

Rapid Deployment of Mobile Membrane Water Treatment for Mining

The challenge

An operating mine in remote Nevada experienced a pit flood as a result of groundwater recharge. More than 40 million gallons of water flooded the open pit, bringing mine operations to a halt. The groundwater, when introduced to the pit, was then contaminated with numerous contaminants such as manganese, heavy metals, and sulfides in high levels. The treated water goals required the water to be suitable for agricultural irrigation, meaning a high level of treatment was needed. Furthermore, the mine is not accessible in winter. An immediate, robust solution was needed to resume operations at the mine.

The solution

Linkan Engineering, out of Elko, Nevada, evaluated multiple treatment alternatives. Neutralization using caustic along with an Aria FAST™ membrane filtration system from Aria Filtra® was selected to treat the pit water. Caustic neutralization upstream of the Aria FAST precipitates metals and allows high solids removal via the membranes.

The Aria Filtra membrane filtration system offered the most robust, reliable treatment when metals coagulation was implemented upstream to remove the difficult solids.

The entire solution—from the first phone call to Aria Filtra, to water quality testing and system optimization, through effluent production—was 30 days.



“Pall was instrumental in supplying the mobile [Aria FAST] system for this project. Their fast response and knowledgeable application engineers assisted Linkan in meeting our client’s needs and saving the mine considerable loss of production.”*

Samuel Billin, president, Linkan Engineering

*Aria Filtra, formerly Pall Water, was a division of Pall Corporation when this quote was provided.



The results

The Aria FAST system resulted in the mine pit water being treated and removed in less than two months. The system operated continuously and allowed monitoring of water quality to ensure compliance with downstream water treatment requirements. The treated pit water was used for irrigation in the local farming community adjacent to the mine site.

The benefits

Overall, the Aria FAST operation was able to meet the client's needs, including:

- Meeting environmental discharge limits
- Quick response to mobile asset deployment
- Zero capital investment required
- Barite mine operations resuming
- Short-term rental availability

Aria FAST mobile water treatment solutions provide water on demand, when and where you need it most.

- Rapid deployment
- Easy installation
- Robust design
- Temporary or long-term solutions



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Aria Filtra, a division of Trojan Technologies, is the filtration partner of choice for municipal and industrial customers that need reliable access to consistent, high-quality water. With more than two billion gallons of installed capacity spanning six continents, Aria Filtra has the process expertise, proven technology, and intelligent systems that customers trust to reliably tackle their most complex water treatment challenges. Featuring industry-leading durability, reliability, and ease of operations, our broad portfolio of solutions ensures mission-critical functions continue to work as needed, day in, day out, for years to come. Learn more at AriaFiltr.com.

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