

**General information**

Wellbore name	8/10-2
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Well name	8/10-2
Seismic location	PG 5708 SP.870
Production licence	017
Drilling operator	Phillips Petroleum Company Norway
Drill permit	240-L
Drilling facility	NORTRYM
Drilling days	41
Entered date	05.02.1980
Completed date	17.03.1980
Release date	17.03.1982
Publication date	24.09.2004
Purpose - planned	WILDCAT
Reentry	NO
Content	DRY
Discovery wellbore	NO
Kelly bushing elevation [m]	25.0
Water depth [m]	66.0
Total depth (MD) [m RKB]	2997.0
Final vertical depth (TVD) [m RKB]	2997.0
Bottom hole temperature [°C]	91
Oldest penetrated age	LATE PERMIAN
Oldest penetrated formation	ZECHSTEIN GP
Geodetic datum	ED50
NS degrees	57° 8' 6.9" N
EW degrees	3° 18' 9.5" E
NS UTM [m]	6332624.27
EW UTM [m]	518318.79
UTM zone	31
NPDID wellbore	226



Wellbore history

General

Well 8/10-2 was drilled on the Sørvestlandet High about 20 km east of the Ula Field. The primary objective of the well was Jurassic sandstones expected to be 122 m thick. Secondary objective was Paleocene sandstones.

Operations and results

Wildcat well 8/10-2 was spudded with the semi-submersible installation Nortrym on 5 February 1980 and drilled to TD at 2997 m in the Late Permian Zechstein Group.

The first samples to the surface were from Miocene - Oligocene. They were badly contaminated with cement from the casing shoe at 461 m. First clean formation samples were collected at 503 m and they consisted of a soft grey brown clay with minor amounts of fine to medium grained sand and occasional fossil frogs. This gave way at 570 m to a totally argillaceous section, and soft grey-brown, slightly calcareous, claystone was found. This became the dominant lithology down to the 13 3/8" casing point at 1198 m. After casing point, cement contamination of samples occurred for about 10 m. The claystone gave way to a grey-green-brown, soft, sticky clay, which had occasional traces of carbonaceous material. Top Hordaland Group is set at 1265 m. At 1471 m a thin hard white limestone occurred with an associated drop in drilling rate from 61 m to 46 m per hour. Background gas also decreased during this interval. After 1494 m the dominant lithology became soft grey-brown clay, some sections of which were slightly calcareous. Occasional fossil fragments and pyrite nodules were also found in this section. There was a slow increase in the claystone content and by 1801 m a light grey claystone had become the dominant lithology. This claystone was moderately hard, slightly calcareous and micro micaceous; traces of dolomite and shelly fragments were also found. By 1951 m the soft clays had disappeared completely and were replaced by light grey and dark brown claystones, both soft to firm, the light grey claystone being non-calcareous and the brown claystone slightly to moderately calcareous in parts.

The appearance of the light grey claystone grading to shale between 2073 m to 2103 m was tentatively marked as the top of the Eocene. The drilling rate increased during this period from 15 m per hour to 30 m per hour. The claystone was found to grade into shale in some sections. Occasional traces of fine sand, glauconite and Dolomitic limestone were also found.

The top of the Palaeocene (Balder Formation) was found at 2158 m to 2166 m based on Electric Log data. The only visible formation change was the occurrence of minor amounts of brown to dark brown claystone, which was soft, non-calcareous and micro micaceous with a trace of disseminated pyrite. This non-calcareous brown claystone became dominant throughout the Palaeocene with minor amounts of light grey non-calcareous shale being found as well as traces of marl, pyrite and tuff.

The first Danian Chalk was encountered at 2333 m and in the Våle Formation, a rapid increase in the drilling rate occurred at this point. Top Ekofisk Formation was set at 2364.8. The Chalk was white to cream generally soft to firm but with occasional hard streaks. Also a trace of light brown to translucent very hard flint or (chert) was found.

The Maastrichtian marks the top of the Cretaceous at 2385 m (Tor Formation) and is dominantly chalk which is white, hard, occasionally very hard and microcrystalline. On reaching the Maastrichtian, the drilling rate dropped from 8 m per hour to 3 m per hour and there was also a slight decrease in background gas. Accessory minerals found during this section include Flint (Chert), pyrite and a trace of lignite, which may have been an isolated piece of driftwood subjected to partial coalification.

The Lower Cretaceous (Rødby Formation) was marked at 2513 m based on both Electric Log and Mud Log data. The decrease in Chalk content was paralleled by an



increase in brown to red clay, which was slightly calcareous and had traces of mica and sub-rounded Quartz grains. Downwards the red claystone graded through into a very calcareous red siltstone and then after 2626 m into a brown-grey Claystone, which was firm to moderately hard and only slightly calcareous.

At 2657 m the shales and claystones of the Jurassic Kimmeridgian (Flekkefjord Formation) were found and an increase in drilling rate from 8 m per hour to 14 m per hour occurred. There was also a slight increase in background gas from 0.03% (6 units) to 0.07% (14 units). The claystones/shales were described as being medium to dark grey/brown, firm to moderately hard, occasionally fissile and slightly calcareous. An increase in the gamma ray count was noted on the Electric Logs at this point. The gamma ray log showed a rapid cut back after the Kimmeridge shales at 2667.2 m and suggested a shaley sand formation but the rock cuttings collected consisted of silty clays with occasional pyrite. This marks the top of the Sandnes Formation. This silty clay sequence continued until 2702 m where the drilling rate increased from 8 m per hour to 23 m per hour and the first trace of clean sand was found. There was however no obvious change in background gas levels when the sand was penetrated. The sandstone was described as being soft to friable, light grey to white, very fine-grained, sub rounded to angular and slightly calcareous. Checks for fluorescence proved to be negative. On the Electric logs a slight drop in the SP is noted but the Gamma Ray still indicated a fairly argillaceous sequence. The hole was in gauge suggesting a fairly competent formation and FDC and Neutron curves track fairly close together possibly again suggesting a gas free shaly sand sequence. The conductivity curve rose rapidly during the sand section. Gas levels remained in the region of 0.0075 % (1.5 Units) to 0.055 % (11 Units) throughout the sand section.

Entering into the Triassic the cuttings samples showed a gradual tailing off of sand content and a parallel rise in the % of grey-brown claystones and clays. As these clays became dominant this is probably where the Jurassic/Triassic boundary occurs. Top Triassic Group is set at 2752 m. Traces of Sandstone and Sand were found in the samples down to 2804 m but these were suspected of coming from further up the hole in the Middle Jurassic. Red Clay and Claystone remained the dominant lithologies down to 2880 m to 2886 m where there was a decrease in the amount of sample arriving at the surface and an increase in the mud chloride content was noticed suggesting we had penetrated the evaporite sequence of the Triassic. The Electric Logs later confirmed this. Top of the Halite was placed at 2880 m to 2886 m on mud log data. Traces of soft white Anhydrite were found from 2896 m down to TD. There was a decrease in background gas at 2743 m from 0.009 % to 0.007 % and then a further rapid drop occurred at 2896 m in the Halite where the gas values fell almost to zero.

No conventional core was cut in the well and no fluid sample taken.

The well was permanently abandoned on 17 March as a dry well.

Testing

No drill stem test was performed

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
460.00	2980.00

Cuttings available for sampling?	NO
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**Lithostratigraphy**

Top depth [mMD RKB]	Lithostrat. unit
91	NORDLAND GP
1265	HORDALAND GP
2158	ROGALAND GP
2158	BALDER FM
2166	SELE FM
2316	LISTA FM
2348	VÅLE FM
2365	SHETLAND GP
2365	EKOFISK FM
2385	TOR FM
2471	HOD FM
2510	HIDRA FM
2513	CROMER KNOLL GP
2513	RØDBY FM
2540	SOLA FM
2599	TUXEN FM
2626	ÅSGARD FM
2657	BOKNFJORD GP
2657	FLEKKEFJORD FM
2667	VESTLAND GP
2667	SANDNES FM
2752	NO GROUP DEFINED
2752	SKAGERRAK FM
2795	SMITH BANK FM
2880	ZECHSTEIN GP

Composite logs

Document name	Document format	Document size [MB]
226	pdf	0.37

Geochemical information





Document name	Document format	Document size [MB]
226 1 source rock analysis of well 8 10 2	pdf	2.13

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

Document name	Document format	Document size [MB]
226 01 WDSS General Information	pdf	0.23
226 02 WDSS completion log	pdf	0.20

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

Document name	Document format	Document size [MB]
226 1 Completion Report & Completion log	pdf	11.81

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CDM	1223	2997
CDM AP	1220	2973
CDM AP	1220	2996
DIL BHC GR	1223	2996
FDC CNL GR	1223	2997
ISF SONIC GR	1223	2996
MLL	2286	2438
MLL	2652	2804
MPT	2286	2804
VSP	1222	2996

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	118.0	36	118.0	0.00	LOT
SURF.COND.	20	461.0	26	478.0	1.53	LOT
INTERM.	13 3/8	1198.0	17 1/2	1211.0	1.90	LOT





INTERM.	9 5/8	2997.0	12 1/4	2997.0	0.00	LOT
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Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
503	1.09	85.0		seawater	
1236	1.33	65.0		seawater	
2240	1.32	53.0		seawater	
2534	1.36	55.0		seawater	
2806	1.34	56.0		seawater	
2997	1.34	57.0		seawater	