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Our ref: AU-EXP NUKE NS-00228

Licence Relinquishment Report PL 043 ES

Reference is made to the notification on license decision to NPD dated 30.01.2020, regarding drop decision in production license 043ES.

This report outlines the key license history, the database, prospects and the technical evaluation of the production license 043 (PL043 ES) and fulfills the requirement by the NPD for a license status report within 3 months of relinquishment.

1 Key licence history

PL043 ES is located within block 30/4 on the eastern margin of the Viking Graben, a few kilometers north of the Martin Linge Field. PL043 ES was awarded 02.03.2018 (APA 2017) with Total E&P Norge AS as the Operator and the Sara prospect as the main and only prospect. The original work program was to decide on drill or drop by 02.03.2019. A one-year extension of the license terms was applied for in Q4 2018 and granted by OED 19th April 2019. During the license period, the Sara prospect has been firmed up through seismic interpretation on a new seismic reprocessing, subsequent G&G evaluation and tec-ec in 2019.

As Total farmed out of the license as of 16th May 2018. The current distribution of PL043 ES shares is:

- Equinor Energy AS, Operator 70 %
- Petoro AS 30 %

The Sara prospect comprise a four-way closure with the Hermod formation as the reservoir deposited as a turbiditic delta fan system. The critical risk is the trap seal as the overlying Balder Formation is very sandy in this area.

The PL043ES has been handled through the PL043 RC committee. A RC work meeting where the Sara prospect was the only item on the agenda was held 23th January 2020. In this meeting the Operator presented an evaluation of all the relevant studies for the drop decision.

2 Database

The seismic database constitutes TO1301ML and CGG18M01. A multi azimuth reprocessing named TO1301-ML-EQR18-Z-3AZ-V2-FINAL-FULL-T was available spring 2019 and formed the basis for the final interpretation of the Sara prospect.

Key wells for the prospect are 29/9-1, 30/7-8 R, 30/7-6 R, 30/4-2, 30/4-D-1 H, 29/6-1, 30/4-1 and GB 3/15-12

3 Review of geological framework

The application securing the PL043 ES focused on the Paleocene play within the Hermod Formation.

The main risk for the Paleocene play in the area is trap seal, as the stratigraphic sequence from Paleocene age and into the Eocene age, most likely lacks an effective cap rock. Upwards migration through the Paleocene stratigraphy will then most likely bypass the Paleocene and accumulate in the Eocene as seen in the Eocene discovery above the Martin Linge Field.

The Sara prospect was worked up by studying all the available well and seismic data. The results of the studies improved understanding of the opportunities and provided support for volumetric input parameters and risk assessment.

In detail, the studies/work completed for PL043 ES were the following

- Remapping on reprocessed multi-azimuth seismic
- Geophysical work to clarify direct hydrocarbon indicators
- Sub-regional studies of Paleocene fans to understand trap seal and reservoir
- Variance cubes to evaluate migration mechanism
- Evaluation of volumes and risk
- Valuation of prospect

4 Prospect update

The reservoir for the Sara prospect is the Hermod Fm within the Paleocene. The sandstones were deposited as turbidites fed from the Shetland platform to the west, and further into the Viking Graben. There is no risk connected to reservoir presence.

An interpretation of the top Hermod Formation reveals a 4-way anticlinal which forms the trap for the prospect. The main risk for the prospect is trap seal, as the cap rock in the Balder Formation is regarded as weak. Deep sea sandstones with the same orientation as in Hermod Formation is also active during this period and referred to as Odin member. There is a couple of pressure points within the Eocene-Paleocene sandstones in the Martin Linge area which all suggests hydrostatic pressure and communication. This is also seen in the Frigg area further to the South. The probability for a working trap seal is set to 0.25 for the Sara prospect.

Upward fracture migration from the Jurassic strata through the Cretaceous and Tertiary, is the model for hydrocarbons to enter the known discoveries within the Eocene Frigg Formation in the area. This mechanism is clearly seen by gas chimney cubes for the Martin Linge Eocene discovery and also the model for the Sara prospect. As the gas chimney cubes shows similarities between the sections below the Martin Linge Eocene discovery, and the Sara prospect the probability for a working migration is set to 0.9.

A business case based on one single slot sub-sea template and tie-back to Martin Linge was performed in November 2019.

The table below gives a summary of the volumes and risk for the Sara prospect.

Prospect	Pg	Recoverable MSm ³ OE		
		P90	Mean	P10
Sara	0.225	0.7	3.3	15.4

5 Conclusions

The work program for PL043 ES has been fulfilled. The Sara prospect has been evaluated within the specified time frame and geological and geophysical studies have been completed. After a full evaluation the license recommends to drop due to the very low probabilities for finding hydrocarbons. The PL043 ES Management Committee has therefore decided to allow the license to expire on the second of March 2020.

Kind regards

Tom Dreyer

PL043 ES MC Chairman.

FIGURES

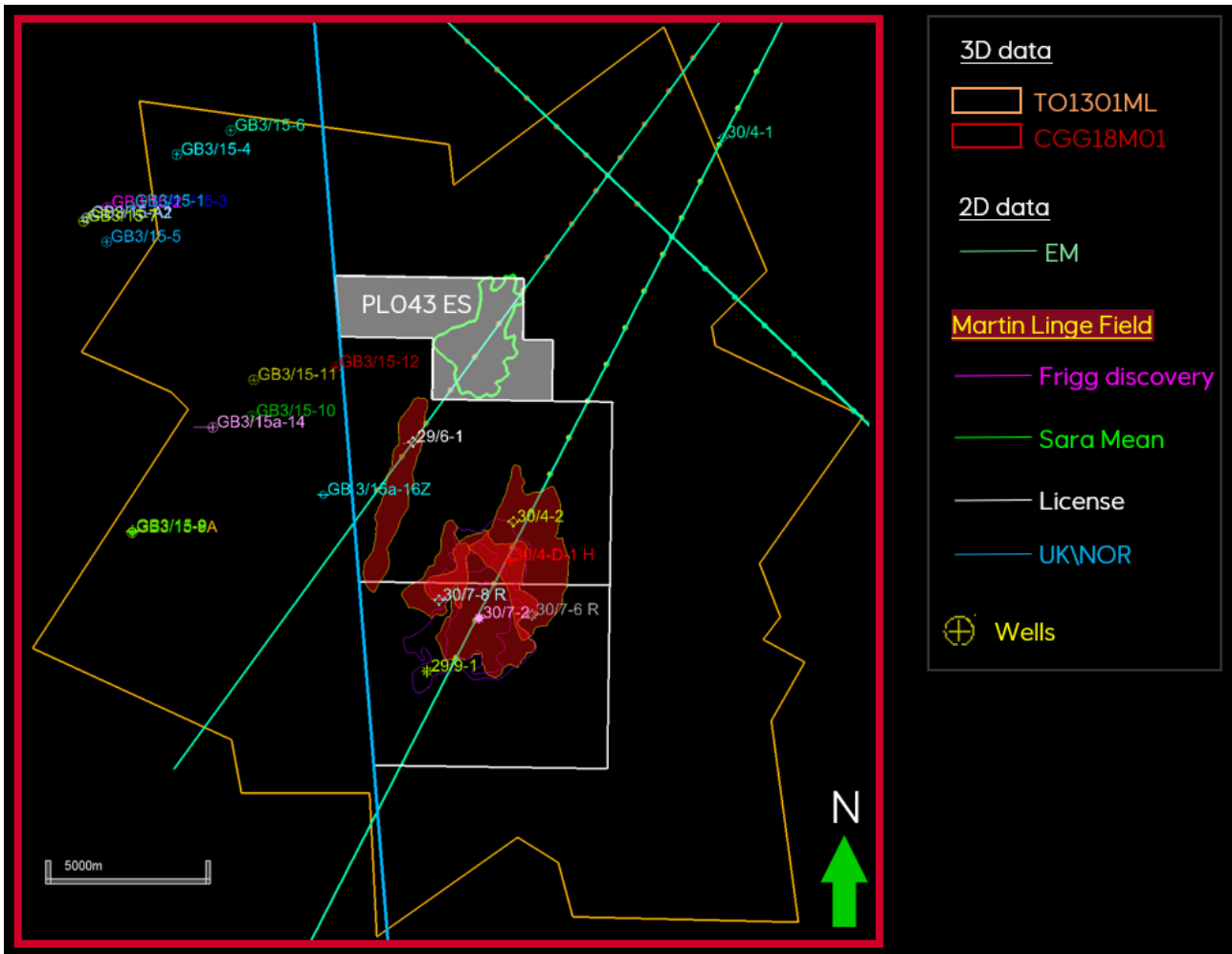


Figure 1. License overview map with seismic database, discoveries, wells, prospect outline and PL043 ES license.

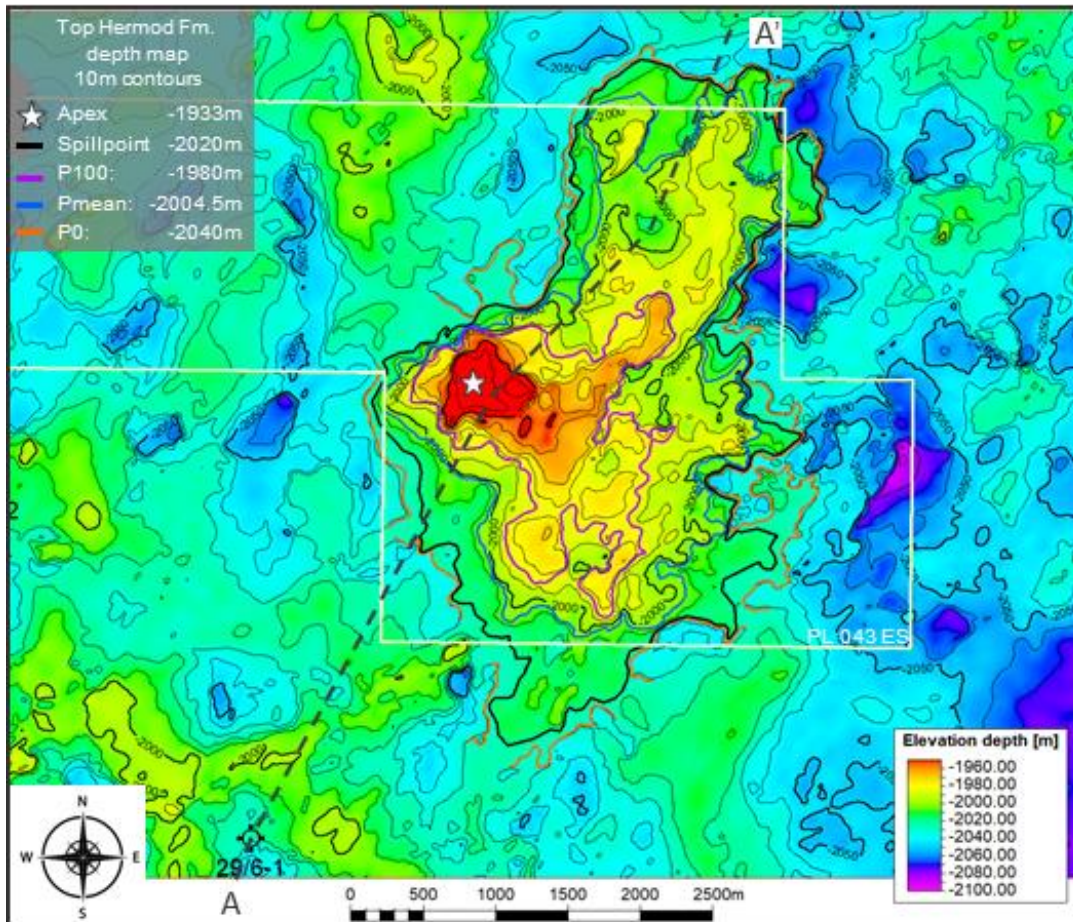


Figure 2 Top Hermod structural map with Sara prospect polygons. White outline is license boundary for PL043 ES wells.

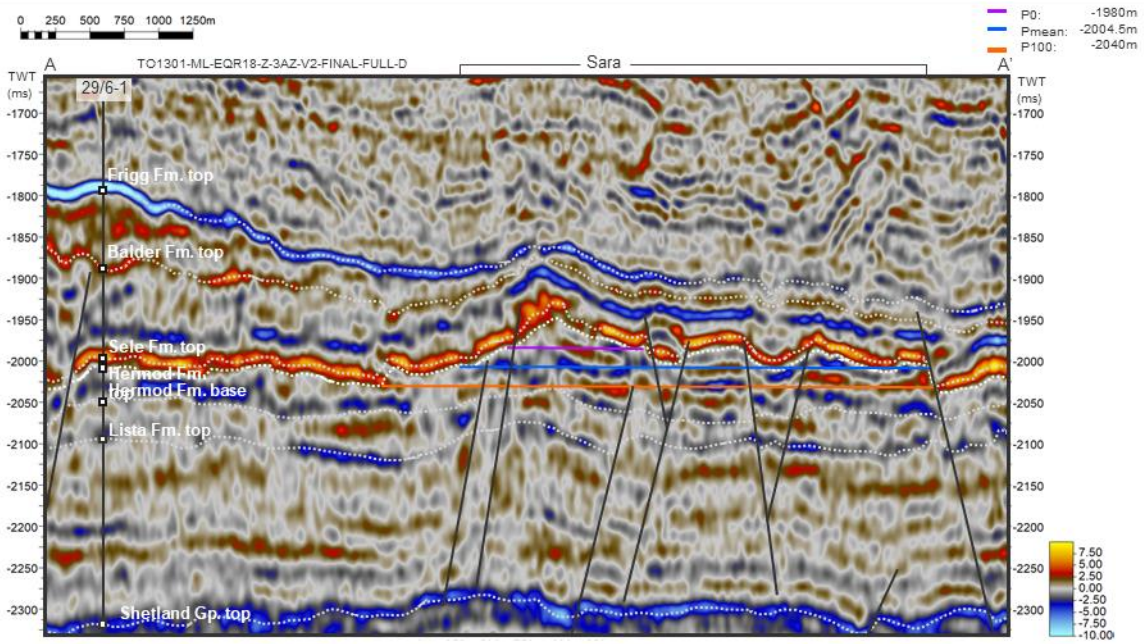


Figure 3 Composite line through Sara prospect with key seismic horizons and HC-filling scenarios.