

Page 1 of 15

PL 277C – Licence status report



Title: License status report							
Document no.:	Contract no.:		Project:				
2022- 013497	Contract no		l Toject.				
2022-010-07							
Classification:		Distribution:					
Restricted		Biotribution	•				
Expiry date:		Status:					
		Final					
		1					
Distribution date:	Rev. no.:		Copy no.:				
Author(s)/Source(s):							
Subjects:							
PL277C License Status report							
Remarks:							
Valid from:		Updated:					
2022-06-08							
Responsible publisher:		Authority	Authority to approve deviations:				
Prepared by (Organisation unit / Nar	ne):		Date/Signature:				
				X			
EPN SUB CCN GGP /							
				_			
Responsible (Organisation unit/ Nan	ne):		Date/Signature:				
				Χ			
EPN SUB ASDW GF /				<u>. </u>			
	_			_			
Recommended (Organisation unit/ Name):			Date/Signature:				
	Neconinience (Organisation unite Name).			Χ			
EPN SUB ASDW GF							
Approved by (Organisation unit/ Nan	ne):		Date/Signature:	_			
	/.		Date/Orginature.	Χ			
EPN EPW GF /							



Valid from: Rev. no.

Summary

Reference is made to the notification on PL277C license drop decision to NPD dated 14th of February 2021.

This report outlines the key license history, the database, prospects and the technical evaluation of the production license PL277C and fulfils the requirement by the NPD for a license status report within 3 months of relinquishment.

Classification: Restricted Status: Final www.equinor.com



Valid from: Rev. no.

Table of contents

Contents

1	Licence history	5
2	Database overviews	6
2.1	Seismic data	6
2.2	Well data	6
3	Results of geological and geophysical studies	7
4	Prospect update report	8
5	Technical evaluation	8
6	Conclusion	8



Valid from: Rev. no.

1 Licence history

Licence: PL277C

Awarded: 14.02.2020

License period: Expires 14.02.2022

Initial period; 4 years

<u>License group:</u> Equinor Energy AS 51% (Operator)

Petoro As 30% OMV (Norge) AS 19%

License area: 35.22 km²

Work programme:

Meetings held:

20.02.2020 MC meeting

28.05.2020 AC meeting-Maturation plan 20.10.2021 AC Workmeeting, Status

Work performed:

2020: License award

2020/2021: Geological/geophysical evaluation of prospectivity 2021: Evaluation of 34/10-J-1 BH results Statfjord Gp

2021: License decision to surrender license

Reason for surrender:

A prospect called Skinfaks Sør N1C was drilled as an exploration extension from the injection slot 34/10-J-1 BH in August 2021. The Statfjord prospect is classified as dry with poor properties. The Statfjord Gp result from 34/10-J-1 BH was an important datapoint for final evaluation and drop recommendation of the Skinfaks Sør N1A Statfjord prospect in the DoD of the PL277C license.



Valid from: Rev. no.

2 Database overviews

2.1 Seismic data

Common seismic database is the Seismic survey 3D CGG18M01 PSTM covering the total area of the license. The survey (together with the earlier version CGG17M01 PSTM) formed the basis of the seismic interpretation in the license.

The common seismic database is found in the table below. The seismic surveys are covering the total area of the license. The CGG 18M01 NVG PSDM survey formed the basis of the seismic interpretation in the license, due to the processing improvement with regards to random noise and multiples, while compared with the previous vintages.

Seismic survey	2D/3D	Year	Quality
NNS_MEGASURVEYPLUS_PHASE1	3D	2014	Good
ST11005Z11_APCBM	3D	2011	Good
CGG 17M01 NVG PSTM (CGG 16001 NVG)	3D	2016	Good
CGG 18M01 NVG PSDM	3D	2016	Good

2.2 Well data

Table 1. Key wells in common database

Well	Year	Drilling operator	Present license	Status	Age at TD
29/3-1	1986	Total	Open	P&A	Early Jurassic
33/12-6	1976	Mobil Exploration	PL152	P&A	Late Triassic
33/12-8 S	2002	Statoil	PL152	P&A	Early Jurassic
33/12-8 A	2002	Statoil	PL152	P&A	Middle Jurassic
34/10-38 S	1995	Statoil	PL050	P&A	Late Triassic
34/10-J-4 H, 34/10-44 S	2001	Statoil	PL050	Gas injector	Late Triassic
34/10-30	1986	Statoil	PL050	P&A	Late Triassic
34/10-35	1992	Statoil	PL050	P&A	Early Jurassic



Valid from: Rev. no.

34/10-K-2 H	1998	Statoil	PL050	P&A	Early Jurassic
33/12-9 S	2012	Statoil	PL152	P&A	Middle Jurassic
34/10-J-1BH	2021	Equinor	PL277/PL152	Gas injector	Early Jurassic

3 Results of geological and geophysical studies

The application securing the PL277C in 2020, focused on the Middle Jurassic Brent Gp and Lower Jurassic Statfjord Gp closures, located in the southernmost part of the Skinfaks Ridge containing a lot of discoveries. The main prospect of the application was the Lower Jurassic Skinfaks Sør N1A Statfjord prospect.

The main risk of the Lower Jurassic play in the area was reservoir quality based on the downflank well 29/3-1 with a non-productive reservoir of the Statfjord Gp

The Skinfaks Sør N1A prospect was worked up by studying all the available seismic and well data. The result of the studies improved the understanding of the opportunities and provided support for volumetric input parameters and risk assessment.

The studies/work completed for PL277C were following:

- Mapping with focus on the Middle and Lower Jurassic prospectivity on CGG18M01 PSTM
- Well-ties of key wells.
- Lower and Middle Jurassic reservoir quality and prediction (petrology and sedimentology)
- Seismic data analysis for enhanced understanding of depositional model
- Petrophysical analysis
- Prospect evaluation
- Prospect volume calculations and risk estimation



Valid from: Rev. no.

4 Prospect update report

The main risk of the main prospect Skinfaks Sør N1A was reservoir properties due to tight reservoir sandstones in the Statfjord Gp observed in the downflank well 29/3-1.

In August 2021, the well 34/10-J-1BH tested the Statfjord reservoir in the Skinfaks Sør N1C segment to the north. The results from this well was a very important datapoint for final evaluation of the prospect Skinfaks Sør N1A. The well was dry and encountered Statfjord sandstones with poor properties and confirmed the results from the downflank well 29/3-1.

The expected resource potential for the Skinfaks Sør N1A prospect has been reduced due to the poor well results of Statfjord Gp in well 34/10-J1 BH. The Skinfaks Sør N1A prospect was the main driver for the license application and the remaining Skinfaks Sør N1B Ness, the Skinfaks Sør N1A+B Tarbert and Etive/Rannoch prospects are considered of low value.

5 Technical evaluation

Contact observations from the 34/10-J-1BH well confirmed that the Brent discovery in Skinfaks Sør N1C does not extend into the PL277C license.

A technical assessment of development of potential new discoveries in the area has been performed. Prospects in the PL277C license is not reachable from existing subsea templates in the Gullfaks Satellite area. Due to the reduced resource potential and costly development concepts, further development of the area has been deemed non-commercial.

6 Conclusion

The work programme for PL277C has been fulfilled. The prospect Skinfaks Sør N1A has been evaluated within the specified time frame and geological and geophysical studies have been completed. After a full evaluation of the PL277C area, the license recommends dropping the license due to the negative well results of 34/10-J-1 BH and poor remaining potential. The PL277C Management Committee has therefore decided to allow the license to be surrendered.



Valid from: Rev. no.

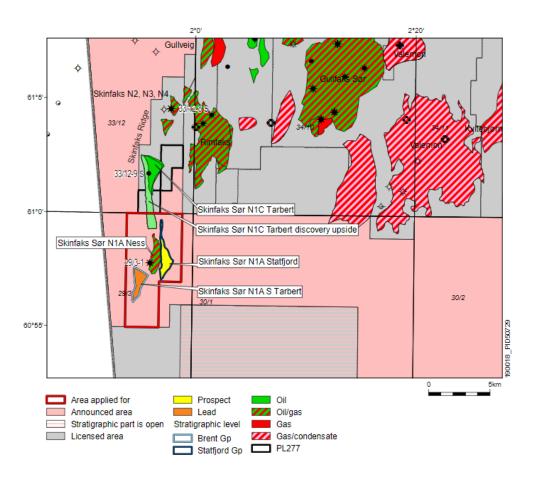


Figure 1 Overview map from the APA application summary

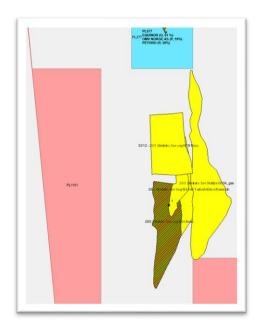


Figure 2 Overview map of remaining prospectivity and Ness discovery in 29/3-1



Valid from: Rev. no.

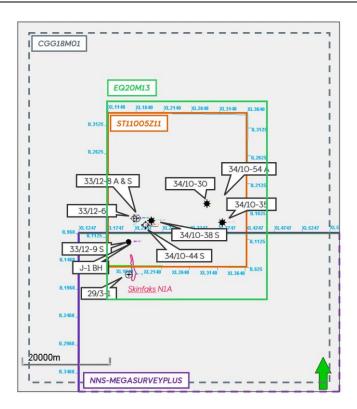


Figure 3 Coverage of the Seismic Surveys vs. Prospect location

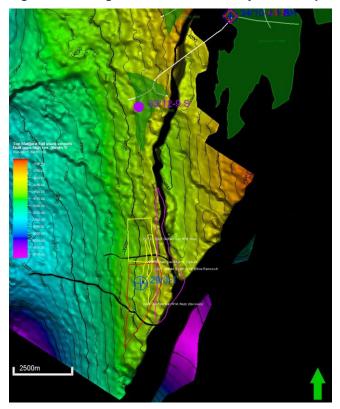


Figure 4 Structural Map of Top Statfjord with Ness (29/3-1) and Tarbert (33/12-9S) Discoveries and Brent and Statfjord Prospects

Classification: Restricted Status: Final www.equinor.com



Valid from: Rev. no.

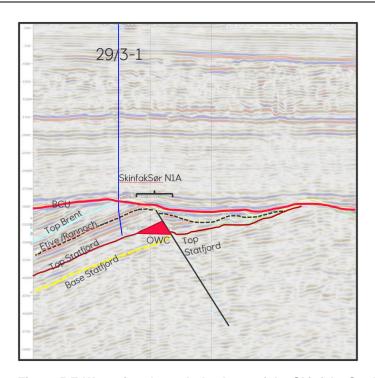


Figure 5 E-W section through the Apex of the Skinfaks Sør N1A prospect

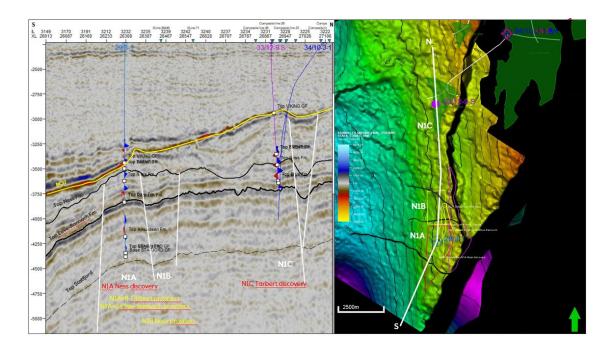
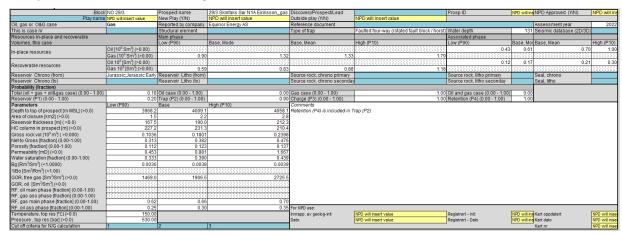


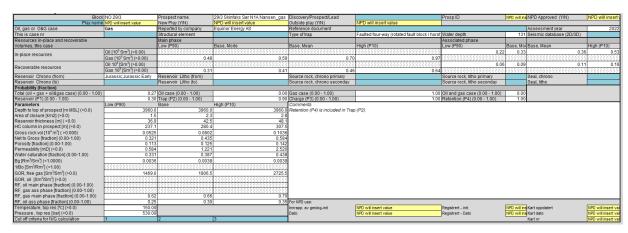
Figure 6 Seismic section through the Brent prospects and the discoveries Ness (29/3-1) and Tarbert (33/12-9S)



Valid from: Rev. no.

Table 1 Revised prospect table scheme for remaining prospectivity inside license;, Skinfaks Sør N1A Statfjord Eiriksson and Nansen gas case







Valid from: Rev. no.

Table 2 Revised prospect table scheme for remaining prospectivity inside license;, Skinfaks Sør N1A Statfjord Eiriksson and Nansen oil case

Pleate	NO 29/3	Prospect name	29/3 Skinfaks Sør N1A Eiriksson oil	Discours (Document) and		Prosp ID	NIDD	NPD Approved (Y/N)	NPD will insert
			NPD will insert value		NPD will insert value	Prosp ID	INPU WIII INS	[NPD Approved (17N)	INPU WIII Insert
Oil, gas or O&G case			Equinor Energy AS	Reference document	IN D WIII III SEIT VAIGE	<u> </u>		Assessment year	2022
This is case nr	OII	Structural element	Equilibric Energy 710	Type of trap	Faulted four-way (rotated fault block / horst)	Water denth		Seismic database (2D/3D)	2022
Resources in-place and recoverable		Main phase		Type or trup	T delice four way (foldies last block / fiorst)	Associated phase	101	CONTINUE GRADUSC (EDISO)	
Volumes, this case			Base, Mode	Base, Mean	High (P10)		Base Mode	Base, Mean	High (P10)
	Oil [10 ⁵ Sm ³ l (>0.00)	1.56							
	Gas [10 ⁹ Sm ³] (>0.00)					0.37	0.53	0.56	0.76
	Oil 10 ⁶ (Sm ³ 1 (>0.00)	0.11	0.15	0.19	0.28				
	Gas 10 ⁹ [Sm ³] (>0.00)					0.03	0.03	0.05	0.07
Reservoir Chrono (from)	Jurassic:Jurassic Early	Reservoir Litho (from)		Source rock, chrono primary		Source rock, litho primary	0.00	Seal, chrono	
Reservoir Chrono (to)		Reservoir Litho (to)		Source rock, chrono seconday		Source rock, litho seconday		Seal, litho	
Probability (fraction)			<u> </u>		'				
Total (oil + gas + oil&gas case) (0.00 - 1.00)	0.09	Oil case (0.00 - 1.00)	1.00	Gas case (0.00 - 1.00)	0.00	Oil and gas case (0.00 - 1.0			
Reservoir (P1) (0.00 - 1.00)		Trap (P2) (0.00 - 1.00)		Charge (P3) (0.00 - 1.00)	1.00	Retention (P4) (0.00 - 1.00)	1.00		
Parameters			High (P10)	Comments					
Depth to top of prospect [m MSL] (>0.0)	3968.2			Retention (P4) is included in Ti	ap (P2).				
Area of closure [km2] (>0.0)	1.6								
Reservoir thickness [m] (>0.0)	167.5		212.3						
HC column in prospect [m] (>0.0)	227.2								
Gross rock vol [109 m3] (>0.000)	0.1037		0.2361						
Net to Gross [fraction] (0.00-1.00)	0.209								
Porosity [fraction] (0.00-1.00)	0.132								
Permeability [mD] (>0.0)	1.248								
Water saturation [fraction] (0.00-1.00)	0.302	0.373	0.436						
Bg [Rm ³ /Sm ³] (<1.0000)									
1/Bo [Sm ³ /Rm ³] (<1.00)	0.543	0.588	0.641						
GOR, free gas [Sm ³ /Sm ³] (>0.0)									
GOR, oil [Sm ³ /Sm ³] (>0.0)	212.1	240.0	267.9	i					
RF, oil main phase [fraction] (0.00-1.00)	0.06	0.08	0.12	i					
RF, gas ass phase [fraction] (0.00-1.00)	0.06	0.09	0.13	i					
RF, gas main phase [fraction] (0.00-1.00)									
RF, oil ass phase [fraction] (0.00-1.00)				For NPD use:					
Temperature, top res [°C] (>0.0)	150.00			Innrapp, av geolog-init					NPD will insert
Pressure, top res [bar] (>0.0)	530.00			Dato:	NPD will insert value	Registrert - Dato	NPD will inse	Kart dato	NPD will insert
Cut off criteria for N/G calculation	1	2	3			•		Kartnr	NPD will insert

	NO 29/3		29/3 Skinfaks Sør N1A Nansen oil			Prosp ID	NPD will inse	NPD Approved (Y/N)	NPD will inse
	NPD will insert value				NPD will insert value				
Oil, gas or O&G case	Oil	Reported by company		Reference document				Assessment year	2022
This is case nr		Structural element		Type of trap	Faulted four-way (rotated fault block / horst)		131	Seismic database (2D/3D)	
Resources in-place and recoverable		Main phase				Associated phase			
Volumes, this case					High (P10)	Low (P90)	Base, Mode	Base, Mean	High (P10)
	Oil [10 ⁸ Sm ³] (>0.00)	0.99	1.33	1.41	1.92				
	Gas [10 ⁹ Sm ³] (>0.00)					0.24	0.29	0.34	0.46
	Oil 10 ⁶ [Sm ³] (>0.00)	0.07	0.12	0.13	0.20				
Trecoverable resources	Gas 10 ⁹ [Sm ³] (>0.00)					0.02	0.02	0.04	0.06
Reservoir Chrono (from)	Jurassic;Jurassic Early	Reservoir Litho (from)		Source rock, chrono primary		Source rock, litho primary		Seal, chrono	
Reservoir Chrono (to)		Reservoir Litho (to)		Source rock, chrono seconday		Source rock, litho seconday		Seal, litho	
Probability (fraction)									
Total (oil + gas + oil&gas case) (0.00 - 1.00)		Oil case (0.00 - 1.00)		Gas case (0.00 - 1.00)		Oil and gas case (0.00 - 1.0			
Reservoir (P1) (0.00 - 1.00)		Trap (P2) (0.00 - 1.00)		Charge (P3) (0.00 - 1.00)	1.00	Retention (P4) (0.00 - 1.00)	1.00		
	Low (P90)		High (P10)	Comments					
Depth to top of prospect [m MSL] (>0.0)	3960.0			Retention (P4) is included in Tr	ap (P2).				
Area of closure [km2] (>0.0)	1.6								
Reservoir thickness [m] (>0.0)	36.9		48.1						
HC column in prospect [m] (>0.0)	237.1		307.5						
Gross rock vol [109 m3] (>0.000)	0.0532		0.1022						
Net to Gross [fraction] (0.00-1.00)	0.263		0.413						
Porosity [fraction] (0.00-1.00)	0.133								
Permeability [mD] (>0.0)	1.325		3.717						
Water saturation [fraction] (0.00-1.00)	0.279	0.350	0.422						
Bg [Rm ³ /Sm ³] (<1.0000)									
1/Bo [Sm ³ /Rm ³] (<1.00)	0.543	0.588	0.641						
GOR, free gas [Sm³/Sm³] (>0.0)									
GOR, oil [Sm ³ /Sm ³] (>0.0)	212.1		267.9						
RF, oil main phase [fraction] (0.00-1.00)	0.06								
RF, gas ass phase [fraction] (0.00-1.00)	0.06	0.11	0.17						
RF, gas main phase [fraction] (0.00-1.00)									
RF, oil ass phase [fraction] (0.00-1.00)				For NPD use:					
Temperature, top res [*C] (>0.0)	150.00								NPD will inse
Pressure , top res [bar] (>0.0)	530.00			Dato:	NPD will insert value	Registrert - Dato	NPD will inse		NPD will inse
Cut off criteria for N/G calculation	1	2	3					Kart nr	NPD will inse



Valid from: Rev. no.

Table 3 Revised prospect table scheme for remaining prospectivity inside license;, Skinfaks Sør N1B Ness Fm

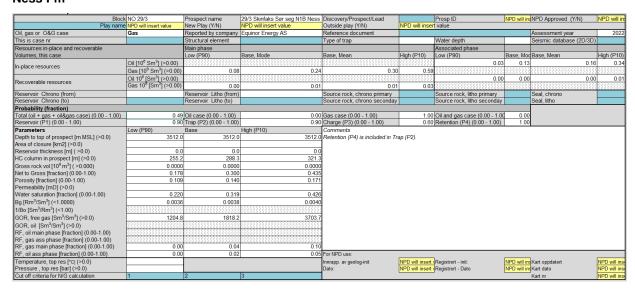
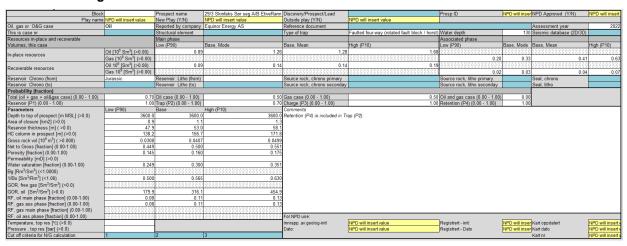


Table 4 Revised prospect table scheme for remaining prospectivity inside license;, Skinfaks Sør N1A+B Etive/Rannoch gas and oil





Valid from: Rev. no.

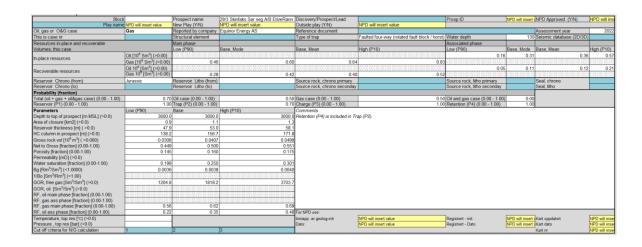
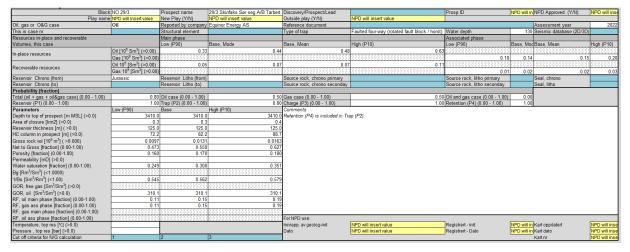


Table 5 Revised prospect table scheme for remaining prospectivity inside license;, Skinfaks Sør N1A+B Tarbert gas and oil



	NO 29/3	Prospect name	29/3 Skinfaks Sør seg A/B Tarbert			Prosp ID	NPD will inser	NPD Approved (Y/N)	NPD will in:
Play name	NPD will insert value	New Play (Y/N)	NPD will insert value		NPD will insert value				
Oil, gas or O&G case		Reported by company	Equinor Energy AS	Reference document				Assessment year	2022
This is case nr		Structural element		Type of trap	Faulted four-way (rotated fault block / horst	Water depth	130	Seismic database (2D/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)					0.09	0.13	0.13	3 0.17
in-place resources	Gas [109 Sm3] (>0.00)	0.17	0.24	0.24	0.32				
	Oil 10 ⁶ [Sm ³] (>0.00)					0.04	0.05	0.06	0.08
Recoverable resources	Gas 10 ⁹ [Sm ³] (>0.00)	0.10	0.12	0.14	0.19				
Reservoir Chrono (from)	Jurassic	Reservoir Litho (from)		Source rock, chrono primary		Source rock, litho primary		Seal, chrono	
Reservoir Chrono (to)		Reservoir Litho (to)		Source rock, chrono seconday		Source rock, litho seconday		Seal, litho	
Probability (fraction)									
Total (oil + gas + oil&gas case) (0.00 - 1.00)	0.80	Oil case (0.00 - 1.00)	0.50	Gas case (0.00 - 1.00)	0.50	Oil and gas case (0.00 - 1.00)	0.00		
Reservoir (P1) (0.00 - 1.00)		Trap (P2) (0.00 - 1.00)		Charge (P3) (0.00 - 1.00)		Retention (P4) (0.00 - 1.00)	1.00		
Parameters	Low (P90)	Base	High (P10)	Comments					
Depth to top of prospect [m MSL] (>0.0)	3410.0	3410.0	3410.0	Retention (P4) is included in Ti	rap (P2).				
Area of closure [km2] (>0.0)	0.3	0.3	0.4						
Reservoir thickness [m] (>0.0)	125.0		125.0	l					
HC column in prospect [m] (>0.0)	72.2	82.2	88.7	1					
Gross rock vol [109 m3] (>0.000)	0.0097	0.0131	0.0163						
Net to Gross [fraction] (0.00-1.00)	0.473			l					
Porosity [fraction] (0.00-1.00)	0.160	0.170	0.180						
Permeability [mD] (>0.0)									
Water saturation [fraction] (0.00-1.00)	0.199	0.250	0.301						
Bg [Rm ³ /Sm ³] (<1.0000)	0.0038	0.0038	0.0039						
1/Bo [Sm ³ /Rm ³] (<1.00)									
GOR, free gas [Sm ³ /Sm ³] (>0.0)	1818.2	1818.2	1818.2						
GOR, oil [Sm ³ /Sm ³] (>0.0)				1					
RF, oil main phase [fraction] (0.00-1.00)				1					
RF, gas ass phase [fraction] (0.00-1.00)				1					
RF, gas main phase [fraction] (0.00-1.00)	0.54	0.59	0.64	1					
RF, oil ass phase [fraction] (0.00-1.00)	0.38	0.44	0.50	For NPD use:					
Temperature, top res [*c] (>0.0)				Innrapp. av geolog-init	NPD will insert value	Registrert - init:			NPD will inse
Pressure , top res [bar] (>0.0)				Dato:	NPD will insert value	Registrert - Dato	NPD will inser	Kart dato	NPD will inse
Cut off criteria for N/G calculation	1	2	3					Kart nr	NPD will inse