General information

Wellbore name	6506/11-11 S
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Field	BERLING
Discovery	6506/11-10 Berling
Well name	6506/11-11
Seismic location	PGS16909NWS; Inline 25919. Xline 12074
Production licence	644
Drilling operator	OMV (Norge) AS
Drill permit	1767-L
Drilling facility	DEEPSEA BERGEN
Drilling days	151
Entered date	31.05.2019
Completed date	28.10.2019
Plugged and abondon date	28.10.2019
Release date	28.10.2021
Publication date	10.11.2021
Purpose - planned	APPRAISAL
Reentry	NO
Content	GAS
Discovery wellbore	NO
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	GARN FM
Kelly bushing elevation [m]	23.0
Water depth [m]	382.0
Total depth (MD) [m RKB]	4443.0
Final vertical depth (TVD) [m RKB]	4433.0
Oldest penetrated age	JURASSIC
Oldest penetrated formation	ROR FM
Geodetic datum	ED50
NS degrees	65° 12' 10.5'' N
EW degrees	6° 22' 46.77'' E
NS UTM [m]	7233796.58
EW UTM [m]	377393.02

UTM zone	32
NPDID wellbore	8759

Wellbore history

Operations and results

Well 6506/11-11 S was entered with the semi-submersible Deepsea Bergen rig on 31 May 2019 and was drilled to TD at 4443 m (4432.7 m TVD) in the Early Jurassic Ror Formation. The well was drilled down to 469.5 m with seawater and high viscosity pills, from 469.5 to 1426 m with KCl Polymer mud and RMR system in place, from 1426 to 2625 m with KCl Glydril water-based mud, and from 2625 m to TD with RheGuard oil-based mud. The well was initially planned to be vertically drilled, but due to presence of corrals the location was moved approximately 80 m westwards.

Top of intra-Lange (informally Breiflabb Member) sandstones was penetrated at 3912 m (3879 m TVD MSL) and was water bearing without evidence of a hydrocarbon-water contact. Further Intra-Lange Formation (informally Smørflyndre Member) came in at 3952 m (3919 m TVD MSL) and has indications of hydrocarbon presence based on log interpretation without clear hydrocarbon-water contact. The Garn Formation was penetrated at 4141 (4107 m TVD MSL) m and can be separated into three lithostratigraphic intervals. The uppermost sandstone is a good reservoir. The bioturbated silt rich sandstone sequence below this is cemented and therefore of poor reservoir quality. An older sandstone of good reservoir quality is present at the base. The reservoir is saturated with gas-condensate at initial reservoir conditions with a gas-down-to contact at 4207.6 m (4174.4 m TVD MSL). The Ile Formation was penetrated at 4209 m (4175.9 m TVD MSL) and consists of several water bearing sandstone layers of good porosity and flow capacity. Three cores were cut, all in Garn Formation retrieving 41.53 m of cores. 21 SWC plugs covering Breiflabb and Smørflyndre members and Lyr, Garn and Ile formations were successfully drilled. MDT fluid samples were taken at 4142.3 m (gas condensate), 4166 m (gas condensate), 4186.3 m (gas condensate), and 4274.9 m (water).

The well was permanently plugged and abandoned on 28 October 2019 as a gas appraisal well.

Testing

Two successful DSTs were performed in the Garn Formation.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
474.00	4443.00

Cuttings available for sampling?	YES

Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	4150.0	4157.0	[m]
2	4158.0	4172.2	[m]
3	4173.0	4193.4	[m]

Total core sample length [m]	41.5
Cores available for sampling?	YES

Oil samples at the Norwegian Offshore Directorate

Test type	Bottle number	Top depth MD [m]	Bottom depth MD [m]	Fluid type	Test time	Samples available
DST	DST 1A	4199.70	4190.00	WATER	06.09.2019 - 14:22	YES
DST	DST 1A	4199.70	4190.00	OIL	06.09.2019 - 14:07	YES
DST	DST 2	4162.68	4140.34	OIL	28.09.2019 - 04:39	YES
DST	DST 2	4162.68	4140.34	WATER	29.09.2019 - 18:20	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
405	NORDLAND GP
552	NAUST FM
1516	KAI FM
1933	HORDALAND GP
1933	BRYGGE FM
2101	ROGALAND GP
2101	TARE FM

2126	TANG FM
2221	SHETLAND GP
2221	SPRINGAR FM
2420	NISE FM
2535	KVITNOS FM
3183	CROMER KNOLL GP
3183	NO FORMAL NAME
3254	LANGE FM
3912	NO FORMAL NAME
3952	NO FORMAL NAME
4030	NO FORMAL NAME
4116	LYR FM
4141	FANGST GP
4141	GARN FM
4209	ILE FM
4357	BÅT GP
4357	ROR FM
4393	TOFTE FM
4399	ROR FM

Logs

Log type	Log top depth [m]	Log bottom depth [m]
HXPT GR	4212	4326
IS CBL VDL GR	2610	3410
IS CBL VDL GR LINER	2610	3410
LWD - ABG EWR4 DGR XBAT	2625	3827
LWD - ALD CTN EWR GM	3827	4443
LWD - EWR4 DGR XBAT	409	2625
MDT	4142	4274
QAIT EMS PPC MSIP QGEO GR	3819	4441
VSI4 ZOVSP	388	4423
XHPT APS LDS ECS HNGS CMR GR	3819	4441
XLR	3915	4203
XLR	4233	4273

Casing and leak-off tests

Casing type	Casing diam. [inch]	Casing depth [m]	Hole diam. [inch]	Hole depth [m]	LOT/FIT mud eqv. [g/cm3]	Formation test type
CONDUCTOR	30	470.0	36	470.0	0.00	
SURF.COND.	20	1420.0	26	1420.0	1.68	FIT
INTERM.	13 3/8	2618.0	17 1/2	2619.0	1.98	LOT
INTERM.	9 5/8	3810.0	12 1/4	3820.0	2.15	FIT
LINER	7	4432.0	8 1/2	4433.0	0.00	

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
46	1.49	25.0		1.5Sg Spud / Kill Mud	
110	1.49	35.0		1.5Sg Spud Mud	
110	1.29	12.0		KCl Polymer	
509	1.34	15.0		KCl Polymer	
613	1.30	13.0		KCl Polymer	
953	1.39	16.0		KCl Polymer	
1033	1.29	12.0		KCl Polymer	
1314	1.39	13.0		KCl Polymer	
1426	1.39	13.0		KCl Polymer	
1426	1.44	39.0		Glydril WBM	
2040	1.62	38.0		Glydril WBM	
2625	1.62	38.0		Glydril WBM	
2628	1.66	23.0		Rheguard OBM	
2628	1.64	45.0		Rheguard OBM	
3030	1.66	50.0		Rheguard OBM	
3762	1.76	72.0		Rheguard OBM	
3827	1.76	55.0		Rheguard OBM	
3827	1.84	24.0		Rheguard OBM	
3897	1.85	27.0		Rheguard OBM	
4050	1.85	32.0		Rheguard OBM	
4136	1.96	42.0		Rheguard OBM	
4150	1.96	43.0		Rheguard OBM	
4150	1.90	35.0		Rheguard OBM	
4442	1.68			CaBr brine	
4442	1.91	39.0		Rheguard OBM	
4442	1.64			CaBr2 brine	

4443	1.91	46.0		Rheguard OBM	
4443	1.14			NaCl brine	
4443	1.91	70.0		1.92 sg OBM MW 50	