

**General information**

Wellbore name	16/1-8
Type	EXPLORATION
Purpose	WILDCAT
Status	SUSPENDED
Press release	<a href="#">link to press release</a>
Factmaps in new window	<a href="#">link to map</a>
Main area	NORTH SEA
Field	<a href="#">EDVARD GRIEG</a>
Discovery	<a href="#">16/1-8 Edvard Grieg</a>
Well name	16/1-8
Seismic location	ST9511M06 3085 & x-line ST9511M06 2334
Production licence	<a href="#">338</a>
Drilling operator	Lundin Norway AS
Drill permit	1152-L
Drilling facility	<a href="#">BREDFORD DOLPHIN</a>
Drilling days	67
Entered date	08.09.2007
Completed date	13.11.2007
Release date	13.11.2009
Publication date	13.11.2009
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL
Discovery wellbore	YES
1st level with HC, age	JURASSIC
1st level with HC, formation	NO GROUP DEFINED
Kelly bushing elevation [m]	25.0
Water depth [m]	108.0
Total depth (MD) [m RKB]	2200.0
Final vertical depth (TVD) [m RKB]	2200.0
Maximum inclination [°]	1.7
Bottom hole temperature [°C]	87
Oldest penetrated age	LATE TRIASSIC
Oldest penetrated formation	NO GROUP DEFINED
Geodetic datum	ED50
NS degrees	58° 50' 8.63" N
EW degrees	2° 14' 6.36" E



NS UTM [m]	6522162.97
EW UTM [m]	455844.01
UTM zone	31
NPDID wellbore	5612

**Wellbore history**

**General**

Well 16/1-8 was drilled on the Luno Prospect on the eastern margin of the South Viking Graben on the south-western part of the Utsira High in the North Sea. The Luno prospect is situated between well 16/1-5 with oil shows in Late Jurassic and 16/1-4 with gas/condensate discovery in fractured basement rocks and up dip from the 16/1-7 Jurassic discovery. The primary objective of well 16/1-8 was to test the hydrocarbon potential in Late Jurassic sandstones of the Viking Group. Secondary objectives were to assess the quality of the Eocene Grid Formation and Permo-Triassic sandstones. Total depth was planned in basement at 2173 +/- 50 m.

**Operations and results**

Well 16/1-8 was spudded with the semi-submersible installation Bredford Dolphin on 8 September 2007 and drilled to TD at 2200 m in undefined Triassic formations consisting of conglomerates, sandstones and claystone. A shallow gas zone was warned and encountered in a thin sand from 634 - 638 m. Downtime (NPT) for the operations was as much as 33% of total rig time. Forty-four per cent of the total NPT was due to WOW before anchor handling. Another 14 % of NPT was caused by problems with cementing the 13 3/8" casing. In addition formation characteristics in the reservoir made operations challenging, and combined with increased formation evaluation scope; time spent on coring, logging and drilling to TD drastically increased compared to plan. The well was drilled with seawater and hi-vis pills down to 400 m, with KCl/glycol enhanced mud (GEM) from 400 to 1196 m, and with Performadril mud from 1196 m to TD. Performadril may contain up to 5% polyakylene glycols.

The Eocene sandstones of the Grid Formation at 1556 m were found water bearing with normal pressure gradient. Top Jurassic was encountered at 1925 m and contained sandstones and conglomerates with hydrocarbon shows. A 2 m thick and questionable Late Jurassic sequence was seen on top. Palynoflora at 1930.7 m suggested a Middle to Early Jurassic age. Hydrocarbons were encountered from 1925 m down to an OWC based on MDT pressure data at ca 1965 m, which gives an oil column of ca 40 m. Shows on cores continued down to 1966.3 m. No shows were recorded below this depth or above 1925 m. The reservoir was not easily characterized by log data as these were affected by feldspar rich conglomerates and other electrically conductive materials.

Three conventional cores were cut. The first two were taken in the hydrocarbon bearing interval and the third in the water bearing interval. MDT pressure and fluid sampling was carried out and the fluid gradients were determined (oil and water). The fluid samples were taken at 1933.6 m, 1939.4 m, 1952.8 m, and 1956.4 m (oil), and at 1982 m (water).

The plan was to permanently abandon the well, but due to the characteristics of the discovery, a decision was made to temporary abandon the well with the purpose of re-entering to perform a DST at a later stage.

The well was suspended on 13 November 2007 as an oil discovery.

**Testing**

No drill stem test was performed.

**Cuttings at the Norwegian Offshore Directorate**

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
410.00	2201.00



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	1930.0	1935.3	[m ]
2	1944.0	1945.6	[m ]
3	1965.5	1973.0	[m ]

Total core sample length [m]	14.4
Cores available for sampling?	YES

**Palynological slides at the Norwegian Offshore Directorate**

Sample depth	Depth unit	Sample type	Laboratory
1880.0	[m]	DC	NETWORK
1890.0	[m]	DC	NETWOR
1900.0	[m]	DC	NETWOR
1910.0	[m]	DC	NETWOR
1919.0	[m]	DC	NETWOR
1925.0	[m]	DC	NETWOR
1931.0	[m]	DC	NETWOR
1940.0	[m]	DC	NETWOR
1946.0	[m]	DC	NETWOR
1952.0	[m]	DC	NETWOR
1958.0	[m]	DC	NETWOR
1965.0	[m]	DC	NETWOR
1971.0	[m]	DC	NETWOR
1977.0	[m]	DC	NETWOR
1983.0	[m]	DC	NETWOR
1989.0	[m]	DC	NETWOR
1995.0	[m]	DC	NETWOR
2000.0	[m]	DC	NETWOR
2006.0	[m]	DC	NETWOR
2012.0	[m]	DC	NETWOR
2018.0	[m]	DC	NETWOR
2024.0	[m]	DC	NETWOR
2030.0	[m]	DC	NETWOR



2036.0	[m]	DC	NETWOR
2042.0	[m]	DC	NETWOR
2045.0	[m]	DC	NETWOR
2048.0	[m]	DC	NETWOR
2051.0	[m]	DC	NETWOR
2054.0	[m]	DC	NETWOR
2060.0	[m]	DC	NETWOR
2066.0	[m]	DC	NETWOR
2072.0	[m]	DC	NETWOR
2078.0	[m]	DC	NETWOR
2084.0	[m]	DC	NETWOR
2087.0	[m]	DC	NETWOR
2090.0	[m]	DC	NETWOR
2093.0	[m]	DC	NETWOR
2096.0	[m]	DC	NETWOR
2099.0	[m]	DC	NETWOR
2102.0	[m]	DC	NETWOR
2105.0	[m]	DC	NETWOR
2108.0	[m]	DC	NETWOR
2111.0	[m]	DC	NETWOR
2114.0	[m]	DC	NETWOR
2117.0	[m]	DC	NETWOR
2120.0	[m]	DC	NETWOR
2126.0	[m]	DC	NETWOR
2132.0	[m]	DC	NETWOR
2138.0	[m]	DC	NETWOR
2144.0	[m]	DC	NETWOR
2150.0	[m]	DC	NETWOR
2156.0	[m]	DC	NETWOR
2162.0	[m]	DC	NETWOR
2168.0	[m]	DC	NETWOR
2174.0	[m]	DC	NETWOR
2180.0	[m]	DC	NETWOR
2186.0	[m]	DC	NETWOR
2192.0	[m]	DC	NETWOR
2198.0	[m]	DC	NETWOR

**Lithostratigraphy**



Top depth [mMD RKB]	Lithostrat. unit
133	<a href="#">NORDLAND GP</a>
745	<a href="#">UTSIRA FM</a>
882	<a href="#">HORDALAND GP</a>
963	<a href="#">SKADE FM</a>
1157	<a href="#">NO FORMAL NAME</a>
1556	<a href="#">GRID FM</a>
1713	<a href="#">NO FORMAL NAME</a>
1765	<a href="#">ROGALAND GP</a>
1765	<a href="#">BALDER FM</a>
1781	<a href="#">SELE FM</a>
1801	<a href="#">LISTA FM</a>
1891	<a href="#">VÅLE FM</a>
1897	<a href="#">SHETLAND GP</a>
1897	<a href="#">EKOFISK FM</a>
1913	<a href="#">HOD FM</a>
1925	<a href="#">NO GROUP DEFINED</a>
1964	<a href="#">NO GROUP DEFINED</a>

### Composite logs

Document name	Document format	Document size [MB]
<a href="#">5612</a>	pdf	0.39

### Logs

Log type	Log top depth [m]	Log bottom depth [m]
CMR HRLA PEX ECS	1900	2195
CMR MDT	1875	2060
FMI MSIP	1886	2060
MDT	1933	1939
MDT	1952	1956
MDT	1978	1939
MSCT	1350	1959
MSCT	1906	2010
MSCT	1923	1939
MSCT	1940	2115





MSCT	1951	1957
MSCT	1958	2110
MWD LWD - GR RES PESS	133	1194
MWD LWD - GR RES PR DENS POR SON	1196	2200
VSP	335	2173

**Drilling mud**

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
180	0.00	110.0		WATER BASED	
212	1.25	65.0		WATER BASED	
220	0.00	110.0		WATER BASED	

**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]
<a href="#">5612 Formation pressure (Formasjonstrykk)</a>	PDF	0.22



