

WDSS Report

Date: 21/10/96

PB/SKR

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Well no:	Operator:
<b>6507/06-02</b>	<b>SAGA</b>

**Well**

Coordinates :	65° 44' 26.42" N 07° 41' 06.55" E	UTM coord. :	7291819.83 N 439718.65 E
License no :	123	Permit no :	679
Rig :	WEST ALPHA	Rig type :	SEMI-SUB.
Contractor :	SMEDVIG DRILLING		
Bottom hole temp:	140 °C	Elev. KB :	18 M
Spud. date :	91.04.27	Water depth :	315 M
Compl. date :	91.07.16	Total depth :	4354 M
Spud. class :	WILDCAT	Form. at TD :	L.TRIASSIC
Compl. class :	P&A. OIL SHOWS	Prod.form. :	
Seisloca :	B-08-83 SP 1235		

**Licensees**

10.000000 ELF PETROLEUM NORGE AS  
 15.000000 SAGA PETROLEUM ASA  
 50.000000 DEN NORSKE STATS OLJESELSKAP A.S  
 10.000000 TOTAL NORGE AS  
 15.000000 BP PETROLEUM DEV. OF NORWAY AS

**Casing and Leak-off Tests**

Type	Casing diam	Depth below KB	Hole diam.	Hole depth below KB	Lot mud eqv. g/cm3
CONDUCTOR	30	405.0	36	406.0	
INTERM.	20	1040.0	26	1042.0	1.69
INTERM.	13 3/8	2029.0	17 1/2	2030.0	1.67
INTERM.	9 5/8	3309.0	12 1/4	3310.0	1.99
OPEN HOLE		3325.0	8 1/2	3326.0	

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### Conventional Cores

Core no.	Intervals cored meters	Recovery m	%
1	3727.0 - 3732.2	5.2	100.0
2	3732.2 - 3739.2	7.0	100.0

### Mud

Depth	Mud weight	Visc.	Mud type
336.0	1.05		WATER BASED
730.0	1.44	16.0	WATER BASED
1055.0	1.05	.0	WATER BASED
1350.0	1.32	16.0	WATER BASED
1487.0	1.35	16.0	WATER BASED
1848.0	1.45	36.0	WATER BASED
1906.0	1.44	13.0	WATER BASED
2050.0	1.55	20.0	WATER BASED
2056.0	1.55	20.0	WATER BASED
2285.0	1.52	22.0	WATER BASED
2295.0	1.52	22.0	WATER BASED
2396.0	1.52	20.0	WATER BASED
2531.0	1.52	15.0	WATER BASED
2548.0	1.52	15.0	WATER BASED
2573.0	1.52	16.0	WATER BASED
2694.0	1.52	15.0	WATER BASED
2727.0	1.53	22.0	WATER BASED
2815.0	1.52	19.0	WATER BASED
2907.0	1.52	19.0	WATER BASED
2994.0	1.54	19.0	WATER BASED
3013.0	1.54	21.0	WATER BASED
3111.0	1.54	20.0	WATER BASED
3169.0	1.54	21.0	WATER BASED
3217.0	1.55	20.0	WATER BASED
3314.0	1.55	22.0	WATER BASED
3325.0	1.55	22.0	WATER BASED
3327.0	1.52	21.0	WATER BASED
3413.0	1.52	19.0	WATER BASED
3460.0	1.52	21.0	WATER BASED
3503.0	1.52	20.0	WATER BASED
3618.0	1.52	21.0	WATER BASED
3722.0	1.45	14.0	WATER BASED

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3727.0	1.52	20.0	WATER BASED
3732.0	1.52	21.0	WATER BASED
3740.0	1.52	20.0	WATER BASED
3806.0	1.52	22.0	WATER BASED
3849.0	1.52	21.0	WATER BASED
4002.0	1.50	21.0	WATER BASED
4056.0	1.48	17.0	WATER BASED
4100.0	1.45	18.0	WATER BASED
4180.0	1.45	18.0	WATER BASED
4273.0	1.45	18.0	WATER BASED
4284.0	1.45	18.0	WATER BASED
4296.0	1.45	17.0	WATER BASED
4327.0	1.45	15.0	WATER BASED
4335.0	1.45	15.0	WATER BASED
4343.0	1.45	16.0	WATER BASED
4354.0	1.45	15.0	WATER BASED

**Drill Stem Test (intervals and pressures)**

Test no.	Test interval meter	Choke size	Pressure (psi) WHP	BTHP	FFP
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**Drill Stem Test (recovery)**

Test no.	Oil Sm <sup>3</sup> /d	Gas Sm <sup>3</sup> /d	Oil grav. g/cm <sup>3</sup>	Gas grav. rel. air	GOR m <sup>3</sup> /m <sup>3</sup>
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**Drill Bit Cuttings and Wet Samples**

Sample type	Interval below KB	Number of samples
WET SAMPLES	1060 - 4354	510
CUTTINGS	1060 - 4354	630

**Shallow Gas**

Interval below KB	Remarks
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**Available Logs**

Log type	Intervals logged	1/200	1/500	
AMS	2027.0 - 3322.0			
CBL VDL GR	915.0 - 3307.0			
CDM AP/SHDT MSD	3310.0 - 4275.0			
CDR (RT)	400.0 - 1050.0			
DIL LSS GR	1038.0 - 4343.0			
DIL MSFL SLS GR	3307.0 - 4285.0			
DIL SLS GR	1038.0 - 4343.0			
DRILLING DATA PRESS.	333.0 - 4354.0			
LDL CNL GR	1038.0 - 4260.0			
LDL GR	1038.0 - 2044.0			
MUD	333.0 - 4354.0			
MWD/END OF WELL LOG	333.0 - 4343.0			
RFT	2055.0 - 2887.0			
RFT HP GAUGE	3729.0 - 3967.0			
SHDT GR	3307.0 - 4277.0			
SYNTHETIC SEISMOGRAM				
TWO WAY TRAVEL TIME				
WALKAWAY VSP				
WELLSITE LITHOLOGY	333.0 - 4354.0			
VELOCITY LOG	1000.0 - 4270.0			
VSP				

**Main operations for well: 6507/6-2****Main operation: DRILLING**

Sub operation:	Minutes:	Hours:	% of total:
BOP ACTIVITIES	3390	56,5	3,95
BOP/WELLHEAD EQ	4830	80,5	5,62
CASING	6450	107,5	7,51
CIRC/COND	4317	72,0	5,03
DRILL	39183	653,1	45,62
HOLE OPEN	540	9,0	0,63
OTHER	360	6,0	0,42
PRESS DETECTION	30	0,5	0,03
REAM	1290	21,5	1,50
SURVEY	480	8,0	0,56
TRIP	25020	417,0	29,13
<b>Total</b>	<b>85890</b>	<b>1431,5</b>	<b>100,00</b>

**Main operation: FORMATION EVAL**

Sub operation:	Minutes:	Hours:	% of total:
CIRC SAMPLES	180	3,0	1,63
CIRC/COND	570	9,5	5,15
CORE	750	12,5	6,78
LOG	6540	109,0	59,08
OTHER	30	0,5	0,27
RFT/FIT	960	16,0	8,67
TRIP	2040	34,0	18,43
<b>Total</b>	<b>11070</b>	<b>184,5</b>	<b>100,00</b>

**Main operation: INTERRUPTION**

Sub operation:	Minutes:	Hours:	% of total:
FISH	2490	41,5	23,45
LOST CIRC	1890	31,5	17,80
MAINTAIN/REP	3990	66,5	37,57
OTHER	2250	37,5	21,19
<b>Total</b>	<b>10620</b>	<b>177,0</b>	<b>100,00</b>

**Main operation: MOVING**

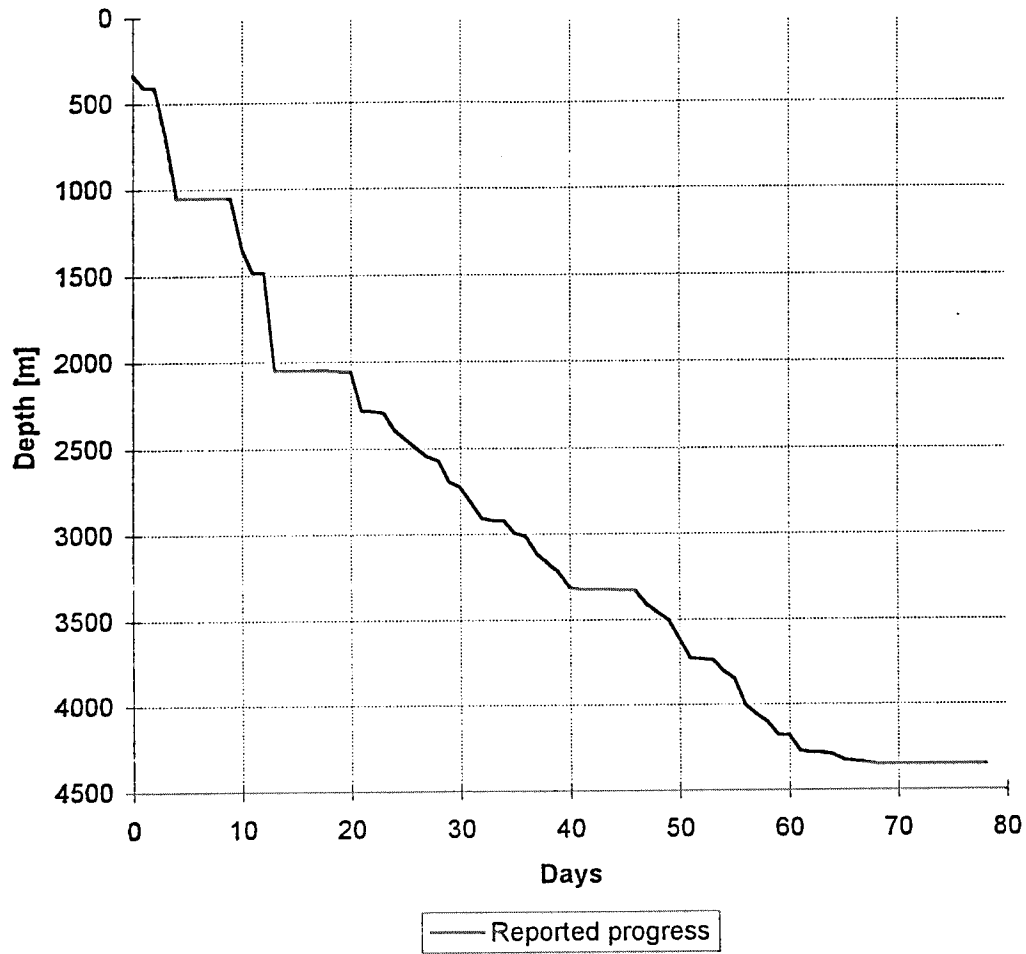
Sub operation:	Minutes:	Hours:	% of total:
ANCHOR	3180	53,0	96,36
POSITION	120	2,0	3,64
<b>Total</b>	<b>3300</b>	<b>55,0</b>	<b>100,00</b>

**Main operation: PLUG & ABANDON**

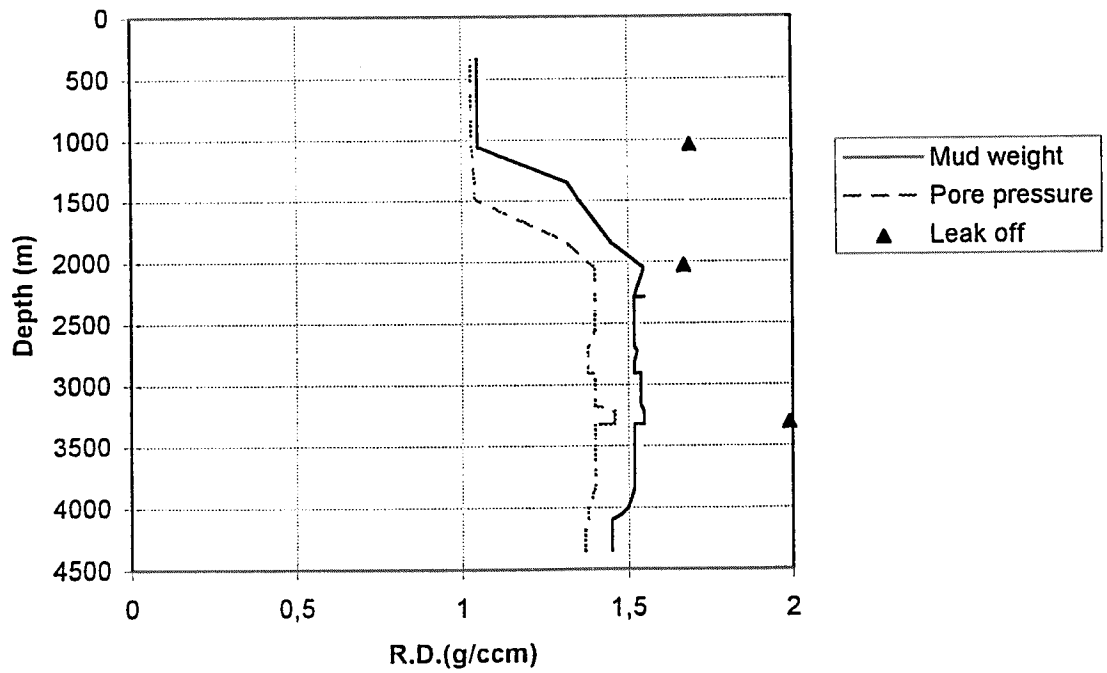
Sub operation:	Minutes:	Hours:	% of total:
CEMENT PLUG	870	14,5	13,74
CIRC/COND	390	6,5	6,16
CUT	570	9,5	9,00
EQUIP RECOVERY	1080	18,0	17,06
MECHANICAL PLUG	510	8,5	8,06
PERFORATE	300	5,0	4,74
SQUEEZE	210	3,5	3,32
TRIP	2400	40,0	37,91
<b>Total</b>	<b>6330</b>	<b>105,5</b>	<b>100,00</b>

Total time used: 1953,5 Hours

Depth vs time for well: 6507/6-2



Composite plot for well: 6507/6-2



# Well History 6507/6-2

## General:

Well 6507/6-2 was designed to drill the north-western corner of block 6507/6, on a rotated fault block off the Donna Terrace, immediately north-west of the main fault zone.

It was defined as a structural fault trap on a rotated downfaulted block with possibilities of a larger "stratigraphic closure", where the main fault zone against the Nordland Ridge acted as a sealing fault. The main objectives of the well were:

- 1) to test the hydrocarbon potential of the Jurassic Fangst Group and the Tilje Formation.
- 2) to test the reservoir properties and hydrocarbon potential of the Cretaceous Lysing Formation Equivalent.
- 3) to test a possible sand development below the Inter Cromer Knoll Unconformity.
- 4) to test the probable source rock properties of the Spekk and Åre Formations.

Maximum formation pressure was expected to approximate  $1.60 \text{ g/cm}^3$  in the Shetland Group decreasing to  $1.40 \text{ g/cm}^3$  at top Cromer Knoll Group. Below this level the expected formation pressure was uncertain, but most likely it would not exceed  $1.50 \text{ g/cm}^3$ . No shallow gas warnings were given for this well.

## Operations:

Wildcat well 6507/06-02 was spudded 27 April 1991 by the semi-submersible rig West Alpha and completed 16 July 1991 at a total depth of 4354m RKB in shale interbedded with sandstone and coal of the Åre Formation. Båt Group of Rhaetian age (Triassic). Only minor problems occurred while drilling the hole. The well mainly penetrated claystones with minor silt and sandstone intervals down to Top Cromer Knoll Group at 2663 m RKB MD. In the Cromer Knoll Group the lithology was mainly claystone with thin intervals of sandstone and limestone. The reservoir in the Fangst Group was reached at 3727 m RKB MD, 336 m deeper than prognosed, and proved to be dry. However, oil was found in a thin sand bed in the Lange Formation (Turonian age). This sand was neither cored nor production tested, but oil was recovered by RFT sampling. A total of two conventional cores were cut in the Garn Formation between 3727 to 3740 m RKB MD. A total of 180 sidewall cores were attempted, and 130 were recovered. The well was permanently plugged and abandoned with oil shows.

## Testing:

No DST tests were performed

# Geological Tops.

## Well: 6507/6-2.

	Depth m (RKB).
Nordland Group	333.0
Naus Fm	593.0
Kai Fm	1395.0
Hordaland Group	1818.0
Brygge Fm	1818.0
Rogaland Group	1981.0
Tare Fm	1891.0
Tang Fm	2039.0
Shetland Group	2092.0
Cromer Knoll Group	2663.0
Lange Fm	2663.0
Lyr Fm	3154.0
Viking Group	3175.0
Spekk Fm	3175.0
Melke Fm	3276.0
Fangst Group	3727.0
Garn Fm	3737.0
Not Fm	3781.0
Ile Fm	3812.0
Båt Group	3853.0
Ror Fm	3853.0
Tilje Fm	3904.0
Åre Fm	4014.0
T.D.	4354.0