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**Demolition North of 60
Tununuk Point/Tuktoyaktuk, NT
John Bertrand, Imperial Oil**



- A comprehensive understanding of the scope is paramount
- Vacant sites often have many surprises
- Utilizing local contractors is key to a successful project
- Understand and respect the local cultural norms



Presentation Outline

- Project Objectives
- Site Locations
- Background/History
- Project Scope
- Working in the North
- Safety Highlights
- Success in the North
- Questions





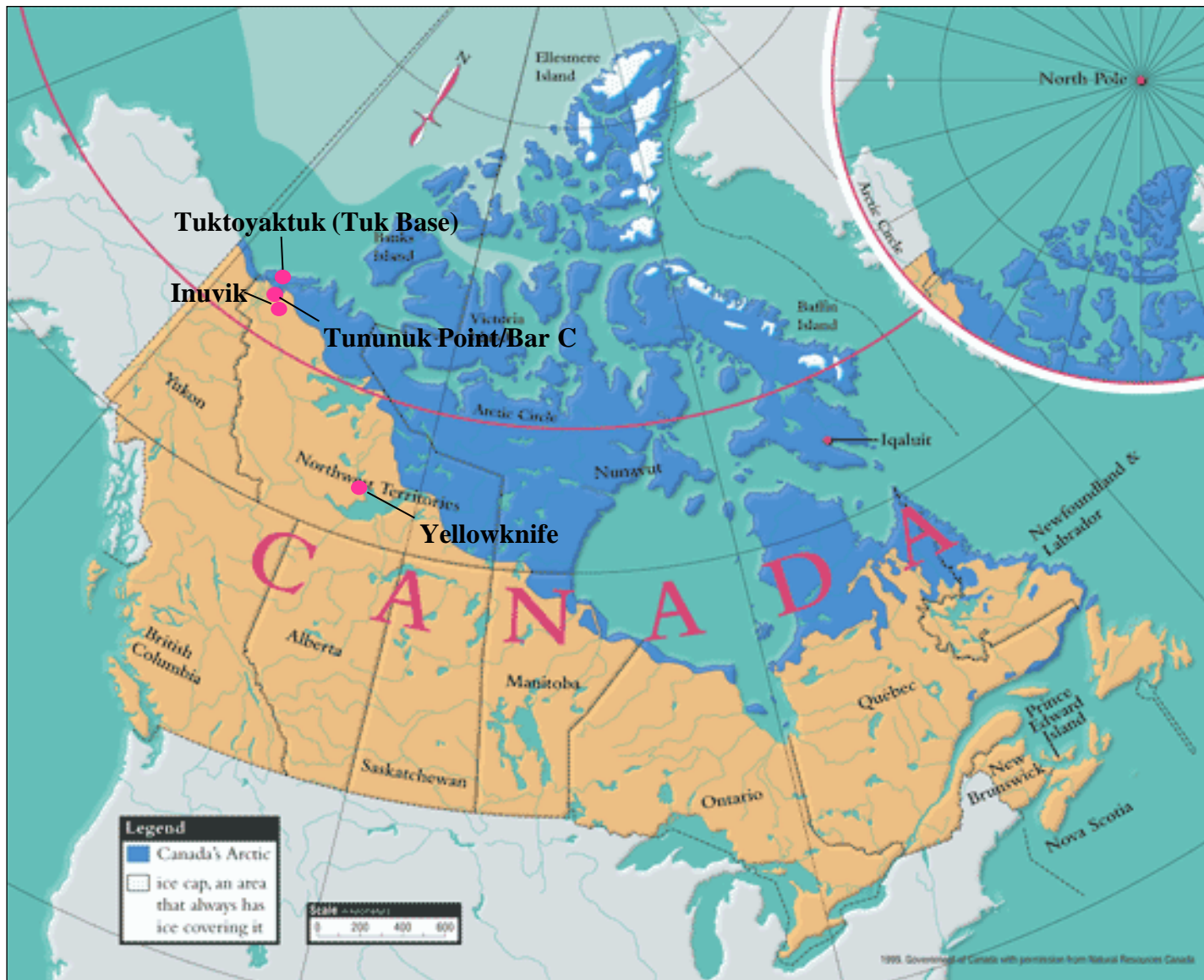
Project Objectives

- **Safe** abatement and demolition of surface structures to “slab-on-grade”
 - Tanks, buildings, equipment, piping, debris and residual products to be removed
 - Foundations, berms and slabs to remain in place
- Properly transport and dispose waste at approved southern facilities



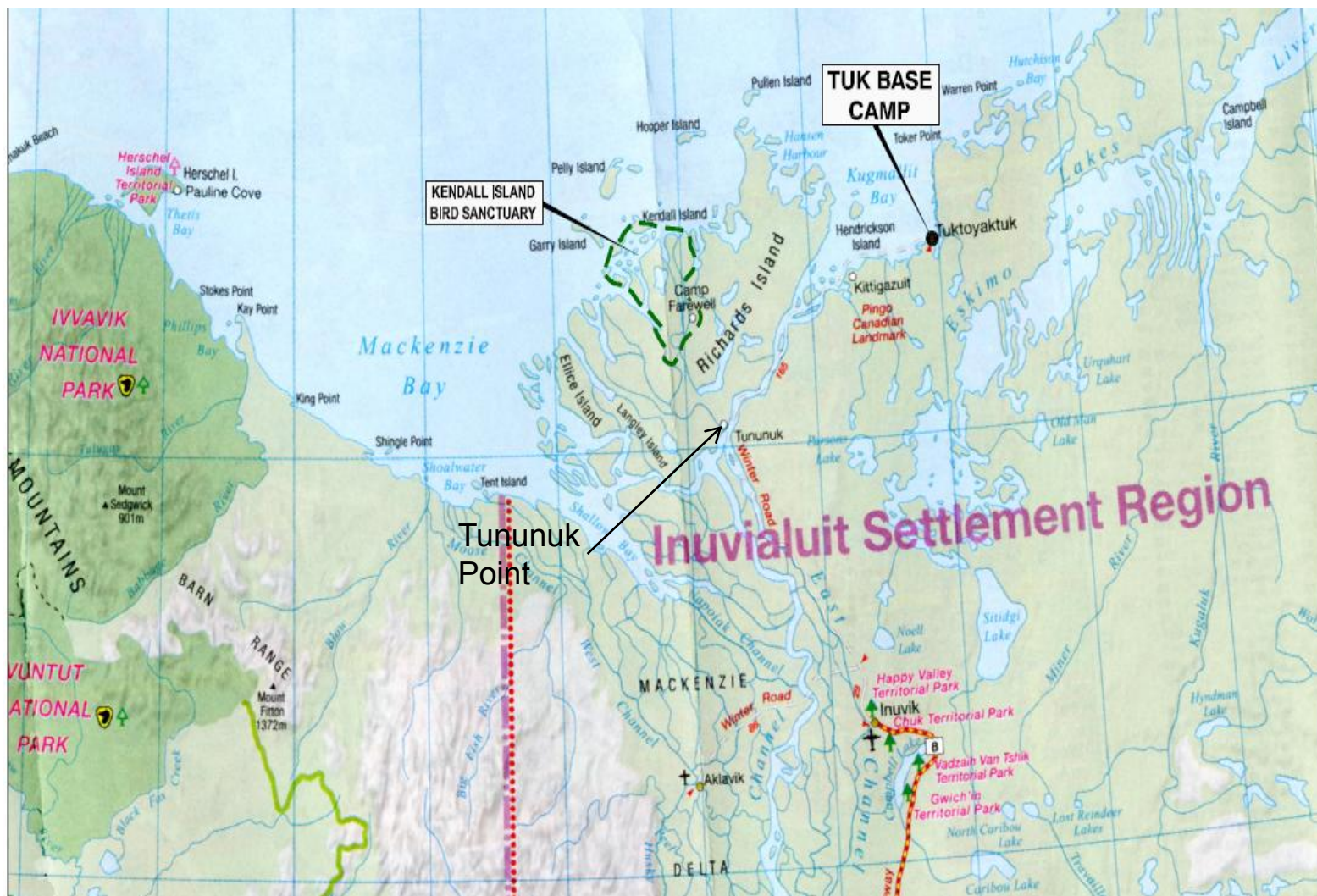


Canada's North





Site Locations

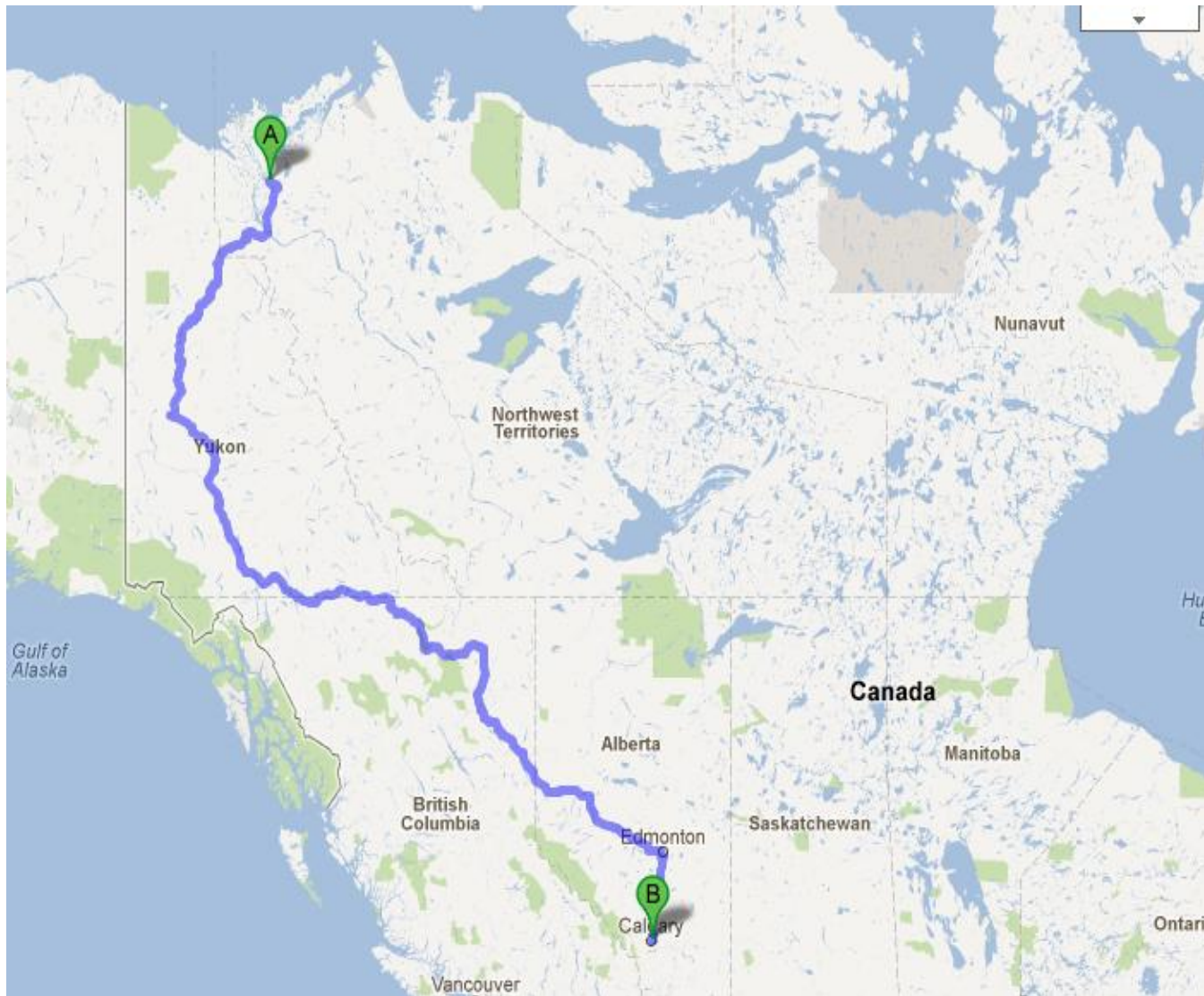




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Map data Google 2012



- **Tuktoyaktuk, NT**

- Coastal hamlet, 69° N
- Population: ~900 (mainly Inuvialuit)
- Access by air, ice road and boat/barge



- **Tununuk Point, NT**

- Richards Island, 69° N
- Uninhabited
- Used for subsistence
- Access by air, ice road and boat/barge





History: Tuktoyaktuk

- Operated from the early to late 1980s
- Imperial logistics base for oil and gas exploration activities in the Beaufort Sea.
 - Storage area
 - Camp
 - Tank farm
 - Barge docks
 - Air strip
 - Warehouse
 - Garage
- Extensive demobilization of infrastructure in the late 1980s.
- Left vacant for ~20 years with considerable debris on-site
- 2007-2008: 727 seacans and 66 drums removed





History: Tununuk Point

- BAR-C - Intermediate DEW Line site constructed 1957
- Warehouse, garage, air strip, fuel storage and module train
- Operations ceased in 1963
- Imperial logistics base for oil and gas exploration activities (1972-1984)
 - New camp
 - Larger gravel storage areas
 - Dock
 - Bermed tank farm
- Support for year round onshore and offshore exploration programs.
- Extensive demobilization of infrastructure in the mid 1980s.
- Left vacant for ~30 years
- Winter 2012: 44,000 L of fuel removed





Project Scope: Tuktoyaktuk

- Storage building (5 bay)
- Large diesel furnace
- Steel pilings (156)
- Tanks (7 various sizes)
- Hanger building
- Skid mounted shacks
- Abatement





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Project Scope: Tununuk Point

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- Marine fuel loading dock
- 4 tanks
- 6 buildings
- ~1.5 kms of pipeline
- Road construction
- Brushing
- Debris clean-up
- Abatement





Working in the North

- **Climate**
 - Limited summer working window (June-Sept)
 - Extreme winters make for challenging work environments
 - Winter ice roads increase access
- **Transportation**
 - Barge/boat in summer months
 - Ice roads in winter
 - Mobilization of equipment from the South
- **Waste Disposal**
 - Barged to Inuvik
 - Trucked out of the NT to BC or AB (~2500 kms)





Working in the North

- **Inuvialuit Settlement Region**
 - Community consultation
 - Regulatory requirements
 - Environmental monitors
 - Site inspections
- **Wildlife**
 - Wildlife monitors
 - Black/grizzly bears, wolves, wolverines, etc.
- **Communication**
 - Limited internet and tele-communications





Working in the North

- **Living accommodations**
 - Barge camp (Tununuk)
 - Site camp
- **Local work force**
 - Critical to success
 - Communication barriers
 - Cultural norms
 - Unfamiliarity with procedures
- **ERP**
 - Response is limited to helicopters in the area
 - BAR-C; 2 hrs by boat
 - Tuk; 5 hrs by boat
 - Adjust scope if weather conditions are poor
 - Medic on-site



- **Decommissioning**
 - Sites are often left vacant for decades and are improperly decommissioned (~30 000 L at BAR-C)
 - Information is limited
 - Dilapidated infrastructure and overgrown work areas
 - Unexpected hazards
- **Changes in scope**
 - Schedule implications
 - Major cost overruns
- **Working conditions**
 - Isolation
 - Close quarters
 - 12 hrs/day for 30 days
 - Maintain worker morale



- Five Safety Themes
 - ✓ Risk Tolerance
 - ✓ Right Tool for the Job
 - ✓ Job Procedure
 - ✓ Line of Fire
 - ✓ Stop and Think
- 1 first aid
- 5 small spills
- 2 equipment damages





Success in the North

- Comprehensive job spec
- Utilize local contractors
- Site visit prior to mobilization
- ILA engagement
- Pre-project planning
- On-site leadership
- Interface management
- Management of change
- Demobilization pause





- Thank-you:
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