

# Lift Station Aeration A Study of the Benefits

- Cost Savings
- Energy Savings
- Reduced Maintenance
- Reduced Repairs
- Increased Biological Performance

A Special thanks to  
Thermo Fisher Scientific  
for the amazing D.O.  
Probe!

JMJ Automation

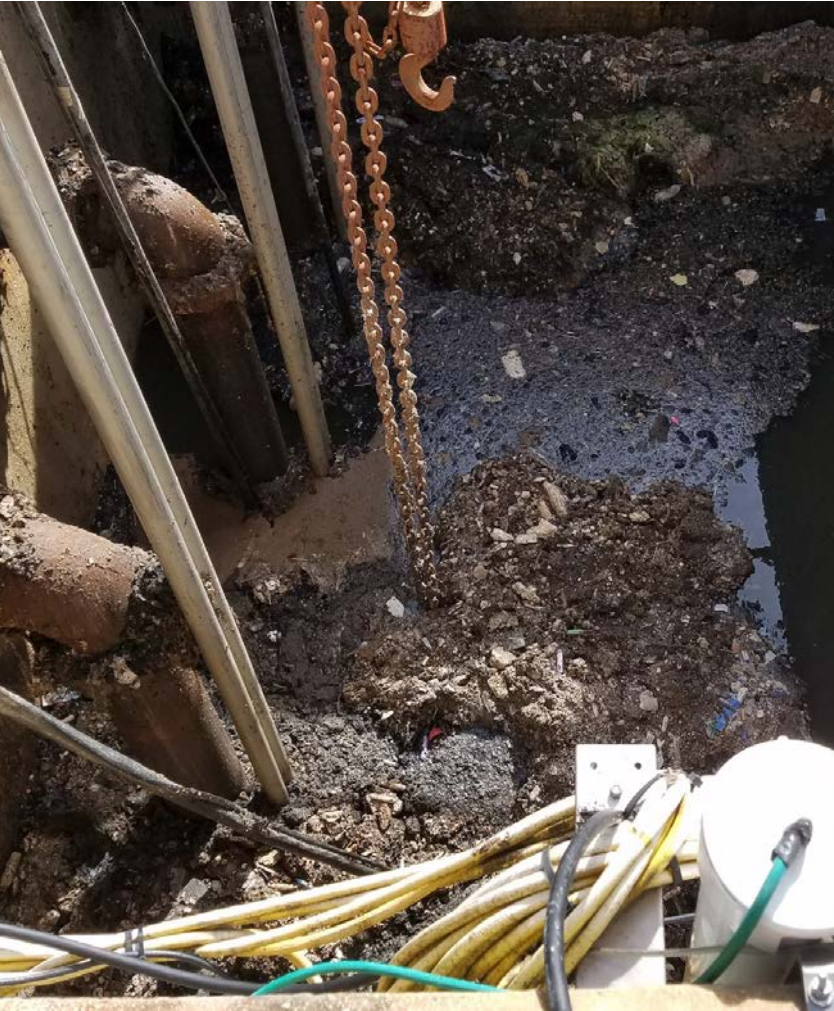
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## JMJ Automation Intelligent SCADA Integration

The Owners of JMJ Automation Designed an Aeration System for a 1.7MGD Triplex Lift Station. The Lift Station feeds a 3.5MGD Sludge Activated, Extended Aeration Wastewater Treatment Plant. The WWTP uses two 1.5MG Aeration Basins for the Aeration and the Biological Process. The Aeration Basins are Powered by 8 Triton Systems, each with 1 Blower and 1 Mixer. The WWTP's SCADA System Maintains a Constant Dissolved Oxygen Level in each of the Aeration Basins by Increasing and Decreasing the Frequency of the VFDs Controlling the Blowers on the Tritons. By Aerating the Lift Station, the top 6-18 inch Grit Blanket Remains Completely Broken up and the Effluent Sent to the WWTP from the Lift Station has an Increased Dissolved Oxygen Level.



## BEFORE

Before aeration, the most significant drawback to lift stations is the grease and grit cake that builds on the top of the lift station. This causes issues with the cake interfering with floats and transducers, odor issues, and can even lead to equipment failure. Operators have to spend a significant amount of time and energy to keep the cake broken up manually and under control.

## AFTER

After two days of aeration, the cake is (and has remained) completely broken up. This has reduced odor issues and maintenance requirements. In addition, it has jumpstarted the biological process. Additionally, the aeration has increased the average dissolved oxygen from 0.51ppm to 5.67ppm at the lift station. After dilution and the two hour trip to the WWTP, the sewage is now entering the aeration basins at 1.76ppm instead of 1.01ppm - this equates to a savings in energy and wear and tear on the VFDs that controls the blowers.

