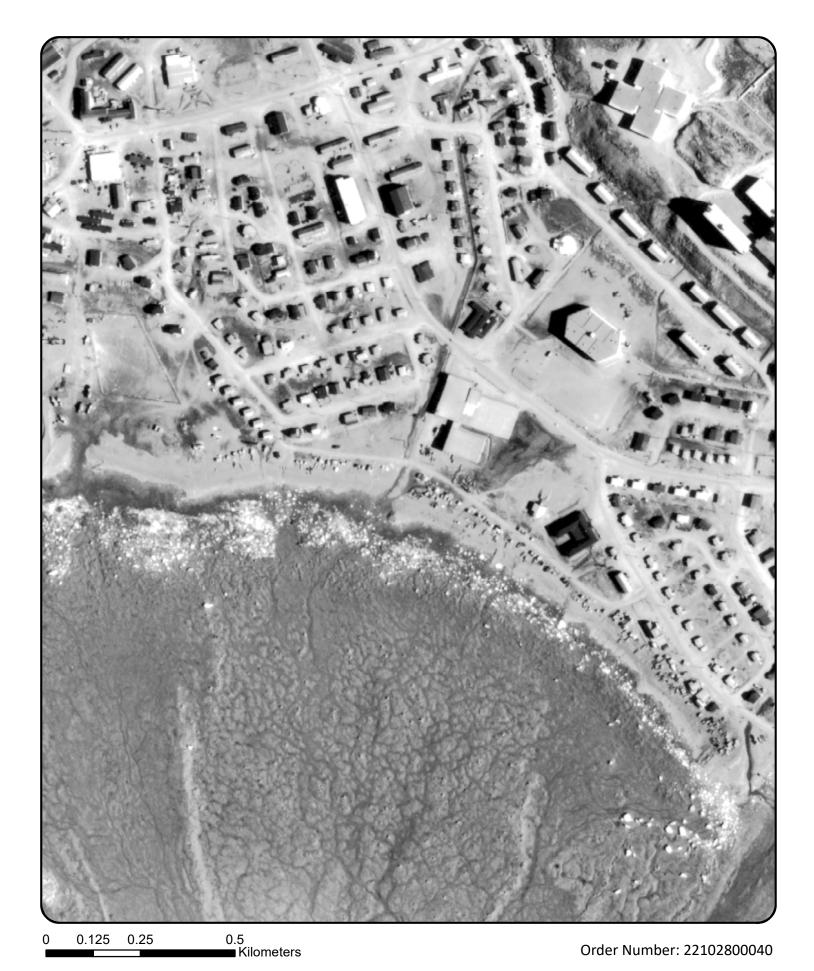
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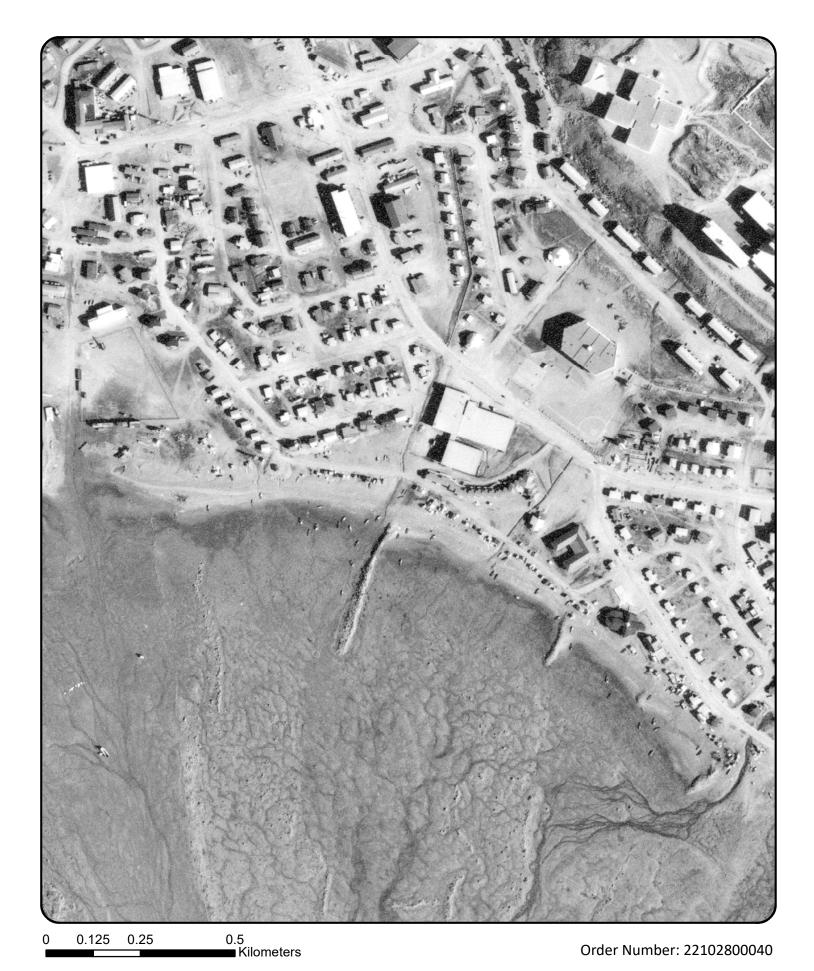




Year: 1989; 1982 Source: NAPL

Map Scale: 1: 10000





Year: 1993 Source: NAPL Map Scale: 1: 10000



APPENDIX E

Summary of Test Pit Information

TABLE E-1 Summary of Test Pit Information Iqaluit Sewer Protection Upgrades City of Iqaluit Stantec Project No. 1101000074

TP ID	Soil Description	Final Depth (mbgs)	Approx. Depth Active Zone (mbgs)	Approx. Depth Permafrost (mbgs)	Observations (Impacts, Debris)/ MW Installed	Sample ID	Sample Depth (mbgs)
TP-01-M	Brown well-graded sand with gravel, some cobbles, moist at 1.2 m, wood and foam debris	1.83	1.52	1.83	Soil Vapour 56.7 ppm Prepack TP-01-M installed with screen 0.83 m -1.82 m.	TP-01 (1.22-1.83)	1.22-1.83
TP-02-M	Grey well-graded sand with gravel	2.13	1.22	2.13	Soil Vapour 35.2 ppm Prepack TP-02-M installed with screen 0.74 m -1.73 m.	TP-02 (1.83-2.13)	1.83-2.13
TP-03	Grey well-graded sand with gravel	2.29	1.42	2.29	Soil Vapour 23.4 ppm	TP-03 (1.22-1.98)	1.22-1.98
TP-04-M	Brown with black seams, well-graded sand with gravel	2.29	1.52	2.29	Soil Vapour 0 ppm Prepack TP-04-M installed with screen 0.74 m -1.73 m.	TP-04 (1.22-1.83)	1.22-1.83



APPENDIX F

Summary Analytical Tables & Laboratory Certificate of Analysis

Table F-1
Summary of Soil Analytical Results - BTEX and PHC
Phase I/II Environmental Site Assessment
Sewer Protection Project, Iqaluit, NU
City of Iqaluit

Sample Location			TP-	-01	TP-02	1	P-03	TP-04
Sample Date			28-Se	ep-22	28-Sep-22	28-	Sep-22	28-Sep-22
Sample ID			TP-01 (1.22- 1.83)	TP-01 (1.22- 1.83) Lab-Dup	TP-02 (1.83- 2.13)	TP-03 (1.22- 1.98)	TP-03 (1.22- 1.98) Lab-Dup	TP-04 (1.22- 1.83)
Sample Depth			1.22-	1.83	1.83-2.13	1.2	22-1.98	1.22-1.83
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory			BV	BV	BV	BV	BV	BV
Laboratory Sample ID			TXJ	526	TXJ529	T	XJ530	TXJ532
Sample Type	Units	GN		Lab-Dup			Lab-Dup	
BTEX and Petroleum Hydrocarbons	3							
Benzene	mg/kg	0.03	< 0.0060	<0.0060	< 0.0060	<0.0060	<0.0060	< 0.0060
Toluene	mg/kg	0.37	< 0.020	<0.020	< 0.020	< 0.020	< 0.020	< 0.020
Ethylbenzene	mg/kg	0.082	0.046	0.050	< 0.010	< 0.010	< 0.010	< 0.010
Xylene, m & p-	mg/kg	n/v	0.076	0.080	< 0.020	< 0.020	< 0.020	< 0.020
Xylene, o-	mg/kg	n/v	0.044	0.045	< 0.020	< 0.020	< 0.020	< 0.020
Xylenes, Total	mg/kg	11	0.12	0.13	< 0.020	< 0.020	< 0.020	< 0.020
PHC F1 (C6-C10 range)	mg/kg	n/v	100	93	<10	<10	<10	<10
PHC F1 (C6-C10 range) minus BTEX	mg/kg	240	100	93	<10	<10	<10	<10
PHC F2 (>C10-C16 range)	mg/kg	260	1,600	-	960	400	-	<10
PHC F3 (>C16-C34 range)	mg/kg	1,700	450	-	490	240	-	<50
PHC F4 (>C34-C50 range)	mg/kg	3,300	<50	-	<50	<50	-	<50
Chromatogram to baseline at C50	none	n/v	Yes	-	Yes	Yes	-	Yes

N	o	t	0	c	
1.4	v	u	c	J	

<u> </u>	
GN	Government of Nunavut's Environmental Guideline for the Management of Contaminated Sites (April 1999, revised December 2014)
	BTEX guidelines taken from Table A3.1, Appendix 3; Commercial Land Use, Coarse-Grained Soil (for benzene, 10 -5 incremental risk)
	PHC F1 to F4 guidelines taken from Table 2. Commercial Land Use, Coarse-Grained Soil for protection against contaminated groundwater
	discharge to an adjacent surface water body
6.5	Concentration exceeds the standard/guideline.
15.2	Measured concentration did not exceed the indicated standard.
< 0.03	Analyte was not detected at a concentration greater than the laboratory reporting limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
Lab-Dup	Laboratory Initiated Duplicate
	6.5 15.2 <0.03 n/v



Table F-2
Summary of Soil Analytical Results - Metals
Phase I/II Environmental Site Assessment
Sewer Protection Project, Iqaluit, NU
City of Iqaluit

Sample Location Sample Date Sample ID Sample Depth Sampling Company Laboratory Laboratory Sample ID Sample Type	Units	ССМЕ	TP-01 28-Sep-22 TP-01 (1.22- 1.83) 1.22-1.83 STANTEC BV TXJ526	TP-02 28-Sep-22 TP-02 (1.83- 2.13) 1.83-2.13 STANTEC BV TXJ529	TP-03 28-Sep-22 TP-03 (1.22- 1.98) 1.22-1.98 STANTEC BV TXJ530	TP-04 28-Sep-22 TP-04 (1.22- 1.83) 1.22-1.83 STANTEC BV TXJ532
Metals	1		•	•	•	
Antimony	mg/kg	40	<0.20	<0.20	<0.20	<0.20
Arsenic	mg/kg	12	<1.0	1.0	<1.0	29
Barium	mg/kg	2,000	16	7.6	8.0	20
Beryllium	mg/kg	8	<0.20	<0.20	<0.20	<0.20
Boron	mg/kg	n/v	<5.0	<5.0	<5.0	<5.0
Cadmium	mg/kg	22	< 0.10	<0.10	< 0.10	< 0.10
Chromium	mg/kg	87	33	29	46	48
Cobalt	mg/kg	300	4.0	3.2	4.7	6.1
Copper	mg/kg	91	6.1	3.6	3.8	5.4
Lead	mg/kg	260	14	2.1	2.5	5.0
Mercury	mg/kg	24	< 0.050	< 0.050	< 0.050	< 0.050
Molybdenum	mg/kg	40	1.0	1.0	2.0	2.2
Nickel	mg/kg	89	6.4	5.1	7.5	9.0
Selenium	mg/kg	2.9	< 0.50	< 0.50	< 0.50	< 0.50
Silver	mg/kg	40	< 0.20	<0.20	< 0.20	< 0.20
Thallium	mg/kg	1	< 0.050	< 0.050	< 0.050	< 0.050
Tin	mg/kg	300	1.4	<1.0	1.1	1.1
Uranium	mg/kg	33	0.44	0.36	0.50	0.63
Vanadium	mg/kg	130	70	70	110	120
Zinc	mg/kg	410	30	18	20	45

CCME Canadian Council of Ministers of the Environment

Canadian Environmental Quality Guidelines, Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health, on-line summary table,

for industrial land use and coarse grained soil

6.5 Concentration exceeds the indicated standard.

15.2 Measured concentration did not exceed the indicated standard.

< 0.03 Analyte was not detected at a concentration greater than the laboratory reporting limit.

n/v No standard/guideline value.



Table F-3 **Summary of Soil Analytical Results - VOCs Phase I/II Environmental Site Assessment** Sewer Protection Project, Iqaluit, NU City of Iqaluit

Sample Location			TP	-01	TP-02	TF	P-03	TP-04
Sample Date			28-S	ep-22	28-Sep-22	28-S	ep-22	28-Sep-22
			TP-01	TP-01	TP-02	TP-03	TP-03 (1.22-	TP-04
Sample ID			(1.22-1.83)	(1.22-1.83) Lab-Dup	(1.83-2.13)	(1.22-1.98)	1.98) Lab- Dup	(1.22-1.83)
Sample Depth			1.22	сар-Бар -1.83	1.83-2.13	1.22	2-1.98	1.22-1.83
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory			BV	BV	BV	BV	BV	BV
Laboratory Sample ID			TXJ	526	TXJ529	TX	J530	TXJ532
Sample Type	Units	CCME		Lab-Dup			Lab-Dup	
Volatile Organic Compounds								
Acetone (2-Propanone)		n/v	< 0.49	< 0.49	< 0.49	< 0.49	<0.49	< 0.49
Bromodichloromethane	mg/kg	n/v	<0.49	<0.49	<0.49	<0.49	<0.049	< 0.040
Bromoform (Tribromomethane)	mg/kg	n/v	<0.040	<0.040	< 0.040	< 0.040	<0.040	< 0.040
Bromomethane (Methyl bromide)	mg/kg	n/v	< 0.040	<0.040	< 0.040	< 0.040	<0.040	< 0.040
Carbon Tetrachloride (Tetrachloromethane)	mg/kg	50	< 0.040	<0.040	< 0.040	< 0.040	<0.040	< 0.040
Chlorobenzene (Monochlorobenzene)	mg/kg	10	< 0.040	<0.040	< 0.040	< 0.040	<0.040	< 0.040
Chloroform (Trichloromethane)	mg/kg	50	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040
Dibromochloromethane	mg/kg	n/v	< 0.040	< 0.040	< 0.040	< 0.040	<0.040	< 0.040
Dichlorobenzene, 1,2-	mg/kg	10	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040
Dichlorobenzene, 1,3-	mg/kg	10	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040
Dichlorobenzene, 1,4-	mg/kg	10	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040
Dichlorodifluoromethane (FREON 12)	mg/kg	n/v	< 0.040	<0.040	< 0.040	< 0.040	< 0.040	< 0.040
Dichloroethane, 1,1-	mg/kg	50	< 0.040	<0.040	< 0.040	< 0.040	< 0.040	< 0.040
Dichloroethane, 1,2-	mg/kg	50	< 0.049	<0.049	< 0.049	< 0.049	< 0.049	< 0.049
Dichloroethylene, 1,1-	mg/kg	50	< 0.040	<0.040	< 0.040	< 0.040	< 0.040	< 0.040
Dichloroethylene, cis-1,2-	mg/kg	50	< 0.040	<0.040	< 0.040	< 0.040	<0.040	< 0.040
Dichloroethylene, trans-1,2-	mg/kg	50	< 0.040	<0.040	< 0.040	< 0.040	<0.040	< 0.040
Dichloropropane, 1,2-	mg/kg	50	< 0.040	<0.040	< 0.040	< 0.040	<0.040	< 0.040
Dichloropropene, cis-1,3-	mg/kg	n/v	< 0.030	<0.030	< 0.030	< 0.030	<0.030	< 0.030
Dichloropropene, trans-1,3-	mg/kg	n/v	< 0.040	<0.040	< 0.040	<0.040	<0.040	< 0.040
Ethylene Dibromide (Dibromoethane, 1,2-)	mg/kg	n/v	<0.040	<0.040	< 0.040	<0.040	<0.040	<0.040
Hexane	mg/kg	n/v	< 0.040	<0.040	< 0.040	< 0.040	<0.040	<0.040
Methylene Chloride (Dichloromethane)	mg/kg	50	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049
Methyl Ethyl Ketone (2-Butanone)	mg/kg	n/v	< 0.40	<0.40	< 0.40	< 0.40	< 0.40	<0.40
Methyl Isobutyl Ketone	mg/kg	n/v	< 0.40	<0.40	< 0.40	<0.40	<0.40	< 0.40
Methyl tert-butyl ether (MTBE)	mg/kg	n/v	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Styrene	mg/kg	50	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Tetrachloroethane, 1,1,1,2-	mg/kg	n/v	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Tetrachloroethane, 1,1,2,2- Tetrachloroethylene (PCE)	mg/kg mg/kg	50 0.6	<0.040 <0.040	<0.040 <0.040	<0.040 <0.040	<0.040 <0.040	<0.040 <0.040	<0.040 <0.040
Trichloroethane, 1,1,1-	mg/kg	50	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Trichloroethane, 1,1,2-	mg/kg	50	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Trichloroethane (TCE)	mg/kg	0.01	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Trichlorofluoromethane (Freon 11)	mg/kg	n/v	<0.010	<0.010	<0.010	<0.010	<0.010	<0.040
Vinyl Chloride	mg/kg	n/v	<0.040	<0.040	< 0.040	<0.040	<0.040	<0.040
viriyi OriiOride	mg/kg	1 I/ V	\U.U.U	\U.U.U.J	~0.013	~0.013	~0.013	~0.013

CCME Canadian Council of Ministers of the Environment

Canadian Environmental Quality Guidelines, Canadian Soil Quality Guidelines for the

Protection of Environmental and Human Health, on-line summary table,

for commercial land use and coarse grained soil

6.5 Concentration exceeds the standard/guideline. 15.2

Measured concentration did not exceed the indicated standard.

< 0.03 Analyte was not detected at a concentration greater than the laboratory reporting limit.

n/v No standard/guideline value. Lab-Dup Laboratory Initiated Duplicate



Table F-4
Summary of Groundwater Analytical Results - BTEX and PHC
Phase I/II Environmental Site Assessment
Sewer Protection Project, Iqaluit, NU
City of Iqaluit

Sample Location Sample Date Sample ID Sampling Company Laboratory Laboratory Sample ID Sample Type	Units	FIGQG	TP-01 29-Sep-22 TP-01-M STANTEC BV TXK293	TP-02 29-Sep-22 TP-02-M STANTEC BV TXK294	TP-03 28-Sep-22 TP-03 STANTEC BV TXK295	TP-04 29-Sep-22 TP-04-M STANTEC BV TXK297
BTEX and Petroleum Hydrocarbons		200	0.75	-0.47	10.47	10.47
Benzene	μg/L	690	0.75	< 0.17	< 0.17	<0.17
Toluene	μg/L	83	0.59	<0.20	<0.20	<0.20
Ethylbenzene	μg/L	11,000	3.8	< 0.20	< 0.20	< 0.20
Xylene, m & p-	μg/L	n/v	5.0	< 0.20	< 0.20	< 0.20
Xylene, o-	μg/L	n/v	6.2	< 0.20	< 0.20	<0.20
Xylenes, Total	μg/L	18,000	11	< 0.20	< 0.20	< 0.20
PHC F1 (C6-C10 range)	μg/L	n/v	220	<25	<25	29
PHC F1 (C6-C10 range) minus BTEX	μg/L	9,100	200	<25	<25	29
PHC F2 (>C10-C16 range)	mg/L	1.3	36	3.0	14	0.11
PHC F3 (>C16-C34 range)	mg/L	n/v	4.2	1.7	7.1	0.22
PHC F4 (>C34-C50 range)	mg/L	n/v	< 0.20	<0.20	<0.20	<0.20

FIGQG Guidance Document on Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites (Government of Canada, June 2016 (version 4) revised November 2016) Table 3 Federal Interim Groundwater Quality Guidelines Generic Guidelines For Commercial and Industrial Land Uses (mg/L);

Tier 1 (Lowest Guideline), coarse-grained soil

6.5	Concentration exceeds the guideline.
15.2	Measured concentration did not exceed the indicated standard.
<0.03	Analyte was not detected at a concentration greater than the laboratory's reportable detection limit (rdl).
n/v	No standard/guideline value



Table F-5
Summary of Groundwater Analytical Results - Metals
Phase I/II Environmental Site Assessment
Sewer Protection Project, Iqaluit, NU
City of Iqaluit

Sample Location Sample Date Sample ID Sampling Company Laboratory Laboratory Sample ID Sample Type	Units	FIGQG	TP-01 29-Sep-22 TP-01-M STANTEC BV TXK293	TP-02 29-Sep-22 TP-02-M STANTEC BV TXK294	TP-04 29-Sep-22 TP-04-M STANTEC BV TXK297
Metals					
Aluminum	μg/L	n/v	11.30	15.9	26.0
Antimony	μg/L	n/v	<0.0005	< 0.0005	<0.0005
Arsenic	μg/L	12.5	0.75	0.48	0.39
Barium	μg/L	500	20.5	20.2	28.3
Beryllium	μg/L	100	< 0.10	< 0.10	< 0.10
Bismuth	μg/L	n/v	<1.0	<1.0	<1.0
Boron	μg/L	5,000	91	57	58
Cadmium	μg/L	0.12	0.035	0.048	0.083
Calcium	μg/L	n/v	119	123	110
Chromium	μg/L	56	<1.0	<1.0	<1.0
Cobalt	μg/L	n/v	2.55	0.56	1.39
Copper	μg/L	2.0	3.40	3.30	1.41
Iron	μg/L	n/v	37.0	17.8	43.1
Lead	μg/L	2.0	0.23	0.29	2.19
Lithium	μg/L	n/v	<2.0	<2.0	<2.0
Magnesium	μg/L	n/v	10.5	12.1	10.9
Manganese	μg/L	n/v	1,270	222	1,300
Molybdenum	μg/L	n/v	<1.0	<1.0	1.4
Nickel	μg/L	83	3.1	2.1	2.4
Potassium	μg/L	n/v	4.6	3.49	3.72
Selenium	μg/L	54	< 0.10	0.13	0.14
Silicon	μg/L	n/v	4,720	4,620	4,850
Silver	μg/L	1.5	< 0.020	< 0.020	< 0.020
Sodium	μg/L	n/v	20.9	19.4	18.8
Strontium	μg/L	n/v	263	307	244
Sulfur	μg/L	n/v	11.6	11.4	8.8
Thallium	μg/L	n/v	< 0.010	< 0.010	< 0.010
Tin	μg/L	n/v	<5.0	<5.0	<5.0
Titanium	μg/L	n/v	<5.0	<5.0	<5.0
Uranium	μg/L	n/v	1.10	1.55	1.05
Vanadium	μg/L	n/v	<5.0	< 5.0	<5.0
Zinc	μg/L	10	6.8	< 5.0	13.1
Zirconium	μg/L	n/v	0.14	0.12	0.12

FIGQG Guidance Document on Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites
(Government of Canada, June 2016 (version 4) revised November 2016) Table 3 Federal Interim Groundwater
Quality Guidelines Generic Guidelines For Commercial and Industrial Land Uses (mg/L); Tier 2 (Marine Life),
coarse-grained soil. Except Boron, Cadmium and Silver - From Federal Interim Groundwater Quality Guidelines
Memo (May 2016) Table 3: Updated Guidelines – Commercial and Industrial Land Uses (mg/L)

6.5	Concentration exceeds the guideline.
15.2	Measured concentration did not exceed the guideline.
<0.03	Analyte was not detected at a concentration greater than the laboratory's reportable detection limit (rdl).
n/v	No standard/guideline value.



Table F-6 **Summary of Groundwater Analytical Results - VOCs Phase I/II Environmental Site Assessment** Sewer Protection Project, Iqaluit, NU City of Igaluit

Sample Location Sample Date Sample ID Sampling Company Laboratory Laboratory Work Order Laboratory Sample ID Sample Type	Units	FIGQG	TP-01 29-Sep-22 TP-01-M STANTEC BV C249705 TXK293	TP-02 29-Sep-22 TP-02-M STANTEC BV C249705 TXK294	TP-03 28-Sep-22 TP-03 STANTEC BV TXK295	TP-04 29-Sep-22 TP-04-M STANTEC BV C249705 TXK297
Volatile Organic Compounds						
Acetone (2-Propanone)	μg/L	13,000	<10	<10	11	<10
Bromodichloromethane	μg/L	8,500	<0.50	<0.50	< 0.50	<0.50
Bromoform (Tribromomethane)	μg/L	3,700	<1.0	<1.0	<1.0	<1.0
Bromomethane (Methyl bromide)	μg/L	33	<0.50	<0.50	< 0.50	<0.50
Carbon Tetrachloride (Tetrachloromethane)	μg/L	6.8	<0.20	<0.20	<0.20	<0.20
Chlorobenzene (Monochlorobenzene)	μg/L	1.3	<0.20	<0.20	<0.20	<0.20
Chloroform (Trichloromethane)	μg/L	1.8	1.0	1.2	0.82	<0.20
Dibromochloromethane	μg/L	10,000	<0.50	<0.50	<0.50	<0.50
Dichlorobenzene, 1,2-	μg/L	0.7	<0.50	<0.50	< 0.50	<0.50
Dichlorobenzene, 1,3-	μg/L	42	<0.50	<0.50	< 0.50	<0.50
Dichlorobenzene, 1,4-	μg/L	26 n/v	<0.50 2.1	<0.50 6.1	<0.50 11	<0.50 2.4
Dichlorodifluoromethane (FREON 12) Dichloroethane, 1,1-	μg/L	6,600	<0.20	<0.20	<0.20	<0.20
Dichloroethane, 1,2-	μg/L	100	<0.50	<0.50	<0.50	<0.50
Dichloroethane, 1,2-	μg/L	490	<0.20	<0.20	<0.20	<0.20
Dichloroethene, cis-1,2-	μg/L μg/L	30	<0.50	<0.50	<0.50	<0.50
Dichloroethene, trans-1,2-	μg/L μg/L	30	<0.50	<0.50	1.3	<0.50
Dichloropropane, 1,2-	μg/L	330	<0.20	<0.20	<0.20	<0.20
Dichloropropane, 1,2-	μg/L	n/v	<0.30	<0.30	< 0.30	< 0.30
Dichloropropene, trans-1,3-	μg/L μg/L	n/v	<0.40	<0.40	<0.40	<0.40
Ethylene Dibromide (Dibromoethane, 1,2-)	μg/L μg/L	5.1	<0.23 (1)	<0.20	<0.20	<0.20
Hexane	μg/L	n/v	<1.0	<1.0	<1.0	<1.0
Methylene Chloride (Dichloromethane)	μg/L	98	<2.0	<2.0	<2.0	<2.0
Methyl Ethyl Ketone (2-Butanone)	μg/L	150,000	<10	<10	<10	<10
Methyl Isobutyl Ketone	μg/L	58,000	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether (MTBE)	μg/L	4,300	1.2	<0.50	< 0.50	<0.50
Styrene	μg/L	72	< 0.50	< 0.50	< 0.50	< 0.50
Tetrachloroethane, 1,1,1,2-	μg/L	66	< 0.50	< 0.50	< 0.50	< 0.50
Tetrachloroethane, 1,1,2,2-	μg/L	63	< 0.50	< 0.50	< 0.50	< 0.50
Tetrachloroethene (PCE)	μg/L	110	0.26	<0.20	0.80	<0.20
Trichloroethane, 1,1,1-	μg/L	1,100	< 0.20	<0.20	< 0.20	<0.20
Trichloroethane, 1,1,2-	μg/L	91	< 0.50	< 0.50	< 0.50	< 0.50
Trichloroethene (TCE)	μg/L	29	< 0.20	<0.20	<0.20	0.46
Trichlorofluoromethane (Freon 11)	μg/L	n/v	6.7	11	18	4.4
Vinyl Chloride	μg/L	13	<0.20	<0.20	<0.20	<0.20

Notes:

FIGQG Guidance Document on Federal Interim Groundwater Quality Guidelines for Federal

> Contaminated Sites (Government of Canada, June 2016 (version 4) revised November 2016). Table 3 Federal Interim Groundwater Quality Guidelines Generic Guidelines For Commercial and Industrial Land Uses (mg/L); Tier 1 (Lowest Guideline), coarse-grained soil Except Chloroform and Tetrachloroethene - From Federal Interim Groundwater Quality Guidelines Memo (May 2016) Table 3: Updated Guidelines - Commercial and Industrial

Land Uses (mg/L) 6.5 Concentration exceeds the guideline.

15.2 Measured concentration did not exceed the indicated standard. < 0.03

Analyte was not detected at a concentration greater than the laboratory's reportable

detection limit (rdl).

n/v No standard/guideline value.





Your Project #: 1101000074.402 Site Location: IQALUIT, NU

Your C.O.C. #: 896665-01-01, 896665-02-01

Attention: Jules Richard

Stantec Consulting Ltd 1133 St George Blvd Moncton, NB CANADA E1E 4E1

Report Date: 2022/10/19

Report #: R7348327 Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2S6894 Received: 2022/10/03, 12:00

Sample Matrix: Soil # Samples Received: 4

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
1,3-Dichloropropene Sum (1)	4	N/A	2022/10/11		EPA 8260C m
Petroleum Hydrocarbons F2-F4 in Soil (1, 3)	4	2022/10/07	2022/10/07	CAM SOP-00316	CCME CWS m
Acid Extractable Metals by ICPMS (1)	4	2022/10/07	2022/10/07	CAM SOP-00447	EPA 6020B m
Moisture (1)	4	N/A	2022/10/06	CAM SOP-00445	Carter 2nd ed 51.2 m
Grain Size - Calculated (2)	4	N/A	2022/10/19		
Particle Size (Sieve), Sieve/pan 75um (2)	4	N/A	2022/10/19	ATL SOP 00053	ASTM D1140-17 m
Volatile Organic Compounds and F1 PHCs (1)	3	N/A	2022/10/07	CAM SOP-00230	EPA 8260C m
Volatile Organic Compounds and F1 PHCs (1)	1	N/A	2022/10/08	CAM SOP-00230	EPA 8260C m

Sample Matrix: Water # Samples Received: 4

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
1,3-Dichloropropene Sum (1)	4	N/A	2022/10/11		EPA 8260C m
Petroleum Hydrocarbons F2-F4 in Water (1, 3)	4	2022/10/11	2022/10/12	CAM SOP-00316	CCME PHC-CWS m
Hardness (calculated as CaCO3) (4)	3	N/A	2022/10/11	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (4)	3	N/A	2022/10/11	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (4)	3	N/A	2022/10/09	BBY7SOP-00002	EPA 6020B R2 m
Volatile Organic Compounds and F1 PHCs (1)	4	N/A	2022/10/11	CAM SOP-00230	EPA 8260C m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the



Your Project #: 1101000074.402 Site Location: IQALUIT, NU

Your C.O.C. #: 896665-01-01, 896665-02-01

Attention: Jules Richard

Stantec Consulting Ltd 1133 St George Blvd Moncton, NB CANADA E1E 4E1

Report Date: 2022/10/19

Report #: R7348327 Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2S6894 Received: 2022/10/03, 12:00 customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

- * RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
- (1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd, Mississauga, ON, L5N 2L8
- (2) This test was performed by Bureau Veritas Bedford, 200 Bluewater Rd Suite 105, Bedford, NS, B4B 1G9
- (3) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.
- (4) This test was performed by Bureau Veritas Burnaby, 4606 Canada Way , Burnaby, BC, V5G 1K5

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Ronklin Gracian, Project Manager

Email: Ronklin.Gracian@bureauveritas.com

Phone# (905)817-5752

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Client Project #: 1101000074.402

Site Location: IQALUIT, NU

Sampler Initials: JR

PART. SIZE (SIEVE/PAN 75 UM-CCMEHC,PIRI)

Bureau Veritas ID		TXJ526	TXJ529	TXJ530	TXJ532		
Sampling Date		2022/09/28	2022/09/28	2022/09/28	2022/09/28		
COC Number		896665-01-01	896665-01-01	896665-01-01	896665-01-01		
	UNITS	TP-01 (1.22-1.83)	TP-02 (1.83-2.13)	TP-03 (1.22-1.98)	TP-04 (1.22-1.83)	RDL	QC Batch
Calculated Parameters							
Grain Size	N/A	COARSE	COARSE	COARSE	COARSE	N/A	8267825
Inorganics							
Sieve - #200 (>0.075mm)	%	97	100	96	98	1	8286529
Sieve - Pan	%	3	<1	4	2	1	8286529
RDL = Reportable Detection QC Batch = Quality Control N/A = Not Applicable							



Client Project #: 1101000074.402 Site Location: IQALUIT, NU

Sampler Initials: JR

CCME ICPMS METALS (SOIL)

Bureau Veritas ID		TXJ526	TXJ529	TXJ530	TXJ532		
Sampling Date		2022/09/28	2022/09/28	2022/09/28	2022/09/28		
COC Number		896665-01-01	896665-01-01	896665-01-01	896665-01-01		
	UNITS	TP-01 (1.22-1.83)	TP-02 (1.83-2.13)	TP-03 (1.22-1.98)	TP-04 (1.22-1.83)	RDL	QC Batch
Metals							
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	<0.20	<0.20	0.20	8270793
Acid Extractable Arsenic (As)	ug/g	<1.0	1.0	<1.0	29	1.0	8270793
Acid Extractable Barium (Ba)	ug/g	16	7.6	8.0	20	0.50	8270793
Acid Extractable Beryllium (Be)	ug/g	<0.20	<0.20	<0.20	<0.20	0.20	8270793
Acid Extractable Boron (B)	ug/g	<5.0	<5.0	<5.0	<5.0	5.0	8270793
Acid Extractable Cadmium (Cd)	ug/g	<0.10	<0.10	<0.10	<0.10	0.10	8270793
Acid Extractable Chromium (Cr)	ug/g	33	29	46	48	1.0	8270793
Acid Extractable Cobalt (Co)	ug/g	4.0	3.2	4.7	6.1	0.10	8270793
Acid Extractable Copper (Cu)	ug/g	6.1	3.6	3.8	5.4	0.50	8270793
Acid Extractable Lead (Pb)	ug/g	14	2.1	2.5	5.0	1.0	8270793
Acid Extractable Molybdenum (Mo)	ug/g	1.0	1.0	2.0	2.2	0.50	8270793
Acid Extractable Nickel (Ni)	ug/g	6.4	5.1	7.5	9.0	0.50	8270793
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	<0.50	<0.50	0.50	8270793
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	<0.20	<0.20	0.20	8270793
Acid Extractable Thallium (Tl)	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	8270793
Acid Extractable Tin (Sn)	ug/g	1.4	<1.0	1.1	1.1	1.0	8270793
Acid Extractable Uranium (U)	ug/g	0.44	0.36	0.50	0.63	0.050	8270793
Acid Extractable Vanadium (V)	ug/g	70	70	110	120	5.0	8270793
Acid Extractable Zinc (Zn)	ug/g	30	18	20	45	5.0	8270793
Acid Extractable Mercury (Hg)	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	8270793

RDL = Reportable Detection Limit



Client Project #: 1101000074.402 Site Location: IQALUIT, NU

Sampler Initials: JR

CCME VOC F1-F4 (SOIL)

Bureau Veritas ID		TXJ526			TXJ526		
Sampling Date		2022/09/28			2022/09/28		
COC Number		896665-01-01			896665-01-01		
	UNITS	TP-01 (1.22-1.83)	RDL	QC Batch	TP-01 (1.22-1.83) Lab-Dup	RDL	QC Batch
Volatile Organics							
Benzene	ug/g	<0.0060	0.0060	8269465	<0.0060	0.0060	8269465
Toluene	ug/g	<0.020	0.020	8269465	<0.020	0.020	8269465
Ethylbenzene	ug/g	0.046	0.010	8269465	0.050	0.010	8269465
p+m-Xylene	ug/g	0.076	0.020	8269465	0.080	0.020	8269465
o-Xylene	ug/g	0.044	0.020	8269465	0.045	0.020	8269465
Total Xylenes	ug/g	0.12	0.020	8269465	0.13	0.020	8269465
F1 (C6-C10)	ug/g	100	10	8269465	93	10	8269465
F1 (C6-C10) - BTEX	ug/g	100	10	8269465	93	10	8269465
F2-F4 Hydrocarbons			•			•	•
F2 (C10-C16 Hydrocarbons)	mg/kg	1600	10	8271533			
F3 (C16-C34 Hydrocarbons)	mg/kg	450	50	8271533			
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	50	8271533			
Reached Baseline at C50	mg/kg	Yes		8271533			
Inorganics			•			•	•
Moisture	%	12	1.0	8269511			
Calculated Parameters			•			•	•
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	0.050	8266980			
Volatile Organics	•		•			•	
Acetone (2-Propanone)	ug/g	<0.49	0.49	8269465	<0.49	0.49	8269465
Bromodichloromethane	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
Bromoform	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
Bromomethane	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
Carbon Tetrachloride	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
Chlorobenzene	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
Chloroform	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
Dibromochloromethane	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
1,2-Dichlorobenzene	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
1,3-Dichlorobenzene	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
1,4-Dichlorobenzene	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
Dichlorodifluoromethane (FREON 12)	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
1,1-Dichloroethane	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
1,2-Dichloroethane	ug/g	<0.049	0.049	8269465	<0.049	0.049	8269465
RDL = Reportable Detection Limit	'						

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate



Client Project #: 1101000074.402 Site Location: IQALUIT, NU

Sampler Initials: JR

CCME VOC F1-F4 (SOIL)

Bureau Veritas ID		TXJ526			TXJ526		
Sampling Date		2022/09/28			2022/09/28		
COC Number		896665-01-01			896665-01-01		
	UNITS	TP-01 (1.22-1.83)	RDL	QC Batch	TP-01 (1.22-1.83) Lab-Dup	RDL	QC Batch
1,1-Dichloroethylene	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
cis-1,2-Dichloroethylene	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
trans-1,2-Dichloroethylene	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
1,2-Dichloropropane	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
cis-1,3-Dichloropropene	ug/g	<0.030	0.030	8269465	<0.030	0.030	8269465
trans-1,3-Dichloropropene	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
Ethylene Dibromide	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
Hexane	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
Methylene Chloride(Dichloromethane)	ug/g	<0.049	0.049	8269465	<0.049	0.049	8269465
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.40	0.40	8269465	<0.40	0.40	8269465
Methyl Isobutyl Ketone	ug/g	<0.40	0.40	8269465	<0.40	0.40	8269465
Methyl t-butyl ether (MTBE)	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
Styrene	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
1,1,1,2-Tetrachloroethane	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
1,1,2,2-Tetrachloroethane	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
Tetrachloroethylene	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
1,1,1-Trichloroethane	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
1,1,2-Trichloroethane	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
Trichloroethylene	ug/g	<0.010	0.010	8269465	<0.010	0.010	8269465
Trichlorofluoromethane (FREON 11)	ug/g	<0.040	0.040	8269465	<0.040	0.040	8269465
Vinyl Chloride	ug/g	<0.019	0.019	8269465	<0.019	0.019	8269465
Surrogate Recovery (%)			•	•		•	
o-Terphenyl	%	86		8271533			
4-Bromofluorobenzene	%	111		8269465	109		8269465
D10-o-Xylene	%	122		8269465	126		8269465
D4-1,2-Dichloroethane	%	99		8269465	84		8269465
D8-Toluene	%	94		8269465	98		8269465

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate



Client Project #: 1101000074.402 Site Location: IQALUIT, NU

Sampler Initials: JR

CCME VOC F1-F4 (SOIL)

Bureau Veritas ID		TXJ529		TXJ530		
Sampling Date		2022/09/28		2022/09/28		
COC Number		896665-01-01		896665-01-01		
	UNITS	TP-02 (1.83-2.13)	QC Batch	TP-03 (1.22-1.98)	RDL	QC Batch
Volatile Organics						
Benzene	ug/g	<0.0060	8269465	<0.0060	0.0060	8269297
Toluene	ug/g	<0.020	8269465	<0.020	0.020	8269297
Ethylbenzene	ug/g	<0.010	8269465	<0.010	0.010	8269297
p+m-Xylene	ug/g	<0.020	8269465	<0.020	0.020	8269297
o-Xylene	ug/g	<0.020	8269465	<0.020	0.020	8269297
Total Xylenes	ug/g	<0.020	8269465	<0.020	0.020	8269297
F1 (C6-C10)	ug/g	<10	8269465	<10	10	8269297
F1 (C6-C10) - BTEX	ug/g	<10	8269465	<10	10	8269297
F2-F4 Hydrocarbons	- N				1	L
F2 (C10-C16 Hydrocarbons)	mg/kg	960	8271533	400	10	8271533
F3 (C16-C34 Hydrocarbons)	mg/kg	490	8271533	240	50	8271533
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	8271533	<50	50	8271533
Reached Baseline at C50	mg/kg	Yes	8271533	Yes		8271533
Inorganics			+		·P	
Moisture	%	16	8269511	4.5	1.0	8269511
Calculated Parameters	1				II.	
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	8266980	<0.050	0.050	8266980
Volatile Organics			'		*	
Acetone (2-Propanone)	ug/g	<0.49	8269465	<0.49	0.49	8269297
Bromodichloromethane	ug/g	<0.040	8269465	<0.040	0.040	8269297
Bromoform	ug/g	<0.040	8269465	<0.040	0.040	8269297
Bromomethane	ug/g	<0.040	8269465	<0.040	0.040	8269297
Carbon Tetrachloride	ug/g	<0.040	8269465	<0.040	0.040	8269297
Chlorobenzene	ug/g	<0.040	8269465	<0.040	0.040	8269297
Chloroform	ug/g	<0.040	8269465	<0.040	0.040	8269297
Dibromochloromethane	ug/g	<0.040	8269465	<0.040	0.040	8269297
1,2-Dichlorobenzene	ug/g	<0.040	8269465	<0.040	0.040	8269297
1,3-Dichlorobenzene	ug/g	<0.040	8269465	<0.040	0.040	8269297
1,4-Dichlorobenzene	ug/g	<0.040	8269465	<0.040	0.040	8269297
Dichlorodifluoromethane (FREON 12)	ug/g	<0.040	8269465	<0.040	0.040	8269297
1,1-Dichloroethane	ug/g	<0.040	8269465	<0.040	0.040	8269297
1,2-Dichloroethane	ug/g	<0.049	8269465	<0.049	0.049	8269297
1,1-Dichloroethylene	ug/g	<0.040	8269465	<0.040	0.040	8269297
RDL = Reportable Detection Limit QC Batch = Quality Control Batch	•		•		•	



Client Project #: 1101000074.402 Site Location: IQALUIT, NU

Sampler Initials: JR

CCME VOC F1-F4 (SOIL)

cis-1,2-Dichloroethylene trans-1,2-Dichloroethylene 1,2-Dichloropropane	UNITS ug/g	2022/09/28 896665-01-01 TP-02 (1.83-2.13)	QC Batch	2022/09/28 896665-01-01 TP-03		
cis-1,2-Dichloroethylene trans-1,2-Dichloroethylene 1,2-Dichloropropane	ug/g	TP-02 (1.83-2.13)	QC Batch	TP-03		
cis-1,2-Dichloroethylene trans-1,2-Dichloroethylene 1,2-Dichloropropane	ug/g	(1.83-2.13)	QC Batch			
trans-1,2-Dichloroethylene 1,2-Dichloropropane				(1.22-1.98)	RDL	QC Batch
1,2-Dichloropropane	,	< 0.040	8269465	<0.040	0.040	8269297
• • • • • • • • • • • • • • • • • • • •	ug/g	<0.040	8269465	<0.040	0.040	8269297
cis-1,3-Dichloropropene	ug/g	<0.040	8269465	<0.040	0.040	8269297
	ug/g	<0.030	8269465	<0.030	0.030	8269297
trans-1,3-Dichloropropene	ug/g	<0.040	8269465	<0.040	0.040	8269297
Ethylene Dibromide	ug/g	<0.040	8269465	<0.040	0.040	8269297
Hexane	ug/g	<0.040	8269465	<0.040	0.040	8269297
Methylene Chloride(Dichloromethane)	ug/g	<0.049	8269465	<0.049	0.049	8269297
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.40	8269465	<0.40	0.40	8269297
Methyl Isobutyl Ketone	ug/g	<0.40	8269465	<0.40	0.40	8269297
Methyl t-butyl ether (MTBE)	ug/g	<0.040	8269465	<0.040	0.040	8269297
Styrene	ug/g	<0.040	8269465	<0.040	0.040	8269297
1,1,1,2-Tetrachloroethane	ug/g	<0.040	8269465	<0.040	0.040	8269297
1,1,2,2-Tetrachloroethane	ug/g	<0.040	8269465	<0.040	0.040	8269297
Tetrachloroethylene	ug/g	<0.040	8269465	<0.040	0.040	8269297
1,1,1-Trichloroethane	ug/g	<0.040	8269465	<0.040	0.040	8269297
1,1,2-Trichloroethane	ug/g	<0.040	8269465	<0.040	0.040	8269297
Trichloroethylene	ug/g	<0.010	8269465	<0.010	0.010	8269297
Trichlorofluoromethane (FREON 11)	ug/g	<0.040	8269465	<0.040	0.040	8269297
Vinyl Chloride	ug/g	<0.019	8269465	<0.019	0.019	8269297
Surrogate Recovery (%)	•		•		•	
o-Terphenyl	%	86	8271533	86		8271533
4-Bromofluorobenzene	%	94	8269465	96		8269297
D10-o-Xylene	%	99	8269465	87		8269297
D4-1,2-Dichloroethane	%	96	8269465	100		8269297
D8-Toluene	%	94	8269465	98		8269297

QC Batch = Quality Control Batch



Client Project #: 1101000074.402 Site Location: IQALUIT, NU

Sampler Initials: JR

CCME VOC F1-F4 (SOIL)

Bureau Veritas ID		TXJ530			TXJ532		
Sampling Date		2022/09/28			2022/09/28		
COC Number		896665-01-01			896665-01-01		
	UNITS	TP-03 (1.22-1.98) Lab-Dup	RDL	QC Batch	TP-04 (1.22-1.83)	RDL	QC Batch
Volatile Organics							
Benzene	ug/g	<0.0060	0.0060	8269297	<0.0060	0.0060	8269465
Toluene	ug/g	<0.020	0.020	8269297	<0.020	0.020	8269465
Ethylbenzene	ug/g	<0.010	0.010	8269297	<0.010	0.010	8269465
p+m-Xylene	ug/g	<0.020	0.020	8269297	<0.020	0.020	8269465
o-Xylene	ug/g	<0.020	0.020	8269297	<0.020	0.020	8269465
Total Xylenes	ug/g	<0.020	0.020	8269297	<0.020	0.020	8269465
F1 (C6-C10)	ug/g	<10	10	8269297	<10	10	8269465
F1 (C6-C10) - BTEX	ug/g	<10	10	8269297	<10	10	8269465
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	mg/kg				<10	10	8271533
F3 (C16-C34 Hydrocarbons)	mg/kg				<50	50	8271533
F4 (C34-C50 Hydrocarbons)	mg/kg				<50	50	8271533
Reached Baseline at C50	mg/kg				Yes		8271533
Inorganics							
Moisture	%				5.5	1.0	8269511
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/g				<0.050	0.050	8266980
Volatile Organics			•	•		•	
Acetone (2-Propanone)	ug/g	<0.49	0.49	8269297	<0.49	0.49	8269465
Bromodichloromethane	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
Bromoform	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
Bromomethane	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
Carbon Tetrachloride	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
Chlorobenzene	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
Chloroform	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
Dibromochloromethane	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
1,2-Dichlorobenzene	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
1,3-Dichlorobenzene	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
1,4-Dichlorobenzene	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
Dichlorodifluoromethane (FREON 12)	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
1,1-Dichloroethane	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
1,2-Dichloroethane	ug/g	<0.049	0.049	8269297	<0.049	0.049	8269465
RDL = Reportable Detection Limit							

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate



Client Project #: 1101000074.402 Site Location: IQALUIT, NU

Sampler Initials: JR

CCME VOC F1-F4 (SOIL)

Bureau Veritas ID		TXJ530			TXJ532		
Sampling Date		2022/09/28			2022/09/28		
COC Number		896665-01-01			896665-01-01		
	UNITS	TP-03 (1.22-1.98) Lab-Dup	RDL	QC Batch	TP-04 (1.22-1.83)	RDL	QC Batch
1,1-Dichloroethylene	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
cis-1,2-Dichloroethylene	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
trans-1,2-Dichloroethylene	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
1,2-Dichloropropane	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
cis-1,3-Dichloropropene	ug/g	<0.030	0.030	8269297	<0.030	0.030	8269465
trans-1,3-Dichloropropene	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
Ethylene Dibromide	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
Hexane	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
Methylene Chloride(Dichloromethane)	ug/g	<0.049	0.049	8269297	<0.049	0.049	8269465
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.40	0.40	8269297	<0.40	0.40	8269465
Methyl Isobutyl Ketone	ug/g	<0.40	0.40	8269297	<0.40	0.40	8269465
Methyl t-butyl ether (MTBE)	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
Styrene	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
1,1,1,2-Tetrachloroethane	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
1,1,2,2-Tetrachloroethane	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
Tetrachloroethylene	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
1,1,1-Trichloroethane	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
1,1,2-Trichloroethane	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
Trichloroethylene	ug/g	<0.010	0.010	8269297	<0.010	0.010	8269465
Trichlorofluoromethane (FREON 11)	ug/g	<0.040	0.040	8269297	<0.040	0.040	8269465
Vinyl Chloride	ug/g	<0.019	0.019	8269297	<0.019	0.019	8269465
Surrogate Recovery (%)				'			
o-Terphenyl	%				86		8271533
4-Bromofluorobenzene	%	96		8269297	93		8269465
D10-o-Xylene	%	92		8269297	96		8269465
D4-1,2-Dichloroethane	%	103		8269297	93		8269465
D8-Toluene	%	99		8269297	95		8269465

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate



Client Project #: 1101000074.402 Site Location: IQALUIT, NU

Sampler Initials: JR

CCME VOCS BY HS & F1-F4 (WATER)

Bureau Veritas ID		TXK293		TXK294	TXK295	TXK297		
Sampling Date		2022/09/29		2022/09/29	2022/09/28	2022/09/29		
COC Number		896665-02-01		896665-02-01	896665-02-01	896665-02-01		
	UNITS	TP-01-M	RDL	TP-02-M	TP-03	TP-04-M	RDL	QC Batch
Volatile Organics	•	•	•			•		
Benzene	ug/L	0.75	0.17	<0.17	<0.17	<0.17	0.17	8268997
Toluene	ug/L	0.59	0.20	<0.20	<0.20	<0.20	0.20	8268997
Ethylbenzene	ug/L	3.8	0.20	<0.20	<0.20	<0.20	0.20	8268997
p+m-Xylene	ug/L	5.0	0.20	<0.20	<0.20	<0.20	0.20	8268997
o-Xylene	ug/L	6.2	0.20	<0.20	<0.20	<0.20	0.20	8268997
Total Xylenes	ug/L	11	0.20	<0.20	<0.20	<0.20	0.20	8268997
F1 (C6-C10)	ug/L	220	25	<25	<25	29	25	8268997
F1 (C6-C10) - BTEX	ug/L	200	25	<25	<25	29	25	8268997
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	mg/L	36	0.10	3.0	14	0.11	0.10	8274830
F3 (C16-C34 Hydrocarbons)	mg/L	4.2	0.20	1.7	7.1	0.22	0.20	8274830
F4 (C34-C50 Hydrocarbons)	mg/L	<0.20	0.20	<0.20	<0.20	<0.20	0.20	8274830
Reached Baseline at C50	mg/L	Yes		Yes	Yes	Yes		8274830
Calculated Parameters	•	•	•					
1,3-Dichloropropene (cis+trans)	ug/L	<0.50	0.50	<0.50	<0.50	<0.50	0.50	8266808
Volatile Organics	•							
Acetone (2-Propanone)	ug/L	<10	10	<10	11	<10	10	8268997
Bromodichloromethane	ug/L	<0.50	0.50	<0.50	<0.50	<0.50	0.50	8268997
Bromoform	ug/L	<1.0	1.0	<1.0	<1.0	<1.0	1.0	8268997
Bromomethane	ug/L	<0.50	0.50	<0.50	<0.50	<0.50	0.50	8268997
Carbon Tetrachloride	ug/L	<0.20	0.20	<0.20	<0.20	<0.20	0.20	8268997
Chlorobenzene	ug/L	<0.20	0.20	<0.20	<0.20	<0.20	0.20	8268997
Chloroform	ug/L	1.0	0.20	1.2	0.82	<0.20	0.20	8268997
Dibromochloromethane	ug/L	<0.50	0.50	<0.50	<0.50	<0.50	0.50	8268997
1,2-Dichlorobenzene	ug/L	<0.50	0.50	<0.50	<0.50	<0.50	0.50	8268997
1,3-Dichlorobenzene	ug/L	<0.50	0.50	<0.50	<0.50	<0.50	0.50	8268997
1,4-Dichlorobenzene	ug/L	<0.50	0.50	<0.50	<0.50	<0.50	0.50	8268997
Dichlorodifluoromethane (FREON 12)	ug/L	2.1	1.0	6.1	11	2.4	1.0	8268997
1,1-Dichloroethane	ug/L	<0.20	0.20	<0.20	<0.20	<0.20	0.20	8268997
1,2-Dichloroethane	ug/L	<0.50	0.50	<0.50	<0.50	<0.50	0.50	8268997
1,1-Dichloroethylene	ug/L	<0.20	0.20	<0.20	<0.20	<0.20	0.20	8268997
cis-1,2-Dichloroethylene	ug/L	<0.50	0.50	<0.50	<0.50	<0.50	0.50	8268997
trans-1,2-Dichloroethylene	ug/L	<0.50	0.50	<0.50	1.3	<0.50	0.50	8268997
1,2-Dichloropropane	ug/L	<0.20	0.20	<0.20	<0.20	<0.20	0.20	8268997
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								



Client Project #: 1101000074.402 Site Location: IQALUIT, NU

Sampler Initials: JR

CCME VOCS BY HS & F1-F4 (WATER)

Bureau Veritas ID		TXK293		TXK294	TXK295	TXK297		
Sampling Date		2022/09/29		2022/09/29	2022/09/28	2022/09/29		
COC Number		896665-02-01		896665-02-01	896665-02-01	896665-02-01		
	UNITS	TP-01-M	RDL	TP-02-M	TP-03	TP-04-M	RDL	QC Batch
cis-1,3-Dichloropropene	ug/L	<0.30	0.30	<0.30	<0.30	<0.30	0.30	8268997
trans-1,3-Dichloropropene	ug/L	<0.40	0.40	<0.40	<0.40	<0.40	0.40	8268997
Ethylene Dibromide	ug/L	<0.23 (1)	0.23	<0.20	<0.20	<0.20	0.20	8268997
Hexane	ug/L	<1.0	1.0	<1.0	<1.0	<1.0	1.0	8268997
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	<2.0	<2.0	<2.0	2.0	8268997
Methyl Ethyl Ketone (2-Butanone)	ug/L	<10	10	<10	<10	<10	10	8268997
Methyl Isobutyl Ketone	ug/L	<5.0	5.0	<5.0	<5.0	<5.0	5.0	8268997
Methyl t-butyl ether (MTBE)	ug/L	1.2	0.50	<0.50	<0.50	<0.50	0.50	8268997
Styrene	ug/L	<0.50	0.50	<0.50	<0.50	<0.50	0.50	8268997
1,1,1,2-Tetrachloroethane	ug/L	<0.50	0.50	<0.50	<0.50	<0.50	0.50	8268997
1,1,2,2-Tetrachloroethane	ug/L	<0.50	0.50	<0.50	<0.50	<0.50	0.50	8268997
Tetrachloroethylene	ug/L	0.26	0.20	<0.20	0.80	<0.20	0.20	8268997
1,1,1-Trichloroethane	ug/L	<0.20	0.20	<0.20	<0.20	<0.20	0.20	8268997
1,1,2-Trichloroethane	ug/L	<0.50	0.50	<0.50	<0.50	<0.50	0.50	8268997
Trichloroethylene	ug/L	<0.20	0.20	<0.20	<0.20	0.46	0.20	8268997
Trichlorofluoromethane (FREON 11)	ug/L	6.7	0.50	11	18	4.4	0.50	8268997
Vinyl Chloride	ug/L	<0.20	0.20	<0.20	<0.20	<0.20	0.20	8268997
Surrogate Recovery (%)	•		•					
o-Terphenyl	%	98		90	99	93		8274830
4-Bromofluorobenzene	%	98		94	94	96		8268997
D4-1,2-Dichloroethane	%	106		104	102	103		8268997
D8-Toluene	%	94		95	98	96		8268997

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) The detection limit was raised due to matrix interferences.



Client Project #: 1101000074.402 Site Location: IQALUIT, NU

Sampler Initials: JR

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

Bureau Veritas ID		TXK293	TXK294	TXK297		
Sampling Date		2022/09/29	2022/09/29	2022/09/29		
COC Number		896665-02-01	896665-02-01	896665-02-01		
	UNITS	TP-01-M	TP-02-M	TP-04-M	RDL	QC Batch
Calculated Parameters	<u> </u>		•			-
Dissolved Hardness (CaCO3)	mg/L	339	356	319	0.50	8277096
Metals			ı			I.
Dissolved Aluminum (Al)	ug/L	11.3	15.9	26.0	3.0	8277098
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	0.50	8277098
Dissolved Arsenic (As)	ug/L	0.75	0.48	0.39	0.10	8277098
Dissolved Barium (Ba)	ug/L	20.5	20.2	28.3	1.0	8277098
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	0.10	8277098
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	1.0	8277098
Dissolved Boron (B)	ug/L	91	57	58	50	8277098
Dissolved Cadmium (Cd)	ug/L	0.035	0.048	0.083	0.010	8277098
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	1.0	8277098
Dissolved Cobalt (Co)	ug/L	2.55	0.56	1.39	0.20	8277098
Dissolved Copper (Cu)	ug/L	3.40	3.30	1.41	0.20	8277098
Dissolved Iron (Fe)	ug/L	37.0	17.8	43.1	5.0	8277098
Dissolved Lead (Pb)	ug/L	0.23	0.29	2.19	0.20	8277098
Dissolved Lithium (Li)	ug/L	<2.0	<2.0	<2.0	2.0	8277098
Dissolved Manganese (Mn)	ug/L	1270	222	1300	1.0	8277098
Dissolved Molybdenum (Mo)	ug/L	<1.0	<1.0	1.4	1.0	8277098
Dissolved Nickel (Ni)	ug/L	3.1	2.1	2.4	1.0	8277098
Dissolved Selenium (Se)	ug/L	<0.10	0.13	0.14	0.10	8277098
Dissolved Silicon (Si)	ug/L	4720	4620	4850	100	8277098
Dissolved Silver (Ag)	ug/L	<0.020	<0.020	<0.020	0.020	8277098
Dissolved Strontium (Sr)	ug/L	263	307	244	1.0	8277098
Dissolved Thallium (TI)	ug/L	<0.010	<0.010	<0.010	0.010	8277098
Dissolved Tin (Sn)	ug/L	<5.0	<5.0	<5.0	5.0	8277098
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	5.0	8277098
Dissolved Uranium (U)	ug/L	1.10	1.55	1.05	0.10	8277098
Dissolved Vanadium (V)	ug/L	<5.0	<5.0	<5.0	5.0	8277098
Dissolved Zinc (Zn)	ug/L	6.8	<5.0	13.1	5.0	8277098
Dissolved Zirconium (Zr)	ug/L	0.14	0.12	0.12	0.10	8277098
Dissolved Calcium (Ca)	mg/L	119	123	110	0.050	8277097
Dissolved Magnesium (Mg)	mg/L	10.5	12.1	10.9	0.050	8277097
Dissolved Potassium (K)	mg/L	4.60	3.49	3.72	0.050	8277097
Dissolved Sodium (Na)	mg/L	20.9	19.4	18.8	0.050	8277097
RDL = Reportable Detection Li					•	
OC Batala Ovalita Cambral Bar						

QC Batch = Quality Control Batch



Client Project #: 1101000074.402 Site Location: IQALUIT, NU

Sampler Initials: JR

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

Bureau Veritas ID		TXK293	TXK294	TXK297		
Sampling Date		2022/09/29	2022/09/29	2022/09/29		
COC Number		896665-02-01	896665-02-01	896665-02-01		
	UNITS	TP-01-M	TP-02-M	TP-04-M	RDL	QC Batch
Dissolved Sulphur (S)	mg/L	11.6	11.4	8.8	3.0	8277097

RDL = Reportable Detection Limit QC Batch = Quality Control Batch



Client Project #: 1101000074.402 Site Location: IQALUIT, NU

Sampler Initials: JR

GENERAL COMMENTS

Results relate only to the items tested.



QUALITY ASSURANCE REPORT

Stantec Consulting Ltd

Client Project #: 1101000074.402

Site Location: IQALUIT, NU

			Matrix	Spike	SPIKED	BLANK	Method I	Blank	RP	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8268997	4-Bromofluorobenzene	2022/10/11	101	70 - 130	102	70 - 130	93	%				
8268997	D4-1,2-Dichloroethane	2022/10/11	103	70 - 130	101	70 - 130	103	%				
8268997	D8-Toluene	2022/10/11	101	70 - 130	103	70 - 130	94	%				
8269297	4-Bromofluorobenzene	2022/10/08	97	60 - 140	97	60 - 140	95	%				
8269297	D10-o-Xylene	2022/10/08	89	60 - 130	86	60 - 130	85	%				
8269297	D4-1,2-Dichloroethane	2022/10/08	104	60 - 140	102	60 - 140	101	%				
8269297	D8-Toluene	2022/10/08	99	60 - 140	101	60 - 140	99	%				
8269465	4-Bromofluorobenzene	2022/10/07	110	60 - 140	101	60 - 140	86	%				
8269465	D10-o-Xylene	2022/10/07	126	60 - 130	102	60 - 130	87	%				
8269465	D4-1,2-Dichloroethane	2022/10/07	87	60 - 140	107	60 - 140	115	%				
8269465	D8-Toluene	2022/10/07	99	60 - 140	107	60 - 140	89	%				
8271533	o-Terphenyl	2022/10/07	83	60 - 130	84	60 - 130	88	%				
8274830	o-Terphenyl	2022/10/11	96	60 - 130	102	60 - 130	95	%				
8268997	1,1,1,2-Tetrachloroethane	2022/10/11	81	70 - 130	98	70 - 130	<0.50	ug/L	NC	30		
8268997	1,1,1-Trichloroethane	2022/10/11	82	70 - 130	100	70 - 130	<0.20	ug/L	NC	30		
8268997	1,1,2,2-Tetrachloroethane	2022/10/11	80	70 - 130	95	70 - 130	<0.50	ug/L	NC	30		
8268997	1,1,2-Trichloroethane	2022/10/11	84	70 - 130	100	70 - 130	<0.50	ug/L	NC	30		
8268997	1,1-Dichloroethane	2022/10/11	79	70 - 130	94	70 - 130	<0.20	ug/L	NC	30		
8268997	1,1-Dichloroethylene	2022/10/11	82	70 - 130	99	70 - 130	<0.20	ug/L	NC	30		
8268997	1,2-Dichlorobenzene	2022/10/11	81	70 - 130	95	70 - 130	<0.50	ug/L	NC	30		
8268997	1,2-Dichloroethane	2022/10/11	82	70 - 130	95	70 - 130	<0.50	ug/L	NC	30		
8268997	1,2-Dichloropropane	2022/10/11	79	70 - 130	95	70 - 130	<0.20	ug/L	NC	30		
8268997	1,3-Dichlorobenzene	2022/10/11	83	70 - 130	98	70 - 130	<0.50	ug/L	NC	30		
8268997	1,4-Dichlorobenzene	2022/10/11	95	70 - 130	111	70 - 130	<0.50	ug/L	NC	30		
8268997	Acetone (2-Propanone)	2022/10/11	85	60 - 140	102	60 - 140	<10	ug/L	NC	30		
8268997	Benzene	2022/10/11	77	70 - 130	91	70 - 130	<0.17	ug/L	NC	30		
8268997	Bromodichloromethane	2022/10/11	84	70 - 130	99	70 - 130	<0.50	ug/L	NC	30		
8268997	Bromoform	2022/10/11	82	70 - 130	97	70 - 130	<1.0	ug/L	NC	30		
8268997	Bromomethane	2022/10/11	82	60 - 140	93	60 - 140	<0.50	ug/L	NC	30		
8268997	Carbon Tetrachloride	2022/10/11	81	70 - 130	98	70 - 130	<0.20	ug/L	NC	30		
8268997	Chlorobenzene	2022/10/11	81	70 - 130	96	70 - 130	<0.20	ug/L	NC	30		
8268997	Chloroform	2022/10/11	82	70 - 130	97	70 - 130	<0.20	ug/L	NC	30		



Stantec Consulting Ltd

Client Project #: 1101000074.402

Site Location: IQALUIT, NU

			Matrix	Spike	SPIKED	BLANK	Method I	Blank	RP	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8268997	cis-1,2-Dichloroethylene	2022/10/11	84	70 - 130	99	70 - 130	<0.50	ug/L	NC	30		
8268997	cis-1,3-Dichloropropene	2022/10/11	85	70 - 130	92	70 - 130	<0.30	ug/L	NC	30		
8268997	Dibromochloromethane	2022/10/11	81	70 - 130	95	70 - 130	<0.50	ug/L	NC	30		
8268997	Dichlorodifluoromethane (FREON 12)	2022/10/11	88	60 - 140	117	60 - 140	<1.0	ug/L	NC	30		
8268997	Ethylbenzene	2022/10/11	76	70 - 130	93	70 - 130	<0.20	ug/L	NC	30		
8268997	Ethylene Dibromide	2022/10/11	80	70 - 130	93	70 - 130	<0.20	ug/L	NC	30		
8268997	F1 (C6-C10) - BTEX	2022/10/11					<25	ug/L	NC	30		
8268997	F1 (C6-C10)	2022/10/11	90	60 - 140	84	60 - 140	<25	ug/L	15	30		
8268997	Hexane	2022/10/11	82	70 - 130	101	70 - 130	<1.0	ug/L	NC	30		
8268997	Methyl Ethyl Ketone (2-Butanone)	2022/10/11	91	60 - 140	111	60 - 140	<10	ug/L	NC	30		
8268997	Methyl Isobutyl Ketone	2022/10/11	71	70 - 130	89	70 - 130	<5.0	ug/L	NC	30		
8268997	Methyl t-butyl ether (MTBE)	2022/10/11	77	70 - 130	94	70 - 130	<0.50	ug/L	NC	30		
8268997	Methylene Chloride(Dichloromethane)	2022/10/11	84	70 - 130	97	70 - 130	<2.0	ug/L	NC	30		
8268997	o-Xylene	2022/10/11	77	70 - 130	94	70 - 130	<0.20	ug/L	NC	30		
8268997	p+m-Xylene	2022/10/11	80	70 - 130	98	70 - 130	<0.20	ug/L	NC	30		
8268997	Styrene	2022/10/11	87	70 - 130	106	70 - 130	<0.50	ug/L	NC	30		
8268997	Tetrachloroethylene	2022/10/11	76	70 - 130	89	70 - 130	<0.20	ug/L	NC	30		
8268997	Toluene	2022/10/11	73	70 - 130	88	70 - 130	<0.20	ug/L	11	30		
8268997	Total Xylenes	2022/10/11					<0.20	ug/L	NC	30		
8268997	trans-1,2-Dichloroethylene	2022/10/11	83	70 - 130	98	70 - 130	<0.50	ug/L	NC	30		
8268997	trans-1,3-Dichloropropene	2022/10/11	92	70 - 130	93	70 - 130	<0.40	ug/L	NC	30		
8268997	Trichloroethylene	2022/10/11	86	70 - 130	101	70 - 130	<0.20	ug/L	NC	30		
8268997	Trichlorofluoromethane (FREON 11)	2022/10/11	81	70 - 130	99	70 - 130	<0.50	ug/L	NC	30		
8268997	Vinyl Chloride	2022/10/11	74	70 - 130	91	70 - 130	<0.20	ug/L	NC	30		
8269297	1,1,1,2-Tetrachloroethane	2022/10/08	93	60 - 140	96	60 - 130	<0.040	ug/g	NC	50		
8269297	1,1,1-Trichloroethane	2022/10/08	100	60 - 140	105	60 - 130	<0.040	ug/g	NC	50		
8269297	1,1,2,2-Tetrachloroethane	2022/10/08	90	60 - 140	89	60 - 130	<0.040	ug/g	NC	50		
8269297	1,1,2-Trichloroethane	2022/10/08	98	60 - 140	98	60 - 130	<0.040	ug/g	NC	50		
8269297	1,1-Dichloroethane	2022/10/08	92	60 - 140	94	60 - 130	<0.040	ug/g	NC	50		
8269297	1,1-Dichloroethylene	2022/10/08	99	60 - 140	103	60 - 130	<0.040	ug/g	NC	50		
8269297	1,2-Dichlorobenzene	2022/10/08	85	60 - 140	94	60 - 130	<0.040	ug/g	NC	50		
8269297	1,2-Dichloroethane	2022/10/08	95	60 - 140	95	60 - 130	<0.049	ug/g	NC	50		



Stantec Consulting Ltd

Client Project #: 1101000074.402

Site Location: IQALUIT, NU

			Matrix	Spike	SPIKED	BLANK	Method I	Blank	RP	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8269297	1,2-Dichloropropane	2022/10/08	93	60 - 140	93	60 - 130	<0.040	ug/g	NC	50		
8269297	1,3-Dichlorobenzene	2022/10/08	89	60 - 140	99	60 - 130	<0.040	ug/g	NC	50		
8269297	1,4-Dichlorobenzene	2022/10/08	103	60 - 140	113	60 - 130	<0.040	ug/g	NC	50		
8269297	Acetone (2-Propanone)	2022/10/08	103	60 - 140	98	60 - 140	<0.49	ug/g	NC	50		
8269297	Benzene	2022/10/08	91	60 - 140	94	60 - 130	<0.0060	ug/g	NC	50		
8269297	Bromodichloromethane	2022/10/08	97	60 - 140	98	60 - 130	<0.040	ug/g	NC	50		
8269297	Bromoform	2022/10/08	88	60 - 140	88	60 - 130	<0.040	ug/g	NC	50		
8269297	Bromomethane	2022/10/08	99	60 - 140	101	60 - 140	<0.040	ug/g	NC	50		
8269297	Carbon Tetrachloride	2022/10/08	97	60 - 140	102	60 - 130	<0.040	ug/g	NC	50		
8269297	Chlorobenzene	2022/10/08	92	60 - 140	95	60 - 130	<0.040	ug/g	NC	50		
8269297	Chloroform	2022/10/08	97	60 - 140	100	60 - 130	<0.040	ug/g	NC	50		
8269297	cis-1,2-Dichloroethylene	2022/10/08	97	60 - 140	99	60 - 130	<0.040	ug/g	NC	50		
8269297	cis-1,3-Dichloropropene	2022/10/08	91	60 - 140	88	60 - 130	<0.030	ug/g	NC	50		
8269297	Dibromochloromethane	2022/10/08	90	60 - 140	92	60 - 130	<0.040	ug/g	NC	50		
8269297	Dichlorodifluoromethane (FREON 12)	2022/10/08	130	60 - 140	139	60 - 140	<0.040	ug/g	NC	50		
8269297	Ethylbenzene	2022/10/08	89	60 - 140	93	60 - 130	<0.010	ug/g	NC	50		
8269297	Ethylene Dibromide	2022/10/08	90	60 - 140	90	60 - 130	<0.040	ug/g	NC	50		
8269297	F1 (C6-C10) - BTEX	2022/10/08					<10	ug/g	NC	30		
8269297	F1 (C6-C10)	2022/10/08	88	60 - 140	96	80 - 120	<10	ug/g	NC	30		
8269297	Hexane	2022/10/08	92	60 - 140	99	60 - 130	<0.040	ug/g	NC	50		
8269297	Methyl Ethyl Ketone (2-Butanone)	2022/10/08	96	60 - 140	91	60 - 140	<0.40	ug/g	NC	50		
8269297	Methyl Isobutyl Ketone	2022/10/08	91	60 - 140	85	60 - 130	<0.40	ug/g	NC	50		
8269297	Methyl t-butyl ether (MTBE)	2022/10/08	90	60 - 140	90	60 - 130	<0.040	ug/g	NC	50		
8269297	Methylene Chloride(Dichloromethane)	2022/10/08	106	60 - 140	108	60 - 130	<0.049	ug/g	NC	50		
8269297	o-Xylene	2022/10/08	87	60 - 140	92	60 - 130	<0.020	ug/g	NC	50		
8269297	p+m-Xylene	2022/10/08	89	60 - 140	94	60 - 130	<0.020	ug/g	NC	50		
8269297	Styrene	2022/10/08	90	60 - 140	92	60 - 130	<0.040	ug/g	NC	50		
8269297	Tetrachloroethylene	2022/10/08	86	60 - 140	92	60 - 130	<0.040	ug/g	NC	50		
8269297	Toluene	2022/10/08	95	60 - 140	100	60 - 130	<0.020	ug/g	NC	50		
8269297	Total Xylenes	2022/10/08					<0.020	ug/g	NC	50		
8269297	trans-1,2-Dichloroethylene	2022/10/08	99	60 - 140	103	60 - 130	<0.040	ug/g	NC	50		
8269297	trans-1,3-Dichloropropene	2022/10/08	97	60 - 140	91	60 - 130	<0.040	ug/g	NC	50		



Stantec Consulting Ltd

Client Project #: 1101000074.402

Site Location: IQALUIT, NU

			Matrix	Spike	SPIKED	BLANK	Method I	Blank	RP	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8269297	Trichloroethylene	2022/10/08	99	60 - 140	103	60 - 130	<0.010	ug/g	NC	50		
8269297	Trichlorofluoromethane (FREON 11)	2022/10/08	103	60 - 140	109	60 - 130	<0.040	ug/g	NC	50		
8269297	Vinyl Chloride	2022/10/08	92	60 - 140	95	60 - 130	<0.019	ug/g	NC	50		
8269465	1,1,1,2-Tetrachloroethane	2022/10/07	87	60 - 140	101	60 - 130	<0.040	ug/g	NC	50		
8269465	1,1,1-Trichloroethane	2022/10/07	92	60 - 140	98	60 - 130	<0.040	ug/g	NC	50		
8269465	1,1,2,2-Tetrachloroethane	2022/10/07	84	60 - 140	102	60 - 130	<0.040	ug/g	NC	50		
8269465	1,1,2-Trichloroethane	2022/10/07	77	60 - 140	103	60 - 130	<0.040	ug/g	NC	50		
8269465	1,1-Dichloroethane	2022/10/07	82	60 - 140	91	60 - 130	<0.040	ug/g	NC	50		
8269465	1,1-Dichloroethylene	2022/10/07	88	60 - 140	90	60 - 130	<0.040	ug/g	NC	50		
8269465	1,2-Dichlorobenzene	2022/10/07	89	60 - 140	100	60 - 130	<0.040	ug/g	NC	50		
8269465	1,2-Dichloroethane	2022/10/07	78	60 - 140	95	60 - 130	<0.049	ug/g	NC	50		
8269465	1,2-Dichloropropane	2022/10/07	82	60 - 140	93	60 - 130	<0.040	ug/g	NC	50		
8269465	1,3-Dichlorobenzene	2022/10/07	94	60 - 140	99	60 - 130	<0.040	ug/g	NC	50		
8269465	1,4-Dichlorobenzene	2022/10/07	101	60 - 140	105	60 - 130	<0.040	ug/g	NC	50		
8269465	Acetone (2-Propanone)	2022/10/07	75	60 - 140	94	60 - 140	<0.49	ug/g	NC	50		
8269465	Benzene	2022/10/07	81	60 - 140	85	60 - 130	<0.0060	ug/g	NC	50		
8269465	Bromodichloromethane	2022/10/07	88	60 - 140	101	60 - 130	<0.040	ug/g	NC	50		
8269465	Bromoform	2022/10/07	83	60 - 140	103	60 - 130	<0.040	ug/g	NC	50		
8269465	Bromomethane	2022/10/07	82	60 - 140	88	60 - 140	<0.040	ug/g	NC	50		
8269465	Carbon Tetrachloride	2022/10/07	91	60 - 140	96	60 - 130	<0.040	ug/g	NC	50		
8269465	Chlorobenzene	2022/10/07	97	60 - 140	94	60 - 130	<0.040	ug/g	NC	50		
8269465	Chloroform	2022/10/07	83	60 - 140	94	60 - 130	<0.040	ug/g	NC	50		
8269465	cis-1,2-Dichloroethylene	2022/10/07	89	60 - 140	95	60 - 130	<0.040	ug/g	NC	50		
8269465	cis-1,3-Dichloropropene	2022/10/07	83	60 - 140	82	60 - 130	<0.030	ug/g	NC	50		
8269465	Dibromochloromethane	2022/10/07	81	60 - 140	98	60 - 130	<0.040	ug/g	NC	50		
8269465	Dichlorodifluoromethane (FREON 12)	2022/10/07	105	60 - 140	103	60 - 140	<0.040	ug/g	NC	50		
8269465	Ethylbenzene	2022/10/07	106	60 - 140	85	60 - 130	<0.010	ug/g	9.6	50		
8269465	Ethylene Dibromide	2022/10/07	82	60 - 140	97	60 - 130	<0.040	ug/g	NC	50		
8269465	F1 (C6-C10) - BTEX	2022/10/07					<10	ug/g	8.1	30		
8269465	F1 (C6-C10)	2022/10/07	NC	60 - 140	96	80 - 120	<10	ug/g	8.0	30		
8269465	Hexane	2022/10/07	72	60 - 140	91	60 - 130	<0.040	ug/g	NC	50		
8269465	Methyl Ethyl Ketone (2-Butanone)	2022/10/07	63	60 - 140	83	60 - 140	<0.40	ug/g	NC	50		



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Site Location: IQALUIT, NU

			Matrix	Spike	SPIKED	BLANK	Method E	Blank	RP	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8269465	Methyl Isobutyl Ketone	2022/10/07	67	60 - 140	78	60 - 130	<0.40	ug/g	NC	50		
8269465	Methyl t-butyl ether (MTBE)	2022/10/07	74	60 - 140	83	60 - 130	<0.040	ug/g	NC	50		
8269465	Methylene Chloride(Dichloromethane)	2022/10/07	82	60 - 140	95	60 - 130	<0.049	ug/g	NC	50		
8269465	o-Xylene	2022/10/07	104	60 - 140	86	60 - 130	<0.020	ug/g	2.9	50		
8269465	p+m-Xylene	2022/10/07	114	60 - 140	87	60 - 130	<0.020	ug/g	4.7	50		
8269465	Styrene	2022/10/07	89	60 - 140	80	60 - 130	<0.040	ug/g	NC	50		
8269465	Tetrachloroethylene	2022/10/07	84	60 - 140	90	60 - 130	<0.040	ug/g	NC	50		
8269465	Toluene	2022/10/07	92	60 - 140	91	60 - 130	<0.020	ug/g	NC	50		
8269465	Total Xylenes	2022/10/07					<0.020	ug/g	4.0	50		
8269465	trans-1,2-Dichloroethylene	2022/10/07	87	60 - 140	92	60 - 130	<0.040	ug/g	NC	50		
8269465	trans-1,3-Dichloropropene	2022/10/07	87	60 - 140	96	60 - 130	<0.040	ug/g	NC	50		
8269465	Trichloroethylene	2022/10/07	94	60 - 140	97	60 - 130	<0.010	ug/g	NC	50		
8269465	Trichlorofluoromethane (FREON 11)	2022/10/07	92	60 - 140	95	60 - 130	<0.040	ug/g	NC	50		
8269465	Vinyl Chloride	2022/10/07	82	60 - 140	83	60 - 130	<0.019	ug/g	NC	50		
8269511	Moisture	2022/10/06							0.93	20		
8270793	Acid Extractable Antimony (Sb)	2022/10/07	94	75 - 125	99	80 - 120	<0.20	ug/g	NC	30		
8270793	Acid Extractable Arsenic (As)	2022/10/07	100	75 - 125	100	80 - 120	<1.0	ug/g	NC	30		
8270793	Acid Extractable Barium (Ba)	2022/10/07	NC	75 - 125	94	80 - 120	<0.50	ug/g	0.69	30		
8270793	Acid Extractable Beryllium (Be)	2022/10/07	95	75 - 125	96	80 - 120	<0.20	ug/g	NC	30		
8270793	Acid Extractable Boron (B)	2022/10/07	87	75 - 125	91	80 - 120	<5.0	ug/g	NC	30		
8270793	Acid Extractable Cadmium (Cd)	2022/10/07	98	75 - 125	96	80 - 120	<0.10	ug/g	NC	30		
8270793	Acid Extractable Chromium (Cr)	2022/10/07	101	75 - 125	105	80 - 120	<1.0	ug/g	3.2	30		
8270793	Acid Extractable Cobalt (Co)	2022/10/07	98	75 - 125	103	80 - 120	<0.10	ug/g	2.3	30		
8270793	Acid Extractable Copper (Cu)	2022/10/07	93	75 - 125	99	80 - 120	<0.50	ug/g	11	30		
8270793	Acid Extractable Lead (Pb)	2022/10/07	99	75 - 125	99	80 - 120	<1.0	ug/g	3.8	30		
8270793	Acid Extractable Mercury (Hg)	2022/10/07	91	75 - 125	89	80 - 120	<0.050	ug/g				
8270793	Acid Extractable Molybdenum (Mo)	2022/10/07	101	75 - 125	102	80 - 120	<0.50	ug/g	21	30		
8270793	Acid Extractable Nickel (Ni)	2022/10/07	96	75 - 125	100	80 - 120	<0.50	ug/g	4.2	30		
8270793	Acid Extractable Selenium (Se)	2022/10/07	101	75 - 125	103	80 - 120	<0.50	ug/g	NC	30		
8270793	Acid Extractable Silver (Ag)	2022/10/07	101	75 - 125	99	80 - 120	<0.20	ug/g	NC	30		
8270793	Acid Extractable Thallium (TI)	2022/10/07	99	75 - 125	101	80 - 120	<0.050	ug/g	NC	30		
8270793	Acid Extractable Tin (Sn)	2022/10/07	96	75 - 125	92	80 - 120	<1.0	ug/g				



Stantec Consulting Ltd

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Site Location: IQALUIT, NU

			Matrix	Spike	SPIKED	BLANK	Method I	Blank	RP	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8270793	Acid Extractable Uranium (U)	2022/10/07	98	75 - 125	99	80 - 120	<0.050	ug/g	0.98	30		
8270793	Acid Extractable Vanadium (V)	2022/10/07	NC	75 - 125	98	80 - 120	<5.0	ug/g	1.7	30		
8270793	Acid Extractable Zinc (Zn)	2022/10/07	93	75 - 125	101	80 - 120	<5.0	ug/g	3.0	30		
8271533	F2 (C10-C16 Hydrocarbons)	2022/10/07	90	60 - 130	91	80 - 120	<10	mg/kg	NC	30		
8271533	F3 (C16-C34 Hydrocarbons)	2022/10/07	88	60 - 130	89	80 - 120	<50	mg/kg	NC	30		
8271533	F4 (C34-C50 Hydrocarbons)	2022/10/07	89	60 - 130	89	80 - 120	<50	mg/kg	NC	30		
8274830	F2 (C10-C16 Hydrocarbons)	2022/10/11	105	60 - 130	111	60 - 130	<0.10	mg/L	NC	30		
8274830	F3 (C16-C34 Hydrocarbons)	2022/10/11	100	60 - 130	110	60 - 130	<0.20	mg/L	NC	30		
8274830	F4 (C34-C50 Hydrocarbons)	2022/10/11	103	60 - 130	109	60 - 130	<0.20	mg/L	NC	30		
8277098	Dissolved Aluminum (Al)	2022/10/09	94	80 - 120	97	80 - 120	<3.0	ug/L				
8277098	Dissolved Antimony (Sb)	2022/10/09	101	80 - 120	102	80 - 120	<0.50	ug/L				
8277098	Dissolved Arsenic (As)	2022/10/09	100	80 - 120	103	80 - 120	<0.10	ug/L				
8277098	Dissolved Barium (Ba)	2022/10/09	95	80 - 120	99	80 - 120	<1.0	ug/L				
8277098	Dissolved Beryllium (Be)	2022/10/09	94	80 - 120	95	80 - 120	<0.10	ug/L				
8277098	Dissolved Bismuth (Bi)	2022/10/09	93	80 - 120	97	80 - 120	<1.0	ug/L				
8277098	Dissolved Boron (B)	2022/10/09	97	80 - 120	99	80 - 120	<50	ug/L				
8277098	Dissolved Cadmium (Cd)	2022/10/09	98	80 - 120	100	80 - 120	<0.010	ug/L				
8277098	Dissolved Chromium (Cr)	2022/10/09	96	80 - 120	100	80 - 120	<1.0	ug/L				
8277098	Dissolved Cobalt (Co)	2022/10/09	96	80 - 120	99	80 - 120	<0.20	ug/L				
8277098	Dissolved Copper (Cu)	2022/10/09	94	80 - 120	98	80 - 120	<0.20	ug/L				
8277098	Dissolved Iron (Fe)	2022/10/09	99	80 - 120	103	80 - 120	<5.0	ug/L				
8277098	Dissolved Lead (Pb)	2022/10/09	99	80 - 120	101	80 - 120	<0.20	ug/L				
8277098	Dissolved Lithium (Li)	2022/10/09	92	80 - 120	94	80 - 120	<2.0	ug/L				
8277098	Dissolved Manganese (Mn)	2022/10/09	95	80 - 120	99	80 - 120	<1.0	ug/L				
8277098	Dissolved Molybdenum (Mo)	2022/10/09	101	80 - 120	104	80 - 120	<1.0	ug/L				
8277098	Dissolved Nickel (Ni)	2022/10/09	94	80 - 120	99	80 - 120	<1.0	ug/L				
8277098	Dissolved Selenium (Se)	2022/10/09	102	80 - 120	100	80 - 120	<0.10	ug/L				
8277098	Dissolved Silicon (Si)	2022/10/09	105	80 - 120	108	80 - 120	<100	ug/L				
8277098	Dissolved Silver (Ag)	2022/10/09	97	80 - 120	98	80 - 120	<0.020	ug/L				
8277098	Dissolved Strontium (Sr)	2022/10/09	97	80 - 120	101	80 - 120	<1.0	ug/L				
8277098	Dissolved Thallium (TI)	2022/10/09	97	80 - 120	99	80 - 120	<0.010	ug/L				
8277098	Dissolved Tin (Sn)	2022/10/09	98	80 - 120	99	80 - 120	<5.0	ug/L				



Stantec Consulting Ltd

Client Project #: 1101000074.402

Site Location: IQALUIT, NU

Sampler Initials: JR

			Matrix	Spike	SPIKED	BLANK	Method E	Blank	RPI	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8277098	Dissolved Titanium (Ti)	2022/10/09	98	80 - 120	99	80 - 120	<5.0	ug/L				
8277098	Dissolved Uranium (U)	2022/10/09	101	80 - 120	103	80 - 120	<0.10	ug/L				
8277098	Dissolved Vanadium (V)	2022/10/09	99	80 - 120	101	80 - 120	<5.0	ug/L				
8277098	Dissolved Zinc (Zn)	2022/10/09	98	80 - 120	102	80 - 120	<5.0	ug/L				
8277098	Dissolved Zirconium (Zr)	2022/10/09	96	80 - 120	97	80 - 120	<0.10	ug/L				
8286529	Sieve - #200 (>0.075mm)	2022/10/19					<1	%	0.59	25	94	90 - 110
8286529	Sieve - Pan	2022/10/19					100, RDL=1	%	1.1	25		

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).



Client Project #: 1101000074.402

Site Location: IQALUIT, NU

Sampler Initials: JR

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Colleen Acker, B.Sc, Scientific Service Specialist

David Huang, BBY Scientific Specialist

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maria Maria	INVO	CE TO:				REPO	RT TO:							TINFORMAT	ION:		0 11	C2S6	11	Bottle Order #:
mpany Name ention: dress;	ACCOUNTS PAYABI 1199 Main Street	E		Company Nan Attention: Address:	Jules Ri	chard					Quotation P.O. #: Project			00074.4	02		M	M	FNV-970	1
e it	Moncton NB E1C 1HS SAPinvoices@Stante	Fax: (50	6) 858-8698	Tel: Email:	jules.ric	nard@stantec	Fax: com;Nancy.	Gallant@	stantec.	com	Project Na Site #: Sampled B		Jules F	, NU Richard				TOU	COC#:	Project Manager: Marie Muse =
DE REGUL	ATED DRINKING WATER (BUREA		D FOR HUMAN CONS G WATER CHAIN OF		ST BE SUBM	TED ON THE				1	NALVSIS RE	QUESTED	PLEASE B	E SPECIFIC)					Turnaround Time (TAT) R Please provide advance notice for	
Table 1 Table 2	ation 153 (2011)	Reg 558. MISA M PWGO Other	Other Regulations Servicery Sever Bylaw Storm Sever Bylaw Unicipality Reg 406 Table		Special in	structions	Field Filtered (please circle): Metals / Hg / Cr VI	ize (SeyePan 75 um- HC,PiRi)	VDCF1:Fit (sol).	ICPAS Meters	CPMS Metals for Federal Int	VOCs by HS & F1-F4	Ĭ			Potential Co.	samples	Standeni TAT = 3 Please note: Stan your Project Manu	Plant FAT in just gendfeel). 17 Working days for most teas: clear FAT for certain feels such as SOD and ager for details. 165 TAT (If applies to artiles submission). To to betattier.	ma Mezirat
337	Include Criteria	on Certificate of Anal Sample (Location) von		Sampled	пте запрео	Macris	ž.	Part S COME	CCME	CCME	Des. 10 GWGG	CCME				3	Hod	it of Station	Conv	(call has for d) nersts
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		TP-01 (0-0.6	61) 9/3	8/2022		Soil				×							×	1	- 5	
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		TP-02 (1.83-2	2.13) 9/3	8/2022		Soil		×	×	x								.6		
		TP-03 (1.22-1	1.98) 9/2	8/2022		Soil		×	×	*								6		
		TP-03 (1.98-2	2.29) 96	9/2022		Soil		×	×	*							×	- 6	+	
		TP-04 (1.22-	1.83) %	8/2022	- 2	Soil		×	X	×								6		
		TP-04 (1.83-2	2.29) %	8/2022		Soil		X		x			1				x	3		
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REGULA	TED DRINKING WA	ER OR WATER INTENDE	D FOR HUMAN CON		Jules no	hard@stant	ec.com;N	ancy.C	Sallante	star tec	c.com	Sample	d By	Jul	es Richar	d		111	I A DE CENTRE DE CONTRACTOR DE LA CARROLLE	Maria
		REAU VERITAS DRINKING	G WATER CHAIN OF	CUSTODY	IST BE SUBM	ITTED ON T	HE					ANALYSIS	REQUEST		SE BE SPEC			-	C#696955-02-01	Marie Muse
	on 153 (2011)		Other Regulations		Special In	etoution	9					¥				T			Turnaround Time (TAT) R Please provide advance notice to	tequired:
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Sampi	e Barcode Laber	painting (Location) (det		Samplea 11			Flotd Fill		品品	S	8	5 5	WE VO			1	Esam	Rush Continu	t Ter	nn Required
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WHICH ARE	AVAILABLE FOR VIEWING	ORK SUBMITTED ON THIS CHAIN OF AT WWW.BVNA.COMITERMS AND TID ENSURE THE ACCURACY OF T	CUSTODY IS SUBJECT TO	BUREAU VERITAS	S STANDARD TER	MI AND CONDIT	Day Brown	ine man		del	4/10	104	0	(D)	1			2.4.1	Custody Seal Present Present Intact	Yes N

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