

**General information**

Wellbore name	9/4-1
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Well name	9/4-1
Seismic location	line 5735 & SP 2462 1/2
Production licence	013
Drilling operator	Conoco Norway Inc.
Drill permit	11-L
Drilling facility	ENDEAVOUR
Drilling days	50
Entered date	31.03.1968
Completed date	19.05.1968
Release date	19.05.1970
Publication date	22.04.2005
Purpose - planned	WILDCAT
Reentry	NO
Content	SHOWS
Discovery wellbore	NO
Kelly bushing elevation [m]	29.0
Water depth [m]	68.0
Total depth (MD) [m RKB]	2963.0
Maximum inclination [°]	5.25
Bottom hole temperature [°C]	75
Oldest penetrated age	LATE PERMIAN
Oldest penetrated formation	ZECHSTEIN GP
Geodetic datum	ED50
NS degrees	57° 35' 2" N
EW degrees	4° 1' 13" E
NS UTM [m]	6382987.51
EW UTM [m]	561007.44
UTM zone	31
NPDID wellbore	150



Wellbore history

General

Well 9/4-1 is situated northeast in the Åsta Graben in the Danish-Norwegian Basin. The chosen well location allowed multiple Tertiary to Mesozoic prospects to be tested. The primary objectives of 9/4-1 were Middle Jurassic and Early Triassic (Bunter) sandstones, while basal Tertiary and Early Cretaceous sandstones and Late Cretaceous limestones were secondary objectives.

The well is Type Well for the Egersund Formation.

Operations and results

Wildcat well 9/4-1 was spudded with the jack-up installation Endeavour on 31 Marc 1968 and drilled to TD at 2963 m in Late Permian Zechstein salt. Three casing strings were set in the hole. Seawater was used as drilling fluid down to 1106 m, from where an XP-20 lignosulphonate type mud was used. When the drilling commenced after the 30" conductor pipe was set, several drilling problems arose. The circulation was lost, and the hole fell in repeatedly, so the conductor pipe had to be re-driven and cemented several times until the hole conditions allowed the 20" casing to be set. At 2963 m the drill pipe stuck in salt, and after five days of unsuccessful fishing operations, it was decided to abandon the hole. The lower part of the hole could not be logged due to the unrecovered fish.

Twenty-five net meter of Jurassic sandstone was penetrated in a sand body (Sandnes Formation) at 2288 m. The section was water wet, but fair shows were logged in the upper 5 m of the sand. The remainder had very scattered poor shows. Porosity averaged 25 percent and examination of sidewall cores indicated a clean permeable sandstone reservoir. The second primary objective, the Bunter Sandstone, was represented by an estimated 60 m of thin interbedded sands and sandstones scattered throughout a thick Triassic section composed predominantly of silty red brown to pastel claystones. Due to lack of logs the interpretation of the Triassic section is somewhat tentative. Late Cretaceous Chalk and Early Cretaceous sandstones proved non-productive due to either the absence of the predicted lithologies or the non-development of reservoir properties in the sediments present. There were no shows in the Triassic or in the secondary target sections. Organic geochemical analyses show excellent source properties in the Late Jurassic Tau Formation with 6 - 7 % TOC and hydrogen index around 250 mg HC/g TOC. Colas and shale in the underlying Vestland and Bryne Formations also show good source potentials. Vitrinite data indicate top oil window maturity already at ca 2000 m.

No conventional cores were cut. Sixty-nine out of 73 attempted sidewall cores were retrieved over the interval 2196 m to 2415 m in the Jurassic and Triassic sections. No fluid samples were taken.

The well was permanently abandoned on 19 May 1968 as a dry hole with shows.

Testing

No drill stem test was performed.

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
97	NORDLAND GP



518	HORDALAND GP
1127	ROGALAND GP
1127	BALDER FM
1154	SELE FM
1174	FISKEBANK FM
1230	LISTA FM
1269	VÅLE FM
1336	SHETLAND GP
1336	EKOFISK FM
1365	TOR FM
1690	HOD FM
1804	BLODØKS FM
1811	CROMER KNOLL GP
1811	RØDBY FM
1822	SOLA FM
1847	ÅSGARD FM
1985	BOKNFJORD GP
1985	FLEKKEFJORD FM
2047	SAUDA FM
2200	TAU FM
2251	EGERSUND FM
2288	VESTLAND GP
2288	SANDNES FM
2319	BRYNE FM
2329	NO GROUP DEFINED
2329	SKAGERRAK FM
2590	SMITH BANK FM
2939	ZECHSTEIN GP

Composite logs

Document name	Document format	Document size [MB]
150	pdf	0.24

Geochemical information





Document name	Document format	Document size [MB]
150_1	pdf	0.49
150_2	pdf	0.94
150_3	pdf	0.77

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

Document name	Document format	Document size [MB]
150_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]
150_01_Final_Geological_Report	pdf	0.80
150_02_Composite_well_log	pdf	1.55

Documents - Norwegian Offshore Directorate papers

Document name	Document format	Document size [MB]
150_01_NPD_Paper_No.24_Lithology_Well_9_4_1	pdf	13.95

Logs

Log type	Log top depth [m]	Log bottom depth [m]
BHC GR	333	1006
BHC GR	975	2416
FDC	1092	2419
GR	300	333
IES	333	1106
IES	1092	2419

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	36	144.0	48	146.0	0.00	LOT
SURF.COND.	20	334.0	26	335.0	0.00	LOT
INTERM.	13 3/8	1092.0	17 1/2	1094.0	0.00	LOT
OPEN HOLE		2963.0	12 1/4	2963.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
1106	1.02			seawater	
2252	1.23			Spersene XP	
2963	1.25			Spersene XP	