



Unlike a scrubber system, O-MEGA systems eliminate the need to withdraw odorous air from the structure and pass it through a separate odor control scrubbing process.

Fishing for an Odor Solution

By Jim Force

One would not think that fishermen would be too concerned about odor. But when they began to fish so near to the Seabrook, Texas, Wastewater Treatment Plant (WWTP) that they could smell the wet well, plant managers realized it was time to take action.

Hydroxyl ion fogging system controls odor at a waterside Texas WWTP

“We have water on all four sides,” said Kevin Padgett, assistant public works director for the city of Seabrook, located on Galveston Bay midway between Houston and Galveston. “[People] fish from shore right up to the plant. We really had to do something.”

The solution was an O-MEGA hydroxyl ion fogging system supplied by Vapex Environmental Technologies, Oveido, Fla. Since its testing and installation in 2007, there have been no odor complaints.

“It’s really done its job,” Padgett said about the unit.

“It’s a neat system,” added Public Works Director Arthur Chairez. “We love it.”

WWTP Overview

The city’s population is about 10,000, and residents and visitors alike enjoy a waterfront location with 15 parks and 10 miles of hike and bike trails along the bay.

The Seabrook facility is rated for 2.5 million gal per day, with actual flow at about half that, according to Padgett. Treatment consists of manually cleaned bar screens in the headworks followed by a complete-mix activated sludge system, clarification, disinfection and discharge. Biosolids are digested and then dewatered on a portable belt press every other week.

The force main into the plant is about a mile long, and was the source of the odor of concern. Anaerobic conditions create hydrogen sulfide, which builds up in the wet well.

The city experimented with several odor control techniques before deciding to try the hydroxyl ion fogging system, which was one of several recommendations from an outside consulting firm.

“We tried bacteria, hydrogen peroxide and some manhole drops,” Padgett said. “Vapex brought in a test unit which ran on site for about a month. It did a very good job, and we decided to go with it.”

Odor No More

O-MEGA systems generate a hydroxyl ion fog that is injected into the odorous space through a special atomizing nozzle. The nozzle generates sub-1-micron-sized to average 5-micron-sized water particles that disperse throughout the entire wet well and react with the odorous compounds. Unlike with a scrubber system, there is no need to withdraw odorous air from the structure and pass it through a separate odor control scrubbing process. The reacted mist simply condenses back into the water stream. No hazardous chemicals are purchased, handled or stored. The fogging systems are compact, and they feature relatively low capital, operating and maintenance costs.

The hydroxyl ion fogging unit at Seabrook does double duty. It sits alongside the wet well, and some of the fog is piped into the headworks, which is an enclosed structure.

“It’s a relatively maintenance-free system,” Padgett said. “All you really need is a water source and electricity. We change filters quarterly.”

In three years of 24-7 operation, the unit has required just two service calls, according to Padgett, and both times the supplier responded quickly.

“It’s very simple technology,” Padgett said. “It should keep running for quite awhile.”

The Seabrook WWTP uses a chemical spray system to control odor on the biosolids digesters. “Compared to our costs for chemicals,” Chairez said, “the O-MEGA unit is very low cost for what it does.” **WWD**

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ARTICLE SUMMARY

Challenge: Fisherman fishing near Texas’ Seabrook WWTP began complaining of unpleasant odor coming from the facility.

Solution: WWTP staff selected a hydroxyl ion fogging system and applied it to the plant’s wet well and headworks.

Conclusion: The unit has performed well, eliminating odor complaints and requiring little maintenance.