

Well no : 30/ 9-04 S Operator : HYDRO

Coordinates : 60 28 12.83 N UTM coord. : 6703963
 02 45 32.05 E 486742

Licence no : 79 Permit no : 444

Rig : TREASURE SEEKER Rig type : SEMI-SUB.

Contractor : WILHELMSSEN OFFSHORE SERVICES

Bottom hole temperature : 111.1 deg.C Elev. KB : 25 M

Spud. date : 84.11.22 Water depth : 110 M

Compl. date : 85.03.30 Total depth : 4303 M

Spud. class : WILDCAT Form. at TD : JURASSIC

Compl. class : P&A. OIL/GAS/COND. Prod. form : M.JURASSI

Seisloca : NH 82-064 SP. 444

LICENSEES

16.000000 NORSK HYDRO PRODUKSJON A.S
 10.500000 SAGA PETROLEUM A.S.
 73.500000 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 ³
CONDUCTOR	30	221.0	36	222.0	
SURF.COND.	20	618.0	26	630.0	1.40
INTERM.	13 3/8	1648.0	17 1/2	1667.0	1.66
INTERM.	9 5/8	3275.0	12 1/4	3297.0	1.75
LINER	7	3558.0	8 1/2	4303.0	

CONVENTIONAL CORES

Core no.	Intervals cored meters		Recovery		Series
			M	%	
1	3332.0	- 3350.3	18.3	100.0	MIDDLE JURASSIC
2	3350.0	- 3368.6	18.6	100.0	MIDDLE JURASSIC
3	3368.6	- 3379.5	10.9	88.0	MIDDLE JURASSIC
4	3432.3	- 3436.7	4.7	94.0	MIDDLE JURASSIC
5	3437.0	- 3444.5	7.5	93.7	MIDDLE JURASSIC
6	3445.0	- 3455.2	10.2	85.0	MIDDLE JURASSIC
7	3457.0	- 3462.7	5.7	62.0	MIDDLE JURASSIC
8	3467.0	- 3469.6	2.6	52.0	MIDDLE JURASSIC
9	3472.0	- 3474.7	2.7	90.0	MIDDLE JURASSIC
10	3475.0	- 3483.8	8.8	97.8	MIDDLE JURASSIC
11	3484.0	- 3498.1	14.1	88.1	MIDDLE JURASSIC
12	3580.0	- 3598.1	18.1	100.0	MIDDLE JURASSIC
13	4268.0	- 4276.3	8.3	94.4	LOWER JURASSIC

MUD PROPERTIES

Depth below KB meter	Mud weight g/cm ³	Plastic viscosity mPa.s	Mud type
222.000	1.03		WATER BASED
617.000	1.09		WATER BASED
625.000	1.10	6.0	WATER BASED
630.000	1.11	6.0	WATER BASED
700.000	1.15	14.0	WATER BASED
1667.000	1.18	25.0	WATER BASED
1667.000	1.20	26.0	OIL BASED
1837.000	1.50	33.0	OIL BASED
3117.000	1.31	32.0	OIL BASED
3151.000	1.50	39.0	OIL BASED
3368.000	1.27	23.0	WATER BASED
3467.000	1.28	21.0	WATER BASED
3472.000	1.27	21.0	WATER BASED
3545.000	1.31	39.0	OIL BASED
3558.000	1.27	20.0	WATER BASED

DRILL STEM TEST

INTERVALS AND PRESSURES

Test no	interval meter	Choke size	Pressure (PSI)		
			WHP	BTHP	FIPP
1.0	3416.900 - 3422.900	28.6	638.0	3287.8	4081.1
2.0	3311.300 - 3324.300	25.4	2025.0	4179.1	4315.8

RECOVERY

Test no.	Oil Sm ³ /d	Gas M Sm ³ /d	Oil grav. g/cm ³	Gas grav. rel. air	GOR m ³ /m ³
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1.0	783	0.158	0.800	0.800	2025
2.0	334*	1.1	0.800	0.700	3384

* - CONDENSATE

DRILL BIT CUTTINGS AND WET SAMPLES

<i>SAMPLE TYPE</i>	<i>INTERVAL BELOW KB</i>	<i>NUMBER OF SAMPLES</i>

<i>Cutting</i>		
<i>Wet Samples</i>	<i>230 - 4300</i>	<i>240</i>

SHALLOW GAS

<i>Interval below KB</i>	<i>REMARKS</i>

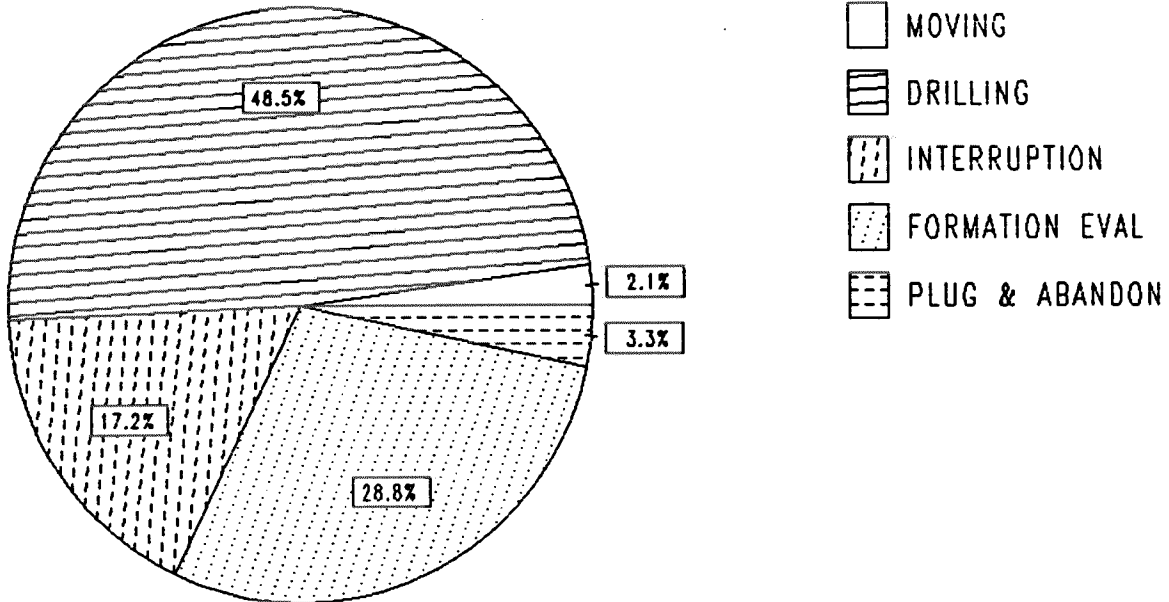
	<i>NONE</i>

AVAILABLE LOGS

LOG TYPE	INTERVALS	1/200	1/500
ISF LSS GR	221 - 4305	X	X
LDL CNL	618 - 4306	X	X
DLL MSFL	3281 - 3677	X	X
CDM	3281 - 4306	X	
CDM AP	3282 - 3680	X	X
SHDT	3281 - 3681	X	
NGT SPECTRO	3281 - 3450	X	X
NGT SPECTRO	3272 - 4306	X	X
RFT HEWLETT PACKARD	3299 - 3627	X	
RFT	3595 - 4259	X	
DRILLING DATA PRESSURE	135 - 4303	1:5000	
TEMPERATURE DATA	135 - 4303	1:5000	
DXC/NXB	135 - 4303	1:5000	
CBL VDL CCL	275 - 1648	X	
CBL VDL CCL	1200 - 3261	X	
CBL VDL CCL	3167 - 3261	X	
MUD	135 - 4303		X
VELOCITY	121 - 4305		X
(+ WST-VSP,	1625 - 4307		1 stk)
(+ Seismic Quicklook,	1625 - 4307		1 stk)
(+ Synthetic Seismogram, Geogram, 10, 20 cm/s,			12 stk)

DAILY DRILLING REPORT SYSTEM

Main operation : 30/09-04s



Total : 3144 HRS

Main operation	Minutes	Hours	% of total
MOVING	4050	67.50	2.15
DRILLING	91500	1525.00	48.51
INTERRUPTION	32460	541.00	17.21
FORMATION EVAL	54315	905.25	28.79
PLUG & ABANDON	6315	105.25	3.35

MAIN OPERATIONS WELL : 30/09-04J

MAIN OPERATION: DRILLING

Sub operations	Min	Hrs	% of total
CASING	9465	157.75	10.34
TRIP	25620	427.00	28.00
DRILL	31880	531.33	34.84
CIRC/COND	4915	81.92	5.37
SURVEY	1785	29.75	1.95
BOP/WELLHEAD EQ	7935	132.25	8.67
UNDERREAM	885	14.75	0.97
REAM	4905	81.75	5.36
BOP ACTIVITIES	3285	54.75	3.59
OTHER	540	9.00	0.59
PRESS DETECTION	15	0.25	0.02
WAIT	270	4.50	0.30
TOTAL	91500	1525.00	

MAIN OPERATION: MOVING

Sub operations	Min	Hrs	% of total
TRANSIT	1710	28.50	42.22
ANCHOR	2340	39.00	57.78
TOTAL	4050	67.50	

MAIN OPERATION: FORMATION EVAL

Sub operations	Min	Hrs	% of total
LOG	12045	200.75	22.18
CIRC/COND	2505	41.75	4.61
TRIP	10740	179.00	19.77
OTHER	390	6.50	0.72
CIRC SAMPLES	285	4.75	0.52
CORE	4170	69.50	7.68
DST	23115	385.25	42.56
PROD TEST	1065	17.75	1.96
TOTAL	54315	905.25	

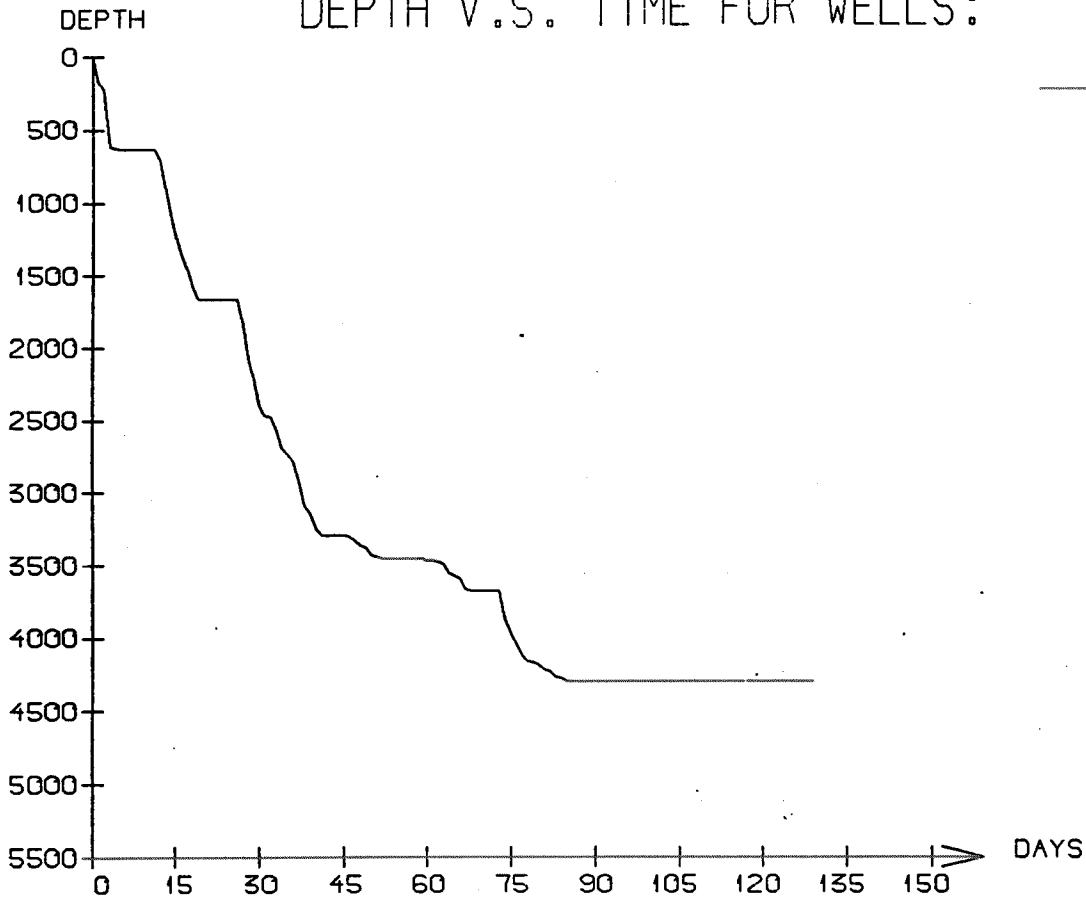
MAIN OPERATION: INTERRUPTION

Sub operations	Min	Hrs	% of total
WAIT	15225	253.75	46.90
MAINTAIN/REP	10770	179.50	33.18
LOST CIRC	225	3.75	0.69
FISH	2895	48.25	8.92
OTHER	3345	55.75	10.30
TOTAL	32460	541.00	

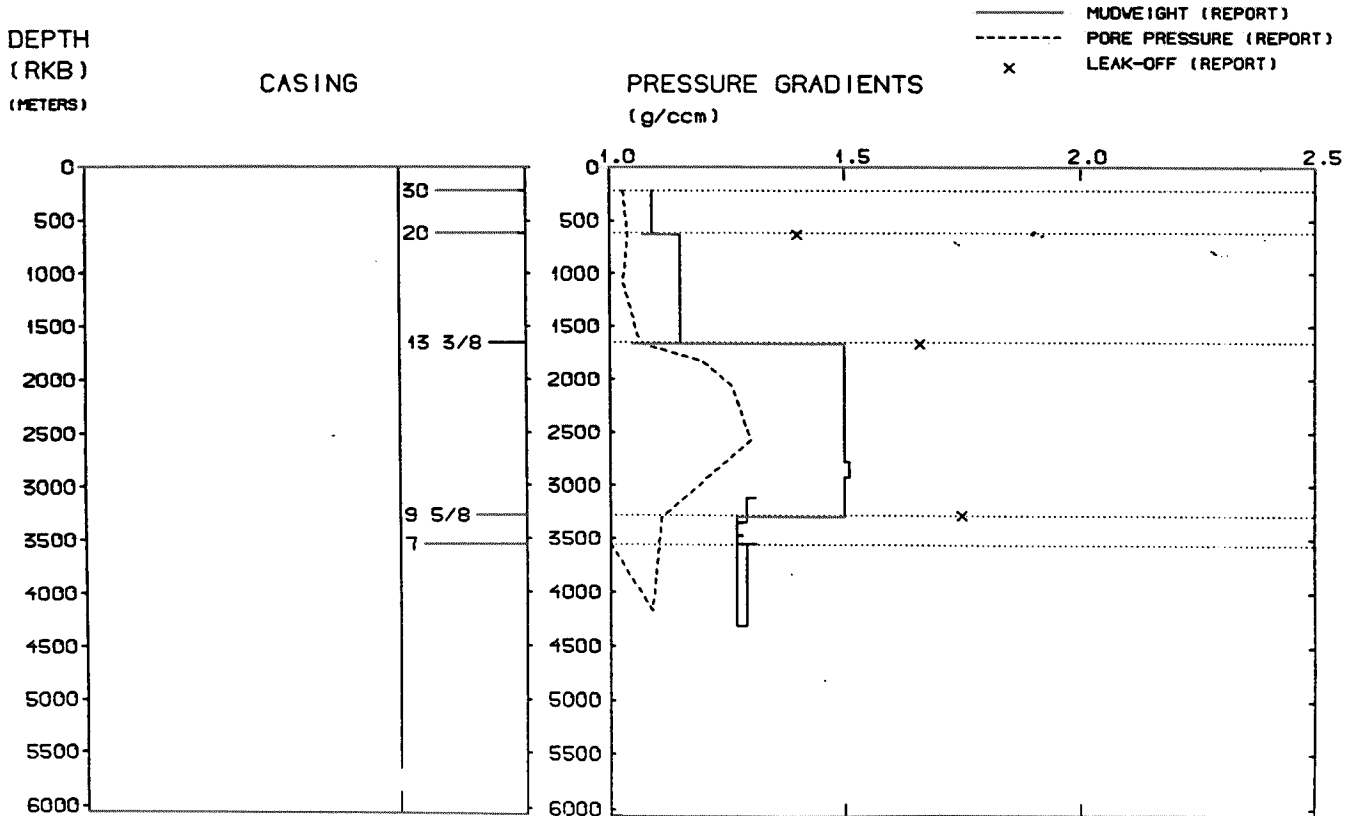
MAIN OPERATION: PLUG & ABANDON

Sub operations	Min	Hrs	% of total
TRIP	2235	37.25	35.39
CIRC/COND	330	5.50	5.23
CEMENT PLUG	1095	18.25	17.34
PERFORATE	255	4.25	4.04
SQUEEZE	120	2.00	1.90
OTHER	375	6.25	5.94
CUT	765	12.75	12.11
EQUIP RECOVERY	1140	19.00	18.05
TOTAL	6315	105.25	

DEPTH V.S. TIME FOR WELLS:



WELL: 003009 04S PRESSURE COMPOSITE PLOT



WELL HISTORY 30/9-4 S

GENERAL:

Wildcat well 30/9-4 S was drilled on the B-structure on the south-western flank of the Oseberg field.

This is an elongated and rotated fault block bounded by faults in all directions.

The Brent Group is truncated by the Base Cretaceous Unconformity, and this well was expected to go directly from Cretaceous to Ness formation.

The objectives of the well were to find hydrocarbon accumulations in the Brent Group, secondary in the Statfjord Formation, and to penetrate the Brent Group in a position where the sand in the Ness Formation is preserved.

The well was deviated westwards at an angle of approximately 40°.

OPERATIONS:

The well was spudded 22 November 1984 by the semi-submersible rig Treasure Saga.

No significant problems were encountered during the drilling.

At 3680 m the mud was changed from water- to oilbased, and the well was drilled by turbine down to 4303 m.

12 cores were cut in the well.

Top reservoir came in at 3290 m, and the logs show gas in the interval 3294-3413 m, and oil in the interval 3418-3425 m. The gas is found in 2 good sands measuring respectively 8 and 12 m near the top of the Ness Formation.

Gas/oil and oil/water contacts could not be defined as these are sand/shale contacts.

The result of this drilling confirms presens of oil and gas in even more new structure elements to the west of the Oseberg field, but the new proven reserves are to small to mean any significant upgrading of the NPD's reserve estimate for the field.

TESTING:

Two Drill Stem Tests were performed in this well.

GEOLOGICAL TOPS

WELL: 30/09-04-S

	Depth m (RKB)
<i>Nordland Group</i>	135,0
<i>Utsira Fm</i>	595,0
<i>Hordaland Group</i>	845,0
<i>Rogaland Group</i>	2366,0
<i>Balder Fm</i>	2366,0
<i>Sele Fm</i>	2486,0
<i>Lista Fm</i>	2598,0
<i>Våle Fm</i>	2754,0
<i>Shetland Group</i>	2769,0
<i>Brent Group</i>	3295,0
<i>Ness Fm</i>	3379,0
<i>Etive Fm</i>	3551,0
<i>Dunlin Group</i>	3633,0
<i>Drake Fm</i>	3633,0
<i>Cook Fm</i>	4053,0
<i>Burton Fm</i>	4077,0
<i>Statfjord Fm</i>	4175,0
 <i>TD=</i>	 4303,0