

ESSO 2D MARINE SEISMIC SURVEY ENVIRONMENT PLAN: PUBLIC SUMMARY

This summary of Esso Ventures Pty Ltd's 2D marine seismic survey Environment Plan (EP) is prepared in accordance with the requirement under Regulations 11(7) and 11(8) of the *Petroleum (Submerged Lands)(Management of Environment) Regulations 1999* submitted as a legislative and mandatory requirement to the Western Australia Department of Industry and Resources (DoIR).

INTRODUCTION

Esso Ventures Pty Ltd (Esso) is to conduct a 2D marine seismic survey primarily within the permit area of WA-318-P but also extending into WA-324-P, WA-313-P and adjacent open acreage. The seismic survey area is situated 150 km north of Wyndham and 300 km south west of Darwin.

COORDINATES OF THE PETROLEUM ACTIVITY

The seismic survey will take place in Commonwealth marine waters within and adjacent to Exploration Permit WA-318-P (Figure 1). The total area of the seismic survey is approximately 10,500 km² and is bounded by the geographical coordinates given in Table I below.

Table I : The Coordinates of the Proposed Seismic Survey Area

GDA 94	Latitude (South)			Longitude (East)		
Location	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
A	13	24	58	127	09	28
B	14	08	05	127	49	42
C	14	08	05	128	02	43
D	13	54	44	128	17	02
E	13	22	10	128	17	02
F	13	03	55	128	00	00
G	13	03	55	127	21	35
H	13	15	14	127	09	28

Notes: Environment Plan for Seismic Survey on WA-318-P, January 2008 by RPS

DESCRIPTION OF THE ACTION

The primary objective in carrying out the seismic survey is to map the sub-surface geology via the acquisition of two dimensional (2D) seismic data within the survey area in order to ascertain the potential for sub-surface oil and gas deposits.

The seismic survey will be conducted by Gardline Marine Sciences Australia Pty Ltd, using a specialised seismic survey vessel, M/V Ocean Endeavour. The survey will utilise a single air-gun array with a total capacity of 1950 cubic inches with an operating pressure of 2000 psi. A single streamer 5000 m long will be towed behind the survey vessel at depths ranging from 7 to 9 m below the sea surface. The air-guns will be discharged approximately every 10 seconds resulting in an interval of 25 m between pulses.

The seismic survey is expected to commence sometime between March and April 2008 depending on the availability of the M/V Ocean Endeavour. The seismic operation will continue 24 hours per day and take approximately 15 working days to complete.

DESCRIPTION OF THE RECEIVING ENVIRONMENT

Physical Environment

The survey area is sited within the Joseph Bonaparte Gulf and is underlain by one of the Western Australia's major Proterozoic sedimentary basin. The survey area is located on the continental shelf in water depths ranging from 20 to 100 m. There are no known significant or shallow seabed features in the area. The nearest landfall is located approximately 28 km southwest of the Permit Area.

The climate in the Joseph Bonaparte Gulf is tropical monsoon, with a distinct wet summer season and dry winter season. Cyclones are most likely to occur between December and April; however most are likely to pass the north of the survey area, through the Timor Sea.

Biological Environment

The nearest marine protected areas, Cartier Island Marine Reserve and Cobourg Marine Park, are approximately 390 km west-north-west and 445 km north-east of the survey area respectively.

Some marine migratory species with broad distributions such as cetaceans, fish, sharks, sea turtles and seabirds may traverse the survey area, at least on occasion. The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) lists nine threatened and migratory species that could occur in the area:

- Blue and humpback whales
- Loggerhead, green, leatherback, hawksbill, olive Ridleys and flatback turtles
- Whale shark

A further eight species listed as Migratory on the EPBC Database may be encountered in the survey area. The survey area does not contain recognised critical habitat for any of the above threatened or migratory species, and the open oceanic conditions are not associated with features such as feeding or breeding grounds.

The unstable nature of soft clayey sediments in shallower waters reduces the abundance and diversity of organisms occupying these habitats, which are often bare of attached biota. Sediments in deeper waters are subject to less turbulence and usually comprise finer-grained sands and silts. These habitats are more favourable for colonisation by burrowing organisms, primarily arthropods and polychaete worms. Attached benthic organisms are expected to be sparse and are likely to comprise anemones, sea pens and hydroids.

It is unlikely that algal, seagrass or coral beds are present in the survey area due to the absence of hard substrate, generally high turbidity, and depth of the water.

Socio-Economic Environment

The Joseph Bonaparte Gulf supports low levels of petroleum exploration and development. At present, there are no oil producing fields exist adjacent to the Joseph Bonaparte Gulf.

Consultation with Commonwealth and State fishing authorities and commercial operators indicated that the Northern Prawn Fishery is active in the Permit Area. However, the seismic survey is scheduled to take place outside of the peak period of the prawn fishing season. Levels of tourism, recreational or game fishing is expected to be very low or absent in the area because of the distance offshore.

The survey area does not lie on any recognised shipping lane or recommended navigation track, but low levels of commercial shipping are expected.

MAJOR ENVIRONMENTAL HAZARDS AND CONTROLS

Risk analysis has been used to characterise risk likelihood and severity and to evaluate the potential environmental risks and effects, as summarised in Table 2.

Given the water depth and absence of shallow bathymetric features, distance from shore, separation from recognised cetacean migratory routes, and the management requirements for all environmental aspects of operations, the risk of significant adverse environmental effects from the seismic survey is low.

Table 2: Summary of Environmental Risks and Management Approach

Hazard/ Incident	Potential Hazard Consequence	Risk and Management Approach
Acoustic impulse from air-guns during seismic operations.	Physiological damage or disruption to behaviour patterns of sensitive marine fauna.	Low risk. Survey scheduled to avoid peak whale migration periods. Implementation of DEWR (now DEWHA) Guidelines for Interactions Between Offshore Seismic Exploration and Whales.
Collision with a cetacean or turtle or entanglement on towed equipment	Physiological damage or death of an individual	Low risk. Survey scheduled to avoid peak whale migration periods. Implementation of DEWR (now DEWHA) Guidelines for Interactions Between Offshore Seismic Exploration and Whales.
Diesel loss through rupture of vessel fuel tanks	Acute/ chronic toxic effect on marine organisms from hydrocarbon loss.	Low risk. Seismic survey vessel uses sophisticated navigation equipment and has a support vessel to aid navigation and interactions with other maritime users.
Quarantine-Introduction of exotic marine species	Alteration to community composition and function – competition with indigenous species.	All vessels will comply with Australian quarantine laws. Ballast exchanges conducted outside the Australian 12 nautical mile limit.

MANAGEMENT APPROACH

The marine seismic survey will be conducted in accordance with all legislative and regulatory requirements, to the satisfaction of the DoIR. Esso's overall environmental objective for the programme is to avoid or minimise environmental risks to as low as reasonably practicable (ALARP). The environmental management approaches relevant to each aspect of the seismic acquisition programme are summarised in Table 2.

CONSULTATIONS

The consultations with regards to the seismic activity in and around the Permit Area of WA-318-P have been undertaken with relevant stakeholders. The lists of the stakeholders are as follows:

- Australian Maritime Safety Authority (AMSA), Canberra;
- Australian Fisheries Management Authority (AFMA);
- Western Australia Department of Fisheries;
- Western Australia Fishing Industry Council;
- Western Australian Northern Trawl Owners Association;
- Commonwealth Fisheries Association;
- Northern Fishing Companies Association;
- Austral Fisheries Pty Ltd.;
- A. Raptis and Sons;
- Northern Prawn Fishery (Qld) Trawl Association;
- NPF Industry Pty Ltd;
- Northern Territory Trawler Owners Association;
- Northern Territory Seafood Council;
- Recfishwest;
- Tourism Western Australia;
- Australia North-West Tourism;
- Kimberley Marine Tourism Association;
- Tourism Northern Territories

The consultations indicated that conflicts with other users within the seismic survey area are unlikely as little or no recreational fishing occurs, no commercial tourism activity occurs in the vicinity and no major shipping routes exist. The Northern Prawn Fishery season will commence sometime in August 2008 and therefore the seismic survey is not expected to extend into that season.

FURTHER DETAILS

Enquiries on Esso's 2D marine seismic survey should be addressed to:

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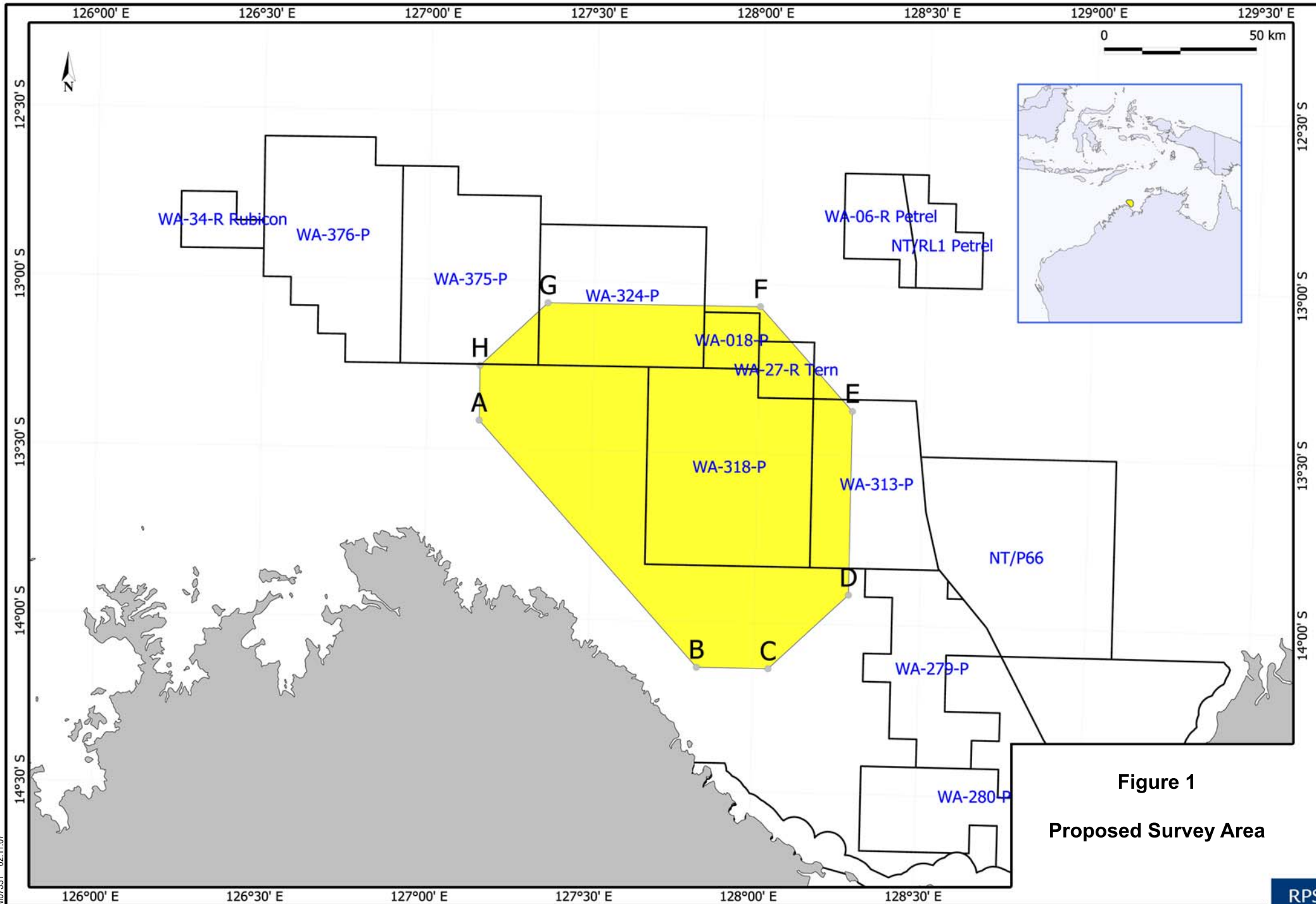


Figure 1
Proposed Survey Area