

Our date  
2014-12-15Our reference  
AU-EXP NOR ELNS - 00116

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## Licence Relinquishment Report PL 037F

Reference is made to the letter sent to MPE dated September 5<sup>th</sup> 2014 (ref. AU-EXP NOR ELNS-00096) regarding the relinquishment of the production licence PL037F.

### 1 INTRODUCTION

Production licence PL037F was awarded on February 8<sup>th</sup> 2013 as part of the 2012 TFO round. Statoil Petroleum AS is operator with 21.875% and shares the licence with Petoro AS (30%), ExxonMobil E&P Norway AS (25%) and Centrica Resources (Norge) AS (23.125%).

Work obligations are geological and geophysical studies within two years from award to a decision to drill or drop by February 8<sup>th</sup> 2015. The initial period for PL 037F expires on February 8<sup>th</sup> 2017, by which time a well has to be drilled.

### 2 BACKGROUND AND LICENCE HISTORY

PL037F covers parts of block 33/9 (total area of 8.249 km<sup>2</sup>) (Figure 1). The licence is located NW of the Statfjord Nord and Sygna oil fields.

The licence targeted the downflank upside potential of the Hjort prospect in Upper Jurassic Munin Mbr. and Mid Jurassic Brent Gp. sandstones. The crest and largest part of Hjort is located in PL037 to the east. Those areas in PL037 covering Hjort are also included in the relinquishment as requested in referenced letter above (see also Figure 1).

### 3 DATABASE

Prospect evaluation was based on existing seismic and regional well data. Seismic cube ST0405 was used for prospect evaluation. No new seismic was acquired. No new wells were drilled.

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#### 4 TECHNICAL WORK AND MEETINGS

Technical work in PL037F was related to the re-evaluation of the Hjort prospect. Prospect evaluation included amongst other items a review of regional pressure data, fault seal analysis and a regional migration model. A new technical economical evaluation was performed.

The following Management and Exploration committee meetings were held in the licence:

- PL037F MC Start-up meeting – 30.05.2013
  - Agreement was reached to handle all PL037F matters in existing PL037 committees
- PL037/037F MC meeting – 20.11.2013
- PL037/037F EC meeting – 04.03.2014
- PL037/037F MC meeting – 18.06.2014

The operator's recommendation to drop PL037F and relinquish parts of PL037 related to Hjort was posted on L2S July 3<sup>rd</sup> 2014 for partners' approval and was subsequently approved by all partners.

#### 5 PROSPECT EVALUATION

The Hjort prospect is located in block 33/9, NW of Statfjord Nord and Sygna oil fields and consists of two stacked reservoir segments in Uppare Jurassic Munin Mbr. and Mid Jurassic Brent Gp. sands, respectively. ST0405 was used for seismic interpretation and data quality is sufficient. LFP work was performed on well 33/9-17. Depth conversion was based on existing Statfjord North and Sygna velocity models.

The prospect is a two-way dip closure down-faulted from Statfjord North and Sygna (see Figure 2). Downflank well 33/9-17 drilled Munin and Brent reservoirs and found water. Weak oil shows were only encountered in the Munin Mbr. The WUT in this well is regarded as the deepest possible filling of the Hjort prospect.

The prospect relies on two upflank sealing faults, which constitutes the main risk for both segments (see Table 2). Faults seal analysis and regional pressure work was performed to de-risk trap seal.

Hjort is sourced from the Draupne Fm in a local kitchen area to the north. Expected HC type is oil. Hjort is positioned south of a sub basin. Charge models built for Hjort show that the amount of generated and migrated hydrocarbons available to fill the trap is a critical issue for the hydrocarbon column. Migration risk is considered especially high for Brent and constitutes another substantial risk for the segment. Dry wells in the Brent Gp. to the north may have leaked through the Munin sandstone. There is no DFI seen on Hjort as suggested by LFP work.

#### 6 RESOURCES

A summary of estimated resources and risks for the Hjort prospect are shown table 1 and table 2. Note that most of the Hjort prospect volumes are located in PL037 (see Figure 1).

Table 1 Hjort prospect volume

<b>Well: -</b>	<b>Prospect/discovery name:</b> Hjort						
<b>UNDISCOVERED</b>	In-place res. (MSm <sup>3</sup> oe) 100%, Total Structure			Recoverable res. (MSm <sup>3</sup> oe) 100%, Total Structure			Pg %
	P90	Mean	P10	P90	Mean	P10	
Hjort Munin	1.7	10.0	24.6	0.7	4.5	11.0	22
Hjort Brent	0.7	4.8	10.8	0.2	1.3	3.0	9

Table 2 Hjort prospect risks

<b>Prospect segments</b>	<b>P-Play</b>			<b>P-Prospect/Segment</b>						
	Reserv.	Source	Seal	Reservoir		Source			Trap	
				pre-sence	produc-ability	pre-sence	migra-tion	hc-phase	geo-metry	seal
Hjort Munin	1	1	1	0.90	1.00	1.00	0.60	1.00	1.00	0.40
Hjort Brent	1	1	1	1.00	1.00	1.00	0.30	1.00	1.00	0.30

All values in %-factor

## 7 TECHNICAL / ECONOMICAL EVALUATION

A technical/economical evaluation was performed for the Hjort Munin segment. Hjort Brent segment volumes were not included due to very high risk.

Commercial analysis was based on a new template with two oil producers and one water injector and pipelines to Sygna and Statfjord North. Drilling from available slots on Sygna and Statfjord North was also investigated. None of the business cases fostered a sufficient economic value, given the high risk and limited volume potential for the Hjort Munin segment.

## 8 SUMMARY AND CONCLUSIONS

The work programme for the initial period of PL037F has been fulfilled. The Hjort prospect evaluation has been completed. The prospect is not economically attractive to warrant drilling of an exploration well and extend the licence period. The PL037/PL037F Management Committee has therefore decided to relinquish licence PL037F and the parts of PL037 covering the Hjort prospect.

Kind regards  
Statoil Petroleum AS

  
PL037/PL037F Management Committee Chairman

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## 9 FIGURES

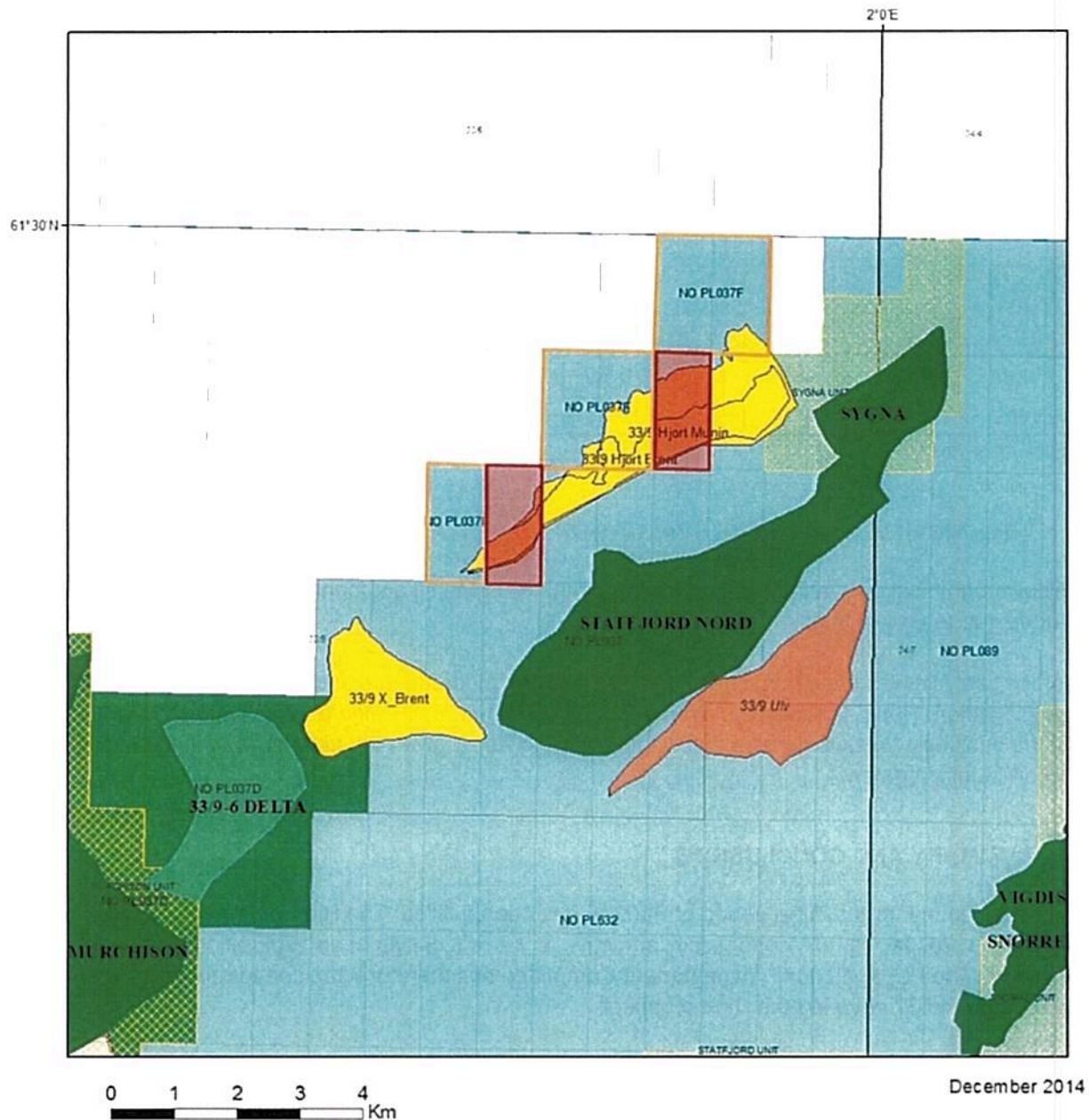


Figure 1: PL 037F area map and Hjord prospect location (Hjord Brent small outline, Hjord Munin large outline). PL037F licence area is yellow framed. Relinquished area in PL037 related to Hjord is highlighted by red shaded areas.

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## Hjort Prospect – Munin and Brent ST0405

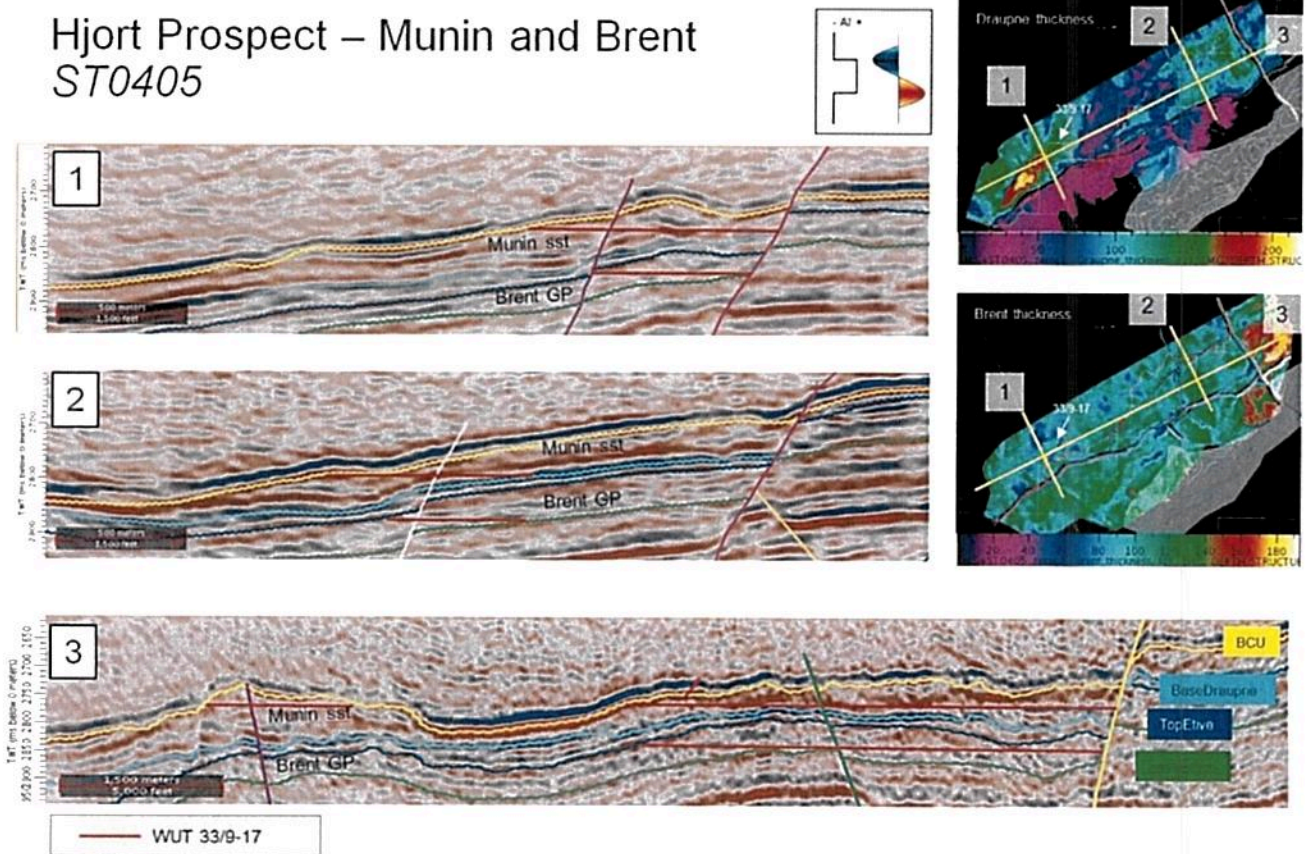


Figure 2: Seismic sections illustrating the Hjort prospect with segments on Brent Gp. and Munin Fm. level

### Attachments:

- NPD Prospect data spreadsheet Hjort Munin prospect (xls speardsheet)
- NPD Prospect data spreadsheet Hjort Brent prospect (xls speardsheet)