



Generell informasjon

Brønnbane navn	30/6-10 A
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	30/6-10
Seismisk lokalisering	913 133 SP 615
Utvinningstillatelse	053
Boreoperatør	Norsk Hydro Produksjon AS
Boretillatelse	360-L
Boreinnretning	TREASURE SCOUT
Boredager	92
Borestart	02.12.1982
Boreslutt	03.03.1983
Frigitt dato	03.03.1985
Publiseringsdato	29.03.2014
Opprinnelig formål	APPRAISAL
Gjenåpnet	NO
Innhold	OIL/GAS
Funnbrønnbane	NO
1. nivå med hydrokarboner, alder	MIDDLE JURASSIC
1. nivå med hydrokarboner, formasjon.	BRENT GP
Avstand, boredekk - midlere havflate [m]	23.0
Vanndybde ved midlere havflate [m]	109.0
Totalt målt dybde (MD) [m RKB]	2665.0
Totalt vertikalt dybde (TVD) [m RKB]	2577.0
Maks inklinasjon [°]	39
Temperatur ved bunn av brønnbanen [°C]	104
Eldste penetrerte alder	EARLY JURASSIC
Eldste penetrerte formasjon	DRAKE FM
Geodetisk datum	ED50
NS grader	60° 36' 29.53" N



ØV grader	2° 46' 24.74" E
NS UTM [m]	6719328.26
ØV UTM [m]	487600.49
UTM sone	31
NPDID for brønnbanen	56

Brønnhistorie

General

Well 30/6-10 A is a sidetrack to appraisal well 30/6-10 on the Alfa structure on the Oseberg Field in the North Sea. The primary well found oil and gas all through the Brent Group with a gas/oil contact at 2520 m, but no oil water contact. The main objective was to further define the gas/oil contact and to perform drill stem tests over the reservoir. The well was planned to penetrate the Brent reservoir approximately 300 m west of the original hole.

Operations and results

Appraisal well 30/6-10 A was sidetracked on 2 December 1982 through a milled window in the 13 3/8" casing at 1788 to 1803 m in the primary well bore. The sidetrack was drilled with the semi-submersible installation Treasure Scout to 2665 m (2577 m TVD) in the Early Jurassic Drake Formation. At 2657 m bad weather came up and caused some problems and down time. The pipe got stuck at TD but was worked free after 32.5 hrs using pipe lax, Imco spot and diesel. Otherwise the sidetrack was drilled with KCl/polymer mud from kick-off to TD.

First oil shows were seen in cuttings from limestone stringers in the Balder Formation at 2015 m. Oil shows on limestone cuttings continued down through the Shetland Group to top Heather Formation at 2448 m. The Brent Group interval from 2480 - 2608.5 m (2429 - 2531 m TVD) was found hydrocarbon bearing over the entire interval with the free gas/oil contact based on RFT pressure gradients at 2594 m (2520 m TVD) in the Ness Formation. No oil/water contact was found. The net pay in the Brent Group was calculated to be 58 m with average porosity of 24.4% and average water saturation of 27%. The net/gross ratio in 30/6-10 A is higher than in 30/6-10 due to a better sand development in the Ness Formation.

A total of 10 cores were cut from 2467 m in the lower part of the Heather Formation, through the Ness Formation and into the oil zone of the Etive Formation at 2606.5 m. When coring the last core the inner barrel parted in two and part of the core was washed away by the mud. Only 21.6% of this core was recovered, and relating this part to any specific depth proved to be impossible. The part recovered was sandstone with good oil shows. Segregated RFT samples were taken at 2605.5 m (gas, oil and solids), 2596 m (gas, oil and solids), and 2592 m (gas and condensate with traces of oil).

The well was permanently abandoned on 3 March 1982 as a gas and oil appraisal well.

Testing

Four production tests were performed, three in the gas zone and one in the oil zone.

DST1 from 2600 to 2602 m (2524.75 m to 2526.25 m TVD) at the base of the Etive Formation tested 563 Sm³/day of oil and 78820 Sm³ gas through a 32/64" choke. Oil gravity was 35.7 deg API and gas gravity was 0.685 (air=1). GOR was 140 Sm³/Sm³. Down hole temperature was 100.7 deg C at gauge depth 2513.5 m TVD.

DST2 from 2587 to 2590 m (2514 to 2516.5 m TVD) in the middle of the Etive Formation



tested 181 Sm³ /day of condensate and 546190 Sm³ /day of gas through a 40/64" choke. Condensate gravity was 58.7 deg API and gas gravity was 0.660 (air = 1). GOR was 3030 Sm³/Sm³. Down hole temperature was 102.2 deg C at gauge depth 2513.7 m TVD.

DST3 from 2546 to 2555 m (2481 - 2489 m TVD) in the lower Ness Formation tested 170 Sm³ /day) of condensate and 551850 Sm³/day of gas through a 40/64" choke. Condensate gravity was 60.2 deg API and gas gravity was 0.655 (air=1). GOR was 3246 Sm³/Sm³. Down hole temperature was 101 deg C at gauge depth 2471 m TVD.

DST4 from 2480.5 to 2486.5 m (2430 - 2435 m TVD) in the Upper Ness Formation tested 254 Sm³/day of condensate and 798500 Sm³ /day of gas through a 64/6 4" choke. Condensate gravity was 60.2 API and gas gravity 0.665. GOR was 3143 Sm³/Sm³.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
1800.00	2665.00

Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerter i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	2467.0	2475.7	[m]
2	2477.5	2495.6	[m]
3	2496.0	2512.8	[m]
4	2515.0	2519.7	[m]
5	2520.0	2535.9	[m]
6	2537.0	2546.0	[m]
7	2546.0	2561.2	[m]
8	2563.7	2573.2	[m]
9	2574.5	2587.9	[m]
10	2602.6	2606.6	[m]

Total kjerneprøve lengde [m]	115.3
Kjerner tilgjengelig for prøvetaking?	YES

Kjernebilder



2467-2471m



2471-2475m



2475-2476m



2477-2481m



2481-2485m



2485-2489m



2489-2493m



2493-2495m



2496-2500m



2500-2504m



2504-2508m



2508-2512m



2512-2513m



2525-2519m



2519-2519m



2520-2524m



2524-2528m



2528-2532m



2532-2535m



2537-2541m



2541-2545m



2545-2548m



2546-2550m



2550-2554m



2554-2558m



2558-2561m



2563-2567m



2567-2571m



2571-2573m



2574-2578m



2578-2582m



2582-2586m



2586-2587m



2602-2606m

Palynologiske preparater i Sjøkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
2469.5	[m]	C	RRI
2472.4	[m]	C	RRI
2490.3	[m]	C	RRI
2496.6	[m]	C	RRI
2512.8	[m]	C	RRI
2528.4	[m]	C	RRI
2541.8	[m]	C	RRI
2557.7	[m]	C	RRI
2565.5	[m]	C	RRI
2582.3	[m]	C	RRI

Oljeprøver i Sjøkeldirektoratet

Test type	Flaske nummer	Topp dyp MD [m]	Bunn dyp MD [m]	Væske type	Test tidspunkt	Prøver tilgjengelig
DST	TEST1	2600.00	2602.00		07.02.1983 - 00:00	YES
DST	DST3	2446.00	2555.00		18.02.1983 - 00:00	YES
DST	DST4	2480.00	2487.00		22.02.1983 - 00:00	YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
132	NORDLAND GP
687	UTSIRA FM
890	HORDALAND GP



1982	ROGALAND GP
1982	BALDER FM
2053	SELE FM
2168	LISTA FM
2250	VÅLE FM
2265	SHETLAND GP
2448	VIKING GP
2448	HEATHER FM
2480	BRENT GP
2480	NESS FM
2572	ETIVE FM
2608	DUNLIN GP
2608	DRAKE FM

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
56_1	pdf	0.44
56_2	pdf	0.61
56_3	pdf	11.79
56_4	pdf	0.52

Dokumenter - eldre Sokkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
56_01_WDSS_General_Information	pdf	0.18
56_02_WDSS_completion_log	pdf	0.17

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
56_30_6_10_A_COMPLETION_LOG	pdf	1.12
56_30_6_10_A_COMPLETION_REPORT	pdf	21.49

Borestrengtester (DST)





Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsven til størrelse [mm]
1.0	2600	2602	12.7
2.0	2587	2590	15.8
3.0	2446	2555	15.8
4.0	2480	2487	25.4

Test nummer	Endelig avstengningstrykk [MPa]	Endelig strømningstrykk [MPa]	Bunnhullstrykk [MPa]	Borehullstemperatur [°C]
1.0				
2.0				
3.0				
4.0				

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstyngde rel. luft	GOR [m3/m3]
1.0	563	79000	0.850	0.685	140
2.0	181	546000	0.740	0.660	3017
3.0	170	552000	0.740	0.660	3246
4.0	254	799000	0.740	0.664	3143

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
DLL MSFL	2340	2648
FDC CNL	1768	2650
HDT	1786	2654
ISF SON	1786	2654
NGT	2330	2640
RFT	2481	2607
RFT	2592	2592
RFT	2605	2605

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	219.0	36	220.0	0.00	LOT
SURF.COND.	20	949.0	26	970.0	1.56	LOT
INTERM.	13 3/8	1788.0	17 1/2	1803.0	1.59	LOT
INTERM.	13 3/8	2138.0	17 1/2	2432.0	1.79	LOT
INTERM.	9 5/8	2652.0	12 1/4	2656.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
2020	1.35	54.0		waterbased	
2630	1.36	53.0		waterbased	
2650	1.32	55.0		waterbased	