Challenges Facing Soil Treatment Facilities in the Yukon

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Presented at:
REMTEC 2009
Challenges

- Regulatory Environment (scheduling)
- Available Equipment and Technology
- Operation Issues
Regulatory Environment

- Contaminated Sites Regulation, Environment Act
- Yukon Environmental and Socio-economic Assessment Act - YESAA
Regulatory Environment

- Contaminated Sites Regulation, Environment Act
  - Permits required for
    - Remediation of Designated Contaminated Sites
    - Operation of a Land Treatment Facility (LTF)
- Yukon Environmental and Socio-economic Assessment Act - YESAA
Does your project require an evaluation by a Designated Office under YESAA?

**Step 1: Location**

1. Is your project in Yukon?
   - **YES**
     - YESAA does not apply
     - Contact YESAA
     - Project may be subject to the Climate Change Act
   - **NO**
     - Continue to Step 2

**Step 2: Activity Regulations**

2. Is your project listed in the Activity Regulations?
   - **YES**
     - YESAA does not apply
     - Continue to Step 3
   - **NO**
     - YESAA does apply
     - Continue to Step 3

**Step 3: Circumstances**

3. Do any of the following apply to your project?
   - **YES**
     - Continue Project Proposal (Form 1)
   - **NO**
     - YESAA does not apply
     - You are a federal agency
     - Continue to Step 3

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Legend:
- Question related to Yukon
- YESAA does not apply
- YESAA does apply
- Contact YESAA
YESAA Assessment
  – 3 to 4 months

Permit Application
  – 1 to 3 months
  – May require 3rd party review
Regulatory Environment

- LTF with >3,000 m³ capacity
  - Require YESAA Assessment
  - Hydrogeological Assessment

- LTF with <3,000 m³ capacity
  - Require specific details of operation
    - Dimensions, slope and height of biopiles
    - Width of aisles between soil treatment areas
Meeting the Challenge

- Planning
- Yukon Environment
  - http://environmentyukon.gov.yk.ca/
Equipment and Technology

- Limited market for specialized equipment
  - Lack of qualified personnel
  - Mob/Demob and O&M Costs are significant
- Site access may limit remediation alternatives
- Tendency is to use local resources
  - landfarming / biopiles
Land Treatment Facilities

**Synthetic Liners**
- Availability of bedding materials
- May require double liner
- Qualified personnel to install or repair

**Compacted Silt Liners**
- Availability of silty soils
  - >30% Silt
  - Minimum 1 m thick
Meeting the Challenge

- Local contractors/consultants will know the area
- Commercial facilities may already exist
Operation

- Remote sites
- Available equipment/power
- Weather
Meeting the Challenge

- Smaller equipment
- Remediation systems requiring less maintenance
- Rely on indigenous species
Meeting the Challenge

• Biopiles vs. landfarming
• Design systems that enhance heat retention
• Nutrient amendments in remote sites
Weather - Mean Monthly Temperatures 2008

[Graph showing mean monthly temperatures for 2008, with a peak in July and August and a drop in January and December.]
Acknowledgments

- Arctic Backhoe Services
- Golden Hill Ventures LP
- Northwestel
- City of Whitehorse