



Generell informasjon

Brønnbane navn	30/2-1
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	HULDRA
Funn	30/2-1 Huldra
Brønn navn	30/2-1
Seismisk lokalisering	702 164 SP 435
Utvinningstillatelse	051
Boreoperatør	Den norske stats oljeselskap a.s
Boretillatelse	328-L
Boreinnretning	DYVI DELTA
Boredager	149
Borestart	17.05.1982
Boreslutt	12.10.1982
Plugget dato	12.11.2016
Plugget og forlatt dato	15.03.2019
Frigitt dato	12.10.1984
Publiseringsdato	17.10.2007
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	GAS/CONDENSATE
Funnbrønnbane	YES
1. nivå med hydrokarboner, alder	MIDDLE JURASSIC
1. nivå med hydrokarboner, formasjon.	BRENT GP
Avstand, boredekk - midlere havflate [m]	30.0
Vanndybde ved midlere havflate [m]	125.0
Totalt målt dybde (MD) [m RKB]	4243.0
Totalt vertikalt dybde (TVD) [m RKB]	4237.0
Maks inklinasjon [°]	7.75
Temperatur ved bunn av brønnbanen [°C]	164
Eldste penetrerte alder	EARLY JURASSIC
Eldste penetrerte formasjon	STATFJORD GP



Geodetisk datum	ED50
NS grader	60° 52' 5.42" N
ØV grader	2° 38' 49.16" E
NS UTM [m]	6748315.20
ØV UTM [m]	480827.13
UTM sone	31
NPDID for brønnbanen	72

Brønnhistorie

General

Well 30/2-1 is located roughly mid-way between the Oseberg Field complex and the Kvitebjørn Field in the Northern North Sea. The primary objective of the well was sandstones of Middle Jurassic age. Secondary objectives were sandstones of Paleocene and Late/Early Triassic age.

Operations and results

Wildcat well 30/2-1 was spudded with the semi-submersible installation Dyvi Delta on 17 May 1982 and drilled to TD at 4243 m, 133 m into the Early Jurassic Statfjord Formation. A total of 125 days were spent on the drilling phase, which was 5 days more than prognosed. Twelve days were lost due to problems with lost circulation, gas influx, stuck pipe and a leaking liner overlap in the 8 1/2" hole section. Three and a half days were lost to free the 13 3/8" casing when this got stuck at 1998 m. Most of those days were caught up because total depth was reached 357 m shallower than prognosed, and because of successfully turbodrilling with diamond bits in the 12 1/4" and 6" hole section. The well was drilled with spud mud down to 1035 m, with Gypsum mud from 1035 m to 1860 m, and with Gypsum/Lignosulphonate mud from 1860 m to 2155 m. An oilfaze/pipelax and an Imco spot/pipelax pill was spotted at 1998 m to free the pipe. From 2155 to TD the well was drilled with Spersene XP 20 (Lignosulphonate).

Hydrocarbons were encountered in the Brent group. The secondary prospects were found to be water wet, although oil shows were recorded in dolomite between 1852 m and 1911 m in the Eocene and in a 30 cm thick sandstone bed at 1952 m in the Late Paleocene Balder Formation. Weak shows were also recorded on sandstones from 4119 m to 4202 m in the Statfjord Formation.

Eleven cores were cut with a total recovery of 108.8 metres. Two cores were cut from 1952 m to 1969.5 m in the Late Paleocene Balder Formation, while 9 cores were cut from 3696 m to 3794 m in the Ness, Etive, and Rannoch Formations of the Brent Group. Five RFT runs were made. From the pressure data no hydrocarbon-water contact was seen and it was concluded that the Brent Group was completely hydrocarbon filled. At 3791 m one 2 3/4 -gallon sample (gas and filtrate) and one 1 -gallon sample (filtrate only) was obtained, and at 3763 m one 2 3/4 -gallon sample (0.85 l condensate) was obtained.

The well was suspended on 12 October 1982 on as a gas/condensate discovery.

Testing

Three DST'S were performed in the well. All three tests produced gas and condensate.

DST 1 tested the interval 3785 - 3792 m in the Rannoch Formation. The maximum gas production was about 677000 sm³/day on a 32/64" choke with a GOR of about 2200



Sm3/Sm3. The condensate gravity was 0.804 g/cc and the gas gravity was 0.695 (air = 1). The CO2 content was 2% and the H2S content was nil.

DST 2 tested the interval 3761 - 3771 m in the Etive Formation. The maximum production was about 1030000 Sm3/day on a 48/64" choke with a GOR of about 2470 Sm3/Sm3. The condensate gravity was 0.807 g/cc and the gas gravity was 0.695 (air = 1). The CO2 content was 4%.

DST 3 tested the interval 3720 - 3728 m in the Etive Formation. The maximum production was about 1016000 Sm3/day on a 48/64" choke with a GOR of approximately 2564 sm3/Sm3. The condensate gravity was 0.814 g/cc and the gas gravity was 0.692 (air = 1). Six ppm H2S and 4 % CO were measured during this test. Sand production was not observed in any of the tests. The gauges used at bottom hole had a temperature limit of 150 deg. C and the measured BHT seemed to approach this limit.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
220.00	4242.50

Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerter i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	1952.0	1954.0	[m]
2	1954.0	1968.1	[m]
3	3696.0	3700.8	[m]
4	3701.0	3708.3	[m]
5	3712.0	3716.4	[m]
6	3717.0	3733.6	[m]
7	3733.6	3734.7	[m]
8	3735.8	3751.9	[m]
9	3751.5	3758.0	[m]
10	3758.0	3776.0	[m]
11	3776.0	3794.0	[m]

Total kjerneprøve lengde [m]	108.8
Kjerter tilgjengelig for prøvetaking?	YES



Kjernebilder



1952-1954m



1954-1959m



1959-1964m



1964-1968m



3696-3700m



3706-3708m



3712-3716m



3717-3722m



3706-3708m



3722-3727m



3727-3732m



3732-3733m



3733-3734m



3735-3740m



3740-3745m



3745-3750m



3750-3751m



3751-3756m



3756-3758m



3758-3763m



3763-3768m



3768-3773m



3773-3775m



3776-3781m



3781-3786m



3786-3791m



3791-3794m



Palynologiske preparater i Sokkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
220.0	[m]	DC	RRI
420.0	[m]	DC	RRI
620.0	[m]	DC	RRI
820.0	[m]	DC	RRI
1020.0	[m]	DC	RRI
1160.0	[m]	DC	GEOCH
1190.0	[m]	DC	GEOCH
1220.0	[m]	DC	RRI
1220.0	[m]	DC	GEOCH
1250.0	[m]	DC	GEOCH
1280.0	[m]	DC	GEOCH
1310.0	[m]	DC	GEOCH
1360.0	[m]	DC	GEOCH
1390.0	[m]	DC	GEOCH
1420.0	[m]	DC	RRI
1420.0	[m]	DC	GEOCH
1450.0	[m]	DC	GEOCH
1480.0	[m]	DC	GEOCH
1510.0	[m]	DC	GEOCH
1540.0	[m]	DC	GEOCH
1570.0	[m]	DC	GEOCH
1600.0	[m]	DC	GEOCH
1620.0	[m]	DC	RRI
1630.0	[m]	DC	GEOCH
1660.0	[m]	DC	GEOCH
1690.0	[m]	DC	GEOCH
1720.0	[m]	DC	GEOCH
1750.0	[m]	DC	GEOCH
1780.0	[m]	DC	GEOCH
1810.0	[m]	DC	GEOCH
1820.0	[m]	DC	RRI
1840.0	[m]	DC	GEOCH
1870.0	[m]	DC	GEOCH
1900.0	[m]	DC	GEOCH
1912.5	[m]	DC	RRI



Faktasider

Brønnbane / Leting

Utskriftstidspunkt: 15.5.2024 - 14:06

1930.0	[m]	DC	GEOCH
1959.7	[m]	C	RRI
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
2112.5	[m]	DC	RRI
2140.0	[m]	DC	GEOCH
2160.0	[m]	DC	GEOCH
2172.5	[m]	DC	GEOCH
2200.0	[m]	DC	GEOCH
2212.5	[m]	DC	RRI
2400.0	[m]	DC	RRI
2600.0	[m]	DC	RRI
2800.0	[m]	DC	RRI
3000.0	[m]	DC	RRI
3210.0	[m]	DC	RRI
3420.0	[m]	DC	RRI
3600.0	[m]	DC	RRI
3620.0	[m]	DC	RRI
3650.0	[m]	DC	RRI
3670.0	[m]	DC	RRI
3680.0	[m]	DC	GEOST
3696.5	[m]	C	GEOST
3699.4	[m]	C	GEOST
3700.0	[m]	DC	GEOST
3704.7	[m]	C	GEOST
3705.9	[m]	C	GEOST
3708.5	[m]	C	GEOST
3715.7	[m]	C	GEOST
3725.8	[m]	C	GEOST
3731.4	[m]	C	GEOST
3734.3	[m]	C	GEOST
3736.1	[m]	C	GEOST
3742.3	[m]	C	GEOST
3746.1	[m]	C	GEOST
3752.0	[m]	C	GEOST
3752.3	[m]	C	GEOST



3756.0	[m]	C	GEOST
3760.0	[m]	DC	GEOST
3760.5	[m]	C	GEOST
3765.7	[m]	C	GEOST
3777.5	[m]	DC	GEOST
3785.9	[m]	C	GEOST
3790.6	[m]	C	RRI
3792.2	[m]	C	GEOST
3793.7	[m]	C	GEOST
3795.0	[m]	DC	RRI
3800.0	[m]	DC	GEOST
3810.0	[m]	DC	GEOST
3820.0	[m]	DC	GEOST
3830.0	[m]	DC	GEOST
3895.0	[m]	DC	RRI
3935.0	[m]	DC	RRI
4000.0	[m]	DC	RRI
4052.5	[m]	DC	RRI
4102.5	[m]	DC	RRI
4200.0	[m]	DC	RRI

Oljeprøver i Sökkeldirektoratet

Test type	Flaske nummer	Topp dyp MD [m]	Bunn dyp MD [m]	Væske type	Test tidspunkt	Prøver tilgjengelig
DST	DST1	3785.00	3792.00		23.09.1982 - 00:00	YES
DST	DST2	3761.00	3771.00		30.09.1982 - 15:45	YES
DST	DST2B	0.00	0.00	OIL	25.09.1982 - 00:00	YES
DST	DST3	3720.00	3728.00		07.10.1982 - 01:34	YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
155	NORDLAND GP
847	UTSIRA FM



957	HORDALAND GP
1917	ROGALAND GP
1917	BALDER FM
1993	SELE FM
2105	LISTA FM
2159	SHETLAND GP
3605	CROMER KNOLL GP
3636	VIKING GP
3636	DRAUPNE FM
3657	HEATHER FM
3675	BRENT GP
3675	NESS FM
3720	ETIVE FM
3778	RANNOCH FM
3793	DUNLIN GP
3793	DRAKE FM
3962	COOK FM
4000	BURTON FM
4110	STATFJORD GP

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
72_1	pdf	1.54
72_2	pdf	0.38
72_3	pdf	1.22
72_4	pdf	0.87
72_5	pdf	0.44

Dokumenter - eldre Sökkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
72_01_WDSS_General_Information	pdf	0.21
72_02_WDSS_completion_log	pdf	0.30

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)





Dokument navn	Dokument format	Dokument størrelse [KB]
72 01 Completion Report and Completion I og	PDF	44.39
72 03 Cation exchange capacity	pdf	0.07
72 03 Comparison of separator samples	pdf	0.58
72 03 Drilling fluid recap	pdf	2.81
72 03 Final core report core 11	pdf	1.51
72 03 Final well report	pdf	11.49
72 03 Geochemical analysis of sediments	pdf	0.58
72 03 Geological prognosis and Drilling program	pdf	1.79
72 03 Geological prognosis and Drilling program encl 01	pdf	0.11
72 03 Geological prognosis and Drilling program encl 02	pdf	0.88
72 03 Interpretaion Six by SCHLUMBERGER	pdf	7.59
72 03 Interpretation Six encl 01	pdf	0.37
72 03 Interpretation Six encl 02	pdf	0.25
72 03 Interpretation Six encl 03	pdf	0.40
72 03 Interpretation Six encl 04	pdf	1.21
72 03 Interpretation Six encl 05	pdf	0.64
72 03 Interpretation Six encl 06	pdf	0.42
72 03 Int palynofacies sedimentological core	pdf	1.32
72 03 Int palynofacies sedimentological core encl 01	pdf	0.33
72 03 Int palynofacies sedimentological core encl 02	pdf	0.37
72 03 Paleo strat final report	pdf	7.74
72 03 Petroleum geochemistry report	pdf	1.31
72 03 Petroleum geochemistry report B	pdf	0.92
72 03 Petrophysical evaluation	pdf	1.46
72 03 Petrophysical evaluation encl 01	pdf	0.70
72 03 Preliminary description interpretation of cores	pdf	0.35
72 03 Pressure prediction	pdf	0.70
72 03 Pressure survey report by SPERRY	pdf	0.36
72 03 Pressure survey report DST2 Gauge 0022 SPERRY	pdf	1.30
72 03 Pressure survey report DST2 Gauge 0054 SPERRY	pdf	0.90
72 03 Pressure survey report DST3 Gauge 0054 SPERRY	pdf	2.26





72 03 Pressure survey report DST3 sureface SPERRY	pdf	0.36
72 03 Pressure survey report Run1 DST1 G51&54 SPERRY	pdf	1.72
72 03 Pressure survey report Run1 DST1 SPERRY	pdf	0.80
72 03 Pressure survey report Run1 DST3 SPERRY	pdf	1.06
72 03 Pressure temperature measurements by FLOPETROL	pdf	4.17
72 03 Processing Global by SCHLUMBERGER	pdf	0.02
72 03 Processing Global encl 01	pdf	7.16
72 03 Processing Global encl 02	pdf	1.22
72 03 Report on stable isotopes on natural gas	pdf	0.45
72 03 Reservoir fluid study DST 2	pdf	0.99
72 03 Reservoir Fluid Study DST 3	pdf	1.00
72 03 Residual gas measurements	pdf	1.06
72 03 RFT Report a	pdf	0.34
72 03 RFT Report a encl 01	pdf	1.59
72 03 RFT Report a encl 02	pdf	3.53
72 03 RFT Report b	pdf	0.30
72 03 RFT Report b encl 1	pdf	1.38
72 03 RFT Report b encl 2	pdf	2.68
72 03 Special core analysis	pdf	4.33
72 03 Special core analysis by STATOIL	pdf	1.70
72 03 TBP Distillation of condensate DST 2	pdf	0.39
72 03 Test program Dyvi Delta	pdf	0.90
72 03 Thin section analysis	pdf	8.94
72 03 Time breakdown and review of operations	pdf	0.55
72 03 Wax analysis of condensate DST no 2B	pdf	0.27
72 03 Well summary	pdf	2.60
72 03 Well testing report	pdf	2.72
72 03 Well testing report DST 1 by FLOPETROL	pdf	2.36
72 03 Well testing report DST 2 by FLOPETROL	pdf	2.60
72 03 Well testing report DST 3 by FLOPETROL	pdf	2.67
72 03 Well testing report encl 01	pdf	0.82





Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsven til størrelse [mm]
1.0	3785	3792	12.7
2.0	3761	3771	19.0
3.0	3720	3728	19.0

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

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstygde rel. luft	GOR [m3/m3]
1.0	307	677000	0.804	0.695	2205
2.0	417	1030000	0.807	0.695	2470
3.0	396	1016000	0.814	0.692	2565

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
CBL CDL GR	820	2152
CBL VDL GR	2905	3775
CBL VDL GR	3775	3837
DLL MSFL GR	3600	3829
FDC CNL GR CAL	1020	4244
GEODIP	3492	3620
HDT	3491	3831
HDT	3837	4244
ISF SONIC MSFL GR SP	216	4243
NGT	3600	3834
VELOCITY	960	4243

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	216.0	36	219.0	0.00	LOT
SURF.COND.	20	1020.0	26	1035.0	1.70	LOT
INTERM.	13 3/8	2152.0	17 1/2	2155.0	1.94	LOT
INTERM.	9 5/8	3491.0	12 1/4	3501.0	1.99	LOT
LINER	7	3834.0	8 1/2	3836.0	2.05	LOT
OPEN HOLE		4243.0	6	4243.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
210	1.03	100.0		waterbased	
260	1.06	70.0		waterbased	
1100	1.10	33.0		waterbased	
1780	1.24	41.0		waterbased	
2210	1.70	58.0		waterbased	
2600	1.77	59.0		waterbased	
3130	1.80	51.0		waterbased	
3670	1.89	58.0		waterbased	
3750	1.91	55.0		waterbased	

Tynnslip i Sokkeldirektoratet

Dybde	Enhet
3972.50	[m]
3980.00	[m]
3788.50	[m]
3779.90	[m]
3708.10	[m]
3724.60	[m]
3720.00	[m]

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 brønnspar. Trykkdataene er rapportert inn til Oljedirektoratet og videre prosessert og kvalitetssikret av IHS Markit.

Dokument navn	Dokument format	Dokument størrelse [KB]
72 Formation pressure (Formasjonstrykk)	pdf	0.22

