



Generell informasjon

Brønnbane navn	2/4-2
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	EKOFISK
Funn	2/4-2 Ekofisk
Brønn navn	2/4-2
Seismisk lokalisering	LINE PG-0312 SP: 698.
Utvinningstillatelse	018
Boreoperatør	Phillips Petroleum Company Norway
Boretillatelse	34-L
Boreinnretning	OCEAN VIKING
Boredager	98
Borestart	18.09.1969
Boreslutt	24.12.1969
Frigitt dato	24.12.1971
Publiseringsdato	18.01.2007
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	OIL
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]	27.0
Vanndybde ved midlere havflate [m]	70.0
Totalt målt dybde (MD) [m RKB]	3305.0
Maks inklinasjon [°]	6.75
Temperatur ved bunn av brønnbanen [°C]	133
Eldste penetrerte alder	LATE CRETACEOUS
Eldste penetrerte formasjon	TOR FM
Geodetisk datum	ED50



NS grader	56° 32' 8.65" N
ØV grader	3° 11' 54.57" E
NS UTM [m]	6265865.23
ØV UTM [m]	512208.29
UTM sone	31
NPDID for brønnbanen	172

Brønnhistorie

General

Wildcat well 2/4-2 (originally termed 2/4-1AX by the License) was drilled by Phillips as a replacement for well 2/4-1, which was junked at 1662 m in Miocene sediments due to an oil kick and severe circulation problems. The objective was to test the hydrocarbon potential of the Tertiary and top Cretaceous.

Operations and results

Wildcat well 2/4-2 was spudded with the semi-submersible installation Ocean Viking on 18 September 1969 and drilled to TD at 3305 m in the Late Cretaceous Tor Formation. No significant problems occurred in the operations. The well was drilled with seawater and hi-vis pills down to 619 m, and with lignosulphonate mud from 619 m to TD.

The well discovered oil in Danian and Late Cretaceous chalk (Ekofisk and Tor Formations). The oil was found in two reservoirs separated by a hard, grey and tight lime mudstone in the base of the Ekofisk Formation. The upper, Ekofisk Formation reservoir was encountered at 3033 m and continued down to the tight lime mudstone at 3183 m. The lower, Tor Formation reservoir extended from 3203 m to 3257 m. Comparison between DST oil from the Ekofisk Formation in well 2/4-2 and the Miocene "kick-oil" encountered in well 2/4-1 showed that the 2/4-1 Miocene oil is a heavier oil with a higher asphaltene content and lower paraffin content than the 2/4-2 oil.

Eight conventional cores were cut with a total of 48.5 m recovered. Core 1 was cut in Early Miocene from 1664 to 1679.4 m, while cores 2 - 8 were cut in the Ekofisk and Tor Formations in the interval 3051 m to 3280 m. No wire line fluid samples were taken

The well was suspended on 24 December 1969 as the Ekofisk Discovery well, the first economic petroleum discovery on the Norwegian Continental Shelf.

Testing

One successful drill stem tests (DST 4) was conducted in open hole in the interval 3159 to 3195.5 m at the base of the Ekofisk Formation. It flowed 5.9 MMCFD (167069 Sm³) gas and 1071 BPD (170 Sm³) oil on a 34/64" choke. The GOR was reported as 5500 cu.ft./STB (980 Sm³/Sm³). The oil had an API gravity of 37.2 deg. The reservoir temperature was reported to be 265 deg F (129.4 deg C).

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
838.20	3304.03



Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
2	10010.0	10017.0	[ft]
3	10496.0	10510.0	[ft]
4	10515.0	10528.0	[ft]
5	10565.0	10573.0	[ft]
6	10605.0	10621.5	[ft]
7	10653.0	10657.0	[ft]
8	10713.0	10755.0	[ft]

Total kjerneprøve lengde [m]	31.9
Kjerner tilgjengelig for prøvetaking?	YES

Palynologiske preparater i Sokkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
5980.0	[ft]	DC	
6220.0	[ft]	DC	
6250.0	[ft]	DC	
6280.0	[ft]	DC	
6300.0	[ft]	DC	
6330.0	[ft]	DC	
6410.0	[ft]	DC	
6440.0	[ft]	DC	
6480.0	[ft]	DC	
6580.0	[ft]	DC	
6630.0	[ft]	DC	
6690.0	[ft]	DC	
6750.0	[ft]	DC	
6810.0	[ft]	DC	
6870.0	[ft]	DC	
6900.0	[ft]	DC	
6930.0	[ft]	DC	
6960.0	[ft]	DC	
7020.0	[ft]	DC	



7100.0 [ft]	DC	
7160.0 [ft]	DC	
7210.0 [ft]	DC	
7260.0 [ft]	DC	
7330.0 [ft]	DC	
7420.0 [ft]	DC	
7480.0 [ft]	DC	
7540.0 [ft]	DC	
7600.0 [ft]	DC	
7690.0 [ft]	DC	
7750.0 [ft]	DC	
7820.0 [ft]	DC	
7880.0 [ft]	DC	
7940.0 [ft]	DC	
8000.0 [ft]	DC	
8090.0 [ft]	DC	
8150.0 [ft]	DC	
8210.0 [ft]	DC	
8270.0 [ft]	DC	
8330.0 [ft]	DC	
8390.0 [ft]	DC	
8450.0 [ft]	DC	
8510.0 [ft]	DC	
8570.0 [ft]	DC	
8620.0 [ft]	DC	
8680.0 [ft]	DC	
8750.0 [ft]	DC	
8810.0 [ft]	DC	
8840.0 [ft]	DC	
8900.0 [ft]	DC	
8960.0 [ft]	DC	
9020.0 [ft]	DC	
9080.0 [ft]	DC	
9120.0 [ft]	DC	
9180.0 [ft]	DC	
9240.0 [ft]	DC	
9330.0 [ft]	DC	
9390.0 [ft]	DC	
9450.0 [ft]	DC	
9500.0 [ft]	DC	



9560.0	[ft]	DC	
9650.0	[ft]	DC	
9710.0	[ft]	DC	
9770.0	[ft]	DC	
9840.0	[ft]	DC	
9890.0	[ft]	DC	
9940.0	[ft]	DC	
9980.0	[ft]	DC	
10020.0	[ft]	DC	
10060.0	[ft]	DC	
10100.0	[ft]	DC	
10140.0	[ft]	DC	
10180.0	[ft]	DC	
10221.0	[ft]	C	
10230.0	[ft]	DC	
10240.0	[ft]	DC	
10260.0	[ft]	DC	
10350.0	[ft]	DC	
10365.0	[ft]	DC	
10410.0	[ft]	DC	
10430.0	[ft]	DC	
10470.0	[ft]	DC	
10485.0	[ft]	DC	
10505.0	[ft]	DC	
10520.0	[ft]	DC	
10550.0	[ft]	DC	
10600.0	[ft]	DC	
10620.0	[ft]	DC	
10640.0	[ft]	DC	
10675.0	[ft]	C	
10720.0	[ft]	DC	
10800.0	[ft]	DC	
10840.0	[ft]	DC	
10860.0	[ft]	DC	
10876.0	[ft]	C	
10926.0	[ft]	C	
11000.0	[ft]	DC	
11045.0	[ft]	DC	
11100.0	[ft]	DC	
11150.0	[ft]	DC	



11200.0	[ft]	DC	
11240.0	[ft]	DC	
11250.0	[ft]	DC	

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
98	NORDLAND GP
1682	HORDALAND GP
2904	ROGALAND GP
2904	BALDER FM
2911	SELE FM
2970	LISTA FM
3017	VÅLE FM
3050	SHETLAND GP
3050	EKOFISK FM
3203	TOR FM

Spleisede logger

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

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
172_1	pdf	0.34
172_2	pdf	1.28

Dokumenter - eldre Sjøkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
172_01_WDSS_General_Information	pdf	0.19





Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
172_01_2_4_2_Completion_Report_and_Completion_log_2	pdf	11.04
172_02_2_4_2_Well_Recompletion_Report	pdf	3.43
172_2_4_2_Additional_Core_Description_Sheets	pdf	11.08
172_2_4_2_Completion_report	pdf	6.02
172_2_4_2_Drilling_Fluid_Summary	pdf	3.29
172_2_4_2_Drilling_Mud_Reports	pdf	0.17
172_2_4_2_Individual_Well_Completion_Report	pdf	43.44
172_2_4_2_Individual_well_Record	pdf	30.92
172_2_4_2_Lithological_and_Sedimentological_Eval	pdf	2.55
172_2_4_2_Petrography_of_Selected_Samples	pdf	25.72
172_2_4_2_Quantitative_Log_Analysis_1	pdf	8.81
172_2_4_2_Quantitative_Log_Analysis_2	pdf	5.15
172_2_4_2_The_Micropalaeontology_and_Stratigraphy	pdf	4.25
172_2_4_2_Well_Log_Study	pdf	7.28

Dokumenter - Sokkeldirektoratets publikasjoner

Dokument navn	Dokument format	Dokument størrelse [KB]
172_01_NPD_Paper_No.25_Lithology_Well_2_4_2	pdf	18.62
172_02_NPD_Paper_No.25_Lithologic_Correlation_chart_Well_2_4_2	pdf	1.95
172_03_NPD_Paper_No.25_Paleocene_Maastrichtian_Correlation_chart_Well_2_4_2	pdf	1.18

Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsventil størrelse [mm]
1.0	3160	3196	25.4
2.0	3160	3196	0.0
3.0	3160	3196	0.0





4.0	3148	3160	25.4
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Test nummer	Endelig avstengningstrykk [MPa]	Endelig strømningsstrykk [MPa]	Bunnhullstrykk [MPa]	Borehullstemperatur [°C]
1.0				
2.0				
3.0				
4.0				

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstygde rel. luft	GOR [m3/m3]
1.0	1089				
2.0					
3.0					
4.0	170	167067	0.839		

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
AC GR CAL	580	3302
CBL	2295	3154
DIP	2365	3155
FDC	2865	3304
IEL	580	3305
LL	2865	3304
MLL	2865	3304
NEU POR	2865	3304
TEMP	40	3305

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	132.0	36	133.0	0.00	LOT
SURF.COND.	20	581.0	26	581.0	0.00	LOT
INTERM.	13 3/8	1607.0	17 1/2	1607.0	0.00	LOT
INTERM.	9 5/8	2366.0	12 1/4	2366.0	0.00	LOT



LINER	7	3159.0	8 1/2	3159.0	0.00	LOT
LINER	5	3305.0	6	3305.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
619	1.15	85.0		spud-mud	
655	1.55	45.0		spud-mud	
1150	1.64	50.0		spud-mud	
1616	1.67	50.0		water-based	
2377	1.71	50.0		water-based	
3039	1.61	45.0		water-based	
3265	1.66	45.0		water-based	
3305	1.67	47.0		water-based	

Tynnslip i Sokkeldirektoratet

Dybde	Enhet
10679.00	[ft]
10685.00	[ft]
10759.00	[ft]