

A photograph of a water treatment facility at sunset. The scene features several large white cylindrical tanks in the background, a complex metal structure on the left, and a series of rectangular basins in the foreground with water cascading over low walls. The sky is a mix of orange, yellow, and blue, with the sun low on the horizon. A bright green square is in the top left corner.

**Water & Waste Management**

**BioRemove™**  
**FOG Boost**

**Municipal**

Case study: Grease reduction in heavily loaded sewer lines

The application of BioRemove™ FOG Boost to heavily loaded sewer lines led to significantly reduced grease deposits.

## Benefits

- **Improved plant efficiency through reduction of grease deposits**
- **Simplified operations by providing an easy to use solution**

## Background

A 500-mm (20-inch) gravity sewer line serving a road with a high concentration of restaurants required cleaning as often as every third day to prevent blockages and overflows from sewage backing up in the manholes. Novozymes was contacted for assistance.

## Application

Three manholes were treated with

BioRemove™ FOG Boost over a two-month period and monitored for visual changes in the grease layers and the water depth in the manholes.

## Results

Visual changes began to be seen in 3-4 days and a progressive change from thick, crusted, tan grease deposits covering the entire manhole surfaces to thin, light tan deposits covering 50-70% of the manhole surfaces occurred over the next two months. Water levels in these manholes dropped from 20-50 cm (4-20 inches) indicating that grease deposits in the lines between the manholes had also been reduced. No physical cleaning, overflows, or sewer backups occurred during treatment. Figures 1-3 document the visual appearances of the treated manholes during the program.



Figure 1. Manhole #1 at Start, Day 28 and Day 48

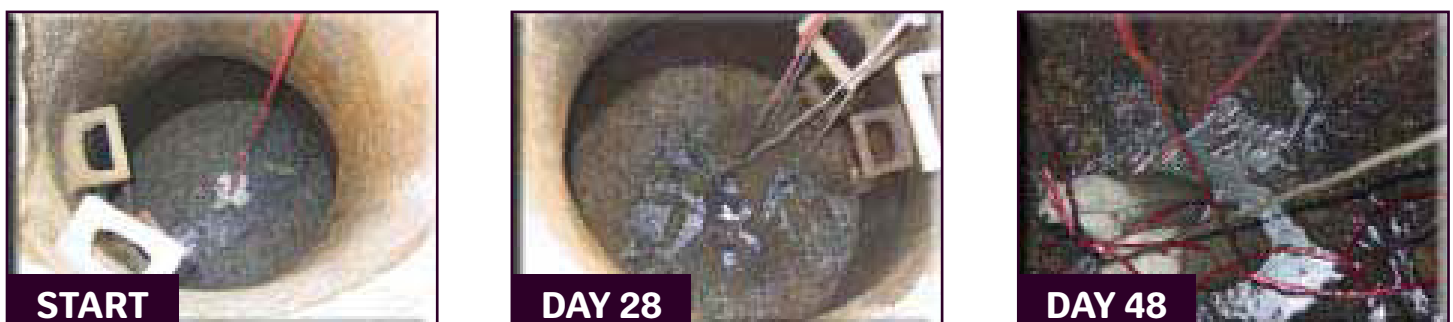


Fig. 2. Manhole #2 at Start, Day 28 and Day 52



Fig. 3. Manhole #3 at Start, Day 28 and Day 35

Temperature can play an important role with collection system applications since biological degradation rates are lower during cold weather months. The water temperature during the application described here was no less than 15°C throughout the trial showing BioRemove™ FOG Boost excels in reducing grease even at low temperatures.

## Conclusion

Novozymes' biological program was easy to implement and provided significant benefits over other disposal alternatives. BioRemove™ FOG Boost resulted in:

- **Lower operating costs**
- **Improved plant efficiency**
- **Simplified operations**





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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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