Offshore Petroleum Regulator
for Environment & Decommissioning

**The Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020**

**Regulation 14(3)**
**Secretary of State Decision**

**IOG UK Ltd**
**Southwark Pipeline Installation**

**To:** [redacted]**, Director Environmental Operations, OPRED**

**Decision Recommendation:**

That you agree, on behalf of the Secretary of State, to the grant of consent by the Oil and Gas Authority (OGA).

As set out further below, taking into account the relevant considerations, I have concluded that the project will not have any significant effects on the environment and have decided that no additional conditions should be attached to the agreement to the grant of consent.

**From:** [redacted]
Environmental Manager

**Date:** **21 April 2022**

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|---|---|
| **ES Title:** | Southwark Pipeline Installation Project |
| **Developer:** | IOG UK Ltd |
| **Consultants:** | Intertek |
| **OGA[1] Field Group:** | Southern North Sea |
| **ES Report No:** | D/4257/2020 |
| **ES Submission Date:** | 12 April 2021 |
| **Block No/s:** | 49/21c and 49/26 |
| **Project Type:** | Pipeline |
| **OGA Reference Nos:** | PA/3497 (Pipeline Works Authorisation - reference number PA/3703) & PA/3707 (Deposit Consent) |

**Project Description**

The Southwark Pipeline Installation project is located in the Southern North Sea in quad/blocks 49/21c and 49/26 within the North Norfolk Sandbank and Saturn Reef (NNSSR) Special Area of Conservation (SAC) and Southern North Sea (SNS) SAC, approximately 52 kilometres (km) east from the UK coastline and 65 km west from the UK/Netherlands median line. The proposed project is in a water depth of approximately 22 – 34 metres (m).

The proposed project consists of the installation of an approximately 6 km 24” diameter gas pipeline, and to install tie-in spools at both ends of the pipeline. Pipeline protection will be in the form of concrete mattresses, biodegradable grout bags and potentially rock.

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The project also consists of installing up to four spool pieces located in quad/block 48/29 at location labelled ‘C’ see Figure 2. The spool pieces will be protected using concrete mattresses and grout/sandbags.

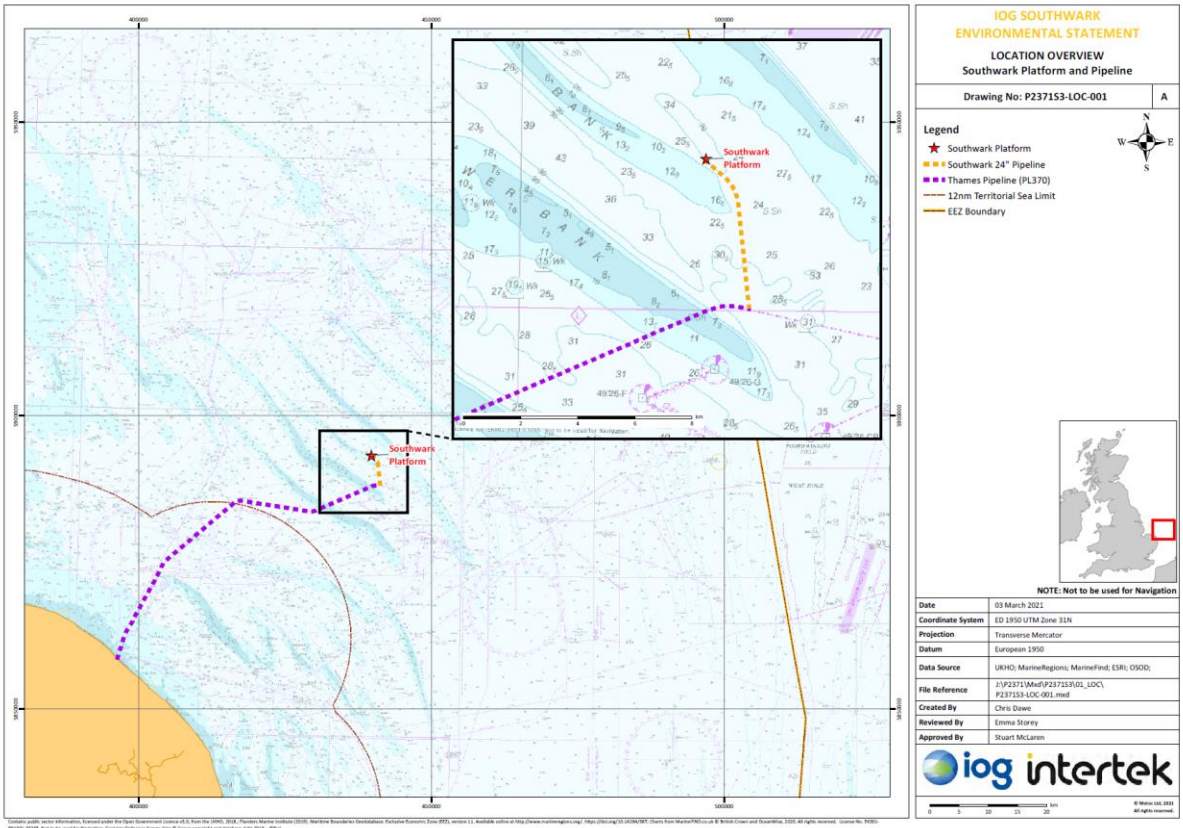


**Figure 1 – The location of the proposed Southwark pipeline tie-ing into the existing Southwark Platform and existing Thames pipeline**

The installation of the new single 24” gas export pipeline (Southwark pipeline PL4943, approximately 6 km long), will be connected, using tie in spools, to an existing pipeline, the Thames pipeline PL370, which leads into the onshore Bacton terminal (see Figure 1 and 2). Up to four spool pieces, a total length of up to 62m, will also be installed to tie an existing valve skid into the Thames pipeline, at location ‘C’; see Figure 2.

Once the new Southwark pipeline, PL4943 is installed, it will be connected to the recently installed Southwark Normally Unmanned Installation (NUI) at one end and the existing Thames pipeline at the other end, illustrated by Figure 2, locations ‘A’ and ‘B’. Once installation has been completed, PL370 and PL4943 will be classed as one pipeline and will be renamed as PL5152 by the OGA. This export line will then transport produced gas and fluids from the Southwark NUI to the onshore Bacton terminal on the north Norfolk coast. (The development of the Southwark field, including the Southwark NUI and three gas development wells, was considered under the Environmental Statement (ES) D/4208/2018).

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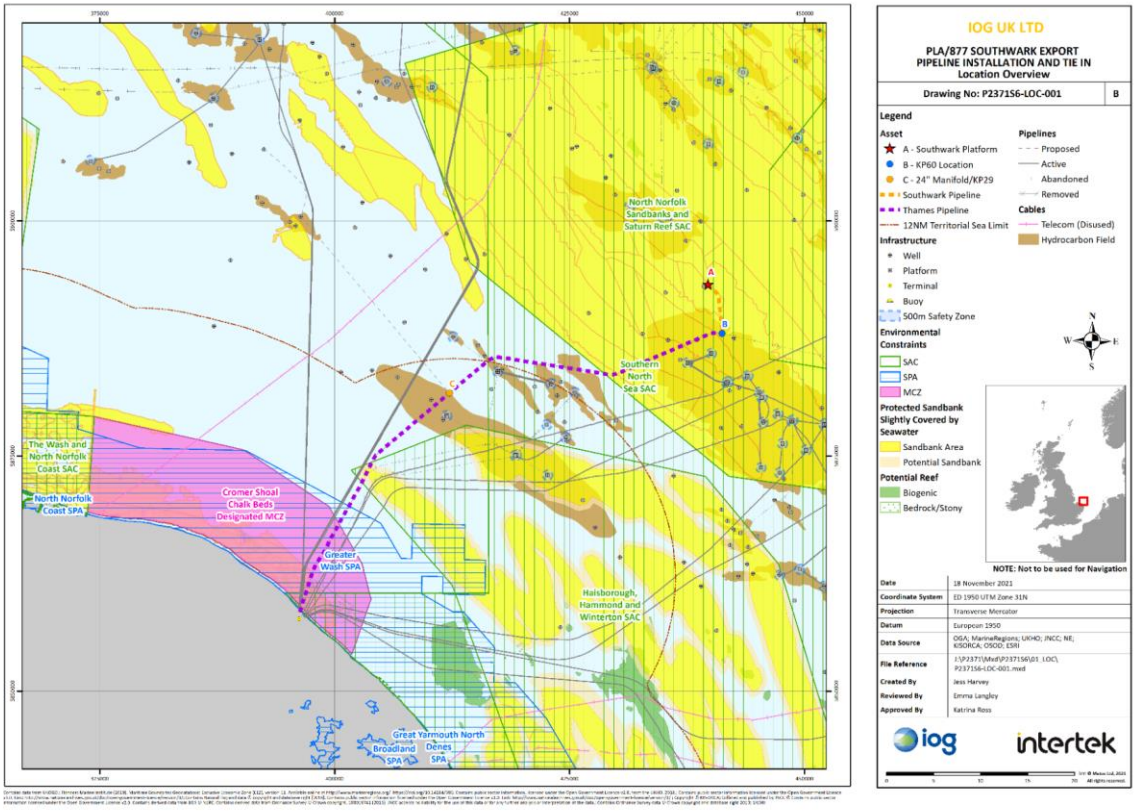


**Figure 2 – The location of Sites A, B, C and the location of the project in relation to protected sites**

The new pipeline will be installed and buried below the mean seabed level. To achieve the burial depth, the sandwaves will have to be shaved to the mean seabed level due to the height of surrounding sandwaves. The pipeline route will then be trenched below mean seabed level and will be backfilled either naturally or mechanically. The pipeline will be laid preferably by a dynamic positioning vessel, however the worst case scenario of using an anchor pipelay vessel has also been assessed. Temporary deposits such as tools and equipment to complete the tie in of the pipeline will be placed on the seabed and recovered when the pipeline installation has been completed. Protective materials, such as mattresses and biodegradable grout bags, will be placed in a temporary location with the temporary deposits prior to being used at the tie in locations to protect the pipeline. The ES also considers the potential future requirement to mitigate against the risk of upheaval buckling by proposing to use rock material to be placed along specific locations of the pipeline, if required. To aid the tie in of the spools at location 'C', localised dredging may have to be undertaken.

## Key Environmental Impacts

The Environmental Statement (ES) identified and discussed the following as having the potential to cause an environmental impact:

- effects on users of the sea (e.g. commercial fishing and shipping) from the physical presence of temporary and permanent infrastructure;
- effects on the sediment, seabed habitats, fauna and flora from seabed disturbance caused by the placement of temporary and permanent infrastructure;
- effects on water quality, flora and fauna from discharges to sea caused by drilling, commissioning and operational produced water;
- effects on marine mammals and fish from underwater noise caused by vessel traffic

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and potential detonation of a UXO;
- effects on the water quality, protected species and habitats, fauna and flora from an accidental event resulting in a release of hydrocarbons from the pipeline; and
- effects on the local air quality and climate from the discharge of atmospheric emissions generated from the project.

**Key Environmental Sensitivities**

The ES identified the following environmental sensitivities:

- **Fish and shellfish**: The project is located within the spawning and nursery grounds of 11 fish species: Atlantic herring, Atlantic cod, Atlantic mackerel, common sole, European plaice, tope, sandeel, whiting; all of which are included on the UK Biodiversity Action Plan (UKBAP) list of priority species. Atlantic cod, tope, sandeel and common sole are also listed on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species, with Atlantic cod and tope being listed as vulnerable and sandeel and common sole as data deficient (IUCN 2020). In addition, Atlantic cod populations are listed on the OSPAR List of Threatened or Declining Species and Habitats as being in decline in OPSAR Region II (the Greater North Sea). European sprat, lemon sole, Nephrops, and shark are also known within the vicinity.

- **Seabirds**: Multiple species of seabird could be present at the project area in various levels of abundance, dependent upon the season. The most commonly observed birds in the area included northern gannet, northern fulmar, Arctic skua, great skua, Atlantic puffin, razorbill, common guillemot, black-legged kittiwake, lesser black-backed gull and great black-backed gull. Other species recorded as present, but very infrequently, include red-throated diver, sandwich tern, common tern, Arctic tern and little gull. Sensitivity of seabirds in the project area is extremely high from November through to February, very high from March to April and low from June to September.

- **Protected habitats and species**: there are a number of Special Areas of Conservation (SACs) and Special Protected Areas (SPA) within 40 km of the project area. The proposed pipeline between locations 'A' and 'B' is within the North Norfolk Sandbanks and Saturn Reef SAC (NNSR SAC) designated for the protection of sandbanks slightly covered by seawater all the time (Annex I habitat) and Reefs (Annex I habitat) and the Southern North Sea SAC (SNS SAC) designated for the protection of harbour porpoise. The following protected sites are located within 40 km of the project area: Haisborough, Hammond and Winterton SAC located 15 km southwest of the proposed project, designated for the protection of sandbanks which are slightly covered by sea water all the time (Annex I habitat) and reefs (Annex I habitat); Greater Wash SPA located 34 km southwest of the proposed project designated for the protection of breeding populations of sandwich tern, common tern and little tern and non-breeding populations of red-throated diver, common scoter and little gull. The closest Annex I Reef, *Sabellaria spinulosa* reef, to the proposed project outside of an SAC is located 30 km southwest at Winterton Ridge. Inspection of side scan sonar data, ground-truthing with visual camera systems and grab samples indicated that there are no areas of *Sabellaria spinulosa* that could be classified as 'reef' (i.e., not an Annex I habitat) within the surveyed area.

- **European Protected Species and pinnipeds**: Cetaceans such as harbour porpoise are observed in low to moderate densities for most of the year, with high densities observed in July; and Atlantic white-beaked dolphin are observed in low densities in January, April to May and in October. Other sightings in the region include bottlenose dolphin, common dolphin, Sowerby's beaked whale, Northern bottlenose whale, minke whale, and humpback whale. Pinnipeds such as the grey seal and the harbour seal may occur in the

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project area in very low densities but are far more common close to shore.

- **Other users of the sea**: There has been a reduction in commercial fishing effort in the project area since 2015, (although there was a slight increase from 2018 to 2019). The quantity and value landed by species type over 2015-2019, indicates that shellfish are the most landed category, while demersal are the most valuable and pelagic catch is low. A comparison of 2019 annual landings and value of catch in the UKCS for demersal, pelagic and shellfish highlighted those commercial fisheries within the project area as being of low to medium importance for demersal, pelagic and shellfish fisheries when compared with the rest of the UKCS. Distribution of shellfish are concentrated towards the inshore area of the project location.

  Shipping density in the area is high to the north, east and southeast of the location of the project. In-field traffic at the project location is mainly associated with the Leman platforms and none of the shipping lanes cross the pipeline route. Fishing activity is identified in the areas surrounding the operational area, but the major traffic is associated with general shipping and passing vessels.

  The project area sits within a well-established location for offshore oil and gas infrastructure. The nearest installations, aside from the Southwark NUI, to the project area are the Leman platforms, 2.4 km away, operated by Shell, and the Vulcan 1 platform, 8.6 km away, operated by Chrysaor. There are two wind farm leases and three windfarm cable leases within 40 km of the project location; the nearest windfarm is the East Anglia North Tranche One West (Norfolk Vanguard West) located 25.5 km southeast; the closest wind farm cable array is the consented Hornsea Three Transmission Asset 23.5 km northeast. The nearest aggregate site, Humber 3 (Area 484) is located 32.1 km to the north. No other oil and gas construction activities are planned in the project area at the time of installation and commissioning of this project.

  There are no sites of marine archaeological interest, aquaculture sites or any other projects or plans within 40 km of the proposed project, which could have the potential to interact with the impacts caused by the pipeline.

  **In-combination, cumulative and transboundary sensitivities:** There are no expected transboundary effects from the operations due to the localised and temporary nature of the disturbance and the 65 km distance from the UK/Norway Median Line. It is not considered likely that any planned operational discharge will be detectable at this distance from the project location. The installation of the 6 km pipeline will reduce availability of the natural environment to activities such as fishing, but this will be offset by trenching and burying the pipeline so that fishing activities can continue in those locations. No other oil and gas construction activities are planned in the project area at the time of installation and commissioning of the Southwark Pipeline Installation project.

**Public Consultation**

The ES was subject to public consultation, for which the public notice was published on 30 April 2021 and ended on 02 June 2021. There were no public representations received.

Further information was requested under a Regulation 12(1) notice from IOG UK Ltd on 3rd November 2021, and 10th December 2021. A response to the requests were provided by the Developer on 11th November and 10th December 2021, and 10 March 2022. The further information, was considered, and was deemed to be directly relevant to reaching a conclusion on whether the project is likely to have a significant effect on the environment, and was therefore subject to further public notice. The public notice was published on 11

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March 2022 and the consultation ended on 10 April 2022. There were no public representations received.

**Consultation with Other Authorities**

The Joint Nature Conservation Committee (JNCC), Ministry of Defence (MoD), Trinity House, Marine Management Organisation (MMO), Centre for Environment Fisheries and Aquaculture Science (CEFAS), Maritime Coastal Agency (MCA), and Natural England (NE) were consulted on the application for consent, the ES submission, and the further information subject to Public Notice. All the consultees submitted responses and none of consultees had objections to the ES.

**Conclusion on the significant effect of the project on the environment**

I have reviewed the following:

- the ES;
- the further information obtained under Regulation 12 as summarised above;
- the representations received from other authorities as summarised above; and
- the conditions that may be attached to the agreement to the grant of consent.

Taking those matters into account, I have concluded on behalf of the Secretary of State that this project will not have any significant effects on the environment:

**Physical presence of temporary and permanent infrastructure**

The proposed project lies within a well-developed oil and gas area and will present a modest increase in physical presence of vessels and offshore oil and gas activity. A standard 500m temporary exclusion zone will be used for most vessels. If an anchored pipelay vessel is used, the safety zone would be extended to 1 km to the front and back of the vessel and 500m either side. There is potential to further restrict fishing activity and navigation during pipelay installation period, however, due to the temporary nature of the pipelay operation, and that the pipeline will be trenched, it is not anticipated that the proposed project will have a significant impact on fishing and navigation in the area. I agree with the assessment that the impacts resulting from the physical presence of vessels and associated infrastructure will not have a significant effect on the environment.

**Placement of infrastructure on the seabed (seabed disturbance)**

Permanent infrastructure will be placed on the seabed, and these include the pipeline, spools and protective material (mattresses, grout bags and potential rock). Permanent deposits of up to 200 concrete mattresses, and 2900 biodegradable grout bags will be used at the tie in locations to protect the Southwark pipeline. The ES also considers the potential future requirement to mitigate against the risk of upheaval buckling by proposing to use up to 67,500 tonnes (approximately 10% of the pipeline route) of rock material placed along specific locations of the pipeline if required.

The seabed will also be disturbed when the sandwaves are shaved, and the pipeline is laid, trenched and backfilled. This will cause displacement and resuspension of sediments.

The ES considers two options for using a pipelay vessel, an anchored vessel and/or a dynamically positioned (DP) pipelay vessel. The inclusion of both scenarios allows for a comparison of seabed disturbance and thus includes a worst-case scenario. There would be

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disturbance to the seabed from the anchors (if used) and the associated anchor chains. It has been confirmed that the use of an anchor lay vessel would be highly unlikely.

Further information was provided on the installation of the spool pieces, the associated dredging and protective materials at Location 'C', not assessed in the original submission. The protective materials at Location 'C' are to be placed on the existing Thames pipeline at the tie-in location for the existing 24" valve skid. Temporary deposits at Locations 'A', 'B' and 'C' will be placed on the seabed and these will be recovered when the campaign has finished. All protective materials will also be temporarily laid at the same location until required. The worst-case area of impact from the placement of all the infrastructure and protective materials on the seabed is expected to be 0.00763 $km^2$.

There will be displacement and resuspension of sediments, however this is expected to be localised and of short duration. The infauna in the project area have short lifespans and high recovery rates to disturbance, whilst the visible fauna on the seabed in the area is relatively sparse. It is expected that the locations disturbed will be rapidly recolonised. The protective materials, introducing a hard substrate, would be limited to the tie in locations of the pipeline, and approximately 10% of the pipeline length, should rock be required. In addition, due to the dynamic nature of the sandwave system, it is expected that over time some of the protective material may be buried by sand deposition. No Annex I habitats were identified from the surveys. No significant impacts to benthic communities are considered likely, as a result of the placement of infrastructure and protective materials.

Spawning intensity for sandeels in the area is low, and the site-specific survey data suggests that the habitat in project area is not conducive to sandeel spawning. The fish spawning or nursery grounds of other species known to overlap project location also cover large areas, therefore the impact from seabed disturbance is unlikely to affect any species on a population level. Due to the temporary nature of the pipelay operation, it is not anticipated that the proposed project will have a significant cumulative impact on fishing and navigation in the area.

I agree with the assessment that there will be a temporary impact to the seabed, but this will be insignificant in terms of environmental effects given the ability of the environment to recover. Sediments will be displaced; however this will be short term and temporary, with the benthic community able to recover over time. The species found in the area are considered resilient to the effects of sediment disturbance and will be able to recolonise quickly. I would therefore agree with the assessment that the cumulative impacts of the project on the seabed will not be significant on the environment.

I agree with the assessment that the project impacts resulting from the placement of infrastructure on the seabed will not have a significant effect on the environment.

**Discharges to sea**

Discharges to sea are possible from the pipeline itself and at the associated installation (the Southwark platform) when hydrotesting, leak testing and commissioning of the pipeline. Water quality and marine organisms were identified as key receptors. As the impacts to water quality are likely to be localised and short term, and given the sensitivity of the area is low, the impact is assessed as not significant. The impacts to the marine organisms are possible but not significant, as the discharges are unlikely to be detectable above background levels and are expected to be reversable once the activities have ceased. I agree that the impacts from discharges to the sea from the project will not have a significant effect on the environment.

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**Atmospheric Emissions**

Local air quality and climate change were the primary receptors considered in relation to atmospheric emissions from the project, specifically from fuel consumption associated with vessels.

The total predicted greenhouse gas emissions for this project is a worst case of 14,871 tonnes $CO^2e$, which represents approximately 0.08% of the greenhouse gas emissions from the UK offshore oil and gas industry and approximately 0.003% of total UK greenhouse gas emissions. The potential effect of gases released from operations on local air quality is not considered a significant effect offshore as there are no immediate receptors. The potential effects from greenhouse gases emitted from operations on the climate will be minor, as the Southwark Pipeline Installation will be a one-off project, and once the project is complete there will be no ongoing emissions.

Clarification was provided by the Developer regarding backgassing of the pipeline. Once the pipeline has been laid, it will be flooded with chemically treated seawater. Prior to commissioning the pipeline, a pipeline inspection gauge (PIG) train will be propelled by nitrogen to displace the seawater, and to dry the line. Prior to the commencement of production at the Southwark NUI, the nitrogen will be displaced by hydrocarbon gas and both gases will be vented at the Southwark NUI. Whilst nitrogen is not a greenhouse gas, a worst case assumption has been made that the hydrocarbon gas will be 100% methane, of which 3,775 tonnes $CO^2$ equivalent (e) could be vented.

I agree with the conclusion that the additional atmospheric emissions will contribute to both localised and short-term increase in atmospheric pollutants. This activity and the whole project will be a one off activity. Once the project is complete there will be no ongoing emissions. Taken into the wider context of UK atmospheric emissions, I conclude that there will be no significant effect on the environment.

**Underwater noise**

The primary source of noise during the project will result from the use of the vessels. The main receptors to underwater noise are marine mammals and fish.

The auditory injury criteria for high and very high frequency cetaceans (white beaked dolphin and harbour porpoises) were assessed along with the auditory injury criteria for grey seals and harbour seals. For some activities the vessels may be stationary for extended periods, however, this will only require low thruster power to maintain position, with consequent low levels of transmitted sound. Use of thrusters at high power, associated with manoeuvring, will be short term; hence, sensitive species are unlikely to remain within the zone of influence for 24 hours.

The potential injury to fish was also assessed. As the species of fish and shellfish present at the proposed project location are typical of the SNS, no impacts at population level are expected.

The works will be temporary in nature. I agree with the conclusion that the combined temporary impact and sensitivity of mammals and fish to underwater noise results will not have a significant impact on both receptors.

Prior to installing the pipeline, a pre lay survey will be undertaken to ensure that there are no obstructions, for example debris or potential unexploded ordnance (UXO) present within the pipeline corridor. The unlikely event of detonating an unexploded ordinance (UXO) was

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considered and assessed. The developer stated that they will implement mitigation measures such as adhering to the JNCC Guidelines, which includes undertaking a visual search, using soft start procedure and Passive Acoustic Monitoring (PAM). They will also use a deflagration (low order detonation) process, and use an acoustic deterrent device (ADD).

If a UXO detonation is required, the use of an ADD will slightly extend the duration of time for disturbance level effects (from instantaneous disturbance from detonation to brief <1hour by the use of an ADD), and the benefits of using the ADD will be to reduce the more significant risks of injury associated with detonation. Although animals in the wider area may display a startled reaction, there will not be widespread or prolonged displacement or disturbance. In the event of the detonation of a UXO the Statutory Nature Conservancy Boards (SNCBs 2020) indicate that, in the absence of empirical evidence of harbour porpoise avoidance, a precautionary 26 km effective deterrence range (EDR) should be used for high order detonation of UXOs. They also note that a single explosion would probably be of too short duration to cause widespread displacement.

Implementing the mitigation measures will ensure that the risk of marine mammals being exposed to sound levels sufficient to cause blast injuries or the onset of auditory injury will be reduced to a negligible level. The proposed mitigation measures have proven successful for similar projects in the SNS and they are proven effective at reducing the magnitude of the effect by reducing the number of marine mammals exposed to noise levels that may cause injurious effects.

I agree that the proposed project will not have a significant impact resulting from underwater noise.

**Accidental events**

The ES assessed worst case spill scenarios; an instantaneous release from the pipeline, and a release of diesel from a vessel. A pipeline release model estimate of up to 0.63 m3 gas condensate released as a result of a pipeline failure would not reach the shoreline, with persistence on the water surface up to 3 days following the end of release. The release of diesel from a vessel (within 500 m of the platform) was modelled and would result in surface slick that would rapidly break down through natural weathering processes such as evaporation and dissolution.

The potential to cause a significant adverse impact is low and unlikely to result in a major environmental incident (MEI). An accidental event is highly unlikely due to the proposed mitigation measures which will be in place, such as release prevention and hydrocarbon containment measures.

I therefore agree with the conclusion that an instantaneous release from the pipeline, does not have the potential to significantly impact the environment. Despite this, mitigation measures and commitments will be in place which will reduce the risk of such events occurring to as low a risk as possible.

**Features of the project or measures envisaged to avoid, prevent, reduce or offset significant effects.**

There are no features of the project or measures envisaged to avoid, prevent, reduce or offset any significant adverse effects on the environment.

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**Decision on Conditions to the agreement of the grant of consent**

No conditions should be attached to the agreement to the grant of consent.

**Recommendation**

I have set out above my conclusion on the significant effects of the project on the environment and the conditions that should be attached to the grant of consent.

I recommend that the Secretary of State should agree to the grant of consent for this project because there are no significant effects on the environment.

[redacted] Date:
Environmental Manager

Offshore Petroleum Regulator for Environment and Decommissioning
For and on behalf of the Secretary of State for Business, Energy, and Industrial Strategy

**Agreement decision**

I accept the recommendation for the reasons given.

On behalf of the Secretary of State, I therefore agree to the grant of consent.

[redacted] Date: 22 April 2022
Director, Environmental Operations
Offshore Petroleum Regulator for Environment and Decommissioning
For and on behalf of the Secretary of State for Business, Energy, and Industrial Strategy.

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