



**Aboriginal Affairs and
Northern Development Canada**

**Affaires autochtones et
Développement du Nord Canada**



Bathurst Island The Definition of a Difficult Location

RemTech 2014

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Introduction

- Mark Yetman
 - Project Manager, Lands & Contaminated Sites
 - Nunavut Regional Office, Aboriginal Affairs and Northern Development Canada
- Nunavut Contaminated Sites Program
 - Responsible for managing contaminated sites located on Federal Crown Lands within Nunavut
 - The majority of these sites are the result of exploration and military activities





Nunavut Contaminated Sites Program

- CSP Database
 - Database contains information on over 300 potentially contaminated sites
 - Phase I and Phase II Environmental Site Assessments (ESAs) have been done on many of these sites
 - Once assessed the sites were scored using the National Classification System for Contaminated Sites (NCSCS) and prioritized for action



Resolution Island



Nunavut Contaminated Sites Program (continued)

- To Date:
 - Completed 120 Phase I/II ESAs
 - Completed 31 Phase III ESAs
 - Completed Remedial Activities at 15 Sites
 - Have 10 Sites in Long-Term Monitoring
 - Have 12 Sites Currently Active





Nunavut Contaminated Sites Program





Bathurst Island Project - Introduction

- Originally included 5 individual sites that were grouped together for efficiency and cost effectiveness
 - Bent Horn
 - Ile Vanier
 - Stokes Range
 - Young Inlet
 - Humphries Hill



- Located ~300 kilometres northwest of Resolute Bay, Nunavut
- Contamination is the result of oil and gas exploration and production activities
 - Contaminated soils (PHCs, Metals, PCBs)
 - Contaminated surface water (Metals)
 - Non-hazardous wastes (wood and metal debris)
 - Hazardous wastes (fuels, batteries, compressed gas cylinders)



Bathurst Island Project – 5 Sites





Bathurst Island Project – Definition of a Difficult Location

What makes Bathurst Island a difficult location?

1. Physical Location
2. Scope
3. Stakeholders
4. Logistics
5. Weather
6. Site Conditions
7. Quality of Information
8. Path Forward





Bathurst Island Project – 1. Physical Location

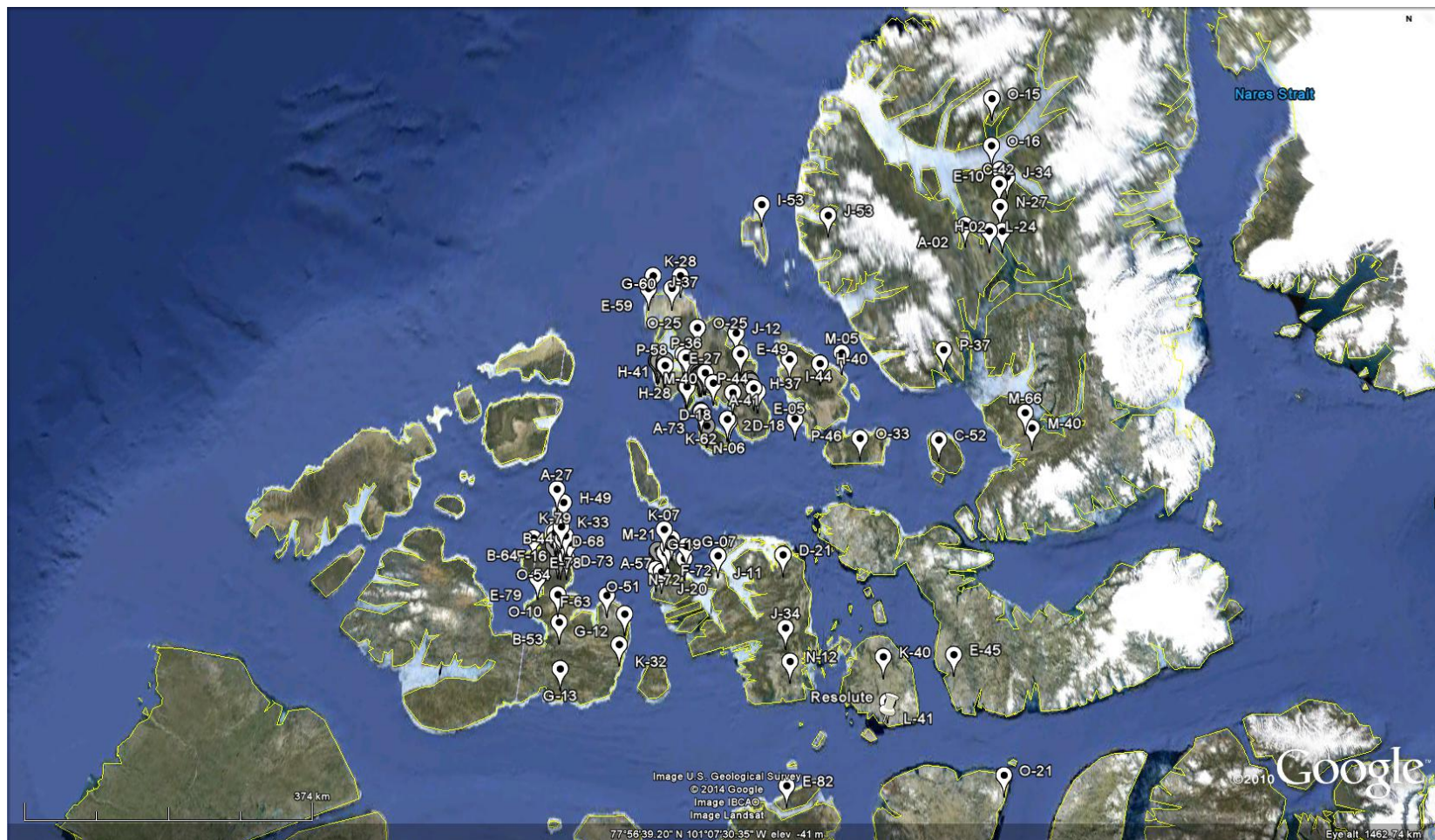
- Located approximately 300 kilometres northwest of the nearest community, Resolute Bay
 - GPS Coordinates of the Bent Horn site: $76^{\circ}19'31.32''N - 104^{\circ}4'59.45''W$
 - Puts the site in the High Arctic and well north of the Arctic Circle (~66th parallel)
 - Travel time
 - Cost





Bathurst Island Project – 2. Scope

- When preparing for the Phase III Environmental Site Assessment we contacted the National Energy Board to obtain copies of *Well Closure Reports* for the sites





Bathurst Island Project – 2. Scope (continued)

- Upon reviewing the locations of these additional well sites, 5 of them were in the vicinity of the Bathurst Island Project and we added them to the scope of work for the project
 - N-12 (Allison R)
 - J-34 (Bathurst Caledonia)
 - K-07 (Robert Harbour)
 - M-21 (Cape Fleetwood)
 - G-07 (Charles Point)





Bathurst Island Project – 10 Sites





Bathurst Island Project – 3. Stakeholders

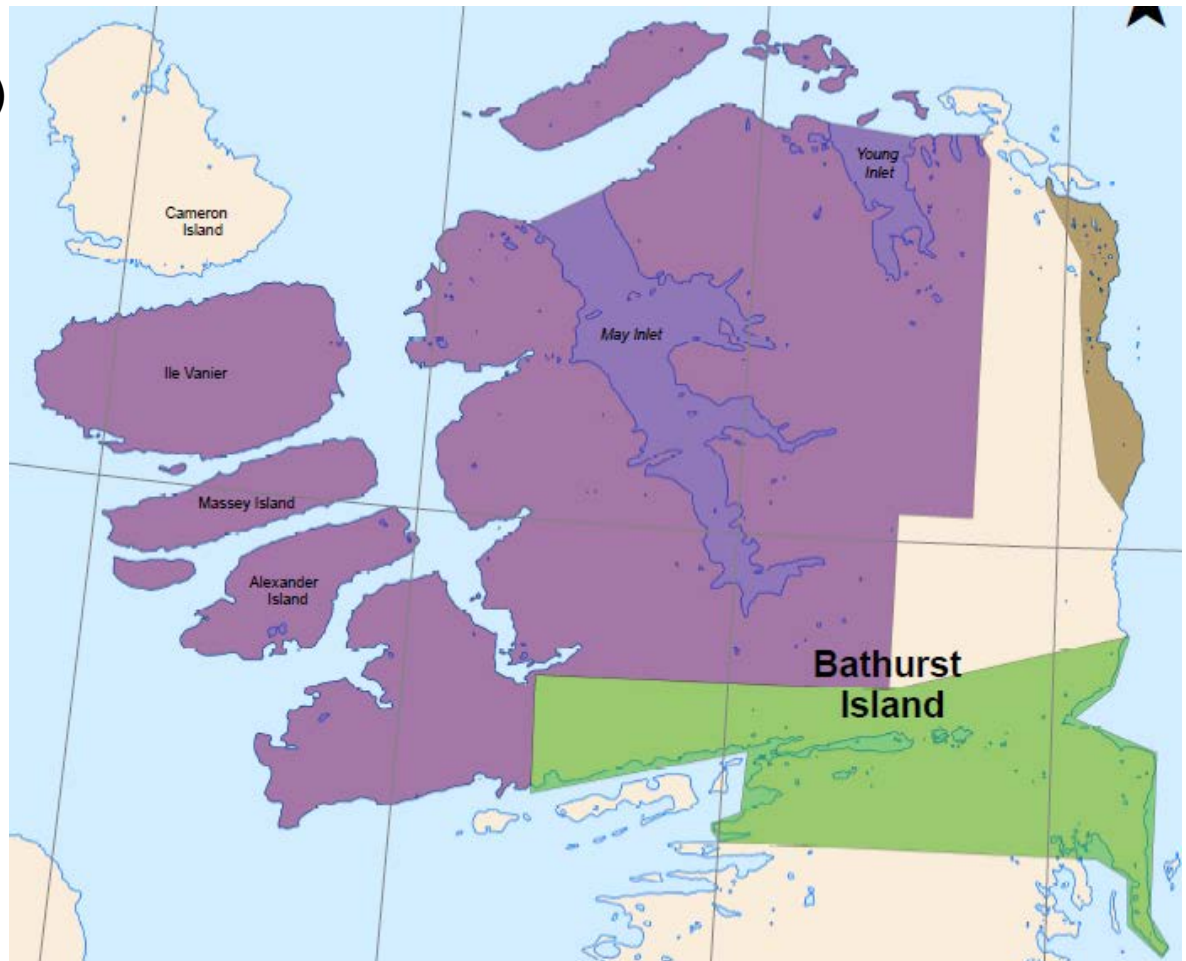
- As with most of our projects there are a number of stakeholders that influence the development of the project, these include (but are not limited to) the following:
 - Qikiqtani Inuit Association
 - Hamlet of Resolute Bay
 - Residents of Resolute Bay
 - Regulators
 - Nunavut Impact Review Board
 - AANDC Land Administration
 - Nunavut Water Board
 - Other Federal Departments
 - Government of Nunavut
 - Parks Canada





Bathurst Island Project – 3. Stakeholders (continued)

- Parks Canada has proposed to create a National Park (Qausuittuq) encompassing a large portion of the project area
 - The Lands have been withdrawn through an Order in Council
 - Includes 4 of the project sites
 - Ile Vanier
 - Stokes Range
 - Young Inlet
 - Humphries Hill
 - Potential impacts to project plan





Bathurst Island Project – 4. Logistics

- Logistics had a major influence on the project
- Site infrastructure
 - Airstrips at many sites but condition unknown
 - Some sites helicopter access only
 - No locally based helicopters
 - H&S considerations required two helicopters
 - Initially planned to stay at the site mobilizing a camp via a DC-3
 - Airstrips deemed unsuitable
 - Backup plan was to base in Resolute Bay
 - Resulted in lost time (4 hours per day flying)





Bathurst Island Project – 5. Weather

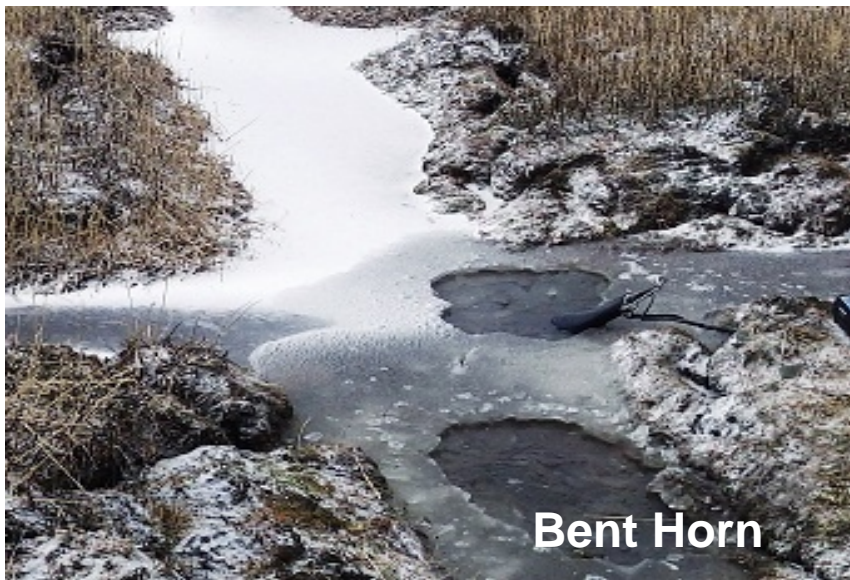
- Weather also had a major impact on the field season
 - Delayed the start of the field season
 - Mobilization planned to start July 13th but due to snow on the airstrip it was delayed until July 29th (2 weeks lost)
 - Ended the field season early
 - Significant snow on the ground on August 22nd forced an end to the field
 - Total: 25 day field season
 - 11 weather days
 - 44% lost time





Bathurst Island Project – 6. Site Conditions

- The conditions encountered at the site increased the difficulty of completing the planned assessment work
 - Sampling challenges
 - Permafrost and a small active layer
 - Frozen surface water

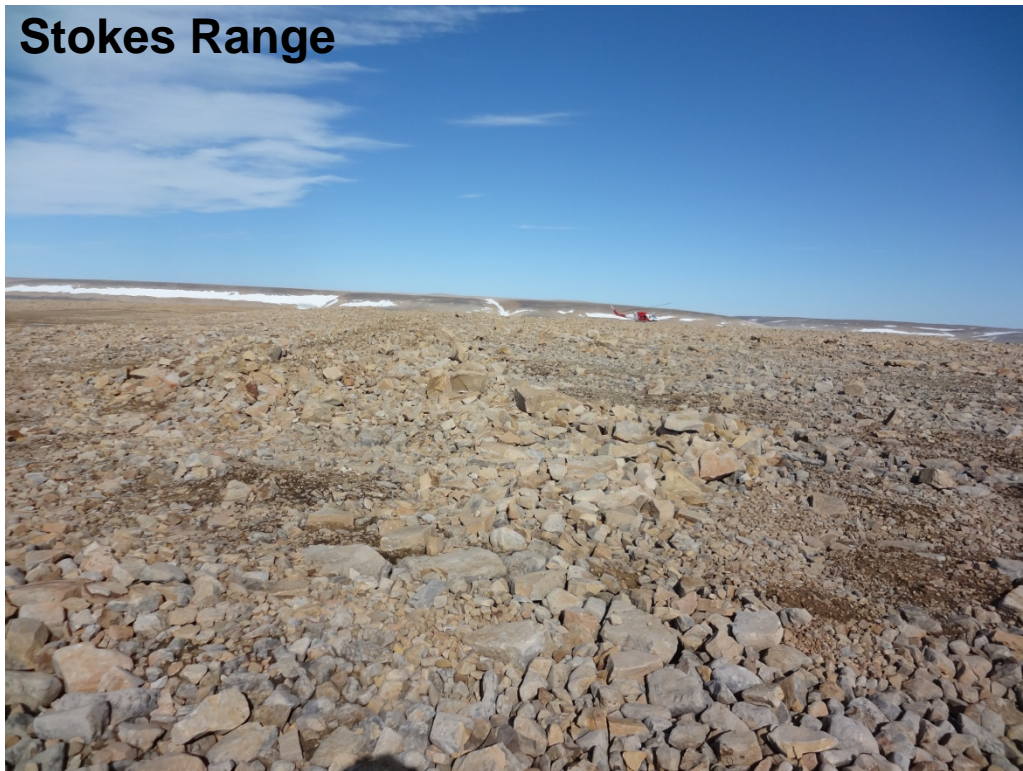




Bathurst Island Project – 6. Site Conditions (continued)

- General condition of the site
 - Muddy/wet areas
 - Terrain

Stokes Range



Young Inlet



Bathurst Island Project – 7. Quality of Information

- Challenges included
 - Incomplete information in previous assessments
 - Inadequate assessment of site airstrips
 - One instance where the Phase I/II assessment indicated extremely high PHC levels (basically free product)
 - Inability to complete the full scope of assessment work
 - Incomplete delineation
 - Not able to assess all sites
 - Forced to make some assumptions





Bathurst Island Project – 8. Path Forward

- This location is the most northerly site that the Nunavut Contaminated Sites program has attempted to address
 - Extreme logistical challenges
 - Health and safety concerns
 - High cost
- We have a large number of potentially similar sites and the Bathurst Island Project will likely dictate how we approach them
 - As a result we have taken a step back and are taking additional time to develop remedial options and ultimately a Remediation and Risk Management Plan



Questions?

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