

NOS-9085



elf norge a/s

FINAL GEOLOGICAL REPORT

15/3-1

FINAL GEOLOGICAL REPORT

15/3-1

ELF AQUITAINE NORGE A/S RESERVOIR DEPARTMENT		
DATE RECEIVED:	1/10-75	
REG. NO:	26703	REG. COI in
FIELD/ WELL:	15/3-1	
FILING CODE	WDRL4	
LISTINGS:	AUTHORITIES	PARTNER:

Elf Norge A/S
Exploration Department
July, 1975

1. PERTINENT DATA

1.1. General

Licence	025 owned by Petronord
Operator	Elf Norge A/S
Rig	Deep Sea Driller
Contractors	Deep Sea Drilling Company. Mud logging: Geoservices
Location	Geographic X = 01° 43' 13" 249 E Y = 58° 50' 57" 004 N i.e. crossing of seismic lines = 69-58-51 and 1-43
Water depth	-109 m
RKB	25 m
Depth datum	RKB

1.2. Drilling and Operation Time Table

27.11.74	Spudded and started drilling
28.11.74	30" casing set at 198 m
03.12.74	20" casing set at 612 m
6.12.74.-12.1.75	Drilling in 17"1/2 down to 2856 m
14.-15.01.75	SPE Run 1 IES-BHC-GR-HDT SWC 1.2.
17.-18.01.75	13"3/8 casing set at 2842 m
22.1.-17.2.75.	Drilling in 11"15/16 down to 3947 m
19.02.75.	Cut Core 1 3947-3951 m
28.02.75.	Drilling in 12" down to 3957 m
28.2.-2.3.75.	SPE Run 2 IES-BHC-GR-HDT SWC 3.4.
3.-4.03.75.	9"5/8 casing set at 3950 m
6.-14.03.75.	Drilling in 8"11/32 down to 4083 m
16.03.75.	Cut Core 2 4083-4092 m
17.-18.03.75.	Drilling in 8"11/32 down to 4141 m
19.03.75.	Cut Core 3 4141-4150 m
20.-24.03.75.	Drilling in 8"11/32 down to 4400 m While circulating before logging run, pipes were stuck and the hole started to kick. After several attempts it was decided to plug and try to sidetrack the well.

21.4.-5.5.75.	Side-tracking from 3985 m down to 4375 m
5.-8.05.75	SPE Run 3 IES-BHC-GR-HDT Run 1 DLL-FDC SWC 5
9.05.75	Liner 7" set at 4374 m
14.-27.05.75.	Drilling in 5"27/32 down to 4652 m
28.05.75.	SPE Run 4 IES-BHC-GR
28.31.05.75.	Drilling in 5"27/32 down to 4762 m
4.-7.06.75.	SPE Run 5 BHC-GR Run 2 DLL-FDC Run 1 ML-MLL Run 4 HDT F.I.T. 1,2
7.-11.06.75.	Drilling in 5"27/32 down to 4963 m
11.06.75.	SPE Run 6 BHC-GR Run 5 IES
12.-13.06.75.	Drilling in 5"27/32 down to 4991 m
14.06.75.	Cut Core 4 4991-4994 m
14.-17.06.75.	Drilling in 5"27/32 down to 5129 m T.D.
21.-27.06.75.	SPE Run 6 IES Run 7 BHC-GR Run 3 FDC-DLL Run 2 ML-MLL Run 5 HDT SWC 6 FIT 3
28.6.-6.7.75.	FIT 4,5,6,7,5 bis,8 were performed and the well completed.

1.3.Status

Plugged and abandoned.

Oil and gas in Jurassic Sandstones.

2. GEOLOGICAL DATA AND RESULTS

2.1. Objectives

This well was located on the south west of the block 15/3.

It is situated on the East Flank of the North Sea Central Graben.

The main objectives were Dogger Sands, and secondary ones were: Lower tertiary, Danian, Lower Cretaceous sands, Triassic sandstones and Zechstein dolomites.

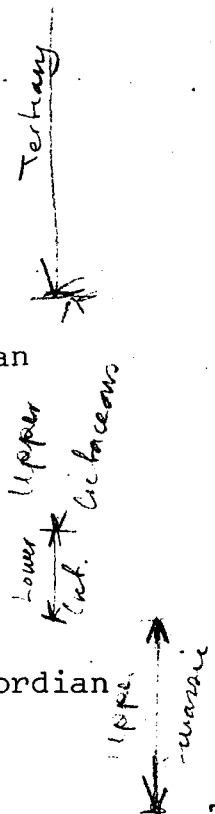
15/3-1 was due to explore all the series down to the economic basement according to commitments.

2.2. Stratigraphical and Structural Results

2.2.1. Stratigraphical Data

See following table and composite log.

STRATIGRAPHICAL UNITS	Top RKB (m)	Top MSL (m)	Thickness (m)
Pleistocene to Miocene	134	-109	712
Oligocene	846	821	614
Middle-Upper Eocene	1460	-1435	690
Paleocene to Danian	2150	-2125	561
Danian	2711	-2686	89
Maestrichtian - Campanian	2800	-2775	378
Campanian - Santonian	3178	-3153	326
Turonian	3504	-3479	308
Lower Cretaceous	3812	-3787	135
Kimmeridgian - Call.oxfordian	3947	-3922	768
Callovian to oxfordian	4715?	-4690	414
	TD 5129	-5104	



Remarks

- thickness of the cretaceous chalk: 378 m
- large development of limestone into the cretaceous section (Turonian: 308 m)
- down to the jurassic top, no abnormal pressure was observed.
- in jurassic section, pore pressure grew up shortly to 1.88.

2.2.2. Structural Results

Stratigraphical unit	Prognosis MSL	Top MSL	Z (m)
Brown clays	900	821	+79
Eocene	1600	1435	+165
Tuff	2150	2125	+25
Cretaceous Chalk	2825	2775	+50
Turonian (M1)	3800	3479	+21
Kimmeridgian (M2)	4000	3922	+78

2.3. Reservoirs

2.3.1. Paleocene Sands (2215-2599 m)

There is no main sand body, but there are intercalations of shale and sand, fine, medium, poor sorted.

Gross thickness: 384 m
Net thickness: 198 m

2.3.2. Danian Sands (2599-2711 m)

A main sand body with some shale and dolomite stringers; sand fine, medium, fair sorted, very clean

Gross thickness: 112 m
Net thickness: 95 m

2.3.3. Jurassic Sandstones

Three main reservoir sections were encountered from Kimmeridgian unconformity down to TD.

2.3.3.1. First reservoir (3980-4317 m)

1. 3980-4032 m: Thin alternates of sandstone, very fine, mainly calcareous, cemented, and shale.

Gross thickness: 52 m
Net thickness: 1 m

2. 4083-4317 m: Alternates of shale and sandstone, fine, mainly medium grained, poor sorted, partly calcareous or argilaceous cemented.

Gross thickness: 234 m

Upper part	Net thickness: 14 m
	Porosity: 22%

Lower part	Net thickness: 3 m
	Porosity: 26%

2.3.3.2. Second Reservoir (4442.5-4610 m)

Sandstone, fine to coarse grained, poor sorted, with some beds that are calcareous or siliceous cemented. Some shale interbeds.

Gross thickness: 167.5 m

Net thickness: 128 m

Porosity: 22%

2.3.3.3. Third Reservoir (4986-5046 m)

Sandstone, fine to coarse locally slightly dolomitic or argilaceous, with a shale body interbed.

Gross thickness: 60 m

Net thickness: 15 m

Porosity: 11-15 %

2.4. Shows and Fluids

2.4.1. Shows

Down to 3947 m there is no significant show, only 0.5% methane at 2599 m in connection with the top of Danian sands.

Shows during drilling were encountered into the jurassic sandstones (C1, C2, C3 and C4, C5 on the top of hydrocarbons bearing reservoirs).

Core 1 (3947-3951) : Black shale, direct and cut fluorescence.

Core 2 (4083-4092) : Yellow direct and yellow to green cut fluorescence, strong hydrocarbon odor, and gas bubbles on sandstone.

Core 3 (4141-4150) : No direct fluorescence, yellow cut fluorescence and strong hydrocarbon odor and bubbles on the whole core.

Core 4 (4991-4993) : No show

There was no direct and cut fluorescence on cuttings during drilling.

2.4.2. Fluids

The first core (full shaly) is oil bleeding from tiny veins.

2.4.2.3. Third Reservoir

4986-5001 : Net pay : 10 m
Porosity: 12,5%
Sw : 15%

This reservoir is gas bearing

5029-5047 : water and residual hydrocarbon bearing

5087-5092,3: Net pay : 2,5 m
Porosity : 11%
Sw : 22%

Hydrocarbon bearing, but poor permeability

5096,5-5101 : Net pay : 2,5 m
Porosity: 11%
Sw : 31%

Hydrocarbon bearing, but poor permeability

F.I.T. 3 : Failure

2.5. Conclusion

Oil and gas discovery into jurassic sandstones.

Chief Geologist

C.BASTIEN

Well Site Geologists

J.C.PORTALIS

M.VOSSOUGUI