Minera San Xavier, a subsidiary of New Gold Inc., has a gold mine that was closed and in reclamation near San Luis Potosi, Mexico. To enable the mining operation to produce permeate for leach pad rinsing, eliminating salts from process solution and avoiding the use of well water to comply with Mexican standard NOM-155-SEMARNAT-2007, the company selected Pall Water and ChemTreat Mexico to provide a mobile temporary deployment of microfiltration (MF) and high-recovery reverse osmosis (RO).

Raw water was sourced from the process water pond and heap leach pads, and flows through carbon columns, before being fed to Pall Water Aria™ FAST and IMPRO™ Reverse Osmosis mobile membrane filtration systems. The mobile systems treated the process water from the heap leach pad without using well water to minimize the water footprint in the biophysical closure stage. Additionally, the mobile systems enabled the mine to reduce energy consumption and decrease the detoxification time of the leaching yard.

The mine made the decision to implement the Aria FAST and IMPRO systems during the COVID-19 outbreak in the United States and Mexico. Facing travel restrictions and social distancing requirements, Pall Water worked remotely with local ChemTreat teams to commission the systems and meet the mine’s project timeline. Upon start-up, the mine reached its nominal capacity and achieved consistent results.

According to Angel Chung, General Manager, New Gold, “ChemTreat and Pall Water’s personnel exhibited professionalism, commitment, support, and effort to get the MF and RO plant running despite the limitations and obstacles due to the COVID-19 pandemic. We expect to continue receiving their excellent service, great support, and teamwork.”

**PROJECT BENEFITS:**
- RO concentrate is sent to evaporators, minimizing waste generation
- Compliance with Mexican discharge standard NOM-155-SEMARNAT-2007
- Total suspended solids (TSS) removal producing at 1.15 MGD (181.7 m³/hr)
- Water recoveries that exceed 95%
- Turbidity below 0.20 NTU at all times and less than 0.10 NTU 95% of the time
- RO permeate capacity:
  - Up to 0.92 MGD (145.3 m³/hr)
  - Up to 80% recovery and total dissolved solids (TDS), mainly salts
- Cleaning frequency:
  - Enhanced flux maintenance (EFM): every 48 hours
  - Clean-in-place (CIP): every 90 days
- Secure, remote monitoring through Pall Water’s Aria™ SMARTBOX for ongoing process optimization and evaluation

**PROJECT HIGHLIGHTS:**
- Rapid deployment during the COVID-19 pandemic
- Partnership with ChemTreat Mexico for local on-site commissioning with remote virtual commissioning provided by Pall Water
- The first mine in Mexico to utilize MF/RO membranes in a heap leach closure and reclamation application

Pall Water has installations all over the globe. To speak to a Pall Water representative in your area, please go to www.pallwater.com.

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