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Title:

Status report surrender

PL829

Contents

1 History of the production licence 5
2 Database overviews 8
2.1 Seismic data 8
2.2 Well data 10
3 Results from geological and geophysical studies 12
4 Prospect update report 14
5 Technical evaluation 19
6 Conclusion 20
7 References 21
8 Enclosures 22

List of figures

Fig. 1.1 Schweinsteiger and PL 829 Structural setting.
Fig. 2.1 Updated common seismic database for PL829 2019.
Fig. 2.2 Common seismic and well database for PL829 in 2016.
Fig. 2.3 Key wells for PL829.
Fig. 4.1 PL829 application prospectivity.
Fig. 4.2 Updated prospectivity for PL829.
Fig. 4.3 Schweinsteiger top reservoir depth map pre-drill, with outlines of proposed gas-oil-contact and oil-water-contact. Sided by a seismic section through the Schweinsteiger prospect.

List of tables

Table 1.1 PL829: Licence decision gates.
Table 2.1 3D Seismic database.
Table 2.2 List of wells in the common well database.

1 History of the production licence

PL829 was awarded February 5 2016 as part of APA 2015, to operator Statoil Petroleum AS and partners Spike Exploration AS and Petoro AS. Wellesley Petroleum AS entered the licence in 2016 through a transfer with Point Resources AS. Operatorship was transferred from Equinor Energy AS to Wellesley Petroleum AS November 29 2019, and the licence shares were distributed as follows: Wellesley 60%, Petoro 20% and Equinor 20%. The licence covers an area of 1271 km^2 in blocks 6204/7, 6204/8, 6204/10 and 6204/11 in the Sløre botn Sub-basin and Måløy Slope area (Fig. 1.1).

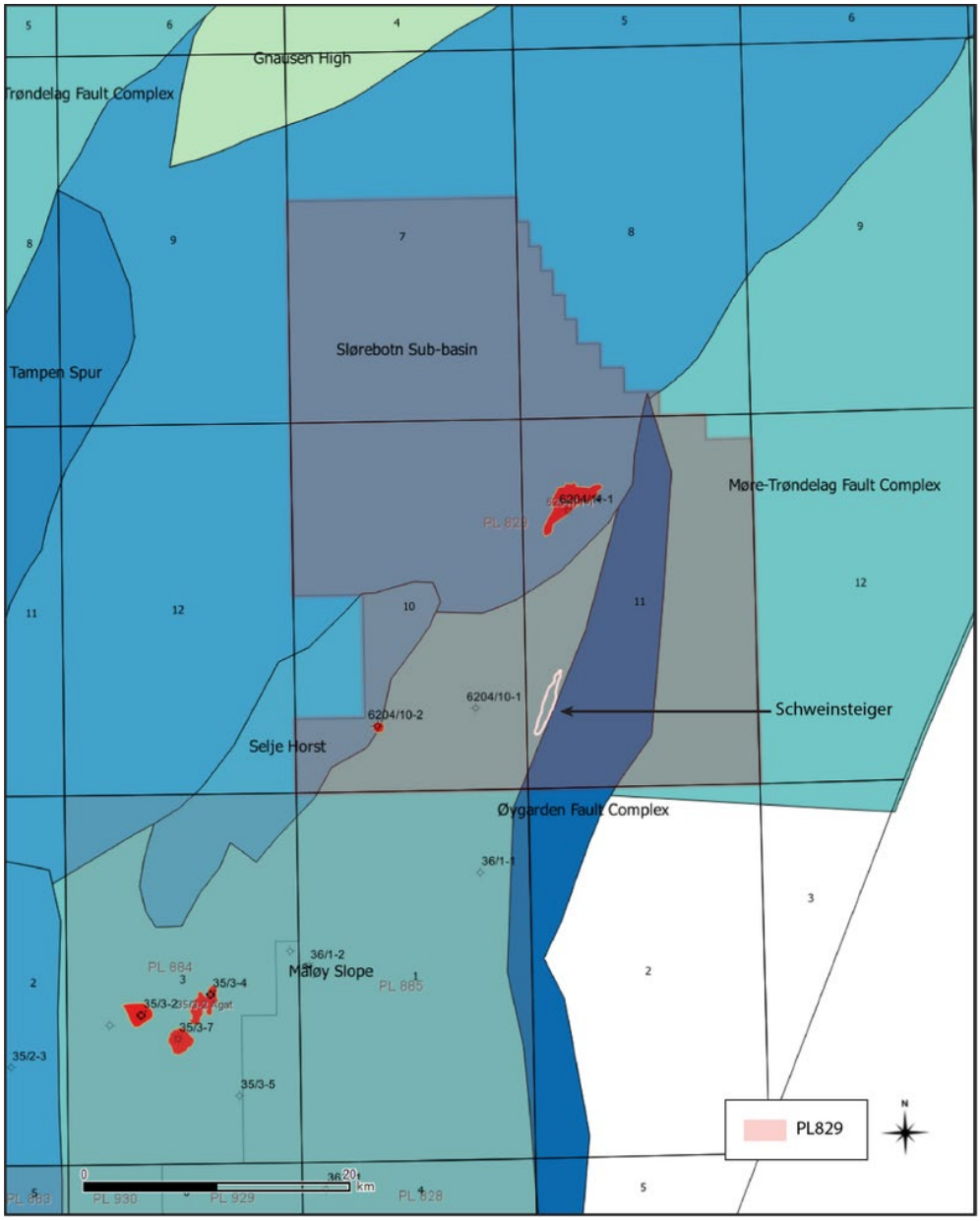

Fig. 1.1 Schweinsteiger and PL829 Structural setting.

The work commitment for PL829 was to prepare for a DoD in February 2019 through re-processing of seismic studies, geological special studies and prospect maturation. A drill decision to test the Schweinsteiger Prospect was taken in Q4 2019.

Wellesley Petroleum AS has on behalf of the licence group fulfilled the work commitment and have drilled the exploration well 6204/11-3.

Table 1.1 PL829: Licence decision gates.

Work obligation	Decision	Task status	Expiry date
Obtain 3D Seismic		Completed	
	Decision to drill	Completed	10.11.2019
Drill exploration well		Completed	
	(BoK) Decision to concretize	Dropped	05.02.2021
Conceptual studies		Dropped	
	(BoV) Decision to continue	Dropped	05.02.2023
(PDO) Prepare plan for development		Dropped	
	(PDO) Decision to submit plan for development	Dropped	05.02.2024
	(PDO) Submit plan for development	Dropped	05.02.2024
	Decision to enter extension period	Dropped	05.02.2024

Licence meetings

EC/MC meeting 1: 15.04.2016
EC/MC meeting 2: 22.11.2016
EC/MC meeting 3: 01.12.2017
EC/MC meeting 4: 01.11.2018
EC/MC meeting 5: 05.12.2019
EC/MC meeting 6: 19.11.2020

EC meetings/Work meetings

Seismic Acquisition workshop meeting: 23.05.2017
EC Work meeting: 09.05.2018
EC Work meeting: 21.10.2019
Well planning meeting: 25.03.2020
Well planning meeting: 02.04.2020
Data acquisition meeting: 13.05.2020
Risk Meeting: 24.06.2020
Post-well close out meeting: 21.01.2021

Reason for relinquishment

The 6204/11-3 Schweinsteiger well was drilled on the licence in September 2020 and the well was dry. Prior to the decision to drill the Schweinsteiger prospect, a complete prospectivity review of all stratigraphic levels was undertaken in 2018 and 2019 on the newly acquired PGS17010 PSDM data. PL829 is located in an area where stand-alone volumes are required in order to have a commercial discovery, the sub-surface review was followed by a technical/economic review. A number of prospects and leads were identified but the only prospect with large enough stand-alone volumes and moderate risk was Schweinsteiger. Following the failure of the 36/1-3 Presto well in the neighboring licence and the 6204/11-3 well, the remaining prospects are concluded to have high geological and economic risk.

2 Database overviews

2.1 Seismic data

Seismic database

The licence group decided to include the PGS1701NNS in addition to part of the CGG17M01 broadband surveys in the common seismic database to fulfill the licence work obligation. The geophysical evaluation is mainly based on these two surveys. In addition the licence group has reprocessed an old 3D survey ST17M02 covering the northwestern part of the licence. However due to the superior quality of the two other surveys this latter survey was not used in the final evaluation of the licence. (Fig. 2.1, Fig. 2.2).

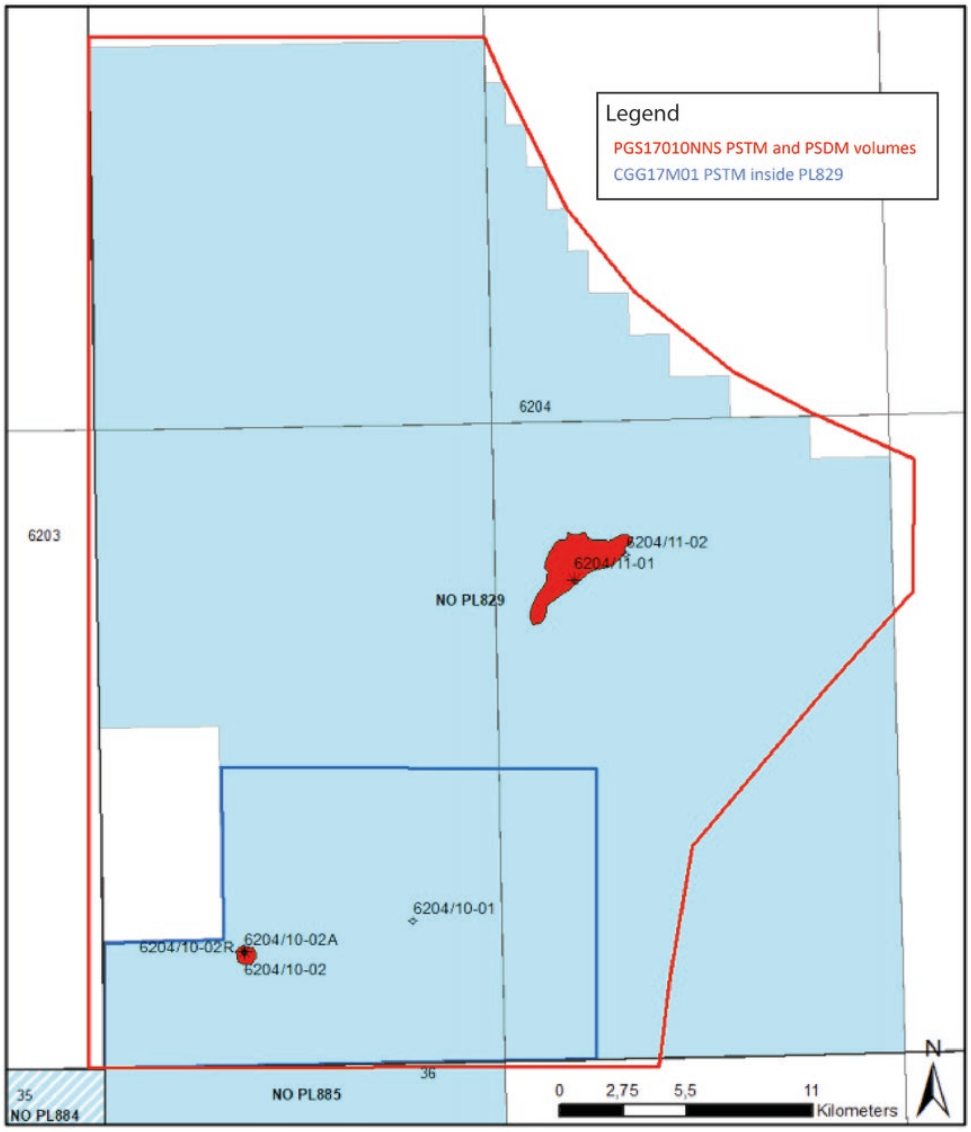

Fig. 2.1 Updated common seismic database for PL829 2019.
Seismic databse updated with PGS17010NNS PSTM and PSDM data in 2019.

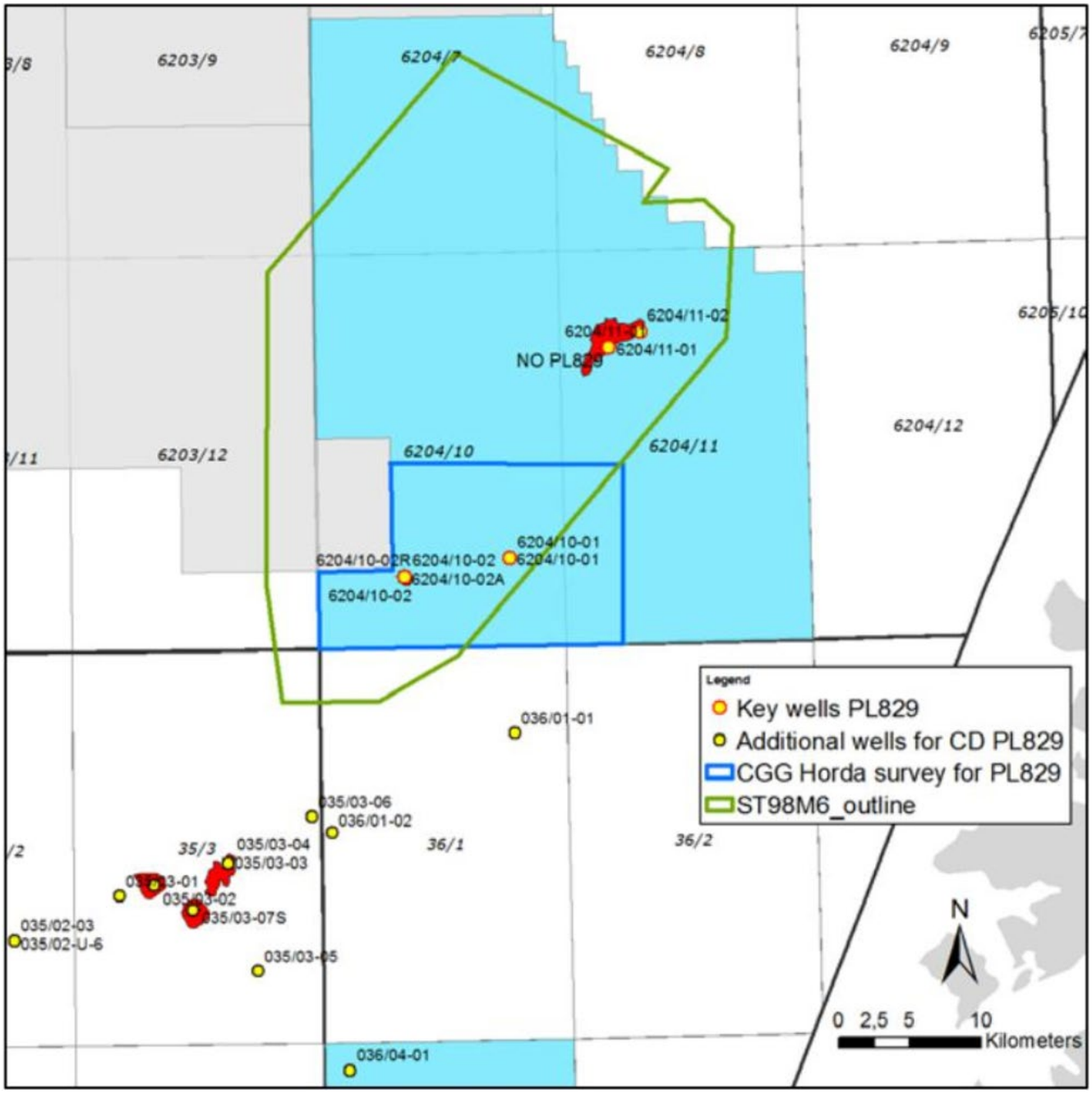

Fig. 2.2 Common seismic and well database for PL829 in 2016.
The common seismic database that was later updated (Fig. 2.1)

Table 2.1 3D Seismic database.

Survey	Status	Area km²	Version	Quality
PGS17010NNS	Acquired	1278	PSDM Full stack, Partial stacks, Gathers	Good
CGG17M01 PSTM inside PL829	Acquired	238	Full stack, Partial stacks, Gathers	Good
ST17M02	Released	974	PSTM Full stack, partial stacks	Good

2.2 Well data

Wells database

The geological evaluation was based on several wells in the area, although very few of these worked as analogues for the 6204/11-3 Schweinsteiger well. The most relevant well was the 36/1-1, which was interpreted as the well with the most similar stratigraphy as expected in the Schweinsteiger prospect (Fig. 2.3).

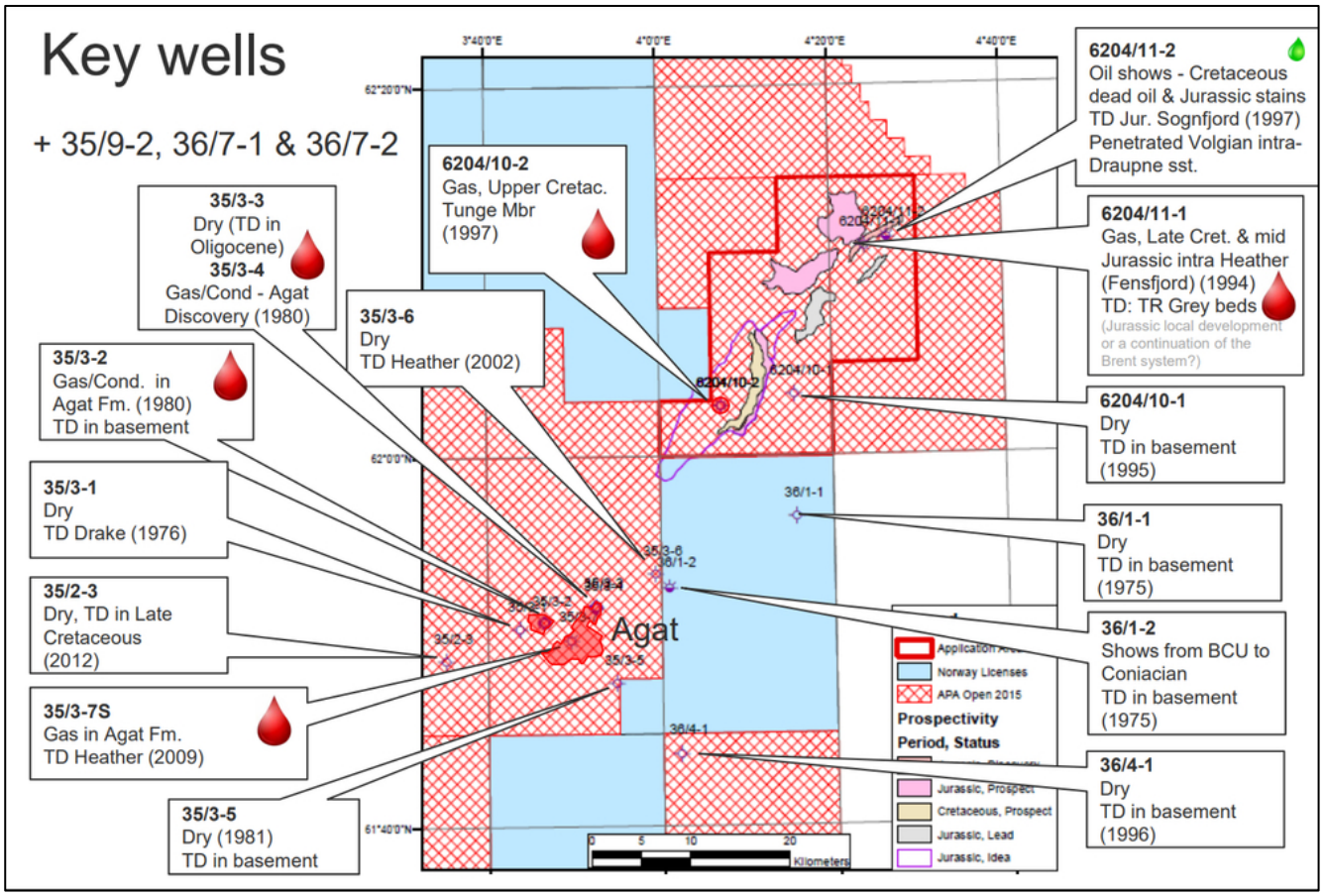

Fig. 2.3 Key wells for PL829.

Table 2.2 List of wells in the common well database.

Wellbore	NPDID	Age at TD	Drilling operator	Content	TD TVD (mRKB)	Completion year
6204/11-1	1134	Triassic	Den norske stats oljeselskap a.s	Gas	2961,6	1994
6204/10-1	2666	Pre-Devonian	Den norske stats oljeselskap a.s	Dry	2707,0	1995
6204/11-2	1549	Late Jurassic	Den norske stats oljeselskap a.s	Oil shows	2919,0	1997
6204/10-2 R	3258	Pre-Devonian	Den norske stats oljeselskap a.s	Gas	2092,0	1997
6204/10-2 A	3280	Early Cretaceous	Det Norske	Dry	2051,0	1997
36/1-1	435	Pre-Devonian	Amoco Norway Oil Company	Dry	1596,0	1975
36/1-2	436	Pre-Devonian	Saga Petroleum ASA	Shows	3250,0	1975
36/4-1	2847	Pre-Devonian	BP	Dry	2715,0	1996
36/7-1	1794	Pre-Devonian	Norsk Hydro	Oil/Gas	2839,0	1996
36/7-2	2990	Pre-Devonian	Norsk Hydro	Oil	1435,0	1997
35/3-4	219	Pre-Devonian	Saga Petroleum ASA	Gas/Condensate	4087,0	1981
35/3-2	136	Pre-Devonian	Saga Petroleum ASA	Gas/Condensate	4398,0	1980
35/3-1	432	Middle Jurassic	Saga Petroleum ASA	Dry	4469,6	1976
35/3-5	433	Pre-Devonian	Saga Petroleum ASA	Dry	4112,0	1982
35/9-2	1600	Pre-Devonian	Norsk Hydro	Oil/Gas	2877,0	1991
35/2-3	6921	Late Cretaceous	Statoil Petroleum ASA	Dry	1640,0	2012
35/3-7 S	6154	Middle Jurassic	VNG Norge AS	Gas	3971	2009

3 Results from geological and geophysical studies

Several studies and evaluations have been carried out in-house and by external companies to address the geological and geophysical understanding of the licence prospectivity. An overview is given below.

Basin Modelling Study

Basin modelling was performed using ZetaWare Trinity software for the region by Torena AS (Throndsen, 2018). The study incorporated the latest seismic mapping as well as detailed hydrocarbon shows and accumulation data from the general area. The model was calibrated against temperature data and vitrinite reflectance data. The source rock properties were interpreted (reconstructed to immaturity) from the average properties of the released wells in the area. The heat flow was allowed to vary laterally, but was kept constant through time and produced a good fit between the calculated and observed values both for temperature and vitrinite reflectance.

Petrophysics Study

Detailed petrophysical analysis of the Lower Cretaceous and the Upper Jurassic reservoirs in a number of wells was completed inhouse prior to drilling 6204/11-3.

Rock Physics Study

An in-house rock physics study was performed using the CGG17M01 BroadSeis 3D seismic data and offset well data. This study was a key part of the licence work program, and despite little direct well calibration, suggested a potential for direct detection of hydrocarbons on seismic gathers. Seismic gathers of the CGG17NM01 survey were conditioned in-house with noise and multiple suppression, gather alignment and spectral balancing. The conditioned CGG gathers demonstrated a class III AVA response at the mapped top reservoir that could represent hydrocarbon presence, most likely gas. Additionally, a somewhat horizontal reflector with a class IV AVA response was identified within the mapped prospect that could represent a fluid contact, most likely gas over oil.

Post-well Studies

Multiple studies were conducted following of the 6204/11-3 Schweinsteiger well as part of the post well analysis. These include thorough biostratigraphic evaluation delivered by Petrostrat to mainly determine the ages of different units, Geochemical analysis conducted by Stratum Reservoir to determine the geochemical source type and maturity characterization of mud gases and cuttings analysis by Qemscan to assess any changes in character across a seismic flat event.

Biostrat Study

Biostratigraphical analysis was conducted by Petrostrat to determine the ages of the different sedimentologial units .Challenges were met in the interval from 1093 - 1322 m MD, where palynology and micropaleontology recoveries were very poor, which resulted in a poor-resolution breakdown of the stratigraphy. Evidence of penetration of the Early Cretaceous, however, was indicated by the first appearance of palynological key markers. Due to poor recovery and absence of palynology and micropaleontology evidence from 1216 down to TD, no biostratigraphic interpretation could be made, and the stratigraphic zonation at this depth is mainly log-based.

Qemscan Study

The Qemscan study was performed by Stratum Reservoir on 56 cuttings samples which were prepared for QEMSCAN 50 micron analysis, and the report presents mineralogical and textural data from the samples. Qemscan work shows a mineralogical change across the seismic flat event linked to the elevated levels of siderite above, and only trace levels of siderite below. There is also more silicified clay above the seismic flat event and less below. The work interprets the siderite and silicified clay to be the diagenetic products of sweet corrosion caused by the presence of gas and water in the reservoir. However, the Qemscan analysis does not prove that the mineralogical variation alone would cause the presence of such a seismic flat event, and suggests that a more detailed density calculation may be useful for quantifying relative effects of fluids and mineralogy across it.

Gas Origin Study

The Gas origin study was another work by Stratum Reservoir. The objects of the study was to determine the gas concentration characteristics and liquid hydrocarbon associations of mud gases, determine the gases' origins and determine if gas above the predicted reservoir level is genetically similar to the gas in the predicted reservoir level. Stratum Reservoir found that the mud gases were methane-rich and dry to very dry (low C2 + wetness contents). The study confirms the presence of a variable thermogenic gas component in as well as above the predicted reservoir level.

FIT Study

The FIT study was performed by Karlsen Keros Consulting to determine the potential migration into the Schweinsteiger trap. The study found that the gas from inclusions is thermogenic and non-biodegraded. It was also found that samples from the basement below the predicted reservoir level shows methane likely of a magmatic origin. It is suggested that the data gives support to a co-genetic medium-mature condensate, and a marine silisiclastic source rock facies is very likely.

4 Prospect update report

There are multiple prospects and leads defined within the bounds of PL829 (Fig. 4.1, Fig. 4.2). Most of these prospects, however, were inherited from the licence application, and are not Wellesley-produced. Therefore, the operator has limited information on much of this prospectivity.

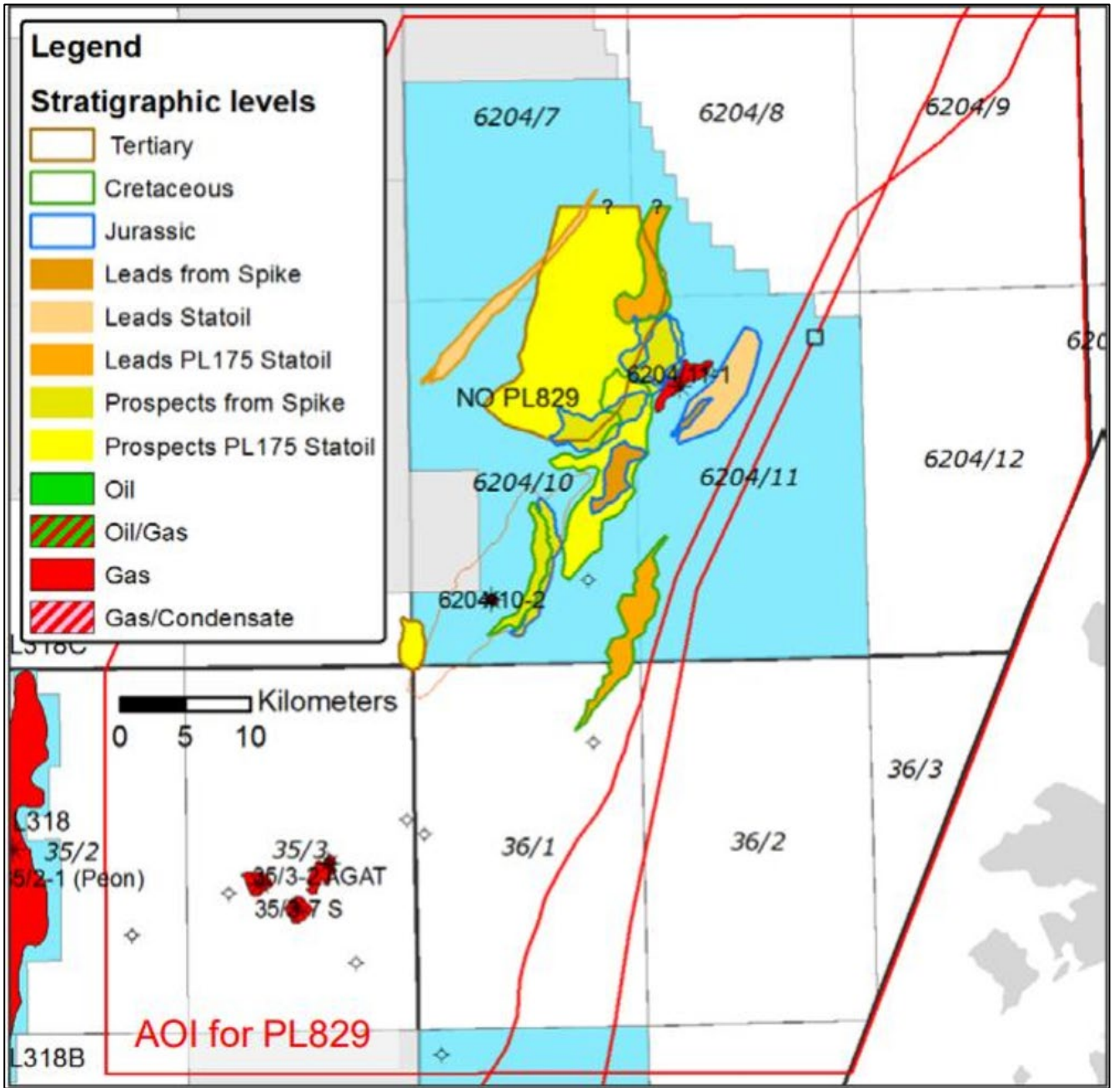

Fig. 4.1 PL829 application prospectivity.

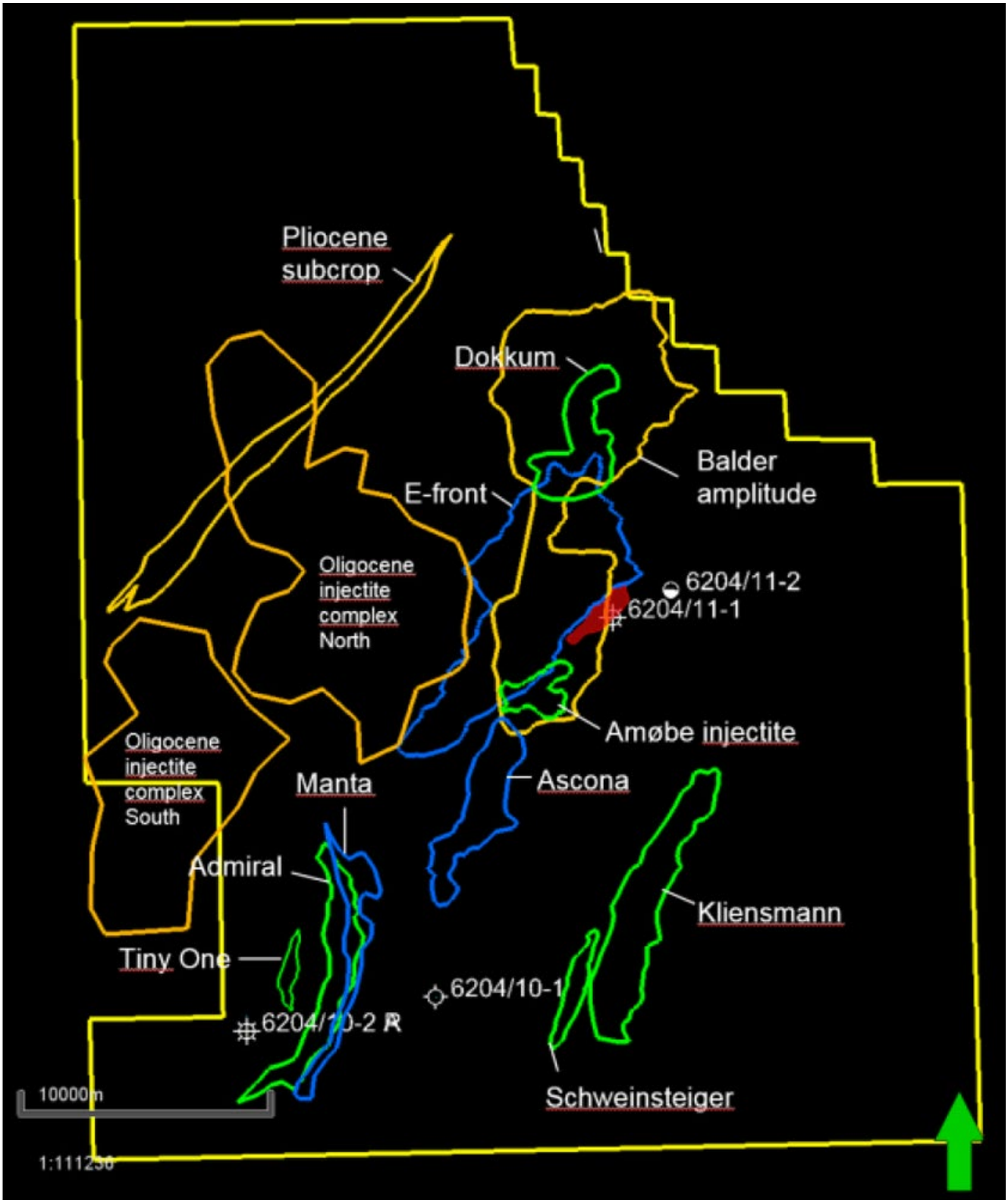

Fig. 4.2 Updated prospectivity for PL829..

Schweinsteiger prospect

The Schweinsteiger prospect is delimited to the south-east by the Selje horst, the licence area covers the northern extend of the Måløy slope to the south and the Møre Fault complex and Slørebotn Sub-basin to the North. It lies on a structural faulted block on the eastern margin of the Øygarden Fault Complex, towards the Måløy Slope. The Schweinsteiger Prospect is a shallow elongated 3-way dip closure sitting on a north-east south-west faulted blocked on the Måløy slope. The structure is capped by Upper Cretaceous shale of the Kyrre Fm and is laterally sealed by Lower Cretaceous shales. The main reservoir was believed to be of Åsgard Fm and the crest of the structure is at 1010 m TVDSS (Fig. 4.3). Tthe structure that was tested by well 36/1-1 situated 12 kilometres south of the Schweinsteiger structure was concidered as the most similar reservoir analogue to the prospect. The Schweinsteiger prospect was tested by exploration well 6204/11-3. Reservoir rocks were not found in the closure at Lower Cretaceous level, and dry sandstones were discovered deeper in the well in what has been interpreted as the Jurassic. Post-well analyses have hinted that the seismic flat event that previously was attributed to a gas-oil contact is indeed a response to various other changes across that horizon, including differences in mineralogy.

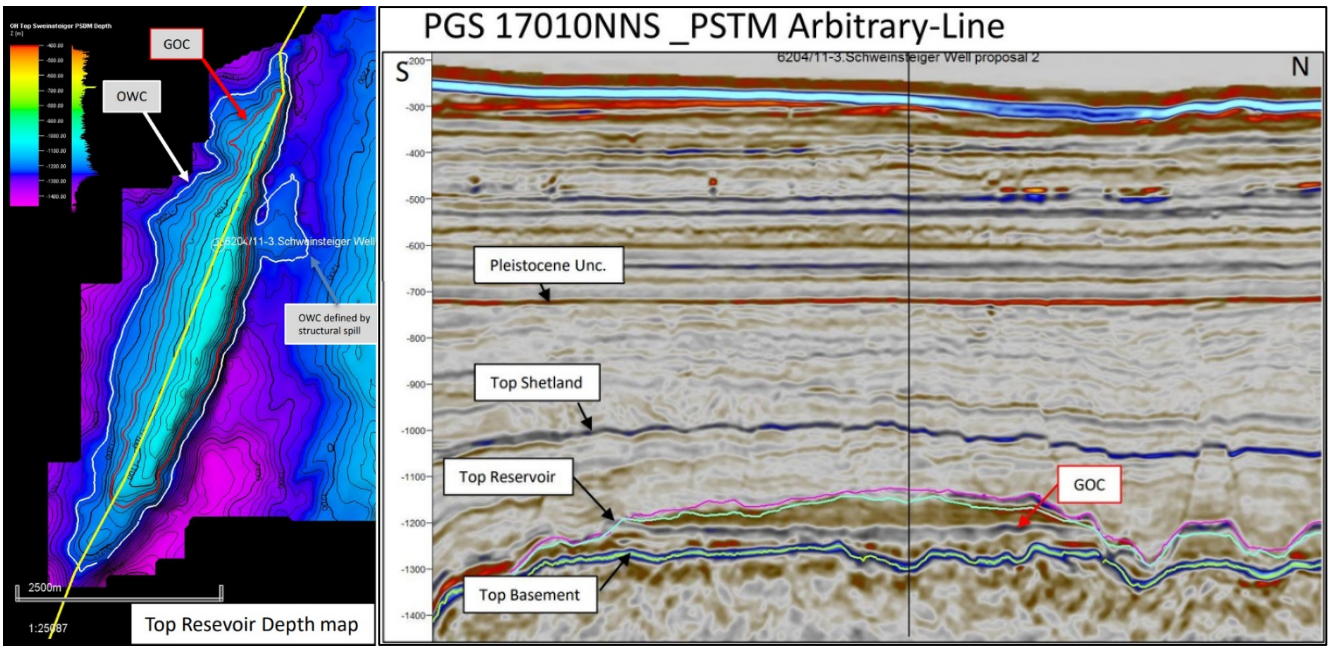

Fig. 4.3 Schweinsteiger top reservoir depth map pre-drill, with outlines of proposed gas-oil-contact and oil-water-contact. Sided by a seismic section through the Schweinsteiger prospect.

Schweinsteiger was the main prospect in the licence, but the licence had some lower ranked prospectivity as well.

E-Discovery

The E-Discovery is a discovery made by the 6204/11-1 well, in Sognefjord Formation. The well contains 21 metres of light gas with a 31 metres residual oil column below. The trap is a rotated fault block, it holds a total gas column in the structure of approximately 165 metres, and the structure is most likely filled to spill. Volume potential is limited. Reservoir quality is generally good with average porosity of 21% and permeabilities from 100-1000 mD. This discovery is what the E-front prospect builds on.

Manta Prospect

The Manta Prospect is an Upper Jurassic. fault-bounded strat-trap prospect along the eastern flank of the Selje High. Manta has a main risk at seal and charge.

Admiral Prospect

The Admiral Prospect is located in the Upper Cretaceous Kyrre Formation, above the M-Prospect. It is a fault bounded 3-way stratigraphic trap against the eastern flank of Selje Horst. The Selje Horst acts as a barrier to the gravity flows. The prospect's main risk is to be either seal or charge.

E-Front Prospect

The E-Front prospect is situated in a downfaulted tilted fault block, downdip of the 6204/11-1 well which found gas in the Upper Jurassic Fensfjord Formation. The main risk of the E-Front prospect is considered the presence of fault seal.

Ascona Lead

Ascona is an Upper or Middle Jurassic lead based on stratigraphic pinch-out in a small sub-basin. Volumes are quite small, and it has a main risk on reservoir presence.

Hale Bopp Prospect

The Hale Bopp prospect is defined based on an Intra-Balder elevated amplitude and works as a stratigraphic pinch-out trap. The prospect has higher volume potential than the other remaining prospects in the licence, but has great risk on reservoir presence and quality.

Tiny One Prospect

Tiny One is an Upper Jurassic Jorsalfare - Kyrre Formation prospect defined in a structural 4-way closure. There is limited volume potential.

Kliensmann Lead

The Kliensmann Lead is an Upper Cretaceous amplitude-driven opportunity which co-incides with a HC-column in Schweinsteiger. The reservoir was probably tested by the Schweinsteiger well, but no reservoir rocks were encountered at the estimated level. It has quite high risk but could have an amplitude uplift.

Amøbe Lead

The Amøbe Lead is a small injectite type play of Upper Cretaceous age. The main risk is trap seal.

Pliocene Subcrop Lead

The Pliocene Subcrop Lead is a stratigraphic subcrop trap based on elevated amplitude. Volumes are small at around 3-4 mSm3 with main risk at reservoir quality.

5 Technical evaluation

There has not been performed any technical evaluation on the E-Discovery or the remaining prospects.

6 Conclusion

Phase 1 of the work program was fulfilled by gathering seismic data, maturing the Schweinsteiger prospect and drilling well 6204/11-3. None of the remaining prospects and leads have volumes to support a standalone development, and all the remaining prospects have too high risk to be pursued any further.

7 References

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8 Enclosures

1 E-Discovery

2 Manta Prospect

3 Admiral Prospect

4 E-Front Prospect

5 Ascona Lead

6 Hale Bopp Propsect

7 Tiny One Prospect

8 Kliensmann Lead

9 Amøbe Lead

10 Pliocene Subcrop Lead