Project Photos

Project Information

Client: Basin Wastewater Solutions

Location: North Dakota, U.S.A.

Application: Containerized Membrane Bioreactor Sewage Treatment Systems

Description: The project entailed the design, fabrication, and commissioning of multiple containerized membrane bioreactor systems for the treatment of sewage from portable toilet facilities at oil and gas drilling sites. Nominal output is 3,000 gallons per day.

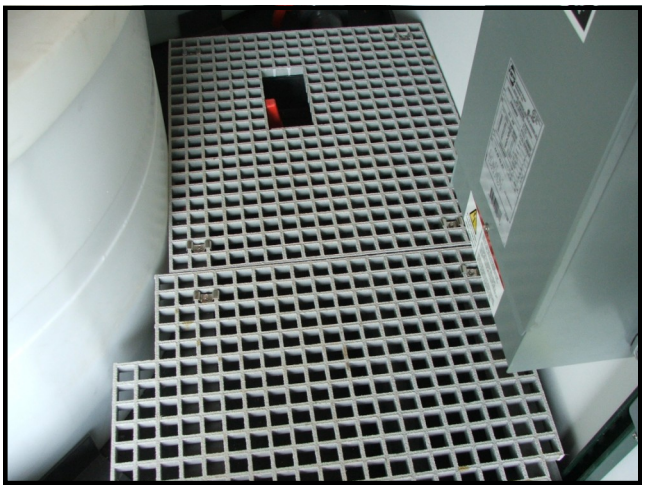
Oil and gas drilling sites in North Dakota are characterized by their remote location. Hauling of sewage from these sites can be expensive; therefore, the client desired a means in which the sewage generated by the drilling crew could be treated locally.

The systems are totally contained in a 20 foot intermodal shipping containers. All components of the treatment systems are mounted inside the containers. Portability of the systems allows them to be easily moved when the associated drilling equipment is moved to a new well site.

The systems shipped from RODI's New Mexico facility completely assembled and ready to install at the drilling sites. Inlet, outlet, and power connections were all that were necessary to install the system.

RODI's containerized membrane bioreactor systems are aerobic systems that utilize atmospheric oxygen to allow bacteria to digest the organic waste in the sewage. A high performance membrane then separates the suspended biomass from the treated water. This allows RODI's system to produce treated effluent of highest quality.

The systems are equipped with a state-of-the-art monitoring and control system. All normal treatment functions are completely automated. Data is automatically logged by the control system to facilitate analysis of the system performance.



A raised floor inside the containers provides a clean, uncluttered work area.

The RODI treatment systems have many other features normally seen in larger treatment plants. Here is shown a small inlet screen designed to remove trash and larger objects that might affect the performance of the system.

RODI's containerized membrane bioreactor systems have proven effective at treating the high strength waste from portable toiler facilities at remote work locations. Typical performance data are shown below.

PureBox™ CMBR Performance Data

Date	8/9/09	10/1/09	10/8/09	10/22/09	10/30/09	11/5/09	11/12/09	11/19/09	11/25/09	12/3/09
BOD, mg/l [1]	0.47	0.46	0.34	0.76	0.42	0.40	0.20	0.26	0.04	0.30
TSS, mg/l [2]	ND [3]	0	0	0	0	0	0	0	0	0
Date	12/10/09	12/17/09	12/24/09	12/31/09	1/7/10	1/14/10	1/21/10	1/28/10	2/4/10	7/1/10
BOD, mg/l [1]	0.11	0.10	0.24	ND [3]	0.42	0.47	0.53	0.37	0.36	0.30
TSS, mg/l [2]	0	0	0	0	0	0	0	0	0	0

[1] Standard Method 5210 B. 5-Day BOD Test Detection Limit is 2.0 mg/l.
[2] Total Suspended Solids Detection Limit is 0.5 mg/l for a 1 liter sample.
[3] No Data Available.

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RODI systems