

Case Study: Biologic Lagoon Dredge Reduces Odors and Sludge Volume in Industrial Lagoon

SUMMARY

An industrial wastewater treatment plant dosed with Biologic Lagoon Dredge showed a significant reduction in odors and sludge volume over the course of a 12-month study. Sludge volume was reduced by 52% in the first 90 days and 84% by the end of 12 months. Working volume of the lagoon increased allowing for increased organic decomposition and a reduction in odors. This reduction in odors was especially noticed during the semi-annual lagoon turn-over.

BACKGROUND

The industrial wastewater plant was located in the Midwest and was experiencing reoccurring odor complaints from the community. The wastewater system contained of two facultative lagoons, which consisted of a primary (6 million gallons) and secondary cell (4 million gallons). The facultative lagoons were less than two (2) years old and had a daily BOD loading rate of 3400 lbs/day.

OBJECTIVE

The case study objective was to reduce the odors being emitted from the lagoon, reduce the sludge volume and regain lagoon working capacity.

MATERIALS AND METHODS

Baseline sampling was conducted in the primary cell with a sludge judge sampling device. Total depth of the primary cell was 180 inches (15 feet) and primary cell working volume did not vary more than \pm six (6) inches during the 12-month study. In order to better understand the true effect of treatment and the cause of odors, only the bottom 60 inches (5 feet) of the primary cell was sampled during each sampling. Sampling of the primary cell was conducted every 60 to 90 days for a period of 12 months. Water temperatures were taken during each sampling and samples were sent to a 3rd party lab for analysis. Treatments were based on primary cell volume with the initial treatment of Biologic Lagoon Dredge at 5.0 ppm followed by a monthly dose at 0.5 ppm.

RESULTS

Baseline sampling of the primary cell indicated that the bottom sludge level was 7.75% in total sludge with water temperatures at 21°C. During the first 90 days, a 52% reduction in sludge was observed along with a drop-in water temperature of 15°C (21°C - 6°C). Sludge reduction continued to decrease, although at a slower pace during the winter months. After 12 months of treatment, bottom sludge was reduced by 84% and odors were reduced significantly.

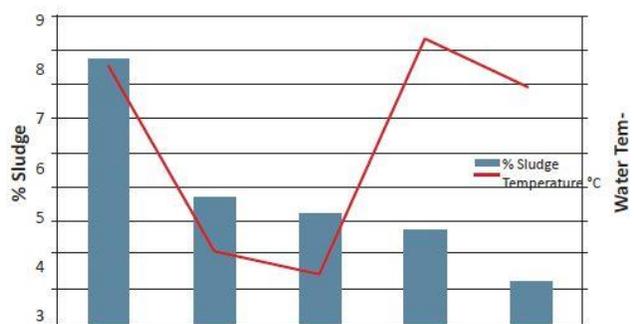


Figure 1: sludge reduction over 12 month treatment period