

Well no : 34/07-09

Operator : SAGA

Coordinates : 61 29 11.99 N
02 11 43.60 E

UTM coord. : 6817423 N
457150 E

Licence no : 89

Permit no : 510

Rig : TREASURE SAGA

Rig type : SEMI-SUB.

Contractor : WILHELMOSEN OFFSHORE SERVICES

Bottom hole temperature : deg.C

Elev. KB : 26 M

Spud. date : 86.04.13

Water depth : 304 M

Compl. date : 86.06.12

Total depth : 3240 M

Spud. class : APPRAISAL

Form. at TD : TRIASSIC

Compl. class : P&A. OIL DISCOVERY

Prod. form : L.TRIASSIC

Seisloca : SG 8420 ROW 011 COLUMN 470

LICENSEES

3.920000 DEMINEX (NORGE) A/S
0.980000 DET NORSKE OLJESELSKAP A/S
7.840000 ELF AQUITAINE NORGE A/S
14.700000 ESSO NORGE A.S
11.760000 NORSK HYDRO PRODUKSJON A.S
9.800000 SAGA PETROLEUM A.S.
51.000000 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	465.0	36	471.0	.
SURF.COND.	20	899.0	26	1002.0	1.46
INTERM.	13 3/8	1821.0	17 1/2	2138.0	1.83
INTERM.	9 5/8	2802.0	12 1/4	3240.0	.

CONVENTIONAL CORES

Core no.	Intervals cored meters	Recovery		Series
		M	%	
1	2470.0 - 2494.5	24.5	100.0	UPPER TRIASSIC
2	2494.5 - 2518.0	23.5	100.0	
3	2518.0 - 2546.0	28.0	100.0	
4	2546.0 - 2574.0	28.0	100.0	
5	2574.0 - 2593.0	19.0	100.0	
6	2593.0 - 2607.7	14.7	100.0	
7	2615.0 - 2643.0	28.0	100.0	
8	2643.0 - 2670.5	27.5	100.0	
9	2670.5 - 2692.5	22.0	100.0	
10	2692.5 - 2720.5	28.0	100.0	

MUD PROPERTIES

Depth below KB meter	Mud weight g/cm ³	Viscosity	Mud type
471.000	1.03	0.0	WATER BASED
616.000	1.10	8.0	WATER BASED
858.000	1.15	6.0	WATER BASED
915.000	1.16	7.0	WATER BASED
915.000	1.03	0.0	WATER BASED
915.000	1.20	8.0	WATER BASED
1002.000	1.10	12.0	WATER BASED
1498.000	1.20	16.0	WATER BASED
1617.000	1.30	18.0	WATER BASED
1709.000	1.73	20.0	WATER BASED
1837.000	1.41	22.0	WATER BASED
2138.000	1.58	25.0	WATER BASED
2350.000	1.65	28.0	WATER BASED
2430.000	1.70	29.0	WATER BASED
3240.000	1.73	24.0	WATER BASED

DRILL STEM TEST

INTERVALS AND PRESSURES

Test no	interval meter	Choke size	Pressure (PSI)		
			WHP	BTHP	FFP
1.0	2553.500 - 2550.500 Test temperature: 92.0 °C	15.9 15.9	1735.0	4844.0	4344.0
1.1	2536.000 - 2527.000 Test temperature: 92.8 °C	15.9 15.9	1726.0	4815.0	4328.0
1.2	2515.000 - 2506.000 Test temperature: 94.2 °C	15.9 15.9	1381.0	4351.0	3852.0
1.3	2504.000 - 2501.000 Test temperature: 94.7 °C	15.9 15.9	1352.0	4671.0	3832.0

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	1184	94990	0.839	0.778	80
1.1	1135	109100	0.835	0.805	96
1.2	893	79310	0.835	0.795	80
1.3	896	79260	0.838	0.805	80

DRILL BIT CUTTINGS AND WET SAMPLES

SAMPLE TYPE	INTERVAL BELOW KB	NUMBER OF SAMPLES
Cutting	480-3156,5	420
Wet Samples	480-3240	480

SHALLOW GAS

Interval REMARKS

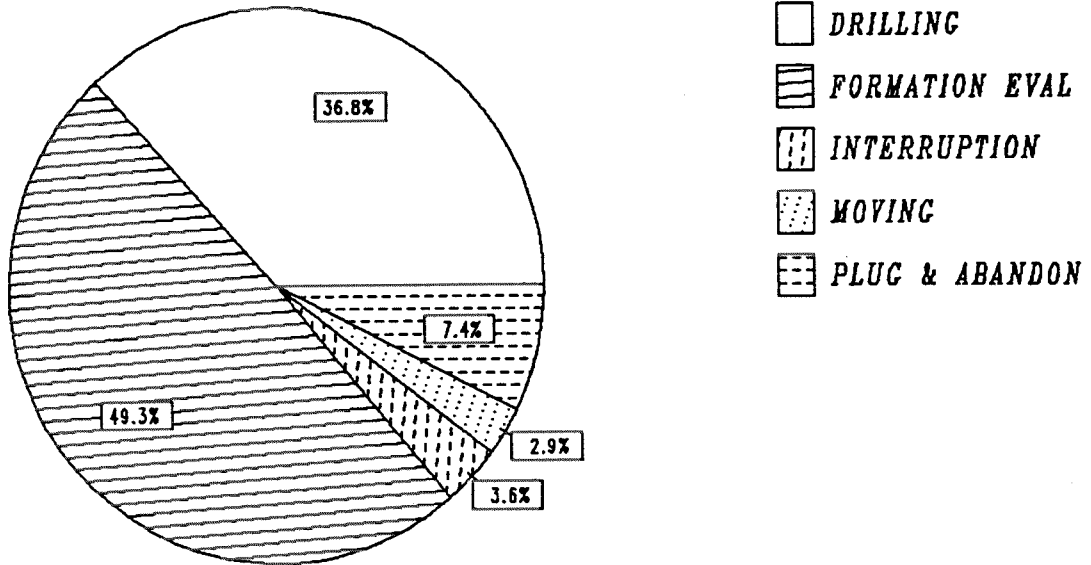
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AVAILABLE LOGS

LOG TYPE	INTERVALS	1/200	1/500	Div.
DIFL LS BHC GR	899.000 - 1832.800	X	X	
DIFL LS BHC GR	1819.000 - 3155.000	X	X	
DIFL LS BHC GR	3120.000 - 3239.000	X	X	
CDL GR	899.000 - 1833.500	X	X	
CDL CNL GR	1819.000 - 2717.200	X	X	
CDL CNL GR	2400.000 - 3154.000	X	X	
DLL MLL GR	1819.000 - 2716.200	X	X	
PRODIP	2950.000 - 3155.000	X		
CDM DIPLOG	1819.000 - 3155.000	X		
CDM AP	1819.000 - 3154.800	X	X	
FMT GR	2456.400 - 2698.500		X	
FMT	2503.000 - 2698.500	X	X	
FMT HP CRYSTAL	2456.500 - 2698.000	X	X	
FMT HP CRYSTAL	2503.000 - 2698.500		X	
RFT HP/CASED HOLE	2585.000 - 2624.000	X	X	
RFT STRAIN GAUGE	2585.000 - 2624.000			
RFT STRAIN GAUGE C/H	2585.000 - 2624.000			
ACBL VDL	790.000 - 1819.000	X		
ACBL VDL	1700.000 - 2644.100	X	X	
TEMPERATUR DATA	356.000 - 3240.000	1:5000		
WIRESLINE DATA	356.000 - 3240.000	1:5000		
DRILLING DATA	365.000 - 3240.000	1:5000		
MUD	471.000 - 3240.000		X	
VELOCITY	900.000 - 3212.000	1:1000X		
(Velocity, drift curve 900-3212, plot 1.		1 stk.)		
(Velocity, time/depth, 900-3212, plot 4.		1 stk.)		
(Velocity, adjusted cont. 501-1415, plot 6.		1 stk.)		
(Velocity, depth/time, 501-1416, plot 7.		1 stk.)		
(Two-way travel time, 5-10cm/s		2 stk.)		
(Synthetic seism.Norm./Rev.Pol. 10cm/s		2 stk.)		
(VSP.Zero offset, 5-10cm/s. ved1.1-7		7 stk.)		

DAILY DRILLING REPORT SYSTEM

Main operations for well : 0034/07 -09



Total : 1488.00 hours

Main operation	Minutes	Hours	% of total
DRILLING	32850	547.50	36.79
FORMATION EVAL	44010	733.50	49.29
INTERRUPTION	3210	53.50	3.60
MOVING	2610	43.50	2.92
PLUG & ABANDON	6600	110.00	7.39

MAIN OPERATIONS FOR WELL : 0034 / 07 - 09

MAIN OPERATION : DRILLING

Sub operations	Minutes	Hrs	% of total
BOP ACTIVITIES	450	7.50	1.37
BOP/WELLHEAD EQ	2880	48.00	8.77
CASING	4560	76.00	13.88
CIRC/COND	3090	51.50	9.41
DRILL	14550	242.50	44.29
OTHER	510	8.50	1.55
PRESS DETECTION	270	4.50	0.82
REAM	60	1.00	0.18
SURVEY	240	4.00	0.73
TRIP	4710	78.50	14.34
UNDERREAM	1530	25.50	4.66
Total	32850	547.50	100.00

MAIN OPERATION : FORMATION EVAL

Sub operations	Minutes	Hrs	% of total
CIRC/COND	930	15.50	2.11
CORE	6120	102.00	13.91
DST	20100	335.00	45.67
LOG	6960	116.00	15.81
OTHER	1680	28.00	3.82
RFT/FIT	630	10.50	1.43
TRIP	7590	126.50	17.25
Total	44010	733.50	100.00

MAIN OPERATION : INTERRUPTION

Sub operations	Minutes	Hrs	% of total
FISH	180	3.00	5.61
MAINTAIN/REP	2640	44.00	82.24
WAIT	390	6.50	12.15
Total	3210	53.50	100.00

MAIN OPERATION : MOVING

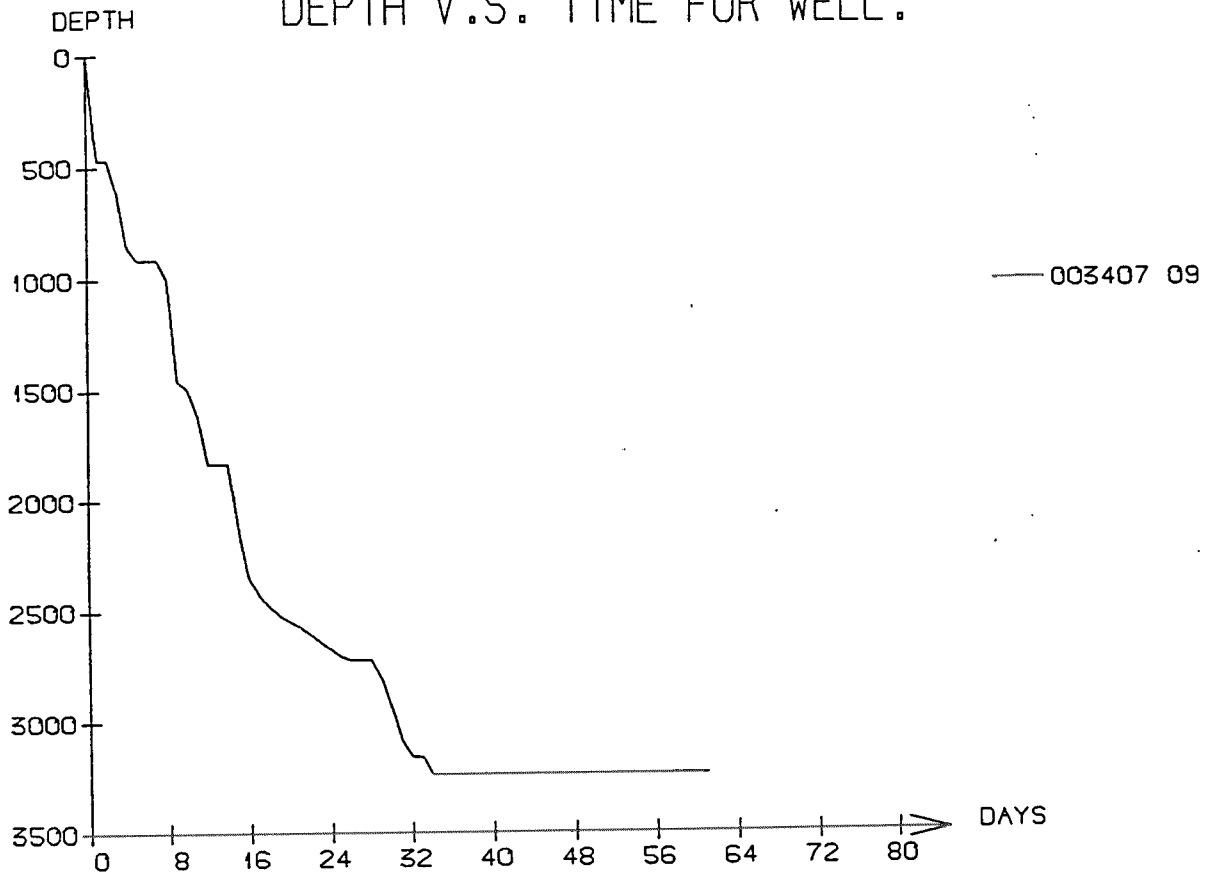
Sub operations	Minutes	Hrs	% of total
ANCHOR	2220	37.00	85.06
TRANSIT	390	6.50	14.94
Total	2610	43.50	100.00

MAIN OPERATION : PLUG & ABANDON

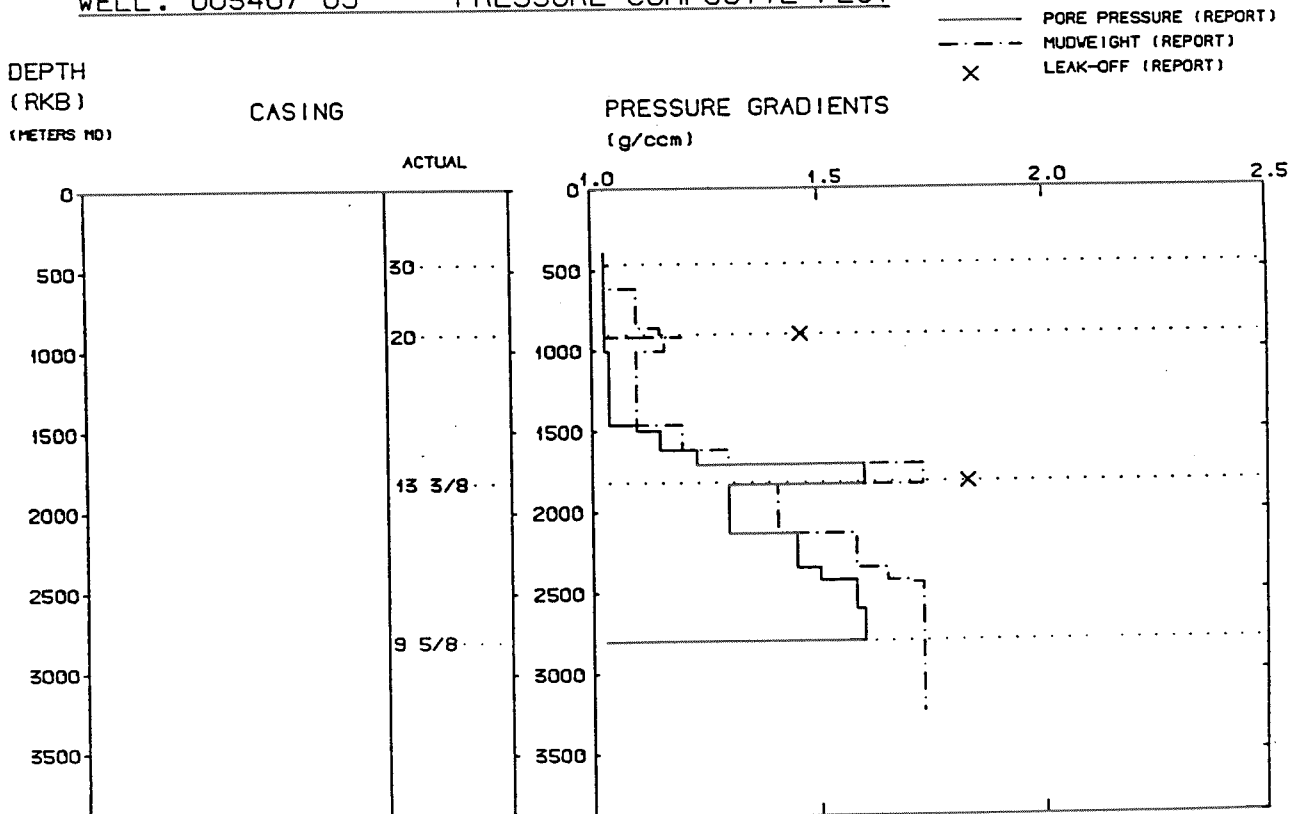
Sub operations	Minutes	Hrs	% of total
CEMENT PLUG	330	5.50	5.00
CIRC/COND	720	12.00	10.91
CUT	660	11.00	10.00
EQUIP RECOVERY	960	16.00	14.55
MECHANICAL PLUG	60	1.00	0.91
OTHER	1140	19.00	17.27
PERFORATE	780	13.00	11.82
SQUEEZE	420	7.00	6.36
TRIP	1320	22.00	20.00
WAIT	210	3.50	3.18
Total	6600	110.00	100.00

Total time used 1488.00 hrs

DEPTH V.S. TIME FOR WELL:



WELL: 003407 09 PRESSURE COMPOSITE PLOT



Well History 34/7-9

GENERAL:

Well 34/7-9 was drilled in the Snorre structure in the northernmost part of the block. The Late Triassic - Early Jurassic reservoirs are tilted fault blocks dipping between 5 and 9 degrees to the northwest. The structure is divided into elongated fault blocks by major NNE-SSW trending faults, downthrown by up to 250 m to the east.

The main objective of the well was to further assess the upper Lunde of the Snorre structure in the northern part of block 34/7. Further objectives were to test the reservoir quality of the upper part of the upper Lunde in an oil bearing position, test the oil/water contact and test the seismic correlation into a structurally complex area.

OPERATIONS:

Appraisal well 34/7-9 was spudded 13 April 1986 by Wilh. Wilhelmsen Offshore Services semi-submersible rig Treasure Saga and completed 12 June 1986 at a depth of 3240 m in Triassic rocks. Drilling proceeded without significant problems.

6 cores were cut in the interval 2470 - 2607.7 m and 4 cores were cut in the interval 2615 - 2720.5 m. The reservoir came in approx. 50 m deeper than prognosed. The oil/water contact is at 2590 m, 5 m deeper than what is common in the Snorre East, but above the contact in Snorre West.

The well is plugged and abandoned as an oil discovery.

TESTING:

One DST test was performed in several intervals at the same time. A positive sign was the relatively low fall in production and pressure over time.

GEOLOGICAL TOPS

WELL: 34/7-9

Depth m (RKB)

<i>Nordland Group</i>	<i>356.0</i>
<i>Utsira Fm.</i>	<i>1031.3</i>
<i>Hordaland Group</i>	<i>1172.0</i>
<i>Grid Fm.</i>	<i>1445.0</i>
<i>Rogaland Group</i>	<i>1657.0</i>
<i>Balder Fm.</i>	<i>1657.0</i>
<i>Sele Fm.</i>	<i>1680.5</i>
<i>Lista Fm.</i>	<i>1761.0</i>
<i>Shetland Group</i>	<i>1806.5</i>
<i>Jorsalfare Fm.</i>	<i>1806.5</i>
<i>Kyrre Fm.</i>	<i>2013.0</i>
<i>Cromer Knoll Group</i>	<i>2429.3</i>
<i>Rødby Fm.</i>	<i>2429.3</i>
<i>Mime Fm.</i>	<i>2433.0</i>
<i>Hegre Group</i>	<i>2442.5</i>
<i>Lunde Fm.</i>	<i>2442.5</i>
<i>T.D.</i>	<i>3240.0</i>