

CASE STUDY

An Affordable Wastewater Treatment Solution for Institutions and Small Municipalities

Mifflin, Ohio

Problem

The village was an unsewered community with failing septic systems with inadequate area available for on-site replacements.

Solution

EarthTek was selected to assist with the design, and to supply a 30,000 gpd SABRE sequencing batch reactor (SBR) treatment plant.

The village of Mifflin, a small community of 60 homes and 10 businesses located in northern Ohio. The village had been served by home septic treatment systems (HSTS), until it was discovered some of the existing systems were failing, which caused water quality problems in nearby waterways. The village is located immediately upstream of a large, public recreational lake.

A new wastewater treatment system was commissioned to collect and treat the village's sewage. This project was part of Ohio EPA's HAB-related nutrient reduction effort to help reduce discharge pollutants from wastewater systems that can contribute to harmful algal blooms (HABs).

The village hired the consulting firm of Hunt Engineering, LLC to develop a plan for a new plant. The firm's project engineer, Christopher Hunt, P.E. evaluated several options, eventually selecting EarthTek of Batesville, Indiana to assist with the design, and to supply a 30,000 gpd package SABRE sequencing batch reactor (SBR) treatment plant for the project.

Testimonial

"This plant just works."
-Tim Parks, Licensed Plant Operator

Institutional Market

Project Overview

Mifflin, Ohio



Design Parameters

- 60 households
- 10 local businesses

Annual OM&R

- \$12,588

Primary Treatment

- 30,000-gallon primary FRP tank

Secondary Treatment

- 30,000-gallon EarthTek SABRE SBR

Tertiary Treatment

- Tertiary Filter
- UV Disinfection
- Post Aeration

Dispersal

- Surface water discharge with NPDES permit

Operation

- Part-time operator

Influent Quality

- < 250 mg/l BOD5
- < 300 mg/l TSS
- < 40 mg/l NH3-N

EarthTek SABRE Effluent Quality

- < 10 mg/l BOD5
- < 12 mg/l TSS
- < 1 mg/l NH3-N

Continued on Next Page

Mifflin, Ohio

Institutional
Market

EarthTek's SABRE SBR system was selected due to:

- Utilized buried fiberglass tanks to be aesthetic, and minimized odors due to the plant being constructed in the village with homes nearby
- Simple to operate and maintain with minimal operating expenses
- Cost-effective compared to other systems

The package wastewater system included a 30,000-gallon, 10' diameter, two-compartment buried primary fiberglass (FRP) treatment tank, one 30,000-gallon, 10' diameter, single-compartment buried FRP SBR tank for secondary treatment, followed by mechanical filtration, ultraviolet disinfection system, effluent flow monitoring, post aeration, and composite sampling of the treated effluent.

The treated effluent has met regulatory discharge permit limits of 10 mg/l BOD5, 12 mg/l TSS, 1 mg/l Ammonia as Nitrogen, and 125 count/100 ml E Coli since it was commissioned in the fall of 2015.



For more information about EarthTek SBR systems, contact EarthTek, at 800-972-9940.



info@earthtek.com