

HydroSuction Dredge

Doña Julia Hydropower Plant, Costa Rica

Challenge

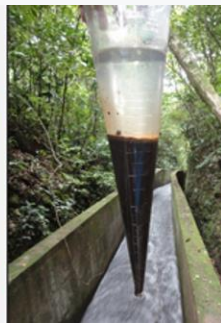
Doña Julia is an 18.5 MW run-of-river hydropower plant with a daily storage reservoir. Over twelve years, more than 60,000 m³ of sediments accumulated in the reservoir, consisting of sand, silt, debris and large amounts of organic material. The reservoir's thin PE membrane required a dredging solution capable of removing sediments without damaging the lining.



Sediment accumulation prior to dredging



Sediment removal during HydroSuction Dredge operation



Solution

SediCon designed and supplied a customized 12" HydroSuction Dredge with high-efficiency water jetting tailored to the reservoir sediment conditions. The system discharges sediments over the spillway, eliminating the need for structural modifications to the existing dam.

The lightweight floating platform and specially designed suction head enable efficient removal of both coarse and fine sediments while protecting the PE-lined reservoir from mechanical damage.



Project Location

Project facts

Client: O&M Eléctrica Matamoros S.A.
 Project: Doña Julia HPP
 Location: Costa Rica
 Technology: HydroSuction Dredge
 Installed capacity: 18.5 MW
 Reservoir volume: 220,000 m³
 Live Storage: 180,000 m³

Results and benefits

- More than 60,000 m³ removed
- Removes coarse and fine sediments
- Handles organic debris
- Protects PE-lined reservoir
- No structural modifications required
- Continued operation beyond original scope

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.