



CASE STUDY: Odor & Corrosion - Milford, Connecticut -

City of Milford, Connecticut Gulf Pond Force Main

Milford, CT is located about 70 miles from New York City, and lies along the beautiful coast of the Long Island Sound. The city has a population of just over 50,000 and contains an extensive sewer system that had been plagued for years by odor complaints and damage due to hydrogen sulfide (H_2S).



Silver Sands State Park in Milford, CT

TECHNOLOGY:

Pure Dissolved Oxygen for
 H_2S Prevention

APPLICATION:

Sewer Force Main

LOCATION:

Milford, Connecticut

CONSULTANT:

AECOM

OBJECTIVES:

Prevent Odors

Protect Infrastructure

The main cause of the City's odor and corrosion problems was isolated to a force main system starting at the Gulf Pond Pump Station, which carries an average 3 MGD about 13,200 ft to a large diameter interceptor. With H_2S levels over 900 ppm, all manholes on the interceptor were badly deteriorated and the ductile iron sewer had developed perforations along the sides of the pipe.

The excessive cost of replacing piping and manholes on the interceptor was one of the main drivers to hire the local office of AECOM to develop an approach for eliminating the generation of H_2S in the Gulf Pond Force Main.



Sewer Pipe with H_2S Corrosion



ECO₂

Odor and
Corrosion
Control
through
Super-
Oxygenation

COLLECTION SYSTEMS

HEADWORKS

PRIMARY CLARIFIERS

POST-AERATION

INDUSTRIAL

ECO OXYGEN TECHNOLOGIES, LLC

www.eco2tech.com

Force Main H₂S Prevention System

After an evaluation of several options for H₂S elimination, AECOM determined that SuperOxygenation by ECO₂ would provide the best results with the lowest total life-cycle cost.



Gulf Pond Pump Station Building



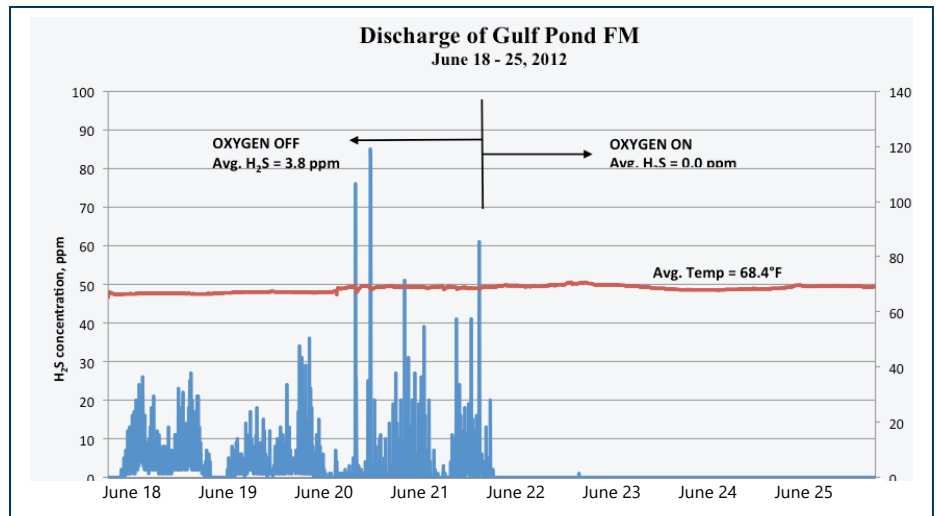
ECO₂ System Installed



Bulk Oxygen Storage Tank

Results

The ECO₂ system installed at the Gulf Pond Pump Station includes a 4 ft diameter Speece Cone, 5 hp sidestream pump (1,000 gpm), and bulk liquid oxygen storage tank. The system dissolves 1,000 lbs/day of pure oxygen to maintain aerobic conditions in the entire length of the force main. Only dissolved oxygen is blended back into the force main, no air or bubbles are introduced into the sewer system. The system has been effectively preventing H₂S since 2012.



Headspace H₂S Levels at the Force Main Discharge Before and After Oxygen System