General information

Wellbore name	6407/1-8 S
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Discovery	6407/1-8 S (Sierra)
Well name	6407/1-8
Seismic location	MC3D-HVG2013EQZ18. IL: 3552. XL: 2762
Production licence	263 D
Drilling operator	Equinor Energy AS
Drill permit	1827-L
Drilling facility	WEST HERCULES
Drilling days	37
Entered date	22.09.2020
Completed date	28.10.2020
Plugged and abondon date	28.10.2020
Release date	28.10.2022
Publication date	28.10.2022
Purpose - planned	WILDCAT
Reentry	NO
Content	GAS
Discovery wellbore	YES
1st level with HC, age	LATE CRETACEOUS
1st level with HC, formation	LANGE FM
Kelly bushing elevation [m]	31.0
Water depth [m]	295.0
Total depth (MD) [m RKB]	3570.0
Final vertical depth (TVD) [m RKB]	3551.0
Maximum inclination [°]	11.1
Oldest penetrated age	MIDDLE JURASSIC
Oldest penetrated formation	ILE FM
Geodetic datum	ED50
NS degrees	64° 59' 55.63'' N
EW degrees	7° 11' 29.72'' E
NS UTM [m]	7209719.38

EW UTM [m]	414722.25
UTM zone	32
NPDID wellbore	9093

Wellbore history

General

Well 6407/1-8 S was drilled to test the Apollonia prospect in the Grinda Graben In the Norwegian Sea. The primary objective was to test the hydrocarbon potential in the Early - Middle Jurassic Garn and Ile formations. No secondary targets were identified pre-drill, but the possible presence of overpressured HC bearing sandstones in the Lange Formation was identified as an operational risk in the overburden. In case of a discovery in the primary target an appraisal side-track 6407/1-8 A was planned.

Operations and results

An 8 1/2" shallow gas pilot hole was drilled to 1250 m equivalent to the planned depth of the 26" hole section. No shallow gas or shallow water influx was observed.

Wildcat well 6407/1-8 S was spudded with the semi-submersible installation West Hercules on 20 September 2020 and drilled to TD at 3570 m (3551 m TVD) m in the Middle Jurassic Ile Formation. Operations proceeded without significant problems. The well was drilled with seawater and hi-vis pills down to 1245 m, with Glydril water-based mud from 1245 m to 2232 m, with Versatec oil-based mud from 2232 m to 3405 m, and with Exploradril oil-based mud from 3405 m to TD.

Gas peaks and minor shows with direct fluorescence were seen in cutting samples below top of the Nise Formation. Hydrocarbon filled sand was observed in the Lange Formation, confirmed by both logs, pressure points and mud gas measurements. The hydrocarbon shows were bluish white to yellowish white, strong direct fluorescence, no to very slow blooming bluish white cut fluorescence and with no visible cut. The primary targets Garn and Ile formations were dry, with no gas response and no hydrocarbon shows.

No cores were cut, and no fluid samples were taken in the well.

Due to no discovery in the primary target the planned 6407/1-8 A side-track was cancelled.

The well was permanently abandoned on 28 October 2020 as a gas discovery.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1250.00	3570.00

Cuttings available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
327	NORDLAND GP
327	NAUST FM
1436	KAI FM
1755	HORDALAND GP
1755	BRYGGE FM
2119	ROGALAND GP
2119	TARE FM
2206	TANG FM
2262	SHETLAND GP
2262	SPRINGAR FM
2383	NISE FM
2724	KVITNOS FM
2930	CROMER KNOLL GP
2930	LYSING FM
2950	LANGE FM
3187	UNDIFFERENTIATED
3301	VIKING GP
3301	SPEKK FM
3329	MELKE FM
3437	FANGST GP
3437	GARN FM
3520	NOT FM
3555	ILE FM

Logs

Log type	Log top depth [m]	Log bottom depth [m]
AIT MSIP XPT PEX GR	3405	3569
IBC CBL	2145	3390
MSIP XPT GR	2224	3393
MWD - ARC TELE	377	2232
MWD - PD ARC TELE	3405	3570
MWD - PD ARC TELE ADN	2232	3405
MWD - PD HARC TELE	377	1250

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	36	375.7	42	377.0	0.00	
INTERM.	20	1237.9	26	1245.0	1.69	FIT
INTERM.	13 5/8	2224.6	17 1/2	2232.0	1.88	FIT
INTERM.	9 5/8	3394.6	12 1/4	3405.0	1.99	FIT
OPEN HOLE		3570.0	8 1/2	3570.0	0.00	

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
377	1.04	28.0	25.5	Spud Mud	
378	1.30	14.0	7.0	Spud Mud	
1245	1.45	19.0	16.0	Glydril	
2050	1.56	19.0	17.0	Glydril	
2442	1.72	57.0	9.0	Versatec	
2968	1.76	73.0	9.5	Versatec	
3405	1.76	72.0	9.5	Versatec	
3570	1.28	16.0	6.0	Exploradrill	