

**General information**

Wellbore name	6507/7-3
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	6507/7-3
Seismic location	BP 83 - 307 SP. 820
Production licence	095
Drilling operator	Conoco Norway Inc.
Drill permit	475-L
Drilling facility	NORTRYM
Drilling days	52
Entered date	29.07.1985
Completed date	18.09.1985
Release date	18.09.1987
Publication date	18.12.2008
Purpose - planned	APPRAISAL
Reclassified from wellbore	6507/7-A-53
Reentry	NO
Content	OIL/GAS
Discovery wellbore	NO
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	GARN FM
Kelly bushing elevation [m]	25.0
Water depth [m]	346.0
Total depth (MD) [m RKB]	2850.0
Final vertical depth (TVD) [m RKB]	2850.0
Maximum inclination [°]	1.75
Bottom hole temperature [°C]	98
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	ÅRE FM
Geodetic datum	ED50
NS degrees	65° 19' 1.31" N
EW degrees	7° 17' 44.79" E
NS UTM [m]	7245042.82



EW UTM [m]	420591.73
UTM zone	32
NPDID wellbore	482

Wellbore history

General

Appraisal well 6507/7-3 was drilled in the northern part of the Haltenbanken area, some 190 km west of the Norwegian coast. It was drilled to evaluate the "B" prospect in the intensely faulted zone that lies at the intersection of the Nordland Ridge in the northeast and the Halten Terrace in the south. The prospect was in a southward plunging horst block formed by a Late Jurassic tensional fault system. The well was drilled down dip from the 6507/7-2 discovery well. It was designed to test the Middle Jurassic sands to determine whether an oil leg was present.

Operations and results

Well 6507/7-3 was spudded with the semi-submersible installation Nortrym on 29 July 1985 and drilled to TD at 2850 m in Early Jurassic sediments of the Åre Formation. Few problems were experienced during operations on 6507/7-3, those that did occur were predominantly related to gumbo and tight hole conditions. There were no serious accidents or problems during the operation. A total of 54 days was spent on drilling, logging, testing, and completion. The well was drilled with sea water and gel sweeps down to 1030 m, and with gypsum/polymer mud from 1030 m to TD.

The Late Cretaceous (Santonian) was found directly overlying the Middle Jurassic (Callovian) Fangst Group as anticipated. No hydrocarbon fluorescence or staining was observed until the top of the Fangst Group at 2367.5 m. The Fangst and Båt Group was found oil bearing down to claystones belonging to the Ror Formation at 2540 m. Patchy fluorescence and a slight hydrocarbon odour persisted down to 2448 m. Using gradients established from electric logs, excellent RFT pressure data, and fluid analysis, the true oil/water contact was however indicated to be at 2491 m. No hydrocarbon fluorescence or staining was observed on cores or ditch cuttings below 2448 m.

Thirteen cores were cut from 2360 to 2470 m and 2500 to 2662 m with 96% recovery from the Late Cretaceous through to the Early Jurassic. Analysis of cores and logs indicated good porosities and permeabilities, particularly in the upper section. RFT fluid sampling was done in the Fangst and Båt Groups at 2390 m, 2393 m, 2395 m, 2410 m, 2417 m, 2432 m, 2433.5 m, and 2444.5 m

The well was abandoned on 18 September 1985 as an oil and gas appraisal well.

Testing

Three drill stem tests were undertaken, all of them testing the oil-bearing sands of the Fangst Group. The intervals perforated were: 2413 - 2430 m (DST 1), 2385 - 2400 m (DST 2), and 2368 - 2380 m (DST 3). At stabilized conditions on various choke sizes, peak production of oil on test was 870 Sm³/ day (5465 BOPD), with an oil gravity of 29 deg API. Associated gas production was 93000 Sm³/day (3.285 MMCFD) with a gravity of 0.67 with respect to air. The average temperatures measured at gauge carrier depth were 86.1, 85.9, and 84.8 deg C in DST, DST 2, and DST 3, respectively

Cuttings at the Norwegian Offshore Directorate



Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
460.00	2846.00

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
1	2360.0	2360.7	[m]
2	2361.0	2376.6	[m]
3	2381.0	2386.7	[m]
4	2386.1	2414.5	[m]
5	2415.0	2442.8	[m]
6	2442.8	2471.0	[m]
7	2500.0	2519.7	[m]
8	2521.0	2541.7	[m]
9	2543.0	2569.1	[m]
10	2570.0	2586.5	[m]
11	2587.0	2616.5	[m]
12	2615.5	2643.0	[m]
13	2643.0	2661.0	[m]

Total core sample length [m]	264.4
Cores available for sampling?	YES

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
2141.0	[m]	DC	OD
2159.0	[m]	DC	OD
2186.0	[m]	DC	OD
2201.0	[m]	DC	OD
2231.0	[m]	DC	OD
2255.0	[m]	C	OD
2270.0	[m]	DC	OD
2321.0	[m]	DC	OD
2345.0	[m]	DC	OD
2359.1	[m]	C	SAGA
2359.5	[m]	C	SAGA



2360.0	[m]	C	OD
2360.3	[m]	C	OD
2361.0	[m]	C	OD
2361.7	[m]	C	OD
2362.6	[m]	C	OD
2362.9	[m]	C	OD
2363.4	[m]	C	OD
2363.7	[m]	C	OD
2364.0	[m]	C	OD
2365.0	[m]	C	OD
2365.5	[m]	C	SAGA
2365.5	[m]	C	OD
2366.0	[m]	C	OD
2366.3	[m]	C	OD
2367.0	[m]	C	OD
2367.3	[m]	C	OD
2367.4	[m]	C	SAGA
2367.6	[m]	C	SAGA
2367.7	[m]	C	OD
2368.0	[m]	C	OD
2373.0	[m]	C	OD
2376.0	[m]	C	OD
2382.7	[m]	C	OD
2383.5	[m]	C	OD
2404.0	[m]	C	OD
2408.4	[m]	C	OD
2410.9	[m]	C	OD
2469.5	[m]	C	OD
2471.1	[m]	C	OD
2523.1	[m]	C	OD

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	2413.00	2430.00		03.09.1985 - 00:00	YES
DST	DST2	2385.00	2400.00		08.09.1985 - 00:00	YES



DST	DST3	2368.00	2380.00		12.09.1985 - 00:00	YES
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Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
371	NORDLAND GP
371	NAUST FM
1472	KAI FM
1906	HORDALAND GP
1906	BRYGGE FM
1990	ROGALAND GP
1990	TARE FM
2021	TANG FM
2081	SHETLAND GP
2368	FANGST GP
2368	GARN FM
2400	NOT FM
2412	ILE FM
2434	BÅT GP
2434	ROR FM
2499	TILJE FM
2720	ÅRE FM

Geochemical information

Document name	Document format	Document size [MB]
482_1	pdf	0.79
482_2	pdf	2.65

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

Document name	Document format	Document size [MB]
482_01_WDSS_General_Information	pdf	0.29
482_02_WDSS_completion_log	pdf	0.22



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

Document name	Document format	Document size [MB]
482_01_6507_7_3_COMPLETION_REPORT	pdf	12.38
482_02_6507_7_3_COMPLETION_LOG	pdf	1.92

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	2413	2430	21.0
2.0	2385	2400	24.0
3.0	2368	2380	25.4

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0	6.000	5.000	25.000	88
2.0	6.000	4.000	25.000	87
3.0	6.000	5.000	25.000	85

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0	772	86027	0.870	0.680	112
2.0	870	93021	0.909	0.737	227
3.0	823	89510	0.808	0.745	417

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CBL VDL GR CCL	1500	2804
CBL VDL GR CCL	2291	2291
CST	2310	2832
DIL LSS GR SP	2292	2847
DLL MSFL GR SP	2292	2706
FDC CNL GR	2140	2846
ISF LSS MSFL GR SP	469	1027
ISF LSS MSFL GR SP	1024	2137
LDT CNL GR	1024	2140





LDT CNL NGS	2292	2845
MWD - GYRO MULTISHOT	375	2834
RFT	2369	2601
SHDT	2235	2845
VSP	473	2834

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	469.0	36	469.0	0.00	LOT
SURF.COND.	20	1024.0	26	1030.0	1.49	LOT
INTERM.	13 3/8	2291.0	17 1/2	2307.0	1.75	LOT
INTERM.	13 3/8	2307.0	17 1/2	2360.0	1.75	LOT
INTERM.	9 5/8	2832.0	12 1/4	2850.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
469	1.14	100.0	57.5	WATER BASED	30.07.1985
469	1.03	100.0	47.8	WATER BASED	31.07.1985
469	1.07	100.0		WATER BASED	30.07.1985
469	1.14	100.0	57.5	WATER BASED	30.07.1985
469	1.03	100.0	47.8	WATER BASED	31.07.1985
1030	1.16	8.0	37.6	WATER BASED	05.08.1985
1030	1.14	7.0	234.6	WATER BASED	01.08.1985
1030	1.16	8.0	37.6	WATER BASED	05.08.1985
1035	1.09	48.0	105.0	WATER BASED	07.08.1985
1630	1.29	59.0	105.0	WATER BASED	08.08.1985
1983	1.38	22.0	148.4	WATER BASED	09.08.1985
2248	1.38	27.0	1056.0	WATER BASED	08.08.1985
2307	1.38	26.0	105.6	WATER BASED	08.08.1985
2307	1.38	25.0	96.0	WATER BASED	12.08.1985
2307	1.26	15.0	67.2	WATER BASED	12.08.1985
2307	1.26	16.0	62.4	WATER BASED	13.08.1985
2307	1.39	23.0	1008.0	WATER BASED	08.08.1985
2307	1.38	26.0	105.6	WATER BASED	08.08.1985
2307	1.38	25.0	96.0	WATER BASED	12.08.1985



2307	1.26	15.0	67.2	WATER BASED	12.08.1985
2307	1.26	16.0	62.4	WATER BASED	13.08.1985
2360	1.26	17.0	67.2	WATER BASED	15.08.1985
2381	1.26	18.0	99.0	WATER BASED	19.08.1985
2419	1.26	19.0	96.0	WATER BASED	19.08.1985
2470	1.26	19.0	96.0	WATER BASED	19.08.1985
2521	1.26	18.0	115.0	WATER BASED	17.08.1985
2566	1.26	18.0	23.0	WATER BASED	21.08.1985
2588	1.26	19.0	110.4	WATER BASED	21.08.1985
2643	1.27	21.0	124.8	WATER BASED	23.08.1985
2776	1.27	19.0	115.2	WATER BASED	26.08.1985
2850	1.27	16.0	105.0	WATER BASED	26.08.1985
2850	1.27	16.0	95.7	WATER BASED	24.08.1985

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]
482_Formation_pressure_(Formasjonstrykk)	pdf	0.27

