

SCD Probiotics®

Case Study Summary – Sludge Reduction and Cost Savings in Municipal Wastewater Treatment Facility with SCD ScentGuard™

Wastewater – Sludge reduction (CSS-039-11)

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Industry: Wastewater
Product: SCD ScentGuard (Previously sold as SCD Odor Away™)
Application: SCD ScentGuard™ added to wastewater treatment facility

Highlights

- After the treatment, sludge loads were decreased to 20 loads per month—a 68% reduction
- Facility achieved a cost savings of \$6,000 per month

Introduction

The facility in this study is designed for a 2 million-gal./d (mgd) flow rate with an average daily inflow of 1.4 mgd 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 is brought into the wastewater treatment plant via gravity flow and combined sewer/storm wastewater from three pumping stations. They have encountered a sludge production issue and there was a need to improve the efficiency of wastewater treatment in the area.

SCD ScentGuard was introduced as an all-natural, microbial solution for the facility's issues, based on knowledge that the microorganisms in SCD ScentGuard enhance the ability of naturally-occurring, gram-positive heterotrophic bacteria to convert organic matter in wastewater systems. Two basic goals for sludge treatment before final disposal include reducing its volume stabilizing the organic materials.

Specific goals for the facility included:

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



Methodology

SCD ScentGuard was added after the clarifier and before the aerobic digester at a rate of 1:1,500 to 1:3,000 (or 0.075% - 0.15%). This was 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 ScentGuard and waste liquid. Due to the facility's flow system, a small amount of the microbial products is introduced back into the beginning of the system thus further improving the amount of sludge decreased in the digester.

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Results

Both the facility's operational and financial performance were positively impacted. Throughout the experiment, there was significant improvement in the number of tanks hauled each week and sludge loads decreased dramatically within the three-month trial. Before adding SCD ScentGuard, the facility averaged 64 total sludge tank loads per month. After the treatment trial, loads were decreased to 20 loads per month—a 68% reduction in loads. The facility achieved a final savings of \$6,000 per month, after the cost of product.

Conclusions

SCD ScentGuard decreased the number of sludge loads the plant was hauling to another facility to be treated and a huge reduction in cost was achieved. By these results, we can conclude that the product effectively improves wastewater treatment operations. This could be a source of baseline information for other researchers conducting similar studies. Most importantly, this is added evidence that the microbes in SCD ScentGuard are efficient in converting organic matter in wastewater systems.

