

SCD Probiotics®

Case Study Summary – Remediation of water with pathogens and copper using SCD Probiotics® in Reseda Lake Park, Los Angeles, California, USA

Wastewater - Pathogen control and copper remediation (CSS-029-2009)

Page | 1

Industry:	Wastewater (pathogen reduction)
Application:	SCD Probiotics® Technology applied at strategic locations in the lake
Where:	Reseda Lake Park, Los Angeles, California, USA
When:	March 2, 2009 – June 24, 2009
Products:	OET Magic Sinkers* (solid Bokashi balls), OET Impregnated Carbon Bag* (Activated Charcoal with SCD BioKlean™) and OET Pond Magician* (SCD BioKlean™)
SCD Customer:	Organic Environmental Technology (OET)

** Product names throughout this study are from SCD Probiotics customer.*

Background

SCD Probiotics Technology was applied at strategic locations in the lake. Copper level and pathogen count baseline measurements were improved after SCD Probiotics product application.

Introduction

Reseda Lake is a man-made lake, approximately 2.5 ac. in size and 9 ft. deep, in a recreational area of Reseda Park. The lake is polluted from the droppings of birds and the decomposition of food that has been scattered in the water by visitors who feed the birds (see Table I on the following page). SCD Probiotics products are to be applied in the lake with an objective to improve the parameters causing the lake to be polluted. Specifically, the lake water in Reseda Lake should meet or exceed the city standards for lake water quality in order to be consistent with the city standards established by the Department of Natural Resources (see Table I on the following page).

Methodology

A baseline measurement of metals and pathogenic microbes was established prior to the treatment of SCD Probiotics products and technology. All samples were analyzed for total *E. coli*, Enterococcus, and Total Coliform bacteria, as well as copper. Copper is one of the noticeable elements found in Reseda Lake. It is an essential nutrient at low concentrations, but is toxic to aquatic organisms at higher concentrations – finding it necessary to monitor its corresponding value. The microbial culture formulation and application process were designed and developed by SCD Probiotics technology team in partnership with California-based Organic



Environmental Technology. For the treatment, product applications began in March 2009. A solid microbial culture (Magic Sinkers) was placed in various strategic locations along with activated wood charcoal (Impregnated Carbon) and a liquid microbial culture (Pond Magician), which was injected at the aerator unit. Samples at six locations around the lake were taken on June 24, 2009.

Results

The table below represents the significant improvements in water quality at all levels, with sample results having tested far below the City Standards. These parameters are known to measure water quality in any type of body of water. There was drastic reduction of pathogens measured before and after SCD Probiotics application; *E.coli* reduced from 4,433 MPN/100mL to 8 MPN/100mL, Enterococcus reduced from 4,333 MPN/100mL to 3 MPN/100mL and Total Coliform reduced from 15,300 MPN/100mL to 30 MPN/100mL. Copper which was originally higher in value (most likely toxic) at 235 µg/L was lowered to 140 µg/L just within the city standards (200 µg/L).

Table I: Water Quality Improvements at Reseda Lake based on SCD Probiotics Technology Application

Parameter	Baseline	After SCD Probiotics	City Standards
	Geometric Means	Geometric Means	
	3/2/2009	6/24/2009	
Copper (µg/L)	235	140	200
<i>E. coli</i> (MPN/100mL)	4433	8	576
Enterococcus (MPN/100mL)	4333	3	104
Total Coliforms (MPN/100mL)	15300	30	1000

Conclusions

Based from the results of the trial, water quality improvements could be expected with SCD Probiotics products application; with a main focus on copper level and pathogen count reduction. The results from this trial could be considered as baseline information in treating similar types or other types of lakes or bodies of water.

