



MBR.ST-35

Pre-Engineered MBR Sewage Treatment System

The Clear³ MBR.ST-35 is a pre-engineered stand-alone decentralized modular treatment plant capable of treating sewage and waste water from residential, recreational, institutional and commercial developments up to **9,200 gallons per day**. The rugged, self-contained system is housed in a single modular building enclosure, built to meet local **weather conditions from extreme heat to extreme cold**. The Clear³ MBR.ST-35 is built on Newterra's years of membrane bioreactor experience and utilizes world class proven ZeeWeed[®] membranes for exceptional permeate quality that meets the **most stringent regulatory requirements** for reuse applications or discharge to sensitive receptors.

Clear³ Design Advantages

- Pre-fabricated modular facilities
- Rapid deployment
- Compact footprint
- Scalable
- Operator-friendly
- High-quality effluent
- No odor
- More discharge options
- Sound attenuation
- Reuse-ready effluent

Influent & Effluent Limits

Designed for a range of wastewater strengths and the ability to meet the most stringent discharge and reuse requirements.

| Flow Parameter | Influent From... | Effluent Limits |
|--|-------------------|------------------|
| Biological Oxygen Demand (BOD ⁵) | 200 to 400 mg/L | 5 mg/L |
| Total Suspended Solids (TSS) | 150 to 350 mg/L | 5 mg/L |
| Total Kjeldhal Nitrogen (TKN) | 35 to 70 mg/L | - |
| Total Ammania Nitrogen (TAN) | 25 to 50 mg/L | 1 mg/L |
| Total Nitrogen (TN) | - | 5 mg/L * |
| Total Phosphorous (TP) | 5 to 10 mg/L | 0.1 mg/L * |
| Fat, Oil, and Grease (FOG) | Less than 30 mg/L | - |
| Fecal Coliform | - | 2.2 MPN/100 mL** |
| Water Temperature | 10 to 25°C | - |
| Turbidity | - | 0.5 mg/L |

*With nutrient reduction option(s) selected
**With disinfection option(s) selected

Efficient Modular Design

- 20' long x 8' wide x 9.5' high
- Fully functional building including, but not limited to insulation, heating, ventilation, lighting, operator work space, and eyewash station
- Optional exterior finishings (color, siding, and/or roofing)



Design Flow Parameters

With robust biology and a broad turn-down capability the Clear³ MBR.ST-35 is designed around the following flow conditions.

| Flow Parameter | Up To... |
|----------------------------|----------------|
| Average Daily Flow (ADF) | 9,200 gal/day |
| Maximum Monthly Flow (MMF) | 11,000 gal/day |
| Maximum Daily Flow (MDF) | 18,400 gal/day |

“ Newterra is leading the way with decentralized wastewater solutions that help reduce project costs with a sustainable treatment approach ”



800.420.4056
newterra.com

Newterra, Ltd. | 800.420.4056 | newterra.com

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Base Unit Features

- Pre-treatment
- Flow equalization
- Aerobic biological treatment
- Membrane filtration with industry leading ZeeWeed® 500S membranes
- Sludge storage and thickening
- Advanced telemetry for remote control, monitoring & diagnostics
- Equipment or treatment train redundancy
- Low power, sludge production, and chemical consumption
- Pre-engineered for fast delivery
- Quality controlled factory assembled and tested
- MET/MET certified

Adders & Options

- ❑ Customized process design, tankage and equipment sizing
- ❑ Biological nutrient reduction, MLE process for denitrification
- ❑ Biological nutrient reduction, 4-stage bardenpho process for denitrification
- ❑ Coagulant dosing for phosphorous reduction
- ❑ UV disinfection
- ❑ Critical spare parts package
- ❑ Turbidity monitoring
- ❑ Increased chemical storage
- ❑ Building exterior finish (selection of colors, siding, roofing)
- ❑ Annual newtN™ service agreement

Flexible Tankage

The Clear³ MBR.ST-35 is designed for use with a variety of in-ground tank configurations. This flexibility allows the benefits of a pre-engineered product, while using the best available tank configuration based on project specific site conditions and availability of labour and materials.



| Basin | Required Volume |
|--------------------------|-----------------|
| Trash Trap | 5,600 gal |
| Equalization | 5,600 gal |
| Aerobic | 6,100 gal |
| Sludge Holding (30 days) | 5,400 gal |

Fiberglass

- 10' diameter FRP tanks provided by Newterra
- All in-tank components are factory installed prior to delivery
- Minimal mechanical and electrical site-work

Pre-Cast Concrete

- Pre-cast concrete tanks provided by Newterra or supplied locally
- Some mechanical and electrical site work
- All in-tank components are shipped loose for installation at site

Poured Concrete

- Poured in place concrete tanks supplied locally
- Smallest footprint of the tankage options
- More civil engineering and on-site civil, mechanical, and electrical work required
- All in-tank components are shipped loose for installation at site



newtN™ Advanced Remote Monitoring & Control

- Advanced cloud-based data acquisition and control
- Bank level security
- A real-time link to the treatment system familiar HMI screen
- Email/text out upon alarm and a daily system status report
- Operating data is collected and available for download from the customer portal or locally at the HMI
- The customer portal also includes other useful information at your fingertips including manuals, troubleshooting guides, parts lists, etc.