

WATER TREATMENT FOR MINING & MINERAL PROCESSING

Pureflow Filtration Div. helps mining operators and EPC firms develop water treatment systems around the demands of each site. Water quality challenges don't come in one size, and neither do our solutions. Pureflow offers a broad range of water treatment technologies.

TECHNOLOGIES

- Coagulation and oxidation filtration
- Multimedia pressure filtration
- Adsorptive media systems
- Selective ion exchange systems
- Ozone generation systems
- Reverse osmosis (RO)
- Ultrafiltration (UF)
- Biological filtration systems
- Backwash water reclaim systems
- Advanced oxidation processes (AOP)

AFTERMARKET SERVICES AND SUPPORT

Pureflow provides troubleshooting, preventive maintenance and remote monitoring. Support includes parts and consumables, media and membrane cleaning, repairs and PLC upgrades. Service contracts cover scheduled inspections and performance monitoring, with operator training available.



TREATMENT BY WATER STREAM

Treatment options matched to each water stream

Pureflow tailors treatment to the contaminants in your mine's water and the water quality you require for operation, reuse or discharge.

WATER STREAMS AND TREATMENT CONSIDERATIONS

Source Water & Makeup Water

- Media filtration for arsenic, lead, zinc, copper, etc.
- Ultrafiltration for turbidity and suspended solids
- Provide coagulation and oxidation pretreatment
- Cyanamide destruction
- Ozone for hydrogen sulfide oxidation

Process Water Treatment

- Remove suspended solids with ultrafiltration
- Remove hardness with ion exchange
- Target dissolved contaminants with resins
- Provide chemical feed and pretreatment
- AOP for difficult organic contaminants

Mine Water & Discharge Treatment

- Filter particulates from mine dewatering flows
- Remove dissolved metals with selected media
- Target chromium(VI) with ion exchange
- Design treatment around discharge limits

Water Reclaim & Reuse

- Reclaim filter backwash water
- Treat contaminants to meet reuse targets
- Automatic solids dewatering and handling equipment
- Ozone disinfection and AOP for organics

Process selection and removal performance depend on water chemistry and testing.

PUREFLOW SUPPORT

Pilot testing

Process design

System commissioning

Operator training

Field service and maintenance

Parts and consumables



ENGINEERING & PILOT TESTING

Pilot data for full-scale design

PROCESS SELECTION STARTS WITH EVIDENCE

Pureflow supports process selection and design through bench testing and onsite pilot studies. Mobile trailers and skid-mounted systems evaluate filter media, membranes, biological processes, ozone and AOP where suitable. Pureflow technicians can run the study or train third-party operators.

PILOT SYSTEM FEATURES

20' Mobile Pilot Trailer

- Air-conditioned / heated 20 ft × 8 ft × 8 ft trailer
- Four 6-inch I.D. filter columns for simultaneous testing of up to four media
- PLC automation for 24-hour operation and automated backwashing
- Four chemical feed systems with static mixers
- Individual column flow control and metering
- Online pH, turbidity, ORP and chlorine monitors available
- Onboard laboratory analytical instruments
- Ozone generation and dissolution available

UF Pilot Systems

- Nanostone aluminum oxide ceramic membrane
- Flow: 11–43 GPM at 59–235 gal/ft^2/day (GFD)
- Fully automated, self-cleaning operation
- Remote monitoring, control and data trending
- VFD-controlled feed, backwash and chemically enhanced backwash pumps
- Online TDS, pH, free chlorine and temperature analyzers
- Modular skid: 102 in. L × 48 in. D × 90 in. H

PILOT STUDY SEQUENCE

01 VERIFY TREATABILITY

Measure contaminant removal against project water-quality targets.

02 OPTIMIZE OPERATION

Refine operating conditions and estimate treatment costs.

03 REPORT FINDINGS

Document pilot results and recommend full-scale design parameters. Provide treatment proposal.



SUSTAINABLE WATER REUSE & PLANT OPERATION

Treatment designed around mining operations

WATER RECOVERY AS PART OF THE TREATMENT SYSTEM

Pureflow integrates backwash water reclaim with treatment for reuse. Ozone supports disinfection, while AOP targets difficult organic contaminants. Designs account for water quality, operating conditions and residuals, with testing to confirm treatment and recovery performance.

DESIGN PRIORITIES FOR LONG-TERM OPERATION

Water Recovery & Reuse

- Backwash water reclaim within the treatment system
- Storage and controls for reclaimed water
- 4-minute backwash for coagulation filtration systems
- Residual solids dewatering systems
- Ultrafiltration for suspended-solids removal ahead of reuse or RO

Operation & Maintenance

- System design focused on ease of maintenance
- Automation to simplify day-to-day operation
- Controls & instrumentation that support troubleshooting
- Permanent media options
- Remote monitoring & troubleshooting

Up to 99% backwash-water recovery

Recovery depends on site conditions. Testing confirms treatment and recovery performance.

DISCUSS YOUR APPLICATION WITH PUREFLOW

Share your water analysis, flow range and treatment targets.

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