

## Environmental Statement (ES) Summary and Sign-Off

<b>Title:</b>	Blackbird Development Environmental Statement
<b>Operator:</b>	Nexen Petroleum UK Limited (Nexen)
<b>Report No:</b>	D/4088/2010
<b>Submission Date:</b>	December 2010
<b>Block No:</b>	20/2a, 20/3a & 20/3f
<b>Development Type:</b>	Field Development
<b>Reviewer:</b>	Inger Söderström
<b>Date:</b>	July 2011

### A) Project Description:

Nexen propose to develop the Blackbird Field as a subsea tie back to the existing FPSO the Aoka Mizu situated over the Ettrick Field. The field Development will include the tie back of the PB1 well (which was drilled in 2010); as a development well and drilling a water injection well IB1 and the installation of a new 6 Km 7" flexible production flowline, a 6 Km 3" flexible gas lift flowline, (both tied back to the Ettrick Drill Centre Manifold (EDCM)), an 8" water injection flowline and an 8 Km electro-hydraulic control and chemical umbilical which will be tied back via the Blackbird umbilical riser base to the FPSO. Produced oil will use the existing system at Aoka Mizu, and be offloaded via shuttle tankers, with produced gas injected back into the reservoir and exported to shore via the existing SAGE flowline.

Situated primarily within Block 20/2a in the Central North Sea, the Blackbird Field lies approximately 75 km from the nearest UK coastline and 145 km west of the UK/Norway median line, in a water depth of 110 metres. The Blackbird Field has a maximum estimated recovery of 10.1 million barrels of oil and a maximum of 4.8 billion cubic feet of gas, with first oil/gas is anticipated in January 2012.

The water injection well will be drilled using a conventional semi-submersible drilling rig anchored over the well location, with the top hole sections being drilled riserless with seawater and high viscosity sweeps. This will generate approximately 421 tonnes of water based mud and cuttings which will be discharged at the seabed. The lower sections will be drilled with Low Toxicity Oil Based Mud (LTOBM) and will result in an estimated 424 tonnes of LTOBM cuttings which will be skipped and shipped ashore for treatment and disposal.

Pipelay operations will be conducted using a dynamically positioned (DP) vertical-lay vessel, and all flowlines will be trenched using a water-jet trencher and naturally backfilled. A worst case of 46,000 tonnes of rock has been included as a contingency should the whole lengths of the flowlines require stabilisation, however a more likely quantity of rock dump that will be required against upheaval buckling has been estimated to be 25,100 tonnes. An estimated 303 mattresses will also be used to provide subsea protection.

Some topside modifications are required to the FPSO to accommodate the Blackbird Development, including software upgrades to the Master Control Systems, hardware modifications to the hydraulic power unit and additional chemical injection facilities.

Drilling is scheduled for Q3 2012, subsea installation scheduled for Q3 2011 and commissioning scheduled for Q3 2011. First production is expected in Q1 2012 with an anticipated field life of 5 years.

## **B) Key Environmental Impacts:**

The EIA identified and discussed the following potential impacts:

- Local disturbance to the seabed caused by anchoring, trenching and subsea structure installation
- Underwater Noise
- Discharge of WBM cuttings from the Water Injection Well
- Discharge of flowline contents during installation and commissioning
- Physical presence of the flowline and subsea structures
- Accidental hydrocarbon releases
- Production – atmospheric emissions, produced water discharge, accidental hydrocarbon spills.

## **C) Key Environmental Sensitivities:**

The EIA identified the following environmental sensitivities:

- Fish: Blackbird subsea and drilling activities will co-incide with spawning periods for lemon sole, sprat, and Nephrops and the area acts as a nursery for Norway pout, Haddock, Blue whiting and sprat. The spawning and nursery areas are extensive and the area of impact would be localised and temporary. Therefore the drilling of the water injection well and pipelay is unlikely to impact these species.
- Seabirds: Seabird vulnerability ranges from low to very high during the proposed period of operations. However it has been assessed that there are sufficient mitigation measures in place to prevent accidental spills that could have a significant impact on seabirds.
- Protected habitats: A number of pockmarks have been identified in the area during various surveys, but subsequent investigations did not identify any methane derived authigenic carbonate (MDAC) structures or chemo-synthetic activity within the pockmarks. Therefore these pockmarks would not fit the Annex 1 Habitat definition.  
Protected species: Grey Seals may be present in the area of the Blackbird Development as they travel to and from foraging sites, but at sea distribution data indicates their occurrence in offshore areas of the central North Sea is likely to be relatively low and infrequent. Harbour/Common Seals tend to have a more inshore distribution and although they may be present their occurrence is likely to be low and infrequent. Bottlenose dolphins have been recorded in low numbers in surrounding quadrants in September and November, whilst Harbour porpoise have been observed in the area throughout the year with high numbers in quadrant 20 in July and low numbers in August and September. Any disturbance of marine mammals is expected to be limited to the drilling and pilling operations, and the short duration and localised disturbance is considered unlikely to have any significant impact.
- Other users of the sea: The proposed development is situated within ICES rectangle 44E9 and a total of 1,100 days fishing effort was recorded in 2009. Shipping density in the vicinity of the proposed development is moderate.

**D) Consultees:**

The Joint Nature Conservation Committee (JNCC), Marine Scotland (MS), Maritime and Coastguard Agency (MCA), Ministry of Defence (MoD) and Northern Lighthouse Board (NLB) made the following comments:

**JNCC:**

JNCC confirmed that the Blackbird Development is unlikely to have a significant environmental impact on the nature conservation value of the marine environment but recommended Nexen avoid disrupting pockmarks during pipelay.

**MS:** Marine Scotland commented on the confusing project description. Nexen have clarified this and MS have confirmed that they are content for the Blackbird ES to be accepted.

**MCA:** MCA confirmed that they have no objections.

**MoD:** MoD confirmed that they have no objections.

**NLB:** NLB advised that the geographic locations (WGS84 datum) of any subsea structures required to be left in situ should be notified to the UK Hydrographic Office to ensure updating of all relevant admiralty charts..

**E) Public Consultation:**

No comments were received following the public notice.

**F) Further Information:**

Further information was requested from Nexen which addressed the issues raised by JNCC, MS and the internal DECC review, which included clarification in relation to the project description, pipeline and umbilical installation, the pipeline protection (rock dumping), seabed contamination, and the atmospheric emissions. Additional information was provided by Nexen on 10 and 27 June, 2011 which adequately addressed the issues raised.

**G) Conclusion:**

Following consultation and the provision of further information, DECC OED is satisfied that this project is unlikely to have a significant environmental impact, and is content that it will not have a significant adverse effect on the marine environment in general or on any protected sites or species.

**H) Recommendation:**

DECC OED recommends that the Blackbird Development is given consent to proceed.

*Wendy Kennedy*

**Approved : Wendy Kennedy** - Head of Offshore Oil and Gas Environment and Decommissioning **Date: 13 July 2011**