

PL354 and 354B RELINQUISHMENT REPORT

VNG Norge AS
Wintershall Norge ASA

1 Key license history

The PL354 was awarded as part of the APA 2005 on the 6th January 2006 to the following companies:

Endeavour Energy Norge AS 50%
Petro-Canada UK Limited 30%
Revus Energy ASA 20%

The PL354B was awarded to the same companies as part of the APA 2006 on the 16th February 2007 to the following companies:

The work obligations for PL354 were to reprocess 3D seismic data over the license area by 6th January 2008. No extra work obligations were imposed for PL354b.

The license period should consist of:

- Drill and drop decision by 6th January 2008
- Decide on make a Plan for Development or drop by 6th January 2010
- Decide to submit a Plan for development or drop by 6th January 2011

The EC and MC meetings were held regularly and as needed.

On 1st August 2008 Endeavour Energy Norge AS (VNG Norge AS) applied on behalf of licensees to extend the deadline for reprocessing of 3D seismic data from 6th January 2008 to 6th June 2008 due to delay in the re-processing caused by misplaced navigation tapes for one of the seismic surveys. The OED granted permission to extend the deadline by 6 months to 7th September 2008.

The licensees decided not to drill any exploration well. Petro-Canada decided to leave the license at this point and their 30% share was taken over by the two other licensees (15% each). They applied to prolong the license to study two old discoveries with a view to eventually make a Plan for Development for these.

Endeavour Energy Norge AS was taken over by VNG and became VNG Norge AS in 2009. Revus Energy ASA was taken over by Wintershall Norge ASA in 2009.

VNG Norge AS has mapped both licenses based on PSDM reprocessed 3D seismic data and evaluated in detail both licenses in order to improve the definition of critical factors for evaluation of hydrocarbons in the 2/22 and 2/7-29 discoveries. The licensees have concluded that there is not enough volume of hydrocarbons to justify developing the discoveries and no drillable prospects were identified.

The licensees applied for relinquishment. This was granted 9th February 2010.

2 Database

The PL354 and PL354B were evaluated as part of a joint interpretation project with Endeavour Energy's UK office.

All wells in Norwegian blocks 1/9, 2/7, 2/10, 2/11, UK blocks 30/25, 30/30, 31/21, 31/26, 31/27 and Danish blocks 5603/26, 5603/30 were available for this study.

Seismic surveys BPN9102, ST9206, PAG95 and SG9101 were reprocessed into EENO1R07 M which was used to map the licenses. No new wells were drilled. Fig. 2.1 showing 3D seismic surveys along with the wells used for the final evaluation and decision making process.

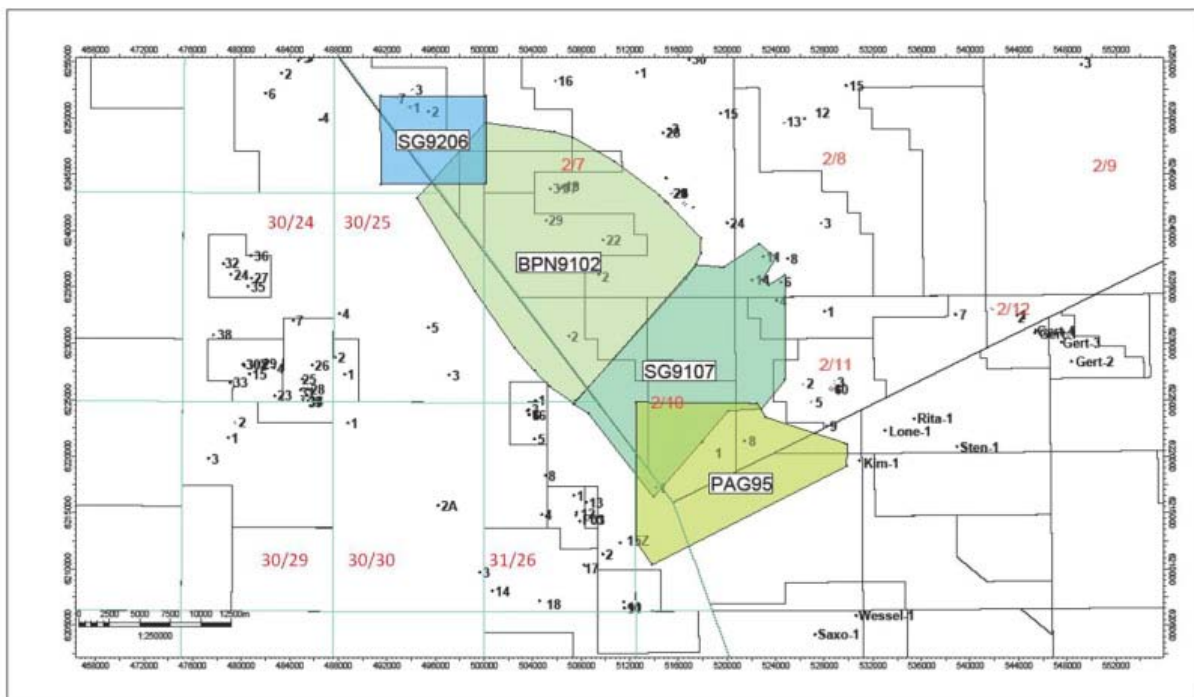


Fig. 2-1 PL354 database. The final outline of reprocessed survey EEN3D01R07 M is shown in coloured areas with the original input surveys named. Wells available to the project are shown.

In order to make the final mapping of the two old discoveries (2/7-22 and 2/7-29) the BPN9102 survey was reprocessed to PSDM.

3 Review of geological framework

The license area lies on a geological feature called the Gresen Nose which is a shallow ridge of old rocks extending northwards near the Norway-UK median line. A variety of trap types, from smaller structural closures to fault seal-dependent and stratigraphic pinch-out traps have been recognised.

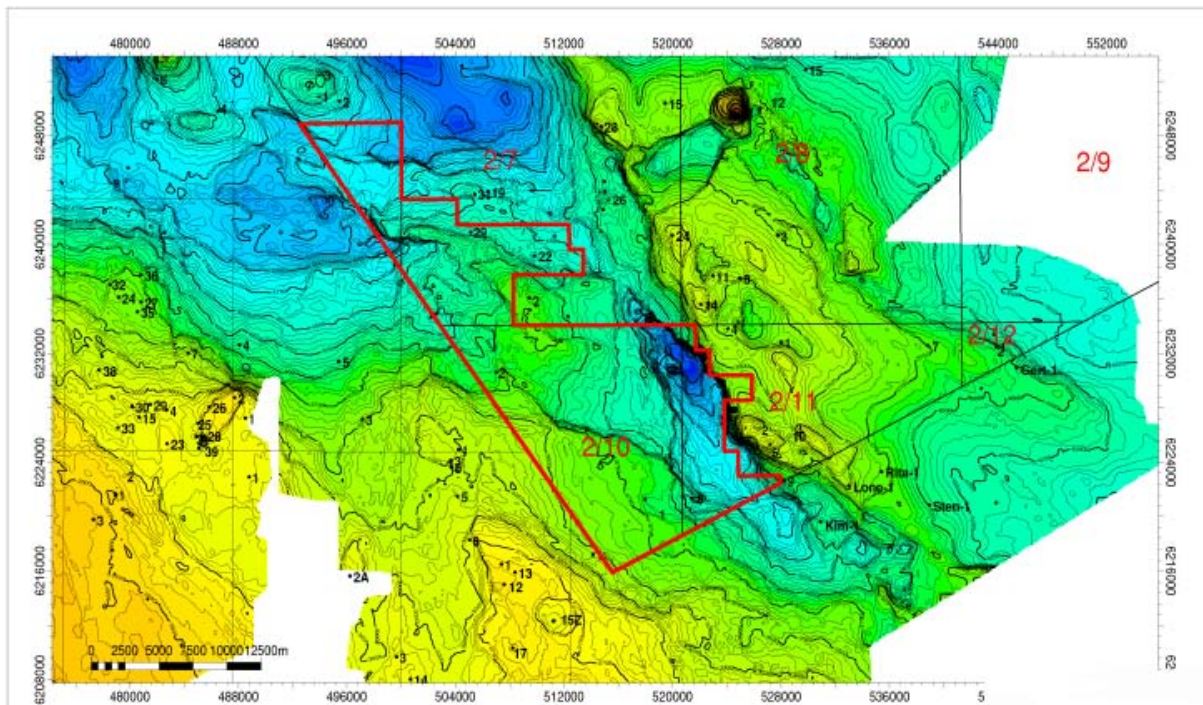


Fig. 3-1 Base Cretaceous Unconformity depth map. The figure shown the shallow structural nose extending along the Norway-UK median line (The Gresen Nose). The PL354 area is outlines in red line.

Fig. 3.2 shows the post-Carboniferous stratigraphy and lithostratigraphic nomenclature utilised for the southwestern Central Graben and Gresen Nose area.

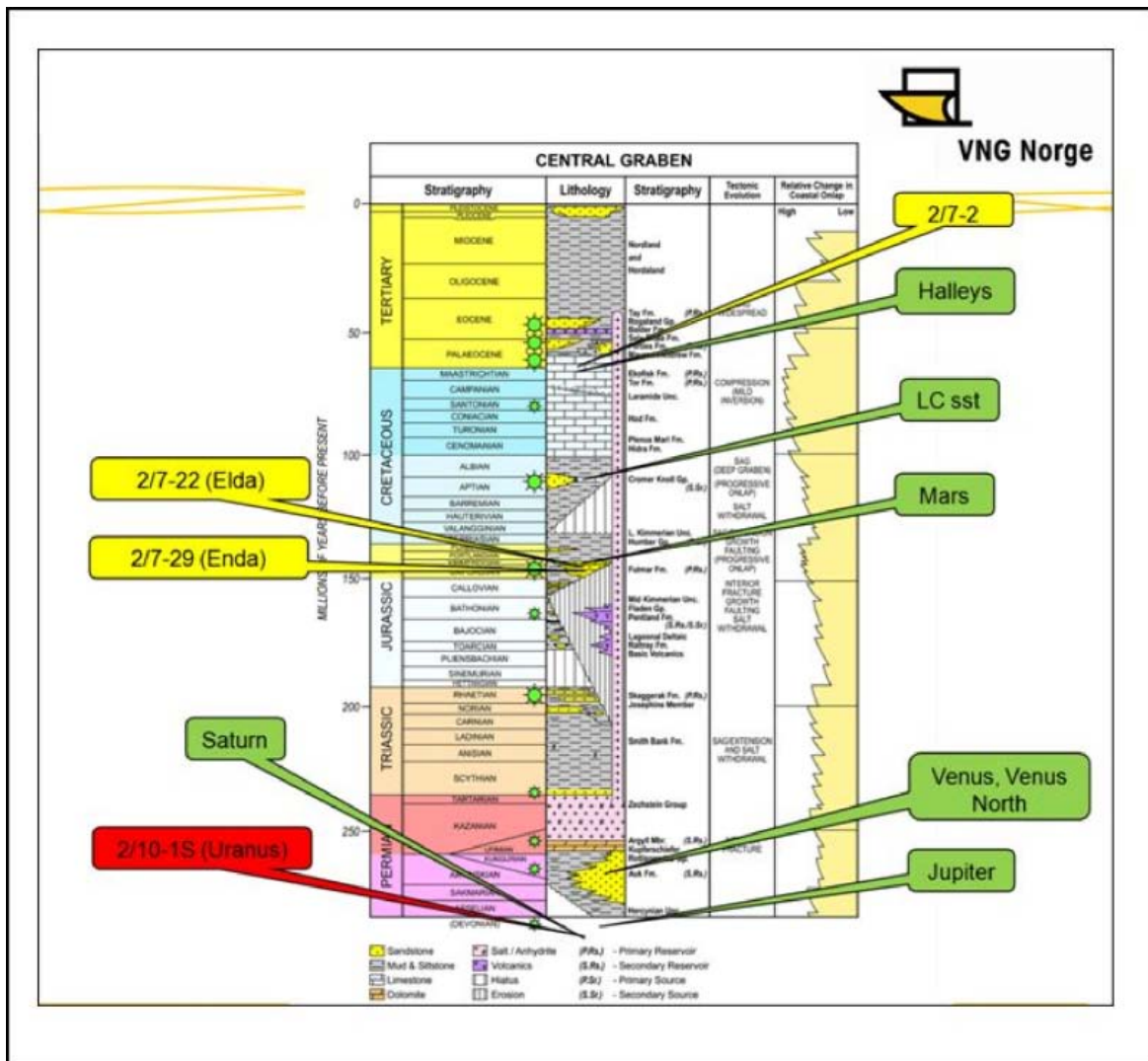


Fig. 3-2 Stratigraphy of western part of the Central Graben. Identified prospects, leads and discoveries are shown.

The following studies were performed as part of the license work:

- Maturity modelling (Exploro)
- Chalk seismic inversion (Schlumberger)
- 3D Seismic reprocessing (PGS)
- Regional structural study (Midland Valley)
- Jurassic sedimentology study (Ichron)
- Rotliegendes sedimentology study (Ichron)
- Chalk sedimentology (Geus)
- Core scanning in 2/7-29 (APT)
- Biostratigraphy Chalk (APT)
- Petrophysical evaluation of all exploration wells (internal)
- General seismic interpretation of the area including adjacent UK and Danish areas (Internal)

The major findings of the work were:

1. A uniform evaluation of the pre-Cretaceous geology of the Grensen Nose area. The importance of the different fault trends (N-S, NW-SE and EW) related to reservoir development at the different time steps was better understood.
2. The regional correlation of dated Carboniferous volcanic layers from the UK into Norwegian sector enabled dating of these layers in Norway.
3. The structural development of the area was better understood, especially related to the lack of Upper Jurassic source rock within license area.

In the last phase of the evaluation, the old discoveries 2/7-22 and 2/7-29 were studied. Both are downthrown fault closures and the hydrocarbon volumes are very dependent on the location of the large fault plane to the South of the discoveries.

The PSDM reprocessing of the BPN9102 survey provided a clearer image of the fault plane and of the reservoir reflectors. Unfortunately, the revised mapping of the fault plane and the reservoir did not indicate larger hydrocarbon volumes.

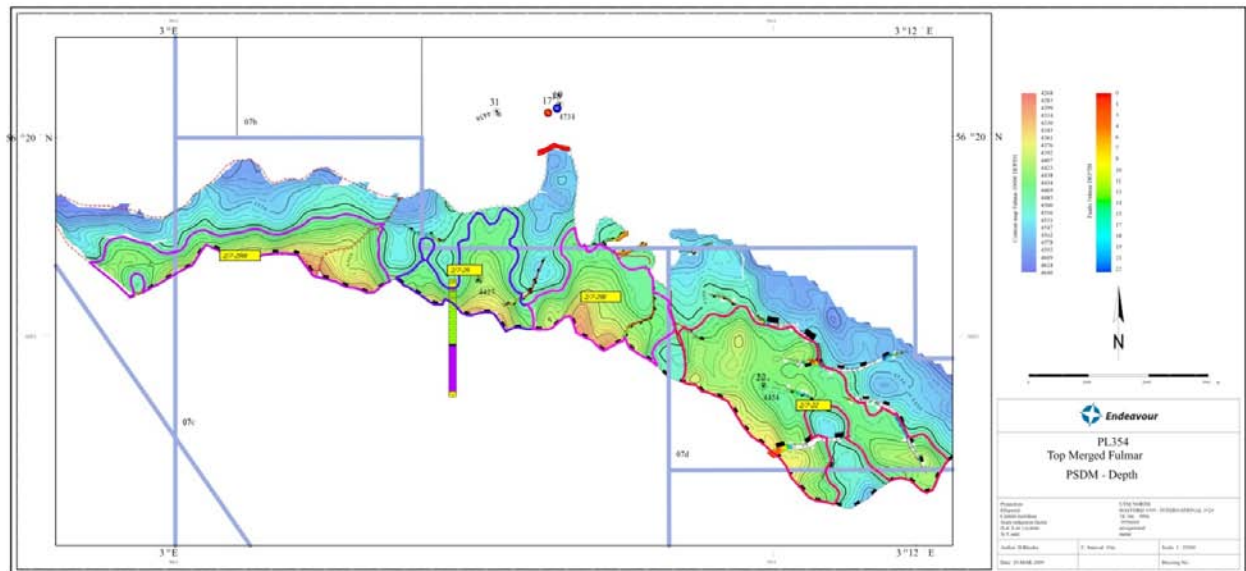


Figure 3-3. Depth map of top Fulmar reservoir showing that the reservoir is divided into four segments of which only two have been drilled.

4 Prospect update

As part of the 2005 APA license application, Endeavour Energy Norge AS (EEN) applied for a license covering part of blocks 1/9, 2/7 and 2/10. EEN mapped two prospects and three leads within PL354 area. Furthermore, EEN showed interest for existing discoveries extending into applied acreage which might have possibilities for development of on-block resources. All defined prospects, leads, discoveries and estimated resources are explained below. The reader must refer to the original license application.

- The Mars Prospect in block 1/9 was a large three-way closure relying upon a sealing fault towards the east. The assumed reservoir was Upper Jurassic sandstones at Fulmar/Fife Formation level with reservoir crest depth at 4830 m MSL. The principal risk in the Mars prospect was related to the reservoir and updip faultseal. Seismic mapping on reprocessed PSDM data and revised depth conversion has downgraded the prospect and it is now revised into a lead.
- The Venus Prospect in block 2/10 and UK block 31/21b was a fault seal-dependent trap (three-way closure). The trap was defined at Top Rotliegendes Group level and was connected to the same source area in the UK Central Graben that constitutes the source of the low gas-oil-ratio (GOR) oil in the Angus, Fife, Flora and Fergus Fields. The main risk was related to the reservoir and trap. The final mapping has maintained the initial view of the prospect, but with revised reserves. It is currently regarded as a high risk prospect and it was decided to wait with further evaluation until a lower risk look-alike prospect in the UK (Newburgh) was drilled. Unfortunately, the Newburgh prospect has still not been drilled.
- The Venus North Lead in blocks 2/7 and 2/10 was a three-way closed trap at Top Rotliegendes Auk level. It resembled the Venus prospect, but was much smaller. The final evaluation is that this is still a lead.
- The Jupiter Lead in block 2/10 and UK Blocks 31/27 was a stratigraphic pinch-out trap with a crest located at 3720 m MSL in UK block 31/26b. The interpretation of this lead was based on a strong seismic amplitude that is observed on the Grensen Nose in the southernmost Norwegian sector. The final evaluation is has led to the lead being taken off the prospect/lead list. This is due to the extensive mapping of the old pre-Cretaceous horizons which has been mapped from the UK side into Norway and has helped to date the horizons. The strong seismic amplitude is now regarded as being volcanic rocks subcropping the Base Cretaceous Unconformity.
- The Lower Cretaceous Lead in block 2/7 was a stratigraphic trap at the Lower Cretaceous level identified mainly by the presence of a thin sand with oil shows. Closer inspection has revealed that the log response in fact was that of a limestone and the speculative turbidite lead has been dropped.
- The discovery in the Upper Jurassic in 2/7-29 was at the time of the application regarded as an interesting discovery to be studied for development together with the Ebba discovery outside the license area. Later also the discovery in 2/7-22 was included in the PL354b license. Negotiations with the Ebba owners were unsuccessful and as a last attempt, a study of stand-alone development of 2/7-22 and 2/7-29 was made. This included seismic reprocessing to PSDM of the survey covering the area, seismic

reinterpretation and development studies. The conclusion of the work was that the recoverable volumes were marginal with a significant downside and the project was dropped.

- The discovery in the chalk in 2/7-2 had a possibility of extending into PL354. After extensive studies of the chalk and especially depth conversion of this, it was concluded that the discovery do not extend into the license.
- During the work of the license it was found that well 2/10-1 had made a gas discovery which had remained forgotten du to an unsuccessful welltest (for technical reasons). It is still not listed as a discovery on the NPD website. Detailed seismic mapping failed to accurately delineate the discovery due to the necessity to involve several faults iin the trapping mechanism. Even the largest estimate was not found to be economically attractive.
- Finally, a new lead, called Saturn, was defined. The trap is a structural closure at the base Cretaceous level updip of 2/7-2. The reservoir stratigraphy has been determined from the well and from horizon mapping from the UK side to be the Lower Flora sandstone. Part of the 4-way closure is mapped to be taken up by the Flora volcanics which mean that part of the 4-way structure is non-reservoir. Consequently, the reservoir volume inside the trap was too small to be of interest.

The location and extension of defined prospects, leads and discoveries are shown in Fig. 4.1 . A summary of all defined prospects, leads and discoveries with changes in resource volumes and probability estimates is provided in Table 4.1 .

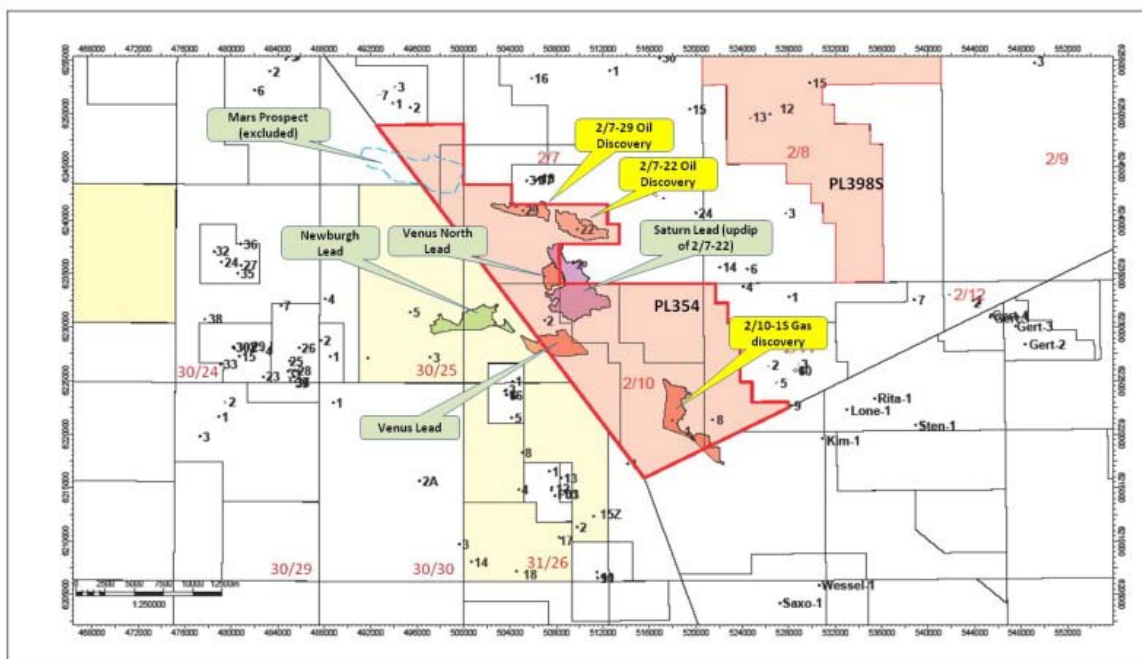


Fig. 4-1 License overview . Outline of prospects, leads and discoveries.

	Pre-award					Final evaluation		
	Class	Mean In-place oil	Mean Rec. Oil	Mean Rec. Gas	Chance of discovery	Mean Rec. Oil	Mean Rec. Gas	Chance of discovery
		(10^6 Sm^3)	(10^6 Sm^3)	(10^9 Sm^3)	(frac)	(10^6 Sm^3)	(10^9 Sm^3)	(frac)
2/7-2	Discovery	5.8	1.6		1	0		1
2/7-29	Discovery	1.4	0.3		1	1		1
2/10-1S	Discovery				1		0.2	1
2/7-22	Discovery			1.4	1	0.8		1
Mars	Prospect		7.4		0.38	0.01		0.16
Venus	Prospect		6.1		0.35	2		0.19
Venus North	Lead	11.1				3.2		0.19
Jupiter	Lead	92.6				0		0
L. Cret above Mars	Lead	11.9				0		0
Saturn	Lead					1		0.32

Table 4.1 PL354 Reserves summary and update.

5 Technical evaluations

Development of PL 354 was limited to the discoveries 2/7-29 and 2/7-22 as the identified prospects were viewed to be too small and have too high risk. As shown in Fig. 5.1 there are a number of tie-back alternatives. The discoveries are HPHT and it was identified significant H_2S content during the test. The seismic reprocessing revealed that the volumes were smaller than initially assessed and that the 2/7-29 discovery was divided into 3 different compartments.



Fig. 5-1 Area infrastructure.

The development concept was based on a 50 km subsea tie-back to Janice in the UK sector estimated to a cost of 2640 MNOK for the facilities and 3000 MNOK for the production wells. The corresponding NVP was -490 MNOK.

There are tie-back alternatives closer both in the Norwegian and the UK sector UK, but these were viewed to be more uncertain and commercially difficult mainly due to other ongoing

developments and capacity constraints. Nevertheless, a scenario assuming tie-back to the closest infrastructure (Eldfisk) incorporating other potential but not fully evaluated cost savings (total potential 610 MNOK) also proved to be uneconomic (NPV of -90 MNOK). The conclusion was therefore that the project at this stage was not economic and did not have any potential upside whereas there was still a significant downside associated with:

- Potential for reduced recovery and low production rate caused by condensate blocking.
- Potential for cost increase due to high H₂S in combination with HPHT. In particular the host modification cost was viewed to be likely to increase from our initial assessment.

6 Conclusions

The license partners concluded that none of the exploration prospects, leads and existing discoveries warranted an exploration well and/or development.