

Case Study: Biologic Lift Station Improves Settling, Solids Digestion, Reduces Odors and Operational Cost in a Wastewater Treatment Plant

SUMMARY

A municipal wastewater treatment plant (WWTP) treated with Biologic Lift Station showed significant operational improvements. The facility historically suffered from high solids loading and poor settling, resulting in solids overflow in their clarifiers. After seven weeks of treatment, solids overflow in the clarifiers stopped and settled for the first time in years. Additionally, odors at the facility were reduced.

BACKGROUND

The subject facility was located in the southwestern United States. The majority of the facility's wastewater flow came from residential housing. High solids loading at the plant led to the installation of settling tube-type clarifiers. This installation did not resolve the issues and solids overflow persisted since the installation. Three lift stations feed into this WWTP and each had a daily flow of 50k-70k gallons per day (GPD) for a total daily flow of 150-200k GPD going into the WWTP. Historically the lift stations and headworks of the WWTP all suffered from constant bad odors and had been using an odor control product to little effect costing \$30,000/year.

Facility Challenges or Issues

- Poor settling
- Solids overloading
- Odors

OBJECTIVE

The treatment objective was to improve settling in the clarifiers, reduce sludge and odors.

MATERIALS AND METHODS

Treatment started in May 2017 at three lift stations up stream of the WWTP. Each lift station was initially dosed with Biologic Lift Station for seven weeks. Results were monitored after three and seven weeks of treatment by ranking odors at the plant, recording polymer usage and taking photos of the clarifier.

RESULTS

Sludge which was previously overflowing and covering the settling tubes for years was eliminated (Figure 1) Polymer purchasing for sludge dewatering was cut by 50% WWTP was using a treatment program from another company to reduce odors that was discontinued at an annual cost savings of over \$30,000 Odors were reduced by over 57% at the plant (Figure 2)



Figure 1: Settling tube before treatment (Left), settling tube after three (3) weeks of treatment (Right)



Figure 2: Average odor rankings by facility personnel (1 lowest - 10 highest)