

PL714 Licence Surrender Report

Innhold

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1 Key licence history

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| <u>Licence:</u> | PL714 - Blocks 7220/2, 3 |
| <u>Awarded:</u> | 21.06.2013 |
| <u>Licence period:</u> | Expired 21.06.2017 Initial period: 4 years |
| <u>Licence group:</u> | Statoil Petroleum AS 50% (Operator) Eni Norge AS 30% Petro AS 20% |
| <u>Licence area:</u> | 443.024 km ² |
| <u>Work performed:</u> | |
| 2013: | Licence awarded and licence start-up. |
| 2013-14: | Seismic interpretation, evaluation of the prospectivity and Isfjell well planning. |
| 2014: | Drilling of Well 7220/2-1 on the Isfjell Prospect: gas discovery. |
| 2015: | Evaluation of the well and the gas discovery, remapping and evaluation of impact on the remaining prospectivity in the area |

Meetings held:

Combined EC and MC meetings with PL532/PL608 since 2013.

Management Committee meeting 22nd of March 2017 – unanimous decision to surrender licence.

Reasons for relinquishment

The Isfjell gas discovery has limited resources and is considered non-commercial. Only small prospects of Early Cretaceous, Middle Jurassic and Triassic age remain in the licence.

2 Database

2.1 Seismic data

The common 3D seismic database for the Johan Castberg area (PL532, PL608 and PL714) is shown in Figure 2.1 and Table 2.1. Later work in the licence and Johan Castberg area has supported the PL714 post-well interpretations and studies.

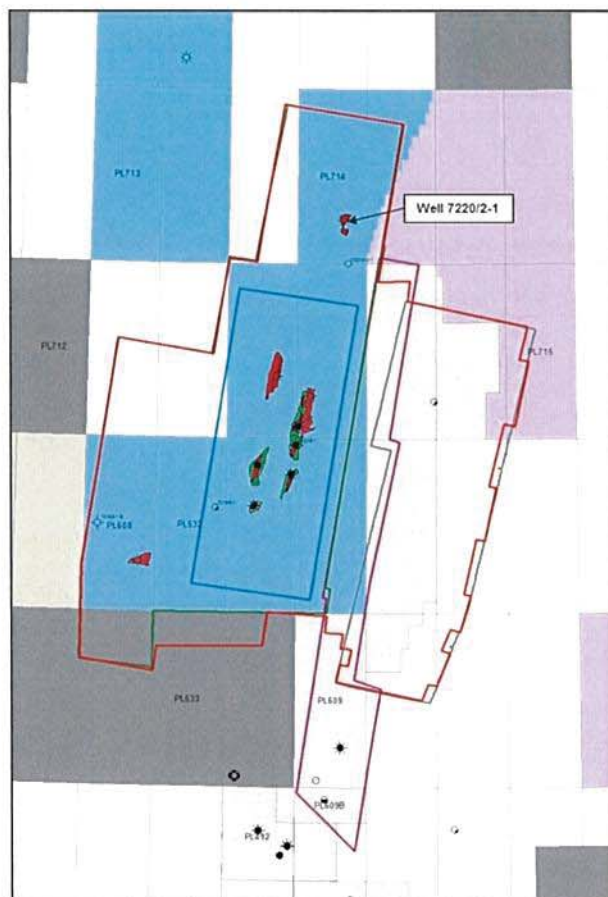


Figure 2.1 Common 3D seismic database for the Johan Castberg area (PL532, PL608 and PL714). Outline of the PSDM data (delivered November 2014) including the 3D surveys WG08, WG0901, WG1003, LN11003 and SG9810), is indicated by the red line.

| Survey | NPDID | Operator | Year | Survey (sq.km) | Type | Quality |
|-----------|-------|----------------------------|------|----------------|---|---------------------|
| WG08 | 4559 | WesternGeco Multiclient | 2008 | 911 | Near, Mid-Far & Full stack, AVO cubes | Good - Excellent |
| WG0901 | 7057 | WesternGeco Multiclient | 2009 | 706 | Near, Mid-Far & Full stack | Good |
| WG1003* | 7208 | WesternGeco Multiclient | 2010 | 1706 | Full stack | Good |
| LN11003** | 7454 | Lundin Petroleum | 2011 | 686 | Field data | |
| ST13M07 | | Statoil | 2014 | 4000 | Near, Mid-Far, Full stack, AVO cubes | Good |

Table 2.1. Common 3D seismic database within the Johan Castberg licences, PL532, PL608 and PL714.

2.2 Well data

Table 2.2 lists all wellbores used in the Isfjell discovery evaluation.

| | NPDID | Well Type | Year | Licence | Objective | TD (m MD RT) | Result | Test | Prospect/ Discovery |
|-----------|-------|-------------|------|---------|------------------------|--------------------|------------------------|------|------------------------|
| 7220/2-1 | 7558 | Exploration | 2014 | 714 | Jurassic- Triassic | 1594 | Gas Discovery | None | Isfjell |
| 7220/7-3S | 7414 | Exploration | 2014 | 532 | Jurassic - Triassic | 2097 | Oil & Gas Discovery | None | Drivis |
| 7220/4-1 | 7307 | Exploration | 2014 | 532 | Jurassic - Triassic | 3240 | Gas Discovery | None | Kramsnø |
| 7220/7-2S | 7252 | Exploration | 2013 | 532 | Triassic - Jurassic | 1855 | Oil & Gas Discovery | None | Skavl |
| 7219/8-2 | 7225 | Exploration | 2013 | 608 | Jurassic | 3425 | Gas Discovery | None | Iskrystall |
| 7220/5-2 | 7166 | Exploration | 2013 | 532 | Cretaceous | 1780 | Gas Discovery | None | Nunatak |
| 7220/5-1 | 6775 | Appraisal | 2012 | 532 | Jurassic | 1740 | Oil & Gas Discovery | None | Skrugard |
| 7220/7-1 | 6756 | Exploration | 2012 | 532 | Jurassic | 2230 | Oil & Gas Discovery | None | Havis |
| 7220/8-1 | 6484 | Exploration | 2011 | 532 | Jurassic | 2222 | Oil & Gas Discovery | None | Skrugard |
| 7219/8-1S | 2031 | Exploration | 1992 | 182* | Jurassic | 4611 | Dry | None | |
| 7219/9-1 | 1138 | Exploration | 1988 | 136* | Jurassic | 4300 | Dry (oil shows) | None | A |

Table 2.2. Exploration wells in the greater Johan Castberg area used for evaluating the PL714 licence, well planning of the Isfjell 7220/2-1 and post-well studies.

2.3 Special studies

Reference is made to the Isfjell discovery evaluation report. Later work in the Johan Castberg area has supported the post-well interpretations and studies.

3 Review of Geological and Geophysical studies

22R evaluations and application form the basis for the identified prospects in the licence. Later evaluations had only minor implications on the initial evaluations. The main prospect in the licence was the Middle-Lower Jurassic Isfjell prospect (Figure 3.1). The 7220/2-1 well was drilled in 2014 targeting what was evaluated as oil phase above the very distinct single flatspot, see Top Realgrunnen amplitude map (Figure 3.2) and seismic well section (Figure 3.3).

The well tested gas, and possibly a 2-meter thin oil-leg before reaching the water zone (Figure 3.4). The second target, Snadd Fm., was water-bearing. The Isfjell well proved better reservoir in Snadd Fm. than prognosed, increased the belief in Kolmule/Torsk Fm as a competent seal and increased the gas vs oil probability in the PL714 area.

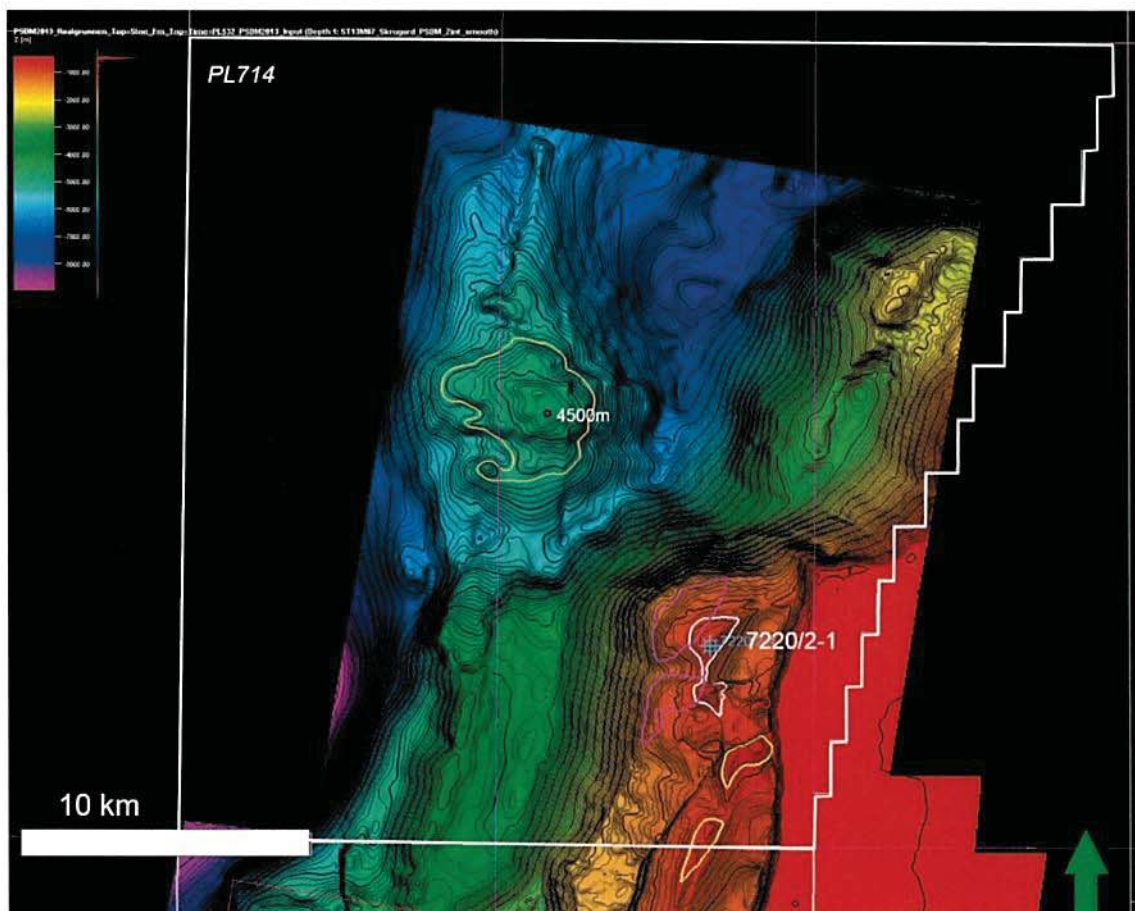


Figure 3.1. Top Realgrunnen SG depth map based on ST13M07 seismic dataset, contour interval is 50m. Main Realgrunnen and Triassic prospects are shown in yellow and violet polygons, respectively.

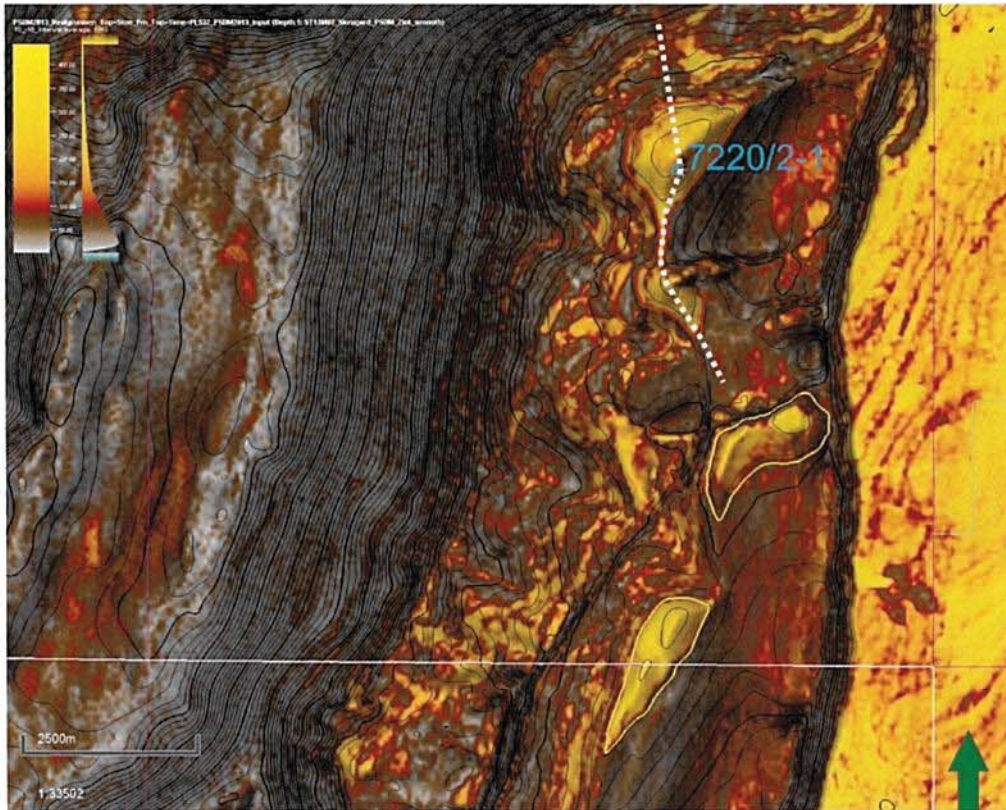


Figure 3.2. Isfjell, Snørås and Istapp prospects clearly seen on Top Realgrunnen RMS amplitude map, window 10ms up and 10 ms down relative to Top Realgrunnen surface. Contour interval is 50m. Dotted white line shows location of seismic random line in Figure 3.3.

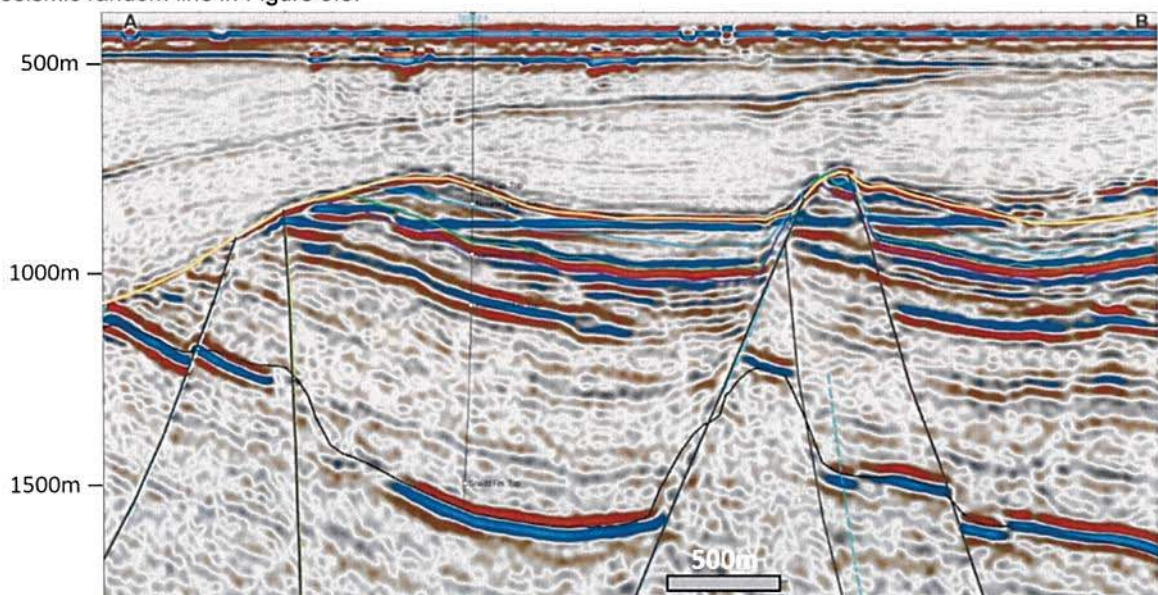


Figure 3.3 NS random line (ST13M07, depth) through the Isfjell structure showing the distinct seismic flat event running through the two main segments on Isfjell. The single flat event was pre-well evaluated as an OWC, whereas the well proved mainly gas, with a minor oil leg. Horizons shown are in yellow – top Stø Fm., blue – top Nordmela Fm., green – top Nordmela 1, dark blue – top Tubåen Fm., and black – top Snadd Fm.

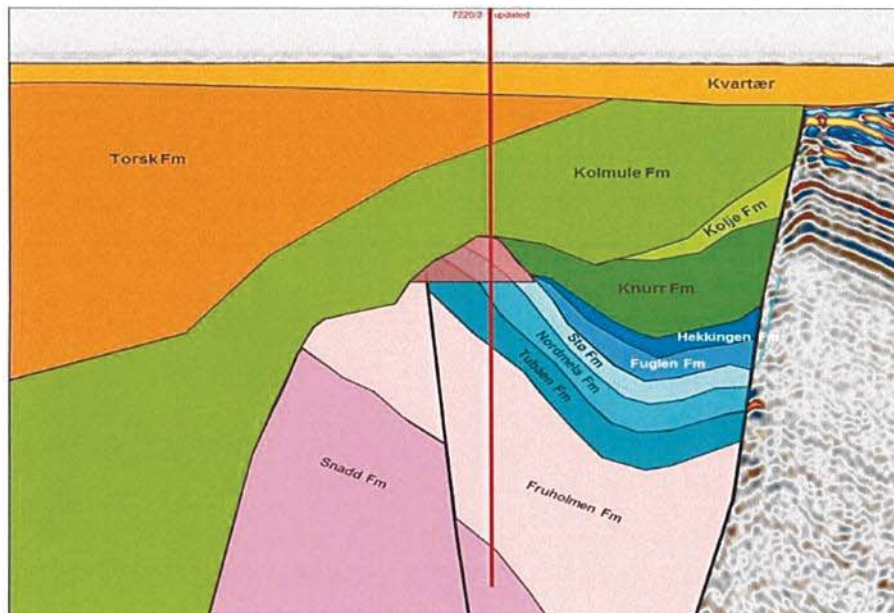


Figure 3.4 Isfjell post-well geological sketch. Pre-well, the overburden sealing capacity was evaluated to insufficient to hold a gas column down to the observed seismic flat event.

4 Prospect update report

PL714 is located in the Bjørnøyrenna Fault Complex at the eastern margin of the Bjørnøya Basin, on the transition to the Loppa High, continuing northwards along the same fault terraces as the PL532 Johan Castberg discoveries (see Figure 4.1)

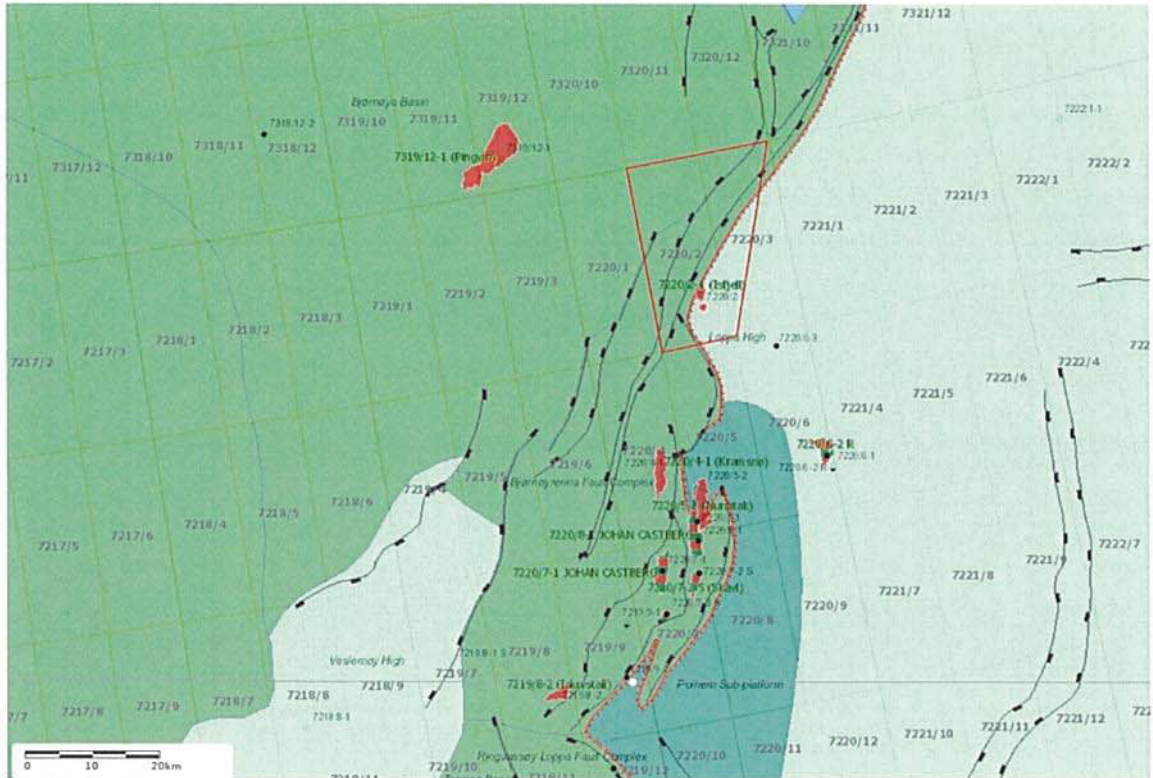
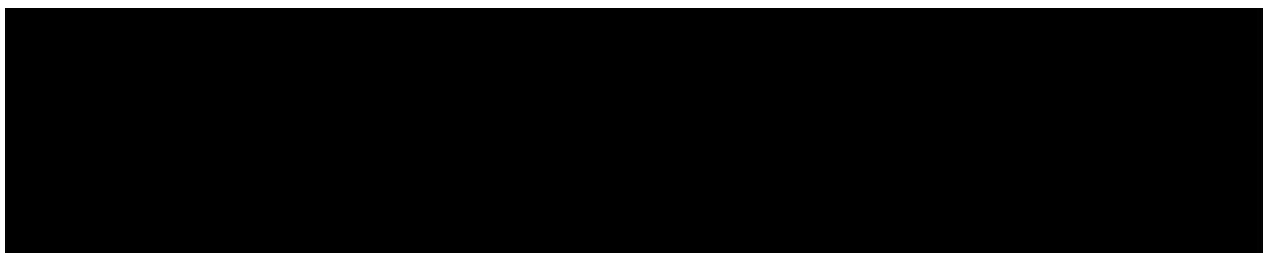


Figure 4.1. Structural element map of the greater Johan Castberg area, including PL714 shown in with red polygon.



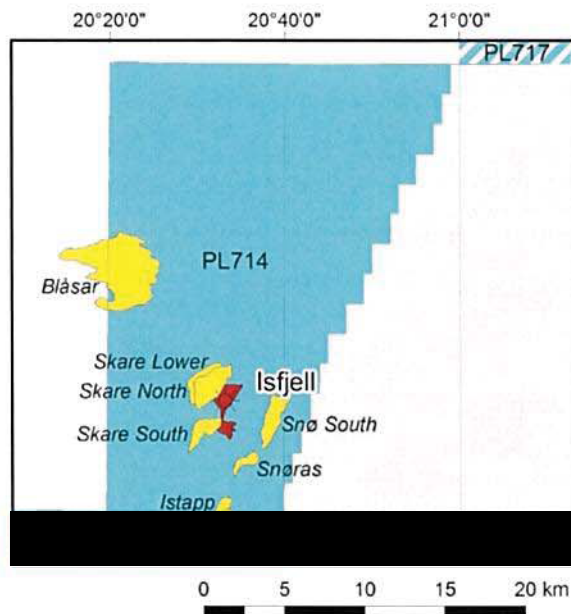


Figure 4.2 Map showing remaining prospects in the PL714 licence.

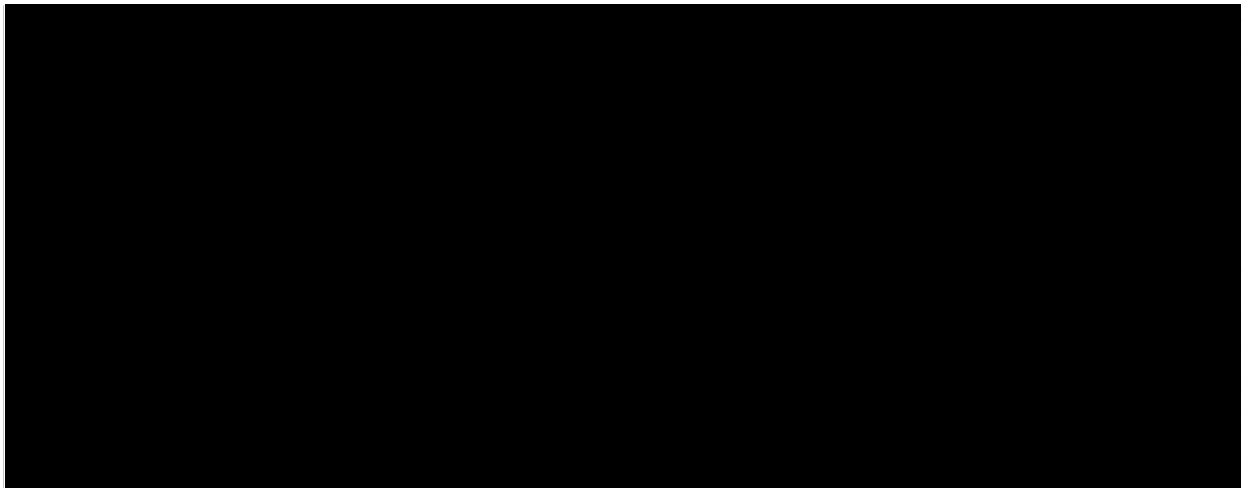


Table 4.1. Prospect in-place and recoverable volumes and probability of gas and oil of the remaining PL714 prospects.

A seismic random line (Figure 4.3) in the western part of the licence through the Jurassic Blåsar structure, shows the typical setting with deeply buried Jurassic strata, gas disturbance in the overburden and relatively poor seismic imaging of the deeper reservoir sections. Figure 4.4 shows the Triassic Skare North structure west of the Isfjell discovery. This structure has the highest volume potential of the remaining prospects in the licence. The seismic section as well as the amplitude maps in Figure 4.5 reveal that the amplitude response on the Snadd A reservoir is most likely a response to lithology and possibly fluid phase variations.

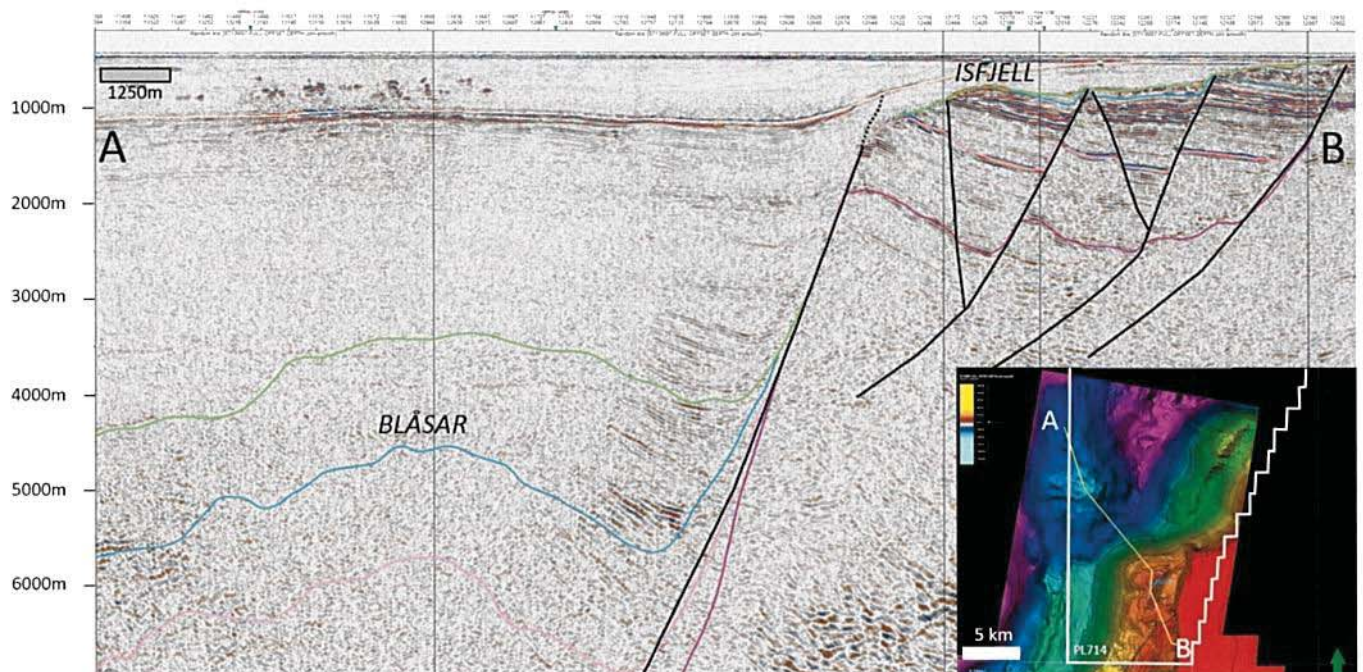


Figure 4.3. Seismic random line (ST13M07, fullstack, depth) AB running through the deeply buried Blåsar structure and the shallow Isfjell gas discovery. Poor imaging resulting in top reservoir maps of low confidence in geometry and depth, and poor reservoir quality from severe diagenesis, results in a poor volume potential and high risk in Blåsar. Colour legend: light yellow - Seabed, peach - Base Tertiary Unconformity, green - Base Albian Unconformity, blue - Top Realgrunnen SG, bright pink - Near Top Snadd Fm., pink/violet - Intra Snadd Marl marker.

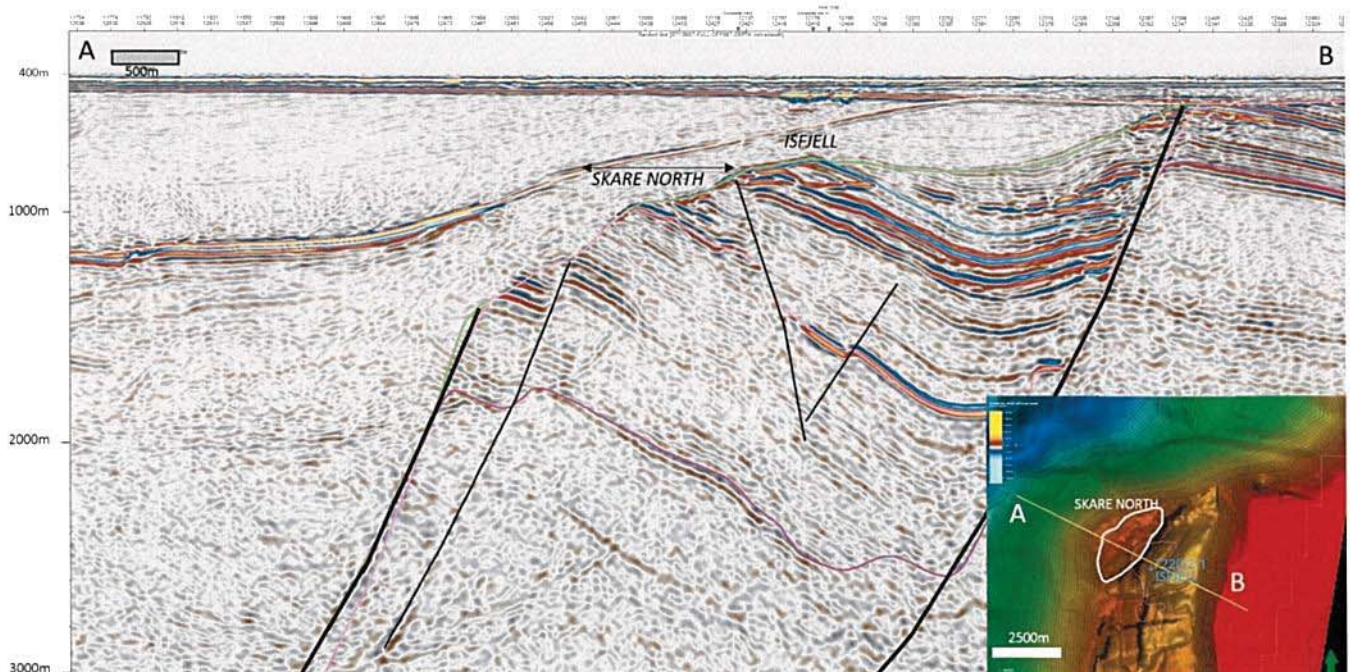


Figure 4.4. Seismic random line (ST13M07, fullstack, depth) AB running through the Triassic Skare North structure and the Isfjell gas discovery. Colour legend: light yellow - Seabed, peach - Base Tertiary Unconformity, green - Base Albian Unconformity, blue - Top Realgrunnen SG, bright pink - Near Top Snadd Fm., pink/violet - Intra Snadd Marl marker.

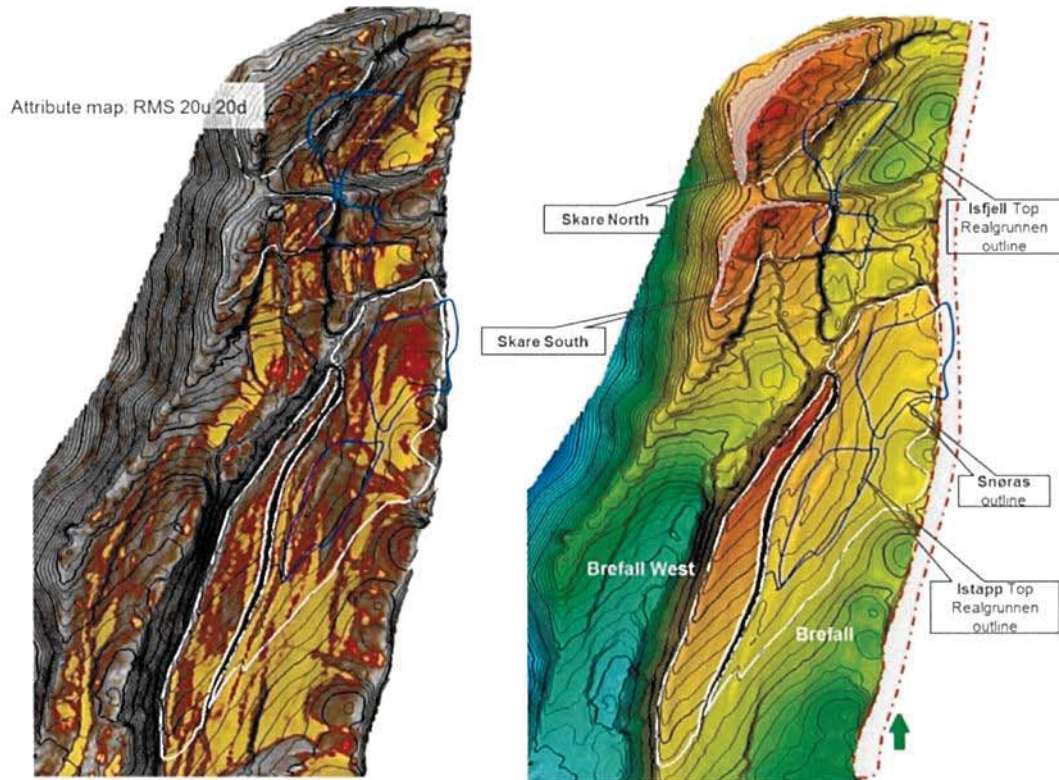


Figure 4.5. Top Snadd Fm. depth map (right) and amplitude map (left), showing remaining prospectivity on Snadd and Realgrunnen levels in the licence. From the 22R application.

5 Technical evaluations

A technical economical evaluation was conducted on the Iskrystall (PL608) gas discovery in February 2017, giving a minimum economical volume (MEV) of 2,5 G Sm³ gas. This assumes gas production from 2043, and tie-back to the Johan Castberg FPSO.

As seen from Table 5.1, the total P10 recoverable volumes are below the Iskrystall MEV, and Isfjell is regarded a non-commercial gas discovery.

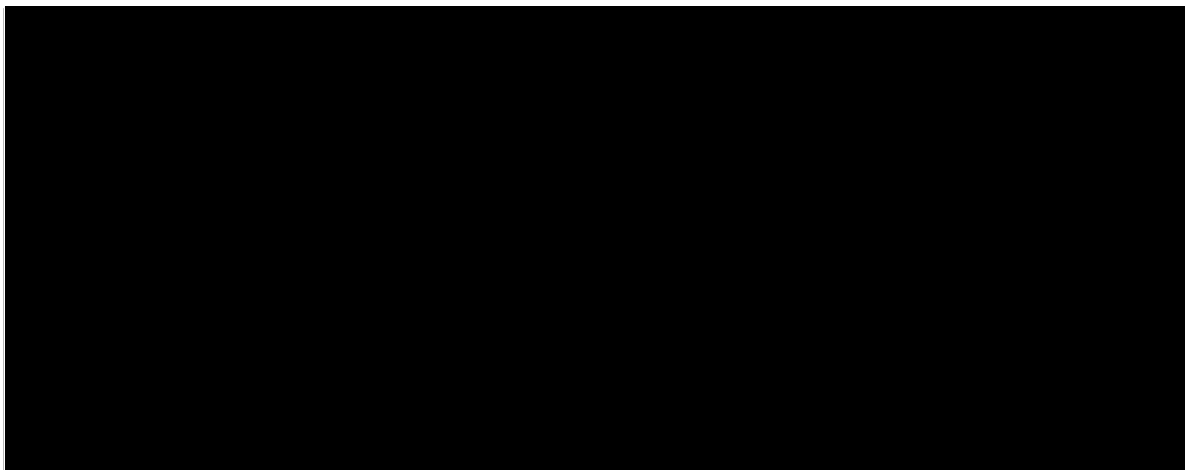


Table 5.1. Isfjell inplace and recoverable volumes.

6 Conclusions

Due to the non-commercial Isfjell gas discovery, and remaining prospectivity with low volume and value potential, the licence unanimously decided to give up the licence, effective from expiry of the initial period 21 June 2017.

7 References

Reports

Statoil (2008): 20th Licensing Round, Norwegian Continental Shelf. Application Blocks 7220/4,5,7,8.

Statoil (2015): Isfjell Discovery Evaluation Report, (PL714).