Norwegian Oil Company Equinor plans to drill in the GAB next year but has not published its safety plans: BP’s 2016 well plan proves safe Bight drilling is a myth

- BP modelling shows a Bight oil spill could release more than twice the amount of crude oil that entered the Gulf of Mexico after the Deepwater Horizon disaster.
- Critical equipment needed to ‘cap’ a well blow out could not be deployed in seas greater than 3.5m which at the proposed well site in the Great Australian Bight occurs on average more than a third of the time, or 122.8 full days per year.
- While a ‘harsh environment’ rig would be used to drill, it is “highly unlikely” a second harsh environment rig could be found to drill a relief well and ‘kill’ the leak if a loss of well control were to occur.
- The pressures and temperatures an oil company will encounter when drilling in the Bight are subject to “significant uncertainty” due to the experimental and unprecedented nature of the project leading to heightened risk of a loss of well control.
- The well operations management plan was accepted by NOPSEMA in 2016 for the BP well-site currently held by Equinor and which Equinor plans to drill in 2019.
- These documents have been released after a two year FOI battle by Greenpeace Australia Pacific starting in August 2016.

Executive Summary

Oil companies, with the assistance of the regulator, have waged a legal battle for more than two years to hide details of how dangerous and risky drilling by any oil company would be in the Great Australian Bight and how difficult it would be to respond in the event of an accident. Greenpeace Australia Pacific has obtained BP’s 2016 plan to prevent and respond to an oil spill in the Great Australian Bight after first lodging a freedom of information request with the national offshore oil regulator, NOPSEMA, in August 2016. Aside from indicating the inherent risks associated with oil drilling in the Great Australian Bight, the process highlights the worrying approach to transparency when it comes to oil and gas exploration.

The information in this document repeatedly refers to the “significant uncertainty” of the experimental project in particular around the pressures and temperatures, factors that contribute to higher risk of an accident, any oil company would encounter in the ultra-deepwater well Equinor intends to drill next year. It explicitly outlines that critical equipment needed to halt or contain a spill such as capping stacks and relief wells, the sourcing of which itself being uncertain, would be unable to be used in the harsh conditions of the Bight much of the time.
The well operations management plan (WOMP) reveals for the first time that the oil company’s own modelling showed the volume of oil that could escape into the environment could be more than twice the amount that entered the Gulf of Mexico after the Deepwater Horizon disaster in 2010 - 7.9 million barrels (941 million litres) compared with 3.2 million barrels.

Background

Before proceeding with exploratory oil drilling a permit titleholder must have a safety case, well operations management plan (WOMP), and environment plan (EP) accepted by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). The WOMP outlines risks and how an oil company will manage risks, ensure well integrity, and respond in the case of a loss of well integrity (such as a well blow out). NOPSEMA requires that a WOMP reduces risks to as low as reasonably practicable (ALARP) and notes for example that “a higher level of risk or uncertainty should result in an equivalently higher level of detail in the WOMP. For example, greater detail might be expected regarding a high pressure high temperature (HPHT) well versus a normally pressured well.”

BP’s WOMP was accepted by NOPSEMA in May 2016. However, BP’s EP was not accepted by NOPSEMA after three submissions and in November 2016 BP abandoned its plans to conduct exploration activity. In 2017 it transferred two of its permit titles to Equinor, including EPP39 and the well-site Stromlo-1, to which this WOMP applies. Equinor has confirmed that Stromlo-1 is its target well-site and it plans to drill from November 2019, subject to approval of its own WOMP, Safety Case, and EP. Equinor is currently consulting with stakeholders it has deemed relevant ahead of submitting its EP.

Transparency

Greenpeace Australia Pacific requested a copy of BP’s WOMP via a freedom of information (FOI) request to NOPSEMA in August 2016 when Equinor, then known as Statoil, was a joint venture partner with BP and BP’s intention was still to begin exploration drilling by end of year.

NOPSEMA’s initial decision was a partial refusal of the document, redacting approximately 65 out of 130 pages. The statement of reasons for refusal included as valid considerations: That the information in the document is “highly technical in nature”, that it contained “specific technical requirements to ensure the integrity of the well, rather than containing information about BP’s plans for managing risks to the environment,” and “the likelihood of opposition/protest groups using the information to oppose all drilling activities in the Great Australian Bight.” None of the above are valid reasons for non-disclosure of information that is in the public interest. Moreover, disclosure of safety information contained in proposals for high-risk activity is especially critical given independent scrutiny is accepted as a condition of safe assessment following reviews of accidents like Deepwater Horizon and Australia’s Montara spill.
In January 2017 Greenpeace Australia Pacific requested a second review by the Office of the Australian Information Commissioner (IC) which was accepted in July 2017. During the course of the IC review NOPSEMA again objected to the release of the WOMP after consultation with BP and new titleholders Statoil on the grounds of protecting commercially sensitive information and arguing that disclosure could “prejudice the future supply of information to NOPSEMA.” In July 2018 the IC review notified Greenpeace Australia Pacific that it expected to make a decision on disclosure of the WOMP in late August. In late August 2018 the IC informed Greenpeace Australia Pacific that NOPSEMA had reversed its initial decision in favour of full release of the WOMP.

What’s in the WOMP?

Reservoir characteristics

- The Bight’s basin is a frontier area with no history of drilling into the proposed geological layers/strata resulting in, “significant uncertainty in the prognosed temperature gradient.” (3.1.7)
- There is also no “relevant top-down fluid data” meaning there is “significant uncertainty in all fluid predictions.” (3.1.9)
- In short, BP acknowledged, and NOPSEMA accepted, that as this is a *rank wildcat* (exploratory well drilled in a basin where no other wells, or too few wells to define the basin, have been drilled) drilling proposal, the pressures and temperatures they might encounter cannot be predicted without “significant uncertainty.”
- Nonetheless BP provides estimated “high-case” maximum reservoir temperature and pressure estimations of 97 C and 10,180 PSI respectively. (Table 6)

Temporary abandonment

- “the weather conditions in the Great Australian Bight may not provide enough time to run” the operator’s preferred well abandonment procedure. (6.3.8)
- BP - who previously were planning to drill at this site - acknowledges that it has experienced this situation in the North Sea where “weather events are more frequent” than in the Great Australian Bight, but “usually less severe (storms rather than cyclones or hurricanes).” (my emphasis) (6.3.8)

Blowout contingency measures

- The worst case discharge scenario estimated an average flow rate of 54 thousand barrels of oil a day (mbd) (12.1, Table 32)
- Cumulatively this would amount to 1.9 mmstb (million barrels) of oil after 35 days (the estimated time it would take to get a capping stack in place, presuming all goes well) and 7.9 mmstb after 149 days (the time it would take to drill a relief well). (Table 32) This would equate to more than double the oil estimated to have spilled following the Deepwater Horizon blow out (3.19 mmstb) in 2010.

Cap and containment plan
The first response stage in the case of a loss of well control under BP’s plan was to intervene with a blowout preventer (BOP) which BP stated “must occur within 48 hours of a WCD event.” (12.2) To complete the BOP intervention would require a remote operated vehicle (ROV) to be mobilised via a supply vessel.

The second element BP proposed was to, within 10 days, inject subsea dispersant into the flowing oil at the well-site to reduce the slick on the surface (but not reduce the quantity of oil entering the environment, most of which does not reach the surface or shore anyway but remains in the mid-level sea column or sea-bed).

BP said the dispersant would be delivered by “vessels of opportunity” but notes that the “10 day timeline requirement may not be met... due to met ocean conditions in the GAB” (12.2). In a subsequent EP rejection NOPSEMA noted that BP had not demonstrated that it could rely on vessels of opportunity. Given the lack of available vessels in the region, any operator would face similar challenges.

The third element of cap and containment is to deploy a capping stack - the operator specified a 10,000PSI rated OSRL capping stack located in Singapore which BP admitted would take 35 days to deliver and install. (12.2) The capping stack would be shipped from Singapore to Perth then moved to a construction vessel for deployment. (12.2) Sourcing a suitable construction vessel is subject to uncertainty, BP stating at the time that, “times relating to the sourcing and readiness of a suitable subsea construction vessel are estimates based on potential regional availability.”(12.3.3)

“overboarding [deployment] of the capping stack would be limited by a maximum sea state of around 3.5-4m. Any sea state at the wells site beyond this may necessitate ‘waiting on weather’ (WOW) delays.” (12.3.3)

According to Bureau of Meteorology wave data for the proposed Stromlo 1 well site in the Great Australian Bight, between 1 January 2015 and 30 September 2018, the site experienced a significant wave height of above 3.5m for 11025 hours: i.e. 33.6% of the time, or an average of 122.8 full days per year.

A capping stack is only intended as a temporary intervention, deployed (and itself subject to failure) while a relief well is drilled in order to kill the well.

BP admits that “as harsh environment rigs are rare it is extremely unlikely one will be available in a short time frame for a relief well” and that by using a non harsh environment rig “downtime due to waiting on weather would be increased (particularly during winter).” (12.3.5)

Conclusion:

- It is clear that BP’s WOMP as approved was insufficient to protect the Bight in the case of a worst-case accident and NOPSEMA’s approach to assessing ALARP should be reviewed.

- Failure to release information in the WOMP for public scrutiny, including details around the reservoir characteristics, is unsafe - the OPGS Act should be amended to require a public consultation around WOMPS and Safety Case.
BP’s WOMP shows that the level of uncertainty around well characteristics, met ocean conditions, and the availability of critical safety equipment means that any oil company would face similar hurdles, and given its globally significant ecosystem and the communities that rely upon it, Bight drilling should be ruled out as fundamentally unsafe.