

L-89

725.1

Stavanger, 11th July 1973

JR/bf
73/170

STATENS OLJEDIREKTORAT
Lagårdsveien 80

4000 STAVANGER

FORTROLIG

i h.t. Beskyttelsesinstruksen,
jfr. offentlighetslovens

§ nr.

Dear Sirs,

Please find enclosed our program for the well 3/7-1 -

and the results of the soil survey we made on this location in May 1973.

Yours very truly,

J. RENOUX

Enclosures - 1 application
1 CG DORIS report
1 Norges Geotekniske Institutt report



elf norge a/s

P.O. BOX 168 N-4001 STAVANGER
7 RUE NELATON 75739 PARIS CEDEX 15

TEL.: 31040
TELEX: 33174
TEL.: 578 61.00

Stavanger, 11th July 1973

OUR REF: 73/152
PLR/MCB/bf

YOUR REF:

STATENS OLJEDIREKTORAT
Lagårdsveien 80

4000 STAVANGER

CONFIDENTIAL

FORTROLIG
i h.t. Beskyttelsesinstruksen,
jfr. offentlighetslovens
§ _____ nr. _____

Dear Sirs,

Pursuant to Sections 35 and 39 of the Royal Decree of April 9th, 1965, and Section 6 of the Royal Decree of August 25th, 1967, ELF NORGE A/S acting as operator for the French-Norwegian Group and the Amoco/Noco Group, is requesting your approval for one well we intend to drill on the Norwegian Continental Shelf.

- a) Location - Block 3/7 (Licence 023)
X: 04° 00' 00" E + e
Y: 56° 27' 37" N
- b) Drilling Platform - OCEAN TIDE
- c) Water depth - 64 m, - RKB - Sea bottom = 84 m = 20 m 65,6'
- d) Bottom survey: bottom survey has been carried out. Kullenberg cores have been done - 4 of them have been tested by Norges Geotekniske Institutt -
- e) Estimated total depth: 3500 meters
- f) Expected geological data: See appendix 1/5000.

The main objectives are Jurassic and Permian sandstones and secondary objects Danian Upper Cretaceous limestones.

g) Drilling program

1) Casing program

<u>Hole</u>	<u>Casing</u>	<u>Weight</u>	<u>Grade</u>	<u>Setting depth RKB</u>
36"	30"	1"	B	115 m ^{30m} ₁₄₈
26"	20"	94	X 52	530 m ⁴⁴⁵ ₁₅₀₀
17"1/2	13"3/8	68	K 55	1440 m ¹³³⁵ ₄₄₀₀
12"1/4	9"5/8	47	N 80	2640 m ²⁵⁵⁵ ₈₀₀₀
8"1/2	7" (1)			3300/3500 m ¹¹⁰⁰⁰ ₁₁₈₀₀

(1) if any production test

2) Cementing program

- conducting pipe 30": Drived after predrilling
- casing 20" - cemented up to sea bottom - 80 T class B
- Casing 13"3/8: cemented up to 200 m into 20" csg- class B cement - 90 tons
- casing 9"5/8: cemented up to 200 m into 13"3/8 csg- 50 T class D

TO surface !!

3) Mud program

- 36" : drilled with sea-water - no returns
- 26 and 17"1/2: sea-water based mud ^{9.5} _{11.1}
density 1,10 - 1,30 according to formation pressure
viscosity 55 - 100
water loss 10 - 15
- 12"1/4 : Same mud ^{11.1} _{12.9}
density 1,30 - 1,50
viscosity 45 - 50
water loss 5
- 8"1/2: sea water based mud ^{12.9} _{14.1}
density 1,50 - 1,65
viscosity 45 - 59
water loss less than 5

h) Blow out preventers

- 20" BOP stack - 2000 PSI Cameron ✓
- 13"5/8 BOP stack - 10.000 PSI
- Well head and mud line suspension Gray -

i) Logging program

Basic runs (minimum program)

- Resistivity log
- Sonic log
- Radioactivity log
- Caliper
- Dipmeter

In addition, for reservoir rocks:

- Neutron
- Microlog and Microlaterolog
- Formation density compensated

j) Coring program

Cores would be possible in each reservoir rocks. Side wall cores will be taken in Lower Tertiary and Mesozoic formations.

k) Sample program

Samples will be normally caught at 20' minimum intervals, reduced to 10' and finally 5' as drilling rates declines.

l) Testing program

Conventional tests through perforations in casing will be run, if warranted by log analysis.

m) Contractors and Sub-contractors

Contractor - ODECO

Sub-contractors:

- | | |
|-----------------|-----------------------|
| Logging | - Schlumberger |
| Cementing | - Dowell Schlumberger |
| Helicopters | - Helikopter Service |
| Divers | - THREE X |
| Mud logging | - Corelab |
| Mud engineering | - Milchem |

In case this forecast would be modified, we will report immediately.

Yours sincerely,
ELF NORGE A/S


P. LE REST



COMPAGNIE GENERALE POUR LES DEVELOPPEMENTS
OPERATIONNELS DES RICHESSES SOUS-MARINES
Societe anonyme au capital de 7.500.000 de Francs - Reg. du Com. 66 B 811 Paris

FORTROLIG
i h.t. Beskyttelsesinstruksen,
jfr. offentlighetslovens
§ 2015

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INSEE 802-75-113-0148 H

	Elf Norge A/S	
	13 JUN 1973	
	Stavanger	

ELF NORGE A/S.,
P.B. 168,
4001 STAVANGER.

Attention: Mr. Renoux

ST.6082

8th June, 1973.

Re: Soil Samples from the North Sea,
Preliminary Test Results.

In accordance with your order of May 1973, we have carried out tests on four soil samples from the North Sea. The samples were taken by gravity corer from the ship Astragale.

The four samples were labelled K1, K8 and K14 and the lengths of the cores were 85, 134, 210 and 142 cm, respectively, all with a sample diameter of 44 mm.

The samples were tested for bulk density, moisture content and grain size distribution with the results shown on the enclosed drawings No.7286/101 and -102. The bulk densities were obtained by weighing the whole sample and estimating its volume from the nominal diameter and net length of the core.

All the samples consisted of medium to fine sand with varying amounts of sea shells. Virtually all particles greater than 0.5 mm. consisted of shells. Excluding the shells, the four samples have almost identical gradings ranging from about 0.1 to about 0.4 mm.

Triaxial tests have been conducted on the sand fraction to investigate the angle of friction of the material. These tests have been carried out at NGI in Oslo and we are still awaiting the final report.

The tests have been drained test adopting a cell pressure of 1 kp/cm². Two samples have been prepared and tested, one at 100% relative density and one at 70% relative density (corresponding to bulk densities of about 2.13 and 2.03 Mp/m³). The resulting ϕ -values at peak stress were 40° and 36°, respectively.

Yours truly,


J. Clavis

Enc.

4000-501-1

CHECKED

DRAWN

R M

DATE

29.5.73

JOB NO.

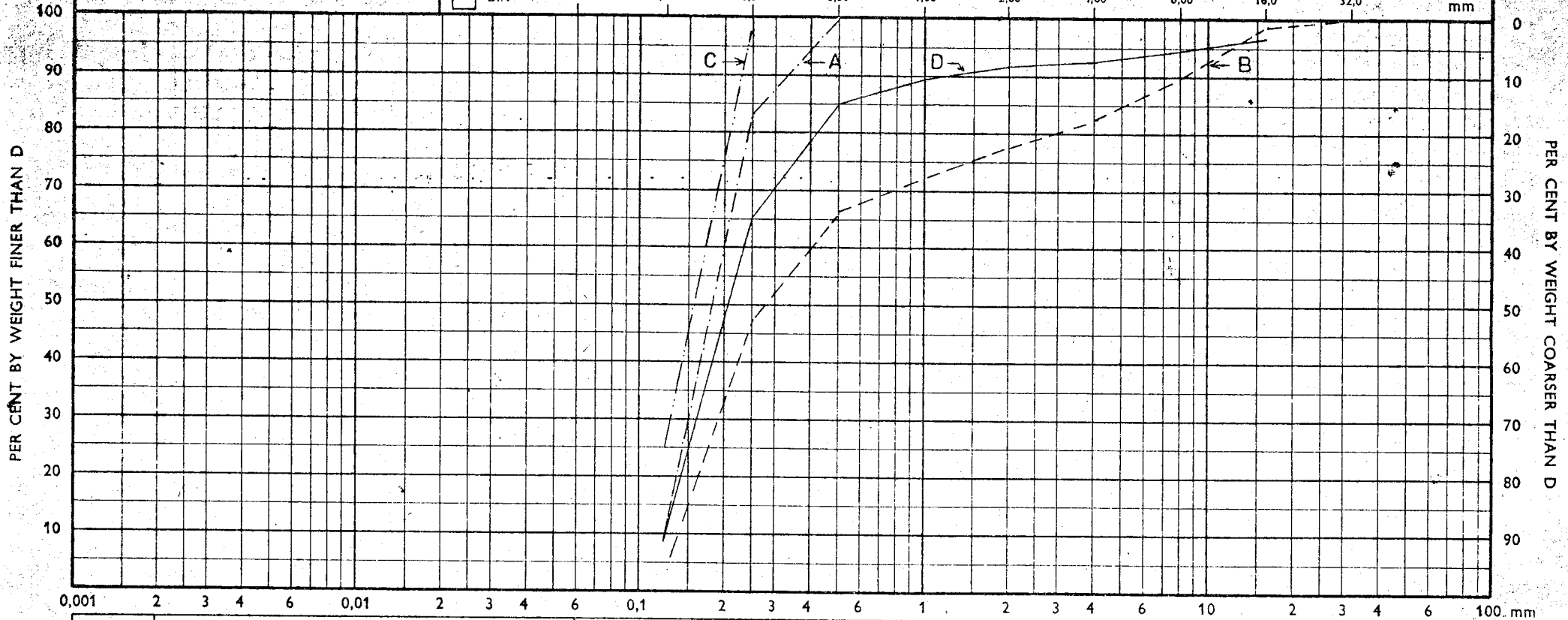
7286

DWG. NO.

101

GRAIN SIZE DISTRIBUTION

<input type="checkbox"/> B.S.	200	100	52	25	14	7	3/16"	3/8"	3/4"	1 1/2"	
<input type="checkbox"/> ASTM	200	100	50	30	16	8	4	3/8"	3/4"	1 1/2"	3
<input type="checkbox"/> DIN	0,06	0,125	0,25	0,50	1,00	2,00	4,00	8,00	16,0	32,0	mm



CLAY	SILT			SAND			GRAVEL			STONE
	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	

SYM-BOL	BORING NO.	DEPTH. m (ELEV.)	SAMPLE DESCRIPTION	O	γ	W	REMARKS	METHOD		
								DRY SIEVING	HYDR.	WET + DI
A	K 5	0-095	SAND		202	201		X		
B	"	095-134	--- MAINLY SHELL >0,5 mm	"		177		X		
C	K 1	0-028	---	"	197	220		X		
D	"	056-085	SAND W / SHELL MAINLY >0,5 mm	"		203		X		

NOTE BY
MOSK TEKNICK

C.G. DORIS

4000-501-1

CHECKED

DRAWN

RM

DATE

29.5.73

JOB NO.

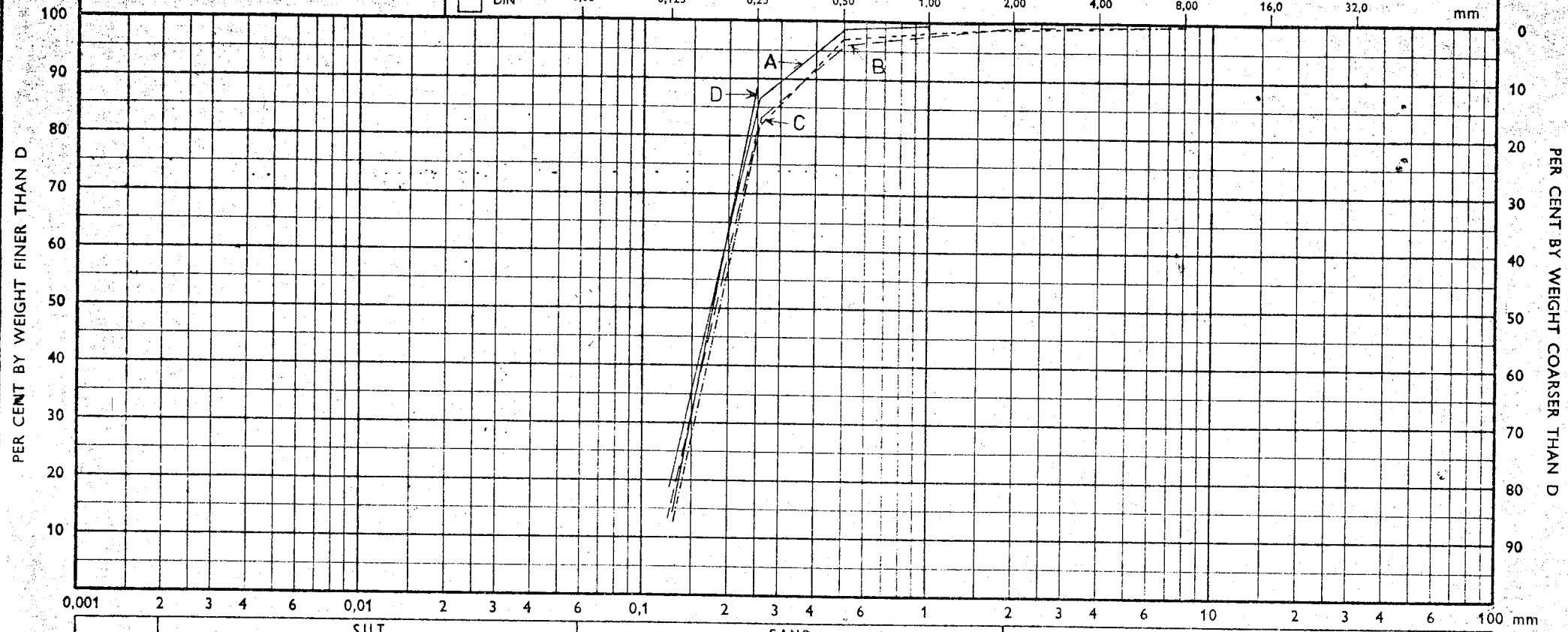
7286

DWG. NO.

102

GRAIN SIZE DISTRIBUTION

<input type="checkbox"/> B.S.	200	100	52	25	14	7	3/16"	3/8"	3/4"	1 1/2"
<input type="checkbox"/> ASTM	200	100	50	30	16	8	4	3/8"	3/4"	1 1/2"
<input type="checkbox"/> DIN	0,06	0,125	0,25	0,50	1,00	2,00	4,00	8,00	16,0	32,0
	mm									



CLAY	SILT			SAND			GRAVEL			STONE
	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	

SYM-BOL	BORING NO.	DEPTH. m (ELEV.)	SAMPLE DESCRIPTION	O	γ	W	REMARKS	METHOD		
								DRY SIEVING	HYDR.	WET + DRY
A	K 8	0-0.7	SAND w/ SHELL	TRACES	218	174		X		
B	"	14-21	---	"		255		X		
C	K 14	0-0.6	---	"	198	221		X		
D	"	095-14.2	---	"		106		X		

NOTE BY

C. G. DORIS

Blocs 2/9 et 3/7
Carottages Kullenberg

4° 00' E

B3120

3170

3140

J64

3150

3160

3170

3180

3190

J3

56° 27' 37" N

B32

3210

3220

3230

3240

3250

3260

3270

Ech: 1/20.000

J62

4° 00' E

