



Crown-Indigenous Relations
and Northern Affairs Canada

Relations Couronne-Autochtones
et Affaires du Nord Canada

Northern Contaminated Sites Program

Science Advisory Board for
Contaminated Sites in BC
September 2023



Canada



Objectives

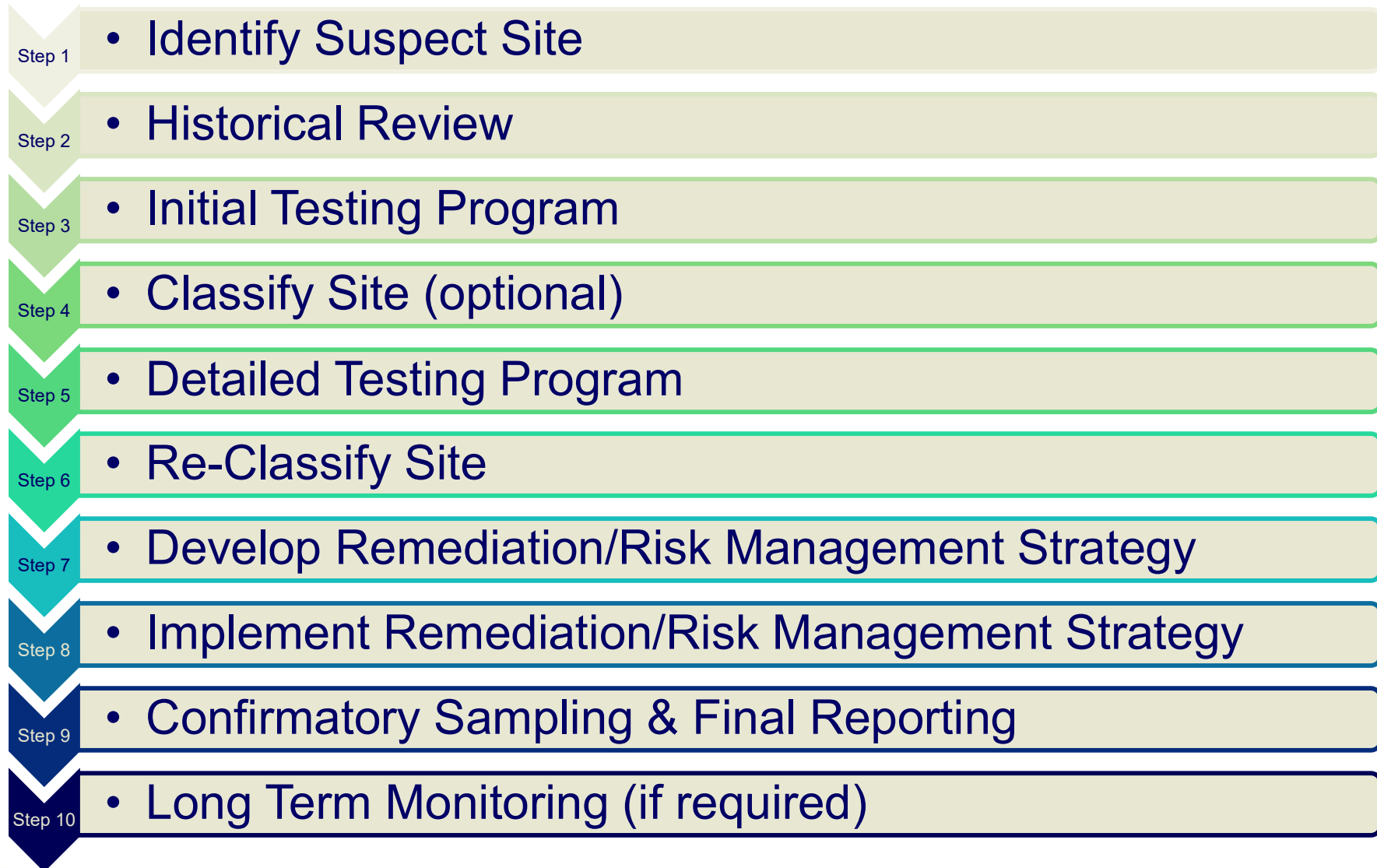
- Increase awareness of:
 - The management of federal contaminated sites
 - CIRNAC'S Northern Contaminated Sites Program
 - “Big 8” Overview - Northern Abandoned Mine Reclamation Program
 - Faro Mine Remediation Project
 - Giant Mine Remediation Project





Federal Contaminated Sites: Decision-Making Framework

10-Step Process





Northern Contaminated Sites Program

Manages a portfolio of contaminated sites in the North (YT, NWT, NU) – 165 sites remain with an estimated \$6.3B in environmental liability.

Most of these sites originate from private sector mineral exploration and development activity and were abandoned to the federal government when their owners became insolvent.

The sites became the responsibility of the Department as owner of last resort in the territories.

Program objectives are to reduce risks to human health and the environment, decrease federal liabilities and to maximize socio-economic benefits for Indigenous Peoples and northerners.

Work closely with Public Services and Procurement Canada, Indigenous partners, territorial governments, and the private sector to manage its sites.





Northern Contaminated Sites Program: Sites by Territory

- Total CIRNAC Contaminated Sites N60: 1,003 (includes suspected, active, and closed sites)

Region	Number of Sites
Northwest Territories	80 (active and suspected)
Suspected	3
Active	77
Remediated and Closed	36
Yukon	8 (active and suspected)
Suspected	0
Active	8
Remediated and Closed	2
Nunavut	77 (active and suspected)
Suspected	10
Active	67
Remediated and Closed	25

[Federal Contaminated Sites Inventory](#)





Northern Contaminated Sites Program - Sources of Funds

Northern Abandoned Mine Reclamation Program

- \$9.1 billion over 15 years (2020-21 to 2034-35)
- The “Big 8” projects (14 sites) managed under the Northern Abandoned Mines Reclamation Program allows the Department to better address the unique scale, duration and complexities of these projects.
- These 8 mine sites represent the bulk of the liability managed by the Program (95%).

Federal Contaminated Sites Action Plan

- \$188 million for the Department over five years (2020-21 to 2024-25).
- Funding for the Department’s other 100+ northern contaminated sites comes from the Federal Contaminated Sites Action Plan, a horizontal initiative led by Environment and Climate Change Canada and Treasury Board Secretariat.





Stakeholders, Partnerships and Socio-economic Impacts

- Northern and Indigenous economic development
 - Requires strong relationships with Indigenous partners, territorial governments and other stakeholders
- Project Lifecycle Engagement
- Major project implementation provides a significant opportunity for the GoC to maximize socio-economic benefits to impacted Indigenous communities and Northerners



Employment

- Over 12,000 jobs for northerners cumulatively since 2005
- 27% Indigenous employment

Training

- 227,800 hours of training to northerners, 53% to Indigenous peoples cumulatively since 2005
- Partnerships with northern colleges and training providers

Business development

- More than 11,000 contracts to northern companies
- \$354 million to Indigenous companies cumulatively since 2010 (30% of contracts)





“The Big 8”: Northern Abandoned Mine Reclamation Program Portfolio



Mount Nansen Remediation Project

Yukon

- Faro Mine Remediation Project
- United Keno Hill Mine Project
- Mount Nansen Mine Project
- Clinton Creek Mine Remediation Project
- Ketzka River Mine Remediation Project

Northwest Territories

- Giant Mine Remediation Project
- Cantung Mine Project
- Great Bear Lake Remediation Project





Northern Abandoned Mine Reclamation Program Portfolio Project Status'

FCSI #	Project	Current Step	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35
C1052001	Clinton Creek	Step 7 - Develop Remediation Plan	Planning									Remediation		
C2503001	Faro Mine	Step 7 - Develop Remediation Plan	Planning			Remediation								
C2504001	Ketza River	Step 7 - Develop Remediation Plan	Planning									Remediation		
C2505001	Mount Nansen Mine	Step 7 - Develop Remediation Plan	Planning			Remediation				Adaptive Management			Monitoring Event	
C2509001	United Keno Hill Mine	Step 7 - Develop Remediation Plan	Planning	Remediation				Adaptive Management				Monitoring		
00000154	Cantung Mine	Step 7 - Develop Remediation Plan	Planning						Remediation		Adaptive Management			
C1048001	Giant Mine	Step 8 - Implement Remediation Plan	Remediation											
C1010001	Great Bear Lake*	Step 7 - Develop Remediation Plan	Planning	Remediation					Monitoring					

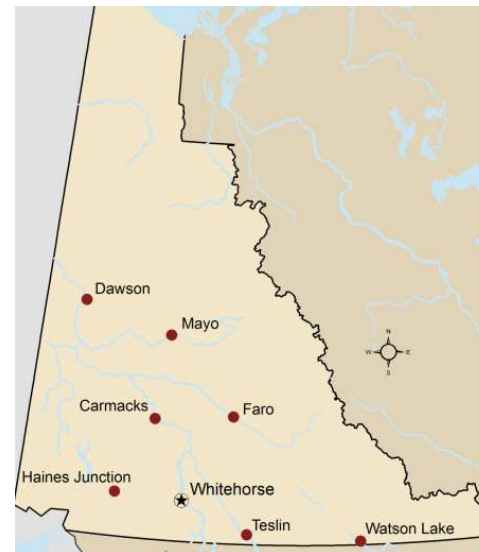
*Comprised of seven sites.





Faro Mine Remediation Project

- Mine Type: open-pit lead-zinc mine
- Location: outside the Town of Faro in Yukon, on the traditional territory of Ross River Dena Council and the Kaska Nation.
- Size: 25 sq. km
- Operations: 1969-1998, produced 70 million tonnes of tailings, as well as 320 million tonnes of waste rock.
- The waste rock and tailings left behind have the potential to leach heavy metals and acid into the land and water.





Faro Mine Site Overview

LEGEND

Creeks

Diversions
Channel that diverts clean water around the site.

Copyright: Faro Mine Remediation Project Office, May 2011.
Photos: Government of Yukon / Mike Mathew / Galtier Architects
www.faromine.ca | info@faromine.ca

Faro Mine Complex Landmarks Map

Mining for lead and zinc at the Faro Mine began in 1969 and lasted for almost 30 years. During its operation, the mine processed between 5,000 and 9,300 tonnes of ore per day. In 1998, the owner, Anvil Range Mining

Corporation, went into receivership and stopped all mining operations. The Faro Mine site is 25 km² or 2,500 hectares in size. There is a total of 70 million tonnes of tailings and a total of 376 million tonnes of waste rock on the site.



Faro

Vangorda



1. Rose Creek Tailings Area



2. Rose Creek Diversion



3. Intermediate Pond & Dam



4. Cross Valley Pond & Dam



5. Mill Area - Faro Water Treatment Plant



6. Faro Waste Rock



7. Faro Pit



8. Faro Creek Diversion



9. Haul Road



10. Fresh Water Supply Dam & Reservoir



11. Access Road



12. Crum Pit



13. Vangorda Water Treatment Plant



14. Crum Waste Rock



15. Crum Sulphide Cell Cover Project



16. Vangorda Creek Diversion



17. Vangorda Pit



18. Vangorda Waste Rock



Principles of the Faro Mine Remediation Plan

1. Divert clean water to keep it clean



2. Collect and treat contaminated water



3. Develop landforms and construct covers





Faro Mine Remediation Project – Status

- Important work is taking place at the site to keep it safe and secure



- Regulatory approvals are pending to initiate final remediation
- Meaningful First Nation engagement and involvement in the project continues to be a priority for the project





Giant Mine Remediation Project

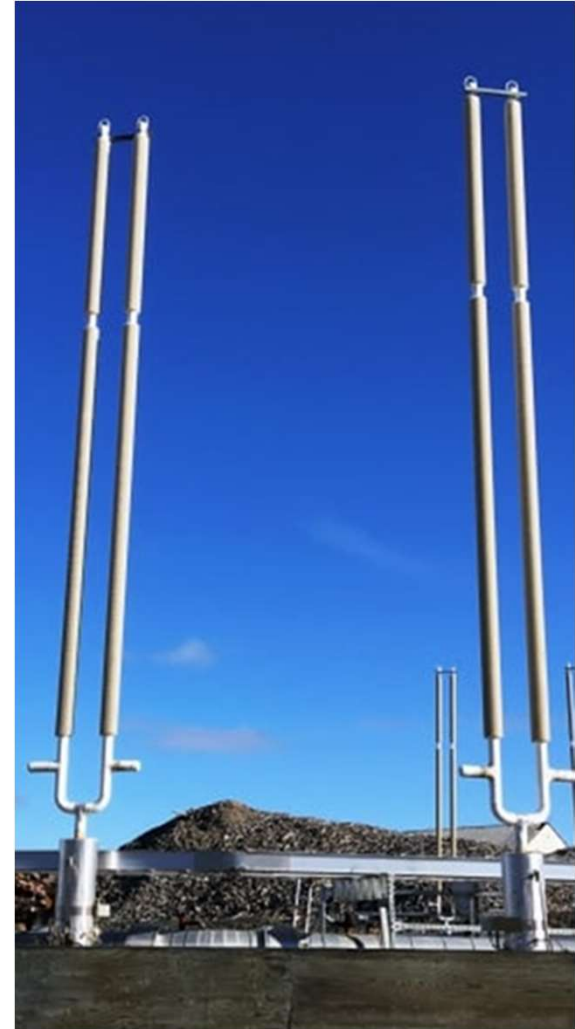
- Mine Type: Former gold mine
- Location: Within the City of Yellowknife, approximately 5 km from the city centre, with significant regional public and media interest (high-profile site).
- Size: The site is 1,600 hectares in size.
- Operations: 1948-2004. the mine produced 7 million ounces of gold
- This produced 237,000 tonnes of toxic arsenic trioxide dust which is stored underground.
- Remediation will require long-term containment of arsenic trioxide waste, removal of mine buildings, and remediation of surface areas including tailings ponds.
- The Giant Mine requires ongoing management to protect human health and safety, and the environment.





Principles of the Giant Mine Remediation Plan

- The Closure and Reclamation Plan is the blueprint for cleaning up the site. It covers the clean-up of the entire mine site, both surface and underground aspects.
- The remediation plan for the site will address:
 - containing and managing arsenic trioxide waste over the long-term
 - demolishing and removing all buildings and debris areas on the surface
 - remediating surface areas including Baker Creek, the tailings ponds, open pits and contaminated soil and waste rock
 - water management and treatment
 - filling and covering pits
 - remediating the townsite and nearby shoreline sediments





Giant Mine Project Resources and NWT Wildfires

- In August 2023, the NWT was inundated with wildfires. Yellowknife was given an evacuation order on Aug 16.
- Giant Mine Remediation Project Contractors pivoted immediately to provide forest fire support the city of Yellowknife and the Government of the Northwest Territories.
- Built fire breaks around the city by the Western Northern Front, which is where the two most severe fires were.
- In six days, the contractors built a 100 meter wide, 10 kilometer long fire breaks.
- The amount of work completed in these six days is work that would typically be completed in a two-year field season in Yellowknife.





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Video of Giant Mine underground





For Fun: Giant Mine Reclamation Viewer



- Free downloadable app to an iPhone, iPad or Mac
- Uses augmented reality to show surface maps, a subsurface tour and visuals of the future.

<https://apps.apple.com/ca/app/giant-mine-reclamation-viewer/id1532446729>





To Learn More

Northern Contaminated Sites Program

- [Northern Contaminated Sites Program](#)
- [Northern Abandoned Mine Reclamation Program](#)

Faro Mine

- [Faro Mine](#)
- [Faro Mine Remediation Project](#)

Giant Mine

- [Giant Mine Information Centre](#)
- [What's Happening at Giant Mine](#)
- [Giant Mine Remediation Project](#)

