Case Study #137

Pexgol: Significant Pipe Wall Scale Reduction

The mine was facing scaling issues with their existing HDPE pipes, which required replacement every two weeks. The introduction of Pexgol pipes drastically reduced scaling.

Copper Mine
USA | 2022

- **Pilot Study**
  Scaling performance comparison between same sized Pexgol & HDPE pipes
- **Working Conditions**
  Temperature: Ambient
  Flow: 60 gpm - 6ft/s
  Pressure: 20 psi
- **Application**
  Transport rinse cycle water with dissolved gypsum
- **Length**
  304 m / 1,000 ft

Introduction

A prominent copper mine in Arizona that uses an in-situ copper ore recovery process, experienced scaling issues in the existing HDPE (PE 4710) piping deployed in the rinse cycle phase of ore extraction.
Scaling in the HDPE pipes caused clogging and despite the use of scale inhibitors and cleaning, some pipes were still being replaced too frequently.

The Problem

Increased operational maintenance and reduced efficiency of the HDPE pipes created the need for a more efficient, long-term solution.

The Solution

Pexgol was proposed as the solution for reduced scaling.
A controlled pilot study was commissioned by the mine to compare gypsum slurry pumped through Pexgol vs HDPE (PE 4710) for a period of 4 weeks.
Various flow velocities, pressures and ambient temperatures were monitored and compared after 2 and 4 weeks.

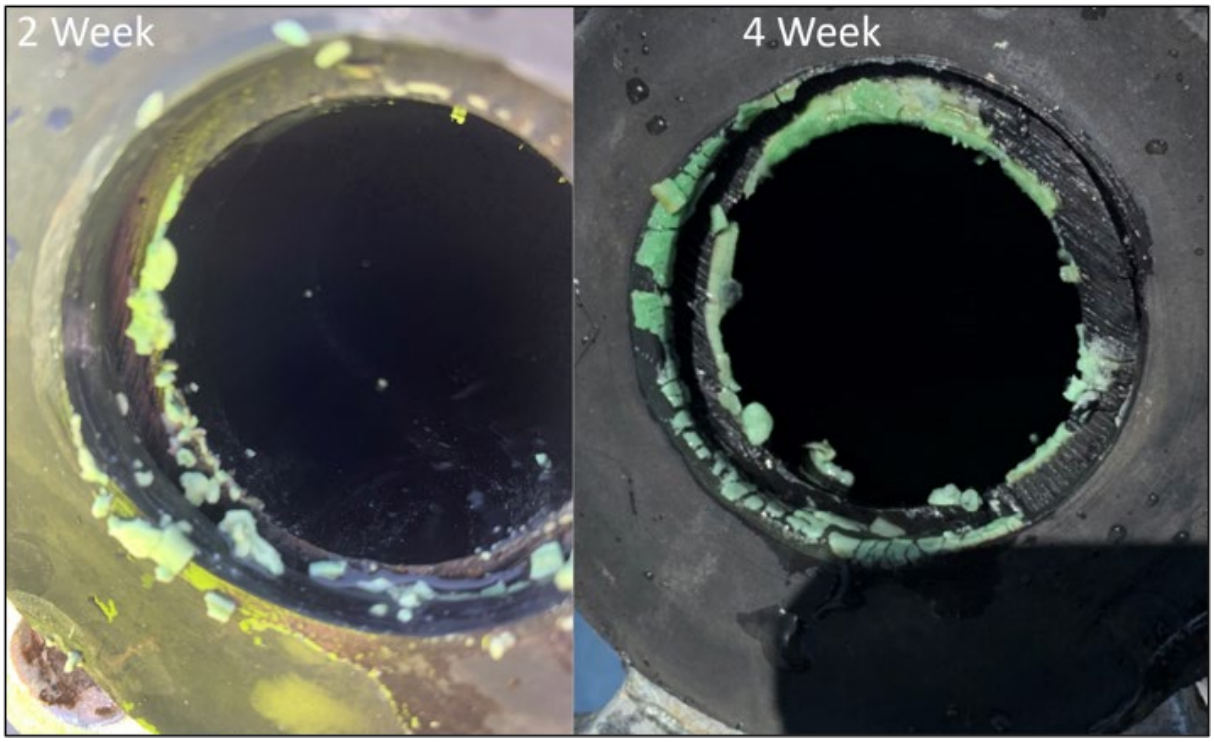
Results

The Pexgol pipes showed almost no scaling compared with the scaled HDPE pipes after 2 and 4 weeks.
It was recommended that Pexgol replace HDPE at the rinse cycle phase of ore extraction of the mine.

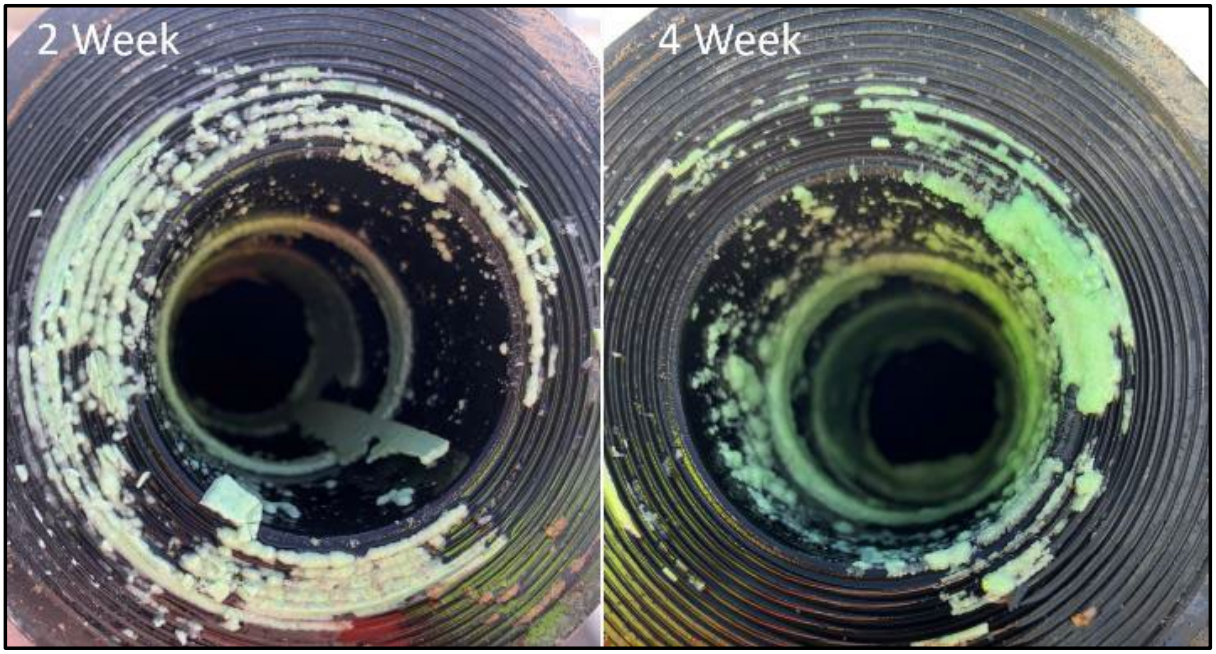
Conclusion

Pexgol pipes are a viable solution for similar slurry applications.

Results Pexgol Pipe



Results HDPE Pipe



The Advantages of Pexgol Pipe Systems

PEXGOL
X-LINKED PIPING SOLUTIONS

High wear resistance
Pexgol is the preferred solution for abrasive materials transportation. Typically resists three times more than HDPE and twice more than steel.

Excellent chemical and corrosion resistance
Pexgol pipes can endure a wide range of chemical agents, slurries, toxic and radioactive materials.

High temperature resistance
Working temperatures range from -50°C/-58°F up to 110°C/230°F.

Superior external corrosion resistance
Pexgol withstands decades of exposure to corrosive environments, with nonstop performance in some of the world's harshest environments.

Long pipe sections
Pexgol pipes can be supplied in long coil lengths, reducing number of joints, installation time and risks.

Creep and impact resistance
Pexgol pipes tolerate abnormal amounts of axial and radial stresses and are highly resistant to impact, fracture and fatigue. Furthermore, Pexgol pipes are completely resistant to cracks even when dragged over sharp rocky terrain and coagulated salt crystals.

For more information please visit:
pexgol.com