

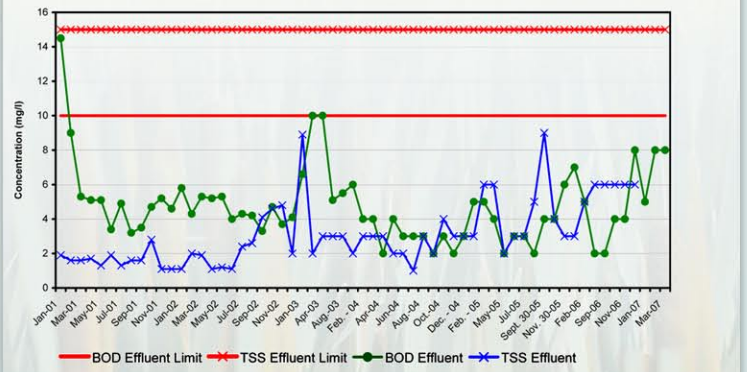
the City of Mandeville, LA

constructed wetland with trickling filters



treated effluent used for land application in a cypress forest

City of Mandeville, LA - Municipal Wastewater Treatment
BOD & TSS Effluent and Permit Limit Concentrations
Primary Treatment - Aerated Lagoons
Secondary Treatment - Sub-surface Flow Wetland with Gravel Trickling Filter
Flow Rate - 2 Million Gallons per Day



The City of Mandeville is located on the North Shore of Lake Ponchartrain, North of New Orleans. The existing wastewater facility consisted of a three cell aerated lagoon and constructed wetlands. This system, with a dry weather flow of 1.0 MGD, would work well most of the year, but was periodically out of compliance for ammonia spikes. After assessment it was determined that storm event contributions would increase flow to 9.0 MGD.

NSI designed and permitted an upgrade to the existing system to 2.0 MGD by adding a stormwater diversion system, improved aeration, and a gravel trickling filter. Treated effluent from the system is discharged through an irrigation system into a cypress forest near the site. The design utilizes treated effluent as a resource for the restoration of the surrounding site. Competing proposals both recommended activated sludge systems with price tags almost six times the cost of the NSI's solution.

In addition to the basic improvements, an on-line monitoring system, which included a fiber optic network, was added for remote and onsite monitoring. On-line monitoring data includes ammonia, nitrate, dissolved oxygen, ORP, and operational status of all pumps and aeration equipment. The system has been in compliance since installation and improvements were finalized. Additionally, the infrastructure has survived the radical storm events present in the region, including Hurricane Katrina.