

Well no :	30/9-9	Operator :	HYDRO
Coordinates :	60° 19' 51.23" N 02° 52' 28.95" E	UTM coord. :	668842706 N 49308108 E
Licence no :	104	Permit no :	621
Rig :	POLAR PIONEER	Rig type :	SEMI-SUB.
Contractor :	POLAR FRONTIER DRILLING A/S		
Bottom hole temp:	92 °C	Elev. KB :	23 M
Spud. date :	89.09.27	Water depth :	101 M
Compl. date :	89.11.06	Total depth :	2809 M
Spud. class :	WILDCAT	Form. at TD :	E.JURASSIC
Compl. class :	SUSPENDED. OIL DISC.	Prod.form. :	
Seisloca :	NH 8502 COL. 1268 ROW 201		

LICENSEES

5,000000	CONOCO PETROLEUM NORGE A/S
5,000000	DNO OLJE A/S
30,000000	NORSK HYDRO PRODUKSJON A.S
5,000000	SAGA PETROLEUM A.S.
50,000000	DEN NORSKE STATS OLJESELSKAP A.S
5,000000	NORSK AGIP 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	211,0	36	213,0	
INTERM.	13 3/8	905,0	17 1/2	919,0	1,41
INTERM.	9 5/8	2180,0	12 1/4	2193,0	1,75
LINER	7	2523,0	8 1/2	2809,0	

CONVENTIONAL CORES

Core no.	Intervals cored meters	Recovery	
		M	%
1	2291,0	- 2304,6	13,5 100,0
2	2306,0	- 2312,4	6,4 100,0
3	2313,0	- 2316,0	3,0 100,0
4	2322,0	- 2326,7	4,7 100,0
5	2347,0	- 2356,9	9,9 100,0
6	2393,0	- 2410,3	17,3 100,0
7	2411,0	- 2426,9	15,9 100,0

MUD

Depth	Mud weight	Visc.	Mud type
213,000	1,05		WATER BASED
919,000	1,15	14,0	WATER BASED
919,000	1,05		WATER BASED

Depth	Mud weight	Visc.	Mud type
946,000	1,15	13,0	WATER BASED
1382,000	1,25	14,0	WATER BASED
1773,000	1,36	20,0	WATER BASED
2074,000	1,38	24,0	WATER BASED
2140,000	1,15	15,0	WATER BASED
2193,000	1,38	21,0	WATER BASED
2242,000	1,13	15,0	WATER BASED
2306,000	1,14	18,0	WATER BASED
2317,000	1,13	17,0	WATER BASED
2357,000	1,14	18,0	WATER BASED
2388,000	1,15	14,0	WATER BASED
2809,000	1,14	17,0	WATER BASED

DRILL STEM TEST

INTERVALS AND PRESSURES

Test no.	Interval meter		Choke size	Pressure (PSI) WHP	BTHP	FFP
1,0	2394,400	-	2409,400	19,05	1415	3533
2,0	2294,600	-	2310,600	19,05	1418	3413

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	Temp.
1,0	946	158000	0,822	0,743	166	100 °C
2,0	966	158000	0,820	0,745	164	99,8 °C

DRILL BIT CUTTINGS AND WET SAMPLES

Sample type	Interval below KB	Number of samples
WET SAMPLES	930 - 2809	210
CUTTING	920 - 2809	240

SHALLOW GAS

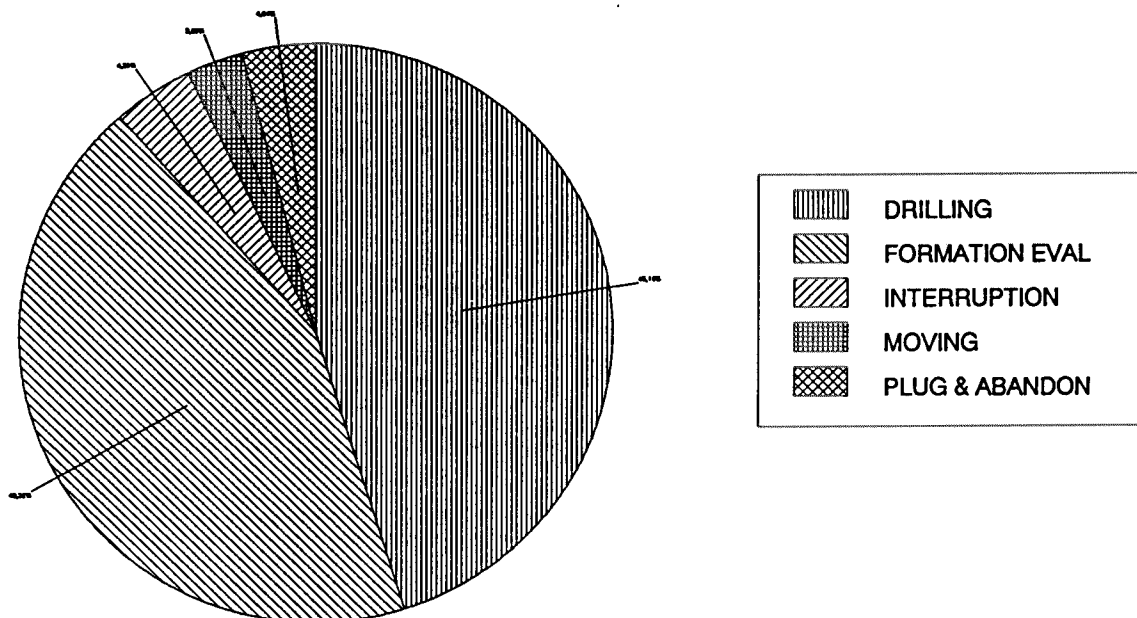
Interval below KB	Remarks
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AVAILABLE LOGS

Log type	Intervals		1/200	1/500	Div.
AMS	1946,0	- 2776,0		X	
CBL VDL GR CCL	2163,0	- 2442,0	X		
CBL VDL GR CCL JB	1772,0	- 2445,0	X		
CDM AP / SHDT	2180,0	- 2807,0	X	X	
DIL LSS GR	904,5	- 2180,5	X	X	
DIL LSS SGR	2180,0	- 2806,5	X	X	
DLL MSFL GR	2180,0	- 2437,0	X	X	
DRILL. DATA PRESS.	200,0	- 2800,0			1:5000
FMS GR AMS	2180,0	- 2807,0	X		
LDL CNL GR	904,5	- 2180,5	X	X	
LDL CNL NGL	2180,0	- 2788,4	X	X	
MUD LOG	904,0	- 2807,0		X	
MWD	124,0	- 2291,0		X	
NGL RATIOS	2180,0	- 2779,4	X	X	
RFT HP GR	2257,5	- 2784,1		X	
RFT HP GR	2295,4	- 2303,0			
VELOCITY (READ)	900,000	- 2800,000		X	
VELOCITY (SCHLUMBERGER)	905,000	- 2807,000		X	
SYNTHETIC SEISMOGRAM	10 cm/s				1
SYNTHETIC SEISMOGRAM	10 cm/s				1
TWO TIME TRAVEL TIME	10 cm/s				1
FREQUENCY TEST	10 cm/s				4
V.S.P. ZERO OFFSET VSP	10 cm/s	20 cm/s			12
COMPOSITE V.S.P.- GEOGRAM	10 cm/s	- 20 cm/s			3

Daily Drilling Report System (DDRS)

Operations for well: 30/9-9



Main operations	Minutes	Hours	% of total
DRILLING	27180	453,00	45,16
FORMATION EVAL	26070	434,50	43,32
INTERRUPTION	2640	44,00	4,39
MOVING	1860	31,00	3,09
PLUG & ABANDON	2430	40,50	4,04
Total	60180	1003,00	100,00

Operations for well: 30/9-9**Main operation: DRILLING**

Sub operations	Minutes	Hours	% of total
BOP ACTIVITIES	1110	18,50	4,08
BOP/WELLHEAD EQ	1440	24,00	5,30
CASING	8010	133,50	29,47
CIRC/COND	240	4,00	0,88
DRILL	11040	184,00	40,62
REAM	390	6,50	1,43
SURVEY	210	3,50	0,77
TRIP	4740	79,00	17,44
Total	27180	453,00	100,00

Main operation: FORMATION EVAL

Sub operations	Minutes	Hours	% of total
CIRC SAMPLES	540	9,00	2,07
CORE	3090	51,50	11,85
DST	15090	251,50	57,88
LOG	4290	71,50	16,46
TRIP	3060	51,00	11,74
Total	26070	434,50	100,00

Main operation: INTERRUPTION

Sub operations	Minutes	Hours	% of total
MAINTAIN/REP	2640	44,00	100,00
Total	2640	44,00	100,00

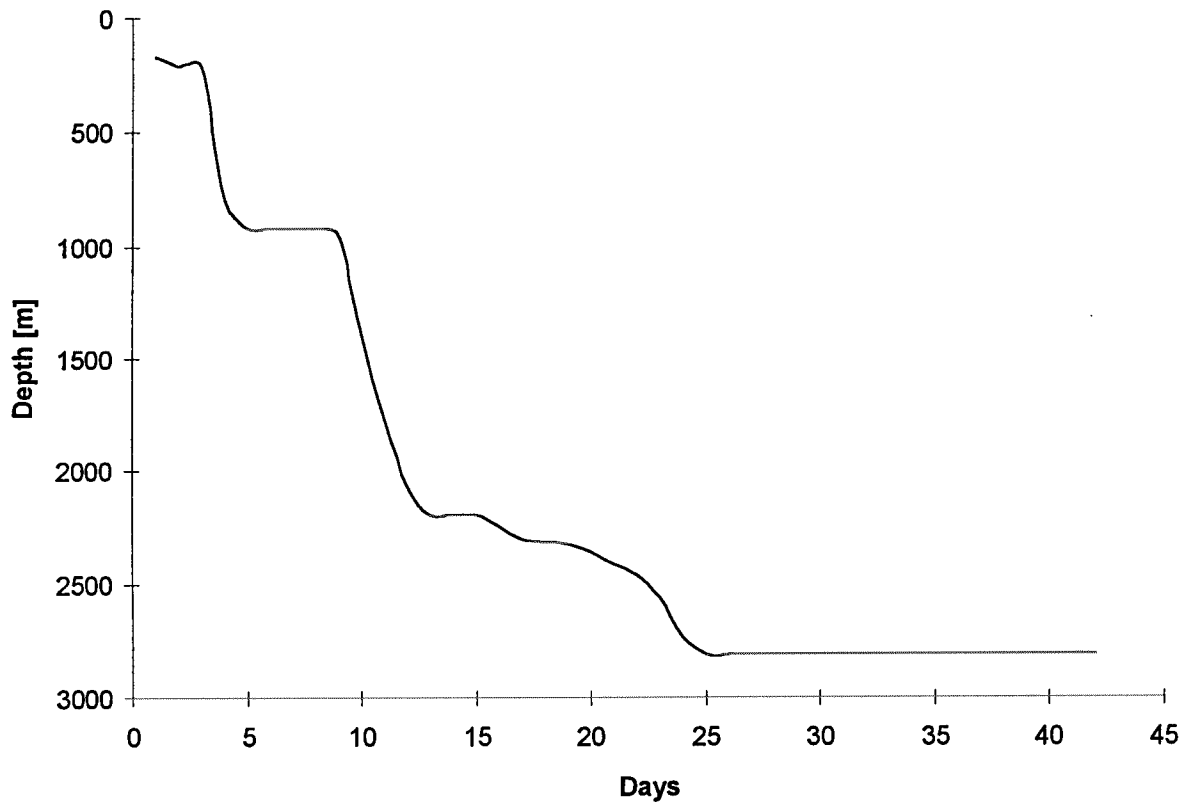
Main operation: MOVING

Sub operations	Minutes	Hours	% of total
ANCHOR	1530	25,50	82,26
TRANSIT	330	5,50	17,74
Total	1860	31,00	100,00

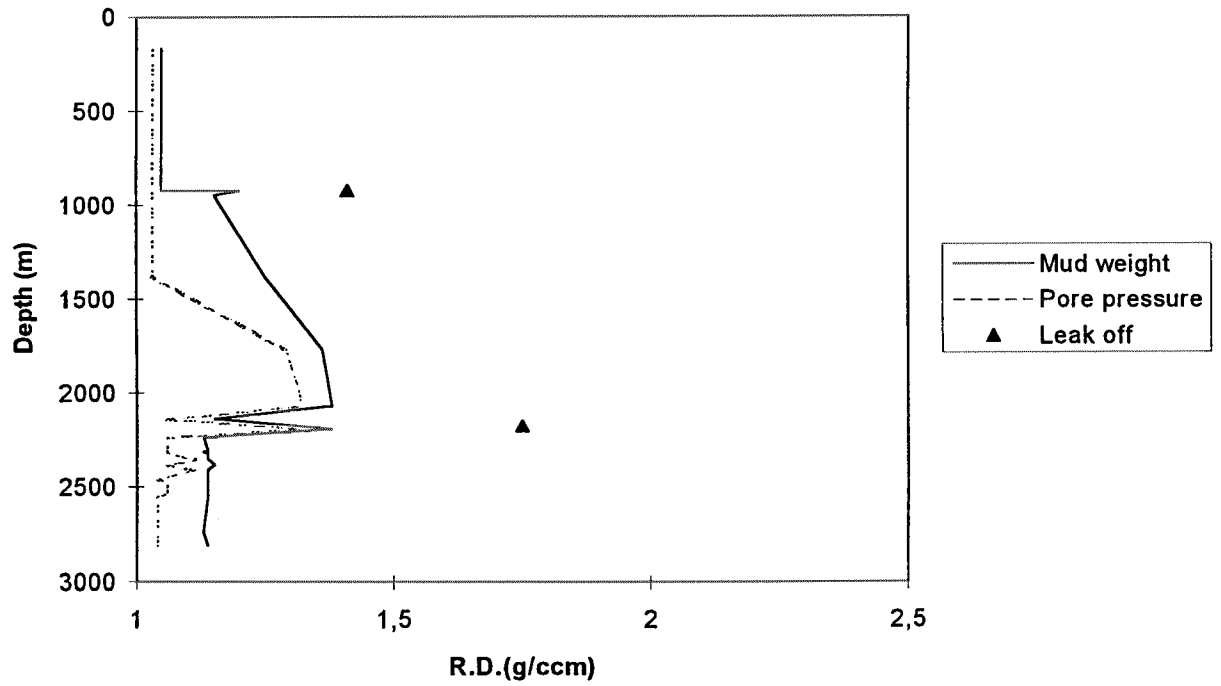
Main operation: PLUG & ABANDON

Sub operations	Minutes	Hours	% of total
CEMENT PLUG	450	7,50	18,52
CIRC/COND	90	1,50	3,70
EQUIP RECOVERY	1050	17,50	43,21
MECHANICAL PLUG	180	3,00	7,41
OTHER	120	2,00	4,94
TRIP	540	9,00	22,22
Total	2430	40,50	100,00

Depth vs time for well: 30/9-9



Composite plot for well: 30/9-9



Well History 30/9-9.

General:

Well 30/9-9 is located on the southern part of the J-structure 3.5 km south of well 30/9-5, which encountered an highly eroded Brent Group with gas shows. The Cook Formation was gas bearing, and the Statfjord Formation was water bearing. The main target was the sandstones in the Middle Jurassic Brent Group. The Cook Formation was the secondary target whilst the Statfjord Formation was considered to be non prospective on this location. The primary objectives of the well were to:

- prove oil in the sandstones of the Brent Group and the Cook Formation
- define an oil/water contact
- drill in a position which left non-commercial hydrocarbons updip on the structure.
- drill in a position with good seismic data quality.

Secondary objective was to verify the structural and sedimentological interpretation of the area. The well was planned to be drilled 30 m into the Statfjord Formation to a total depth of 2803 m RKB.

Operations:

Wildcat well 30/9-9 was spudded 26 September 1989 by the semi-submersibel rig Polar Pioneer and completed 6 November 1989 at a depth 2809 m RKB in the late Sinemurian Statfjord Formation..

No significant problems occurred during drilling and completion. A total of 7 cores were cut in the Middle Jurassic Brent Group. Oil was encountered in the Tarbert- and Ness Formation down to 2319 m RKB (OWC from RFT). The net pay was estimated to 13.5 m. The Lower Jurassic Cook Formation was found water bearing No OWC was proved in the Ness Formation, leaving oil down to base reservoir. The well was temporary plugged and abandoned as an oil discovery.

Testing:

Two DST tests were performed in the well.

Test no 1 was performed in the interval 2394.4 to 2409.4 (Ness Fm) and flowed oil. GOR 166. Sm^3/Sm^3 .

Test no 2 was performed in the interval 2294.6 to 2310.6 m RKB (Tarbert- and uppermost Ness Fm) an flowed oil. GOR 164 Sm^3/Sm^3 .

Geological Tops.

Well: 30/9-9.

	Depth m (RKB).
Nordland Group	124.0
Utsira Fm	662.0
Hordaland Group	864.0
Rogaland Group	1926.0
Balder Fm	1926.0
Sele Fm	1975.0
Lista Fm	2033.0
Maureen Fm	2174.0
Shetland Group	2178.0
Hardråde Fm	2178.0
Kyrre Fm.	2216.0
Tryggvason Fm	2253.0
Viking Group	2292.0
Heather Fm	2292.0
Brent Group	2293.0
Tarbert Fm	2293.0
Ness Fm	2307.0
Dunlin Group	2412.0
Drake Fm	2412.0
Cook Fm	2640.0
Burton Fm	2653.0
Amundsen Fm	2735.0
Statfjord Fm	2762.0
T.D.	2809.0