

Well no : 34/10-32 Operator : STATOIL

Coordinates : 61 04 33.37 N UTM coord. : 6771662 N
 02 12 43.59 E 457486 E

Licence no : 50 Permit no : 540

Rig : WEST VISION Rig type : SEMI-SUB.

Contractor : A/S SMEDVIG DRILLING CO.

Bottom hole temperature : deg.C Elev. KB : 34 M

Spud. date : 87.04.09 Water depth : 136 M

Compl. date : 87.07.13 Total depth : 3753 M

Spud. class : APPRAISAL Form. at TD :

Compl. class : SUSP. Prod. form :

Seisloca : ST 8134-227 CP 365

LICENSEES

9.000000 NORSK HYDRO PRODUKSJON A.S
 6.000000 SAGA PETROLEUM A.S.
 85.000000 DEN NORSKE STATS OLJESELSKAP A.S

CASING AND LEAK-OFF TESTS

Type	Casing diam.	Depth below KB	Hole diam.	Hole depth below KB	Lot mud eqv. g/cm3
CONDUCTOR	30	278.0	36	278.0	.
SURF.COND.	20	316.0	26	350.0	1.34
INTERM.	13 3/8	1787.0	17 1/2	1800.0	1.76
INTERM.	9 5/8	2924.0	12 1/4	2940.0	1.95
LINER	7	3739.0	8 1/2	3753.0	.

CONVENTIONAL CORES

Core no.	Intervals cored meters	Recovery		Series
		M	%	
1	3176.0 - 3189.0	13.0	100.0	
2	3359.0 - 3371.3	12.3	100.0	LOWER JURASSIC
3	3373.0 - 3400.0	27.0	100.0	LOWER JURASSIC
4	3400.0 - 3427.0	27.0	100.0	LOWER JURASSIC
5	3427.4 - 3447.2	19.8	100.0	LOWER JURASSIC
6	3707.0 - 3723.0	16.2	100.0	TRIASSIC

MUD PROPERTIES

Depth below KB meter	Mud weighth g/cm3	Viscosity	Mud type
1873.000	1.20	20.0	WATER BASED
1981.000	1.30	20.0	WATER BASED
281.000	1.15	48.0	WATER BASED
631.000	1.18	61.0	WATER BASED
2133.000	1.30	65.0	WATER BASED
2307.000	1.35	26.0	WATER BASED

2535.000	1.40	55.0	WATER BASED
2700.000	1.45	55.0	WATER BASED
2968.000	1.50	50.0	WATER BASED
3062.000	1.55	55.0	WATER BASED

DRILL STEM TEST

INTERVALS AND PRESSURES

Test no.	interval meter	Choke size	Pressure (PSI)		
			WHP	BTHP	FFP
1.0	3468.000 - 3482.000	15.9	158.1	5144.3	
	Test temperature: 129.0 °C				
2.0	3379.000 - 3385.000	12.7	3113.9	6490.2	
	Test temperature: 126.0 °C				

RECOVERY

Test no.	Oil Sm ³ /d	Gas Sm ³ /d	Oil grav. g/cm ³	Gas grav. rel. air	GOR m ³ /m ³
1.0	0	1800	0.000	0.661	0
2.0	870	118300	0.858	0.642	136

DRILL BIT CUTTINGS AND WET SAMPLES

SAMPLE TYPE	INTERVAL BELOW KB	NUMBER OF SAMPLES
Cutting	280-3753	630
Wet Samples	280-3753	390

SHALLOW GAS

Interval below KB	REMARKS
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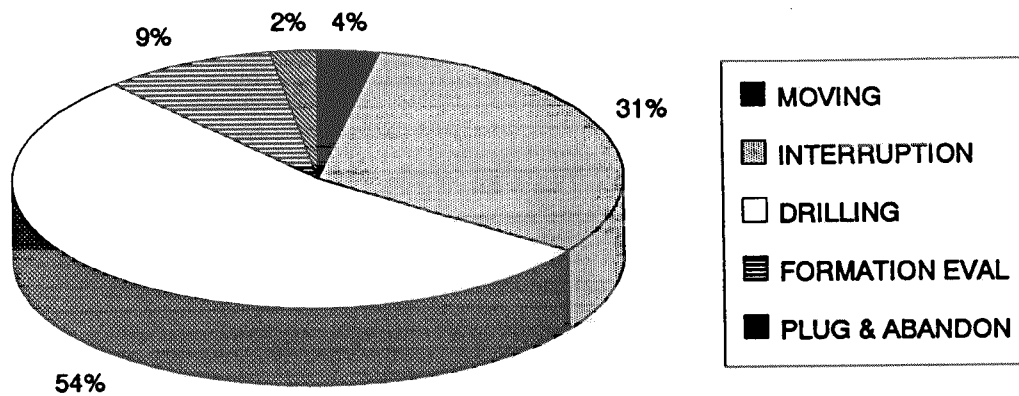
AVAILABLE LOGS

LOG TYPE	INTERVALS	1/200	1/500	Div.
LSS GR	1782.000 - 2936.000	X	X	
DLL GR	2924.000 - 3752.000	X	X	
DITE SDTA MSFL GR	2924.000 - 3754.000	X	X	
LDL GR	1782.000 - 2930.500	X	X	
LDL CNL NGS PCD EPT	2924.000 - 3756.000	X	X	
SHDT MSD	2926.000 - 3737.000	X		
SHDT/NGS SPEC-RATIOS	2924.000 - 3756.000	X		
CDM AP/SHDT MSD	2926.000 - 3737.000	X	X	
RFT GR STRAIN GAUGE	3043.000 - 3374.000			
RFT GR HP GAUGE	3043.000 - 3374.000			
RFT HP-CAUSED GAUGE	3043.000 - 3656.000			

RFT STRAIN GAUGE	3643.000 - 3656.000		
CASED HOLE			
CBL VDL GR	1300.000 - 1781.000		X
CBL VDL GR 9 5/8"	860.000 - 2920.000		X
CBL VDL CCL	2786.000 - 3685.000		X
VELOCITY	1782.000 - 3754.000	1:1000	X
(VSP,f/offset, run 3a, 1700-3675 m.			1 stk.)
(VSP,rigshot, plot 1-5			5 stk.)
(Geogram,Synthetic seismogram,10 cm/s			8 stk.)

DAILY DRILLING REPORT SYSTEM

MAIN OPERATIONS FOR WELL: 34/10-32



Main operation	Minutes	Hrs	% of total
MOVING	5010	83,5	3,51
INTERRUPTION	44550	742,5	31,25
DRILLING	76710	1278,5	53,81
FORMATION EVAL	12990	216,5	9,11
PLUG & ABANDON	3300	55,0	2,31
<i>Total</i>	142560	2376,0	100,00

SUB OPERATIONS FOR WELL: 34/10-32

MAIN OPERATION: MOVING

Sub operation	Minutes	Hrs	% of total
ANCHOR	4470	74,5	89,22
TRANSIT	540	9,0	10,78
<i>Total</i>	5010	83,5	100,00

MAIN OPERATION: INTERRUPTION

Sub operation	Minutes	Hrs	% of total
MAINTAIN/REP	19320	322,0	43,37
FISH	18750	312,5	42,09
SIDETRACK	6480	108,0	14,55
<i>Total</i>	44550	742,5	100,00

MAIN OPERATION: DRILLING

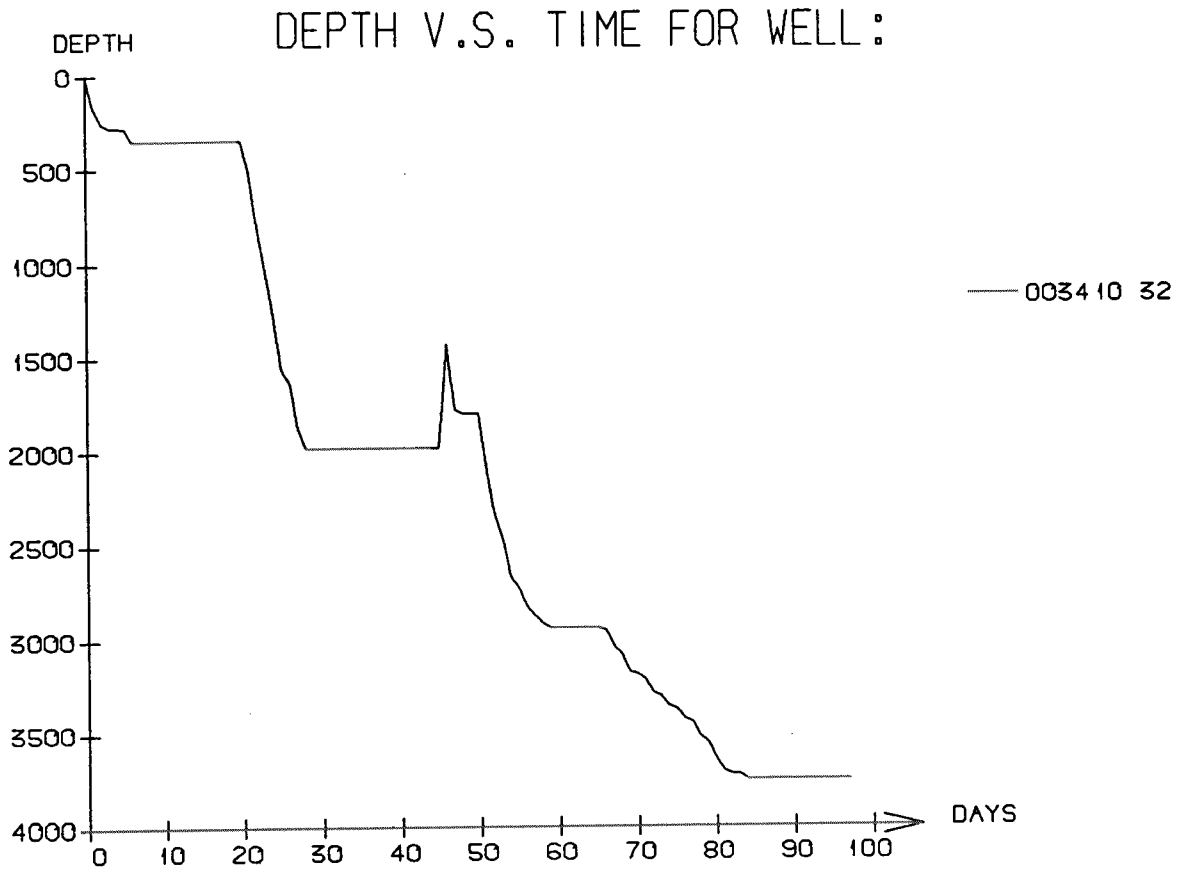
Sub operation	Minutes	Hrs	% of total
TRIP	15690	261,5	20,45
DRILL	26490	441,5	34,53
CIRC/COND	3570	59,5	4,65
CASING	18090	301,5	23,58
BOP/WELLHEAD EQ	6180	103,0	8,06
UNDERREAM	510	8,5	0,66
PRESS DETECTION	1050	17,5	1,37
SURVEY	1290	21,5	1,68
BOP ACTIVITIES	1530	25,5	1,99
REAM	2190	36,5	2,85
OTHER	120	2,0	0,16
<i>Total</i>	76710	1278,5	100,00

MAIN OPERATION: FORMATION EVAL

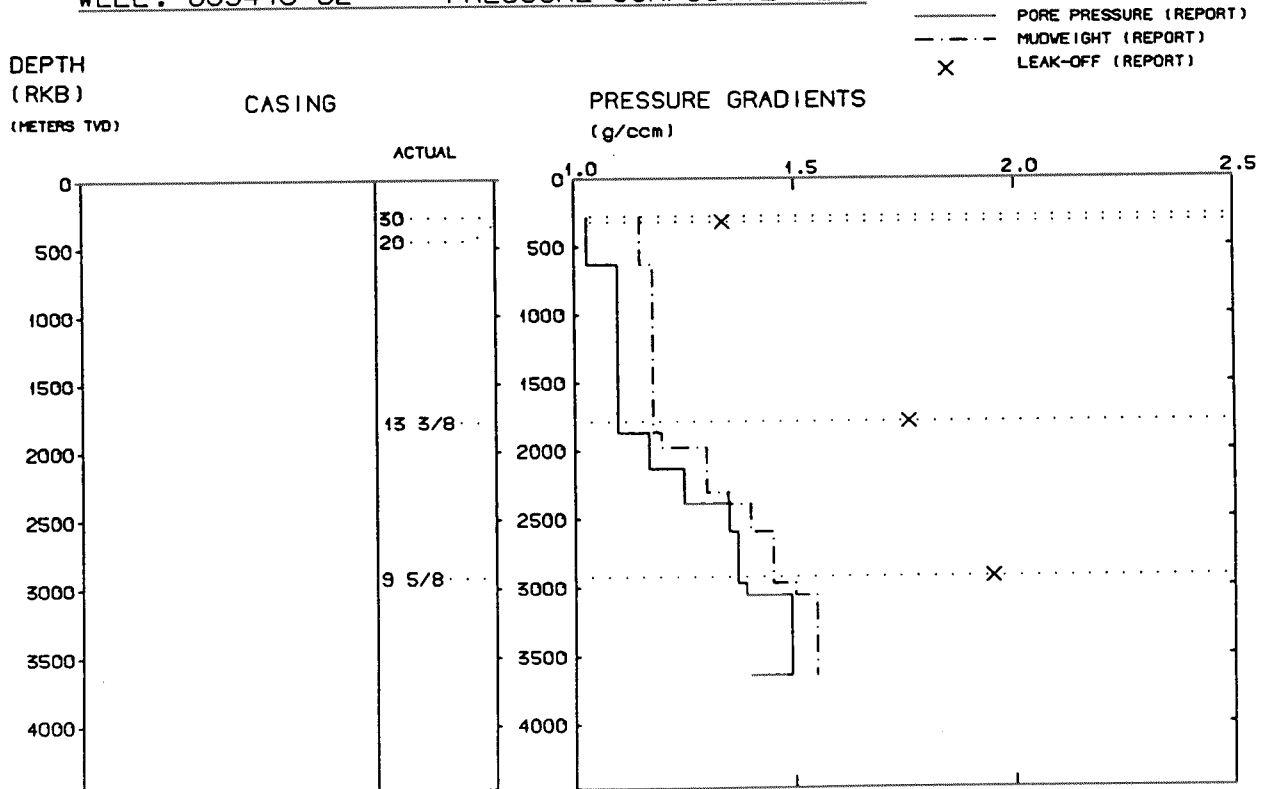
Sub operation	Minutes	Hrs	% of total
LOG	4230	70,5	32,56
CIRC SAMPLES	900	15,0	6,93
OTHER	90	1,5	0,69
TRIP	3960	66,0	30,48
CORE	3360	56,0	25,87
CIRC/COND	450	7,5	3,46
<i>Total</i>	12990	216,5	100,00

MAIN OPERATION: PLUG & ABANDON

Sub operation	Minutes	Hrs	% of total
TRIP	1770	29,5	53,64
CEMENT PLUG	300	5,0	9,09
EQUIP RECOVERY	1020	17,0	30,91
OTHER	210	3,5	6,36
<i>Total</i>	3300	55,0	100,00



WELL : 003410 32 PRESSURE COMPOSITE PLOT



Well History 34/10-32

GENERAL:

Well 34/10-32 was the fifth well on the Gullfaks South structure. The main objective of the well was to confirm hydrocarbons in the southern part of the structure, and to get data for update of the structural and geological model of the area.

The main target was the Statfjord Formation, where the oil/water contact was expected at 3360 m. Secondary target was Brent Group sandstones and the Lunde Formation.

OPERATIONS:

Appraisal well 34/10-32 was spudded 9 April 1987 by Smedvig semi-submersible rig West Vision and completed 13 July 1987 at a depth of 3753 m in Triassic rocks.

Shallow gas was found in the neighbouring hole, and it was decided to set the 20" casing early. There was one meter of shallow gas in this hole, but no problems occurred due to this. Drilling operations went slowly in the beginning, but speeded up after a while. It was drilled until the setting depth of 13 3/8" casing at 1982 m. During setting the casing got stuck at approx. 1000 m. It was decided to pull it out, but orders came to continue. The results were that the casing got completely stuck. After several days of fishing 1000 m of the casing was lost to the bottom of the hole. 700 m of this was fished out and a sidetrack was made, with kick-off point at 1323 m. Drilling continued to 1800 m. Further drilling proceeded without significant problems.

6 cores were cut in the well, one in the interval 3176 - 3189 m, 4 in the interval 3359 - 3447.2 and one between 3707 - 3723.5 m. Most of Brent was missing due to a fault. The remaining Brent sand was gas-bearing. The Statfjord Formation came in as prognosed and was oil-bearing down to 3385 m. This is the same as the oil/water contact in 34/10-2.

The well was suspended.

TESTING:

Two DST tests were performed in this well, DST 1 in the interval 3457 - 3471 m and DST 2 in the interval 3379 - 3385 m.

Well no : 34/10-32R

Operator : STATOIL

Coordinates : 61 04 33.37 N
02 12 43.59 E

UTM coord. : 6771662 N
457486 E

Licence no : 50

Permit no : 540

Rig : DEEPSEA BERGEN

Rig type : SEMI-SUB.

Contractor : ODFJELL DRILLING AND CONSULTING COMPANY A/S

Bottom hole temperature : deg.C

Elev. KB : 23 M

Spud. date : 87.07.15

Water depth : 136 M

Compl. date : 87.08.10

Total depth : 3742 M

Spud. class : APPRAISAL

Form. at TD : TRIASSIC

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

Prod. form : E. JURASSIC

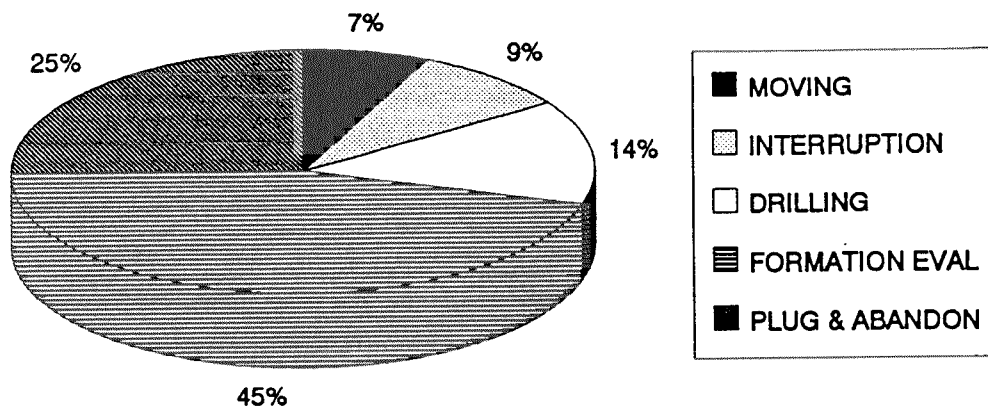
Seisloca : ST 8134 - 227 CP. 365

LICENSEES

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DAILY DRILLING REPORT SYSTEM

MAIN OPERATIONS FOR WELL: 34/10-32 R



Main operation	Minutes	Hrs	% of total
MOVING	2940	49,0	7,04
INTERRUPTION	3718	62,0	8,90
DRILLING	5760	96,0	13,79
FORMATION EVAL	18960	316,0	45,40
PLUG & ABANDON	10382	173,0	24,86
<i>Total</i>	<i>41760</i>	<i>696,0</i>	<i>100,00</i>

SUB OPERATION FOR WELLS: 34/10-32 R

MAIN OPERATION: MOVING

Sub operation	Minutes	Hrs	% of total
POSITION	330	5,5	11,22
ANCHOR	1380	23,0	46,94
TRANSIT	1230	20,5	41,84
<i>Total</i>	2940	49,0	100,00

MAIN OPERATION: INTERRUPTION

Sub operation	Minutes	Hrs	% of total
MAINTAIN/REP	1980	33,0	53,25
WELL CONTROL	1738	29,0	46,75
<i>Total</i>	3718	62,0	100,00

MAIN OPERATION: DRILLING

Sub operation	Minutes	Hrs	% of total
BOP/WELLHEAD EQ	1320	22,0	22,92
BOP ACTIVITIES	300	5,0	5,21
TRIP	60	1,0	1,04
OTHER	4080	68,0	70,83
<i>Total</i>	5760	96,0	100,00

MAIN OPERATION: FORMATION EVAL

Sub operation	Minutes	Hrs	% of total
LOG	2505	41,8	13,21
RFT/FIT	105	1,8	0,55
TRIP	6480	108,0	34,18
DST	9360	156,0	49,37
CIRC/COND	510	8,5	2,69
<i>Total</i>	18960	316,0	100,00

MAIN OPERATION: PLUG & ABANDON

Sub operation	Minutes	Hrs	% of total
CEMENT PLUG	1860	31,0	17,92
SQUEEZE	240	4,0	2,31
TRIP	4110	68,5	39,59
CIRC/COND	480	8,0	4,62
MECHANICAL PLUG	720	12,0	6,94
WAIT	150	2,5	1,44
PERFORATE	601	10,0	5,79
CUT	1230	20,5	11,85
EQUIP RECOVERY	961	16,0	9,26
OTHER	30	0,5	0,29
<i>Total</i>	10382	173,0	100,00

GEOLOGICAL TOPS

WELL: 34/10-32

	Depth m (RKB)
<i>Nordland Group</i>	167.0
<i>Utsira Fm.</i>	870.0
<i>Hordaland Group</i>	961.0
<i>Skade Fm.</i>	1049.0
<i>Grid Fm.</i>	1235.5
Claystone sequence	1637.0
<i>Rogaland Group</i>	1827.0
<i>Balder Fm.</i>	1827.0
<i>Sele Fm.</i>	1898.0
<i>Lista Fm.</i>	2004.5
<i>Shetland Group</i>	2062.0
<i>Hardråde Fm.</i>	2062.0
<i>Kyrre Fm.</i>	2338.0
<i>Tryggvason Fm.</i>	2800.5
<i>Blodøks Fm.</i>	2925.0
<i>Svarte Fm.</i>	2941.0
<i>Cromer Knoll Group</i>	3037.0
<i>Mime Fm.</i>	3037.0
<i>Viking Group</i>	3092.0
<i>Draupne Fm.</i>	3092.0
<i>Heather Fm.</i>	3102.0
<i>Brent Group</i>	3170.0
<i>Tarbert Fm.</i>	3170.0
<i>Dunlin Group</i>	3178.0
<i>Drake Fm.</i>	3178.0
<i>Cook Fm.</i>	3236.0
<i>Amundsen Fm.</i>	3286.0
<i>Statfjord Fm.</i>	3353.0
Nansen Member	3353.0
Eiriksson Member	3386.0
Raude Member	3488.0
<i>Hegre Group</i>	3538.0
<i>Lunde Fm.</i>	3538.0
T.D.	3753.0