General information

Wellbore name	16/1-1
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Well name	16/1-1
Seismic location	C 309 C SP: 20470
Production licence	001
Drilling operator	Esso Exploration and Production Norway A/S
Drill permit	8-L
Drilling facility	OCEAN TRAVELER
Drilling days	76
Entered date	26.09.1967
Completed date	10.12.1967
Release date	10.12.1969
Publication date	28.06.2007
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL SHOWS
Discovery wellbore	NO
Kelly bushing elevation [m]	26.0
Water depth [m]	114.0
Total depth (MD) [m RKB]	3203.0
Maximum inclination [°]	4.25
Bottom hole temperature [°C]	95
Oldest penetrated age	LATE CRETACEOUS
Oldest penetrated formation	HOD FM
Geodetic datum	ED50
NS degrees	58° 59' 18.4'' N
EW degrees	2° 2' 3'' E
NS UTM [m]	6539317.03
EW UTM [m]	444490.52
UTM zone	31
NPDID wellbore	147

Wellbore history

General

Well 16/1-1 is located roughly midway between the Gudrun Discovery and the Balder Field in the North Sea. This early wildcat well had the general objective to: " -test the hydrocarbon potential and investigate the lithology in this portion of the North Sea basin".

The well is Type Well for the Utsira Formation.

Operations and results

Wildcat well 16/1-1 was spudded with the semi-submersible installation Ocean Traveler on 26 September 1967 and drilled to TD at 3203 m in the Late Cretaceous Hod Formation. No significant problems were reported from the operations. Initial drilling from the sea floor to 392 m was with seawater and gel without casing. Returns were to the sea floor. Below 392 m to total depth, a seawater slurry with Bentonite, Zeogel, Spersene, XP-20, Caustic Soda, and 0-12% diesel oil was used.

Porous sandstone was observed in the Miocene, Oligocene, and Eocene. There were also Paleocene sands in the well. Traces of possible residual oil stain were encountered in cuttings and cores from the Oligocene and Eocene. In addition, questionable shows (non-fluorescent dead oil) were reported on cores from the Paleocene. However, neither the hot wire gas indicator nor chromatograph suggested the presence of hydrocarbons.

A total of 18 cores were cut from the different formations within the Hordaland, Rogaland, and Shetland Groups, recovering a total of 171 m core. The depth for core 2 is probably incorrect, possibly be five meter shallow due to malfunction of the bumper subs. FIT wire line fluid samples were taken in potential hydrocarbon-yielding beds at 1878.5 m, 2532.9 m, and at 2592.3 m. Only water and mud were recovered.

The well was permanently abandoned on 10 December 1967 as a dry well.

Testing

No drill stem test was performed.

Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	5100.0	5130.0	[ft]
2	5643.0	5673.0	[ft]
3	6315.0	6349.0	[ft]
4	7060.0	7103.0	[ft]
5	7353.0	7407.0	[ft]
6	7609.0	7639.0	[ft]
7	7639.0	7692.0	[ft]
8	7692.0	7701.0	[ft]
10	7932.0	7959.0	[ft]

11	7962.0	7992.0	[ft]
12	7992.0	8022.0	[ft]
13	8305.0	8332.0	[ft]
14	8619.0	8646.0	[ft]
15	8680.0	8690.0	[ft]
16	8699.0	8760.0	[ft]
17	8934.0	8975.0	[ft]
18	10479.0	10509.0	[ft]

Total core sample length [m]	172.5
Cores available for sampling?	NO

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
1.0	[ft]	C	
1554.0	[m]	C	BGS
1559.0	[m]	C	BGS
1563.0	[m]	C	BGS
1720.0	[m]	C	BGS
1729.0	[m]	C	BGS
2152.5	[m]	C	BGS
2161.5	[m]	C	BGS
2165.0	[m]	C	BGS
2329.0	[m]	C	BGS
2344.0	[m]	C	STAT
2427.0	[m]	C	BGS
2656.0	[m]	C	BGS
2727.0	[m]	C	BGS
2728.0	[m]	C	BGS
2980.0	[m]	C	
3100.0	[m]	C	
3280.0	[m]	C	
3400.0	[m]	C	
3490.0	[m]	C	
3580.0	[m]	C	
3700.0	[m]	C	
3700.0	[m]	C	
3790.0	[m]	C	

3910.0	[m]	C	
4000.0	[m]	C	
4090.0	[m]	C	
4180.0	[m]	C	
4300.0	[m]	C	
4390.0	[m]	C	
4480.0	[m]	C	
4580.0	[m]	C	
4690.0	[m]	C	
4710.0	[m]	C	
4790.0	[m]	C	
4820.0	[m]	C	
4880.0	[m]	C	
4900.0	[m]	C	
4980.0	[m]	C	
5000.0	[m]	C	
5080.0	[m]	C	
5100.0	[m]	C	
5100.0	[m]	C	
5110.0	[m]	C	
5180.0	[m]	C	
5180.0	[m]	C	
5270.0	[m]	C	
5300.0	[m]	C	
5390.0	[m]	C	
5480.0	[m]	C	
5570.0	[m]	C	
5643.0	[m]	C	
5643.0	[m]	C	
5645.0	[m]	C	
5657.0	[m]	C	
5672.0	[m]	C	
5673.0	[m]	C	
5790.0	[m]	C	
5840.0	[m]	C	
5880.0	[m]	C	
5900.0	[m]	C	
5940.0	[m]	C	
5980.0	[m]	C	
6000.0	[m]	C	

6080.0	[m]	C	
6100.0	[m]	C	
6190.0	[m]	C	
6190.0	[m]	C	
6280.0	[m]	C	
6300.0	[m]	C	
6315.0	[m]	C	
6345.0	[m]	C	
6375.0	[m]	C	
6480.0	[m]	C	
6500.0	[m]	C	
6580.0	[m]	C	
6600.0	[m]	C	
6680.0	[m]	C	
6700.0	[m]	C	
6780.0	[m]	C	
6800.0	[m]	C	
6890.0	[m]	C	
6900.0	[m]	C	
6985.0	[m]	C	
7000.0	[m]	C	
7060.0	[m]	C	
7062.0	[m]	C	
7065.0	[m]	C	
7065.0	[m]	C	
7066.0	[m]	C	
7067.0	[m]	C	
7072.0	[m]	C	
7078.0	[m]	C	
7084.0	[m]	C	
7087.0	[m]	C	
7092.0	[m]	C	
7094.0	[m]	C	
7096.0	[m]	C	
7099.0	[m]	C	
7100.0	[m]	C	
7102.0	[m]	C	
7103.0	[m]	C	
7103.0	[m]	C	
7150.0	[m]	C	EXXON

7190.0	[m]	C	
7200.0	[m]	C	
7240.0	[m]	C	EXXON
7290.0	[m]	C	
7300.0	[m]	C	
7353.0	[m]	C	
7353.0	[m]	C	
7382.0	[m]	C	
7387.0	[m]	C	EXXON
7405.0	[m]	C	EXXON
7450.0	[m]	C	
7480.0	[m]	C	
7490.0	[m]	C	
7500.0	[m]	C	
7520.0	[m]	DC	
7550.0	[m]	DC	
7580.0	[m]	DC	
7600.0	[m]	DC	
7609.0	[m]	C	
7609.0	[m]	C	
7615.0	[m]	C	
7617.0	[m]	C	
7620.0	[m]	DC	
7639.0	[m]	C	EXXON
7639.0	[m]	DC	
7644.0	[m]	DC	
7645.0	[m]	DC	
7692.0	[m]	C	EXXON
7696.0	[m]	DC	
7746.0	[m]	DC	EXXON
7790.0	[m]	DC	
7800.0	[m]	DC	
7850.0	[m]	DC	
7880.0	[m]	DC	
7900.0	[m]	DC	
7945.0	[m]	DC	
7963.5	[m]	DC	
7969.5	[m]	DC	
7980.0	[m]	DC	
8011.0	[m]	DC	

8060.0	[m]	DC	EXXON
8100.0	[m]	DC	
8150.0	[m]	DC	EXXON
8200.0	[m]	DC	
8250.0	[m]	DC	EXXON
8290.0	[m]	DC	
8305.0	[m]	DC	
8323.0	[m]	C	EXXON
8340.0	[m]	DC	
8380.0	[m]	DC	EXXON
8380.0	[m]	DC	
8400.0	[m]	DC	
8450.0	[m]	DC	
8500.0	[m]	DC	
8520.0	[m]	SWC	EXXON
8550.0	[m]	DC	EXXON
8558.0	[m]	SWC	EXXON
8560.0	[m]	DC	EXXON
8563.0	[m]	SWC	EXXON
8595.0	[m]	SWC	EXXON
8619.0	[m]	DC	
8620.0	[m]	C	EXXON
8622.0	[m]	DC	
8627.0	[m]	DC	
8630.0	[m]	DC	
8632.0	[m]	C	
8632.0	[m]	DC	
8632.0	[m]	SWC	EXXON
8634.0	[m]	DC	
8641.0	[m]	DC	
8644.0	[m]	DC	
8645.0	[m]	SWC	EXXON
8675.0	[m]	SWC	EXXON
8675.0	[m]	SWC	EXXON
8680.0	[m]	C	EXXON
8680.0	[m]	DC	
8680.0	[m]	DC	
8682.0	[m]	DC	
8685.0	[m]	SWC	EXXON
8700.0	[m]	C	EXXON

8730.0	[m]	SWC	EXXON
8778.0	[m]	SWC	EXXON
8780.0	[m]	DC	EXXON
8820.0	[m]	DC	EXXON
8835.0	[m]	SWC	EXXON
8855.0	[m]	SWC	EXXON
8870.0	[m]	DC	EXXON
8875.0	[m]	SWC	EXXON
8905.0	[m]	SWC	EXXON
8915.0	[m]	SWC	EXXON
8925.0	[m]	DC	
8934.0	[m]	C	
8934.0	[m]	DC	
8940.0	[m]	DC	
8941.0	[m]	DC	
8941.0	[m]	C	
8954.0	[m]	C	
8957.0	[m]	C	
8962.0	[m]	SWC	EXXON
8983.0	[m]	SWC	EXXON
9000.0	[m]	DC	
9005.0	[m]	SWC	EXXON
9035.0	[m]	SWC	EXXON
9050.0	[m]	DC	
9100.0	[m]	DC	EXXON
9100.0	[m]	DC	
9150.0	[m]	DC	EXXON
9200.0	[m]	DC	EXXON
9250.0	[m]	DC	EXXON
9300.0	[m]	DC	EXXON
9810.0	[m]	DC	
10060.0	[m]	DC	
10140.0	[m]	DC	
10175.0	[m]	DC	
10240.0	[m]	DC	
10340.0	[m]	DC	
10396.0	[m]	DC	
10509.0	[m]	DC	
10509.0	[m]	DC	

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
140	NORDLAND GP
644	UTSIRA FM
775	NO FORMAL NAME
908	HORDALAND GP
908	SKADE FM
1127	NO FORMAL NAME
1222	SKADE FM
1254	NO FORMAL NAME
1854	GRID FM
1942	NO FORMAL NAME
2207	ROGALAND GP
2207	BALDER FM
2259	SELE FM
2316	HERMOD FM
2355	SELE FM
2361	LISTA FM
2402	HEIMDAL FM
2646	VÅLE FM
2734	SHETLAND GP
2734	EKOFISK FM
2763	TOR FM
2926	HOD FM

Composite logs

Document name	Document format	Document size [MB]
147	pdf	0.55

Geochemical information

Document name	Document format	Document size [MB]
147_1	pdf	1.25
147_2	pdf	1.13

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

Document name	Document format	Document size [MB]
147_01_WDSS_General_Information	pdf	0.20

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

Document name	Document format	Document size [MB]
147_01_16_1_1_Completion_Report	pdf	5.96
147_02_16_1_1_Completion_log	pdf	1.74

Documents - Norwegian Offshore Directorate papers

Document name	Document format	Document size [MB]
147_01_NPD_Paper_No.8_Lithology__Well_16_1_1	pdf	12.73
147_02_NPD_Paper_No.8_Interpreted_Lithology_log__Well_16_1_1	pdf	89.24

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CDM	1401	3205
FDC	1401	3207
GR BHC	137	3203
IES	388	3206
MLL	388	3206
SNP	1401	2593

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	174.0	36	175.0	0.00	LOT

SURF.COND.	20	387.0	26	390.0	0.00	LOT
INTERM.	9 5/8	1400.0	12 1/4	1401.0	0.00	LOT
OPEN HOLE		3203.0	8 1/2	3203.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
391	0.00			seawater	
1000	0.00			bent/Zeo/sp	

Thin sections at the Norwegian Offshore Directorate

Depth	Unit
2250.00	[m]
2250.00	[m]
2250.00	[m]
2250.00	[m]
2251.00	[m]
2251.00	[m]
2251.00	[m]
2251.00	[m]
2251.00	[m]
2251.00	[m]
2251.00	[m]
2251.00	[m]
2251.00	[m]

Pressure plots

The pore pressure data is sourced from well logs if no other source is specified. In some wells where pore pressure logs do not exist, information from Drill stem tests and kicks have been used. The data has been reported to the NPD, and further processed and quality controlled by IHS Markit.

Document name	Document format	Document size [MB]
147_Formation_pressure_(Formasjonstrykk)	pdf	0.21