



Qulliq Energy Corporation

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Proposed Power Plant Location
Gjoa Haven, Nunavut – Option 01

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FINAL REPORT



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Summary

Site and Adjacent Land Conditions

Location(s)	Site located west of existing Tank Farm, Gjoa Haven, Nunavut
Type of facility	Vacant
Current on-site facilities	No permanent structures, several industrial seacans are present
Former on-site facilities	None
Site Zoning	Industrial M2
Adjacent land use	North: Vacant industrial zoned land South: Nuvu Road and former waste disposal site and Vacant Nuna land East: Industrial (Tank Farm) West: Residential and Vacant industrial zoned land
Current Site owner	Either Crown Land or Hamlet of Gjoa Haven
Previous owners/caveats of Potential Environmental Concern (PEC)	None
PECs identified during aerial photo review	None

Site Reconnaissance Findings

Spills/stains	Surface staining near south-central area (metal from welding/engine oil)
Aboveground storage tanks	No evidence – empty tank on its side, reportedly never used on-Site
Underground storage tanks	No evidence
Vegetation	Minimal surface vegetation (grasses)

Environmental Receptors

Residences/subsurface features	None
Groundwater use	None
Local water supply	None, shipped and treated from north of community
Surface water bodies	None
Sensitive habitats or areas	None

Areas of Potential Environmental Concern

On site	APEC 1: use of Site for storage of industrial equipment in the south-central area of the Site, including open welding operations, decaying drilling equipment containing fuel and oils, pails of engine oil, and surficial staining
Adjacent properties	APEC 2: presence of a tank farm, approximately 30 m east, including several documented spills, a gasoline and diesel service station, storage of fuels (jet A, diesel, turbo A, heating oil, gasoline, and diesel)

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1 Introduction

Englobe Corp. (Englobe) was retained by Qulliq Energy Corporation (QEC) to perform a Phase I Environmental Site Assessment (ESA) of the proposed power plant location, north of Nuvu Road, approximately 30 metres (m) west of the existing Tank Farm in Zone M within the community of Gjoa Haven, Nunavut – Option 01 (the Site). The Site location and Site Plan are presented on Figures 1 and 2, respectively.

1.1 Objectives

The objectives of the Phase I ESA are to:

- ▶ Determine if the current and past usage of the Site and/or adjacent properties could have had an environmental impact at the Site.
- ▶ Identify areas of potential environmental concern (APECs) and potential contaminants of concern (PCOCs) at the Site.
- ▶ Identify potential sensitive receptors that could be affected by environmental impacts.

The Phase I ESA is based on a visual inspection of the Site and neighboring areas, interviews concerning historical uses and practices of the area, and the consultation of records of hazardous spills, hamlet records, satellite imagery and aerial photographs.

2 Phase I Environmental Site Assessment

2.1 Site Description and Background

Gjoa Haven is an Inuit hamlet situated on the northeastern shore of Petersen Bay of the Rasmussen Basin, in the Kitikmeot Region of King William Island in Nunavut. The Site is a vacant lot, currently used for the storage of various drilling and construction equipment and materials, approximately 1.02-hectare (ha), located in the Industrial zone of Gjoa Haven, north of Nuvu Road and approximately 30 m west of the existing Tank Farm. The Site is rectangular in shape. Figure 1 provides the location of the Site and Figure 2 shows details of the surrounding land use. The nearest surface water body is an unnamed lake, located approximately 90 m northeast of the Site and Petersen Bay is located approximately 400 m south of the Site.

The Site is zoned as Industrial Land, Zone M by the Hamlet of Gjoa Haven. The land use surrounding the Site is as follows:

- ▶ North: Industrial Land, Zone M – Vacant.
- ▶ South: Road – Nuvu Road, Waste Disposal, Zone WD, and Nuna Land, Zone N.
- ▶ East: Industrial Land, Zone M – Tank Farm approximately 30 m east of the Site.
- ▶ West: Industrial Land, Zone M – Three abandoned residential buildings and Ibruq Road.

Currently, the Site is a vacant lot used for the storage of various construction equipment and materials. Based on the information gathered from available documents, the property has always been vacant, with no history of residential, industrial, or commercial buildings.

For the purposes of this study, the area investigated as part of this Phase I ESA includes the Site, and adjacent properties, as required by the CSA standard. Areas within a 250 m radius of the Site were assessed as part of the database search (referred to as the Phase I Study Area), as shown on Figure 2.

2.2 Geology, Topography and Hydrogeology

The surficial geology within the Site consists of beach crest esker sediments from the last glaciation of the Quaternary period. These esker sediments are comprised of sand and gravel of variable thickness which occur as large esker ridge ice-contact complexes that may also include glaciomarine deltas (Geological Survey of Canada, 2018).

Bedrock geology within the Site consists of dolostone, dolomitic limestone, limestone, and minor sandstone, shale, intraclast conglomerate, and breccia, typical of nearshore and intertidal to supratidal settings of the Franklinian Shelf. The Franklinian Shelf within the Arctic Platform was dated from the Late Cambrian to Ludlow epochs between the Cambrian to Silurian Periods (Harrison et. al, 2015).

Based on available topographic maps the Atlas of Canada's Toporama website from Natural Resources Canada (Natural Resources Canada, 2020), the overall topography of the Site is relatively flat, gently sloping southwest towards the community of Gjoa Haven and Petersen Bay. The inferred groundwater flow direction in the vicinity of the Site is likely southwest towards the community of Gjoa Haven and Petersen Bay, based on the topography of the Site.

A site-specific topographical map is presented in Appendix A.

2.3 Methodology

The Phase I ESA was completed in accordance with the Government of Nunavut Environmental Guideline for the Management of Contaminated Sites (2014) and Canadian Standard's Association CAN/CSA Z768-01 (R2016).

The four principal components of this Phase I ESA include a review of available public and private information regarding the Site, a Site visit, interviews, and the evaluation and reporting of information.

2.3.1 Review of Available Public and Private Information

This activity involves the review of available information on site history, including ownership and use, aerial photos, publicly available environmental reports, water well records, along with a review for the presence of upstream oil and gas activities. This research helps to determine if past activities may have impacted the Site, as well as if activities carried out on adjacent properties may have contributed to potential impacts at the Site.

2.3.2 Site Visit

The Site visit helps to determine if potential impacts exist on the Site, and if there are any discrepancies from the records reviewed. A thorough examination of the Site is conducted to determine any site impacts, hazards, and risks.

2.3.3 Interviews

Interviews are conducted, to gather information that may not have been formally documented, and to corroborate or augment information gathered in the records review and site visit.

2.3.4 Evaluation and Reporting

All of the information gathered from the Phase I ESA is evaluated and reported to assist in the potential subsequent ESAs at the Site.

3 Records Review

The following sources of information were consulted and reviewed to determine potential environmental impacts from past activities on the Site or on adjacent sites. Table 1 below is a summary of records reviewed.

Table 1: Summary of Records Reviewed

Record	Consultation Location
Land use and ownership titles	Government of Nunavut Department of Justice: Legal Registries Division, Government of Nunavut Department of Community and Government Services: Planning and Lands Division, Hamlet of Gjoa Haven
Historical City Directories	Hamlet of Gjoa Haven
Aerial photographs	National Air Photo Library
Hazardous Materials and Spill Database	Online, Department of Environment and Natural Resources, Government of Northwest Territories
Various government and private source records	EcoLog ERIS
Records from Regulatory Agencies	Nunavut Impact Review Board, Nunavut Water Board, Department of Environment, Government of Nunavut

3.1 Land Use and Ownership Titles

Upon review of the information available from the Government of Nunavut Department of Community and Government Services: Planning and Lands Division and the Government of Nunavut Department of Justice: Legal Registries Division, no legal description for the Site was available. A land title search request was submitted to the Government of Nunavut Department of Justice: Legal Registries Division; however, no information was available. In addition, a land title search request was submitted to the Hamlet of Gjoa Haven; however, it was indicated by Mr. Ed Devereaux, the Senior Administrative Officer (SAO) of Gjoa Haven, that Gjoa Haven staff and officials do not have access to archives at the current time due to the Covid-19 pandemic.

Upon review of the aerial photographs, it does not appear that development on Site or within the Phase I Study Area has changed significantly between 1956 and 2016, and the majority of the properties within the Phase I Study Area appear to have been vacant or used for residential purposes since their first development with the exception of the present-day Tank Farm (see Section 3.7). Therefore, the absence of the Land Title and Chain of Title is not anticipated to impact the conclusions of this report.

3.2 Historical City Directories

A City Directory search provides the names of occupants or businesses that were operating at a certain municipal address at a point in time, however, the City Directory does not provide details as to the activities that take place at the properties.

As indicated by Mr. Devereaux, Gjoa Haven staff and officials do not have access to archives at the current time due to the Covid-19 pandemic.

Upon review of the aerial photographs, it does not appear that development in the Phase I Study Area had changed significantly between 1956 and 2016, and the majority of the properties within the Phase I Study Area appear to have been vacant with the exception of the former waste dump site and Tank Farm (see Section 3.6). Therefore, the absence of Historical City Directory is not anticipated to impact the conclusions of this report.

3.3 Chain of Title

Based on the information above, a chain of title could not be obtained for the Site.

3.4 Fire Insurance Plans

Given the Site was historically used as vacant land and later for the storage of material, no fire inspection report was requested.

3.5 Site Operating Records

Since the proposed Site for the construction of the new QEC Power Plant was previously undeveloped, there are no Site Operating Records for the Site.

3.6 Publicly Available Environmental Reports

A search request was submitted to the Government of Nunavut Department of Environment on September 17, 2020. The search confirmed that there are no reports publicly available for the Site. It is possible that the Government of Nunavut Department of the Environment has environmental reports on the Tank Farm located to the east of the Site, but these were not requested.

3.7 Aerial Photographs and Satellite Imagery

Aerial photographs of the Site were obtained from the National Air Photo Library (NAPL) for 1956, 1975, 1983, and 1987. Satellite imagery was obtained from Google Earth Pro® for 2003, 2011, and 2016. Aerial photographs and satellite imagery were used to develop a history of land use for the Site and adjacent properties. Tables 2 and 3 summarize the results of the aerial photograph review. The aerial and satellite photographs are included in Appendix B.

Table 2: Aerial Photographs and Main Observations of the Site and its Neighbouring Area

Image	Id Number / Date	Year	Observations
Aerial Photographs	A15388-041	1956	No buildings or infrastructure present on the Site or within the Hamlet of Gjoa Haven. A small lake is present northeast of the Site.
	A24166_041	1975	The Site remains undeveloped and appears unchanged between 1956 and 1975. Two dirt roads from the developed areas of Gjoa Haven appear to extend south of the Site. Several residential buildings, dirt roads, and a tank farm have been developed in the hamlet of Gjoa Haven on the east coast of Petersen Bay.
	A26414_062	1983	The Site appears unchanged between 1975 and 1983. Three tanks are noted southeast of the Site, adjacent to the assumed present-day Nuvu Road. The former waste dump is present to the south of the Site, south of present day Nuvu Road. Additional residential buildings are present within Gjoa Haven. Recreation Drive is present north of the Site, connecting to an airstrip. The Qiqrtaq School is present, north of Recreation Drive.
	A27144_073	1987	The northern most portion of the Site is visible in this aerial photograph, and based on what is visible, the Site appears unchanged between 1983 and 1987. Additional buildings are present along Recreation Drive and Nuvu Road.
Google Earth®	August 23, 2003	2003	No buildings or infrastructure is present on the Site however, it appears that there are piles of objects present in the central portion of the Site. A tank farm is present adjacent to the east boundary of the Site, south of the lake. Within the tank farm, there are four large vertical tanks and seven smaller horizontal tanks. One of the tanks south of Nuvu Road, southeast of the Site is present. Two of the tanks, one on either side of Nuvu Road, were decommissioned between 1987 and 2003. The community of Gjoa Haven along the east coast of Petersen Bay appears to be developed. The previous tank farm located south of Qiqrtaq School on Recreation Drive, has been decommissioned between 1987 and 2003. The former sewage lagoon located east of the airstrip, and northeast of the Site is present. The present-day waste dump is present, located east of the Site on Nuvu Road.
	August 3, 2011	2011	No buildings or infrastructure is present on the Site. The Site appears to continue to store the piles of objects, with the addition of a seacan and objects along the western border.

		The Community Hall off of Recreation Drive is constructed. An addition to the former sewage lagoon is present.
July 12, 2016	2016	<p>No buildings or infrastructure is present on the Site. The Site appears to continue to store the piles of objects and the seacan. The material that was stored along the western border is no longer present.</p> <p>An addition on the east of the Qiqrtaq School is present.</p> <p>The former sewage lagoon has been decommissioned and the new sewage lagoon has been constructed between 2011 and 2016</p>

Table 3: Description of Surrounding Area based on Aerial and Satellite Image Record

Year	Site Review	North of Site	West of Site	South of Site	East of Site
1956	Vacant land	Vacant land. Small lake northeast of the Site	Vacant land	Vacant land	Vacant land
1975	No significant changes were apparent	No significant changes were apparent	Residential properties and a tank farm visible	Two dirt roads visible south of the Site	No significant changes were apparent
1983	No significant changes were apparent	Recreation Drive and airstrip visible	Further development of properties and community buildings	Three tanks noted southeast of the Site, adjacent to dirt road, assumed present-day Nuvu Road. Former waste dump site present.	No significant changes were apparent
1987	No significant changes were apparent	No significant changes were apparent	Further development of properties and community buildings	No significant changes were apparent	No significant changes were apparent
2003	Piles of objects present in central portion of Site	Former sewage lagoon is visible	Further development of properties and community buildings. Former tank farm decommissioned	Two tanks southeast of the Site no longer present. Former waste dump site no longer present.	Tank farm adjacent to Site and present-day waste dump site off of Nuvu Road visible
2011	Seacan and additional material stored on the western border of Site visible	Addition to former sewage lagoon present	No significant changes were apparent	No significant changes were apparent	No significant changes were apparent
2016	Piles of material stored on western border no longer present	Former sewage lagoon no longer present. New sewage lagoon present, southeast of the former sewage lagoon.	No significant changes were apparent	No significant changes were apparent	No significant changes were apparent

Based on the review of aerial and satellite images, the Site has been historically vacant land and later used for storage of material from 1987 to 2003. Within the Phase I Study Area, the following observations were noted:

- ▶ The present-day Tank Farm, adjacent to the eastern border of the Site, was constructed between 1987 and 2003;
- ▶ Three tanks were constructed southeast of the Site between 1975 and 1983, and from 1987 to 2003, two tanks were decommissioned;
- ▶ The former waste dump site to the south of the Site was decommissioned between 1987 and 2003; and,
- ▶ The surrounding buildings within the west portion of the Site were developed between 1987 to present day, generally for residential uses.

3.8 Records from Regulatory Agencies

The following regulatory agencies were contacted for environmental information pertaining to the Site. Copies of the correspondence are included in Appendix C. Relevant information from these inquiries is presented below.

- ▶ The Hamlet of Gjoa Haven;
- ▶ The Nunavut Water Board Public Registry;
- ▶ The Nunavut Impact Review Board Public Registry;
- ▶ The Department of Environment, Government of Nunavut.

3.8.1 Hazardous Materials Spills Database Hamlet Records

The hamlet of Gjoa Haven was contacted to request for any relevant information about the history of the Site and surrounding lots. The lot number and plan were also requested but not received at the time of this report preparation. If any information is forthcoming which may differ from the findings discerned herein, Englobe will provide an amendment. A community map obtained from the Hamlet indicates the property is located within the Industrial M zone.

3.8.2 Nunavut Water Board Public Registry

The Nunavut Water Board Public Registry was reviewed. The database indicated that the hamlet of Gjoa Haven provided potable water and the disposal of sewage waste and solid waste from the community. The facilities operate under the License 3BM-GJO1828 and will continue to do so until December 18, 2028. Potable water within the community is provided by the Municipality. The hamlet draws raw water from Swan Lake through a 2.3 km buried line to a Water Treatment Plant where the treated water is then stored to be trucked and distributed to holding tanks in each building. Each building within the community possesses an additional holding tank for sewage that is collected, trucked, and disposed of in a sewage lagoon. Between the sewage lagoon and the ocean is a natural wetland area.

- ▶ Under the 3BM-GJO1318 Amendment No.1, issued June 16, 2015, the hamlet of Gjoa Haven was given the authorization for use of the new sewage lagoon. The new sewage lagoon has a capacity of at least 58,000 m³ and is expected to be used for the next 25 to 30 years. Treated effluent from the new sewage lagoon is discharged seasonally during July to August into the existing adjacent wetland area as a means of secondary polishing of the effluent before entering the ocean.

- ▶ The Solid Waste Disposal/Management Facility for Gjoa Haven is located adjacent to the new sewage lagoon to the south, approximately 1.5 km east of the community, accessible via Nuvu Road. The Solid Waste Disposal/Management Facility is comprised of three separated areas for general municipal waste disposal, bulky wastes, and hazardous wastes. Waste is generally crushed and stored within the designated areas however, during suitable weather conditions, the Hamlet conducts open burns of suitable waste.

3.8.3 Nunavut Impact Review Board Public Registry

The Nunavut Impact Review Board Public Registry was reviewed. The database indicated that prior to the construction of the new sewage lagoon, sewage from the community was hauled by sewage truck and discharged into a single-cell sewage lagoon, connected to a secondary cell outside by an overflow discharge pipe across a berm. The former sewage lagoon was located approximately 1.5 km east of the community and had an approximate volume of 22,700 m³.

- ▶ The former sewage lagoon berm had stability issues reported since July 2004, and experienced continuous leaks during summer and fall due to raw sewage thawing.
- ▶ In September 2006, an inspection revealed that a section of the berm wall had collapsed, and a continuous stream of raw sewage was flowing from the lagoon along a 1.2 km path through a natural wetland.
- ▶ The new sewage lagoon was completed in 2013.

3.8.4 Department of Environment, Government of Nunavut

The Government of Nunavut Department of Environment provided Englobe with a document titled “Contaminated Sites Inventory – Kitikmeot Region, Nunavut – Final Report” dated December 2009. The document lists several contaminated sites for the region including several located in or around the hamlet of Gjoa Haven. Based on available information, only one site is located within the Phase I Study Area. The report identifies site number MLGH008 – Old Dumpsite at the South End of the Community as a Class 1 Site having High Risk Potential with a National Classification System (NCS) score of 76 +/- 4. The dump site is located approximately 60 m to the south of the Site, opposite Nuvu Road. Although the dump site is potentially contaminating, it is considered to be downgradient of the Site, and therefore it is not of major concern.

The Government of Nunavut also provided several geotechnical reports for the Gjoa Haven area. Upon review, no significant environmental data was identified regarding the Site or Phase I Study Area.

3.8.5 Hazardous Materials Spills Database

Englobe consulted the Hazardous Materials Spills Database (HMSD), maintained by the Environment and Natural Resources department of the Government of Northwest Territories. Since the Site was not found within the database a more generalized search for the community of Gjoa Haven was undertaken on the HMSD. One hundred and fourteen (114) spill reports were found for the hamlet of Gjoa Haven (for the complete list, please refer to Appendix D). Each spill report was looked at to determine the exact location. Table 4 summarizes the spills that potentially occurred within 250 m of the Site.

Table 4: Summary of Spills which occurred in Proximity to the Site

Spill ID.	Date	Location Description	Approximate Distance to Site	Contaminant	Volume (L)	Spill Cause	Lead Agency
Spill-2017058	February 25, 2017	Tank Farm Fill Station, Gjoa Haven	~ 40 m east of the Site	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	2000	Other	GN
Spill-2009443	September 16, 2009	Tank Farm Dispenser	~ 40 m east of the Site	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	62	Overflow Event	GN
Spill-2008394	August 13, 2008	Tank Farm Dispenser	~ 40 m east of the Site	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	1832	Overflow Event	GN
Spill-2007314	July 6, 2007	Tank Farm Pump House	~ 40 m east of the Site	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	900	Fitting Leak	GN
Spill-2004387	June 16, 2004	In Tank Farm Berm	~ 40 m east of the Site	Petroleum - gasoline (aviation, turbo B, jet B)	205	Other	GN

Notes:
 GN - Government of Nunavut

Based on a review of the database, there were five confirmed recorded spills that took place within the Phase I Study Area. All spills that took place within the Phase I Study Area were recorded to have taken place at the Tank Farm in the years following 2003, indicating that the spills took place at the Tank Farm located approximately 40 m east of the Site. Based on the aerial photograph review in Section 3.6, between 1987 and 2003, a previous tank farm located within the community of Gjoa Haven, south of Qiqtaq School on Recreation Drive, was decommissioned, and the present-day Tank Farm had been constructed as of 2003.

In four of the confirmed recorded spills (Spill ID: spill-2017058, spill-2009443, spill-2008394, and spill-2007314), between 62 to 2000-Litres (L) of petroleum fuel oil (Jet A, diesel, Turbo A, heat) was released due to overflow events, fitting leaks, and other causes. In one of the confirmed recorded spills (Spill ID: spill-2004387), 205 L of petroleum gasoline (aviation, Turbo B, and Jet B) was released into a tank farm berm due to other causes. Due to the proximity of these recorded spills, these findings are considered as an environmental concern to the Site.

The justification for not carrying forward 12 spill records (Spill ID: spill-2001313, spill-1999100, spill-1997015, spill-1996023, spill-1995055, spill-1995032, spill-1994186, spill-1991173, spill-1988037, spill-2017206, spill-1996148, and spill-1993150) as potentially contaminating activities (PCAs), was that for the abovementioned records, the spill location and/or occurrence date could not be confirmed or were recorded to have taken place between 1987 and 2003, the time period where the former tank farm was decommissioned and the present-day Tank Farm was constructed.

Within the database, there were 68 unplottable records. Unplottable records are records without specific location descriptions or occurrence dates that were considered in the search

due to, for example, the partial location description. Upon review of the unplotable records, all were determined to be outside of the Site and Phase I Study Area or had insufficient information to determine the location of the subject record or were not pertinent.

3.9 Various Government and Private Source Records

EcoLog ERIS is a database and information Service Company that specializes in providing environmental and historical information compiled from government and private source records. A request was forwarded to ERIS to conduct a search of the databases listed in Table 5.

Table 5: EcoLog ERIS Databases Reviewed

Federal	Territorial	Other
Dry Cleaning Facilities	Crown Land Fuel Storage Tanks	Automobile Wrecking & Supplies
Federal Convictions	Mineral Occurrences	Compressed Natural Gas Stations
Contaminated Sites on Federal Land	Hazardous Materials Spills Database	ERIS Historical Searches
Federal Identification Registry for Storage Tank Systems	-	Canadian Mine Locations
Greenhouse Gas Emissions from Large Facilities	-	Oil and Gas Wells
Indian and Northern Affairs Fuel Tanks	-	Retail Fuel Storage Tanks
National Analysis of Trends in Emergencies System	-	Scott's Manufacturing Directory
National Defence and Canadian Forces Spills	-	-
National Defence and Canadian Forces Waste Disposal Sites	-	-
National Energy Board Pipeline Incidents	-	-
National Energy Board Wells	-	-
National Environmental Emergencies System	-	-
National PCB Inventory	-	-
National Pollutant Release Inventory	-	-

Notes:

PCB – Polychlorinated biphenyl

The ERIS results are presented in Appendix E. Based on the ERIS database search results, there were no relevant records for the Site.

3.10 Federal Contaminated Land

There are five federal contaminated sites identified in the area of Gjoa Haven which are presented in Table 6. None of the sites appear to be located within the 250 m radius of the Site.

Table 6: Federal Contaminated Sites reported in Gjoa Haven

Site Number	Reporting Organization or Branch	Internal Identifier	Site Name
16357	Fisheries and Oceans Canada	C N 00086	Gjoa Haven - No Contamination Identified
16363	Fisheries and Oceans Canada	C N 00092	Surrounding the daymark structure.
16493	Fisheries and Oceans Canada	C N 00345	Gjoa Haven Barge Landing (Drainage Channel)
8676	National Defence	0164-C001	CAM-CB
1095	Royal Canadian Mounted Police	PR V/1	Gjoa Haven RCMP Detachment Site

3.11 Upstream Oil and Gas Facilities

There are no upstream oil and gas facilities on or near the Site.

4 Results

4.1 Site Visit Results

A site reconnaissance was conducted by a representative of Englobe on September 28, 2020. The site visit included a walkthrough of the Site and a cursory assessment of adjacent properties. During the site reconnaissance, the weather was cloudy and the temperature was approximately 0°C. Photographs were taken during the site reconnaissance and are included in Appendix F.

4.2 Interviews

As part of the Site visit, Mr. Ed Devereaux, the Senior Administrative Officer of Gjoa Haven, was interviewed. According to Mr. Devereaux, the Site is currently owned and occupied by the hamlet of Gjoa Haven, and historically no buildings have been constructed on the Site.

It was indicated that the Site has been used by Canadrill for the storage of several seacans for over six years, and by XYZ Contractors for their equipment and materials for approximately one year.

To Mr. Devereaux's knowledge, no spills have occurred within the Site; however, it was indicated that the Site fell within the setback zone of a previously existing dump site, located to the south. Notes from the Site visit are provided in Appendix G.

4.3 Topography

The topography of the Site and surrounding land is generally flat and is gently sloped towards the coast to the southwest. The terrain observed on Site was covered with sparse vegetation. Please refer to Appendix A for a detailed topographical survey of the Site.

4.4 Current Use of the Site

The Site is currently used for the storage of seacans, drilling equipment, construction materials, several unmarked drums, cargo boxes, and wooden pallets. Reportedly, the seacans and cargo boxes contained drywall insulation, flooring, and various construction materials and equipment. Pipe casings, metal pipes, and propane gas for welding were also present on Site. During the Site visit, an old compressor was also noted to be present on Site. Three abandoned houses were noted to be immediately to the west of the Site.

4.5 Utilities

There are no overlying oil pipes or any utilities present.

4.6 Drains, Pits and Sumps

There are no drains, pits or sumps on the Site.

4.7 Gas Well

No wells were observed on Site; however, a pipeline was noted beyond the southeast corner of the Site which connected the observed off-Site storage tanks, next to the tank farm to a terminal point towards the coast.

4.8 Air Emissions

No strong, pungent or noxious odours were noted during the Site visit. There is no environmental concern associated with air emissions at the Site.

4.9 Water and Wastewater Discharges

Site drainage takes place via infiltration or surface run-off towards the coast of Petersen Bay of the Rasmussen Basin, southwest of the Site.

Potable water and sewage disposal are provided to the residents of Gjoa Haven by the municipality. Potable water is drawn from Swan Lake to a Water Treatment Plant where the treated water is then stored to be trucked and distributed to holding tanks in each building. In addition, each building within the community possesses a holding tank for sewage that is collected, trucked, and disposed of in a Sewage Lagoon. Treated effluent from the Sewage

Lagoon is discharged seasonally into the existing adjacent wetland area for secondary polishing prior to entering the ocean.

4.10 Waste Management, Handling and Landfill

At the time of the Site visit, apart from metal scraps and waste engine and lubricating oils, there were no hazardous wastes and/or general wastes generated on the Site. Wastes are reportedly brought to the present-day waste dump at the east end of Nuvu Road.

4.11 Material and Chemical Storage, Handling and Management

The unmarked drums were observed to be empty at the time of the Site visit. Several pails of engine oil were located in the south-central area of the Site. Furthermore, several tanks of compressed gases used for welding were observed at the Site; however, any leak would result in an atmospheric release and is not expected to impact the soils or groundwater at the Site.

4.12 Spills and Releases

Evidence of engine oil and/or metal cuttings from welding activities were observed in the south-central area of the Site.

4.13 Designated Substances

4.13.1 Asbestos-containing Materials

There are no buildings on Site to contain asbestos-containing materials (ACMs), and there is no construction debris present on Site that could contain ACMs.

4.13.2 PCB-containing Materials and Equipment

The use of PCB dielectric fluids in electrical equipment such as transformers, fluorescent light ballasts and capacitors was a common industry practice up to approximately 1980. The Federal Chlorobiphenyls Regulation, SOR/91-152, prohibits the use of PCBs in this electrical equipment installed after July 1, 1980.

There are no buildings on Site to contain PCBs, and there is no construction debris present on Site that could contain PCB-containing materials and equipment.

4.13.3 Lead-based Paint

Although Lead-based Paints (LBP) were banned from use on exterior or interior surfaces of buildings, furniture or household products in the early 1970s, various commercial paints are still known to contain lead in concentrations greater than 0.5% by weight (e.g., road paint).

The scope of this assessment did not include a detailed investigation of construction materials. However, the general observations during the site visit did not reveal any potential LBP products at the Site.

4.13.4 Mercury

Englobe did not observe any potential mercury-containing devices or equipment on Site during the reconnaissance.

4.13.5 Urea Formaldehyde Foam Insulation

Urea Formaldehyde Foam Insulation (UFFI) was commonly used as insulation in buildings between 1975 and 1978. The use of UFFI was banned across Canada on December 17, 1980.

The scope of this assessment did not include a detailed investigation of construction materials. However, the general observations did not reveal any potential UFFI at the Site.

4.13.6 Ozone-depleting Substances

In 1987, Canada signed the Montreal Protocol on Substances that Deplete the Ozone Layer which involved the phase out of Ozone-depleting Substances (ODS). Currently, it has been agreed upon that developed countries must phase-out the production and consumption of hydrochlorofluorocarbons, which were used as transitional chemicals to replace more harmful ODS, by 75% in 2010, 90% in 2015, and completely by 2020. Therefore, these transitional ODS may still be in use and are typically found in refrigerants on heating, ventilation and air conditioning systems, refrigerators, coolers, and freezers.

No potential ODS sources were observed on the Site; therefore, ODS is not considered an environmental concern.

4.13.7 Radioactive Materials

Englobe did not observe any potential radioactive materials present on Site. A naturally-occurring radioactive materials survey was not completed as part of this Phase I ESA.

4.13.8 Radon Gas

Radon gas is a product of the natural decay series that begins with uranium. Radon is produced directly from barium, which can be commonly found in geologic materials that contain black shale and/or granite. In confined spaces (e.g., basements) it can be concentrated and become a health hazard.

Given that only low levels of radon are found in Nunavut soils and that Englobe did not observe any confined spaces on Site, Radon gas is not expected to be an area of environmental concern for the Site.

4.13.9 Potential for Mould

Englobe did not observe any evidence of mould during the Site reconnaissance.

4.14 Aboveground Storage Tanks

No evidence of Aboveground Storage Tanks (ASTs) was observed at the Site. An empty tank was lying on its side in the south-central are of the Site; however, it was reported that the tank never contained chemicals while present at the Site.

4.15 Underground Storage Tanks

No evidence of Underground Storage Tanks (USTs) was observed at the Site.

5 Summary and Conclusions

Englobe carried out a Phase I ESA for the proposed power plant location, north of Nuvu Road in Zone M in Gjoa Haven, Nunavut – Option 01. The objectives of the Phase I ESA were to determine if the current and past usage of the Site and/or adjacent properties could have had an impact on soil and groundwater quality at the Site, and to identify APECs and PCOCs that could have resulted from past on-site activities and/or activities on neighbouring properties.

The following points summarize the findings of the Phase I ESA:

- ▶ The Site is currently used for the storage of drilling equipment and construction materials.
- ▶ The Site is surrounded by vacant undeveloped land to the north, Nuvu Road and a former waste dump to the south, an unnamed road and a tank farm to the east, and three abandoned residential properties to the east.
- ▶ The results from the Phase I ESA Site visit identified the following two (2) APECs for the Site:
 - APEC 1: The on-Site use for storage of industrial equipment in the south-central area of the Site, including open welding operations, decaying drilling equipment containing fuel and oils, pails of engine oil, and surficial staining. PCOCs include metals, petroleum hydrocarbon fractions F1-F4 (PHCs F1-F4), volatile organic compounds (VOCs) [including Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)], and polycyclic aromatic hydrocarbons (PAHs).
 - APEC 2: The off-Site presence of a tank farm to the immediate east of the Site, including several documented spills, a gasoline and diesel service station, and storage of fuels (jet A, diesel, turbo A, heating oil, gasoline, and diesel). PCOCs include PHCs F1-F4, VOCs (including BTEX), and PAHs.
- ▶ Records from the regulatory agencies confirmed APEC 2 for the Site due to several documented spills.

6 Recommendations

Based on the available information, the Site and surrounding properties revealed the presence of current and historical environmental concerns which could potentially affect the Site. A Phase II ESA is recommended for the Site to verify the environmental quality.

7 References

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- NUNAVUT IMPACT REVIEW BOARD. 2013. Waste Treatment Facilities, Gjoa Haven, Nunavut – Schematic Design Report, Design Development, and Environmental Protection Plan

PERSONAL COMMUNICATIONS

- HAMLET OF GJOA HAVEN, EMAILS SENT REQUESTING LOT AND PLAN INFORMATION FOR THE STUDY SITE, INCLUDING ANY RECORDED HISTORICAL ENVIRONMENTAL EVENTS ON THE STUDY SITE.
- GOVERNMENT OF NUNAVUT, DEPARTMENT OF ENVIRONMENT, LAUREN PERRIN AND MEREDITH CLAYDEN. EMAIL COMMUNICATIONS ON THE RETRIEVAL OF ANY PAST ENVIRONMENTAL CONCERNS ON THE STUDY SITE. HAMLET OF GJOA HAVEN.

INTERVIEWS

OCTOBER 2, 2020. MR. ED DEVEREAUX, ASSISTANT SAO, HAMLET OF GJOA HAVEN. INTERVIEW CONDUCTED BY SHARATH SUKRUTHA, OF ENGLOBE CORP.

FIGURES

Figure 1	Site Location
Figure 2	Site Plan

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Ref. : © 2020 ArcGIS / GeoEye / Maxar Technologies. All rights reserved.



LEGEND

- Existing Power Plant Site
- Proposed Site (6,047 m²)
- A Geodetic Coordinate (Typical; see table)

Point	Northing	Easting	Elevation (masl)
A	7614855.26	383566.04	40
B	7614818.43	383631.99	44
C	7614756.48	383589.83	42
D	7614801.07	383513.74	39

Datum is UTM (NAD83), Zone 15, Meter; Central Meridian 93d W

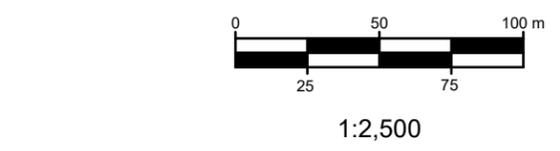
No.	Version	Date	By	Check	Appr.
B	FINAL	2021-02-12	K.B.	K.B.	P.G.
A	PRELIMINARY	2020-10-01	K.B.	K.B.	P.G.

Discipline :	Environment	Prepared by :	K. BUDD	Checked by :	K. BUDD
Scale :	1:2,500	Drawn by :	D. WILSON	Approved by :	P. GINGRAS
Date :	February 2021	Figure no. :	FIGURE 2		
Layout :	Paper size :	Registration no. :	---		
OPTION 01	ANSI full bleed B (11.00 x 17.00 Inches)				

Resp.	Project	Otp	Project/ Disc	Phase/ Type	Electronic ref./ Drawing no.	Rev.
140	P0023273.000-0100-0000	---	---	---	P0023273.000-0100-0000-PL-PHI-GJOA HAVEN.dwg	---



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 Edmonton, Alberta
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 780-481-1416



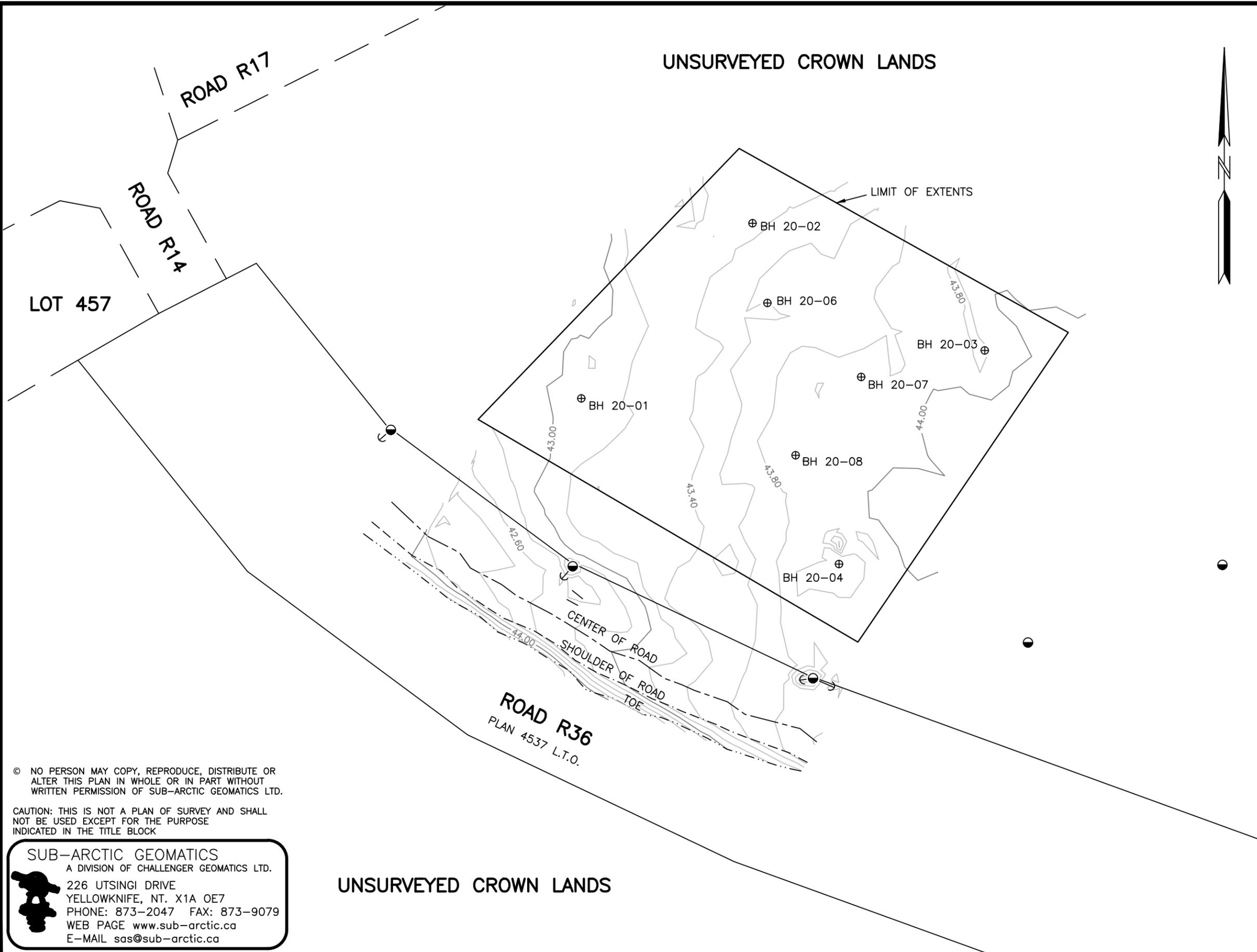
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**PHASE I ENVIRONMENTAL SITE ASSESSMENT
 PROPOSED POWER PLANT LOCATION**
 Gjoa Haven, Nunavut

**Aerial Photograph showing
 Proposed Site Coordinates – Option 01**

Appendix A Topographic Survey

UNSURVEYED CROWN LANDS



NOTES:
 DATE OF SURVEY: SEPTEMBER 26 AND 27, 2020
 SHEET 1 OF 2
 CONTOUR INTERVAL IS 0.20 METRES
 ALL ELEVATIONS ARE EXPRESSED IN METRES OR DECIMALS THEREOF.
 LOT STRUCTURE COPIED FROM N.T.S. ZONE MAPPING.
 ELEVATIONS BASED ON CSRS-PPP OBSERVATIONS
 UTM ZONE 15 NAD83
 CGVD2013 DATUM



LEGEND:
 BOREHOLE ⊕
 POWER POLE ●
 GUY WIRE ↖

NO.	REVISION\ISSUE	DATE:

DRAWN BY: J.N.
 CHECKED BY: B.P.

ENGLOBE CORP.

**TOPOGRAPHIC SURVEY
 GJOA HAVEN - NU
 POTENTIAL POWER PLANT
 LOCATION OPTION #1**

PROJECT NO.: 80591
 FILE NO.: 80591-TOPO-OC26-REV1
 DATE: OCTOBER 26, 2020
 SCALE: 1:750

LOT 457

ROAD R17

ROAD R14

ROAD R36
 PLAN 4537 L.T.O.

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UNSURVEYED CROWN LANDS

Appendix B Aerial Photographs



Photo 1: Aerial Photo of the area in 1956 (National Air Photo Library)

0023273.000-0100-0000

*PHASE I ENVIRONMENTAL SITE ASSESSMENT - PROPOSED POWER PLANT LOCATION
GJOA HAVEN, NUNAVUT - OPTION 01
QULLIQ ENERGY CORPORATION*



Photo 2: Aerial photo of the area in 1975 (National Air Photo Library)

0023273.000-0100-0000

PHASE I ENVIRONMENTAL SITE ASSESSMENT - PROPOSED POWER PLANT LOCATION

GJOA HAVEN, NUNAVUT - OPTION 01

QULLIQ ENERGY CORPORATION



Photo 3: Aerial photo of the area in 1983 (National Air Photo Library)

0023273.000-0100-0000

PHASE I ENVIRONMENTAL SITE ASSESSMENT - PROPOSED POWER PLANT LOCATION
GJOA HAVEN, NUNAVUT - OPTION 01
QULLIQ ENERGY CORPORATION



Photo 4: Aerial photo of the Site in 1987 covering the north portion of the Site (National Air Photo Library)

0023273.000-0100-0000

*PHASE I ENVIRONMENTAL SITE ASSESSMENT - PROPOSED POWER PLANT LOCATION
GJOA HAVEN, NUNAVUT - OPTION 01
QULLIQ ENERGY CORPORATION*



Photo 5: Aerial photo of the Site in 2003 (Google Earth Pro)

0023273.000-0100-0000

PHASE I ENVIRONMENTAL SITE ASSESSMENT – PROPOSED POWER PLANT LOCATION
GJOA HAVEN, NUNAVUT – OPTION 01
QULLIQ ENERGY CORPORATION

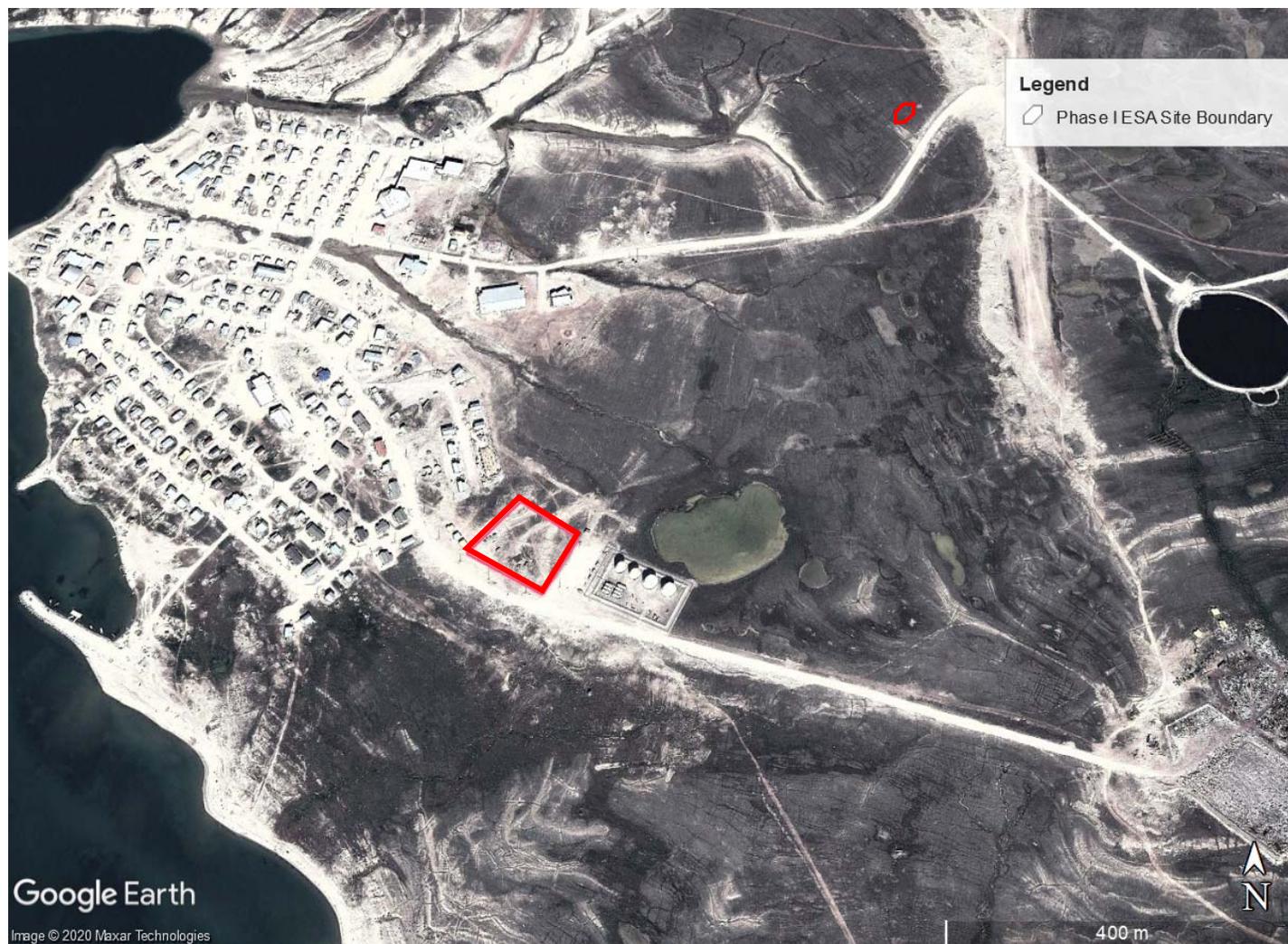


Photo 6: Aerial photo of the Site in 2011 (Google Earth Pro)

0023273.000-0100-0000

PHASE I ENVIRONMENTAL SITE ASSESSMENT - PROPOSED POWER PLANT LOCATION
GJOA HAVEN, NUNAVUT - OPTION 01
QULLIQ ENERGY CORPORATION



Photo 7: Aerial photo of the Site in 2016 (Google Earth Pro)

0023273.000-0100-0000

PHASE I ENVIRONMENTAL SITE ASSESSMENT - PROPOSED POWER PLANT LOCATION
GJOA HAVEN, NUNAVUT - OPTION 01
QULLIQ ENERGY CORPORATION

Appendix C Records from Regulatory Agencies

Amanda Bruniski

From: Alix Rive
Sent: Tuesday, September 08, 2020 3:42 PM
To: LandTitleSearches@gov.nu.ca
Subject: request to get land titles for Phase I ESAs
Attachments: Igloolik, UTM.pdf; Kugaaruk_utm.pdf; Gjoa Haven_utm.pdf; Location_Chesterfield Inlet.doc; Cambridge Bay_UTM.pdf

Hello,

In the context of Phase I ESAs, I am looking to get land title information on the following sites (their aerial photographs are attached with their UTM coordinates):

- 1) Cambridge Bay (1 site)
- 2) Gjoa Haven (1 site)
- 3) Igloolik (1 site)
- 4) Kugaaruk (1 site)
- 5) Chesterfield Bay (two sites)

Please confirm whether this is the right department to be sending this request, thank you very much for your help.

Have a good day,
Alix

ALIX RIVE, Biol., M.Sc
Project Manager
Environmental engineering, Northern Canada

Englobe
16114 – 114 Avenue NW
Edmonton (Alberta) T5M 2Z5 Canada
T 780.481.1416, ext. 104; **C 780-782-5637**
F 780.481.9008
alix.rive@englobecorp.com
www.englobecorp.com



Follow us :



Amanda Bruniski

From: Corporate Registries <Corporate.Registries@gov.nu.ca>
Sent: Thursday, November 12, 2020 8:13 AM
To: Lilian Chen
Subject: RE: Land Title Search, Chain of Title Search

Follow Up Flag: Follow up
Flag Status: Flagged

Caution Do not click on links or open attachments you do not trust.

Attention Assurez-vous que le contenu soit de confiance avant d'ouvrir une pièce jointe ou un hyperlien.

Hi Lilian,

You will need to speak with NRCAN regarding NTS Map sheet (as this is not our office's system).

Kind regards,

Legal Registries Division (Land Titles Office)
Department of Justice
Government of Nunavut
P.O. Box 1000, Stn. 570, Iqaluit, NU, X0A 0H0
(p): (867)-975-6590
(f) : (867)-975-6594

Website: <http://nunavutlegalregistries.ca>

From: Lilian Chen <lchen@dstgroup.com>
Sent: November 10, 2020 4:43 PM
To: Corporate Registries <Corporate.Registries@gov.nu.ca>
Subject: RE: Land Title Search, Chain of Title Search

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

To Whom it May Concern,

Upon reviewing the information available on the NRCAN Map Browser at the below link, I was able to determine that the sites I listed in the below email chain were not previously surveyed. In the below email response from your office, it was recommended that if the sites were determined to be un-surveyed land, to use the relevant NTS map sheet Quads to perform the search.

I do not exactly know how to continue with this step and was wondering if there was any guidance on how to proceed with the Land Titles or Chain of Title searches for the below mentioned sites.

Thanks,

Lilian Chen, B.Sc.
Environmental Scientist

DST CONSULTING ENGINEERS INC.

A Division of **Englobe**

3397 American Drive, Units 14 & 15

Mississauga ON, L4V 1T8

Canada

T: 1.877.300.4800 ,364

M: 1.647.524.3586

F: 1.888.979.6772

E: lchen@dstgroup.com

W: www.dstgroup.com | www.englbecorp.com

COMMENCE PAR TA SÉCURITÉ



TODAY WILL BE A SAFE DAY



Englobe

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From: Corporate Registries <Corporate.Registries@gov.nu.ca>

Sent: Monday, October 5, 2020 4:36 PM

To: Lilian Chen <lchen@dstgroup.com>

Cc: Nan Du <ndu@dstgroup.com>

Subject: RE: Land Title Search, Chain of Title Search

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Attention Assurez-vous que le contenu soit de confiance avant d'ouvrir une pièce jointe ou un hyperlien.

Good afternoon Lilian,

Thank you for your email.

Please be advised that our office can provide information on titled land. Having said this, to perform any searches our office would require the legal description on the parcel of land.

Please use the NRCAN Map Browser (<https://proxyinternet.nrcan.gc.ca/map-carte-eng.php>) to determine if the land of interest has been surveyed.

If, through this process the land is determined to be un-surveyed land, please use the relevant NTS map sheet Quads to perform the search.

If you have any questions or require anything further, do not hesitate to contact our office.

Kind regards,

Legal Registries Division (Land Titles Office)

Department of Justice
Government of Nunavut
P.O. Box 1000, Stn. 570, Iqaluit, NU, X0A 0H0
(p): (867)-975-6590
(f) : (867)-975-6594

Website: <http://nunavutlegalregistries.ca>

CC

From: Lilian Chen <lchen@dstgroup.com>

Sent: October 5, 2020 10:44 AM

To: LandTitleSearches <landtitlesearches@gov.nu.ca>; CorporateSearches <corporatesearches@gov.nu.ca>; Corporate Registries <Corporate.Registries@gov.nu.ca>

Cc: Nan Du <ndu@dstgroup.com>

Subject: Land Title Search, Chain of Title Search

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

To Whom it May Concern;

I would like to make an inquiry into any available current/historical Land Titles or Chain of Titles available for the following properties in Nunavut. At the current time, I do not believe these Sites have a local address or lot numbers so I've provided a Google Earth file with the Sites outlined (attached), UTM coordinates, and screenshots of the Sites of interest.

Sites:

- 1) **Hamlet of Chesterfield Inlet Option 1**, east of Mission Lake, west of Crescent 1A, and north of 1st Crescent
 - a. UTM Coordinates: Zone 15 V

Corner	Easting	Northing
North	615604.41 m	7025890.70 m
East	615631.99 m	7025864.93 m
South	615537.32 m	7025743.98 m
Southwest	615522.58 m	7025767.62 m
West	615532.08 m	7025812.09 m

- 2) **Hamlet of Chesterfield Inlet Option 3**, east of Crescent 1A and northeast of the Chesterfield Inlet, Nunavut Tank Farm
 - a. UTM Coordinates: Zone 15 V

Corner	Easting	Northing
North	615674.19 m	7025824.04 m
East	615731.18 m	7025757.07 m
South	615672.07 m	7025716.23 m
West	615622.78 m	7025798.62 m

- 3) **Gjoa Haven Option 1**, north of Nuvu Road and west of the existing tank farm
 - a. UTM Coordinates: Zone 15W

Corner	Easting	Northing
--------	---------	----------

North	383566.04	7614855.26
East	383631.99	7614818.43
South	383589.83	7614756.48
West	383513.74	7614801.07

Thank you for your assistance.
Sincerely,

Lilian Chen, B.Sc.
Environmental Scientist

DST CONSULTING ENGINEERS INC.

A Division of **Englobe**
3397 American Drive, Units 14 & 15
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Arthur Antonacci

From: Perrin, Lauren <LPerrin@GOV.NU.CA>
Sent: October 1, 2020 11:12 AM
To: Alix Rive
Cc: Clayden, Meredith; Katheryne Budd; Nan Du
Subject: RE: Nunavut ESAs
Attachments: Cambridge Bay2.png; Kugaaruk Site Summaries-compressed.pdf; Igloolik Site Summaries_compressed.pdf

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Hi Alix,

No worries, see attached new screenshot of Cambridge Bay and the ESA reports for Kugaaruk and Igloolik.

As for the NCS scores- they are site classifications:

Class 1: High Priority for Action (Total NCSCS Score greater than 70)
Class 2: Medium Priority for Action (Total NCSCS Score between 50 and 69.9)
Class 3: Low Priority for Action (Total NCSCS Score between 37 and 49.9)
Class N: Not a Priority for Action (Total NCSCS Score less than 37)
Class INS: Insufficient Information (≥15% of Responses are "Do Not Know")

As mentioned before these NCS scores had a lot of limitations when they were calculated.

Cheers,
Lauren

From: Alix Rive <Alix.Rive@englobecorp.com>
Sent: September 30, 2020 1:19 PM
To: Perrin, Lauren LPerrin@GOV.NU.CA
Cc: Clayden, Meredith <MClayden@GOV.NU.CA>; Katheryne Budd <Katheryne.Budd@englobecorp.com>; Nan Du <ndu@dstgroup.com>
Subject: RE: Nunavut ESAs

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Hi Lauren,

I was actually thinking of these tank farms in Cambridge Bay (see copy paste here). Our study site is the pink polygon Yes I would like to get that report in reference to Kugaaruk Option 1 (Mlk u010).

Could I also get MLIG010 (igloolik) – our site is located to this tank farm. Thanks very much. I am cc'ing Nan and Katheryne here as they are part of the team.

Have a good day,
Alix



ALIX RIVE, Biol., M.Sc

Project Manager
Environmental engineering, Northern Canada

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From: Perrin, Lauren <LPerrin@GOV.NU.CA>
Sent: Wednesday, September 30, 2020 7:38 AM
To: Alix Rive <Alix.Rive@englobecorp.com>
Cc: Clayden, Meredith <MClayden@GOV.NU.CA>; Katheryne Budd <Katheryne.Budd@englobecorp.com>
Subject: RE: Nunavut ESAs

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Hi Alix,

My apologies I should have indicated what the different colour dots mean. The different colours represent the various NCS scores (attached is a picture of NCS legend). I will note however, the NCS scores were developed a long time ago

with limited information therefore are not great presentations of the level of concern. I can provide you with the report associated with MLKU010, if you like.

As requested attached is a screen shot of Cambridge Bay Tank Farm.

Cheers,
Lauren

From: Alix Rive <Alix.Rive@englobecorp.com>
Sent: September 29, 2020 5:58 PM
To: Perrin, Lauren <LPerrin@GOV.NU.CA>
Cc: Clayden, Meredith <MClayden@GOV.NU.CA>; Katheryne Budd <Katheryne.Budd@englobecorp.com>
Subject: RE: Nunavut ESAs

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Thanks Lauren for your email and for taking the time to have a look in your database.

It looks like site MLKU010 in Kugaaruk would be on our option 1 site. It's a red dot. Does this mean it's closed ? What colour does orange indicate ? I am just wondering because some of the neighbouring properties have orange dots.

Would it be possible to take a screen shot of the area around the tank farm in Cambridge Bay– our site is located about 400 m northwest of the tank farm.

Thanks for your help with this,

Alix

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From: Perrin, Lauren <LPerrin@GOV.NU.CA>
Sent: Tuesday, September 29, 2020 2:56 PM
To: Alix Rive <Alix.Rive@englobecorp.com>
Cc: Clayden, Meredith <MClayden@GOV.NU.CA>
Subject: RE: Nunavut ESAs

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Hi Alix,

After a preliminary search through our files it doesn't appear that we have any ESA's on the areas you've indicated however I have attached screenshots of the sites where we have site assessments in case I have misinterpreted your request and/or if another close contaminated site is within the boundaries you are looking at.

Happy to discuss further, let me know.

Cheers,
Lauren

From: Alix Rive <Alix.Rive@englobecorp.com>

Sent: September 21, 2020 8:30 PM

To: Perrin, Lauren <LPerrin@GOV.NU.CA>

Subject: RE: Nunavut ESAs

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Hi Lauren,

Thanks for your response. Appreciate you looking into this for us.

Just to be clear, there is no accessible website that documents all the environmental reports relevant to communities of Nunavut in one place ? for e.g. in Alberta we have the Environmental site assessment repository.

Thanks again for your help!

Alix

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From: Perrin, Lauren <LPerrin@GOV.NU.CA>

Sent: Monday, September 21, 2020 2:31 PM

To: Alix Rive <Alix.Rive@englobecorp.com>

Cc: Kiran Chandra Prakash <Kiran.ChandraPrakash@englobecorp.com>; Clayden, Meredith <MClayden@GOV.NU.CA>

Subject: RE: Nunavut ESAs

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Hi Alix,

Thanks for providing this information! I will look into this request and gather as much information as I can by end of week. I do suggest that you reach out to CGS' (PPE section) in the meantime as I will only be able to provide information on potential spills and known contaminates.

Cheers,
Lauren

From: Alix Rive <Alix.Rive@englobecorp.com>
Sent: September 17, 2020 12:50 PM
To: Clayden, Meredith <MClayden@GOV.NU.CA>
Cc: Perrin, Lauren <LPerrin@GOV.NU.CA>; Kiran Chandra Prakash <Kiran.ChandraPrakash@englobecorp.com>
Subject: RE: Nunavut ESAs

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Hello Meredith,

Thanks for reaching out – and I am sorry I missed your call yesterday. You mentioned you would be out today. So perhaps we could touch base tomorrow?

Here are the locations of the site assessments we will be conducting (find attached).

- Gjoa Haven (M2 – Lot 47)
- Igloodik (M2 – north of tank farm)
- Chesterfield Inlet (Industrial, northeast of tank farm)
- Cambridge Bay (restricted industrial)
- Kugaaruk (Zone 16W heavy industrial)

I am interested in knowing whether the Government of Nunavut has any record of any historical activities that could have led to some potential contamination on these sites. For example are there any records of infraction notices, complaints, corrective actions, spills, known sources of contamination, permits, certificates of authorization, aboveground storage tanks recorded for these properties.

I am cc'ing Kiran Chandra Prakash, the Project Manager and Client contact on this project.

Kiran: Meredith would like to touch base with QEC to talk to them about contaminated sites in general. Could you give her the contact info?

Thanks!

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Amanda Bruniski

From: Lilian Chen
Sent: Thursday, November 12, 2020 3:26 PM
To: saogjoa@qiniq.com
Cc: Arthur Antonacci
Subject: Request for Information for a Phase I ESA
Attachments: 2020084_GjoaHaven_RevisedLocations_GeotechESATopo.docx

Hi Mr. Devereaux,

I was given your contact info from Sharath, the Englobe technician that you met with in September, and I wanted to follow up with a request for some information about the environmental history of those two sites. Any **land title/chain of title** (past and present) information and information regarding the current **source of potable water for the Hamlet** would be greatly appreciated as well.

The sites are shown here attached, with UTM coordinates.

I am looking for any **historical events or environmental issues** such as : infraction notices, complaints, corrective actions, spills, known sources of contamination, permits, certificates of authorization, aboveground storage tanks recorded for the subject property, etc. Has there been any activities there? Are the sites being used right now to store anything?

Additionally, Sharath noted that you mentioned that the sites fell within the setback zone of a previously existing dump yard. Would you have any additional information regarding the dump yard (location, years active, waste materials disposed of at the dump yard, how the yard was decommissioned)?

Would it also be possible to send a zoning and site plan identifying buildings and authorized uses of the areas, that would be greatly appreciated.

Thank you very much for your assistance,

Lilian Chen, B.Sc.
Environmental Scientist

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Amanda Bruniski

From: Lilian Chen <lchen@dstgroup.com>
Sent: Friday, November 20, 2020 6:37 AM
To: Arthur Antonacci; saogjoa@qiniq.com
Subject: RE: Request for Information for a Phase I ESA

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Good Moring Mr. Devereaux,

I just wanted to touch base to see if you would be able to provide any information regarding the below questions emailed to your office yesterday. Please let me know if there are any issues in fulfilling the information request.

Sincerely,

Lilian Chen, B.Sc.
Environmental Scientist

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From: Arthur Antonacci <ArthurJames.Antonacci@englobecorp.com>
Sent: Thursday, November 19, 2020 1:37 PM
To: saogjoa@qiniq.com
Cc: Lilian Chen <lchen@dstgroup.com>
Subject: FW: Request for Information for a Phase I ESA

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Hi Mr. Devereaux,

Thank you so much for responding to my call. As you've mentioned that Nunavut has entered a lockdown due to COVID-19 until early December and am unable to access your typical office resources, I was wondering if you could provide some detail on a few general questions regarding the Hamlet Operations?

- How is potable water provided to the Hamlet residents and businesses? Are you aware of any potable groundwater wells within the Hamlet?
- Are you able to draw a markup of the approximate locations of the former and new waste dumps? Based on Google Earth Imagery and in the image attached, I assumed that the old waste dump was located south of Nuvu Road and the tank farm, and the new waste dump is south of the new sewage lagoon, please confirm.
- Would you be able to provide a timeline of when the old waste dump/new waste dump were in use?
- Can you describe the types of waste material accepted at the dump sites?
- Can you confirm if the Hamlet gas station is connected to the west side of the tank farm?
- Would you be able to provide any information on the tank farm/gas station (presence/type of secondary containment, types of fuel stored, any oil water separators used, type and construction material of the tanks, approximately when the tank farm was constructed)

It would be greatly appreciated if we could get a response by the end of the week!

Sincerely,

Lilian Chen, B.Sc.
Environmental Scientist

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From: Lilian Chen
Sent: Thursday, November 12, 2020 5:26 PM
To: saogjoa@qiniq.com
Cc: Arthur Antonacci <ArthurJames.Antonacci@englobecorp.com>
Subject: Request for Information for a Phase I ESA

Hi Mr. Devereaux,

I was given your contact info from Sharath, the Englobe technician that you met with in September, and I wanted to follow up with a request for some information about the environmental history of those two sites. Any **land title/chain of title** (past and present) information and information regarding the current **source of potable water for the Hamlet** would be greatly appreciated as well.

The sites are shown here attached, with UTM coordinates.

I am looking for any **historical events or environmental issues** such as : infraction notices, complaints, corrective actions, spills, known sources of contamination, permits, certificates of authorization, aboveground storage tanks recorded for the subject property, etc. Has there been any activities there? Are the sites being used right now to store anything?

Additionally, Sharath noted that you mentioned that the sites fell within the setback zone of a previously existing dump yard. Would you have any additional information regarding the dump yard (location, years active, waste materials disposed of at the dump yard, how the yard was decommissioned)?

Would it also be possible to send a zoning and site plan identifying buildings and authorized uses of the areas, that would be greatly appreciated.

Thank you very much for your assistance,

Lilian Chen, B.Sc.
Environmental Scientist

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Appendix D Hazardous Materials and Spills Database

Gjoa Haven Database as of september 8, 2020

Spill	Occurance Date	Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spill Cause	Lead Agency
spill-2020177	12-Jun-20	Kitikmeot	Gjoa Haven, Community, Nunavut	H NO: 404 Gjoa Haven, NU.	Unknown	Unknown Quantity			GN - Government of Nunavut
spill-2018337	22-Aug-18	Kitikmeot	Gjoa Haven, Community, Nunavut	Qikiqtaq Coop Store	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	500	Litres		GN - Government of Nunavut
spill-2018336	20-Aug-18	Kitikmeot	Gjoa Haven, Community, Nunavut	Qikiqtaq Coop Store	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	500	Litres		GN - Government of Nunavut
spill-2018296	10-Jul-18	Kitikmeot	Gjoa Haven, Community, Nunavut		Petroleum - fuel oil (jet A, diesel, turbo A, heat)	20	Litres	Deliberate Discharge	GN - Government of Nunavut
spill-2018260	26-Jun-18	Kitikmeot	Gjoa Haven, Community, Nunavut			18	Litres	Tank Leak	GN - Government of Nunavut
spill-2018240	19-Jun-18	Kitikmeot	Gjoa Haven, Community, Nunavut		Other	19	Litres	Breakage	GN - Government of Nunavut
spill-2017290	03-Aug-17	Kitikmeot	Gjoa Haven	Lot 349, Detached Garage, Gjoa Haven, NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	1	Litres	Fitting Leak	GN - Government of Nunavut
spill-2017149	08-May-17	Kitikmeot	Gjoa Haven	Gjoa Haven	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	170	Litres	Other	GN - Government of Nunavut
spill-2017058	25-Feb-17	Kitikmeot	Gjoa Haven	Tank Farm Fill Station, Gjoa Haven	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	2000	Litres	Other	GN - Government of Nunavut
spill-2016379	11-Oct-16	Kitikmeot	Gjoa Haven	Unit 37-022, Gjoa Haven	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Tank Leak	GN - Government of Nunavut

spill-2016346	25-Aug-16	Kitikmeot	Gjoa Haven	382 Den Drive, Gjoa Haven, NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	215	Litres	Deliberate Discharge	GN - Government of Nunavut
spill-2016244	26-Jun-16	Kitikmeot	Gjoa Haven	Unit #177, Gjoa Haven, NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	200	Litres	Other	GN - Government of Nunavut
spill-2016242	22-Jun-16	Kitikmeot	Gjoa Haven	Local Curling Rink	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	160	Litres	Collision or Crash	GN - Government of Nunavut
spill-2015406	26-Sep-15	Kitikmeot	Gjoa Haven	Gjoa Haven	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	150	Litres	Overflow Event	GN - Government of Nunavut
spill-2013271	02-Aug-13	Kitikmeot	Gjoa Haven	Mom & Tots	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	50	Litres	Overflow Event	GN - Government of Nunavut
spill-2013239	04-Jul-13	Kitikmeot	Gjoa Haven	Gjoa Haven	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	10	Litres	Overflow Event	GN - Government of Nunavut
spill-2013176	28-May-13	Kitikmeot	Gjoa Haven	Hamlet Garage	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	615	Litres	Collision or Crash	GN - Government of Nunavut
spill-2012131	17-Apr-12	Kitikmeot	Gjoa Haven	Arena	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	300	Litres	Tank Leak	GN - Government of Nunavut
spill-2012008	16-Jan-12	Kitikmeot	Gjoa Haven	CAP Enterprise	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	295	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2011272	12-Jul-11	Kitikmeot	Gjoa Haven	Old Health Centre, Gjoa Haven NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	92	Litres	Overflow Event	GN - Government of Nunavut
spill-2011220	12-Jun-11	Kitikmeot	Gjoa Haven	Nunavut Arctic College Building, Gjoa Haven	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	20	Litres	Tank Leak	GN - Government of Nunavut

spill-2010424	20-Oct-10	Kitikmeot	Gjoa Haven	Gjoa Haven	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	75	Litres	Overflow Event	GN - Government of Nunavut
spill-2010224	10-Jun-10	Kitikmeot	Gjoa Haven	Old Power Corp Care of Hamlet	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	810	Litres	Fitting Leak	GN - Government of Nunavut
spill-2009453	25-Sep-09	Kitikmeot	Gjoa Haven	Down by the Bay (shore)	Petroleum - gasoline (aviation, turbo B, jet B)	161	Litres	Other	GN - Government of Nunavut
spill-2009443	16-Sep-09	Kitikmeot	Gjoa Haven	Tank Farm Dispenser	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	62	Litres	Overflow Event	GN - Government of Nunavut
spill-2009365	22-Jul-09	Kitikmeot	Gjoa Haven	Simon and Rachel Hiqiniq's House	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	250	Litres	Tank Leak	GN - Government of Nunavut
spill-2008541	07-Nov-08	Kitikmeot	Gjoa Haven	Gjoa Haven Elementary School	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	200	Litres	Overflow Event	GN - Government of Nunavut
spill-2008499	16-Oct-08	Kitikmeot	Gjoa Haven	Unloading Dock	Petroleum - gasoline (aviation, turbo B, jet B)	138	Litres	Collision or Crash	GN - Government of Nunavut
spill-2008394	13-Aug-08	Kitikmeot	Gjoa Haven	Tank Farm Dispenser	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	1832	Litres	Overflow Event	GN - Government of Nunavut
spill-2008310	30-Jun-08	Kitikmeot	Gjoa Haven	Beside Unit 171 on Public Road	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	48	Litres	Tank Leak	GN - Government of Nunavut
spill-2008305	20-Jun-08	Kitikmeot	Gjoa Haven	Public Housing Unit 171	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	50	Litres	Tank Leak	GN - Government of Nunavut
spill-2008269	03-Jun-08	Kitikmeot	Gjoa Haven	Local Dump Site in a Berm	Petroleum - waste oil (slops, sludge)	0	Litres	Other	GN - Government of Nunavut

spill-2008152	22-Apr-08	Kitikmeot	Gjoa Haven	Airport Parking Area	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	1100	Litres	Collision or Crash	GN - Government of Nunavut
spill-2007562	19-Dec-07	Kitikmeot	Gjoa Haven	Airport Facility	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	110	Litres	Overflow Event	GN - Government of Nunavut
spill-2007509	09-Nov-07	Kitikmeot	Gjoa Haven	Near the Nunavut Power Corp Facility	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	409	Litres	Fitting Leak	GN - Government of Nunavut
spill-2007479	11-Oct-07	Kitikmeot	Gjoa Haven	Unloading Dock	Petroleum - lubricating oil (lube, hydraulic)	205	Litres	Other	GN - Government of Nunavut
spill-2007347	20-Jul-07	Kitikmeot	Gjoa Haven	Airport	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	100	Litres	Other	GN - Government of Nunavut
spill-2007314	06-Jul-07	Kitikmeot	Gjoa Haven	Tank Farm Pump House	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	900	Litres	Fitting Leak	GN - Government of Nunavut
spill-2007057	16-Feb-07	Kitikmeot	Gjoa Haven	Airport	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	180	Litres	Collision or Crash	GN - Government of Nunavut
spill-2006272	01-Jul-06	Kitikmeot	Gjoa Haven	Power Plant Fuel Storage Berm	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	615	Litres	Overflow Event	GN - Government of Nunavut
spill-2006155	18-Apr-06	Kitikmeot	Gjoa Haven	House 390 5-Plex	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	300	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2006119	29-Mar-06	Kitikmeot	Gjoa Haven	Power Corporation Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	114	Litres	Overflow Event	GN - Government of Nunavut
spill-2005483	09-Oct-05	Kitikmeot	Gjoa Haven	Water Lake West Dyke	Wastewater (sewage, mine tailings)	10000000	Litres	Dyke Failure	GN - Government of Nunavut
spill-2005445	16-Sep-05	Kitikmeot	Gjoa Haven	Hamlet of Gjoa Haven	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	250	Litres	Collision or Crash	GN - Government of Nunavut

spill-2004548	17-Aug-04	Kitikmeot	Gjoa Haven	Old Pentecostal Church	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Tank Leak	GN - Government of Nunavut
spill-2004491	21-Jul-04	Kitikmeot	Gjoa Haven	Sewage Lagoon	Wastewater (sewage, mine tailings)	0	Litres	Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-2004475	21-Jul-04	Kitikmeot	Gjoa Haven	Hamlet of Gjoa Haven	Unknown	45	Litres	Deliberate Discharge	GN - Government of Nunavut
spill-2004464	13-Jul-04	Kitikmeot	Gjoa Haven	Lot 110 Plan 1141	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	45	Litres	Overflow Event	GN - Government of Nunavut
spill-2004387	16-Jun-04	Kitikmeot	Gjoa Haven	In Tank Farm Berm	Petroleum - gasoline (aviation, turbo B, jet B)	205	Litres	Other	GN - Government of Nunavut
spill-2003605	01-Oct-03	Kitikmeot	Gjoa Haven	Duplex owned by Co-op	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Tank Leak	GN - Government of Nunavut
spill-2003516	26-Jul-03	Kitikmeot	Gjoa Haven	Unit 0048	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Tank Leak	GN - Government of Nunavut
spill-2003472	07-Jul-03	Kitikmeot	Gjoa Haven	Lot 503-SK-180	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2003431	13-Jun-03	Kitikmeot	Gjoa Haven	Northern Staff House Fuel Tank	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	552	Litres	Tank Leak	GN - Government of Nunavut
spill-2003277	10-Apr-03	Kitikmeot	Gjoa Haven	Fuel Tank at Gov.'t of Nunavut Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	46	Litres	Overflow Event	GN - Government of Nunavut
spill-2003183	19-Mar-03	Kitikmeot	Gjoa Haven	Unit 179 Public Housing	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Pipe Leaks	GN - Government of Nunavut

spill-2002321	13-May-02	Kitikmeot	Gjoa Haven	Kekertak Co-op Storage Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	1500	Litres	Collision or Crash	GN - Government of Nunavut
spill-2001313	08-Oct-01	Kitikmeot	Gjoa Haven	Fuel Farm	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	1800	Litres	Overflow Event	GN - Government of Nunavut
spill-2000136	30-May-00	Kitikmeot	Gjoa Haven	Hamlet Garage Yard	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	92	Litres	Fitting Leak	GN - Government of Nunavut
spill-2000040	22-Feb-00	Kitikmeot	Gjoa Haven	Water Supply Lake	Chemicals (including transformer oils)	1.5	Litres	Overflow Event	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-1999172	30-Dec-99	Kitikmeot	Gjoa Haven	Lot 394 Plot 2742	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	100	Litres	Collision or Crash	GN - Government of Nunavut
spill-1999100	12-Aug-99	Kitikmeot	Gjoa Haven	Tank Farm	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	4286	Litres	Overflow Event	GN - Government of Nunavut
spill-1998167	04-Sep-98	Kitikmeot	Gjoa Haven	Gjoa Haven Elementary School	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0		Overflow Event	GNWT - Department of Environment and Natural Resources
spill-1997151	10-Jul-97	Kitikmeot	Gjoa Haven	Gjoa Haven Nursing Station	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	23	Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
spill-1997147	05-Jul-97	Kitikmeot	Gjoa Haven	Outside House #91	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	40	Litres	Deliberate Discharge	GNWT - Department of Environment and Natural Resources
spill-1997081	07-May-97	Kitikmeot	Gjoa Haven	Nunavut Waterboard Office	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	1449	Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources

spill-1997015	13-Feb-97	Kitikmeot	Gjoa Haven	Tank Farm Facility	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	230	Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
spill-1996023	19-Feb-96	Kitikmeot	Gjoa Haven	Tank Farm	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	400	Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
spill-1995109	08-Jul-95	Kitikmeot	Gjoa Haven	House # 37-019 Duplex	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	1137	Litres	Collision or Crash	GNWT - Department of Environment and Natural Resources
spill-1995088	13-Jun-95	Kitikmeot	Gjoa Haven	Airport Dispenser	Petroleum - gasoline (aviation, turbo B, jet B)	40	Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
spill-1995055	02-May-95	Kitikmeot	Gjoa Haven	Tank Farm	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	720	Litres	Tank Leak	GNWT - Department of Environment and Natural Resources
spill-1995032	28-Mar-95	Kitikmeot	Gjoa Haven	Tank Farm	Petroleum - gasoline (aviation, turbo B, jet B)	500	Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
spill-1994195	19-Oct-94	Kitikmeot	Gjoa Haven	On Road Outside DPW Shop	Chemicals (including transformer oils)	20	Litres	Other	GNWT - Department of Environment and Natural Resources
spill-1994196	19-Oct-94	Kitikmeot	Gjoa Haven		Petroleum - lubricating oil (lube, hydraulic)	0	Litres	Unkown Cause	GNWT - Department of Environment and Natural Resources
spill-1994186	29-Sep-94	Kitikmeot	Gjoa Haven	Tank Farm	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	69	Litres	Fitting Leak	GNWT - Department of Environment and Natural Resources

spill-1994172	15-Sep-94	Kitikmeot	Gjoa Haven	House #169	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	35	Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
spill-1994136	29-Jul-94	Kitikmeot	Gjoa Haven	House #2	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	50	Litres	Tank Leak	GNWT - Department of Environment and Natural Resources
spill-1994101	04-Jun-94	Kitikmeot	Gjoa Haven	APM Construction Site	Petroleum - lubricating oil (lube, hydraulic)	68	Litres	Other	GNWT - Department of Environment and Natural Resources
spill-1994091	03-Jun-94	Kitikmeot	Gjoa Haven	Airport Tank Farm	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	8000	Litres	Tank Leak	GNWT - Department of Environment and Natural Resources
spill-1994043	14-Mar-94	Kitikmeot	Gjoa Haven	Renewable Resources Office	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	40	Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
spill-1993139	20-Aug-93	Kitikmeot	Gjoa Haven	House #28	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	138	Litres	Fitting Leak	GNWT - Department of Environment and Natural Resources
spill-1993098	23-Jun-93	Kitikmeot	Gjoa Haven	Arena Complex	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	91	Litres	Tank Leak	GNWT - Department of Environment and Natural Resources
spill-1992169	24-Jul-92	Kitikmeot	Gjoa Haven	APM Construction Site	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	90	Litres	Tank Leak	GNWT - Department of Environment and Natural Resources
spill-1992158	09-Jul-92	Kitikmeot	Gjoa Haven	Quqqshun School	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	30	Litres	Overflow Event	GNWT - Department of Environment and Natural Resources

spill-1992116	12-Jun-92	Kitikmeot	Gjoa Haven	House #32	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	40	Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
spill-1992062	02-May-92	Kitikmeot	Gjoa Haven	House #4	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	400	Litres	Fitting Leak	GNWT - Department of Environment and Natural Resources
spill-1992035	12-Mar-92	Kitikmeot	Gjoa Haven	Hamlet Garage	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	30	Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
spill-1991225	17-Dec-91	Kitikmeot	Gjoa Haven	Ladies Group Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	70	Litres	Other	GNWT - Department of Environment and Natural Resources
spill-1991173	04-Sep-91	Kitikmeot	Gjoa Haven	POL Tank Farm	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	300	Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources
spill-1991015	21-Feb-91	Kitikmeot	Gjoa Haven	Beside NWTPC Power Plant	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	400	Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
spill-1989173	31-Oct-89	Kitikmeot	Gjoa Haven	In Garage	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	150	Litres	Fitting Leak	GNWT - Department of Environment and Natural Resources
spill-1988157	07-Oct-88	Kitikmeot	Gjoa Haven	House #97	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	12	Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
spill-1988141	04-Sep-88	Kitikmeot	Gjoa Haven	New School	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	3500	Litres	Fitting Leak	GNWT - Department of Environment and Natural Resources

spill-1988037	11-Apr-88	Kitikmeot	Gjoa Haven	NCPC Tank Farm	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	2250	Litres	Overflow Event	ECCC - Environment and Climate Change Canada
spill-1987117	31-Oct-87	Kitikmeot	Gjoa Haven		Petroleum - fuel oil (jet A, diesel, turbo A, heat)	250	Litres	Fitting Leak	GNWT - Department of Environment and Natural Resources
spill-1987078	05-Jul-87	Kitikmeot	Gjoa Haven	School Fuel Tank	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	456	Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources
spill-1987028	06-Apr-87	Kitikmeot	Gjoa Haven	Beside Town Water Lake	Petroleum - lubricating oil (lube, hydraulic)	100	Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources
spill-1987017	18-Feb-87	Kitikmeot	Gjoa Haven	Fuel Distribution Shack	Petroleum - gasoline (aviation, turbo B, jet B)	20	Litres	Fitting Leak	GNWT - Department of Environment and Natural Resources
spill-1974021	13-Jun-74	Kitikmeot	Gjoa Haven	Tank Farm	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	22730	Litres	Deliberate Discharge	GNWT - Department of Environment and Natural Resources
spill-2004571		Kitikmeot	Gjoa Haven	RCMP Detachment	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2001291		Kitikmeot	Gjoa Haven	Site 503-Sk-074	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Unkown Cause	GN - Government of Nunavut
spill-2017206		Kitikmeot	Gjoa Haven	Gjoa Haven Gas Station - Jet A Dispenser Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	500	Litres	Overflow Event	GN - Government of Nunavut
spill-2001292		Kitikmeot	Gjoa Haven	House 37-104	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Pipe Leaks	GN - Government of Nunavut

spill-1987038		Kitikmeot	Gjoa Haven	Beside Nursing Station	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	600	Litres	Overflow Event	ECCC - Environment and Climate Change Canada
spill-2017306		Kitikmeot	Gjoa Haven	Gjoa Haven	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	5	Litres	Pipe Leaks	GN - Government of Nunavut
spill-1992181		Kitikmeot	Gjoa Haven	House #13	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Tank Leak	GNWT - Department of Environment and Natural Resources
spill-2006240		Kitikmeot	Gjoa Haven	Water Treatment Plant to Swan Lake Pump House	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	1290	Litres	Collision or Crash	CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada
spill-1996104		Kitikmeot	Gjoa Haven	Housing Unit #0132	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	161	Litres	Tank Leak	GNWT - Department of Environment and Natural Resources
spill-1988051		Kitikmeot	Gjoa Haven	North Side of Hamlet Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
spill-2013048		Kitikmeot	Gjoa Haven	CAP Construction	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	760	Litres	Unkown Cause	GN - Government of Nunavut
spill-1996148		Kitikmeot	Gjoa Haven	Tank Farm	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	182	Litres	Other	GNWT - Department of Environment and Natural Resources
spill-1988106		Kitikmeot	Gjoa Haven	Co-op Bunkhouse Near RC Church	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Tank Leak	GNWT - Department of Environment and Natural Resources

spill-1993150		Kitikmeot	Gjoa Haven	GNWT Fuel Yard	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Tank Leak	GNWT - Department of Environment and Natural Resources
spill-1989084		Kitikmeot	Gjoa Haven	Housing Association Yard	Petroleum - lubricating oil (lube, hydraulic)	210	Litres	Collision or Crash	GNWT - Department of Environment and Natural Resources
spill-1989085		Kitikmeot	Gjoa Haven	Hamlet Storage Shed	Petroleum - lubricating oil (lube, hydraulic)	205	Litres	Collision or Crash	GNWT - Department of Environment and Natural Resources

Appendix E ERIS Search Results



DATABASE REPORT

Project Property: *Gjoa Haven Option 1
Gjoa Haven Option 1
Gjoa Haven NU*

Project No:

Report Type: *Quote - Custom-Build Your Own Report*

Order No: *20291100218*

Requested by: *Englobe Corp.*

Date Completed: *September 21, 2020*

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Executive Summary

Property Information:

Project Property: *Gjoa Haven Option 1
Gjoa Haven Option 1 Gjoa Haven NU*

Project No:

Order Information:

Order No: *20291100218*
Date Requested: *September 11, 2020*
Requested by: *Englobe Corp.*
Report Type: *Quote - Custom-Build Your Own Report*

Historical/Products:

Aerial Photographs *Aerials - National Collection*
ERIS Xplorer [*ERIS Xplorer*](#)

Executive Summary: Report Summary

<i>Database</i>	<i>Name</i>	<i>Searched</i>	<i>Project Property</i>	<i>Boundary to 0.25km</i>	<i>Total</i>
AUWR	<i>Automobile Wrecking & Supplies</i>	Y	0	0	0
CDRY	<i>Dry Cleaning Facilities</i>	Y	0	0	0
CFST	<i>Crown Land Fuel Storage Tanks</i>	Y	0	0	0
CNG	<i>Compressed Natural Gas Stations</i>	Y	0	0	0
EHS	<i>ERIS Historical Searches</i>	Y	0	0	0
FCON	<i>Federal Convictions</i>	Y	0	0	0
FCS	<i>Contaminated Sites on Federal Land</i>	Y	0	0	0
FRST	<i>Federal Identification Registry for Storage Tank Systems (FIRSTS)</i>	Y	0	0	0
GHG	<i>Greenhouse Gas Emissions from Large Facilities</i>	Y	0	0	0
IAFT	<i>Indian & Northern Affairs Fuel Tanks</i>	Y	0	0	0
MINE	<i>Canadian Mine Locations</i>	Y	0	0	0
MNR	<i>Mineral Occurrences</i>	Y	0	0	0
NATE	<i>National Analysis of Trends in Emergencies System (NATES)</i>	Y	0	0	0
NDSP	<i>National Defense & Canadian Forces Spills</i>	Y	0	0	0
NDWD	<i>National Defence & Canadian Forces Waste Disposal Sites</i>	Y	0	0	0
NEBI	<i>National Energy Board Pipeline Incidents</i>	Y	0	0	0
NEBT	<i>National Energy Board Wells</i>	Y	0	0	0
NEES	<i>National Environmental Emergencies System (NEES)</i>	Y	0	0	0
NPCB	<i>National PCB Inventory</i>	Y	0	0	0
NPRI	<i>National Pollutant Release Inventory</i>	Y	0	0	0
OGWE	<i>Oil and Gas Wells</i>	Y	0	0	0
RST	<i>Retail Fuel Storage Tanks</i>	Y	0	0	0
SCT	<i>Scott's Manufacturing Directory</i>	Y	0	0	0
SPL	<i>Spills</i>	Y	0	0	0
Total:			0	0	0

Executive Summary: Site Report Summary - Project Property

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist (m)</i>	<i>Elev diff (m)</i>	<i>Page Number</i>
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No records found in the selected databases for the project property.

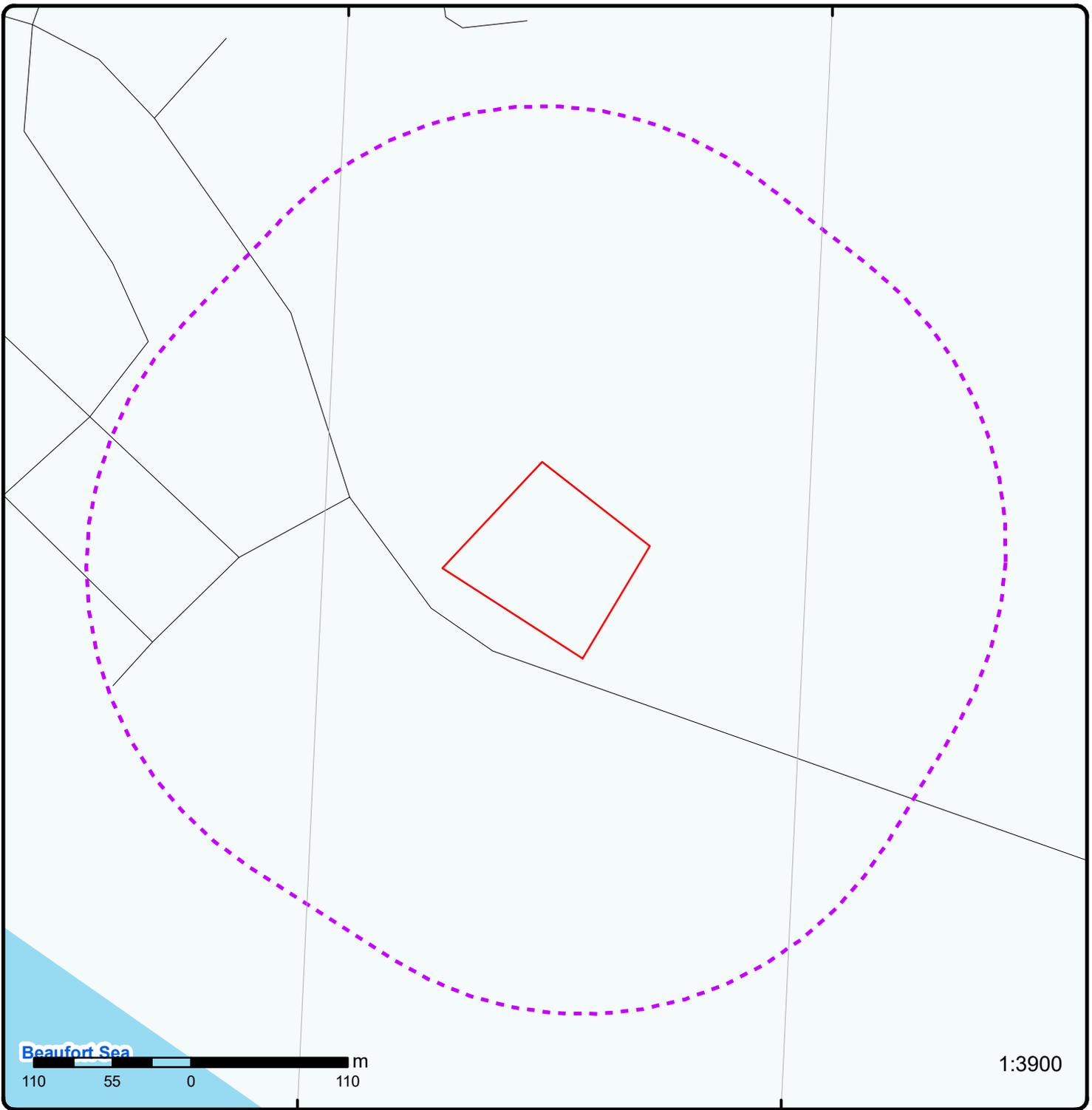
Executive Summary: Site Report Summary - Surrounding Properties

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist (m)</i>	<i>Elev Diff (m)</i>	<i>Page Number</i>
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No records found in the selected databases for the surrounding properties.

Executive Summary: Summary By Data Source

No records found in the selected databases for the project property or surrounding properties.



Map : 0.25 Kilometer Radius

Order Number: 20291100218

Address: Gjoa Haven Option 1, Gjoa Haven, NU



Project Property	Expressway	Industrial and Resource - Regions	National Park
Buffer Outline	Principal Highway	Main Line	Provincial or Territorial Park
Eris Sites with Higher Elevation	Secondary Highway	Sidetrack	Other Park
Eris Sites with Same Elevation	Major Road	Transit Line	Golf Course or Driving Range
Eris Sites with Lower Elevation	Local road	Abandoned Line	Park or Sports Field
Eris Sites with Unknown Elevation	Trail	Proposed Road	Other Recreation Area
	Proposed Road		
	Ferry Route/Ice Road		

95°52'30"W

95°51'W

68°37'30"N

68°37'30"N



Aerial Year: 2019

Address: Gjoa Haven Option 1, Gjoa Haven, NU

Source: ESRI World Imagery

Order Number: 20291100218



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95°54'W

95°52'30"W

95°51'W

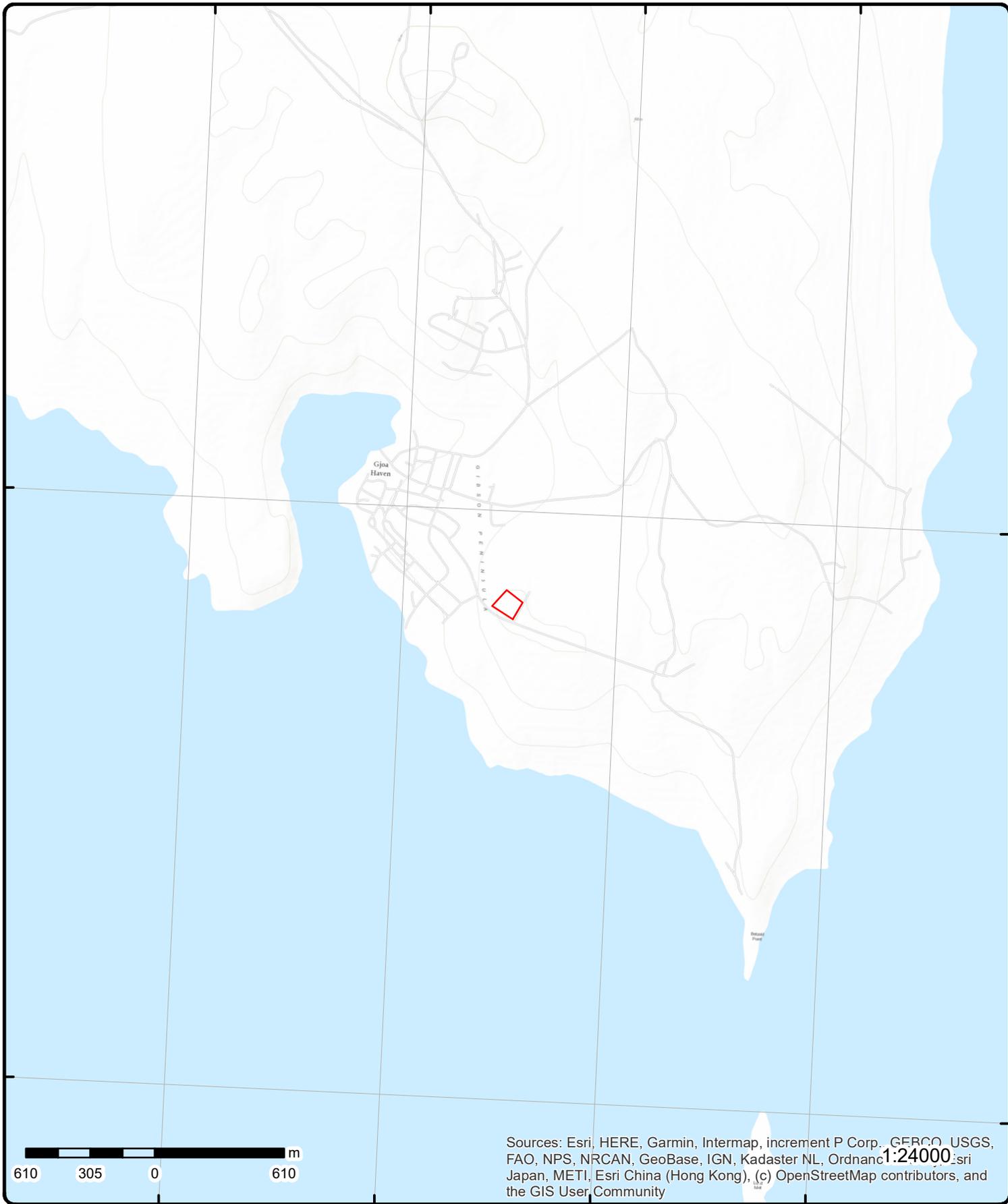
95°49'30"W

68°37'30"N

68°37'30"N

68°36'N

68°36'N



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

1:24000

Topographic Map

Address: Gjoa Haven Option 1, NU

Source: ESRI World Topographic Map

Order Number: 20291100218



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Detail Report

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elev/Diff (m)</i>	<i>Site</i>	<i>DB</i>
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No records found in the selected databases for the project property or surrounding properties.

Unplottable Summary

Total: 0 Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
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Unplottable Report

No unplottable records were found that may be relevant for the search criteria.

Appendix: Database Descriptions

*Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. **Note:** Databases denoted with " * " indicates that the database will no longer be updated. See the individual database description for more information.*

Automobile Wrecking & Supplies:

Private

[AUWR](#)

This database provides an inventory of known locations that are involved in the scrap metal, automobile wrecking/recycling, and automobile parts & supplies industry. Information is provided on the company name, location and business type.

Government Publication Date: 1999-Jan 31, 2020

Dry Cleaning Facilities:

Federal

[CDRY](#)

List of dry cleaning facilities made available by Environment and Climate Change Canada. Environment and Climate Change Canada's Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations (SOR/2003-79) are intended to reduce releases of tetrachloroethylene to the environment from dry cleaning facilities.

Environment and Climate Change Canada cites the coronavirus pandemic as an explanation for delays in releasing data pursuant to requests.

Government Publication Date: Jan 2004-Dec 2017

Crown Land Fuel Storage Tanks:

Territorial

[CFST](#)

The Department of Indian and Northern Affairs Canada mandates that all fuel storage tanks on Crown Land be recorded, when an individual applies for a land use permit or surface lease. Please note that there are numerous records in the database where the "Commencement Date" is previous to 1997. However, since INAC only began registering tank locations in 1997, any tanks installed previous to that may or may not be in the database, due to lack of regulations. Note the following descriptions: Commencement Date is the original file date, Fuel Application Date is the date an application was submitted for a tank, and the Fuel Confirmation Date is the date the department accepted the application and confirmed the information submitted. The Department of Indian and Northern Affairs cites the coronavirus pandemic as an explanation for delays in releasing data pursuant to requests.

Government Publication Date: Oct 1997-Feb 2019

Compressed Natural Gas Stations:

Private

[CNG](#)

Canada has a network of public access compressed natural gas (CNG) refuelling stations. These stations dispense natural gas in compressed form at 3,000 pounds per square inch (psi), the pressure which is allowed within the current Canadian codes and standards. The majority of natural gas refuelling is located at existing retail gasoline that have a separate refuelling island for natural gas. This list of stations is made available by the Canadian Natural Gas Vehicle Alliance.

Government Publication Date: Dec 2012 - Jun 2020

ERIS Historical Searches:

Private

[EHS](#)

ERIS has compiled a database of all environmental risk reports completed since March 1999. Available fields for this database include: site location, date of report, type of report, and search radius. As per all other databases, the ERIS database can be referenced on both the map and "Statistical Profile" page.

Government Publication Date: 1999-Jul 31, 2020

Federal Convictions:

Federal

[FCON](#)

Environment Canada maintains a database referred to as the "Environmental Registry" that details prosecutions under the Canadian Environmental Protection Act (CEPA) and the Fisheries Act (FA). Information is provided on the company name, location, charge date, offence and penalty.

Government Publication Date: 1988-Jun 2007*

Contaminated Sites on Federal Land:

Federal

[FCS](#)

The Federal Contaminated Sites Inventory includes information on known federal contaminated sites under the custodianship of departments, agencies and consolidated Crown corporations as well as those that are being or have been investigated to determine whether they have contamination arising from past use that could pose a risk to human health or the environment. The inventory also includes non-federal contaminated sites for which the Government of Canada has accepted some or all financial responsibility. It does not include sites where contamination has been caused by, and which are under the control of, enterprise Crown corporations, private individuals, firms or other levels of government. Includes fire training sites and sites at which Per- and Polyfluoroalkyl Substances (PFAS) are a concern.

Government Publication Date: Jun 2000-Apr 2020

Federal Identification Registry for Storage Tank Systems (FIRSTS):

Federal

[FRST](#)

A list of federally regulated Storage tanks from the Federal Identification Registry for Storage Tank Systems (FIRSTS). FIRSTS is Environment and Climate Change Canada's database of storage tank systems subject to the Storage Tank for Petroleum Products and Allied Petroleum Products Regulations. The main objective of the Regulations is to prevent soil and groundwater contamination from storage tank systems located on federal and aboriginal lands. Storage tank systems that do not have a valid identification number displayed in a readily visible location on or near the storage tank system may be refused product delivery.

Government Publication Date: May 31, 2018

Greenhouse Gas Emissions from Large Facilities:

Federal

[GHG](#)

List of greenhouse gas emissions from large facilities made available by Environment Canada. Greenhouse gas emissions in kilotonnes of carbon dioxide equivalents (kt CO₂ eq).

Government Publication Date: 2013-Dec 2017

Indian & Northern Affairs Fuel Tanks:

Federal

[IAFT](#)

The Department of Indian & Northern Affairs Canada (INAC) maintains an inventory of aboveground & underground fuel storage tanks located on both federal and crown land. Our inventory provides information on the reserve name, location, facility type, site/facility name, tank type, material & ID number, tank contents & capacity, and date of tank installation.

Government Publication Date: 1950-Aug 2003*

Canadian Mine Locations:

Private

[MINE](#)

This information is collected from the Canadian & American Mines Handbook. The Mines database is a national database that provides over 290 listings on mines (listed as public companies) dealing primarily with precious metals and hard rocks. Listed are mines that are currently in operation, closed, suspended, or are still being developed (advanced projects). Their locations are provided as geographic coordinates (x, y and/or longitude, latitude). As of 2002, data pertaining to Canadian smelters and refineries has been appended to this database.

Government Publication Date: 1998-2009*

Mineral Occurrences:

Territorial

[MNR](#)

The C.S. Lord Northern Geoscience Centre maintains a database of mineral showings (commodity occurrences) for both the Northwest Territories and Nunavut. The database provides Showing ID, latitude, longitude, Showing Name, commodity type, current development stage, and general comments on lithology, mineralization and geological settings.

Government Publication Date: 1900-Sep 2018

National Analysis of Trends in Emergencies System (NATES):

Federal

[NATE](#)

In 1974 Environment Canada established the National Analysis of Trends in Emergencies System (NATES) database, for the voluntary reporting of significant spill incidents. The data was to be used to assist in directing the work of the emergencies program. NATES ran from 1974 to 1994. Extensive information is available within this database including company names, place where the spill occurred, date of spill, cause, reason and source of spill, damage incurred, and amount, concentration, and volume of materials released.

Government Publication Date: 1974-1994*

National Defense & Canadian Forces Spills:

Federal

[NDSP](#)

The Department of National Defense and the Canadian Forces maintains an inventory of spills to land and water. All spill sites have been classified under the "Transportation of Dangerous Goods Act - 1992". Our inventory provides information on the facility name, location, spill ID #, spill date, type of spill, as well as the quantity of substance spilled & recovered.

Government Publication Date: Mar 1999-Apr 2018

National Defence & Canadian Forces Waste Disposal Sites:

Federal

[NDWD](#)

The Department of National Defence and the Canadian Forces maintains an inventory of waste disposal sites located on DND lands. Where available, our inventory provides information on the base name, location, type of waste received, area of site, depth of site, year site opened/closed and status.

Government Publication Date: 2001-Apr 2007*

National Energy Board Pipeline Incidents:

Federal

[NEBI](#)

Locations of pipeline incidents from 2008 to present, made available by the Canada Energy Regulator (CER) - previously the National Energy Board (NEB). Includes incidents reported under the Onshore Pipeline Regulations and the Processing Plant Regulations related to pipelines under federal jurisdiction, does not include incident data related to pipelines under provincial or territorial jurisdiction.

Government Publication Date: 2008-Mar 31, 2020

National Energy Board Wells:

Federal

[NEBT](#)

The NEBW database contains information on onshore & offshore oil and gas wells that are outside provincial jurisdiction(s) and are thereby regulated by the National Energy Board. Data is provided regarding the operator, well name, well ID No./UWI, status, classification, well depth, spud and release date.

Government Publication Date: 1920-Feb 2003*

National Environmental Emergencies System (NEES):

Federal

[NEES](#)

In 2000, the Emergencies program implemented NEES, a reporting system for spills of hazardous substances. For the most part, this system only captured data from the Atlantic Provinces, some from Quebec and Ontario and a portion from British Columbia. Data for Alberta, Saskatchewan, Manitoba and the Territories was not captured. However, NEES is also a repository for previous Environment Canada spill datasets. NEES is composed of the historic datasets ' or Trends ' which dates from approximately 1974 to present. NEES Trends is a compilation of historic databases, which were merged and includes data from NATES (National Analysis of Trends in Emergencies System), ARTS (Atlantic Regional Trends System), and NEES. In 2001, the Emergencies Program determined that variations in reporting regimes and requirements between federal and provincial agencies made national spill reporting and trend analysis difficult to achieve. As a consequence, the department has focused efforts on capturing data on spills of substances which fall under its legislative authority only (CEPA and FA). As such, the NEES database will be decommissioned in December 2004.

Government Publication Date: 1974-2003*

National PCB Inventory:

Federal

[NPCB](#)

Environment Canada's National PCB inventory includes information on in-use PCB containing equipment in Canada including federal, provincial and private facilities. Federal out-of-service PCB containing equipment and PCB waste owned by the federal government or by federally regulated industries such as airlines, railway companies, broadcasting companies, telephone and telecommunications companies, pipeline companies, etc. are also listed. Although it is not Environment Canada's mandate to collect data on non-federal PCB waste, the National PCB inventory includes some information on provincial and private PCB waste and storage sites. Some addresses provided may be Head Office addresses and are not necessarily the location of where the waste is being used or stored.

Government Publication Date: 1988-2008*

National Pollutant Release Inventory:

Federal

[NPRI](#)

Environment Canada has defined the National Pollutant Release Inventory ("NPRI") as a federal government initiative designed to collect comprehensive national data regarding releases to air, water, or land, and waste transfers for recycling for more than 300 listed substances.

Government Publication Date: 1993-May 2017

Oil and Gas Wells:

Private

[OGWE](#)

The Nickle's Energy Group (publisher of the Daily Oil Bulletin) collects information on drilling activity including operator and well statistics. The well information database includes name, location, class, status and depth. The main Nickle's database is updated on a daily basis, however, this database is updated on a monthly basis. More information is available at www.nickles.com.

Government Publication Date: 1988-May 31, 2020

Retail Fuel Storage Tanks:

Private

[RST](#)

This database includes an inventory of retail fuel outlet locations (including marinas) that have on their property gasoline, oil, waste oil, natural gas and / or propane storage tanks.

Government Publication Date: 1999-Jan 31, 2020

Scott's Manufacturing Directory:

Private

[SCT](#)

Scott's Directories is a data bank containing information on over 200,000 manufacturers across Canada. Even though Scott's listings are voluntary, it is the most comprehensive database of Canadian manufacturers available. Information concerning a company's address, plant size, and main products are included in this database.

Government Publication Date: 1992-Mar 2011*

Spills:

Territorial

[SPL](#)

The Department of Resources, Wildlife & Economic Development (RWED), in Yellowknife, maintains an inventory of spill locations through the "Hazardous Materials Spills Database". Information is provided on the spill number, date, location, spill description, quantity & commodity spilled and all applicable parties involved.

Government Publication Date: Mar 31, 2020

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

Appendix F Site Photographs



Photo 1: Vista looking east across the north portion of Site.



Photo 2: Vista looking south across east portion of Site.



Photo 3: Vista looking south across west portion of Site.



Photo 4: Vista east across south area of Site.



Photo 5: Wooden cargo boxes along west side of property, facing north.



Photo 6: View of empty drums on south side of site, facing east.



Photo 7: View of drilling equipment and engine oil pails in southeast area of Site, note surface staining, facing northwest.



Photo 8: View of compressed gas tanks for welding and empty AST on its side, facing north.



Photo 9: View of drilling supplies, welding operations, and seacans, facing south.



Photo 10: View of old drilling equipment, facing southwest.



Photo 11: View of old drilling equipment, facing east.



Photo 12: View of gas station (left) and Tank Farm (right) to the east of the Site, facing northeast from Nuvu Road.



Photo 13: View of abandoned fuel trucks and jet fuel storage (back left) to the northwest of the Site, facing northeast.



Photo 14: View of abandoned residential units to the west of the Site, facing southwest.



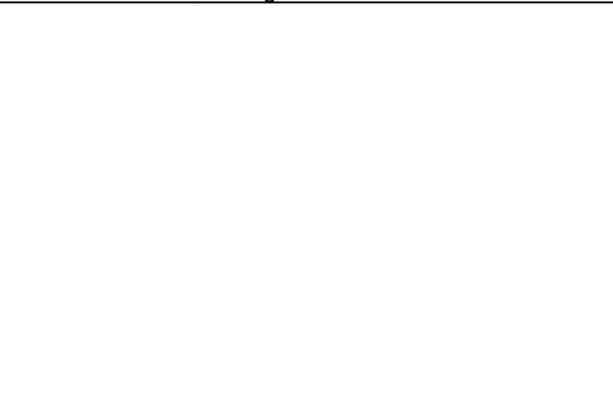
Photo 15: View of vacant land to the north of the Site, facing north.



Photo 16: View of Gjoa Haven community to the west of the Site, facing west.



Photo 17: View of unnamed lake to the northeast of the Site, facing east.



Appendix G Site Notes/Interview

Environmental Site Assessment – Phase I

Description of Site

- Inspect the site thoroughly, and describe what you see

Flat in both Options. Lot of casing pipes and seacans and cargo at the site belonging to Candrill and another xyz contractor.

- Any building(s) present on site? Vehicles? Mechanical Equipment? Snowmobiles? Sheds? Anything. If there is any equipment, describe the condition and inspect if there are any stains around the equipment.

Nothing on option 5. Old empty houses found on the south west corner of the site of option 1. Old compressor engine parked at Option 1. Tire marks of skidsters and crane to move the cargo boxes. Seacan belonging to xyz contractors and canadrill present in the site with lots of pipes and casings in the area. sandy surface throughout with some vegetation in the area.

- Anything else being stored on-site, if so, what? Describe. Take photographs.
Only option 1 had seacan and cargo boxes – Believed to be Construction materials for XYZ contractors (Contact – 709 640 7475) – comprising of drywall insulation, flooring and everything in between. Casings and pipes belonging to Canadrill – Also present – Propane Gas for welding.

Any above storage tanks? If so, describe and indicate size of tank and contents. Any staining around ? If so, describe and take photographs.

No storage tanks except for the one east of option 1.

- Any pipelines? Wells?

Closest pipeline goes from the storage tank to the coast on its south side.

- Any strong odours ?

No odours noted. Was also windy on all the days I drilled.

- Note site drainage, ditches, etc.

No drainage found. No surface water.

- Any storage, disposal and generation of hazardous materials? If so, what? Take photographs.

Propane gas used for welding by Canadrill. The Canadrill seacan also had the rig engine oil stored in a few pails.

- Are there any discoloration or staining that could be from contamination anywhere? If so, take GPS coordinates to delineate and take photographs.

None. However I took a sample below the old compressor which I suspected to have some discoloration.

- What buildings, objects, roads are immediately surrounding the site boundaries? Please describe what you see for each direction (N, NW, NE, SE, SW, E, W) and take photographs.

Road found on the south side of both option 1 and option 5. Storage tank on the east side of option 1.

- What are these neighboring buildings? What activities take place there? Any potential contamination from these surrounding sites?

Only gas station on east side of Option 1.

Topography and Physical Characteristics:

- Is the terrain gently sloping? If yes, in what direction? Is it flat?

Both options seemed Flat.

- Is there surface water? Frozen? Take photographs.

No surface water in either of the options.

- Is there any vegetation? what kind? herbaceous? Shrubs? Is it stressed? Take photographs.

No stressed vegetation. Grassy vegetation on option 5. However, only some vegetation was found on option 1 due to the sandy surface.

Interviews

- Note down any names of people you talk to regarding the site. Note the questions and answers.
- Ask interviewees what the history of the site.
 1. Who is the current landowner, occupant?
Hamlet – As per SAO.
 2. Have there been any buildings here in the past?
No buildings – As per SAO. But 3 unoccupied houses are close to the SW border of option 1.
 3. Has anything been stored here in the past?
Canadrill have been using this space for their seacans since 6+ years. The XYZ contractors have also been using this space for their materials since last year
 4. Has the site been used for anything in the past? If so, what?
Used only for storage.
 5. Knowledge of spills, any environmental incidents or concerns?
No spills in the Area. However, SAO said that both site fall under the Setback zone of a previously existing dump yard.

SAO Gjoa Haven Contact – Ed Devereaux – saogjoa@qiniq.com – 867 360 7141 ext 202
QEC Assistant Operator – Andrew Palongayak – 867 360 1201

