General information

Wellbore name	6506/12-4
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Well name	6506/12-4
Seismic location	ST 8403 - 203 SP. 471
Production licence	094
Drilling operator	Den norske stats oljeselskap a.s
Drill permit	460-L
Drilling facility	DYVI STENA
Drilling days	143
Entered date	24.03.1985
Completed date	13.08.1985
Release date	13.08.1987
Publication date	02.03.2004
Purpose - planned	WILDCAT
Reentry	NO
Content	SHOWS
Discovery wellbore	NO
Kelly bushing elevation [m]	25.0
Water depth [m]	257.0
Total depth (MD) [m RKB]	4457.0
Final vertical depth (TVD) [m RKB]	4455.0
Maximum inclination [°]	6
Bottom hole temperature [°C]	155
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	ÅRE FM
Geodetic datum	ED50
NS degrees	65° 12' 46.97'' N
EW degrees	6° 43' 30.37'' E
NS UTM [m]	7234298.14
EW UTM [m]	393591.29
UTM zone	32
NPDID wellbore	475

Wellbore history

General

Wildcat well 6506/12-4 was drilled on the Alpha north segment in the northern part of the Smørbukk field, Haltenbanken. The primary objective was to test the hydrocarbon bearing potential of Middle Jurassic Sandstones.

Secondary objectives were to test Early Jurassic sandstones within the coal beds, and possible sand development within the Cretaceous. The prognosed depth was 4457 m or rocks of Triassic age to satisfy the licence commitment.

The well is the typewell for the Melke, Springar, and Nise Formations, and reference well for the Viking and Cromer Knoll Groups and the Lange, Lysing, and Kvitnos Formations (NPD Bulletin no 4)

Operations and results

Wildcat well 6506/12-4 was spudded with Dyvi Offshore installation Dyvi Stena 24 March 1985 and drilled to TD at 4457 m in the Early Jurassic Åre Formation. The well was drilled with seawater and hi-vis pills down to 680 m where a shallow gas pocket caused the well to flow. The gas was led through the diverter system and mud weight was increased. This led to lost circulation, but control was gradually regained after pumping LCM pills. A cement plug was set between 600 m and 680 m. The 20" casing was set shallow at 622 m and drilling commenced with a Gypsum / Lignosulphonate mud system to the 8 1/2" section at 3936 m from where a weighted lignosulphonate mud system was used the rest of he well bore down to TD. During coring operation, at 3978 m, a water kick was experienced, but was brought under control. During cleanup at TD the drill string got stuck. While attempting to work this free, the string fell of the hook. Three weeks were spent on fishing for the string without complete success. The top of the fish is left at 3910 m.

About ten m sandstone was encountered in top Lysing Formation (Late Cenomanian ? Turonian). The sandstone was cored and it contained hydrocarbons but none were produced during DST. The Garn Formation was encountered at 3980 m and a pore pressure considerably higher than expected was observed. Shows were recorded on the cores from the Lysing. Shows recorded in sandstone sequences throughout the Jurassic indicated residual hydrocarbons. Three cores were cut in the well: one from 3135 m to 3157 m in the Lysing to Lange Formations and two from 3972 m to 4008.5 m in the Melke to Garn Formations. The well was plugged and abandoned on 13 August 1985 as a dry well with shows.

Testing

One DST test was performed in the Lysing Formation between 3133 m to 3150 m. Only water was produced and the test indicated poor reservoir characteristics. Maximum temperature at 3095.62 m was 105.9°C

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
370.00	4457.00

Cuttings available for sampling?	YES

Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	3129.0	3150.9	[m]
2	3972.0	3980.1	[m]
3	3980.2	4008.7	[m]

Total core sample length [m]	58.5
Cores available for sampling?	YES

Core photos


3129-3133m


3134-3138m


3139-3143m


3144-3148m


3149-3150m


3972-3977m


3978-3980m


3980-3985m


3986-3991m


3992-3997m


3998-4003m


4004-4008m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
1630.0	[m]	DC	OD
1990.0	[m]	DC	STRAT
2010.0	[m]	DC	STRAT
2020.0	[m]	DC	STRAT
2040.0	[m]	DC	STRAT
2050.0	[m]	DC	STRAT
2070.0	[m]	DC	STRAT
2080.0	[m]	DC	STRAT
2100.0	[m]	DC	STRAT
2110.0	[m]	DC	STRAT
2130.0	[m]	DC	STRAT
2140.0	[m]	DC	STRAT
2140.0	[m]	DC	OD
2160.0	[m]	DC	STRAT
2170.0	[m]	DC	STRAT
2180.0	[m]	DC	OD
2190.0	[m]	DC	STRAT
2210.0	[m]	DC	STRAT
2220.0	[m]	DC	STRAT
2240.0	[m]	DC	STRAT
2250.0	[m]	DC	STRAT
2270.0	[m]	DC	STRAT
2280.0	[m]	DC	STRAT
2300.0	[m]	DC	STRAT
2310.0	[m]	DC	STRAT
2326.0	[m]	DC	STRAT
2340.0	[m]	DC	STRAT
2360.0	[m]	DC	STRAT
2375.0	[m]	SWC	STRAT
2381.0	[m]	DC	STRAT
2390.0	[m]	DC	STRAT
2405.0	[m]	DC	STRAT
2434.0	[m]	DC	STRAT
2449.0	[m]	DC	STRAT
2464.0	[m]	DC	STRAT
2481.5	[m]	SWC	STRAT
2482.0	[m]	DC	STRAT
2497.0	[m]	DC	STRAT

2509.0	[m]	DC	STRAT
2527.0	[m]	DC	STRAT
2539.0	[m]	DC	STRAT
2554.0	[m]	DC	STRAT
2569.0	[m]	DC	STRAT
2579.5	[m]	SWC	STRAT
2584.0	[m]	DC	STRAT
2599.0	[m]	DC	STRAT
2614.0	[m]	DC	STRAT
2629.0	[m]	DC	STRAT
2644.0	[m]	DC	STRAT
2659.0	[m]	DC	STRAT
2674.0	[m]	DC	STRAT
2679.5	[m]	SWC	STRAT
2689.0	[m]	DC	STRAT
2704.0	[m]	DC	STRAT
2734.0	[m]	DC	STRAT
2749.0	[m]	DC	STRAT
2764.0	[m]	DC	STRAT
2779.0	[m]	DC	STRAT
2780.0	[m]	SWC	STRAT
2794.0	[m]	DC	STRAT
2809.0	[m]	DC	STRAT
2824.0	[m]	DC	STRAT
2839.0	[m]	DC	STRAT
2853.0	[m]	DC	STRAT
2868.0	[m]	DC	STRAT
2879.5	[m]	SWC	STRAT
2884.0	[m]	DC	STRAT
2899.0	[m]	DC	STRAT
2914.0	[m]	DC	STRAT
2929.0	[m]	DC	STRAT
2934.5	[m]	SWC	STRAT
2944.0	[m]	DC	STRAT
2959.0	[m]	DC	STRAT
2974.0	[m]	DC	STRAT
2989.0	[m]	DC	STRAT
3004.0	[m]	DC	STRAT
3019.0	[m]	DC	STRAT
3034.0	[m]	DC	STRAT

3034.0	[m]	DC	RRI
3049.0	[m]	DC	STRAT
3052.0	[m]	DC	RRI
3064.0	[m]	DC	STRAT
3070.0	[m]	DC	RRI
3079.0	[m]	DC	STRAT
3084.5	[m]	SWC	STRAT
3094.0	[m]	DC	STRAT
3094.0	[m]	DC	RRI
3109.0	[m]	DC	STRAT
3114.5	[m]	SWC	STRAT
3124.0	[m]	DC	STRAT
3129.1	[m]	C	STRAT
3130.1	[m]	C	SAGA
3130.4	[m]	C	SAGA
3132.5	[m]	C	STRAT
3133.2	[m]	C	STRAT
3133.4	[m]	C	SAGA
3136.6	[m]	C	STRAT
3137.8	[m]	C	SAGA
3139.0	[m]	DC	STRAT
3139.7	[m]	C	STRAT
3141.0	[m]	C	STRAT
3143.2	[m]	C	SAGA
3143.4	[m]	C	STRAT
3143.7	[m]	C	STRAT
3144.3	[m]	C	SAGA
3146.4	[m]	C	STRAT
3146.8	[m]	C	SAGA
3148.1	[m]	C	STRAT
3149.2	[m]	C	SAGA
3150.0	[m]	C	STRAT
3150.9	[m]	C	SAGA
3154.0	[m]	DC	STRAT
3160.0	[m]	DC	RRI
3169.0	[m]	DC	STRAT
3181.0	[m]	DC	RRI
3184.0	[m]	DC	STRAT
3199.0	[m]	DC	STRAT
3204.5	[m]	SWC	STRAT

3214.0	[m]	DC	STRAT
3223.0	[m]	DC	RRI
3229.0	[m]	DC	STRAT
3244.0	[m]	DC	STRAT
3244.0	[m]	DC	RRI
3259.0	[m]	DC	STRAT
3264.5	[m]	SWC	STRAT
3274.0	[m]	DC	STRAT
3283.0	[m]	DC	RRI
3289.0	[m]	DC	STRAT
3301.0	[m]	DC	RRI
3304.0	[m]	DC	STRAT
3319.0	[m]	DC	STRAT
3319.0	[m]	DC	RRI
3334.0	[m]	DC	STRAT
3337.0	[m]	DC	RRI
3349.0	[m]	DC	STRAT
3354.5	[m]	SWC	STRAT
3364.0	[m]	DC	STRAT
3373.0	[m]	DC	RRI
3379.0	[m]	DC	STRAT
3391.0	[m]	DC	RRI
3394.0	[m]	DC	STRAT
3409.0	[m]	DC	STRAT
3409.0	[m]	DC	RRI
3424.0	[m]	DC	STRAT
3427.0	[m]	DC	RRI
3439.0	[m]	DC	STRAT
3444.5	[m]	SWC	STRAT
3454.0	[m]	DC	STRAT
3463.0	[m]	DC	RRI
3469.0	[m]	DC	STRAT
3484.0	[m]	DC	STRAT
3493.0	[m]	DC	RRI
3499.0	[m]	DC	STRAT
3504.5	[m]	SWC	STRAT
3514.0	[m]	DC	STRAT
3523.0	[m]	DC	RRI
3529.0	[m]	DC	STRAT
3541.0	[m]	DC	RRI

3544.0	[m]	DC	STRAT
3559.0	[m]	DC	STRAT
3559.0	[m]	DC	RRI
3574.0	[m]	DC	STRAT
3577.0	[m]	DC	RRI
3589.0	[m]	DC	STRAT
3595.0	[m]	DC	RRI
3604.0	[m]	DC	STRAT
3613.0	[m]	DC	RRI
3619.0	[m]	DC	STRAT
3631.0	[m]	DC	RRI
3634.0	[m]	DC	STRAT
3649.0	[m]	DC	STRAT
3649.0	[m]	DC	RRI
3664.0	[m]	DC	RRI
3667.0	[m]	DC	RRI
3679.0	[m]	DC	STRAT
3685.0	[m]	DC	RRI
3697.0	[m]	DC	STRAT
3703.0	[m]	DC	RRI
3709.0	[m]	DC	STRAT
3721.0	[m]	DC	RRI
3724.0	[m]	DC	STRAT
3736.0	[m]	DC	STRAT
3739.0	[m]	DC	RRI
3754.0	[m]	DC	STRAT
3757.0	[m]	DC	RRI
3769.0	[m]	DC	STRAT
3775.0	[m]	DC	RRI
3784.0	[m]	DC	STRAT
3793.0	[m]	DC	RRI
3799.0	[m]	DC	STRAT
3811.0	[m]	DC	RRI
3814.0	[m]	DC	STRAT
3820.0	[m]	DC	RRI
3829.0	[m]	DC	STRAT
3835.0	[m]	DC	RRI
3844.0	[m]	DC	STRAT
3847.0	[m]	DC	RRI
3859.0	[m]	DC	STRAT

3859.0	[m]	DC	RRI
3871.0	[m]	DC	RRI
3874.0	[m]	DC	STRAT
3889.0	[m]	DC	STRAT
3898.0	[m]	DC	STRAT
3934.0	[m]	DC	STRAT
3943.0	[m]	DC	STRAT
3964.0	[m]	DC	STRAT
3970.0	[m]	DC	STRAT
3972.1	[m]	C	STRAT
3972.2	[m]	C	STRAT
3972.6	[m]	C	OD
3973.1	[m]	C	OD
3974.1	[m]	C	STRAT
3974.5	[m]	C	OD
3975.2	[m]	C	STRAT
3975.7	[m]	C	OD
3976.1	[m]	C	STRAT
3977.0	[m]	C	OD
3977.0	[m]	C	STRAT
3977.6	[m]	C	STRAT
3983.0	[m]	C	STRAT
3988.4	[m]	C	OD
3993.0	[m]	C	STRAT
3997.9	[m]	C	STRAT
4012.0	[m]	DC	STRAT
4021.0	[m]	DC	STRAT
4030.0	[m]	DC	STRAT
4039.0	[m]	DC	STRAT
4048.0	[m]	DC	STRAT
4057.0	[m]	DC	STRAT
4066.0	[m]	DC	STRAT
4075.0	[m]	DC	STRAT
4084.0	[m]	DC	STRAT
4093.0	[m]	DC	STRAT
4102.0	[m]	DC	STRAT
4111.0	[m]	DC	STRAT
4120.0	[m]	DC	STRAT
4132.0	[m]	DC	STRAT
4138.0	[m]	DC	STRAT

4156.0	[m]	DC	STRAT
4165.0	[m]	DC	STRAT
4174.0	[m]	DC	STRAT
4183.0	[m]	DC	STRAT
4192.0	[m]	DC	STRAT
4201.0	[m]	DC	STRAT
4210.0	[m]	DC	STRAT
4219.0	[m]	DC	STRAT
4228.0	[m]	DC	STRAT
4237.0	[m]	DC	STRAT
4246.0	[m]	DC	STRAT
4255.0	[m]	DC	STRAT
4264.0	[m]	DC	STRAT
4273.0	[m]	DC	STRAT
4282.0	[m]	DC	STRAT
4291.0	[m]	DC	STRAT
4300.0	[m]	DC	STRAT
4309.0	[m]	DC	STRAT
4318.0	[m]	DC	STRAT
4327.0	[m]	DC	STRAT
4399.0	[m]	DC	STRAT
4408.0	[m]	DC	STRAT
4417.0	[m]	DC	STRAT
4426.0	[m]	DC	STRAT
4435.0	[m]	DC	STRAT
4444.0	[m]	DC	STRAT
4459.0	[m]	DC	STRAT

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
282	NORDLAND GP
282	NAUST FM
1470	KAI FM
1897	HORDALAND GP
1897	BRYGGE FM
2065	ROGALAND GP
2065	TARE FM
2171	TANG FM

2211	SHETLAND GP
2211	SPRINGAR FM
2380	NISE FM
2600	KVITNOS FM
3133	CROMER KNOLL GP
3133	LYSING FM
3150	LANGE FM
3835	LYR FM
3855	VIKING GP
3855	SPEKK FM
3863	MELKE FM
3980	FANGST GP
3980	GARN FM
4021	NOT FM
4045	ILE FM
4116	BÅT GP
4116	ROR FM
4168	TOFTE FM
4252	TILJE FM
4414	ÅRE FM

Composite logs

Document name	Document format	Document size [MB]
475	pdf	0.76

Geochemical information

Document name	Document format	Document size [MB]
475_1	pdf	4.80

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

Document name	Document format	Document size [MB]
475_01_WDSS_General_Information	pdf	0.30

475_02_WDSS_completion_log	pdf	0.31

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

Document name	Document format	Document size [MB]
475_6506_12_4_COMPLETION_REPORT_AND_LOG	pdf	32.29

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	3133	3150	12.7

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0	17.000			

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0					

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CBL VDL GR	270	2087
CBL VDL GR	270	2087
CBL VDL GR	275	3905
CST GR	2207	3505
ISF LSS MSFL SP GR	355	638
ISF LSS MSFL SP GR	620	2105
ISF LSS MSFL SP GR	2088	3953
ISF LSS MSFL SP GR	3934	4457
LDL CNL GR	620	2106
LDL CNL HGS GR	2087	3956
LDL GR	620	2106
MWD - GR RES DIR	376	4437

NGS PL.B	3650	3956
VSP	630	3905

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	356.0	36	357.0	0.00	LOT
SURF.COND.	20	622.0	26	680.0	1.54	LOT
INTERM.	13 3/8	2089.0	17 1/2	2107.0	1.79	LOT
INTERM.	9 5/8	3936.0	12 1/4	3955.0	1.92	LOT
OPEN HOLE		4457.0	8 1/2	4457.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
680	1.12	6.0	7.3	WATERBASED	10.04.1985
680	1.12	6.0	7.3	WATER BASED	10.04.1985
1650	1.21	6.0	7.0	WATERBASED	23.04.1985
1650	1.21	6.0	7.0	WATER BASED	23.04.1985
2107	1.50	6.0	7.0	WATERBASED	25.04.1985
2107	1.50	6.0	7.0	WATER BASED	25.04.1985
3950	1.73	18.0	6.7	WATER BASED	04.06.1985
3950	1.73	18.0	6.7	WATERBASED	04.06.1985
3978	1.79	18.0	7.0	WATERBASED	20.06.1985
3978	1.79	18.0	7.0	WATER BASED	20.06.1985
4112	1.79	22.0	7.7	WATER BASED	25.06.1985
4112	1.79	22.0	7.7	WATERBASED	25.06.1985

Thin sections at the Norwegian Offshore Directorate

Depth	Unit
3129.35	[m]
3136.35	[m]
3138.35	[m]
3139.35	[m]