



Generell informasjon

Brønnbane navn	25/4-1
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	HEIMDAL
Funn	25/4-1 Heimdal
Brønn navn	25/4-1
Seismisk lokalisering	LINE 681 203.
Utvinningstillatelse	036
Boreoperatør	Elf Petroleum Norge AS
Boretillatelse	69-L
Boreinnretning	NEPTUNE 7
Boredager	162
Borestart	01.07.1972
Boreslutt	09.12.1972
Frigitt dato	09.12.1974
Publiseringsdato	15.02.2006
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	OIL/GAS
Funnbrønnbane	YES
1. nivå med hydrokarboner, alder	PALEOCENE
1. nivå med hydrokarboner, formasjon.	HEIMDAL FM
2. nivå med hydrokarboner, alder	MIDDLE JURASSIC
2. nivå med hydrokarboner, formasjon	VESTLAND GP
3. nivå med hydrokarboner, alder	EARLY JURASSIC
3. nivå med hydrokarboner, formasjon	STATFJORD GP
Avstand, boredekk - midlere havflate [m]	23.0
Vanndybde ved midlere havflate [m]	122.0
Totalt målt dybde (MD) [m RKB]	4060.0
Maks inklinasjon [°]	5
Temperatur ved bunn av brønnbanen [°C]	130



Eldste penetrerte alder	TRIASSIC
Eldste penetrerte formasjon	SMITH BANK FM
Geodetisk datum	ED50
NS grader	59° 34' 27.3" N
ØV grader	2° 13' 22.6" E
NS UTM [m]	6604408.11
ØV UTM [m]	456100.43
UTM sone	31
NPDID for brønnbanen	359

Brønnhistorie

**General**

Well 25/4-1 is the discovery well on the Heimdal Field. The primary objective was Paleocene sand development (which was confirmed by the well), while Jurassic sands were regarded as a secondary objective. Planned depth was 3500 m.

The well is Type Well for the Heimdal Formation.

Operations and results

Wildcat well 25/4-1 was spudded with the semi-submersible installation Neptune 7 on 1 July 1972 and drilled to TD at 4060 m in the Triassic Smith Bank Formation. From 2600 m to 3580 m the well built some angle (maximum 5 deg), resulting in a 3 m deviation between measured and true vertical depth at 3580 m. In addition, logger's depth is 6 m deeper than driller's depth from seabed to 3525 m. Below 3525 m driller's depth is equal to logger's depth. This history quotes logger's depth if not otherwise stated. While drilling at 3178 m the well started to flow and a lost circulation situation followed. The situation was adequately dealt with. The well was drilled water based all through.

The well penetrated a 356 m thick Heimdal Formation from 2067 m to 2423 m. The reservoir was composed of more or less unconsolidated sands with interbedded shales and carbonates. The formation was gas filled down to a gas/oil contact at 2173 and contained oil in a thin zone down to a shale at 2177 m. The OWC could not be seen in the well. The upper Cenomanian rested unconformably on a 14 m thick Oxfordian/Callovia Draupne Formation sequence, which in turn rested unconformably on the Middle Jurassic Vestland Group at 3185 m. Several permeable reservoirs were penetrated from 3185 m to 3512.5 m (3179 m to 3506.5 m drillers depth) in the Middle Jurassic to Late Triassic. Four of these were hydrocarbon bearing, with separate fluid contacts. Oil was found from 3185 m to an OWC at 3195 m in the Hugin and Sleipner formations. The Statfjord Formation held gas from 3292.5 m to a GOC at 3297 m with oil from 3297 m to an OWC at 3303.5 m. In addition, a thin gas zone was found further down in the Statfjord Formation, from 3508 m to 3512.5 m. No contact was seen here. Finally the Late Triassic Smith Bank Formation had gas in a thin zone from 3532 m down to a GWC at 3533.5 m.

An extensive coring programme was carried out with 18 cores and a total of 254 m core recovered. Cores were cut in the Balder Formation (core 1), Heimdal Formation (cores 2, 3, and 4), Tryggvason Formation (core 5), and the Sleipner and Statfjord formations (cores 6 to 18).

Four drill stem tests were conducted. DST 1/Statfjord flowed from the interval 3307 m to 3321 m (3301 m to 3315 m drillers depth) in the Statfjord Formation and produced only 50 Sm³ water. The DST temperature was 112 °C. DST 2 in Sleipner produced only water and filtrate without any hydrocarbons. DST 3 flowed from the interval 3185 m to 3190 m (3179 m to 3184 m drillers depth) near top Sleipner Formation and produced 190000 Sm³ gas, 74 Sm³ oil and 384 Sm³ water pr day through a 1" choke. The DST temperature was 104 °C. DST 4 (called DST 1/Heimdal in well reports) flowed from the interval 2115 m to 2128 m in the Heimdal Formation and produced 952000 Sm³ gas and 85 Sm³ condensate pr day through a 1" choke. The temperature in this test, measured at 2099 m, was 71 °C.

choke. DST 1/Statfjord flowed from the interval 3307 m to 3321 m (3301 m to 3315 m drillers depth) in the Statfjord Formation and produced only 50 Sm³ water.



Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
450.00	4060.00

Borekaks tilgjengelig for prøvetaking?	NO
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	1936.0	1944.0	[m]
2	2078.0	2095.3	[m]
3	2096.0	2114.0	[m]
4	2409.4	2413.5	[m]
5	3088.0	3092.5	[m]
6	3188.0	3195.0	[m]
7	3195.0	3204.0	[m]
8	3204.0	3222.4	[m]
9	3222.4	3234.8	[m]
10	3288.0	3306.0	[m]
11	3306.0	3316.0	[m]
12	3316.0	3333.9	[m]
13	3334.0	3352.0	[m]
14	3370.0	3388.0	[m]
15	3388.0	3406.0	[m]
16	3407.3	3418.0	[m]
17	3418.0	3436.0	[m]
18	3436.0	3454.2	[m]

Total kjerneprøve lengde [m]	245.5
Kjerner tilgjengelig for prøvetaking?	YES

Palynologiske preparater i Sokkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
1610.0	[m]	DC	OD
1620.0	[m]	DC	OD
1640.0	[m]	DC	OD
1660.0	[m]	DC	OD



Faktasider

Brønnbane / Leting

Utskriftstidspunkt: 13.5.2024 - 20:32

1680.0 [m]	DC	OD
1690.0 [m]	DC	OD
1720.0 [m]	DC	OD
1740.0 [m]	DC	OD
1760.0 [m]	DC	OD
1780.0 [m]	DC	OD
1800.0 [m]	DC	OD
1820.0 [m]	DC	OD
1840.0 [m]	DC	OD
1860.0 [m]	DC	OD
1880.0 [m]	DC	OD
1900.0 [m]	DC	OD
1920.0 [m]	DC	OD
1945.0 [m]	DC	OD
1960.0 [m]	DC	OD
1980.0 [m]	DC	OD
2000.0 [m]	DC	OD
2020.0 [m]	DC	OD
2040.0 [m]	DC	OD
2060.0 [m]	DC	OD
2075.0 [m]	DC	OD
2088.0 [m]	DC	OD
2115.0 [m]	DC	OD
2120.0 [m]	DC	OD
2140.0 [m]	DC	OD
2160.0 [m]	DC	OD
2180.0 [m]	DC	OD
2200.0 [m]	DC	OD
2220.0 [m]	DC	OD
2245.0 [m]	DC	OD
2260.0 [m]	DC	OD
2280.0 [m]	DC	OD
2300.0 [m]	DC	OD
2320.0 [m]	DC	OD
2340.0 [m]	DC	OD
2360.0 [m]	DC	OD
2380.0 [m]	DC	OD
2400.0 [m]	DC	OD
2420.0 [m]	DC	OD
2440.0 [m]	DC	OD



2460.0	[m]	DC	OD
2480.0	[m]	DC	OD
2500.0	[m]	DC	OD
2515.0	[m]	DC	OD
2540.0	[m]	DC	OD
2560.0	[m]	DC	OD
2570.0	[m]	DC	OD
2600.0	[m]	DC	OD
3705.0	[m]	DC	
3725.0	[m]	DC	
3745.0	[m]	DC	
3765.0	[m]	DC	
3785.0	[m]	DC	
3805.0	[m]	DC	
3825.0	[m]	DC	
3845.0	[m]	DC	
3865.0	[m]	DC	
3885.0	[m]	DC	
3905.0	[m]	DC	
3925.0	[m]	DC	
3945.0	[m]	DC	
3965.0	[m]	DC	
3985.0	[m]	DC	
4005.0	[m]	DC	
4025.0	[m]	DC	
4035.0	[m]	DC	
4055.0	[m]	DC	

Oljeprøver i Sökkeldirektoratet

Test type	Flaske nummer	Topp dyp MD [m]	Bunn dyp MD [m]	Væske type	Test tidspunkt	Prøver tilgjengelig
DST		0.00	0.00	WATER		YES

Litostratigrafi



Topp Dyb [mMD RKB]	Litostrat. enhet
145	NORDLAND GP
381	UTSIRA FM
423	NO FORMAL NAME
826	HORDALAND GP
1000	SKADE FM
1080	NO FORMAL NAME
1317	GRID FM
1330	NO FORMAL NAME
1926	ROGALAND GP
1926	BALDER FM
1972	SELE FM
2027	LISTA FM
2067	HEIMDAL FM
2423	LISTA FM
2570	VÅLE FM
2620	SHETLAND GP
2620	JORSALFARE FM
2721	KYRRE FM
3062	TRYGGVASON FM
3154	BLODØKS FM
3171	VIKING GP
3171	DRAUPNE FM
3185	VESTLAND GP
3185	HUGIN FM
3190	SLEIPNER FM
3292	STATFJORD GP
3513	NO GROUP DEFINED
3513	SMITH BANK FM

Spleisede logger

Dokument navn	Dokument format	Dokument størrelse [KB]
359	pdf	0.51

Geokjemisk informasjon





Dokument navn	Dokument format	Dokument størrelse [KB]
359_1	pdf	0.07
359_2	pdf	1.14
359_3	pdf	1.58

Dokumenter - eldre Sokkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
359_01_WDSS_General_Information	pdf	0.40

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
359_01_25_4_1_Geological_report	pdf	20.98
359_02_25_4_1_Completion_log	pdf	1.89

Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsven til størrelse [mm]
1.0	3300	3314	0.0
2.0	3208	3213	0.0
3.0	3179	3184	25.4

Test nummer	Endelig avstengningstrykk [MPa]	Endelig strømningstrykk [MPa]	Bunnhullstrykk [MPa]	Borehullstemperatur [°C]
1.0				
2.0				
3.0		29.000		

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstyngde rel. luft	GOR [m3/m3]
1.0					
2.0					





3.0	74	180000		0.797	2432
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Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
CBL	1850	2946
CNT FDC	2946	3527
FDC CNT GR	1922	2626
GR	120	1915
GR CBL CCL	2877	3523
GR SL	1922	2626
GR SL	2946	3173
GR SL	3150	3423
GR SL	3150	3525
GR SL	3525	4055
HDT	1922	2626
HDT	2946	3485
IES	441	1915
IES	1922	2626
IES	2590	2950
IES	2946	3173
IES	2946	3528
IES	3150	3423
IES	3525	4061
LL9	1922	2626
LL9	2946	3520
ML MLL	1922	2626
ML MLL	2946	3530
ML MLL	3526	4060
SL	441	1915
SL GR	2590	2950

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	181.0	36	182.0	0.00	LOT
SURF.COND.	20	442.0	26	450.0	0.00	LOT
INTERM.	13 3/8	1917.0	17 1/2	1920.0	0.00	LOT



INTERM.	9 5/8	2942.0	12 1/4	2950.0	0.00	LOT
LINER	7	3524.0	8 1/2	3524.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
170	1.05			seawater	
450	1.15			seawater	
1800	1.25	50.0		seawater	
2800	1.25	50.0		seawater	
3500	2.10			seawater	

Tynnslip i Sokkeldirektoratet

Dybde	Enhet
2104.00	[m]
2412.00	[m]
3222.00	[m]
3229.00	[m]
3229.00	[m]
3230.00	[m]
3295.00	[m]
3224.00	[m]
3296.00	[m]
3380.00	[m]
3298.00	[m]
3298.00	[m]
3324.00	[m]

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]
359 Formation pressure (Formasjonstrykk)	pdf	0.23

