

# Kawakawa Bay New Zealand

## Septic Tank Replacement

### First Vacuum Project in NZ

Kawakawa Bay, near Auckland, is a coastal community that was originally established as a holiday village. The popularity of the area grew, and by 2010 there was a resident population of about 600 people, with a summer population of up to 2000 people.

Traditionally the wastewater at Kawakawa Bay was disposed of via septic tank systems on individual properties. The poor performance of these systems resulted in untreated wastewater being discharged to the beach and into local stormwater drains.

In 2002, after years of poor water quality results, permanent signs were erected at Kawakawa Bay warning the public that the beach was too polluted for recreational swimming or shellfish gathering.

In response to public health and environmental concerns Manukau City Council researched a number of alternative sewerage systems including gravity, low pressure pump systems and vacuum systems. Based on the environmental, economic and operational benefits the Flovac system was chosen as the best solution for this community.

The construction and commissioning of the new Flovac vacuum sewerage system in 2010 for Kawakawa Bay has led to dramatic improvements in marine water quality in the bay. Sampling undertaken in the summer of 2012 supports this and just 12 months after the installation of the Flovac system, the sea was declared safe for swimming and the warning signs were permanently taken down

Construction was completed by local contractors Fulton Hogan and designed by Harrison Grierson, an Auckland based engineering firm.



Vacuum Pump Station

## Key reasons why council chose a Flovac System at Kawakawa Bay

### Low Capital Cost

The shallow trenches required for the vacuum mains resulted in construction costs significantly less than the alternatives.

### Ease and Speed of Construction

The shallow trenches and small diameter pipes meant residents were not adversely impacted during construction and the time contractors were required on site was limited. No collection pits are placed on peoples properties, allowing for fast, easy installation.

### Environmental Benefits

Flovac systems do not have overflows and rainfall cannot infiltrate into the sewer systems. As Kawakawa bay is not connected to mains water supply, the low flow rates, especially during winter do not impact its operation.

### Low Energy Use

Low pressure pump systems require a power connection at every house. The vacuum system only requires power at the vacuum pump station and power consumption is very low compared to alternative systems.

### Ease of Operation and Maintenance

Council operators have been very happy with the low number of callouts and report no problems with the system.



Flovac Collection Pit and Valve

### Christchurch Projects

Flovac has been appointed to install the first two vacuum systems in the rebuilding of Christchurch's Sewers.

The Kawakawa Bay project gave SCIRT in Christchurch comfort in Flovac's ability to deliver a resilient energy efficient sewerage system that with "SMART" monitoring would provide reliability even during earthquakes.

Vacuum systems have been used extensively in a number of earthquake areas including Japan, Flovac recently installed a large system in a very shaky area of Greece.

The first two Christchurch projects should be complete early 2014.