



Generell informasjon

Brønnbane navn	2/4-6
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	VEST EKOFISK
Funn	2/4-6 Vest Ekofisk
Brønn navn	2/4-6
Seismisk lokalisering	
Utvinningstillatelse	018
Boreoperatør	Phillips Petroleum Company Norway
Boretillatelse	44-L
Boreinnretning	PENTAGONE 81
Boredager	105
Borestart	28.08.1970
Boreslutt	10.12.1970
Frigitt dato	10.12.1972
Publiseringsdato	16.04.2007
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	GAS/CONDENSATE
Funnbrønnbane	YES
1. nivå med hydrokarboner, alder	PALEOCENE
1. nivå med hydrokarboner, formasjon.	EKOFISK FM
2. nivå med hydrokarboner, alder	LATE CRETACEOUS
2. nivå med hydrokarboner, formasjon	TOR FM
Avstand, boredekk - midlere havflate [m]	24.0
Vanndybde ved midlere havflate [m]	69.0
Totalt målt dybde (MD) [m RKB]	3411.0
Totalt vertikalt dybde (TVD) [m RKB]	3411.0
Maks inklinasjon [°]	1.3
Temperatur ved bunn av brønnbanen [°C]	137
Eldste penetrerte alder	LATE CRETACEOUS



Eldste penetrerte formasjon	TOR FM
Geodetisk datum	ED50
NS grader	56° 34' 0.4" N
ØV grader	3° 5' 8.2" E
NS UTM [m]	6269306.18
ØV UTM [m]	505261.23
UTM sone	31
NPDID for brønnbanen	181

Brønnhistorie



General

Well 2/4-6 (named 2/4-5X by operator Phillips) was drilled on a structure ca six km west off the Ekofisk discovery. The objective of the well was to test the Danian and Late Cretaceous limestone, which had proved oil productive in the other wells drilled within the block 2/4.

Operations and results

Wildcat well 2/4-6 was spudded with the semi-submersible installation Neptune 7 on 28 August 1970 and drilled to TD at 3411 m in the Late Cretaceous Tor Formation. The well was drilled with sweater and hi-vis mud down to 585 m, with seawater/drill aid mud from 585 m to 3107 m, and with seawater lignosulphonate mud from 3107 m to TD.

The well penetrated a thick, nearly complete Tertiary succession consisting mostly of shales and claystones. A ca 50 m thick sandy sequence with gas shows was encountered at 2956 m in the uppermost Paleocene. Danian Limestone (Ekofisk Formation) was penetrated at 3110 m and Late Cretaceous limestone (Tor Formation) was encountered at 3270 m. A rich condensate and gas was tested from these formations

Five conventional cores were cut between 3120.5 and 3223.4 m in the Ekofisk Formation. No wire line fluid samples were taken.

The well was permanently abandoned on 10 December 1970 as a gas and condensate discovery

Testing

Five drill stem tests through perforations of the 7" liner were carried out. The following results are maximum flow after acidization:

DST 1 tested the zone 3370 - 3374 m in the Tor Formation. It produced only water at a rate of 13 m³/day. Bottom hole temperature (BHT) in the test was reported to be 136.7 deg C.

DST 2 tested the intervals 3271 - 3286 m and 3295 - 3310 m in the Tor Formation. This test flowed 568 Sm³ oil/day on a 1" choke. Oil gravity was 42.8 deg API and the GOR was 452 Sm³/Sm³. The BHT was reported to be 133.9 deg C.

DST 3 tested the interval 3243 - 3246 m in the lower Ekofisk Formation. It produced only water at a rate of 23 m³/day.

DST 4 tested the interval 3194 - 3216 m in the Ekofisk Formation. It flowed 609 Sm³ oil/day on a 1" choke. The oil gravity was 41.3 deg API and the GOR was 364 Sm³/Sm³. The BHT was reported to be 130 deg C.

DST 5 tested the interval 3124 - 3152 m in the Ekofisk Formation. It flowed 748 Sm³ oil/day on a 1" choke. The oil gravity was 44.6 deg API and the GOR was 539 Sm³/Sm³. The BHT was reported to be 129.4 deg C.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
1292.35	3410.71

Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	10234.0	10265.0	[ft]
2	10289.0	10319.0	[ft]
3	10319.0	10349.0	[ft]
4	10349.0	10409.0	[ft]
5	10514.0	10564.0	[ft]

Total kjerneprøve lengde [m]	61.3
Kjerner tilgjengelig for prøvetaking?	YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
93	NORDLAND GP
1768	HORDALAND GP
2958	ROGALAND GP
2958	BALDER FM
2966	SELE FM
2971	LISTA FM
3091	VÅLE FM
3110	SHETLAND GP
3110	EKOFISK FM
3270	TOR FM

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
181_1	pdf	0.07
181_2	pdf	3.65

Dokumenter - eldre Sokkeldirektoratets WDSS rapporter og andre relaterte dokumenter





Dokument navn	Dokument format	Dokument størrelse [KB]
181_01_WDSS_General_Information	pdf	0.17

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
181_01_2_4_6 (5X) Completion Report and Completion log	pdf	3.11
181_01_2_4_6(5X) Well Completion Report	pdf	3.11
181_02_2_4_6(5X) Mud Report	pdf	15.33
181_03_2_4_6 (5X) Complex Lithology Analysis	pdf	7.99
181_03_2_4_6(5X) Fluid Sample Analysis	pdf	5.66
181_03_2_4_6 (5X) Geochemical Analysis of Sidewall Core Sample	pdf	6.56
181_03_2_4_6 (5X) The Micropalaeontology and Stratigraphy	pdf	5.72
181_04_2_4_6(5X) Core Analysis Results	pdf	0.74
181_05_2_4_6(5X) DSTs	pdf	11.79

Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsventil størrelse [mm]
1.0	3370	3375	25.4
2.0	3271	3310	25.4
3.0	3243	3246	25.4
4.0	3195	3216	25.4
5.0	3125	3152	25.4

Test nummer	Endelig avstengningstrykk [MPa]	Endelig strømningstrykk [MPa]	Bunnhullstrykk [MPa]	Borehullstemperatur [°C]
1.0				136
2.0				
3.0				
4.0				130





5.0	48.000	45.000	45.000	129
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Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstygnde rel. luft	GOR [m3/m3]
1.0					
2.0	568	256736	0.812		452
3.0					
4.0	609	221676	0.819		364
5.0	747	402539	0.804		539

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
BHC GR	579	3387
CBL	1524	3389
DLL	3102	3389
FDC	3102	3389
GR	91	579
GR	3095	3391
HDT	3101	3389
IES	579	3390
ML MLL	3102	3390
SNP	3103	3390
VELOCITY	579	3387

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	130.0	36	130.0	0.00	LOT
SURF.COND.	20	578.0	26	580.0	0.00	LOT
INTERM.	13 3/8	1599.0	17 1/2	1600.0	0.00	LOT
INTERM.	9 5/8	3099.0	12 1/4	3100.0	0.00	LOT
LINER	7	3396.0	8 1/2	3396.0	0.00	LOT

Boreslam



Dybde MD [m]	Egenvekt, slam [g/cm ³]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
130	0.99			seawater	
585	1.71			seawa/aid	
1014	1.71			seawa/aid	
1682	1.71			seawa/aid	
3107	1.73			seawa/aid	
3266	1.72			seawa/aid	