



CASE HISTORY

CLIENT: Municipal
LOCATION: Crowley, Louisiana
APPLICATION: Nitrification
PRODUCT: Lemna Polishing Reactor™

BACKGROUND

The state of Louisiana invoked ammonia limits of 2 mg/l (Summer) and 5 mg/l (Winter) on this small community in South Western Louisiana. The community upgraded their 2.5 MGD facility with another company's ammonia reduction system. However, their WWTF continued to exceed discharge requirements 12 months after the upgrade. If not corrected, the continued non-compliance subjected the community to potential fines and penalties from the state and federal governing agencies if not corrected. Lemna was asked to find an affordable solution that could meet the effluent requirements while utilizing their existing infrastructure.

PROJECT INFORMATION

The WWTF experiences substantial I&I problems during rain events. The project required a design that would be economical to operate and require little to no maintenance. The electrical availability was 3-phase, 230/460. The influent flow rate was 2.5 MGD with water temperatures ranging from 50-60 degrees Fahrenheit. An existing concrete structure approximately 55 feet X 33.5' had to be used as the nitrification chamber. This chamber followed a facultative pond, duckweed-settling zone and small rock filter basin. Frequent ponding and short-circuiting in the rock basin was common.

LEMTEC™ SOLUTION

Lemna Technologies upgraded the facility by installing 37 polishing reactors in an orderly, serpentine arrangement. Each reactor was designed to encourage fixed film attachment of nitrifying bio-mass with a constant source of mixing and aeration in each unit. The reactors can be individually removed and regulated which enables the operators to maintain the system without disrupting the entire nitrification system. The facility was installed in December of 1999.

RESULTS

The polishing reactors are reducing ammonia concentrations to a range of 0.20 mg/l to 0.40 mg/l on a consistent basis. After 3 years of operation, the operators have not had to clean or remove any polishing reactor or aeration system. The community and consulting engineer are very satisfied and relieved to own a reliable and affordable nitrification system.

For more information, please contact:

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