



*Advancing Water Treatment With
Responsible Innovation™*

Case Study Relating to H₂S Odors

INTRODUCTION:

A Fortune 50 company located in California experienced long term problems with H₂S odors which developed within their private sewer lines at their main corporate facility. After dealing with a consulting company for 2 years with no resolution, United Laboratories, Inc. was referred to them by the city in which they are located.

Within the facility itself, the auditorium where they hold many high level corporate meetings and events was largely affected. H₂S odors were strong within the auditorium as well as just outside of the auditorium. On numerous occasions it required evacuation of this section of the building. Since the auditorium is in use approximately 300 days out of the year, it was a significant problem. In addition, the odors outside of the building would also become overpowering which then was an irritant for the community as well as the company.

INVESTIGATION:

The company has a cafeteria kitchen which is in operation 8 hours per day, Monday through Friday. Water flows from this kitchen through private sewer lines for about 1,000 feet passing through a 10,000 gallon grease trap, then traveling across a parking lot and down a roadway past one side of the auditorium. The sewer line makes a right angle turn just past the auditorium, flowing alongside and past this building to the next street making another right angle turn to follow the street to the main interchange. At this interchange it connects to the city sewer system. Prints of old sewer and storm water collection lines were reviewed as well and United specialists walked the entire routing from the kitchen to the connection with the city sewer system.

The only significant water flow is when the kitchen is in operation. At other times there is virtually no water flow through these lines. The company had no systematic maintenance program in place to control the activity in the grease trap. Instead they pumped the trap every three months, removing three to four truckloads of grease at a cost of \$900 per truckload.

After careful analysis of all the data it was determined that the grease trap was the origin of the problem with numerous complications in the collection system, especially the lack of maintenance of the grease trap and the long periods with no water flow.

These factors translated into an untreated grease trap passing high levels of grease and solids into the sewer line where, due to lack of water flow, they settled out, going septic and generating high levels of H₂S (over 300 ppm, these levels can be fatal) in the sewers.

Due to a low spot in the collection system just downstream from the first right angle turn by the auditorium a water seal formed, confining most of the H₂S gas at the corner of the auditorium. This area was next to the main air intake of the building. The confined H₂S concentrated to high levels and was able to seep thru the ground into the main air intakes of the building. There were also cracks in the pipes and an old storm water connection that ran from the downspout to the sewer that, when disconnected from the sewer sometime in the past, was never capped permitting the seepage to happen. H₂S gas levels were so high that immediate action was needed.

IMPLEMENTATION:

Fixing this problem began with having the grease trap pumped and all the lines cleaned with **United 756 LIFT-ZYME Wastewater Treatment for Sanitary Collection Systems** and a Jetta truck. The lines were then decontaminated with a soak of **United 893 KONVERT-A-ZYME Wastewater Control and Degassing Agent**.

Once this was completed, a regular maintenance program was developed and implemented to keep the grease and H₂S under control with this low water flow situation. This includes:

- A drip feed system of **United 756 LIFT-ZYME** in the kitchen.
- Use of **United 984 LIBERATOR Bacterial Treatment Blocks** in the grease trap.
- A drip feed of both **United 756 LIFT-ZYME** and **United 893 KONVERT-A-ZYME** in the effluent of the grease trap.
- Placement of **United 896 OXY BLUE Odor Eliminator** in the waste stream just before the corner by the auditorium.
- **United 300 Mud Remover** is also used monthly to minimize any build-up in the lines.

RESULTS:

The H₂S has been kept under control for years without further incident, while the frequency of pumping and cleaning the grease trap has been significantly reduced.

CONCLUSION:

Working with United's Wastewater Specialists to review the entire system from the kitchen to the city sewer lines, helped to identify the problems creating the H₂S gas issue. Based on all conditions identified, a program was put in place to eliminate this issue, starting with the primary cause of a grease trap that was not treated within this low water flow situation. The tailor recommended products and feed system put together to maintain this grease trap and the buildup in the lines was successful at eliminating the buildup of the dangerous H₂S gas, while also reducing the need for pumping and cleaning the grease trap.

