



**Long twilight:** A worker on the Maui A production platform looks out towards Mt Taranaki at sunset. The Maui field might be in its twilight years, but new drilling success means the twilight will last a little longer.

# After burn

Taranaki's Maui offshore gas field has now been flowing natural gas for more than 33 years, and thanks to a special project the brainchild of experts in New Plymouth, the field looks set to continue to flow for years to come. **Rob Maetzig** explains why.

**F**or a short time on Wednesday night, a swanky black-tie function at Auckland's Langham Hotel turned into party central for about 20 of Shell Todd Oil Services Ltd's New Plymouth staff.

But they thoroughly deserved to celebrate, for their company had just won a prestigious New Zealand award – the Energy Project of the Year.

It was an award well worth winning, too, because the project in question has lengthened the productive life of one of this country's most valuable energy assets, the Maui offshore gasfield.

Stretching across 150 square kilometres of area and lying more than three kilometres under the sea floor, when it was discovered in 1969 it was one of the largest offshore gasfields in the world.

At its peak in the 1990s it poured out massive amounts of gas, meeting more than 90 per cent of New Zealand's total domestic natural gas demand.

However, as the years progressed the field naturally began to peter out – the industry prefers to call it maturing – and these days it is very much a shadow of its former self,

currently meeting about 20 per cent of the national demand.

But how much gas is actually left? Or, more importantly, how much more can be recovered?

That's a question that the subsurface team at New Plymouth-headquartered Shell Todd Oil Services began to attempt to answer more than seven years ago.

They believed there might be a lot more natural gas hiding in a large number of pockets throughout the field that would have been bypassed by the usual gas extraction process.

The team – colloquially known as rock doctors – became even more convinced after studying the latest 3-D and even 4-D computer modelling. But the trouble was that even though there were likely to be many of these pockets, and that combined they could potentially produce large quantities of gas, the pockets were also likely to be relatively small, difficult to access and therefore costly to drill for.

So how to physically explore for this gas in the most cost-effective way? The STOS team worked through several potential methods before settling on the best approach: put a lightweight

“workover” rig on the Maui production platforms, re-enter existing wells, and precisely steer the drilling bit to the pockets of bypass gas in a method known in the industry as slim-hole sidetracking.

A very small hydraulic workover unit not designed for drilling had to be selected because it had to be able to fit onto the production platforms. That also meant the STOS engineering team had to beef up the rig's capability so it could actually drill at the depths required.

And then there was the question of being able to accurately steer the small-diameter directional drilling tools. The STOS team opted for a process known as geosteering, in which the steering is constantly adjusted in response to geological and logging information that is gathered while the drilling is actually taking place.

Especially for the Maui project, the STOS team developed a unique monitoring system that was manned at its New Plymouth office, 110 kilometres away from the drill bit.

This allows the position of each well to be compared directly against its prognosis on the geologist's work station as it is drilled.

Instructions are then fed back to the drillers on where to steer the drill bit.

It is all proving highly accurate, and is enabling the rig's operators to drill into pockets of gas only four metres thick 3.5km below the seabed – and to remain within that four-metre zone for up to 700 metres of directional drilling.

And when the pockets of gas are struck, they are also able to go into production within weeks of drilling.

Unlike typical drilling programmes, where production is usually delayed for months while the rig is removed and special production tubing installed, the Maui wells are so designed to allow them to produce their gas even while the rig is still on the platform.

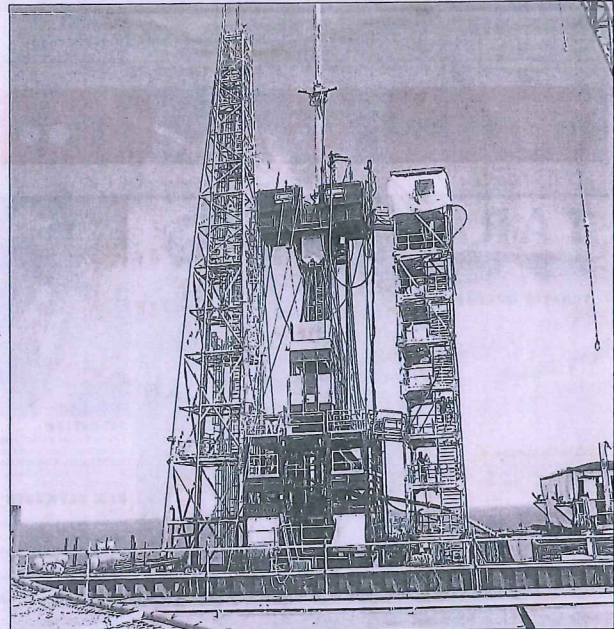
While no figures are being made public as to how much new gas has been found out at Maui, so far it is sufficient to extend the life of the field by several years at current rates of production.

The company is now busy preparing to get a second hydraulic rig offshore for a second drilling operation, which the STOS team is confident will prove successful enough to extend Maui's life for years to come.

STOS general manager Rob Jager says he is extremely proud of his team's achievements so far, and thanks the Taranaki community for its ongoing support.

“Seven years ago the team had a hunch and a belief there might be more natural gas hiding in what was once a giant field, and by 2011 they had not only found ways to safely and economically target where they thought the gas was trapped, but they also managed to successfully unlock and produce this gas through existing facilities,” he says.

“We had hints that there was more natural gas to be found in Maui, but in this business nothing is certain. Lateral thinking, flexibility and frankly having the courage to back the uncertain has led to this great result for us.”



**Targeting bypassed gas:** The small workover rig busy drilling from the Maui B production platform.

## Swimming star eyes small screen

Jill Serjeant

United States Olympic champion swimmer Ryan Lochte, who emerged as one of the hottest new stars from the London Games, has signed on for his first acting role.

Lochte, 28, who won two gold medals in London, will play himself in a cameo appearance in the high-school television series *90210* in October, producers said on Wednesday.

The US swimmer will cross paths with Naomi Clark, played by AnnaLynne McCord, and Max Miller (Josh Zuckerman), at a resort where they are trying to rebuild their rocky relationship.

“When we found out Ryan Lochte was going to be in town and might appear on *90210*, we felt like we'd won a gold medal,” executive producers Patti Carr and Lara Olsen said.



**Golden boy:** US Olympic champion swimmer Ryan Lochte is taking his first steps to being a star on film.

“Team USA are all-stars in our book, and we're so excited he's making an appearance on the show. “We only wish the episode was a surf event so we could have gotten him in the

water, but he deserves a little rest on dry land,” they said.

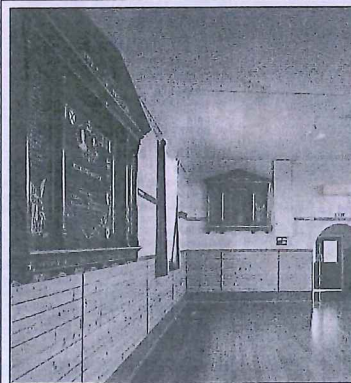
Lochte has been busy fielding offers from Hollywood since he made a splash in London.

He said last week he was moving from Florida to Los Angeles and would love to appear on television contest *Dancing with the Stars* or *The Bachelor*.

The single swimmer became a social media sensation during the London Olympics, thanks to his penchant for flashy teeth grills, playful rivalry with Michael Phelps, and good looks that had some commentators comparing him to movie heart-throb Ryan Gosling.

*90210*, a spin-off of the 1990s television series *Beverly Hills, 90210*, begins its fifth season on the CW network in October and follows a group of privileged Beverly Hills teens as they navigate life.

The episode featuring Lochte will air in the US on October 28. Reuters



**Banquet at Pankawalla Tomorrow 11.30am**  
Meet at Pankawalla for an Indian cuisine cooking demonstration and a banquet lunch. \$15, bookings essential through Govett-Brewster's reception or ph 06 759 6060

**Curator Talk at Percy Thomson Tomorrow 2pm**  
Govett-Brewster's Paul Brobbel talks about the touring exhibition *Laurence Aberhart: Recent Taranaki Photographs* at the Percy Thomson Gallery, Stratford

**Free entry**  
Image: Laurence Aberhart Interior, #2, Aiti, Toka, Taranaki, 27 September 2009 (detail), Courtesy the artist



Govett-Brewster Art Gallery  
Queen Street New Plymouth  
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