



CASE STUDY



Newterra Implements MBR System for Rural Community

An Innovative Decentralized Wastewater Solution Ensures Environmental Compliance and Operational Efficiency for this Regional Wastewater Receiving/Treatment Facility

Market Served: Regional Wastewater Facility
Application: Decentralized Wastewater System
Location: Killdeer, North Dakota
Challenge: Short-Term Wastewater Treatment
Solution/Service: Membrane Bioreactor System

Overview

Newterra designed and implemented a modular Membrane Bioreactor (MBR) system for a regional wastewater treatment facility in rural North Dakota. This system processes up to 100,000 gallons of sewage daily from a newly built lodge and authorized haulers, meeting stringent discharge and reuse standards.

Project Context

The greenfield lodge, located near Killdeer, North Dakota, caters to short-term housing demands driven by the expanding oil industry. Newterra was engaged early to create a modular treatment solution that could be swiftly deployed onsite, ensuring compliance with regulatory requirements while facilitating water reuse and discharge to the environment.

Technical Details

The MBR system integrates a biological treatment unit followed by final filtration using ultrafiltration membranes. This advanced process produces effluent of near potable water quality, stored in a pond for resale or safe discharge into the river. The system includes a sludge treatment process, resulting in only dry sludge and clean water outputs.

Modular Construction

Newterra's solution was fully modular and prefabricated, comprising 11 standard ISO shipping containers. This modular approach facilitated rapid onsite installation, completed within two days. Container units were mounted on piles, interconnected, and skirted to enhance aesthetics and shield against harsh winter conditions.

Commissioning and Operations

System commissioning required approximately one week post-installation of external piping and power connections. The facility operates with automated information collection for billing purposes, supported by automated pay stations for waste haulers, promoting efficient wastewater management and water resource conservation.

This project highlights Newterra's innovative approach to decentralized wastewater treatment, ensuring environmental compliance, operational efficiency, and sustainability in remote and demanding industrial settings.

What's Your Unique Water Question?

Contact us at [+1.951.448.6789](tel:+19514486789) to solve your most challenging water issue.