

RELINQUISHMENT REPORT FOR PRODUCTION LICENCE 471

BLOCKS 6407/2(Part) & 6407/5(Part)

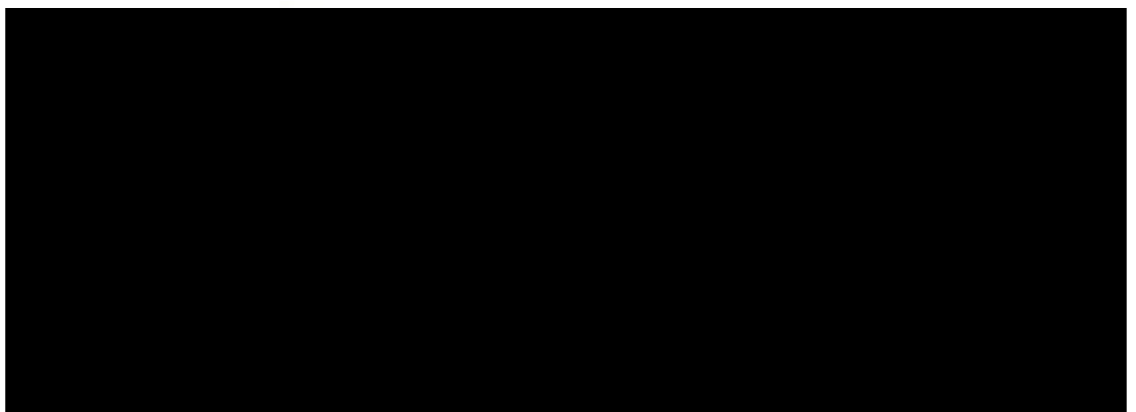


March 2013
Confidential



Prepared by:

Approved by:



PL471 Relinquishment Report

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1 Key Licence History

The Production License 471 (PL471) was awarded to OMV (Norge) AS (50% and operator) and Sagex Petroleum (50%) through the APA 2007 licensing round, in February 2008. Current equity holders are OMV (Norge) AS (40% and operator), Norwegian Energy Company ASA (40%) and Valiant Petroleum Norge AS (20%). The initial work programme was to acquire 200 sqkm of 3D seismic data and to drill one exploration well before the end of the initial 4-year period, by 28 February 2012. Reprocessing of existing 3D seismic data replaced the acquisition of new 3D seismic, with the consent granted by NPD. Prior to the activities associated with PL471, one well had been drilled in the license area. The well 6407/5-1 was drilled by Mobil Exploration Norway and plugged & abandoned as a dry well with shows in 1988.

Reprocessing and full interpretation of the resulting PSTM and PSDM 3D seismic data sets over the licence area were carried out. In addition, geological, reservoir and basin modeling studies were performed resulting in thorough evaluation of all prospective levels in the Cretaceous and Jurassic. Exploration well 6407/5-2S was drilled to evaluate the hydrocarbon potential of the Cretaceous Chamonix and Jurassic Cortina prospects using Borgland Dolphin rig in 2011. Approximately 15m of silty sandstones were encountered in the prognosed Upper Cretaceous Lysing Formation. No hydrocarbons were discovered in these sands. Post-well biostratigraphic evaluation of the well assigned these sand interval to the Lange Sandstone Member. Gas was encountered in the sandstones of the Jurassic Rogn, Melke and Garn Formations with approximately 40m of gas column at the well location. The well was permanently abandoned. The discovery is estimated to hold from 0.3×10^9 Sm³ (P90) to 1.6×10^9 Sm³ (P10) with a Mean estimate of 0.9×10^9 Sm³ of recoverable gas.

All outstanding work commitments for the licence have been fulfilled by reprocessing of pre-existing 3D seismic data and drilling of exploration well 6407/5-2S. The original deadline for decision for continuation (BOV) was February 28, 2012, which was subsequently was extended to February 28, 2013.

The Cortina discovery and remaining potential in the Moritz prospect (Figure 1.1) are below the minimum economic field size in this area and therefore it was decided to relinquish the license.

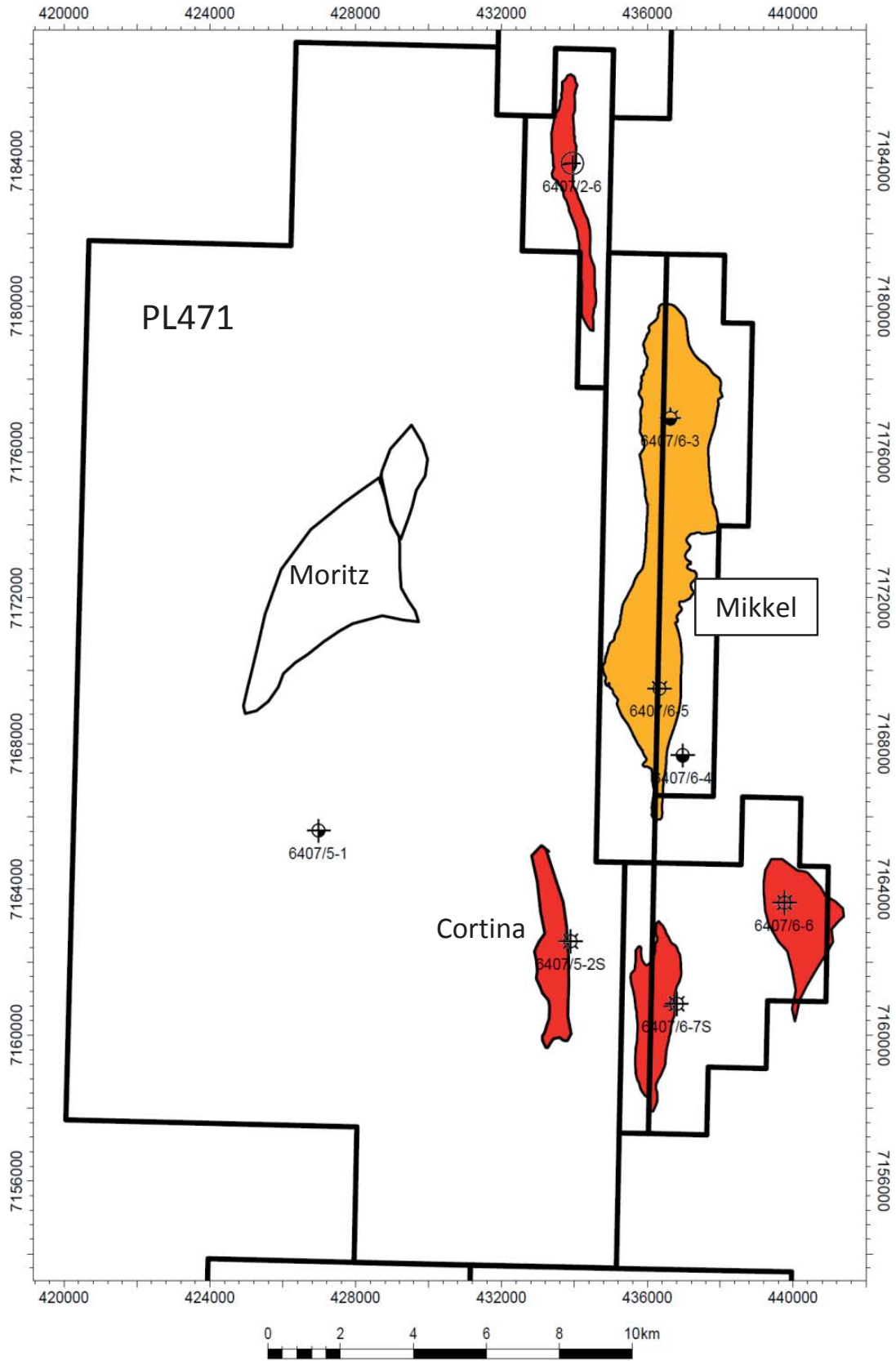


Figure 1.1 PL471, Cortina Discovery and Moritz Prospect Location

2 Database

Seismic

The geophysical evaluation and interpretation of the PL471 is based on a dataset that is a merge and re-processing of two pre-existing datasets; MD99 and ST9807. The reprocessing was performed in both time and depth:

- PSTM (Pre-Stack Time Migration): the cube was reprocessed with the aim to preserve amplitude and covers an area of approximately 716 km².
- PSDM (Pre-Stack Depth Migration): the cube covers the same area as for the PSTM cube and was aimed at improving the structural imaging in the area.

Figure 2.1 displays the coverage of this 3D dataset.

Well Database

The well database used in the evaluation of the PL471 includes all the nearby wells over the area. Figure 2.2 displays the location of wells that have been used in the evaluation of PL471.

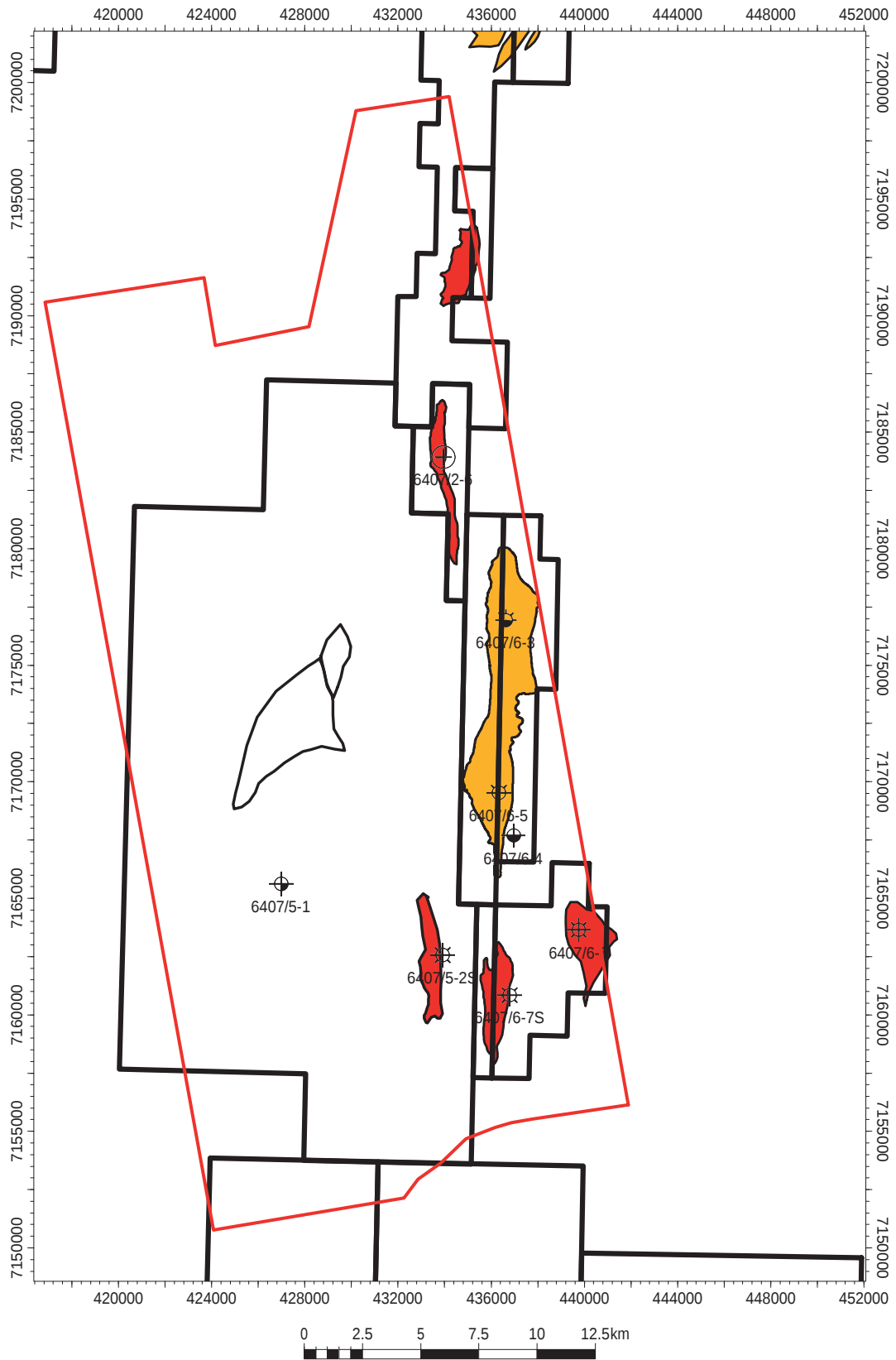


Figure 2.1 OMV2008MR08 3D Seismic Coverage

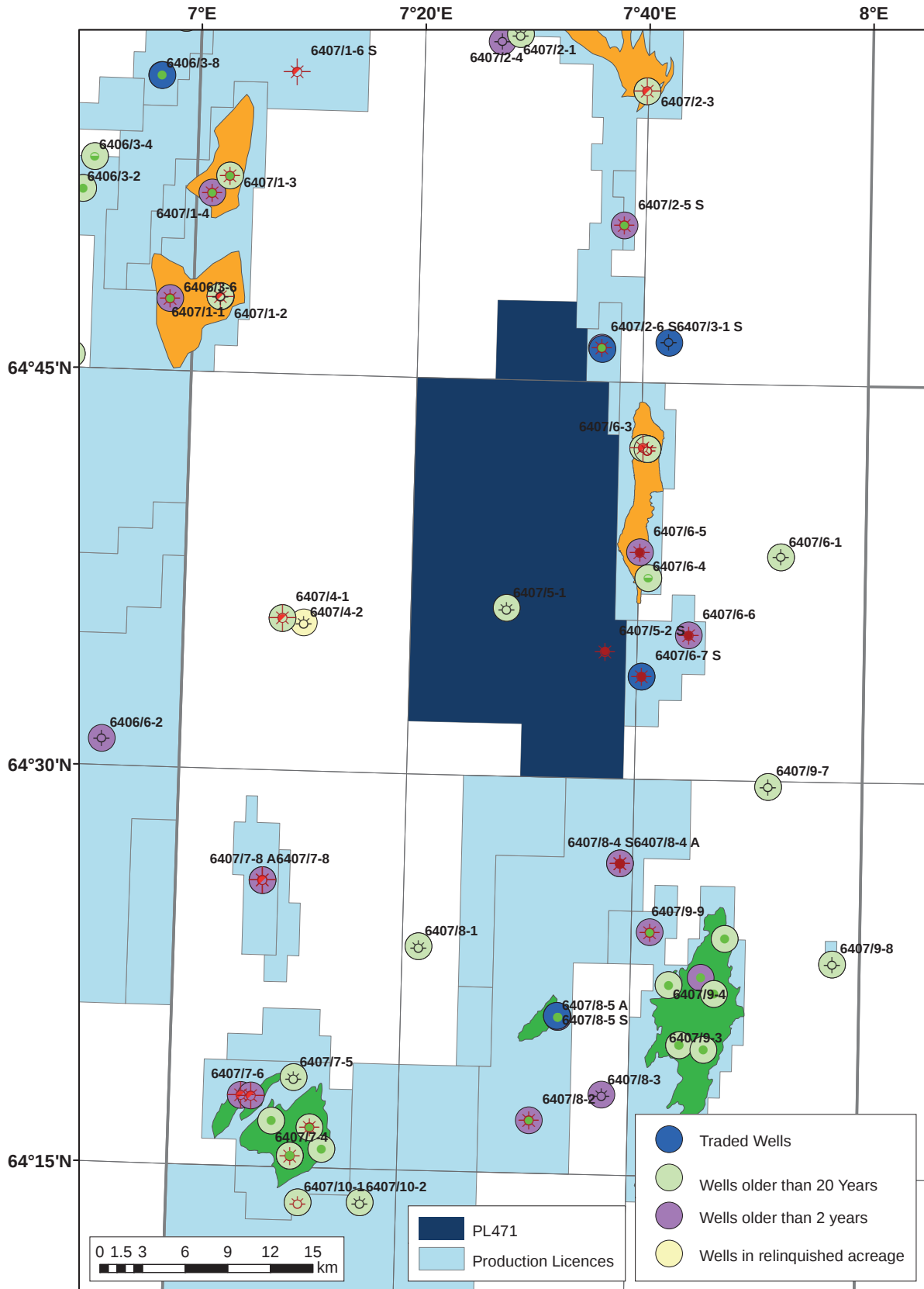


Figure 2.2 Well Database

3 Review of Geological Framework

The PL471 is located in the Gimsan Basin on the eastern part of the Halten Terrace (Figure 3.1). To the east, the area is bounded by the Vingleia and the Bremstein Fault Complex. The Bremstein Fault Complex forms the eastern boundary of the Halten Terrace and controlled its final structural expression in the Late Cretaceous. The Halten Terrace was formed during the Middle Jurassic to Early Cretaceous extensional event. The terrace is cut by numerous faults which generally have a south-southwest to north-northeast trend.

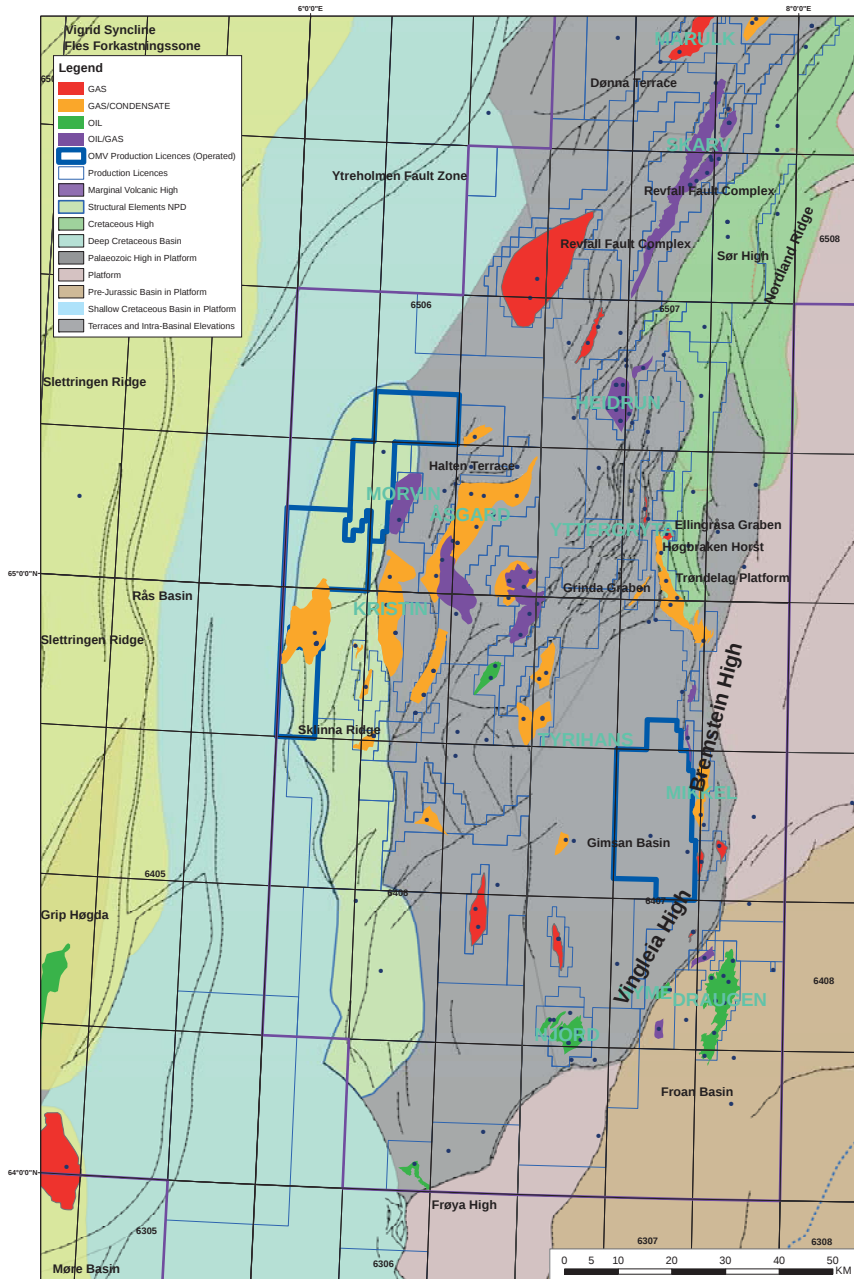


Figure 3.1 Halten Terrace Structural Elements.

The general stratigraphy of the area (Dalland et al., 1988) is shown in Figure 3.2. In general most of the stratigraphic intervals in the Haltenbanken are present in the PL471 area.

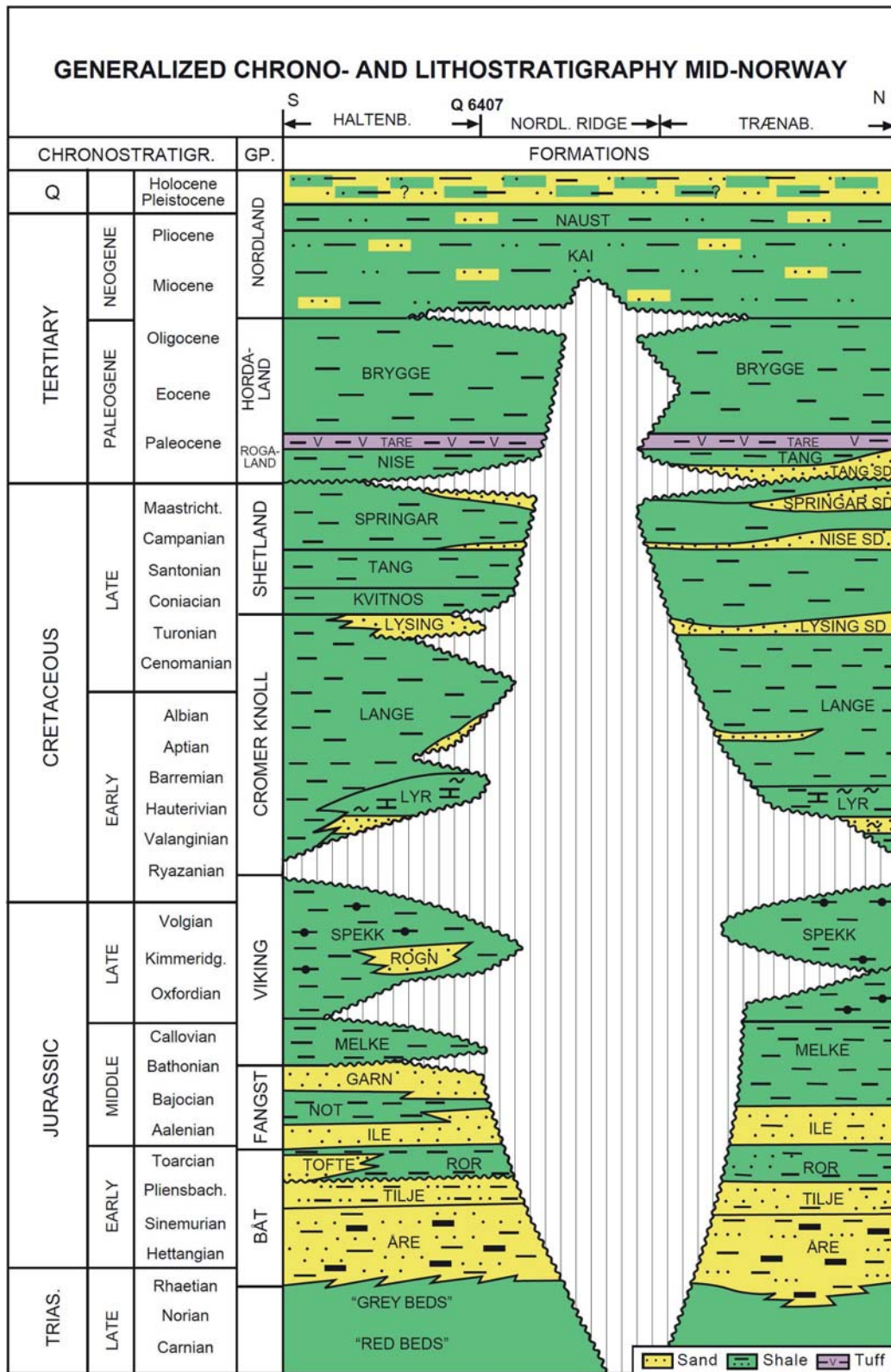


Figure 3.2 Generalized Chrono- and Lithostratigraphy (Dalland et al., 1988)

Potential Late Cretaceous reservoirs were the main target at the time of license application and culminated in the drilling of the Chamonix prospect. The Jurassic sandstones of the Garn, Ile and Tilje Formations together with the Rogn, Tofte and Åre Formations were considered additional targets. However, drilling of exploration well 6407/5-2S to evaluate the Upper Cretaceous Lysing Formation (Chamonix Prospect) and the deeper Jurassic reservoirs (Cortina Prospect) did not prove any hydrocarbon accumulation in the Cretaceous reservoir, but discovered gas in the sandstones of the Jurassic Rogn, Melke and Garn Formations. Therefore, the remaining prospectivity within the PL471 is seen in the reservoirs of the Jurassic age.

4 Prospect Update

At the time of license application, one stratigraphic prospect (Cretaceous Chamonix, Figure 4.1) and two structural leads (Jurassic Geilo Sør and Geilo Nord) were identified within the area covered by PL471. The Geilo leads were renamed Moritz West, Moritz Central and Moritz East during the license work. Prior to drilling of well 6407/5-2S, one Late Cretaceous Lysing prospect (Chamonix) and two Jurassic prospects (Moritz and Cortina) were identified and evaluated. The exploration well 6407/5-2S was drilled in summer 2011 to evaluate the Upper Cretaceous Lysing Formation in the Chamonix Prospect and the deeper Jurassic reservoirs of the Garn, Ile, Tofte and Tilje Formations as a secondary target in the Cortina Prospect. Approximately 15m of silty sandstones were encountered in the prognosed Upper Cretaceous Lysing Formation. No hydrocarbons were discovered in these sands. Post-well biostratigraphic evaluation of the well assigned these sand interval to the Lange Sandstone Member. Gas was discovered in the sandstones of the Jurassic Rogn, Melke and Garn Formations. The Ile, Tofte and Tilje Formations were found to be water bearing.

The discovery was made on a fault bound three-way structural closure (Figure 4.2 and Figure 4.3). Pressure data suggests that the Garn, Rogn and Melke reservoirs are in communication and share a common gas-water contact (GWC). The discovery is estimated to hold from 0.3×10^9 Sm³ (P90) to 1.6×10^9 Sm³ (P10) with a Mean estimate of 0.9×10^9 Sm³ of recoverable gas. The discovery evaluation report was submitted to NPD in June 2012.

Motritz Prospect

Moritz prospect consists of three segments that are named Moritz West, Moritz Central and Moritz East (Figure 4.4). These are fault bounded structural closures with potential reservoir rocks of Early to Middle Jurassic age. Moritz Central and Moritz East have very small potential and therefore hydrocarbon resources are only calculated for Moritz West. Moritz West structure is bounded by two faults that meet in the northeastern corner of the structure (Figure 4.4). Potential reservoirs are Middle Jurassic Garn and Ile Formations. The gas case recoverable resource potential of the Moritz West prospect was calculated to range from a P90 volume of 0.6×10^9 Sm³ to a P10 of 11.9×10^9 Sm³, with a Mean recoverable resource potential of 6×10^9 Sm³ as presented in Table 4.1.

The overall Change of Success (Pg) for the Moritz Prospect is 0.18. The individual risk elements for the prospect are summarised in Table 4.1. Fault seal and reservoir quality have been considered as the main risks for this prospect. The sealing capacity of the northeastern fault (Figure 4.5), where sand to sand juxtaposition occurs, is considered to be a high risk. The Garn Formation has been drilled in exploration well 6407/5-1 approximately five km south of the Moritz prospect. Top Garn was encountered at 4179 m TVDSS and the well drilled 100 m of tight sandstone with average porosity of 6%. Although the interpreted Garn Formation in the Moritz prospect is mapped approximately 400-500 m shallower, the reservoir quality is still deemed as a high risk.

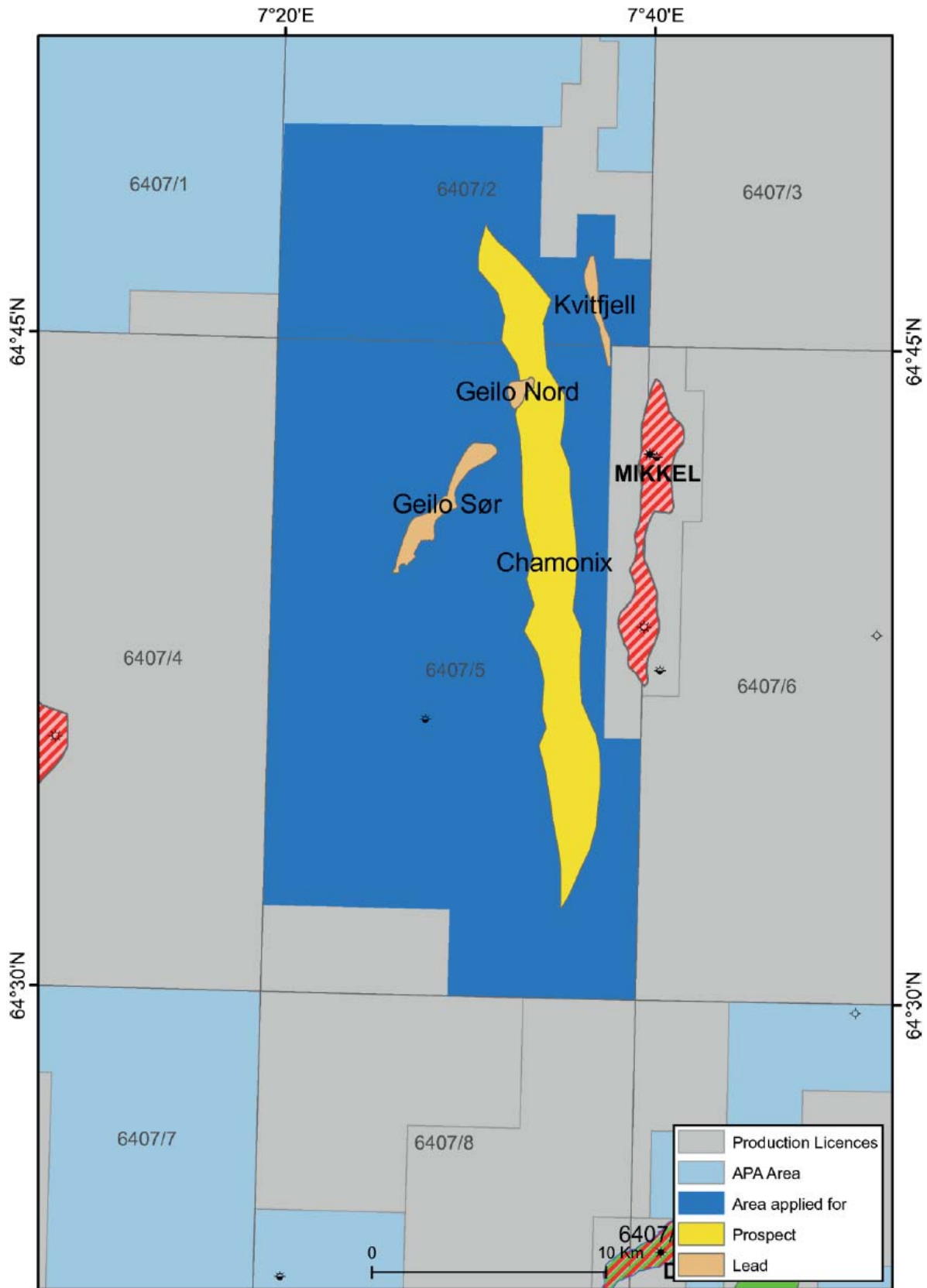


Figure 4.1 Prospect and Leads at the Time of License Application

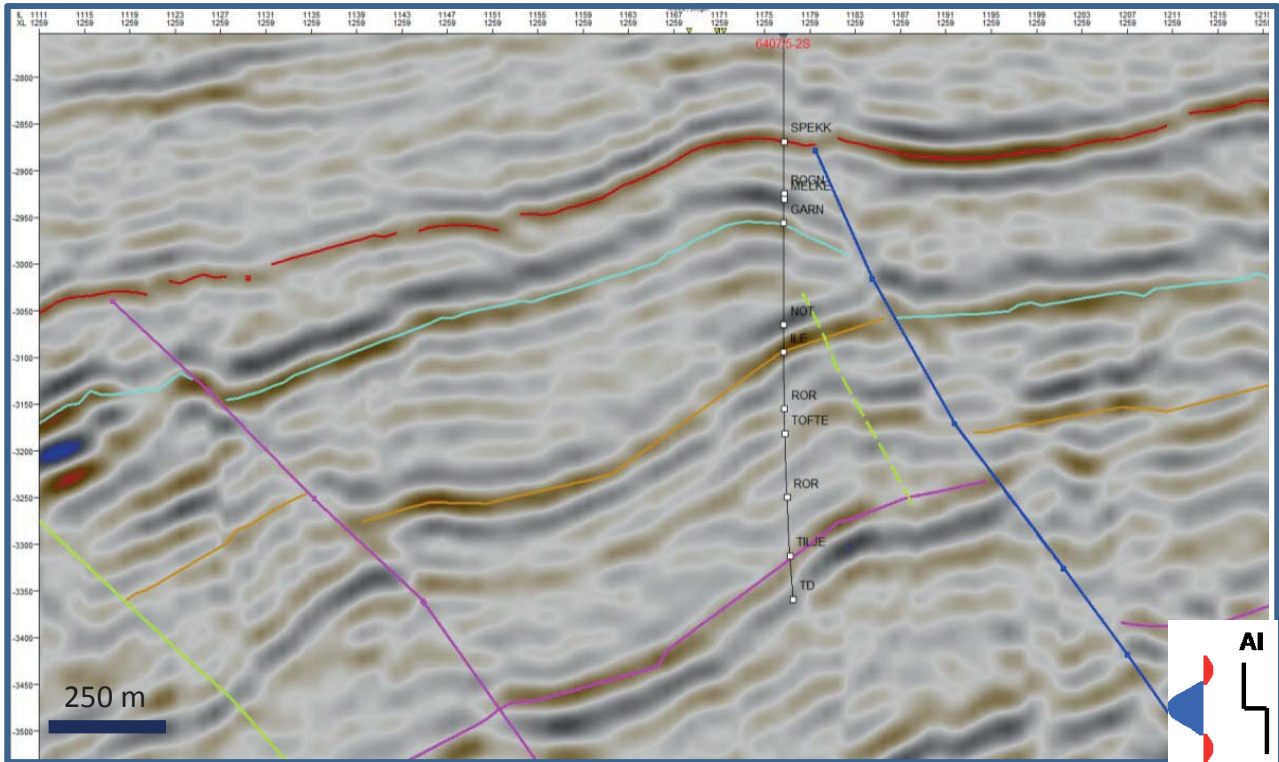


Figure 4.2 Seismic Through the 6407/5-2S Well. See Figure 4.2 for location

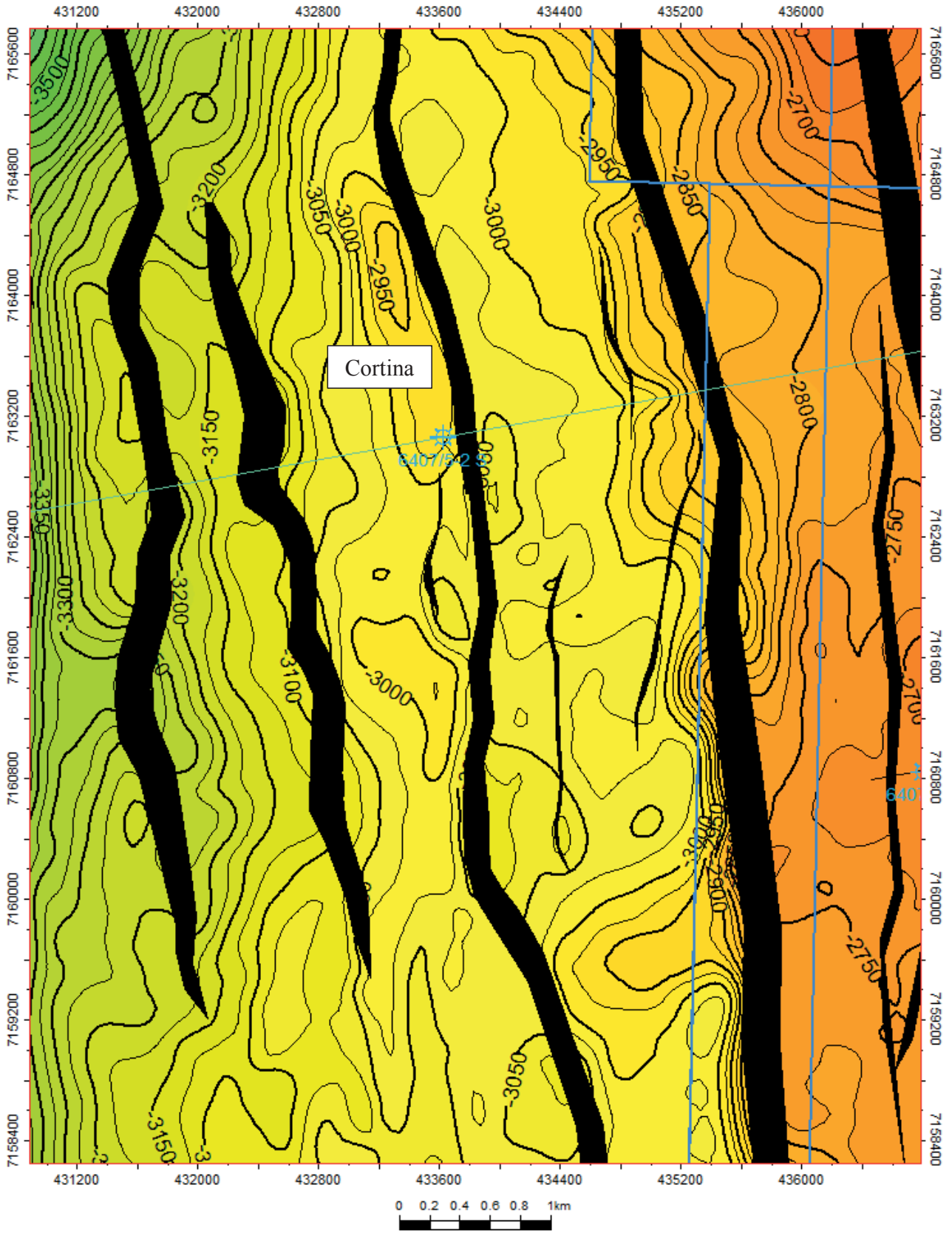


Figure 4.3 Cortina Discovery, Top Garm Formation Depth Map

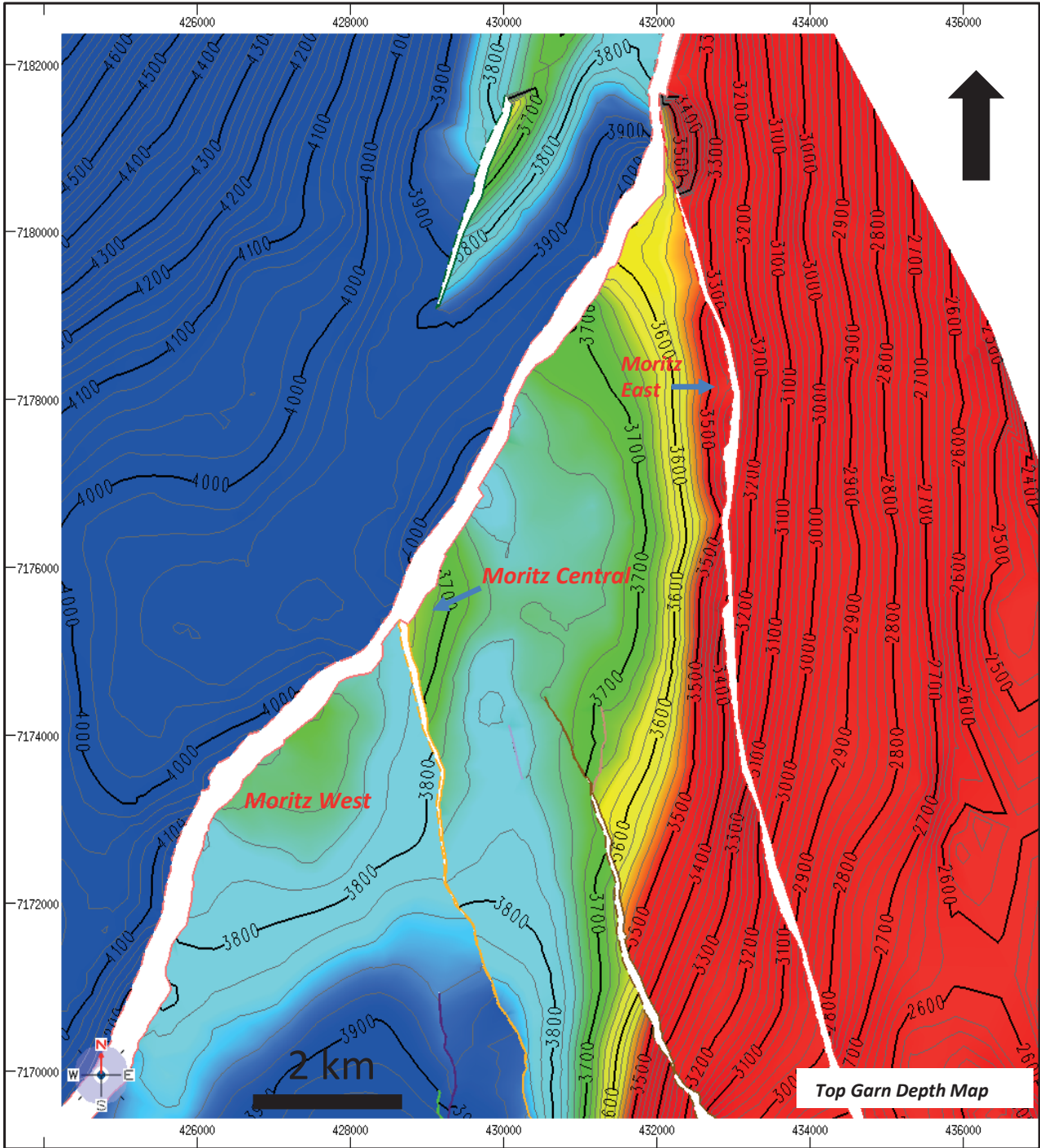


Figure 4.4 Moritz Prospect

Table 4.1 Moritz Prospect

2/1/2013

Table 1: Prospect data

Block	Prospect name		Discovery/Prosp/Lead	Prosp ID (or New!)	NPD approved?	
6407/5	Moritz		Prospect	<i>NPD will insert data</i>	<i>NPD will insert data</i>	
Play (name / new)	Structural element		Company/ reported by / Ref. doc.		Year	
<i>NPD will insert data</i>	Gimsan Basin		OMV (Norge) AS, PL471 Relinquishment Report		2013	
Oil/Gas case	Resources IN PLACE					
Gas	Main phase			Ass. phase		
	Low	Base	High	Low	Base	High
Oil 10 ⁶ Sm ³				0.4	4.9	10.4
Gas 10 ⁹ Sm ³	0.8	9.6	19			
	Resources RECOVERABLE					
	Main phase			Ass. phase		
	Low	Base	High	Low	Base	High
Oil 10 ⁶ Sm ³				0.1	2	4.4
Gas 10 ⁹ Sm ³	0.6	6	11.9			
	Which fractiles are used as:		Low:	P90	High:	P10
Type of trap	Water depth (m)		Reservoir Chrono (from - to)		Reservoir Litho (from - to)	
Structural	216		Middle Jurassic		Garn and Ile Formations	
Source Rock, Chrono	Source Rock, Litho		Seal, Chrono		Seal, Litho	
Middle/Late Jurassic	Spekk and Melke Formations		Middle/Late Jurassic		Not and Spekk Formations	
Seismic database (2D/3D):		OMV2008MR08 3D				
Probability of discovery:						
Technical (oil+gas case)		0.18		Prob for oil/gas case		N/A
Probability (fraction):		Reservoir (P1)	Trap (P2)	Charge (P3)	Retention (P4)	
		0.5	0.8	0.9	0.5	
Parametres:		Low	Base	High	Comments	
Depth to top of prospect (m)			3680			
Area of closure (km ²)		4.2	10	15.5		
Reservoir thickness (m)		90	105	120		
HC column in prospect (m)		90	140	180		
Gross rock vol. (10 ⁹ m ³)		0.8	1.1	1.4		
Net / Gross (fraction)		0.6	0.74	0.88		
Porosity (fraction)		0.1	0.13	0.16		
Water Saturation (fraction)		0.4	0.3	0.2		
Bg. (<1)		0.003569	0.003448	0.003335		
Bo. (>1)		N/A	N/A	N/A		
GOR, free gas (Sm ³ /Sm ³)						
GOR, oil (Sm ³ /Sm ³)		N/A	N/A	N/A		
Recovery factor, main phase		0.55	0.62	0.7		
Recovery factor, ass. phase		0.3	0.42	0.55		
Temperature, top res (deg C) :		125	Pressure, top res (bar) :			

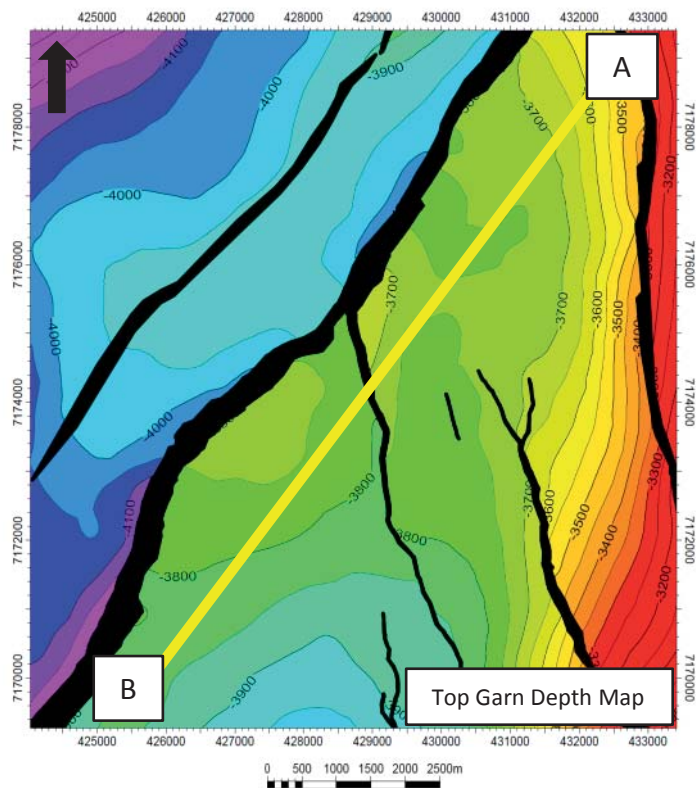
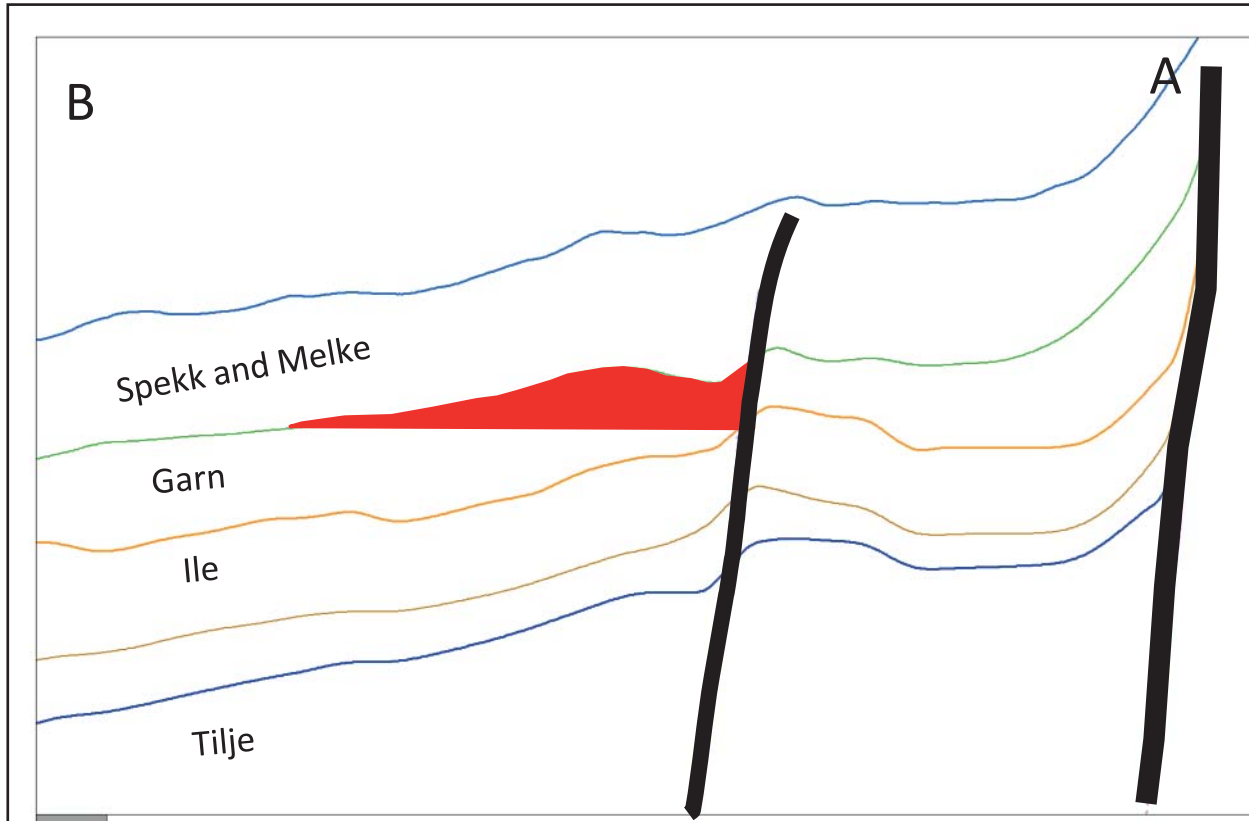


Figure 4.5 Moritz Structural Cross Section

5 Technical Evaluations

No new technical economic evaluations have been performed due to the relatively low resource potential of the discovery and prospect in the PL 471 area. Individually, and combining the mean reserves for the Cortina discovery and the Moritz prospect, the volumes are below the minimum economic field size.

6 Conclusions

Drilling of exploration well 6407/5-2S only proved the sub-commercial Cortina gas discovery. The hydrocarbon resources in the Cortina discovery are below the minimum economic field size in this area.

Therefore, given the small resources in the 6407/5-2S Cortina discovery and relatively small remaining potential coupled with the high geological risk in the Moritz prospect, the OMV (Norge) AS operated PL 471 licence group has decided to relinquish the licence after the five-year period, effective as of February 28, 2013. All licence commitments have been fulfilled.