

Town of WestPort Indiana Water Treatment Lagoon Dredging Project



The town of Westport Indiana has three wastewater lagoons located a mile or so south of this small central Indiana community. Two of these lagoons needed to be dredged to reduce the amount of solids that had accumulated over the last twenty years. Approx 24" of solids on the bottom needed to be reduced to 6" or less to allow the lagoons to continue to be used. The town contracted with a firm to dredge the two north lagoons. The contractor decided to use the geotextile dewatering bag method to dewater sludge dredged from the lagoons. A small cutter head dredge would be used to pump solids to the bags located at the south end of the two lagoons. The two lagoons are approx 300' X 600' in area.

Cristofulli cutter head dredge in 3" size will pump approx 250 to 300 gpm and will dredge up to 8' in depth. Cutterhead will cut thru veg and med heavy materials.



A Generator is used to power the dredge which pumps sludge up to tank located near the bag staging area. The tank is agitated and from there the sludge is pumped over to the bag staging area and into the bags.



Dredging was done by using a stainless steel cable stretched across the lagoon. One end of the cable is fixed to the hydraulic hoe located on the far bank, the other hooked to the trailer that held the generator that provided power to the dredge. After each pass the hoe and trailer were moved about 4 feet to make ready for the next pass. Only one pass would be made across the lagoon. The travel speed is adjusted to reduce the sludge blanket to the desired amount.

For this project a gasoline powered trash pump is used to boost the flow going from the dredge up to the bag staging area located 600' away.



Pumping to a tank on the bank with agitation or recirculation sends a more homogenous solution to the process which improves flocculation.



Three 45' circumference X 100' long dewatering bags are staged to accept the sludge. Room for an additional 3 bags is prepared in case they are needed. Polyethylene sheeting is laid out under the bags.



A Port-A-Poly polymer makedown system is set up near the bags. Drainage netting between the sheeting and bag provides additional drainage. At the back of the bag lay down area a sump collects the clear effluent that drains from the bags and it is pumped back to the lagoon with a gasoline pump.



The sludge is pumped from the agitated holding tank over to a Blue River Technologies flocculator where polymer solution is added and mixed with the sludge.



The flocculator causes the water and solids to separate agglomerating the solids so the water can flow easily from the containment bag without blinding.



Proper control of the process will result in more and dryer sludge being retained in the bag for disposal resulting in less bag and chemical cost.