

Case Study

Dewatering solutions for iron ore mining

Application

Tailings dewatering

Slurry

Sand and iron ore

Flow Rate

850 m³/hr (3740gpm)

Head

60m (197ft)

Pump

SHW 250-550 (10-22)

Pump Materials

261kW Submersible Motor
(400HP)

Features

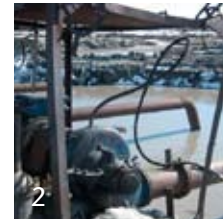
High Chrome iron Wet End
Agitator



Weir Minerals SHW submersible slurry pumps provides the best solution.

Located in the Murmansk region of northwest Russia an operator of an iron ore plant was looking for a reliable solution for their tailings dewatering.

The operator had built a new dressing plant to treat the old tailings and had started construction on two mine pumping stations to upgrade the dewatering of the old tailings field. The new pumping stations will be situated in an old sands quarry within the mine site. They will maintain the quarry's annual output at 5.0-5.5 million tons and enable processing of 17.5 million tons of high-quality sands during the mine's development stage, an amount required to meet production and sales targets for concentrates.



1. Sump with column and pump installed and in operation
2. Horizontal installation replaced by SHW submersible pumps

Dewatering the quarry field will reduce the moisture content of the sands as much as possible, while lower ground-water table will create conditions favorable for exploiting the deposit until the development stage is complete.

Prior to the project the operator had utilized horizontal pumps, however they required significant time and money to keep the area dry for the horizontal units and the wear life was inadequate. Due to this, the operator switched to submersible slurry pumps. Initially they tried a competitor's pump but were not happy with the service and pump design. They had also had a major failure of one of the units.

Looking for a solution the operator contacted Weir Minerals. Our solution was the Warman SHW heavy duty submersible slurry pump.



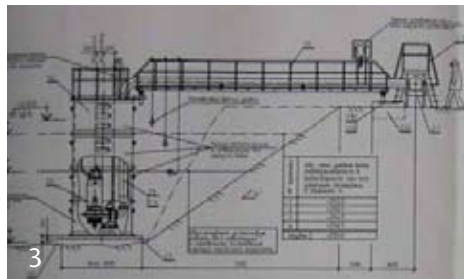
Each pump is installed in its own column 500-550mm (20-22in) above the sump bottom. The pond is approximately 15m (50ft) in diameter and 4m (13ft) deep.

After the second pump was installed, the operator was able to lower the water level 1800mm (6ft) in just 2 hours.

The client is extremely pleased with the performance of the SHWs. Each pump runs smoothly without any vibration or noise. Also, as the SHW has some of the best efficiencies in the industry; the absorbed power is below the client's expectations.

When you need a reliable pump that will provide the Lowest Total Cost Solution, you can count on Weir Minerals.

Weir Minerals offer a full range of submersible, cantilever, horizontal, trailer, skid and barge mounted auto prime pumps for the mineral processing and mine dewatering,



1. SHW Pump being installed on site
2. Pump column
3. Layout of submersible installation

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