

# CASE STUDY

## An Affordable Wastewater Treatment Solution for Institutions and Small Municipalities

### Logan, Ohio

#### Problem

Aging infrastructure was preventing the camp from planned expansion.

#### Solution

Earthtek Environmental, LLC was selected to assist with the design and to provide a 16,000 gpd sequencing batch reactor (SBR) treatment plant.

Camp Akita, a mission of the First Community Church, is a 1,200-acre camp located in the scenic Hocking Hills of southeastern, Ohio. The camp operates year-round, and offers entertainment, food, and lodging for groups up to 200 people.

In 2013, the camp's directors began planning for the future, and soon realized the existing 8,000 gpd precast extended aeration plant built in 1979 would need to be replaced.

Since the discharge stream is small and considered an exceptional water body, the Ohio EPA required any new plant to meet the state's Best Available Demonstrated Control Technology (BADCT).

The camp hired the consulting firm of E.P. Ferris and Associates to develop a plan for a new plant. The firm's project engineer, Jay Herskowitz, P.E. evaluated several options, eventually putting the project out to bid to plant suppliers across the nation.

### Testimonial

"I love my plant! I can run this thing from my house."  
-Mike Young, Licensed Plant Operator

### Institutional Market

### Project Overview

#### Logan, Ohio



#### Design Parameters

- Seasonal flows
- Typically ~200 campers during busy season

#### Annual OM&R Costs

- \$10,606

#### Primary Treatment

- 20,000-gallon primary/equalization tank

#### Secondary Treatment

- Two 8,000-gallon EarthTek SABRE SBR's

#### Tertiary Treatment

- Tertiary Filter
- UV Disinfection
- Post Aeration

#### Dispersal

- Surface water discharge with NPDES permit

#### Operation

- Part-time operator

#### Influent Quality

- < 300 mg/L BOD5
- < 200 mg/L TSS
- < 60 mg/L NH3-N

#### EarthTek SABRE Effluent Quality

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

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### Logan, Ohio

Institutional  
Market

EarthTek of Batesville, Indiana was selected to assist with the design, and to supply a 16,000 gpd package SABRE sequencing batch reactor (SBR) treatment plant for the project.

EarthTek's SABRE SBR bid was selected due to:

- Meeting the stringent BADCT requirements
- Consisted of two separate SBR tanks to handle a large variation between summer and winter flows
- Utilized buried fiberglass tanks, and has minimal operating costs
- Cost-effective compared to other systems

The package wastewater system included a 20,000-gallon, 10' diameter, single-compartment buried primary fiberglass (FRP) treatment tank, two 8,000-gallon, 8' diameter, single-compartment buried FRP SBR tanks for secondary treatment, followed by mechanical filtration, ultraviolet disinfection system, effluent flow monitoring, post aeration, and composite sampling for activated sludge treatment of domestic wastewater.

The treated effluent has met the 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 commenced the summer of 2014.



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



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