

**General information**

Wellbore name	2/7-28
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	ELDFISK
Discovery	2/7-1 Eldfisk
Well name	2/7-28
Seismic location	EMBLA 3D INLINJE 106 OG X-LINJE 1320
Production licence	018
Drilling operator	Phillips Petroleum Company Norway
Drill permit	717-L
Drilling facility	MÆRSK GUARDIAN
Drilling days	153
Entered date	08.03.1992
Completed date	07.08.1992
Release date	07.08.1994
Publication date	03.10.2013
Purpose - planned	APPRAISAL
Reentry	NO
Content	SHOWS
Discovery wellbore	NO
Kelly bushing elevation [m]	41.2
Water depth [m]	71.0
Total depth (MD) [m RKB]	3893.0
Final vertical depth (TVD) [m RKB]	3887.5
Maximum inclination [°]	12
Bottom hole temperature [°C]	155
Oldest penetrated age	LATE PERMIAN
Oldest penetrated formation	ZECHSTEIN GP
Geodetic datum	ED50
NS degrees	56° 22' 52.16" N
EW degrees	3° 14' 19.29" E
NS UTM [m]	6248666.78
EW UTM [m]	514740.54
UTM zone	31
NPDID wellbore	1906



Wellbore history

**General**

Exploration well 2/7-28 was drilled on the Eldfisk Jurassic Prospect, on the flank of the Eldfisk Field on the western side of the Feda Graben in the North Sea. The well was positioned 1.8 kilometres west of the Eldfisk Alpha Platform. The primary objective was to prove hydrocarbons in sandstones in the Late Jurassic Eldfisk Formation. The Eldfisk Formation is interpreted as high density turbidite/debris flow deposits located on the eastern side of the major northwest-southeast trending Skrubbe Fault.

Operations and results

Well 2/7-28 was spudded with the jack-up installation Mærsk Guardian on March 8, 1992 and drilled to TD at 3893 m, 54 m into the Late Permian Zechstein Group. Drilling to the Upper Palaeocene Section proceeded without major difficulty, but the 11 3/4" liner was set higher than prognosed because of a combination of lost circulation in the Lower Palaeocene Våle Formation and instability in the Tertiary section above. A prognosed depleted chalk reservoir horizon, the flank of the Eldfisk Field, necessitated setting 9 7/8" casing at top of the Ekofisk Formation. Drilling proceeded to 3050.4 m in the Lower part of the Hod Formation, the proposed setting for the 8 3/4" casing. While under-reaming before running the linear, an under-reamer arm was lost in the hole. A successfully sidetrack hole was made below the liner. Drilling continued to 3061.1 m where the bottom hole assembly twisted off. The hole was sidetracked again and drilling continued to base of the Early Cretaceous where 7" liner was set. Further drilling to final TD went without significant difficulties. The well was drilled water based with spud mud down to 745 m, polymer mud from 745 m to 8313 m, sea water/Drispac/Soltex mud from 8313 m to 9304 m, polymer mud from 9304 m to 10008 m, and Thermadril mud from 10008 m to TD.

Poor shows were recorded in intervals between 1510 m to 1950 m in Miocene to Late Oligocene claystones. At 1617 m in top Hordaland Group the shows were stronger with local strong smell of oil. A weak show was recorded also in the Balder Formation.

The Våle Formation was encountered at 2827 m and top Ekofisk Formation at 2850 m. The Våle Formation proved to be in pressure communication with the depleted Ekofisk-Tor-Hod reservoir of the main Eldfisk Field. The reservoir was pressure depleted down to 2917 m in the Hod Formation due to production from the Eldfisk Field since 1979. Good oil shows were described throughout the chalk reservoir down to 2914 m in the Hod Formation. The shows became weaker below this depth and vanished below 3048 m.

The base Cretaceous unconformity, top Farsund Formation, was encountered at 3339 m. The section from 3414 m to 3426 m in the Farsund Formation was extremely rich in organic carbon (TOC = 10 - 22%) and with log responses that confirmed an extremely rich source rock. The target Eldfisk Formation was encountered 20 m thick with top at 3498 m. The lower part from 3509 to 3518 m had sandstone with up to 20% porosity, but it was water bearing with only poor shows. There were poor oil shows on claystone throughout the Farsund and Haugesund formations.

Two cores were cut. Core 1 was cut from 3414.4 m to 3433.3 m in the best source rock interval in the Farsund Formation. Core 2 was cut from 3514.1 m in the basal Eldfisk Formation to 3519.6 m in top Haugesund Formation. No wire line fluid samples were taken in the well.

The well was permanently abandoned on 7 August 1992 as well with shows.

Testing

No drill stem test was performed.

**Cuttings at the Norwegian Offshore Directorate**

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
551.80	3879.90

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	11202.0	11262.2	[ft]
2	11529.0	11547.0	[ft]

Total core sample length [m]	23.8
Cores available for sampling?	YES

Core photos

3414-3418m



3419-3423m



3424-3428m



3429-3432m



3515-3518m



3518-3519m

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
112	NORDLAND GP
1616	HORDALAND GP
2729	ROGALAND GP
2729	BALDER FM



2742	SELE FM
2784	LISTA FM
2827	VÅLE FM
2850	SHETLAND GP
2850	EKOFISK FM
2898	TOR FM
2902	HOD FM
3091	BLODØKS FM
3096	HIDRA FM
3176	CROMER KNOLL GP
3176	RØDBY FM
3190	SOLA FM
3263	TUXEN FM
3281	ÅSGARD FM
3339	TYNE GP
3339	FARSUND FM
3498	ELDFISK FM
3518	HAUGESUND FM
3796	SMITH BANK FM
3839	ZECHSTEIN GP

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

Document name	Document format	Document size [MB]
1906_01_WDSS_General_Information	pdf	0.66
1906_02_WDSS_completion_log	pdf	0.23

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

Document name	Document format	Document size [MB]
1906_2_7_28_Completion_log	pdf	2.37
1906_2_7_28_Drilling_report	pdf	5.35
1906_2_7_28_Final_Well_report	pdf	3.49

Logs





Log type	Log top depth [m]	Log bottom depth [m]
BGT GR	1494	2829
BHC GR	2651	2830
DLL MSFL GR	1494	2828
DLL MSFL GR	3334	3850
DLL MSFL SDT GR	3022	3339
FMS GR	2844	3038
FMS GR	3334	3839
LDL CNL GR	3022	3328
LDL CNL NGL	3334	3847
MWD - GR RES	218	1494
SDT GR	2755	3021
SDT GR	3334	3842
VSP	1524	3840
VSP	1524	3307

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	218.8	36	220.0	0.00	LOT
INTERM.	20	534.6	26	540.0	1.40	LOT
INTERM.	13 3/8	1494.8	17 1/2	1500.0	2.00	LOT
INTERM.	11 3/4	2810.3	17 1/2	2815.0	0.00	LOT
INTERM.	9 7/8	2836.2	12 1/4	2840.0	0.00	LOT
INTERM.	8 3/8	3019.2	12 1/4	3022.0	0.00	LOT
LINER	7	3331.5	8 1/2	3893.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
137	1.03			WATER BASED	
163	1.03			WATER BASED	
202	1.03			WATER BASED	
227	1.20			WATER BASED	
476	1.15	23.0		WATER BASED	
509	1.20	24.0		WATER BASED	



543	1.13	28.0		WATER BASED	
814	1.32	30.0		WATER BASED	
1003	1.87	27.0		WATER BASED	
1296	1.53	34.0		WATER BASED	
1372	2.04	20.0		WATER BASED	
1463	1.80	26.0		WATER BASED	
1501	1.56	28.0		WATER BASED	
1682	1.73	24.0		WATER BASED	
1817	1.74	39.0		WATER BASED	
2125	1.74	43.0		WATER BASED	
2349	1.74	45.0		WATER BASED	
2397	1.74	18.0		WATER BASED	
2408	1.87	35.0		WATER BASED	
2420	1.74	36.0		WATER BASED	
2469	1.73	25.0		WATER BASED	
2534	1.74	36.0		WATER BASED	
2591	1.80	23.0		WATER BASED	
2621	1.74	15.0		OIL BASED	
2721	1.74	35.0		WATER BASED	
2743	1.43	15.0		WATER BASED	
2743	1.73	23.0		WATER BASED	
2781	1.74	33.0		WATER BASED	
2800	1.74	31.0		WATER BASED	
2810	1.87	37.0		WATER BASED	
2822	1.73	18.0		WATER BASED	
2830	1.74	22.0		WATER BASED	
2834	1.67	22.0		WATER BASED	
2836	1.73	17.0		WATER BASED	
2836	1.04	23.0		WATER BASED	
2836	1.40	31.0		WATER BASED	
2836	1.58	30.0		WATER BASED	
3002	1.03	15.0		WATER BASED	
3020	1.40	16.0		WATER BASED	
3023	1.57	15.0		WATER BASED	
3034	1.56	16.0		WATER BASED	
3046	1.32	18.0		WATER BASED	
3048	2.04	22.0		WATER BASED	
3048	1.26	13.0		WATER BASED	
3050	1.40	16.0		WATER BASED	
3050	1.40	17.0		WATER BASED	



3051	1.56	15.0		WATER BASED	
3060	1.56	16.0		WATER BASED	
3061	1.57	15.0		WATER BASED	
3222	1.67	14.0		WATER BASED	
3277	1.67	12.0		WATER BASED	
3338	1.67	15.0		WATER BASED	
3513	2.02	19.0		WATER BASED	
3520	2.02	17.0		WATER BASED	
3656	2.02	21.0		WATER BASED	
3719	2.02	19.0		WATER BASED	
3719	2.02	19.0		WATER BASED	
3893	2.04	19.0		WATER BASED	