



**Water & Waste Management**

# **BioSpikes® 5000**

**Municipal wastewater**

Case study: Municipal lagoon postpones \$600,000 dredging project with Novozymes BioSpikes®



A municipality increased its lagoon capacity and postponed a \$600,000 dredging project with BioSpikes®.

## Benefits

- **A 28% reduction in sludge levels in the treated area**
- **An increase in lagoon treatment capacity from 9% to 35% in the treated area**
- **Postpones a \$600,000 dredging project without associated negative impacts on effluent quality**

## Background

A municipality was concerned about potential problems from years of sludge buildup in its wastewater treatment lagoon. The 2.5-hectare (6-acre) lagoon is 3.4 m (11 ft) deep, and sludge levels ranged from 2.4 to 3.0 m (8 to 10 ft) throughout the lagoon, severely limiting treatment capacity.

Looking for alternatives to a \$600,000 dredging quote, the municipality teamed up with Novozymes to evaluate BioSpikes®.

## Application

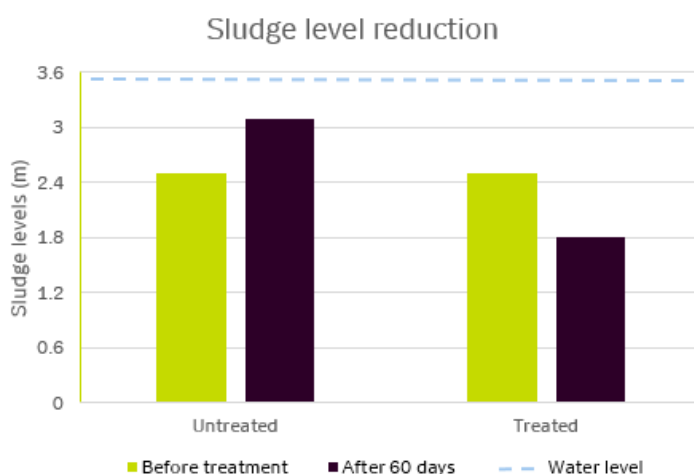
The lagoon is aerated by two floating mixers in the front end. BioSpikes® were added to an area of the lagoon with significant sludge buildup.

Sludge measurements were performed monthly for 6 months and compared to the untreated control area.

## Results

After 60 days the sludge levels were reduced in the treated area by 28% - 0.87 m (2.8 ft), while the sludge levels in the untreated areas increased by 19% - 0.47 m (1.5 ft).

The drop in sludge levels led to an improvement in operating capacity from 9% before the trial to 35% after the trial – a 289% increase.



**Fig. 1.** The application of Novozymes BioSpikes® 5000 resulted in 28% reduction in sludge volume in the treatment area over 60 days.

## Conclusion

The addition of BioSpikes® to the municipal lagoon system successfully deferred dredging and increased treatment capacity.

The municipality is planning to scale up the application and treat a much larger area.



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#### About Novozymes

Novozymes is the world leader in biological solutions. Together with customers, partners and the global community, we improve industrial performance while preserving the planet's resources and helping to build better lives. As the world's largest provider of enzyme and microbial technologies, our bioinnovation enables higher agricultural yields, low-temperature washing, energy-efficient production, renewable fuel and many other benefits that we rely on today and in the future. We call it Rethink Tomorrow.

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