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LENNTECH

WATER TREATMENT SOLUTIONS



MINING INDUSTRY

Contaminated mine water is generated when rock containing sulphidic minerals is exposed to water and oxygen, resulting in the production of acidity and high concentrations of metals and sulphate in the water.

Mine drainage, process water and storm water associated with industrial activities are the main types of water produced in mining operation. The two primary aims of the treatment of contaminated mine water are to neutralize acidity and removal metals.

Lenntech provides sustainable complete water treatment solutions for mining industry considering a wide range of technologies and strategies.

APPLICATIONS

- ✚ Waste water reuse/recycle
- ✚ Waste water minimization
- ✚ Brine minimization



OUR SOLUTIONS

- ✚ Sulfate removal
- ✚ Heavy metals removal
- ✚ Desalination / Demineralization
- ✚ Zero liquid discharge (ZLD)

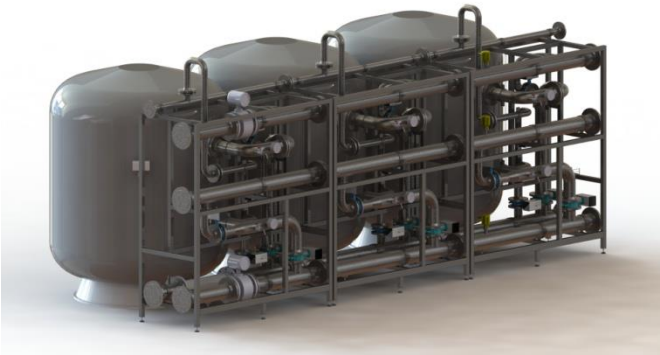


OUR ADVANTAGES

- ✚ Engineered and custom designed solutions for unique water and equipment needs
- ✚ Turn-key solutions including design, engineering, manufacturing, automation, installation, maintenance and training
- ✚ State-of-art technologies for effective water and wastewater reuse
- ✚ Best on-line assistance and on-site service and support

OUR TECHNOLOGIES

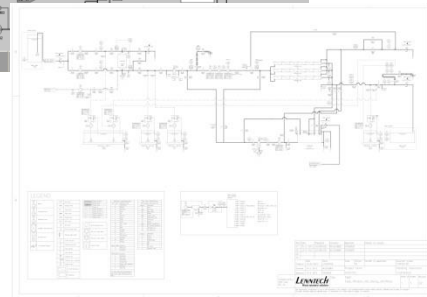
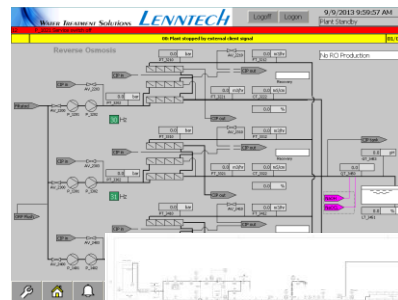
Mine waste waters are often acidic and require the addition of lime, limestone or caustic soda to rise the pH (**chemical precipitation**). Since the pH is increased, dissolved metals precipitate and settle into the bottom of settling or sedimentation ponds. **Coagulants** and **flocculants** can be added in order to combine smaller particles into larger clumps which will settle quickly.



Depending on the desired final water quality, there might be required technologies to remove dissolved minerals, like **reverse osmosis** and other **membrane filtration**, **ion exchange**, **electro-deionization**, **adsorption media**.



The reverse osmosis brine can be ultimately treated with **evaporation/crystallization**, allowing total usage of the waste water and providing a **zero liquid discharge** solution for the operators.



Lenntech Reverse Osmosis technologies will allow a **recovery of up to 65-85%** of the waste water producing a clean water stream with high quality standards that can be re-used in other processes or safely discharged in the environment.

Case Study

Reduced discharge of manganese and sulphate containing mine water in Scandinavia

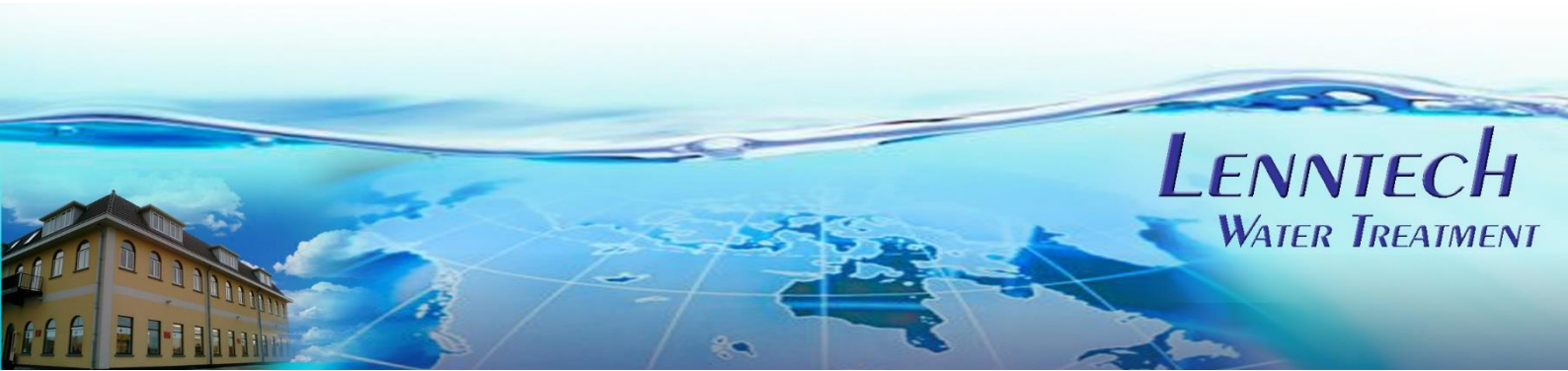
Lake contamination through the discharge of process water containing high concentrations of sulphates and manganese led to the adoption of technologies for water recycling. These have included improved precipitation of manganese from process waters and removal of sulphates through membrane separation.

The complete system provided by Lenntech incorporates multimedia filtration for manganese and iron removal and reverse osmosis technology, which removes sulphates and other dissolved impurities from the contaminated water. The high quality produced water, which used to be discharged in the environment, is now re-used in the operational processes.



As a result of implementation of Lenntech's sustainable and reliable solution, sulphate discharges have been reduced by approximately 60% and manganese discharges by 80%.





Lenntech is currently active in more than 130 countries worldwide, providing ultimate water treatment solutions for all sorts of applications, from domestic equipment to industrial turnkey plants.

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Lenntech performs as an organization that strains itself at all time to secure quality, business continuity, continuous improvement, sustainability, satisfied clients, safe working conditions and prevention of pollution. All according to legislation and regulations.

Lenntech works on management system of continuous improvement in the field of quality, safety, health and environment. In addition this management system meets the ISO 9001:2008, the ISO 14001:2004, the OHSAS 18001:2007 and VCA* 5.1 requirements so that the implementation of the system can be verified and confirmed by independent parties.

