

Well no : 25/11-14 S

Operator : ESSO

Coordinates : 59° 11' 17.31" N
02° 22' 11.64" E

UTM coord. : 656132370 N
46399553 E

Licence no : 1
Rig : BYFORD DOLPHIN

Permit no : 648
Rig type : SEMI-SUB.

Contractor : DOLPHIN A/S

Bottom hole temp: 85 °C

Elev. KB : 25 M

Spud. date : 90.09.13

Water depth : 127 M

Compl. date : 90.12.31

Total depth : 2081 M

Spud. class : APPRAISAL

Form. at TD PALEOCENE

Compl. class : SUSP. OIL

Prod.form. :

Seisloca : 3885 - 320 SP. 541

LICENSEES

100,000000 ESSO EXPL. & PROD. NORWAY 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	187,0	36	190,0	
INTERM.	20	452,0	26	454,0	1,72
INTERM.	13 3/8	1564,0	17 1/2	1570,0	1,73
INTERM.	9 5/8	2068,0	12 1/4	2070,0	

CONVENTIONAL CORES

Core no.	Intervals cored meters	Recovery	
		M	%
1	1862,0 - 1866,0	4,0	100,0
2	1864,0 - 1868,0	4,0	100,0
3	1868,0 - 1876,5	8,5	100,0
4	1876,5 - 1883,0	6,8	100,0
5	1883,2 - 1883,8	0,6	100,0

MUD

Depth	Mud weight	Visc.	Mud type
744,000	1,16	18,0	WATER BASED
950,000	1,18	18,0	WATER BASED
1196,000	1,16	15,0	WATER BASED
1254,000	1,18	18,0	WATER BASED
1433,000	1,16	19,0	WATER BASED
1572,000	1,50	20,0	WATER BASED
1576,000	1,18	17,0	WATER BASED
1640,000	1,20	16,0	WATER BASED
1795,000	1,50	25,0	WATER BASED
1908,000	1,26	19,0	WATER BASED

Depth	Mud weight	Visc.	Mud type
2035,000	1,50	27,0	WATER BASED
2065,000	1,08		WATER BASED
2066,000	1,12		WATER BASED
2081,000	1,50	22,0	WATER BASED

DRILL STEM TEST

INTERVALS AND PRESSURES

Test no.	Interval meter		Choke size	Pressure (PSI) WHP	BTHP	FFP
1,0	1998,200	-	2015,200	13,7		
2,0	1999,200	-	2015,200	25,4		

Test temperature: N/A

RECOVERY

Test no.	Oil Sm3/d	Gas Sm3/d	Oil grav. g/cm3	Gas grav. rel. air	GOR m3/m3
1,0	508		,915		
2,0	985		,915		

DRILL BIT CUTTINGS AND WET SAMPLES

Sample type	Interval below KB	Number of samples
WET SAMPLES	480 - 2080	240

SHALLOW GAS

Interval below KB	Remarks

AVAILABLE LOGS

Log type	Intervals
AS NGL CCL	1550,0 - 2063,0
CBL VDL CCL GR	700,0 - 2063,0
CNL NGL CCL	1550,0 - 2064,0
DRILLING PRESSURE	469,0 - 1908,0

<u>Log type</u>	<u>Intervals</u>	
MUD	469,0	- 1908,0
VSP	1100,0	- 2060,0
MWD (TVD + MD)	187,0	- 1908,0
NGL RATIOS	1550,0	- 2064,0
TDT CCL GR	1750,0	- 2054,0
VELOCITY	1900,0	- 2100,0

Main operations for well: 25/11-14 S

Main operation: COMPLETION

Sub operation:	Minutes:	Hours:	% of total:
BOP/WELLHEAD EQ	6135	102,3	29,70
CIRC/COND	630	10,5	3,05
COMPL STRING	4260	71,0	20,62
OTHER	2850	47,5	13,80
SAND CONTROL	3930	65,5	19,03
WAIT	60	1,0	0,29
WIRE LINE	2790	46,5	13,51
Total	20655	344,3	100,00

Main operation: DRILLING

Sub operation:	Minutes:	Hours:	% of total:
BOP ACTIVITIES	945	15,8	2,33
BOP/WELLHEAD EQ	2940	49,0	7,26
CASING	11850	197,5	29,25
CIRC/COND	1260	21,0	3,11
DRILL	11985	199,8	29,58
HOLE OPEN	1170	19,5	2,89
OTHER	30	0,5	0,07
PRESS DETECTION	30	0,5	0,07
REAM	495	8,3	1,22
SURVEY	270	4,5	0,67
TRIP	9540	159,0	23,55
Total	40515	675,3	100,00

Main operation: FORMATION EVAL

Sub operation:	Minutes:	Hours:	% of total:
CIRC SAMPLES	315	5,3	0,68
CIRC/COND	3540	59,0	7,62
CORE	1980	33,0	4,26
DST	780	13,0	1,68
LOG	1845	30,8	3,97
OTHER	1950	32,5	4,20
PROD TEST	19035	317,3	40,98
TRIP	16905	281,8	36,39
WAIT	105	1,8	0,23
Total	46455	774,3	100,00

Main operation: INTERRUPTION

Sub operation:	Minutes:	Hours:	% of total:
FISH	6480	108,0	11,78
LOST CIRC	3015	50,3	5,48
MAINTAIN/REP	5280	88,0	9,60
OTHER	11445	190,8	20,80
SIDETRACK	6750	112,5	12,27
WAIT	22050	367,5	40,08
Total	55020	917,0	100,00

Main operation: MOVING

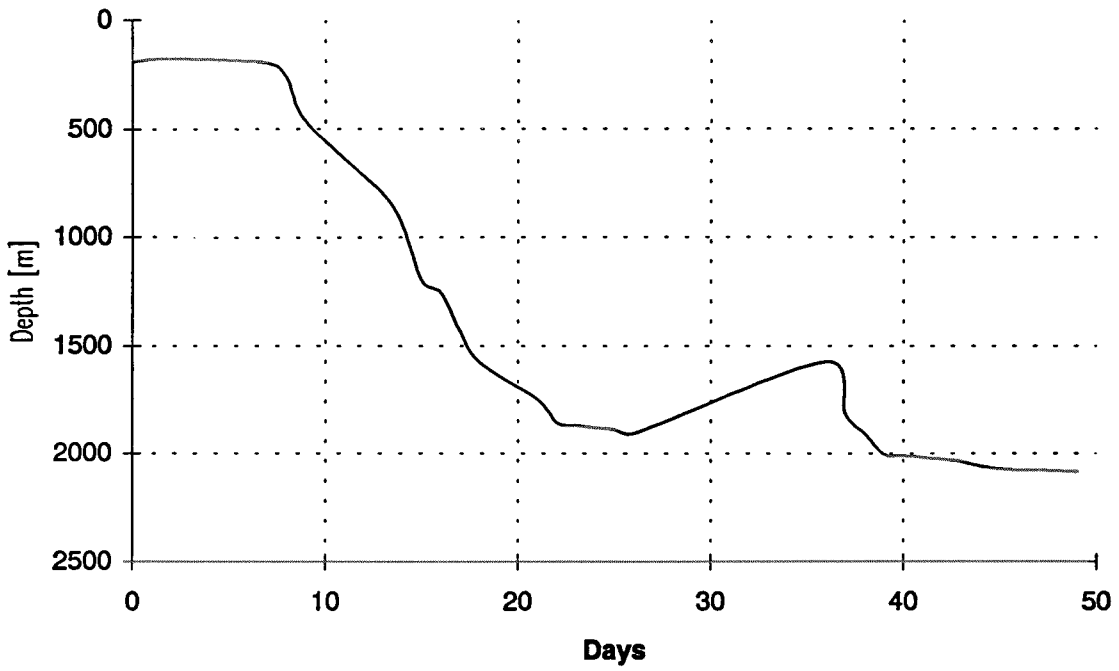
Sub operation:	Minutes:	Hours:	% of total:
ANCHOR	5190	86,5	64,07
POSITION	420	7,0	5,19
TRANSIT	2490	41,5	30,74
Total	8100	135,0	100,00

Main operation: PLUG & ABANDON

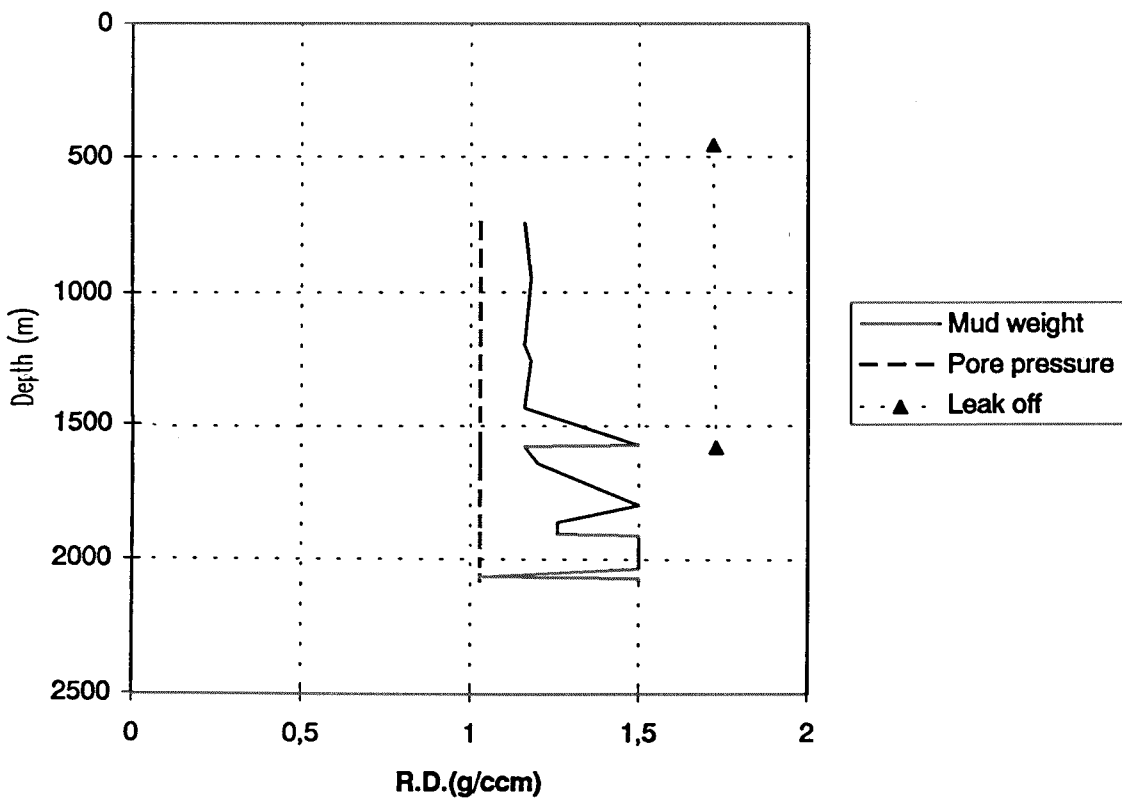
Sub operation:	Minutes:	Hours:	% of total:
CEMENT PLUG	255	4,3	2,24
CIRC/COND	735	12,3	6,46
CUT	615	10,3	5,40
EQUIP RECOVERY	3690	61,5	32,41
MECHANICAL PLUG	240	4,0	2,11
OTHER	675	11,3	5,93
PERFORATE	510	8,5	4,48
SQUEEZE	315	5,3	2,77
TRIP	3330	55,5	29,25
WAIT	1020	17,0	8,96
Total	11385	189,8	100,00

Total time used: 3035,5 Hours

Depth vs time for well: 25/11-14 S



Composite plot for well: 25/11-14 S



Well History 25/11-14 S.

General:

Well 25/11-14 S was designed as an appraisal well to the Balder Field. This field was drilled in 1967 by the 25/11-1 well, and was the first well on the Norwegian shelf that proved oil. Block 25/11 is located at the Utsira High, a large basement high, flanked by the Viking Graben to the west and the Stord Basin to the east. Well 25/11-14 S was planned to be completed for a long term test by the FPV Petrojarl 1. In order to build up the deviation of the well, a kickoff was planned to start at 1060 m RKB. Seismic anomalies at 235 m RKB, 254 m RKB and 515 m RKB might indicate possible drilling hazards, ie shallow gas. The main objectives of this well were:

- to test the IB4 Paleocene sands at 1863 m RKB.
- to test the IB3 Paleocene sands at 1897 m RKB.
- to test any Eocene sands that yield hydrocarbons.

Based on data from surrounding wells, no abnormal pressure was expected. The surface location and well trajectory for this well, was designed so that a later plugback and sidetrack to a horizontal completion can be accomplished.

Operations:

Appraisal well 25/11-14 S was spudded 13 September 1990 by the semi-submersible rig Byford Dolphin, and completed 31 Desember 1990 at a depth of 2081 m RKB in rocks of Paleocene age, the Heimdal formation sands. During setting of the 30" casing a fatal accident occurred as one of the roughnecks was hit by the rig tongs and perished on the drilling floor. The planned kickoff for the deviated part of the well was performed at 950 m RKB. The upper sand IB4 was nonexistent in this well, and the IB3 came in 7 m below prognosed depth. A total of five cores were cut in the interval 1859 to 1886 m RKB. While POOH for coring no 6, the drillstring became stuck, and one had to go for a sidetrack. The well was plugged back and sidetracked from approximately 1573 m RKB. A total of 7 cores were cut in the interval 2010 to 2070 m RKB in the sidetracked well. Also in this track the IB4 sand was missing, and the IB3 came in 16 m deeper than prognosed. The OWC came in as prognosed at 2055 m RKB. As drilling commenced towards TD, one began to lose mud to the formation, due to higher mudweight than the formation could resist. The well was temporary plugged and abandoned, completed for long term testing.

Testing:

One DST test was performed in two steps, step one without a gravel packer and step two with a gravel packer. Step one produced 508 Sm³/d through a 13,7 mm choke. During step two one lost 160 Sm³ liquid to the formation, and while testing some of this liquid was produced. Maximum production in step two was 985 Sm³ oil through a 25,4 mm choke.

Geological Tops.

Well:25/11-14 S

	Depth m (RKB).
Nordland Group	152,0
Utsira Fm	813,0
Hordaland Group	918,0
Rogaland Group	1765,0
Balder Fm	1765,0
Sele Fm	1834,0
Lista Fm	1859,0
Heimdal Fm	1903,0,0
T.D.	1908,0

Well:25/11-14 S T2

Nordland Group	
Utsira Fm	
Hordaland Group	918,0
Rogaland Group	1825,0
Balder Fm	1825,0
Sele Fm	1898,0
Lista Fm	1925,0
Heimdal Fm	1998,0
OWC	2054,0
T.D.	2081,0