

Well no : 6506/12-01

Operator : STATOIL

Coordinates : 65 10 07.58 N  
06 43 44.07 E

UTM coord. : 7229359 N  
393591 E

Licence no : 94

Permit no : 430

Rig : ROSS ISLE

Rig type : SEMI-SUB.

Contractor : ROSS DRILLING CO. A/S

Bottom hole temperature : 155.6 deg.C

Elev. KB : 22 M

Spud. date : 84.05.15

Water depth : 250 M

Compl. date : 85.02.06

Total depth : 4925 M

Spud. class : WILDCAT

Form. at TD : JURA/TRIAS

Compl. class : P&A. GAS/COND. DISC.

Prod. form :

Seisloca : 911460 SP. 230

## LICENSEES

-----  
10.000000 NORSK AGIP A/S  
10.000000 ARCO NORGE A/S  
5.000000 NORSK HYDRO PRODUKSJON A.S  
15.000000 MOBIL EXPLORATION NORWAY INC.  
50.000000 DEN NORSKE STATS OLJESELSKAP A.S  
10.000000 TENNECO OIL NORWAY A/S

## CASING AND LEAK-OFF TESTS

Type	Casing diam.	Depth below KB	Hole diam.	Hole depth below KB	Lot mud eqv. g/cm <sup>3</sup>
-----	-----	-----	-----	-----	-----
CONDUCTOR	30	346.0	36	347.0	
SURF.COND.	20	931.0	26	951.0	
INTERM.	13 3/8	2184.0	17 1/2	2203.0	1.81
INTERM.	9 5/8	3907.0	12 1/4	3918.0	1.92
LINER	7	4553.0	8 1/2	4554.0	1.98
OPEN HOLE			6	4925.0	

## CONVENTIONAL CORES

Core no.	Intervals cored meters	Recovery		Series
		M	%	
1	3975.0 - 3993.0	18.0	100.0	MIDDLE JURASSIC
2	3993.0 - 4022.0	29.0	100.0	MIDDLE JURASSIC
3	4023.0 - 4044.0	21.0	100.0	MIDDLE JURASSIC
4	4044.0 - 4070.0	26.0	99.3	MIDDLE JURASSIC
5	4071.0 - 4098.0	26.4	97.8	MIDDLE JURASSIC
6	4098.0 - 4125.0	26.5	98.1	M/L JURASSIC
7	4125.0 - 4151.0	26.8	100.0	LOWER JURASSIC
8	4152.0 - 4191.0	37.0	100.0	LOWER JURASSIC
9	4191.0 - 4206.0	14.1	94.0	LOWER JURASSIC
10	4206.0 - 4229.5	23.5	87.5	LOWER JURASSIC
11	4230.0 - 4250.0	20.0	90.5	LOWER JURASSIC
12	4251.0 - 4274.7	23.7	94.2	LOWER JURASSIC
13	4276.0 - 4277.4	1.4	48.0	LOWER JURASSIC
14	4278.0 - 4290.4	12.4	88.0	LOWER JURASSIC

## MUD PROPERTIES

Depth below KB meter	Mud weight g/cm <sup>3</sup>	Plastic viscosity mPa.s	Mud type
346.000	1.10	7.0	WATER BASED
1274.000	1.13	6.0	WATER BASED
1700.000	1.17	8.0	WATER BASED
2110.000	1.35	11.0	WATER BASED
2300.000	1.60	16.0	WATER BASED
2718.000	1.65	20.0	WATER BASED
3654.000	1.68	16.0	WATER BASED
3917.000	1.72	15.0	WATER BASED
3973.000	1.25	12.0	WATER BASED
4554.000	1.28	17.0	WATER BASED
4682.000	1.36	16.0	WATER BASED
4757.000	1.40	16.0	WATER BASED
4833.000	1.45	20.0	WATER BASED
4924.000	1.53	20.0	WATER BASED

## DRILL STEM TEST

### INTERVALS AND PRESSURES

Test no	interval meter	Choke size	Pressure (PSI)		
			WHP	BTHP	FFP
1.0	4504.000 - 4509.000	31.8	6769.6	7157.8	4371.7
2.0	4351.000 - 4373.000	25.4	1772.4	6236.6	1740.5
3.0	4291.300 - 4304.200	32.0		6816.8	
4.1	4251.000 - 4261.000	23.8	1849.2	6816.8	2755.8
5.0	4218.000 - 4203.000	25.4	1199.5		
6.0	4095.000 - 4110.000				
7.0	3993.000 - 4011.000	31.8	1205.2		

### RECOVERY

Test no.	Oil Sm <sup>3</sup> /d	Gas M 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>
1.0	NO RESPONSE FROM FORMATION				
2.0	517*	0.37	0.790	0.750	1338
3.0	NO RESPONSE FROM FORMATION				
4.1	670*	0.60	0.805	0.750	816
5.0	376*	0.58	0.790	0.750	1550
5.1	273*	0.41	0.790	0.750	1500
6.0	NO RESPONSE FROM FORMATION				
7.0	511*	0.73	0.790	0.750	1424

\* - CONDENSATE

## DRILL BIT CUTTINGS AND WET SAMPLES

SAMPLE TYPE	INTERVAL BELOW KB	NUMBER OF SAMPLES
Cutting	347 - 4922.5	1520
Wet Samples	350 - 4922.5	500

## SHALLOW GAS

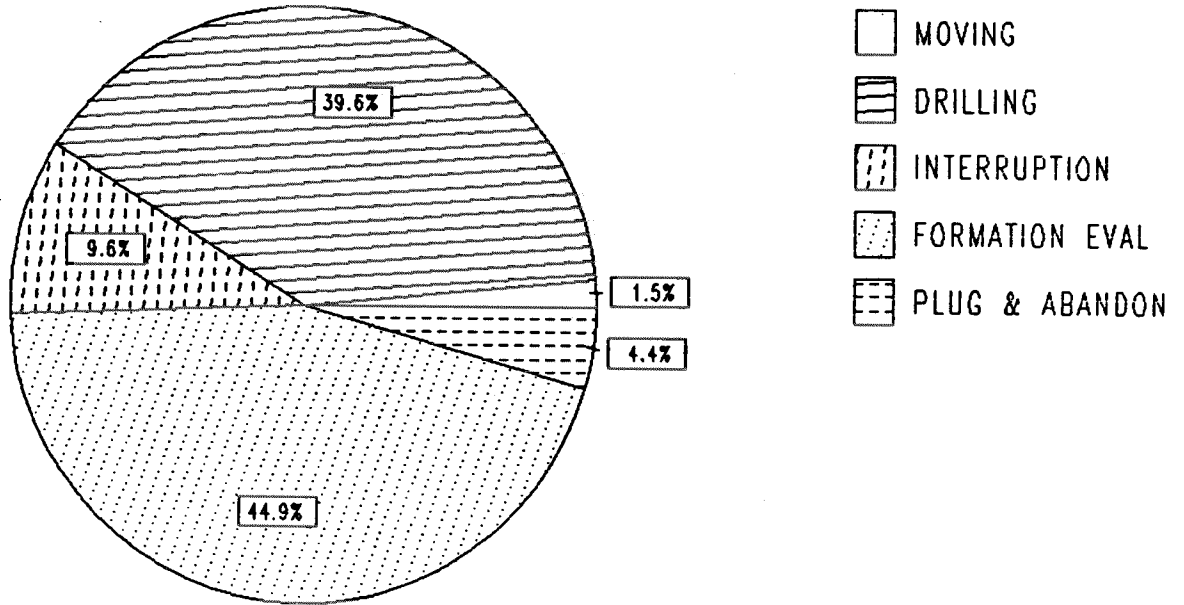
Interval below KB	REMARKS
530 - 580 - 593 M	GAS CHARGED SAND LAYERS
662 - 713 - 717 M	GAS CHARGED SAND LAYERS

## AVAILABLE LOGS

LOG TYPE	INTERVALS	1/200	1/500
ISF LSS MSFL GR	346 - 945	X	
ISF LSS MSFL	931 - 2200	X	
ISF LSS MSFL	2185 - 3916	X	
ISF LSS MSFL	3909 - 4230	X	
ISF LSS MSFL	3909 - 4554	X	
ISF LSS MSFL	4554 - 4926	X	
ISF LSS MSFL	346 - 4926		X
LDL CNL	346 - 947	X	
LDL CNL	931 - 2201	X	
LDL CNL	2185 - 3921	X	
LDL CNL	3909 - 4231	X	
LDL CNL	3909 - 4556	X	
LDL CNL	4554 - 4929	X	
LDL CNL	346 - 4929		X
DLL	3909 - 4549	X	X
DLL	4554 - 4924	X	X
SHDT	3550 - 3921	X	
SHDT	3909 - 4557	X	
NGS PLAYBACK	3550 - 3910	X	
NGS PLAYBACK	3909 - 4510	X	
RFT PRETEST SAMPLE	3976 - 4098	X	
RFT SAMPLE	3987 - 3987	X	
RFT PRETEST	4077 - 4454	X	
RFT	4573 - 4794	X	
CBL VDL	790 - 2181	X	
CBL VDL	2472 - 3906	X	
CBL VDL	3754 - 4926	X	
CBL VDL CCL	3754 - 4510	X	
MUD	272 - 4924		X
VELOCITY	350 - 4925		X
(+ Synthetic Seismogram, Geogram, 10 cm/s,			6 stk)
(+ V.S.P., Plot 1-9,			9 stk)
(+ Composite VSP Geogram Display, 10 cm/s,			3 stk)

# DAILY DRILLING REPORT SYSTEM

Main operation : 6506/12-01



Total : 4224 HRS

Main operation	Minutes	Hours	% of total
MOVING	3720	62.00	1.47
DRILLING	100350	1672.50	39.60
INTERRUPTION	24210	403.50	9.55
FORMATION EVAL	113910	1898.50	44.95
PLUG & ABANDON	11250	187.50	4.44

MAIN OPERATIONS WELL : 6506/12-01

MAIN OPERATION: DRILLING

Sub operations	Min	Hrs	% of total
TRIP	15390	256.50	15.34
OTHER	210	3.50	0.21
DRILL	40440	674.00	40.30
CIRC/COND	4770	79.50	4.75
SURVEY	1470	24.50	1.46
CASING	19983	333.05	19.91
BOP/WELLHEAD EQ	6117	101.95	6.10
REAM	3120	52.00	3.11
PRESS DETECTION	1740	29.00	1.73
UNDERREAM	2760	46.00	2.75
BOP ACTIVITIES	3870	64.50	3.86
WAIT	480	8.00	0.48
<b>TOTAL</b>	<b>100350</b>	<b>1672.50</b>	

MAIN OPERATION: MOVING

Sub operations	Min	Hrs	% of total
TRANSIT	750	12.50	20.16
ANCHOR	2970	49.50	79.84
<b>TOTAL</b>	<b>3720</b>	<b>62.00</b>	

MAIN OPERATION: FORMATION EVAL

Sub operations	Min	Hrs	% of total
LOG	10905	181.75	9.57
CIRC SAMPLES	330	5.50	0.29
CIRC/COND	3270	54.50	2.87
CORE	9540	159.00	8.38
TRIP	19410	323.50	17.04
OTHER	2460	41.00	2.16
RFT/FIT	2385	39.75	2.09
DST	65610	1093.50	57.60
<b>TOTAL</b>	<b>113910</b>	<b>1898.50</b>	

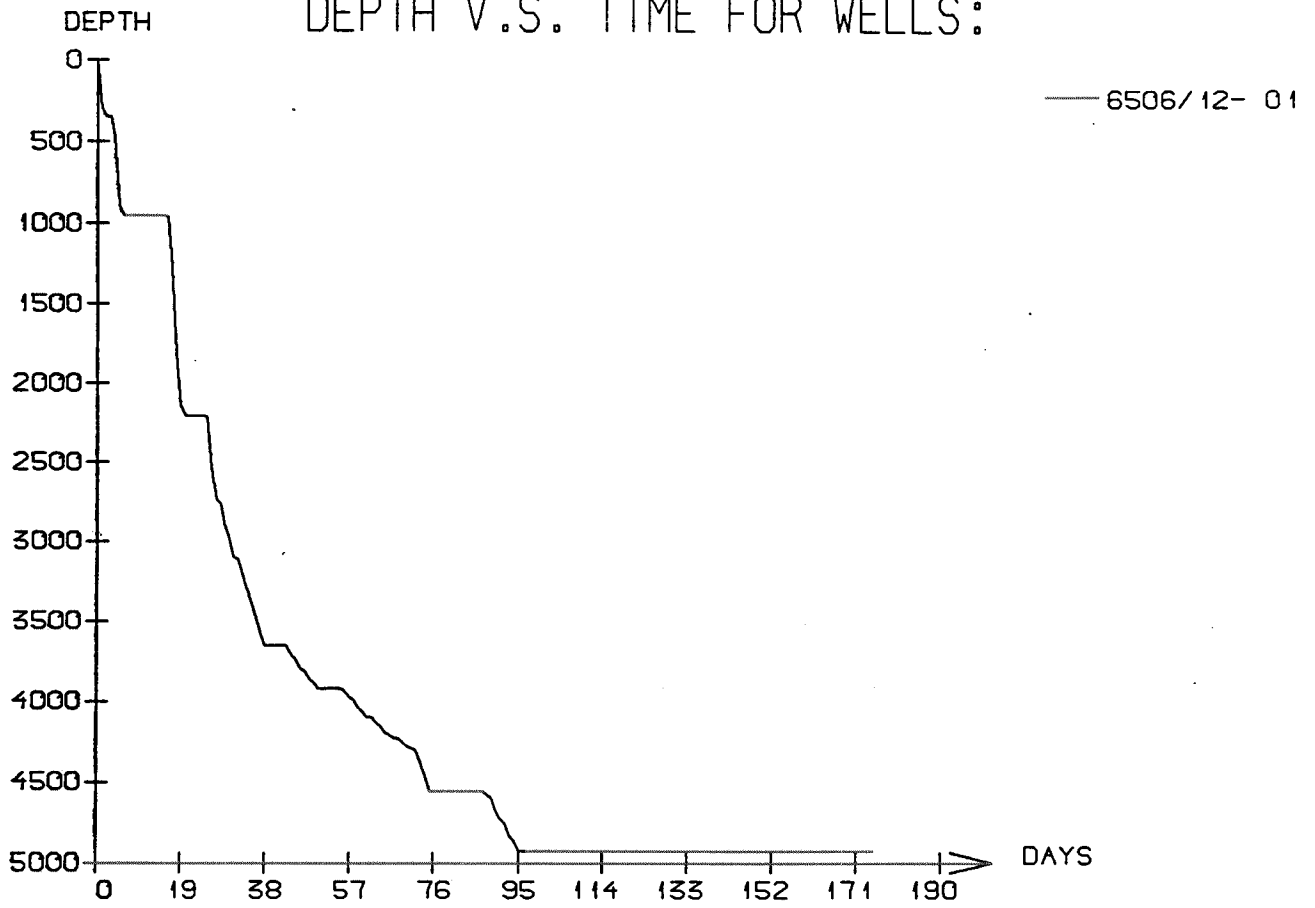
MAIN OPERATION: INTERRUPTION

Sub operations	Min	Hrs	% of total
MAINTAIN/REP	10950	182.50	45.23
FISH	7770	129.50	32.09
WAIT	5490	91.50	22.68
<b>TOTAL</b>	<b>24210</b>	<b>403.50</b>	

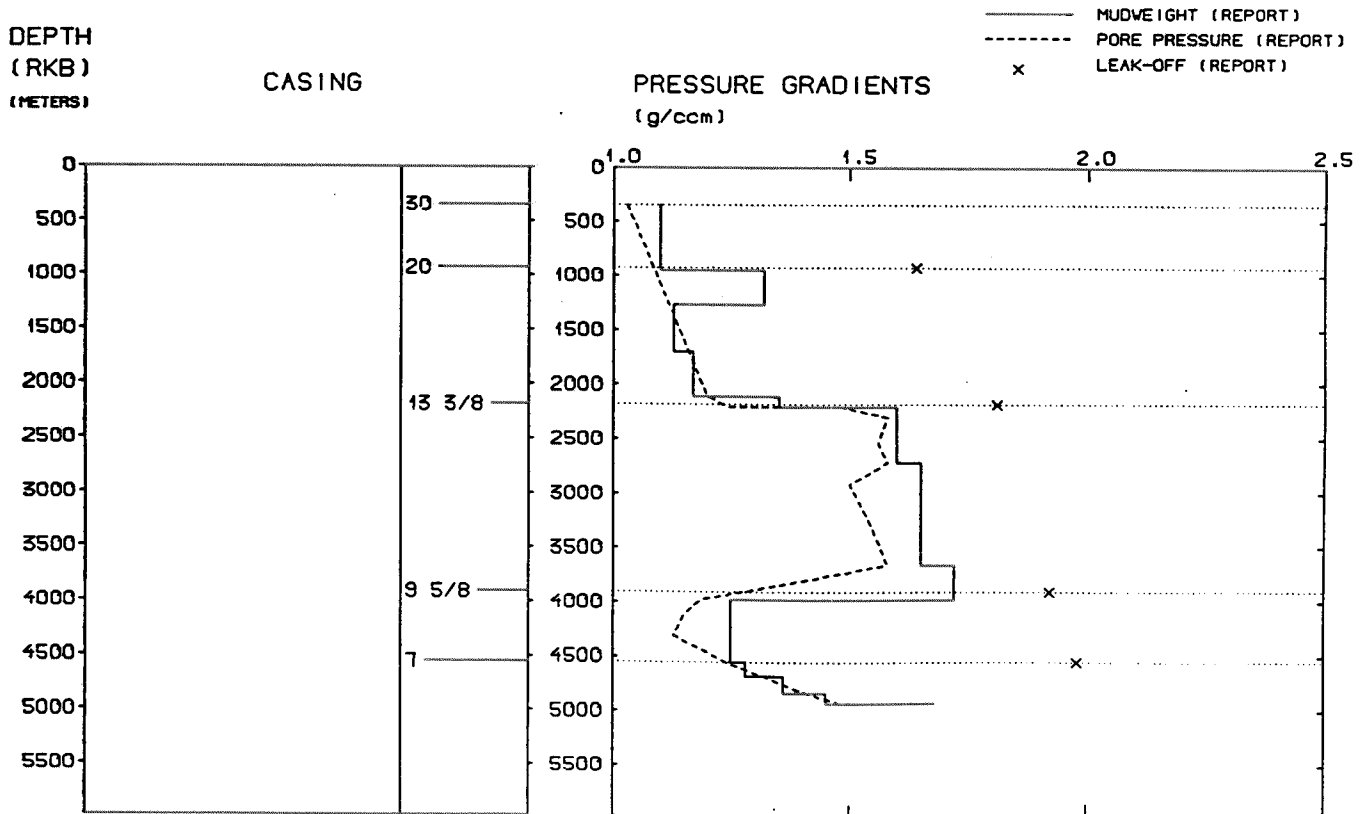
MAIN OPERATION: PLUG & ABANDON

Sub operations	Min	Hrs	% of total
TRIP	5430	90.50	48.27
CIRC/COND	1860	31.00	16.53
CEMENT PLUG	870	14.50	7.73
MECHANICAL PLUG	450	7.50	4.00
CUT	660	11.00	5.87
PERFORATE	510	8.50	4.53
EQUIP RECOVERY	1230	20.50	10.93
OTHER	240	4.00	2.13
<b>TOTAL</b>	<b>11250</b>	<b>187.50</b>	

# DEPTH V.S. TIME FOR WELLS:



## WELL: 650612 01      PRESSURE COMPOSITE PLOT



## WELL HISTORY 6506/12-1

### GENERAL:

Wildcat well 6506/12-1 was drilled on the Alpha structure in the north-west part of the block. The main objective was Middle Jurassic sandstones in an anti-form structure. The secondary and tertiary objectives were Early Jurassic and Triassic sandstones on the same structure. Late and Early Cretaceous were also considered possible zones of hydrocarbon accumulations.

### OPERATIONS:

6506/12-1 was spudded 15 Mai 1985 by the semi-submersible rig Ross Isle. Drilling down to, and cementing the 20" casing, went without problems. While testing the casing a leak was discovered. No influx or loss of fluid was experienced. The problem was solved by setting a cement plugg in the interval 540-590 m. A leak-off test equal to  $1.34 \text{ g/cm}^3$  below the 20" casing shoe was considered to low, and a cement squeeze was performed, after which a formation integrity test gave  $1.64 \text{ g/cm}^3$  without leak-off. A cement squeeze also had to be performed to obtain a satisfactory leak-off test below the 13 3/8" casing shoe. Pore pressures were considerably below prognosed down to this depth. While preparing to run the 9 5/8" casing a sealing ring was dislodged and had to be milled. At 4925 m it was decided to stop the drilling as the angel had buildt up to much, and a RFT-tool was stuck in the hole. The well was then logged and plugged back for testing. A total of 14 cores were cut. 6506/12-1 is drilled in a structure complex where further drillings are planned to determine the importance of this gas and condensate discovery.

### TESTING:

7 different intervals in the reservoir were tested, and gas and condensate was produced from 4, whilst the other 3 showed the formation to be tight. The gas/oil ratio differ some from interval to interval.



# GEOLOGICAL TOPS

WELL: 6506/12-01

	Depth m (RKB)
<i>Nordland Group</i>	272,0
<i>Naust Fm</i>	272,0
<i>Kai Fm</i>	1459,0
<i>Hordaland Group</i>	1931,0
<i>Brygge Fm</i>	1931,0
<i>Rogaland Group</i>	2132,0
<i>Tare Fm</i>	2132,0
<i>Tang Fm</i>	2227,0
<i>Shetland Group</i>	2279,0
<i>Cromer Knoll Group</i>	3175,0
<i>Viking Group</i>	3836,0
<i>Spekk Fm</i>	3836,0
<i>Melke Fm</i>	3852,0
<i>Fangst Group</i>	3974,0
<i>Garn Fm</i>	3974,0
<i>Not Fm</i>	4013,0
<i>Ile Fm</i>	4048,0
<i>Båt Group</i>	4107,0
<i>Ror Fm</i>	4107,0
<i>Tofte Fm</i>	4164,0
<i>Tilje Fm</i>	4229,0
<i>Åre Fm</i>	4437,0
<i>TD=</i>	4925,0