

Pipeline Under Railway Shunting Yard Filled

INDUSTRY

Infrastructure

STRUCTURE

Pipeline

PROBLEM

Void filling & sealing

LOCATION

Otahuhu, New Zealand

DURATION / YEAR

8 days / 2013

TECHNOLOGY

Benefil

BUSINESS UNIT

Mainmark New Zealand



Summary

WaterCare Services Ltd required filling of the decommissioned, redundant 800mm diameter pipeline running for 1.6 km directly under the KiwiRail Westfield shunting yard and under Mainfreight's principal Auckland depot. The line had to be filled to prevent the possibility of dangerous collapse in the future.

Benefil engineering filler grout was the best material for this project because of its light weight and its ability to be pumped for long distances: up to 150m. These factors enabled us to carry out the project with far fewer crossings of these exceptionally busy tracks than would have been the case with other materials. Interruption to traffic was absolutely minimised and the project was completed comparatively economically and very quickly: in eight days.

Objectives

The aims were to fill the pipeline system completely, and with the least possible number of track-crossings and with the least possible interruption to the busy traffic.

Solution

Benefil is an amino-plastic, expanding filler-grout. It is a safe, non-toxic, environmentally-friendly material with a life-expectancy of over 50 years.

Benefil is rapidly mixed and foamed for immediate injection on-site. In this case the line was injected via man-holes created for the purpose. These injection points were set well apart and longer stretches of pipe were filled from both ends, the Benefil being able to be pumped as far as 150m.

The 1.6km pipeline was filled as required with Benefil grout of sufficient density to preclude the possibility of disastrous future collapse.

All the objectives of the WaterCare Services engineers and the KiwiRail personnel were met successfully.

Above, left: This decommissioned 1.6 km, 800 mm Ø pipe-line under the KiwiRail Westfield shunting yards and Mainfreight goods depot was completely filled using Benefil hard-foam filler grout. Above, top right: Injection lines to three locations beneath the freight depot building. Above, bottom right: Establishing at an injection point along the 1.6 kms of pipeline.