Beach Petroleum Limited

Bernoulli 3D Seismic Survey

Environmental Plan
Executive Summary

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The Proponent

Beach Petroleum Limited (Beach Petroleum) is the designated operator for proposed seismic data acquisition in offshore petroleum permit area VIC/P46 on behalf of joint venture partners Essential Petroleum Resources Pty Ltd (25%) and Mitwell Energy Resources Pty Ltd (25%).

Beach Petroleum is a publicly listed oil and gas exploration and production company with interests in exploration and production tenements within Australia, New Zealand and Papua New Guinea.

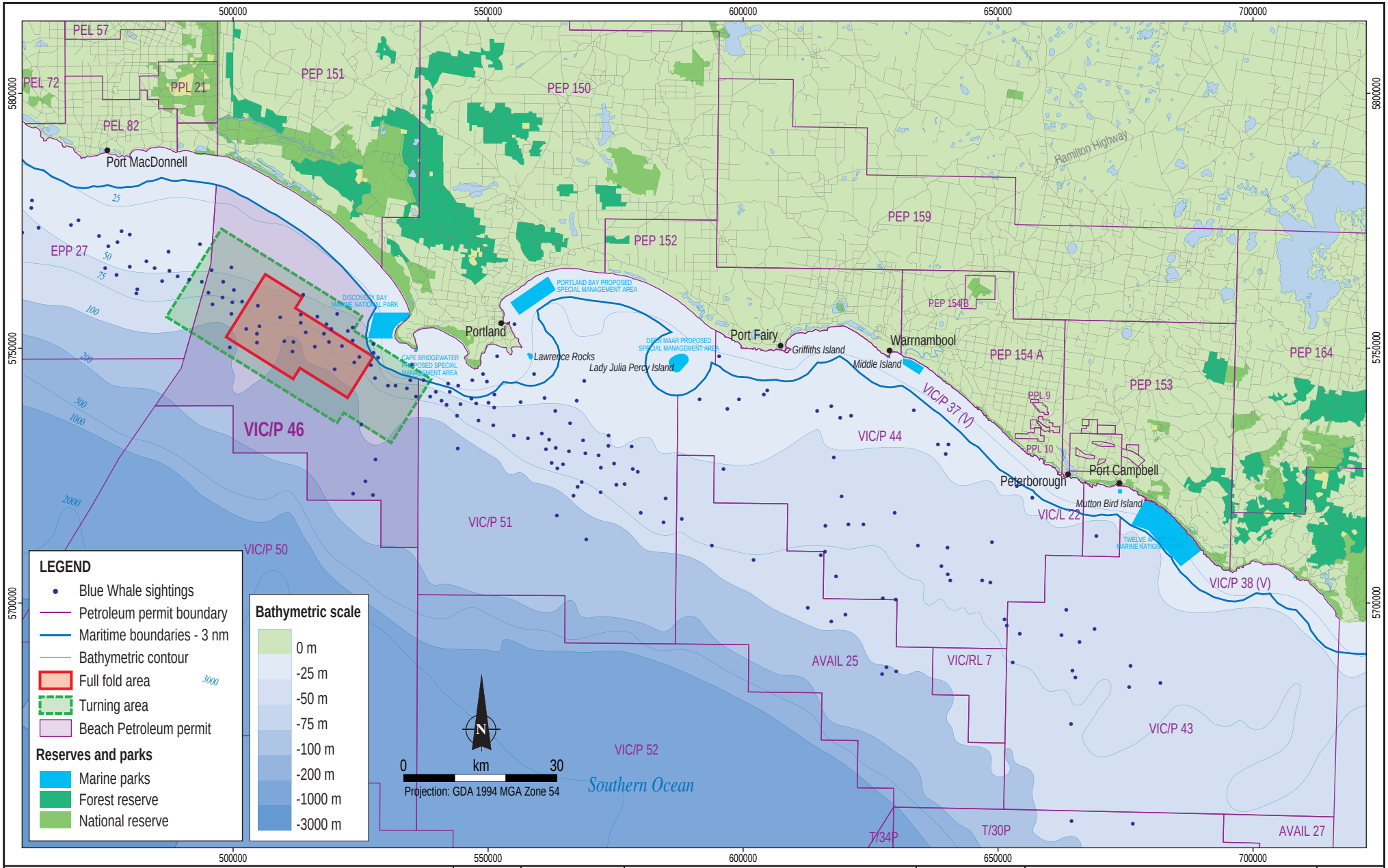
The Proposal

Beach Petroleum Limited (Beach Petroleum) proposes to acquire approximately 320 km^2 of three-dimensional (3D) marine seismic survey data, within Victorian Petroleum Permit Area VIC/P46 in the in the Otway Basin of western Bass Straight (Figure ES1). The duration of the survey will be approximately 15 days, during the period May 2007 to June 2007. The precise commencement and completion dates are dependent upon vessel availability and weather conditions.

The survey will be undertaken in Commonwealth waters, approximately 26 km west of Portland and 6 km southwest from the nearest landfall, in water depths ranging from approximately 60 m to 150 m.

The vessel will tow eight hydrophone cable streamers each 5,400 m long, with a streamer separation of 100 m and a sail line spacing of approximately 800 m. The hydrophone cable streamers travel about 8 m below the sea surface controlled by mechanical devices called ‘birds’ to maintain the travel depth, and prevent the equipment from making contact with the seabed. The vessel will be required to make all turns outside of the proposed exploration area at the completion of each transect pass, due to the required turning circle of the vessel with cables in tow and the need to obtain full seismic coverage of the exploration area. At no time will the vessel or streamers enter the Discovery Bay Marine National Park.

A support vessel will permanently be on station to ensure that in the event of loss of power (or other malfunction), streamers are recovered immediately and not allowed to sink or wash inshore. A smaller scout vessel, or vessels will also be used for warning smaller boats, scouting potential hazards, streamer cable maintenance and minor logistics.



enesar people and place	Job No: 1255	Beach Petroleum	BEACH PETROLEUM	Location of survey area
	File No: 1255_02_ES01_HB	Vic/P46 Seismic Survey		Figure No: ES1

Background

Seismic exploration is undertaken to map the subsurface geology of an area and enable identification of potential petroleum reservoir rocks, such as sandstones. Marine seismic surveys are conducted using a specialised seismic survey vessel towing an acoustic source, which involves a sudden release of compressed air every 7-8 seconds and one or more hydrophone detector cables towed behind the vessel. During a seismic survey, the acoustic pulse is directed downwards to the seabed and reflected from the boundaries separating the rock layers in the subsurface, and the reflected signals are recorded by many hydrophones towed in a cable several kilometres long.

Stakeholder Consultation

In the course of planning the proposed seismic program, Beach Petroleum has to date undertaken extensive consultation with relevant stakeholders in the region to identify regulatory processes, potential environmental issues and management requirements. Beach Petroleum will undertake ongoing consultation to ensure the seismic survey management arrangements and communications are in place.

Stakeholders of relevance to the Bernoulli 3D Seismic Survey include:

- Commonwealth Government:
  - Department of Environment and Water Resources (DEW).
- Victorian State Government:
  - Department of Primary Industries (DPI) Fisheries.
  - Department of Primary Industries (Minerals and Petroleum Regulation Branch).
  - Department of Sustainability and Environment.
- Commercial fishing and other groups:
  - Portland Professional Fishermen's Association.
  - Port MacDonnell rock lobster fishers.
  - Portland DPI Regional Fisheries Officer.
  - Seafood Industries Victoria.
  - VRFish.
  - Deakin University (Warrnambool) blue whale research group.
- Consultation and information dissemination has been, and will continue to be, undertaken through a range of media including:
  - Meetings with regulators.
  - Meetings and correspondence with key stakeholders.
  - Invitation for public comment on the EPBC referrals via the DEW website.
  - Provision of detailed survey maps.
  - Daily schedule communications to fishing operators.
  - Vessel communication systems with maritime traffic.

Further consultation with the above groups and others, including Australian Fisheries Management Authority (AFMA) and Australian Maritime Safety Authority (AMSA) as necessary will follow APPEA and DEW Guidelines and occur up to and during the time of the survey.

Beach Petroleum has also sent letters to several fishing industry organisations, advising them of the survey and has also prepared (April 2007) information sheets for distribution to recreational fishing associations in Portland and Port MacDonnell, as well as other (fuel/bait/tackle) outlets used by recreational anglers. A locally based person has been appointed to assist with this process.

Environmental Impact Assessment

Referral and assessment of the Bernoulli 3D Seismic Survey under the EPBC Act by the DEW determined on 1 November 2006 that the project was not a 'controlled action' (Referral 2006/3053).

The components of seismic surveys and survey-related activities that could result in environmental and social impacts include:

- High intensity sound discharges.
- Physical presence of seismic vessel.
- Waste discharge.
- Hydrocarbon and/or chemical spills.
- Exhaust emissions.

The potential environmental and social issues related to these activities include:

- Disturbance to marine fauna causing:
  - Changes to behavioural ecology of species (feeding, breeding, migration patterns).
  - Physical damage (i.e., lethal effects, pathological damage, injury).
  - Low level contamination/toxicity of marine fauna.
- Disturbance to benthic habitats:
  - Damage and/or destruction of seafloor habitats and palaeo-environments from anchoring, grounding and accidental loss of streamers and associated equipment.
  - Low level contamination/toxicity of benthic habitats.
  - Changes in water quality.
- Interference with shipping, boating and fishing in the area.
- Interference with oil and gas production infrastructure (existing or under construction).
- Introduction of exotic marine species.
- Emissions to air as a result of exhaust emissions from vessels.

The effects of acoustic signals have been well researched in the scientific literature. The Environmental Plan provides a detailed assessment of the potential impacts. The salient points of the assessment are summarised below.

Marine Fauna

- The survey will be conducted between May to June 2007, potentially occurring after the end of the blue whale summer migration period in south-west Victoria, and prior to the main period of arrival of southern right whale.
- Department of the Environment and Water Resources guidelines for managing interactions between offshore seismic operations and larger cetaceans will be applied, including a dedicated whale observer on board. All whale sightings will be reported to the DEW.
- Impacts to marine fauna (including fish, invertebrates and larvae) from the air source discharge are unlikely outside of the immediate vicinity of the source (i.e., 1-5m). Most species display some avoidance behaviour by moving laterally or into deeper water. Soft start-up procedures will enable marine fauna such as fish and cetaceans to escape potentially harmful exposure.
- Potential for fuel or oil spills is negligible.
- The survey is scheduled for a 15 day period, representing a temporary and low risk.

Navigation Safety

- The period of any displacement or disturbance to local boat traffic will be limited to the short duration of the survey.
- A support vessel will conduct reconnaissance scouts ahead of the survey vessel and will be in attendance in case of loss of power to main vessel.
- The hydrophone cables will be tracked via GPS to monitor their location (assisting retrieval if one or more become severed).
- All vessel operations will be conducted in compliance with the Australian Maritime Safety Authority (AMSA) Offshore Support Vessel Code of Safe Working Practice (OSV Code), which includes regular Notices to Mariners and standards for radar monitoring and vessel communications.
- Watch will be maintained on the survey vessel for other craft.
- The vessel will undergo regular anti-fouling of the hull. Verification of this will be provided by the survey contractor, who will advise when anti-fouling paint was last applied.

Waste Discharge

- Sewage and putrescible wastes will be treated and disposed in Commonwealth waters in accordance with MARPOL regulations.
- Solid inert combustible wastes will be incinerated on-board. Non-combustible solids will be returned to shore for disposal.
- Any spills will be recorded in a wastes and emissions log, reported to Beach Petroleum and regulatory authorities advised in accordance with regulatory requirements.

- Survey vessel will not take on or discharge ballast water.

Small Volume Spill

- An Oil Spill Contingency Plan (OSCP) and Emergency Response Manual is held on the vessel and staff are appropriately trained in its execution and in the use of oil spill response equipment.
- No at-sea refuelling is planned for the survey. Port refuelling operations will be monitored by the vessel's Master or First Officer.

Commercial Fisheries

- Marine species are commercially harvested from the Bernoulli 3D Seismic Survey area. The commercial fisheries present within the survey area include the southern rock lobster fishery, the giant crab fishery, the abalone fishery, the south east fishery, the gillnet, hook and trap fishery, the southern squid jig fishery and the eastern tuna and billfish fishery.
- Some deep-water species may be fished by trawling in the survey area.
- The seismic vessel will temporarily displace commercial and recreational fishing vessels in the survey area.
- Through prior consultation, fishing operators are aware of the survey and can plan their fishing activities accordingly.
- Regular communication with fishing groups and provision of coordinates of survey area to fishermen will minimise potential impacts to commercial fishing activity.

Recreation and Tourism

- The seismic vessel will not significantly impact on visual amenity (i.e. sightseeing).
- Interference to boating, surfing, diving, snorkelling and swimming activities is unlikely but may occur. The recommended operating buffer of 1,500 m advised for surfing, diving, snorkeling and swimming will be enforced.

In summary, the seismic exploration program proposed by Beach Petroleum will not result in detrimental impacts to populations of marine fauna or commercial fisheries in the vicinity of the survey area.

Contact Details

Please direct all queries, comments or request for a copy of the approved Bernoulli 3D Seismic Survey Environmental Plan to:

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