



Generell informasjon

Brønnbane navn	33/9-13 S
Type	EXPLORATION
Formål	APPRAISAL
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	STATFJORD NORD
Funn	33/9-8 Statfjord Nord
Brønn navn	33/9-13
Seismisk lokalisering	E 86-543 & CMP 946
Utvinningstillatelse	037
Boreoperatør	Den norske stats oljeselskap a.s
Boretillatelse	565-L
Boreinnretning	ROSS ISLE
Boredager	72
Borestart	14.10.1987
Boreslutt	24.12.1987
Frigitt dato	24.12.1989
Publiseringsdato	10.04.2015
Opprinnelig formål	APPRAISAL
Gjenåpnet	NO
Innhold	OIL
Funnbrønnbane	NO
1. nivå med hydrokarboner, alder	MIDDLE JURASSIC
1. nivå med hydrokarboner, formasjon.	BRENT GP
Avstand, boredekk - midlere havflate [m]	22.0
Vanndybde ved midlere havflate [m]	291.0
Totalt målt dybde (MD) [m RKB]	3077.0
Totalt vertikalt dybde (TVD) [m RKB]	3001.0
Maks inklinasjon [°]	34.3
Temperatur ved bunn av brønnbanen [°C]	102
Eldste penetrerte alder	EARLY JURASSIC
Eldste penetrerte formasjon	STATFJORD GP
Geodetisk datum	ED50
NS grader	61° 27' 4.45" N



ØV grader	1° 58' 3" E
NS UTM [m]	6813648.01
ØV UTM [m]	444949.13
UTM sone	31
NPDID for brønnbanen	1028

Brønnhistorie

General

Well 33/9-13 S was drilled on the Statfjord Nord Field on the Tampen Spur area in the North Sea. The primary objective was to prove oil in the Brent Group to the northeast of the 33/9-8 discovery well. Secondary objective was to test the Statfjord Group in a position up-dip of the 33/9-8 location.

Operations and results

Well 33/9-13 S was spudded with the semi-submersible installation Ross Isle on 14 October 1987 and drilled to TD at 3077 m in the Early Jurassic Statfjord Group. The well location was moved ca 300 m to the south-southwest to avoid a potential shallow gas zone at 381 m. The well was deviated back to the original target position with maximum deviation 34.3° at 1739 m. Shallow gas was encountered at 399.5 m, 399.9m, 404.5 m, and 547 m. No significant problem was encountered in the operations. The well was drilled with seawater and hi-vis bentonite down to 398 m, with gypsum/polymer mud from 398 m to 2378 m, and with lignosulphonate/bentonite mud from 2378 m to TD.

The Brent Group, Rannoch Formation was encountered at 2726 m and was completely oil filled down-to 2795 m (2720 m TVD) with shows on claystones and siltstones down to top Dunlin Group. The Statfjord Group was encountered at 3003 m and was water filled. Shows were described only within the Brent Group.

Four cores were cut in the Brent and uppermost Dunlin Groups within the interval 2732 - 2828.3 m. No fluid samples were taken on wire line.

The well was permanently abandoned on 24 December 1987 as an oil appraisal well.

Testing

Two Drill Stem Tests were conducted

DST 1.1 tested the interval 2778 to 2787 m (2703 to 2712 TVD). The test produced 122 Sm³ oil and 6960 Sm³ gas /day through a 9.53 mm choke. The GOR was 57 Sm³/Sm³, the oil density was 0.850 g/cm³, and the gas gravity was 0.890 (air = 1). The DST reservoir temperature was 93.1 °C.

DST 1.2 tested the interval 2758 to 2775.2 m + 2778 to 2787 m (2683 to 2700.2 m + 2703 to 2712 TVD). The test produced 642 Sm³ oil and 33139 Sm³ gas /day through a 9.53 mm choke. The GOR was 51.6 Sm³/Sm³, the oil density was 0.838 g/cm³, and the gas gravity was 0.830 (air = 1). The DST reservoir temperature was 93.1 °C.

DST 2 tested the interval 2727 to 2740.7 m (2652 to 2665.7 m TVD). The test produced 815 Sm³ oil and 41640 Sm³ gas /day through a 9.53 mm choke. The GOR was 51 Sm³/Sm³, the oil density was 0.839 g/cm³, and the gas gravity was 0.805 (air = 1). The DST reservoir temperature was 93.0 °C.



Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
410.00	3075.00

Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	2732.0	2754.3	[m]
2	2756.0	2783.4	[m]
3	2783.4	2799.9	[m]
4	2801.0	2828.3	[m]

Total kjerneprøve lengde [m]	93.5
Kjerner tilgjengelig for prøvetaking?	YES

Kjernebilder



2732-2736m



2736-2740m



2740-2743m



2744-2748m



2748-2752m



2752-2754m



2756-2760m



2760-2764m



2764-2768m



2768-2772m





2772-2776m 2776-2780m 2780-2783m 2787-2791m 2791-2795m



2795-2799m



2799-2800m



2801-2805m



2805-2809m



2809-2813m



2813-2817m



2817-2821m



2821-2825m



2825-2828m



2783-2787m

Palynologiske preparater i Sakkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
2649.0	[m]	DC	OD
2670.0	[m]	DC	OD
2691.0	[m]	DC	OD
2697.0	[m]	DC	OD
2703.0	[m]	DC	OD
2706.0	[m]	DC	OD
2709.0	[m]	DC	OD
2712.0	[m]	DC	OD
2715.0	[m]	DC	OD
2718.0	[m]	DC	OD
2724.0	[m]	DC	OD
2730.0	[m]	DC	OD
2732.5	[m]	C	OD
2733.2	[m]	C	OD
2734.2	[m]	C	OD
2734.6	[m]	C	OD
2735.6	[m]	C	OD
2735.8	[m]	C	OD
2736.0	[m]	DC	OD
2737.5	[m]	C	OD
2747.4	[m]	C	OD



2748.9	[m]	C	OD
2749.6	[m]	C	OD
2753.9	[m]	C	OD
2759.1	[m]	C	OD
2763.2	[m]	C	OD
2766.6	[m]	C	OD
2767.3	[m]	C	OD
2767.3	[m]	C	OD
2772.5	[m]	C	OD
2775.5	[m]	C	OD

Oljeprøver i Søkeldirektoratet

Test type	Flaske nummer	Topp dyp MD [m]	Bunn dyp MD [m]	Væske type	Test tidspunkt	Prøver tilgjengelig
DST	TEST1,1	2758.00	2787.00		26.11.1987 - 02:30	YES
DST	TEST1,2	2758.00	2787.00	OIL	28.11.1987 - 04:30	YES
DST	TEST2	2727.00	2740.70		13.12.1987 - 00:00	YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
313	NORDLAND GP
957	UTSIRA FM
1135	HORDALAND GP
1707	ROGALAND GP
1707	BALDER FM
1773	SELE FM
1929	SHETLAND GP
2710	CROMER KNOLL GP
2727	BRENT GP
2727	RANNOCH FM
2810	BROOM FM
2815	DUNLIN GP
2815	DRAKE FM
2855	COOK FM



2919	AMUNDSEN FM
3003	STATEFJORD GP

Dokumenter - eldre Sökkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
1028_01_WDSS_General_Information	pdf	0.39
1028_02_WDSS_completion_log	pdf	0.27

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
1028_33_9_13_S_Completion_report_and_log	pdf	22.54

Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsven til størrelse [mm]
1.0	2703	2712	9.5
1.1	2758	2787	14.3
1.2	2683	2700	9.5
2.0	2652	2666	18.6

Test nummer	Endelig avstengningstrykk [MPa]	Endelig strømningstrykk [MPa]	Bunnhullstrykk [MPa]	Borehullstemperatur [°C]
1.0				93
1.1	19.000	8.000		
1.2		8.000		93
2.0				93

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstyngde rel. luft	GOR [m3/m3]
1.0	122	6960	0.850	0.890	57
1.1	1100		0.800	0.810	45





1.2	642	33139	0.838	0.830	52
2.0	1602	68755	0.842	0.785	43

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
CBLV GRS	310	3020
CDL CN SPL GRS	2680	3072
DIFL AC GRS CAL	2361	3074
DIPS GRS	2710	3069
DLL MLL GRS CAL	2729	2820
FMT GRS	2710	3069
MWD - SN GR	379	3077
VELOCITY	700	3060

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	375.0	36	375.0	0.00	LOT
SURF.COND.	20	394.0	26	422.0	1.27	LOT
INTERM.	13 3/8	1300.0	17 1/2	1315.0	1.79	LOT
INTERM.	9 5/8	2363.0	12 1/4	2378.0	1.84	LOT
LINER	7	3075.0	8 1/2	3077.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
374	1.20	13.0	18.5	WATER BASED	19.10.1987
374	1.20	13.0	18.5	WATER BASED	19.10.1987
394	1.22	17.0	5.0	WATER BASED	19.10.1987
394	1.22	17.0	5.0	WATER BASED	19.10.1987
398	1.20	12.0	11.5	WATER BASED	19.10.1987
398	1.20	12.0	11.5	WATER BASED	19.10.1987
515	1.22	20.0	5.3	WATER BASED	26.10.1987
515	1.22	20.0	5.3	WATER BASED	26.10.1987
1230	1.22	23.0	7.0	WATER BASED	26.10.1987



Faktasider

Brønnbane / Leting

Utskriftstidspunkt: 11.5.2024 - 16:13

1230	1.22	23.0	7.0	WATER BASED	26.10.1987
1315	1.22	21.0	6.0	WATER BASED	26.10.1987
1315	1.22	21.0	6.0	WATER BASED	26.10.1987
1460	1.30	18.0	5.0	WATER BASED	29.10.1987
1460	1.30	18.0	5.0	WATER BASED	28.10.1987
1781	1.54	19.0	6.0	WATER BASED	30.10.1987
1781	1.54	19.0	6.0	WATER BASED	29.10.1987
2096	1.54	24.0	14.0	WATER BASED	02.11.1987
2096	1.54	24.0	14.0	WATER BASED	01.11.1987
2097	1.60	23.0	10.0	WATER BASED	18.12.1987
2097	1.60	23.0	10.0	WATER BASED	18.12.1987
2246	1.58	22.0	16.0	WATER BASED	01.11.1987
2246	1.58	22.0	16.0	WATER BASED	02.11.1987
2378	1.58	30.0	14.0	WATER BASED	02.11.1987
2378	1.58	24.0	6.5	WATER BASED	03.11.1987
2378	1.58	30.0	14.0	WATER BASED	01.11.1987
2378	1.58	24.0	6.5	WATER BASED	02.11.1987
2378	1.58	27.0	7.0	WATER BASED	05.11.1987
2378	1.58	27.0	7.0	WATER BASED	05.11.1987
2416	1.52	33.0	8.0	WATER BASED	06.11.1987
2416	1.52	33.0	8.0	WATER BASED	06.11.1987
2536	1.51	31.0	6.0	WATER BASED	09.11.1987
2536	1.51	31.0	6.0	WATER BASED	09.11.1987
2675	1.56	38.0	7.0	WATER BASED	09.11.1987
2675	1.56	38.0	7.0	WATER BASED	09.11.1987
2720	1.60	35.0	6.0	WATER BASED	09.11.1987
2720	1.60	35.0	6.0	WATER BASED	09.11.1987
2740	1.60	33.0	5.0	WATER BASED	10.11.1987
2740	1.60	33.0	5.0	WATER BASED	10.11.1987
2753	1.60	23.0	7.0	WATER BASED	15.12.1987
2753	1.60	23.0	7.0	WATER BASED	15.12.1987
2753	1.60	23.0	9.0	WATER BASED	16.12.1987
2753	1.60	23.0	9.0	WATER BASED	16.12.1987
2785	1.60	34.0	5.0	WATER BASED	11.11.1987
2785	1.60	34.0	5.0	WATER BASED	11.11.1987
2820	1.60	33.0	5.0	WATER BASED	12.11.1987
2820	1.60	33.0	5.0	WATER BASED	12.11.1987
2828	1.60	37.0	6.6	WATER BASED	13.11.1987
2828	1.60	37.0	6.6	WATER BASED	13.11.1987
2867	1.60	32.0	12.0	WATER BASED	16.11.1987



2867	1.60	32.0	12.0	WATER BASED	16.11.1987
2983	1.60	30.0	11.0	WATER BASED	16.11.1987
2983	1.60	30.0	11.0	WATER BASED	16.11.1987
3077	1.60	23.0	8.0	WATER BASED	19.11.1987
3077	1.60	23.0	8.0	WATER BASED	19.11.1987
3077	1.60	26.0	7.0	WATER BASED	20.11.1987
3077	1.60	30.0	12.0	WATER BASED	16.11.1987
3077	1.60	24.0	7.0	WATER BASED	17.11.1987
3077	1.60	30.0	12.0	WATER BASED	16.11.1987
3077	1.60	24.0	7.0	WATER BASED	17.11.1987
3077	1.60	26.0	7.0	WATER BASED	20.11.1987

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]
1028 Formation pressure (Formasjonstrykk)	pdf	0.22

