

Well no :	16/4-2	Operator :	HYDRO
Coordinates :	58° 35' 47.03" N 02° 01' 48.03" E	UTM coord. :	649566828 N 44361941 E
Licence no :	87	Permit no :	639
Rig :	VILDKAT EXPLORER	Rig type :	SEMI-SUB.
Contractor :	TRANSNOR RIG AS		
Bottom hole temp:	81 °C	Elev. KB :	25 M
Spud. date :	90.06.29	Water depth :	93.5 M
Compl. date :	90.07.29	Total depth :	3117 M
Spud. class :	WILDCAT	Form. at TD	PRE.CRET.
Compl. class :	P&A. DRY HOLE	Prod.form. :	
Seisloca :	NH (SHELL) 8806 - 242 SP 650		

LICENSEES

20.000000	NORSK HYDRO PRODUKSJON AS
20.000000	A/S NORSKE SHELL
50.000000	DEN NORSKE STATS OLJESELSKAP A.S
10.000000	CONOCO PETROLEUM NORGE 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	205.0	36	206.0	
INTERM.	18 5/8	479.0	24	485.0	1.86
INTERM.	13 3/8	1683.0	17 1/2	1710.0	1.90
OPEN HOLE		3117.0	12 1/4		

CONVENTIONAL CORES

Core no.	Intervals cored meters	Recovery	
		M	%
1	1920.0 - 1926,3	6.3	100,0

MUD

Depth	Mud weight	Visc.	Mud type
160.000	1.00	1.0	WATER BASED
191.000	1.20		WATER BASED
206.000	1.20		WATER BASED
485.000	1.20		WATER BASED
514.000	1.24	13.0	WATER BASED
914.000	1.22	11.0	WATER BASED
1286.000	1.21	15.0	WATER BASED
1446.000	1.20	15.0	WATER BASED
1557.000	1.30		WATER BASED
1583.000	1.23	17.0	WATER BASED
1710.000	1.33	18.0	WATER BASED
1927.000	1.27	17.0	WATER BASED

Depth	Mud weight	Visc.	Mud type
2234.000	1.27	15.0	WATER BASED
2600.000	1.28	17.0	WATER BASED
2826.000	1.31	14.0	WATER BASED
3015.000	1.30	16.0	WATER BASED
3117.000	1.31	16.0	WATER BASED

DRILL BIT CUTTINGS AND WET SAMPLES

Sample type	Interval below KB	Number of samples
WET SAMPLES	490 - 3117	300
CUTTINGS	485 - 3117	480

SHALLOW GAS

Interval below KB	Remarks
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AVAILABLE LOGS

Log type	Intervals	1/200	1/500	Div.
AMS	478.0 - 1708.0		X	
AMS	1685.0 - 3080.0		X	
CBL VDL GR CCL	964.0 - 1676.0	X		
DIL LSS GR SP	478.0 - 1708.0	X	X	
DIL LSS SGR SP	1685.0 - 3112.0	X	X	
DRILLING DATA	100.0 - 3150.0			5000
LDL CNL SGR	1685.0 - 3092.0	X	X	
LDL GR CALIPER	478.0 - 1708.0	X	X	
MUD	100.0 - 3150.0		X	
MWD LWD COMPOSITE	132.0 - 3113.0		X	
NGS RATIO	1685.0 - 3083.0	X	X	
RFT GR AMS	1920.0 - 3111.0			2000
SHDT GR	1685.0 - 3114.0	X	X	
CDM AP / SHDT	1690.0 - 3108.0	X		
SYNTHETIC SEISMOGRAM	10 cm/s			
TWO-WAY TRAVEL TIME	10 cm/s			
V.S.P.	10 cm/s			
VELOCITY LOG	480.0 - 3102.0		X	1000

Main operations for well: 16/4-2

Main operation: DRILLING

Sub operation:	Minutes:	Hours:	% of total:
BOP ACTIVITIES	420	7,0	1,48
BOP/WELLHEAD EQ	1470	24,5	5,17
CASING	3840	64,0	13,52
CIRC/COND	1680	28,0	5,91
DRILL	13860	231,0	48,79
HOLE OPEN	720	12,0	2,53
REAM	900	15,0	3,17
TRIP	5520	92,0	19,43
Total	28410	473,5	100,00

Main operation: FORMATION EVAL

Sub operation:	Minutes:	Hours:	% of total:
CIRC SAMPLES	90	1,5	1,80
CIRC/COND	570	9,5	11,38
CORE	240	4,0	4,79
LOG	3150	52,5	62,87
TRIP	960	16,0	19,16
Total	5010	83,5	100,00

Main operation: INTERRUPTION

Sub operation:	Minutes:	Hours:	% of total:
FISH	1710	28,5	35,19
MAINTAIN/REP	1020	17,0	20,99
OTHER	1860	31,0	38,27
WAIT	270	4,5	5,56
Total	4860	81,0	100,00

Main operation: MOVING

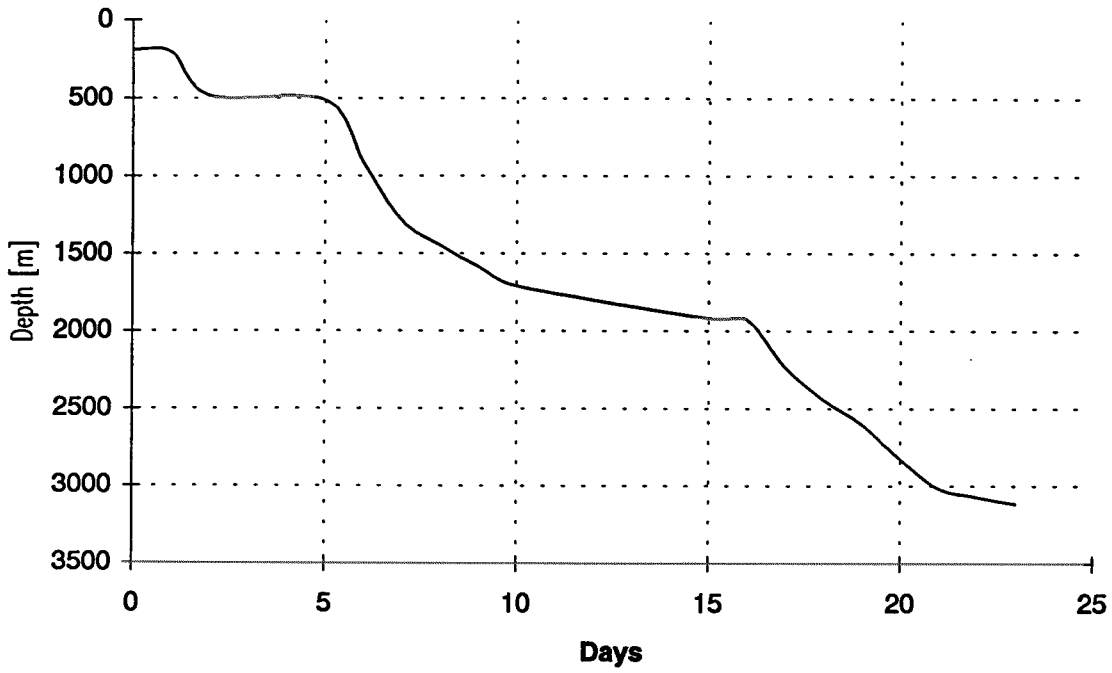
Sub operation:	Minutes:	Hours:	% of total:
ANCHOR	1260	21,0	47,19
TRANSIT	1410	23,5	52,81
Total	2670	44,5	100,00

Main operation: PLUG & ABANDON

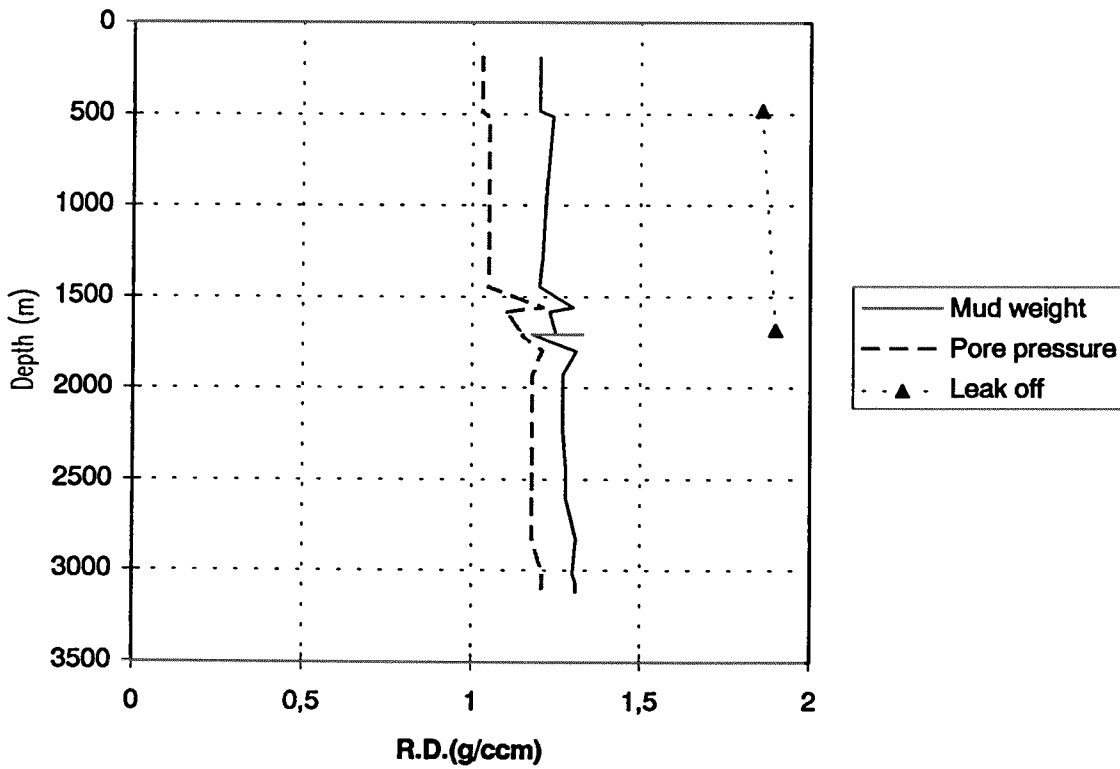
Sub operation:	Minutes:	Hours:	% of total:
CEMENT PLUG	300	5,0	6,33
CIRC/COND	90	1,5	1,90
CUT	480	8,0	10,13
EQUIP RECOVERY	1530	25,5	32,28
OTHER	600	10,0	12,66
PERFORATE	210	3,5	4,43
SQUEEZE	180	3,0	3,80
TRIP	1350	22,5	28,48
Total	4740	79,0	100,00

Total time used: Hours

Depth vs time for well: 16/4-2



Composite plot for well: 16/4-2



Well History 16/4-2.

General:

Well 16/4-2 was the second well on the block and last commitment well for license 087. The well is located in a central position on the structure, close to the western border of the block. The main target was sands of Middle Eocene age supposed to be present within a mounded seismic sequence that constitutes the eastern part of the Alpha prospect in the Sleipner Field.

The primary objective of the well was to prove oil in the Eocene sandstones. Secondary objectives were to:

- confirm the seismic interpretation and the geological model for the Eocene sand.

- test a possible small closure at top Heimdal Formation level, to obtain additional information on migration paths in the area.

- confirm the seismic interpretation of the basal Cretaceous/ Late Jurassic sequence, and test the hydrocarbon potential of possible Late Jurassic sand accumulations.

Shallow gas may be expected at 537 m. This corresponds to the level of the blowout in well 16/4-1. A possible shallow gas content could occur in a thin sandlayer at 685 m which is correlated from well 16/4-1.

Operations:

Wildcat well 16/4-2 was spudded by the semi-submersible rig Vildkat Explorer 29 June 1990, and completed 29 July 1990 at a depth of 3117 m RKB in rocks of Late Jurassic age. No shallow gas was encountered in the well, the gas zones were drilled with riser and mud weight 1.22 rd to control the gas. One core was cut in the interval from 1920 to 1927 m RKB with 88.6 % recovery. A total of 60 sidewall cores were attempted in one run from 1750 to 3113 m RKB, whereof 50 was recovered. The Eocene sandstone, the Grid formation, came in at 1913 m RKB, approximately 88 m deeper than prognosed, hydrocarbons were absent. The Heimdal formation sandstones came in at 2415 m RKB, approximately 110 m deeper than prognosed, hydrocarbons were absent. There was also a sand developed in the Late Jurassic, but here as well the hydrocarbons were missing. Drilling went on without any significant problems apart from the 13 3/8" casing getting stuck at 1450 m RKB. The casing shoe was finally set at 1683 m RKB, and the casing cemented. The well was permanently plugged and abandoned as a dry well.

Testing:

No DST tests were performed in this well.

Geological Tops.

Well:16/4-2

	Depth m (RKB).
Nordland Group	118,5
Utsira Fm	778,0
Hordaland Group	1068,0
Skade Fm	1319,0
Grid Fm	1913,0
Rogaland Group	2198,5
Balder Fm	2198,5
Sele Fm	2270,0
Lista Fm	2340,5
Heimdal Fm	2415,0
Shetland Group	2584,5
Ekofisk Fm	2584,5
Tor Fm	2629,0
Hod Fm	2739,0
Cromer Knoll Group	2792,5
Sola Fm	2792,5
Åsgard Fm	2838,0
Mime Fm	2900,0
Viking Group	2961,0
T.D.	3117,0