SURF CLEANER

Application Case

SurfCleaner goes deep underground in iron ore mine

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>
> SurfCleaner Sales director

Equipment: 2 SCO 1000 units
Year: 2022–2023

The SCO 1000 requires just 20W on average of electricity, equivalent to a small household lightbulb, making it ultra-energy efficient. Other comparable devices require circa 7.5kW, close to 13 times the energy demand. This low power profile means devices can be operated using mobile batteries for up to four days.

The Swedish iron ore mine is divided into eight production areas, each containing its own group of ore passes and ventilation systems. The main haulage level lies at a depth beyond 1,000 meters with seven 500 ton-capacity shuttle trains, collecting ore and delivering it to one of four crushing stations before being skip hoisted to the surface.

A champion of innovation and sustainability, the mine has invested heavily in electric, remote-controlled drilling and ore handling equipment to support the complex mining process. This equipment is free from exhaust emissions, produces less heat, fewer vibrations and lower noise levels, while dramatically reducing the mine’s energy costs compared to diesel-powered units.

SurfCleaner collects, separates and discharges oil — around the clock

“Electric machines are used extensively in mining, and this type of equipment needs regular cleaning due to build-up of grease and hydraulic oil,” says SurfCleaner.
“The mine carries out this work in a washing hall 1,300 meters underground where contaminated water flows into an API separator in the mine’s water treatment plant. One of our SCO 1000 devices has been installed in the API separator to help manage the first stage of the water treatment process . Here, it collects, separates and discharges oil and grease into an IBC tank around the clock. Another SCO 1000 device is used in a second API separator, further along the process, collecting thin layers of remaining oil. The separated oil is later collected by an oil recycling company, while the treated water can be reused as process or wash water. The ability to reuse both oil and water is a major win-win for the circular economy.

Our technology has essentially replaced the former oil filtration system and eliminated an entire stage of the water treatment process between the API separators. By comparison the oil filter solution was expensive, cumbersome and hard to maintain. The first SCO 1000 device is separating around one cubic meter of oil per week, while the second device is deployed when required — removing any remaining oil from the second API separator within 24 hours. As such, the mine no longer needs an oil recycling company to make the 800 km round trip with vacuum trucks to transport oil-damaged water to third-party treatment facilities.”

Other mining operators are lining up for demonstrations

SurfCleaner are delighted to be demonstrating the benefits of SurfCleaner’s devices to the global mining sector. This project has led to modifications to our own technology — specifically geared towards use in underground mining environments, which experience high volumes of abrasive media. The modifications include the development of protective screens which collect and reduce inflow of unwanted debris. We are currently delivering several more demonstration projects and we hope to support many more mining operators by delivering immediate cost saving, operational and environmental benefits.

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