Faro Mine
REMEDIATION PROJECT

Water Monitoring

Background

A robust water monitoring program is in place at the Faro Mine site due to the potential for water site conditions to contaminate water, both locally and regionally. Water that flows over and through waste rock and tailings can become acidic and pick up metals, which can be harmful to people, plants, fish, and wildlife.

An important objective of the Faro Mine Remediation Project is to protect people, plants, fish, and wildlife from poor water quality by stopping clean water from coming into contact with contaminated areas, and by collecting and treating contaminated water before it is released into the environment.

For more information refer to the Water Management Fact Sheet and the Water Treatment Fact Sheet.

Monitoring Programs

To ensure the protection of people, plants, fish, and wildlife, water monitoring is conducted in the following categories:

01 **Groundwater**

02 **Surface Water**

03 **Seepage**

04 **Treated Water**

Water monitoring is done both by hand and by automated instruments installed in-stream. In any given month, 50 to 200 measurements are taken to measure the quality and quantity of the water in surface water, groundwater, seeps, and treated water discharges around the site.

Water monitoring works alongside other monitoring systems to better understand existing conditions, improve current operations, and inform a final design of the remediation plan. Other environmental and meteorological monitoring conducted at the site includes the tracking of temperature, precipitation, wind, sediments, soil, wildlife, and aquatic organisms.

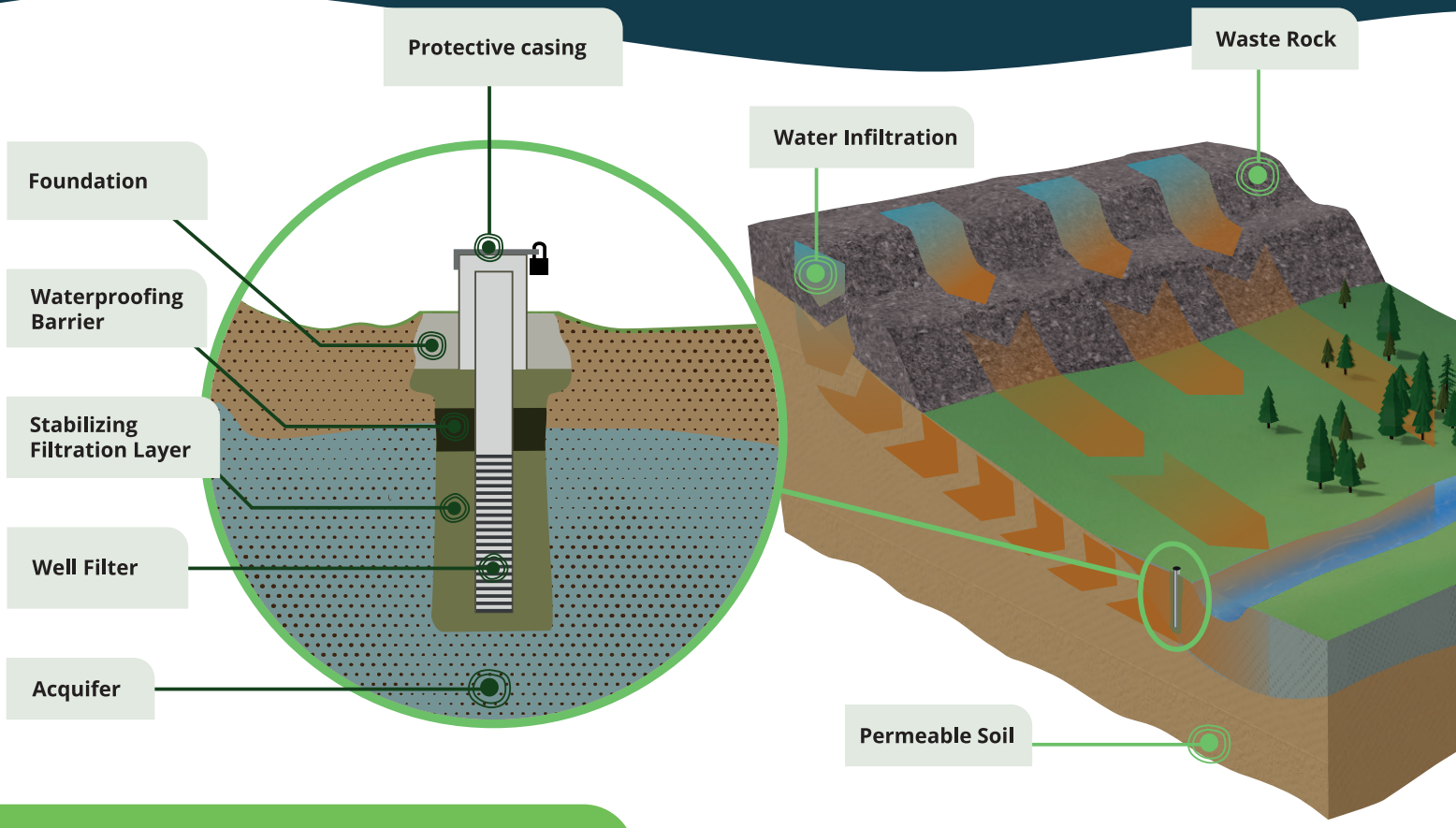


Diagram: Groundwater monitoring well and how it monitors contaminated water.

01 Groundwater

- Groundwater is water that flows beneath the land surface in soil, or through spaces in rock. Historical mining activity at the Faro Mine site has caused groundwater in certain areas to become contaminated with metals and acid. Groundwater returns to the surface at different points on the Faro Mine site and impacts water quality in creeks and streams.
- Groundwater monitoring occurs at over 200 groundwater wells across the site.
- Groundwater monitoring wells are small pipes installed in different underground areas where groundwater collects (aquifers).

02 Surface Water Monitoring

- Surface water monitoring is focused on ensuring the health of water that flows off site down to the Pelly River, as well as contaminated water on site that doesn't flow downstream.
- Water quality is tested on a regular basis in Rose Creek, the Pelly River, and in other nearby creeks that could be affected by historical mining activity. Surface water quality is regularly tested at over 75 locations, and surface water quantity is regularly monitored at 50 locations.
- Surface water monitoring data is used to make decisions that help keep people, plants, fish and wildlife safe.

03 Seepage Monitoring

- Seepage refers to groundwater which emerges to the surface. Over 100 seeps across the Faro Mine site are monitored to understand their chemistry, if the area may be contaminated, and how the water in the area may affect the rest of the site.
- Seeps can change depending on the amount of rain or snowfall experienced in the area, and can change location as upstream remediation work is done. During sampling programs, field crews will make observations to identify new or changed seep locations.
- Any new seep locations will be added to the sampling program, and any changes in seep location will be documented.

04 Treated Water Monitoring

- Treated water is also monitored to verify water quality standards are being met. If treated water quality standards are not met, water will be sent back for further treatment. The treatment process, and the amount of treated water discharged can be adjusted to help keep people, plants, fish, and wildlife safe.

Image: Effluent Sampling Point

Image: Project team in the field conducting surface water monitoring.

Plan Framework

To help identify when additional work needs to be completed to protect plants, fish, wildlife, and people, and to meet territorial guidance, the Faro Mine site uses adaptive management plans. The site's Water Quality Adaptive Management Plan is a key tool to identify areas of poor water quality and to prompt action to reduce risks from it.

- Water quality data from the Faro Mine site are analyzed for patterns over time that might indicate early signs of potential issues, either with the performance of a system or that the environment has further degraded.
- If a water quality issue is detected, the framework in the Adaptive Plan is followed to understand and address the risks.
- A typical response to a potential surface water quality issue includes the following steps:

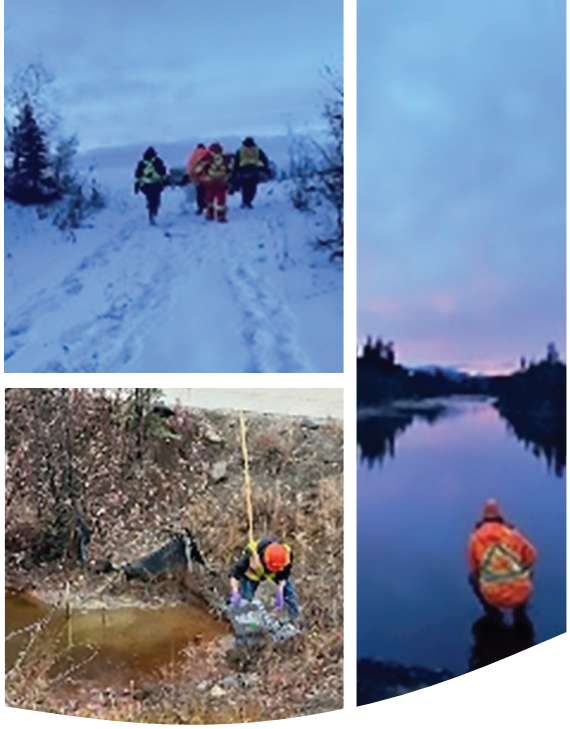


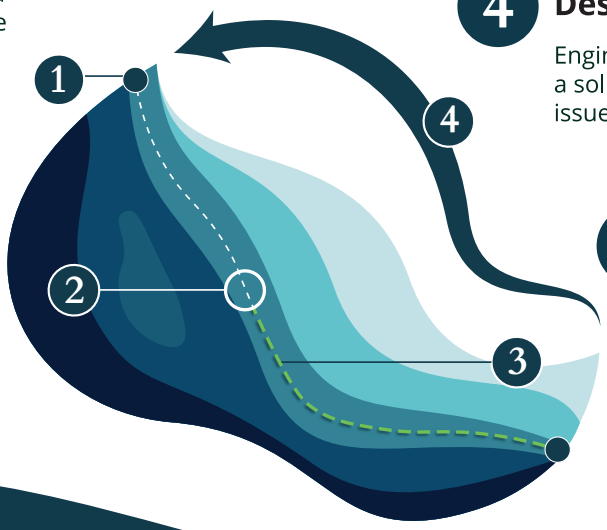
Image: Project team in the field conducting surface water monitoring.

1 Analyze the Data

Data from upstream and downstream stations are further analyzed to determine source area of contamination.

2 Study the Site

Intensive field studies are initiated to survey groundwater in affected areas.



3 Identify the Pathway

Pathway travelled by the contaminant from the potential source to where it emerges is identified.

4 Design a Solution

Engineers work to design a solution to address the issue observed.

For More Infomation

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