



Generell informasjon

Brønnbane navn	15/5-5
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	GLITNE
Funn	15/5-5 Glitne
Brønn navn	15/5-5
Seismisk lokalisering	NH 9302 ROW 1376 - COL. 1777
Utvinningstillatelse	048
Boreoperatør	Norsk Hydro Produksjon AS
Boretillatelse	820-L
Boreinnretning	TREASURE SAGA
Boredager	36
Borestart	31.08.1995
Boreslutt	05.10.1995
Frigitt dato	05.10.1997
Publiseringsdato	19.12.2007
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	OIL
Funnbrønnbane	YES
1. nivå med hydrokarboner, alder	PALEOCENE
1. nivå med hydrokarboner, formasjon.	HEIMDAL FM
Avstand, boredekk - midlere havflate [m]	26.0
Vanndybde ved midlere havflate [m]	109.0
Totalt målt dybde (MD) [m RKB]	2645.0
Totalt vertikalt dybde (TVD) [m RKB]	2636.0
Maks inklinasjon [°]	3.9
Temperatur ved bunn av brønnbanen [°C]	90
Eldste penetrerte alder	PALEOCENE
Eldste penetrerte formasjon	EKOFISK FM
Geodetisk datum	ED50
NS grader	58° 43' 3.4" N



ØV grader	1° 38' 39.41" E
NS UTM [m]	6509552.03
ØV UTM [m]	421473.46
UTM sone	31
NPDID for brønnbanen	2635

Brønnhistorie

General

Well 15/5-5 is located in the Northern North Sea, ca 15 km north of the Sleipner Field. The primary objective of the well was to prove commercial volumes of oil in a prospect in the Late Paleocene Heimdal Formation. The well location was chosen so as to test the prospect in a position with as little up dip reserves as possible.

Operations and results

Wildcat well 15/5-5 was spudded with the semi-submersible installation Treasure Saga on 31 August 1995 and drilled to TD at 2645 m in the Early Paleocene Ekofisk Formation. Boulders were experienced in the interval 155 -170 m MD and some time was spent to correct the inclination. Otherwise operations went without problems and the well was completed well within schedule. The well was drilled with spud mud down to 1000 m and with KCl/polymer mud from 1000 m to TD.

The well penetrated water bearing Grid Formation sands from 1479 m to 1807 m. The Heimdal Formation was encountered at 2154 m with 27.4 m of net pay hydrocarbon-bearing reservoir sand down to the OWC at 2187m. The average porosity was calculated to 30.6 % and the average horizontal core permeability was 1.9 Darcy. The OWC was based on formation pressure measurements (MDT) and logs. The average oil saturation over the interval was estimated to 67.4 %. The MDT data indicated a Free Water Level at 2189.2 m. Oil shows and low saturation of migrated hydrocarbons were observed in selected intervals below the OWC down to 2191 m. The Heimdal Formation from top to 2191 was the only interval in the well that had reported oil shows. An 82 m thick water bearing sandstones of the Ty Formation was encountered at 2501 m.

The interval 2157 - 2200 m was cored in 3 cores using equipment especially developed for soft sediment coring. The original core depths are 4 m shallow relative to wire line log curves. The cores covered most of the oil zone and extended into the water leg. MDT fluid samples were taken at 2157.5 m (mud filtrate and oil), 2177 m (oil), 2186.5 m (oil), and at 2193.5 m (water).

The well was permanently abandoned on 5 October 1995 as an oil discovery.

Testing

One production test was conducted in the Heimdal Formation over the perforated interval 2154 - 2183.5 m. The test produced 575 Sm³ oil and 36000 Sm³ gas /day through a 60/64" choke. The GOR was 63 Sm³/Sm³, the oil density was 0.864 g/cm³, and the gas gravity was 0.868 (air = 1). The gas contained maximum 0.3% CO₂ and no H₂S. Maximum bottom hole temperature in the test was 79.7 deg C.

Borekaks i Sokkeldirektoratet



Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
1010.00	2645.00

Borekaks tilgjengelig for prøvetaking?	YES
--	-----

Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	2157.0	2175.5	[m]
2	2175.5	2177.9	[m]
3	2181.5	2198.2	[m]

Total kjerneprøve lengde [m]	37.6
Kjerner tilgjengelig for prøvetaking?	YES

Kjernebilder



2157-2162m



2162-2167m



2167-2172m



2172-2175m



2175-2177m



2181-2186m



2186-2191m



2191-2196m



2196-2198m

Palynologiske preparater i Sokkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
1010.0	[m]	DC	RRI
1020.0	[m]	DC	RRI
1032.0	[m]	SWC	RRI
1050.0	[m]	DC	RRI



1070.0 [m]	DC	RRI
1080.0 [m]	DC	RRI
1100.0 [m]	DC	RRI
1110.0 [m]	DC	RRI
1130.0 [m]	DC	RRI
1140.0 [m]	DC	RRI
1158.0 [m]	SWC	RRI
1170.0 [m]	DC	RRI
1190.0 [m]	DC	RRI
1200.0 [m]	DC	RRI
1220.0 [m]	DC	RRI
1230.0 [m]	DC	RRI
1250.0 [m]	DC	RRI
1266.0 [m]	SWC	RRI
1280.0 [m]	DC	RRI
1300.0 [m]	DC	RRI
1310.0 [m]	DC	RRI
1330.0 [m]	DC	RRI
1340.0 [m]	DC	RRI
1360.0 [m]	DC	RRI
1370.0 [m]	DC	RRI
1390.0 [m]	DC	RRI
1415.0 [m]	DC	RRI
1430.0 [m]	DC	RRI
1442.0 [m]	SWC	RRI
1460.0 [m]	DC	RRI
1470.0 [m]	DC	RRI
1485.0 [m]	DC	RRI
1505.0 [m]	DC	RRI
1520.0 [m]	DC	RRI
1535.0 [m]	DC	RRI
1555.0 [m]	DC	RRI
1572.0 [m]	SWC	RRI
1585.0 [m]	DC	RRI
1595.0 [m]	DC	RRI
1620.0 [m]	DC	RRI
1630.0 [m]	DC	RRI
1650.0 [m]	DC	RRI
1660.0 [m]	DC	RRI
1680.0 [m]	DC	RRI



1690.0	[m]	DC	RRI
1710.0	[m]	DC	RRI
1720.0	[m]	DC	RRI
1740.0	[m]	DC	RRI
1750.0	[m]	DC	RRI
1770.0	[m]	DC	RRI
1780.0	[m]	DC	RRI
1800.0	[m]	DC	RRI
1810.0	[m]	DC	RRI
1830.0	[m]	DC	RRI
1840.0	[m]	DC	RRI
1860.0	[m]	DC	RRI
1870.0	[m]	SWC	RRI
1890.0	[m]	DC	RRI
1900.0	[m]	DC	RRI
1920.0	[m]	DC	RRI
1930.0	[m]	DC	RRI
1950.0	[m]	DC	RRI
1960.0	[m]	DC	RRI
1980.0	[m]	DC	RRI
1997.0	[m]	SWC	RRI
2010.0	[m]	DC	RRI
2022.0	[m]	SWC	RRI
2027.0	[m]	SWC	RRI
2040.0	[m]	DC	RRI
2050.0	[m]	DC	RRI
2056.0	[m]	SWC	RRI
2079.0	[m]	SWC	RRI
2083.0	[m]	SWC	RRI
2090.0	[m]	DC	RRI
2100.0	[m]	DC	RRI
2107.0	[m]	SWC	RRI
2110.0	[m]	DC	RRI
2118.0	[m]	SWC	RRI
2120.0	[m]	DC	RRI
2124.0	[m]	SWC	RRI
2130.0	[m]	DC	RRI
2133.0	[m]	SWC	RRI
2140.0	[m]	SWC	RRI
2148.0	[m]	SWC	RRI



2150.0	[m]	DC	RRI
2162.0	[m]	C	RRI
2163.0	[m]	C	RRI
2176.0	[m]	C	RRI
2182.0	[m]	C	RRI
2184.0	[m]	C	RRI
2186.0	[m]	C	RRI
2187.0	[m]	C	RRI
2188.0	[m]	C	RRI
2191.0	[m]	C	RRI
2193.0	[m]	C	RRI
2195.0	[m]	C	RRI
2198.0	[m]	C	RRI
2200.0	[m]	DC	RRI
2210.0	[m]	DC	RRI
2212.0	[m]	SWC	RRI
2220.0	[m]	DC	RRI
2234.0	[m]	SWC	RRI
2240.0	[m]	SWC	RRI
2245.0	[m]	DC	RRI
2255.0	[m]	DC	RRI
2260.0	[m]	DC	RRI
2262.0	[m]	SWC	RRI
2270.0	[m]	DC	RRI
2280.0	[m]	DC	RRI
2290.0	[m]	DC	RRI
2300.0	[m]	DC	RRI
2303.0	[m]	SWC	RRI
2310.0	[m]	DC	RRI
2320.0	[m]	DC	RRI
2330.0	[m]	DC	RRI
2341.0	[m]	SWC	RRI
2370.0	[m]	DC	RRI
2380.0	[m]	DC	RRI
2390.0	[m]	DC	RRI
2400.0	[m]	DC	RRI
2410.0	[m]	DC	RRI
2420.0	[m]	DC	RRI
2450.0	[m]	DC	RRI
2460.0	[m]	DC	RRI



2470.0	[m]	DC	RRI
2480.0	[m]	DC	RRI
2488.0	[m]	SWC	RRI
2500.0	[m]	DC	RRI
2510.0	[m]	DC	RRI
2520.0	[m]	DC	RRI
2530.0	[m]	DC	RRI
2550.0	[m]	DC	RRI
2560.0	[m]	DC	RRI
2570.0	[m]	DC	RRI
2580.0	[m]	DC	RRI
2590.0	[m]	DC	RRI
2610.0	[m]	DC	RRI
2620.0	[m]	DC	RRI
2630.0	[m]	DC	RRI
2640.0	[m]	DC	RRI

Oljeprøver i Sokkeldirektoratet

Test type	Flaske nummer	Topp dyp MD [m]	Bunn dyp MD [m]	Væske type	Test tidspunkt	Prøver tilgjengelig
DST	TEST1	2183.50	2154.00		25.09.1995 - 09:25	YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
137	NORDLAND GP
718	UTSIRA FM
864	UNDIFFERENTIATED
893	HORDALAND GP
1479	GRID FM
1807	NO FORMAL NAME
2027	ROGALAND GP
2027	BALDER FM
2076	SELE FM
2127	LISTA FM
2154	HEIMDAL FM



2458	LISTA FM
2491	VÅLE FM
2501	TY FM
2583	VÅLE FM
2598	SHETLAND GP
2598	EKOFISK FM

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
2635_1	pdf	0.65
2635_2	pdf	0.27
2635_3	pdf	2.33

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
2635_15_5_5_COMPLETION_REPORT	pdf	19.06

Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsven til størrelse [mm]
1.0	2154	2183	23.8

Test nummer	Endelig avstengningstrykk [MPa]	Endelig strømningsstrykk [MPa]	Bunnhullstrykk [MPa]	Borehullstemperatur [°C]
1.0			18.000	79

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstyngde rel. luft	GOR [m3/m3]
1.0	575	36000	0.864	0.868	63





Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
CST GR	1032	2588
DLL MSFL DSI LDL CNL GR SP AMS	989	2636
FMS GR AMS	1700	2620
MDT GR AMS	2155	2305
MRIL GR	2130	2225
MWD DPR	136	2642
USIT CBL VDL GR AMS	1755	2225
VSP	400	2610

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	210.0	36	210.0	0.00	LOT
SURF.COND.	13 3/8	990.0	17 1/2	1000.0	0.00	LOT
INTERM.	9 5/8	1545.0	12 1/4	1549.0	0.00	LOT
LINER	7	2593.0	8 1/2	2645.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
210	1.08			WATER BASED	
826	1.05			WATER BASED	
1166	1.25	21.0		WATER BASED	
2157	1.25	24.0		WATER BASED	
2218	1.20	13.0		WATER BASED	
2593	1.20	14.0		WATER BASED	
2645	1.25	24.0		WATER BASED	

Trykkplott

Porertrykksdataene kommer fra logging i brønnen hvis ingen annen kilde er oppgitt. I noen brønner der trykk ikke er logget, er det brukt informasjon fra formasjonstester eller brønnspark. Trykkdataene er rapportert inn til Oljedirektoratet og videre prosessert og kvalitetssikret av IHS Markit.





Dokument navn	Dokument format	Dokument størrelse [KB]
2635 Formation pressure (Formasjonstrykk)	pdf	0.22

