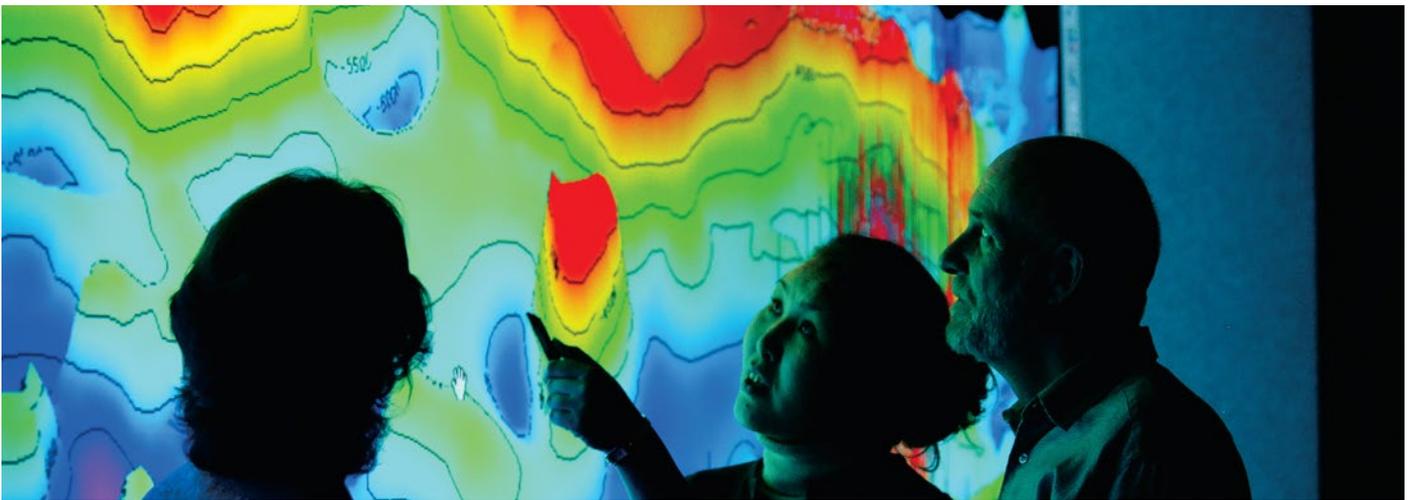




fact sheet

seismic activities a general overview

human energy®



exploring what lies beneath

Seismic surveying is an established data collection method for the oil and gas industry. Strict requirements and operational procedures are in place to protect marine habitats.

Marine seismic surveys involve applying an energy source at the ocean surface to produce detailed images of rock types and their location beneath the earth's surface.

The work involves an acoustic source that releases bubbles of compressed air, which collapse and send a low frequency sound wave towards the seafloor. Sound waves are bounced off rock formations and captured by recording sensors at the surface. The data builds up a geological picture of the area for use by many different parties.

As part of our permit requirements set forth by the New Zealand Government, Chevron has committed to acquiring seismic data in the East Coast and Pegasus basins.

To achieve this, Chevron New Zealand Exploration (CNZEL) has secured a contract with Schlumberger New Zealand Ltd (SNZL) to purchase data from its planned multi-client 3D Seismic Survey off the New Zealand east coast.

protecting New Zealand's unique environment

Protecting the marine flora and fauna in New Zealand is very important to Chevron. The oil and gas industry uses extensive environmental management plans to ensure no land or seabed is disturbed during seismic activities. All seismic surveying must meet the Department of Conservation's Code of Conduct for Minimising Acoustic Disturbance to Marine Mammals from Seismic Operations. New Zealand has strict requirements laid out in this code, including:

- Required use of Passive Acoustic Monitoring (PAM) systems 24/7 during seismic surveys. These systems detect the presence of marine mammals during seismic operations, allowing explorers to implement measures that minimise potential impact of man-made sound.
- Marine Mammal Observers and trained PAM operators to be on the vessel at all times to record observations/sightings of marine mammals before and during operations. The acoustic source is stopped if any marine mammals enter the relevant mitigation zones, which are known to the observers/operators.

Seismic activities will be underway from November 2016 to June 2017.



multi-client seismic program

Chevron will purchase its data through the SNZL multi-client survey. The data may be used by a number of clients to assess exploration potential of the general area and to meet work program requirements.

SNZL has been responsible for submitting comprehensive plans to the New Zealand Government for assessment ahead of the beginning of any seismic work. The plans include an environmental risk assessment and marine mammal impact assessment, and detail specific environmental management plans that will be implemented in the course of the survey.

For more information about seismic surveying in New Zealand, see PEPANZ's virtual overview visit seismicsurvey.co.nz

case study: great Australian bight

The Great Australian Bight (GAB) represents one of Australia's most prospective frontier hydrocarbon exploration regions, however it remains largely unexplored.

In late 2013, Chevron Australia acquired two deepwater exploration permits located in the GAB Commonwealth waters.

In 2015, a 3D seismic data acquisition program over Chevron's acreage was completed by seismic company TGS, with 22,000 square kilometres of data acquired during the program. Conducted over two seasons, this is the largest seismic survey completed in Australasia and Chevron globally to date.

Similar to the East Coast and Pegasus basins in New Zealand, the GAB is an underexplored frontier region with water depths ranging from 200 metres to more than 3000 metres and challenging ocean conditions.

The seismic survey in the GAB was completed ahead of schedule and under budget with an exceptional safety performance. There were no incidents involving whales or other cetaceans and no recorded disturbance to the local tuna catch.