



Dredging Industrial Settling Pond Residual to a Belt Press

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Objective

A dredging contractor was contracted to dredge the sediment from this Delaware based chemical plant’s wastewater settling pond. The pond residual was to be dewatered with a belt press and the solids loaded on trucks for subsequent hauling to a landfill. The dredge pumped the residual to a mixing tank for a more consistent flow of solids to the belt press. WaterSolve LLC was contracted to supply a chemical feed system, emulsion polymer, and technical support to monitor the polymer feed rate on the belt press for optimum performance.

Conditioning Chemical

A representative sample of the pond sediment was sent to WaterSolve’s lab prior to the project. Dewatering polymers were evaluated based on water release rate, water clarity, and flocculent appearance. In addition, dosing rate(s) were determined during bench-top dewatering experiments and recommendations provided to the facility during this phase of the program. Solve 137 was the recommended polymer for dewatering this residual on the belt press. WaterSolve successfully ran tests using Solve 137 with the pond residual using a belt press simulator in the lab. The belt press rental company then tested the Solve 137 on their simulator with the pond residual and approved the process. The dry wt solids of the belt press simulator were 56%.



The hydraulic dredge dug the residuals from the settling pond and transferred them to mixing tank near the belt press. Then the belt press dewateres the residuals and the conveyor transfers them to the truck for hauling to a landfill.



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Location: Delaware
Products: Solve 137
Equipment: Polymer Make-down Unit

The Result

A hydraulic dredge was placed in the wastewater settling pond to pump the pond residuals to a mixing tank. The mixing tank was filled to capacity and the belt press dewatered the pond residuals one tank full at a time. A WaterSolve technician monitored and adjusted the polymer feed rate for optimum performance during the pressing operation. Adjustments were also made to the residual feed rate, the belt speed, and the pressure for the belt tension to optimize the performance of the press. The WaterSolve technician gathered a sample from each load of solids, measured the dry weight solids, and documented each load as they were filled. The dry tons for each load were calculated and a running total was listed as part of the reporting each day. The dredge pumped approximately 500-GPM. The press operated at 100 to 200-GPM depending on the in-line density of the solids. Loads leaving the site averaged 55% dry wt solids and contained 11 dry tons of the pond residuals.



The Solve 137 polymer is working well as the dewatered pond residual is forming in nice straight rows on the belt press.

The belt press forms sheets of dewatered residual which are falling off the belts and being conveyed to the trailer for off-site disposal.

