Production License 527

License Report

Oslo, July 2015

1. Key License History

Production License 527 was awarded in May 2009, following the 20th License Round in 2008. The partner group comprised Chevron Norge AS (40% interest, Operator), Statoil ASA (20%), A/S Norske Shell (20%) and Petoro AS (20%). The license was awarded for an initial phase of 6 years followed by a Drill/Drop Phase gate and, in case of a drill decision, an additional 2 year drill phase.

The initial phase 6 years were broken down further into 4 years with a firm work commitment, which included a minimum of 1000 Line kilometres of 2D seismic, an OBN test and a minimum of 500km^2 of 3D seismic. In the subsequent 2 years prior to Drill/Drop, the work commitment listed 'more data'.

1st Phase (2009-2013)	2nd Phase (2013-15)	3rd Phase (2015-2017)
minimum of 1000 km 2D, OBN data, minimum of 500km^2 3D. *Drop or more data*	'More data'. *Drill/Drop.*	Exploration Well

Table 1: Summary of work commitment.

The Partner group held 2 EC/MC meetings per year, in addition to various Technical Workshops. Table 2 summarizes the meetings.

Regular Meetings	**Date**	**Main Topics**
MC-1	26.05.2009	License startup, adminstration
EC-1	25.06.2009	Technical review of Partners prospectivity assessments,2D/OBN program
EC-2	23.10.2009	Technical update, review of seismic acquisition
MC-2	11.11.2009	Work Program, Budgets.
EC/MC-3	28.05.2010	Geologic update (Structural Model, Pot. Fields, Basin Model), CDB, Processing Update.
EC/MC-4	04.11.2010	CDB, Processing Update, Seismic Interpretation Update, 3D Planning & Tendering.
EC-5	05.04.2011	Database Updates, Vendor 2D, 3D Planning & Acquisition timeline, 2D Processing.
MC-5	03.05.2011	Work Program & Budget Review.
EC/MC-6	03.11.2011	WP&B, Subsurface Update, CDB, Review of 3D Acquisitions, 3D Processing Timelines.
EC/MC-7	07.03.2012	3D NATS/WATS Processing Update, Fast Track Interpretation, Hi-Tech 3D options. CSEM/MMT feasibility.
MC-8	05.06.2012	Work Program, Budgets, Subsurface Update.
EC/MC-9	18.10.2012	Processing review, Subsurface Update, CSEM/MMT survey
EC/MC-11	14.03.2013	Processing review, Subsurface Update, Gravity results.
EC/MC-12	08.12.2013	Major Subsurface Review incl. full update on prospectivity. Finite Difference Model review. Potential Field Update, CSEM/MMT inversion results.
EC/MC-13	03.04.2014	Subsurface recap, iGBMig review, Potential Fields & CSEM/MMT Update
EC/MC14	29.10.2014	License Review & Summary, Remaining Uncertainty, iGBMig, Way forward.
Technical Workshops	**Date**	
Partner Technical Workshop	11.05.2010	Petroleum System Elements: Specialist Presentations Chevron, Partner views.
Partner Technical Workshop	19.10.2010	Seismic Workshop (2D review, initial screening, 3D planning)
Partner Technical Workshop	08/09.02.2011	3D Planning: Partner interpretation review, Technology, Location. 2D review.
Partner Technical Workshop	08.11.2012	Further Hi-Tech 3D Acquisition Strategy, Scenarios.

Table 2: Partner Meetings held, 2009-2014.

2. Database

Seismic Data

License acquisitions:

In 2009, the Partnership acquired a 2D Deep Tow survey covering PL527 (1124km), and a 2.5D OBN Pilot (90 Nodes) to test technology in this setting. Fugro was the acquisition company, CGGV the processing company. This dataset was designed for Low Frequency enhancement, a key component of Subvolcanic Imaging. A modest imaging uplift was achieved, and the survey was used to design a large 3D reconnaissance survey.

That 3D survey was designed to cover the entire prospective area of PL527. During the summer of 2011, a total of 2680km^2 of 3D Narrow Azimuth Towed Streamer (NATS) data were acquired using CGGs BroadSeis™ technology. In addition, a 72km^2 3D Wide Azimuth Towed Streamer (WATS) was acquired using the same vendor and technology. Processing of both 3D datasets was carried out over 2011-2013 by CGG in close cooperation with Chevron experts.

Other:

The regional seismic data contained all released 2D Lines in the PL527 area in addition to selected Fugro/TGS MNR-AMR lines which form the main regional 2D dataset in the Vøring Basin. Also, all available regional 3D surveys were included in the evaluation.

Finite Difference Modelling

To assess the potential uplift of further high-tech seismic surveys such as OBN, full WATS or Coil over the already acquired NATS, a multi-property 3D model of PL527 was built using the 3D NATS seismic. Particular attention was paid to the volcanic facies variations and the sill intrusions.

Synthetic seismic in various designs was generated in the model and delivered to seismic vendors for processing. As the 'perfect' seismic result was known from the model, a qualitative image comparison could be made as to which acquisition and processing technique would yield the best result and what the main differences were.

The conclusion was that no single technology was standing out a lot over the NATS, which guided the decision that no further high cost seismic acquisition would result in enhancing the seismic image to reduce geologic risk.

Interactive Gaussian Beam Migration (iGBMig)

A proprietary Chevron processing tool called 'Interactive Gaussian Beam Migration' (iGBMig) was used on the 3D NATS survey to further investigate velocity model changes and their impact on the image and resulting geology. This study focussed on 3 targets: the Volcanic Sequence, the shallow sub-volcanic zone with the Cretaceous objective and deep structural zone. Some modest improvements were achieved with this in the shallow sections; however these velocity changes did not translate into an improved deep image. Further potential was not recognized and no further tests were carried out.

Potential Fields Data

License acquisitions:

During the 3D NATS shoot in 2011, a ship-borne Marine Gravity survey was acquired.

Other:

Regional Gravity: Fugro Mid-Norway & Mid-Norway Deep Surveys, North-East Atlantic SPAN (GXT), Norway Regional Surveys (NR1572515), a GETECH Satellite offshore data merge. For Magnetic data a regional merged dataset from NGU was used.

EM Data

License acquisitions/Spec:

A 3D/2D CSEM/MMT survey was designed by Chevron and acquired by EMGS on a License Spec basis in 2012. It used 157 receivers in 12 Source/15 receiver lines.

Other:

1 Legacy 2D line over PL527 was acquired by OHM in 2008, and test reprocessed by Chevron in 2012. This test encouraged and enabled the EMGS 2012 acquisition.

Well Data

Released data from the following Norway wells were used: 6704/12-1, 6706/11-1, 6707/10-1, 6707/10-2, 6706/12-1, 6706/6-1, 6607/12-1, 6603/5-1S, 6604/2-1, 6603/12-1, 6604/10-1, 6705/10-1, 6605/1-1, 6605/8-1, 6605/8-2, 6607/5-1, 6607/5-2. Additional wells: ODP 642E, Faroes well 6104/21-1 and UK wells 213/27-1Z, UK 217/15-1Z.

Geologic Studies:

Study	Purpose
VBPR - Geophysical Atlas of the Vøring and Møre Basins	Geophysical Report
VBPR - Sills Study	Reference of volcanic facies
VBPR - JMT Sampling	Rock sample database
CASP - Norway-Greenland Provenance Package	Sand distribution prior to break up
CASP - East Greenland Cretaceous Report Package	Cretaceous sedimentation and basin evolution
CASP - East Greenland Jurassic Report Package	Jurassic sedimentation and basin evolution
CASP - Greenland-Norway Project 2007-08	GIS data base on CASP work related to evolution of the Greenland/Norway rift
CASP - Greenland-Norway Project 2009-11	Annual membership in the current research
ODP/DSDP published reports	Volcanic stratigraphy and rock properties
Force Sub-basalt reports	Seismic imaging
Vøtec phase 1 published results	Structural evolution

Table 3: Overview of Geologic Studies.

3. Review of Geologic Framework

Regional Structural Analysis

A structural model was developed for the Outer Vøring Basin which suggests a hyperextended margin geometry characterized by Lower Cretaceous rifting. Late Cretaceous/Paleocene renewed rifting culminated in the Break-up of the North Atlantic with associated Volcanism, followed by minor Miocene inversion.

Building on that model, a 2D-Structural Transect over PL527 was built. This Transect was later updated and its location adjusted as the 3D data became available. The basic assumption is a deep crustal detachment underlying the basin with a SE dip towards the Norwegian mainland. Normal faulting resulted in a segmented broad high in the AOI, with Cretaceous and Jurassic reservoir objectives at prospective depths. This structural model was calibrated with GravMag datasets, as deep stratigraphic control is poor. Most recent structural work suggests however that the westernmost parts of the basin may be dominated by seaward-dipping faults with significant offsets and listric behaviour at depth, generating the accommodation space for the accumulation of thick volcanic units.

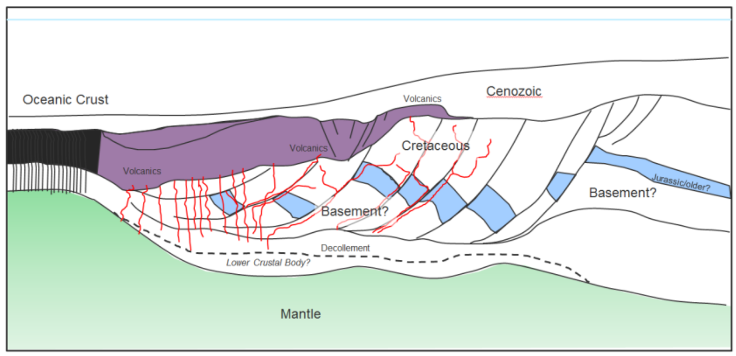

Figure 1: Schematic structural setting, VMH. Section is W-E oriented.

Regional Source Rock(s) and HC Charge Modelling

The principal source rocks in the basin are shales of Late Jurassic to earliest Cretaceous age (Spekk Fm). A database of well samples and Spekk-derived hydrocarbons (HC) has been developed for this license, including samples from Mid Norway, the Northern North Sea and East Greenland. The source rock presence is conceptual, and was inferred to be present from HC accumulations and the regional stratigraphic model. This source rock was simulated in a number of 2D and 3D Basin Model iterations. The structural models provided the boundary conditions for Heat Flows (Present Day and Paleo) which were also calibrated against well data (VR, BHTs). HC shows in wells, regional lithology information and the tectonic history provided further calibration. Particularly wells in the SW Outer Vøring provided crucial thermal information, indicating that the present day Heat Flow is increasing towards the west and south-west, most likely caused by the shallow position of the Moho in relation to the Oceanic Crust.

The models suggest the Spekk Fm source rock is over-mature in most areas of the Outer Vøring. Only the structurally highest areas around Nyk and in the AOI are they in the late gas generation stage. Late stage gas flushing and in-situ oil to gas cracking provides the mechanism to charge the existing HC accumulations in the OVB. The expected HC phase in the AOI is modelled as dry gas.

Regional Reservoirs

The primary objective reservoirs in the Outer Voring area are well documented Greenland-derived Upper Cretaceous, deep water sandstones. These sands have been found in many wells and a depositional model has been developed for each formation, using Conjugate Margin reconstructions, provenance data, outcrop reports and the seismic database. Distribution of these sands is controlled mainly by paleo-basin configuration and bathymetry. Principal risk in the AOI is the possibility of sand bypass and/or absence due to Late Cretaceous/Paleocene uplift and erosion of the westernmost areas. It also appears that sand deposition focussed on the Hel Graben and Nyk High area; hence the parameters from these areas cannot be directly applied to the AOI.

In addition to the Upper Cretaceous sandstones, a secondary objective included Middle Jurassic shallow marine sandstones, analogous to the Halten Terrace reservoirs. The presence of the Jurassic sandstones is not confirmed in the Vøring Basin, as each well targeting the Jurassic encountered a thicker than anticipated Cretaceous section so the Jurassic is not yet penetrated there. The paleogeography model assumes these sandstones were deposited in a shallow marine seaway extending from East Greenland outcrops in the west to the Haltenbanken in the east.

Reservoir Quality

Reservoir Quality assessments were conducted for the main objective intervals for each new major seismic horizon update, integrating all regional data. Touchstone™ modelling integrated with the Basin Model provided reliable reservoir quality models, indicating favourable static and dynamic reservoir parameters for the Upper Cretaceous objective.

The Middle Jurassic objective is, due to depth of burial and the modelled thermal regime, less favourable and requires enhanced porosity preservation processes, such as chlorite coatings, to preserve porosity at depth to make this a viable objective.

Volcanic Units

The Volcanic units in the Outer Voring were of great interest as they cover the main objectives. Main areas of focus were thickness and impact on underlying reservoirs. Insights were gained from the ODP 642E well in combination with the 3D seismic, which provided an excellent tool to map out volcanic facies details.

Integration with CSEM/MMT inversions allowed for a corroboration of the Base Volcanics interpretation surface and supported the presence of sub-volcanic siliciclastic sediments. 'Fensters' in the volcanic canopy were newly identified which allowed for the mapping of sub-volcanic target horizons and enhanced the confidence in the Base Volcanic pick.

Regional analogues from UK wells as well as East Greenland outcrops were instrumental to develop the appropriate geologic scenario.

The Late Palaeocene – Eocene Volcanic sequences in the AOI are characterised by Seaward-Dipping Reflectors (stacked terrestrial lava flows, thinning towards the east and topping a volcanic delta), a paleo-coastline represented by the Vøring Escarpment, and, eastward of this feature, subaqueous hyaloclastites and Inner Flows. The ODP well also suggests the presence of a more complex volcanic assemblage in some places below the terrestrial flows. Widespread sill and dike complexes are observed in the Cretaceous sections both inboard and outboard of the Volcanics.

Regional Seals

A seal database was established using cuttings samples from equivalent formations in wells from the region. Column heights were derived from regional discoveries. Effective seals have been proven by regional discoveries, and are inferred to be present in the AOI.

4. Prospect Update

Seismic imaging quality issues made this Subvolcanic play a very challenging, high risk/high reward opportunity. The prospectivity in PL527 in 2009 was based on a poor quality, coarse 2D seismic grid. A large 4-way closure (‘Gryffin’) was mapped at a conceptual Base Volcanics horizon which more or less resembled the Top Volcanics horizon (the only reliable seismic event on the 2009 dataset). The closure had a very irregular appearance on a map as a result of the seismic grid, probably related to sub-volcanic faulting, and the expectation was that this large closure would break up into multiple sub-structures once more and better quality data became available. A structural analogue was the broad Nyk High to the east of the volcanic region.

The western flank of the Gryffin high was dominated by SDR packages of stacked volcanics, the eastern flank was inferred as a large fault co-located with the Vøring Escarpment, offsetting the Inner Flows and closing the structure. To the NE and SW, the saddle axis simply plunged deeper without any major faulting. The target objective in this closure was Upper Cretaceous, deep marine sandstones of the Lysing, Nise and Springar Formations. Timing of charging the structure from the Upper Jurassic Spekk Fm was identified to be the key risk, with the main uncertainties being the actual depth of the source rock and the sub-regional heat flow history.

During various stages of data acquisition (described in the Database section above) the seismic image improved incrementally and more reliable geologic concepts could be developed. Unsurprisingly, the biggest uplift and learnings came with the 3D NATS/WATS datasets.

These datasets in both PSDM Kirchhoff and PSDM Controlled Beam Migration were the main interpretation volumes. Unfortunately, they were all lacking the deep illumination (below 3-4km) required to understand the deep structural configuration which therefore remained mostly conceptual. Particularly the WATS pilot did not yield the anticipated uplift. However the shallow section - which was expected to contain the primary Cretaceous objective - showed reasonable signal in the Volcanic ‘Fenster’. These sub-volcanic sedimentary sections were further constrained by CSEM data. Once identified, these units were interpreted away from the Fensters/gaps in the volcanic cover.

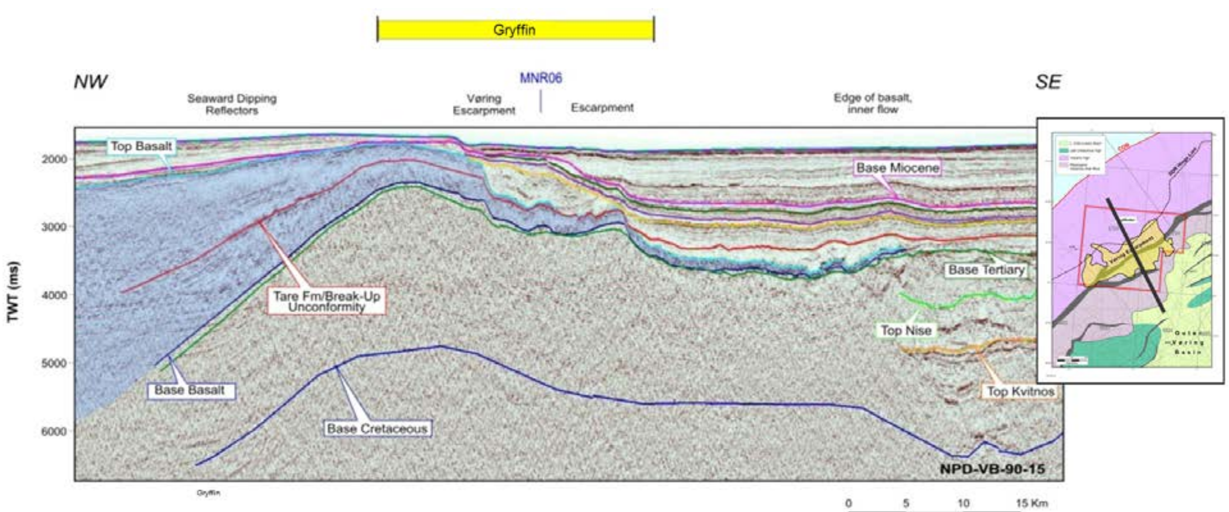

Figure 2: Play concept 2009.

The resulting structural culmination of a large dome emerged in the SW blocks of the license, as opposed to the previously mapped larger structure spanning the entire 9 blocks (Fig. X).

Two main sub-structures were identified/grouped: Firstly Gryffin A, a single fault block 3-way closure, partly covered by Volcanics, which was treated as a separate closure because it could be clearly mapped. The Luva block on the Nyk High can be regarded as a direct structural analogue. Secondly, Gryffin Main, which rolls the bulk of the additional Cretaceous closures into one lead. A fault framework was identified, but only the Gryffin A fault was used to define lead outlines as mapping out 3D faults under the volcanics proved to be very challenging.
A network of sill intrusions was seen on some early datasets, and became clearly visible on 3D and CSEM. Analogues in outcrops and wells have demonstrated though that the effect of these sills on neighbouring reservoirs is almost negligible. Their impact on seals is dependent on timing, and most sills are regarded as Palaeocene in age. This coincides with the main generation and migration stage from the Spekk Fm source rock.
Reservoir quality for the Cretaceous is expected to be very good, as calibrated by regional analogues. This is mainly related to the shallow depth of this interval at less than 800m below mudline. The reservoir facies is expected to be basin floor fans, possibly channelized and confined as the seismic character changes considerably in the PL527 3D. Shallow, bedding controlled sills are observed in the objective section in the Volcanic Fenster and are very likely to occur elsewhere, too. This can reduce sandstone net/gross ratios and reservoir properties.

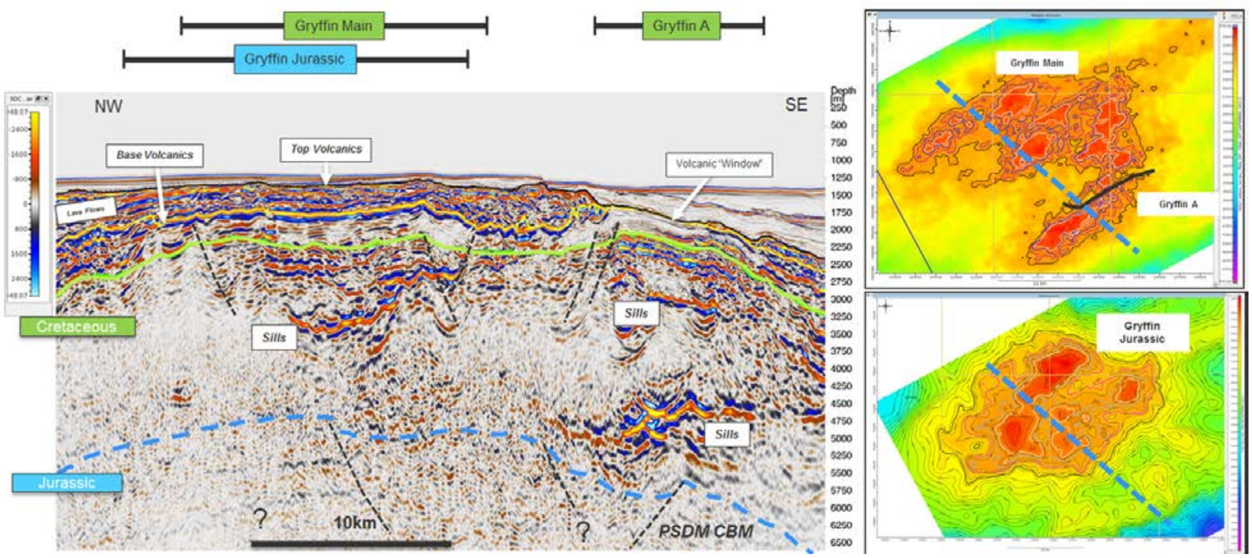

Figure 3: Play Concept and status of evaluation 2015.

The shallow depth of the objective also affects the mechanical seal competency of the overburden rocks and limits the expected gas columns to 300m in both Gryffin A and Gryffin Main. This takes into account some uplift and erosion of the section on the main ridge in the Late Cretaceous/Early Paleocene, otherwise the sealing succession would be ineffective. Mapping out the seal interval 'sandwiched' between the Volcanics and the Top Reservoir proved difficult, and its potential absence in some areas is a possibility.

A Lower Middle Jurassic objective was included in the recent evaluation as an optimistic scenario. Lower - Middle Jurassic reservoirs, analogous to the Halten Terrace, were evaluated. The seismic signal at the relevant depths hardly exists; hence the seismic picks and resulting maps are conceptual and model driven. A large 4-way closure was interpreted, which is located directly beneath the Gryffin Main structure.
Sandstones at these depths undergo considerable diagenetic effects and require grain coatings, comparable to similar reservoirs on the Halten Terrace at comparable depths in order to preserve good porosities and permeabilities. A gas cut-off of 12% total porosity was used to define rocks of reservoir quality.

Top Seals at these depths are not an issue and no significant overpressure is expected.

The timing of the petroleum system elements can be seen below (Fig X). In general, in the absence of a secondary source rock, the timing of HC charge is not optimal, as the bulk of the hydrocarbons were expelled and had migrated well before the final structural development of the prospects had occurred. Charge is essentially expected to be provided by very late stage gas flushing and oil-to-gas cracking in the Lower – Middle Jurassic reservoirs. This is in alignment with the basin-wide calibration of existing discoveries.

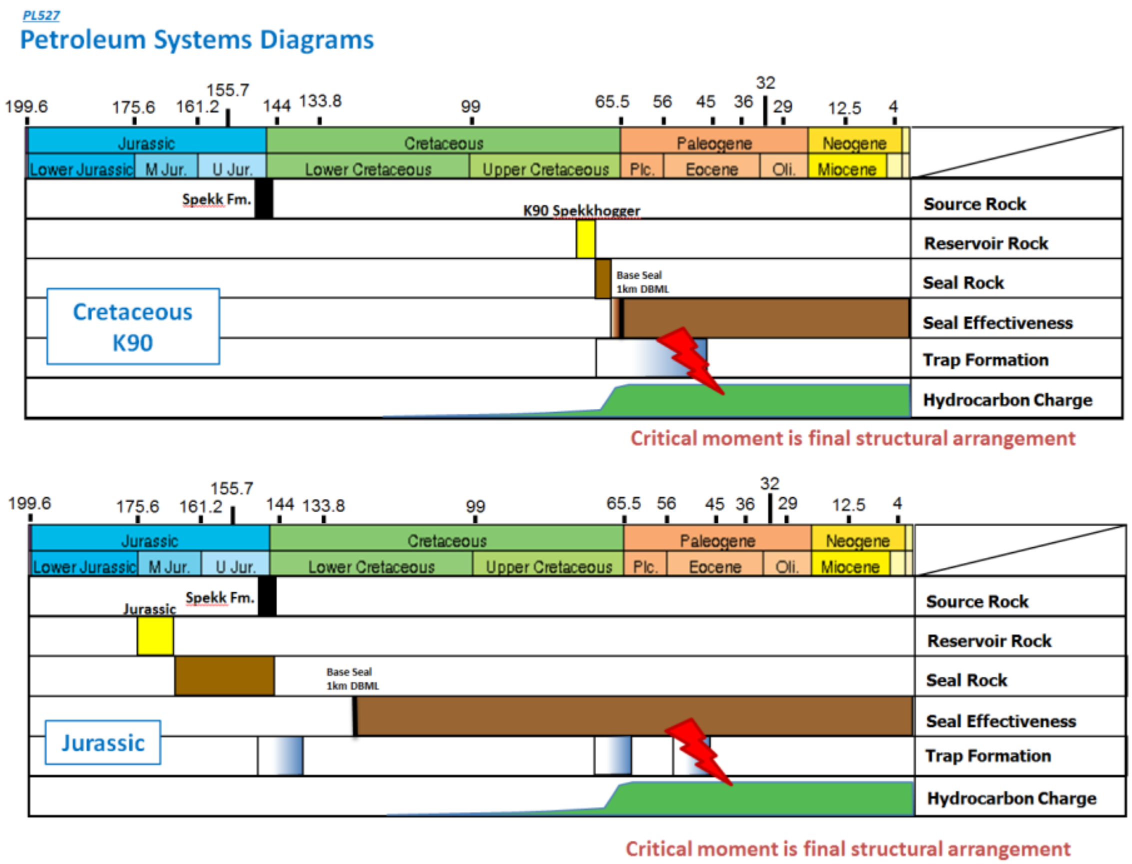

Figure 4: Petroleum System Events Chart, Cretaceous and Jurassic.

Volumetric Results & Risk:

2009

Gryffin Cretaceous	Low	Mid	High
mmboe (in place)	1171	3099	8238
mmboe (recoverable)	713	1943	5317
Geologic Chance Of Success (COS)	5%		

2015

Gryffin A	Low	Mid	High
mmboe (in place)	85	234	621
mmboe (recoverable)	43	120	322
Geol. COS	12%		

Gryffin Main	Low	Mid	High
mmboe (in place)	439	1222	3283
mmboe (recoverable)	171	485	1314
Geol. COS	8%		

Gryffin Jurassic	Low	Mid	High
mmboe (in place)	669	1769	4657
mmboe (recoverable)	340	911	2453
Geol. COS	7%		

Table 4: Risk & Resource Changes, 2009-2015.

5. Technical evaluations on development

Multiple development and economic assessments of the PL527 prospect were performed as the 2009-2014 technical work progressed, incorporating refinements in recovery estimates, timing, product price forecasts, and projected costs. Most of these evaluations assumed that a potential hydrocarbon discovery would consist of dry gas, as indicated by the source and charge analysis described in Part 3 above. In addition, development and economic sensitivities were run to assess the impact of oil production instead of gas. Screening of potential development alternatives resulted in selection of a semi-submersible production facility and living quarters plus subsea wells as the preferred concept. This concept offers robust topside weight and layout flexibility, and could accommodate laterally-extensive subsea locations on multiple fault blocks across the Gryffin structure.

Final development scenarios were linked to a field-wide composite recovery range representing a statistical risked roll-up of the low, mid, and high recovery outcomes described in Part 4 for the Gryffin Cretaceous, Gryffin A, and Gryffin Main compartments. Although this combined field size is potentially large in volume, the unfavourable geologic chance of success (COS) results in unacceptably weak economic returns. To determine whether additional seismic acquisition might enhance the COS and thereby improve the economic attractiveness of exploratory drilling, a value-of-information decision tree was constructed. Using the inputs provided by subject-matter experts on incremental costs and risks, the value-of-information analysis showed that further investment in currently-available seismic technology was not economically justified.

Product export challenges and associated high investments were not the largest factor impacting the economic returns for development. However, an optimized export strategy will play an important development role in this deepwater region. The long tie-in distance from PL527 to existing mid-Norway infrastructure would require significant pipeline investment for a gas development. For an oil development, the long distance would tend to favour a tanker-export solution rather than export by oil pipeline. To optimize future capital spend, hypothetical scenarios were modelled assuming tie-in of the PL527 gas stream to either the Aasta Hansteen spar development or directly into the Polarled pipeline. The timing and rates achievable in these scenarios are highly dependent on availability of future spare capacity at either facility.

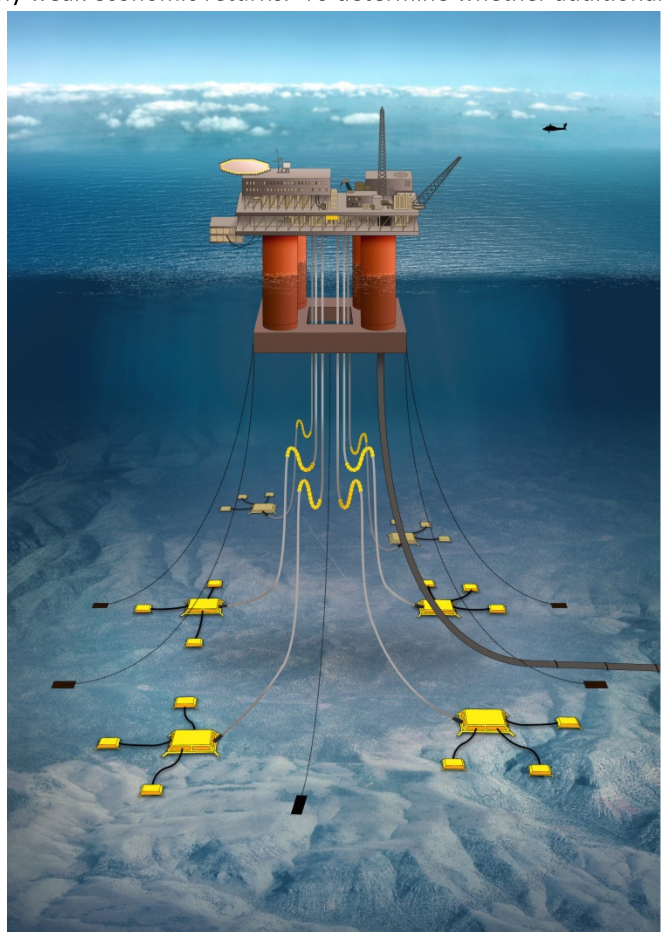

Figure 5: Representation of the development concept selected for PL527: Semi-submersible with subsea wells.

6. Conclusions

Significant technical work has been performed on the PL527 License, resulting in an updated Risk & Resource profile and associated economic assessment. Significant resource potential in the License is noted; however the overall risk reduction was not to the desired level, and major uncertainty still remains.

Seismic modelling suggests that a major uplift in seismic imaging is unlikely even with higher tech, high cost seismic acquisitions such as Coil or OBN, which makes further risk reduction unlikely.

The Partnership has in a unanimous vote decided not to move PL527 into the drilling phase, and to drop the license in accordance with the license terms as per 15 May 2015.

Additional Figures

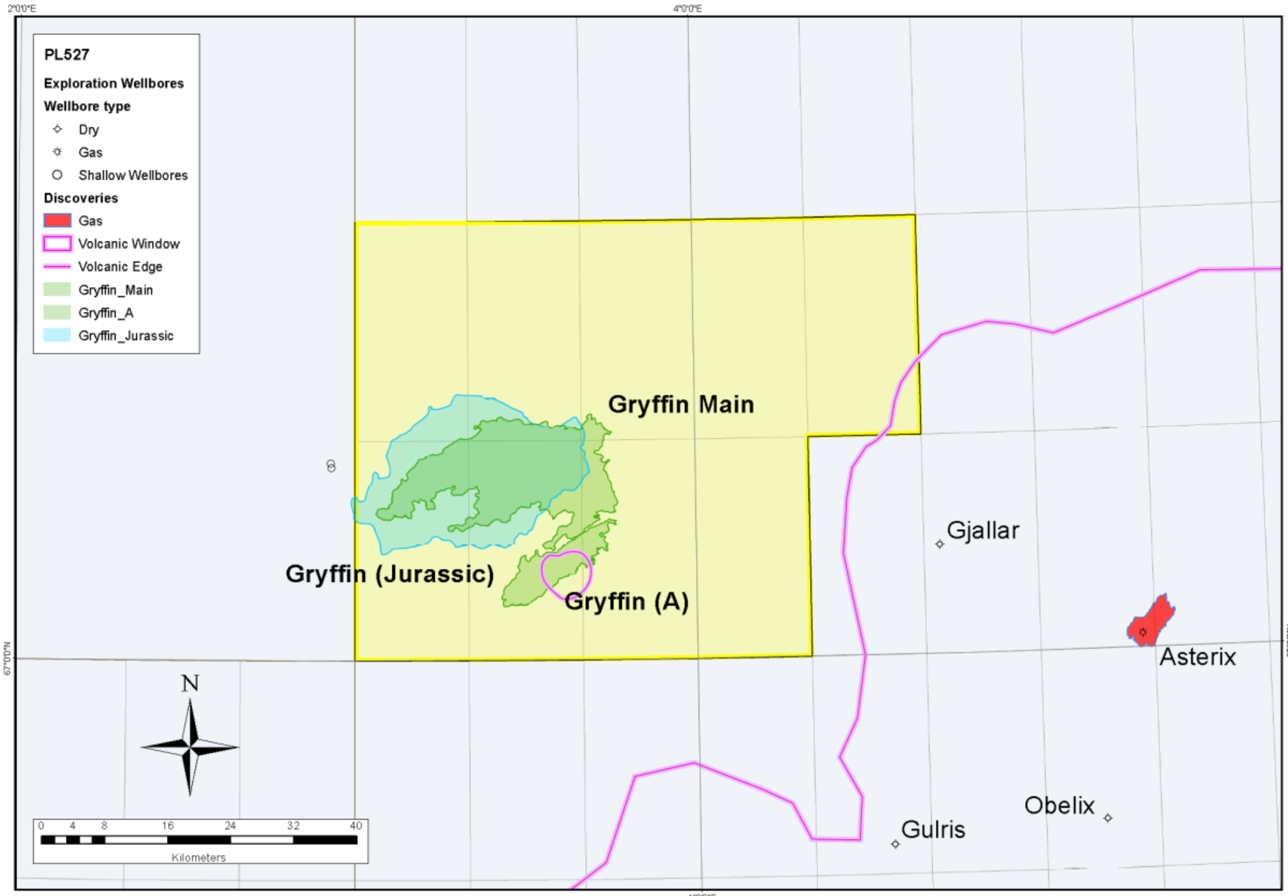

Figure 6: Leads identified and their location in PL527.

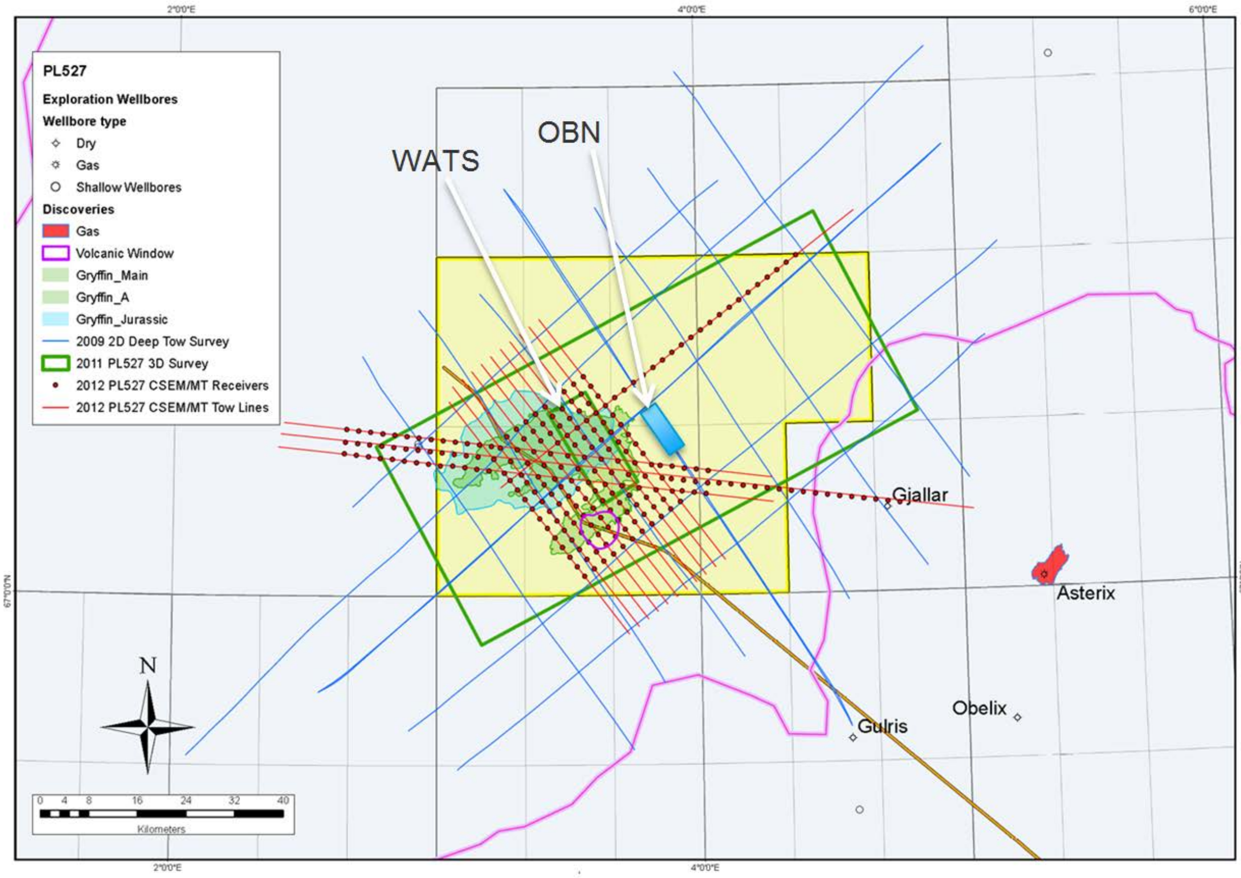

Figure 7: Database on PL527.

Table 5: Prospect data (Enclose map)									
Block	6703/11, 12	Prospect name	Gryffin A	Discovery/Prosp/Lead		Prosp ID (or New!)	NPD will insert value	NPD approved (Y/N)	
Play name	NPD will insert value	New Play (Y/N)		Outside play (Y/N)					
Oil, Gas or O&G case:	Gas	Reported by company		Reference document				Assessment year	
This is case no.:	1 of 1	Structural element		Type of trap		Water depth [m MSL] (>0)	1200	Seismic database (2D/3D)	3D
Resources IN PLACE and RECOVERABLE		**Main phase**				**Associated phase**			
Volumes, this case		Low (P90)	Base, Mode	Base, Mean	High (P10)	Low (P90)	Base, Mode	Base, Mean	High (P10)
In place resources	Oil [10^6 Sm^3] (>0.00)								
	Gas [10^9 Sm^3] (>0.00)	14.00	37.00	44.00	99.00				
Recoverable resources	Oil [10^6 Sm^3] (>0.00)								
	Gas [10^9 Sm^3] (>0.00)	7.00	19.00	24.00	51.00				
Reservoir Chrono (from)	Campanian	Reservoir litho (from)	Sandstone	Source Rock, chrono primary	Spekk	Source Rock, litho primary	Shale	Seal, Chrono	Maastrichtian
Reservoir Chrono (to)		Reservoir litho (to)		Source Rock, chrono secondary		Source Rock, litho secondary		Seal, Litho	Shale
Probability [fraction]									
Total (oil + gas + oil & gas case) (0.00-1.00)		Oil case (0.00-1.00)		Gas case (0.00-1.00)	0.12	Oil & Gas case (0.00-1.00)			
Reservoir (P1) (0.00-1.00)	0.55	Trap (P2) (0.00-1.00)	0.60	Charge (P3) (0.00-1.00)	0.70	Retention (P4) (0.00-1.00)	0.50		
Parametres:	Low (P90)	Base	High (P10)	*Comments: Volumtrics are MMBOE. Potential hydrocarbons in all prospects are estimated to be dry gas, with minor amounts of condensate less than 1 Sm3/Sm3. Volumetrics table represents both gas and condensate.*					
Depth to top of prospect [m MSL] (> 0)		1918							
Area of closure [km^2] (> 0.0)		57.0							
Reservoir thickness [m] (> 0)	110	179	296						
HC column in prospect [m] (> 0)	135	180	240						
Gross rock vol. [10^9 m^3] (> 0.000)	0.720	1.726	4.053						
Net / Gross [fraction] (0.00-1.00)	0.27	0.40	0.60						
Porosity [fraction] (0.00-1.00)	0.26	0.29	0.32						
Permeability [mD] (> 0.0)									
Water Saturation [fraction] (0.00-1.00)	0.20	0.30	0.39						
Bg [Rm3/Sm3] (< 1.0000)	0.0037	0.0040	0.0044						
1/Bo [Sm3/Rm3] (< 1.00)									
GOR, free gas [Sm^3/Sm^3] (> 0)									
GOR, oil [Sm^3/Sm^3] (> 0)									
Recov. factor, oil main phase [fraction] (0.00-1.00)									
Recov. factor, gas ass. phase [fraction] (0.00-1.00)									
Recov. factor, gas main phase [fraction] (0.00-1.00)	0.43	0.52	0.63						
Recov. factor, liquid ass. phase [fraction] (0.00-1.00)	0.37	0.45	0.55	For NPD use:					
Temperature, top res [°C] (>0)				Innrapp. av geolog-init:	NPD will insert value	Registrert - init:	NPD will insert value	Kart oppdatert	NPD will insert value
Pressure, top res [bar] (>0)				Dato:	NPD will insert value	Registrert Dato:	NPD will insert value	Kart dato	NPD will insert value
Cut off criteria for N/G calculation	1.	2.	3.					Kart nr	NPD will insert value

Figure 8: Volumetric Information on Gryffin A.

Table 5: Prospect data (Enclose map)									
Block	6703/8, 10, 11	Prospect name	Gryffin Main	Discovery/Prosp/Lead		Prosp ID (or New!)	NPD will insert value	NPD approved (Y/N)	
Play name	NPD will insert value	New Play (Y/N)		Outside play (Y/N)					
Oil, Gas or O&G case:	Gas	Reported by company		Reference document				Assessment year	
This is case no.:	1 of 1	Structural element		Type of trap		Water depth [m MSL] (>0)	1200	Seismic database (2D/3D)	3D
Resources IN PLACE and RECOVERABLE		**Main phase**				**Associated phase**			
Volumes, this case		Low (P90)	Base, Mode	Base, Mean	High (P10)	Low (P90)	Base, Mode	Base, Mean	High (P10)
In place resources	Oil [10^6 Sm^3] (>0.00)								
	Gas [10^9 Sm^3] (>0.00)	70.00	194.00	248.00	522.00				
Recoverable resources	Oil [10^6 Sm^3] (>0.00)								
	Gas [10^9 Sm^3] (>0.00)	27.00	77.00	99.00	209.00				
Reservoir Chrono (from)	Campanian	Reservoir litho (from)	Sandstone	Source Rock, chrono primary	Spekk	Source Rock, litho primary	Shale	Seal, Chrono	Maastrichtian
Reservoir Chrono (to)		Reservoir litho (to)		Source Rock, chrono secondary		Source Rock, litho secondary		Seal, Litho	Shale
Probability [fraction]									
Total (oil + gas + oil & gas case) (0.00-1.00)		Oil case (0.00-1.00)		Gas case (0.00-1.00)	0.08	Oil & Gas case (0.00-1.00)			
Reservoir (P1) (0.00-1.00)	0.50	Trap (P2) (0.00-1.00)	0.50	Charge (P3) (0.00-1.00)	0.60	Retention (P4) (0.00-1.00)	0.50		
Parametres:	Low (P90)	Base	High (P10)	*Comments: Volumtrics are MMBOE. Potential hydrocarbons in all prospects are estimated to be dry gas, with minor amounts of condensate less than 1 Sm3/Sm3. Volumetrics table represents both gas and condensate.*					
Depth to top of prospect [m MSL] (> 0)		1931							
Area of closure [km^2] (> 0.0)		268.0							
Reservoir thickness [m] (> 0)	103	171	287						
HC column in prospect [m] (> 0)	126	172	235						
Gross rock vol. [10^9 m^3] (> 0.000)	3.183	7.817	18.578						
Net / Gross [fraction] (0.00-1.00)	0.27	0.40	0.60						
Porosity [fraction] (0.00-1.00)	0.24	0.27	0.30						
Permeability [mD] (> 0.0)									
Water Saturation [fraction] (0.00-1.00)	0.20	0.30	0.39						
Bg [Rm3/Sm3] (< 1.0000)	0.0037	0.0040	0.0044						
1/Bo [Sm3/Rm3] (< 1.00)									
GOR, free gas [Sm^3/Sm^3] (> 0)									
GOR, oil [Sm^3/Sm^3] (> 0)									
Recov. factor, oil main phase [fraction] (0.00-1.00)									
Recov. factor, gas ass. phase [fraction] (0.00-1.00)									
Recov. factor, gas main phase [fraction] (0.00-1.00)	0.43	0.52	0.63						
Recov. factor, liquid ass. phase [fraction] (0.00-1.00)	0.37	0.45	0.55	For NPD use:					
Temperature, top res [°C] (>0)				Innrapp. av geolog-init:	NPD will insert value	Registrert - init:	NPD will insert value	Kart oppdatert	NPD will insert value
Pressure, top res [bar] (>0)				Dato:	NPD will insert value	Registrert Dato:	NPD will insert value	Kart dato	NPD will insert value
Cut off criteria for N/G calculation	1.	2.	3.					Kart nr	NPD will insert value

Figure 9: Volumetric information on Gryffin Main.

Table 5: Prospect data (Enclose map)

Block	6703/7,8, 10, 11	Prospect name	Gryffin Jurassic	Discovery/Prosp/Lead		Prosp ID (or New!)	NPD will insert value	NPD approved (Y/N)	
Play name	NPD will insert value	New Play (Y/N)		Outside play (Y/N)					
Oil, Gas or O&G case:	Gas	Reported by company		Reference document				Assessment year	
This is case no.:	1 of 1	Structural element		Type of trap		Water depth [m MSL] (>0)	1200	Seismic database (2D/3D)	3D
Resources IN PLACE and RECOVERABLE		**Main phase**				**Associated phase**			
Volumes, this case		Low (P90)	Base, Mode	Base, Mean	High (P10)	Low (P90)	Base, Mode	Base, Mean	High (P10)
In place resources	Oil [10^6 Sm^3] (>0.00)								
	Gas [10^9 Sm^3] (>0.00)	106.00	281.00	360.00	740.00				
Recoverable resources	Oil [10^6 Sm^3] (>0.00)								
	Gas [10^9 Sm^3] (>0.00)	54.00	145.00	187.00	390.00				
Reservoir Chrono (from)	Bathonian	Reservoir litho (from)	Sandstone	Source Rock, chrono primary	Spekk	Source Rock, litho primary	Shale	Seal, Chrono	Callovian-Oxfordian
Reservoir Chrono (to)		Reservoir litho (to)		Source Rock, chrono secondary		Source Rock, litho secondary		Seal, Litho	Shale
Probability [fraction]									
Total (oil + gas + oil & gas case) (0.00-1.00)		Oil case (0.00-1.00)		Gas case (0.00-1.00)	0.07	Oil & Gas case (0.00-1.00)			
Reservoir (P1) (0.00-1.00)	0.45	Trap (P2) (0.00-1.00)	0.40	Charge (P3) (0.00-1.00)	0.60	Retention (P4) (0.00-1.00)	0.60		
Parametres:	Low (P90)	Base	High (P10)	*Comments: Volumtrics are MMBOE. Potential hydrocarbons in all prospects are estimated to be dry gas, with minor amounts of condensate less than 1 Sm3/Sm3. Volumetrics table represents both gas and condensate.*					
Depth to top of prospect [m MSL] (> 0)		4360							
Area of closure [km^2] (> 0.0)		397.0							
Reservoir thickness [m] (> 0)	94	179	346						
HC column in prospect [m] (> 0)	265	373	525						
Gross rock vol. [10^9 m^3] (> 0.000)	8.724	20.829	50.828						
Net / Gross [fraction] (0.00-1.00)	0.34	0.45	0.60						
Porosity [fraction] (0.00-1.00)	0.10	0.12	0.14						
Permeability [mD] (> 0.0)									
Water Saturation [fraction] (0.00-1.00)	0.35	0.45	0.53						
Bg [Rm3/Sm3] (< 1.0000)	0.0030	0.0032	0.0034						
1/Bo [Sm3/Rm3] (< 1.00)									
GOR, free gas [Sm^3/Sm^3] (> 0)									
GOR, oil [Sm^3/Sm^3] (> 0)									
Recov. factor, oil main phase [fraction] (0.00-1.00)									
Recov. factor, gas ass. phase [fraction] (0.00-1.00)									
Recov. factor, gas main phase [fraction] (0.00-1.00)	0.43	0.55	0.70						
Recov. factor, liquid ass. phase [fraction] (0.00-1.00)	0.34	0.45	0.60	For NPD use:					
Temperature, top res [°C] (>0)				Innrapp. av geolog-init:	NPD will insert value	Registrert - init:	NPD will insert value	Kart oppdatert	NPD will insert value
Pressure, top res [bar] (>0)				Dato:	NPD will insert value	Registrert Dato:	NPD will insert value	Kart dato	NPD will insert value
Cut off criteria for N/G calculation	1.	2.	3.					Kart nr	NPD will insert value

Figure 10: Volumetric information on Gryffin Jurassic.