

**General information**

Wellbore name	35/3-1
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Well name	35/3-1
Seismic location	
Production licence	041
Drilling operator	Saga Petroleum ASA
Drill permit	162-L
Drilling facility	DEEPSEA SAGA
Drilling days	100
Entered date	19.07.1976
Completed date	26.10.1976
Release date	26.10.1978
Publication date	11.02.2005
Purpose - planned	WILDCAT
Reentry	NO
Content	DRY
Discovery wellbore	NO
Kelly bushing elevation [m]	25.0
Water depth [m]	304.0
Total depth (MD) [m RKB]	4475.0
Final vertical depth (TVD) [m RKB]	4469.6
Maximum inclination [°]	12.1
Bottom hole temperature [°C]	126
Oldest penetrated age	MIDDLE JURASSIC
Oldest penetrated formation	DRAKE FM
Geodetic datum	ED50
NS degrees	61° 50' 41.89" N
EW degrees	3° 43' 41.36" E
NS UTM [m]	6857289.00
EW UTM [m]	538333.83
UTM zone	31
NPDID wellbore	432



Wellbore history

The exploratory well, 35/3-1, was drilled on block 35/3 in the northern Norwegian North Sea, approximately 65 km west of Måløy in western Norway. The location is east of the Norwegian Trench. The general objective was to test the total stratigraphical sequence down to pre-Jurassic strata. Within the sequence, sand development was predicted for the Lower Cretaceous and the Early Jurassic, with a possibility for minor sands in Middle-Late Jurassic. The well should penetrate two seismic reflectors believed to represent top Early-pre Jurassic and basement, respectively. Planned TD was at 5250 m.

Operations and results

Wildcat well 35/3-1 was spudded with the semi-submersible installation Deepsea Saga on 19 July 1976. The well was terminated at 4475 m in the Dunlin Group (Middle Jurassic, Bajocian age). This was not the planned TD, but due to high pressure the well was abandoned at this depth for safety reasons. Because of this the two deep seismic reflectors were not tested in this well. The well was drilled with seawater and salt water gel/Milben mud down to 982 m, with gypsum mud from 982 m to 2474 m, and with lignosulphonate mud from 2474 m to TD.

A number of Tertiary sands not normally encountered in this part of the North Sea, were penetrated in this well. In the Early Jurassic, at 3805 m, a 215 m sequence of Agat Formation sandstone was penetrated. At 4145 m a 21 m sequence of Late Jurassic Intra Heather Formation sandstone was penetrated. Shows were encountered and described as follows:

"The first traces of hydrocarbons were encountered in Early Cretaceous sand at 3865 m. The sand gave a poor show of dead oil with no direct fluorescence, but with slow, streaming, cream cut fluorescence. Similar shows were occasionally encountered over the interval 3865 - 3975 m, partly with a fast, streaming, white cut fluorescence. At 3900 m a relatively clean, fine to medium grained silica cemented sand showed light brown stain, traces of pale yellow fluorescence, and fast, streaming, white cut fluorescence. In the Jurassic, two sand beds around 4220 m had a fair gas show of 350,000 ppm C1, 35000 ppm C2, and 13000 ppm C3 as recorded in The Analyst's unit. The sand had no stain and no direct fluorescence, but showed some scattered white cut fluorescence. A dirty sand stringer at 4225 m showed 130000 ppm C1, 23000 ppm C2 and 9500 C3, with associated scattered white cut fluorescence. General background gas in the Jurassic was 1000 ppm total."

Geochemical analyses showed oil maturity below ca 3200 m (%Ro > 0.5). Below ca 4100 m analyses showed abundant light hydrocarbons, indicating condensate/gas generation from Heather shales below this depth. These shales had 1.9% organic carbon on average, representing a massive source rock for condensate and gas. No conventional cores were cut and no fluid sample taken. Fifty-one sidewall cores were recovered from 2975 m to TD.

The well was plugged and abandoned on 26 October as a well with shows.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate



Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
520.00	4475.00

Cuttings available for sampling?	YES
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Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
2530.0	[m]	DC	RRI
2545.0	[m]	DC	RRI
2560.0	[m]	DC	RRI
2575.0	[m]	DC	RRI
2590.0	[m]	DC	RRI
2605.0	[m]	DC	RRI
2617.0	[m]	DC	RRI
2635.0	[m]	DC	RRI
2650.0	[m]	DC	RRI
2665.0	[m]	DC	RRI
2680.0	[m]	DC	RRI
2695.0	[m]	DC	RRI
2710.0	[m]	DC	RRI
2725.0	[m]	DC	RRI
2740.0	[m]	DC	RRI
2755.0	[m]	DC	RRI
2770.0	[m]	DC	RRI
2785.0	[m]	DC	RRI
2800.0	[m]	DC	RRI
2815.0	[m]	DC	RRI
2830.0	[m]	DC	RRI
2845.0	[m]	DC	RRI
2860.0	[m]	DC	RRI
2875.0	[m]	DC	RRI
2890.0	[m]	DC	RRI
2905.0	[m]	DC	RRI
2920.0	[m]	DC	RRI
2935.0	[m]	DC	RRI
2950.0	[m]	DC	RRI
2965.0	[m]	DC	RRI
2980.0	[m]	DC	RRI
2995.0	[m]	DC	RRI



3010.0	[m]	DC	RRI
3025.0	[m]	DC	RRI
3037.0	[m]	DC	RRI
3055.0	[m]	DC	RRI
3070.0	[m]	DC	RRI
3085.0	[m]	DC	RRI
3100.0	[m]	DC	RRI
3115.0	[m]	DC	RRI
3130.0	[m]	DC	RRI
3145.0	[m]	DC	RRI
3160.0	[m]	DC	RRI
3175.0	[m]	DC	RRI
3190.0	[m]	DC	RRI
3205.0	[m]	DC	RRI
3220.0	[m]	DC	RRI
3235.0	[m]	DC	RRI
3250.0	[m]	DC	RRI
3265.0	[m]	DC	RRI
3280.0	[m]	DC	RRI
3295.0	[m]	DC	RRI
3310.0	[m]	DC	RRI
3325.0	[m]	DC	RRI
3340.0	[m]	DC	RRI
3355.0	[m]	DC	RRI
3370.0	[m]	DC	RRI
3385.0	[m]	DC	RRI
3400.0	[m]	DC	RRI
3415.0	[m]	DC	RRI
3430.0	[m]	DC	RRI
3460.0	[m]	DC	RRI
3475.0	[m]	DC	RRI
3490.0	[m]	DC	RRI
3505.0	[m]	DC	RRI
3520.0	[m]	DC	RRI
3535.0	[m]	DC	RRI
3550.0	[m]	DC	RRI
3565.0	[m]	DC	RRI
3595.0	[m]	DC	RRI
3615.0	[m]	DC	RRI
3630.0	[m]	DC	RRI



3645.0 [m]	DC	RRI
3690.0 [m]	DC	RRI
3720.0 [m]	DC	RRI
3750.0 [m]	DC	RRI
3780.0 [m]	DC	RRI
3810.0 [m]	DC	RRI
3837.0 [m]	DC	RRI
3870.0 [m]	DC	RRI
3900.0 [m]	DC	RRI
3930.0 [m]	DC	RRI
3960.0 [m]	DC	RRI
3990.0 [m]	DC	RRI
4020.0 [m]	DC	RRI
4050.0 [m]	DC	RRI
4080.0 [m]	DC	RRI
4110.0 [m]	DC	RRI
4140.0 [m]	DC	RRI

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
330	NORDLAND GP
574	UTSIRA FM
743	HORDALAND GP
743	NO FORMAL NAME
835	NO FORMAL NAME
965	NO FORMAL NAME
1161	NO FORMAL NAME
1204	NO FORMAL NAME
1350	ROGALAND GP
1350	BALDER FM
1358	LISTA FM
1392	NO FORMAL NAME
1422	LISTA FM
1556	NO FORMAL NAME
1580	SHETLAND GP
1580	JORSALFARE FM
1720	KYRRE FM
2962	TRYGGVASON FM



3359	BLODØKS FM
3387	SVARTE FM
3725	CROMER KNOLL GP
3725	RØDBY FM
3805	AGAT FM
4020	ÅSGARD FM
4145	VIKING GP
4145	INTRA HEATHER FM SS
4166	HEATHER FM
4435	DUNLIN GP
4435	DRAKE FM

Composite logs

Document name	Document format	Document size [MB]
432	pdf	0.56

Geochemical information

Document name	Document format	Document size [MB]
432_1	pdf	1.62

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

Document name	Document format	Document size [MB]
432_01_WDSS_General_Information	pdf	0.28

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

Document name	Document format	Document size [MB]
432_01_Completion_Report	pdf	12.11
432_02_Completion_log	pdf	3.08





Logs

Log type	Log top depth [m]	Log bottom depth [m]
BHC SONIC GR	503	2472
CBL	321	4176
CBL	325	2461
FDC CNL GR	4176	4471
FDC GR	503	4182
HDT	0	0
HDT	2462	4471
IES	503	2474
ISF SONIC GR	2461	4468
MLL ML	4176	4471
VELOCITY	375	4470

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	505.0	36	507.0	0.00	LOT
SURF.COND.	20	969.0	26	970.0	0.00	LOT
INTERM.	13 3/8	2465.0	17 1/2	2466.0	1.77	LOT
INTERM.	9 5/8	4180.0	12 1/4	4182.0	2.04	LOT
OPEN HOLE		4475.0	8 1/2	4475.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
510	0.00			seawater	
819	1.10	68.0	58.0	water based	
2306	1.19	53.0	30.0	water based	
2622	1.31	46.0	18.0	water based	
3139	1.35	48.0	5.0	water based	
4202	1.37	46.0	5.0	water based	
4313	1.80	49.0	4.0	water based	