

LIFE DEMINE

Decreasing the Impact of Abandoned Mines



Abandoned mines: an environmental time bomb

Mining activities cause serious environmental damage to **freshwater ecosystems** through the discharge of **polluted effluents**, which may contain high concentrations of **heavy metals** or **salts**, depending on the type of mine. This environmental problem is especially critical for **abandoned mines**, because there is no company in charge of treating these mining effluents, leaving a legacy of **local and global pollution**.



The LIFE DEMINE project: an innovative solution

The **LIFE DEMINE** project aims to demonstrate and disseminate the technical and economic feasibility of **decreasing** the overall **environmental impact caused by mining effluents from abandoned mines** in water bodies.

This will be done by adopting an **innovative and versatile treatment process** that will combine existing and widely known technologies based on **membrane processes (nano-filtration)** and **electrocoagulation**. The LIFE DEMINE project will obtain a **non-polluting final effluent** to be discharged in water bodies with the minimal environmental impact, in accordance with the European Water Framework Directive (2000/60/EC).

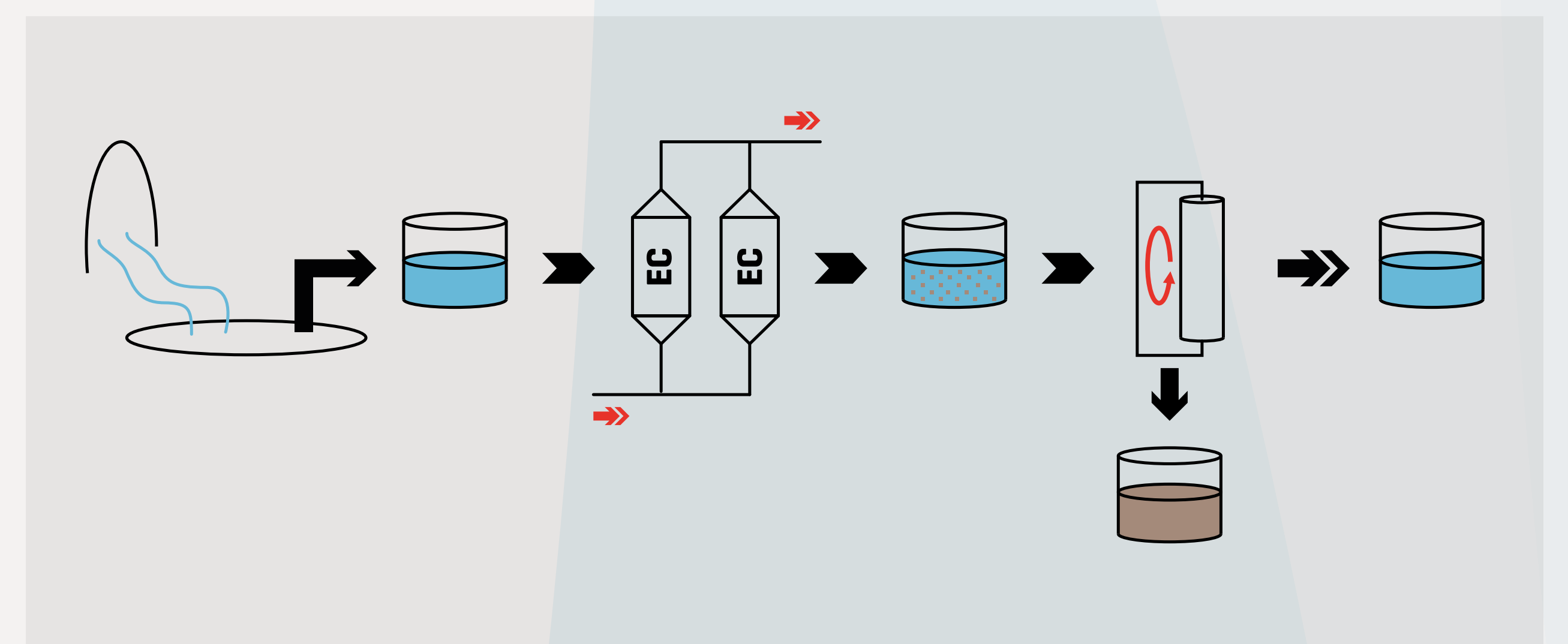
The role of ELENTEC in the LIFE DEMINE project

The Application

Abandoned mines present an environmental challenge due to their unmanaged discharges of metal-containing effluent to the environment, most often in remote locations of poor access and with no supporting infrastructure. As part of LIFE DEMINE, ELENTEC has implemented a novel combination of Electro-Coagulation (EC) and Membrane Filtration (MF) to treat mine effluent.

The Process

EC causes dissolved metals to precipitate out of solution, enabling their physical removal from the water. This is achieved via MF which enables the safe discharge of clean water whilst producing a compact sludge where the contaminants are collected.



The Technology

To tackle the challenging operational conditions of remote mine sites, ELENTEC has designed a complete treatment process that fits into standard shipping containers and is deployed as a self-sufficient unit. This is possible due to the very compact footprint of EC and MF. A modular design has been developed, where each process stage is encapsulated into a 'Process Module'. This way, from a range of standard modules, a plant's configuration can be tailored to fit a specific site's requirements.



Coordinated by



Partners



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