| Well no: | Operator: |
|---|---|
| 31/02-17 A | HYDRO |

## Well

| | | | |
|---|---|---|---|
| Coordinates : | 60° 52' 57.08" N<br>03° 27' 05.79" E | UTM coord. : | 6749946.42 N<br>524516.87 E |
| License no : | 54 | Permit no : | 716 |
| Rig : | TRANSOCEAN 8 | Rig type : | SEMI-SUB. |
| Contractor : | TRANSOCEAN ASA | | |
| Bottom hole temp: | 85 °C | Elev. KB : | 24 M |
| Spud. date : | 92.01.20 | Water depth : | 340 M |
| Compl. date : | 92.01.31 | Total depth : | 1924 M |
| Spud. class : | APPRAISAL | Form. at TD : | JURASSIC |
| Compl. class : | P&A. OIL/GAS | Prod.form. : | |
| Seisloca : | NH-8901, LINJE 794, SP. 1404 | | |

## Licensees

| | |
|---|---|
| 3.105000 | ELF PETROLEUM NORGE AS |
| 4.900000 | NORSK HYDRO PRODUKSJON AS |
| 25.900000 | A/S NORSKE SHELL |
| 58.800000 | DEN NORSKE STATS OLJESELSKAP A.S |
| 1.000000 | TOTAL NORGE AS |
| 6.295000 | NORSKE CONOCO 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 | 451.0 | 36 | 452.0 | |
| INTERM. | 18 5/8 | 906.0 | 26 | 921.0 | |
| INTERM. | 13 3/8 | 1642.0 | 17 1/2 | 1643.0 | 1.33 |

| Well no: | Operator: |
|---|---|
| 31/02-17 A | HYDRO |

# Conventional Cores

| Core no. | Intervals cored meters | Recovery m | % |
|---|---|---|---|
| 1 | 1703.0 - 1710.3 | 7.3 | 100.0 |
| 2 | 1710.5 - 1714.7 | 4.2 | 100.0 |
| 3 | 1714.5 - 1740.6 | 26.1 | 100.0 |
| 4 | 1740.6 - 1745.4 | 4.8 | 100.0 |
| 5 | 1756.0 - 1782.3 | 26.3 | 100.0 |

# Mud

| Depth | Mud weight | Visc. | Mud type |
|---|---|---|---|
| 926.0 | 1.35 | 49.0 | OIL BASED |
| 1546.0 | 1.38 | 50.0 | OIL BASED |
| 1580.0 | 1.25 | 35.0 | OIL BASED |
| 1652.0 | 1.38 | 44.0 | OIL BASED |
| 1652.0 | 1.38 | 46.0 | OIL BASED |
| 1652.0 | 1.38 | 44.0 | OIL BASED |
| 1703.0 | 1.26 | 31.0 | OIL BASED |
| 1755.0 | 1.26 | 29.0 | OIL BASED |
| 1847.0 | 1.26 | 29.0 | OIL BASED |
| 1924.0 | 1.25 | 30.0 | OIL BASED |
| 1924.0 | 1.26 | 35.0 | OIL BASED |

# Drill Stem Test (intervals and pressures)

| Test no. | Test interval meter | Choke size | Pressure (psi) WHP | BTHP | FFP |
|---|---|---|---|---|---|

# Drill Stem Test (recovery)

| Test no. | Oil Sm3/d | Gas Sm3/d | Oil grav. g/cm3 | Gas grav. rel. air | GOR m3/m3 |
|---|---|---|---|---|---|

| Well no: | Operator: |
|---|---|
| 31/02-17 A | HYDRO |

# Drill Bit Cuttings and Wet Samples

| Sample type | Interval below KB | Number of samples |
|---|---|---|
| | | |

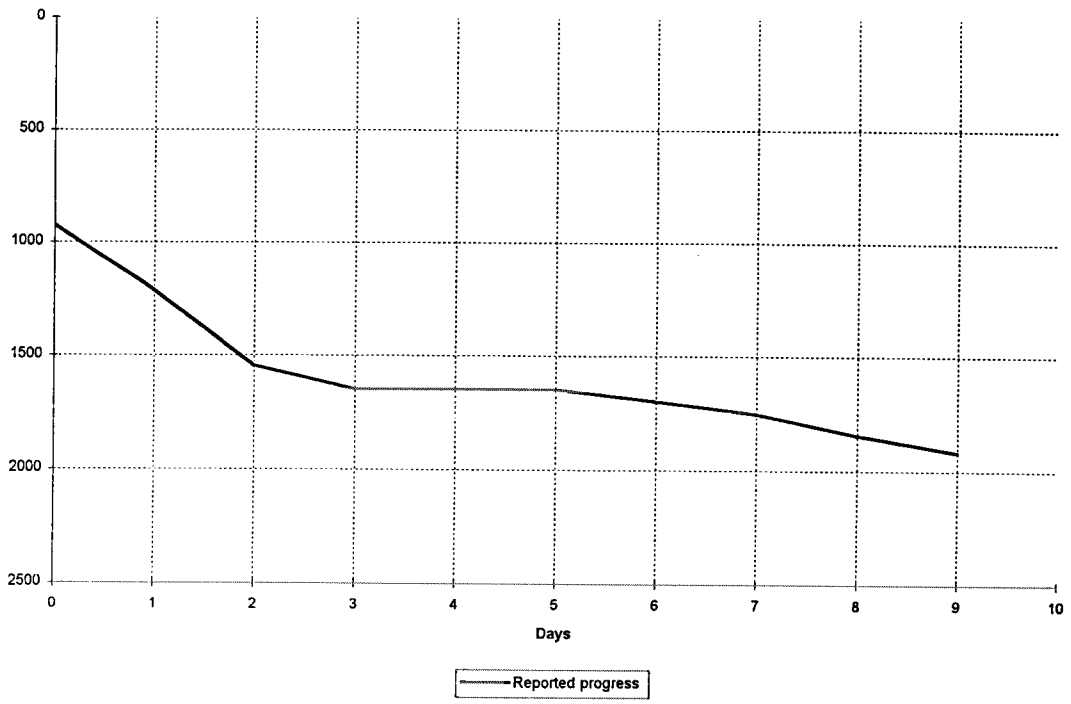
# Shallow Gas

| Interval below KB | Remarks |
|---|---|
| | |

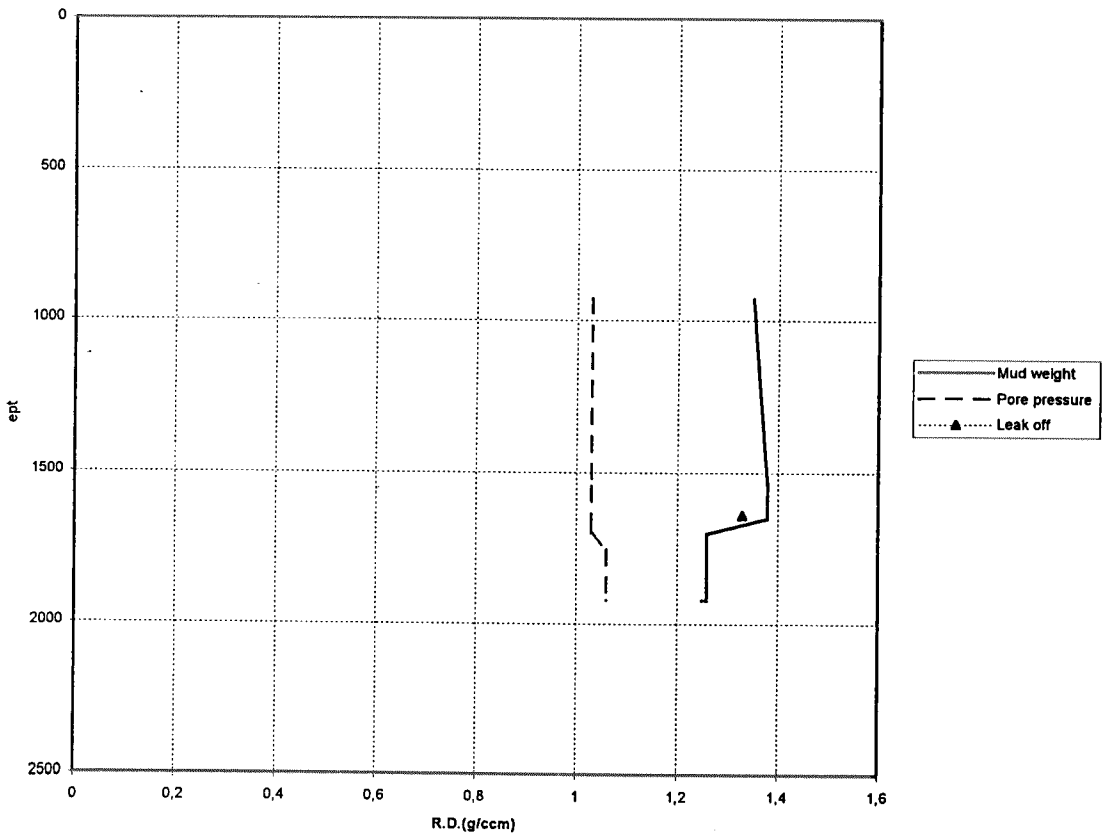
# Available Logs

| Log type | Intervals logged | 1/200 | 1/500 | |
|---|---|---|---|---|
| DITE PI AS GR | 1643.0 - 1922.0 | | | |
| | | | | |
| DRILLING DATA | 909.0 - 1924.0 | | | |
| | | | | |
| GR CCL CASING LOG | 350.0 - 1650.0 | | | |
| | | | | |
| GYRO SURVEY | 364.0 - 1630.0 | | | |
| | | | | |
| LDL CNL AMS GR | 857.0 - 1923.0 | | | |
| LDL CNL GR | 857.0 - 1923.0 | | | |
| | | | | |
| MUD FORMATIONGIST | 1645.0 - 1938.0 | | | |
| MUD FORMATION | 909.0 - 1924.0 | | | |
| | | | | |
| MWD LOG | 900.0 - 1910.0 | | | |
| | | | | |
| PI AS AMS GR | 1643.0 - 1922.0 | | | |
| | | | | |
| WELLSITE LITHOLOGY | 909.0 - 1924.0 | | | |

**Depth v.s. time plot for well: 31/2-17 A**




**Composite plot for well: 31/2-17 A**



## Main operations for well: 31/2-17 A

### Main operation: DRILLING

| Sub operation: | Minutes: | Hours: | % of total: |
|---|---|---|---|
| BOP ACTIVITIES | 300 | 5,0 | 2,95 |
| CASING | 2760 | 46,0 | 27,14 |
| CIRC/COND | 600 | 10,0 | 5,90 |
| DRILL | 4200 | 70,0 | 41,30 |
| OTHER | 360 | 6,0 | 3,54 |
| TRIP | 1950 | 32,5 | 19,17 |
| Total | 10170 | 169,5 | 100,00 |

### Main operation: FORMATION EVAL

| Sub operation: | Minutes: | Hours: | % of total: |
|---|---|---|---|
| CIRC SAMPLES | 180 | 3,0 | 3,85 |
| CIRC/COND | 120 | 2,0 | 2,56 |
| CORE | 930 | 15,5 | 19,87 |
| LOG | 1710 | 28,5 | 36,54 |
| TRIP | 1740 | 29,0 | 37,18 |
| Total | 4680 | 78,0 | 100,00 |

### Main operation: INTERRUPTION

| Sub operation: | Minutes: | Hours: | % of total: |
|---|---|---|---|
| MAINTAIN/REP | 1260 | 21,0 | 100,00 |
| Total | 1260 | 21,0 | 100,00 |

### Main operation: MOVING

| Sub operation: | Minutes: | Hours: | % of total: |
|---|---|---|---|
| TRANSIT | 1530 | 25,5 | 100,00 |
| Total | 1530 | 25,5 | 100,00 |

### Main operation: PLUG & ABANDON

| Sub operation: | Minutes: | Hours: | % of total: |
|---|---|---|---|
| CEMENT PLUG | 810 | 13,5 | 75,00 |
| TRIP | 270 | 4,5 | 25,00 |
| Total | 1080 | 18,0 | 100,00 |

Total time used: 312,0 Hours

# WELL HISTORY 31/2-17 (S, A, B)

## GENERAL:

The objective was to obtain the thickness of the oil zone and reservoir properties in the Intermediate Area. The drilling operation was divided into three phases, drilling of the wells 31/2-17 S, 31/2-17 A and 31/2-17 B, all being drilled from the same wellhead location. The well 31/2-17S and 31/2-17A is located on each side of a fault subdividing the intermediate area into two main compartments. Well 31/2-17 S is located on the eastern side of the fault. Well 31/2-17SA, which was side-tracked from well 31/2-17 S, was turned 180 degrees and landed on the western side of the fault. Well 31/2-17S B was side-tracked from well 31/2-17S A and drilled to a horizontally position about 5m above the oil water contact.

## OPERATION:

**Well 31/2-17** S:The Gas-Oil-Contact was penetrated at 1972m MD RKB in "Heather B" Formation. The Oil-Water-Contact was penetrated at 2011m MD RKB also in the "Heather B" Formation.

**Well 31/2-17 SA**: This well was kicked of from 31/2-17 S at 909m MD RKB. The Gas-Oil-Contact was penetrated at 1725.4m MD RKB in the Sognefjord Formation. The Oil-Water-Contact was penetrated at 1746.5m MD RKB also in the Sognefjord Formation.

**Well 31/2-17 SB**: This well was kicked off from 31/2-17SA at 1645m MD RKB, and the well angle was built up to approximately 90 degrees. One horizontal core (2.8 m) was taken at TD. The Gas-Oil-Contact was assumed the same as in well 31/2-17SA.

31/2-17S and 31/2-17A were plugged and abandoned, while well 31/2-17B was temporary plugged.

## TESTING:

No DST tests were performed in these wells.

# Geological Tops.

# Well: 31/2-17 A.

| | Depth m (RKB). |
|---|---|
| Hordaland Group | 900.0 |
| Rogaland Group | 1412.0 |
| Balder Fm | 1412.0 |
| Sele Fm | 1454.0 |
| Lista Fm | 1501.0 |
| Våle Fm | 1667.0 |
| Viking Group | 1681.0 |
| Draupne Fm | 1681.0 |
| Sognefjord Fm | 1688.0 |
| Heather Fm | 1748.0 |
| Fensfjord Fm | 1894.0 |
| T.D. | 1924.0 |