

Application Engineering Bulletin

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MSP Rents Utilizes Thompson Pump to Aid in WWTP Upgrades

Planning committees and the City of Chapel Hill, NC recently met to discuss possible updates required on the Mason Farm Wastewater Treatment Plant. The 2-acre site was to undergo upgrades that would increase their productivity by about 10 million gallons per day.

The project would include installing six sock dewatering systems at various places within the 2-acre plant allowing for excavation and the construction of new structures. Sock dewatering systems use a perforated hose, or sock, that is buried underground. Installing the sock consists of using a machine that digs the hole for the perforated hose, while installing the hose itself. Once installed, the sock hose is connected to a pump with large amounts of air handling ability. The groundwater is pulled through in the perforated hose, and is discharged through the pump to the desired discharge point.



An aerial view of the Mason Farm WWTP, in Chapel Hill, NC.

Project Managers determined that in order to make the project successful, they would combine efforts with MSP Rents in Raleigh, NC. They knew that MSP Rents was a Thompson Pump distributor, and that they would have not only the expertise and the ability to respond quickly to review the needs of the general contractor, but that MSP Rents would be also able to produce complete dewatering systems.

MSP Rents recommended using two of Thompson Pump's 6-inch Vacuum Assisted Dry Prime Trash Pumps for the project due to their high volume and air displacement capabilities, which were needed to lower the water table efficiently allowing excavation to begin.

Thompson's 6-inch Vacuum Assisted Dry Prime Trash Pumps are capable of producing a maximum of 1,500 gallons per minute (2,160,000 gallons per day), along with a maximum head of 102-feet. The Vacuum Assisted Dry Prime Trash Pumps include an external vacuum pump to provide 78-cfm (cubic feet per minute) of air handling capabilities. Along with a self-priming centrifugal pump end, which by its design has its own air handling capability of 29-cfm. A total of - totaling 107-cfm of air handling capability was available on each pump.

In order to maintain an even influx from the different sock dewatering systems, engineers at MSP manufactured a PVC manifold system with six input lines regulated by gate valves on one side of the manifold, and two suction lines connected to the suction ports of each of the two Vacuum Assisted Dry Prime Trash Pumps on the other side of the manifold. The manifold system allowed MSP crews to fine-tune the system so that the input was going into the pumps on a consistently even basis throughout the two-acre site.

The combination of the expertise of MSP Rents, and the reliable Thompson Pump 6-inch Vacuum Assisted Dry Prime Trash Pumps, the upgrades were made to the treatment plant resulting in another successful dewatering construction project.

Special thanks to Rick Brown, manager from MSP Rents, Raleigh, NC for his help on this project.



Two Thompson Vacuum Assisted Dry Prime Trash Pumps attached to the manifold used to regulate the suction of the wastewater.