

Anaerobic Digester Saves 42% in Sludge Hauling

FIELD REPORT

Location: Royersford

Project Summary

The wastewater treatment plant historically handled and hauled 440,000 gallons of 3.0% solids to the landfill. The facility uses permanganate for odor and dissolved oxygen control during decanting only. In an effort to improve decant, they used various products such as liquid and dry bacteria with poor to fair results. The quality and quantity of the supernatant decreased after each decant, preventing them from pumping supernatant back to the head works because of organic overloading.

Overview

A town operating a trickling filter wastewater treatment plant with primary and secondary clarification is permitted for 0.540 million gallons per day, with an average daily flow of 0.250. Primary solids are wasted to the primary digester and the secondary biosolids are wasted back to the head works along with secondary digester supernatant. During a sixty (60) day trial of Probiotic Solutions® BIO ENERGIZER®, decant quantities doubled and sludge hauling costs decreased, prompting the facility to contact Probiotic Solutions® to use BIO ENERGIZER® on a permanent basis.

Solution

The facility contacted Probiotic Solutions® to reduce their secondary digester solids volume and hauling costs, and to improve their supernatant clarity. Probiotic Solutions® recommended using a cellular biostimulant and nutrient called BIO ENERGIZER® to enhance decant and the solids reduction efficiency of the digesters. A trial test was started on May 16. Initially, 2 gallons was batch fed to the primary digester with a 7 ounce daily maintenance dose fed to the digester through the sludge pumping pit. Three gallons of BIO ENERGIZER® were

initially added to the secondary digester and 7 ounces a day were added thereafter. Within 2 weeks, the dosage rate was reduced to 3 ounces every other day and applied only at the sludge pumping pit. To ensure good mixing of the BIO ENERGIZER®, air was added for 24 hours to the secondary digester when it was 1/4 full of sludge. The facility decanted 73,500 gallons of supernatant at 0.1% solids July 15. Solids normally were in the 1.5% range. The volume of each decant was double the normal volume, with half the solids loading at an average of 0.21%. They noticed increased settleability and clarity throughout the process for up to two weeks after each decant. These results continued until the next year in August. As a precautionary measure, the facility decided to remove all solids before winter.

Savings

They noticed an immediate savings of 18.8% in sludge hauling costs. The facility will not haul biosolids for two years, which will save \$40,000. They were able to purchase 2 new trucks with the added capital.

Our anaerobic digesters were completely emptied and we do not plan to dewater sludge again for 3 years. [By that time] we will have saved \$40,000. We wish we started using Bio Energizer years ago. Just think how much money we could have saved.

Summary

1. Abated decanting problem
2. Total sludge disposal costs reduced by 42.4% and will not remove biosolids for two years.
3. Increased microbial activity in primary and secondary anaerobic digesters.

The following data were obtained from the facility's files:

	Solids in Gallons	Cost of Hauling and Removal/gal.	Total Cost	Cost/Month
Before BIO ENERGIZER® 1st Year	440,000 3% Solids	0.53	\$23,320.00	\$1,943.00
After BIO ENERGIZER 2nd Year	318,955* 6% Solids	0.49	\$15,628.80	\$919.00
Net Savings per month				\$1,024.00

*Note: Digesters were emptied as a precautionary measure prior to winter. 3/4 tank remained before empty.

Client Testimonial

We truly believe Bio Energizer is the sole reason for our savings in sludge dewatering costs. We have tried all different types of liquid and powdered bacteria but to no avail. Using Bio Energizer, we extended our sludge holding time from 12 months to 18 months.

Probiotic Solutions® Product Information

BIO ENERGIZER® is a broad-spectrum bio-activator containing over 30 essential microbial growth-promoting ingredients. By design, BIO ENERGIZER® is a balanced formulation of vitamins, trace nutrients, enzymes, organic acids, and biostimulants that motivate the existing microbial community to greater metabolic capacity and efficiency. BIO ENERGIZER® is not a bacterium nor an inoculum.

For many years wastewater operators have continued to use BIO ENERGIZER® to cut sludge hauling costs.

Operators Using BIO ENERGIZER® Report:

- 1) Increases in BOD efficiency.** BIO ENERGIZER® improves treatment plant removal efficiency to increase plant treatment capacity and more easily meet effluent requirements.
- 2) The elimination of expensive dredging costs.** BIO ENERGIZER® converts sludge into gases and water, reducing sludge accumulations. No draining, drying, excavating, or inconvenient down time.
- 3) The reduction of odors and aeration costs.** BIO ENERGIZER® enhances aerobic and facultative biological ecosystems to reduce the production of objectionable and offensive odors and enhances dissolved oxygen levels. BIO ENERGIZER® also increases the dissolved oxygen levels which decreases the need for aeration.

BIO ENERGIZER® enhances endogenous respiration for faster and more complete oxidation of sludge into carbon dioxide and water.



Our Probiotic Solutions® Products

are Highly Efficient and Effective Due to Our Unique Delivery System

Call Toll Free Today for Your Free Quote and System Evaluation.

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