

Recognising Pohokura's green side

Shell Exploration NZ was awarded a Taranaki Regional Council Environmental Award this year for the design and development of its Pohokura production station project.

THE POHOKURA FIELD offshore in Taranaki is the country's largest gas resource, discovered in 2000 and owned by a joint venture between Shell, Todd Pohokura, and OMV New Zealand.

The field and associated production station and tank farm is operated by Shell Exploration NZ with the services of Shell Todd Oil Services (STOS), which is owned 50/50 by Shell Petroleum Mining and Todd Petroleum Mining. STOS operates a number of gas fields for joint venture partners including Maui, and Kapuni.

Commercial gas and condensate is piped from three onshore 'extended reach' drilling wells in the southern part of the field, a platform eight kilometres offshore, and five offshore wells via an undersea pipeline back to an onshore production station at Motunui, which is controlled via a control room operating 24/7 from the STOS head office in New Plymouth.

Condensate, separated from the gas flow at the Motunui production station, is piped to the Omata Tank Farm where it is loaded onto oil tankers for

transportation to Marsden Point oil refinery and refineries offshore, while Pohokura's gas is fed into the national grid network (producing around 40 percent of the country's gas).

Pohokura was the first plant in the country to be unmanned and remotely controlled.

In a first for this country, the production facility is automated and unmanned as the design of the production station and platform incorporates a very high level of reliability (over 95 percent in 2009).



Kids at the Community Day and a Riparian planting

Environmental innovations

The original design of the field included a pipeline from the onshore production station out to the offshore platform that would run over the cliff face and across the foreshore. STOS says that after consultation with the community, it decided to use technology referred to as horizontal directional drilling to preserve the local coastal environment, by avoiding excavation in the foreshore area. In what was a first for New Zealand, horizontal directional drilling was used to drill and insert the pipeline behind the cliff face and underneath the foreshore, so there was no visible or physical intrusion.

When designing the onshore plant, existing infrastructure was used where possible to minimise the impact on the environment such as using the existing condensate storage facilities at the Omata tank farm.

Much of the rotating equipment (pumps and compressors) used at the production station run using variable speed electric motors as opposed to older fixed speed motors. Variable motors work at a flexible rate and adjust according to production demand saving energy, in contrast to fixed speed motors which run continuously at a high speed. The use of electric power also reduces the emissions from the operation where previously, internal combustion engines would have been used to drive the rotating equipment.

Pohokura was designed with a suite of discharge mitigation measures. The stormwater

drains at the plant are valved and operate in the closed position to ensure stormwater discharges are managed safely.

The plant's processing areas are built on concrete bunds that are checked for contaminants before the water in the bund is drained into the stormwater treatment system.

In another environmental innovation, the production station's storm water disposal system includes a natural bio-filter of wetland plants. Prior to discharge, the stormwater is collected and directed through the primary pond, which is designed to remove residual floating hydrocarbons supported by an absorbent skimmer. The discharge then passes through the wetland, which further treats the stormwater and acts as a natural filter removing organic compounds that could have an impact on the environment.

Extensive riparian planting was undertaken and is ongoing at the Pohokura field using a local contractor, WISE (Waitara Initiative Supporting Employment) Trust, set up to provide work opportunities for any long term unemployed people from the Waitara area. This group did the initial riparian planting at the production station and continue to provide ground and maintenance support today.

Community consultation

Since the consenting phase at the beginning of the project, regular meetings were held with the community.

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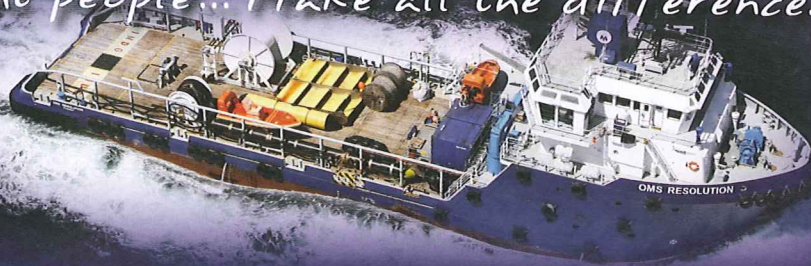
Liaison now is through the Motunui Community Advisory Group, consisting of community and company representatives, which meets quarterly to listen to community feedback and receive an update from the business. Neighbours, landowners, hapu and various fishing groups attend these meetings.

Prior to construction, the Pohokura site was discovered to be of historical significance to Maori. Working with local hapu, archaeologists were called in to examine the area and found significant evidence of Maori occupation, such as digging sticks, stone axes, and hangi pits.

Work was stopped as this history was documented with support from a hapu monitor and the Historic Places Trust. A comprehensive archaeology report was commissioned to be shared with the local community. ○



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