



Generell informasjon

Brønnbane navn	30/9-1
Type	EXPLORATION
Formål	APPRAISAL
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	OSEBERG
Funn	30/6-1 Oseberg
Brønn navn	30/9-1
Seismisk lokalisering	705 118 SP 332
Utvinningstillatelse	079
Boreoperatør	Norsk Hydro Produksjon AS
Boretillatelse	351-L
Boreinnretning	TREASURE SEEKER
Boredager	98
Borestart	24.10.1982
Boreslutt	29.01.1983
Frigitt dato	29.01.1985
Publiseringsdato	07.01.2015
Opprinnelig formål	WILDCAT
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]	25.0
Vanndybde ved midlere havflate [m]	106.0
Totalt målt dybde (MD) [m RKB]	2895.0
Totalt vertikalt dybde (TVD) [m RKB]	2895.0
Maks inklinasjon [°]	4.3
Temperatur ved bunn av brønnbanen [°C]	112
Eldste penetrerte alder	EARLY JURASSIC
Eldste penetrerte formasjon	DRAKE FM
Geodetisk datum	ED50
NS grader	60° 28' 25.09" N



ØV grader	2° 52' 45.38" E
NS UTM [m]	6704324.73
ØV UTM [m]	493362.24
UTM sone	31
NPDID for brønnbanen	65

Brønnhistorie

**General**

Well 30/9-1 was drilled on the southeast part of the Oseberg fault block (Alpha structure) in the North Sea. The Alpha structure is an eastward tilted fault block that contains proven reserves of oil and gas in the Middle Jurassic Brent Group sandstone reservoir. The primary objective of the well was to establish the oil/water contact in this part of the structure. The well was planned to be drilled to a total depth of 2850 m, approximately 100 m into the Dunlin Group.

Operations and results

Appraisal well 30/9-1 was spudded with the semi-submersible installation Treasure Seeker on 24 October 1982 and drilled to TD at 2895 m in the Early Jurassic Drake Formation. No significant problem was encountered in the operations. The well was drilled with seawater/hi-vis pills and pre-hydrated bentonite down to 969 m, with KCl/Drispac mud from 969 m to 2515 m, and with KCl/polysal mud from 2515 m to TD.

The Brent Group was found hydrocarbon bearing from 2685 m down to 2738 m where the free water level was established. This interval comprises the whole of the Ness Formation and the uppermost 3 m of the Etive Formation. Net pay in the interval was 10.5 m. Poor oil shows were recorded on limestone cuttings in the interval 2281 to 2232 m in the uppermost Shetland Group. Good oil shows were recorded through the oil column of the reservoir. Below the contact at 2738 m, shows became weaker and patchy down to 2778 m. Below this depth only some weak shows on claystone from three sidewall cores in the interval 2872 m to 2895 m were reported.

Seven conventional cores were cut from 2682 m at the top of the Ness formation to 2784.9 m, into the Dunlin Group shales. RFT fluid samples were taken at 2690.5 m (oil, gas, water, and filtrate), 2732.2 m (water and filtrate with small amounts of oil and gas), 2737.5 m (water and filtrate with trace oil and gas), and at 2782.2 m (water and filtrate with small amounts of oil and gas).

The well was permanently abandoned on 29 January 1983 as an oil appraisal well.

Testing

Three drill stem tests were performed in the Brent Group.

DST 1 (2743-2761 m) in the upper part of the Etive Formation is a combined water production/injection test. It produced 200 m³/day of water through a 44/64" choke. The first injection rate was 134 m³/day of water and the second injection rate amounted to 1170.4 m³/day of water. Maximum temperature measured at 2740.5 m was 105.1 °C.

DST 2 (2727 -2733 m) at the very base of the Ness Formation flowed 325 Sm³/day oil with 36507 Sm³/day of associated gas with a gravity of 0.780 (air = 1). Choke size was 28/64". The GOR was 112 Sm³/Sm³, the oil gravity was 32.2° API, and the gas gravity was 0.780 (air = 1). Maximum temperature measured at 2714.3 m was 106.6 °C.

DST 3 (2689 – 2692 m) in the uppermost part of the Ness Formation tested 375 Sm³/day of oil and 39620 Sm³/day of gas through a 28/64" choke. The GOR was 106 Sm³/Sm³, the oil gravity was 34.9°API and the gas gravity 0.724 (air = 1). Maximum temperature measured at 2678.9 m was 105.7 °C.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
250.00	2895.00



Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	2681.8	2699.0	[m]
2	2700.0	2707.0	[m]
3	2708.5	2713.2	[m]
4	2714.0	2730.5	[m]
5	2737.3	2749.9	[m]
6	2750.0	2768.0	[m]
7	2768.0	2784.8	[m]

Total kjerneprøve lengde [m]	92.8
Kjerner tilgjengelig for prøvetaking?	YES

Palynologiske preparater i Sokkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
330.0	[m]	DC	RRI
530.0	[m]	DC	RRI
730.0	[m]	DC	RRI
930.0	[m]	DC	RRI
1130.0	[m]	DC	RRI
1330.0	[m]	DC	RRI
1510.0	[m]	DC	GEOCH
1530.0	[m]	DC	RRI
1540.0	[m]	DC	GEOCH
1570.0	[m]	DC	GEOCH
1600.0	[m]	DC	GEOCH
1630.0	[m]	DC	GEOCH
1666.0	[m]	DC	GEOCH
1690.0	[m]	DC	GEOCH
1720.0	[m]	DC	GEOCH
1730.0	[m]	DC	RRI
1750.0	[m]	DC	GEOCH
1780.0	[m]	DC	GEOCH
1810.0	[m]	DC	GEOCH



1840.0 [m]	DC	GEOCH
1870.0 [m]	DC	GEOCH
1900.0 [m]	DC	GEOCH
1915.0 [m]	DC	RRI
1930.0 [m]	DC	GEOCH
1960.0 [m]	DC	GEOCH
1990.0 [m]	DC	GEOCH
2020.0 [m]	DC	GEOCH
2050.0 [m]	DC	GEOCH
2080.0 [m]	DC	GEOCH
2110.0 [m]	DC	GEOCH
2115.0 [m]	DC	RRI
2140.0 [m]	DC	GEOCH
2170.0 [m]	DC	GEOCH
2200.0 [m]	DC	GEOCH
2215.0 [m]	DC	RRI
2230.0 [m]	DC	GEOCH
2260.0 [m]	DC	GEOCH
2280.0 [m]	DC	GEOCH
2290.0 [m]	DC	GEOCH
2320.0 [m]	DC	GEOCH
2406.0 [m]	SWC	RRI
2415.0 [m]	SWC	RRI
2422.5 [m]	SWC	RRI
2433.0 [m]	SWC	RRI
2452.0 [m]	SWC	RRI
2465.0 [m]	SWC	RRI
2477.0 [m]	SWC	RRI
2485.0 [m]	SWC	RRI
2494.0 [m]	SWC	RRI
2505.0 [m]	SWC	RRI
2514.0 [m]	SWC	RRI
2528.0 [m]	SWC	RRI
2540.0 [m]	SWC	RRI
2560.0 [m]	SWC	RRI
2569.0 [m]	SWC	RRI
2580.0 [m]	SWC	RRI
2592.0 [m]	SWC	RRI
2605.0 [m]	SWC	RRI
2615.0 [m]	SWC	RRI



2624.0	[m]	SWC	RRI
2635.0	[m]	SWC	RRI
2649.0	[m]	SWC	RRI
2659.0	[m]	SWC	RRI
2672.5	[m]	SWC	RRI
2682.0	[m]	SWC	RRI
2693.1	[m]	C	RRI
2706.8	[m]	C	RRI
2739.7	[m]	C	RRI
2786.6	[m]	C	RRI
2790.0	[m]	DC	RRI
2795.0	[m]	SWC	RRI
2811.0	[m]	SWC	RRI
2837.0	[m]	SWC	RRI
2850.0	[m]	SWC	RRI
2860.0	[m]	SWC	RRI
2872.0	[m]	SWC	RRI
2880.0	[m]	DC	RRI
2885.0	[m]	SWC	RRI
2895.0	[m]	SWC	RRI

Oljeprøver i Sökkeldirektoratet

Test type	Flaske nummer	Topp dyp MD [m]	Bunn dyp MD [m]	Væske type	Test tidspunkt	Prøver tilgjengelig
DST	DST2A	2727.00	2733.00		15.01.1983 - 00:00	YES
DST	DST3	2689.00	2692.00		21.01.1983 - 00:00	YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
131	NORDLAND GP
645	UTSIRA FM
880	HORDALAND GP
1989	ROGALAND GP
1989	BALDER FM
2072	SELE FM



2158	LISTA FM
2270	MAUREEN FM
2281	SHETLAND GP
2415	CROMER KNOLL GP
2425	VIKING GP
2425	DRAUPNE FM
2470	HEATHER FM
2685	BRENT GP
2685	NESS FM
2735	ETIVE FM
2783	DUNLIN GP
2783	DRAKE FM

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
65_GCH_1	pdf	0.08
65_GCH_2	pdf	3.15

Dokumenter - eldre Sökkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
65_01_WDSS_General_Information	pdf	0.17
65_02_WDSS_completion_log	pdf	0.30

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
65_30_9_1_Completion_log	pdf	4.45
65_30_9_1_Completion_report	pdf	23.78

Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsven til størrelse [mm]
1.0	2743	2761	17.4





2.0	2727	2733	11.1
3.0	2689	2692	11.1

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

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstyngde rel. luft	GOR [m3/m3]
1.0					
2.0	325	37000	0.864	0.780	112
3.0	375	40000	0.850	0.724	105

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
CBL	1300	2485
CST	1720	2514
CST	2505	2895
CST	2520	2885
DLL MSFL MLL	2495	2870
HDT	1900	2514
HDT SHDT	2495	2897
ISF LSS	219	965
ISF LSS MSFL	951	2512
ISF LSS MSFL EPT	2495	2895
ISF LSS NGT	2495	2897
LDT CNL	951	2507
LDT CNL NGT EPT	2495	2893
RFT	2570	2881
RFT	2729	0
RFT	2732	2737
RFT	2737	0
VELOCITY	648	2893



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	217.0	36	220.0	0.00	LOT
SURF.COND.	20	951.0	26	969.0	1.64	LOT
INTERM.	13 3/8	2498.0	17 1/2	2515.0	1.70	LOT
INTERM.	9 5/8	2878.0	12 1/4	2895.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
260	1.05			waterbased	
560	1.10			waterbased	
1300	1.32			waterbased	
1730	1.44			waterbased	
2080	1.46			waterbased	
2260	1.48			waterbased	
2560	1.24			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]
65 Formation pressure (Formasjonstrykk)	pdf	0.23

