

Containerized Membrane Bioreactor (MBR) Wastewater Treatment Systems

Operation and Maintenance Cost

Summary: This document describes the estimated costs and labor requirements for operating and maintaining RODI Systems CMBR containerized wastewater treatment systems. These costs are best estimates based on experience and design data; however, actual cost may vary depending upon local conditions, power cost, waste strength, operator abilities, and other factors outside the control of RODI Systems.

| Membrane Bioreactor O&M – 2,500 GPD System¹ | | | |
|--|--|--------------------------------|--|
| Maintenance Item | Frequency | Man Hours Required/Year | Materials Cost/Year² |
| Monitor system operating parameters | Once per week | 100 | - |
| Housekeeping | Once per week | 100 | \$300 |
| Change lubricating oil in blowers | Once per month | 100 | \$150 |
| Replace pump seals | Once every two years | 30 | \$200 |
| Calibrate instrumentation | Once per quarter | 20 | \$100 |
| Sludge removal | As needed, generally once every two to three months for domestic waste | - | Varies with amount of sludge produced |
| Membrane cleaning | Twice per year | 40 | \$100 |
| Membrane replacement | Every five years | 20 | \$1,000 ³ |
| Unscheduled component repair and replacement | As needed | 50 | \$1,500 |
| Power | Continuous | - | \$3,500 ⁴ |
| ¹ Does not include necessary maintenance for lift stations. ² US\$. ³ \$5,000 over five years. ⁴ Based on \$0.10 per kWh. | | | |

| Membrane Bioreactor O&M – 5,000 GPD System¹ | | | |
|---|--|--------------------------------|--|
| Maintenance Item | Frequency | Man Hours Required/Year | Materials Cost/Year² |
| Monitor system operating parameters | Once per week | 100 | - |
| Housekeeping | Once per week | 100 | \$300 |
| Change lubricating oil in blowers | Once per month | 100 | \$150 |
| Replace pump seals | Once every two years | 30 | \$200 |
| Calibrate instrumentation | Once per quarter | 20 | \$100 |
| Sludge removal | As needed, generally once every two to three months for domestic waste | - | Varies with amount of sludge produced |
| Membrane cleaning | Twice per year | 40 | \$200 |
| Membrane replacement | Every five years | 20 | \$2,000 ³ |
| Unscheduled component repair and replacement | As needed | 50 | \$2,000 |
| Power | Continuous | - | \$4,500 ⁴ |
| ¹ Does not include necessary maintenance for lift stations. ² US\$. ³ \$10,000 over five years. ⁴ Based on \$0.10 per kWh. | | | |

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