

CLAY COUNTY UTILITY AUTHORITY TAPS BCR TO CUT BIOSOLIDS MANAGEMENT COSTS

Clay County Utility Authority's (CCUA) installed Neutralizer® systems at each of its four wastewater treatment plants (WWTPs) between 2006 and 2010. The streamlined, patented two-stage Neutralizer® system treats waste activated sludge and produces Class A residuals for unrestricted land application in just a matter of hours.

Long-Term Success:

- 43% reduction in annual operating costs for biosolids treatment and disposition
- 92% decrease in energy costs associated with biosolids treatment
- Odor-free residuals
- Enhanced nutrient removal that meets strict new standards for nutrient discharge
- Adjustable pH to suit client needs, with an extremely low P index

Cost/Risk Challenges:

- Escalating energy costs
- Need to control odor
- Hauling and disposal costs
- Stringent environmental regulations



CHALLENGING SITUATION

CCUA's four regional WWTPs in the Jacksonville, Florida area were treating secondary sludge through an antiquated aerobic digestion process and hauling Class B residuals either to the landfill or land application sites. In an effort to upgrade their process to a Class AA/EQ biosolids treatment solution at all WWTPs, CCUA commissioned Mittauer & Associates, Inc. to conduct a comprehensive engineering study to evaluate the initial capital, operational, and maintenance costs of various treatment options along with qualitative benefits for commonly used Class A and Class B biosolids treatment options. The findings would help the city address these challenges:

- Escalating energy costs
- Need to control odor
- Hauling and disposal costs
- Stringent environmental regulations

About the Neutralizer® System

Neutralizer®, BCR's patented Class AA/EQ residuals treatment solution, is a two-stage chemical oxidation system that treats Waste Activated Sludge (WAS) and produces Class AA/EQ residuals in a matter of hours. Approved by the U.S. EPA as a Process to Further Reduce Pathogens (PFRP), Neutralizer® has become the most installed Class AA/EQ BCR Product in Florida because it is simple, safe, environmentally responsible, and cost effective for wastewater treatment plants.

CASE STUDY: Clay County Utility Authority



STUDY POINTS TO BCR'S NEUTRALIZER® SYSTEM

The study compared BCR's Neutralizer® solution to dryer systems, lime stabilization, anaerobic digestion and Class B aerobic digestion. The findings concluded that the Neutralizer® system was the most economical and environmentally responsible option. The simple, two-stage chemical process safely meets pathogen and vector attraction requirements as defined by the CFR 40 Part 503 and is approved by the U.S. EPA as a Process to Further Reduce Pathogens (PFRP). It requires a minimal footprint and can be easily integrated into a WWTP's existing infrastructure.



BCR's Neutralizer® solution incorporates Huber's easy-to-operate HMI and disk thickeners that simplify use and reduce energy consumption and costs.

BCR'S SOLUTION DELIVERS

The BCR Neutralizer® system that was implemented features a control system and monitoring devices that record process parameters and ensure the consistent, documented generation of high quality Class AA/EQ biosolid material. The Neutralizer® systems were installed between 2006 and 2010 at all four WWTPs, ranging from 2 MGD (millions of gallons) to 5 MGD average daily flow.

Following installation of the fourth Neutralizer® system, 100% of CCUA's biosolids met Class AA/EQ standards as defined by the CFR 40 Part 503. The material is registered as a commercial fertilizer with the Florida Department of Agriculture, and is distributed to local users. BCR's solution provided multiple advantages over CCUA's previous treatment system, including:

- 43% reduction in annual operating costs for biosolids treatment and disposition
- 92% decrease in energy costs associated with biosolids treatment
- Odor-free residuals
- Enhanced nutrient removal that meets strict new standards for nutrient discharge
- Adjustable pH to suit client needs, with an extremely low P index (phosphorous leach-ability) — 0.1 Phosphorous Source Coefficient in a study performed by Penn State University

CASE STUDY:
Clay County Utility Authority

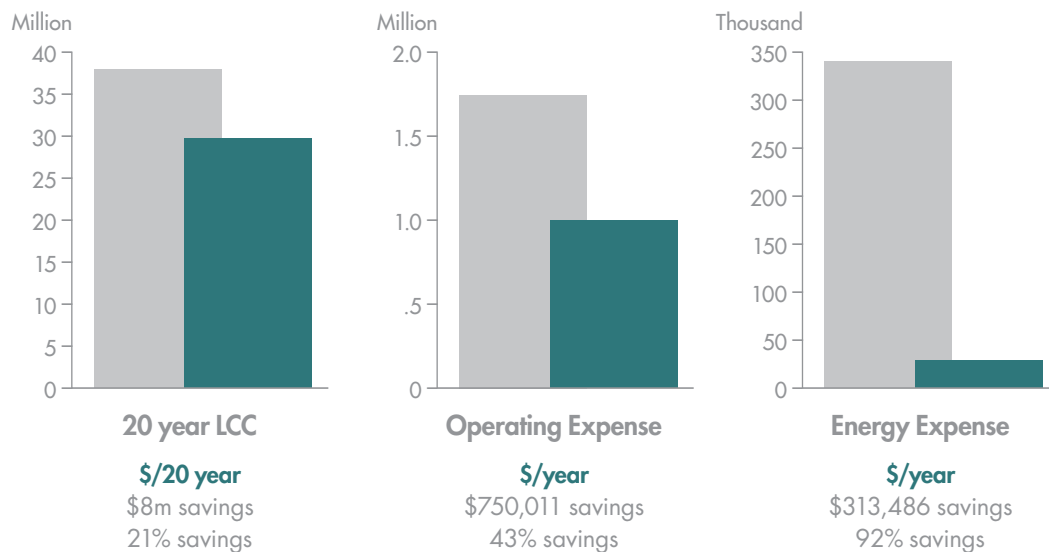


**YEAR ONE: OPERATING PERFORMANCE SOARS, ENERGY USAGE
AND COSTS PLUMMET**

In 2009 CCUA conducted an internal analysis of the Neutralizer's® annual operating cost at the three locations that had been completed at the time, compared with the annual operating costs of digestion and hauling incurred by those sites. Monitored by a single control panel, the new, highly automated, and simple-to-operate system reduced CCUA's annual biosolids management operating costs by approximately \$750,000.00. What's more, since day one, the system had reliably treated over 18,000 tons of biosolids with consistent results.

Instead of using energy-intensive treatment (digesters, dryers, incinerators, gasifiers) required by digestion, the Neutralizer® system relies on chemistry. The entire Neutralizer® process uses energy-efficient equipment to minimize electrical consumption by 90–95% from other Class A biosolids treatment options.

The following chart shows before-and-after 20-year life cycle costs (LCC) and before-and-after average annual operating and energy costs:



CASE STUDY:

Clay County Utility Authority



WHAT MAKES BCR A TRUSTED PARTNER?

BCR designs, builds, and assumes full project accountability for long-term, sustainable wastewater treatment/organic waste and biosolids management solutions that deliver municipalities on average savings of 40-plus percent in operating costs and 90-plus percent in energy consumption. Our partnerships meet capital and operating expense constraints, assure regulatory compliance, buoy public sentiment, and enhance environmental stewardship.

- Only provider using scalable, lowest-cost solutions certified by the U.S. EPA that provide high quality end products for beneficial reuse/land application.
- Only company with economically viable solutions for <15MGD / <15 DTPD operations.
- Only fully integrated platform with proven technologies and 100% project success.
- Only progressive project delivery approach with financial and risk analysis models designed specifically for biosolids & organics operations/management.

