

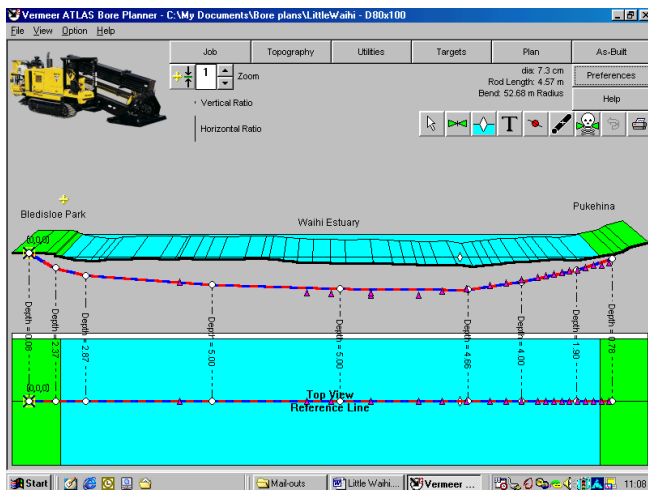
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## estuary.

Two years after a failed attempt by another drilling contractor, Smythe Contractors Ltd successfully installed a replacement watermain under Little Waihi Estuary.

Little Waihi estuary is a little known gem on the East Coast of the North Island. The estuary supports an abundance of marine life and is a source of food gathering for the local people.

The protection of the ecology in the Estuary was recognised as the number one risk during the project.



▲ Drill Path Bore plan & as-build

Non-magnetic drill head location equipment was utilised. This location equipment relies on the Earth's magnetic field to give the drill head direction. This location equipment aided in the reduction of the works activities within the marine zone.

▲ Little Waihi estuary looking from behind the drill

In order to reduce the likely-hood of drill cuttings blowing out through the estuary floor, the bore was planned to be 6-7m deep. This extra depth aided in the return of the drill cuttings to either side of the estuary over the 340m crossing.



▲ Ice creams for the crew during the pull back



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Mike Smythe (director, in his underpants) checking for drill fluid escape as the pipe is pulled up towards the drill. Ladies on the beach came down to investigate.

Two reaming passes were undertaken before the pipe was connected to the drill string. The pipeline installation was achieved over a 5 hours period without incident.



Mark Smythe adding bentonite into the hopper for mixing. All drilling fluid additives for this project were environmentally friendly



### Arrival of the pipe at the drill after travelling 340m

The pipeline was flushed, sterilised and connected into the existing water mains on either side of the estuary.

This project was another great success for Smythe Contractors Ltd, demonstrating that the environment can be the big winner from the utilisation of trenchless technology

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