

CASE STUDY

An Affordable Wastewater Treatment Solution for Institutions and Small Municipalities

Circleville, Ohio

Problem

Two extended aeration plants were failing, causing numerous OEPA violations for Logan Elm school district.

Solution

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

Logan Elm school district located in Circleville, Ohio, had failing package plants at two of their schools. One plant served the McDowell Middle School with an enrollment of approximately 300 students, and the other served neighboring Logan Elm High School with an enrollment of approximately 600 students. The school district wanted a new plant to treat both schools, and eliminate OEPA violations.

The school district hired Stone Environmental, Engineering & Science in Columbus, Ohio, to develop a plan for a new plant. The firm's project engineer, Jeff Baird, P.E. evaluated several options, eventually selecting EarthTek of Batesville, Indiana to assist with the design, and to provide a 11,540 gpd package sequencing batch reactor (SBR) treatment plant for the project.

Message from the President

"Our goal is to create the best solution for our client's specific needs, not just provide an off-the-shelf plant."

-Kevin Chaffee, P.E.

Institutional Market

Project Overview

Circleville, Ohio



Design Parameters

- Logan Elm High School
Enrollment – 582
- McDowell Middle School
Enrollment - 299

Annual OM&R Cost

- \$4,208

Primary Treatment

- 15,000-gallon primary FRP tank

Secondary Treatment

- 15,000-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

- < 325 mg/l BOD5
- < 250 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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Circleville, Ohio

Institutional
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EarthTek's SABRE SBR bid was selected because it:

- Utilizes buried fiberglass tanks to be aesthetic, and minimizes odors, as the plant is located between the football and baseball fields
- Handles large variable flows caused by summer and winter break
- Simple to operate and maintain with minimal outgoing expense
- Cost-effective compared to other systems

The package wastewater system included a 15,000-gallon, 10' diameter, two-compartment buried primary fiberglass (FRP) treatment tank, one 15,000-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 treated effluent.

The treated effluent has met the regulatory discharge limits of 10 mg/l BOD5, 12 mg/l TSS, 1 mg/l Ammonia as Nitrogen, and 126 count/100 ml E. Coli since it was put into operation.



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



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