

High-Efficiency Mobile Membrane System Rapidly Restores Gold Mining Plant While Protecting the Environment



The challenge

In 2015, a gold mining plant in Peru at 3,000 meters of altitude sought to protect its existing reverse osmosis (RO) unit from contaminated leachate water. An operator found that the plant's conventional treatment, consisting of neutralized and treated leaching water, could not provide a stable and high-quality stream of water for mining production. The plant required a quick, reliable wastewater solution to not only meet peak demand in the summer months, but also treat the mine leachate and prevent the existing RO membrane from collapsing or releasing contaminated water into the environment. Compounding the challenge was the geographical nature and environment of the Peruvian plant. The ideal solution would be able to operate with a quick delivery rate and small footprint for the plant, given the difficult restrictions.

The solution

Aria Filtra™ worked closely with a mobile water treatment specialist, who selected the Aria FAST™ membrane system as a solution to treat the mine leachate, guarantee the availability of a quality water source, and increase overall capacity. The gold mining plant initially deployed one Aria FAST unit that kept the treated leachate water neutral and chemically stable to avoid any form of precipitation and prevent the preexisting membrane from collapsing.

With the Aria FAST unit's quick deployment of six months and seamless ability to increase capacity, the membrane system was a perfect solution to address the challenges of Peru's strict regulations and the gold mine's focus on social impact. Furthermore, Aria FAST's modular, self-contained form factor removed the need for the plant to erect any new buildings or spend time configuring the system before it became operational.

The results

The fully integrated Aria FAST unit allowed the gold mining plant to rapidly meet water supply demand and remove the colloids, algae, and all particulate matter from the leachate water. After months of utilization following the implementation of Aria FAST, the operator was able to improve the quality of the preexisting RO membranes and increase the flow capacity of the Aria FAST unit by 450 cubic meters without any additional unit extension. The unit quickly increased permeability in the plant, keeping the plant online.

Additionally, the system was able to meet Peru's water regulation standards while preventing any harm to the environment.

Aria Filtra's dedicated Aria CARE™ customer service team provided a technician to facilitate the installation, and now provides continuous, remote monitoring to ensure the system is fully operational on an ongoing basis. With the rental agreement, the Aria CARE team provides 24/7 phone support, and a technician can troubleshoot any issues that arise and quickly make necessary changes to the system.

The benefits

The speed of deployment allowed the gold mining plant to rapidly meet its water filtration needs while preventing any damage to the environment from occurring. The Aria FAST units were delivered in the month of December 2015 and startup was quickly completed in January 2016, saving the customer from a potentially costly shutdown procedure. Overall, the Aria FAST system provided the following benefits:

- **User friendly with quick and easy deployment**
- **Increased protection of preexisting RO membrane life**
- **Flexibility to increase capacity**
- **High efficiency to treat a difficult influent**
- **Positive impact on the environment**

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 AriaFiltra.com.

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