Building a Culture of Safety at Faro Mine Complex

James Carss, Parsons Inc.

The Faro Mine Complex (FMC) is one of the largest and most complex contaminated sites in Canada. Located four hours north of Whitehorse, in a remote area in the south-central Yukon, Faro was an open-pit lead-zinc mine that operated from 1969 until 1998. The FMC site covers approximately 2,500 hectares and includes 70 million tonnes of tailings and 320 million tonnes of waste rock. Both the tailings and waste rock contain high concentrations of heavy metals that could leach into the environment. In addition to extensive acid mine drainage, site contaminants include petroleum hydrocarbons, metals, metalloids, and organometallics. Unique features resulting from the operation of the FMC include three large open pits and a large tailings impoundment area that presently contain contaminated water. A care and maintenance regime, including diversion of clean surface water and collection and treatment of contaminated water, is currently in place at the site.

In 2016 Government of the Yukon awarded Parsons a 4 year long care and maintenance contract for operations at the Faro Mine Complex. Parsons’ scope of work includes the following:
- Operating and managing all water treatment and water management facilities, including operating three water treatment facilities with a throughput equaling 9,000 US gallons per minute
- Inspecting and maintaining dams, diversions, and other infrastructure
- Monitoring water entering the receiving environment to ensure it meets effluent quality standards
- Operating an onsite accredited chemical laboratory
- Managing waste, including reducing sludge volumes
- Providing erosion and sediment control
- Providing preventive maintenance for plant equipment and making repairs to and/or replacing plant equipment
- Monitoring hazards
- Providing site management and ensuring site security

The prime goal of Parsons’ work at the site is to protect human health, safety, and the environment. This goal provided an opportunity to redefine the core safety objectives at the site, and implement an effective, modern safety program at one of Canada’s two government-managed remediation megaprojects. Major hazards present at FMC include operating equipment, hazardous materials, electrical hazards, emergency response time, weather extremes, wildlife, work at heights, work around water, slips/trips/falls, and heavy lifting.

The objective of this presentation is to share the objectives, challenges and achievements realized during the course of developing, implementing, and growing a successful, modern, safety program at the Faro Mine Complex, one of Canada’s most complex contaminated sites.

Thaidra Sloane
Thaidra is a Government of Yukon Senior Project Manager responsible for the care and maintenance of the abandoned Faro Mine Complex. She manages ongoing site operations including water management, environmental monitoring, site inspections, implementation of progressive remediation plans, and associated communication and consultation activities.

James Carss
James is a professional engineer with extensive northern engineering experience. He is Program Director for Parsons’ work at Faro Mine Complex, Faro, Yukon and Giant Mine, Yellowknife, NT.