

Dewatering of dredged material with SoilTain® Dewatering Tubes



Situation

The Aller river, the Weser's largest tributary, is designated as a federal waterway in the Unteraller area. This particular section, near Verden, contains the marina for the Verden motorboat association (Verdener Motorboot-Verein e.V.k), which dates back to 1971. Approximately 1000 m³ of contaminated sediment has formed in the marina basin over the decades. It is now necessary to extract and professionally dispose of this sediment for ecological and maintenance reasons.

Solution

Design and Contracting consultants Matthäi adopted an innovative dewatering concept with geosynthetic tubes to carry out this construction project. This system consists of three distinct steps: The extraction/dredging of the sediment, the conditioning of the sludge suspension, and finally the static dewatering using geosynthetic tubes. The sludge was extracted using the Watermaster Classic III ("Matthäi IV"); This amphibious multi-functional vehicle is equipped with a suction dredge and cutter head, and can be used even in inaccessible locations

whilst also providing a high degree of mobility along with a large capacity. Conditioning and addition of a flocculant was carried out using the Flocmaster polymer mixing equipment from Knauer. The addition of flocculants improves dewatering and speeds up the process. The Knauer equipment offers major benefits when it comes to the quality of polymer mixing, the required quantity of process water and the necessary quantity of flocculant. The final stage of the process was carried out with **SoilTain®** dewatering tubes, into which the prepared sediment is pumped and within which the main static dewatering takes place. The specially developed filter composite from which the **SoilTain®** tubes are manufactured allows solids to be retained

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while excess water is released through the pores of the material. In addition, it encourages the formation of a filter cake on the inside of the tube, which in turn limits the discharge of fine particles. **SoilTain®** dewatering tubes are therefore an efficient and effective component for sludge dewatering.

The coordinated interaction of all parties involved allowed the project to be carried out successfully. The project was scientifically documented by the University of Rostock. The execution of this dredged material dewatering project was notable not only due to the professional cooperation between the companies involved, but also the innovation, flexibility and technical knowledge displayed by all. On this basis, the innovative pilot project was able to be carried out successfully in every respect.



Location: Verden an der Aller

Construction documentation and execution: Matthäi Bauunternehmung GmbH & Co. KG
Abt. Wasserbau
27283 Verden

Polymer mixing technology: J.F. Knauer GmbH

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Product: **SoilTain®** Dewatering Tubes



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