CASE STUDY

Rapid Deployment of Innovative Wastewater Treatment Solution in Texas Hill Country

Homebuilders and residential developers often face challenges in developing properties due to the lack of sewer infrastructure. Strict regulatory water quality standards, combined with distant or insufficient municipal treatment plants, can impede or even halt development efforts. This case study highlights how a Texas Hill Country ***residential developer*** successfully addressed regulatory and development pressures by deploying a decentralized, membrane bioreactor (MBR) treatment plant.

CHALLENGES FACED

A 700-acre master-planned community, located just outside Austin, Texas, encountered regulatory and development obstacles during the launch of its initial phase, which included 300 homes and a community center. The site's distance from municipal treatment plants posed logistical challenges, exacerbated by the existing plants llimited capacity to accomodate the increased waste. Complicating matters further, stringent water quality standards safeguarded the delicate aquifers in the region, making it arduous to identify a financially viable solution that satisfied regulatory mandates.The challenge was met with the The BluBox™MBR modular system with ***impressive discharge metrics of 5/5/.5/8 for BOD/TSS/TP/TN.***

SOLUTION IMPLEMENTED

The developer turned to M|MBR Systems, an Integrated Wastewater Systems company. The company specializes in BluBox modular MBR systems, renowned for their ability to treate sewage to nearly drinking water quality, meeting the strictest permit regulations while enabling the reuse of treated effluent. The decision to opt for the BluBox MBR system over traditional aerobic treatment

HIGHLIGHTS

Expansion from 70K gpd to 150K gpd

From 300 home to 1,000 home community

Days to Operational Status: 43

systems was driven by its capacity to generate high-quality effluent water.

To streamline the installation process, M|MBR Systems expedited the delivery and installation of the the BluBox modular MBR system from their Tech Hub within six weeks. This interim measure allowed the developer to promptly address the immediate demand, catering to the initial phase of development while gradually integrating additional permanent treatment capacity as required.

Despite initial challenges and the urgency for a swift solution, the BluBox MBR system was ***operational within a remarkable 43 days from contract execution*** for the temporary facility. The collaborative efforts of the teams facilitated the execution of Phase II, wherein the permanent wastewater treatment facility was expanded to accommodate up to 1,000 homes. The final plant includes two BluBox systems, permanent bolted steel EQ tanks, a Pre-Air Modular Tank, and other ancillary equipment.

OUTCOME AND IMPACT

M|MBR Systems plaid a pivotal role in plant operations, offering support ranging from startup assistance to membrane inspections, testing, permit compliance, and facilitating plant expansion.

The BluBox MBR modular leased system met all regulatory requirements, achieving impressive discharge metrics of 5/5/.5/8 for BOD/TSS/TP/TN. Within 43 days, the system was operational, enabling the community to discontinue pumping and hauling, while satisfying the standards set by the Texas Commission of Environmental Quality Quality (TCEQ).

Subsequently, just 11 months later, the permanent 150,000 gallons per day plant was brought online, efficiently catering to the rapid growth of this residential community.

This case study illustrates the successful collaboration between our company, and the development client, in overcoming regulatory challenges and implementing an innovative wastewater treatment solution. The BluBox MBR system not only addressed the immediate needs of the community but also provided a scalable and sustainable solution for future phases of development.

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