

Well no : 34/04-06

Operator : SAGA

Coordinates : 61 34 14.09 N
02 13 19.99 E

UTM coord. : 6826753 N
458688 E

Licence no : 57

Permit no : 497

Rig : VINNI

Rig type : SEMI-SUB.

Contractor : SDS DRILLING

Bottom hole temperature : deg.C

Elev. KB : 26 M

Spud. date : 85.12.31

Water depth : 374 M

Compl. date : 86.03.26

Total depth : 3282 M

Spud. class : APPRAISAL

Form. at TD : TRIASSIC

Compl. class : P&A. OIL DISCOVERY

Prod. form :

Seisloca : SG 8420 - 198 SP. 525

LICENSEES

5.000000 AMERADA HESS NORGE A/S
10.000000 AMOCO NORWAY OIL COMPANY
15.000000 DEMINEX (NORGE) A/S
15.000000 SAGA PETROLEUM A.S.
50.000000 DEN NORSKE STATS OLJESELSKAP A.S
5.000000 TEXAS EASTERN NORWEGIAN INC.

CASING AND LEAK-OFF TESTS

Type	Casing diam.	Depth below KB	Hole diam.	Hole depth below KB	Lot mud eqv. g/cm ³
CONDUCTOR	30	521.0	36	530.0	.
SURF.COND.	20	904.0	26	920.0	1.63
INTERM.	13 3/8	1841.0	17 1/2	1856.0	1.80
INTERM.	9 5/8	2760.0	12 1/4	2770.0	1.99

CONVENTIONAL CORES

Core no.	Intervals cored meters	Recovery M	%	Series
1	2549.5 - 2553.3	3.8	100.0	
2	2576.0 - 2583.0	7.0	100.0	
3	2589.0 - 2596.5	7.5	100.0	
4	2600.0 - 2612.9	12.9	100.0	
5	2614.0 - 2622.4	8.4	100.0	
6	2642.0 - 2660.5	18.5	100.0	

MUD PROPERTIES

Depth below KB meter	Mud weight g/cm ³	Viscosity	Mud type
530.000	1.06	0.0	WATER BASED
585.000	1.07	7.0	WATER BASED
740.000	1.14	6.0	WATER BASED
904.000	1.10	12.0	WATER BASED

920.000	1.12	7.0	WATER BASED
920.000	1.14	6.0	WATER BASED
920.000	1.12	7.0	WATER BASED
920.000	1.14	5.0	WATER BASED
920.000	1.15	5.0	WATER BASED
920.000	1.14	9.0	WATER BASED
920.000	1.15	5.0	WATER BASED
920.000	1.03	0.0	WATER BASED
920.000	1.10	12.0	WATER BASED
1110.000	1.11	19.0	WATER BASED
1381.000	1.13	17.0	WATER BASED
1791.000	1.31	20.0	WATER BASED
1861.000	1.48	17.0	WATER BASED
2127.000	1.55	19.0	WATER BASED
2345.000	1.65	21.0	WATER BASED
2498.000	1.68	18.0	WATER BASED
2746.000	1.70	20.0	WATER BASED
2760.000	1.62	17.0	WATER BASED
2770.000	1.70	22.0	WATER BASED
3282.000	1.62	17.0	WATER BASED
3282.000	1.70	18.0	WATER BASED

DRILL STEM TEST

INTERVALS AND PRESSURES

Test no.	interval meter	Choke size	Pressure (PSI)		
			WHP	BTHP	FFP
1.0	2592.000 - 2595.000 Test temperature: 93.1 °C	6.4	236.0	5754.0	4546.0
1.1	2577.000 - 2585.000 Test temperature: 93.6 °C	12.7	2228.0	5573.0	5216.0

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	0	0	0.000	0.000	0
1.1	1173	71190	0.821	0.770	62

DRILL BIT CUTTINGS AND WET SAMPLES

SAMPLE TYPE	INTERVAL BELOW KB	NUMBER OF SAMPLES
Cutting	530-3282	400
Wet Samples	530-3207	500

SHALLOW GAS

Interval below KB	REMARKS
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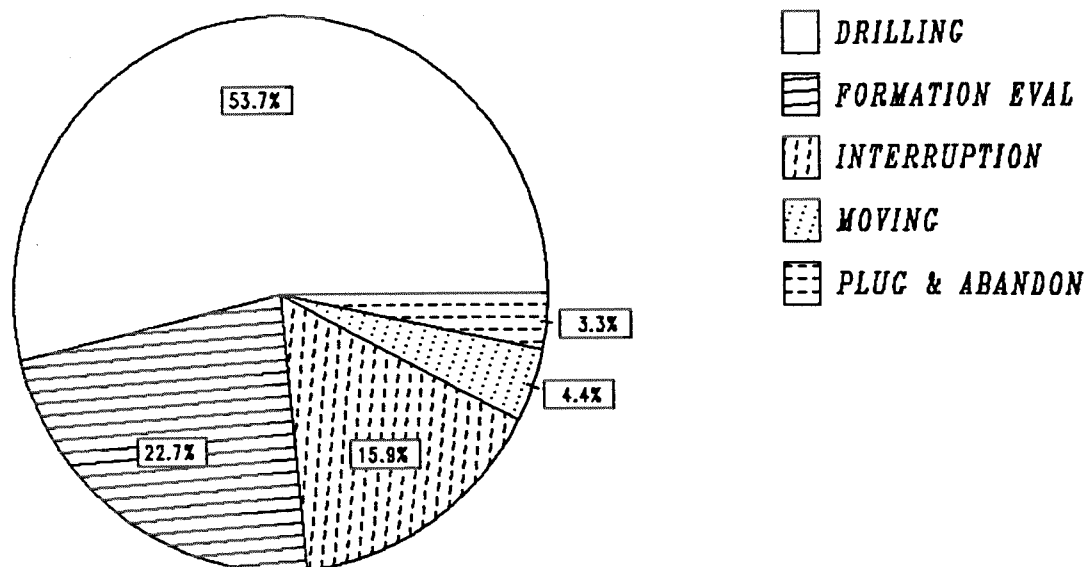
AVAILABLE LOGS

LOG TYPE	INTERVALS	1/200	1/500	Div.
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ISF DDBHC GR	521.000 - 918.000	X	X
ISF DDBHC GR	904.000 - 1853.000	X	X
ISF BHC	1841.000 - 2769.000	X	X
ISF LSS GR	2762.000 - 3281.000	X	X
LDL GR	521.000 - 919.000	X	X
LDL GR	904.000 - 1855.000	X	X
LDL CNL SGR	1841.000 - 2769.000	X	X
LDL CNL GR	2762.000 - 3282.000	X	X
DLL MSFL SP	2545.000 - 2767.000	X	X
SHDT SLOW CHANEL	1841.000 - 2770.000	X	
SHDT SLOW CHANEL	1841.000 - 2770.000	X	
SHDT	2762.000 - 3282.000	X	
CDM AP/MSD SHDT	1841.000 - 3282.000	X	
NGT PLAYBACK	2500.000 - 2769.000	X	
RFT HP GAUGE	2578.000 - 2747.000	X	
RFT STRAIN GAUGE	2578.000 - 2747.000	X	
RFT	2583.000 - 2586.000	X	
HP	2583.000 - 2586.000	X	
CBL VDL	750.000 - 1841.000	X	
CBL VDL	1800.000 - 2760.000	X	
CBL VDL	2500.000 - 2650.000	X	
MUD	400.000 - 3282.000	X	
VELOCITY LOG	506.000 - 3254.000		1:1000X
(Synthetic seismogram, 10cm/s plot 13-16			4 stk.)
(Velocity, linear time scale			6 stk.)
(Two-way travel time, 5 & 10cm/s			2 stk.)
(VSP zero offset 5 cm/s			1 stk.)
(VSP zero offset 5-10cm/s			7 stk.)

DAILY DRILLING REPORT SYSTEM

Main operations for well : 0034/04 -06



Total : 2136.00 hours

Main operation	Minutes	Hours	% of total
DRILLING	68850	1147.50	53.72
FORMATION EVAL	29100	485.00	22.71
INTERRUPTION	20400	340.00	15.92
MOVING	5580	93.00	4.35
PLUG & ABANDON	4230	70.50	3.30

MAIN OPERATIONS FOR WELL : 0034 / 04 - 06

MAIN OPERATION : DRILLING

Sub operations	Minutes	Hrs	% of total
BOP ACTIVITIES	990	16.50	1.44
BOP/WELLHEAD EQ	13020	217.00	18.91
CASING	9420	157.00	13.68
CIRC/COND	3120	52.00	4.53
DRILL	19650	327.50	28.54
HOLE OPEN	1860	31.00	2.70
OTHER	2160	36.00	3.14
PRESS DETECTION	120	2.00	0.17
REAM	660	11.00	0.96
SURVEY	150	2.50	0.22
TRIP	16050	267.50	23.31
UNDERREAM	1140	19.00	1.66
WAIT	510	8.50	0.74
Total	68850	1147.50	100.00

MAIN OPERATION : FORMATION EVAL

Sub operations	Minutes	Hrs	% of total
CIRC/COND	780	13.00	2.68
CORE	4320	72.00	14.85
DST	5640	94.00	19.38
LOG	7860	131.00	27.01
OTHER	1140	19.00	3.92
TRIP	9360	156.00	32.16
Total	29100	485.00	100.00

MAIN OPERATION : INTERRUPTION

Sub operations	Minutes	Hrs	% of total
MAINTAIN/REP	2730	45.50	13.38
OTHER	150	2.50	0.74
WAIT	17520	292.00	85.88
Total	20400	340.00	100.00

MAIN OPERATION : MOVING

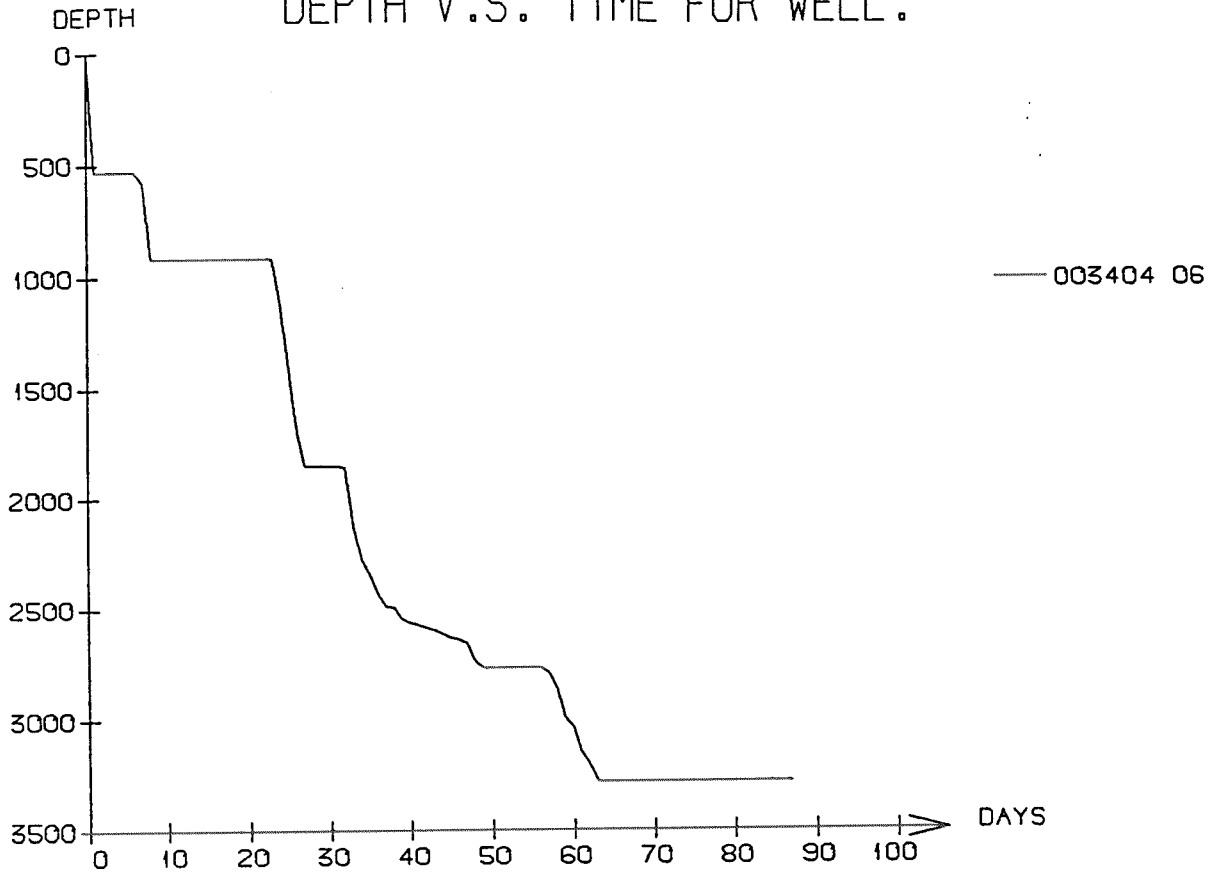
Sub operations	Minutes	Hrs	% of total
ANCHOR	5580	93.00	100.00
Total	5580	93.00	100.00

MAIN OPERATION : PLUG & ABANDON

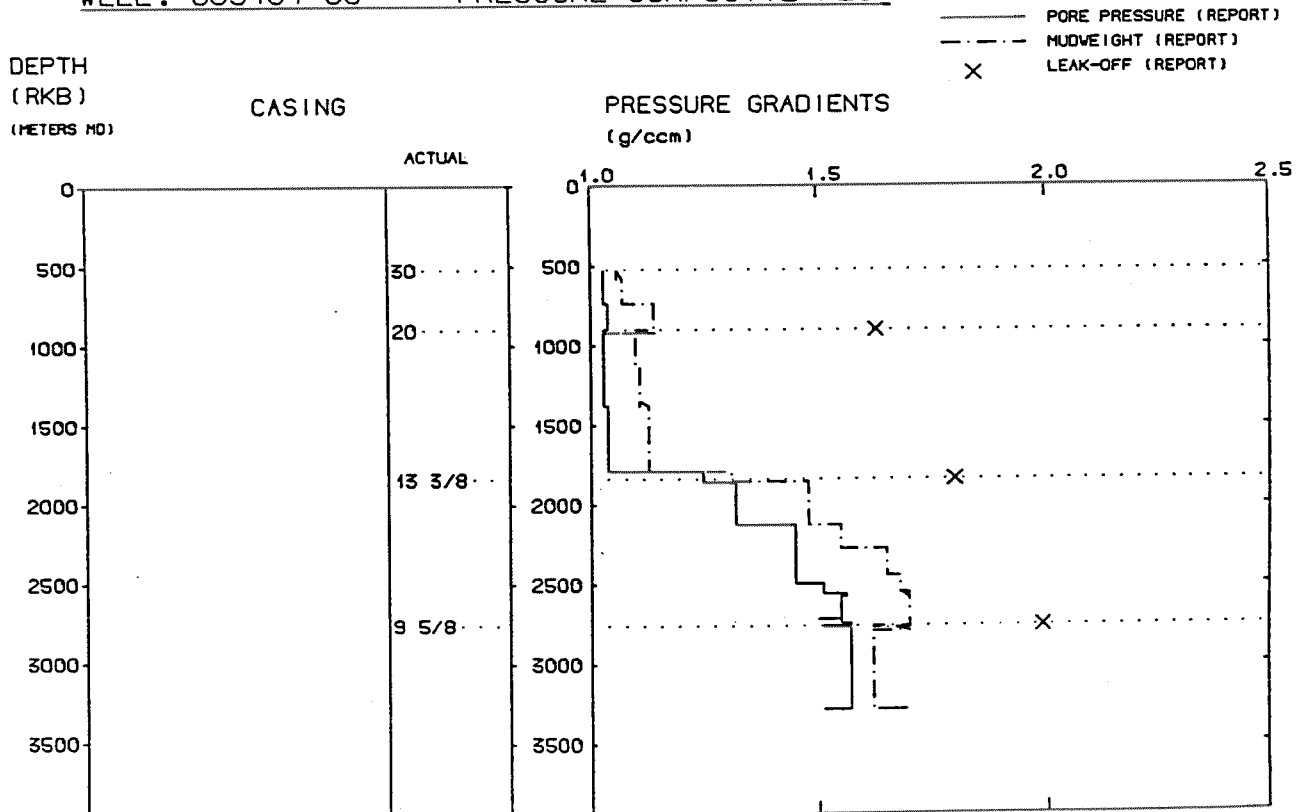
Sub operations	Minutes	Hrs	% of total
CEMENT PLUG	60	1.00	1.42
CIRC/COND	150	2.50	3.55
CUT	420	7.00	9.93
EQUIP RECOVERY	1320	22.00	31.21
MECHANICAL PLUG	60	1.00	1.42
OTHER	300	5.00	7.09
PERFORATE	360	6.00	8.51
TRIP	1560	26.00	36.88
Total	4230	70.50	100.00

Total time used 2136.00 hrs

DEPTH V.S. TIME FOR WELL:



WELL: 003404 06 PRESSURE COMPOSITE PLOT



Well History 34/4-6

GENERAL:

Well 34/4-6 was designed to test the reservoir quality of the Late Lunde Formation, and to confirm the established OWC observed as well as the outline of the reservoir in the northern part of the Snorre field. Secondary object was to control the proposed sub-division and reservoir characteristics of the Middle and Early Lunde Formation. Shallow gas readings at two levels, 766 m - and 862 m RKB. Prognosed depth at 3236 m in Triassic rocks.

OPERATIONS:

Appraisal well 34/4-6 was spudded 31 Desember 1985 by Ditlev Simonsen semi-submersible rig Vinni and completed 26 March 1986 at a depth of 3282 m RKB in Triassic rocks.

The primary target, the Upper Lunde Formation, was encountered at 2576.5 m RKB, 65 m deeper than prognosed. OWC was anticipated to be the same as in 34/4-4 and was encountered at 2587 m RKB. This indicate that there is a severe downgrading of reserves in the northern part of the Snorre Field.

No Jurassic rocks were encountered below the Base Cretaceous Unconformity. Six cores were cut totalling 84,5 m. One core was cut in the Shetland Group crossing the border zone into Cromer Knoll Group. The other cores were taken in the Late Lunde Group where hydrocarbons were encountered in the uppermost section.

The well was permanently plugged and abandoned as a oil discovery at a depth of 3282 m RKB in the Teist Formation of Late Triassic age.

TESTING:

One DST-test was performed in the well.

GEOLOGICAL TOPS

WELL: 34/4-6

Depth m (RKB)

<i>Nordland Group</i>	399,5
<i>Utsira Fm</i>	1127,5
<i>Hordaland Group</i>	1239,0
<i>Rogaland Group</i>	1658,0
<i>Balder Fm</i>	1658,0
<i>Sele/Lista Fm</i>	1687,5
<i>Shetland Group</i>	1774,5
<i>Cromer Knoll Group</i>	2554,5
<i>Hegre Group</i>	2576,5
<i>Lunde Fm</i>	2576,5
<i>Lomvi Fm</i>	3153,0
<i>Teist Fm</i>	3230,5
<i>TD</i>	3282,0