

SCD Probiotics®

Case Study Summary – Sludge reduction and cost savings in municipal wastewater treatment facility with SCD Odor Away™ in Kansas City, MO, USA

Wastewater – Sludge reduction (CSS-039-2011)

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Industry:	Wastewater
Application:	SCD Odor Away™ added to wastewater treatment facility
Where:	Kansas City, Missouri
When:	Since 2011
Product:	SCD Odor Away
Customer:	City of Kansas City, Water Services Division, Rocky Branch Facility

Background

Wastewater issues at Rocky Branch facility managed by Water Services Division of Kansas City, Missouri were addressed through the application of SCD Odor Away. Results presented achievement of specific goals, highlighting sludge reduction and cost savings.

Introduction

The Water Services Division (WSD) has various facilities throughout Kansas City, Missouri, USA. Rocky Branch is one facility that is designed for a 2 million-gal.-per-day (mgpd) flow rate with an average daily inflow of 1.4 mgpd based on 515 mgpy at 365 days. There is an approximate retention time of three hours from the influent pumping station to the effluent or Aerobic Digester. Influent comes to Rocky Branch Wastewater-treatment Plant via gravity flow and combined sewer/storm water wastewater from three pumping stations. In this wastewater treatment plant, they have encountered a sludge production issue and there was a need to improve the efficiency of wastewater treatment facility in the area. SCD Odor Away is an all-natural microbial solution for the issues at Rocky Branch.

The theory is that the microorganisms in SCD Odor Away enhance the ability for gram-positive heterotrophic bacteria to convert organic matter in wastewater systems. The residue that accumulates in sewage treatment plants is called sludge. Two basic goals of treating sludge before final disposal are to reduce its volume and to stabilize the organic materials. So reduction of sludge, through the help of SCD Odor Away, is the general objective of this project.



Specific goals at the Rocky Branch Facility in Kansas City, Missouri, included:

1. Reduce sludge (Total Dissolved Solids) in aerobic digester
2. Reduce number of sludge tanks hauled per week to other location.
3. Financial savings due to decreased hauls

Methodology

SCD Odor Away was added after the clarifier before the aerobic digester at a rate of 1:1,500 to 1:3,000 (or 0.075% - 0.15%). This is an average of 22 gal./day for the first 30 days. For day 31- 60, application was 1:4,000 to 1:6,000, which is an average of 11 gal./day. For day 61+, application was 1:10,000, which is an average of 5 gal./day. At each application rate, it was very important to maintain 48 hours of retention time between SCD Odor Away and waste liquid. Due to the facility's flow system, a fraction of the microbial products are introduced back into the beginning of the system thus further improving the amount of sludge decreased in the digester.

Results

Throughout the experiment, there was significant improvement to the number of tanks hauled each week. Sludge loads decreased dramatically within the three-month trial. Before adding product, total sludge tank loads per month were 64. After treatment trial, loads are decreased to 20 tanks per month, representing a 68% reduction. The facility has achieved a financial savings of \$6,000 per month to the city, after the cost of product. In summary, the following benefits were achieved as a result of the SCD Probiotics application, positively impacting the operational and financial performance of the Rocky Branch wastewater-treatment facility.

1. A 68% reduction in overall sludge hauling to another facility.
2. Cost reductions:
 - \$6,000 per month to the city after cost of product

Conclusions

SCD Odor Away decreased sludge loads in the system treated and a huge reduction in cost was achieved. By these results, we could deduce that the product extremely improves wastewater treatment operations. This could be a source of baseline information for other researchers conducting similar studies. Most importantly, this would support that microbes are efficient in converting organic matter in wastewater systems.

