



Coniston-2 Appraisal Well Environment Plan: Public Summary May 2009

This summary of the Coniston-2 EP has been submitted to comply with Regulation 11(7)(8) of the Petroleum (Submerged Lands) (Management of Environment) [P(SL)(MoE)] Regulations 1999.

Introduction

Apache Energy Limited (Apache) proposes to drill a vertical appraisal well, Coniston-2, in Commonwealth waters off the Western Australian coast in Exploration Permit WA-35-L. Drilling is proposed to commence around mid June 2009 (weather conditions permitting) using the *Stena Clyde* semi-submersible drill rig. Coniston-2 is located 50 km to the north of the North West Cape and 39 km to the north of Muiron Islands (**Figure 1**).

Apache's generic Environment Plan (EP) for its drilling program on the North West Shelf (NWS) in State and Commonwealth waters will be used to manage the well (EA-00-RI-164). A bridging document to this EP for Coniston-2 was approved by the Department of Mines and Petroleum (DMP), in accordance with the Petroleum (Submerged Lands) (Management of Environment) (PSLMoE) Regulations 1999.

Project Description

The proposed Coniston-2 drill site is located at 21° 20' 46.700"S 114° 03' 5.560"E (GDA 94, Zone 50) in a water depth of 407 m.

The *Stena Clyde* will be moved into position for the Coniston-2 well by work boats and then kept on location with primary and secondary anchors.

The drilling procedure for the well will be drill a 914 mm hole to 440m with seawater and prehydrated gel (SW/PHG). A 762 mm conductor and Low Pressure Well Head Housing (LPWHH) will then be run and cemented in place. Following this a 406 mm hole will be drilled to 1073 m measured depth below the rotary table (MDRT). A 340 mm x 473 mm casing will be run and cemented and a Latch High Pressure Well Head Housing (HPWHH) installed. The Blow Out Preventers (BOPs) and Lower Marine Riser Package (LMRP) and marine riser will then be landed, latched and tested. Following this, a full BOP test will be performed before drilling a 216 mm hole to 1397 m MDRT using WBM. The well will then be evaluated, logged and plugged and abandoned (pending results of the evaluation). Vertical seismic profiling (VSP) will be undertaken as part of this drilling programme. A production test will not be carried out for this well.

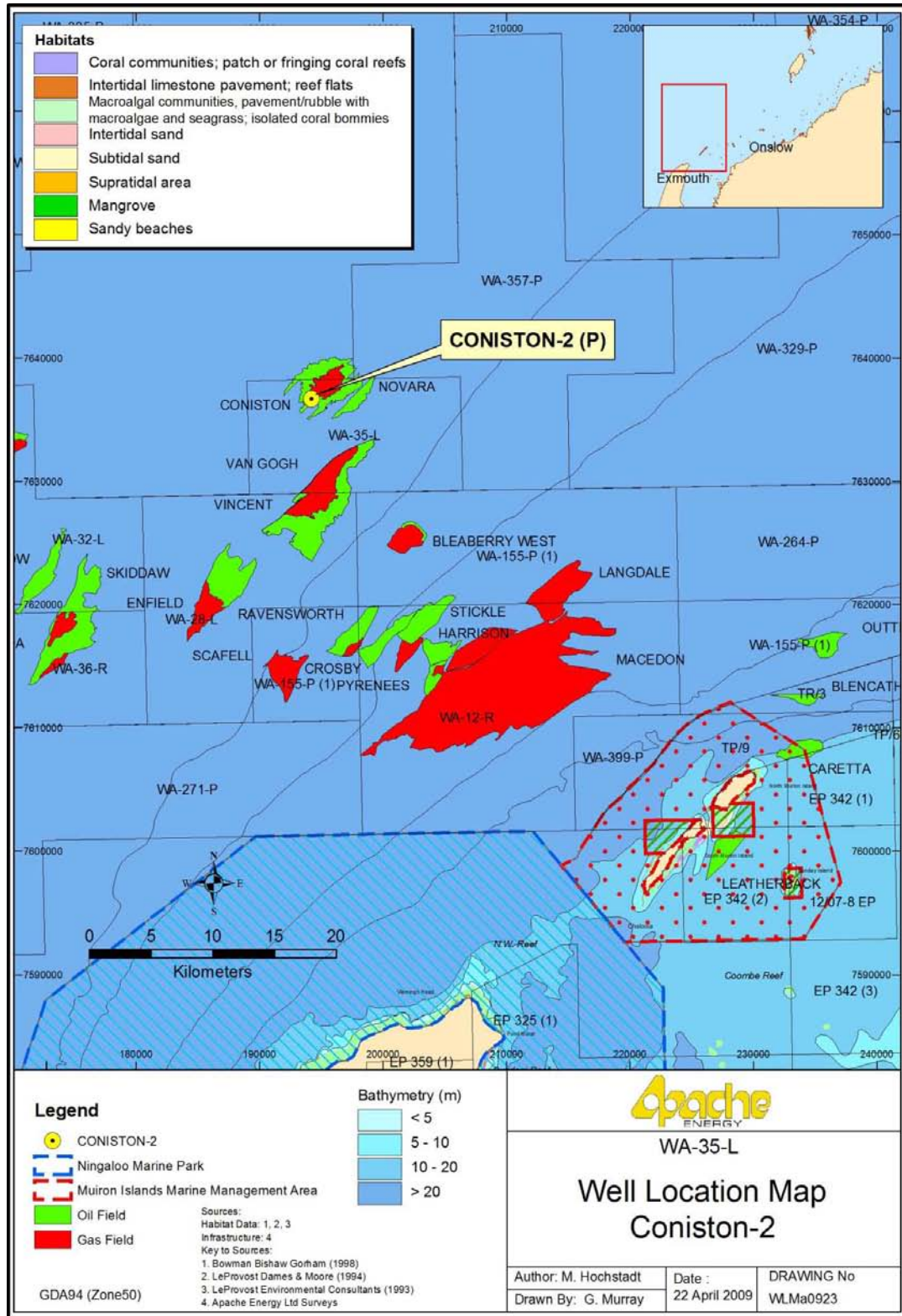


Figure 1 Location of the Coniston-2 drill site

Receiving Environment

Physical Environment

The NWS lies in the arid tropics region of Australia, which experiences high summer temperatures and periodic cyclones (with associated rainfall). Rainfall is generally low, with evaporation exceeding rainfall. Mean ocean temperatures range from a minimum of 11°C in winter to a maximum of 37°C in summer. Shelf waters are usually thermally stratified at a depth of about 20 m.

Wind patterns are monsoonal with a marked seasonal pattern. From October to March, the prevailing non-storm winds are from the south-west, west and north-west at an average speed of less than 10 knots. From June to August, winds are generally lighter and more variable in direction than in spring and summer. Non-storm winds prevail from north-east through to south-east at average speeds of 5-6 knots. Transitional wind periods, during which either pattern may predominate, can be experienced in April, May and September each year.

The seabed across the Coniston-2 site is predominately composed of fine sandy silt and there are no raised seabed features.

Biological Environment

Diverse assemblages of benthic fauna are likely to exist at the site, especially if unconsolidated sediments are present. Mobile burrowing species that may be present include crustaceans (crabs and shrimps), worms, sea stars, sea urchins and other small animals. Spatial and seasonal distribution of such species depends on factors such as substrate composition, season, water depth and temperature.

The demersal habitat of the NWS hosts a diverse assemblage of fish, many of which are commercially exploited by trawl and trap fisheries, for example the genera *Lethrinus* (emperor) and *Lutjanus* (snapper). Pelagic fish in this area include tuna, mackerel, herring, pilchard and sardine. The inshore habitats in this region are not considered to be significant nursery grounds for commercially important deeper-water fish species.

Whale sharks (*Rhincodon typus*) are oceanic and cosmopolitan in their distribution; however, they aggregate in and near the waters of the Ningaloo Marine Park during autumn, around the Exmouth region. They are occasionally observed from Apache's offshore oil and gas facilities on the NWS such as the Stag platform.

Four species of marine turtle nest on sandy shore sites of the Dampier Archipelago, Montebello Islands, Lowendal Islands, Barrow Island, and other coastal islands in the Exmouth region. These are the green turtle (*Chelonia mydas*), flatback turtle (*Natator depressus*), hawksbill turtle (*Eretmochelys imbricata*), and the loggerhead turtle (*Caretta caretta*). All four species are on the National List of Threatened Species. The leatherback turtle (*Dermochelys coriacea*) may also visit the open waters of the shelf. The loggerhead, flatback and leatherback turtles are known to feed on mid-water plankton and benthic animals, and can forage in continental shelf waters, so may occur around the Coniston-2 location. The timing of drilling does not coincide with the turtle nesting season. Furthermore, due to the offshore location, the Coniston-2 well is distant from any breeding/nesting sites.

The nationally threatened dugong (*Dugong dugong*) occurs across the tropical coastal waters of Australia from Shark Bay to Queensland. They are herbivorous and are generally associated with seagrass beds, upon which they feed. Dugongs are commonly found in shallow sheltered areas (less than 5 m deep), often near islands

or large bays. They are not likely to be present around the proposed Coniston-2 location.

Dolphins are relatively common in the region. Species known to occur in the region are the bottlenose dolphin (*Tursiops truncatus*), common dolphin (*Delphinus delphis*), Indo-pacific humpback dolphins (*Sousa chinensis*) and the striped dolphin (*Stenella coeruleoalba*). A number of whale species, including the short-finned pilot whale (*Globicephala macrorhynchus*), false killer whale (*Pseudorca crassidens*), tropical byrdes whale (*Balaenoptera edeni*), southern minke whale (*Balaenoptera acutorostrata*) and humpback whale (*Megaptera novaeangliae*), also occur in the region, the most commonly sighted of these being the humpback whale. This species migrates between the Antarctic waters and the Kimberly region of Western Australia. The peak of their northerly migration between the Exmouth Gulf and the Dampier Archipelago occurs around late July to early August, while the southerly return migration peaks around late August – early September. The proposed Coniston-2 well is located within the migration corridor of the humpback whale in the Exmouth to Dampier Archipelago region and the timing of drilling coincides with the northern migration period.

Eighteen species of seabird have been recorded over the NWS waters. These include petrels, shearwaters, tropicbirds, frigatebirds, boobies and terns, and silver gulls. Of these, eight species occur year round and the remaining 10 are seasonal visitors.

Socio-Economic Environment

The population centres adjacent to the region in which the drilling program is located are the Port of Dampier and Port Hedland and the smaller coastal and fishing towns of Onslow and Point Samson. Dampier, Karratha and Port Hedland are the main service and population centres for the region. Local people seeking aquatic recreation such as boating, diving and fishing use the coast and islands of the Pilbara. The open waters of the Commonwealth permit areas do not support significant recreational or tourism activity.

Commercial fisheries are active along the Pilbara coast; however fishing effort in the open Commonwealth waters is low, with operators favouring the inshore areas.

No marine or terrestrial conservation areas are located in the vicinity of the drill site.

Table 1 summarises the biological and socio-economic features of the NWS.

Table 1. NWS biological and human activity seasons

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Dugong breeding	breeding								breeding			
Hawksbill turtle nesting												
Flatback turtle nesting												
Green turtle nesting												
Loggerhead turtle nesting												
Coral spawning												
Whale migration						north			south			
Whalesharks												
Algae	growing				Shedding fronds				growing			

Potential hazard (risk)	Potential environmental effect (consequence)	Risk ranking
		material.
Cooling water and atmospheric emissions	Potential localised reduction in water quality. Emissions of greenhouse gases. Potential localised reduction in air quality.	Negligible – discharged above water line to allow cooling and oxygenation.
Introduction of foreign marine organisms from drill rig and support vessels	Competition with local marine life and absence of natural predators can alter ecological balance of flora and fauna communities, favouring the introduced species and resulting in loss of flora and fauna diversity and abundance.	Negligible
Impacts to humpback whales from vertical seismic profiling (VSP) noise	VSP is a more benign activity than conventional seismic surveys. Potential short-lived impacts include disruption to navigation and communication, with some research indicating no disruption from normal activities when seismic activity is occurring several kilometres away.	DoIR guidelines on minimising acoustic disturbance to Marine Fauna will be followed during VSP
Oil or diesel spills	Severe damage of marine habitats (e.g., coral reefs, mangroves, beaches) and death or injury to marine life (e.g. birds, mammals).	Acceptable – oil spill modelling indicates spills would be unlikely to reach land.

Environmental Management

Extensive environmental management guidelines are prepared for each Apache-drilled well. Apache management documents used to guide the implementation of well-specific environmental management procedures are listed below:

- Environmental Management Policy (April 2009).
- Contaminated Waste Management Procedure (VI-SA-ON-EN-000).
- Incident Reporting Procedure (AE-91-IF-002).
- Lighting Management Plan (EA-60-RI-153).
- OSCP Volume 1 – Operations (NWS) (AE-OO-EF-008).
- OSCP Volume 2 – Resource Atlas (NWS) (AE-OO-EF-008/2).
- Quarantine Procedure (AE-91-IQ-189).
- Refuelling Management Plan (DR-91-IG-001).
- Refuelling Operational Procedure Guide.
- Vermin Management Plan (EA-60-RI-131).
- Waste Management Plan (EA-60-RI-167).

Consultation

In preparing the Generic NWS Drilling Program EP, Apache consulted with numerous stakeholder representatives, including:

- (former) DoIR
- Department of Environment (DoE)
- CALM (Marine branch)
- Fisheries WA

- Marine and Coastal Community Network
- Environment Protection Agency (EPA)
- Marine Parks Reserve Authority (MPRA)
- CALM (Environmental protection)
- WA Fishing industry Council

Further Details

For further information about the Coniston-2 drilling program, please contact:

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