



Northport

Port Services Centre

Security Level **1**

VIDEO SURVEILLANCE OPERATING

Channel profiled in full 3D

A high resolution, continuous sounding of Whangarei Harbour's deep-water navigation channel has been conducted for the first time. It gives harbour pilots, ships' masters and others using the harbour entrance a picture of the channel bed that is far more detailed than the sounding sheets that have been used to date.

A multibeam channel profile was commissioned by Northport and conducted by Discovery Marine Ltd in March and April. It has provided a three-dimensional digital image of every single square meter of the channel from the Fairway buoy at the entrance to the harbour through to Northport's berths. Until now readings have been undertaken with traditional single-beam sounder technology which can only provide a basic reading of the depth at any given point.

"It's like switching the lights on in an unfamiliar room after trying to find your way around in the dark," said Northport's terminal facilities manager, Greg Blomfield.

"We thought we knew what the channel looked like but in reality we knew only its basic parameters. Nothing prepared us for the full picture that the multibeam profile has provided; the holes and ridges it has exposed, the little features, and the peaks and troughs of the sand waves down there.

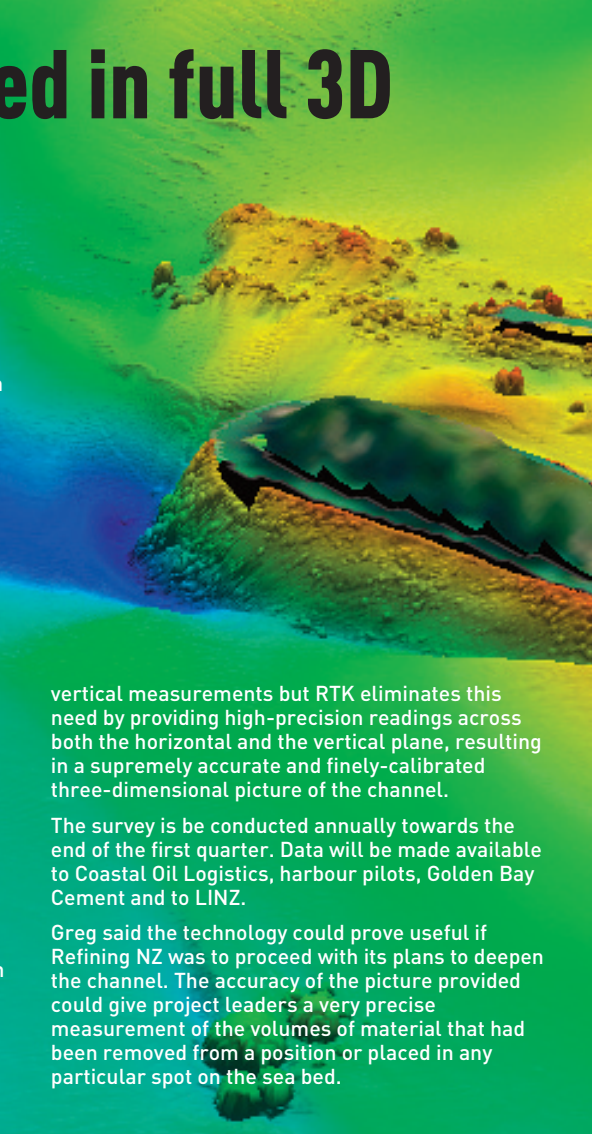
"And we can look at it from any angle. This enhances our understanding of the channel immeasurably and, combined with the data from our wave-buoys, it improves immensely our ability to provide accurate navigation information at and on approach to the port."

Discovery Marine used high precision RTK GPS technology for the project. Conventional hydrographic surveying relies on tidal data for

vertical measurements but RTK eliminates this need by providing high-precision readings across both the horizontal and the vertical plane, resulting in a supremely accurate and finely-calibrated three-dimensional picture of the channel.

The survey is being conducted annually towards the end of the first quarter. Data will be made available to Coastal Oil Logistics, harbour pilots, Golden Bay Cement and to LINZ.

Greg said the technology could prove useful if Refining NZ was to proceed with its plans to deepen the channel. The accuracy of the picture provided could give project leaders a very precise measurement of the volumes of material that had been removed from a position or placed in any particular spot on the sea bed.

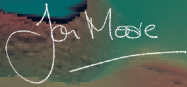


SHIP TO SHORE

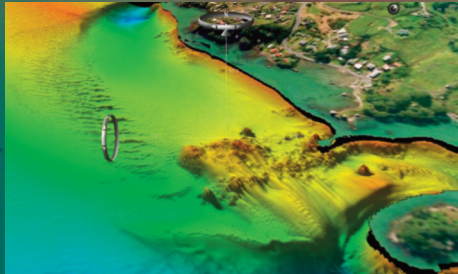
This is our second edition of Channel 19. We had encouraging feedback following our launch edition in November; thank you for that and please keep telling us what you think. It all helps us to improve the product.

Exciting times lie ahead for Northport. We are 13 years old this year and we're just about to enter into a new growth phase - we have bought a crane that will enable us to start handling containers. More about this in our end-of-year edition; suffice to say at this stage that the development appears to have the potential to stimulate or facilitate significant commercial and economic growth in Northland. At least, if the volume of calls and visits to the port since the news was announced is anything to go by.

Enjoy this issue of Channel 19.



Jon Moore
CEO



NEW H&S OFFICER FOR NORTHPORT

Northport Ltd has appointed a new health and safety officer. Joseph Cowan has more than 10 years of experience in athletic conditioning, exercise rehabilitation, health and safety and is also a registered osteopath.

Before joining Northport Joe worked in ACC's National Serious Injury Service. Here he gained a sound insight into the interpretation and implementation of health and safety legislation and the role of ACC and other agencies operating within the greater New Zealand health system.

He holds a Bachelor of Physical Education degree from the University of Otago, a graduate diploma in Business – Services Management from Massey, a Master's degree in Osteopathy and a National Certificate in Occupational Health and Safety.

Born and raised in Kaitia, Joe has lived and worked in Australia, Dubai, Ireland and the US. His interests include hunting, fishing, kayaking, surfing, rugby, cricket and native New Zealand plants.

"We're lucky to have Joe on board," said Northport chief executive Jon Moore. "He's thorough and conscientious in his chosen discipline but he also brings to our team a diverse array of experiences and skills."

Changes bring opportunity

When you've been sharing the same harbour with someone for over 100 years you tend to get to know each other pretty well. That's certainly the case with the port and its customer, Golden Bay Cement's Portland manufacturing plant.

Both organisations have evolved and flourished beneath the shadow of Mt Manaia and the Whangarei Heads, each undergoing several transformations over the years.

Golden Bay Cement's Portland plant was established by the Wilson family in 1913. Since Day One it has had a reputation for manufacturing consistent, high-grade cement and today, as part of the Fletcher Building Group, it's New Zealand's largest premium-quality manufacturer of the product.

CAPACITY

The plant's annual manufacturing capacity is now at around a million tonnes. This is the result of a \$105 million upgrade in 2005/6 which introduced the latest cement processing techniques and environmental management capabilities that exceed even the stringent requirements to which the industry must adhere.

Today the plant ships cement nation-wide to distribution depots in Auckland, Tauranga, Napier, Wellington and Picton, as well as to export markets across the Pacific.

Hanging in its offices at Portland at the western-most inland reaches of Whangarei Harbour, are two photographs that illustrate part of the process. They show Golden Bay Cement's coastal freighter, MV Golden Bay, ploughing through massive seas around the East Cape. In the first her bows are digging deep

into the cold grey swell, white water breaking around her. In the second they're rearing skywards, testifying to the roller-coaster journey being endured by her crew in the atrocious conditions.

IMPORTS

Golden Bay currently imports through Northport about 25,000 tonnes (approximately one ship-load) a year of gypsum from South Australia and between 60,000 and 90,000 tonnes (two to three ship-loads) a year of coal from Port Kembla in New South Wales. The gypsum is trucked to the Portland plant on arrival but the coal is stockpiled at Northport and trucked into the plant as part of its Just In Time processes.

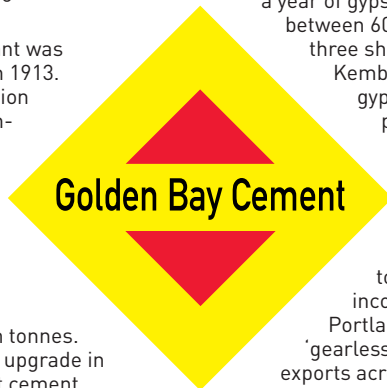
Until now the company's business with Northport has had to be restricted largely to the incoming raw materials used by the Portland plant. This is because the 'gearless' ships used to move most of its exports across the Pacific haven't been able to load at Northport the shipping containers in which the bagged cement is transported.

The exception is cement exported to Tahiti, which does leave from Northport because the ship which runs that route has its own on-board cranes.

EXPORT

Most cement for export, however, is loaded onto the MV Golden Bay or the company's cement barge, Marsden Point, at Portland Wharf and shipped directly past Northport's wharves to other export ports around the country.

"It's been hugely frustrating," Mr Bourke said. "We're hoping that the shippers, and in some cases



our customers, will see the significant boost in Northport's capability that the new crane will bring and that they'll start putting more volume through the export port right on our doorstep.

"This would result in significant efficiencies and enhance our responsiveness and time to market considerably."

Mr Bourke said Golden Bay Cement had invested in a number of supply-chain solutions for its South Island customers and that containers formed part of the mix. These are currently filled and loaded in Auckland after the cement has been shipped by sea or trucked by road from Portland.

The new crane at Northport could potentially change this arrangement, he says.

RELATIONSHIP

"Our working relationship with Northport has been built around what's do-able at any given time. Until now the port has been ideally suited for bulk and break-bulk cargoes but it's been less able to sustain exports of packaged and containerised goods. Scale and the need to use ship's gear for loading have been limiting factors.

"If these factors change then the potential efficiencies are obvious and could well prove attractive."



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EASTLAND BRINGS DEBARKER NORTH

Eastland Group has established a multi-million dollar debarking plant near Northport. The 1.1 hectare operation provides debarking and anti-sap staining services to Northland forestry customers, largely replicating Eastland Port's Gisborne operation.

The plant completely removes bark from logs, rendering them insect-free and able to be loaded as deck cargo for China without the issues associated with traditional methyl bromide treatment. The process also reduces the volume of a cargo of logs, enabling more to be carried in each shipment.

An anti-sap stain treatment is also available to exporters. Freshly-cut pruned logs are treated to prevent the growth of sap stain, mould and decay fungi which degrade the appearance of the wood and reduce its marketability.

Three people have been employed to work the debarking operation, with more to be brought on as volumes increase.



Repeater upgrade for Whangarei Harbour Radio

Northport has spent \$45,000 on upgrading Whangarei Harbour Radio's Western Hills repeater station, installing more versatile technology which monitors itself and alerts technicians in the event of a fault.

The repeater, which has been operating since the 1960s, is 287 metres above sea level. It enables Whangarei Harbour Radio to communicate with vessels as far north as Cape Brett and as far south as the Coromandel on its VHF channel 19 marine working channel and on the international distress and calling VHF channel 16.

Latest off-the-shelf digital repeater technology has replaced custom-built equipment that was installed by the Northland Port Corporation in 1992. This means back-ups and spares are readily accessible, making the repeater easier and cheaper to maintain.

It is powered exclusively by a solar energy system. Northport technicians can monitor it and diagnose faults from anywhere in the world by SMS, while the system can alert them proactively to faults or pending operational issues.

FROM MICROBES TO CRANES AND GANTRIES, ENGINEERING COVERS IT ALL

When acid-secreting, steel-dissolving microbes threatened to damage severely within just 10 years the pilings fronting Northport's 570 metre linear wharf, it was time for the company's engineering team to show their mettle.

Accelerated Low Water Corrosion (ALWC) is a severe microbiologically influenced corrosion (MIC) caused or promoted by micro-organisms. It was eating through Northport's 12-15mm pilings at a rate of about a millimetre each year, dissolving the steel 10 times more quickly than might be expected with regular corrosion.

PROTECTION

The engineering team, led by Northport's terminal facilities manager Greg Blomfield, investigated preventative options and selected a technique called Impressed Current Cathodic Protection.

"It's like the sacrificial anode on a boat but on steroids," explains Greg. "We impress a DC charge into the water. The current leaves the anode and

travels through the water to the sheet piling, changing the chemical composition of the surface and killing the bugs. As an added bonus, the regular corrosion we might expect is slowed down dramatically as well."

Greg says the solution is working "like a dream". Thickness readings of the pilings taken with an ultrasonic thickness gauge indicate that the corrosion curve has flatlined since the introduction of the technology.

"We've found and implemented a solution to a problem that would otherwise have cost the company literally millions of dollars in reconstruction costs and lost business," Greg says.

"It was a great result."

Of course, not all of the engineering team's work is that consequential. But it's vital to the smooth operation of the port. The five-person team comprises Greg, port engineer Ben Sweeney, electricians Matt Evans and Cameron



Pepperell, and property maintenance specialist Mark Edwards. Greg is currently looking for a suitably capable and qualified mechanic to join the team as well.

They are the port's infrastructure and asset managers, responsible for anything to do with the hard infrastructure or plant on the site. Whether it's maintaining the 35m-high light towers, overseeing construction of the steel 'book-ends' that enable Northport to increase by 20 percent the number of logs it can store, or installing the new crane that is due to become operational at Northport later this year, the engineering department makes it happen.

INFRASTRUCTURE

"We're responsible for ensuring that everything is in good working order for the operations team, so that when a ship is alongside all the supporting infrastructure is in place and fully operational," Greg says. "Time is money in this business and delays caused by equipment failure are not acceptable."

They're also responsible for ensuring that Northport meets the many varying and complex conditions of more than 60 operational and permissive consents governing the port's business, including the management of storm-water, dust and noise.

Apart from the crane project, which will give Northport the ability for the first time to load dedicated container vessels, the engineering department is involved in two major projects; upgrading the port's electrical infrastructure and boosting the area of hard-standing through land reclamation work. It has also overseen the most detailed survey of Whangarei Harbour's deep-water navigation channel that has ever been conducted (see inside cover).

One thing the team can be sure of is that life will continue to be interesting. Northport's engineering capabilities are, and will remain, central to plans for the port's future at the heart of Northland's growing regional economy.

