

MBR Te Uku, New Zealand

Task

Hynds Environmental installed a siClaro MBR system in April 2006. The system has the capability to treat 4,000 litres of wastewater per day and produces an effluent quality typically better than 5:5:5 BOD₅ : Suspended Solids : Ammonia, eliminating risk to both humans and the environment.

To cope with the school's growth, facilities including a sewage system needed to be developed. Hynds Environmental was appointed to design and install an advanced sewage treatment system to manage the school's wastewater treatment. The siClaro MBR Wastewater Treatment System's was chosen for its small footprint, low operational and maintenance requirements, minimal odour and low noise generation, that make it an ideal solution for small communities and remote locations.

Inlet

Te Uku School is a rural full primary school located west of Hamilton City near Raglan. The school currently caters for about 200 students between year 1 and 8. The school has undertaken an extensive building programme in recent years to add new classrooms and resource rooms to cater for an expected increase in the number of students.

Process Description

The siClaro MBR Wastewater System is designed in a series of modular tanks. The capacity of the system can therefore be easily increased if required at a later date.

The MBR treatment is a two-stage process. The wastewater from the school initially receives primary treatment to remove settleable solids.

The effluent then passes to a balance tank that regulates the flow into a membrane bioreactor tank. Here, membrane panels are aerated by a coarse bubble system that generates an upward cross-flow over the membranes, essential to keep fouling of the filtration surface to a minimum.

The treated effluent is received into a filtrate tank before being discharged through pressure compensated irrigation driplines buried in a surrounding field. A fully automated Programmable Logic Controller (PLC) electronic alarm system controls the operation of the MBR wastewater system. A remote alarm warning system will activate under conditions of pump failure, high water levels, power failure and aeration diffusion failure, detailing the alarm on an LCD panel for easy identification.

Baudaten

Total design flow (ltr/d)	4.000
Ultrafiltration treatment removing the majority of viruses and pathogen	24 h
Fully automatic electronic alarm system	1.300

Exceeds ARC TP58 specifications

