

**General information**

Wellbore name	6507/8-1
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Field	HEIDRUN
Discovery	6507/7-2 Heidrun
Well name	6507/8-1
Seismic location	CN 8502 - 518 SP. 127
Production licence	124
Drilling operator	Den norske stats oljeselskap a.s
Drill permit	529-L
Drilling facility	DYVI DELTA
Drilling days	43
Entered date	28.10.1986
Completed date	09.12.1986
Release date	09.12.1988
Publication date	17.09.2007
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL/GAS
Discovery wellbore	NO
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	FANGST GP
2nd level with HC, age	EARLY JURASSIC
2nd level with HC, formation	TILJE FM
Kelly bushing elevation [m]	29.0
Water depth [m]	342.0
Total depth (MD) [m RKB]	2600.0
Final vertical depth (TVD) [m RKB]	2600.0
Maximum inclination [°]	2.6
Bottom hole temperature [°C]	86
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	ÅRE FM
Geodetic datum	ED50
NS degrees	65° 18' 35.03" N
EW degrees	7° 20' 52.8" E



NS UTM [m]	7244164.64
EW UTM [m]	423003.38
UTM zone	32
NPDID wellbore	933

Wellbore history

General

Well 6507/8-1 was drilled on the eastern part of the Heidrun Discovery. The primary objective was to ascertain that the Heidrun field extension into the 6507/8 block and to verify reserve calculations. Secondary objectives were to verify geological model and structural interpretation, and define oil water contact in the Tilje Formation. It was also intended to provide more information on reservoir characteristics and hydrocarbon fluids, and maximum input of data for reservoir simulation studies. The Fangst Group was expected at 2245 m, and the Tilje Formation at 2340 m. Prognosed TD was 2590 m.

Operations and results

Wildcat well 6507/8-1 was spudded with the semi-submersible installation Dyvi Delta on and drilled to TD at 2600 m in Early Jurassic sediments of the Åre Formation. Drilling proceeded without significant problems. The well was drilled with seawater and hi-vis pills down to 1063 m, with KCl/polymer mud from 1063 m to 2235 m, and with gel/polymer/lingo mud from 2235 m to TD.

The only oil shows reported above the target reservoir were on sandstone in a cuttings sample at 2235, and on limestone in a SWC at 2238 m, both samples from the Melke Formation. The Middle Jurassic Fangst Group was penetrated at 2248 m and the Early Jurassic Tilje Formation at 2386.5 m. These reservoir sandstones were found to be hydrocarbon bearing with a gas/oil contact at 2312 m and an oil/water contact at 2480 m.

A total of 9 cores were cut from 2249 m to 2469 m in the Garn, Not, Ile, Ror, and Tilje Formations. Core no 1 from the Garn Formation was loose sand and was lost on the drill floor while recovering from core barrel. One relatively good RFT fluid sample was taken at 2317 m. It contained oil with a density of 0.88 g/cc (29 deg API).

The well was permanently abandoned on 9 December 1986 as a gas and oil appraisal.

Testing

Two DST tests were performed in the Tilje Formation.

DST 1 tested the interval 2444 - 2463 m and produced 715 Sm³ oil and 31460 Sm³ gas /day through a 3.81 cm choke. The GOR was 44 Sm³/Sm³, the stock tank oil gravity was 0.933 g/cm³ (22.8 deg API), and the gas gravity was 0.600 (air=1). This test produced no sand.

DST 2 tested the interval 2386.4 -2405.4 m and produced 906 Sm³ oil and 50080 Sm³ gas /day through a 1.91 cm choke. The GOR was 55 Sm³/Sm³, the stock tank oil gravity was 0.917 g/cm³ (22.8 deg API), and the gas gravity was 0.615 (air=1) with 0.5 ppm H₂S and 1.5 % CO₂. This test also produced some sand. The down-hole temperatures recorded during the tests were 84.9 and 81 deg C in DST 1 and DST 2, respectively.

**Cuttings at the Norwegian Offshore Directorate**

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1050.00	2600.00

Cuttings available for sampling?	YES
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Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
2	2262.0	2272.3	[m]
3	2290.0	2314.5	[m]
4	2316.0	2343.9	[m]
5	2369.0	2386.9	[m]
6	2398.0	2411.6	[m]
7	2417.0	2434.3	[m]
8	2439.0	2466.9	[m]
9	2467.0	2494.8	[m]

Total core sample length [m]	167.1
Cores available for sampling?	YES

Core photos

2267-2271m



2262-2266m



2272-2293m



2294-2298m



2299-2303m



2304-2308m



2309-2313m



2314-2319m



2320-2324m



2325-2329m



2330-2334m



2335-2339m



2340-2369m



2370-2374m



2375-2379m



2380-2384m



2385-2400m



2401-2405m



2406-2410m



2411-2420m



2421-2425m



2426-2430m



2431-2439m



2440-2444m



2445-2449m



2450-2454m



2455-2459m



2460-2464m



2465-2469m



2470-2474m



2475-2479m



2480-2484m



2485-2489m



2490-2494m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
1700.0	[m]	DC	STATO
1730.0	[m]	DC	STATO
1740.0	[m]	DC	STATO



1760.0 [m]	DC	STATO
1770.0 [m]	DC	STATO
1790.0 [m]	DC	STATO
1800.0 [m]	DC	STATO
1820.0 [m]	DC	STATO
1830.0 [m]	DC	STATO
1850.0 [m]	DC	STATO
1860.0 [m]	DC	STATO
1880.0 [m]	DC	STATO
1890.0 [m]	DC	STATO
1910.0 [m]	DC	STATO
1920.0 [m]	DC	STATO
1940.0 [m]	DC	STATO
1950.0 [m]	DC	STATO
1970.0 [m]	DC	STATO
1980.0 [m]	DC	STATO
2000.0 [m]	DC	STATO
2010.0 [m]	DC	STATO
2030.0 [m]	DC	STATO
2040.0 [m]	DC	STATO
2060.0 [m]	DC	STATO
2070.0 [m]	DC	STATO
2090.0 [m]	DC	STATO
2100.0 [m]	DC	STATO
2120.0 [m]	DC	STATO
2130.0 [m]	DC	STATO
2150.0 [m]	DC	STATO
2160.0 [m]	DC	STATO
2180.0 [m]	DC	STATO
2190.0 [m]	DC	STATO
2210.0 [m]	DC	STATO
2220.0 [m]	DC	STATO
2223.0 [m]	SWC	STATO
2227.0 [m]	SWC	STATO
2234.0 [m]	SWC	STATO
2239.0 [m]	SWC	STATO
2244.0 [m]	SWC	STATO
2247.0 [m]	SWC	STATO
2266.0 [m]	SWC	STATO
2271.4 [m]	C	STATO



2298.6	[m]	C	STATO
2305.8	[m]	C	STATO
2323.1	[m]	C	STATO
2343.7	[m]	C	STATO
2350.0	[m]	DC	STATO
2361.0	[m]	DC	STATO
2372.2	[m]	C	STATO
2383.6	[m]	C	STATO
2398.5	[m]	C	STATO
2403.8	[m]	C	STATO
2418.9	[m]	C	STATO
2426.5	[m]	C	STATO
2444.4	[m]	C	STATO
2454.7	[m]	C	STATO
2463.8	[m]	C	STATO
2477.8	[m]	C	STATO
2489.5	[m]	C	STATO
2499.0	[m]	DC	STATO
2505.0	[m]	DC	STATO
2511.0	[m]	DC	STATO
2517.0	[m]	DC	STATO
2529.0	[m]	DC	STATO
2535.0	[m]	DC	STATO
2541.0	[m]	DC	STATO
2553.0	[m]	DC	STATO
2565.0	[m]	DC	STATO
2577.0	[m]	DC	STATO
2595.0	[m]	DC	STATO
2600.0	[m]	DC	STATO

Oil samples at the Norwegian Offshore Directorate

Test type	Bottle number	Top depth MD [m]	Bottom depth MD [m]	Fluid type	Test time	Samples available
DST	DST1	2444.00	2462.50		30.11.1986 - 00:00	YES
DST	DST2	2386.00	2406.00		04.12.1986 - 00:00	YES

**Lithostratigraphy**

Top depth [mMD RKB]	Lithostrat. unit
371	NORDLAND GP
1462	KAI FM
1885	HORDALAND GP
1885	BRYGGE FM
1970	ROGALAND GP
1970	TARE FM
2020	TANG FM
2060	SHETLAND GP
2233	VIKING GP
2233	MELKE FM
2248	FANGST GP
2248	GARN FM
2294	NOT FM
2307	ILE FM
2324	BÅT GP
2324	ROR FM
2387	TILJE FM
2559	ÅRE FM

Geochemical information

Document name	Document format	Document size [MB]
933_1	pdf	0.36
933_2	pdf	1.17
933_3	pdf	0.09

Documents - older Norwegian Offshore Directorate WDSS reports and other related documents

Document name	Document format	Document size [MB]
933_01_WDSS_General_Information	pdf	0.25
933_02_WDSS_completion_log	pdf	0.20

Documents - reported by the production licence (period for duty of secrecy expired)





Document name	Document format	Document size [MB]
933_01_Completion_Report	pdf	9.60
933_02_Completion_log	pdf	1.73

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	2444	2463	38.1
2.0	2386	2406	19.1

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0	3.000	2.000	17.000	85
2.0	6.000	5.000		81

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0	715	31460	0.932	0.600	44
2.0	906	50080	0.925		55

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CBL VDL GR	900	2214
CBL VDL GR	2063	2552
CBL VDL GR	2240	2421
CST GR	2232	2241
DITE SDT GR	2217	2596
DLL MSFL GR	2217	2591
LDL CNL GR	2217	2600
MWD - GR RES DIR	371	2600
NGS	2217	2600
RFT	2250	2580
RFT HP GR	2250	2580
RLL	1033	2600
SDT GR	1185	2217





SHDT GR	2217	2600
VELOCITY	1000	2600

Casing and leak-off tests

Casing type	Casing diam. [inch]	Casing depth [m]	Hole diam. [inch]	Hole depth [m]	LOT/FIT mud eqv. [g/cm3]	Formation test type
CONDUCTOR	30	444.0	36	610.0	0.00	LOT
INTERM.	13 3/8	1033.0	17 1/2	1050.0	1.64	LOT
INTERM.	9 5/8	2217.0	12 1/4	2235.0	1.60	LOT
LINER	7	2598.5	8 1/2	2600.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
1053	1.12	6200.0	6.8	WATER BASED	04.11.1986
1398	1.14	6300.0	5.9	WATER BASED	05.11.1986
1675	1.35	6000.0	6.3	WATER BASED	06.11.1986
1700	1.35	5100.0	4.7	WATER BASED	10.11.1986
2131	1.35	5500.0	5.9	WATER BASED	07.11.1986
2217	1.20	9999.0	6.3	WATER BASED	12.11.1986
2217	1.21	9999.0	6.3	WATER BASED	17.11.1986
2217	1.20	9500.0	5.5	WATER BASED	18.11.1986
2217	1.20		6.3	WATER BASED	19.11.1986
2217	1.20	2000.0	4.2	WATER BASED	24.11.1986
2217	1.20	1500.0	4.7	WATER BASED	24.11.1986
2217	0.00	1200.0	3.5	WATERBASED	27.11.1986
2217	1.20	3900.0	3.0	WATER BASED	28.11.1986
2217	1.20	9000.0	5.5	WATER BASED	13.11.1986
2217	1.20	9999.0	6.3	WATER BASED	14.11.1986
2217	1.20	9500.0	5.9	WATER BASED	17.11.1986
2217	0.00	1500.0	3.4	WATERBASED	25.11.1986
2217	0.00	1400.0	3.8	WATERBASED	26.11.1986
2235	1.35	5000.0	3.8	WATER BASED	10.11.1986
2262	1.20	3600.0	6.8	WATER BASED	11.11.1986

Pressure plots





The pore pressure data is sourced from well logs if no other source is specified. In some wells where pore pressure logs do not exist, information from Drill stem tests and kicks have been used. The data has been reported to the NPD, and further processed and quality controlled by IHS Markit.

Document name	Document format	Document size [MB]
933 Formation pressure (Formasjonstrykk)	pdf	0.27

