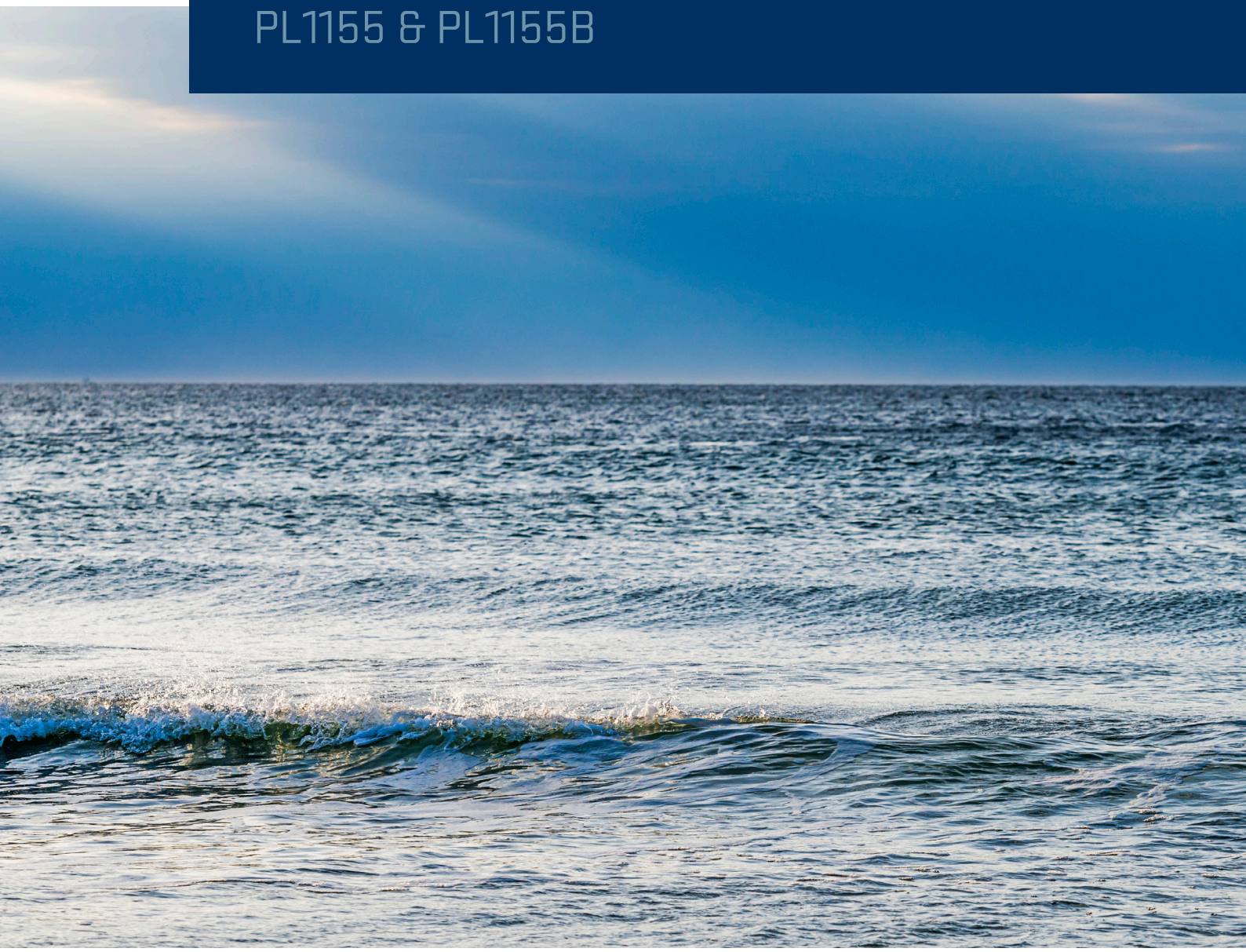
Harbour Energy

Relinquishment Report

PL1155 & PL1155B



petoro

equinor

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1 History of the production licence

General Information

- **Date of award:** PL1155 - 11.03.2022 (following APA 2021), PL1155B - 17.02.2023 (following APA 2022)
- **Area:** Parts of blocks 6407/10 and 6407/11. PL1155 area - 182 km^2 and PL1155B area - 30 km^2. Total area - 212 km^2.
- **Licensees:** Harbour Energy Norge (Operator 50%), Equinor Energy AS (30%), Petoro AS (20%)

The licence was initially awarded to a group consisting of Wintershall Dea Norge AS (Operator 30%) 40%, Equinor Energy AS (30%), Petoro AS (20%) and Chrysaor Norge AS (20%) in March 2022 (APA 2021), with an initial licence period of 2 years. The licence area was extended towards the West in February 2023 with PL1155B (APA 2022 award). The PL1155 and PL1155B licences received a one-year extension of the BoK deadline in April 2024.During the life of the licence partnership Chrysaor Norge AS was taken over by Harbour Energy Norge AS in 2022 and Wintershall Dea Norge AS was taken over by Harbour Energy in 2024. By the time of relinquishment in 2025 the licence constellation was Harbour Energy Norge (Operator 50%), Equinor AS (30%) and Petoro AS (20%).

The following gives an overview of the key terms and conditions, as well as key events in the licence.

Work commitments, extensions and area relinquishment

- Purchase and/or reprocess of 3D seismic and G&G Studies
- Drill or drop decision by 11.03.2024 extended to 11.03.2025
- BoK 11.03.2026 extended to 11.03.2027
- BoV 11.03.2028 extended to 11.03.2029
- PDO 11.03.2029 extended to 11.03.2030

Management and Exploration Committee Meetings

- 08.04.2022 ECMC meeting
- 04.11.2022 ECMC meeting
- 31.01.2023 EC work meeting
- 01.06.2023 EC work meeting
- 23.11.2023 ECMC meeting
- 28.11.2024 ECMC meeting

Work commitment

During the initial two-year commitment period (11 March 2022 to 11 March 2024), Wintershall Dea proposed to purchase the PGS18M05NWS 3D seismic, as the DNO902DNR12, NH9701R07, MC3D-HB-MEGA, SH 9104, LN13002 and SH06MR2137 in the common database did not provide sufficient imaging of the Pineapple prospect and leads. Furthermore, Wintershall Dea proposed reconditioning of the PGS18M05NWS dataset to enhance its quality, making it suitable for both seismic inversion and seismic interpretation. The work commitment for the first licence phase, which included seismic acquisition and reprocessing, has been fulfilled.

Reason for relinquishment

After reinterpretation of the Pineapple prospect on the newly reprocessed/ conditioned PGS18M05WDR22A data, followed by depth conversion, sedimentological facies analysis, fault seal analysis, prospect volume and risk assessment, it was unanimously decided to apply for a one-year extension of the Drill or Drop deadline, from the 11.03.2024 to the 11.03.2025. The extension was granted by the authorities in late April 2024.

The focus for the extension period in 2024 was to de-risk the complex trapping mechanism and to perform a structural restoration of the main Pineapple prospect located on the Frøya High. The effectiveness of the Pineapple trap is contingent upon fault seals to the East and South, as well as base

and top seals. Stratigraphic control within the Pineapple prospect remained challenging due to significant erosion at the BCU level and stratigraphic correlation across the large fault throws into the Pineapple prospect. The principal risks relate to reservoir presence and trap effectiveness, and after re-evaluation the prospect risk remained high.

After re-evaluation of the Pineapple prospect with the new data, and the technical and economical evaluations, the operator proposed in the ECMC meeting on the 28.11.2024 to drop the licence. This was supported by the partners.

2 Database Overview

2.1 Seismic data

3D seismic data played a key role in evaluating the prospect and leads, with PGS18M05 and PGS18M05WDR22A serving as the primary datasets. The licence database includes a limited part of the PGS18M05NWS, covering the PL1155 and PL1155B licence area. A summary of the seismic data used in the assessment of PL1155 and PL1155B is provided in Table 2.1 and Fig. 2.1.

Table 2.1 PL1155 seismic common database

Survey	Underlying survey	Type	Domain	Year	NPDID for survey	Company - responsible
DN0902DNR12		3D	Time	2009		
NH9701R07		3D	Time	1997	3859	Norsk Hydro Produksjon AS
MC3D-HB-MEGA		3D	Time	2010		
SH9104		3D	Time	1991	3443	A/S Norske Shell
LN13002		3D	Time	2013	7899	Lundin Norway AS
SH06MR2137		3D	Time	2006		
PGS18M05NWS	PGS15005	3D	Time	2015	8183	Multiklient Invest AS
	PGS14005			2014	8054	Multiklient Invest AS
	PGS14002			2014	7993	PGS Geophysical AS
	HVG13			2013	7900	Multiklient Invest AS
PGS18M05WDR22A	PGS18M05NWS	3D	Time	2022		Sharp Reflections (reprocessing)

As part of the work programme the licence performed a seismic data conditioning project on 370 km^2 of the PGS18M05NWS with Sharp Reflections covering the key prospectivity and offset wells. The resulting conditioned dataset has the name PGS18M05WDR22A (Fig. 2.1) and includes inversion products.

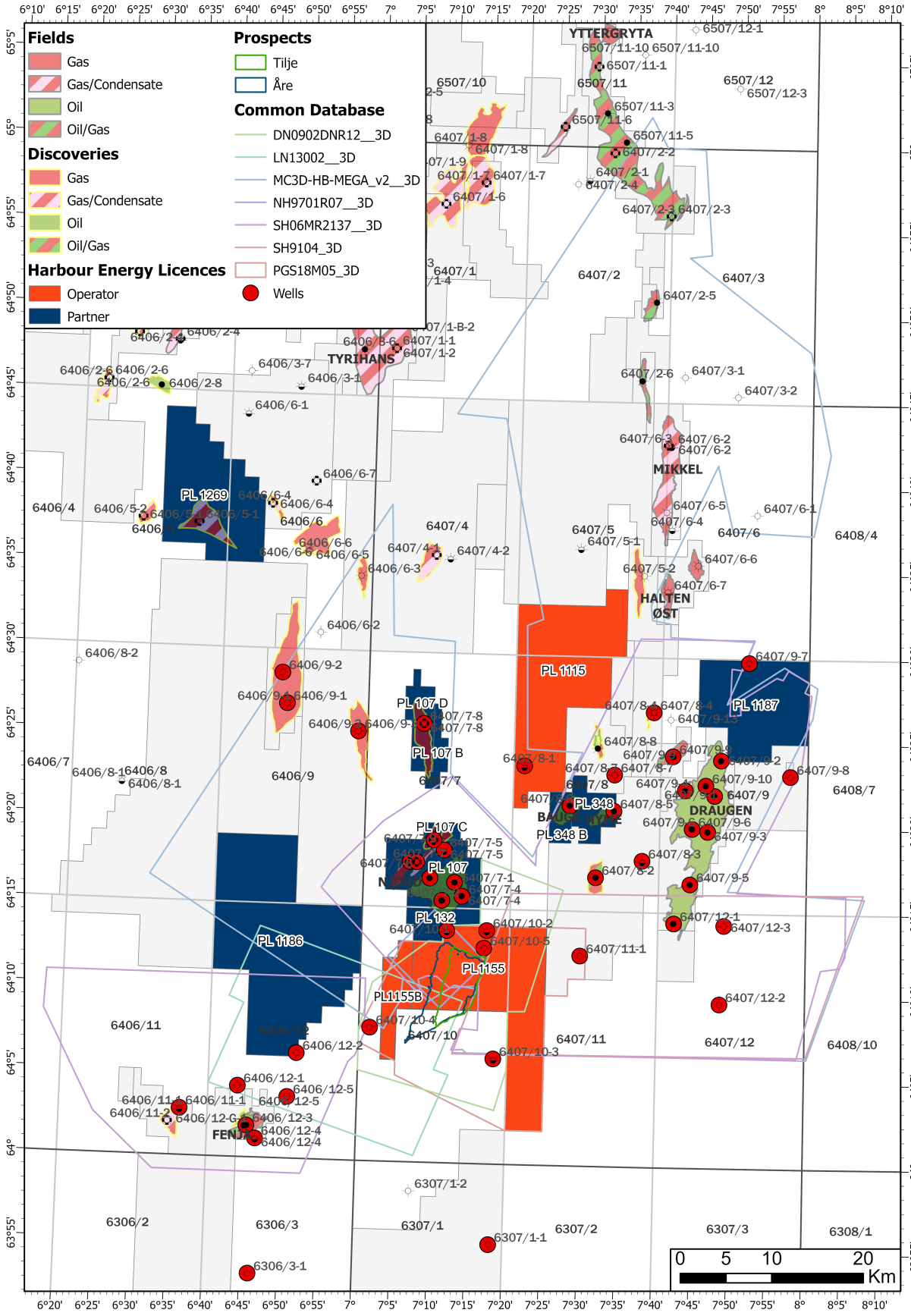

Fig. 2.1 Common seismic and well database

2.2 Well data

The wells used in the technical evaluation for the licence area are shown in Table 2.2 and Fig. 2.1.

Table 2.2 PL1155 common well database

Wellbore name	Content	Total depth (MD) [m RKB]	Oldest penetrated formation	Completed year	NPDID wellbore
6306/3-1S	DRY	2384,0	BASEMENT	2021	9401
6307/1-1 S	DRY	4114,0		2018	8523
6406/11-1 S	OIL	4185,0	RED BEDS (INFORMAL)	1991	1539
6406/12-1 S	DRY	3965,0	MELKE FM	1991	1711
6406/12-2	DRY	4367,0	MELKE FM	1995	2640
6406/12-3 A	OIL	4356,0	MELKE FM	2014	7432
6406/12-3 B	OIL/GAS	4315,0	MELKE FM	2014	7464
6406/12-3 S	OIL/GAS	4001,0	MELKE FM	2014	7322
6406/12-4 S	OIL SHOWS	4318,0	INTRA MELKE FM SS	2015	7721
6406/12-5 S	DRY	4297,0	MELKE FM	2015	7787
6406/9-1	GAS	5080,0	ÅRE FM	2005	4927
6406/9-2	GAS	5348,0	ÅRE FM	2007	5454
6406/9-3	GAS	5138,0	TILJE FM	2013	7141
6407/10-1	GAS SHOWS	3347,0	GREY BEDS (INFORMAL)	1987	1054
6407/10-2	SHOWS	3825,0	TILJE FM	1990	1497
6407/10-3	SHOWS	2973,0	BASEMENT	1992	1927
6407/10-4	DRY	3224,0	BASEMENT	2016	7699
6407/10-5	DRY	2890,0	INTRA MELKE FM SS	2015	7763
6407/11-1	DRY	2175,0	ÅRE FM	2018	8565
6407/12-1	OIL	1805,0	GARN FM	1999	3781
6407/12-2	DRY	1481,5	LANGE FM	2009	6191
6407/12-3	DRY	1968,0	ILE FM	2010	6370
6407/7-1 S	OIL/GAS	3950,0	RED BEDS (INFORMAL)	1986	474
6407/7-2	OIL/GAS	3320,0	RED BEDS (INFORMAL)	1987	1017
6407/7-3	OIL	3222,0	GREY BEDS (INFORMAL)	1988	1229
6407/7-4	OIL	3211,0	ÅRE FM	1989	1360
6407/7-5	SHOWS	3725,0	ÅRE FM	1991	1699
6407/7-6	GAS/ CONDENSATE	3975,0	ÅRE FM	2000	4172
6407/7-7 S	GAS/ CONDENSATE	3886,0	ÅRE FM	2007	5550
6407/7-8	GAS/ CONDENSATE	5138,0	ÅRE FM	2008	5844
6407/7-9 A	GAS	4960,0	ÅRE FM	2016	8050
6407/7-9 S	OIL/GAS/ CONDENSATE	4143,0	ÅRE FM	2016	8029

Wellbore name	Content	Total depth (MD) [m RKB]	Oldest penetrated formation	Completed year	NPDID wellbore
6407/8-1	SHOWS	4650,0	MELKE FM	1992	1859
6407/8-2	OIL/GAS	1950,0	GREY BEDS (INFORMAL)	1994	2434
6407/8-3	SHOWS	1960,0	ÅRE FM	1997	3092
6407/8-4 A	GAS	2473,0	ÅRE FM	2008	5814
6407/8-4 S	GAS	2788,0	ÅRE FM	2008	5813
6407/8-5 A	OIL	3231,0	TILJE FM	2009	6153
6407/8-5 S	OIL	3240,0	GREY BEDS (INFORMAL)	2009	6110
6407/8-6	OIL	3420,0	GREY BEDS (INFORMAL)	2013	7265
6407/8-6 A	OIL	3537,0	ÅRE FM	2013	7266
6407/8-7	DRY	3030,0	ÅRE FM	2015	7684
6407/8-7 A	DRY	3178,0	ÅRE FM	2015	7707
6407/9-1	OIL	2500,0	RED BEDS (INFORMAL)	1984	133
6407/9-10	OIL	1800,0	NOT FM	2003	4710
6407/9-2	OIL	1865,0	TILJE FM	1985	449
6407/9-3	OIL	1868,0	TILJE FM	1985	469
6407/9-4	OIL	1820,0	TILJE FM	1985	480
6407/9-5	OIL	1820,0	NOT FM	1985	492
6407/9-6	OIL	1800,0	ROR FM	1986	871
6407/9-7	DRY	2561,0	RED BEDS (INFORMAL)	1988	1057
6407/9-8	DRY	2126,0	TILJE FM	1992	1974
6407/9-9	OIL/GAS	1920,0	TILJE FM	1999	1990

3 Results of geological and geophysical studies

Several internal and external G&G studies have been undertaken as part of the licence work program to evaluate the prospectivity of the PL1155 and PL1155B licence area. The main objective of the maturation work was to develop an understanding of the Jurassic sand deposition and hydrocarbon retention potential within the licence with focus on the Lower Jurassic Pineapple prospects (Tilje and Åre formation) and the Upper Jurassic Kiwi lead (Rogn formation).

Seismic reprocessing

As a part of the work programme, the PL1155 and PL1155B licence group agreed to perform a seismic data conditioning project on 370 km^2 of the PGS18M05NWS with Sharp Reflections covering the key prospectivity and offset wells.

The main challenges in the PGS18M05NWS 3D seismic, especially below the BCU on the Froya High, are remnant noise obscuring the main geological trends. Especially the near offset multiples and residual multiples below the BCU impact consistent and clear seismic interpretation and AVA compliance. The main image improvement of the data conditioning is on the near angles which were strongly affected by multiple interferences. The resulting conditioned dataset PGS18M05WDR22A shows improved event continuity at target level.

Additionally, different seismic inversions were performed on the now conditioned dataset to improve geological interpretation below the BCU. The relative PCube+ inversion lead to the sharpest and least noisy results. The resulting volumes are relative vp/vs, relative AI, intercept and gradient.

Depth Conversion

Wintershall Dea has used ESTIMAGE's regional Norwegian Sea velocity model based on the PGS18M05NWS seismic volume for depth conversion. The velocity cube has been upgraded with Wintershall Dea's in-house seismic horizon interpretation and wells as additional input. The resolution of the final 3D velocity model is 100 m x 100 m.

Seismic interpretation and mapping

Seismic interpretations have been performed on several seismic cubes, especially the PGS18M05NWS and the PGS18M05WDR22A conditioned 3D volumes, utilising a variety of volume attributes to aid interpretation.

In addition, a study was conducted with ESA (Earth Science Analytics) to derive fault probability volumes, fault planes, horizon interpretations and 3D property prediction volumes with machine learning algorithms in EarthNET. The results of the ML fault probability volumes were used to guide and assist the fault interpretation in the structurally very complex area.

Reservoir studies

The objective of the in-house sedimentological study was to estimate the proportion of Triassic deposits compared to Lower-Middle Jurassic deposits in the Pineapple area rotated fault block.

Seismic horizon interpretation, including the Top Triassic, was uncertain due to poor biostratigraphic age control in the Triassic section, particularly in well 6407/10-3. A review of existing biostratigraphic data from key offset wells, combined with chemostratigraphic correlation, was conducted to estimate the position of the Top Triassic (Grey Beds) within the fault block.

The study concluded that a significant portion of the Pineapple rotated fault block could contain Lower to Middle Jurassic deposits, which hold potential for good reservoir quality. It provided a detailed analysis of the relative proportions of Triassic versus Lower–Middle Jurassic deposits within the fault block, emphasising the reservoir potential of the Jurassic strata. To further reduce stratigraphic uncertainty and evaluate the presence of Jurassic formations within the rotated fault block, a structural reconstruction study was subsequently carried out.

Basin modeling

The occurrence of several hydrocarbon accumulations in a variety of stratigraphic intervals demonstrates the presence of an effective petroleum system in the area. The Pineapple prospect itself is located in a prolific area close to many Lower, Middle and Upper Jurassic discoveries. An in-house Trinity Basin Model was built to improve the understanding of hydrocarbon maturation, expulsion and trap filling. The basin model was carried out to assess regional Upper Jurassic Melke and Spekk source rock maturity and hydrocarbon migration from the Gimsan Basin into the Lower Jurassic Tilje and Åre formation reservoirs on the Frøya High and the Upper Jurassic Rogn formation reservoir in the Froan Basin. Prospect and leads were modelled as oil cases. The charge and migration risks are considered to be low for the Pineapple prospect. Present-day migration pathways indicate that the Kiwi lead lies within the migration shadow of the Gimsan Basin kitchen, as the Frøya High acts as a barrier, resulting in complex and uncertain hydrocarbon migration routes.

Structural restoration

To better understand and reduce stratigraphic uncertainty in the Pineapple area rotated fault block, a structural restoration study was carried out by Badley Geoscience.

The Halten Terrace/Frøya High/Froan Basin area had undergone two major extensional events: Permo-Triassic rifting followed by thermal subsidence and deposition through to the Jurassic, and Late Jurassic rifting followed by thermal subsidence and deposition to the present day.

The first objective was to assess the space available to deposit and preserve Jurassic sediments within the Frøya High horst, where the Pineapple prospect is located. This involved creating a quantitative geological model from the Permo-Triassic to the present day. The second objective was to analyse the 3D structural interpretation of faults within the Pineapple prospect and assess fault seal potential. This included mapping the Base Jurassic horizon using forward modelling results to check the thickness of preserved Jurassic sediments. The third objective was to evaluate the structural model within the Kiwi lead and analyse the trap definition using fault seal analysis.

The findings indicated that the Pineapple prospect could have up to 600 meters of preserved Jurassic sediment, assuming around 1 kilometer of Jurassic displacement on the central horst fault. Without fault movement, up to 200 meters of sediment could still have been preserved. Mapping the Base Jurassic horizon in the Pineapple region showed a thickness of the Åre formation of approximately 150-200 meters, consistent with well data. Fault seal estimates suggested that the prospect bounding faults were likely to seal with maximum supportable column heights of 50-100 meters, increasing with denser hydrocarbon fluid densities.

In conclusion, the study confirmed the preservation of Jurassic sediment in the Pineapple prospect area and provided insights into fault seal potential and trap definition for both the Pineapple prospects and Kiwi lead.

4 Prospect update report

Throughout the licence period, differing views emerged within the partnership regarding the subsurface potential of PL1155 and PL1155B, largely due to limited stratigraphic control in the rotated fault block. The Pineapple prospects, targeting Lower Jurassic Åre and Tilje formations on the Frøya High, was established as the primary focus. The Kiwi prospect, interpreted as a Rogn Formation stratigraphic trap in the Froan Basin, was initially considered a secondary target but was later reclassified as a lead following further evaluation. The Pineapple prospects remained the central focus of the licence work, and their outlines, along with the Kiwi lead, are shown in Fig. 4.1.

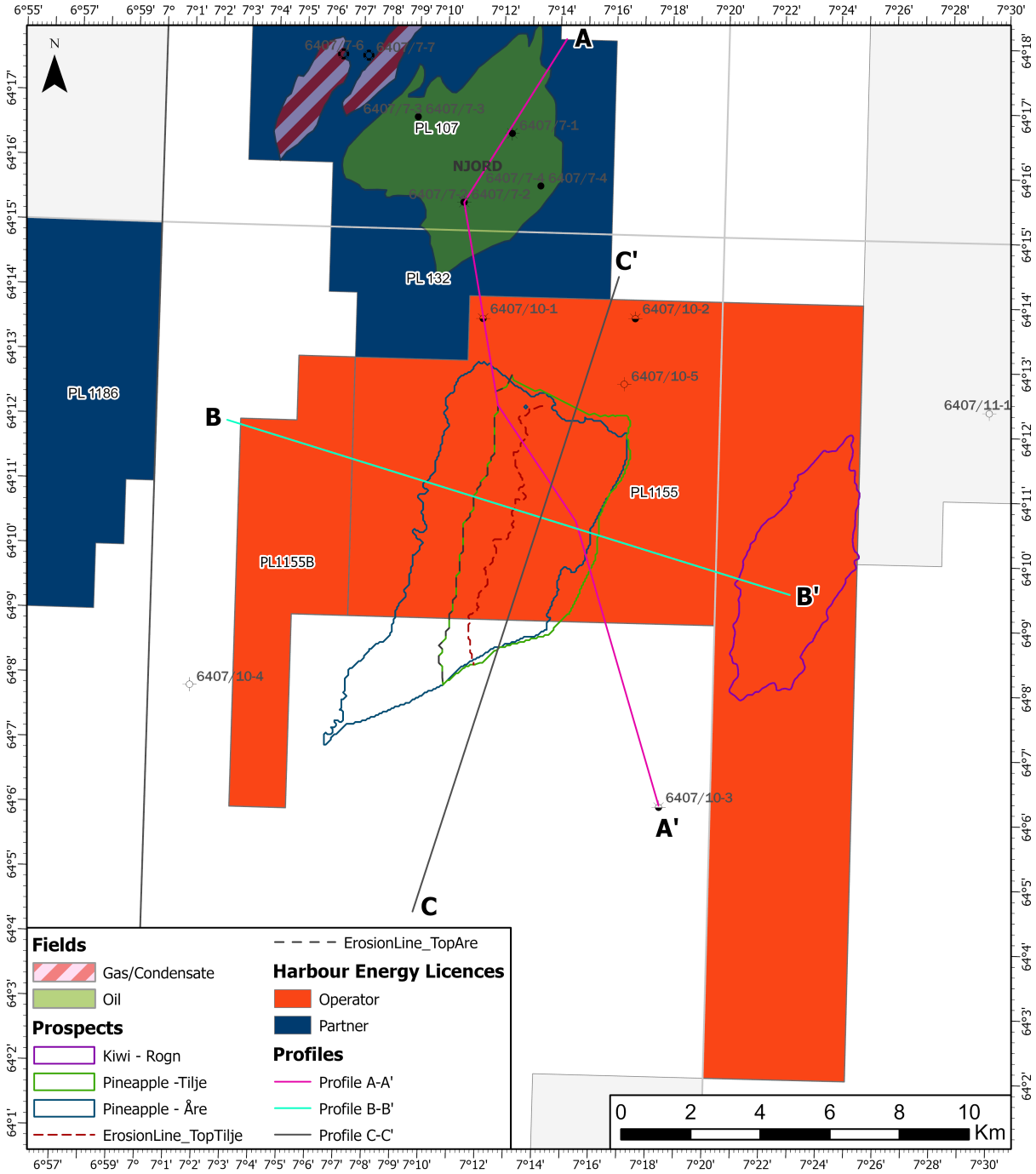

Fig. 4.1 Overview map with prospect outlines and positions of geosections in Figure 4.2.

Pineapple Prospect

PL1155 and PL1155B lie within a mature area with multiple nearby discoveries, benefiting from proximity to existing infrastructure, including the Njord field approximately 10 km to the North of the Pineapple prospect.

The Pineapple prospects lie within a rotated fault block on the Frøya High, interpreted to contain Lower Jurassic Åre formation and Tilje formation sandstones. The rotated fault block is truncated by an Upper Jurassic Unconformity. The trap geometry is influenced by faulting along the Frøya High and truncation at the BCU, which defines the crest and lateral extent of the prospect, adding complexity to the structural and stratigraphic interpretation (Fig. 4.2).

The Top Structure maps for the Pineapple Tilje formation (Fig. 4.3) and Pineapple Åre formation (Fig. 4.4) prospects are both being truncated by the Base Spekk unconformity.

Seismic conditioning of the PGS18M05NWS dataset improved imaging at target level, but remnant multiples below the BCU continue to obscure key geological features. This makes it difficult to confidently image the Rogn Formation directly beneath the BCU and assess whether Rogn formation sands are present and in contact with the Pineapple prospect reservoirs, introducing uncertainty in the trap integrity and hydrocarbon retention. Despite these imaging limitations, basin modeling supports the presence of an effective petroleum system in the area, and charge and migration risks for the Pineapple prospect are considered low. However, when combined with poor stratigraphic age control within the fault block, these uncertainties contribute to the overall risk profile and were carefully considered in the prospect risking.

Although the estimated Pmean recoverable resources are reasonable (Table 4.1, Table 4.2), the combination of the high reservoir and trap risk led to a negative decision to continue further work.

Kiwi Lead

The Kiwi lead was considered a secondary prospect within the licence, interpreted as a stratigraphic trap with thin Upper Jurassic Rogn sands directly beneath the BCU. Seismic conditioning of the PGS18M05 survey aimed to improve imaging below the BCU, but residual multiples limited confidence in mapping the reservoir and trap. Migration is believed to occur from the Gimsan Basin via a complex and uncertain pathway, with the Frøya High acting as a barrier. Trap and seal risks remain significant, particularly due to poor seismic resolution and limited carrier bed contact. Given these uncertainties, the Kiwi prospect was downgraded to a lead.

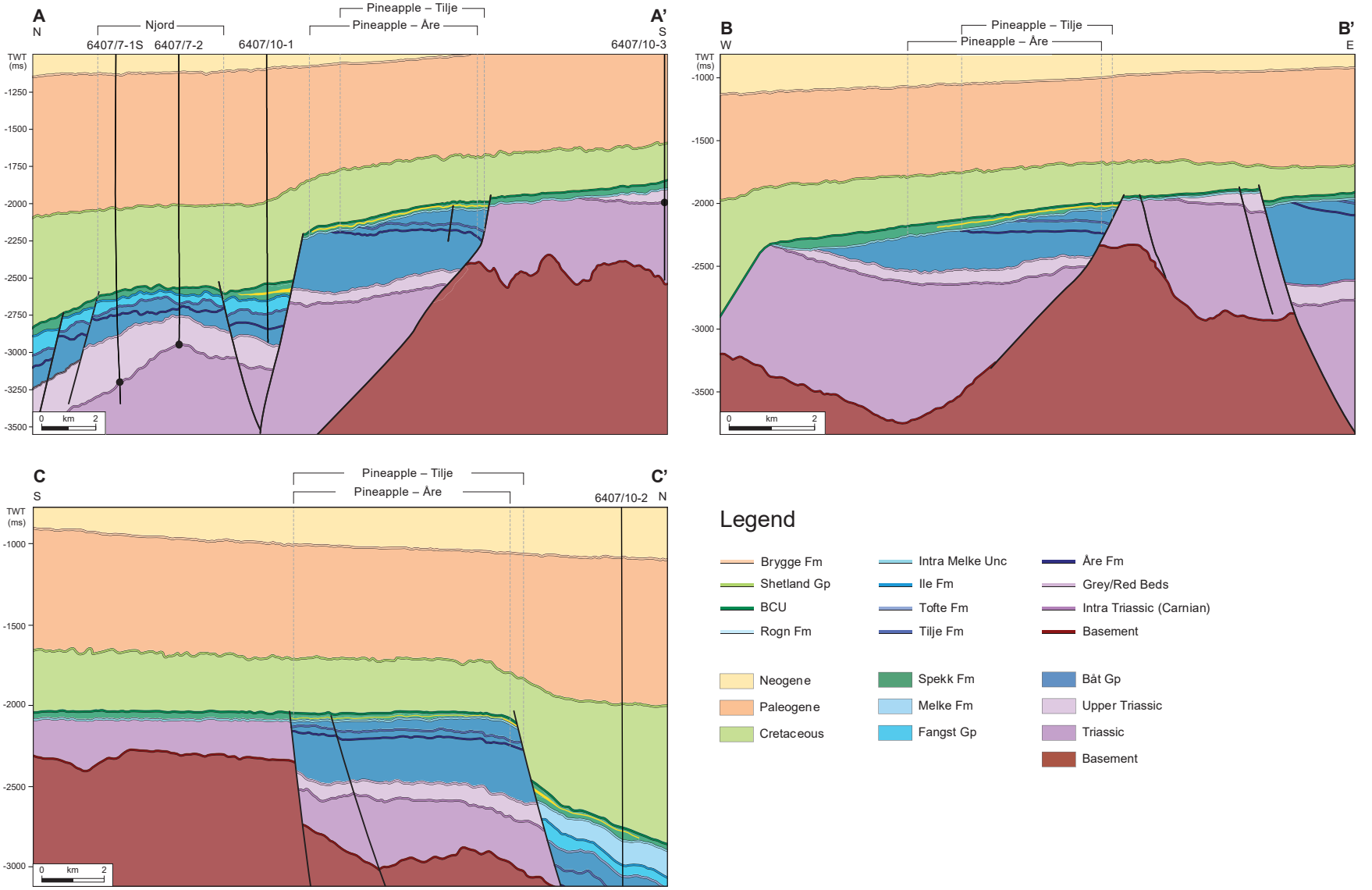

Fig. 4.2 Three geosections intersecting the Pineapple prospects

Conceptual geosections cross-cutting the Pineapple prospects. Locations of the profile lines can be found in Figure 4.1.

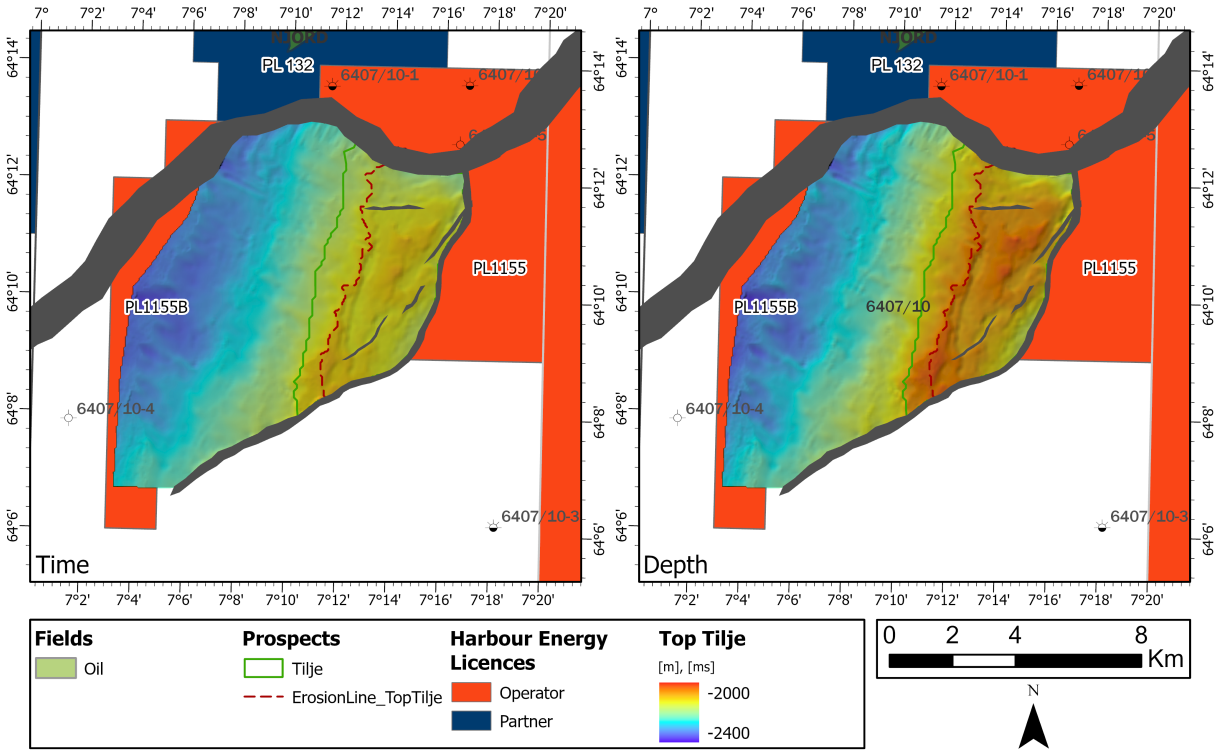

Fig. 4.3 Top Tilje formation reservoir maps

Time and depth maps for Top Tilje formation reservoir. Superimposed are the Tilje prospect outline and the Tilje erosion line. The Tilje erosion line is the truncation of the Top Tilje formation reservoir by the Base Spekk unconformity.

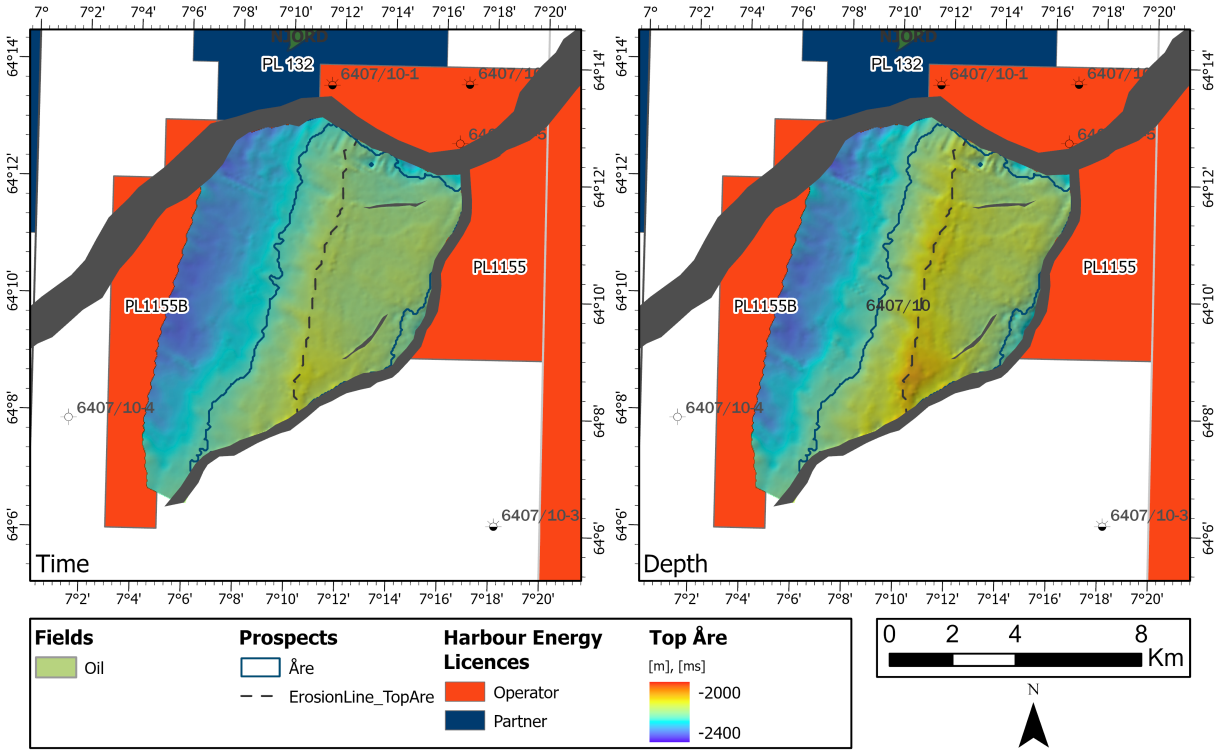

Fig. 4.4 Top Åre formation reservoir maps

Time and depth maps for Top Åre formation reservoir. Superimposed are the Åre prospect outline and the Åre erosion line. The Åre erosion line is the truncation of the Top Åre formation reservoir by the Base Spekk unconformity.

Table 4.1 Pineapple Tilje prospect resource table

Table 4: Discovery and Prospect data (Enclose map)

Block	6407/10 & 6407/11	Prospect name	Pineapple_Tilje	Discovery/Prosp/Lead	Prospect	Prosp ID (or New!)	NOD will insert value	NPD approved (Y/N)	Yes
Play name	NOD will insert value	New Play (Y/N)	No	Outside play (Y/N)	No				
Oil, Gas or O&G case:	Oil	Reported by company	Harbour Energy	Reference document	PL1155 status report for surrender of production license			Assessment year	2024
This is case no.:	1 of 1	Structural element	Froya High	Type of trap	Fault block	Water depth [m MSL] (>0)	330	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)	20.80	66.70	78.70	141.50	2.25	8.47	13.90	27.60
	Gas [10^9 Sm^3] (>0.00)								
Recoverable resources	Oil [10^6 Sm^3] (>0.00)	6.05	16.70	26.80	52.20	0.69	1.43	4.74	9.98
	Gas [10^9 Sm^3] (>0.00)								
Reservoir Chrono (from)	Early Jurassic	Reservoir litho (from)	Tilje Fm	Source Rock, chrono primary	Late Jurassic	Source Rock, litho primary	Spekk Fm	Seal, Chrono	Early to Late Jurassic
Reservoir Chrono (to)	Early Jurassic	Reservoir litho (to)	Tilje Fm	Source Rock, chrono secondary	Early Jurassic	Source Rock, litho secondary	Are Fm	Seal, Litho	Ror & Spekk Fm
Probability [fraction]									
Total (oil + gas + oil & gas case) (0.00-1.00)	0.13	Oil case (0.00-1.00)	0.13	Gas case (0.00-1.00)	0.00	Oil & Gas case (0.00-1.00)	0.00		
Reservoir (P1) (0.00-1.00)	0.45	Trap (P2) (0.00-1.00)	0.50	Charge (P3) (0.00-1.00)	0.72	Retention (P4) (0.00-1.00)	0.80		

Parametres:	Low (P90)	Base	High (P10)	*Comments*
Depth to top of prospect [m MSL] (> 0)		2020		
Area of closure [km^2] (> 0.0)	18.5	26.3	26.6	
Reservoir thickness [m] (> 0)	40	80	110	
HC column in prospect [m] (> 0)	78	158	240	
Gross rock vol. [10^9 m^3] (> 0.000)	401.300	1818.400	1916.600	
Net / Gross [fraction] (0.00-1.00)	0.32	0.50	0.68	
Porosity [fraction] (0.00-1.00)	0.14	0.18	0.23	
Permeability [mD] (> 0.0)				
Water Saturation [fraction] (0.00-1.00)	0.43	0.32	0.18	
Bg [Rm3/Sm3] (< 1.0000)				
1/Bo [Sm3/Rm3] (< 1.00)	0.91	0.78	0.63	
GOR, free gas [Sm^3/Sm^3] (> 0)				
GOR, oil [Sm^3/Sm^3] (> 0)	69	189	305	
Recov. factor, oil main phase [fraction] (0.00-1.00)	0.20	0.33	0.50	
Recov. factor, gas ass. phase [fraction] (0.00-1.00)	0.20	0.33	0.50	
Recov. factor, gas main phase [fraction] (0.00-1.00)				
Recov. factor, liquid ass. phase [fraction] (0.00-1.00)				

				For NPD use:					
Temperature, top res [°C] (>0)	68			Innrapp. av geolog-init:	NOD will insert value	Registrert - init:	NOD will insert value	Kart oppdatert	NOD will insert value
Pressure, top res [bar] (>0)	209			Dato:	NOD will insert value	Registrert Dato:	NOD will insert value	Kart dato	NOD will insert value
Cut off criteria for N/G calculation	Vshale=0.4	Porosity=0.1	3.					Kart nr	NOD will insert value

Table 4.2 Pineapple Åre prospect resource table

Table 4: Discovery and Prospect data (Enclose map)

Block	6407/10 & 6407/11	Prospect name	Pineapple_Are	Discovery/Prosp/Lead	Prospect	Prosp ID (or New!)	NOD will insert value	NPD approved (Y/N)	Yes
Play name	NOD will insert value	New Play (Y/N)	No	Outside play (Y/N)	No				
Oil, Gas or O&G case:	Oil	Reported by company	Harbour Energy	Reference document	PL1155 status report for surrender of production license			Assessment year	2024
This is case no.:	1 of 1	Structural element	Froya High	Type of trap	Fault block	Water depth [m MSL] (>0)	330	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)	1.73	0.40	21.60	52.00	0.23	0.05	3.85	9.71
	Gas [10^9 Sm^3] (>0.00)								
Recoverable resources	Oil [10^6 Sm^3] (>0.00)	0.33	0.09	4.72	11.70	0.04	0.01	0.84	2.12
	Gas [10^9 Sm^3] (>0.00)								
Reservoir Chrono (from)	Early Jurassic	Reservoir litho (from)	Are Fm	Source Rock, chrono primary	Late Jurassic	Source Rock, litho primary	Spekk Fm	Seal, Chrono	Early to Late Jurassic
Reservoir Chrono (to)	Early Jurassic	Reservoir litho (to)	Are Fm	Source Rock, chrono secondary	Early Jurassic	Source Rock, litho secondary	Are Fm	Seal, Litho	Are & Spekk Fm
Probability [fraction]									
Total (oil + gas + oil & gas case) (0.00-1.00)	0.12	Oil case (0.00-1.00)	0.12	Gas case (0.00-1.00)	0.00	Oil & Gas case (0.00-1.00)	0.00		
Reservoir (P1) (0.00-1.00)	0.42	Trap (P2) (0.00-1.00)	0.50	Charge (P3) (0.00-1.00)	0.72	Retention (P4) (0.00-1.00)	0.80		

Parametres:	Low (P90)	Base	High (P10)	*Comments*
Depth to top of prospect [m MSL] (> 0)		2070		
Area of closure [km^2] (> 0.0)	3.2	16.4	33.4	
Reservoir thickness [m] (> 0)	135	274	390	
HC column in prospect [m] (> 0)	103	138	174	
Gross rock vol. [10^9 m^3] (> 0.000)	50.000	368.000	1306.900	
Net / Gross [fraction] (0.00-1.00)	0.34	0.48	0.65	
Porosity [fraction] (0.00-1.00)	0.13	0.19	0.26	
Permeability [mD] (> 0.0)				
Water Saturation [fraction] (0.00-1.00)	0.55	0.45	0.32	
Bg [Rm3/Sm3] (< 1.0000)				
1/Bo [Sm3/Rm3] (< 1.00)	0.91	0.78	0.63	
GOR, free gas [Sm^3/Sm^3] (> 0)				
GOR, oil [Sm^3/Sm^3] (> 0)	69	189	305	
Recov. factor, oil main phase [fraction] (0.00-1.00)	0.12	0.23	0.30	
Recov. factor, gas ass. phase [fraction] (0.00-1.00)	0.12	0.23	0.30	
Recov. factor, gas main phase [fraction] (0.00-1.00)				
Recov. factor, liquid ass. phase [fraction] (0.00-1.00)				

				For NPD use:					
Temperature, top res [°C] (>0)	71			Innrapp. av geolog-init:	NOD will insert value	Registrert - init:	NOD will insert value	Kart oppdatert	NOD will insert value
Pressure, top res [bar] (>0)	212			Dato:	NOD will insert value	Registrert Dato:	NOD will insert value	Kart dato	NOD will insert value
Cut off criteria for N/G calculation	Vshale=0.4	Porosity=0.1	3.					Kart nr	NOD will insert value

5 Technical assessment

The Pineapple Prospect, encompassing the Jurassic Åre and Tilje formations, was the primary focus of the PL1155 and PL1155B licences. However, the stratigraphic uncertainty within the Pineapple rotated fault block introduced significant risks related to reservoir presence and trap effectiveness (Table 4.1, Table 4.2).

Despite extensive technical evaluations, it was determined that PL1155 and PL1155B do not contain any prospects with a justifiable combination of volume and risk.

6 Conclusion

The licence was awarded following the APA 2021 licencing round. The licence work commitment was to purchase and/or reprocess 3D seismic and G&G studies, prior to the drill or drop extended deadline on the 11.02.2025.

The Pineapple Prospect, consisting of Jurassic Åre and Tilje formations, were the main drivers of the PL1155 and PL1155B licence. Internal and external G&G studies have been conducted to mature the Pineapple prospect and reduce the risk of the Jurassic play. The main risks of the Pineapple segments relate to reservoir presence and trap effectiveness, and after re-evaluation the prospect risk remained high.

After re-evaluation of the Pineapple prospect with the reprocessed data, and the technical and economical evaluations, the operator proposed in the ECMC meeting on the 28.11.2024 to drop the licence. This decision was supported by the partners. Harbour Energy Norge AS submitted the PL1155 and PL1155B relinquishment notice to the authorities on the 3rd of March 2025 and the authorities approved the licence relinquishment on the 9th of April 2025.