

Sparta WWTP Improvements

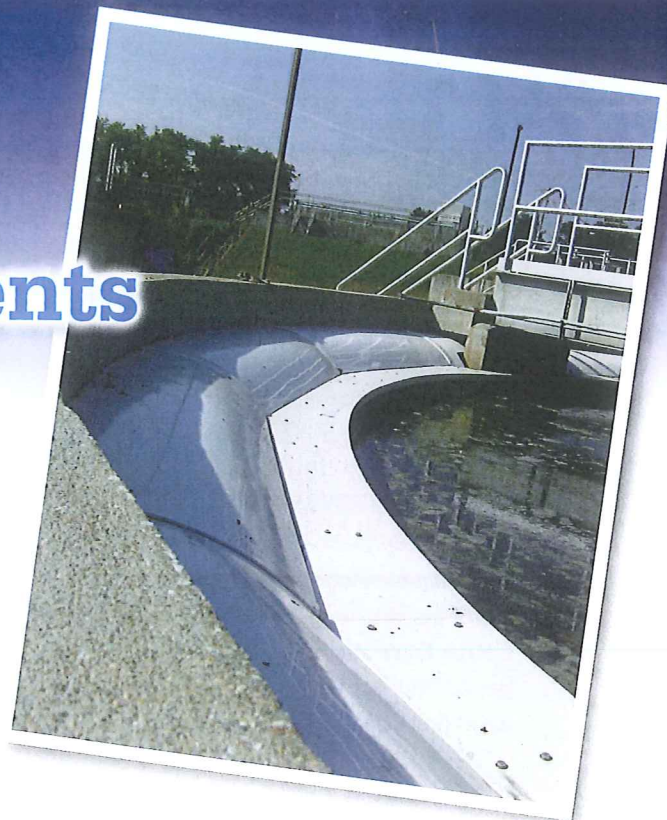
The Village of Sparta has just recently completed a major expansion of its WWTP. The project would take the existing plant with a flow of .8 MGD to a rate of 1.2 MGD and be designed and engineered by Moore & Bruggink Consulting Engineers of Grand Rapids Mi.

The existing plant was of the oxidation ditch type with one primary clarifier, two secondary clarifiers and two aerobic digesters. Chlorine gas is used for disinfection and bisulfite for dechlorination. Phosphorus removal is achieved by the addition of Ferrous chloride.

The project included a completely new headworks building. This is equipped with a new 40" diameter fine screen to remove fibrous stringy material. It also includes a vortex grit chamber and grit dewatering system. A new air handling system supplies the building with fresh air, heating and ventilation. These improvements will eliminate wear on the raw sewage pumps and prevent grit from accumulating in the aerobic digesters.

The existing primary clarifier will receive a new 65' diameter scraper type collector mechanism and half bridge. The oxidation ditch area of treatment had a new ditch built of the same size as the existing. The secondary clarifier area had two new 40' diameter x 12' SWD clarifiers built. The return sludge system will receive a new 410 GPM suction lift pump with a variable frequency drive. The chlorine treatment system received a new 50 lbs/day unit, and one 25 lbs/day unit. The phosphorus removal process received two adjustable diaphragm feed pumps and one new transfer pump. A new 35' x 20' deep aerobic digester was built with one new 620 scfm blower. Sludge storage saw a new 64,280 cuft = 48,800 gallon tank built to increase capacity. A new 712 sqft. maintenance building was also built with work benches, storage shelving, an overhead crane and a 5hp. Air compressor.

One of the most exciting improvements has been the installation of the final clarifier weir and trough covers. Any operator that has worked with a clarifier knows that constantly cleaning algae build up from the weirs and trough is a very time consuming job. As part of the expansion, Moore & Bruggink saw the opportunity to correct this problem by installing fiberglass weir covers. This would block the sunlight and prevent algae from growing on the weirs and in the trough. The covers are hinged six foot sections that allow the plant staff to inspect the weirs at any point in time. The plant staff has been very impressed with the results of the covers. Denny Pecynski, the plant Superintendent of the WWTP says "The trough covers have outperformed our expectations



and we haven't had to clean them once since installation, and that frees up our time to focus on more important operational concerns.

The project has gone well and been a great success and will serve the Village of Sparta well into the future.

