

Our Ref: 01.01.01.01-5661U  
UKOP Doc Ref:1309834



Offshore Petroleum Regulator  
for Environment & Decommissioning

ITHACA ENERGY (UK) LIMITED  
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Registered No.: SC272009

Date: 29th November 2023

Department for Energy Security &  
Net Zero

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Dear Sir / Madam

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

**K2, Stena Spey DRILLING EXPLORATION WELL 22/14c- K2 planned well**

I refer to your amended application dated 28th November 2023, reference DR/2373/5 (Version 1).

It has been determined that the proposed changes to the project are 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](mailto: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**

**K2, Stena Spey DRILLING EXPLORATION WELL 22/14c- K2 planned well**

**DR/2373/5 (Version 1)**

Whereas ITHACA ENERGY (UK) LIMITED has made an application dated 28th November 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 applications, WONS/15751/0/S/1, WONS\_SCON/5106, WONS\_SCON/5126 and WONS/16121/0/S/1

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# **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 5 June 2023 until 31 January 2024.

### **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](mailto: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]



The Secretary of State has decided that, based on the information provided, the project is not likely to have a significant effect on the environment. The main reasons for this decision are:

### **1) Decision reasons**

The following provides a summary of the assessments undertaken by OPRED 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.

### **Characteristics of the Project**

This post amendment screening direction (ref: DR/2373/5) relates to a fifth change to the project for which screening directions were previously issued.

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 (DR/2373/5):**

The fifth change to the project relates to an extension to the project due to delays in the drilling programme, the Stena Spey MODU will return to the K2 well to complete drilling operations and undertake a well suspension workscope. The change to the project consists of the following:

- a) There will be an additional 31 days added to the project, with the project end date extended to 31 January 2024;
- b) To recover the BOP and then suspend rather than directly abandon the well following completion of drilling operations. A wellhead will be left to allow future re-entry and provisions will be in place ensure suitable notification to other users of the sea.
- c) As the drilling rig had to depart the location the extension of the permit end date and inclusion of suspension workscope will not increase the proposed operational emissions from that previously considered.

#### **Summary of the Project (DR/2373/4):**



The fourth change to the project relates to an extension to the project due to delays in the drilling programme and contingency for inclement weather. The change to the project consists of the following:

- a) There will be an additional 28 days added to the project, with the project end extended to 31 December 2023;
- b) The extension to the project will not increase the time spent drilling, but it will increase the emissions to atmosphere, due to the drilling rig being on location for longer. This will result in an increase in diesel used on the rig, the number of helicopter flights and supply vessel visits and;
- c) Due to the additional days on location, the CO<sub>2</sub>(e) emissions has increased by 15.5% from the original project calculation.
- d) The total length of the project has changed from the original estimate of 92 days to 175 days.

### **Summary of the Project (DR/2373/3):**

The third change to the project relates to an issue with the 7" liner, which could not be set in the 10Y sidetrack (which was approved in DR/2373/2). There will be a new sidetrack drilled (to be named 10X) which will consist of the following:

- a) One new sidetrack, which will have 3 new well sections (12 ", 8 " and 9 5/8") and 7" liners;
- b) The sidetrack will be drilled with LTOBM, which will be skipped and shipped to shore, and will not be discharged to the marine environment. The amount of cuttings and LTOBM produced as a result of the additional drilling has increased by approx. 32% and 40 % respectively;
- c) The additional sidetrack drilling will add 35 days to the overall drilling project, which will increase emissions to the atmosphere as a result of the additional fuel used by the drilling rig, support vessels and helicopter shuttles. The total length of the project is 147 days and;
- d) The additional 35 days on location will account for an increase of CO<sub>2</sub>(e) by approximately 17%.

A post amendment screening direction (ref: DR/2373/2) has been approved for the following:

### **Summary of the Project (DR/2373/2)**

This second change to the project relates to the wellbore stability issues for sidetrack 10Y. The 9 5/8" liner was not run to target depth and was set at 7500ft. This is a change to the drilling schedule which has resulted in an additional 7 days drilling. This has also resulted in the use of, and generation of more LTOBM and cuttings, which will be skipped and shipped to shore. The additional 7 days of drilling will also increase the use of fuel used by the drilling rig and other support vessels. This will increase the emissions to atmosphere. The main summary of the change to the



project is:

- a) The overall length of the project will increase from 106 to 113 days;
- b) There will be an approximate increase of 2.5% in the amount of LTOBM and cuttings produced, with no discharge to the marine environment and;
- c) The additional 7 days on location will account for an increase in emissions to atmosphere of approximately 0.01% of the total UKCS CO<sub>2</sub>(e) emissions.

A post amendment screening direction (ref: DR/2373/1) has been approved for the following:

### **Summary of the Project (DR/2373/1):**

Due to the contingency sidetrack being unsuccessful, a mechanical sidetrack has been proposed. This includes the following:

- a) The suspension of the contingency sidetrack (well 10z)
- b) An additional 14 days to the timing of the overall drilling project as the drilling schedule has been extended from 92 days to 106 days;
- c) An increase in atmospheric emissions, as the length of the project has increased;
- d) The mechanical sidetrack will be drilled using Low Toxicity Oil Based Mud (LTOBM) which will be recovered back to the drilling rig and will be taken onshore for recycling. The amount of LTOBM and cuttings produced from the overall drilling project has increased by approx.12%;
- e) There will be no additional discharge to the marine environment as the additional LTOBM and cuttings will be taken onshore for recycling.

### **Description of the Project**

The screening direction previously approved (DR/2373/0) included the following:

- a) Drilling of a new exploration and appraisal well (K2) which will be drilled in the central North Sea in Quad/Block 22/14c. Operations are expected to last 92 days.
- b) The well will be drilled by a semi-submersible drilling rig, the Stena Spey, which will have a 500m exclusion/safety zone established during drilling, and while it is on location.
- c) The Stena Spey will be held in position by 8, 12t Bruce Mk 4 anchors, with 1.5km anchor lines and chains connected to the rig. Approximately 750m of the anchor lines and rope will be in contact with the seabed.
- d) The K2 well will be drilled in sections using Water Based Mud (WBM), with a discharge of cuttings and mud to the environment from the top hole sections. The lower sections of the well will be drilled using Low Toxicity Oil Based Mud (LTOBM) which will be recovered back to the drilling rig and will be taken onshore for recycling. There will be no discharge to the marine environment.
- e) The vessels used for the drilling of this well will include anchor handling vessels, supply vessel, a guard vessel and helicopter trips for personnel.
- f) A contingency sidetrack has been included to represent the worst assessment case.
- g) A cement trial will be undertaken which will include the discharge of cement slurry



to the marine environment from the semi-submersible rig.

h) There will be no vertical seismic profiling or well tests carried out on the well.

i) The well will be fully abandoned after the well has been drilled and measurement tests have been undertaken. The abandonment of the well will be undertaken in accordance with the OEUK Guidelines.

The K2 well is an exploration well which will target the Forties and Lower Forties sandstone reservoirs. The well will be drilled by the Stena Spey semi-submersible drilling rig, which is anchored to the seabed using 8 anchor chains. Anchor handling vessels will position the anchors in place, and once on location, the drilling rig will be served by supply vessels and helicopters moving personnel. A guard vessel will be on location during drilling to ensure other users of the sea do not enter the temporary 500m safety zone.

The K2 well will be drilled using a combination of WBM and LTOBM. The water based mud and drill cuttings will be discharged to sea, whilst the LTOBM will be taken back to shore for recycling and will not be discharged to the marine environment. One contingency sidetrack has been included for the well to allow for a worst-case drilling scenario to be assessed. The well will be drilled within a temporary 500m safety zone for the Stena Spey, and the well will be suspended once measurements and logging have been undertaken. A cement trial is proposed prior to drilling, to ensure that the equipment is working, as the unit has been in cold storage for 10 months. The discharge of the cement used in the trial will be to the marine environment.

Operations are now expected to last a total of 175 days. The proposed project area is within the Central North Sea, and cumulative impacts from drilling discharges, atmospheric releases and oil and chemical releases have been assessed.

It has been concluded that there will be no cumulative impacts expected to occur with the fifth change to the project due to the selection of low bioaccumulation water-based muds, the proposed mitigation and the short duration of the project.

It is not considered to be likely that the change to the project will be affected by natural disasters and the risk of a major accident such as a well blowout has been assessed. The Developer has control measures in place to reduce the risk of a major accident occurring and the probability of such an event occurring is very low.

Other than the matters considered further below, there is not likely to be any significant impact from the change to the project on population and human health.

### **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 K2 well is located in central North Sea, approximately 24 km west from the UK/Norwegian median line and 206 km to the east of Aberdeenshire coast. Survey



data shows the area to be indicative of a predominantly sand with accumulations of shells and occasional boulders and cobbles. A 2020 survey of the block around the well location classifies the sediment type as the EUNIS biotope complex 'deep circalittoral sand'.

Small depressions were found in the area which is interpreted as scour features around boulders. Water depths across the area range from 88.2m to 91.2m, with the water depth at the well location approx. 90m. Average wave height across the area is 2m.

A 2019 survey of the area showed that benthic community was dominated by polychaetes but also recorded brittle stars and crustaceans. 4 individual sea pens were observed at one sample station and low densities of seapen and burrows were also identified by seabed imagery. It was concluded that the seapens and burrows were not in sufficient densities to be considered a 'seapen and burrowing megafauna communities' habitat. There was evidence of juvenile ocean quahog with seabed imagery showing ocean quahog siphons and broken shells. Horse mussels were identified at 3 sample stations, with horse mussel beds being a type of biogenic reef and listed under Annex I of the Habitats Directive. The horse mussel beds were not found in sufficient densities to represent a type of biogenic reef. Therefore, it was concluded that there were no Annex I habitats in the area.

Minke whale, white beaked dolphin, white-sided dolphin and harbour porpoise have all been recorded in the vicinity of the K2 well area. Densities of the species are categorised as low, with only the white sided dolphin peaking to a medium density in September. Due to the distance of the well from shore, and using density maps of the area of seals at sea, it is unlikely that the 2 most common seal species, the grey and common seal, will be present in the vicinity of the drilling activity.

The K2 well is not situated within any conservation areas, with the nearest area of conservation interest being the East of Gannet and Montrose Fields NCMFA which lies 18km to the south-west. This site is designated for the presence of ocean quahog and the presence of offshore deep sea muds. The Scanner Pockmark SAC is 82 km north-west of the site and has been designated for the presence of pockmarks and biogenic reefs.

The K2 well lies within fishing designated ICES rectangle 44F1 and the proposed operations will coincide with fish spawning and/or nursery activity for a number of species. Fishing effort in the area is designated as of low intensity, with demersal fishing dominating the species type. Fishing in the area accounted for 0.13% of the total UK value, and 0.11% of the total live weight landed for 2021. It is not anticipated that the drilling of K2 well will have a significant impact on the fishing industry in the area.

Seabird oil sensitivity in the vicinity of the K2 well is low from May to February, with a medium sensitivity in March and April.

There are no wrecks within the vicinity of the well. There are no offshore wind farms



within 40km of the well location, however the closest INTOG development area is located 10km to the north of block 22/14. The Tampnet telecommunication cable is located 15km to the north of the well location. There are no aquaculture sites or shellfish protected areas within the vicinity of the project area and there are no military restrictions within the block. The closest oil and gas installation is the North Everest platform which is 15.3 Km to the northeast of the proposed location with the closest pipeline 5.5km west from the well (Wood operated CATS pipeline). It is not anticipated that the proposed project will have a significant impact on either the telecommunications lines, offshore wind area or oil and gas infrastructure.

Given the location of the project, it is not likely that the areas identified at paragraphs 2(c)(i), (iii), (iv), (vi), (vii) of Schedule 5 to the Regulations will be affected by the additional change to 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 change to 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 from the change to the project on population and human health.

The semi-submersible drilling rig will be sited at the drilling location and a new, temporary 500m exclusion zone will be established which excludes unauthorised access of vessels and prohibits access to fishing vessels. This will remain in place until drilling has been completed and the well suspended. The drilling rig mooring anchors will extend beyond this 500m zone, and a dedicated guard vessel will be in location to support the rig and warn other users of the sea of the presence of the mooring anchors and one will remain on the K2 location following departure of the rig until FISHSafe has been updated. Fishing activities and shipping density within the area is low. No additional impacts to other marine users are identified as part of the drilling of K2 well. Therefore, there are no significant effects likely in terms of physical presence from the proposed project.

Cuttings from the WBM sections will be discharged at the seabed and into the water column. Cuttings dispersion modelling for Ithaca's Captain wells, and dispersion modelling and monitoring surveys undertaken in the UKCS have been used to assess the dispersion of the drill cuttings and mud from the K2 well. It is expected that the cuttings piles are deposited close to the well site, and due to the weak tidal currents in the area, cuttings concentration are negligible at a distance of 250m from the well. It is expected that the highest cuttings pile thickness of around 1.5m, will occur between 100-200m of the well, covering an area of 0.03 km<sup>2</sup> to 0.13 km<sup>2</sup>.

Seabed disturbance from the discharge of WBM drill cuttings could result in the smothering and mortality of benthic fauna which will result in some short-term temporary impacts. Burrowed mud habitats show a medium sensitivity to smothering, however studies have shown that species of sea pen can re-anchor themselves



when dislodged. Ocean quahog have a short inhalant siphon which can become blocked with suspended sediment. Studies have shown that ocean quahog can tolerate deeper sediment and can burrow to the surface of 40cm of sediment. Burial depths from the cuttings and drilling pile above 50mm are expected to extend up to 200-250m from the well. There is the potential for mortality of individual ocean quahog, and the potential to effect the low density community of sea pens and burrowing megafauna. However, given the very small area of impact and the discharge of the WBM to the water column, the widespread distribution, short life spans and high reproductive rates of the sensitive species in the area, it is not expected to affect the population levels across the North sea and it is expected that the benthic communities will regenerate in the area over time.

The area of permanent seabed disturbance which includes the drill cuttings pile is 0.12 km<sup>2</sup>, whilst temporary disturbance (which also includes the drill cuttings pile) is 0.035 km<sup>2</sup>. Seabed disturbance will occur from the semi-submersible anchors, anchor lines (and their movements on the seabed), the discharge of the cement as a result of the cement trial and the drill cuttings pile. It is expected that the discharge of the cement will be diluted and dispersed within the water column, and any particles that eventually settle on the seabed would occur as a very thin layer spread over a wide area. The anchors and chains on the seabed will cause a temporary re-suspension of sediments and the loss of local benthic communities as a result of smothering, and sediment suspension. There will be mortality of some individual species, as discussed above, but the impact on populations levels across the North Sea is unlikely to be significant.

Noise generated from the project activities will not be significant, and it is concluded that the change to the project is not expected to have a likely significant effect on the site in relation to the cetaceans in the area and the supporting habitats and prey.

There are no expected transboundary effects from the proposal to drill K2 well. Although the UK/Norwegian median boundary is located approximately 24 km from the proposed well location, it is expected that due to the relatively short duration of the activities, there should be no transboundary effects. It is not considered likely that any planned operational discharge (cuttings and chemicals) will be detectable at a distance of 24 km.

The well to be drilled is an exploration well, and an assessment has been included within the project proposal to assess as a worst case, an uncontrolled well blow out, and the subsequent potential for a Major Environmental Incident (MEI). The assessment concluded that there is a potential for an MEI to occur, however the risk of an oil spill event as a result of a well blow out from K2 well is minimal, and the developer has suitable mitigation in place to prevent such an occurrence.

The proposed operation will utilise a guard vessel, supply vessels, and 5 flights per week to/from the drilling rig for personnel. Atmospheric emissions have been assessed from the diesel used for each vessel and the time spent on location. The atmospheric emissions (asCO<sub>2</sub>(e)), from the vessels undertaking the project work has increased due to the additional days on location (from 147 to 175 days in total),



with the increase accounting for 15.5% of the CO<sub>2</sub>(e) for the whole project. In total, these emissions account for 0.1% of the total UKCS emissions. The developer has a set a target for all of their assets to reduce emissions by 25% of 2019 levels by 2025 and 50% of emission by 2030. There is also an ambition for the assets to achieve net zero by 2040.

The emissions may result in a short-term deterioration of the local air quality, but due to the relatively short duration of the work, and that the exposed conditions in the area will rapidly disperse the emissions, it is not anticipated that there will be a significant impact as a result of the change to the project.

## **2) Decision**

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

## **3) Mitigation of significant effects**

The following are features of the project or measures envisaged that the developer has proposed to avoid or prevent what might otherwise have been significant adverse effects on the environment:

n/a