Department of Energy & Climate Change

Offshore Oil & Gas Licensing
28th Seaward Round
Northern & Central North Sea

Blocks 9/28b, 15/24a & 15/25d

Habitats Regulations Assessment
Stage 2 - Appropriate Assessment

June 2015

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1 Introduction

1.1 Background and purpose

On 24th January 2014, the Secretary of State for the Department of Energy and Climate Change (DECC) invited applications for licences in the 28th Seaward Licensing Round. The licensing Round forms part of a plan/programme adopted by the Secretary of State following completion of the Offshore Energy Strategic Environmental Assessment (DECC 2011). Applications for Traditional Seaward, Frontier Seaward and Promote Licences covering over 360 blocks/part Blocks were received.

To comply with obligations under the *Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001* (as amended), in summer 2014, the Secretary of State undertook a screening assessment to determine whether the award of any of the Blocks applied for would be likely to have a significant effect on a relevant site, either individually or in combination with other plans or projects (DECC 2014).

In doing so, the Department has applied the Habitats Directive test (elucidated by the European Court of Justice in the case of Waddenzee (Case C-127/02)) which test is[1]:

> Any plan or project not directly connected with or necessary to the management of the site is to be subject to an appropriate assessment of its implications for the site in view of the site's conservation objectives if it cannot be excluded, on the basis of objective information, that it will have a significant effect on that site, either individually or in combination with other plans or projects.
>
> Where a plan or project not directly connected with or necessary to the management of the site is likely to undermine the site's conservation objectives, it must be considered likely to have a significant effect on that site. The assessment of that risk must be made in the light, *inter alia*, of the characteristics and specific environmental conditions of the site concerned by such a plan or project.

The screening assessment (including consultation with the statutory agencies/bodies) forming the first stage of the Habitats Regulations Assessment (HRA) process, identified 94 whole or part Blocks as requiring further assessment prior to decisions on whether to grant licences (DECC 2014). Because of the wide distribution of these Blocks around the UKCS, the Appropriate Assessments (AA) in respect of each potential licence award are contained in five regional reports as follows:

- Southern North Sea
- Moray Firth
- Northern and Central North Sea

[1] Also see the Advocate General's Opinion in the recent 'Sweetman' case (Case C-258/11), which confirms those principles set out in the Waddenzee judgement.

- West of Shetland
- Irish Sea and St George's Channel

This report documents the further assessment of 3 Blocks in the Northern & Central North Sea.

1.2 Northern and Central North Sea Blocks

The Northern and Central North Sea Blocks applied for in the 28th Round and considered in this assessment are listed below and shown in Figure 1.1[2]. These Blocks were identified as requiring further assessment by the screening process (DECC 2014).

9/28b 15/24a 15/25d

1.3 Relevant Natura 2000 sites

The Natura 2000 sites considered in this assessment were identified based on their location in relation to the 3 Blocks and the foreseeable possibility of interactions. The sites considered include designated Natura 2000 sites (also referred to as 'European Sites' and including Special Areas of Conservation (SAC) and Special Protection Areas (SPA)) and potential sites for which there is adequate information on which to base an assessment.

Guidance in relation to sites which have not yet been submitted to the European Commission is given by Circular 06/2005 (ODPM 2005) which states that: "*Prior to its submission to the European Commission as a cSAC, a proposed SAC (pSAC) is subject to wide consultation. At that stage it is not a European site and the Habitats Regulations do not apply as a matter of law or as a matter of policy. Nevertheless, planning authorities should take note of this potential designation in their consideration of any planning applications that may affect the site.*" Despite reference to the Habitats Regulations not applying as a matter of policy to such sites, in accordance with Scottish Planning Policy (Scottish Government 2014) and the Marine Policy Statement (HM Government 2011), the relevant sites considered include classified and potential SPAs, designated and candidate SACs and Sites of Community Importance (SCIs).

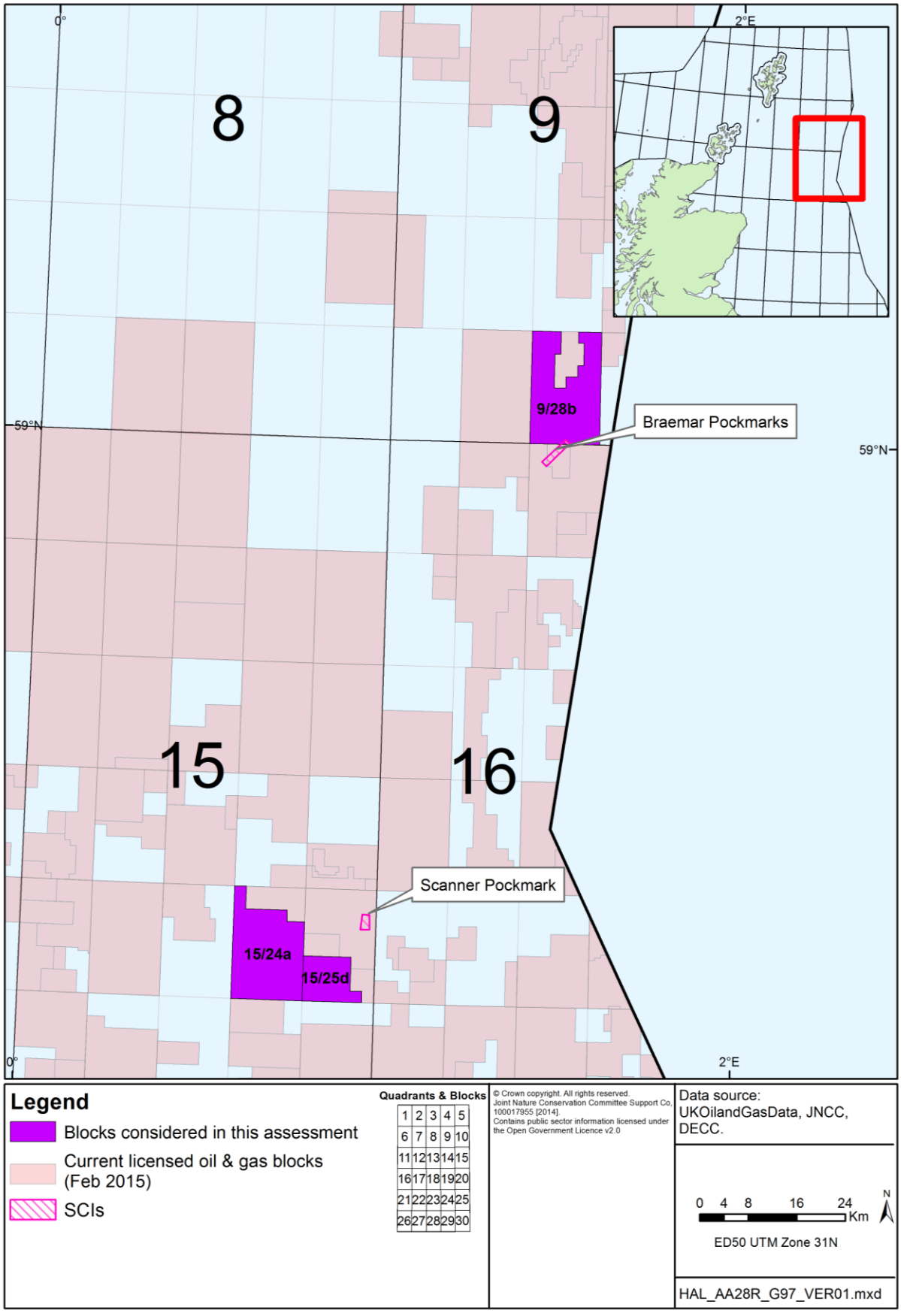
Initial information on the recent condition of both sites is given in the fieldwork report of a 2013 survey commissioned by JNCC (Cefas & the JNCC 2015), a draft of which has been made available by the JNCC. In addition to the previously mapped pockmarks, carbonate blocks and Braemar oilfield facilities, the survey found evidence of demersal fishing (trawl marks seen on sidescan sonar and multibeam backscatter data) within the Braemar SCI and instances of marine litter on the seabed (seen in photos).

[2] Figure 1.1 does not include Blocks for which Promote licence applications were made. The screening assessment concluded that likely significant effects on European sites could not occur from the award of Promote licences and these Blocks were screened out. DECC will undertake HRA of the potential for likely significant effects on European sites in advance of decisions being taken on whether any of the 28th Round Promote licences should proceed to a second term when field operations could be carried out.

In addition to European sites, the characteristics of broadscale physical and ecological features in the area are described in the Offshore Energy SEA (DECC 2011), Charting Progress 2 (Defra 2010) and the OSPAR Quality Status Report (OSPAR 2010).

The relevant sites are shown in Figure 1.1 and summarised in Appendix A.

Figure 1.1: Location of Northern and Central North Sea Blocks and relevant Natura 2000 sites



2 Licensing and activity

2.1 Licensing

The exclusive rights to search and bore for and get petroleum in Great Britain, the territorial sea adjacent to the United Kingdom and on the UK Continental Shelf (UKCS) are vested in the Crown and the *Petroleum Act 1998* (as amended) gives the Secretary of State the power to grant licences to explore for and exploit these resources. The main type of offshore Licence is the Seaward Production Licence. Offshore licensing for oil and gas exploration and production commenced in 1964 and has progressed through a series of Seaward Licensing Rounds. A Seaward Production Licence may cover the whole or part of a specified Block or a group of Blocks. A Licence grants exclusive rights to the holders "to search and bore for, and get, petroleum" in the area covered by the Licence but does not constitute any form of approval for activities to take place in the Blocks, nor does it confer any exemption from other legal or regulatory requirements.

The applications for the 3 Blocks were for Traditional Production Licences which are the standard type of Seaward Production Licences and run for three successive periods or Terms. Each Licence expires automatically at the end of each Term, unless the licensee has made enough progress to earn the chance to move into the next Term. The Initial Term lasts for four years and the Licence will only continue into a Second Term of four years if the agreed Work Programme has been completed and if 50% of the acreage has been relinquished. The Licence will only continue into a Third Term of 18 years if a development plan has been approved, and all the acreage outside that development has been relinquished. DECC at its discretion can offer different term lengths if an applicant makes a strong enough case, for instance where a high pressure high temperature (HPHT) prospect will take longer to plan and explore. In such cases the initial and/or second terms may be extended to six years.

The model clauses and terms and conditions which are attached to Licences are contained in secondary legislation.

It is noted that the environmental management capacity and track record of applicants is considered by DECC, through written submissions and interviews, before licences are awarded.

2.2 Activity

As part of the licence application process, applicant companies provide DECC with details of work programmes they propose in the first term to further the understanding or exploration of the Block(s) in question. These work programmes are considered with a range of other factors in DECC's decision on whether to license the Blocks and to whom. There are two levels of drilling commitment relevant to the proposed work programmes for the Northern and Central North Sea Blocks:

- A **Contingent Drilling Commitment** is a commitment to the Secretary of State to drill a well, but it includes specific provision for DECC to waive the commitment in light of further technical information.

- A **Drill or Drop (D/D) Drilling Commitment** is a conditional commitment with the proviso, discussed above, that the licence is relinquished if a well is not drilled.

Note that Drill-or-Drop and Contingent work programmes (subject to further studies by the licensees) will probably result in a well being drilled in less than 50% of the cases.

It is made clear in the application guidance that a Production Licence does not allow a licensee to carry out all petroleum-related activities from then on (this includes those activities outlined in initial work programmes). Field activities, such as drilling, are subject to further individual controls by DECC (see Figure 2.3), and a licensee also remains subject to controls by other bodies such as the Health and Safety Executive. It is the licensee's responsibility to be aware of, and comply with, all regulatory controls and legal requirements.

The proposed work programmes for the first four-year period are detailed in the licence applications. For some activities, such as seismic survey and accidental events such as oil spills, the impacts can occur some distance from the licensed Blocks and the degree of activity is not necessarily proportional to the size or number of Blocks in an area. In the case of direct physical disturbance, the licence Blocks being applied for are relevant.

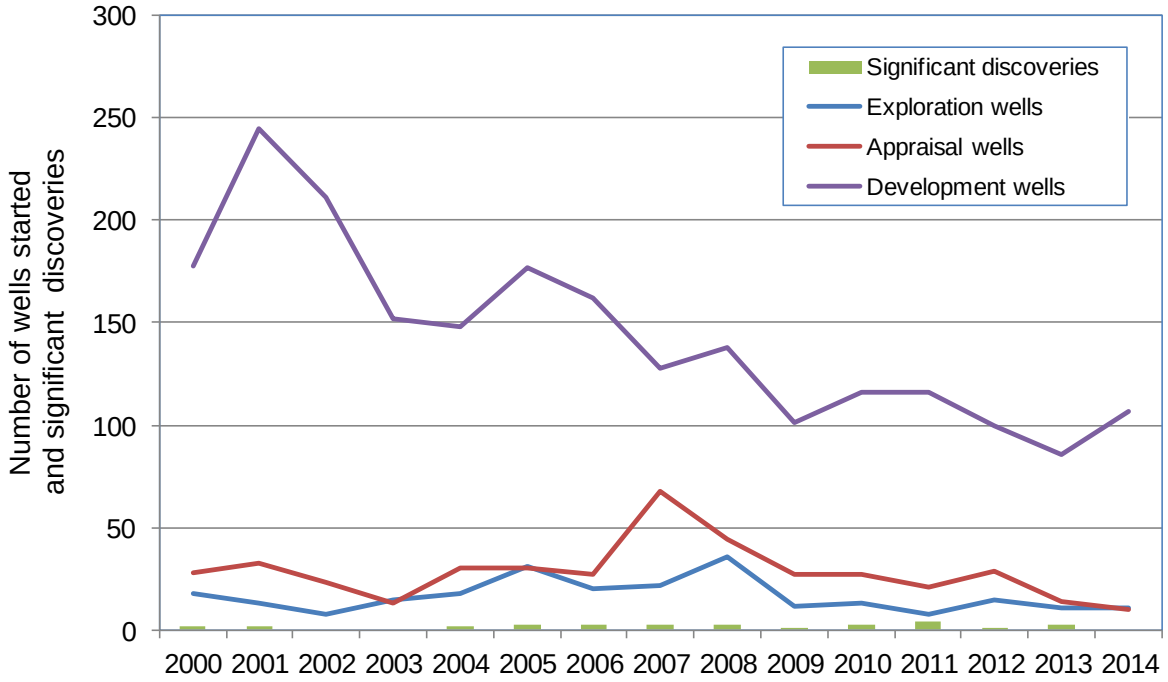
On past experience, less activity actually takes place than is bid at the licence application stage. A proportion of Blocks awarded may be relinquished without any field activities occurring. Activity after the initial term is much harder to predict, as this depends on the results of the initial phase, which is, by definition, exploratory. Typically less than half the wells drilled reveal hydrocarbons, and of that half less than half again will yield an amount significant enough to warrant development. Depending on the expected size of finds, there may be further drilling to appraise the reservoir extent and quality (appraisal wells). For context, Figure 2.1 highlights the total number of exploration and appraisal wells started in the Northern and Central North Sea each year since 2000 as well as the number of significant discoveries made (associated with exploration activities).

Discoveries that are developed may require further drilling, wellhead infrastructure, pipelines and possibly production facilities such as platforms, although recent developments are mostly tiebacks to existing production facilities rather than stand alone developments. For example, of the 45 current projects identified by DECC's Project Pathfinder (as of 13th February 2015)[3] in the Northern and Central North Sea area, 15 are planned as subsea tie-backs to existing infrastructure with 6 planned as tie-backs to FPSOs. Of the other projects: 5 are planned as new platforms; 6 are development wells from existing platforms, while the remaining 13 are either still being considered or are replacement works. The nature, extent and timescale of development, if any, which may ultimately result from the licensing of the 28th Round Northern and Central North Sea Blocks is therefore uncertain; Figure 2.1 shows the number of development wells drilled since 2000. It is therefore regarded that, at this stage, a meaningful assessment of development level activity (e.g. pipelay, placement of jackets, subsea templates or floating installations) cannot be made. Moreover, once project plans are in place, subsequent permitting processes relating to exploration, development and decommissioning, would require assessment (including HRA) as appropriate, allowing the opportunity for further mitigation measures to be identified as necessary. In this way the opinion of the Advocate General in ECJ (European Court of Justice) case C-6/04, effects on Natura sites, *"must be*

[3] https://itportal.decc.gov.uk/eng/fox/path/PATH_REPORTS/pdf

assessed at every relevant stage of the procedure to the extent possible on the basis of the precision of the plan. This assessment is to be updated with increasing specificity in subsequent stages of the procedure" is addressed.

Figure 2.1: Number of exploration, appraisal and development wells started and significant discoveries in the Northern and Central North Sea since 2000



Note: The description "significant" generally refers to the flow rates achieved (or would have been reached) in well tests (15 mmcfgd or 1000 BOPD). It does not indicate the commercial potential of the discovery.
Source: https://www.gov.uk/oil-and-gas-wells#drilling-activity, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/278780/Significant_Discoveries_Jan_2014.pdf

The approach used here has been to take the proposed activity for the Block as being the maximum of any application for that Block, and to assume that all activity takes place. The Blocks comprising individual licences and estimates of work commitments for the Blocks derived by DECC from the applications received are as follows:

Block	Initial term work programme	Licence type
9/28b	Drill or drop well	**Traditional:** work programme must be carried out and 50% of block acreage relinquished within 4-6 years, otherwise licence will not continue to second term.
15/24a (Split)	Reprocess 3D seismic, contingent well	
15/24a (Split)	Reprocess 3D seismic, drill or drop well	
15/25d (Part)	Obtain and reprocess 3D seismic, drill or drop well	

Note: Reprocessing or obtaining seismic refers to use of existing seismic data rather than undertaking new seismic survey[4].

[4] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/274621/28R_Technical_guidance.pdf

DECC routinely seeks advice from other Government Departments and statutory nature conservation agencies in considering applications for activity approval[5]. On the announcement of each seaward licensing Round, DECC issues a list of "other regulatory requirements", providing guidance on Block specific issues and concerns[6]. Depending on the activity and the nature of the sensitivity, these concerns may affect DECC's decision whether or not to approve particular activities at specified times. With respect to Block 15/25d (and by extension to 9/28b), a number of relevant conditions would be attached to a licence including:

- No drilling will be permitted through the shallow gas accumulations supplying the pockmarks or though the migration pathways to them
- The operator will liaise with JNCC in advance of any activities within the Block
- The operator should note that, in advance of consenting decisions, the Competent Authority (DECC) will undertake an HRA of the potential effects of the proposed activity(ies) on the relevant SCI site if the activity(ies) are likely to have a significant effect on the site (either alone or in combination with other plans or projects).

Figure 2.2 provides an overview of the plan process associated with the 28th Licensing Round and the various environmental requirements including HRA. Figure 2.3 outlines the stages for subsequent drilling activities and environmental requirements. These simplified flow diagrams highlight the regulatory requirements and environmental responsibilities at various stages in the development of the plan or exploration level activity, and further requirements for project level environmental assessment and HRA. All activities which could give rise to significant effects on the integrity of relevant sites are subject to regulatory control, including HRA as necessary with consultation with statutory nature conservation bodies. There are high level controls (Table 2.1) to prevent significant impacts and site specific mitigation would be defined at the project level once the location and nature of activity were defined.

Table 2.1: High level controls identified for the relevant potential sources of effect

Source of effect	High level controls
Physical disturbance	There is a mandatory requirement to have sufficient recent data to characterise the seabed in areas where activities are due to take place (e.g. rig placement). Survey information must be made available to the relevant statutory bodies on submission of a relevant permit application or Environmental Statement for the operation to be undertaken, and the identification of sensitive habitats by such survey (including those under Annex I of the Habitats Directive) may affect DECC's decision with regards to the application. Further mitigation (e.g. alternative well location or rig positioning) may need to be identified and implemented where necessary.

[5] DECC strongly advise early consultation with all the organisations relevant to the location and nature of an operator's proposed activities.

[6] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/283487/28R_other_reg_issues.pdf

Source of effect	High level controls
Marine discharges	Discharges from offshore oil and gas facilities have been subject to increasingly stringent regulatory controls over recent decades (see review in DECC 2011, Appendices 4 and 5), and oil and other contaminant concentrations in the major streams (drilling wastes and produced water) have been substantially reduced or eliminated (e.g. the discharge of oil based muds and contaminated cuttings is effectively prohibited), with discharges of chemicals and oil outside of regulatory standards or permit conditions constituting an offence. These are effectively controlled through permitting, monitoring and reporting (e.g. through the mandatory Environmental and Emissions Monitoring System (EEMS) and annual environmental performance reports). At the project level, discharges would be considered in project-specific Environmental Statements and evaluated in further detail within subsequent chemical permit applications, using chemical risk assessments. HRAs (where necessary) may also be undertaken at each stage.

Figure 2.2: Stages of plan level environmental assessment

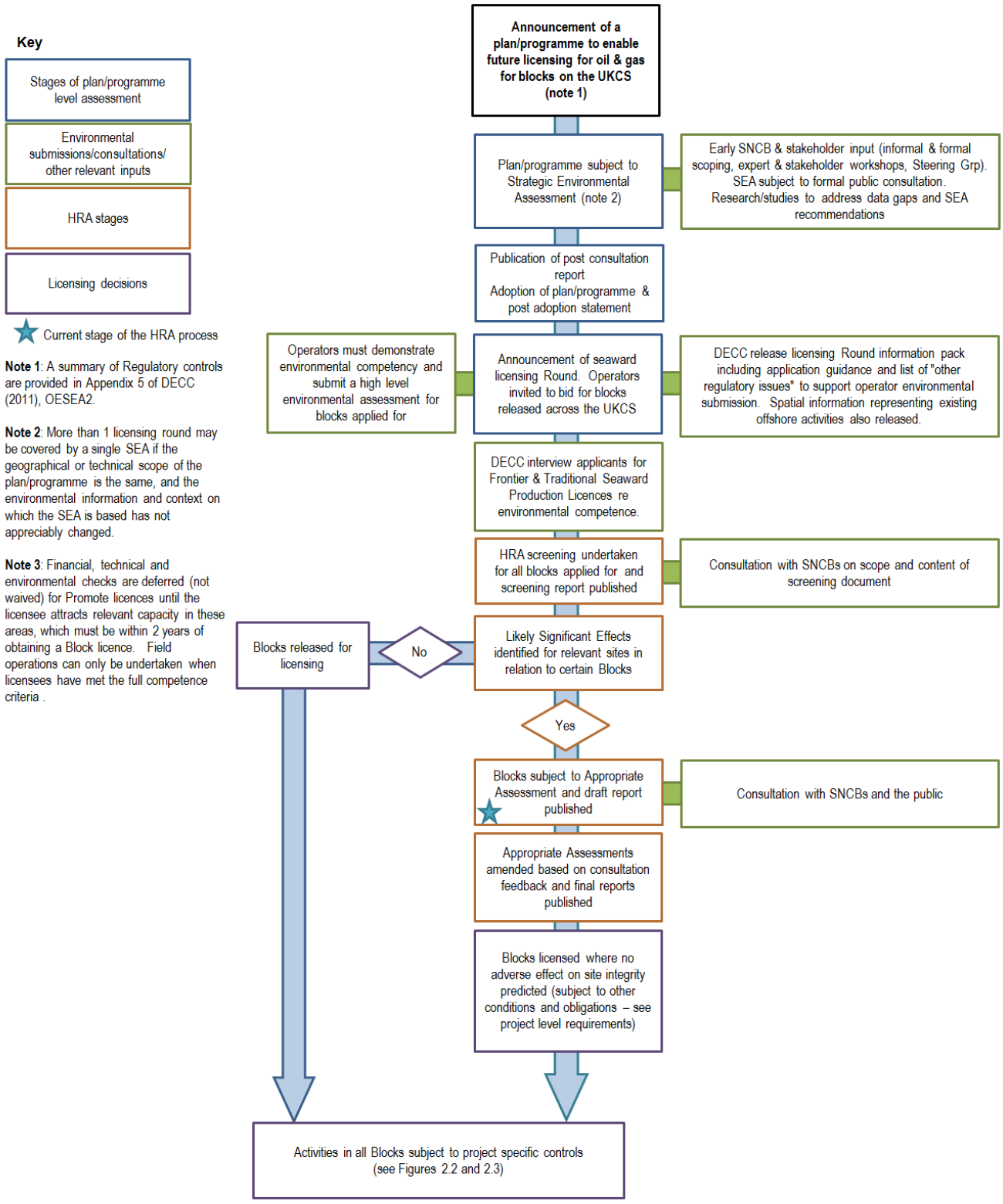
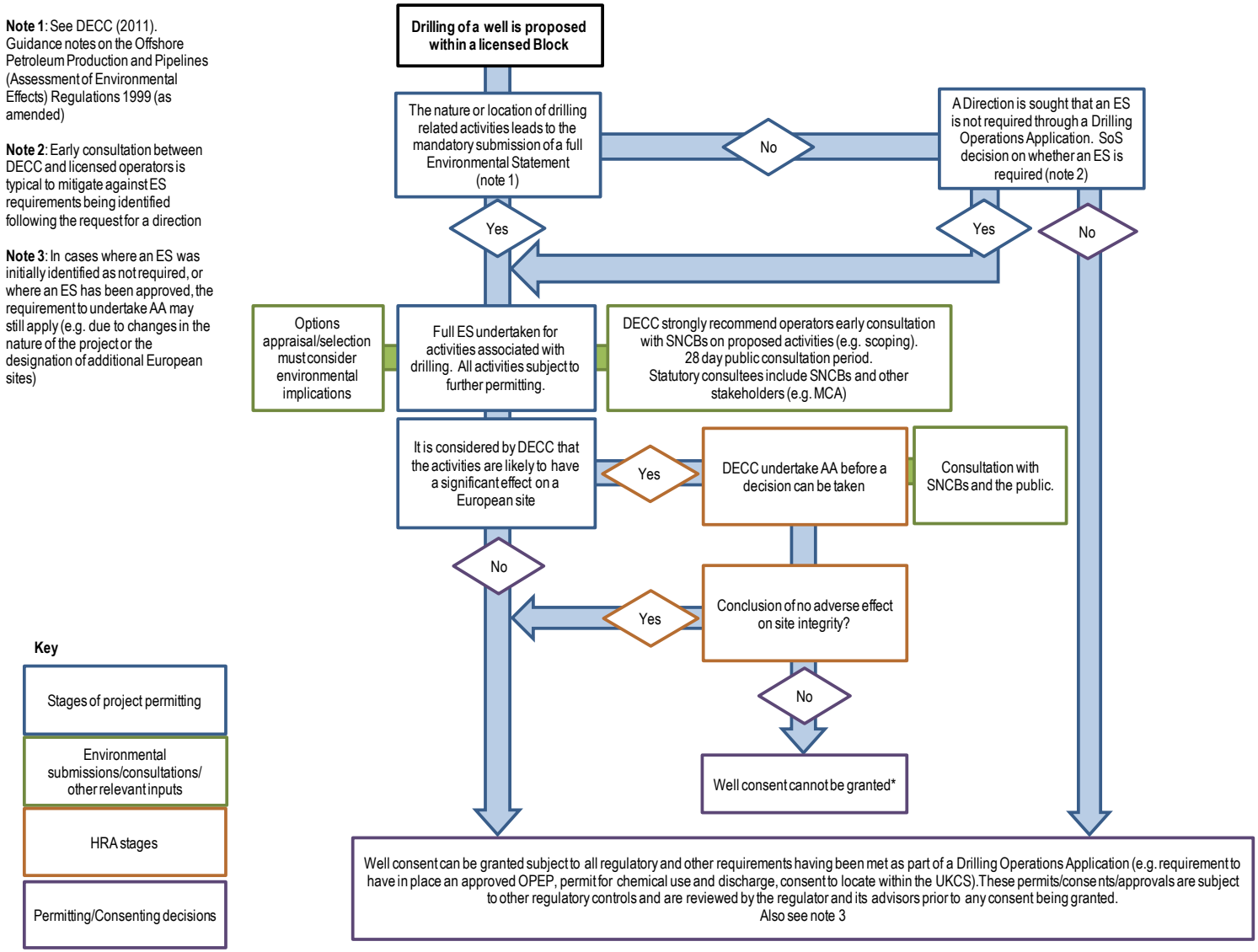


Figure 2.3: High level overview of exploration drilling environmental requirements



** Article 6(4) of the Habitats Directive provides a derogation which would allow a plan or project to be approved in limited circumstances even though it would or may have an adverse effect on the integrity of a European site (see: Defra 2012).*

3 Appropriate assessment process

3.1 Process

In carrying out this AA so as to determine whether it is possible to grant a licence in accordance with Regulation 5(1) of *The Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001* (as amended), DECC has:

- Considered, on the basis of the precautionary principle, whether it could be concluded that the integrity of relevant European Sites would not be affected. This impact prediction involved a consideration of the cumulative and in-combination effects.

- Examined, in relation to elements of the plan where it was not possible to conclude that the integrity of relevant sites would not be affected, whether appropriate mitigation measures could be designed which negated or minimised any potential adverse effects identified.

- Drawn conclusions on whether or not it is possible to go ahead with the plan.

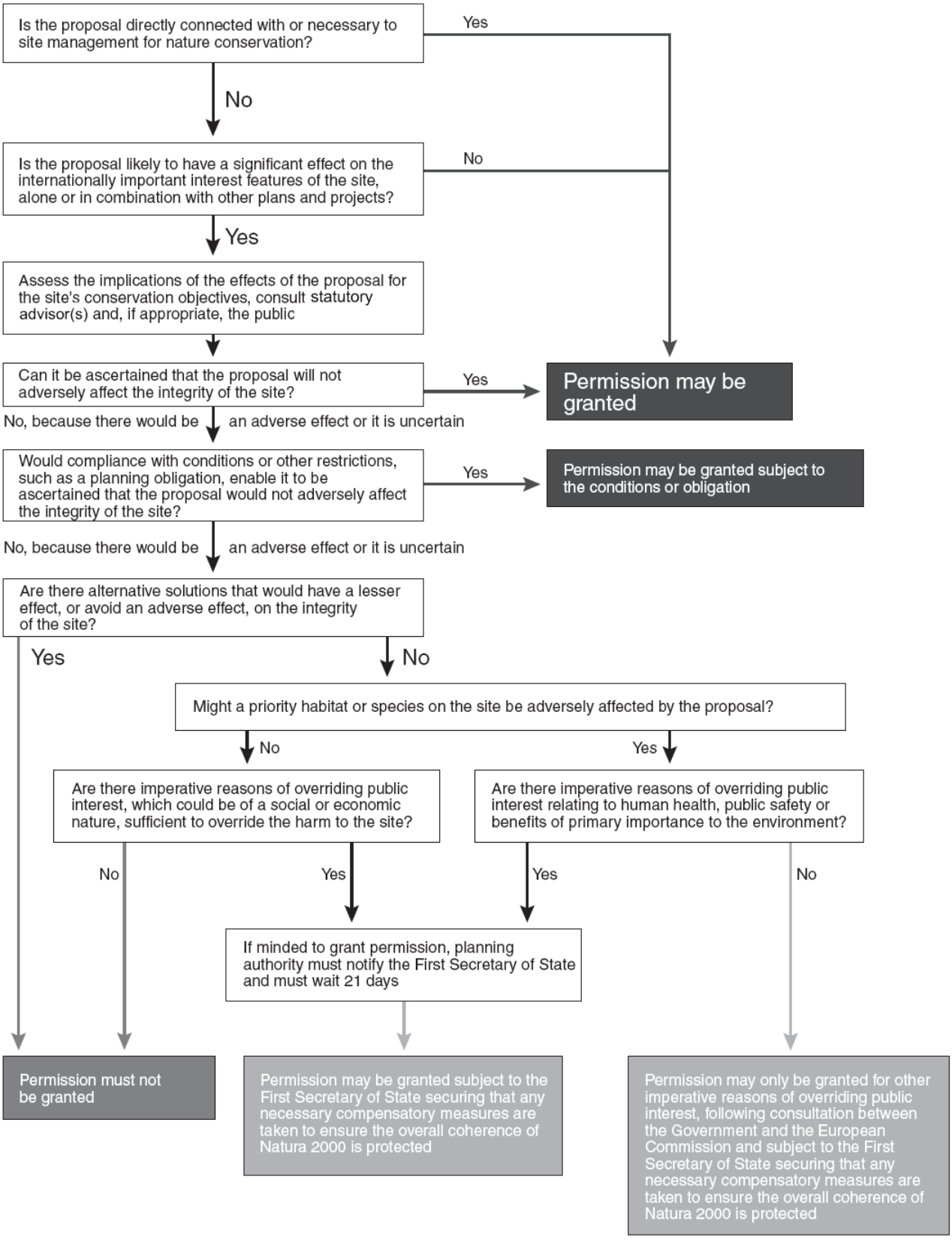
In considering the above, DECC used the clarification of the tests set out in the Habitats Directive in line with the ruling of the ECJ in the *Waddenzee* case (Case C-127/02), so that:

- Prior to the grant of any licence all activities which may be carried out following the grant of such a licence, and which by themselves or in combination with other activities can affect the site's conservation objectives, are identified in the light of the best scientific knowledge in the field.

- A licence can only be granted if DECC has made certain that the activities to be carried out under such a licence will not adversely affect the integrity of that site (i.e. cause deterioration to a qualifying habitat or habitat of qualifying species, and/or undermine the conservation objectives of any given site). That is the case where no reasonable scientific doubt remains as to the absence of such effects.

A flowchart summarising the process is shown in Figure 3.1 overleaf.

Figure 3.1: Summary of procedures under the Habitats Directive for consideration of plans or projects affecting Natura 2000 sites



Note: 'First Secretary of State' in this case is the Secretary of State for DECC. 'Statutory advisor(s)' refers to the relevant statutory Government advisor(s) on nature conservation issues. Source: ODPM (2005).

3.2 Site integrity

The integrity of a site is defined by government policy, in the Commission's guidance and accepted by the courts (Cairngorms Judicial Review case) as being: '*the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified/designated.*' This is consistent with the definitions of favourable conservation status in Article 1 of the Directive (JNCC 2002). As clarified by the European Commission (2000), the integrity of a site relates to the site's conservation objectives. These objectives are assigned at the time of designation to ensure that the site continues, in the long-term, to make an appropriate contribution to achieving favourable conservation status for the qualifying interest features. An adverse effect would be something that impacts the site features, either directly or indirectly, and results in disruption or harm to the ecological structure and functioning of the site and/or affects the ability of the site to meet its conservation objectives. For example, it is possible that a plan or project will adversely affect the integrity of a site only in a visual sense or only habitat types or species other than those listed in Annex I or Annex II. In such cases, the effects do not amount to an adverse effect for purposes of Article 6(3) of the Habitats Directive, provided that the coherence of the network is not affected. The AA must therefore conclude whether the proposed activity adversely affects the integrity of the site, in the light of its conservation objectives.

3.3 Assessment of effects on site integrity

The approach to ascertaining the potential for adverse effects on the integrity of a relevant site is set out in Section 3.1 above. This assessment has been undertaken in accordance with the EC Guidance (EC 2000), and with reference to various other guidance and reports including the Habitats Regulations guidance notes (e.g. SEERAD 2000), Circular 06/2005 (ODPM 2005) and the Scottish Natural Heritage guidance (SNH 2015).

Appendix A lists and summarises the relevant sites as defined in Section 1.3. Appendix B then presents the results of a re-screening exercise of these sites to identify the potential for activities that could follow the licensing of the 3 Blocks in question to result in a likely significant effect. The DECC (2014) screening exercise considered generic exploration activity levels for each Block applied for (e.g. drilling and shooting seismic survey in every Block) in the 28th Round in advance of Block work programmes (Section 2.2) being confirmed. Appendix B presents a re-screening exercise in light of these work programmes. It should be noted that as work programme activity levels can only either be equal to or less than that used in the original screening process, the re-screening did not identify any additional sites to DECC (2014) for which likely significant effect should be considered. Where potential effects are identified in Appendix B, more detailed information on the relevant sites including their conservation objectives is provided in Appendix C.

For those sites where re-screening identified potential effects, detailed assessment is made in the following sections of the implications for the integrity of the relevant sites (in terms of their qualifying features, and the site's conservation objectives) were a licence (or licences) to be granted for the relevant Blocks. The assessment is based on the potential work programmes for the Blocks and likely hydrocarbon resources, along with the characteristics and specific environmental conditions of the relevant sites as described in Appendix C. As noted in Section 2.2, the proposed work programme is taken as the maximum of any application for that Block.

Activities which may be carried out following the grant of a licence, and which by themselves or in combination with other activities can affect the conservation objectives of relevant sites are discussed under the following broad headings:

- Physical disturbance and drilling effects (see Section 4).
- Cumulative and in-combination effects (see Section 5).

With respect to potential underwater noise effects, the screening process (DECC 2014) did not screen-in any relevant Northern and Central North Sea Blocks. The closest coastal site with sensitive qualifying features is Mousa SAC (harbour seal) which is *ca*. 170km from Block 9/28b and considered to be beyond a credible range for significant effects. In addition, the advice on operations for both the Scanner Pockmark and Braemar Pockmarks SCI (JNCC 2012a, b) sites indicate that there is no known sensitivity of the qualifying features to noise.

With respect to accidental spill effects, no Northern and Central North Sea Blocks were screened-in by the screening process (DECC 2014). The qualifying features of the Braemar Pockmarks and Scanner Pockmark SCIs are moderately sensitive to the introduction of non-synthetic compounds (e.g. crude oil spills). However, there is a low risk of damage to the qualifying features given the mandatory control measures in place, the low frequency of accidental spill events (see Section 4.5.1 in DECC 2014), and the depth[7] of the qualifying features in 120 and 150m water depth respectively. Therefore, accidental spills are unlikely to have a significant effect on the qualifying features.

Use has been made of advice prepared by the conservation agencies under Regulation 35[8] (formerly Regulation 33), since this typically includes advice on operations that may cause deterioration or disturbance to relevant features or species. The future provision of conservation advice may be informed by an ongoing JNCC project linking human activities and marine pressures[9]. A matrix of potential interactions identified by previous studies has been produced[10] as a guide. In the matrix, several of the pressures listed for 'marine hydrocarbon extraction (not including pipelines)' are not inevitable consequences of oil and gas exploration (or production), since through the regulatory Environmental Impact Assessment (EIA) and permitting processes they are routinely mitigated by timing, siting (e.g. of rigs) or technology requirements (or a combination of one or more of these).

The conservation objectives for features of the SCI sites considered in this AA are listed in Table 3.1 (see JNCC 2012a, b for definition of terms). These objectives and site conservation status, have been considered during this AA. A site-specific consideration is made of the conservation objectives in relation to potential activities which may follow licensing of the Blocks.

[7] The majority of serious long-term impacts occur from oil on the surface of the water and on shorelines – i.e. subtidal impacts are much less common and are generally shorter in duration. Even when high concentrations of hydrocarbons are dispersed into the water column (either naturally or by the application of chemical dispersants), the resulting impact reduces rapidly as depth increases (Law *et al.* 2011).
[8] *The Conservation of Habitats and Species Regulations 2010*
[9] http://jncc.defra.gov.uk/page-6516
[10] http://jncc.defra.gov.uk/docs/Combined_P_A_Matrix_Annex2_HBDSEG_Paper_28b(1).xlsx

Table 3.1: Conservation objectives for Annex I habitats represented in SCI sites

Conservation objectives	
For Annex I Habitats	Subject to natural change, restore the submarine structures made by leaking gases to favourable condition, such that: • The natural environmental quality is restored; • The natural environmental processes are maintained; • The extent, physical structure, diversity, community structure and typical species representative of **the submarine structures made by leaking gases** in the Northern North Sea are restored.

4 Assessment of physical disturbance and drilling effects

4.1 Introduction

With respect to physical disturbance and drilling effects, the re-screening process (Appendix B) identified two sites where there was the potential for likely significant effects associated with proposed activities that could follow licensing of the relevant Blocks (Figure 1.1). The potential effects are summarised below (Section 4.2), and considered against the conservation objectives of the relevant sites to determine whether they could adversely affect site integrity (Section 4.3).

4.2 Potential physical disturbance and drilling effects

4.2.1 Physical damage at the seabed

The main sources of physical disturbance of the seabed from oil and gas exploration and appraisal activities are:

- **Anchoring of semi-submersible rigs**. Semi-submersible rigs typically use between 8 and 12 anchors to hold position, the radius of which depends on the water depth, seabed conditions and anticipated metocean conditions. The seabed footprint associated with semi-submersible rig anchoring results from a combination of anchor scars caused by anchors dragging before gaining a firm hold, and scraping by the cable and/or chain linking the anchor to the rig, where these touch the seabed (the catenary contact). An Environmental Statement for the Perth Field (Block 15/21c) development in 137m water depth, estimated the area of direct seabed disturbance associated with rig anchoring at 0.064km^2 (assumed 8 anchors, 35m^2 per anchor placement, each chain abrading an area of seabed assumed to be 800m x 10m) (DEO Petroleum 2012). A rig site survey at the Perth field described the seabed sediments to be composed of very soft to firm clay and silty clay and silts, with accumulations of coarser sediment and exposed boulders (DEO Petroleum 2012). Similar sediments are predicted to be present over the 28th Round Blocks and there is therefore the potential for scarring of the seabed to occur as a result of anchoring; such scarring may persist in the medium to long term. With respect to the Braemar Pockmarks SCI (which partly overlaps Block 9/28b), physical abrasion could (unless avoided) directly damage the qualifying feature (submerged structures made by leaking gases) and its typical species, which can take many years to recover. Advice for the site indicates that the locating of a drilling rig may expose the feature to physical disturbance or abrasion at a low level (JNCC 2012b).

- **Placement of jack-up rigs**. The water depths in the Blocks are considered too deep for a jack-up rig to be used.

- **Drilling of wells and wellhead removal**. The surface hole sections of exploration wells are typically drilled riserless, producing a localised (and transient) pile of surface-hole cuttings around the surface conductor. After installation of the surface casing

(which will result in a small quantity of excess cement returns being deposited on the seabed), the blowout preventer (BOP) is positioned on the wellhead housing. These operations (and associated activities such as ROV operations) may result in physical disturbance of the immediate vicinity (a few metres) of the wellhead. When an exploration well is abandoned, the conductor and casing are plugged with cement and cut below the mudline (sediment surface) using a mechanical cutting tool deployed from the rig and the wellhead assembly is removed. The seabed "footprint" of the well is therefore removed although post-well sediments may vary in the immediate vicinity of the well compared to the surrounding seabed (see for example, Jones *et al*. (2012)).

4.2.2 Drilling discharges

The extent and potential impact of drilling discharges have been reviewed by OESEA and OESEA2 (DECC 2009 and 2011, respectively).

In contrast to historic oil based mud discharges[11], effects on seabed fauna of the discharge of cuttings drilled with water based muds (WBM) and of the excess and spent mud itself are usually subtle or undetectable, although the presence of drilling material at the seabed close to the drilling location (<500m) is often detectable chemically (see e.g. Daan & Mulder 1996).

OSPAR (2009) concluded that the discharge of drill cuttings and water-based fluids may cause some smothering in the near vicinity of the well location. The physical disturbance of benthic ecosystems by water-based drill cuttings was examined in a series of mesocosm (Trannum *et al.* 2010) and field experiments (Trannum *et al*. 2011). The mesocosm experiments highlighted a potential reduction in number of taxa, abundance, biomass and diversity of macrofauna with increasing thickness of drill cuttings possibly as a result of oxygen depletion. However, comparison with the field-based experiments indicated that this was probably due to the lack of continuous water flow over the sediment surface in the mesocosm experiments (Trannum *et al*. 2011). The field experiments found that the difference in faunal composition between the controls and those treated with drill cuttings was of small magnitude 6 months after drill cuttings deposition indicating a relatively rapid recovery process following discharge of water-based drill cuttings. This corresponds with field studies where complete recovery was recorded within 1–2 years after deposition of water-based drill cuttings (Daan & Mulder 1996, Currie & Isaacs 2005).

The chemical formulation of WBM avoids or minimises the inclusion of toxic components, and the materials used in greatest quantities (barite and bentonite) are of negligible toxicity. The bulk of WBM constituents (by weight and volume) are on the OSPAR List of Substances/ Preparations Used and Discharged Offshore Which are Considered to Pose Little or No Risk to the Environment (PLONOR).

For the Braemar Pockmarks SCI, JNCC (2012b) indicates that oil and gas industry activity occurring within the site may expose the feature and its associated biological communities to a low level of smothering by drill cuttings. The feature lies in a low-energy environment and thus the cuttings may not be removed by currents and this can lead to localised smothering. Modelling of WBM cuttings discharges for a development well in Block 9/24b in ca. 114m

[11] OSPAR Decision 2000/3 on the Use of Organic-Phase Drilling Fluids (OPF) and the Discharge of OPF-Contaminated Cuttings came into effect in January 2001 and effectively eliminated the discharge of cuttings contaminated with oil based fluids greater than 1% by weight on dry cuttings.

water depth (BP 2010) indicated that impacts on sediments from the proposed drilling would be contained within the 500m zone, with some smothering of biota expected within 100m of the drill site where the predicted depth of material deposition was 1mm and above. Such depth of smothering is significantly less than the natural erosion/deposition rates recorded in the coastal North Sea (20-200g/m^2/year) (OSPAR 2000). However, due to regulatory and consenting processes there is a low risk of physical loss through smothering (JNCC 2012a). Blocks 15/24a and 15/25d are at sufficient distance from the Scanner Pockmark SCI that evidence (empirical and modelled) on the dispersion of discharged cuttings indicates that significant smothering effects will not occur. For Block 9/28b, only a small part overlaps with the Braemar Pockmarks SCI and in the event that a well is proposed near the site boundary DECC will require mitigation to prevent significant smothering effects occurring within the site. Potential mitigation includes relocating the well surface hole location beyond the site and drilling with a deviated rather than a vertical trajectory, and zero discharge cuttings (with mud and cuttings shipped to shore of disposal).

4.2.3 Other effects

The qualifying features of the Scanner Pockmark and Braemar Pockmarks SCIs may be affected by the interruption of the gas or fluid flow on which they depend (JNCC 2012a, b). The submarine structures in both SCIs are considered to be sustained by shallow biogenic gas seepage. However, if deeper petrogenic gas supports the structures, there is potential for a reduction in seepage if the underlying reservoir is depleted through commercial activities. Such interference with or interruption of the methane supply could alter the dependent ecosystem and the continued accretion and restoration of the structure in areas where damage may have occurred.

Holmes & Stoker (2005) investigated the origin of shallow gas in Blocks 15/20c and 15/25d, the latter containing the Challenger Pockmark Complex, the Scanner Pockmark Complex (now an SCI) and the Scotia Pockmark and concluded that "*if suitable precautions are taken, drilling operations in these areas should not significantly affect the supply of shallow gas to the active pockmarks"*. The findings of Holmes & Stoker (2005) are relevant to the consideration of the gas supply to both SCI sites; they recommended that future development operations should not disturb the shallow gas reservoir and that where a geological fault is the conduit for gas transfer from depth to the overlying gas-charged sediments and to active pockmarks that drilling operations should not disturb such faults.

Through the transport and discharge of vessel ballast waters (and associated sediment), and to a lesser extent fouling organisms on vessel/rig hulls, non-native species may be introduced to the marine environment. Should these introduced species survive and form established breeding populations, they can exert a variety of negative effects on the environment. These include: displacing native species by preying on them or out-competing them for resources such as prey and habitat; irreversible genetic pollution through hybridisation with native species; increased occurrence of toxic algal blooms. The economic repercussions of these ecological effects can also be very significant. In response to these risks, a number of technical measures have been proposed such as the use of ultraviolet radiation to treat ballast water or procedural measures introduced such as a mid-ocean exchange of ballast water (the most common mitigation against introductions of non-native species). International management of ballast waters is addressed by the International Maritime Organisation (IMO) through the International Convention for the Control and Management of Ships Ballast Water & Sediments, which was ratified in 30 States in 2005. The Convention includes Regulations with specified technical standards and requirements (IMO Globallast website). Further oil and gas activity is unlikely to change the risk of the introduction of non-native species as the vessels typically operate in a geographically localised area (rigs currently move between the Irish Sea

to the North Sea and vice versa), and the risk from hull fouling is low, given the geographical working region and scraping of hulls for regular inspection.

4.3 Implications for site integrity of relevant sites

Table 4.1 overleaf provides a consideration of potential physical disturbance and drilling effects associated with the Block work programmes and the conservation objectives of the relevant Braemar Pockmarks and Scanner Pockmark SCIs.

4.4 Mitigation

4.4.1 Mandatory requirements

The routine sources of potential physical disturbance and drilling effects associated with exploration are assessed and controlled through a range of regulatory processes, such as EIA as part of the Drilling Operations Application (formerly PON15B) through the Portal Environmental Tracking System (PETS) and, where relevant, HRA to inform decisions on those applications (see also Table 2.1 and Figure 2.3).

Drilling chemical use and discharge is subject to strict regulatory control. The use and discharge of chemicals must be risk assessed as part of the permitting process (e.g. Drilling Operations Application), and the discharge of chemicals which would be expected to have a significant negative impact would not be permitted.

4.4.2 Further mitigation measures

Further mitigation measures are available, the specifics of which would be identified and implemented through the operator's environmental management and the DECC permitting processes. These considerations are informed by specific project plans and the nature of the sensitivities identified from detailed seabed information collected in advance of field activities taking place. Site surveys are required to be undertaken before drilling rig placement (for safety and environmental reasons) and the results of such surveys (survey reports) allow for the identification of further mitigation including the revision of the location of activities (e.g. wellhead, rig leg or anchor positions) to ensure sensitive seabed surface or subsurface features are avoided. Such survey reports are used to underpin operator environmental submissions (e.g. Drilling Operations Applications, Environmental Statements) and survey information is made available to nature conservation bodies during the consultation phases of these assessments[12].

If the scale and location of the proposed drilling discharges could lead to significant smothering effects on sensitive features, DECC will expect the application of additional mitigation such as discharge near the seabed rather than near sea surface or zero discharge where appropriate.

The recommendations of Holmes & Stoker (2005) on protection of the gas supply to a pockmark provide for specific mitigation measures to ensure that the conservation objectives of the SCIs are not compromised by oilfield activities which could follow licensing. They also underpin the conditions described in Section 2.2 which would be attached to a licence for Block 15/25d. The AA recommends that these conditions are also attached to the licence for Block 9/28b.

[12] Whether within or outside an SAC, rig site survey typically includes a consideration of the presence of, amongst other sensitivities, Annex I habitats.

In all instances, consent for project-level activities will not be granted unless the operator can demonstrate that the proposed exploration activities will not have an adverse effect on the integrity of relevant sites. The information provided by operators in their applications must be detailed enough for DECC (and its advisors) to make a decision on whether the activities could lead to a likely significant effect.

Table 4.1: Consideration of potential physical disturbance and drilling effects and relevant site conservation objectives

Relevant sites	Relevant qualifying features	Consideration against conservation objectives
Braemar Pockmarks SCI	Submerged structures made by leaking gases	**Conservation Objectives**: Subject to natural change, restore the submarine structures made by leaking gases to favourable condition, such that: • The natural environmental quality is restored; • The natural environmental processes are maintained; • The extent, physical structure, diversity, community structure and typical species representative of the submarine structures made by leaking gases in the Northern North Sea are restored. **Rig installation/ placement** Qualifying feature is highly sensitive to physical damage through disturbance or abrasion (e.g. anchoring)[13]. Although the seabed footprint associated with semi-submersible drilling rig is relatively small and temporary (Section 4.2.1), Block 9/28b partly overlaps with the site and anchoring and well placement could impact the extent, physical structure, diversity, community structure and typical species of the qualifying feature. The likelihood and scale of impact will be determined by the proposed location of drilling activities and mitigation measures (see Section 4.4) may be required to ensure site conservation objectives are not undermined. **Drilling discharges** Qualifying feature is moderately sensitive to smothering from drill cuttings. Discharge of drill cuttings and water-based fluids may cause smothering of habitats in the near vicinity of the well location. The impacts from such discharges are localised but the water flow over the site may be too weak to prevent increased siltation (Section 4.2.2). Block 9/28b partly overlaps the site and smothering from drill cuttings could impact the extent, diversity and community structure of the qualifying feature. The likelihood and scale of impact will be determined by the proposed location of drilling activities and mitigation measures (see Section 4.4) may be required to ensure site conservation objectives are not undermined. **Other effects** Qualifying feature is highly sensitive to physical loss through interruption of the gas or fluid flow on which it depends (Section 4.2.3). Block 9/28b partly overlaps the site and drilling activities have the potential to interfere with or interrupt the supply of shallow gas thereby impacting the extent, physical structure, diversity and community structure of the qualifying feature. The likelihood and scale of impact will be determined by the proposed location of drilling activities and additional mitigation (see Section 4.4) may be required to ensure site conservation objectives are not undermined.

[13] http://jncc.defra.gov.uk/PDF/BraemarPockmarks_ConservationObjectives_AdviceonOperations_4.0.pdf

Relevant sites	Relevant qualifying features	Consideration against conservation objectives
Scanner Pockmark SCI	Submerged structures made by leaking gases	**Conservation Objectives**: As above. **Other effects** Qualifying feature is highly sensitive to physical loss through interruption of the gas or fluid flow on which it depends (Section 4.2.3). Blocks 15/24a and 15/25d are respectively a minimum of *ca*. 10 and 5km from the site and it is unlikely that drilling activities have the potential to interfere with or interrupt the supply of shallow gas thereby impacting the extent, physical structure, diversity and community structure of the qualifying feature. The likelihood and scale of impact will be determined by the proposed location of drilling activities and additional mitigation (see Section 4.4) may be required to ensure site conservation objectives are not undermined.

4.5 Conclusions

Likely significant effects identified with regards to physical damage to the seabed, drilling discharges and other effects (see Section 4.3) when aligned with project level mitigation and relevant activity permitting (see Section 4.4), will not have an adverse effect on the integrity of the Natura 2000 sites considered in this assessment. There is a legal framework through the implementation of the EIA regulations and the Habitats Directive, to ensure that there are no adverse effects on the integrity of Natura 2000 sites. These would be applied at the project level, at which point there will be sufficient definition to make an assessment of likely significant effects, and for applicants to propose project specific mitigation measures.

The AA recommends that the following conditions be attached to licences for Blocks 9/28b and 15/25d:

- No drilling will be permitted through the shallow gas accumulations supplying the pockmarks or through the migration pathways to them;
- The operator will liaise with JNCC in advance of any activities within the Blocks;
- The operator should note that, in advance of consenting decisions, the Competent Authority (DECC) will undertake an HRA of the potential effects of the proposed activity(ies) on the relevant SCI site if the activity(ies) are likely to have a significant effect on the site (either alone or in combination with other plans or projects).

Taking into account the information presented above and in the Appendices, it is concluded that activities arising from the licensing of Blocks 9/28b, 15/24a and 15/25d, in so far as they may generate physical disturbance effects, will not cause an adverse effect on the integrity of the Braemar Pockmarks SCI or Scanner Pockmark SCI. Consent for activities will not be granted unless the operator can demonstrate that the proposed activities which may include the drilling of a number of wells and any related activity including the placement of a mobile rig, will not have an adverse effect on the integrity of relevant sites.

5 Cumulative and in-combination effects

Potential incremental, cumulative, synergistic and secondary effects from a range of operations, discharges, emissions, and accidents were considered in the Offshore Energy SEAs (DECC 2009, 2011; see also OSPAR 2000, 2010).

5.1 Physical damage/change to features and habitats

Potential relevant sources of physical disturbance to the seabed, and damage to biotopes, associated with oil and gas exploration and appraisal activities were identified by the OESEA2 as anchoring of semi-submersible rigs, and wellhead placement and recovery (DECC 2011).

In general, cumulative effects are likely to be dominated by trawling, although this may be reduced in the future as there are Fisheries Measures Proposals for both SCIs[14,15] which would prohibit all types of demersal fishing within the site boundaries. There is no current or proposed renewable activity in the area. JNCC (2012b) indicates that the TAT14 telecommunication cable runs west to east across the Braemar Pockmarks SCI site, occupying a relatively small area (1.2km long).

No new projects or decommissioning activities, as reviewed in DECC's Project Pathfinder[16] (as of February 2015), could have in-combination effects on the Natura 2000 sites due to interactions with potential activities in the 28th Round Northern and Central North Sea Blocks.

Given the forecast scale of activity, and licence conditions related to Blocks associated with the SCIs, it is likely that there will be considerable spatial and temporal separation between disturbance "footprints" and a low probability of incremental overlap of affected areas. Similarly, with respect to potential cumulative effects associated with the interruption of the gas or fluid flow on which the qualifying features depend, adherence to licence conditions for relevant Blocks will ensure no interruption of gas or fluid flow associated with the drilling of multiple wells.

5.2 Marine discharges

Previous discharges of WBM cuttings in the UKCS have been shown to disperse rapidly and to have minimal ecological effects. Dispersion of further discharges of mud and cuttings could lead to localised accumulation in areas where reduced current allows the particles to settle on the seabed. The proximity of Block 9/28b to the Braemar Pockmarks SCI means that a level of mitigation may be required to ensure that cumulative effects with previous discharges associated with the discovery and development of the Braemar Field are minimised. As described in Section 4.4, such mitigation could include the relocation of the cuttings discharge point further away from the site, discharge near the seabed rather than near sea surface, or zero discharge.

[14] http://nsrac.org/wp-content/uploads/2013/07/Paper-8.3-Braemar-Pockmarks-Site.pdf
[15] http://nsrac.org/wp-content/uploads/2013/07/Paper-8.4-Scanner-Pockmarks-Site.pdf
[16] https://itportal.decc.gov.uk/eng/fox/path/PATH_REPORTS/pdf

5.3 Conclusions

Available evidence indicates that past oil and gas activity and discharges have not led to adverse impacts on the integrity of the Braemar Pockmarks and Scanner Pockmark SCI sites. Any activities relating to the work programmes, and any subsequent development that may occur if site appraisal is successful, will be judged on its own merits and in the context of wider development in the area (i.e. any potential incremental effects). The current controls on marine industrial activities, including oil and gas operations that could follow licensing, can be expected to prevent significant in-combination effects affecting the sites.

The competent authorities will assess the potential for in-combination effects during HRA of project specific consent applications; this process will ensure that mitigation measures are put in place to ensure that subsequent to licensing, specific activities will not result in adverse effects on the integrity of relevant sites. Therefore, bearing this in mind, it is concluded that the in-combination effects from activities arising from the licensing of Blocks 9/28b, 15/24a and 15/25d with those from existing and planned activities will not adversely affect the integrity of the relevant sites.

6 Overall conclusion

Taking account of the evidence and assessment presented above, the report determines that the plan/programme will not have an significant adverse effect on the integrity of the relevant sites (identified in Section 1.3), and recommends the granting of consent by the Secretary of State for the award of licences covering Blocks 9/28b, 15/24a and 15/25d. This is because there is certainty, within the meaning of the ECJ Judgment in the *Waddenzee* case, that implementation of the plan/programme will not adversely affect the integrity of relevant European Sites (as described in Section 4.3), taking account of the mitigation measures that will be required in the licences covering the Blocks or can be imposed through existing permitting mechanisms on the planning and conduct of activities (as described in Section 4.4).

These mitigation measures are incorporated in respect of the habitat interest features through the range of legislation and guidance (see https://www.gov.uk/oil-and-gas-offshore-environmental-legislation) which apply to developer activities which could follow plan adoption. Where necessary, project-specific HRA based on detailed project proposals would be undertaken by the competent authority before the granting of a permit/consent. The competent authority needs to be satisfied that the proposed activity will not result in adverse effects on integrity of relevant sites.

Even where a site/interest feature has been screened out in the plan level assessment, or where a conclusion of no adverse effect on integrity has been reached at plan level, project level HRA will be necessary if, for example, new relevant sites have been designated after the plan level assessment; new information emerges about the nature and sensitivities of interest features within sites, new information emerges about effects including in-combination effects; or if plan level assumptions have not been met at the project level.

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Appendix A – The sites

A1 Sites of Community Importance

Table A.1: Offshore SCIs in the Northern and Central North Sea and their Qualifying Features

Site Name	Area (ha)	Annex I Habitat	Annex II Species
Braemar Pockmarks SCI	518	Submerged structures made by leaking gases	N/A
Scanner Pockmark SCI	335	Submerged structures made by leaking gases	N/A

Appendix B – Re-screening tables for the identification of likely significant effects on the sites

B1 Introduction

In the screening assessment (DECC 2014), the implications of geophysical survey and drilling were considered in a generic way for all Blocks applied for in the 28th Round for sites where there was a foreseeable possibility of interactions. Proposed work programmes for the Blocks have now been confirmed by the applicant companies (see below), or in some cases applications made for Blocks have been withdrawn.

Proposed work programmes for the Blocks from the range of licence applications received are as follows (see also Section 2.2 for details):

- 9/28b – Drill or drop well
- 15/24a (Split) – Reprocess 3D seismic, contingent well
- 15/24a (Split) – Reprocess 3D seismic, drill or drop well
- 15/25d (Part) – Obtain and reprocess 3D seismic, drill or drop well

In light of the proposed work programmes, those sites initially identified in the screening document as having a foreseeable interaction with offshore oil and gas activities are re-screened below. The potential for likely significant effects on relevant Natura 2000 sites is considered in the table below and where relevant, the location of further appropriate assessment is clearly signposted. Activities which may be carried out following the grant of a licence, and which by themselves or in combination with other activities can affect the conservation objectives of relevant sites are considered under the following broad headings:

- Physical disturbance and drilling effects
- Underwater noise
- Accidental spills
- Cumulative and in-combination effects

B1 Offshore Sites of Community Importance

Site name	Features present		Potential for likely significant effects				Consideration in light of Block work programmes
	Habitats	Species	Accidental spills	Physical Disturbance	Underwater noise	Cumulative	
Braemar Pockmarks SCI	✓	-	-	✓	-	✓	**Qualifying features** Submerged structures made by leaking gases **Consideration of likely significant effects** Physical disturbance: Block 9/28b partly overlaps the site. Conservation objectives could be undermined through physical damage by disturbance or abrasion (e.g. anchoring) or loss from interruption or alteration of gas supply to the pockmarks. Discharge of drill cuttings and water-based fluids may cause smothering of habitats in the near vicinity of the well location. Underwater noise: N/A Accidental spills: Given the depth (120m), moderate sensitivity of qualifying feature to oil spill and low likelihood of accidental spill, significant effects not likely. Cumulative: Potential for cumulative and in-combination effects with other oil and gas activities and demersal fishing. **Appropriate Assessment** See Sections 4.3 and 5.

Site name	Features present		Potential for likely significant effects				Consideration in light of Block work programmes
	Habitats	Species	Accidental spills	Physical Disturbance	Underwater noise	Cumulative	
Scanner Pockmark SCI	✓	-	-	✓	-	✓	**Qualifying features** Submerged structures made by leaking gases **Consideration of likely significant effects** Physical disturbance: Blocks 15/24a and 15/25d are *ca*. 5 and 10km from the site and therefore rig anchoring and wellhead placement will not impact the extent and physical structure of the qualifying feature. The wells will not be drilled in the same part Block as the site, and based on cuttings dispersion modelling for other wells in similar depths and current regimes, the drilling discharges would not impact the extent, physical structure or biota of the qualifying feature, given project-level controls. Qualifying feature is highly sensitive to physical loss through interruption of the gas or fluid flow on which it depends and potential for effect despite distance of Blocks from site. Underwater noise: N/A Accidental spills: Given the depth (150m), moderate sensitivity of qualifying feature to oil spill and low likelihood of accidental spill, significant effects not likely. Cumulative: Potential cumulative and in-combination effects with other oil and gas activities in and around the site which could interrupt gas flow. **Appropriate Assessment** See Sections 4.3 and 5.

Appendix C – Detailed information on sites where the potential for effects have been identified

C1 Sites of Community Importance

Site Name: Braemar Pockmarks SCI	
Location	Latitude 58º 59'12"N Longitude 01º 28'34"E
Area (ha)	518
Summary	The Braemar pockmarks are a series of crater-like depressions, two of which contain submarine structures made by leaking gases. Also within the site boundary, and to the south-west of these pockmarks, there is an additional submarine structure that is not associated with a pockmark. These large carbonate blocks and pavement slabs are formed during the oxidation of methane gas. The habitat created supports chemosynthetic organisms that feed off the bubbling methane and provides shelter for fish species such as wolf-fish and cod. Observations of anchorage/trawl marks and dispersed fragments of carbonate structures within the SAC provide some evidence of damage to the feature. This coupled with Vessel Monitoring System information indicates continuing and historical demersal fishing activity within the site. As a result the Annex I feature may not be in favourable condition and may require restoration.
Qualifying features for which the site is designated:	
Annex I Habitat Submarine structures made by leaking gases ***Annex II Species*** None	
Conservation objectives:	
Subject to natural change, restore the feature in favourable condition, such that: • The natural environmental quality is restored • The natural environmental processes are maintained • The extent, physical structure, diversity, community structure and typical species representative of Submarine structures made by leaking gases in the northern North Sea are restored.	
Likely significant effects associated with activities that could follow Block licensing:	
• Physical disturbance and drilling effects (see Section 4.3) • Cumulative and in-combination effects (see Section 5)	

Site Name: Scanner Pockmark SCI	
Location	Latitude 58º 17'07"N Longitude 00º 58'16"E
Area (ha)	335
Summary	Scanner pockmark is a large seabed depression in the northern North Sea which contains large areas of the Annex I habitat Submarine structures made by leaking gases. The blocks lie in the base of the pockmark and support fauna more typically associated with rocky reef. These features appear to support micro-organisms known as 'chemosynthesizers' which utilise the discharged methane and its by-product, hydrogen sulphide. The gutless nematode *Astomonema southwardorum*, which may have a symbiotic relationship with chemosynthetic bacteria, is unique to this site. Fish (hagfish, haddock, wolf-fish and small redfish) also appear to be using the pockmark depressions and the carbonate structures for shelter. This site also contains the Scotia pockmark complex in the north, a composite feature composed of two deeper sections with active methane seeps. The volumes of these pockmarks are considerably greater than the normal pockmarks in the area. There is no direct evidence to indicate that the feature has been damaged. However, according to the best-available information, bottom otter trawling activity overlaps the structure of the pockmark which is supported by direct observation of discarded fishing gear caught on the structures. Bottom trawling can cause fragmentation and burial of some of the submarine structures and as a consequence, the feature may not be in favourable condition and may therefore require restoration.
Qualifying features for which the site is designated:	
Annex I Habitat Submarine structures made by leaking gases ***Annex II Species*** None	
Conservation objectives:	
Subject to natural change, restore the feature in favourable condition, such that: • The natural environmental quality is restored • The natural environmental processes are maintained • The extent, physical structure, diversity, community structure and typical species representative of Submarine structures made by leaking gases in the northern North Sea are restored.	
Likely significant effects associated with activities that could follow Block licensing:	
• Physical disturbance and drilling effects (see Section 4.3) • Cumulative and in-combination effects (see Section 5)	

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