

Well no : 34/08-01

Operator : HYDRO

Coordinates : 61 21 53.50 N  
02 25 57.57 E

UTM coord. : 6803722 N  
469666 E

Licence no : 120

Permit no : 488

Rig : TREASURE SCOUT

Rig type : SEMI-SUB.

Contractor : WILHELMOSEN OFFSHORE SERVICES

Bottom hole temperature : deg.C

Elev. KB : 23 M

Spud. date : 85.11.08

Water depth : 324 M

Compl. date : 86.03.08

Total depth : 3610 M

Spud. class : WILDCAT

Form. at TD : TRIASSIC

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

Prod. form : M. JURASSIC

Seisloca : NH 8404 - 221 SP. 215

### LICENSEES

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13.000000 NORSKE CONOCO A/S  
 13.000000 ELF AQUITAINE NORGE A/S  
 18.000000 NORSK HYDRO PRODUKSJON A.S  
 6.000000 SAGA PETROLEUM A.S.  
 50.000000 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	437.0	36	438.0	.
SURF.COND.	20	903.0	26	1554.0	1.64
INTERM.	13 3/8	1754.0	17 1/2	1770.0	1.74
INTERM.	9 5/8	2379.0	12 1/4	2398.0	1.82
LINER	7	3019.0	8 1/2	3610.0	1.65

### CONVENTIONAL CORES

Core no.	Intervals cored meters	Recovery	
		M	%
1	2768.0 - 2793.8	25.8	100.0
2	2794.0 - 2821.9	27.9	100.0
3	2822.0 - 2830.8	8.8	100.0
4	2839.5 - 2853.0	13.5	100.0
5	2854.0 - 2882.0	28.0	100.0
6	2882.0 - 2892.2	10.2	100.0
7	2894.0 - 2920.0	26.0	100.0
8	2920.0 - 2928.2	8.2	100.0
9	2929.0 - 2947.7	18.7	100.0
10	2947.7 - 2974.7	27.0	100.0
11	3044.0 - 3064.5	20.5	100.0
12	3294.0 - 3316.1	22.1	100.0
13	3512.0 - 3520.6	8.6	100.0

## MUD PROPERTIES

Depth below KB meter	Mud weight g/cm <sup>3</sup>	Viscosity	Mud type
-----			
438.000	1.05	12.0	WATER BASED
438.000	1.24	14.0	WATER BASED
438.000	1.05	9.0	WATER BASED
569.000	1.08	8.0	WATER BASED
925.000	1.11	8.0	WATER BASED
925.000	1.12	8.0	WATER BASED
925.000	1.11	8.0	WATER BASED
925.000	1.15	7.0	WATER BASED
935.000	1.21	7.0	WATER BASED
935.000	1.23	7.0	WATER BASED
935.000	1.21	12.0	WATER BASED
938.000	1.15	17.0	WATER BASED
1189.000	1.18	16.0	WATER BASED
1554.000	1.16	18.0	WATER BASED
1770.000	1.17	19.0	WATER BASED
1773.000	1.20	16.0	WATER BASED
1929.000	1.25	20.0	WATER BASED
2065.000	1.26	20.0	WATER BASED
2121.000	1.32	20.0	WATER BASED
2267.000	1.40	21.0	WATER BASED
2395.000	1.53	28.0	WATER BASED
2461.000	1.52	28.0	WATER BASED
2737.000	1.51	27.0	WATER BASED
2768.000	1.69	37.0	WATER BASED
2787.000	1.70	18.0	WATER BASED
2822.000	1.69	22.0	WATER BASED
2833.000	1.70	20.0	WATER BASED
2920.000	1.69	18.0	WATER BASED
3344.000	1.66	20.0	WATER BASED
3344.000	1.68	21.0	WATER BASED
3351.000	1.66	20.0	WATER BASED
3351.000	1.68	20.0	WATER BASED
3351.000	1.67	20.0	WATER BASED
3368.000	1.66	20.0	WATER BASED
3484.000	1.67	20.0	WATER BASED
2874.000	1.66	20.0	WATER BASED
2900.000	1.64	20.0	WATER BASED
2179.000	1.66	17.0	WATER BASED
2765.000	1.55	12.0	WATER BASED
2850.000	1.70	20.0	WATER BASED
2874.000	1.66	20.0	WATER BASED
3885.000	1.56	12.0	WATER BASED

## DRILL STEM TEST

### ----- INTERVALS AND PRESSURES

Test no.	interval meter	Choke size	Pressure (PSI)		
			WHP	BTHP	FFP
-----					
1.0	2880.000 - 2900.000 Test temperature: 106 °C	11.1	1040.0	6148.0	6121.8
2.0	2854.100 - 2857.100 Test temperature: 105 °C	9.5	4046.0	6116.0	6047.0
3.0	2767.900 - 2806.900 Test temperature: 99.8 °C	12.7	3590.0	6092.8	6015.0

RECOVERY

Test no.	Oil Sm <sup>3</sup> /d	Gas 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	0	2400	0.000	0.620	3
2.0	429	248000	0.834	0.660	579
3.0	0	340000	0.745	0.670	2380

DRILL BIT CUTTINGS AND WET SAMPLES

SAMPLE TYPE	INTERVAL BELOW KB	NUMBER OF SAMPLES
Cutting	430-3610	720
Wet Samples	430-3610	400

SHALLOW GAS

Interval below KB	REMARKS

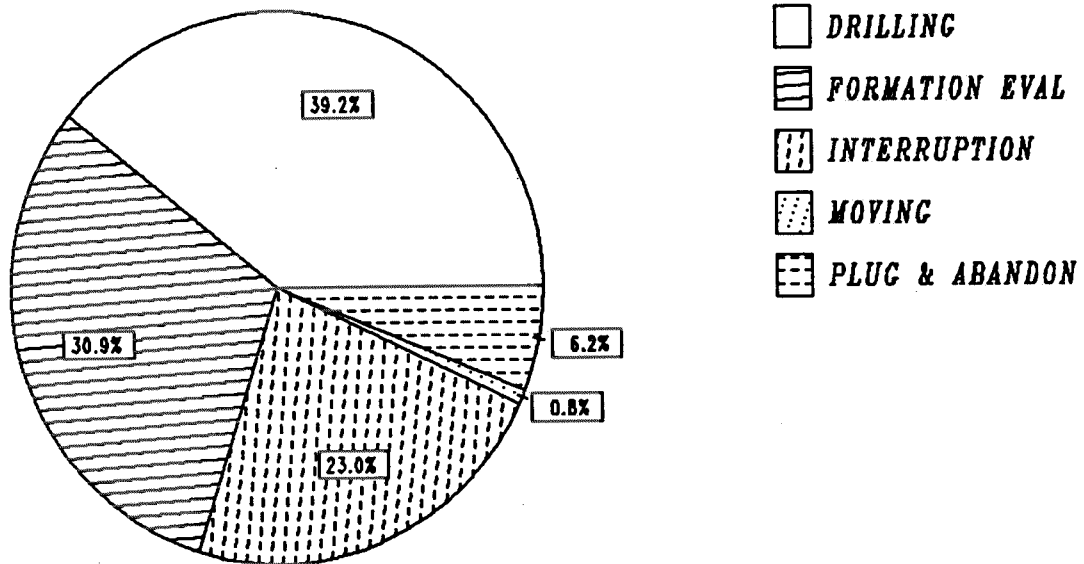
AVAILABLE LOGS

LOG TYPE	INTERVALS	1/200	1/500	Div.
ISF LSS GR	437.000 - 923.000	X	X	
ISF LSS GR	903.000 - 1945.700	X	X	
ISF LSS GR	1754.000 - 2373.000	X	X	
ISF LSS MSFL GR	2379.000 - 2918.000	X	X	
ISF LSS	2733.000 - 3610.000	X	X	
LDL GR	903.000 - 1747.000	X		
LDL CNL NGS	2379.000 - 2920.000	X		
LDL CNL	1754.000 - 2375.000	X	X	
LDL CNL NGS	2766.000 - 3511.000	X	X	
DLL MSFL GR	2720.000 - 2916.000	X	X	
CDM AP/MSD SHDT	1755.000 - 3810.000	X	X	
SHDT	1753.000 - 3612.000	X		
NGT	2847.000 - 3420.000	X		
NGS	2700.000 - 3430.000	X		
RFT	2768.000 - 2894.000	X		1:100
RFT	2866.000 - 3600.000			1:100
HP	2768.000 - 3600.000			1:100
DLWD	1800.000 - 3610.000			X
CBL VDL GR	745.000 - 2962.000	X		
DRILL. DATA PRESS. LOG	348.000 - 3610.000			1:5000
TEMP. DATA LOG	348.000 - 3610.000			X
PRESSURE EVALUATION	348.000 - 3610.000			1:5000
DXC NXB	348.000 - 3610.000			1:5000

GAS RATIO COMP.PLOT	1750.000 - 3610.000	1:1000
MUD	349.000 - 3610.000	X 1:1000
VELOCITY	437.000 - 3610.000	1:1000X
(Synthetic seismogram, marine, 10cm/s		5 stk.)
(VSP.Norm.Rev.Polarity, 10cm/s		12 stk.)
(Airgun well velocity survey		1 stk.)

# DAILY DRILLING REPORT SYSTEM

Main operations for well : 0034/08 -01



Total : 2880.00 hours

Main operation	Minutes	Hours	% of total
DRILLING	67725	1128.75	39.19
FORMATION EVAL	53340	889.00	30.87
INTERRUPTION	39675	661.25	22.96
MOVING	1440	24.00	0.83
PLUG & ABANDON	10620	177.00	6.15

MAIN OPERATIONS FOR WELL : 0034 / 08 - 01

MAIN OPERATION : DRILLING

Sub operations	Minutes	Hrs	% of total
BOP ACTIVITIES	3210	53.50	4.74
BOP/WELLHEAD EQ	4020	67.00	5.94
CASING	6810	113.50	10.06
CIRC/COND	4530	75.50	6.69
DRILL	25935	432.25	38.29
OTHER	630	10.50	0.93
PRESS DETECTION	390	6.50	0.58
REAM	2910	48.50	4.30
SURVEY	1890	31.50	2.79
TRIP	15780	263.00	23.30
UNDERREAM	1620	27.00	2.39
<b>Total</b>	<b>67725</b>	<b>1128.75</b>	<b>100.00</b>

MAIN OPERATION : FORMATION EVAL

Sub operations	Minutes	Hrs	% of total
CIRC SAMPLES	660	11.00	1.24
CIRC/COND	2280	38.00	4.27
CORE	5850	97.50	10.97
DST	24090	401.50	45.16
LOG	9240	154.00	17.32
OTHER	30	0.50	0.06
RFT/FIT	1980	33.00	3.71
TRIP	9210	153.50	17.27
<b>Total</b>	<b>53340</b>	<b>889.00</b>	<b>100.00</b>

MAIN OPERATION : INTERRUPTION

Sub operations	Minutes	Hrs	% of total
FISH	6570	109.50	16.56
MAINTAIN/REP	18615	310.25	46.92
OTHER	540	9.00	1.36
WAIT	11790	196.50	29.72
WELL CONTROL	2160	36.00	5.44
<b>Total</b>	<b>39675</b>	<b>661.25</b>	<b>100.00</b>

MAIN OPERATION : MOVING

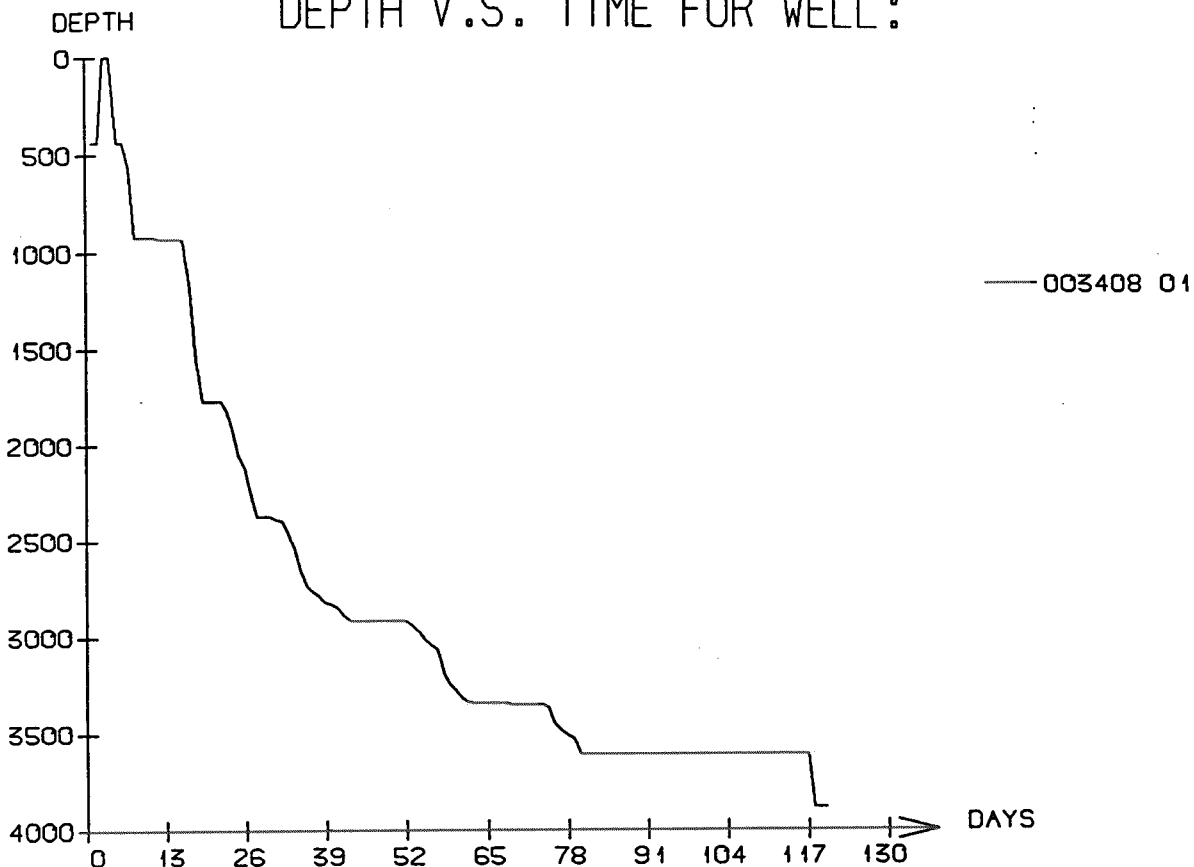
Sub operations	Minutes	Hrs	% of total
ANCHOR	1440	24.00	100.00
<b>Total</b>	<b>1440</b>	<b>24.00</b>	<b>100.00</b>

MAIN OPERATION : PLUG & ABANDON

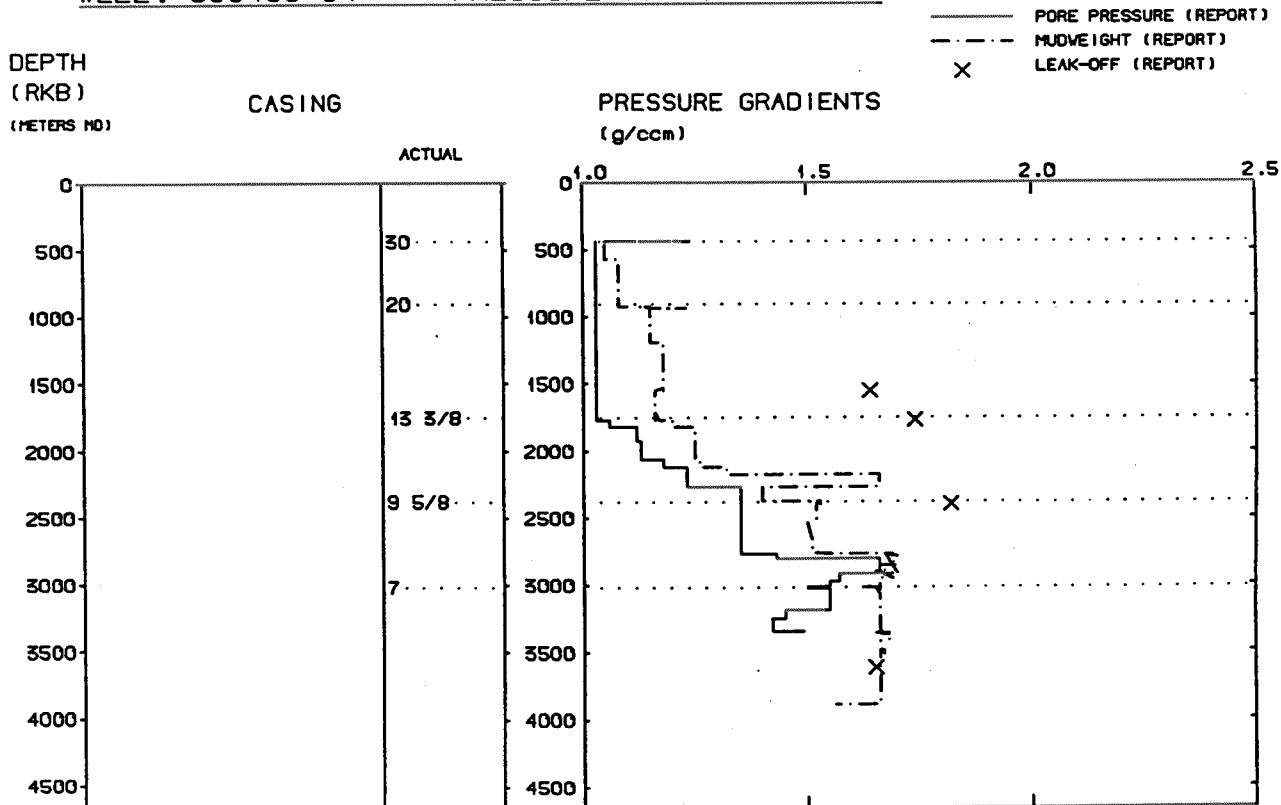
Sub operations	Minutes	Hrs	% of total
CEMENT PLUG	1530	25.50	14.41
CIRC/COND	720	12.00	6.78
EQUIP RECOVERY	570	9.50	5.37
MECHANICAL PLUG	900	15.00	8.47
OTHER	90	1.50	0.85
PERFORATE	180	3.00	1.69
SQUEEZE	630	10.50	5.93
TRIP	4950	82.50	46.61
WAIT	1050	17.50	9.89
<b>Total</b>	<b>10620</b>	<b>177.00</b>	<b>100.00</b>

Total time used 2880.00 hrs

# DEPTH V.S. TIME FOR WELL:



## WELL: 003408 01      PRESSURE COMPOSITE PLOT



# Well History 34/8-1

## GENERAL:

Well 34/8-1 was drilled on the main prospect "A" in the block. The prospect is defined by a main, rotated fault-block flanking the Viking Graben. The closure of the prospect was mainly dependant upon a sealing fault separating the prospect from the structurally higher Gullfaks-area.

The main objectives of the well were:

- to prove possible hydrocarbon accumulations in the structurally and stratigraphically highest reservoir zone (the Brent Group) in an optimal position
- to verify the interpretation regarding the stratigraphic and structural evolution
- to drill in a position which tested both the structural closure and the sealing fault on the "A" prospect.

Secondary objectives of the well were:

- to test the hydrocarbon potential, the stratigraphy and the reservoir quality in the Cook Formation, Statfjord Formation and upper part of Lunde Formation
- to drill in a position where the Brent Group showed no or minor erosion
- to drill in a position which left small quantities of hydrocarbons untested updip in the Brent Group.

The prognosed depth was 3750 m RKB.

## OPERATIONS:

Wildcat well 34/8-1 was spudded 8 November 1985 by Wilh. Wilhelmsen Offshore Services semi-submersible rig Treasure Scout and completed 8 March 1986 at a depth of 3610 m in Triassic rocks. Certain problems were experienced in the beginning, and the well had to be respudded. After this drilling proceeded without significant problems.

13 cores were cut in the well, 10 cores in the Brent Group, one in the Cook Fm. and one in the Lunde Fm. The reservoir top came in at 2767 m, approx. 80 m higher than prognosed. Logs and RFT-data show that it is a probability of gas down to 2854 and the oil/water contact is at 2864 m.

The well was plugged and abandoned as an oil and gas discovery.

## TESTING:

3 DST tests were performed in the well, DST 1 in the water-zone, DST 2 in the oil-zone and DST 3 in the gas-zone. In DST 2 there was experienced gas-coning which could indicate that the oil is difficult to produce.



# GEOLOGICAL TOPS

WELL: 34/8-1

	Depth m (RKB)
<i>Nordland Group</i>	348.5
<i>Utsira Fm.</i>	1091.0
<i>Hordaland Group</i>	1136.0
<i>Skade Fm.</i>	1411.0
<i>Grid Fm.</i>	1524.0
<i>Rogaland Group</i>	1826.0
<i>Balder Fm.</i>	1826.0
<i>Sele Fm.</i>	1874.0
<i>Lista Fm.</i>	1947.0
<i>Shetland Group</i>	2007.0
<i>Jorsalfare Fm.</i>	2007.0
<i>Kyrre Fm.</i>	2387.0
<i>Cromer Knoll Group</i>	2761.0
<i>Mime Fm.</i>	2761.0
<i>Viking Group</i>	2763.0
<i>Heather Fm.</i>	2763.0
<i>Brent Group</i>	2767.0
<i>Tarbert Fm.</i>	2767.0
<i>Ness Fm.</i>	2830.0
<i>Etive Fm.</i>	2851.0
<i>Rannoch Fm.</i>	2901.0
<i>Broom Fm.</i>	2980.0
<i>Dunlin Group</i>	2982.0
<i>Drake Fm.</i>	2982.0
<i>Cook Fm.</i>	3035.5
<i>Burton Fm.</i>	3163.0
<i>Amundsen Fm.</i>	3198.0
 <i>Statfjord Fm.</i>	 3324.0
<i>Hegre Group</i>	3417.5
<i>Lunde Fm.</i>	3417.5
<i>T.D.</i>	3610.0