General information

Wellbore name	15/6-6
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	SLEIPNER VEST
Discovery	15/6-3 Sleipner Vest
Well name	15/6-6
Seismic location	ST 8010 - 118 SP 345
Production licence	029
Drilling operator	Esso Exploration and Production Norway A/S
Drill permit	308-L
Drilling facility	GLOMAR BISCAY II
Drilling days	70
Entered date	01.04.1982
Completed date	09.06.1982
Release date	09.06.1984
Publication date	19.12.2007
Purpose - planned	APPRAISAL
Reentry	NO
Content	GAS/CONDENSATE
Discovery wellbore	NO
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	HUGIN FM
Kelly bushing elevation [m]	25.0
Water depth [m]	110.0
Total depth (MD) [m RKB]	3760.0
Final vertical depth (TVD) [m RKB]	3760.0
Maximum inclination [°]	2.75
Bottom hole temperature [°C]	122
Oldest penetrated age	LATE TRIASSIC
Oldest penetrated formation	SKAGERRAK FM
Geodetic datum	ED50
NS degrees	58° 31' 14.7'' N
EW degrees	1° 44' 53.3'' E
NS UTM [m]	6487517.21

EW UTM [m]	427079.83
UTM zone	31
NPDID wellbore	38

Wellbore history

General

Well 15/6-6 was drilled to appraise the north eastern flank of Alpha structure on the 15/6-3 Sleipner Vest Discovery in the North Sea. The primary target was a gas bearing Jurassic sandstone known as the Hugin Formation. It was drilled to provide needed structural control and to establish a gas/water contact.

Operations and results

Appraisal well 15/6-6 was spudded with the semi-submersible installation Glomar Biscay II on 1 April 1982 and drilled to TD at 3760 m in Late Triassic sediments of the Skagerrak Formation. The 36" hole had to be reamed several times due to ledging. This also occurred in the top of the 26" section. Forty-six bbl's (7.3 m3) of fluid were lost to the formation during cementing of the 13 3/8" casing. The mud weight in this section was 1.68 which is lower than the previous Sleipner wells. This and the fluid loss can possibly be related to an unconsolidated sand (Skade Formation) interval from 1185 to 1199 m. Minor hole problems were encountered in the 12 1/4" section. The drill string was temporarily stuck at 1627 m after making a connection. The well was drilled with seawater and gel.

The well proved sands in the Utsira, Grid, Heimdal, and Sleipner Formations; all water bearing. The gas bearing Hugin Formation was encountered at 3563 m and had a gross thickness of 58 m. The gas/water contact was found at 3607 m, which gives a gross gas interval of 44 m. No oil shows were reported from the target reservoir or other sections in the well.

Three cores were taken in the Middle Jurassic interval in the 8 1/2" section. Core 1 recovered 18.5 m sandstone from 3591 m to 3609.5 m. Core 2 recovered 16.0 m sandstone from 3609.5 m to 3622 m. Core 3 recovered 18.9 m Sandstone, shale and coal from 3625.5 m to 3644.5 m. No wire line fluid sample was taken.

The well was permanently abandoned on 9 June 1982 as a gas appraisal well.

Testing

The well was tested in the interval 3568 - 3578 m in the Hugin Formation where reservoir data indicated significant accumulations of gas and condensate. The test produced 835000 Sm3 gas and 278 Sm3 condensate /day through a 56/64" choke. The GOR (gas/condensate ratio) was 3003 Sm3/Sm3 and the condensate gravity was 47 dg API. The gas gravity was 0.762 (air = 1), the CO2 content was 5 % and the H2S content was 7.5 ppm.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
210.00	3760.00

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	3591.0	3609.5	[m]
2	3609.5	3625.5	[m]
3	3625.5	3644.4	[m]

Total core sample length [m]	53.4
Cores available for sampling?	YES

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
500.0	[m]	DC	
530.0	[m]	DC	
560.0	[m]	DC	
590.0	[m]	DC	
620.0	[m]	DC	
650.0	[m]	DC	
690.0	[m]	DC	
710.0	[m]	DC	
740.0	[m]	DC	
770.0	[m]	DC	
800.0	[m]	DC	
830.0	[m]	DC	
860.0	[m]	DC	
890.0	[m]	DC	
920.0	[m]	DC	
950.0	[m]	DC	
980.0	[m]	DC	
1010.0	[m]	DC	
1040.0	[m]	DC	
1070.0	[m]	DC	
1100.0	[m]	DC	
1130.0	[m]	DC	
1160.0	[m]	DC	
1190.0	[m]	DC	

1220.0	[m]	DC	
1250.0	[m]	DC	
1280.0	[m]	DC	
1310.0	[m]	DC	
1340.0	[m]	DC	
1370.0	[m]	DC	
1400.0	[m]	DC	
1430.0	[m]	DC	
1460.0	[m]	DC	
1490.0	[m]	DC	
1520.0	[m]	DC	
1550.0	[m]	DC	
1580.0	[m]	DC	
1610.0	[m]	DC	
1640.0	[m]	DC	
1670.0	[m]	DC	
1700.0	[m]	DC	
1730.0	[m]	DC	
1760.0	[m]	DC	
1790.0	[m]	DC	
1820.0	[m]	DC	
1850.0	[m]	DC	
1880.0	[m]	DC	
1910.0	[m]	DC	
1940.0	[m]	DC	
1970.0	[m]	DC	
2000.0	[m]	DC	
2030.0	[m]	DC	
2060.0	[m]	DC	
2090.0	[m]	DC	
2120.0	[m]	DC	
2150.0	[m]	DC	
2180.0	[m]	DC	
2210.0	[m]	DC	
2220.0	[m]	DC	
2230.0	[m]	DC	
2240.0	[m]	DC	
2250.0	[m]	DC	
2260.0	[m]	DC	
2270.0	[m]	DC	

2280.0	[m]	DC	
2290.0	[m]	DC	
2300.0	[m]	DC	
2310.0	[m]	DC	
2320.0	[m]	DC	
2330.0	[m]	DC	
2340.0	[m]	DC	
2350.0	[m]	DC	
2360.0	[m]	DC	
2370.0	[m]	DC	
2390.0	[m]	DC	
2400.0	[m]	DC	
2410.0	[m]	DC	
2420.0	[m]	DC	
2430.0	[m]	DC	
2440.0	[m]	DC	
2450.0	[m]	DC	
2460.0	[m]	DC	
2480.0	[m]	DC	
2500.0	[m]	DC	
2510.0	[m]	DC	
2540.0	[m]	DC	
2570.0	[m]	DC	
2600.0	[m]	DC	
2630.0	[m]	DC	
2660.0	[m]	DC	
2690.0	[m]	DC	
2720.0	[m]	DC	
2730.0	[m]	DC	
2740.0	[m]	DC	
2750.0	[m]	DC	
2760.0	[m]	DC	
2770.0	[m]	DC	
2780.0	[m]	DC	
2810.0	[m]	DC	
2840.0	[m]	DC	
2870.0	[m]	DC	
2900.0	[m]	DC	
2930.0	[m]	DC	
2960.0	[m]	DC	

2990.0	[m]	DC	
3020.0	[m]	DC	
3050.0	[m]	DC	
3080.0	[m]	DC	
3110.0	[m]	DC	
3140.0	[m]	DC	
3170.0	[m]	DC	
3200.0	[m]	DC	
3230.0	[m]	DC	
3260.0	[m]	DC	
3290.0	[m]	DC	
3320.0	[m]	DC	
3350.0	[m]	DC	
3380.0	[m]	DC	
3401.0	[m]	SWC	
3403.0	[m]	SWC	
3407.0	[m]	SWC	
3409.0	[m]	DC	
3410.0	[m]	SWC	
3427.0	[m]	SWC	
3436.5	[m]	SWC	
3451.0	[m]	DC	
3462.0	[m]	SWC	
3481.0	[m]	DC	
3482.0	[m]	SWC	
3492.0	[m]	SWC	
3495.0	[m]	SWC	
3499.0	[m]	SWC	
3511.0	[m]	DC	
3516.0	[m]	SWC	
3524.0	[m]	SWC	
3541.0	[m]	DC	
3543.0	[m]	SWC	
3548.0	[m]	SWC	
3554.5	[m]	SWC	
3556.0	[m]	SWC	
3558.0	[m]	SWC	
3562.0	[m]	SWC	
3571.0	[m]	DC	
3601.0	[m]	DC	

3631.0	[m]	DC	
3648.2	[m]	SWC	
3655.0	[m]	DC	
3659.2	[m]	SWC	
3661.0	[m]	DC	
3664.0	[m]	DC	
3691.0	[m]	DC	
3702.0	[m]	SWC	
3721.0	[m]	DC	
3740.0	[m]	SWC	
3751.0	[m]	DC	

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
135	NORDLAND GP
807	UTSIRA FM
1043	HORDALAND GP
1141	SKADE FM
1202	NO FORMAL NAME
1917	GRID FM
1971	NO FORMAL NAME
2205	ROGALAND GP
2205	BALDER FM
2260	SELE FM
2329	LISTA FM
2353	HEIMDAL FM
2647	LISTA FM
2740	SHETLAND GP
2740	EKOFISK FM
2778	TOR FM
3050	HOD FM
3290	BLODØKS FM
3354	SVARTE FM
3377	CROMER KNOLL GP
3398	VIKING GP
3398	DRAUPNE FM
3418	HEATHER FM
3563	VESTLAND GP

3563	HUGIN FM
3621	SLEIPNER FM
3655	NO GROUP DEFINED
3655	SKAGERRAK FM

Composite logs

Document name	Document format	Document size [MB]
38	pdf	0.78

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

Document name	Document format	Document size [MB]
38_01_WDSS_General_Information	pdf	0.17
38_02_WDSS_completion_log	pdf	0.28

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

Document name	Document format	Document size [MB]
38_01_15_6_6_Completion_Report_and_Completion_log	pdf	34.77

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	3568	3578	22.2

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0				

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0	278	835000	0.793	0.762	3003

Logs

Log type	Log top depth [m]	Log bottom depth [m]
AC CBL	2446	3630
CALIPER	160	424
CDL CNL GR	2763	3754
DIPLOG	2773	3749
DLL MLL	3500	3750
IEL BHC AC GR SP	190	3753
TEMP	195	1174
TEMP	1500	2754
TEMP	3569	3716
VSP	1800	3748

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	196.0	36	197.0	0.00	LOT
SURF.COND.	20	447.0	26	465.0	1.54	LOT
INTERM.	13 3/8	1203.0	17 1/2	1218.0	1.67	LOT
INTERM.	9 5/8	2778.0	12 1/4	2794.0	1.72	LOT
LINER	7	3686.0	8 1/2	3760.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
380	1.08	41.0		waterbased	
720	1.10	40.0		waterbased	
1360	1.12	49.0		waterbased	
2420	1.16	51.0		waterbased	
3290	1.34	48.0		waterbased	
3440	1.34	47.0		waterbased	

3610	1.36	42.0		waterbased	
3660	1.34	47.0		waterbased	

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]
38_Formation_pressure_(Formasjonstrykk)	pdf	0.23