RODI systems

Project Photos

Project Information

Client: Septic service company

Location: Colorado, USA

Application: Domestic sewage treatment

Description: The project entailed the design and construction of a containerized membrane bioreactor (MBR) capable of treating 2500 gallons per day of domestic sewage from remote construction work camps. The self-contained system allows it to be easily moved as the camps are relocated during progress of the construction project. The containerized system yielded significant cost savings over hauling sewage to a central facility.

The system is mounted inside a 20 foot intermodal shipping container. It is totally self-contained and equipped with heater to accommodate the cold winter climate of Colorado. The system operates from a single 460 volt AC power source. The portability of this system allows it to be easily moved as the location of the work camp changes.

The container is modified specifically for a water treatment application. The raised fiberglass grating on the floor allows for easy pipe runs without creating a trip hazard. This allows for a larger treatment system to be fit into a smaller container. The side of the container is equipped with a personnel door to allow the bioreactor to take up the entire space in the middle of the container. Hatches on top of the container allow access to the inside of the bioreactor for maintenance purposes.

This system is equipped with a state-of-the-art control system utilizing electronic sensors for flow and pressure monitoring. All control functions are available from a single touch-screen operator interface. The container is insulated with 2 1/2" of rigid foam insulation covered with a 1/16" thick plastic barrier. The insulation is designed for use in wet industrial environments.

This is view through the open cargo doors of the container showing the end of the bioreactor, blower, and heater. A ventilation fan is installed in the door to provide ventilation to the outside of the container as needed.

The heart of the MBR system is the submerged membrane modules which separate the suspended solids from the mixed liquor. The ultrafilter membranes reject solids greater than 0.01 micron in size thus generating effluent of superior quality. This photo illustrates the air used to keep the membrane modules clean during operation.