Shell U.K. Limited

Relinquishment Report

for

License P. 799

Relinquishment of Block 214/21a
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1. License Summary

License Number: P799
License Round: 13th Frontier Round 1991
License type: Traditional
Block Numbers: 214/21a
Present Operator: Shell U.K. Limited 38.50%
Partners: ConocoPhillips (25%), INPEX Corporation (20%), JX Nippon E&P (UK) (10%), OMV (6.5%)

2. License Synopsis

The P799 license is located approximately 130 km NW of the Shetland Islands, 10km SE of the Corona Ridge in the UK Northern North Sea (Figure 1a and b). As originally awarded, P799 covered 213/25, 213/28, 213/29, 213/30, 214/21, 214/22, 214/23, 214/26, 214/27b, 214/28 - also referred to as Tranche 7. The license was awarded during the 13th Frontier licensing round (1991), originally to ConocoPhillips, OMV and Brasoil (later Petrobras). After a series of farm-ins, farm-outs and farm-downs the licensees at the time of relinquishment are: Shell 38.5% (Operator), ConocoPhillips (25%), INPEX (20%), JX Nippon E&P (UK) (10%) and OMV (6.5%) and the license comprises only block 214/21a. Block 213/25a was fully relinquished and 214/21a was block partially relinquished on 12th June 2010 12th June 2010 following the abandonment of well 214/21a-1. The small part block was retained awaiting removal of the 214/21a-2 wellhead which was undertaken in April 2014.
Shell formally became Operator of the P799 license on June 1st 2007. The license decision to transfer Operatorship from ConocoPhillips to Shell was taken to facilitate delivery of the well commitment (held by both Shell and ConocoPhillips), which arose due to the transfer of a deep well commitment in April 2005. The Leiv Eiriksson DP rig arrived in Q4 2007 to commence the two year drilling contract with Shell in the Atlantic Margin. The commitment that required fulfilment was to drill to a TD of either 14,400 feet below MSL or 200 feet below seismic reflector "IC1" as defined by the Operator (Figure 2). The well targeted the South Uist prospect.

Well 214/21a-2 encountered no reservoir quality rock within the main target interval (Cretaceous) and water wet sands in the overlying Paleocene.
3. Work Program Summary

The license work obligations were as follows:

- 1991: Carry out seismic re-processing
- 1992: Acquire no less than 2300 km of seismic data including 300 km deep reflection data and 300 km of slant cable survey data and acquire a gravity and magnetic survey covering not less than 2000 km
- 1993: Acquire not less than a further 500 km of seismic data.

The 3D seismic data available to the license was originally processed by Western Geophysical. Unfortunately, no processing report has been located for this processing to date. Reprocessing of the subset 3D volume was done by Veritas in 2002 using a V(Z) pre-stack time migration ('MOVES'). This volume was used for final prospect maturation.
4. Database

No penetrations of the prognosed reservoir interval existed pre-drill but updated seismic correlation work relating to offset well 214/27-2 suggested that the target interval age was earliest Tertiary (T10); this was subsequently disproven during drilling when the target interval was found to be Cretaceous in age. The lack of offset well calibration to the local stratigraphy pre-drill meant that the prospect was characterised based on seismic definition criteria, with largely model-driven depositional processes and reservoir facies.

The South Uist prospect was interpreted on a reprocessed sub-set PSTM 3D volume of the more regionally extensive CT7-96 1996 3D survey acquired by Geco (under contract from ConocoPhillips) covering the majority of Tranche 6 and 7 (UK Blocks 213 and 214). The reprocessed volume (uist_pstm_2002) covers most of the remaining Tranche 7 area Figure 3.

![Figure 3: ConocoPhillips 1996 3D Survey extent (seed lines) with reprocessed sub-set volume (uist_pstm_2002) indicated by colour-filled area](image)
The 3D data was reprocessed in 2002 by Veritas using two passes of Radon Demultiple - FK filter and a velocity field with angle mutes. The resulting PSTM was provided to partners with scaling and filtering for loading on to workstation.

5. Prospectivity

Block 214/21a in License P799 contains part of the South Uist structure. Wells 214/21a-1 and -2 targeted the elongated 4-way dip-closed structure in 2008 and 2009, respectively (Figure 4). The pre-drill volumes associated with South Uist were material (2.1 tcf) but the prospect was evaluated as being high risk (0.18 POS), largely due to a lack of well penetrations and calibration of the local stratigraphy. Pre-drill critical success factors for the South Uist prospect were assessed as top seal integrity (0.5 chance) and reservoir presence (0.5 chance).

The first of the two deep-water (1152 m) exploration wells (214/21a-1) was spudded on February 12\textsuperscript{th} 2008 after two attempts of jetting the conductor. Hole problems due to reactive Eocene shales were also encountered whilst drilling the 17.1/2" section and the subsequent 13.5/8" casing string had to be set shallow, leaving 215 m rathole beneath it. Several unsuccessful attempts to clean out / pump open hole cement plugs / sidetrack were carried out. The extended time spent on these operations combined with
excessive time on BOP repairs and waiting on weather (WOW) eventually led to the decision within the P799 license to re-spud the well in 2009.

The second South Uist exploration well (214/21a-2) was spudded on the 2nd of July 2009 and completed operations on the 13th of August 2009. The well reached total depth of 3828 m MD and fulfilled an outstanding drilling commitment to the DECC (TD 200 feet below the IC1 reflector).

The 214/21a-2 trajectory encountered no reservoir quality rock within the main target interval which was evaluated, on the basis of cuttings and log data, as comprising 100% claystone of Cretaceous (Maastrichtian) age with traces of limestone. Prior to drilling, two scenarios were carried within the license as to the age of the target interval. The well results confirmed that the target interval was of Cretaceous age (Figure 5). Overlaying the main target interval, two sand units were encountered of Paleocene age (Flett and Vaila Formations). However, both were evaluated as being water-wet with no hydrocarbon shows or indications observed. The well results were consistent with the pre-drill assessment that reservoir presence within the main target interval was a key risk factor.

![Figure 5: 214/21a-2 Lithostratigraphic Prognosis vs. Actual logs](image-url)
6. Resource and Risk Summary

No additional prospectivity is recognised.

7. Conclusion

This report details the relinquishment of License P799 and of the remainder of block 214/21a, following TD of an unsuccessful exploration well and its subsequent well-head abandonment. No further prospectivity has been identified.

8. Clearance

Shell U.K. Limited confirms that the Department of Energy & Climate Change is free to publish the contents of this report. Seismic data referenced in this report is proprietary to ConocoPhillips and Shell has obtained a copy of the data to use freely.

9. Maps and Figures

Relevant maps and figures are embedded within the main text.