



General information





Wellbore name	15/3-1 S
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	GUDRUN
Discovery	15/3-1 S Gudrun
Well name	15/3-1
Seismic location	LINES 69-58-51/1-43
Production licence	025
Drilling operator	Elf Petroleum Norge AS
Drill permit	121-L
Drilling facility	DEEPSEA DRILLER
Drilling days	222
Entered date	27.11.1974
Completed date	06.07.1975
Release date	06.07.1977
Publication date	10.08.2013
Purpose - planned	WILDCAT
Reentry	NO
Content	GAS/CONDENSATE
Discovery wellbore	YES
1st level with HC, age	LATE JURASSIC
1st level with HC, formation	INTRA HEATHER FM SS
2nd level with HC, age	MIDDLE JURASSIC
2nd level with HC, formation	HUGIN FM
Kelly bushing elevation [m]	25.0
Water depth [m]	109.0
Total depth (MD) [m RKB]	5129.0
Oldest penetrated age	MIDDLE JURASSIC
Oldest penetrated formation	HUGIN FM
Geodetic datum	ED50
NS degrees	58° 50' 57" N
EW degrees	1° 43' 13.25" E
NS UTM [m]	6524112.64
EW UTM [m]	426158.89
UTM zone	31
NPDID wellbore	309



Wellbore history

General

Well 15/3-1 S was drilled west of the Gudrun Terrace on the east flank of the North Sea Central Graben. The primary objective was to test sands in the Middle Jurassic (Dogger sands). Secondary objectives were the Early Tertiary, Danian, Early Cretaceous sands. Triassic sandstones and Zechstein dolomites down to the "economic basement" were also possible targets.

The well is reference well for the Ty, Draupne, and Heather formations.

Operations and results

Wildcat well 15/3-1 S was spudded with the semi-submersible installation Deepsea Driller on 27 November 1974 and drilled without significant problems to 4400 m. While circulating before logging the pipe stuck and the hole started to kick. After unsuccessful efforts to free the pipe the well was plugged back and sidetracked from 3985 m. The sidetrack was drilled without further significant problems to final TD at 5129 m in the Middle Jurassic Hugin Formation.

The well penetrated water-bearing Hermod, Heimdal and Ty formation sandstones from 2215 to 2715 m. The Ty Formation from 2556 m was reported as the best of these with a main body of clean sand from 2599 to 2711 m. Top Viking Group, Draupne Formation was encountered at 3947 m. The Draupne Formation contained many oil and gas bearing Intra-Draupne Formation sandstones. Of these the best reservoirs were found in the intervals 4083 to 4317 m with OWC at 4218 m, and 4442.5 to 4610 m with OWC at 4486 m. Total net pay in these two intervals together were 32 m with 22 - 19 % porosity. Geochemical analyses indicated good source rock properties in the shale interbeds, with a maturity ranging from early to late oil window (vitrinite reflectance from 0.6 to 0.9 %Ro). Top Heather Formation was encountered at 4754 m. The Heather Formation had no sandstone interbeds. Top Hugin Formation came in at 4986 m with a 10 m net pay gas bearing sandstone reservoir at 4986 to 5001 m. Porosity here was 12.5%. Sandstones with hydrocarbons were penetrated below this level, but these had low permeability. No oil shows were reported above the Viking Group.

Four cores were cut in the well; the three first before and the fourth after sidetracking. Core 1 was cut from 3947 to 3951 m, core 2 was cut from 4083 to 4092, core 3 was cut from 4141 to 4150 m, and core 4 was cut from 4991 to 4993.3 m. FIT wire line fluid samples were taken at 4217 m (oil and gas), 4148.8 m (oil and gas), 4089.3 m (gas), 4168.5 m (oil and gas), 4243.5 m (water and trace filtrate), 4443.5 m (oil and gas), and at 4479.5 m (water and filtrate)

The well was permanently abandoned on 6 July 1975 as a gas/condensate discovery.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate



Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
200.00	5125.00

Cuttings available for sampling?	YES
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Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	3947.0	3950.5	[m]
2	4083.0	4090.5	[m]
3	4141.0	4150.0	[m]
4	4991.0	4993.3	[m]

Total core sample length [m]	22.3
Cores available for sampling?	YES

Core photos



3947-3950m



High: 4083-4087m



Low: 4083-4087m



3087-4090m



High: 4141-4145m



Low: 4141-4145m



High: 4145-4149m



Low: 4145-4149m



4149-4150m



4991-4993m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
4992.3	[m]	C	RRI
5020.0	[m]	DC	RRI
5050.0	[m]	DC	RRI



5055.0	[m]	DC	RRI
5060.0	[m]	DC	RRI
5065.0	[m]	DC	RRI
5075.0	[m]	DC	RRI
5080.0	[m]	DC	RRI
5085.0	[m]	DC	RRI

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
134	NORDLAND GP
673	UTSIRA FM
846	HORDALAND GP
1460	GRID FM
2147	ROGALAND GP
2147	BALDER FM
2198	SELE FM
2215	HERMOD FM
2239	LISTA FM
2332	HEIMDAL FM
2529	LISTA FM
2556	TY FM
2715	SHETLAND GP
2715	EKOFISK FM
2800	JORSALFARE FM
3178	KYRRE FM
3615	BLODØKS FM
3698	SVARTE FM
3812	CROMER KNOLL GP
3947	VIKING GP
3947	DRAUPNE FM
4754	HEATHER FM
4986	VESTLAND GP
4986	HUGIN FM

Geochemical information





Document name	Document format	Document size [MB]
309_1	pdf	0.28
309_2	pdf	5.12
309_3	pdf	1.40
309_4	pdf	1.03
309_5	pdf	0.92
309_6	pdf	18.32
309_7	pdf	1.45

Documents - older Norwegian Offshore Directorate WDSS reports and other related documents

Document name	Document format	Document size [MB]
309_01_WDSS_General_Information	pdf	0.26

Documents - reported by the production licence (period for duty of secrecy expired)

Document name	Document format	Document size [MB]
309_15_3_1_COMPLETION_LOG	pdf	2.18
309_15_3_1_COMPLETION_REPORT	pdf	5.19

Logs

Log type	Log top depth [m]	Log bottom depth [m]
BHC GR DLL	4380	4726
IES BHC GR	4379	4656
IES BHC GR	4650	4968
IES BHC GR DLL FDC HDT	3954	4384
IES BHC GR FDC DLL ML MLL HDT	4130	5132
IES BHC GR HDT	611	2845
IES BHC GR HDT TL	2844	3959
ML MLL HDT FDC	4378	4730

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	198.0	36	199.0	0.00	LOT
SURF.COND.	26	612.0	20	625.0	0.00	LOT
INTERM.	13 3/8	2842.0	17 1/2	2856.0	0.00	LOT
INTERM.	9 5/8	3950.0	12 1/4	3956.0	0.00	LOT
LINER	7	4374.0	8 1/2	4375.0	0.00	LOT
OPEN HOLE		5132.0	5 7/8	5132.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
2863	1.40			waterbased	
3942	1.55			waterbased	
3953	1.42			waterbased	
4141	1.98			waterbased	
4380	2.05			waterbased	
5129	1.98			waterbased	

Thin sections at the Norwegian Offshore Directorate

Depth	Unit
4083.50	[m]
4084.75	[m]
4085.50	[m]
4141.50	[m]
4143.50	[m]
4145.00	[m]
4146.25	[m]
4148.25	[m]