SCD Probiotics®

Case Study Summary – SCD Probiotics® Technology Used to Control Odor and Improve Water Quality in the City Sewage System

Wastewater - Controlling odor and reducing bacterial load (CSS-026-08)

Industry: Wastewater
Application: SCD Probiotics Technology applied directly to the sewage system
Products: Secondary products made from SCD ProBio Balance™ Plus and SCD Bokashi Balls

Highlights

- TSS was reduced by 68%
- BOD was reduced by 66%
- COD was reduced by 25%
- Oils & Grease were reduced by 8%
- Presence of foul odors showed remarkable reduction
- Bacterial load also showed significant reductions

Introduction

A tourist area faced foul odors coming from the public manholes of the urban sewage wastewater. This raised public health concerns especially during the rainy season when the manholes overflowed. Baseline measurements from the area indicated that parameters such as COD, BOD, and TSS were far higher than environmental regulation standards (see Table I).

Table I: Environmental Regulation Standards & Baseline Data.

Parameter	Outflow Standard for Treated Water	Baseline Data
Chemical Oxygen Demand (COD)	250-500 mg/L	703 mg/L
Biological Oxygen Demand (BOD)	110-220 mg/L	385 mg/L
Total Suspended Solids (TSS)	100- 200 mg/L	400 mg/L

The project concentrated on three geographic areas, served by one pumping station, with a pumping volume of ~5400 m^3/day (6500 m^3/day during the busy tourist season). The overall length of the sewage system was 21 km and the total retention time was 2.5 hours.

Objectives

The specific objectives of this trial are:

- To control odors in the sewage system and pumping stations in three targeted areas
- To reduce the levels of COD, BOD, and TSS
- To reduce Total Coliforms and Fecal Coliforms, improving outflow water quality

Methodology

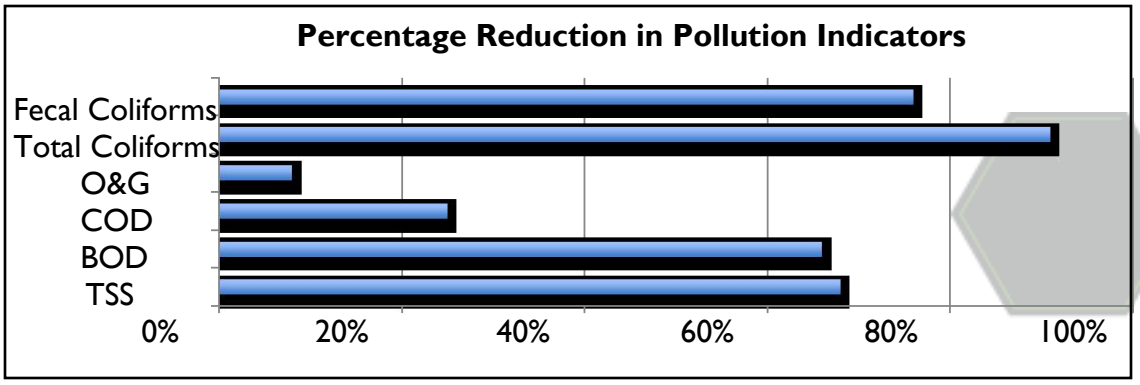
Probiotics used were a mixed culture of beneficial microorganisms without genetic manipulation, present in natural ecosystems, physiologically compatible with each other. When the microbes exposed themselves to organic matter, they accelerate the process of decomposition, without allowing putrefaction.

Then, microbial liquid applied directly to the manholes of each targeted sector following a strict plan and methodology. In addition, dropped SCD Bokashi Balls (solid microbial concentrate) in the manholes were according to a strict plan throughout the trial period. There is proper recording and analysis of samples from the three pumping stations every week over the course of three months and lab results for adjustments on the application plan if necessary. The company personnel and a private laboratory analyzed all samples.

Results

Parameters measured showed a high percentage of reduction. Total Suspended Solids (TSS reduced by 68%. Biological Oxygen Demand (BOD) reduced by 66%. Chemical Oxygen Demand (COD reduced by 25%. Oils & Grease reduced by 8%. The presence of foul odors in the interior and outside of the manholes showed remarkable reduction. The bacterial load also showed significant reductions: Total Coliforms by 91% and Fecal Coliforms by approximately 76% respectively. Significant results (Table II on the next page) demonstrated achievement on all goals of the project.

Table II: Results of the Project – Reduction in Indicators.



Conclusions

From the results of this trial, SCD Probiotics Technology is efficient in improving water quality and controlling odor in urban sewage wastewater, characterized by the percentage reduction of coliforms, COD, BOD, and TSS measured in this study.