

Case Study: Biologic Lagoon Dredge Reduced Sludge in Wastewater Treatment Pond 73% Allowing Increased Manufacturing

SUMMARY

A beverage manufacturing facility faced production constraints due to limited wastewater treatment capacity. The service provider and the production facility did a six-month trial using Biologic Lagoon Dredge with the goal of improving capacity in the wastewater treatment process by digesting sludge. At the end of the trial, sludge levels in the treatment pond were reduced by 73%. This reduction in sludge improved treatment capacity allowing the plant to increase production.

BACKGROUND

A beverage manufacturing facility made capital improvements to their production facility to increase the type and amount of beverages being produced. Their wastewater treatment pond was negatively impacted by the increase in volume and variability of influent load and flow. Plant operators indicated that the wastewater treatment pond's sludge level had risen 0.5m and were concerned about treatment capacity being reduced even further with more production. In order to increase production, they were going to have to reduce sludge accumulation in the pond. Additionally, operators had seen a "slimy" substance building up around the discharge area into the pond.

OBJECTIVE

The treatment objective was to reduce accumulated solids and increase hydraulic capacity in the wastewater treatment pond, therefore increasing the ability to handle increased production.

MATERIALS AND METHODS

The treatment pond had a design depth of 1.8m (6ft) and a volume of 2,000m³ (53,000 gal) with an average daily flow of 168m³ (4,400 gal). The pond was initially given a high dose of Biologic Lagoon Dredge, 5ppm of volume per week, to "catch up" with sludge accumulation. After three weeks, the dose was reduced to 1ppm of pond volume per week, which was maintained for the remaining 180 days of treatment. Sludge depth was measured, before and after treatment, with a sludge judge at five locations evenly distributed within the pond (**Figure 1**).



RESULTS

After 180 days of treatment with Biologic Lagoon Dredge the pond was re-surveyed. The sludge had ceased to accumulate and was significantly reduced in the treatment pond by 73% from 50cm to 13.4cm (20in to 5.3in) (Figure 2). Additionally, the slime layer surrounding the effluent discharge area was digested and no longer visible.

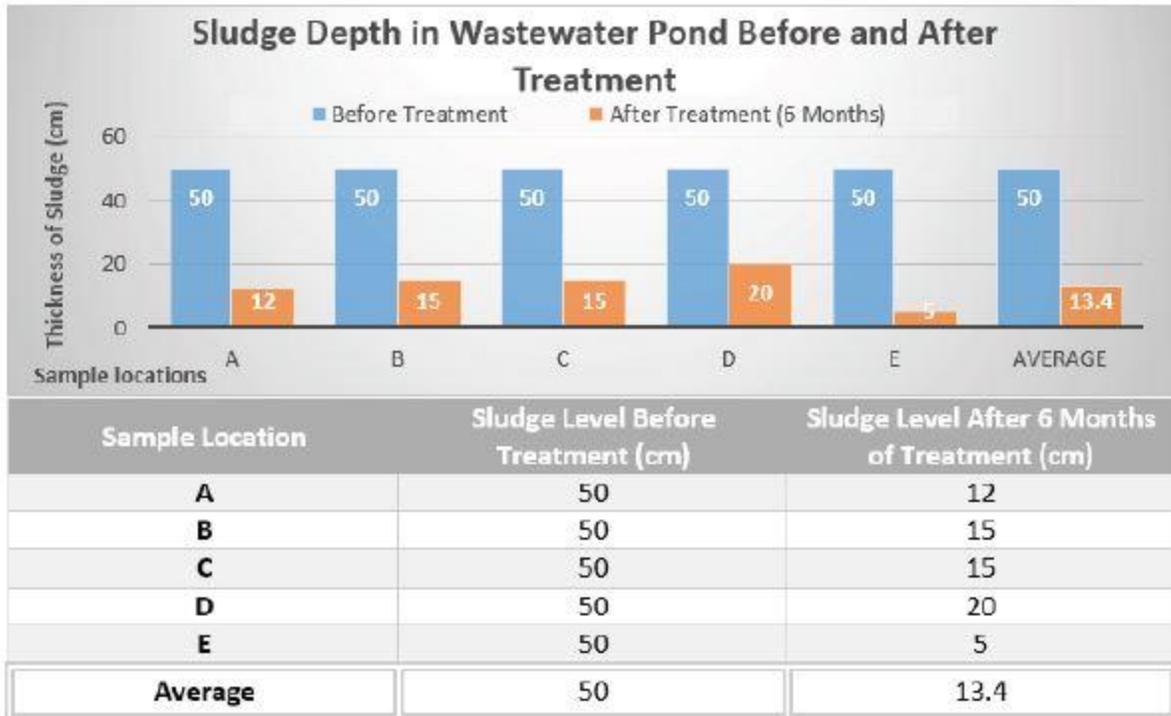


Figure 2: Before and after sludge thickness at five locations in the pond and the average thickness

CONCLUSION

The sludge digested in the pond increased the hydraulic and operating capacity. This improvement allowed the beverage production facility to utilize its new production capabilities without sacrificing wastewater treatment performance. Additionally, it allowed them to avoid capital expansion of their wastewater treatment pond.