

Pontiac Lake Low Pressure Sanitary Sewer System (LPSS)

White Lake Township, Michigan



The public awareness of improving water quality of the natural water resources and enforcement by regulatory agencies has provided an initiative to utilize new methods of underground trenchless technology to construct wastewater collection, retention, and treatment systems.

Historically, Pontiac Lake was used as a recreational facility in the summer. However, currently, most of the dwelling units around the lake are being used as year-round residences.

The project included abandonment of 431 septic fields responsible for deteriorating the water quality of

Pontiac Lake. These septic fields were abandoned in accordance with the current guidelines of the Oakland County Health Department (OCHD) and replaced by a Low Pressure Sewer System (LPSS). The LPSS was installed in accordance with each plot plan. The LPSS included the installation of a Grinder Pump unit with a pre-wired control panel and an associated 1.25" diameter forcemain on each of the 431 lots having septic fields and a future connection for 51 undeveloped lots. Twenty-nine additional pump core units were provided for emergency maintenance.

Spalding DeDecker Associates (SDA) developed a Sustainable Action Plan (SAP), which utilized the Directional Drilling and Micro Tunneling Technology (DDMT) and met the three requisites of sustainability: social equity, economics, and environmental objectives. The utilization of DDMT technology minimized the construction-induced inconveniences of accessibility and traffic to the residents, was economical as compared to other methods of construction, and helped improve the water quality of Pontiac Lake. SDA prepared each plot plan.

SPECIAL FEATURES

Approximately 34,480' of 1.25" diameter High Density Polyethylene (HDPE), SDR 11 pipe was used for the entire on-site private portion of the LPSS. The public portion of the project involved the construction of a common forcemain (3,673' of 6" diameter; 7,970' of 4" diameter; 8,104' of 3" diameter; and 9,233' of 2" diameter) and all associated approved appurtenances. This forcemain pipe was HDPE with properties conforming to the respective Iron Pipe Size (IPS) SDR 11. The forcemain discharged into an existing 8" diameter forcemain previously constructed and utilized for the Market Place, White Lake, and Cranberry Estates Pump Stations. The new forcemain, including the public and private portions, was installed by DDMT

OWNER / CLIENT

Charter Township of White Lake

PROJECT START - END

March 2001 - September 2004

SDA PROJECT NO.

WH01-003



Project Profile

to avoid major restoration and replacements associated with construction by open cut, and thus reduced costs for public and private properties.

