Relinquishment Report

License: PL018ES

Block: 1/5

Area: Norwegian Southern North Sea

February 2025

A/S Norske Shell

Document Classification	RESTRICTED
Document Reference	Sodir2501
Document Version	Final – for external issue - rev
Date	20th February 2025
Approval Status	Approved

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CONTENTS

List of Figures

List of Tables

1. EXECUTIVE SUMMARY

Licence PL018ES (Blocks 1/5) is a stratigraphic licence (below the Base Hidra), transferred from PL018C on 6th December 2019. Licence was acquired 100% by DNO from Total (88.346%) and Equinor (11.654%) on this date also. In 2020 Shell and Spirit Norway stated intent to farm in to this licence in order to create a Joint Well Agreement (JWA) across the licence area containing the Edinburgh prospect, of which PL018ES was a significant component. On the 1st January 2021 Shell and Spirit acquired 40% and 15% equity respectively in the PL018ES licence.

Shell became operator of the licence following the acquisition of licence equity in 2021 with the decision to drill the Edinburgh prospect (in UK licence P.255) agreed by the PL018ES Joint Venture partnership consequently. In 2022 Sval Energi acquired the equity from Spirit Norway. The prospect was subsequently drilled in Q2 2022. The Edinburgh well was plugged and abandoned with gas shows observed.

Figure 1.1 highlights the licence summary on the location map. In 2023 the JV requested a 1 year extension to the Decision to Drill until 1st March 2024 with an associated 3 year extension to the Decision to Concretise until March 2026. This extension allowed the prospectivity of the PL018ES licences to be reviewed in light of the new data gained from the Edinburgh well.

Shell, with partners, elected to recommend the relinquishment of PL018ES and subsequently informed the NPD. The licence was effectively relinquished on 1st January 2025.

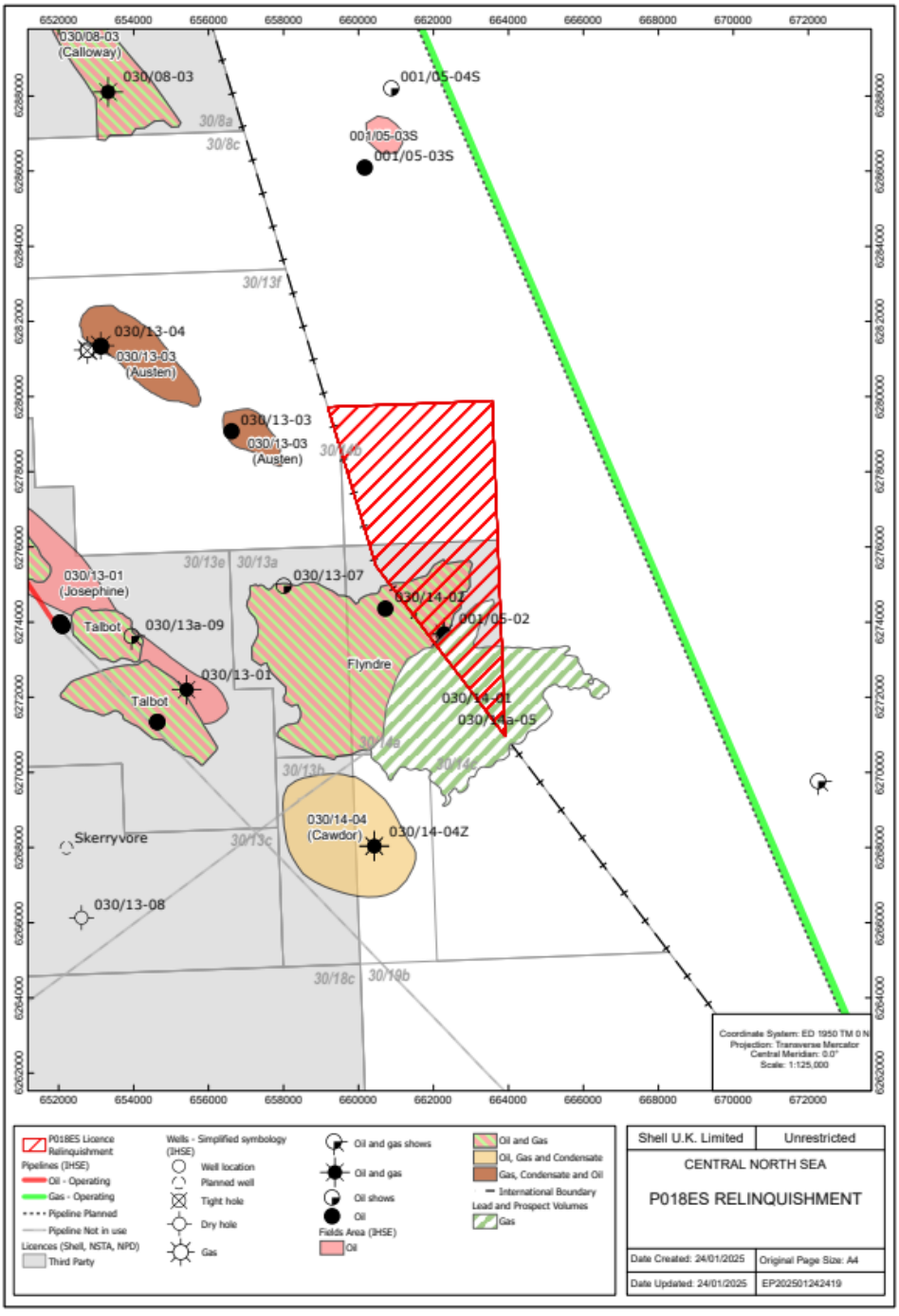


Figure 1.1 – PL018ES in the context of adjacent fields and infrastructure

2. History of Licence

Table 2.1 displays the summary of licence parameters for both the initial licence PL018ES.

License Type	:	Production
Licence Sub-type	:	Stratigraphic split below the Hidra Formation
Licence Number	:	PL018ES
Blocks	:	1/5
Block Area	:	Norwegian SNS
Licence Start Date	:	PL018ES 1st September 1964
Phase 1 Initial (6 years)	:	31st August 1971
Transferred to PL018C	:	20th December 2002
Phase 2 Production	:	31st August 2011
Transferred to PL018ES	:	6th December 2019 (levels below the base Hidra formation)
Phase 3 Production Ext	:	31st December 2028
Relinquished	:	01 January 2025 – 100%
Commitments	:	-
Operator	:	Norske Shell A/S
Participation	:	Norske Shell A/S – 40%; DNO Norge AS – 45%, Sval Energi – 15%

Table 2.1 - Summary of PL018ES licence parameters

2.1. Status of Work Commitment

The following

Licence Meetings

The following PL018ES Management and Exploration Committee meetings have been held:

- 2021, 2nd June, EC/MC Meeting, Critical document (well delivery) review
- 2021, 10th November, MC Meeting, JV Technical Meeting
- 2021, 15th December, EC/MC Meeting, JV Technical Meeting
- 2022, 24th February, EC/MC Meeting, Pre-drill review
- 2022, 10th October, EC/MC Meeting, Initial well results
- 2023, 29th July, EC/MC Meeting, Full review of well analysis
- 2023, 26th September, EC/MC Meeting, review of remaining prospectivity
- 2023, 5th December, EC/MC Meeting, recommendation to relinquish

3. DATABASE OVERVIEW

3.1. Seismic Inventory

The PL018ES licence is covered by several surveys as outlined in table 3.1. The agreed common dataset throughout the project was the PGS15908CGR.

Input Seismic	NPDID	Area [sq km]	Year of Acquisition	Type	Contractor
CN193	3577	960	1993	3D	Conoco Norway
CGG Cornerstone	-	281	2014	3D	CGG
PGS15908CGR	-	5,408	2013	3D	PGS

Table 3.1 – Summary of the surveys used in the Greater Edinburgh area

The areal coverage of the seismic surveys listed above in relation to the PL018ES licence area is shown in figure 3.1.

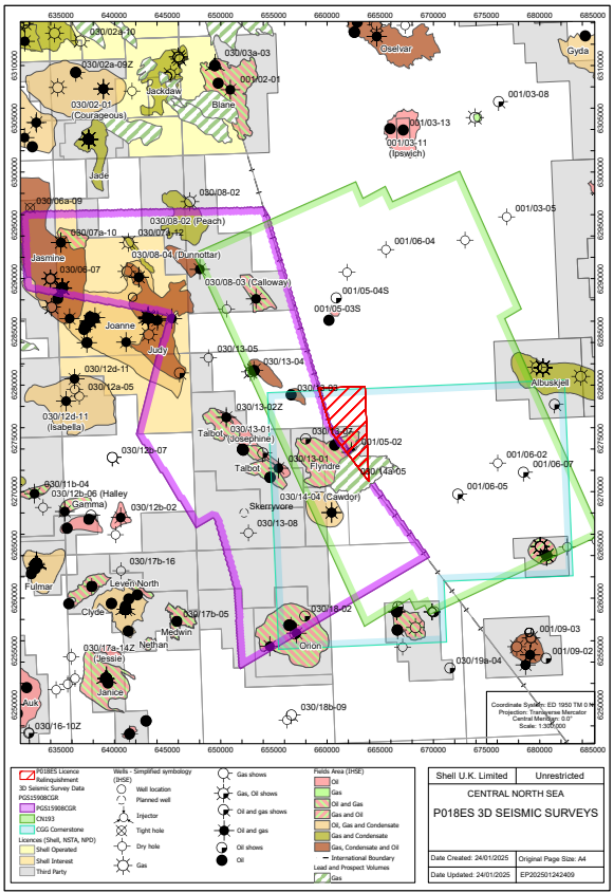


Figure 3.1 – Areal coverage of the seismic surveys used in the interpretation project to mature the Edinburgh exploration well primarily. PL018ES are covered by both surveys.

3.2. Well Inventory

There is one well penetration in the PL018ES licence area which is summarised in table 3.2 below.

Well	NPDID	Result – Field/Discovery	Year	Stratigraphy at TD	Primary Target
1/5-2	238	Oil Development – Flyndre	1974	Zechstein	Jurassic – Fulmar

Table 3.2 – Summary of well penetrations in the licence area

3.2.1. Regional Wells

A number of wells across the region were used throughout the Edinburgh project and are summarised in table 3.3 below.

Well	Result – Field/Discovery	Year	Stratigraphyat TD	Primary Target
UK				
30/8-1	HC Shows	1982	Pentland	Jurassic – Fulmar
30/8-2	Gas/Condensate Discovery - Peach	1995	Maureen	Palaeocene - Forties
30/12-1	Dry	1969	Skagerrak	Jurassic – Fulmar
30/12b-2	Oil Discovery	1980	Skagerrak	Jurassic – Fulmar
30/13-1	Oil Discovery – Josephine	1970	Skagerrak	Cretaceous – Hod
30/13-2	Oil Discovery – Josephine	1972	Skagerrak	Triassic – Skagerrak
30/13-3	Gas/Condensate Discovery – Austen	1990	Skagerrak	Jurassic – Freshney
30/13-4	Gas/Condensate Discovery – Austen	1992	Skagerrak	Jurassic – Fulmar
30/13-5	Dry	1996	Skagerrak	Triassic – Skagerrak
30/13-6	Gas/Condensate Discovery – Austen	1996	Skagerrak	Jurassic – Freshney
30/13-7	Oil Development – Flyndre	1997	Skagerrak	Jurassic – Freshney
30/13a-8	Dry	2004	Tor	Paleocene – Mey
30/14a-5	Edinburgh Prospect	2022	Skagerrak	Jurassic – Fulmar
30/17b-5	Oil Development – Medwin	1979	Skagerrak	Jurassic – Fulmar
30/18-2	Oil Development – Orion	1971	Pentland	Jurassic – Fulmar
30/18-3	Oil Development – Orion	1985	Skagerrak	Jurassic – Fulmar
30/18-6Z	Oil Development – Orion	1998	Maureen	Paleocene – Mey

30/19a-4	Oil Discovery – Affleck		1987	Zechstein	Jurassic – Fulmar
30/19a-5X	Dry		1992	Smith Bank	Jurassic – Fulmar
30/19a-6	Oil Discovery – Affleck		1996	Zechstein	Jurassic – Fulmar
Well	**NPDID**	**Result – Field/Discovery**	**Year**	**Stratigraphy at TD**	**Primary Target**
Norway					
1/5-2	238	Oil Development – Flyndre	1974	Zechstein	Jurassic – Fulmar
1/6-6	1839	Dry (Some shows)	2011	Skagerrak	Jurassic – Fulmar
1/6-2	240	Dry (some shows)	1972	Hod	Paleocene - Forties
1/6-5	1508	Dry (Some shows)	1990	Zechstein	Chalk Group
1/6-7	1928	Dry (Some shows)	1992	Pentland	Jurassic – Fulmar
1/9-7	4652	Dry	2003	Skagerrak	Jurassic – Fulmar

Table 3.3 – List of wells used in regional and prospect evaluation

4. RESULTS OF GEOLOGICAL AND GEOPHYSICAL STUDIES

4.1. Edinburgh Exploration Well (30/14a-5)

The structural crest of the Edinburgh prospect is situated in the P255 licence, directly West of PL018ES, with the licence area acquired in the event of an Edinburgh success case with volume, and possibly a contact, could be expected in the PL018ES area.

Subsequently the Edinburgh exploration well was drilled to target depth, safely, in Q2 2022 in UK licence P255 with shows observed. The well was logged with hydrocarbon and water samples collected. Following an evaluation of the data the well was plugged and abandoned.

5. PROSPECT UPDATE REPORT

5.1. Portfolio Summary

Below is the portfolio summary table for the PL018ES area, table 5.1

				In-place			Recoverable			
Prospect/Lead	Age	HC	Unit	P90	P50	P10	P90	P50	P10	GPoS (%)
Edinburgh Updip (P)	Oxfordian	Gas	mmboe	2	14	44	1.5	5	30	27

Table 5.1 Prospectivity portfolio volumetric and risking summary table

As a result of the Edinburgh well failure the remaining updip opportunity was assessed with the majority of the potential volume situated in the UK P255 licence area, with an extension Eastwards into the PL018ES licence area. This opportunity was assessed as a sidetrack option when drilling the Edinburgh well and was subsequently not drilled.

5.2. Fulmar Play

Edinburgh Up-dip

This opportunity was assessed upon the Edinburgh well reaching TD and encountering gas shows in the Fulmar. It appears as an attic opportunity at the Edinburgh structure that has a Probability of Success of hydrocarbons in place of 27%. There is a significant reservoir recovery risk with Edinburgh updip due to the tight nature of the rock identified in the original exploration well. This is associated with permeability blocking clays and cements. There is a chance that the Edinburgh structure is blown (key pre-drill risk) with the initial well resultsunable to prove this conclusively. Pressure data would suggest pore pressure is close to the fracture gradient at the crest.

Volumetrically only a small proportion of potential volumes could be situated in PL018ES, assuming the maximum contact for Edinburgh updip exists at, or close to, the Fulmar penetration at the Edinburgh well of 15,457 Ft TVDSS, as shown in figure 5.1. This would infer a transition zone is encountered at the Edinburgh well.

Figure 5.2 shows a seismic section across PL018ES highlighting the limited presence of Fulmar (based on an updated pick from the Edinburgh well) juxtaposed against a salt diapir to the North of the Fulmar interpretation. There is also no obvious undrilled structure at Jurassic level that could contain a significant volume of hydrocarbons.

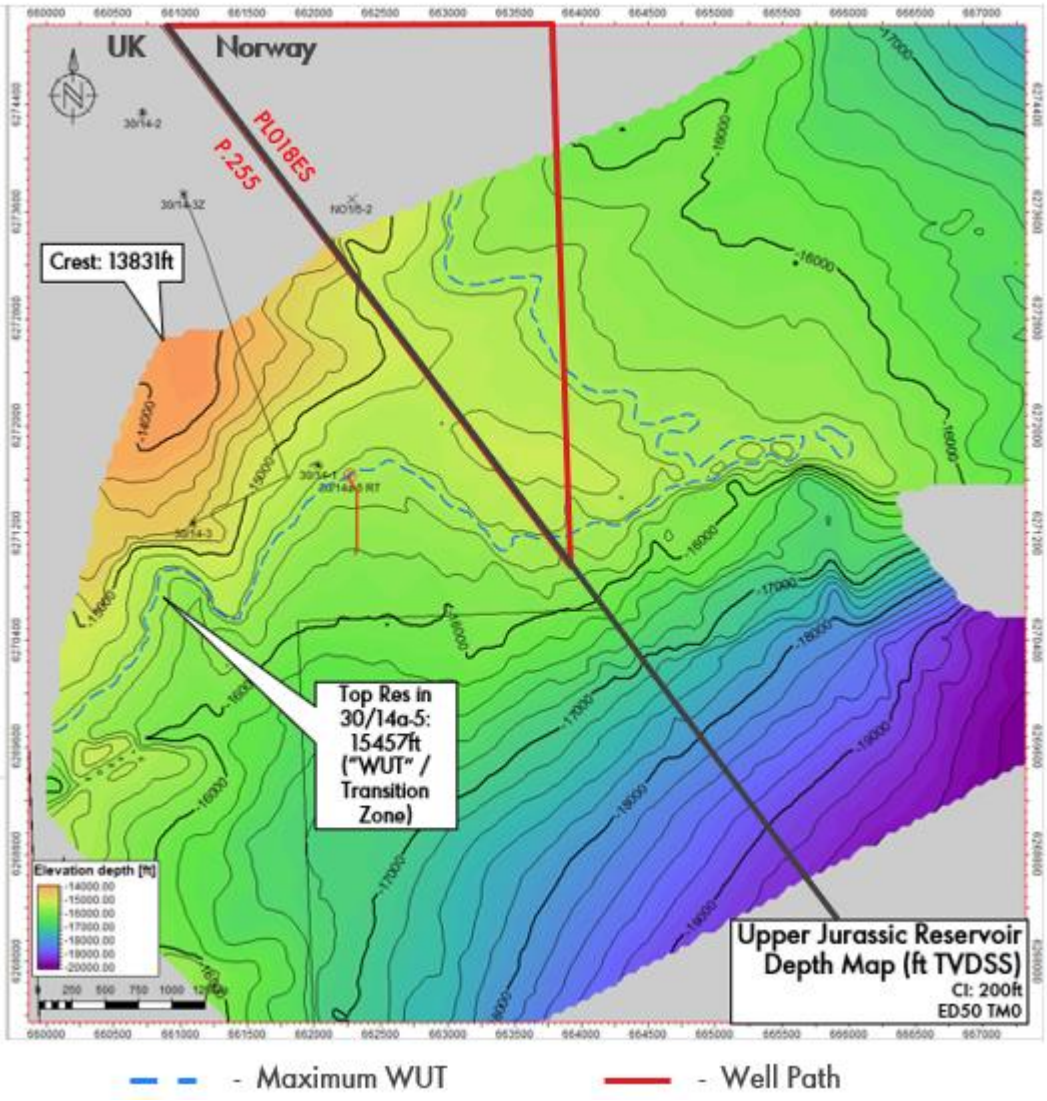
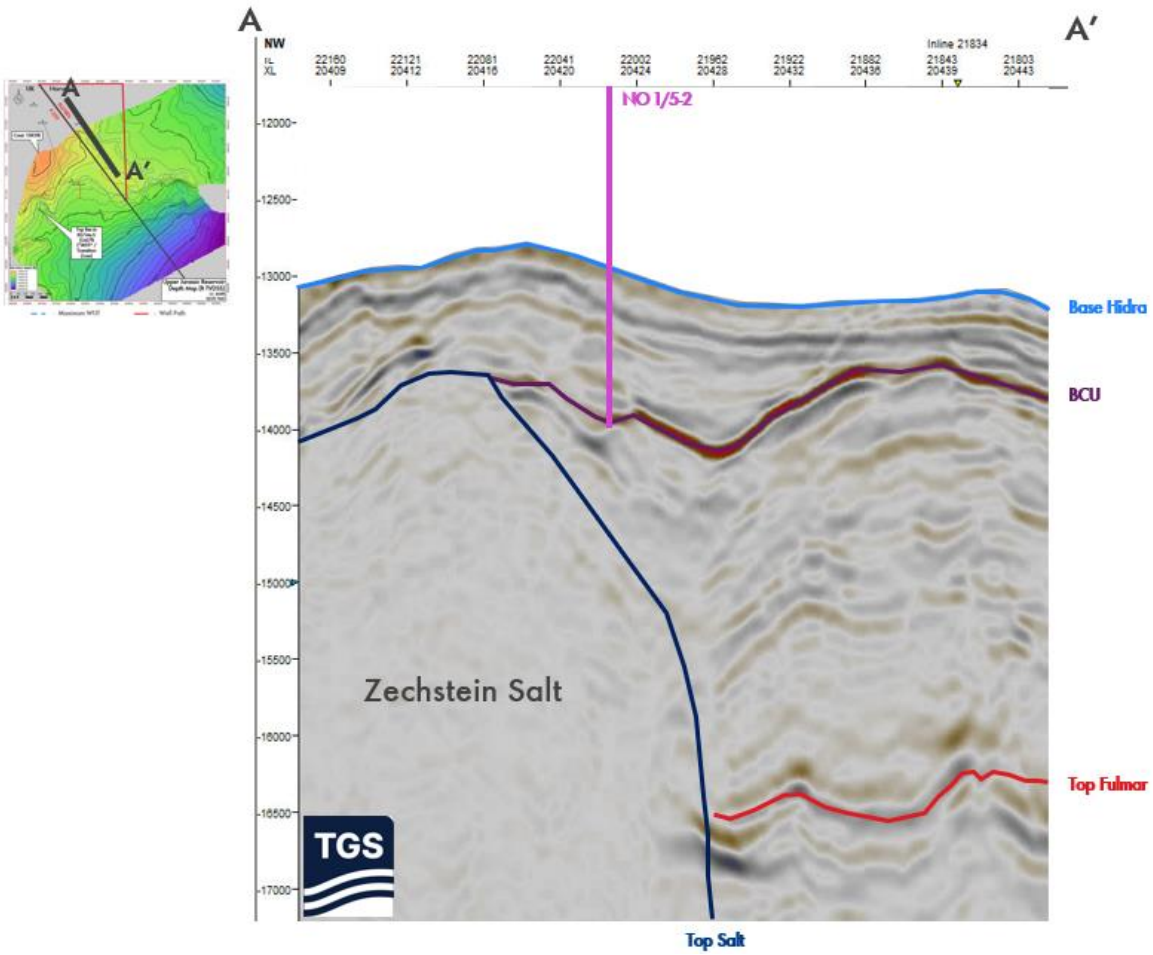


Figure 5.1 – Fulmar structure map (depth) showing the potential contact for Edinburgh updip at 15,457ft TVDSS i.e. the top Fulmar penetration identified in the Edinburgh exploration well



(Seismic survey PGS15908CGR used courtesy of TGS)

Figure 5.2 – Seismic section through PL018ES highlighting interpretation below the base Hidra. Limited Fulmar is present within this licence with the Jurassic interval juxtaposed against a salt diapir.

5.3. Additional Prospectivity

As PL018ES is a stratigraphic licence the formations above Base Hidra are not considered for prospectivity.

As the Edinburgh well tested the Jurassic and Triassic formations of the Edinburgh structure there is no additional prospectivity in this licence area, beyond the identified Jurassic Updip opportunity described above.

6. TECHNICAL ASSESSMENT

The technical assessment of the PL018ES licence areas focused on the remaining prospectivity following the Edinburgh exploration well failure. Following a re-interpretation, using the Edinburgh well penetration for correlation, a technical assessment of the remaining potential was undertaken.

Pre-identified prospectivity

Remaining volume potential exists in the undrilled updip Jurassic segment of the Edinburgh structure, however volumes are very likely to small, with potentially poor recovery, to meet a commercially viable development.

Additional Prospectivity

All stratigraphy tested below the Base Hidra has been tested with no further prospectivity in the area identified.

Final Assessment

Due to the Edinburgh well failure, significantly reducing the size of a potential Jurassic accumulation in the licence area, and the lack of a clear route to commerciality, the partnership has opted to recommend the relinquishment of the licence area having fulfilled the current technical assessment.

7. CONCLUSIONS

(a) The main prospect in the area at the time of application, Edinburgh, was tested by the 30/14a-5 (Edinburgh) exploration well.

(b) No zones of interest were identified in the 30/14a-5 (Edinburgh) exploration well – drilled in P255,

(c) The remaining Jurassic prospectivity in PL018ES would relate to an updip volume which would be materially smaller than the original Edinburgh prospect volumes making a route to commerciality challenging.

No commercially viable prospects have been identified on the licences, consequently the partnership recommends the relinquishment of PL018ES.