



Generell informasjon

Brønnbane navn	34/4-1
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	SNORRE
Funn	34/4-1 Snorre
Brønn navn	34/4-1
Seismisk lokalisering	
Utvinningstillatelse	057
Boreoperatør	Saga Petroleum ASA
Boretillatelse	217-L
Boreinnretning	BYFORD DOLPHIN
Boredager	159
Borestart	11.07.1979
Boreslutt	16.12.1979
Frigitt dato	16.12.1981
Publiseringsdato	26.05.2009
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	OIL
Funnbrønnbane	YES
1. nivå med hydrokarboner, alder	LATE TRIASSIC
1. nivå med hydrokarboner, formasjon.	LUNDE FM
Avstand, boredekk - midlere havflate [m]	25.0
Vanndybde ved midlere havflate [m]	377.0
Totalt målt dybde (MD) [m RKB]	2916.0
Totalt vertikalt dybde (TVD) [m RKB]	2912.0
Maks inklinasjon [°]	8.8
Temperatur ved bunn av brønnbanen [°C]	103
Eldste penetrerte alder	MIDDLE TRIASSIC
Eldste penetrerte formasjon	TEIST FM (INFORMAL)
Geodetisk datum	ED50
NS grader	61° 32' 49.23" N



ØV grader	2° 16' 23.66" E
NS UTM [m]	6824096.50
ØV UTM [m]	461368.88
UTM sone	31
NPDID for brønnbanen	422

Brønnhistorie



General

Wildcat well 34/4-1 was drilled on the rotated fault block systems on the Tampen Spur area of the Northern North Sea. The objective of the well was to test the stratigraphic sequence below the Base Cretaceous Unconformity. The primary target was the Intra Triassic "Carnian Sandstone", which was known from two wells in block 33/12 where it constitutes more than 100 m silty, argillaceous, partly calcareous cemented sandstone. The secondary targets were possible reworked Late Jurassic sandstones immediately below the Unconformity, and by possible sands associated with stratigraphically undefined seismic reflectors between Base Cretaceous and Carnian level.

Operations and results

Well 34/4-1 was spudded with the semi-submersible installation Byford Dolphin on 11 July 1979. The well was first drilled to 2961 m. When pulling out of hole to change bit it got stuck. The bit could not be worked free and the drill string was eventually backed off and left in the hole. A sidetrack was made from 2484 m and drilled to final TD at 2916 m in the Triassic Teist Formation. The well was drilled with seawater and viscosity slugs down to 844 m, with Drispac/Unical/gypsum mud from 844 m to 1988 m, and with Drispac/Unical mud from 1988 m to TD, including sidetrack.

The well penetrated Tertiary, Cretaceous and Triassic rocks with a hiatus ranging from Late Triassic to Early Cretaceous

Secondary target for the well was reworked Late Jurassic sediments immediately below Base Cretaceous. Such deposits were not established. The Triassic sandstones (Lunde Formation) were encountered at 2508 m and contained oil over a column of more than 100 m. No definite OWC was seen, but it could be estimated to be at 2618 m. Numerous shows on sandstone stringers were observed in the Cretaceous from ca 2025 m (top Kyrre Formation) and down to top of the Triassic reservoir. No shows were observed below 2622 m.

Eleven cores were cut in the Lunde Formation. Cores 1 and 2 were cut in the primary well bore, and the first of these was a mis-run. The remaining nine cores were cut in the side track. Two RFT segregated fluid samples were taken. The first, at 2541 m, recovered oil, gas and mud filtrate. The second, at 2639.5 m, recovered formation water and mud filtrate.

The well was permanently abandoned on 16 December 1979 as an oil discovery.

Testing

Two drill stem tests were performed in the Lunde Formation.

DST 1 tested the interval 2608 - 2613 m. It produced a total of 1.65 m³ salt water at a rate of approximately 11 m³ /day (79 bbls/day). The BHT in the test was 94.4 deg C

DST 2 tested the interval 2510 - 2536 m. The average rate in the final flow in this test was 238 m³/day of oil through a 1/4" choke. Average GOR was 120 m³/m³, oil Gravity was 0.82 g/cm³ (41.7 deg API) and the gas gravity was 0.712 (air = 1). The BHT in the test was 90.6 deg C.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
530.00	2910.00



Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
2	2509.2	2510.5	[m]
3	2516.0	2531.8	[m]
4	2531.8	2539.9	[m]
5	2541.4	2544.1	[m]
6	2557.0	2563.5	[m]
7	2570.8	2589.8	[m]
8	2589.8	2608.9	[m]
9	2608.8	2614.7	[m]
10	2615.3	2617.3	[m]
11	2665.0	2674.6	[m]

Total kjerneprøve lengde [m]	90.0
Kjerner tilgjengelig for prøvetaking?	YES

Kjernebilder



2509-2510m



2516-2518m



2518-2521m



2521-2524m



2524-2526m



2526-2529m



2529-2531m



2531-2534m



2534-2537m



2537-2539m



2541-2544m



2557-2559m



2559-2562m



2562-2563m



2570-2573m



2573-2576m



2576-2578m



2578-2581m



2581-2584m



2584-2587m



2587-2589m



2589-2592m



2592-2595m



2595-2597m



2597-2600m



2600-2603m



2603-2606m



2606-2608m



2608-2609m



2608-2611m



2611-2614m



2614-2614m



2615-2617m



2665-2667m



2670-2673m



2673-2674m



2667-2670m



Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
402	NORDLAND GP
1190	UTSIRA FM
1211	HORDALAND GP
1685	ROGALAND GP
1685	BALDER FM
1715	LISTA FM
1788	SHETLAND GP
1788	JORSALFARE FM
2025	KYRRE FM
2490	CROMER KNOLL GP
2490	RØDBY FM
2494	MIME FM
2508	HEGRE GP
2508	LUNDE FM
2834	LOMVI FM
2894	TEIST FM

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
422_1	pdf	0.15
422_2	pdf	0.38
422_3	pdf	1.26

Dokumenter - eldre Sokkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
422_01 WDSS General Information	pdf	0.13
422_02 WDSS completion log	pdf	0.18

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)





Dokument navn	Dokument format	Dokument størrelse [KB]
422 00 34 4 1 Completion Log	pdf	1.60
422 00 34 4 1 Completion Report	pdf	3.05

Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsven til størrelse [mm]
1.0	2608	2613	0.0
2.0	2510	2536	6.3

Test nummer	Endelig avstengningstrykk [MPa]	Endelig strømningstrykk [MPa]	Bunnhullstrykk [MPa]	Borehullstemperatur [°C]
1.0				
2.0	38.100	35.000		94

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstygde rel. luft	GOR [m3/m3]
1.0					
2.0	238	28560	0.820	0.712	120

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
CBL	403	1975
CBL	1950	2499
CST	2480	2521
CST	2677	2915
DLL	2499	2911
FDC CNL GR	2390	2915
HDT	1976	2899
ISF SONIC GR	521	2515
ISF SONIC MSFL SP GR CAL	2499	2914
MSFL	2400	2518
NGT	2499	2915
RFT	2512	2516





RFT	2541	2640
VELOCITY	524	2914

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	521.0	36	521.0	0.00	LOT
SURF.COND.	20	830.0	26	845.0	1.68	LOT
INTERM.	13 3/8	1975.0	17 1/2	1991.0	1.94	LOT
INTERM.	9 5/8	2499.0	12 1/4	2515.0	1.84	LOT
LINER	7	2703.0	8 1/2	2916.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	flytegrense [Pa]	Type slam	Dato, måling
860	1.15	42.0		waterbased	
1275	1.27	40.0		waterbased	
1810	1.48	49.0		waterbased	
2080	1.77	46.0		waterbased	
2370	1.78	50.0		waterbased	
2565	1.77	52.0		waterbased	
2900	1.77	59.0		waterbased	

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]
422 Formation pressure (Formasjonstrykk)	pdf	0.21

