Beehive-1 Exploration Well

Information Flyer #5

27 June 2022

EOG Resources Australia Block WA-488 Pty Ltd, a subsidiary of EOG Resources, Inc. (together 'EOG') as the Titleholder of Exploration Permit WA-488-P is planning to drill the Beehive-1 exploration well ('the project') in the Joseph Bonaparte Gulf in Western Australia (WA) (Figure 1, over page).

Why We're Consulting You

EOG has previously consulted with you, your group, organisation or company as a 'relevant person', defined under the Offshore Petroleum and Greenhouse Gas (Environment) Regulations 2009 as someone whose functions (power, duty, authority or responsibility), activities (things you do or have done) or interests (your rights, advantages, duties and liabilities, or concerns) may be affected by the project. Relevant persons typically include Commonwealth, State and Territory government agencies, commercial and recreational fisheries, and asset owners.

This information flyer provides an update on the project.

Who is EOG?

EOG is one of the largest independent crude oil and natural gas exploration and production companies in the United States of America (USA). EOG acquired the WA-488-P exploration permit from Finniss Offshore Exploration Pty Ltd in November 2021 with the aim of exploring known hydrocarbon prospects in the Bonaparte Basin.

EOG has operated offshore since 1992, with a history of nearly 30 years in Trinidad & Tobago, the UK North Sea and the USA Gulf of Mexico. In the past 10 years, EOG has drilled nearly 40 offshore wells, with an excellent safety and environment record.

The Project

EOG aims to explore a known hydrocarbon prospect in WA-488-P located in the Bonaparte Basin. The project includes geophysical and geotechnical investigations to characterise the seabed (collectively known as Pre-Drill Seabed Assessment or PDSA), prior to drilling an exploration well.

The *Beehive PDSA Environment Plan* (EP) for the geophysical and geotechnical investigations was accepted by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) on 2 March 2022 (link) and is approved for activities up till August 2022. The geophysical investigations are currently underway and are expected to be completed soon.

The geotechnical investigations are now expected to commence by Q2 2023, therefore EOG will prepare and submit a new EP for submission to NOPSEMA.

This information flyer is focused on the new EP for the geotechnical investigations. Additional information flyers will be issued as the project progresses.

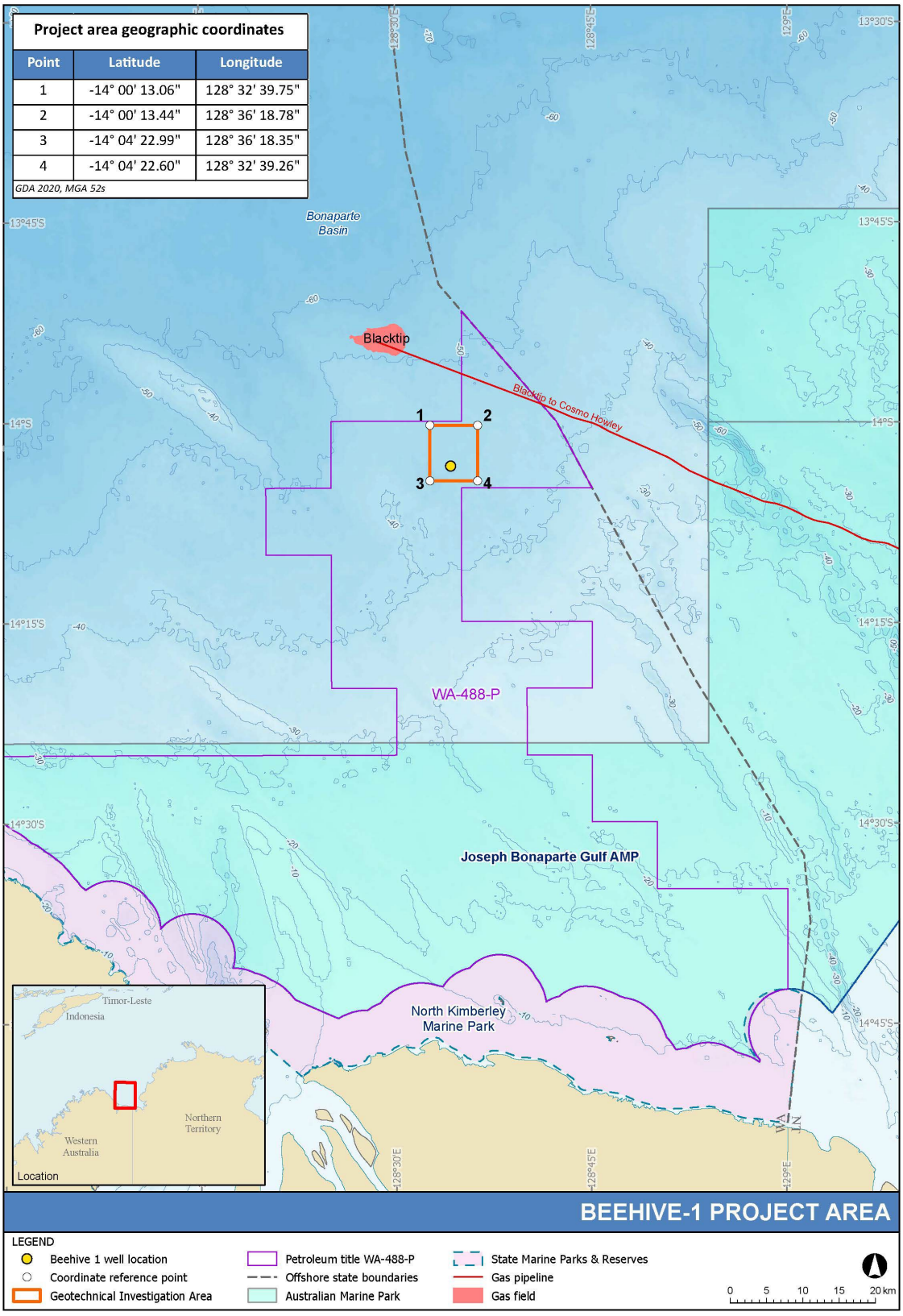

Figure 1. Beehive-1 project area

Geotechnical Investigation

The geotechnical investigations are planned to commence any time prior to Q2 2023 (contingent on the receipt of EP acceptance, vessel and equipment availability). They will be undertaken within a small area (approximately 50 km^2) located 77 km from the nearest WA shoreline and 87 km from the nearest Northern Territory (NT) shoreline. Water depths in the project area range from 40 m to 50 m.

The geotechnical investigations acquire physical measurements and samples of the local shallow geology at and around the potential drill location, using the following techniques (Figure 2):

- Geological analysis of unconsolidated seabed sediments – using grab sampling.
- Geological analysis of formations below the seabed – using coring.
- Determine seabed strength – using piezo cone penetrometer testing (PCPT) and borehole sampling.

The geotechnical investigations are undertaken using a specialised medium-sized vessel and are likely to take up to two weeks to complete.

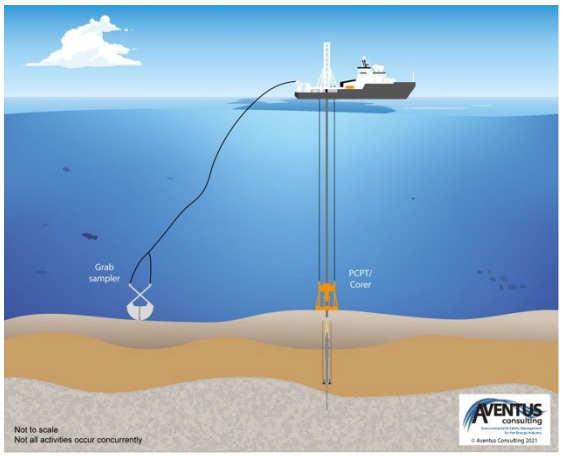

Figure 2. Geotechnical investigations

Drilling

Planning for the drilling campaign is underway. The Beehive-1 well is targeting the Sunbird Formation and anticipates the presence of a light oil or gas condensate.

A jack-up drill rig will drill the well vertically to a depth of about 5,000 m using a water-based mud system, which will take 40-50 days. In the event that hydrocarbons are discovered, well testing (that involves flaring) may take place.

It is anticipated that drilling will commence by Q3 2023 (contingent on the receipt of EP acceptance, vessel and equipment availability). Further details about the drilling campaign will be provided in future information flyers as planning progresses.

Environment Plans

As noted above, the *Beehive PDSA EP* was accepted by NOPSEMA on 2 March 2022. The EPs for the *Geotechnical Investigations* and for *Exploration Drilling* are currently being prepared. These will be submitted to the NOPSEMA for assessment. The *Exploration Drilling EP* has previously been made available on NOPSEMA's website for public exhibition prior to formal assessment by NOPSEMA.

An EP is a comprehensive document that describes the project, outlines stakeholder feedback, details the existing marine and socio-economic environment. It describes and assesses impacts and risks and outlines the control measures to avoid, minimise and mitigate environmental impacts and risks to be acceptable and ALARP (As Low As Reasonably Practicable).

The project will be subject to industry best practice standards and undertaken in accordance with all relevant environmental and safety legislation and regulations.

Features of the Project Area

Features in the project area include:

- Dominated by the Indonesian Throughflow current and strong tides.
- A seabed dominated by flat featureless plains comprising sand and gravel, with localised reefs and outcrops supporting sponge gardens. The plains contain diverse infaunal communities (e.g., crustaceans and polychaete worms).
- Seasonal presence or likely presence of threatened migratory species including turtles, sharks, sawfish, whales, dolphins and seabirds.
- Low-intensity commercial fishing by the Commonwealth managed Northern Prawn Fishery (the project area has a 0.006% overlap with the fishery).
- Some commercial fishing by the WA managed fisheries, including the Northern Demersal Scalefish Managed Fishery and the Mackeral Managed Fishery.
- An absence of NT managed commercial fisheries.
- An absence of known shipwrecks.
- Low commercial shipping traffic.
- An overlap by the Department of Defence North Australian Exercise Area.

Distances from the project area to the following features are:

- The Carbonate bank and terrace system of the Sahul Shelf Key Ecological Feature (KEF) – 13 km.
- The Blacktip unmanned wellhead platform – 13 km.
- Joseph Bonaparte Australian Marine Park (AMP) – 31 km.
- WA North Kimberley Marine Park – 64km.

The geotechnical investigations will provide more detail about the type of seabed in the project area. A summary of key impacts and risks from the geotechnical investigations is presented in the following pages.

How to Provide Feedback

EOG encourages you to ask questions or provide feedback on the project using the following contact details:

General Inquiries:
australia@eogresources.com

PDSA Specific Inquires:
australia_pdsa@eogresources.com

Phone: 0409 772 170

EOG will respond to feedback in a timely fashion.
Additional background project information (and this information flyer) is also available on the EOG website at:
https://www.eogresources.com/australia

Ongoing Consultation

Consultation with relevant persons will be ongoing throughout the project, with additional information flyers to be distributed at various milestones, and in response to any potential changes in the project

Preliminary environmental impact and risk assessment for the Beehive-1 geotechnical investigations (WA-488-P)

Hazard	Potential impacts & risks	Avoidance, management and mitigation measures
Planned events		
Generation of underwater sound from the geotechnical investigations and vessels	Minor, temporary and localised disruption to migration, feeding or breeding patterns for sound-sensitive fauna, such as cetaceans (whales and dolphins).	• Vessel engines and thrusters will be maintained in accordance with planned maintenance system to ensure they are operating efficiently. • Geotechnical activities produce negligible underwater noise. • The activity is expected to take no more than 2 weeks.
Seabed disturbance from geotechnical activities	Temporary and localised seabed turbidity. Smothering of seabed habitat by disturbed sediments.	• The vessel will not anchor during geotechnical investigations (it will remain on location using dynamic positioning). • Very low volumes of cuttings and drilling fluids will be discharged during borehole sampling. • Seabed grab sampling and coring activities are extremely localised. • Cored holes are very narrow and will collapse in on themselves and small surface 'craters' will quickly fill in with sediments and recolonise with benthic fauna. • Large bulky items will be securely fastened or stored on the vessel deck to prevent loss to sea. • Any dropped objects will be recovered (where safe to do so).
Routine vessel discharges and emissions		
Atmospheric emissions	Temporary reduction in air quality in the local air shed.	• Vessels >400 gross tonnes will have in place a current International Air Pollution Prevention (IAPP) certificate and Ship Energy Efficiency Management Plan (SEEMP). • Only marine-grade low sulphur diesel (no greater than 0.5% m/m) will be used. • Waste incineration will not take place. • All fuel-burning equipment will be maintained in accordance with planned maintenance systems.
Light glow	Attractant to fauna, temporary increase in predation rates on fauna attracted to lights.	• Vessel lighting will be kept to the minimum required but in accordance with navigational standards and personnel safety requirements for night-time work.

Hazard	Potential impacts & risks	Avoidance, management and mitigation measures
Discharge of treated sewage and grey water	Temporary and localised reduction in water quality.	• Sewage and grey water will be treated in a MARPOL Annex IV compliant sewage treatment plant prior to discharge (or taken back to port for disposal). • Vessels >400 gross tonnes will have in place a current International Sewage Pollution Prevention (ISPP) certificate. • In the event of a sewage treatment plant malfunction, untreated sewage will only be discharged when > 12 nm from shore or will be offloaded onshore for treatment.
Discharge of cooling water and reverse osmosis (brine)	Temporary and localised elevation in surface water temperature and salinity levels.	• Low impact biocides (chlorine) are used in optimised concentrations in the cooling system. • Engines and associated equipment that require cooling by water will be maintained in accordance with the planned maintenance system so that they are operating within accepted parameters. • Only low-toxicity chemicals (ONCS 'Gold'/'Silver' (CHARM) or 'D'/'E' (non-CHARM)-rated) chemicals are used in the cooling and brine water systems.
Discharge of putrescible waste	Temporary and localised increase in nutrient content of surface and near surface water quality. Temporary increase in scavenging behaviour of pelagic fish and seabirds.	• Putrescible waste will be macerated to <25 mm prior to discharge (or taken back to shore for disposal). • In the event of macerator malfunction, un-macerated putrescible waste will take place will be discharged when >12 nm of land or returned to shore. • Non-putrescible galley waste will be returned to shore for disposal.
Discharge of bilge water and deck drainage	Temporary and localised reduction in water quality.	• Vessels >400 gross tonnes will have in place a MARPOL Annex I compliant oily water separator set to limit oil-in-water content to <15 ppm prior to discharge. • Vessels >400 gross tonnes will have a current International Oil Pollution Prevention (IOPP) certificate. • No whole residual bilge oil is discharged overboard (residual oil from the oily water separator is pumped to tanks and disposed of onshore). • Chemical storage areas will be bunded and drain to the bilge tank. • Portable bunds and/or drip trays are used to collect spills or leaks from equipment that is not contained within a permanently bunded area (non-process areas). • Deck cleaning detergents will be biodegradable. • Spills to decks will be cleaned immediately using Shipboard Marine Pollution Emergency Plan (SMPEP) kits.

Hazard	Potential impacts & risks	Avoidance, management and mitigation measures
Unplanned events		
Accidental overboard release of hazardous and/or nonhazardous waste from the vessels	Marine pollution (litter and a temporary and localised reduction in water quality). Injury and entanglement of individual animals (such as seabirds and turtles) and smothering or pollution of benthic habitats.	• Vessels >100 gross tonnes or certified to carry more than 15 people will have in place and implement a vessel-specific Garbage Management Plan. • Vessel crew and visitors will be inducted into the waste management procedures. • A waste manifest will be maintained. • Only small volumes of chemicals will be kept on board and will be stored in secured drums in bunded areas away from open drains. • Bunded areas will drain through a closed system, processed through the oily water separator. • Safety Data Sheets (SDS) will be available in appropriate locations. • SMPEP kits will be available on board for rapid deck clean-up response.
Introduction of invasive marine species from the vessel hulls and/or ballast water	Reduction in native marine species diversity and abundance. Displacement of native marine species. Socio-economic impacts on commercial fisheries. Reduction of conservation values of protected areas.	• Vessels will carry a low risk of invasive marine species introduction (as determined through a vessel contractor prequalification report). • Vessels >400 gross tonnes will carry a current International Antifouling System (IAFS) Certificate and comply with Marine Order Part 98 (Anti-fouling Systems). • The vessel/s will comply with the: o Australian Ballast Water Management Requirements (DAWR, 2020); and o National Biofouling Guidance for the Petroleum Production & Exploration Industry (AQIS, 2009). • Towed/submersible equipment will be cleaned (e.g., fouling is removed) prior to initial use in the project area.
Vessel strike with megafauna (e.g., whales, dolphins, turtles)	Injury or death of individual animals.	• The Australian Guidelines for Whale and Dolphin Watching (DEWHA, 2005) for sea-faring activities will be implemented, which includes caution and no-approach zones around whales and dolphins. • Vessel strike causing injury to or death of a cetacean is reported via the online National Ship Strike Database within 72 hours of the incident. Vessel strikes of megafauna in NT or WA waters is reported to the NT Marine Wildwatch on 1800 453 941 (or WA's Wildcare on 08-9474 9055) as soon as possible. • Vessel crew will complete an environmental induction covering the above-listed requirements.

Hazard	Potential impacts & risks	Avoidance, management and mitigation measures

Displacement of or interference with third party vessels	Temporary loss of fishing grounds around the vessel safety zone.	• The project area is located in an area with low levels of shipping traffic and low fishing effort.
		• A 'Notice to Mariners' will be issued.
		• Standard maritime safety precautions will be in place, including:
		  ○ Radar and other anti-collision monitoring equipment to detect other vessels.
		  ○ Display of lights and day shapes.
		  ○ The ability to quickly move off location to avoid other vessels.
		  ○ Warnings issued (radio, flares, lights and horns) to avoid collisions.
		  ○ The Vessel Master will be qualified in accordance with AMSA Marine Orders Part 3 (Seagoing qualifications) (e.g., International Convention of Standards of Watchkeeping for Seafarers, STCW95, GMDSS Proficiency).
		• The vessel master will sound the general alarm, manoeuvre the vessel to minimise the effects of the collision and implement all other measures as outlined in the vessel collision procedure.
		• Vessel collisions will be reported to AMSA if that collision has or is likely to affect the safety, operation or seaworthiness of the vessel or involves serious injury to personnel.

Diesel release due to a vessel-to vessel collision	Temporary and localised reduction in water quality. Tainting of commercial fisheries species. Injury and/or death of marine fauna and seabirds. Pathological effects on fish larvae and plankton.	• *As per 'displacement of or interference with third-party vessels', plus:* • No refuelling will take place on location. • Vessel crew will be trained in spill response techniques in accordance with the SMPEP and vessel training matrix. • Diesel spill trajectory modelling indicates a very small area of ecological impact in the event of the loss of a whole tank of fuel. • An Oil Pollution Emergency Plan (OPEP) will be developed based on the spill modelling results. • Vessel-specific SMPEP and project-specific OPEP will be implemented in the event of a large spill. • EOG will report the spill to regulatory authorities within 2 hours of becoming aware of the spill.