

CORALLIAN ENERGY LIMITED: COLTER APPRAISAL WELL INFORMATION ON KEY CONCERNS

Overview

1. The Colter Appraisal Well Environmental Statement (ES) was submitted to the BEIS Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) by Corallian Energy Limited (Corallian), and was subject to consultation and public notice in compliance with the EIA Regulations. Consultees and interested stakeholders had 30 days in which to make representations to the Secretary of State, and the consultation period ended in February 2018.
2. The Joint Nature Conservation Committee (JNCC), Natural England (NE), Historic England (HE), the Marine Management Organisation (MMO), the Environment Agency (EA), the Maritime and Coastguard Agency (MCA), Trinity House (TH), the Centre for Environment, Fisheries and Aquaculture Science (Cefas) and relevant Local Authorities (LAs) were consulted on the proposals.
3. A large number of representations were received from Local Authority consultees, and from the general public in response to the public notice, raising concerns relating to the visual impact; the potential impact on tourism and leisure activities; the potential impact on commercial and recreational fishing, including impacts on migratory fish species; and the potential impact on local seahorse populations.
4. Corallian's ES addressed all of the relevant issues raised by consultees and in response to the public notice. The ES was subject to detailed and intensive scrutiny by OPRED, taking full account of the representations received, and additional information was requested to clarify issues raised in the representations and during the OPRED review.
5. This paper provides a summary of the information relating to the key concerns raised during the consultation process.

Landscape, Seascape and Visual Receptors

6. Many of the representations raised concerns regarding the location of a mobile drilling unit (MoDU) during the proposed operations and its effect on landscape, seascape and visual receptors. There are a significant number of landscape planning designations within the vicinity of the proposed appraisal well and these are clearly valued directly by local residents and visitors, but also indirectly valued in terms of the tourism economy benefits that they bring to the area.
7. The landscape planning designations include the New Forest National Park, the Dorset Areas of Outstanding Natural Beauty (AONB), the Isle of Wight AONB, the Cranborne Chase and West Wiltshire Downs AONB, the Dorset and East Devon Coast World Heritage Site, the Purbeck Heritage Coast, the Tennyson Heritage Coast, the Hamstead Heritage Coast and seven (7) Registered Historic Parks and Gardens.

9. A number of visual receptor groups were also identified including residents of and visitors to coastal settlements, the users of coastal and long-distance footpaths, visitors to tourist attractions and the users of recreational watercraft and commercial vessels.
10. OPRED received advice from bodies including from Natural England, Dorset AONB Team and the Jurassic Coast Trust indicating that although there may be adverse effects on the settings and scenic beauty of relevant landscapes and seascapes, they were not considered to be significant. This is due to a combination of factors, namely the timing of the proposed operations (now winter 2018/19, November to February), the small area occupied by the MoDU and the short-term nature of the deployment.

Commercial and Recreational Fishing and Boating

11. Concerns were raised by a number of parties regarding the high volume of recreational vessels in the area, particularly during the summer months, and the potential displacement resulting from the proposed operations. Similar displacement concerns were raised with regard to commercial and recreational fishing vessels.
12. Major ports in the vicinity of the proposed well location include Southampton, approximately 41 kilometres (km) to the northeast, and Portsmouth, approximately 56 km to the northeast. A number of smaller harbours and bays serving recreational vessels are also situated along the coastline adjacent to the proposed well location. A significant number of recreational vessels are likely to pass in close proximity to the proposed well location, and Poole Bay is a popular area for racing events, particularly during the Easter and summer periods.
13. The majority of fishing vessels operating in the area are under 10 metres (m) in length. They are likely to use both static gears (including potting and netting) and mobile gears (including trawls and dredges), and landings are dominated by shellfish species. Automatic Identification System (AIS) data indicates moderate fishing vessel activity in the area with some vessels actively fishing and others steaming on passage. Chartered angling vessels are also known to be active within Poole Bay.
14. Appropriate navigational controls will be in place, including a 500 m exclusion zone around the MoDU and standard navigational aids. Notifications will also be issued to local fishermen, marinas and recreational clubs, and a Fisheries Liaison Officer (FLO) will be appointed for the project. It is not anticipated that there will be any significant impact on other users of the sea, and the timing (now winter 2018/19, November to February) and duration (45 days) of the proposed operations will also help ensure that any effects on commercial and recreational fishing and boating are not significant.

Tourism and Recreation / Leisure Activities

15. As highlighted above, the region in which the proposed appraisal well is located is valuable for tourism and the associated economic benefits. There is also a thriving recreation / leisure industry based around Poole Bay and the surrounding coastline. The potential effect of the proposed operations on these activities was therefore raised in several of the representations received.
16. Although the impact assessment process focused on the environmental effects of the proposed development, it also considered the effects on tourism and recreation / leisure and concluded, both with regard to the visibility of the MoDU and its physical presence, that there was unlikely to be a significant adverse effect because the short-term nature (45 days) of the operations. With the drilling operations now scheduled for winter 2018/19 (November to February) the proposed operations will be outside the main tourist season further limiting the potential effects on tourism and recreation / leisure activities.

Protected Habitats

17. In total, there are 58 marine and coastal protected areas within the Portland to Solent area, made up of 11 Special Conservation Areas (SACs); five (5) Special Protected Areas (SPAs) and one (1) potential SPA (pSPA); three (3) Marine Conservation Zones (MCZ) and three (3) recommended MCZs (rMCZ); three (3) Ramsar sites; and 32 Sites of Special Scientific Interest (SSSIs). The proposed well is located within the boundary of the Solent and Dorset Coast potential Special Protected Area (pSPA), designated for common terns, Sandwich terns and little terns; is approximately 8.5 km from the River Avon SAC, designated for sea lamprey and Atlantic salmon; and 44 km from the River Itchen SAC, also designated for Atlantic salmon.
18. Concerns were raised about undertaking the drilling operations in or near sensitive sites. Specific concerns were also identified regarding potential noise effects; impacts on migratory fish; and impacts on local seahorse populations. Details relating to these specific issues are outlined below.
19. With regard to potential impacts on protected European sites (SACs and SPAs), the necessary Habitats Regulations Assessment (HRA) was undertaken by BEIS OPRED, as the competent authority. The HRA concluded that the proposed well would not have a significant effect on the qualifying species or habitats, either alone or in-combination with other plans or projects, and that the proposed operations would not have an adverse effect on the integrity of the relevant sites.

Migratory Fish

20. Concerns were raised by statutory consultees relating to the potential impact of underwater noise from the check-shot survey on migratory fish, and the accuracy of the noise modelling used to determine potential effects.

22. Sea lamprey and Atlantic salmon from the River Avon SAC and Atlantic salmon from the River Itchen SAC are known to pass through Poole Bay and the surrounding waters. Atlantic salmon migrate upstream between May and September and smolts (juveniles) migrate downstream between April and May. Sea lamprey migrate upstream between April and May and smolts migrate downstream between April and July.
23. OPRED required Corallian to review the noise modelling and to undertake further modelling using measured data to improve confidence in the results. The additional modelling was considered to be more reliable and predicted impact ranges indicating a very low risk of fish occurring within the area where physical injury would occur. The drilling operations are now scheduled for winter 2018/19 (November to February) and this timing would also avoid significant effects on migratory fish.
24. The check shot survey data is needed to tie downhole data to surface-derived seismic data. Existing well and seismic data have not established whether the Colter prospect is commercially viable.

Seahorse Populations

25. A number of representations raised issues relating to the potential effects on local seahorse populations. Concerns included impacts of drill cuttings discharges (linked to queries regarding the cuttings dispersion modelling).
26. Populations of long- and short- snouted seahorses have been recorded in this area of Poole Bay. These species tend to be found in seagrasses in sheltered areas such as Poole Harbour and the Solent, with Studland Bay known to be an important site. The long-snouted seahorse is seldom found in the open water, but the short-snouted seahorse can be found in open water over sand, silt or mud. Short-snouted seahorses could therefore be found at the proposed well location.
27. Seahorses are thought to breed in Studland Bay, approximately 4 km west of the proposed well location, in spring each year (from late April to early May) and to move into deeper water by mid-October when inshore waters are more rough. The Swash Channel in Poole Bay, approximately 5 km to the west of the proposed well location, has been suggested as a potential wintering ground for the seahorses of Studland Bay.
28. The spawning periods have been recorded as May to August, or exceptionally March to November, for the long-snouted seahorse, and April to October, or exceptionally February to November for the short-snouted seahorse.
29. Cuttings dispersion was modelled using a hydrodynamic model to account for the varying tides and currents in the area. The model predictions indicated that settling reflected the strong tidally-dominated flow patterns in the area. Deposition depths varied between 0.1 millimetre (mm) and 1 mm, with deposition of 1 mm (the threshold where impacts on seabed fauna from smothering can occur) extending no more than 172 m from the well location.

30. Corallian has committed to monitoring the drill cuttings and fluids for the presence of oil whilst drilling through the payzone, and containing any contaminated cuttings for onshore treatment. As the dispersion modelling considered the worst case of total discharge, any cuttings containment is also likely to reduce the deposition footprint.
31. Studland Bay is approximately 4 km from the well location and the Swash Channel is approximately 5 km from the location, so there are unlikely to be any significant effects on seahorses or their important breeding and wintering habitats. As the drilling operations are now scheduled for winter 2018/19 (November to February), this effectively avoids the spawning periods for both species.

Oil Spill Risk

32. Many of the representations highlighted concerns relating to the impact of a major oil spill.
33. Based on historical data it is highly unlikely that a major event, such as a blowout would occur, and it is considered that appropriate measures will be in place to maintain well control and prevent a major spill. The drilling operations are also planned to minimise the risk of any hydrocarbon or chemical pollution. In the unlikely event of a spill occurring an appropriate oil spill response would be implemented based on the approved Oil Pollution Emergency Plan (OPEP) that will have to be in place before operations commence.
34. The location of the proposed well also requires a Shoreline Protection Plan (SPP) to be in place. This will outline the shoreline response arrangements for the areas that may be affected in the event of a worst-case hydrocarbon release. The SPP will interface with the relevant Local Authority Coastal Protection Plans.
35. Under the Bonn Agreement, the English Channel is a zone of joint responsibility between France and the UK. In the event of a spill affecting areas outside UK waters, the Mancheplan would cover counter pollution operations and sets out the division of responsibility between the two parties. For incidents likely to affect both parties simultaneously, it outlines command and control procedures, channels of communication, and the resources available to each party.

Other Issues

36. A number of representations questioned the need to drill the appraisal well at an offshore location using a MoDU. The well location has been chosen to assess two targets that overlap in a tightly constrained area at the core of the prospect, and they can only be effectively tested using a vertical well. Any onshore drill site would be over 6 km from the target location resulting a near horizontal trajectory which could not evaluate the stacked targets.
37. If economically viable levels of oil are found and the field was to be developed, extended reach drilling from an onshore site would be appropriate as the near horizontal wells could effectively target the oil bearing zone or zones.

38. A number of representations also raised concerns about the continued exploitation of fossil fuels. This is a policy matter and is not required to be addressed by the ES.

Conclusion/Summary

39. Following consideration of the ES, the responses received from consultees and the general public and the additional information provided by Corallian, BEIS OPRED is satisfied that the proposals will not have a significant adverse impact on the receiving environment or the living resources it supports, or on any protected habitats or species or other users of the sea.
40. Corallian submitted a register of mitigation measures and commitments as part of the ES, and they were subsequently requested to update the register to take account of additional measures agreed during the ES review process. A copy of the final draft of the register is attached at Annex A.
41. Subsequent to the positive determination of the ES, Corallian will be required to seek a number of supplementary environmental approvals from OPRED, for example a navigational consent to locate the MoDU and a permit to use and discharge chemicals during the course of drilling operations. They will also have to seek acceptance of a well notification and Oil Pollution Emergency Plan from the Offshore Safety Directive Regulator (a partnership of OPRED and the Health and Safety Executive).
42. The OGA will not determine the application for the Well Consent until all the necessary environmental and safety approvals are in place.

Environmental Statement Mitigation Measures and Commitments Register

Table 1: Mitigation Measures and Commitments Register

Ref	Theme	Mitigation Measure / Commitment
1	Physical Presence	<ul style="list-style-type: none"> a. The proposed drilling operations will be scheduled to be undertaken during the winter, with a target spud date of 1st November 2018. b. The crew of the ERRV will be experienced in traffic monitoring duties and will be briefed on the shipping and recreational vessel levels in the area. Additional watchkeeper(s) will be on ERRV to monitor vessel traffic to assist regular crew; c. The ERRV will broadcast on a regular basis the details of the drilling operation and location of the MODU to inform passing vessels before they encounter the MODU. This will allow vessels to alter course with minimal effect on navigation; d. The MODU will be fitted with an AIS transceiver in order for vessels to observe the MODU and nature of its activity on their AIS; e. The main operators of ships passing in proximity to the proposed 98/11-E well location will be provided with advanced notice of the drilling operation; f. A collision risk management plan will be developed for the proposed drilling operations to record the pre-planning measures taken to minimise the risk of vessel collision, and to define the guarding role of the ERRV whilst on location; g. Reporting of the rig move will take place in line with the requirements of Part 4a of the Energy Act and HSE Operations Notice 6 guidance. This includes informing the MOD Hydrographer and Maritime and Coastguard Agency. This will ensure details of the MODU location are distributed via Notices to Mariners, Navtex and NAVAREA warnings, as well as to the appropriate Maritime Rescue Co-ordination Centre (MRCC). Local Notices to Mariners are issued by the Poole Harbour, details of the operation can be added to Local Notices which can then be issued by the Harbour to local stakeholders; h. Notification of the drilling operation will be made to Kingfisher Information Services two weeks prior to the drilling operations commencing to allow time for details of the operation to be issued to fishing vessels in the area; i. Recreational clubs and marinas in the area will be given advance notification (local notices/posters) of the proposed drilling operations to help ensure their users are aware and can plan their routeing and activities accordingly. Appropriate online notifications will also be explored; j. Real time data (AIS and Radar) will be recorded whilst the MODU is on location to provide evidence in event of near miss or incident; k. The Southern IFCA will be kept informed as well planning progresses; l. An onshore FLO will be appointed to maintain good communication with local fisheries and co-ordinate activities throughout the proposed drilling operations; m. Standard lighting on MODU and support vessels will be kept to a minimum, as far as practicable, to minimise the impact of artificial lighting on birds, with considerations for marine navigation and health and safety of offshore workers.
2	Seabed Disturbance	<ul style="list-style-type: none"> a. Cuttings / mud cleaning equipment will be utilised to ensure optimal cuttings cleaning prior to discharge; b. Recovered WBM will be reused / re-circulated where practical; c. Cuttings generated whilst drilling through the payzone will be contained, subject to oil shows being recorded through reservoir objectives. d. When selecting the final well location the <i>S. spinulosa</i> aggregations located in the southeast the Colter survey area will be avoided so that the MODU spud cans and, if required, any stabilisation material is not deposited on top of these features; e. Any stabilisation material deposited will be made up from inert rock/gravel; f. The mass and size of any stabilisation material deposited will kept to the minimum necessary in order to achieve the required MODU stabilisation.

Ref	Theme	Mitigation Measure / Commitment
3	Noise	<ul style="list-style-type: none"> a. Follow JNCC protocol for minimising the risk of injury to marine mammals from geophysical surveys (August 2017), e.g. use of MMOs; b. The proposed drilling operations will be scheduled to be undertaken during the winter, with a target spud date of 1st November 2018, thereby avoiding the period during which the number of terns within the Solent and Dorset coast pSPA is at its highest; c. Recreational diving clubs and businesses in the area will be given advance notification of the proposed check shot survey to help ensure their users are aware and can plan their activities accordingly; d. All helicopter trips will be carried out in accordance with the requirements of the Basic Aviation Risk Standard, Offshore Helicopter Operations Safety Performance Requirements (Flight Safety Foundation, 2016); thereby ensuring appropriate clearance from areas of known bird activity and, as far as possible, existing flight paths from Southampton Airport will be used to minimise the disturbance corridor for onshore/coastal bird species.
4	Atmospheric Emissions	<ul style="list-style-type: none"> e. Use of fuel oil with a sulphur content of no more than 0.1% in accordance with MARPOL and UK regulatory requirements; f. Vessels and contractors will have UK/International Air Pollution Prevention (UKAPP/IAPP) Certificates; g. As part of the contractor selection processes, the MODU and vessel contractors will be required to demonstrate that they have control processes in place to minimise the environmental impacts (i.e. maintain equipment); h. All combustion equipment will have a maintenance programme and will be tested regularly; i. All refrigeration and air-conditioning systems, heat pumps and fire-protection equipment will have a maintenance programme and will be tested regularly. This program will aim to prevent leaks of controlled substances (i.e. halons, CFCs, HCFCs and F-gases) and adequate repairs of detectable leakages will be undertaken as soon as possible.
5	Marine Discharges	<ul style="list-style-type: none"> a. As required under the Offshore Chemicals Regulations 2002 (as amended), the well operator will undertake a full CHARM assessment of the proposed chemicals to be used and discharged during the proposed drilling operations, which will be fully detailed within the chemical permit application submitted to OPRED in advance of the proposed drilling operations (refer to Section 2). As part of chemical selection and assessment process, less hazardous alternatives will be sought in preference for any chemicals identified to be high risk (e.g. those with substitution warnings); b. The use of cuttings / mud cleaning equipment will ensure optimal cuttings cleaning prior to discharge; c. Recovered WBM will be reused / re-circulated where practical; d. WBM will be mixed offshore to ensure that only what is required is used; e. Cuttings generated whilst drilling through the payzone will be contained, subject to oil shows being recorded through reservoir objectives. f. Black (sewage) and grey water will be collected on board the MODU and treated using an approved sewage treatment plant to meet the requirements of the MARPOL Convention before discharge to sea; g. The MODU and vessels will be fitted with closed drainage containment and monitoring systems in all environmentally critical areas as part of their specification; h. Good housekeeping standards will be maintained on the MODU and vessels.
6	Accidental Releases	<ul style="list-style-type: none"> a. Liquid storage areas and areas that might be contaminated with oil will be segregated from other deck areas; b. Permanent drip trays will be located under process plant, pumps and vessels (on grated decks); c. Bunding or additional containment will be provided around plated areas beneath equipment with significant hydrocarbon inventories;

Ref	Theme	Mitigation Measure / Commitment
		<ul style="list-style-type: none"> d. Chemicals will be stored in bunded areas where any spillages can be routed to the closed drainage system; e. Chemical, utility and fuel storage tanks will be equipped with alarm systems and procedure will be in place to minimise and prevent spills overflowing these storage tanks; f. Small spill kits will be on board the MODU to clean up deck spills and prevent spilt hydrocarbons and chemicals from reaching the sea; g. Non-return valves will be installed on transfer hoses and hoses to be tested and inspected as a part of a regular maintenance programme; h. Bunkering procedures will be put in place to include measures such as transfer operations to be supervised at all times from both the supply vessel and MODU; i. Crews will be adequately trained, supervised and regular exercises held to contain and clean-up deck spills; j. Routine equipment maintenance programme will be in place with specific emphasis on environmentally critical equipment; k. Chemical will be effectively managed to endeavour to reduce the volumes required and therefore the frequency of bunkering; l. Floating hoses will be used; m. Where feasible, bunkering operations will be undertaken in daylight and in good weather conditions. n. Shallow gas survey to be undertaken prior to drilling operations commencing; o. Crews will be adequately experienced, trained in well control techniques and supervised; p. Weighted drilling fluids will provide the primary barrier and the downhole pressures will be carefully controlled and monitored; q. The secondary barrier will be the BOP which will be regularly maintained and tested; r. Well design and construction will be reviewed by an independent well examiner; s. Safety and Environmental critical elements related to drilling operations will be identified, and a suitable maintenance and testing schedule applied to each; t. Emergency drills will be held regularly; u. Emergency response plans and equipment will be in place; v. FWM will review spill mitigation measures of all contractors as part of the contractor selection process; w. A Tier 1 vessel dispersant application package will be available on the ERRV; x. A Tier 1 containment and recovery package will be pre-positioned at Poole Harbour throughout the drilling operations. y. Tier 2 / 3 response services including aerial surveillance service and aerial dispersant capability will be provided by Oil Spill Response Limited (OSRL) z. Tier 2 shoreline response equipment and personnel will be provided by Adler and Allan. Equipment on a trailer will be pre-positioned at Hamble with a dedicated stand-by team on call.
7	Solid Waste	<ul style="list-style-type: none"> a. Solid waste will be appropriately stored on the MODU and returned to shore for handling in accordance with the Waste Management Hierarchy. Food waste will be returned to shore for disposal in accordance with the requirements of MARPOL Annex V and UK Regulations.