

HydroSuction Dredge

El Canadá Hydropower Plant, Guatemala

Challenge

El Canadá is a 47 MW run-of-river hydropower plant with a forebay used for daily peaking operation. Approximately 50,000 m³ of sediment, together with debris and organic material, is deposited in the forebay each year. The highly cohesive sediments could not be removed by conventional flushing, while the reservoir's PE lining required a non-intrusive dredging solution.



Forebay before continuous dredging (January 2012)



Forebay after sediment removal (February 2012)

Solution

SediCon designed and supplied a customized 10"/12" HydroSuction Dredge specifically developed for the forebay. The system combines gravity-driven suction with high-efficiency water jetting to remove compacted cohesive sediments while utilizing the existing 600 mm drainage pipeline for sediment discharge.

The dredge was installed and commissioned in 2012 and has provided reliable long-term sediment removal while minimizing water consumption and avoiding major modifications to the existing facility.



Project Location

Project facts

Client: Enel Guatemala S.A.
Project: El Canadá HPP
Location: Guatemala
Technology: HydroSuction Dredge
Installed capacity: 47 MW
Annual production: 178 GWh
Net head: 380 m
Forebay storage: 200,000 m³

Results and benefits

- Operating successfully since 2012
- Removes 20,000 m³/month
- Average removal rate >100 m³/h
- Restores peaking capacity
- Protects PE-lined reservoir
- Reduced CO₂ emissions

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.