



Infiltrator Chambers Used in SBR Wastewater Treatment Plant

Heavy peak flows and a need for groundwater recharge challenge engineers to construct a wastewater management system for the Little River Casino in Manistee, Michigan.

Project

A Sequential Batch Reactor (SBR) treatment plant with a subsurface discharge of High Capacity Infiltrator Chambers. The onsite wastewater treatment system is designed for 180,000 gpd and will treat wastewater from a hotel, casino and housing facilities.

Installation Date

Spring 2002

Engineer

Thomas Krasovec, P.E.
VEC Engineering
4625 Willoughby Rd, Suite 6
Holt, MI 48842

Project Manager/Contractor

Mike Flaughter, P.E.
Elmer's Crane and Dozer

Owner

Little River Band of Ottawa Indians

Design Flow Specifications

Soil type: Coarse sands with an application rate of 2 gpd/sf
Number of chambers installed: 6,000

The Little River Band of Ottawa Indians needed a new wastewater management system for its casino, hotel and tribal housing expansion project. The existing onsite septic system was insufficient and tying to the local municipal system was too costly. Thomas Krasovec of VEC Engineering estimated a design flow of 180,000 gpd would be required once the development was complete. Conventional systems were not feasible options.

A Sequential Batch Reactor (SBR) treatment plant was designed to handle the erratic flows from the casino and hotel. A large subsurface absorption field was required due to a need for groundwater recharge. Thomas Krasovec selected High Capacity Infiltrator Chambers for their large storage and infiltrative capacity, which could accommodate peak flows. The chambers would also be significantly more cost-effective due to materials, labor and time savings compared to other alternatives.

A subsurface disposal system of approximately 6,000 High Capacity Infiltrator Chambers providing 90,000 sq. ft. of infiltrative surface area was designed to accommodate the high volume flows. The SBR treats effluent in batches, allowing the absorption field to receive intermittent doses. A pressurized piping network distributes the flow throughout the chamber field.

Mike Flaughter, the construction manager for this project, reports that the system was installed on time and on budget and has performed effectively for two years.