

Well no : 34/10-23 Operator : STATOIL

Coordinates : 61 01 06.35 N UTM coord. : 6765193
 02 19 1.57 E 463084

Licence no : 50 Permit no : 465

Rig : DYVI DELTA Rig type : SEMI-SUB.

Contractor : DYVI OFFSHORE A/S

Bottom hole temperature : 162.2 deg.C Elev. KB : 29 M

Spud. date : 85.05.06 Water depth : 135 M

Compl. date : 85.10.13 Total depth : 4764 M

Spud. class : WILDCAT Form. at TD : E.JURASSI

Compl. class : P&A. GAS DISCOVERY Prod. form :

Seisloca : ST 8313 - 410 SP. 170

LICENSEES

9.000000 NORSK HYDRO PRODUKSJON A.S
 6.000000 SAGA PETROLEUM A.S.
 85.000000 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/cm ³
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CONDUCTOR	30	224.0	36	225.0	
SURF.COND.	20	1239.0	26	1252.0	1.69
INTERM.	13 3/8	3100.0	17 1/2	3118.0	1.91
INTERM.	9 5/8	3834.0	12 1/4	3850.0	2.13
LINER	7	4525.0	8 1/2	4525.0	2.20
OPEN HOLE			5 7/8	4764.0	

CONVENTIONAL CORES

Core no.	Intervals cored meters	Recovery		Series
		M	%	
1	4082.0 - 4100.0	18.0	100.0	MIDDLE JURASSIC
2	4103.0 - 4130.5	27.5	100.0	MIDDLE JURASSIC
3	4130.5 - 4144.0	13.5	100.0	MIDDLE JURASSIC
4	4144.0 - 4167.5	23.5	100.0	MIDDLE JURASSIC
5	4167.5 - 4169.7	2.2	100.0	MIDDLE JURASSIC
6	4169.7 - 4197.6	27.9	100.0	MIDDLE JURASSIC
7	4197.6 - 4210.5	14.0	100.0	MIDDLE JURASSIC
8	4211.6 - 4224.5	12.9	100.0	MIDDLE JURASSIC
9	4225.1 - 4253.0	27.9	100.0	MIDDLE JURASSIC
10	4253.0 - 4279.4	26.4	100.0	MIDDLE JURASSIC
11	4280.8 - 4308.0	27.2	100.0	MIDDLE JURASSIC

MUD PROPERTIES

Depth below KB meter	Mud weight g/cm ³	Plastic viscosity mPa.s	Mud type
352.000	1.09	6.0	WATER BASED
1167.000	1.08	5.0	WATER BASED
1250.000	1.11	5.0	WATER BASED
1657.000	1.12	15.0	WATER BASED
2029.000	1.20	17.0	WATER BASED
2135.000	1.33	21.0	WATER BASED
2426.000	1.38	19.0	WATER BASED
2782.000	1.45	16.0	WATER BASED
3120.000	1.37	10.0	WATER BASED
3503.000	1.55	23.0	WATER BASED
3549.000	1.77	29.0	WATER BASED
3789.000	1.81	29.0	WATER BASED
3853.000	1.86	26.0	WATER BASED
3963.000	1.92	28.0	WATER BASED
4080.000	2.05	39.0	WATER BASED
4082.000	2.09	38.0	WATER BASED
4107.000	2.03	38.0	WATER BASED
4308.000	2.01	33.0	WATER BASED
4493.000	2.04	32.0	WATER BASED
4525.000	2.01	31.0	WATER BASED
4569.000	1.98	30.0	WATER BASED
4588.000	1.96	29.0	WATER BASED

DRILL STEM TEST

INTERVALS AND PRESSURES

Test no	interval meter	Choke size	Pressure (PSI)		
			WHP	BTHP	FFP
1.0	4085.000 - 4095.000	22.2	3973.8		

RECOVERY

Test no.	Oil Sm ³ /d	Gas M Sm ³ /d	Oil grav. g/cm ³	Gas grav. rel. air	GOR m ³ /m ³
1.0	150	1.72	0.820		11500

DRILL BIT CUTTINGS AND WET SAMPLES

SAMPLE TYPE	INTERVAL BELOW KB	NUMBER OF SAMPLES
Cutting	230 - 4764	1150
Wet Samples	230 - 4764	600

SHALLOW GAS

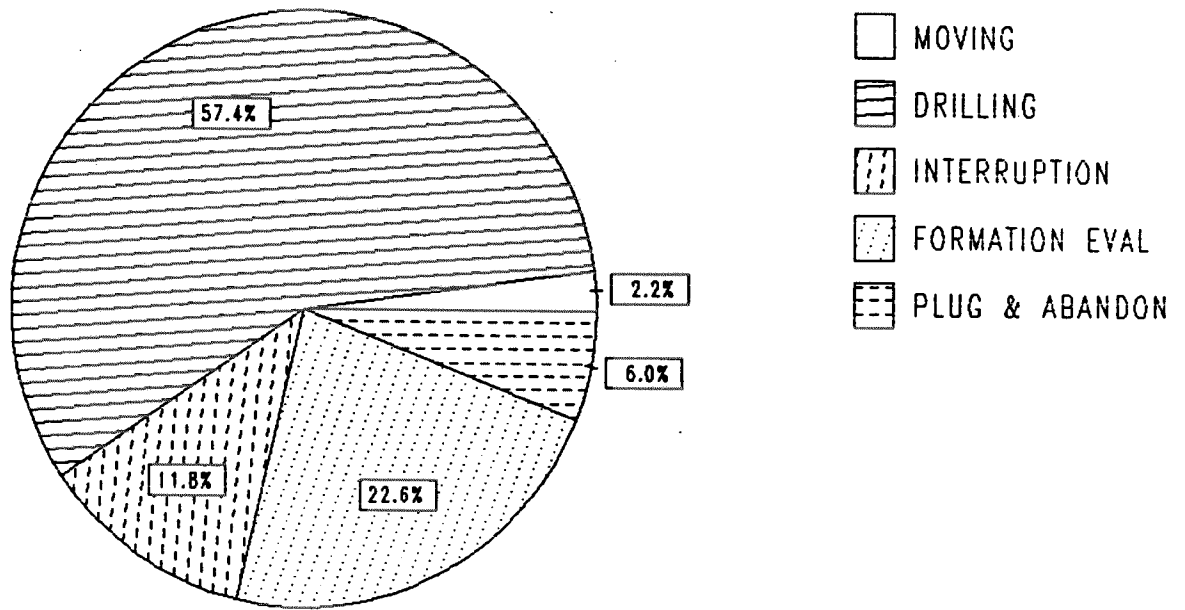
Interval below KB	REMARKS
	NONE

AVAILABLE LOGS

LOG TYPE	INTERVALS	1/200	1/500
ISF SONIC GR	224 - 4764	X	X
LDL CNL	1239 - 4765	X	X
DLL	4050 - 4362	X	X
DLL STATOIL			
DLL MSFL	4529 - 4761	X	X
CDM AP/SHDT	3837 - 4480	X	X
SHDT	3837 - 4485	X	
RFT	4084 - 4096	X	
RFT	4084 - 4281	X	
RFT	4084 - 4440		
RFT	4717 - 4750	X	
CBL VDL	900 - 3100	X	
CBL VDL	2200 - 3830	X	
CBL VDL CCL	3325 - 4525	X	
MUD	230 - 4764		X
VELOCITY	224 - 4764		X
(+ Synthetic Seismogram, Geogram,			4 stk)
(+ V.S.P., Zero-offset, plot 1-10, 10 cm/s,			10 stk)
(+ Composite VSP-Geogram,			3 stk)

DAILY DRILLING REPORT SYSTEM

Main operation : 34/10-23



Total : 3912 HRS

Main operation	Minutes	Hours	% of total
MOVING	5100	85.00	2.17
DRILLING	134759	2245.98	57.41
INTERRUPTION	27600	460.00	11.76
FORMATION EVAL	53131	885.52	22.64
PLUG & ABANDON	14130	235.50	6.02

MAIN OPERATIONS WELL : 34/10-23

MAIN OPERATION: DRILLING

Sub operations	Min	Hrs	% of total
TRIP	22285	371.42	16.54
CASING	26695	444.92	19.81
DRILL	53610	893.50	39.78
SURVEY	1925	32.08	1.43
CIRC/COND	8130	135.50	6.03
BOP/WELLHEAD EQ	8250	137.50	6.12
BOP ACTIVITIES	4619	76.98	3.43
UNDERREAM	2460	41.00	1.83
WAIT	90	1.50	0.07
PRESS DETECTION	5105	85.08	3.79
REAM	1350	22.50	1.00
OTHER	240	4.00	0.18
TOTAL	134759	2245.98	

MAIN OPERATION: MOVING

Sub operations	Min	Hrs	% of total
TRANSIT	3060	51.00	60.00
ANCHOR	2040	34.00	40.00
TOTAL	5100	85.00	

MAIN OPERATION: FORMATION EVAL

Sub operations	Min	Hrs	% of total
CIRC SAMPLES	660	11.00	1.24
LOG	8700	145.00	16.37
TRIP	9990	166.50	18.80
CIRC/COND	3750	62.50	7.06
CORE	5220	87.00	9.82
RFT/FIT	4080	68.00	7.68
DST	20491	341.52	38.57
OTHER	240	4.00	0.45
TOTAL	53131	885.52	

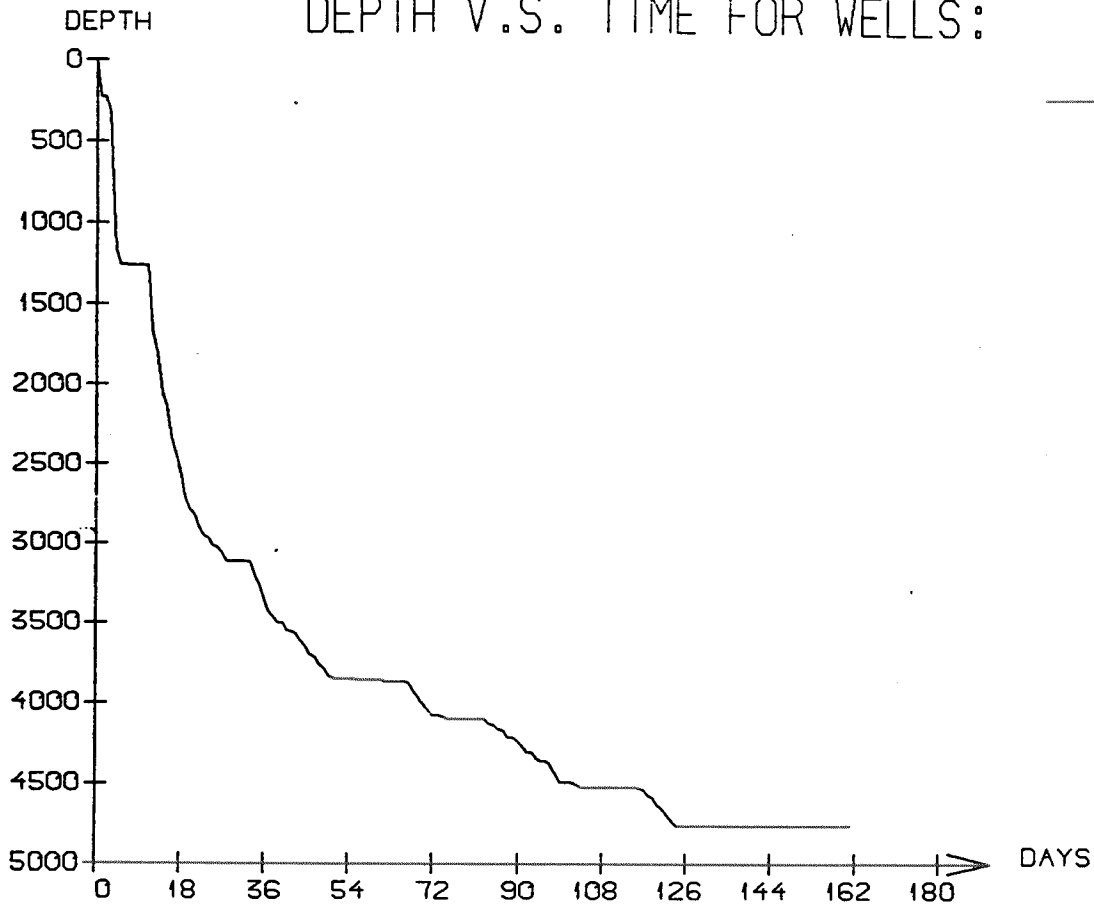
MAIN OPERATION: INTERRUPTION

Sub operations	Min	Hrs	% of total
OTHER	1020	17.00	3.70
MAINTAIN/REP	15810	263.50	57.28
WELL CONTROL	4080	68.00	14.78
FISH	5670	94.50	20.54
WAIT	1020	17.00	3.70
TOTAL	27600	460.00	

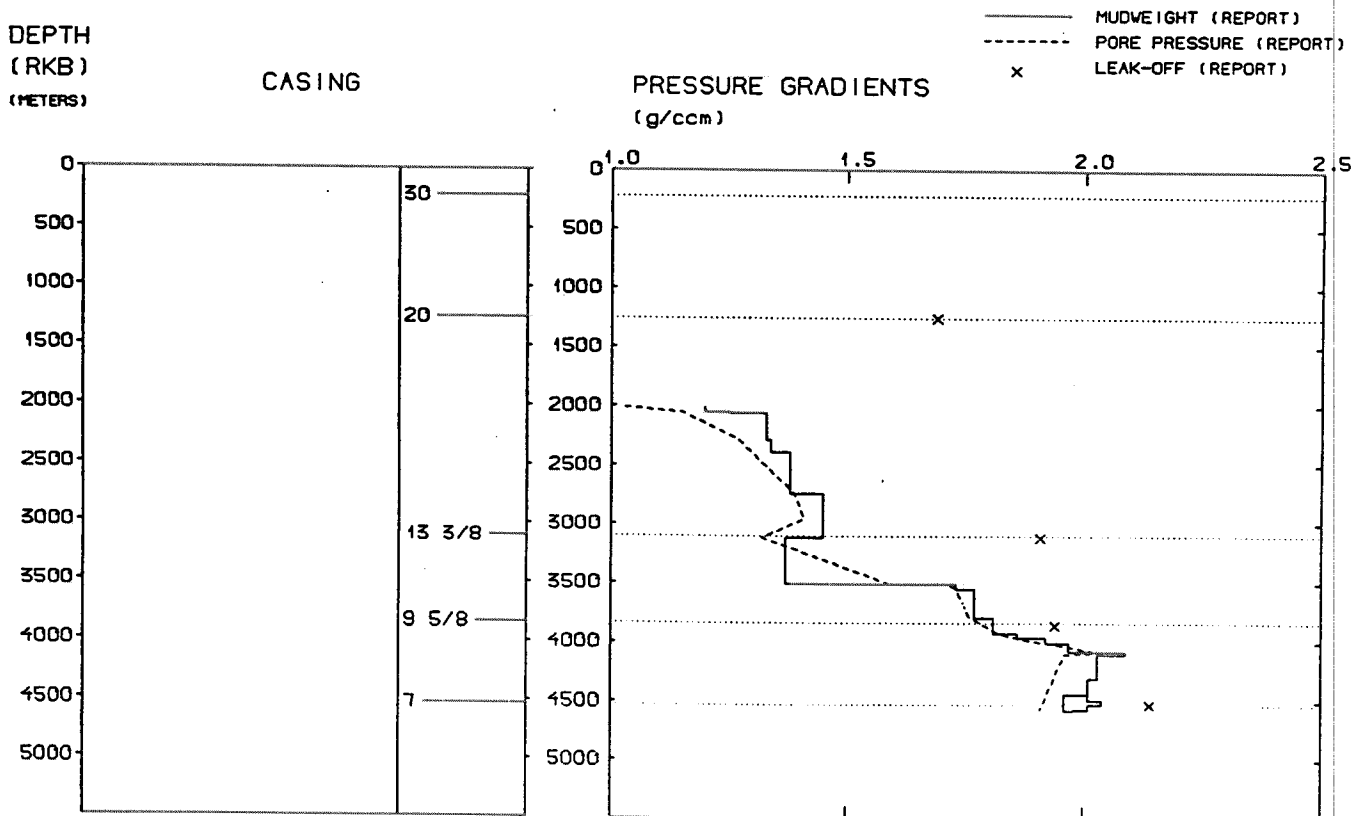
MAIN OPERATION: PLUG & ABANDON

Sub operations	Min	Hrs	% of total
TRIP	4200	70.00	29.72
CIRC/COND	570	9.50	4.03
CEMENT PLUG	1050	17.50	7.43
MECHANICAL PLUG	1080	18.00	7.64
SQUEEZE	1110	18.50	7.86
OTHER	1860	31.00	13.16
WAIT	900	15.00	6.37
PERFORATE	1140	19.00	8.07
CUT	690	11.50	4.88
EQUIP RECOVERY	1530	25.50	10.83
TOTAL	14130	235.50	

DEPTH V.S. TIME FOR WELLS:



WELL: 003410 23 PRESSURE COMPOSITE PLOT



Well History 34/10-23

General:

Well 34/10-23 was designed to test hydrocarbon accumulations in the Gamma structure, primarily in the Brent Group, secondly in the Lower Jurassic Formations. 34/10-23 is the first obligatory well drilled on this structure. 34/10-20, was abandoned above top Jurassic due to high porepressure and lost circulation problems.

Additional objects of the well was:

- to drill on a structural high, which is separated from well 34/10-20 with a significant fault on the Jurassic level.
- drill on a location where the top of the Lower Cretaceous was expected to be deeper than in the 34/10-20 well.
- verify the geophysical interpretation, i.e. seismic mapping and structural model.
- clarify the pressure regime for the Gamma structure.
- verify the geological model and improve stratigraphic knowledge in the south-eastern part of 34/10 block.

Operations:

Wildcat well 34/10-23 was spudded 5 June 1985 by Dyvi Offshore A/S rig semi-submersibel rig Dyvi Delta, and completed 13 October 1985 at a depth of 4764 m RKB in Statfjord Formation.

Except for failure on the MWD equipment, the drilling procedure proceeded without any significant problems.

The gas bearing Brent Formation was encountered at 4083 m RKB, more than one hundred m below prognosed depth. The gas/water contact is at 4120 m RKB, and a gas column of approximately 28 m is proven.

The porepressure increased through the entire Cretaceous section and reached a maximum at top Brent Group.

A positive flow occurred at 4080 m RKB. and approximately three days were used to bring the well under control.

Testing:

One DST tests were performed in the hydrocarbon zone 4085- to 4095 m RKB, and showed a very high gas rate.

GEOLOGICAL TOPS

WELL : 34/10-23

	Depth m (RKB)
<i>Nordland Group</i>	164,0
<i>Utsira Fm</i>	723,0
<i>Hordaland Group</i>	1052,0
<i>Vade Fm</i>	1200,0
<i>Skade Fm</i>	1299,0
<i>Grid Fm</i>	1515,0
<i>Frigg Fm</i>	1610,0
<i>Rogaland Group</i>	1890,0
<i>Balder Fm</i>	1890,0
<i>Lista Fm</i>	1949,0
<i>Shetland Group</i>	2109,0
<i>Cromer Knoll Group</i>	3690,0
<i>Viking Group</i>	3863,0
<i>Draupne Fm</i>	3863,0
<i>Heather Fm</i>	3923,0
<i>Brent Group</i>	4083,0
<i>Tarbert Fm</i>	4083,0
<i>Ness Fm</i>	4119,0
<i>Etive Fm</i>	4242,0
<i>Rannoch Fm</i>	4287,0
<i>Dunlin Group</i>	4335,0
<i>Drake Fm</i>	4335,0
<i>Cook Fm</i>	4413,0
<i>Amundsen Fm</i>	4450,0
<i>Statfjord Fm</i>	4714,0
<i>Hegre Group</i>	4745,0
<i>Lunde Fm</i>	4745,0
TD=	4764,0