U-115

BOX 168 NO 5252

3

elf norge a/s

BA-74-4-1

GEOLOGICAL REPORT

25/2-3

1. PERTINENT DATA

1.1. Objectives

According to committments and in order to increase Frigg area gas reserves, 25/2-3 well was located south-west to the East Frigg Field on Paleocene structure.

Seismic sections show a very strong reflector at tuff marker level while the energy of the Frigg sand horizon is fading out.

Sand channels into tuffitic zone were the main objectives. Lower Eocene and Danian sands were considered as secondary targets.

The "flat spot" phenomenon was not visible on seismic sections.

1.2. General

Licence	026		
Association	Norsk Hydro	34,60%	) Petronord Group
	Elf Norge	29,07%	)
	Aquitaine Norge	14,53%	)
	Total Marine Norsk	21,80%	)
Operator	Elf Norge A/S		
Rig	Deep Sea Driller 1 (H3 semi)		
Contractor	Deep Sea Drilling Co.		
Location	X = 02° 21' 21"4 E Y = 59° 49' 09"7 N SP 370, Seismic line 73-59-49-10 155 m NE, to proposed location		
Water depth	112 m		
Air Gap	26 m		
Sea bottom	138 m		

1.3. Drilling and Operations Time Table

01.09.74	Spudded
02.09.74	Started drilling
04.09.74	Rig moved 30 m
05.09.74	Drilling, 30" casing set at 172 m
09.09.74	13" 5/8 casing set at 474 m
20.09.74	SPE = Run 1 at 2040 m: IES-PS, BHC-GR-CAL, SWC 1

22.09.74	9" 5/8 casing set at 2034 m
02.10.74	At TD = 2795 m
	SPE = Run 2 IES-PS, MBC-GR-CAL, at 2795 m
07.10.74	Completed

1.4. Status

Plugged and abandonned as a dry hole.

2. PRINCIPAL RESULTS

2.1. Stratigraphy

See following table and composite log.

Stratig. units	Top/RKB (m)	Top/MSL (m)	Thickness
	138	- 112	
Pleist. to Mioc.			870
	1008	- 982	
Oligocene			452
	1460	- 1434	
Upper Middle Eoc.			613
	2073	- 2047	
Lower Eocene to Upper Paleocene			138
	2211	- 2185	
Paleoc. to Danian			515
	2726	- 2700	
Maestrichtian			69
TD	2795	- 2769	

2.2. Structural Results

The top of the tuff was encountered at 2211 m, i.e. 85 m below the planned depth.

Eocene sands were encountered at 2073 m, 27 m lower than expected.

The top of the chalk was reached at 2726 m.

2.3. Reservoirs, Shows and Fluids

All the formations considered as objectives:
Eocene sands, Paleocene sands and Danian sands are water bearing.

Conclusion

While the structural closure at tuff level is well-marked, it was probably leaking up in the Eocene sands, which are flatly shaped.

The well has been plugged and abandonned as a dry hole.

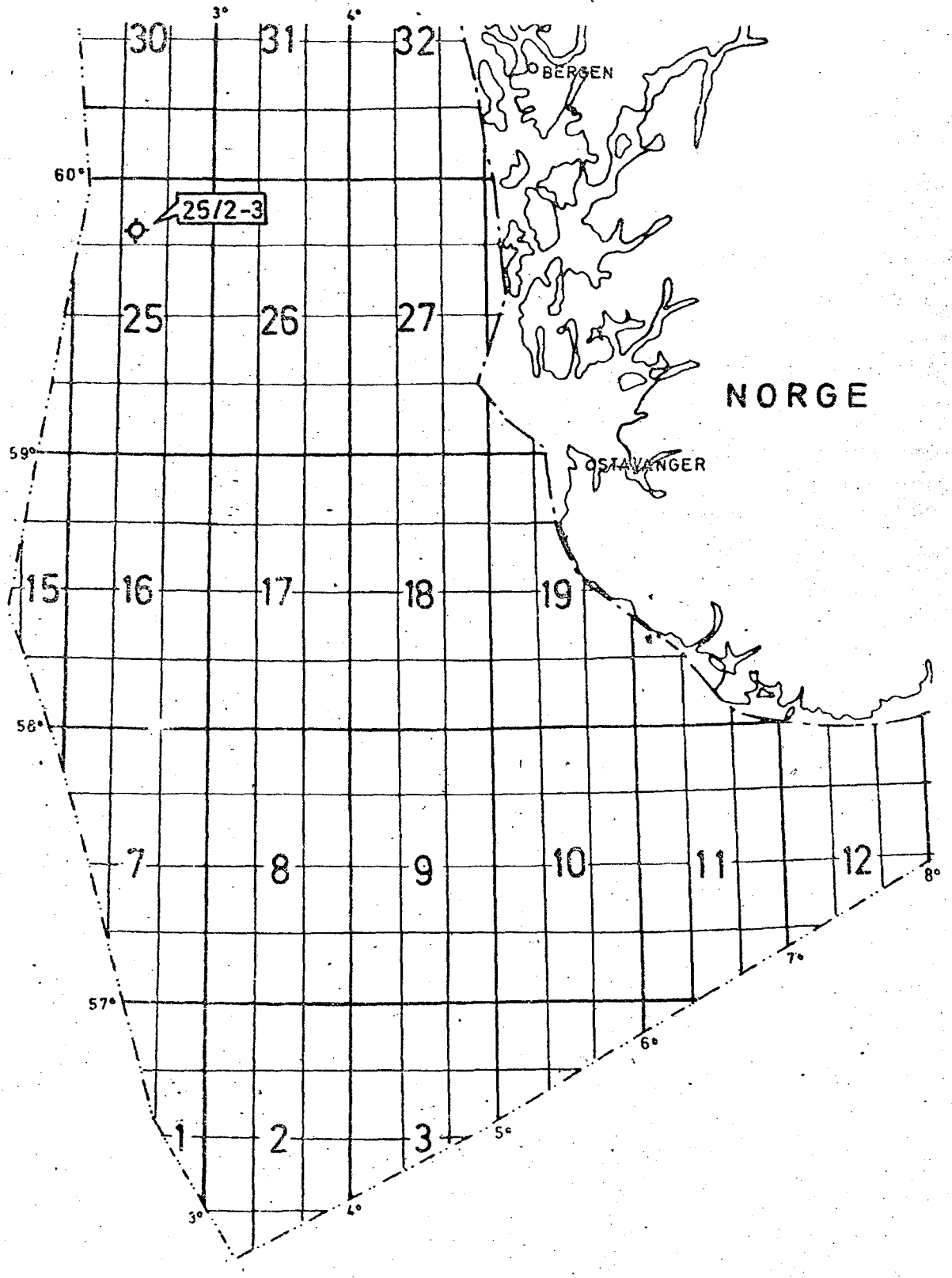
POSITION MAP

WELL : 25/2-3

COUNTRY : NORWAY OFFSHORE

COORDINATES: X: 02° 21' 24.90" E
Y: 59° 49' 9.41" N

Scale: 1/2500.000



EXPLORATION

Co-ord: X 2° 21'21,4" E, Y 59° 49'09,7" N	Z ground -113 m, Z RKB + 25 m	Spudded 01.09.74, Started 02.09.74, At TD 02.10.74, Completed 08.10.74	Well 25/2-3
Depths below RKB, Rig DSO	Total: 138 m	TD Driller 2795 m, TD Logger 2788 m	Country NORWAY off shore
Stopped: UPPER CRETACEOUS			
OPERATOR ELF NORGE A/S		LICENCE 026	OWNED BY PETRONORD A/S

TARGETS

- Eocene sand
- Tuffitic zone sand
- Paleocene sand

RESULTS

Eocene, Paleocene and Danian sands waterwet.

CASINGS / RKB

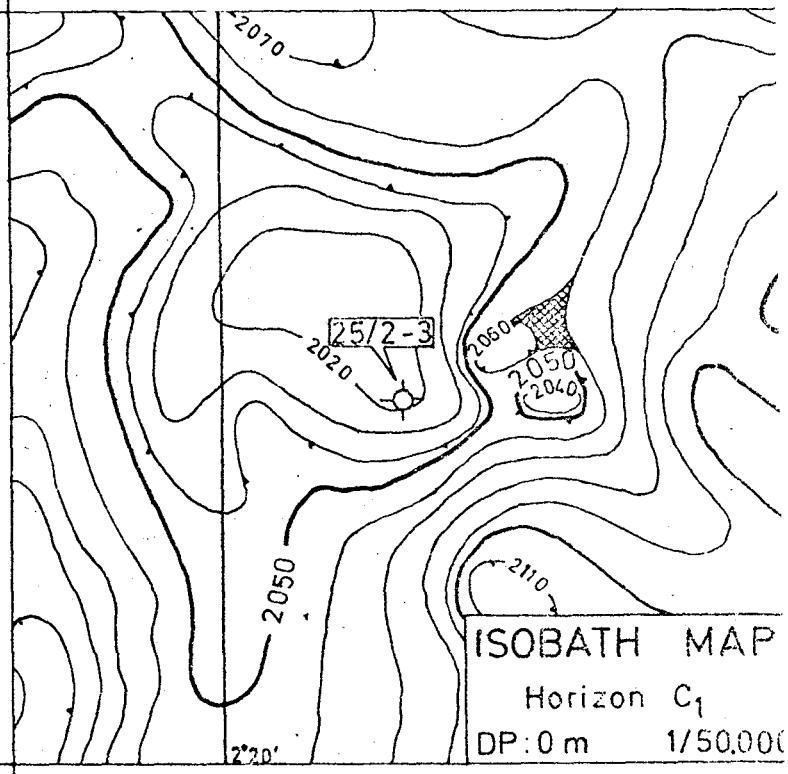
- Ø 30" ▲172 m
- Ø 13 3/8" ▲474 m
- Ø 9 5/8" ▲2034 m

CORES

none

SHOWS

1420-1690. C_1: 2 to 3,5%
1690-1925. C_1: 1 to 3%
1925-1990. C_1: 0,2 to 1%
1990-2795. C_1: tr. - 0,4%



TESTS

none

LOGS

IES PS	2016,5-476	1.
BHC	2033,5-474	1.
GR.CAL.	GR.to MSL	
CBL	1997-1850	1.
IES	2788,2-2030	2.
BHC	2786,5-2030	2.
HDT	2784-2030	1.
SWC	2027-600	1.
SWC	2764,8-2045	2.
Velocity survey		

INTERPRETATION

Date: 18. okt. 1974

By

Z: RKB 25m
Z: Ground or Sea bottom 113 m

Well: 25/2-3

Depths m	Litho-section	Formations	Stages	Shows	Descriptions. Obs.
					25 Sea level
200					
400					138 Sea bed.
600		30" 172m			
800 -250					
1000					
1200					Drilling without returns
1400		13⅜" 474m			
1600 -500			Pleistocene		Sd f to md subrnd. abund Shell frags
1800					
2000					Lignitic levels
2200					Glauc., Muscov.
2400 -750					
2600		LIGNITIC SERIES			
2800					
3000					
3200 -1000					1008
3400		BROWN CLAYS GROUP	Miocene to		Cly drk gy to brn, sft, sltly calc and silty
3600					thin lamin. Lmst beige
3800			Oligocene		interc. Sd md.

Depths m	Formations	Stages	Descriptions. Obs.
4000 -1250			
4200	BROWN CLAYS GROUP (GUMBO FACIES)	Oligocene	interc. Sltst arg.-calc. cmt.
4400			
4600			
4800 -1500			1460 levels of Sltst/Sdst arg.-calc. cmt.
5000			
5200		Eocene	Sh gy to drk gy non calc.
5400			
5600 -1750			
5800			stringers of Dol, beige, indur.
6000			
6200			Sh grn non calc
6400			thin levels of Sdst poor sort. arg. calc. cmt.
6600 -2000	9⅝" 2034m	Upper	
6800		Middle to	2073 tr. Sh "apple grn"
7000	FRIGG MBR.	U.Paleo-L.Eoc	Sh rd brn
7200			Sd f to md subrnd
7400 -2250	Tuff		2211 Tuff light gy 2246
7600	COD MBR.	Paleocene	altern: Sd f to md subang. Sh gy, fissile non calc

Depths m	Litho-section	Formations	Stages	Shows	Descriptions. Obs.
7800		COD MBR.	Paleocene		Sd md to crs subang poor sorted.
8000					2427
8200		LOW. SD-SH MBR			Altern.: Sd md to crs subang mod. sort. w/Sh gy to grnish fissil non calc.
2500					
8400					2582
8600		DANIAN SD.	Danian to		Sd md to crs subang well sort. w/ thin Sh stringers.
8800					2726
9000		MAEST. CHALK	Up.Cret.		Sd: A/A chky Lmst beige
2750					T.D. 2795 m.
9200					
9400					
9600					
9800					
3000					
10000					
10200					
10400					
10600					
3250					
10800					
11000					
11200					
11400					

Z: RKB 25 m
Z: Ground or Sea bottom 113 m

Well: 25/2-3

3500
11600
11800
12000
12200
3750
12400
12600
12800
13000
4000
13200
13400
13600
13800
4250
14000
14200
14400
14600
4500
14800
15000
15200

SIDE WALL CORES DESCRIPTION

SERVICE COMPANY	SPE
ASKED	30
RECOVERED :	28
SHOT	29
LOST	1
FULL BULLET	28

WELL : 25/2-3
LICENCE : 026

RUN N° 1
PAGE N° 1
DATE : 20.9.74

tr : trace - M : medium - G good

N°	DEPTHS	REC	LITHOLOGY	Fluorescence	Cl
1	2027	1	shale, indurated, grey, grey-brown, non calcareous		
2	1982	1	shale as above		
3	1932	1	shale as above		
4	1883	1	shale as above		
5	1828	1	shale as above and trace of dolomite, beige, hard		
6	1787	1	shale as above		
7	1762, 5	1	shale as above		
8	X	0			
9	1667	1	shale as above and dolomite; beige, hard		
10	1637, 5	1	shale as above		
11	1586, 5	1	shale as above		
12	1539	1	shale less compacted grey, grey-brown slightly calcareous		
13	1532	1	shale as above		
14	1521, 5	1	shale as above		
15	1477	1	shale as above		
16	1468, 5	1	shale as above pyritaceous		
17	1417	1	shale / clay, brown, micaceous, silty, slightly clacareous		
18	1394	1	shale / clay as above glauconitic		

SERVICE COMPANY :	SPE
ASKED :	30
RECOVERED :	28
SHOT :	29
LOST :	1
FULL BULLET :	28

SIDE WALL CORES DESCRIPTION

WELL :	25/2-3	RUN N°	1
LICENCE :	026	PAGE N°	2
		DATE :	20.9.74

tr : trace - M : medium - G : good

N°	DEPTHS	REC	LITHOLOGY	Fluorescence		CUT
19	1324	1	shale / clay brown, very silty, calcareous glauconitic			
20	1247, 5	1	shale / clay as above			
21	1204, 5	1	shale / clay as above			
22	1141, 5	1	shale / clay as above			
23	1082	1	shale / clay as above			
24		0				
25	1036, 5	1	clay / shale, brown, sandy, silty, glauconitic calcareous			
26	958	1	sand, fine, well sorted, subrounded, argilaceous, glauconitic, slightly calcareous			
27	892	1	shale brown, sandy, calcareous			
28	826	1	sand fine, subangular, well sorted, calcareous, argilaceous			
29	714, 5	1	sand fine to medium, subangular, calcareous, argilaceous			
30	600	1	sand fine, well sorted, subangular, argilaceous, calcareous, micaceous, glauconitic			

SERVICE COMPANY	SCHLUM.
ASKED :	30
RECOVERED :	30
SHOT :	30
LOST :	/
FULL BULLET :	30

SIDE WALL CORES DESCRIPTION

WELL :	25/2-3	RUN N°	2
LICENCE :	026	PAGE N°	1
		DATE :	7.10.74

tr : trace - M : medium - G good

N°	DEPTHS	REC	LITHOLOGY	Fluorescence	CUT
1	2764,8	10	lmst wh, mudst hd		
2	2758	60	sd f subang to subrnd poor sorted gluc, mic		
3	2725	20	sd f to md subrnd fair sorted, gluc. some part oil stur. w odor		
4	2735	80	sh gy, dk-gy, indur fissil, calc.		
5	2697,5	100	sh a.a.		
6	2667,5	100	sd f subrnd, poor sorted gluc. mica abund		
7	2637,4	100	sh g n, indur abund mic non calc.		
8	2605	60	sd fn subrnd poor sorted gluc. and mica abund		
9	2580	90	sh gn indur abund mic non calc.		
10	2567	100	sh lt brn indur non cal		
11	2537,5	100	sh dk gy indur slightly clac w. tiny inclus. of lmst wh.		
12	2493	100	sh a.a. w inclus of siltst. slightly calc, abund gluc.		
13	2463	100	sd v. f arg. subrnd. pellet of pyr abund		
14	2430	100	sh dk-gn indur mic non calc w inclus and streaks of lignite		
15	2405	100	sd f to med subrnd mica		
16	2353	50	sh lt gy to lt blue slightly calc		
17	2315	60	sh gy fissil indur non calc		
18	2270	80	sh a.a.		

SERVICE COMPANY :	SCHLUM.
ASKED :	30
RECOVERED :	30
SHOT :	30
LOST :	/
FULL BULLET	30

SIDE WALL CORES DESCRIPTION

WELL :	25/2-3	RUN N°	2
LICENCE :	026	PAGE N°	2
		DATE :	7.10.74

tr : trace - M : medium - G : good

N°	DEPTHS	REC	LITHOLOGY	Fluorescence		CUT
19	2244	100	sh lt brn indur non calc			
20	2213,5	100	sh gy to lt gy indur non calc.			
21	2190	100	sd med subrnd to rnd well sorted loose glauc, mica.			
22	2183	100	sd med subrnd poor sorted mic. some inclus. of sh dk-gy			
23	2175	100	altern. of gy indur non calc w sh grn to bluish silty, abund scattered and pellet of pyr.			
24	2162,5	100	sd f to med subrnd to subang poor sorted mica w thin lamina of sh brn to dk gn non calc.			
25	2132	60	sd f subrn to rnd well sorted loose			
26	2121	90	sh gy to dk-gy indur non calc			
27	2107,5	100	sh redish brn to red indur calc.			
28	2101,5	60	sd f subang poor sorted loose glauc, mic w inclus of siltst. hd and sh redish brn.			
29	2057	100	sh gy, dk-gy indur. non calc w inclus of sh red and sd f			
30	2045	100	sh gy, dk-gy ind, mic slightly silty non cal.			

			1