

Our Ref: 01.01.01.01-5660U
UKOP Doc Ref:1299073



Offshore Petroleum Regulator
for Environment & Decommissioning

DANA PETROLEUM (E&P) LIMITED
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Registered No.: 02294746

Date: 29th September 2023

Department for Energy Security &
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Dear Sir / Madam

**THE OFFSHORE OIL AND GAS EXPLORATION, PRODUCTION, UNLOADING
AND STORAGE (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS
2020**

Earn, Valaris 121 DRILLING EXPLORATION WELL 42/27- Earn-1 planned well

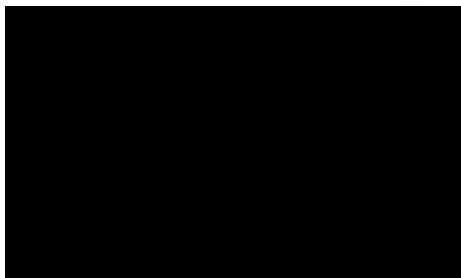
I refer to your amended application dated 28th September 2023, reference DR/2372/1 (Version 1).

It has been determined that the proposed changes to the project is not likely to result in a significant effect on the environment, and therefore an environmental impact assessment is not required.

A screening direction is therefore issued for the changes to the project. An amended schedule of conditions, comments, and main reasons for the decision on the amended application, are attached. A copy of this screening direction will be forwarded to the application consultees, the Oil and Gas Authority and published on the gov.uk website.

If you have any queries in relation to this screening direction or the attachments, please do not hesitate to contact [REDACTED] on [REDACTED] or email the Environmental Management Team at OPRED@energysecurity.gov.uk.

Yours faithfully





**THE OFFSHORE OIL AND GAS EXPLORATION, PRODUCTION, UNLOADING
AND STORAGE (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS
2020**

**SCREENING DIRECTION CONFIRMING THAT AN ENVIRONMENTAL IMPACT
ASSESSMENT IS NOT REQUIRED**

Earn, Valaris 121 DRILLING EXPLORATION WELL 42/27- Earn-1 planned well

DR/2372/1 (Version 1)

Whereas DANA PETROLEUM (E&P) LIMITED has made an application dated 28th September 2023, under The Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020, and whereas the Secretary of State has considered the application and is satisfied that the project is not likely to have a significant effect on the environment; in exercise of the powers available under regulation 6, the Secretary of State hereby directs that the application for consent in respect of the project need not be accompanied by an Environmental Impact Assessment, provided that the project is carried out as described in the application for the screening direction and in accordance with the conditions specified in the attached schedule.

In giving a screening direction under regulation 6 of the above Regulations, the Secretary of State accordingly gives agreement to the Oil and Gas Authority to the grant of consent for the project as detailed in the application, WONS/15331/0/IDA/1 and WONS/15331_0_GS_1.

Effective Date: 29th September 2023



THE OFFSHORE OIL AND GAS EXPLORATION, PRODUCTION, UNLOADING AND STORAGE (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS 2020

SCHEDULE OF SCREENING DIRECTION CONDITIONS

The grant of this screening direction is conditional upon the screening direction holder complying with the following conditions.

1 Screening direction validity

The screening direction shall be valid from 16 June 2023 until 31 December 2023.

2 Commencement and completion of the project

The holder of the screening direction must notify the Department for Energy Security & Net Zero (hereinafter called the 'Department') of commencement and completion of the project within two days:

- a) of commencement of the project and
- b) of completion of the project.

Notification should be sent by email to the Environmental Management Team Mailbox: OPRED@energysecurity.gov.uk

3 Prevention of pollution

The holder of the screening direction must ensure that appropriate measures are taken to minimise discharges, emissions and waste, in particular through the appropriate use of technology; and to ensure that necessary measures are taken to prevent incidents affecting the environment or, where they occur, to limit their consequences in relation to the environment.

4 Inspections

Should the Department consider it necessary or expedient for an inspector appointed by the Secretary of State to investigate whether the conditions of the screening direction are being complied with, the holder of the screening direction shall afford the inspector with such facilities and assistance as the inspector considers necessary to exercise the powers conferred by the regulations. The holder of the screening direction shall additionally ensure that copies (electronic or paper) of the screening direction and any other relevant documents are available for inspection by the inspector at:

- a) the premises of the holder of the screening direction; and
- b) the facilities undertaking the project covered by the screening direction.



5 Check monitoring

Should the Department consider it necessary or expedient to undertake an independent monitoring programme to assess the impact of the project covered by the screening direction, the screening direction holder shall afford the Department with such facilities and assistance as the Department considers necessary to undertake the work.

6 Atmospheric emissions returns

Following completion of the project covered by the screening direction, the holder of the screening direction shall report all relevant atmospheric emissions, such as combustion emissions, extended well test emissions or flaring and venting emissions relating to a well test, using the appropriate Environmental Emissions Monitoring System (EEMS) reporting forms. In the case of atmospheric emissions relating to drilling projects undertaken from a fixed installation, they should be included in the annual EEMS reporting forms for the fixed installation.

7 Unauthorised deposits

Following completion of the project covered by the screening direction, the holder of the screening direction shall recover any materials accidentally or temporarily deposited on the seabed, such as debris, temporary containers, structures or deposits, or scientific instruments, and shall return the materials to land. If it is not possible to recover any of these deposits, full details of the materials remaining on the seabed must be reported to the Department in accordance with the requirements of Petroleum Operations Notice No.2 (PON2).

8 Screening direction variation

In the event that the holder of the screening direction proposes changes to any of the particulars detailed in the application for a screening direction, the holder must notify the Department immediately and submit an application for a post screening direction amendment. The post screening direction must be in place prior to the amended proposals taking effect.

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COMMENTS ON THE APPLICATION FOR SCREENING DIRECTION

Section 1

The attention of screening direction holders is drawn to the following provisions regarding The Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020.

1) You are deemed to have satisfied yourself that there are no barriers, legal or otherwise, to the carrying out of the project covered by the screening direction. The issue of a screening direction does not absolve the screening direction holder from obtaining such authorisations, consents etc that may be required under any other legislation.

2) The Department would draw your attention to the following comments:

The Department has no comments.

3) All communications relating to the screening direction should be addressed to:

OPRED@energysecurity.gov.uk

or

Offshore Petroleum Regulator for Environment & Decommissioning
Department for Energy Security & Net Zero
AB1 Building
Crimon Place
Aberdeen
AB10 1BJ

Tel [REDACTED]



SCHEDULE OF SCREENING DIRECTION DECISION REASONS

1) Decision reasons

The following provides a summary of the assessment undertaken to determine whether an Environmental Impact Assessment is required for this project, summarises the information considered, the potential impacts and sets out the main reasons for the decision made. In considering whether an Environmental Impact Assessment is required or not, the following have been taken into account:

- a) the information provided by the developer;
- b) the matters listed in Schedule 5 of The Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Regulations 2020) (the Regulations);
- c) The results of any preliminary verifications or assessments of the effects on the environment of the project; and
- d) any conditions that the Secretary of State may attach to the agreement to the grant of consent.

Variation DR/2372/1

Variation DR/2372/1 was submitted to the department to cover the change in azimuth in order to remain within the licence boundary. The trajectory of the sidetrack was adjusted westward which resulted in an increase in the depth of an additional 392m. As this section was to be drilled under LTOBM which will be skipped and shipped, the additional environmental impact is marginal and the decision rationale for the original assessment still stands.

There will now also be coring of the sidetrack which was previously not applied for. This does not impact the original assessment of DR/2372.

Characteristics of the project

Having regard, in particular, to the matters identified at paragraphs 1(a) to (g) of Schedule 5 to the Regulations, the characteristics of the project include the following:-

Summary of the project

- Drilling of new exploration well 42/27 - Earn-1 planned well from the Valaris 121 jack up drilling rig
- Drilling of a sidetrack appraisal well (Earn-1ST)
- Drilling of 36" x 26" section riserless from the rotary table with water-based mud (WBM)
- Drilling of 24" section with WBM



Drilling of 17 1/2", 12 1/4", 8 " and 6" main bore sections using Low Toxicity Oil Based Mud (LTOBM)
Drilling of 12 1/4", 8 " and 6" sidetrack sections to the target depth LTOBM
Coring of the mainbore once drilling has completed
logging using Vertical Seismic Profiling for both the mainbore and the sidetrack
Abandonment of mainbore and sidetrack in line with Offshore Energies UK well decommissioning guidelines

Description of the project

The 42/27 - Earn-1 well was proposed at the Earn prospect in the United Kingdom Continental Shelf (UKCS) Block 42/27 in the Southern North Sea (SNS). The proposed tophole location is 32 km southeast of Flamborough Head (England) and 159 km west of the United Kingdom (UK)/ Netherlands boundary line at a water depth of 51.1 m below lowest astronomical tide (LAT). Drilling operations will commence from the 16th of June 2023 and the drilling programme is estimated to be 149 days. This duration includes a contingency respu and the drilling of the sidetrack.

The well and sidetrack will be drilled from the Valaris 121 jack-up drilling rig. The rig has three legs terminating in spud cans that support it on the seabed. There is no requirement for the rig to anchor, or for mud mats or gravel to be deployed to support the spud cans.

The top-hole section will be drilled from the Rotary table with continuous returns to the seabed and on a batch basis from the rig at the sea surface at the end of the section. The fluid system will be WBM.

The 24" section will be drilled with a riser in place using WBM, and the mud and cuttings will be discharged on a batch basis from the rig, with discharge at or near the sea surface.

All remaining sections will be drilled with a riser in place using LTOBM with returns to the rig topsides. Returned cuttings that are contaminated with LTOBM will be skipped and shipped to shore for disposal.

Once the 6" mainbore section has been drilled to the top of the reservoir, the presence of gas will be determined. If gas is present, rock cores will be cut over the full reservoir section. This operation will be conducted with the well still containing LTOBM, i.e., there will be no cleanup or completion required prior to coring. Following coring of the mainbore reservoir section, the sidetrack will be drilled, however no coring will be conducted.

Vertical seismic profiling involves lowering a series of geophones into the well and using them to record a signal from a seismic source fired in the water column above the well. The source will be an array comprising two air guns with a combined source volume of 500 cubic inches. The gun array will be hung over the side of the rig on a crane and will be located ~4 m below sea level. The array will fire once every 10



seconds for up to 24 hours during the mainbore VSP survey, and this procedure will be repeated for the sidetrack VSP survey, which will be conducted several weeks after the mainbore survey.

Following drilling of the mainbore and completion of all required data gathering operations, the mainbore reservoir section will be plugged. In a success case where gas is discovered, the sidetrack will then be drilled and assessed, the sidetrack will then also be plugged.

The well is expected to be permanently abandoned in line with Offshore Energies UK Guidelines with the wellhead removed and the surface casing strings mechanically cut at a depth of at least 3.048 m (10 ft) below the seabed and recovered back to the rig.

Location of the project

Having regard, in particular, to the matters identified at paragraphs 2(a) to (c) of Schedule 5 to the Regulations, the environmental sensitivity of geographical areas likely to be affected by the project has been considered as follows:-

The Earn-1 and Earn-1St are located at the Earn Prospect site in block 42/27 in the South North Sea. The proposed tophole location is 32 km southeast of Flamborough Head (England) and 159 km west of the United Kingdom (UK)/ Netherlands boundary line at a water depth of 51.1 m below lowest astronomical tide (LAT).

Currents in the North Sea circulate in an anti-clockwise direction, driven by inflows from the Atlantic via the northern North Sea down the UK East coast and from the English Channel, and outflow northwards along the Norwegian coast. Against this background of tidal flow, the direction of residual water movement in the SNS is generally to the East.). The mean residual current at the Earn site is approximately 0.1 m/s, however spring tide peak flow velocity is in the region of 0.81 m/s.

Wind strengths are generally between Beaufort scale 1 - 6 (1 - 11 m/s) in the summer months with a greater proportion of strong to gale force winds of force 7 - 12 (14 - 32 m/s) in winter. The annual mean significant wave height at the Earn site is 1.21 - 1.50 m and the annual mean wave power is 6.1 - 12.0 kW/m (NMPi, 2023).

Surveys indicate that the seabed sediments at the Earn 1 well comprise slightly gravelly sand, gravelly sand and gravelly muddy sand and are summarised in GEOxyz (2023a) as "mobile coarse sand with shell fragments and pebbles". This corresponds to the European Union Nature Information Systems (EUNIS) habitat classification for the area of A5.27 Deep circalittoral sand, and with the British Geological Survey 1:250,000 scale seabed sediment type "Slightly gravelly sand" recorded in NMPi (2023). The predominant seabed feature at the site is megarippled sand with crests orientated west-southwest to east-northeast, wavelengths of 10-15 m and amplitudes of 5-10 cm. No Annex I habitats, as listed under the EU Habitats Directive, were identified in the survey area. In addition, there was no evidence of Features of Conservation Importance (FOCI) or OSPAR (2008) 'threatened /



declining habitats'.

Seabed conditions at the Earn site are in line with expectations for the area. There is no evidence of recent point-source contamination or anthropogenic disturbance at the site. Levels of several contaminants are slightly elevated above expected levels for SNS background stations, however this is consistent with expectations for this particular site, as it is fairly close to the Humber Estuary and other sites of significant industrial development on the East coast of England. The macrofauna present is generally diverse and the macrofaunal community is homogenous across the site. No significant correlation was noted between the macrofaunal results and the chemistry variables. It is therefore difficult to interpret whether the generally slightly low abundance and number of species observed is due to the low-level contamination that is present, or whether this is independent of the sediment chemistry, and merely reflective of the physical conditions at the site.

Six juvenile ocean quahog *Arctica islandica* were identified in the Earn macrofauna samples. Ocean quahog is an OSPAR (2008) threatened and / or declining species and is a protected feature of the Holderness Offshore Marine Conservation Zone located 10 km to the southwest of the Earn well site. However, the low number of individuals observed, and the absence of adult specimens, indicates that the Earn site is not of particular importance for this species. Very low numbers of *S. spinulosa* were identified at Earn (three individuals across the entire site). While *S. spinulosa* may construct extensive biogenic reefs under the right conditions (which may therefore comprise Annex I habitat), the presence of low numbers of individuals at the site is not in itself a cause for concern.

The proposed operations are located in International Council for the Exploration of the Sea (ICES) rectangle 37F0. ICES Rectangle 37F0 is located within spawning grounds for cod *Gadus morhua*, herring *Clupea harengus*, lemon sole *Microstomus kitt*, plaice *Pleuronectes platessa*, sandeel *Ammodytidae* spp., and sprat *Sprattus sprattus*, with high-intensity spawning expected for plaice (Coull et al., 1998; Ellis et al., 2012). Block 42/27 is located within occasional grounds for spawning cod.

Seabird sensitivity in Block 42/27 is very high from February to June, and also in August. Sensitivity is high in January and from September to November, and moderate in July and December (see Table 4.2 and the MAT). The proposed operations period from June to December coincides with very high to moderate periods of sensitivity. The proposed operations are located approximately 32 km from the nearest UK coast and are therefore remote from sensitive seabird breeding areas.

The following Seabird species have been recorded within the project area; northern fulmar, sooty shearwater *Ardenna grisea*, manx shearwater *Puffinus puffinus*, northern gannet, pomarine skua *Stercorarius pomarinus*, Arctic skua *Stercorarius parasiticus*, great skua *Stercorarius skua*, black-legged kittiwake, black-headed gull *Chroicocephalus ridibundus*, little gull *Hydrocoloeus minutus*, great black-backed gull *Larus marinus*, common gull *Larus canus*, lesser black-backed gull *Larus fuscus*, herring gull *Larus argentatus*, glaucous gull *Larus hyperboreus*, common tern *Sterna*



hirundo, Arctic tern *Sterna paradisaea*, common guillemot, razorbill, little auk *Alle alle*, and Atlantic puffin *Fratercula arctica*.

Cetacean sightings have been recorded in the vicinity of the proposed operations, with harbour porpoise, minke whale, white-beaked dolphin, Atlantic white-sided dolphin and bottlenose dolphin recorded at varying times throughout the year. Of the species likely to be present, harbour porpoise is listed under Annex II of the Habitats Directive. The operations are located approximately 4.8 km from the Winter extent of the SNS Special Area of Conservation (SAC) which has been identified as an area of importance for harbour porpoise, and 7.1km from the Summer area. All cetacean species recorded in the area are listed as European Protected Species (EPS) under Annex IV of the Habitats Directive.

There are six designated areas of Offshore conservation within 40km of the Earn site. The SNS SAC - 7.1km, Holderness Offshore Marine Conservation Zone - 10km, Greater Wash Special protection Area - 24.5km, Flamborough Head Special Area of Conservation - 26km, Glamborough and Filey Coast Special Protection Area - 29.4km and the Holderness Inshore Marine Conservation Zone - 32.9km.

There are no active aquaculture or shellfish protected waters in the vicinity of the proposed operations. There are ten Oil and Gas installations within 40km of the proposed operations. The Earn-1 location is located in an area that experiences high shipping intensity.

Block 42/27 has a licence restriction stating "The Ministry of Defence (MoD) must be notified, at least twelve months in advance, of the proposed siting of any installation anywhere within Block 42/27 whether fixed to the seabed, resting on the seabed or floating, that is intended for drilling for or getting hydrocarbons, or for fluid injection." The Ministry of Defence was notified of Dana's intention to drill the Earn 1 well in October 2022 and confirmed it had no concerns in relation to the activity at the location specified.

There is one active submarine power cable in the area located 26.8km to the southwest.

The closest known wreck is an unidentified non-dangerous wreck located 476 m to the southwest of the proposed operations. There are no protected military remains or protected wrecks in the vicinity, although there is a historically significant shipwreck (HMS Falcon - stern section) located 3.7 km to the southwest (MMO, 2023).

Given the location of the project, the areas identified at paragraphs 2(c)(i), (iii), (iv), (vi), (vii) and (viii) of Schedule 5 are not likely to be affected by the project.

Type and characteristics of the potential impact

In accordance with paragraph 3 of Schedule 5 to the Regulations, the likely significant effects of the project on the environment have been considered. Potential effects on the environment from the activities associated with the project were



assessed, including impacts arising from atmospheric emissions, seabed disturbance, physical presence, planned discharges and accidental spills. Other than the matters considered further below, there is not likely to be any significant impact of the project on population and human health.

Atmospheric emissions are expected to be temporary in nature, to be emitted from combustion plant on the drilling rig and supporting vessels used on the project. Drilling activities are expected to be 149 days. The well will be abandoned as part of the scope of works so there will be no emissions associated with completion or well tests. The proposed operations will contribute to 0.054% of the total atmospheric emissions associated with the UK offshore activities in a year. Atmospheric emissions are expected to be rapidly dispersed in the open offshore environment in the direction of the prevailing wind. The impact has not been assessed as significant.

Seabed disturbance will result from locating the footprint of the spud cans from the Valaris 121 rig. The area of Impact will be 0.0008km². This is a small area and represents a minute fraction of the available seabed in this region of the North Sea. Once the rig has moved offsite, the natural physical process of sediment transportation and biological settlement will be expected to restore the seabed to its original condition over time. The impact is temporary in nature and has not been assessed as significant.

The 36" x 26" and 24" sections will be drilled using WBM. All mud and cuttings from these sections will be discharged to the marine environment. This will cause initial physical smothering of the benthos within the immediate area, but re-colonisation is expected to be relatively rapid. Sediment movement and effects of the currents in the area (residual current of 0.01 m/s, wave height ranging from 1.21 - 1.50 m and annual mean wave power ranging from 6.1 - 12 kW/m) would cause the cuttings to naturally migrate and disperse along the seabed. The discharge is not expected to cause an impact to spawning fish species at a population level.

It is anticipated that as the cement slurry falls through the water column it will be naturally dispersed and diluted. Discharge of this nature is not expected to have any significant effect on deterioration in water quality or any significant impact on benthos or fish populations. It is not anticipated to have any negative implications for future decommissioning operations. Any cement slurry discharged to sea will comprise of inert materials and low toxicity additives.

The discharge of chemicals used to drill the well, including cementing, wellbore clean up, and completion chemicals have been assessed and are not considered likely to have a significant impact on the marine environment.

A 500 m default safety exclusion zone will exist around the rig once it is on location. The zone is there for the safety of the rig and vessel traffic. Once in place no unauthorised vessels will be allowed to enter meaning that vessel routes and fishing will have to avoid the area. Commercial fishing intensity and vessel traffic are both regarded as low. These receptors are not at risk of being significantly impacted by the project.



Accidental spill modelling has been undertaken for the project application. The worst-case scenario would result in a spill of crude that would beach on the UK coastline. The applicant has outlined multiple response measures available to them which would be enacted in the unlikely unplanned event of a spill. Such measures would be used to reduce the potential impact as far as possible and as quickly as possible.

There are no expected transboundary impacts as a result of the project. While cumulative, and no cumulative impacts have been identified given the other known existing and approved projects in the wider area.

It is considered that the drilling of the Earn-1 well at the Earn Prospect site is not likely to have a significant impact on other offshore activities or other users of the sea, the seabed, marine life or cetacean species and no cumulative impacts are expected to occur.

Decision

Taking the above considerations into account, the Secretary of State has concluded that the project is not likely to have a significant impact on the environment and that an environmental impact assessment is not required.

2) Mitigation of significant effects

Not applicable.