

WDSS Report

Date: 03/01/97

PB/SKR

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Well no:	Operator:
16/10-02	AGIP

**Well**

Coordinates :	58° 08' 26.58" N 02° 02' 14.91" E	UTM coord. :	6444927.85 N 443327.64 E
License no :	101	Permit no :	685
Rig :	BYFORD DOLPHIN	Rig type :	SEMI-SUB.
Contractor :	DOLPHIN A/S	Elev. KB :	25 M
Bottom hole temp:	96°C	Water depth :	79 M
Spud. date :	91.06.20	Total depth :	3150 M
Compl. date :	91.08.01	Form. at TD :	TRIASSIC
Spud. class :	WILDCAT	Prod.form. :	
Compl. class :	P&A. DRY HOLE		
Seisloca :	NA85 - 6, SP. 910		

**Licensees**

5.000000 DEMINEX NORGE AS  
 20.000000 FINA PRODUCTION LICENCES AS  
 50.000000 DEN NORSKE STATS OLJESELSKAP A.S  
 25.000000 NORSK AGIP AS

**Casing and Leak-off Tests**

Type	Casing diam	Depth below KB	Hole diam.	Hole depth below KB	Lot mud eqv. g/cm3
CONDUCTOR	30	161.0	36	163.0	
INTERM.	20	407.0	26	417.0	1.64
INTERM.	13 3/8	1397.0	17 1/2	1405.0	1.80
INTERM.	9 5/8	2777.0	12 1/4	2798.0	1.86
OPEN HOLE		3150.0	8 1/2	3150.0	

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### Conventional Cores

Core no.	Intervals cored meters	Recovery m	%
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### Mud

Depth	Mud weight	Visc.	Mud type
417.0	1.05	13.0	WATER BASED
628.0	1.12	12.0	WATER BASED
896.0	1.18	15.0	WATER BASED
920.0	1.19	15.0	WATER BASED
1277.0	1.22	13.0	WATER BASED
1307.0	1.24	17.0	WATER BASED
1405.0	1.25	18.0	WATER BASED
1498.0	1.32	12.0	DUMMY
2176.0	1.40	27.0	DUMMY
2438.0	1.50	22.0	DUMMY
2780.0	1.55	29.0	WATER BASED
2798.0	1.55	27.0	WATER BASED
2841.0	1.31	15.0	WATER BASED
2953.0	1.30	20.0	WATER BASED
3150.0	1.30	23.0	WATER BASED

### Drill Stem Test (intervals and pressures)

Test no.	Test interval meter	Choke size	Pressure (psi) WHP	BTHP	FFP
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### Drill Stem Test (recovery)

Test no.	Oil Sm3/d	Gas Sm3/d	Oil grav. g/cm3	Gas grav. rel. air	GOR m3/m3
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**Drill Bit Cuttings and Wet Samples**

Sample type	Interval below KB	Number of samples
WET SAMPLES	420 - 3150	240
CUTTINGS	420 - 3150	180

**Shallow Gas**

Interval below KB	Remarks

**Available Logs**

Log type	Intervals logged	1/200	1/500	
CBL VDL CCL GR	950.0 - 2772.0			
CBL VDL GR	100.0 - 1390.0			
CDM AP/SHDT MSD	1397.0 - 2786.0			
CDM AP/SHDT MSD	2776.0 - 3153.0			
CST GR	2780.0 - 3141.0			
DIL BHC SP GR	161.0 - 390.0			
DIL SLS SP GR	407.0 - 1318.0			
DRILLING DATA PLOT	110.0 - 3150.0			
DRILLING DATA PRESS.	420.0 - 3150.0			
LDL CNL NGL AMS	2776.0 - 3152.0			
MWD	417.0 - 3150.0			
NGS RATIOS	2776.0 - 3152.0			
PI DIL SLS BHC SP GR	160.0 - 3152.0			
PI SLS GR SP AMS	1263.0 - 2793.0			
PI SLS SP AMS GR	2776.0 - 3152.0			
RFT-B HP AMS GR	2863.0 - 3139.0			

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SHDT CALIPERS	1397.0 - 2788.0			
SHDT CYBERDIP	2776.0 - 3153.0			
SHDT GR AMS	1397.0 - 2788.0			
SYNTHETIC SEISMOGRAM	400.0 - 3150.0			
WSC	165.0 - 3150.0			
VSP	400.0 - 3150.0			
VSP. ZERO OFFSET				

## Main operations for well: 16/10-2

### Main operation: DRILLING

Sub operation:	Minutes:	Hours:	% of total:
BOP ACTIVITIES	2250	37,5	4,58
BOP/WELLHEAD EQ	1650	27,5	3,36
CASING	5940	99,0	12,09
CIRC/COND	2610	43,5	5,31
DRILL	24510	408,5	49,88
HOLE OPEN	840	14,0	1,71
OTHER	60	1,0	0,12
REAM	1200	20,0	2,44
SURVEY	150	2,5	0,31
TRIP	9930	165,5	20,21
<b>Total</b>	<b>49140</b>	<b>819,0</b>	<b>100,00</b>

### Main operation: FORMATION EVAL

Sub operation:	Minutes:	Hours:	% of total:
CIRC SAMPLES	150	2,5	2,96
CIRC/COND	90	1,5	1,78
LOG	4620	77,0	91,12
TRIP	210	3,5	4,14
<b>Total</b>	<b>5070</b>	<b>84,5</b>	<b>100,00</b>

### Main operation: INTERRUPTION

Sub operation:	Minutes:	Hours:	% of total:
FISH	1740	29,0	50,88
MAINTAIN/REP	1680	28,0	49,12
<b>Total</b>	<b>3420</b>	<b>57,0</b>	<b>100,00</b>

### Main operation: MOVING

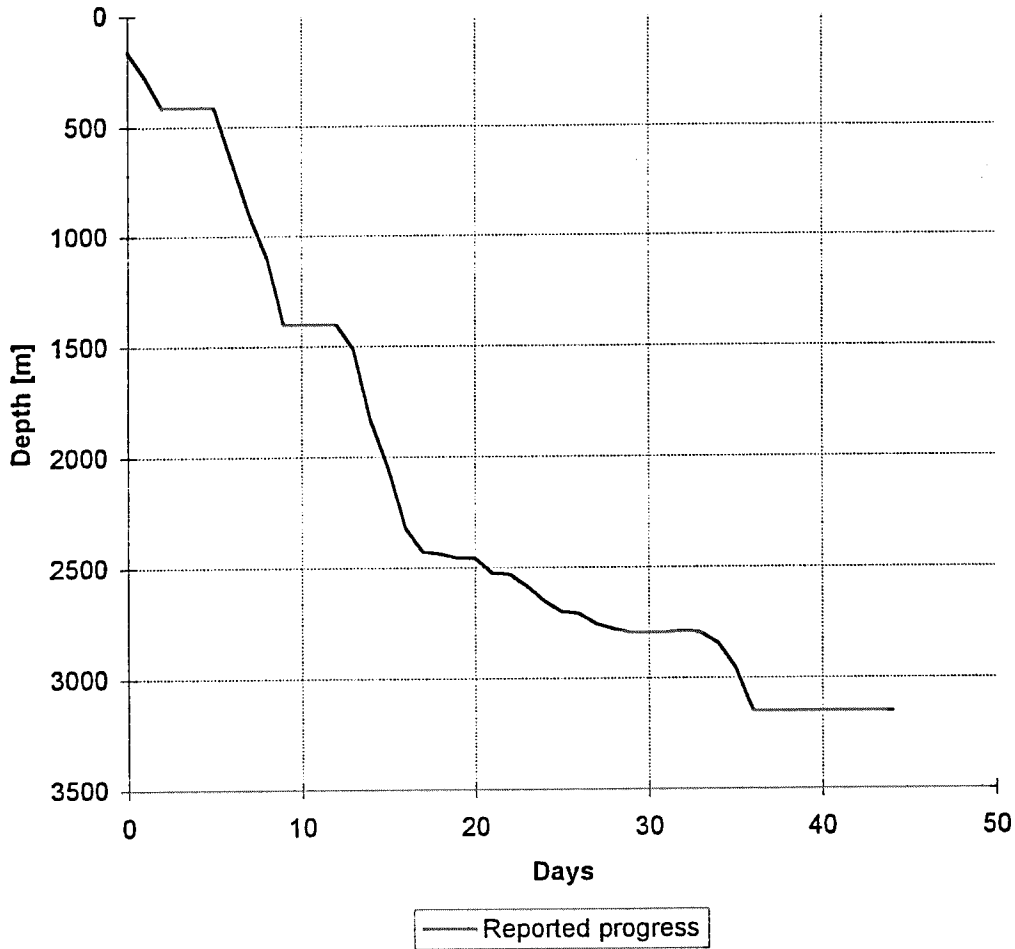
Sub operation:	Minutes:	Hours:	% of total:
ANCHOR	3300	55,0	52,38
TRANSIT	3000	50,0	47,62
<b>Total</b>	<b>6300</b>	<b>105,0</b>	<b>100,00</b>

### Main operation: PLUG & ABANDON

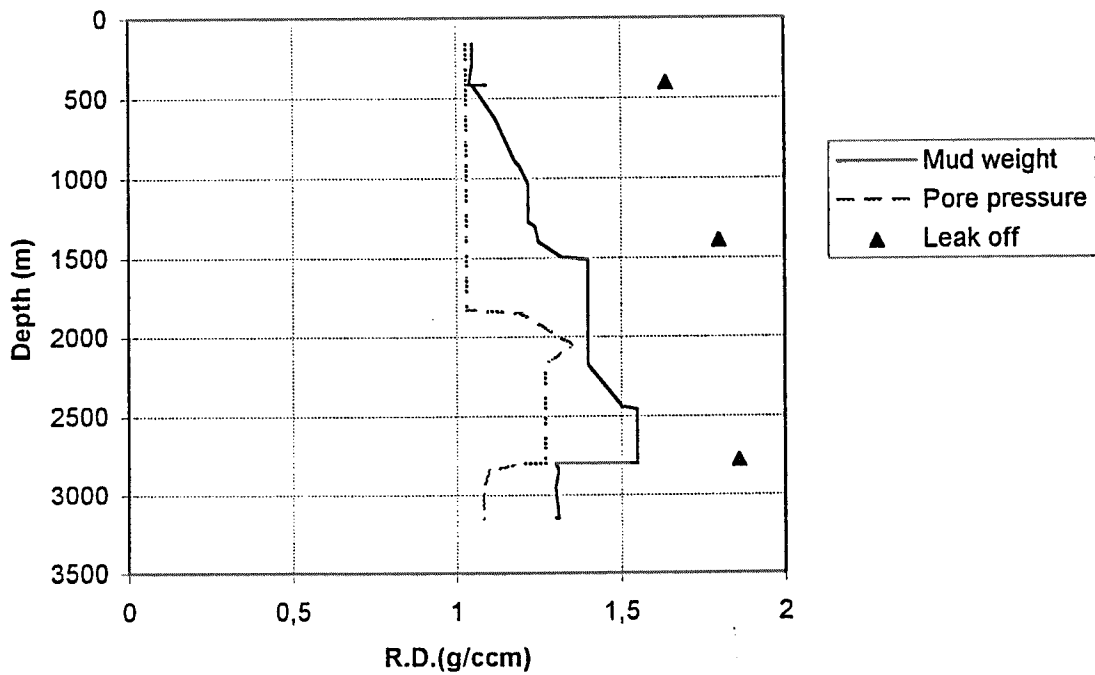
Sub operation:	Minutes:	Hours:	% of total:
CEMENT PLUG	450	7,5	9,43
CIRC/COND	90	1,5	1,89
CUT	570	9,5	11,95
EQUIP RECOVERY	1710	28,5	35,85
TRIP	1950	32,5	40,88
<b>Total</b>	<b>4770</b>	<b>79,5</b>	<b>100,00</b>

Total time used:  Hours

Depth vs time for well: 16/10-2



Composite plot for well: 16/10-2



# Well History 16/10-2.

## General:

Well 16/10-2 designed to test the hydrocarbon potential of the Oxfordian sst on the Delta Prospect in block 16/10. The block is situated on the junction between the Viking Graben, the Central Graben, the Witch Ground Graben as well as the Ling Graben. The area is structurally complicated due to the structural framework initiated by the Caledonian deformational phase. Maximum structurally activity in the block was in the Triassic - Jurassic period when increased and repeated rifting led to the extension of the North Sea. Rifting activity lasted throughout Jurassic with associated block faulting and erosion of sediments. At the end of early Jurassic, the whole area was elevated and Early Jurassic sediments were eroded. In the Oxfordian the collapse of the elevated area marine condition caused coastal sands to accumulate over the Mid Kimmerian Unconformity. The Base Cretaceous Unconformity expresses the final event in the North Sea rifting, uplift and tilting of the Graben margins.

The main objective of this well was to test the hydrocarbon potential of the Oxfordian sandstones, which have been found hydrocarbon bearing in wells 6/3-1, 15/12-4, 15/12-5 and 15/12-6. Important stratigraphical and geochemical information would also be obtained in order to improve the understanding of the block. A secondary objective was the thick Triassic sequences laid down during the subsidence where not eroded due to salt uplift. The reservoir was estimated to a gross thickness of a 100 m. Prognosed depth was 3125 m RKB.

## Operations:

Wildcat well 16/10-2 was spudded by the semi-submersible rig Byford Dolphin 20 June 1991, and completed 1 August 1991 at a depth of 3150 m RKB in rocks of Triassic age, the Skagerak Formation, without finding any hydrocarbon bearing level. Drilling went without any significant problems. Top Oxfordian sst came in at 2853 m RKB, 22 m deeper than prognosed. The reservoir thickness is 70 m and was found waterbearing. The Triassic sst came in at 2923 m RKB, 116 m shallower than prognosed. Since there were no hydrocarbon shows while drilling, no cores were required. A total of 30 sidewall cores were attempted and 19 were recovered and described. The geological results are in good agreement with the prognosis and the expected structural and stratigraphical models. The well was permanently plugged and abandoned as a dry hole.

## Testing:

No DST tests were performed in this well.

# Geological Tops.

## Well:.16/10-2

	Depth m (RKB).
Nordland Group	104.0
Utsira Fm	978.0
Hordaland Group	1271.0
Rogaland Group	2172.0
Balder Fm	2172.0
Sele Fm	2196.0
Lista Fm	2251.0
Maureen Fm Eq.	2317.0
Shetland Group	2335.0
Ekofisk Fm	2335.0
Tor Fm	2371.0
Hod Fm	2523.0
Blodoks Fm	2698.0
Hidra Fm	2716.0
Cromer Knoll Group	2778.0
Viking Group	2818.0
Draupne Fm	2818.0
Vestland Group	2853.0
Oxfordian Sst Unit	2853.0
Triassic Group	2923.0
Skagerak.Fm	2923.0
T.D.	3150.0