Project Summary

Project History

Bensenville operates its own wastewater treatment facility.

Capacity: 4.7mgd
Process: aerobic and anaerobic digestion
Amount: 5,000,000 gallons of raw sludge per year

The primary anaerobic digester is a 500,000 gallon reinforced concrete tank (concrete cylinder) set on its end which was constructed in 1960. Surrounded by a man-made mound of earth, the tank had a mixing system that recycled the methane gas produced by the digestion of the waste materials.

Emergency

July 4, 1996 - staff discovered that the primary anaerobic digester had broken open and sludge was leaking out over the ground on site. The ensuing investigation revealed that the overflow pipe from the primary anaerobic digester to the secondary anaerobic digester had become clogged and was not allowing sludge to flow between the tanks. Sludge was still being pumped into the primary tank when the blockage occurred and caused the concrete tank to become over-pressurized. The roof of the tank separated from the walls and raised up enough to allow the pressurized sludge to leak out over the ground site until the flow into the tank could be cut off.

Owner

Village of Bensenville
700 West Irving Park Road
Bensenville, Illinois 60106
630.766.8200

Consultant

B & W Design/Build, LLC
500 Coventry Lane, Suite 270
Crystal Lake, Illinois 60014
815.479.5180

General Contractor

Joseph J. Henderson & Son, Inc.
4288 Grand Avenue
Gurnee, Illinois 60031
847.244.3222

B&W Design/Build

Village of Bensenville

Anaerobic Digester Repair Project

Proud Recipient of APWA's:
1999 Project of the Year
Category:
Disaster or Emergency
Construction/Repair
Division:
Less than $2 Million

Thank you to the following project participants:

A & J Cartage Inc.

Ambar, Inc.

American Demolition

Aspen Services

Breuer Metal Craftsman

C.D. Chidester Excavation

Energy Associates Inc.

Gateway Concrete Forming

H.H. Holmes Testing

Hogan Contracting

Ley & Associates

Lifting Gear Hire Corp.

Liquid Dynamics

Meyer Material

P & S Painting

Peterson & Matz

Pressure One

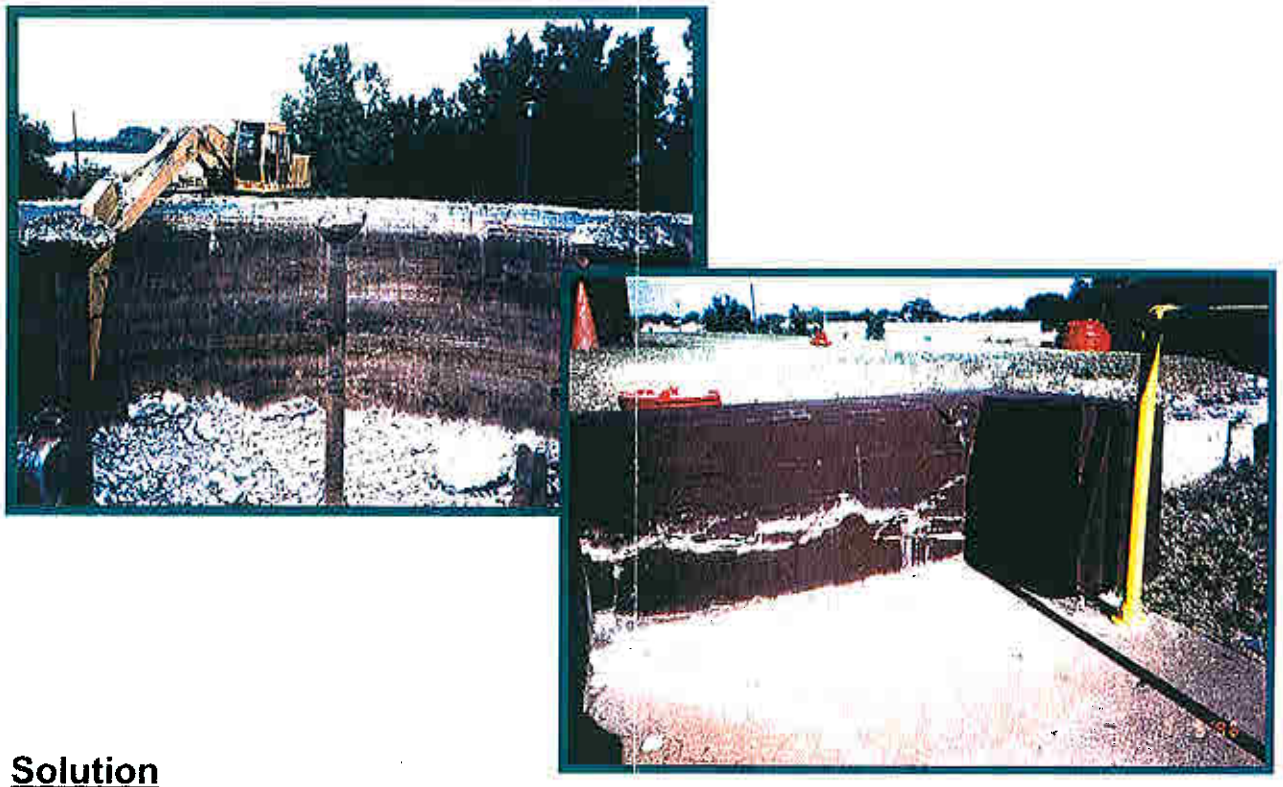
Rockford Fabricating

Stelmach Electric

W.R. Grace

Goals

- Repair the damaged digester as quickly as possible.
- Operate the plant during the repair without violating its NPDES permit and its 503 sludge regulation limits.
- Upgrade the facility while it is being repaired.
- Prevent reoccurrence.



Solution

- Hire Design/Build team of Baxter & Woodman and J.J. Henderson for cost control and to accelerate the schedule.
- Demolish and rebuild the roof in place to ensure long-term reliability and convert the secondary anaerobic digester to an aerobic digester.
- Replace the methane gas swirl mix with the proprietary JET-MIX system.
- Install in-line sludge grinder, in-line pressure monitors, and piping upgrades.