

ROV-controlled Ejector Dredge

Skjerka HPP, Norway

Challenge

Following a plant upgrade in 2019, increased flow mobilized gravel and stones in Skjerka's intake tunnel. The material passed the existing sand trap and caused turbine damage.

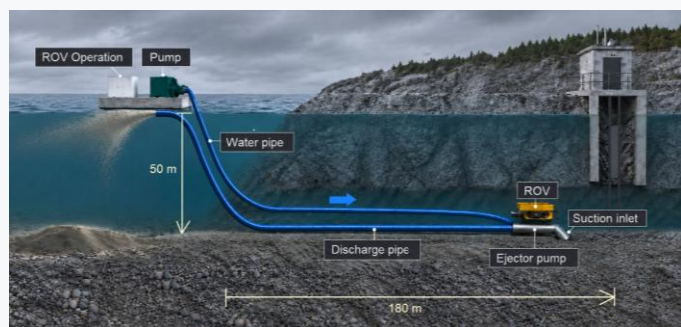
The first 180 m of the tunnel could not be dewatered. Loose material had to be removed at water depths of up to 50 m, despite uneven tunnel conditions and limited visibility. The work also had to be coordinated with power production.



Preparing the SediCon Ejector Dredge and 250 m pipe system



Surface raft with pump, pipework and ROV facilities



ROV-operated Ejector Dredge removing gravel and stones from the submerged tunnel

Solution

SediCon designed, supplied and operated an ejector dredge with an ROV-handled suction head. Powered by a pump on a surface raft, the system transported gravel and stones through a 250 m discharge pipe.

The buoyancy-balanced system and hydraulic backflush enabled dredging throughout the 180 m submerged tunnel section. Work was carried out during planned shutdowns, with the ROV withdrawn to allow generation between dredging shifts.



Project Location

Project facts

Client: Å Energi Vannkraft AS
Project: Skjerka HPP
Location: Norway
Technology: ROV – Ejector Dredge
Tunnel treated: 180 m
Water depth: Up to 50 m

Results and benefits

- No tunnel dewatering
- Full length treated
- Approximately 105 t removed
- Removal capacity ≥ 7 t/h
- Stones up to 17 cm handled
- Reduced mobile sediment

For more than 30 years, SediCon has developed and supplied proprietary sediment handling technologies from Trondheim, Norway. Our solutions for reservoirs, intakes, desanders and tunnels have been successfully implemented in hydropower projects in more than 20 countries across five continents.