



Generell informasjon

Brønnbane navn	6507/7-5
Type	EXPLORATION
Formål	APPRAISAL
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORWEGIAN SEA
Felt	HEIDRUN
Funn	6507/7-2 Heidrun
Brønn navn	6507/7-5
Seismisk lokalisering	CN 8502 - 599 SP. 225
Utvinningstillatelse	095
Boreoperatør	Conoco Norway Inc.
Boretillatelse	500-L
Boreinnretning	NORTRYM
Boredager	50
Borestart	16.01.1986
Boreslutt	06.03.1986
Frigitt dato	06.03.1988
Publiseringsdato	17.09.2007
Opprinnelig formål	APPRAISAL
Gjenåpnet	NO
Innhold	OIL/GAS
Funnbrønnbane	NO
1. nivå med hydrokarboner, alder	MIDDLE JURASSIC
1. nivå med hydrokarboner, formasjon.	ILE FM
Avstand, boredekk - midlere havflate [m]	25.0
Vanndybde ved midlere havflate [m]	331.0
Totalt målt dybde (MD) [m RKB]	2660.0
Totalt vertikalt dybde (TVD) [m RKB]	2659.0
Maks inklinasjon [°]	2.8
Temperatur ved bunn av brønnbanen [°C]	92
Eldste penetrerte alder	EARLY JURASSIC
Eldste penetrerte formasjon	TILJE FM
Geodetisk datum	ED50
NS grader	65° 21' 30.27" N



ØV grader	7° 17' 35.08" E
NS UTM [m]	7249656.78
ØV UTM [m]	420590.94
UTM sone	32
NPDID for brønnbanen	879

Brønnhistorie

General

Well 6507/7-5 is located on the northern part of the Halten Terrace off shore Mid Norway and was drilled to appraise the northern extension of the 6507/7-2 Heidrun Discovery. The primary objective was Middle and Lower Jurassic sands in a downthrown fault block located NNW of the 6507/7-2 well. Prognosed top Jurassic was at 2308 m.

Secondary objective was the Båt Group at an expected depth of 2394 m. Based on site survey, shallow gas could appear at 512, 570, 618, 746, and 799 m. Prognosed TD was 2675 m.

Operations and results

Appraisal well 6507/7-5 was spudded with the semi-submersible installation Nortrym on 16 January 1986 and drilled to TD at 2660 in the Early Jurassic Tilje Formation. The 26" hole section was drilled without marine riser to 1040 m, first as a 17 1/2" pilot hole with MWD logging, then opening up to 26". No shallow gas was recorded. The MWD quality was good, so no electric logging was performed in this section. Since no riser was used, all returns were to seafloor down to 1040 m. No significant problems were encountered during operations. The well was drilled with seawater and pre-hydrated gel down to 1040 m and with KCl/polymer mud from 1040 m to TD.

No sandstone of importance was encountered above the Middle Jurassic. A hiatus from Late Cretaceous Turonian to Late Jurassic Oxfordian/Kimmeridgian was observed at 2310 m. Sandstones of the Fangst Group were encountered at 2353 to 2424 m. Analysis of cores and logs indicated good to excellent porosity and permeability in these sandstones, with the best reservoir properties towards the top, in the Garn Formation.

Poor oil shows were observed in sandstone lenses in core no 1 from the Shetland Group (2255.0 - 2282.5 m), which consisted mainly of claystones. Visible shows of uniform light brown oil were observed on cores from top of the Garn Formation down to 2400 m. Below this depth the shows were occasionally more patchy, until at 2422 m core depth (2427 m loggers depth) where there was no longer any visible oil. The lowermost oil observed on the cores was not believed to represent the true OWC, but a change into impermeable lithologies. One RFT run was carried out in the 12 1/4" hole with the objective of establishing the OWC. Intersection of the oil and water gradients from the RFT pressure data suggested an OWC at ca 2475 m. The Early Jurassic Tilje Formation of the Båt Group was penetrated at 2473.5 m and proved to be dry without shows.

Seventeen cores from the Late Cretaceous through to the Early Jurassic were cut from 2255 to 2644.5 m with 89.4 % recovery. Attempts were made to obtain a water sample on RFT at 2485 and 2485.5 m, but these were unsuccessful due to malfunction of the sample chamber.

The well was permanently abandoned on 6 March 1986 as an oil and gas appraisal.

Testing



Three DST tests were performed in this well.

DST 1 tested the interval 2418 m to 2424 m in the base of the Garn Formation. It produced at maximum rates 751 Sm³ oil and 52358 Sm³ separator gas /day through a 2x1" choke. The separator GOR was 70 Sm³/Sm³, the oil gravity was 27.9 deg API, and the separator gas gravity was 0.65. The gas contained maximum 2% CO₂ and no detectable H₂S.

DST 2, was aborted due to a leak in the kill line and was re-tested as DST 2A.

DST 2A tested the interval 2355 m to 2375 m in the top of the Garn Formation. It produced at maximum rates 982 Sm³ oil and 85630 Sm³ separator gas /day through a 2x1" choke. The separator GOR was 87 Sm³/Sm³, the oil gravity was 31.3 deg API, and the separator gas gravity was 0.68. The gas contained maximum 2% CO₂ and no detectable H₂S.

None of the tests produced any bottom sediments or water.

The DST maximum recorded temperatures from the final flows of DST1 and DST2A were 85.7 deg C at 2421 m, and 82.6 deg C at 2365 m, respectively.

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Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
1050.00	2660.00

Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	2255.0	2282.9	[m]
2	2282.5	2308.8	[m]
3	2308.5	2336.4	[m]
4	2336.0	2349.6	[m]
5	2362.0	2385.5	[m]
6	2390.0	2407.8	[m]
7	2411.0	2438.9	[m]
8	2439.0	2466.9	[m]
9	2467.0	2480.7	[m]
10	2482.0	2497.6	[m]
11	2501.0	2509.0	[m]
12	2512.0	2533.6	[m]
13	2538.0	2553.1	[m]



14	2556.0	2578.7	[m]
15	2581.5	2591.1	[m]
16	2596.5	2623.9	[m]
17	2625.0	2644.5	[m]

Total kjerneprøve lengde [m]	345.7
Kjerner tilgjengelig for prøvetaking?	YES

Palynologiske preparater i Sokkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
2255.0	[m]	C	OD
2257.0	[m]	C	OD
2258.0	[m]	C	OD
2260.0	[m]	C	OD
2261.0	[m]	C	OD
2262.0	[m]	C	OD
2263.5	[m]	C	OD
2264.4	[m]	C	OD
2265.6	[m]	C	OD
2266.5	[m]	C	OD
2267.5	[m]	C	OD
2268.5	[m]	C	OD
2269.5	[m]	C	OD
2270.5	[m]	C	OD
2271.5	[m]	C	OD
2272.5	[m]	C	OD
2273.5	[m]	C	OD
2274.5	[m]	C	OD
2275.5	[m]	C	OD
2276.5	[m]	C	OD
2277.5	[m]	C	OD
2278.5	[m]	C	OD
2279.5	[m]	C	OD
2280.5	[m]	C	OD
2281.5	[m]	C	OD
2282.5	[m]	C	OD
2283.5	[m]	C	OD
2284.5	[m]	C	OD



Faktasider

Brønnbane / Leting

Utskriftstidspunkt: 15.5.2024 - 04:02

2285.5	[m]	C	OD
2286.5	[m]	C	OD
2287.5	[m]	C	OD
2288.5	[m]	C	OD
2289.5	[m]	C	OD
2290.5	[m]	C	OD
2291.5	[m]	C	OD
2292.5	[m]	C	OD
2293.5	[m]	C	OD
2294.5	[m]	C	OD
2295.5	[m]	C	OD
2296.5	[m]	C	OD
2297.5	[m]	C	OD
2298.5	[m]	C	OD
2299.5	[m]	C	OD
2300.5	[m]	C	OD
2301.5	[m]	C	OD
2302.5	[m]	C	OD
2303.6	[m]	C	OD
2304.5	[m]	C	OD
2305.5	[m]	C	OD
2306.5	[m]	C	OD
2307.5	[m]	C	OD
2308.7	[m]	C	OD
2309.0	[m]	C	OD
2309.5	[m]	C	OD
2310.5	[m]	C	OD
2311.5	[m]	C	OD
2312.5	[m]	C	OD
2312.5	[m]	C	OD
2314.5	[m]	C	OD
2316.5	[m]	C	OD
2319.5	[m]	C	OD
2322.5	[m]	C	OD
2325.5	[m]	C	OD
2328.5	[m]	C	OD
2331.5	[m]	C	OD
2334.5	[m]	C	OD
2336.6	[m]	C	OD
2342.5	[m]	C	OD



2348.0	[m]	C	OD
2348.6	[m]	C	OD
2378.7	[m]	C	OD
2405.8	[m]	C	OD
2417.0	[m]	C	OD
2417.3	[m]	C	OD
2418.7	[m]	C	OD
2438.5	[m]	C	OD

Oljeprøver i Sökkeldirektoratet

Test type	Flaske nummer	Topp dyp MD [m]	Bunn dyp MD [m]	Væske type	Test tidspunkt	Prøver tilgjengelig
DST		2418.00	2424.00		21.02.1986 - 00:00	YES
DST	TEST1	0.00	0.00		20.01.1987 - 00:00	YES
DST	DST2	2355.00	2375.00		25.02.1986 - 00:00	YES
DST		2355.00	2375.00		02.03.1986 - 00:00	YES
DST	TEST2A	2355.00	2375.00		02.03.1986 - 00:00	YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
356	NORDLAND GP
356	NAUST FM
1482	KAI FM
1904	HORDALAND GP
1904	BRYGGE FM
1998	ROGALAND GP
1998	TARE FM
2025	TANG FM
2086	SHETLAND GP
2310	VIKING GP
2310	SPEKK FM
2316	MELKE FM



2353	FANGST GP
2353	GARN FM
2399	NOT FM
2409	ILE FM
2424	BÅT GP
2424	ROR FM
2474	TILJE FM

Spleisede logger

Dokument navn	Dokument format	Dokument størrelse [KB]
879_6507_7_5	pdf	0.45

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
879_1	pdf	0.27
879_2	pdf	0.09
879_3	pdf	0.19

Dokumenter - eldre Søkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
879_01_WDSS_General_Information	pdf	0.29
879_02_WDSS_completion_log	pdf	0.23

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
879_01_Completion_Report	pdf	11.57
879_02_Completion_log	pdf	2.15

Borestrengtester (DST)





Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsven til størrelse [mm]
1.0	2417	2424	35.9
2.0	2355	2375	35.9

Test nummer	Endelig avstengningstrykk [MPa]	Endelig strømningstrykk [MPa]	Bunnhullstrykk [MPa]	Borehullstemperatur [°C]
1.0	4.000	4.000	25.000	
2.0	4.000	5.000	25.000	

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstygde rel. luft	GOR [m3/m3]
1.0	774	52000	0.890		67
2.0	953	85000	0.868		89

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
CBL VDL GR CCL	2125	2621
CYBERDIP	2228	2658
CYBERLOOK	2228	2516
DIL GR SP	2228	2516
DIL SLS GR SP	2228	2658
DLL MSFL GR SP	2228	2655
HRT	355	2177
ISF SLS MSFL GR	1032	2232
LDL CNL GR	1032	2233
LDL CNL GR	2228	2516
LDL CNL NGL	2228	2659
MWD - GR RES DIR	455	2240
NGT RATIOS	2228	2659
RFT GP	2358	2637
RFT HP	2358	2637
RFT SG	2358	2637
SHDT	2228	2658
SONIC WAVEFORM	2228	2658
VELOCITY	1036	2654



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	455.0	36	455.0	0.00	LOT
INTERM.	20	1033.0	26	1040.0	1.52	LOT
INTERM.	13 3/8	2228.0	17 1/2	2255.0	1.79	LOT
INTERM.	9 5/8	2659.0	12 1/4	2660.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
426	1.03			WATER BASED	17.01.1986
1794	1.38			WATER BASED	25.01.1986
1905	1.39			WATER BASED	25.01.1986
2075	1.38	108.0	20.0	WATER BASED	05.03.1986
2098	1.34			WATER BASED	25.01.1986
2238	1.42			WATER BASED	25.01.1986
2248	1.42			WATER BASED	30.01.1986
2248	1.42			WATER BASED	31.01.1986
2248	1.42			WATER BASED	03.02.1986
2255	1.21			WATER BASED	03.02.1986
2283	1.20			WATER BASED	03.02.1986
2309	1.21			WATER BASED	01.02.1986
2362	1.22			WATER BASED	04.02.1986
2411	1.22			WATER BASED	06.02.1986
2451	1.02			WATER BASED	10.02.1986
2501	1.20			WATER BASED	10.02.1986
2512	1.20			WATER BASED	10.02.1986
2538	1.02			WATER BASED	10.02.1986
2582	1.20	24.0	9.0	WATER BASED	10.02.1986
2660	1.20	108.0	20.0	WATER BASED	14.02.1986
2660	1.20	108.0	20.0	WATER BASED	24.02.1986

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]
879 Formation pressure (Formasjonstrykk)	pdf	0.28

