



Generell informasjon

Brønnbane navn	30/10-5
Type	EXPLORATION
Formål	APPRAISAL
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	FRIGG
Funn	25/1-1 Frigg
Brønn navn	30/10-5
Seismisk lokalisering	LINE S 72 SP.2010
Utvinningstillatelse	030
Boreoperatør	Esso Exploration and Production Norway A/S
Boretillatelse	118-L
Boreinnretning	NEPTUNE 7
Boredager	250
Borestart	25.08.1974
Boreslutt	01.05.1975
Frigitt dato	01.05.1977
Publiseringsdato	24.09.2004
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	OIL/GAS
Funnbrønnbane	NO
1. nivå med hydrokarboner, alder	EOCENE
1. nivå med hydrokarboner, formasjon.	FRIGG FM
Avstand, boredekk - midlere havflate [m]	24.0
Vanndybde ved midlere havflate [m]	106.0
Totalt målt dybde (MD) [m RKB]	5186.0
Totalt vertikalt dybde (TVD) [m RKB]	5186.0
Temperatur ved bunn av brønnbanen [°C]	160
Eldste penetrerte alder	LATE TRIASSIC
Eldste penetrerte formasjon	HEGRE GP
Geodetisk datum	ED50
NS grader	60° 0' 25.88" N



ØV grader	2° 4' 7.17" E
NS UTM [m]	6652732.96
ØV UTM [m]	448061.74
UTM sone	31
NPDID for brønnbanen	395

Brønnhistorie

**General**

Well 30/10-5 was drilled on the northern tip of the Frigg Field. Its main purpose was to explore a deep-seated closure at Middle Jurassic level. This structure was targeted already in the 30/10-1 and 30/10-4 wells, but it was not reached because well 30/10-1 was terminated in the Late Cretaceous due to high-pressure problems and well 30/10-4 became junked in the Miocene due to an unrecoverable fish.

Operations and results

Exploration well 30/10-5 was spudded with the semi-submersible steel installation Neptune 7 on 25 August 1974 and drilled to TD at 5185 m in the Late Triassic Hegre Group. Reaming of the 12 1/4" hole to 17 1/2" for setting the 13 3/8" casing was delayed due to several twist-offs, junk in hole, pod trouble and weather. After setting the 13 3/8" casing drilling was resumed. At 2943 m, lost circulation was encountered, however; after setting a cement plug, drilling was continued without difficulties. Drilling from the sea floor to 747 m was with seawater and gel. Below 747 m a fresh-water Spersene XP 20 (lignosulphonate) mud system was used.

The Oligocene section consisted entirely of siltstone and clay. The Eocene, section contained a sandstone reservoir (Frigg Formation, first informally termed "Frigg Clastic Tongue") from 1964 m to 2150 m. Good gas shows were present from 1965 m to 1974 m and good oil shows from 1974 m to 1978 m. Below 1978 m the section was water wet. The Rogaland Group contained 159 m of potential sandstone reservoirs but no shows were encountered. The Danian consisted of silty limestone and dark grey shale. The Late Cretaceous consisted primarily of interbeds of tight micritic limestone, marl and shale. Numerous gas shows were noted in limestone stringers in the uppermost part of this section. The limestone section between 2917 m and 2943 m was sandy and contained some gas. A second zone between 3628 m and 3534 m also contained some gas. Log analysis indicated that this zone had an average porosity of 17.8 percent and water saturation of 58.3 percent. The Early Cretaceous was primarily a shale. The Middle Jurassic Brent Group had sands present from 4583 m to 4654 m, 4692 m to 4761 m, and 4793 m to 4806 m. The porosity ranged from 19 to 22 per cent. The Early Jurassic consisted of shale and sandstone stringers. The Triassic consisted of shale and thin limestone stringers. The only oil shows encountered in 30/10-5 were in the Eocene Frigg Formation and the Middle Jurassic Brent Group. The latter had a slight fluorescence and cut in the upper 9 m.

The well had an extensive sidewall-coring programme, recovering 232 sidewall cores in 12 runs from 874 m to 5176 m. One conventional core was cut from 4590.0 m to 4599.1 m in Brent sand with coaly layers. No fluid samples were taken on wire line. The well was permanently abandoned on 1 May 1975 as an oil and gas appraisal of the Frigg Discovery.

Testing

One drill stem test was made. The 9 5/8 inch casing was perforated from 3638 m to 3644 m in the Late Cretaceous. With the packer set at 3635 m the tool was open for 3 minutes, and then closed for 30 minutes for initial build up, then open for 3 hours. During the 3 hours the well flowed 3 1/4 barrels, insufficient for identification of reservoir fluid. Upon completion of flowing the well was shut in for 6 hours and 10 minutes for final pressure build up. A maximum reservoir pressure could not be determined, but the results indicated high pressure and low permeability. Two pressurized bottom hole samples were taken during the test. Both turned out to contain mud and gas, and one of them also contained some water.



Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
770.00	5185.00

Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	15059.0	15089.0	[ft]

Total kjerneprøve lengde [m]	9.1
Kjerner tilgjengelig for prøvetaking?	YES

Palynologiske preparater i Sokkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
780.0	[m]	DC	
810.0	[m]	DC	
840.0	[m]	DC	
890.0	[m]	DC	
925.0	[m]	DC	
960.0	[m]	DC	
990.0	[m]	DC	
1020.0	[m]	DC	
1050.0	[m]	DC	
1080.0	[m]	DC	
1110.0	[m]	DC	
1140.0	[m]	DC	
1170.0	[m]	DC	
1200.0	[m]	DC	
1230.0	[m]	DC	
1260.0	[m]	DC	
1290.0	[m]	DC	
1320.0	[m]	DC	
1350.0	[m]	DC	
1380.0	[m]	DC	
1410.0	[m]	DC	
1440.0	[m]	DC	



Faktasider

Brønnbane / Leting

Utskriftstidspunkt: 30.5.2024 - 12:48

1470.0 [m]	DC	
1510.0 [m]	DC	
1540.0 [m]	DC	
1570.0 [m]	DC	
1600.0 [m]	DC	
1630.0 [m]	DC	
1660.0 [m]	DC	
1690.0 [m]	DC	
1720.0 [m]	DC	
1750.0 [m]	DC	
1780.0 [m]	DC	
1810.0 [m]	DC	
1840.0 [m]	DC	
1870.0 [m]	DC	
1900.0 [m]	DC	
1930.0 [m]	DC	
1960.0 [m]	DC	
1990.0 [m]	DC	
2020.0 [m]	DC	
2050.0 [m]	DC	
2080.0 [m]	DC	
2110.0 [m]	DC	
2140.0 [m]	DC	
2170.0 [m]	DC	
2200.0 [m]	DC	
2230.0 [m]	DC	
2260.0 [m]	DC	
2295.0 [m]	DC	
2325.0 [m]	DC	
2355.0 [m]	DC	
2385.0 [m]	DC	
2415.0 [m]	DC	
2445.0 [m]	DC	
2475.0 [m]	DC	
2505.0 [m]	DC	
2535.0 [m]	DC	
2565.0 [m]	DC	
2595.0 [m]	DC	
2625.0 [m]	DC	
2655.0 [m]	DC	



Faktasider

Brønnbane / Leting

Utskriftstidspunkt: 30.5.2024 - 12:48

2685.0	[m]	DC	
2715.0	[m]	DC	
2722.0	[m]	SWC	
2754.0	[m]	SWC	
2770.0	[m]	SWC	
2835.0	[m]	SWC	
2895.0	[m]	SWC	
2914.0	[m]	SWC	
2955.0	[m]	SWC	
2980.0	[m]	SWC	
3020.0	[m]	SWC	
3050.0	[m]	SWC	
3070.0	[m]	SWC	
3127.0	[m]	SWC	
3206.0	[m]	SWC	
3249.0	[m]	SWC	
3276.0	[m]	SWC	
3324.0	[m]	SWC	
3376.0	[m]	SWC	
3426.0	[m]	SWC	
3469.0	[m]	SWC	
3500.0	[m]	DC	
3518.0	[m]	SWC	
3574.0	[m]	SWC	
3629.0	[m]	SWC	
3640.0	[m]	SWC	
3727.0	[m]	SWC	
3750.0	[m]	DC	
3785.0	[m]	DC	
3800.0	[m]	DC	
3800.0	[m]	DC	
3810.0	[m]	DC	
3822.0	[m]	DC	
3842.0	[m]	DC	
3860.0	[m]	DC	
3885.0	[m]	DC	
3940.0	[m]	DC	
3965.0	[m]	DC	
3995.0	[m]	DC	
4035.0	[m]	DC	



4070.0	[m]	DC	
4100.0	[m]	DC	
4128.0	[m]	DC	
4152.0	[m]	DC	
4176.0	[m]	DC	

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
129	NORDLAND GP
453	UTSIRA FM
658	HORDALAND GP
658	SKADE FM
743	NO FORMAL NAME
1965	FRIGG FM
2075	ROGALAND GP
2075	BALDER FM
2100	INTRA BALDER FM SS
2150	BALDER FM
2182	SELE FM
2214	HERMOD FM
2262	SELE FM
2310	HERMOD FM
2371	SELE FM
2447	LISTA FM
2625	VÅLE FM
2641	SHETLAND GP
2641	EKOFISK FM
2683	JORSALFARE FM
2829	KYRRE FM
3630	TRYGGVASON FM
3782	BLODØKS FM
3805	SVARTE FM
3972	CROMER KNOLL GP
3972	RØDBY FM
4046	SOLA FM
4121	ÅSGARD FM
4162	VIKING GP
4162	DRAUPNE FM



4187	HEATHER FM
4583	BRENT GP
4860	DUNLIN GP
4860	DRAKE FM
4967	COOK FM
5010	AMUNDSEN FM
5049	STATFJORD GP
5127	HEGRE GP

Spleisede logger

Dokument navn	Dokument format	Dokument størrelse [KB]
395	pdf	0.60

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
395 1 Northern North Sea basin An organic geochemical source rock study	pdf	13.06
395 2 Geochemical study of the Mesozoic series in well 30 10 5	pdf	0.89
395 3 Organic matter diagenesis in 30 10 5	pdf	0.12
395 4	pdf	0.24
395 5	pdf	0.24

Dokumenter - eldre Sjøkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
395 01 WDSS General Information	pdf	0.26

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
395 1 Completion Report	pdf	2.64





395 2 Completion log	pdf	2.89
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Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsven til størrelse [mm]
1.0	3638	3644	0.0

Test nummer	Endelig avstengningstrykk [MPa]	Endelig strømningstrykk [MPa]	Bunnhullstrykk [MPa]	Borehullstemperatur [°C]
1.0				

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstyngde rel. luft	GOR [m3/m3]
1.0					

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
BHC S GR-C	731	5181
CBL	3658	3599
CNL	731	5181
DIP	731	3797
DIP	5056	5182
IES	731	5916
TEMP	2487	3074
TEMP	3639	4338
VELOCITY	735	5181

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	162.0	36	162.0	0.00	LOT
SURF.COND.	20	732.0	26	758.0	0.00	LOT
INTERM.	13 3/8	2699.0	17 1/2	2712.0	0.00	LOT





INTERM.	9 5/8	3779.0	12 1/4	3802.0	0.00	LOT
LINER	7	5186.0	8 1/2	5186.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
222	1.07		22.0	seawater	
733	1.07		26.0	seawater	
1226	1.20		14.0	seawater	
1729	1.24	75.0	18.0	water	
2072	1.23	45.0	10.0	water	
2697	1.24	43.0	12.0	water	
3112	1.65	47.0	16.0	water	
4399	1.97	45.0	13.0	water	
4636	2.04	50.0	14.0	water	
5184	2.07	65.0	26.0	water	