# WASTEWATER MANAGEMENT – FACT SHEET

## Dairy Flat School – North Auckland

The Dairy Flat School is a large rural school just north of Auckland. The existing wastewater system had begun to present a health hazard to the children so the Ministry of Education initiated a tendering process for a new system. The engineer to the project decided that the packed bed technology was most suited to this situation and based the tender around this.


**Figure 1. Dairy Flat School – Treatment plant and irrigation area.**

The layout of the school lent itself to a MEDS type primary treatment and collection system prior to the treatment plant. New septic tanks with Orenco Biotube filters and screened pump vaults were installed at various points around the school. The screened effluent was received at the 'Pro-Tech' recirculating packed bed reactor for secondary treatment.

Over the summer months the school often suffered water shortages. The tender called for an advanced treatment system to utilise the effluent as a resource for flushing the toilets. A continuous chlorine measurement and automatic control system using the latest PID capable Dulcometer chlorine management system was installed to provide a robust and consistently high quality water resource to the toilet cisterns.

## Table 1. System Summary

| System Component | Specification | Comment |
|---|---|---|
| Design Flow | 10 $m^3$/day | Fluctuating load through school holidays |
| Interceptor Tanks | 3 x 4.5 $m^3$<br>1 x 23 $m^3$ | Single septic chamber |
| Main Line Size | 50 mm OD (MDPE) | Varies from 25 mm service connections to 50 mm main line at extremities. |
| Recirculation Tank Size | 18 $m^3$ | Single chamber |
| Recirculation Pump | 1 x Zenit submersible | As per tender |
| Packed Bed Reactor Area | 84 $m^2$ | As per tender |
| Treated Effluent Tank Size | 18 $m^3$ | Single chamber |
| Discharge Pump | 1 x Zenit submersible | As per tender |
| Disinfection System | Redox controller with probe, proportional dosing pump with contact head water meter, Sodium Hypochlorite @ 13% | Mixing and storage tank installed under control room shed. Controller connected to telemetry system |
| Disposal Field | 1250 $m^2$ | Pressure compensating dripline irrigation to planted area |

Safety was an important factor during the installation of the plant. The principal was asked to inform the children of the dangers and the onsite installation manager took additional steps to ensure that the works were kept safe and secure to mitigate the possibility of any accidents. There was no disruption to services throughout the installation.

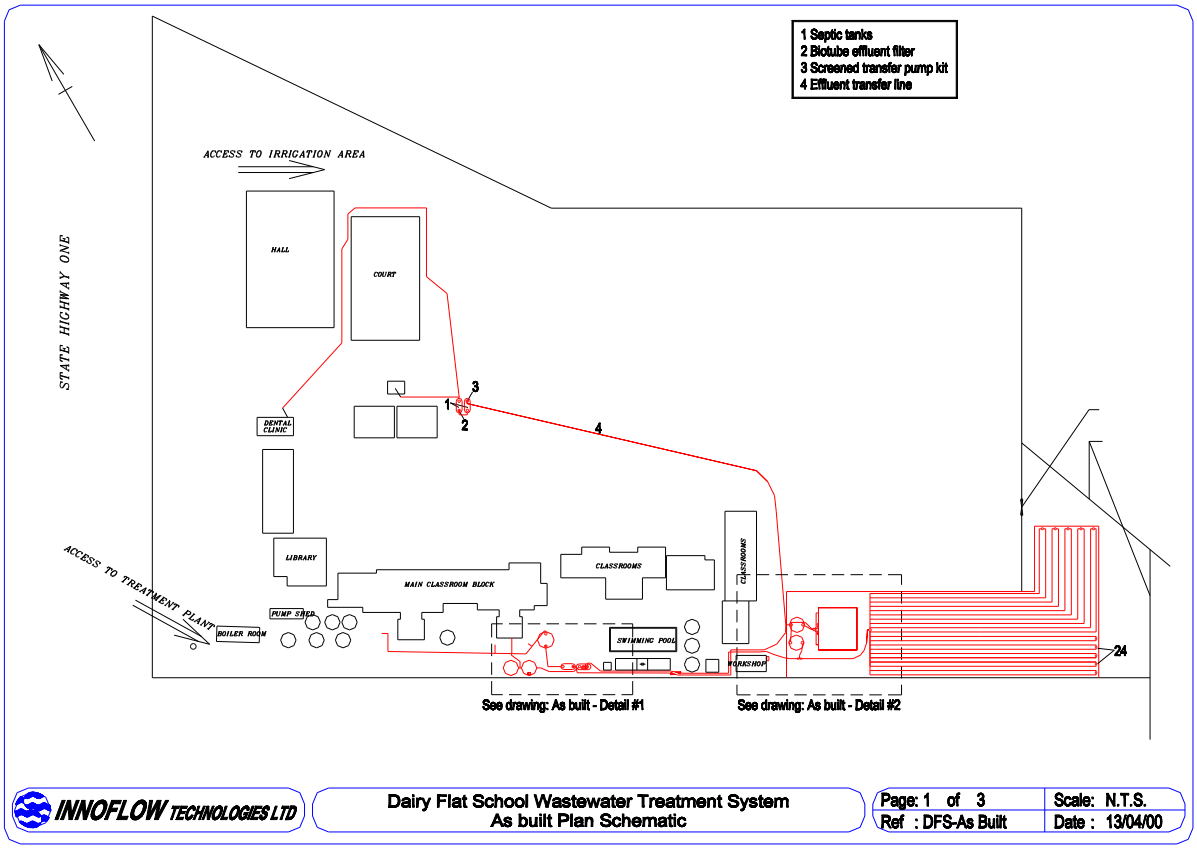


**Figure 2. Schematic as built of the wastewater treatment system.**