Generell informasjon

Brønnbane navn	7/9-1
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Brønn navn	7/9-1
Seismisk lokalisering	LINE N 7-3. SP.42
Utvinningstillatelse	020
Boreoperatør	Conoco Norway Inc.
Boretillatelse	54-L
Boreinnretning	MÆRSK EXPLORER
Boredager	38
Borestart	22.04.1971
Boreslutt	29.05.1971
Frigitt dato	29.05.1973
Publiseringsdato	24.09.2004
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	DRY
Funnbrønnbane	NO
Avstand, boredekk - midlere havflate [m]	31.0
Vanndybde ved midlere havflate [m]	70.0
Totalt målt dybde (MD) [m RKB]	2931.0
Maks inklinasjon [°]	5.5
Temperatur ved bunn av brønnbanen [°C]	113
Eldste penetrerte alder	LATE PERMIAN
Eldste penetrerte formasjon	ZECHSTEIN GP
Geodetisk datum	ED50
NS grader	57° 20' 37.1'' N
ØV grader	2° 51' 21.4'' E
NS UTM [m]	6355791.53
ØV UTM [m]	491329.32
UTM sone	31
NPDID for brønnbanen	191

Brønnhistorie

General

Well 7/9-1 is located on the Reke Fault Zone between the Jæren High and the Sørvestlandet High. The objective of the well was to test for hydrocarbons in Tertiary, Cretaceous, Jurassic, and Triassic reservoirs over a Zechstein salt well which showed 1300 feet of vertical closure over an area of about 65 square km at the base Tertiary level.

The well is Reference Well for the Gassum and Fjerritslev formations.

Operations and results

Wildcat well 7/9-1 was spudded with the jack-up installation Mærsk Explorer on 22 April 1970 and drilled to TD at 2931 m in Zechstein salt. The well was spudded using a high viscosity gel-seawater mud. After drilling out of the 20" casing, which stuck at 242 m, the mud was converted to a lignosulphonate-seawater. The 213 m of 26" rat hole left below the 20" casing gave considerable trouble by acting as a build up area for large balls of gumbo, which collected there as 17 1/2" hole was being made. An attempt to run electric logs at the 13 3/8" casing point failed because of the fill at 442 m. Drilling detergent was used to reduce torque and drag and was successful in the upper part of the hole. The diesel oil content of the mud was maintained between 4% and 7%. A deviation problem arose in the 8 1/2" hole, starting around 2255 m where the angle was 4.5°. It increased steadily and at 2723 m the last survey point was 5.5°. Light bit weight, high rotary speeds, and a bottom hole assembly usually successful in dropping angle had no effect.

The Tertiary Paleocene Sands were not developed over the structure. The other objectives, the Tertiary Danian calceranites, the late Cretaceous Maastrichtian chalk, and the Middle Jurassic to Triassic sandstones, were confirmed, but were water bearing. During the drilling of the Tertiary section to a depth of 1676 m shale gas from the sometimes richly organic shales maintained a high background between 0.5% and 1% methane in the mud with maximum values of 2.5% recorded between 503 m and 594 m. Below 1676 m background readings were generally below 0.1% methane to the base of the Tertiary shale section. The upper Jurassic shales between 2454 m and 2484 m also gave indications up to 0.1% methane. Apart from the shale gas recorded no shows were encountered in any of the porous sections. Organic geochemical analyses showed that the vitrinite in the well was immature to TD (%Ro only up to 0.5), while the maturity based on spore coloration indicated mature kerogen below ca 2000 m. Relatively high TOC was measured in Cretaceous "grey shales", in the Jurassic, and possibly in the Zechstein Group. However, the data appear highly affected by cavings, and from picked lithologies only the Late Jurassic Mandal Formation appeared to be a reliable source rock. It had TOC around 4% and Hydrogen Index around 250 mg HC /g rock.

Two conventional cores were cut in the well and both jammed off. The first retrieved 4.7 m chalky limestone of Danian age (Ekofisk Formation) from the interval 2209.5 m to 2216.8 m. The second core retrieved 3 m of Maastrichtian chalk (Tor Formation) from the interval 2256.4 m to 2260.4 m. No fluid sample was taken.

The well was plugged and abandoned as a dry hole on 29 May 1971.

Testing

No drill stem test was performed

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
102.10	2930.35

Borekaks tilgjengelig for prøvetaking?	NO

Borekjerner i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	7249.0	7264.5	[ft]
2	7403.0	7413.0	[ft]

Total kjerneprøve lengde [m]	7.8
Kjerner tilgjengelig for prøvetaking?	YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
101	NORDLAND GP
1088	HORDALAND GP
2079	ROGALAND GP
2079	BALDER FM
2088	SELE FM
2148	LISTA FM
2180	VÅLE FM
2207	SHETLAND GP
2207	EKOFISK FM
2254	TOR FM
2335	HOD FM
2378	CROMER KNOLL GP
2382	SOLA FM
2406	ÅSGARD FM
2453	TYNE GP
2453	MANDAL FM
2487	VESTLAND GP
2487	ULA FM
2495	BRYNE FM

2524	NO GROUP DEFINED
2524	FJERRITSLEV FM
2601	GASSUM FM
2609	NO GROUP DEFINED
2609	SKAGERRAK FM
2811	ZECHSTEIN GP

Spleisede logger

Dokument navn	Dokument format	Dokument størrelse [KB]
191	pdf	0.29

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
191_1	pdf	0.34
191_2_prelim_results_geochemical_studies_of_conoco_pelican_gulf_7_9_1_well	pdf	0.69
191_3_Preliminary_Results_of_Petroleum_Geochemical_Studies	pdf	0.36

Dokumenter - eldre Sokkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
191_01_WDSS_General_Information	pdf	0.16

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
191_1_Final_Report_Drilling_Operations	pdf	0.71
191_2_Completion_Report	pdf	3.81
191_3_Palynological_Analysis_of_the_Jurassic_8000-8400feet	pdf	0.15
191_4_Supplementary_Repor_on_the_Palynology_Interval_8400-8600	pdf	0.30

Dokumenter - Sokkeldirektoratets publikasjoner

Dokument navn	Dokument format	Dokument størrelse [KB]
191_01_NPD_Paper_No.31_Lithology__Norwegian_Danish_Basin__Well_7_9_1	pdf	33.18
191_02_NPD_Paper_No.31_Correlation_chart_1__Well_7_9_1	pdf	0.49
191_03_NPD_Paper_No.31_Correlation_chart_1_II__Well_7_9_1	pdf	0.35

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
BHC GR	91	2149
BHC SONIC	1070	2149
BHC SONIC GR	2145	2927
DIP	2144	2930
FDC GR	2327	2930
IEL SP	1070	2914
MLL	2143	2928
SWC	2209	2260
VSP	91	2930

Foringsrør og formasjonsstyrketester

Type utforing	Utforing diam. [tommer]	Utforing dybde [m]	Brønnbane diam. [tommer]	Brønnbane dyp [m]	LOT/FIT slam eqv. [g/cm3]	Type formasjonstest
CONDUCTOR	30	108.0	36	110.0	0.00	LOT
SURF.COND.	20	241.0	26	244.0	0.00	LOT
INTERM.	13 3/8	1070.0	17 1/2	1076.0	0.00	LOT
INTERM.	9 5/8	2143.0	12 1/4	2144.0	0.00	LOT
OPEN HOLE		2931.0	8 1/2	2931.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
457	1.19	42.0		seawater	

717	1.17	45.0		seawater	
1070	1.43	50.0		seawater	
1563	1.54	55.0		seawater	
2046	1.56	52.0		seawater	
2405	1.67	46.0		seawater	
2930	1.68	53.0		seawater	