

Well no : 30/09-07

Operator : HYDRO

Coordinates : 60 25 04.76 N
02 45 7.00 E

UTM coord. : 6698146 N
486338 E

Licence no : 104

Permit no : 592

Rig : POLAR PIONEER

Rig type : SEMI-SUB.

Contractor : POLAR FRONTIER DRILLING A/S

Bottom hole temperature : 123 deg.C

Elev. KB : 23 M

Spud. date : 88.11.02

Water depth : 98 M

Compl. date : 88.12.23

Total depth : 3565 M

Spud. class : WILDCAT

Form. at TD : E.JURASSIC

Compl. class : P&A. OIL DISCOVERY

Prod. form :

Seisloca : NH 8502 ROW 395 COL. 728

LICENSEES

5.000000 NORSK AGIP A/S
5.000000 CONOCO PETROLEUM NORGE A/S
5.000000 DET NORSKE OLJESELSKAP A/S
30.000000 NORSK HYDRO PRODUKSJON A.S
5.000000 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/cm3 |
|-----------|--------------|----------------|------------|---------------------|--------------------|
| CONDUCTOR | 30 | 207.0 | 36 | 207.0 | . |
| INTERM. | 13 3/8 | 1057.0 | 17 1/2 | 1072.0 | 1.68 |
| INTERM. | 9 5/8 | 2756.0 | 12 1/4 | .0 | 1.50 |
| LINER | 7 | 2953.0 | 8 1/2 | .0 | . |

CONVENTIONAL CORES

| Core no. | Intervals cored meters | Recovery M | % | Series |
|----------|------------------------|------------|-------|--------|
| 1 | 2832.0 - 2857.8 | 25.8 | 100.0 | |
| 2 | 2860.0 - 2887.0 | 27.0 | 100.0 | |

MUD PROPERTIES

| Depth below KB meter | Mud weight g/cm3 | Viscosity | Mud type |
|----------------------|------------------|-----------|-------------|
| 350.000 | 1.25 | 11.0 | WATER BASED |
| 1072.000 | 1.05 | 1.0 | WATER BASED |
| 1072.000 | 1.20 | 12.0 | WATER BASED |
| 2770.000 | 1.45 | 21.0 | WATER BASED |

| | | | |
|----------|------|------|-------------|
| 2770.000 | 1.26 | 16.0 | WATER BASED |
| 3242.000 | 1.25 | 13.0 | WATER BASED |
| 3320.000 | 1.26 | 10.0 | WATER BASED |
| 3565.000 | 1.25 | 12.0 | WATER BASED |
| 3565.000 | 1.26 | 12.0 | WATER BASED |

DRILL STEM TEST

INTERVALS AND PRESSURES

| Test no. | interval meter | Choke size | Pressure (PSI) | | |
|----------|--|------------|----------------|--------|--------|
| | | | WHP | BTHP | FFP |
| 1.0 | 2811.000 - 2822.000 Temperature: 108 °C | 12.7 | 1640.3 | 4251.6 | 4049.2 |

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 | 540 | 75600 | 0.849 | 0.693 | 140 |

DRILL BIT CUTTINGS AND WET SAMPLES

| SAMPLE TYPE | INTERVAL BELOW KB | NUMBER OF SAMPLES |
|-------------|-------------------|-------------------|
| Cutting | 1070-3565 | 480 |
| Wet Samples | 1080-3465 | 540 |

SHALLOW GAS

Interval below KB REMARKS

AVAILABLE LOGS

| LOG TYPE | INTERVALS | 1/200 | 1/500 | Div. |
|------------|---------------------|-------|-------|------|
| MWD | 121.000 - 2749.000 | | X | |
| MWD | 2790.000 - 3106.000 | X | X | |
| DIS LSS GR | 1055.000 - 2769.000 | X | | |
| DIS LSS GR | 2755.000 - 3566.000 | X | | |
| DIS LSS GR | 1055.000 - 3561.000 | | | X |
| DLL GR | 2755.000 - 3190.000 | X | X | |
| SHDT GR | 2350.000 - 2768.000 | X | | |
| SHDT GR | 2755.000 - 3566.000 | X | | |
| LDL CNL GR | 1055.000 - 2769.000 | X | X | |
| LDL CNL GR | 2755.000 - 3565.000 | X | X | |
| CDM AP | 2350.000 - 2768.000 | | | X |

| | | | |
|---|---------------------|--------|--------|
| CDM AP | 2756.000 - 3566.000 | | X |
| CBL VDL GR | 2244.000 - 2755.000 | X | |
| RFTB HP | 2812.000 - 3167.000 | X | |
| NGS RATIOS | 2755.000 - 3565.000 | X | X |
| AMS | 1055.000 - 2769.000 | 1:1000 | |
| MUD | 1075.000 - 3565.000 | | X |
| VELOCITY | 1045.000 - 3547.000 | | X |
| (Synthetic Seismogram, Geogram, 10 cm/s | | | 4 stk) |
| (Frequency Test 10 cm/s | | | 4 stk) |
| (V.S.P, Offset V.S.P, 10 cm/s, 20 cm/s | | | 5 stk) |
| (V.S.P, Rigshot V.S.P, 10 cm/s | | | 8 stk) |

MAIN OPERATIONS FOR WELL: 003009 07

Main operation: DRILLING

| Sub operations | Minutes | Hrs | % of total |
|-----------------|---------|-------|------------|
| BOP ACTIVITIES | 1920 | 32,0 | 4,30 |
| BOP/WELLHEAD EQ | 600 | 10,0 | 1,34 |
| CASING | 5490 | 91,5 | 12,29 |
| CIRC/COND | 720 | 12,0 | 1,61 |
| DRILL | 26460 | 441,0 | 59,23 |
| REAM | 630 | 10,5 | 1,41 |
| SURVEY | 210 | 3,5 | 0,47 |
| TRIP | 8640 | 144,0 | 19,34 |
| Total | 44670 | 744,5 | 100,00 |

Main operation: FORMATION EVAL

| Sub operations | Minutes | Hrs | % of total |
|----------------|---------|-------|------------|
| CIRC SAMPLES | 210 | 3,5 | 1,08 |
| CIRC/COND | 120 | 2,0 | 0,62 |
| CORE | 900 | 15,0 | 4,65 |
| DST | 10020 | 167,0 | 51,74 |
| LOG | 6015 | 100,3 | 31,06 |
| TRIP | 2100 | 35,0 | 10,84 |
| Total | 19365 | 322,8 | 100,00 |

Main operation: INTERRUPTION

| Sub operations | Minutes | Hrs | % of total |
|----------------|---------|-------|------------|
| FISH | 330 | 5,5 | 4,67 |
| MAINTAIN/REP | 2325 | 38,8 | 32,91 |
| OTHER | 510 | 8,5 | 7,22 |
| WAIT | 3900 | 65,0 | 55,20 |
| Total | 7065 | 117,8 | 100,00 |

Main operation: MOVING

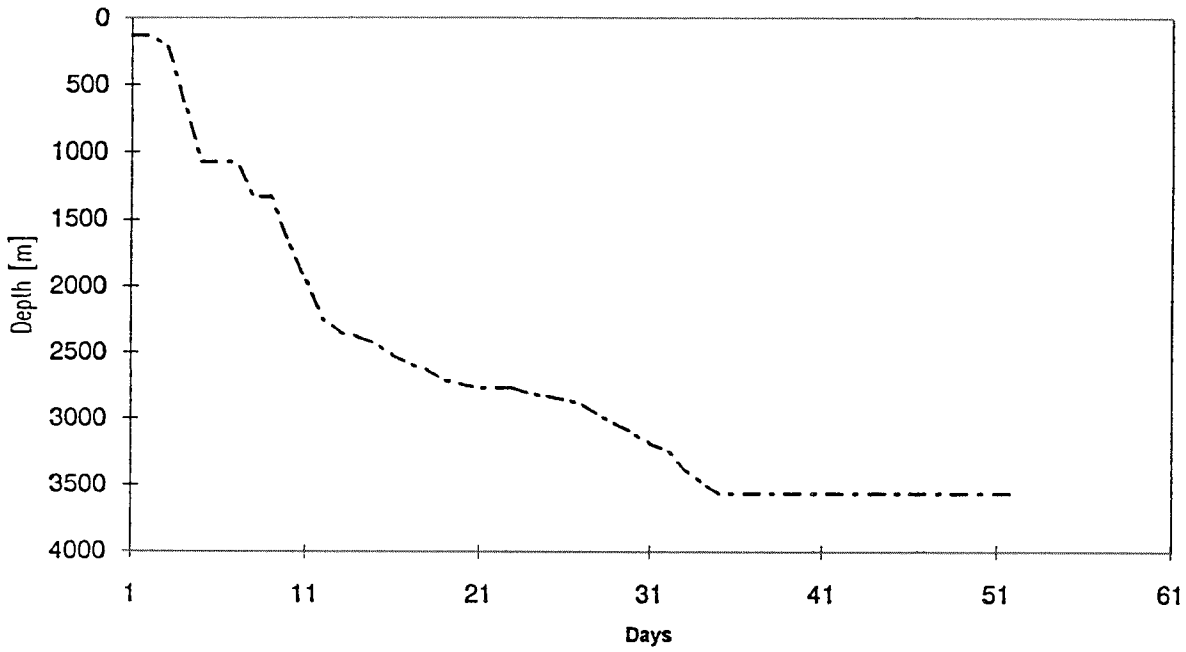
| Sub operations | Minutes | Hrs | % of total |
|----------------|---------|------|------------|
| ANCHOR | 1200 | 20,0 | 37,74 |
| TRANSIT | 1980 | 33,0 | 62,26 |
| Total | 3180 | 53,0 | 100,00 |

Main operation: PLUG & ABANDON

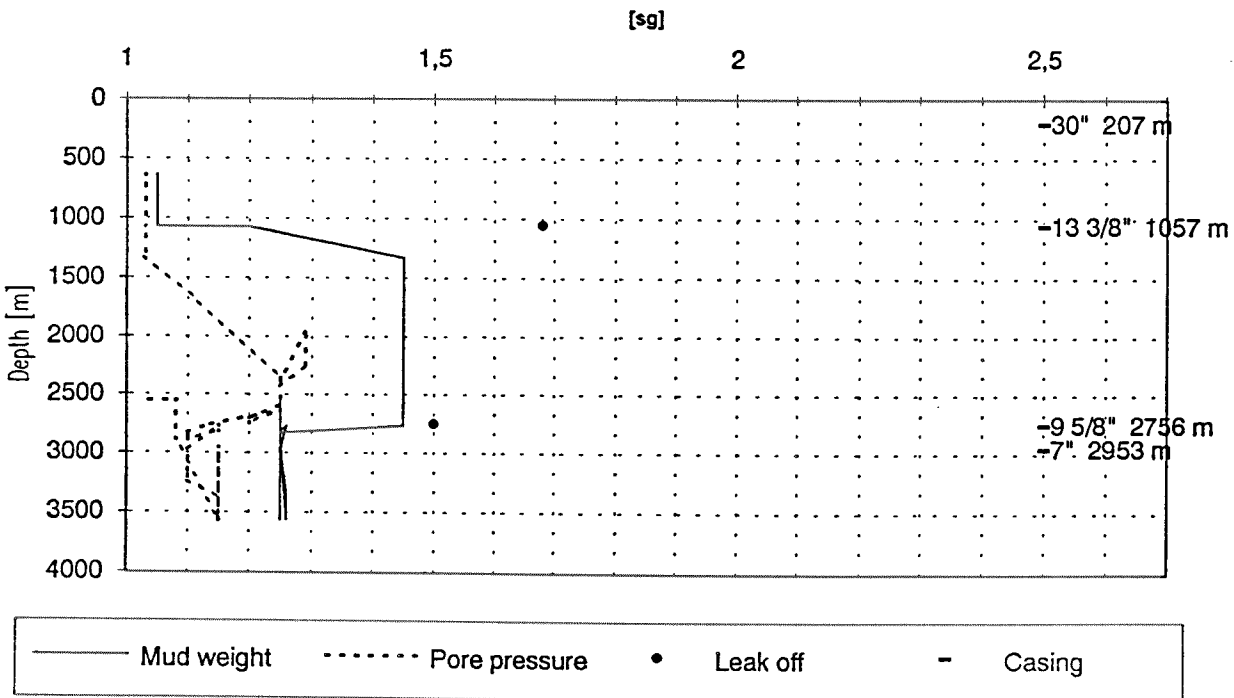
| Sub operations | Minutes | Hrs | % of total |
|-----------------|---------|------|------------|
| CEMENT PLUG | 630 | 10,5 | 30,88 |
| CIRC/COND | 180 | 3,0 | 8,82 |
| EQUIP RECOVERY | 150 | 2,5 | 7,35 |
| MECHANICAL PLUG | 120 | 2,0 | 5,88 |
| TRIP | 960 | 16,0 | 47,06 |
| Total | 2040 | 34,0 | 100,00 |

Total time used 1272 hrs (53 days)

Depth v.s. time plot for well: 003009 07



Composite plot for well: 003009 07



Well History 30/9-7

GENERAL:

Well 30/9-7 was located in the northwestern part of the licence area, on the B-prospect which extends into the 079 licence. The prospect is an easterly tilted fault block, separated from the Omega structure by a NNW-SSE trending normal fault. This well was the third exploration well in the licence.

The main target of the well was the sandstones in the Middle Jurassic Brent Group. Dunlin Group sandstones and the Statfjord Formation were not regarded as prospective in this well.

The primary objectives of the well were to:

- prove oil in the Brent Group sandstones
- define an oil/water contact
- drill in a position which left no commercial hydrocarbons updip on the structure
- drill in a position with good seismic data quality.

The secondary objectives were to:

- verify the structural and sedimentological interpretation of the area.

The well was planned to be drilled 30 m into the Statfjord Fm. to a TD of approx. 3575 m.

OPERATIONS:

Wildcat well 30/9-7 was spudded 2 November 1988 by Polar Frontier Drilling semi-submersible rig Polar Pioneer and completed 23 December 1988 at a depth of 3565 m in Early Jurassic rocks. Drilling proceeded without any significant problems. No shallow gas was encountered.

2 cores were cut in the interval 2832 - 2888 m. The oil/water contact was defined to be between 2823 - 2825 m. Test results were good in the well, but the resources were small.

The well was suspended as an oil discovery, with the intention of production at a later time.

TESTING:

One DST test were performed in the interval 2811 - 2822 m.

GEOLOGICAL TOPS

WELL: 30/9-7

Depth m (RKB)

| | |
|---------------------------|--------|
| <i>Nordland Group</i> | 121.0 |
| <i>Utsira Fm.</i> | 612.5 |
| | |
| <i>Hordaland Group</i> | 910.5 |
| | |
| <i>Rogaland Group</i> | 2082.0 |
| <i>Balder Fm.</i> | 2082.0 |
| <i>Sele Fm.</i> | 2154.0 |
| <i>Lista Fm.</i> | 2249.0 |
| <i>Maureen Fm.</i> | 2370.0 |
| | |
| <i>Shetland Group</i> | 2380.0 |
| | |
| <i>Cromer Knoll Group</i> | 2784.0 |
| | |
| <i>Viking Group</i> | 2791.5 |
| <i>Draupne Fm.</i> | 2791.5 |
| | |
| <i>Brent Group</i> | 2806.0 |
| <i>Tarbert Fm.</i> | 2806.0 |
| <i>Ness Fm.</i> | 2903.0 |
| <i>Rannoch/Etive Fm.</i> | 3137.0 |
| | |
| <i>Oseberg Fm.</i> | 3162.0 |
| | |
| <i>Dunlin Group</i> | 3168.0 |
| <i>Drake Fm.</i> | 3168.0 |
| <i>Burton Fm.</i> | 3387.0 |
| | |
| <i>T.D.</i> | 3565.0 |