

Well no : 34/07-13 Operator : SAGA

Coordinates : 61 24 19.23 N UTM coord. : 6808466 N  
 02 03 12.49 E 449458 E

Licence no : 89 Permit no : 572

Rig : TREASURE SAGA Rig type : SEMI-SUB.

Contractor : WILHELMOSEN OFFSHORE SERVICES

Bottom hole temperature : 89 deg.C Elev. KB : 26 M

Spud. date : 88.02.19 Water depth : 289 M

Compl. date : 88.04.13 Total depth : 2994 M

Spud. class : WILDCAT Form. at TD : TRIASSIC

Compl. class : P&A. OIL DISCOVERY Prod. form :

Seisloca : E 86 (3D) ROW 438 COL. 1410

## 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/cm <sup>3</sup>
CONDUCTOR	30	429.0	36	429.0	.
SURF.COND.	20	957.0	26	973.0	1.59
INTERM.	13 3/8	1843.0	17 1/2	1875.0	1.81
INTERM.	9 5/8	2667.0	12 1/4	2682.0	2.03
OPEN HOLE	8 1/2	2994.0	8 1/2	2994.0	.

## CONVENTIONAL CORES

Core no.	Intervals cored meters	Recovery		Series
		M	%	
1	2496.0 - 2500.5	4.0	88.9	
2	2500.5 - 2515.5	14.8	98.7	MIDDLE JURASSIC
3	2515.5 - 2532.0	16.5	100.0	MIDDLE JURASSIC
4	2532.0 - 2560.0	28.0	100.0	MIDDLE JURASSIC
5	2560.0 - 2588.0	27.7	98.9	MIDDLE JURASSIC
6	2873.0 - 2889.9	16.9	100.0	LOWER JURASSIC

## MUD PROPERTIES

Depth below KB meter	Mud weigh g/cm3	Viscosity	Mud type
434.000	1.05	0.0	WATER BASED
507.000	1.12	5.0	WATER BASED
970.000	1.16	0.0	WATER BASED
973.000	1.14	4.0	WATER BASED
973.000	1.12	21.0	WATER BASED
1348.000	1.13	20.0	WATER BASED
1479.000	1.25	23.0	WATER BASED
1681.000	1.45	26.0	WATER BASED
1875.000	1.50	31.0	WATER BASED
1992.000	1.55	30.0	WATER BASED
2100.000	1.64	26.0	WATER BASED
2100.000	1.61	27.0	WATER BASED
2232.000	1.60	33.0	WATER BASED
2404.000	1.65	28.0	WATER BASED
2492.000	1.50	18.0	WATER BASED
2532.000	1.65	26.0	WATER BASED
2876.000	1.61	26.0	WATER BASED

## DRILL STEM TEST

### INTERVALS AND PRESSURES

Test no	interval meter	Choke size	Pressure (PSI)		
			WHP	BTHP	FFP
1.0	2500.500 - 2504.000	16.0	N/A	N/A	N/A

### RECOVERY

Test no.	Oil Sm3/d	Gas Sm3/d	Oil grav. g/cm3	Gas grav. rel. air	GOR m3/m3
1.0	1350	N/A	0.840	N/A	51

## DRILL BIT CUTTINGS AND WET SAMPLES

SAMPLE TYPE	INTERVAL BELOW KB	NUMBER OF SAMPLES
Cutting	440-2994	270
Wet Samples	440-2994	200

## SHALLOW GAS

Interval below KB	REMARKS

## AVAILABLE LOGS

LOG TYPE	INTERVALS	1/200	1/500	Div.
DIFL LS BHC AC GR	958.000 - 1855.000	X	X	
DIFL LS BHC AC GR	1842.000 - 2681.000	X	X	
DIFL BHC AC GR	2664.000 - 2993.000	X	X	
GR	2377.000 - 2420.000	X		
DLL MLL GR	2300.000 - 2600.000	X	X	
CDL CNL GR	1842.000 - 2682.000	X	X	
CDL CNL GR	2664.000 - 2993.000	X	X	
CDM	2300.000 - 2678.000	X		
CDM AP	2300.000 - 2678.000	X	X	
CDM AP	2667.000 - 2993.000	X	X	
FMT	2494.000 - 2564.000		X	
FMT	2867.000 - 2960.000		X	
AC CBL VDL GR	750.000 - 1842.000	X	X	
AC CBL VDL GR	1000.000 - 2664.000	X	X	
AC CBL VDL GR	2370.000 - 2550.000	X	X	
DRILL. DATA PRESS.	308.000 - 2994.000	1:5000		
TEMP. DATA LOG	308.000 - 2994.000	1:5000		
PRESS. EVAL. LOG	308.000 - 2994.000	1:5000		
WIREL. DATA PRESS.	308.000 - 2994.000	1:5000		
MUD	308.000 - 2994.000		X	
VELOCITY	950.000 - 3000.000		X	
(Two Way Travel Time, 10cm/s, 20cm/s				2 stk.)
(Frequency Test, 10 cm/s				4 stk.)
(Synthetic Seismogram, 10cm/s, 20cm/c				4 stk.)
(V.S.P., Zero Offset V.S.P., 10cm/s, 20cm/s				16 stk.)
(V.S.P., Vertical Incidence V.S.P.,				11 stk.)
(Synthetic Seismogram, Geogram, 10cm/s				4 stk.)
(Composite V.S.P. Geogram Display, 10cm/s				4 stk.)

## MAIN OPERATIONS FOR WELL: 003407 13

### Main operation: DRILLING

Sub operations	Minutes	Hrs	% of total
BOP ACTIVITIES	660	11,0	1,62
BOP/WELLHEAD EQ	4590	76,5	11,25
CASING	5430	90,5	13,31
CIRC/COND	2160	36,0	5,29
DRILL	15720	262,0	38,53
OTHER	180	3,0	0,44
PRESS DETECTION	240	4,0	0,59
REAM	1290	21,5	3,16
SURVEY	420	7,0	1,03
TRIP	8730	145,5	21,40
UNDERREAM	1380	23,0	3,38
Total	40800	680,0	100,00

### Main operation: FORMATION EVAL

Sub operations	Minutes	Hrs	% of total
CIRC SAMPLES	90	1,5	0,34
CIRC/COND	540	9,0	2,05
CORE	4110	68,5	15,62
DST	7710	128,5	29,30
LOG	7950	132,5	30,22
TRIP	5910	98,5	22,46
Total	26310	438,5	100,00

### Main operation: INTERRUPTION

Sub operations	Minutes	Hrs	% of total
FISH	360	6,0	5,13
MAINTAIN/REP	3120	52,0	44,44
WAIT	3540	59,0	50,43
Total	7020	117,0	100,00

### Main operation: MOVING

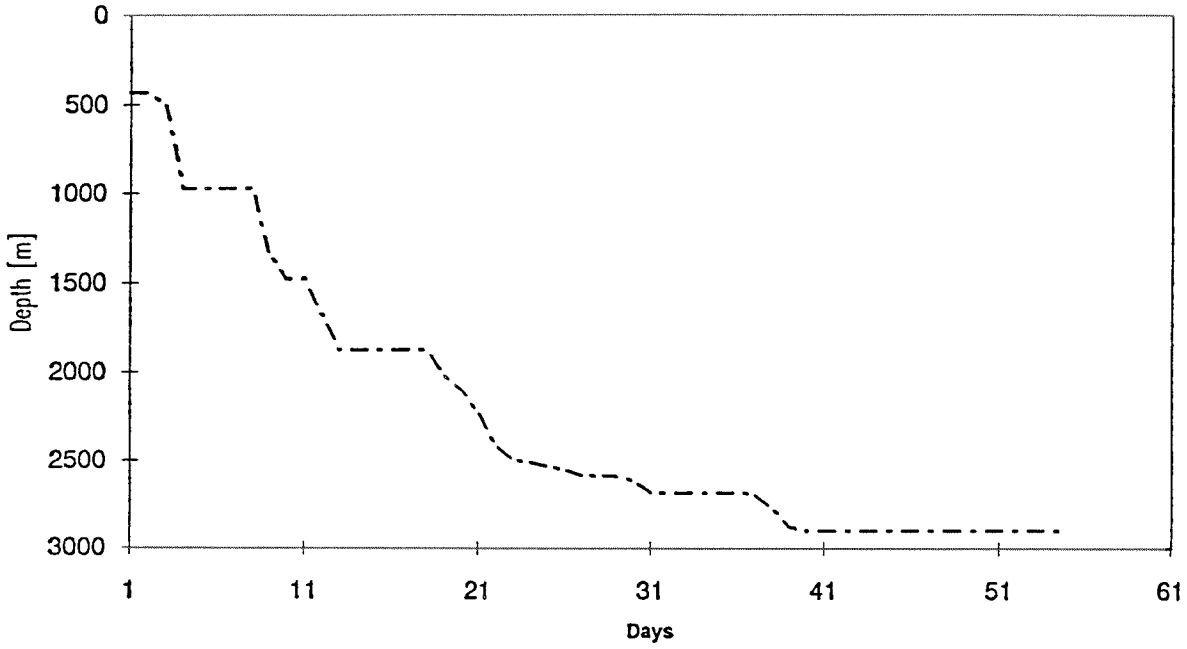
Sub operations	Minutes	Hrs	% of total
ANCHOR	3870	64,5	94,85
POSITION	210	3,5	5,15
Total	4080	68,0	100,00

### Main operation: PLUG & ABANDON

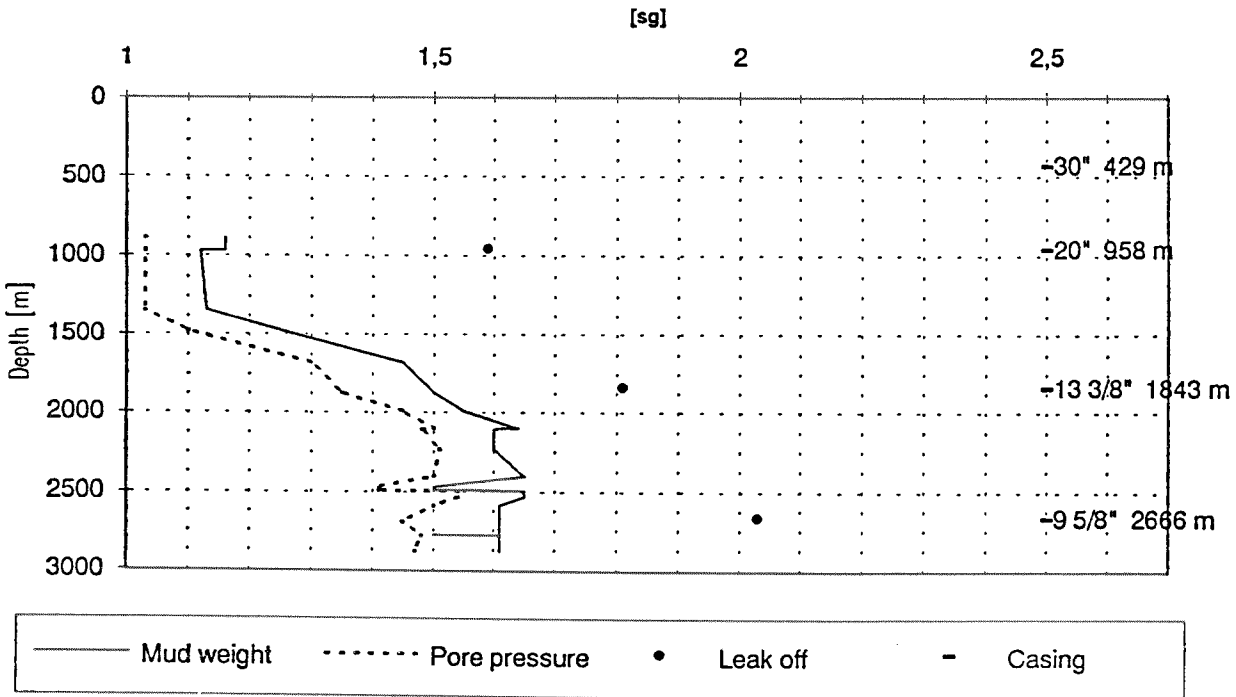
Sub operations	Minutes	Hrs	% of total
CEMENT PLUG	240	4,0	6,20
CIRC/COND	60	1,0	1,55
CUT	120	2,0	3,10
EQUIP RECOVERY	870	14,5	22,48
MECHANICAL PLUG	210	3,5	5,43
OTHER	150	2,5	3,88
PERFORATE	300	5,0	7,75
SQUEEZE	60	1,0	1,55
TRIP	1860	31,0	48,06
Total	3870	64,5	100,00

Total time used 1368 hrs ( 57 days)

Depth v.s. time plot for well: 003407 13



Composite plot for well: 003407 13



## Well History 34/7-13

### GENERAL:

Well 34/7-13 was drilled in the north-western part of block 34/7 on the Snorre West prospect. The prospect is divided into two main fault segments by a SW-NE trending fault with a throw of 60 m. This well was located in the southern part of the two segments.

The primary purposes of the well were to explore the Snorre West prospect and to test a possible extension of the Statfjord East Field in a northward direction. The main target of the well was sandstones of the Middle Jurassic Brent Group. Secondary target was sandstones of the Early Jurassic Statfjord Formation.

### OPERATIONS:

Wildcat well 34/7-13 was spudded 19 February 1988 by Wilh. Wilhelmsen semi-submersible rig Treasure Saga and completed 13 April 1988 at a depth of 2994 m in Triassic rocks. Drilling proceeded without any significant problems. Shallow gas was encountered at 459 m RKB, but it did not cause any technical problems.

Top Brent reservoir came in as prognosed, but it was oil-bearing only in the first 16 m. Due to this the resources for the prospect were reduced compared to what was expected. 5 cores were cut in the interval 2496 - 2587.8 m and 1 core between 2873 - 2890.5 m.

The well was plugged and abandoned as an oil discovery.

### TESTING:

One DST test was performed in the well.

# GEOLOGICAL TOPS

WELL: 34/7-13

Depth m (RKB)

<i>Nordland Group</i>	308.0
<i>Utsira Fm.</i>	930.0
<i>Hordaland Group</i>	1085.0
<i>Grid Fm.</i>	1267.0
<i>Undefined claystone sequence</i>	1323.0
<i>Rogaland Group</i>	1670.0
<i>Balder Fm.</i>	1670.0
<i>Sele Fm.</i>	1723.5
<i>Lista Fm.</i>	1800.0
<i>Shetland Group</i>	1855.0
<i>Cromer Knoll Group</i>	2485.0
<i>Brent Group</i>	2492.5
<i>Etive Fm.</i>	2492.5
<i>Rannoch Fm.</i>	2523.0
<i>Broom Fm.</i>	2598.0
<i>Dunlin Group</i>	2600.0
<i>Drake Fm.</i>	2600.0
<i>Cook Fm.</i>	2669.5
<i>Burton Fm.</i>	2741.5
<i>Amundsen Fm.</i>	2757.5
<i>Statfjord Fm.</i>	2859.0
<i>Hegre Group</i>	2962.0
<i>Lunde Fm.</i>	2962.0
<i>T.D.</i>	2994.0