



● MINING

Copper Mining Pipeline Case Study **Chile**

HydroFLOW® enabled mining operations to reduce scale buildup and improve flow reliability across large diameter water pipelines.



Scale Build-Up



Reliable Flowmeters



Continuous Flow



Lower Maintenance



BEFORE & AFTER

● BEFORE

- ✗ Heavy scale buildup restricted pipe flow
- ✗ Flowmeters produced unreliable readings
- ✗ Valves and controls became difficult to operate

● AFTER

- ✓ Pipe flow operated more reliably
- ✓ Flowmeters maintained accurate measurement
- ✓ Valves and pumps remained operational



BEFORE

Heavy scale buildup



AFTER

Reduced scale buildup



OVERVIEW

Copper mining operations in Chile experienced severe scale buildup inside large diameter water pipelines carrying process, effluent and return water. Scale deposits increased pumping energy costs, restricted flow and affected equipment including pumps, valves and magnetic flowmeters. *HydroFLOW®* was installed to help reduce scale accumulation, protect long pipe networks and improve operational reliability without chemicals or mechanical cleaning.



CHALLENGE

Hard water scale deposits disrupted mining water systems and reduced operational reliability.

- Scale buildup increased pumping energy demand
- Flowmeters produced inaccurate readings
- Pipes required costly replacement work
- Pipe replacement caused water loss and downtime



SOLUTION

HydroFLOW® units were installed externally on mining pipelines to help reduce scale buildup and protect equipment across long water distribution systems.

APPLICATION

Copper mining water pipelines

PIPE SIZES

6 inch to 30 inch pipelines



PIPEWORK

Large diameter mining pipeline



INSTALLATION

HydroFLOW® unit on mining pipeline



RESULTS



Improved Flow Efficiency

Reduced scale buildup improved water flow through pipelines



Reliable Flow Measurement

Flowmeters maintained accurate readings during operation



Lower Maintenance Demand

Reduced equipment fouling lowered repair and servicing work



Asset Protection

Hydrophobic treatment extended equipment operating life



Chemical-Free Operation

No chemicals or mechanical cleaning methods were required



Reliable Equipment Operation

Pipes, valves and pumps remained operational for longer periods

HydroFLOW® helped copper mining operations in Chile reduce scale buildup across large diameter water pipelines and critical process equipment. Flowmeters maintained reliable measurement, pumps and valves operated more consistently and maintenance requirements were reduced without chemicals or mechanical cleaning.



RELIABLE FLOW



EQUIPMENT PROTECTION

200m

PIPELINE COVERAGE

RELATED CASE STUDY

Norilsk Mining Water Treatment Study

Russia

Hydropath technology was deployed at a Norilsk mining operation in Russia to combat scale buildup in water transport pipes. Flow rates were maintained consistently, intervals between cleanings extended 9x, and the total mass of water pumped increased 2.26x.

9x Longer Cycles

Extended time between pipe cleaning interventions by nine times

2.26x More Output

More than doubled the total mass of water pumped per cycle

Steady Flow Rate

Maintained consistent flow rates by preventing scale restrictions