TEMPORARY MINE WATER TREATMENT FOR REMOTE SITE

CANADIAN MINE MEETS DIRECTIVE 019 REGULATIONS WITH TURNKEY INSTALLATION

Overview

In response to provincial regulations for mine water runoff (Directive 019), the client required a temporary water treatment system to ensure that effluent from their operating iron ore mine complex was in accordance with the newly implemented regulations. Installation of the water treatment system, located near the Québec and Labrador border, was accomplished during the cold Canadian winter. The system was intended to be used temporarily for two years before moving to another site owned by the same mining company. Due to the ease of operation and consistent performance, the system may continue at this site for an extended period of time.

The design, implementation, and execution of the project were done by AXOR (now FNX-INNOV), and the process support and major equipment were provided by WesTech in a compressed timeline. Just seven months after receipt of the purchase order, the facility was able to produce compliant water. The mine water treatment system includes four WesTech **RapiSand™** units, four frac tanks with mixers, and four shop-assembled thickeners. The RapiSand is a high rate clarification technology that utilizes ballasted flocculation to minimize footprint and deliver improved performance. The equipment is housed under a fabric dome to accommodate the temporary installation, and the units operate in stop-and-go mode – 12 hours on and 12 hours off. WesTech teamed with AXOR as a versatile partner to successfully install and ultimately operate this turnkey operation for the minimum two-year period. ■

RESULTS

Less than 7 mg/L
Typically < 4 mg/L
Effluent Suspended Solids

6.0 – 7.0
Operating pH Range

4 Treatment Trains
To Manage Wide Variations in Flow and Provide Built-In Redundancy

Project Summary

Iron Ore Mining Complex

Location:
Border of Québec and Labrador, Canada

Application:
Spring Runoff and Mine Site Water Treatment

Process:
Temporary System Includes pH Adjustment, Coagulation, Flocculation, RapiSand, and Sludge Thickening

Net Capacity:
Maximum 2,400 m^3/h (10,000 gpm); Incoming TSS Range of 15 to 40 ppm

Highlights

- **Temporary installation, upgradable for permanent use**
- **Compliance with the provincial Directive 019 regulations**
- **Fast-track design, construction, and implementation**
- **Full EPC installation during winter months**