



Generell informasjon

Brønnbane navn	24/9-5
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	VOLUND
Funn	24/9-5 Volund
Brønn navn	24/9-5
Seismisk lokalisering	FI 89 3D INLINE 1070 & CROSSLINE 2792
Utvinningstillatelse	150
Boreoperatør	Fina Production Licenses AS
Boretillatelse	778-L
Boreinnretning	WEST DELTA
Boredager	51
Borestart	07.12.1993
Boreslutt	26.01.1994
Frigitt dato	26.01.1996
Publiseringsdato	15.02.2006
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	OIL
Funnbrønnbane	YES
1. nivå med hydrokarboner, alder	EOCENE
1. nivå med hydrokarboner, formasjon.	INTRA BALDER FM SS
Avstand, boredekk - midlere havflate [m]	29.0
Vanndybde ved midlere havflate [m]	122.0
Totalt målt dybde (MD) [m RKB]	2860.0
Maks inklinasjon [°]	5.9
Temperatur ved bunn av brønnbanen [°C]	88
Eldste penetrerte alder	LATE CRETACEOUS
Eldste penetrerte formasjon	JORSALFARE FM
Geodetisk datum	ED50
NS grader	59° 29' 6.52" N
ØV grader	1° 55' 10.82" E



NS UTM [m]	6594725.25
ØV UTM [m]	438806.71
UTM sone	31
NPDID for brønnbanen	2244

Brønnhistorie



General

Wildcat well 24/9-5 was drilled in a location SW of the Heimdal field, ca 5 km from the UK border. It was programmed to test two primary sandstone prospects in the Late Paleocene. The lower objective was the Hermod Formation and the upper objective was sandstones within the Balder Formation. The Hermod Formation prospect was a mapped isochron thick with a small area of structural closure at Top Sele Formation. The Balder Formation prospect was mapped as an isochron thick with an associated seismic amplitude anomaly and was primarily regarded as a stratigraphic trap.

Operations and results

Wildcat well 24/9-5 was spudded with the semi-submersible installation West Delta on 7 December 1993 and drilled to TD at 2860 m in the Late Cretaceous Jorsalfare Formation. No significant problem was reported from the operations. The well was drilled with seawater down to 581 m, with KCl/PAC/PHPA from 581 m to 1941 m, and with KCl/PAC/PHPA/glycol from 1941 m to TD.

The Balder Formation was encountered at 1964 m. A gross oil bearing Intra Balder Formation sandstone interval of 7.1 m was encountered at 2011 m. Net sandstone was 6.3 m of which 5.9 m was in a single massive unit. Petrophysical analysis gave porosities of 35 - 40% in the massive sandstone unit with an average SW of 22.2%. Base of the reservoir was encountered at 2018 m, which was found to be an oil-down-to water contact. Samples from the FMT tool indicated the reservoir fluid to consist of 32-34 deg API oil with a GOR of 91 Sm³/Sm³. Pressure gradient analysis gave a free water level at 2031.5 m (2028.0 m TVD). Geochemical analysis of the oil sample indicated minor biodegradation had taken place. The Sele Formation was encountered at 2031 m with 47 m net sandstone in two Hermod Formation sequences. The upper sequence was encountered at 2049 m and the lower at 2098 m. These sandstones proved to be water bearing with no shows. A thin sandstone at 2045.5 - 2047 m, just above the upper Hermod interval, gave the highest known water below the Balder Formation pay interval. An additional zone of interest was encountered in the interval 1775-1790 m where a number of siltstone/argillaceous sandstone stringers were identified. Minor gas shows were observed and rare traces of sandstone gave poor (residual?) oil shows. Log analysis showed the presence of hydrocarbons in thin argillaceous stringers particularly over the interval 1785-1787.5 m where neutron density logs (acquired through casing) indicated the presence of gas (Average SW = 40%).

Four conventional cores were cut. Three were cut in the Late Palaeocene Balder Formation with 7 m Intra Balder Formation sandstone. The fourth was cut in the Hermod Formation Sandstone within the Sele Formation. Three FMT samples were taken in the well, one at 2013.5 m (oil) and two at 2017.5 m (mud filtrate)

Although the hydrocarbon-bearing interval in the Balder Formation was as prognosis it was recognised that the well was not in an optimum location and it was decided to drill an immediate appraisal well. Well 24/9-5 was therefore not tested.

The well was permanently abandoned on 26 January 1994 as an oil discovery.

Testing

No drill stem test was performed in the well.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
590.00	2860.00



Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	2000.0	2001.8	[m]
2	2002.5	2019.9	[m]
3	2020.3	2033.1	[m]
4	2048.3	2052.8	[m]

Total kjerneprøve lengde [m]	36.5
Kjerner tilgjengelig for prøvetaking?	YES

Kjernebilder



2000-2002m



2002-2007m



2007-2012m



2012-2017m



2017-2020m



2020-2025m



2025-2030m



2030-2033m



2048-2052m

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
151	NORDLAND GP
360	UTSIRA FM
550	HORDALAND GP
555	SKADE FM
695	NO FORMAL NAME



1203	GRID FM
1255	NO FORMAL NAME
1294	GRID FM
1309	NO FORMAL NAME
1964	ROGALAND GP
1964	BALDER FM
2011	INTRA BALDER FM SS
2018	BALDER FM
2031	SELE FM
2049	HERMOD FM
2082	SELE FM
2098	HERMOD FM
2112	SELE FM
2116	LISTA FM
2161	HEIMDAL FM
2624	LISTA FM
2728	TY FM
2828	SHETLAND GP
2828	JORSALFARE FM

Spleisede logger

Dokument navn	Dokument format	Dokument størrelse [KB]
2244	pdf	0.36

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
2244_1	pdf	1.88

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
2244_24_9_5_COMPLETION_REPORT_AND_LOG	pdf	17.34





Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
ACBL	129	574
ACBL	450	1344
BRIDGEPLUG BST CCL	1700	1806
CBL VDL GR	1010	1932
CDL CN GR CAL	1750	2858
DIFL ACL SP GR CAL	129	1362
DIFL ACL SP GR CAL	1344	1881
DIFL ACL SP GR CAL	1932	2859
DLL MLL SL CAL SP	1930	2350
FMT VPC GR	2011	2320
FMT VPC GR	2012	2012
FMT VPC GR	2012	2111
FMT VPC GR	2017	2017
HDIP GR	1932	2350
MWD LWD - GR DPR	159	2834
SWC PFC	1950	2657
VSP	500	2850

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	235.0	36	240.0	0.00	LOT
SURF.COND.	20	576.0	26	581.0	0.00	LOT
INTERM.	13 3/8	1346.0	17 1/2	1377.0	0.00	LOT
INTERM.	9 5/8	1935.0	12 1/2	1941.0	0.00	LOT
OPEN HOLE		2860.0	8 1/2	2860.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
240	1.20	15.0		WATER BASED	
580	1.25	100.0		WATER BASED	



1124	1.17	18.0		WATER BASED	
1377	1.25	23.0		WATER BASED	
1377	1.22	20.0		WATER BASED	
2203	1.25	23.0		DUMMY	
2860	1.25	21.0		DUMMY	

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]
2244_Formalion_pressure_(Formasjonstrykk)	pdf	0.21

