

Technology

SDOX-CS®

Application

Collection System
Odor and Corrosion
Control

Location

Woodway Dr.
Houston, TX

Project Goals

Reduce collection
system odor and
corrosion by
minimizing H₂S
production.

Demonstrate oxygen
injection technology in
forcemain applications.

City of Houston Odor Control Demonstration

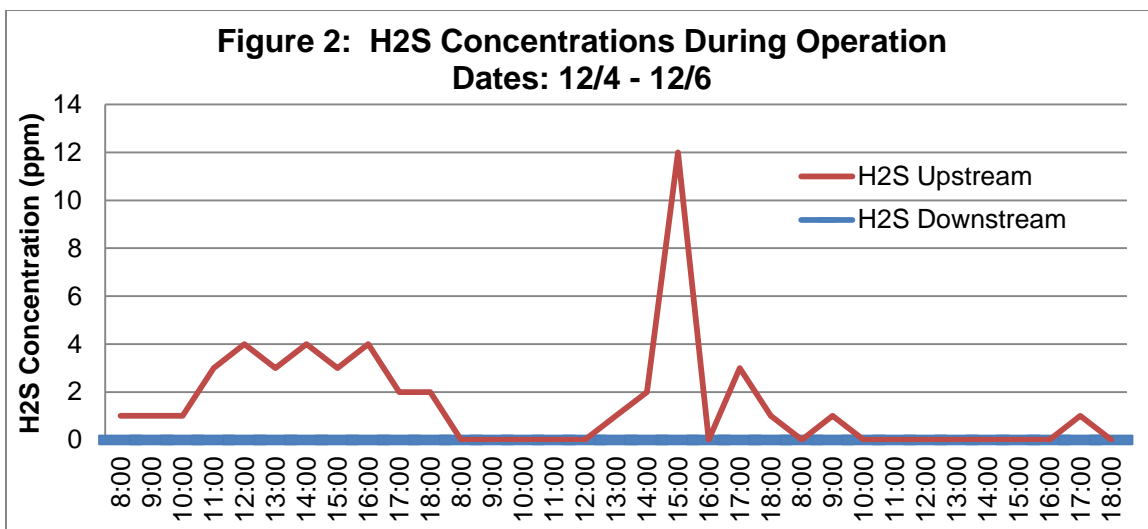
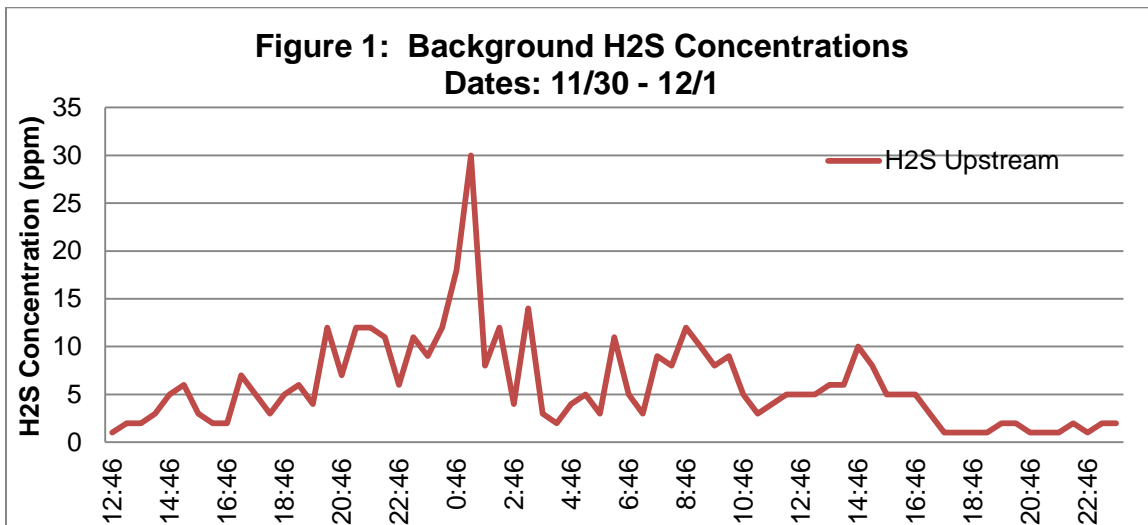
In December of 2012, BlueInGreen successfully completed an odor control demonstration project for the City of Houston (COH). As part of this effort, we effectively injected oxygen - via a supersaturated side-stream process (SDOX-CS®) - into the COH collection system to prevent and eliminate the formation of hydrogen sulfide (H₂S). We accomplished this in both an 18-in pressurized, full flow pipeline as well as a partially-full 30-in gravity sewer line. Based on the qualitative and quantitative results, we proved that our SDOX-CS® solution can be appropriately sized and successfully deployed at a variety of either temporary or permanent locations throughout the City of Houston for the effective control of collection system odors.



Similar to our other experiences, such as the City of Rogers, AR, our demonstration in Houston confirmed that maintaining aerobic conditions within the liquid phase does effectively prevent the formation of odorous H₂S gas. Furthermore, through piloting, we were able to confirm key design assumptions such as oxygen uptake rate (OUR) and ultimately dial-in the operating parameters to meet a given downstream target – effectively optimizing the operating costs associated with a known level of treatment.

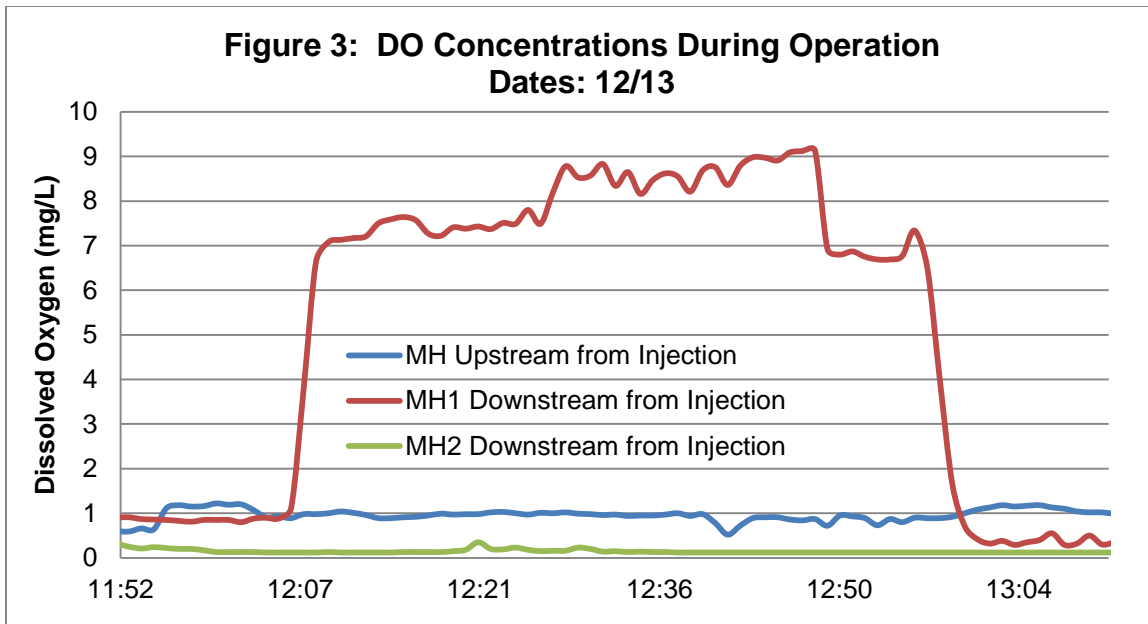


The following figures provide a few snapshots of the data collected during our demonstration. Figure 1 illustrates the need for odor control solutions, with hydrogen sulfide levels averaging >5-mg/L and maximum levels of ~30-mg/L occurring during low flow conditions. Figure 2 shows H₂S levels upstream and downstream during a window of SDOX-CS operation. This figure clearly shows the reduction in H₂S levels due to oxygen injection.



Finally, Figure 3 shows dissolved oxygen (DO) levels upstream and downstream of SDOX-CS injection. As can be seen here, BlueInGreen's technology can effectively increase DO concentrations within the gravity collection system to levels that mitigate the formation of odorous hydrogen sulfide gas.





In addition to the above, the analytical data also shows an average BOD reduction of ~20% with a corresponding ~8% decrease in COD. Therefore, unlike competing technologies which address odor problems with chemical solutions that typically increase solids loading at wastewater treatment facilities, oxygen injection has the potential to reduce loadings at treatment facilities, effectively offsetting some operational costs while simultaneously increasing the expected lifespan of those facilities.

