BA 75-20-1

ESSO EXPLORATION NORWAY INC.

GEOLOGICAL SUMMARY

COMPLETION REPORT

ESSO EXPLORATION NORWAY INC.

30/10-5

Stavanger Office, May 16, 1975.

Prepared by W.V. Naylor

ESSO 30/10-5

Geologic Summary

Table of Contents:

Esso 30/10-5

I. Introduction:

a.	Well Designation	:	Esso 30/10-5.
b.	Well Classification	:	New Field Wildcat.
c.	Well Location	:	
	1. Country	:	Norway.
	2. Licence	:	030.
	3. Coordinates	:	Latitude : 60° 00' 25.893" N. Longitude: 02° 04' 07.016" E.
	4. Seismic Location:		170 meters northeast of 30/10-1. Located on seismic line S72, SP 2010.
	5. Water Depth	:	346 feet.

II. Purpose of Well:

30/10-5 was drilled in order to:

Evaluate a deep seated structure closure not reached in 30/10-1 well and/or through the reservoir potential section to comply with licence 030 requirements.

III. Results of Well:

Esso 30/10-5 reached a total depth of 17,011 feet and bottomed in questionable Triassic. The only good shows encountered were in the Eocene (Frigg Clastic Tonque), however; several thin zones in the Upper Cretaceous with poor permability and porosity contained some gas.

Logs and sidewall cores indicates the thickness of the oil and gas pay section of the Frigg Clastic Tonque in well 30/10-5 is 34 feet. The net gas is 10 feet and net oil 27 feet.

The Dogger Sandstone was cored. The core had some slight fluoresence and cut, however; it was wet throughout. With 7" protective casing set at 14,759 feet the well was drilled to 17å011 feet and the Norwegian Petroleum Directorate confirmed that the well fulfilled Esso's commitments for block 30/10.

The Triassic section (?) 16,821 feet to 17,011 feet consisted of red and grey shales with stringers of white limestone. No reservoirs or shows were encountered. Palynological work indicates that the fauna is highly carbonized, however; one piece of spore indicated possible Triassic.

The Jurassic section, 13,727 feet to 16,821 feet consisted of the Malm Dogger and Lias (?). The fauna of the Jurassic section is highly carbonized, however; it was possible to indentify each age of the Jurassic. The Lias is highly questionable as only one piece of a spore was recognized to be Lias age.

The Lias section, 16,564 feet to 16,821 feet consisted of grey shale with no sand reservoirs.

The Dogger section, 15,036 feet to 16,564 feet is alternating sand, shale and coal section with thick sands developed between 15,032 feet and 15,170 feet, 15,389 feet and 15,619 feet, 15,721 feet and 15,941 feet, 16,131 feet and 16,433 feet and 16,488 feet and 16,542 feet. Log analysis indicates that the sands porosity rangs between 19 and 22 percent. No good shows were encountered in the Dogger sand.

The Malm section, 13,727 feet and 15,036 feet consisted entirely of grey and black shale.

The Lower Cretaceous section, 13,041 feet to 13,727 feet consisted of grey shales and marls with the marls present in the lower 200 feet. Pyrite occurs between 13,343 feet and 13,352 feet and 13,625 feet and 13,727 feet. No reservoirs were present in the Lower Cretaceous.

The Upper Cretaceous section, 8,808 feet to 13,041 feet was predominantly shale, marl and clay with limestone stringers. Thicker limestone zones are present between 8,980 feet and 9,158 feet, 9,252 feet and 9,310 feet and 9,655 feet and 11,857 feet and 12,014 feet. The limestone section between 9,570 feet and 9,655 feet was sandy. Lost circulation was encountered at 9,655 feet of the zone carried some gas. A zone between 11,903 feet and 11,959 feet, contained some gas. Log analysis indicates that this zone has an average porosity of 17.8 percent and water saturations of 58.3 percent. The most prospective part, 11,903 feet to 11,953 feet has a water saturation of 47.6 percent. The clays, marls and shales are grey, slightly calcareous and carried stringers of thin limestone. The lower part, 12,218 feet to 13,041 feet conisted of shale, marl, limestone and some siltstone. Although there were numerous gas shows in the thin limestone stringers in the upper most part of the Upper Cretaceous, there were no good shows encountered.

The Danian section, 8,666 feet to 8,805 feet is predominantly a silty limestone with dark grey shale and traces of chalky limestone. No good reservoirs or shows were noted.

The Paleocene section, 6,808 feet to 8,866 feet, top is marked by a shale section aprroximately 100 feet thick. Below the shale and sand section is a tuff section consist of an upper sand section between 7,308 feet and 7,800 feet and a shale section between 7,800 feet and 8,866 feet. The shale section carries interbedded thin stringers of limestone and dolomite. No shows were present in the Paleocene.

The Eocene section, 4,298 feet to 6,808 feet is mainly grey clay and green shale with traces of siltstone and micritic limestone stringers. The limestone stringers occur between 5,150 feet and 5,670 feet. From 5,675 feet to 6,446 feet the section is a grey shale. A sand unit (Frigg Clastic Tonque) is present from 6,446 feet to 6,668 feet. The sands are fine grained, unconsolidated with shows of gas and oil in the upper 37 feet.

The Oligocene section, 1,969 feet to 4,298 feet is predominantly clay, silty, grey, sticky, with some glauconite.

The Miocene section, 1,083 feet to 1,969 feet consisted of siltstone and shell fragments with glauconite. The sands are fine to medium grained.

The Resent-Pliocene section, 1,083 feet to sea floor at 423 feet, consisted of sands, silt and shells.

IV. Well History:

a. General:

1. Spud Date - September 25, 1974.

2. Completion Date - May 1, 1975.
3. Status - Plugged and abandoned.
4. Total Depth - 17,011 feet.
5. K.B. - 77 feet.

b. Contractor and Rig: Norsedrill - Neptune 7.

c. Casing:

1. 30 inch at 531 feet.
2. 20 inch at 2,400 feet.
3. 13 3/8" at 8,855 feet.
4. 9 5/8" at 12,399 feet.
5 7 inch at 14,759 feet, top at 12,087 feet.

d. Mud Program:

Initial drilling from the sea floor to 2,450 feet was with sea water and gel. Below 2,450 feet a fresh water spersene XP 20 mud system was used.

e. Drilling Problems:

Reaming of the 12 1/4" hole to 17 1/2" for setting the 13 3/8" casing was delayed due to several "twist offs", junk in hole, pod trouble and weather. After setting the 13 3/8" casing drilling was resummed. At 9,655 feet, lost circulation was encountered, however; after setting a cement plug, drilling was continued without difficulties.

f. Coring:

See Part V., b) 2.

1. Conventional:

Core No. 1, 15,059 feet to 15,089 feet - Recovered 100 percent.

2. Sidewall:

Run No. 1 - 8,823 feet to 7,820 feet.
Shot 30 - Recovered 21.

Run No. 2 - 7,564 feet to 6,084 feet.
Shot 30 - Recovered 28.

Run No. 3 - 6,553 feet to 6,455 feet.
Shot 18 - Recovered 17.

Run No. 4 - 5,986 feet to 2,866 feet.
Shot 30 - Recovered 26.

Run No. 5 - 8,429 feet to 3,040 feet.
Shot 30 - Recovered 26.

Run No. 6 - 10,256 feet to 12,451 feet.
Shot 30 - Recovered 22.

Run No. 7 - 10,259 feet to 12,434 feet.
Shot 30 - Recovered 17.

Run No. 8 - 8,931 feet to 10,177 feet.
Shot 30 - Recovered 24.

Run No. 9 - 8,950 feet to 12,461 feet.
Shot 30 - Recovered 13.

Run No. 10 - 14,797 feet to 16,168 feet.
Shot 21 - Recovered 10.

Run No. 11 - 15,010 feet to 16,983 feet.
Shot 24 - Recovered 14.

Run No. 12 - 14,862 feet to 16,934 feet.
Shot 23 - Recovered 14.

g. Logging:

1. Geoservices:

a. Drilling Rate.
b. Lithology.
c. Cutting Gas.
d. Mud Program.
e. - Chromatograph.
f. H_2S Detector.
g. Shale Density.

2. Schlumberger:

	Type of Log:	Entered:	Run Nos.:
a.	IES	2,399'- 8,879'	1
		8,846'-11,411'	2
		11,004'-12,460'	3
		12,395'-14,784'	4
		14,755'-15,848'	5
		15,662'-17,000'	6
b.	BHC-S-GR-C	2,399'- 8,879'	1
		8,846'-11,408'	2
		11,250'-12,460'	3
		12,395'-14,784'	4
		14,755'-15,848'	5
		15,662'-17,000'	6
c.	CNL	2,399'- 8,879'	1
		14,758'-16,999'	2
		11,811'-12,057'	(Run No. 2)
		9,350'- 9,514'	(Run No. 2)
d.	Dipmeter	2,399'- 8,879'	1
		8,846'-12,460'	2
		16,591'-17,003'	3
e.	Temperature	8,160'-10,086'	1
		11,939'-14,235'	2
f.	Cement Bond	12,002'-11,808	1

g. Velocity Survey

A Velocity survey was run at T.D. (17,011').

h. Testing:

1. Production Test Results:

No production test was made.

2. Formation Interval Test Results:

No formation interval test was made.

3. Drill Stem Test:

One drill stem test was made. The 9 5/8 inch casing was perforated from 11,935 feet to 11,955 feet. With the packer set at 11,926 feet the tool was open for 3 minutes, then closed for 30 minutes for initial build up, then open for 3 hours. During the 3 hours the well flowed 3 1/4 barrels. Upon completion of flowing the well was shut in for 6 hours and 10 minutes for final pressure build up.

i. Abandonment:

The 30/10-5 was permanently plugged and abandoned. The 30 inch housing and 4 post guide structures were retreaved. An observation dive was made to check the sea floor of all obstructions and was found to be clean.

The following cement and bridge plugs were placed:

Plug No. 1	-	15,784' - 16,570'	(Cement)
Plug No. 2	-	14,534' - 15,256'	(Cement)
Plug No. 3	-	14,091'	(Bridge)
Plug No. 4	-	12,022' - 12,400'	(Cement)
Plug No. 5	-	12,017'	(Bridge)
Plug No. 6	-	11,955'	(Squeeze perf.)
Plug No. 7	-	11,877'	(Bridge)
Plug No. 8	-	11,519' - 11,877'	(Cement)
Plug No. 9	-	7,917' - 8,580'	(Cement)
Plug No. 10	-	6,834' - 7,087'	(Cement)
Plug No. 11	-	6,053'	(Bridge)
Plug No. 12	-	1,918' - 2,385'	(Cement)
Plug No. 13	-	580' - 820'	(Cement)

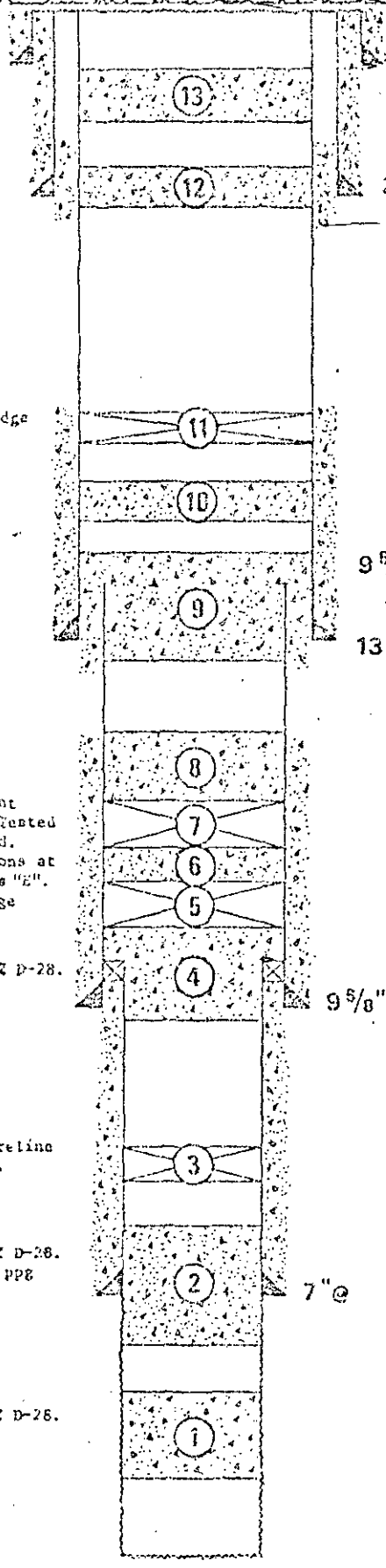
ESSO EXPLORATION NORWAY INC.

RKB = 79'
WD = 423' RKB

WELLBORE SCHEMATIC
As completed
30/10-5

Casing & Conductor Pipe cut at 437' RKB. Seafloor clean.

Mud line at 423' RKB



PLUG No. 13, 580'-820' RKB
168 sacks Class "G".

PLUG No. 12, 1918'-2345' RKB
490 sacks Class "G"; squeezed perforations at 2100' with 105 sacks at 2230' with 220 sacks; tested to 500 psi.

PLUG No. 11, Baker Model K Bridge Plug at 6053' RKB.

PLUG No. 10, 6834'-7087' RKB
178 sacks Class "G"; tested to 1500 psi w/14.0 ppg mud.

PLUG No. 9, 7917'-8580' RKB
600 sacks Class "G" squeezed 30 bbls. Tagged cmt.

PLUG No. 8, 11519'-11877' RKB
134 sacks Class "E".

PLUG No. 7, Baker Model K cement Retainer at 11877' RKB. Tested to 4000 psi w/14.0 ppg mud.

PLUG No. 6, squeezed perforations at 11955' RKB. 134 sacks Class "E".

PLUG No. 5, Baker Model K Bridge Plug at 12017' RKB.

PLUG No. 4, 12022'-12400' RKB
125 sacks Class "E" + 0.2% D-28.

PLUG No. 3, Johnson Mach II wireline Bridge Plug at 14091' RKB.

PLUG No. 2, 14534'-15256' RKB
130 sacks Class "E" + 0.4% D-28. Tested to 3000 psi w/17.3 ppg mud.

PLUG No. 1, 15748'-16570' RKB
146 sacks Class "E" + 0.4% D-28.

NOTE: NOT TO SCALE

531' RKB; X-52 310 lbs/ft; cmt w/950 sacks Class "B" +2% CaCl to mudline.

2400' RKB; K-55 94 & 133 lbs/ft; cmt w/2800 sacks Class "B" + 12% Bentonite + 0.2% Retarder and 587 sacks Class "B" neat cmt to mudline.

cut at 8537' RKB

6855' RKB; N-80 72 lbs/ft.; cmt: (1) 376 sacks Class "G" + 50 sacks gel + 0.3% HR-7 + 0.5% VHR; 329 sacks Class "G" + 0.3% HR-7 + 0.5% VHR. Top at 6070' RKB (2) 1175 sacks Class "G" + 12% gel + 0.3% HR-7 + 0.5% CFR.

at 12399' RKB; P-110 47 lbs/ft; N-80 47 lbs/ft, C-75 53.5 lbs/ft, C-90 53.6 lbs/ft, cmt w/1222 sacks Class "E" to 9432' RKB.

Liner Top at 12087' RKB cmt liner top w/235 sacks Class "E" squeezed to 1000 psi.

14759' RKB; N-80 32 lbs/ft; cmt w/ 450 sacks Class "E"

ALL DEPTHS BASED ON NEPTUNE 7 ROTARY TABLE.

TD 17011' RKB

V. Stratigraphy:

a. Table of Stratigraphy 30/10-5 (R.T. 77 feet):

Stratigraphic Unit:	Drill Depth:	Sub-sea Top:	Thickness:
Recent Pliocene	423'	(- 346')	660'
Miocene	1,083'	(- 1,006')	886'
Oligocene	1,969'	(- 1,892')	2,323'
Eocene	4,298'	(- 4,221')	2,510'
Green Shale Unit	5,675'	(- 5,598')	771'
Frigg Clastic Tonque	6,446'	(- 6,369')	222'
Paleocene	6,808'	(- 6,731')	1,858'
Danian	8,666'	(- 8,589')	139'
Cretaceous	8,805'	(- 8,728')	4,922'
Upper Cretaceous	8,805'	(- 8,728')	4,236'
Lower Cretaceous	13,041'	(-12,964')	686'
Jurassic	13,727'	(-13,650')	2,837'
Malm	13,727'	(-13,650')	1,369'
Dogger	15,036'	(-14,959')	1,528'
Lias	16,564'?	(-16,465')	257'
Triassic	16,821'?	(-16,744')	190' Drlg
Total Depth	17,011'	(-16,934')	-

b. Lithologic Description:

1. Sample Descriptions

WELLSITE SAMPLE DESCRIPTION

COMPANY: Esso Exploration Inc.

WELL (Onshore/Offshore): 30/10-5

HOLE SIZE:

GEOL.: Elf Geologist

DATE: 1974/75

COUNTRY: Norway

DEPTH Ft/M	LITH %	LITHOLOGIC DESCRIPTION	SHOWS & REMARKS
531- 672		Shale, sand with granite pebbles	
672-1574		Sand, fine to med. grained, shell fragements, glauconite	
1574-1804		Sand, shell frag.	
1804-2050		Thin claystone interbeds, sand fine to med. grained, shell fragements	
2050-2500		Clay	
2500-2820		Clay, grey silty	
2820-3290		Clay, sandy, shell fragements	
3290-3820		Clay, sticky, brown grey trace dolomite	
3820-4020		Clay, sticky, gumbo	
4020-4590		Clay, sticky, gumbo. Trace siltstone, dark grey glauconitic	
4590-5150		Clay, dark grey, locally silty. Trace glauconite	
5150-5240		Claystone, dark grey, calc dolomitic stringers	
5240-5674		Clay, soft, dark grey, dolomitic limestone interbedded.	
5674-6390		Shale, green grey. Trace dolomitic limestone	

WELLSITE SAMPLE DESCRIPTION

COMPANY: Esso Exploration Inc.

WELL (Onshore/Offshore): 30/10-5

HOLE SIZE:

GEOL.: Elf Geologist

DATE: 1974/75

COUNTRY: Norway

DEPTH Ft/M	LITH %	LITHOLOGIC DESCRIPTION	SHOWS & REMARKS
6390-6445		Shale, grey green trace limestone	
6445-6530		Shale as above, with trace to 10% sand very fine grain	
6530-6574		Shale trace limestone	
6574-6638		Shale with 10-20% sandstone fine to medium grain	
6638-6674		Shale with limestone and sand. Fluoresence on limestone	
6674-6800		Sand fine grained, shale interbedded	
6800-6840		Sand/sandstone fine to medium grain calc.	
6840-6904		Shale grey brown	
6904-7006		Alt. sand and shale	
7006-7038		Sand	
7038-7108		Sandstone and tuff	
7108-7183		Grey shale and tuff	
7183-7235		Shale grey, fissil, sandy	
7235-7284		Shale	
7284-7440		Sand	
7440-7583		Sand	

WELLSITE SAMPLE DESCRIPTION

COMPANY: Esso Exploration Inc.

WELL (Onshore/Offshore): 30/10-5

HOLE SIZE:

GEOL.: Elf Geologist

DATE: 1974/75

COUNTRY: Norway

DEPTH Ft/M	LITH %	LITHOLOGIC DESCRIPTION	SHOWS & REMARKS
7583-7800		Sand, fine-coarse grain	
7800-7983		Shale, dark grey, silty	
7983-8213		Shale as above	
8213-8308		Shale, dark grey slightly thin strings of lime-stone and grey sandstone streaks	
8308-8525		Shale with dolomite and calc siltstone stringers	
8525-8672		Shale, grey, silty with limestone interbedded	
8672-8711		Limestone slightly silty	
8711-8844		Shale, dark grey, trace chalky limestone	
8844-8905		Shale as above interbedded marl	
8905-8980		Shale dark grey with trace limestone and marl	
8980-9010		Limestone chalky, trace marl	
9010-9090		Limestone chalky with dark grey shale interbedded	
9090-9158		Marl, very soft - fine sandy	
9158-9252		Shale, dark grey slightly calc.	
9252-9301		Limestone, mudstone brown-grey - friable hard - slightly argil and marl white light grey very calc.	

WELLSITE SAMPLE DESCRIPTION

COMPANY: Esso Exploration Inc.

WELL (Onshore/Offshore): 30/10-5

HOLE SIZE:

GEOL.: Elf Geologist

DATE: 1974/75

COUNTRY: Norway

DEPTH Ft/M	LITH %	LITHOLOGIC DESCRIPTION	SHOWS & REMARKS
9301-9449		Clay-marl-calcareous, soft sticky grey, with shale rare limestone stringers, chalky, grey shale or dolomitic	
9449-9485		Clay and shale as above poorly calc. Fluor on limestone	
9485-9570		Clay and shale grey-dark grey	
9570-9605		Limestone, mudstone, light brown, argil sandy and marl streaks, soft, light grey	
9605-9642		Limestone friable grey brownish grey argil and marl as above	
9642-9660		Limestone, very hard	
9660-9696		Shale/clay, brown slightly calc.	
9696-9817		Shale and clay, grey, soft slightly calcareous silty.	
9817-9970		Shale/clay, slightly calc with limestone stringers grey-green.	
9970-10120		Shale as above, sticky rate string of limestone, trace siltstone, brown argil, calc, from 10,053 - rare Qt2 from 9880	
10120-10197		Shale as above, soft, sticky, grey, slightly calc. silty.	

WELLSITE SAMPLE DESCRIPTION

COMPANY: Esso Exploration Inc
WELL (Onshore/Offshore): 30/10-5
HOLE SIZE:
GEOL.: Elf Geologist
DATE: 1974/75
COUNTRY: Norway

DEPTH Ft/M	LITH %	LITHOLOGIC DESCRIPTION	SHOWS & REMARKS
10197-		Shale as above with scattered thin limestone	
10499		stringers	
10499-		Shale with marl as above	
10555			
10555-		Shale as above with marl	
10715			
10715-		Shale as above, with interbedded marl, trace	
10952		limestone	
10952-		Shale as above with interbeds light grey marl,	
11234		trace limestone, trace grey shale increasing	
		marl below 11,119	
11234-		Shale with marl as above trace limestone from	
11417		11,289 occasional dark grey black shale, calc.dolo-	
		(trace Scoriat shale) mitic	
11417-		Shale with marl as above trace limestone	
11634		(Trace Scoriat shale)	
11634-		Shale dark grey, calcareous from 11,720, stringer	
11857		limestone and marl interbedded.	
11857-		Limestone	
11876			
11876-		Shale	
11909			

WELLSITE SAMPLE DESCRIPTION

COMPANY: Esso Exploration Inc.
WELL (Onshore/Offshore): 30/10-5
HOLE SIZE:
GEOL.: Elf Geologist
DATE: 1974/75
COUNTRY: Norway

DEPTH Ft/M	LITH %	LITHOLOGIC DESCRIPTION	SHOWS & REMARKS
11909-11922		Limestone	
11922-11935		Shale	
11935-11968		Limestone	
11968-11981		Shale	
11981-11999		Limestone	
11999-12004		Shale	
12004-12014		Limestone	
12014-12120		Shale	
12120-12218		70% shale - 30% marl, hard firm calc, slightly glauc. pyrite, marl-cream, micaceous, silty trace pin point porosity	
12218-12284		60% shale - 40% marl as above . Trace limestone trace siltstone grey green	
12284-12316		90% shale - 10% marl as above trace limestone as above, trace siltstone as above	

WELLSITE SAMPLE DESCRIPTION

COMPANY: Esso Exploration Inc.

WELL (Onshore/Offshore): 30/10-5

HOLE SIZE:

GEOL.: Elf Geologist

DATE: 1974/75

COUNTRY: Norway

DEPTH Ft/M	LITH %	LITHOLOGIC DESCRIPTION	SHOWS & REMARKS
12316-		80% shale - 10% marl- 10% limestone as above	
12333		trace siltstone as above	
12333-		40-60% marl - 60-40% shale as above. Trace lime-	
12365		stone silt as above	
12365-		70% marl - 20% shale - 10% limestone	
12382			
12382-		95% shale as above - 5% Mic. limestone	
12421		trace coal from 12405 trace siltstone	
12421-		60% shale as above dark grey black	
12448		30% marl as above trace mic. limestone	
		10% coal as above	
12448-		30% clay, 30% shale as above, 25% marl,	
12464		10% mic. limestone, 5% coal	
12464-		Marl - grey with local limestone stringers	
12536			
12536-		Marl as above with limestone, siltstone and	
12670		silty shale dark grey.	
		Strong gas 12536-12634	
12670-		Marl grey, and limestone, grey very argil	
12759			
12759-		Alternating light grey marl, soft and grey shale	
12815			

WELLSITE SAMPLE DESCRIPTION

COMPANY: Esso Exploration Inc.
WELL (Onshore/Offshore): 30/10-5
HOLE SIZE:
GEOL.: Elf Geologist
DATE: 1974/75
COUNTRY: Norway

DEPTH Ft/M	LITH %	LITHOLOGIC DESCRIPTION	SHOWS & REMARKS
12815-13041		Marl with dark grey shale stringers	
13041-13228		Shale, calcareous, dark grey	
13228-13235		Shale as above	
13235-13546		Shale, fissil, dark grey, abundant pyrite between 13317 and 13382	
13546-13592		Marl brownish grey	
13592-13628		Marl as above	
13628-13727		Shale, fissil grey abundant pyrite	
13727-13828		Shale black indurated (numerous lignite inclusions)	
13828-13858		Shale, brown (indurated lignite inclusions)	
13858-13924		Shale grey	
13924-14025		Shale, fissil, grey brown	

WELLSITE SAMPLE DESCRIPTION

COMPANY: Esso Exploration Inc.

WELL (Onshore/Offshore): 30/10-5

HOLE SIZE:

GEOL.: Elf Geologist

DATE: 1974/75

COUNTRY: Norway

DEPTH Ft/M	LITH %	LITHOLOGIC DESCRIPTION	SHOWS & REMARKS
14025-14055		Shale, fissil., dark grey slightly silty limestone gr. brown stringers	
14055-14432		Shale dark grey as above with limestone stringers trace siltstone, calcareous, xyl.	
14432-14764		As above, qtz. grains, fragements of sandstone, calc. abundant pyrite, abundant coal (5%) at 14764	
14764-14783		Shale grey, brown, silty hard	
14783-14812		As above	
14812-15043		Shale as above, silty	
15043-15059		Shale becoming sandy 15043 Sandstone, fine grain with some coarse grain silic 2 + dolomite cmt.	
15059-15089		Core no. 1 Well tried to flow after coring GCM 17.1 - 8.0 ppg. Inc. MW - 17.4 Cl-37,000 - 43,000 ppm	
15089-15276		Sand as above	
15276-15394		Shale - dark grey	

WELLSITE SAMPLE DESCRIPTION

COMPANY: Esso Exploration Inc.

WELL (Onshore/Offshore): 30/10-5

HOLE SIZE:

GEOL.: Elf Geologist

DATE: 1974/75

COUNTRY: Norway

DEPTH Ft/M	LITH %	LITHOLOGIC DESCRIPTION	SHOWS & REMARKS
15394-15498		Sand fine, with sandstone very fine grain, argil slightly cemented	
15498-15704		Shale dark grey	
15704-15848		Shale as above with coal	
15848-15882		Sand coarse	
15882-15915		Sandstone medium - coarse	
15915-15950		Alternatively sandstone and grey shale	
15950-16118		Shale, silty, dark grey coal and sandstone stringers	
16118-16308		Alternatively sandstone, fine to coarse and shale dark grey with mic.	
16308-16433		Alternating shale dark grey and sandstone fine to course grained with streaks of coal	
16433-16459		Shale dark grey silty	
16459-16480		Shale as above	

WELLSITE SAMPLE DESCRIPTION

COMPANY: Esso Exploration Inc.
WELL (Onshore/Offshore): 30/10-5
HOLE SIZE:
GEOL.: Elf Geologist
DATE: 1974/75
COUNTRY: Norway

DEPTH Ft/M	LITH %	LITHOLOGIC DESCRIPTION	SHOWS & REMARKS
16480-16542		Sandstone, very fine white, silty	
16542-16706		Shale as above, hard	
16706-16748		Shale, grey, hard	
16748-16821		Shale grey with stringers, sandstone, very fine argil, calc. cmt.	
16821-17011		Shale, red with stringers, white limestone	

2. Core Description (Conventional)

CONVENTIONAL CORE DESCRIPTION

COMPANY: Esso Exploration Norway Inc.

DATE: 4/7/75 GEOL.: R.L. Koenig

WELL: 30/10-5

COUNTRY (On/Offshore): Norway

CORE No: 1 INTERVAL: FROM: 15059' TO: 15089'

RECOVERY: 30 FT/M 100 %

DEPTH	LITHOLOGY Contacts Accessories Fossils	Sed. Structures	DIP	POROSITY % OBSER. P E G	Meas.	K	LITHOLOGIC DESCRIPTION (REMARKS)	SHOWS Type-Quality	Environ
15059'			15°				15059'-63' Sandstone, qtzitic, med. tan, micaceous, med. gned, sub ang. well sorted. Poor intergran. Pinpoint por. cement. Trace calcite plus unidentified clear-opaque mineral 1.5" coal seam at 15059.6', fractured and filled with unidentified mineral. Dk-grn-black sh. partings ave. 2mm.	No shows	
15065'							15063'-68 Sh., black, fissile, micaceous, coaly in places.		
15070'							15068'-86 Sand as in 1st interval with occasional thin (.5"-1.5") coal layers. Por. in lower 3' fair. and sand slightly more course grained. Wavy subparallel, discontinuous sh. stringers.	No shows	
15075'									
15080'									
15085'							15086'-89' Sand, same as 15059'-63'.		
15089'									

3. Sidewall Core Description

SW Cores Run No. 1

SIDEWALL CORE DESCRIPTION

Run No: 1 Type: Schl. Hole Size: 12 1/4" 17 1/2"

COMPANY: Esso (Elf Opr.) Norway
DATE: November 16, 1974
WELL: 30/10-5
GEOL: B. Barron

	DEPTH M/Ft	REC. %	LITHOLOGIC DESCRIPTION 2"=100%	POROSITY	SHOW
1	7824 2384.90	MF		-	
2	7824.8 2385.00	70	Sh, grn, microbrecia str., dol clasts		
3	7981.6 2432.80	MF		-	
4	7982.5 2433.00	LB		-	
5	8018 2443.80	MF		-	
6	8018 2444.00	100	Sh, gry-grn to brn-gry w/cg qtz		N/S
7	8083.5 2464.80	MF			
8	8087 2465.00	90	Sh, gry-grn		
9	8123 2475.80	MF	-	-	
10	8123 2476.00	100	Sh - a/a		
11	8153 2484.80	MF	-	-	
12	8153 2485.00	100	Sh - a/a		
13	8206 2501.25	100	Sh, gry, micromicaceous		
14	8207 2501.50	90	Sh - a/a		
15	8316 2534.80	50	Sh, kd-gry, soft		
16	8317 2535.00	80	Sh - a/a, slick planes		
17	8415 2564.80	MF	-	-	
18	8482 2570.00	35	Sh, lt gry, calc, nodulous str.		
19	8493 2588.8	100	Sh, dk gry, sub vertical slick surf.		
20	8496 2589.00	90	Sh - a/a		
21	8572 2612.80	15	Sh, lt br, silty, non-calc.		
22	8573 2613.00	40	Sh, dk gry, silty		
23	8618 2626.80	100	Sh, sk gry, non calc.		
24	8619 2627.00	50	Sh - a/a		
25	8675 2644.00	40	Ls, chlky, wh-gry, argil		
26	8675 2644.00	40	Marl, lt gry, v. soft, sd, fg, calc, cut fluor	-	Oil?
27	8710 2664.80	30	Ls, chalky, creamy col		
28	8743 2665.00	LB	-	-	
29	8822 2689.80	25	Marl, lt gry, v. soft		
30	8825 2690.00	25	Marl, gry, v. soft		

SWC Run No. 2 / Log Run No. 1

SIDEWALL CORE DESCRIPTION

Run No: 2. Type: Schl. Hole Size: 12 1/4" 17 1/2"

COMPANY: Esso (Elf Opr.) Norway
DATE: November 16, 1974
WELL: 30/10-5
GEOL: B. Barron

	DEPTH M/Ft	REC. %	LITHOLOGIC DESCRIPTION 2" = 100%	POROSITY	SHOW
1	6035 1854.80	60	Sh, dk gry/gren		
2	6086 1855.00	100	Sh - a/a		
3	6184 1884.80	90	Sh/clay dk gry		
4	6184 1885.00	90	Sh, dk gry		
5	6226 1909.80	80	Sh - a/a		
6	6266 1910.00	100	Sh - a/a rare qtz grains		
7	6334 1932.80	20	Sh, gry-grn gry, microbrecia structure		
8	6542 1933.00	100	Sh, gry-grn - a/a		
9	6393 1948.50	100	Sh, a/a - brownish		
10	6394 1948.80	70	Sh - a/a		
11	6433 1960.80	90	Sh, soft gry-grn w/bedding planes		
12	6434 1961.00	LB	-	-	
13	6505 1982.80	25	Sd, vfg-silty, well sorted, sub-rnded, cut y. fl., br		
			yl. fl. straw cut.	F-G	Oil
14	6506 1983.00	LB	-	-	
15	6568 2001.80	50	Sh, soft gry-grn micromicac.		
16	6569 2002.00	100	Sh, dk gry, rare qtz, pyrite		
17	6735 2052.80	90	Sh, dk gry		
18	6736 2053.00	90	Sh, lt gry grn, strks dk gry, lignite, pyrite		
19	6889 2099.80	100	Sh, gry-grn, non calc, strgr - sdst, vfg		N/S
20	6890 2100.00	80	Sh, dk gry, slick bdg planes		
21	7070 2154.80	25	Tuff - lt gry - wh frgmts, sh, inc. dk gry		
22	7070 2155.00	60	Sh, dk gry, v. sdy, non calc.		
23	7168 2184.80	30	Sh, w/sdst - fg, calc, horiz-contact		N/S
24	7169 2185.00	30	Sh, dk gry		
25	7244 2208.80	50	Sh, gry, arg., micac.		
26	7247 2209.00	40	Sh, gry, v. sdy, non calc.		
27	7428 2264.00	70	Sh, gry interbeds sltst, arg. micac.		
28	7431 2265.00	50	Sh, sdy, dk gry sdst strg, friable, v. cg.		N/S
29	7515 2306.3	80	Sltst, lt br yellow fluor	P	Oil?
30	7547 2306.50	40	Sh, gry, sli calc., sdy, sdst strg., calc		N/S

SWC/Run No. 3/Log Run No. 1

SIDEWALL CORE DESCRIPTION			COMPANY: Esso (Elf Opr.) Norge	WELL: 30/10-5	
Run No: 3 Type: Schl. Hole Size 17 1/2" 12 1/4"			DATE: November 16, 1974	GEOL: B. Barron	
	DEPTH M / Ft.	REC. % –	2" 100% / LITHOLOGIC DESCRIPTION	POROSITY	SHOW
3)x 1	6455 1967.5	50	Sd, vfg-silt, soft-friable, oil odor, straw cut	F-G	Oil
5)x 2	6457 1968.0	50	Sd a/a / bright yellow fluor	"	Oil
2) 3	6460 1969.0	60	Sd a/a / sub-rounded	"	Oil
9) 4	6463 1970.0	80	Sd a/a	"	Oil
6) 5	6465 1970.5	100	Sd a/a	"	Oil
3) 6	6468 1971.5	50	Sd a/a	"	Oil
7)x 7	6468 1977.5	MF	–	–	–
4)x 8	6491 1978.5	25	Sd a/a		Oil
1) 9	6494 1979.5	70	Sd a/a		Oil
8) 10	6498 1980.5	40	Sd a/a		Oil
5) 11	6501 1981.5	30	Sd, vfg-silty, sub-rounded, friable, odor, cut		
			fluor.	F G	Oil
2) 12	6506 1983.0	40	Sd, vfg-silty, sub-rounded, friable, soft, odor		
			cut fluor	"	Oil
6)x 13	6516 1986.0	90	Sd, v/silty, micac.	"	N/S
3)x 14	6517 1986.5	60	Sd, v/silty, sli. arg., non-calc.	"	N/S
0) 15	6524 1988.5	30	Sd, v/silty, sli. arg.	"	N/S
7) 16	6524 1991.5	90			
4) 17	6550 1996.5	100			
1) 18	6553 1997.5	80	Sh, dk gry, v. sdy, micro-micac., v. sli. calc.		
		MF	at 1963.5, 1964.5, 1966.5, 1967.5, 1973.0, 1973.5,		
			1975.0, 1976.5, 1982.0, 1983.5, 1984.5, - Reshot		
			on run No. 5.		
			x Schl. depth questionable - use data from run		
			No. 5. Schl.-Reshot these? Depths.		
			xx Total SWC/Run 1 thru Run 5.		
			Att 150, Rec. 119, LB 8, MF 22? – Depth 6.		
			Rec. 36SWC where Esso Requested Frigg Res. sand		
			evaluation (B. Barron).		

SW/Gun - Run No. 4 - Log Run No. 1

SIDEWALL CORE DESCRIPTION			COMPANY: Esso (Elf Opr.) Norway	WELL: 30/10-5	
Run No: 4 Type: Schl. Hole Size: 17 1/2" 12 1/4"			DATE: November 16, 1974	GEOL: E. Barron	
	DEPTH M/Ft	REC. % - 2" 100%	LITHOLOGIC DESCRIPTION	POROSITY	SHOW
1	2870/874.75	80%	Silt - vfg, shly, gry-pink-grn, m. soft calc.	P	N/S
2	2871/875.0	100%	Sh, gry, calc., silty, m. soft		"
3	3313/1009.75	100%	Sh, a/a / v. calc.		"
4	3314/1010.0	100%	Sh, a/a		"
5	3772/1149.75	100%	Sh, br, micac., calc., m. hd		"
6	3773/1150.0	100%	Sh, a/a		"
7	3903/1189.75	100%	Sh, a/a		"
8	3904/1190.0	100%	Sh, a/a - sli silty		"
9	4100/1249.75	LB	-	-	-
10	4199/1279.75	LB	-	-	-
11	4101/1250.0	70%	Sh, br, micac., m. hd.		N/S
12	4199/1280.0	100%	Sh, a/a		"
13	4306/1312.25	100%	Sh, calc., waxy-slick brk surface, dense, tough		"
14	4306/1312.5	100%	Sh, a/a / dk gry-grn		"
15	4422/1347.75	LB	-	-	
16	4423/1348.0	100%	Sh, a/a		N/S
17	4674/1424.75	100%	Sh, a/a		"
18	4675/1425.0	100%	Sh, a/a		"
19	4842/1475.75	LB	-	-	
20	4839/1475.0	100%	Sh, a/a / Breciated-appearance - no bedding		N/S
21	5084/1549.75	100%	Sh, a/a		"
22	5085/1550.0	100%	Sh, a/a		"
23	5413/1649.75	100%	h, a/a		"
24	5413/1650.0	100%	Sh, a/a		"
25	5659/1724.75	100%	Sh, a/a		"
26	5659/1725.0	100%	Sh, a/a		"
27	5829/1774.75	100%	Sh, a/a		"
28	5823/1775.0	60%	Sh, a/a		"
29	5987/1824.75	100%	Sh, a/a		"
30	5988/1825.0	100%	Sh, a/a		"

SWC/gun No. 5 Log Run No. 1

SIDEWALL CORE DESCRIPTION

17 1/2"

RUN NO: 5 TYPE: Schl. HOLE SIZE: 12 1/4"

COMPANY: Esso (Elf Opr.) Norway

DATE: November 25, 1974.

WELL: 30/10-5

GEOL.: B. Barron

Bottle Nos.		DEPTH M/Ft	REC. % - 2" = 100%	LITHOLOGIC DESCRIPTION	POROSITY	SHOW
30)	1	3043 927.5	MF		MF	
29)	2	3031 924.0	100%	Sh, v. slty, micac., calc.	MF	N/S
28)	3	1252.0	100%	A/a	MF	N/S
27)	4	4108 4206 1282.0	100%	Sh, dk gry, calc., micac., hard		N/S
26)	5	1345.0	100%	Sh, dk gry, calc., micac.		N/S
25)	6	4413 1474.0	MF		-	
24)	7	4836 4842 1963.5	100%	Sh, w/frag. br ls, siltst. - dol.		N/S
23)	8	4445 1964.5	100%	Sh, dk gry, calc., m. soft, sli. sticky		N/S
22)	9	1966.5	20%	Sh, silty strks w/gas? Fluor white cut	F-G	Gas Show
21)	10	6432 1967.0	25%	Sd, vfg-silt, soft friable, sub-rounded, Gas odor		
		6453		no fluor, cut-white fluor	"	Gas
20)	11	6457 1968.0	40%	A/a - w/dull y./wh fluor	"	Gas G/O cont.
19)	12	6473 1973.0	50%	A/a Oil odor, br. yel. fluor, straw cut w/br. yel.		
				fluor	"	Oil
18)	13	6475 1973.5	45%	A/a oil/saturated	"	"
17)	14	6480 1975.0	40%	A/a	"	"
16)	15	6485 1976.5	40%	A/a	"	"
15)	16	6488 1977.5	40%	A/a	"	"
14)	17	6503 1982.0	45%	A/a	"	"
13)	18	6508 1983.5	45%	A/a - br stain	"	"
12)	19	6509 1984.5	30%	A/a	"	at O/W Oil cont.
11)	20	6512 1985.0	70%	Sh, silty w/silt strgs, musty gas odor	P-strk	" strk cut fluor
10)	21	6516 1986.0	70%	Sd, vfg-silty-sli. arg. sub-rnd., non calc, micac	F-G	N/S
9)	22	6517 1986.5	70%	A/a - less silty	"	N/S
8)	23	7824 2384.8	60%	Sh, dk gry, dense, waxy, hard, non calc.		N/S
7)	24	7979 2432.0	50%	A/a - hard, calc.		N/S
6)	25	7989 2435.0	90%	A/a		N/S
5)	26	8018 2443.8	90%	A/a		N/S
4)	27	8100 2468.8	40%	A/a		N/S
3)	28	8123 2475.8	80%	A/a		N/S
2)	29	8152 2484.8	20%	Sh, dk, gry-grn, sli. micac., waxy, w/strks,		
				hd gry-br marl		N/S
1)	30	2569.8 8431	100%	Sh, dk,gry-grn, sli micac., waxy		N/S

SIDEWALL CORE DESCRIPTION

COMPANY: Esso Exploration Norway Inc
WELL: 30/10-5
Run No. 6 Type: Schl. Hole Size: 12 1/4
DATE: February 14, 1975
GEOL: B. Koenig

t No.	DEPTH	REC.	LITHOLOGIC DESCRIPTION	POROSITY	SHOW
30	10256 3126	60	Sh, med. grey, calc., slightly silty, pyrite		NS
29	10341 3152	50	Sh, med. grey, slightly calc., fissile, slightly		
			silty		NS
28	10430 3179	MF			
27	10516 3205	20	Sh, dk grey, slightly calc, fissile		NS
26	10597 3230	20	Sh, med - dk grey, calc. fissile		NS
25	10656 3248	MS			
24	10696 3260	35	Sh, lt - med. grey, calc., fissile		NS
23	10744 3275	20	Sh - A/A		NS
	10827 3300	20	Sh - A/A		NS
21	10909 3325	0			
20	10991 3350	20	Sh - A/A		NS
19	11073 3375	25	Sh - A/A		NS
18	11148 3395	35	Sh - A/A		NS
17	11227 3425	35	Sh, med - grey, calc., fissile, nodule of lt.		
			grey marl		NS
16	11319 3450	30	Sh, dk grey, slightly calc., fissile		NS
15	11394 3473	30	Sh, lt. grey, calc, fissile		NS
14	11467 3495	25	Sh, med. grey, calc., w/thin black sh interbeds		NS
13	11539 3517	30	Sh, med grey, calc., thin paralell laminae		NS
12	11604 3537	30	Sh, clac. w/marl lt-med grey laminated		NS
11	11722 3573	25	Sh/Marl laminae - A/A		NS
10	11827 3605	15	Sh, med dk grey, calc., tr. pyr.		NS
9	11896 3626	15	Sh, dk grey, calc, fissile		NS
8	11949 3642	10	Marl, lt grey, soft, w/sh and org. Ls		Poor fluor No cut
7	12057 3675	10	Marl, lt grey-tan, soft		NS
6	12133 3698	0			
5	12221 3725	0			
4	12290 3746	5	Marl, lt grey-tan, soft		NS
3	12385 3775	0			
2	12416 3785	LB			
1	12451 3795	0			
			Note: 30 cores shot		
			2 missfire		
			~~1 lost bullet~~		
			5 no recovery		
			22 recovered		

SIDEWALL CORE DESCRIPTION

Run No: 8 Type: Schl. Hole Size: 12 1/4

COMPANY: Esso Exploration Norway Inc.
DATE: February 14, 1975

WELL: 30/10-5
GEOL: R.L. Koenig

Core No.	DEPTH M/Ft.	REC.	LITHOLOGIC DESCRIPTION	POROSITY	SHOW
30	9830 2722	90	Sh, med grey, thin paralell alminae, poorly calc.		NS
29	9834 2723	LB			
28	9837 2754	20	Sh, med grey mod. calc., mod. hd, fissile, micac.		NS
27	9839 2755	15	Sh and Marl, interlaminated, lt-med grey		NS
26	9088 2770	60	Sh, med grey, v. calc., fissile, mic.		NS
25	9091 2771	60	Sh, med grey, v. calc., fissile		NS
24	9186 2800	50	Sh, med grey, mod. calc., mod hd, tr silt		NS
23	9190 2801	70	Sh, med-dk grey, non-calc., soft, fissile		NS
22	9301 2835	60	Sh, med grey, v. calc., mod hd, thin paralell		
			wavy laminae		NS
21	9304 2836	50	Sh, med-dk grey, slightly clac., soft, fissile,		
			v. thin laminae		NS
20	9432 2875	80	Sh, med-dk grey, non-calc., soft fissile		NS
19	9436 2876	LB			
18	9498 2895	60	Sh, med grey, non-calc., fissile, micac.		NS
17	9501 2896	50	Sh, med grey, non-calc., mod hd		NS
16	9560 2914	50	Sh, med grey, soft w/mod hd, calc., nodules		NS
15	9564 2915	LB			
14	9603 2927	30	Marl and calc. Sh lt-med grey, mod hd		NS
13	9606 2928	30	Marl and calc. Sh, med-dk grey, soft, fissile,		
			thin wavy laminae, pyrite		NS
12	9695 2955	100	Sh, dark grey, non-calc., fissile, mod hd., micac		NS
11	9698 2956	80	Sh, med -grey-grey-green, non-calc., micac.,		
			fissile (Glauc?)		NS
10	9777 2980	70	Sh, med grey, slightly calc., micaceous fissile		
			very thin, wavy laminae		
9	9780 2081	15	Sh, med grey-grey-green, calc., mod hd,		
			glauconitic		NS
8	9908 3020	90	Sh, med grey w/marl, lt grey, mottled, fissile		NS
7	9911 3021	90	Sh, med-dk grey, calc., soft, fissile		NS
6	10006 3050	90	Marl- A/A		NS
5	10010 3051	100	Marl, lt grey, clayey, soft		NS
4	10089 3075	LB			
3	10092 3076	LB			
2	10111 3102	40	Siltstone, tan lt grey, slightly calc.		NS

SIDEWALL CORE DESCRIPTION

COMPANY: Esso Exploration Norway Inc
WELL: 30/10-5
Run No. 7 Type Schl. Hole Size 12 1/4
DATE: February 14, 1975
GEOL: B. Koenig

ot No.	DEPTH	REC.	LITHOLOGIC DESCRIPTION	POROSITY	SHOW
	12250				
30	3127	LB			
	10344				
29	3153	60	Clay, med grey, soft, sticky		NS
	10433				
28	3180	LB			
	10516				
27	3206	30	Sh, med grey, calc., fissile, slightly macaceous		NS
	10600				
26	3231	30	Sh - A/A		NS
	10659				
25	3249	MF			
	10699				
24	3261	40	Sh, med grey, v. calc., fissile		NS
	10748				
23	3276	90	Sh - A/A		NS
	10830				
22	3301	LB			
	10925				
	3330	LB			
	10974				
20	3351	LB			
	11076				
19	3376	LB			
	11142				
18	3396	LB			
	11240				
17	3426	LB			
	11322				
16	3451	LB			
	11398				
15	3474	LB			
	11470				
14	3496	20	Sh, calc., med grey, fissile, paralell laminae		NS
	11542				
13	3518	30	Sh, calc., med - dk grey, fissile		NS
	11658				
12	3538	20	Sh, calc., med grey, fissile, micaceous		NS
	11726				
11	3574	25	Sh, med grey, calc., fissile w/dk grey contorted		
			laminae		
	11831				
0	3606	20	Marl, med grey, soft, fissile		NS
	11902				
9	3629	25	Sh, med grey, calc., fissile		NS
	11942				
8	3640	5	Marl, med grey, micac., contorted laminae		Poor fluor No cut
	12060				
7	3676	20	Marl, med grey, soft		NS
	12303				
6	3750	LB			
	12238				
5	3730	20	Sh, med grey, v. calc., micac.		NS
	12293				
4	3747	10	Sh - A/A		NS
	12369				
3	3770	LB			
	12402				
2	3780	15	Sh, med dk grey, calc., fissile, soft		NS
	12434				
1	3790	10	Sh, med dk grey, fissile, calc., soft		NS
			Note: 30 cores shot		
			1 missfire		
			12 lost bullets		
			0 no recovery		

17 recovered

SIDEWALL CORE DESCRIPTION

Run No: 8 p. 2 Type: Schl. Hole Size 12 1/4

COMPANY: Esso Exploration Norway Inc
DATE: February 14, 1975

WELL: 30/10-5
GEOL: R.L. Roenig

DEPTH M/Ft	REC.	LITHOLOGIC DESCRIPTION	POROSITY	SHOW
10180 3103	LB			
		Note: 30 cores shot		
		0 missfire		
		6 lost bullets		
		24 recovered		

SIDEWALL CORE DESCRIPTION

COMPANY: Esso Exploration Norway Inc
WELL: 30/10-5
Run No. 9 Type: Schl. Hole Size 12 1/4
DATE: February 14, 1975
GEOL: R.L. Koenig

No.	DEPTH M / FT	REC.	LITHOLOGIC DESCRIPTION	POROSITY	SHOW
30	8950 2731	0			
29	9442 2878	LB			
28	9554 2912	100	Sh, med grey, calc., fissile		NS
27	10572 3070	100	Sh, lt grey, slightly calc., uneven laminae of brush		NS
26	10629 3072	90	Siltstone, lt grey-brownish grey, calc., v. arg.		NS
25	10174 3101	100	Sh, lt grey, calc, fissile, (striated?)		NS
24	10259 3127	80	Sh, med-dk grey, calc., friable, slightly silty, mic		NS
23	10427 3178	LB			
22	10433 3180	LB			
	10656 3248	25	Sh, brn-grey, slightly calc., micac., fissile		NS
20	10830 3301	20	Clay/Sh, soft, fissile, calc.		NS
19	10966 3324	20	Sh, grey, calc., soft		NS
18	10972 3326	Sh,	med grey, calc., fissile, mic.		NS
17	10981 3348	30	Sh - A/A		NS
16	11076 3376	50	Sh, lt grey, v. calc., hd		NS
15	11145 3397	25	Sh, med grey, calc, mod. hd, friable		NS
14	11240 3426	20	Sh - A/A		NS
13	11312 3448	10	Sh, med grey, calc., thin brnish inclusiors		NS
12	11381 3469	20	Marl, lt grey, v. soft, (micro-breccia structures?)		NS
11	11827 3605	20	Sh, lt grey, calc., friable		NS
10	11936 3638	15	Marl, grey, sticky, grey, interbeds		NS
9	12136 3699	0			
	12142 3701	0			
7	12221 3725	0			
6	12270 3740	0			
5	12277 3742	0			
4	12352 3765	0			
3	12375 3772	0			
2	12414 3793	25	Sh, dk grey, calc., friable, mod hd, silty		
1	12461 3798	0			
			Note: 30 cores shot		
			0 missfire		
			3 lost bullets		
			9 no recovery		
			13 recovered		

SIDE WALL CORES DESCRIPTION

WELL :	RUN N° : 10
LICENCE :	PAGE N° : 2
	DATE : 11.9%.7%

SERVICE COMPANY :	[illegible]
ASKED :	[illegible]
RECOVERED :	22
SHOT :	24
LOST :	2
FULL BULLET :	3

tr : trace - M : medium - G : good

N°	DEPTHS M/Ft	REC	LITHOLOGY	Fluorescence	CUT
[illegible]	15056 [illegible]	15	sandstone fine very coarse angular dark grey shale inclusions		
[illegible]	15039 [illegible]		misfire		
23	15026 [illegible]	/	lost		
22	14944 [illegible]	/	lost		
21	14862 [illegible]		misfire		
20	14792 [illegible]	[illegible]	shale fissile black grey micaceous sandy		

SIDE WALL CORES DESCRIPTION

WELL :	RUN N° 13	SERVICE COMPANY :	SI
LICENCE :	PAGE N°	ASKED :	28
	DATE : 11.04.78	RECOVERED :	22
		SHOT :	21
		LOST :	2
		FULL BULLET :	10

tr : trace - M : medium - G : good

N°	DEPTHS M/Ft	REC	LITHOLOGY	Fluorescence	CUT
1	16172 m729				
2	16124 m514,5	0			
3	16037 m388	0			
4	15968 m287	E	shale fissile very soft dark brownish grey (and mudcake)		
5	15932 m232	0			
6	15883 m164	15	sandstone fine medium subangular grains friable		
7	15843 m829	40	coal		
8	15796 m810,5	0			
9	15674 m777,5	0			
10	15620 m7?.1	20	sandstone very fine fine very micaceous argillaceous friable black coloured by abundant lignite particles		
11	15548 m739	30	sandstone brownish fine medium very argillaceous massive		
12	15482 m719	20	sandstone very fine fine moderate sorted friable locally argillaceous		
13	15417 m689	25	sandstone fine coarse angular subangular grained rare muscovite lignite shale joint		
14	15381 m688	10	shale fissile very soft dark brownish grey		
15	15305 m665	0			
16	15240 m645	30	sandstone very fine / siltstone buff large massive; thin lignite shale interbed		
17	15123 m609,5		misfire		
18	15097 m601,5	0			

SIDE WALL CORES DESCRIPTION

WELL :	RUN N°	10	SERVICE COMPANY :
LICENCE :	PAGE N°	2	ASKED :
	DATE :	11.04.75	RECOVERED : 22
			SHOT : 21
			LOST : 0
			FULL BULLET : 0

tr : trace - M : medium - G : good

N°	DEPTHS M/Ft	REC %	LITHOLOGY	Fluorescence CUT
1	15056	11	Sandstone fine very coarse angular dark grey shale inclusions	
20	15039		friable	
21	15026	/	lost	
22	14944	/	lost	
23	14862		friable	
24	14792		Shale friable black grey siliceous sandy	

SIDE WALL CORES DESCRIPTION

WELL : [illegible]	RUN N° [illegible]
LICENCE :	PAGE N° [illegible]
	DATE : [illegible],75

SERVICE COMPANY :	[illegible]
ASKED :	[illegible]
RECOVERED :	[illegible]
SHOT :	[illegible]
LOST :	[illegible]
FULL BULLET :	[illegible]

tr : trace - M : medium - G : good

N°	DEPTHS	REC	LITHOLOGY	Fluorescence	CUT
1	16983 [illegible]	[illegible]			
[illegible]	16995 [illegible]	[illegible]			
[illegible]	16893 [illegible]				
[illegible]	15813 [illegible]	[illegible]	shale fissile very soft brownish grey		
[illegible]	16757 5107,5	10	sandstone fine medium poor cemented and shale dark grey sandy	/	
[illegible]	16109 5033	[illegible]			
7	16644 [illegible]	[illegible]	shale indurated light grey with sandstone interbeds, slickensides		
8	16565 [illegible]	[illegible]	sandstone white fine medium moderate bad sorted shale and lignite inclusions	/	
[illegible]	16552 [illegible]	[illegible]	sandstone fine medium angular grains finely pyritic some micas interbeds of shale fissile dark grey sandy		
[illegible]	16539 [illegible]	[illegible]	shale fissile very soft dark to [illegible] grey		
11	16510 [illegible]	[illegible]	sandstone fine medium very bad sorted shale inclusions scattered quartz gravelles	/	
12	16473 [illegible]		siltstone whitish and shale fissile very soft dark grey (sand medium)		
13	16424 [illegible]				
14	16352 [illegible]	[illegible]	sandstone white fine very coarse poorly cemented friable	/	
[illegible]	16327 [illegible]	[illegible]	sandstone a.a.		
[illegible]	16239 [illegible]	[illegible]			
[illegible]	16142 [illegible]				
[illegible]	16027 [illegible]	[illegible]	shale indurated brownish grey slickensides		

SIDE WALL CORES DESCRIPTION

WELL :	RUN N°
LICENCE :	PAGE N°
	DATE :

SERVICE COMPANY :	
ASKED :	
RECOVERED :	
SHOT :	
LOST :	
FULL BULLET :	

T : trace - M : medium - G : good

N°	DEPTHS	REC	LITHOLOGY	Fluorescence CUT
1	15001		hate fissile soft dark grey finely micaceous and pyritic	
	15074	E	shale very soft dark grey	
21	15387		shale a.a.	
22	15372			
23	15369		sandstone fine medium argillaceous poorly consolidated	
24	15010			

SIDE WALL CORES DESCRIPTION

WELL : [illegible]	RUN N° [illegible]
LICENCE :	PAGE N° 1
	DATE : [illegible]

SERVICE COMPANY : [illegible]	
ASKED :	[illegible]
RECOVERED :	22
SHOT :	23
LOST :	[illegible]
FULL BULLET :	[illegible]

tr : trace - M : medium - G : good

N°	DEPTHS M/Ft	REC	LITHOLOGY	Fluorescence	CUT
1	16934 / 5161,5	0			
	16913 / 5155		misfire		
3	16864 / 5140	[illegible]	shale dark brownish grey to light red micaceous pyrite (and mudcake)		
4	16716 / 5095	60	shale very soft light grey sandy muscovite		
5	16673 / [illegible]	[illegible]	shale very soft partly light grey partly brownish microbreccia texture		
6	16601 / 5060	0			
7	16453 / 5015	E	shale fissile very soft dark brownish grey		
8	16421 / 5005	0			
9	16283 / [illegible]	50	shale very soft grey (mixed with mudcake)		
[illegible]	16217 / [illegible]	25	shale very soft dark grey dark brownish grey very sandy		
11	16142 / [illegible]	E	shale very soft grey sandy		
12	16109 / [illegible]	[illegible]	shale soft dark brownish grey sandy with muscovite and pyrite		
13	16076 / [illegible]	10	shale fissile very soft grey very sandy		
14	15945 / [illegible]	0			
15	15920 / [illegible]	[illegible]			
16	15810 / [illegible]	[illegible]	coal bright with light red inclusions		
17	15748 / [illegible]	[illegible]	siltstone fine well sorted micaceous pyritic [illegible] laminae		
	15674 / [illegible]	[illegible]	shale fissile very soft dark brownish grey		

SIDE WALL CORES DESCRIPTION

WELL :	RUN N° 12
LICENCE :	PAGE N° 2
	DATE : 12.04.75

SERVICE COMPANY :	[illegible]
ASKED :	2[illegible]
RECOVERED :	2[illegible]
SHOT :	2[illegible]
LOST :	[illegible]
FULL BULLET :	[illegible]

tr : trace - M : medium - G : good

N°	DEPTHS	REC	LITHOLOGY	Fluorescence	Cut
[illegible]	15633 [illegible]	/	lost		
20	15371 [illegible]	20	shale fissile very soft dark brownish grey sandy		
21	15305 [illegible]	20	Sericitized very fine fine angular argillaceous / sandy shale very micaceous	/	
22	15010 [illegible]	/	lost		
23	14944 [illegible]	15	shale a.a.		
24	14862 [illegible]	10	shale a.a.		

VI. Reservoirs:

The Triassic (?) consisted of shale and thin limestone stringers. No reservoirs were recognized.

The Lias consisted of shale and sandstone stringers. No good reservoirs were present.

The Jurassic (Dogger) had sands present from 15,036 feet to 15,269 feet, 15,394 feet to 15,620 feet and 15,725 feet to 15,768 feet. The porosity ranged from 19 to 22 per cent.

The Lower Cretaceous is premarily a shale. No reservoir were nated.

The Upper Cretaceous consist primarily of interbeds of tight micritic limestone, marl and shale. No reservoir beds were present.

The Danian consists of silty line and dark grey shale. No reservoir beds were nated.

The Paleocene contains 875 feet of potential sandstone reservoirs. No shows were encountered.

The Eocene section contains a sandstone reservoir (Frigg Clastic Tonque) from 6,446 feet to 6,668 feet. Good gas shows were present from 6,446 feet to 6,476 feet and good oil shows from 6,476 feet to 6,491 feet. Below 6,491 feet the section is wet.

The Oligocene section consists entirely of siltstone and clay. No reservoir beds were nated.

VII. Hydrocarbon:

The only shows encountered in 30/10-5 were in the Eocene (Frigg Clastic Tonque) and the Jurassic (Dogger).

The Frigg Clastic Tonque consisted of 44 feet of pay. The upper 30 feet being gas and the lower 14 feet oil.

The Dogger sand had a slight fluoresence and cut in the upper 30 feet of section.

VIII. Conclusion:

Esso's 30/10-5 reached a total depth of 17,011 feet and bottomed in questionable Triassic. The only good shows encountered were in the Eocene (Frigg Clastic Tonque). The deep objective, Jurassic (Dogger Sand) was discouraging from an exploration view due to the lack of hydrocarbone.

REGISTRERT 21 NOV. 1974
STATENS OLJEDIREKTORAT

SIDE WALL CORES DESCRIPTION

WELL : 30/10-5.	RUN N° 1	SERVICE COMPANY : SYE	
LICENCE :	PAGE N° 1	ASKED : 30	
	DATE : 16/11/74	RECOVERED : 28	
		SHOT : 23	
		LOST : 2	
		FULL BULLET : 21	

tr : trace - M : medium - G : good

N°	DEPTHS	REC %	LITHOLOGY	Fluorescence Cut
1	2690	25	marl grey very soft	
2	2665	/	lost	
3	2645	40	marl light grey very soft and sand fine well sorted subangular calcareous cemented glauconit pale yellow flue and cut	
4	2627	50	shale slightly indurated dark grey no calcareous	
5	2613	40	shale soft dark grey silty no calcareous	
6	2589	90	shale slightly indurated dark grey subvertical slick flaser	
7	2570	35	shale light grey calcareous "nodulous" structure	
8	2535	80	shale indurated dark gray subvertical slick flaser	
9	2501,5	90	shale fissile gray micromicaceous	
10	2485	100	shale greenish grey grumelous	
11	2476	100	shale a.a.	
12	2465	90	shale a.a micromicaceous locally silty	
13	2444	100	shale greenish grey brownish grey in part with coarse quartz and some rounded fraction	
14	2433	/	lost	
15	2385	70	shale greenish microbreccia structure clasts of dolomite hard microcrystalline	
16	2689,8	25	marl grey very soft	
17	2664,8	30	chalky limestone friable creamy	
18	2644	40	chalky limestone friable whitish greyish and argillaceous in part	

SIDE WALL CORES DESCRIPTION

WELL : 30/10-5	RUN N° 1	SERVICE COMPANY : SIE	
LICENCE : —	PAGE N° 2	ASKED : 30	
	DATE : 16/11/74	RECOVERED : 28	
		SHOT : 13	
		LOST : 2	
		FULL BULLET : 11	

tr : trace - M : medium - G : good

N°	DEPTHS	REC %	LITHOLOGY	Fluorescence			CUT
					tr	M	G	
* 19	2626,8	100	Shale slightly indurated dark grey no calcareous				
* 20	2612,8	15	Shale fissile light brownish silty no calcareous				
* 21	2588,8	100	Shale fissile dark grey subvertical slick surfaces				
* 22	2563,8		misfire				
* 23	2534,8	50	Shale soft dark grey grumeleux				
* 24	2501,25	100	Shale fissile grey micromicaceous				
* 25	2484,8		misfire				
* 26	2475,8		misfire				
* 27	2464,8		misfire				
* 28	2443,8		misfire				
* 29	2432,8		misfire				
* 30	2384,8		misfire				
			* ESSO's set				

SIDE WALL CORES DESCRIPTION

WELL : 30/10-5	RUN N° 2
LICENCE :	PAGE N° 1
	DATE : 16/11/74

SERVICE COMPANY :	SDE
ASKED :	30
RECOVERED :	28
SHOT :	30
LOST :	2
FULL BULLET :	28

tr : trace - M : medium - G : good

N°	DEPTHS	REC %	LITHOLOGY	Fluorescence CUT
1	2306,5	40	Shale grey slightly calcareous sandy thin interbeds of sandstone poorly consolidated calcareous	
2	2265	50	Sandy shale dark grey micaceous grading to sandstone fiable fine to very coarse grained argillaceous	/
3	2209	40	shale grey very sandy no calcareous	
4	2185	30	shale dark grey laminated	
5	2155	60	"shale" grey to light grey white pigmented (looks like weathered feldspaths no calcareous) = tuff	
6	2100	80	shale dark grey rare muscovite and pyrite stick plane	
7	2053	90	shale light greyish grey bluish grey locally dark greyish some lignitic debris pyrite	
8	2002	100	shale dark grey rare angular quartz pyrite	
9	1983	/	lost	
10	1961	/	lost	
11	1948,5	100	shale fissile brownish	
12	1933	100	shale soft grey slightly greenish microbreccia structure resorbing fisures	
13	1910	100	shale a.a. rare quartz grains	
14	1885	90	shale indurated grey scattered muscovite	
15	1855	100	shale fissile dark greenish grey	
16	2306,25	80	siltstone beige bright yellow fluo	
17	2264,8	70	shale grey liners interbeds of argillaceous micaceous siltstone	/
18	2208,8	50	shale fissile grey dark grey rare fine quartz	

SIDE WALL CORES DESCRIPTION

WELL : 30/10-5	RUN N° 2	SERVICE COMPANY : SBE	
LICENCE :	PAGE N° 2	ASKED : 30	
	DATE : 16/11/74	RECOVERED : 28	
		SHOT : 30	
		LOST : 2	
		FULL BULLET : 28	

tr : trace - M : medium - G : good

N°	DEPTHS	REC	LITHOLOGY	Fluorescence		
					Visio	CUT
19	2184,8	30	Shal dark grey and sandstone fine calcareous argillaceous horizontal contact.			
20	2154,8	25	tuff light grey white pigmented and shale heterogene dark grey			
21	2099,8	100	shal greenish grey no calcareous bed of fine calcareous sandstone			
22	2052,8	90	Shale fissile grey			
23	2001,8	50	Shal soft dark greenish grey micromicaceous.			
24	1982,8	25	Sand fine angular well sorted muscovite tuffs yello direct fluo tuffs yellow fluo on cut			
25	1960,8	90	Shal soft greenish grey with bedding planes			
26	1948,8	70	Shal a-a			
27	1932,8	20	Shal soft grey to greenish grey micabreccia structure			
28	1909,8	80	Shal grey			
29	1884,8	90	Shal/clay dark grey			
30	1854,8	60	Shal very soft dark grenish grey			
			* ESSO's set			

ERAP - DIRECTION EXPLORATION n° 25029

SIDE WALL CORES DESCRIPTION

WELL : 30/10-5	RUN N° 3	SERVICE COMPANY : SIE	
LICENCE :	PAGE N° 1	ASKED : 30	
	DATE : 16/11/74	RECOVERED : 30	
		SHOT : 17	
		LOST : 0	
		FULL BULLET : 17	

tr : trace - M : medium - G : good

	N°	DEPTHS	REC	LITHOLOGY	Fluorescence	CUT
*	1	1997,5	80	Shale dark grey very sandy micro micaceous very slightly calcareous		
*	2	1983	40	Sand fine to very fine angular subangular grain fair sorted scattered green and reddish minerals rare coarse pearls and remanent		
*	[redacted]	1971,5	50	Sand a.a		
*	4	1956,5	100	Shale	/	
*	5	1981,5	30	Sand a.a		
*	6	1970,5	100	Sand a.a		
*	7	1991,5	90	Sand a.a	/	
*	8	1980,5	40	Sand a.a		
*	9	1970	80	Sand a.a		
*	10	1988,5	30	Sand a.a	/	
*	[redacted]	1979,5	70	Sand a.a		
*	12	1969,5	60	Sand a.a		
	13	1986,5	60	Sand a.a ?	/	
	14	1978,5	25	Sand a.a ?		
	15	1968	60	Sand a.a ?		
	16	1986	90	Sand a.a ?	/	
	17	1977,5		Misfire		
	18	1967,5	50	Sand a.a ?		
	[redacted]					

SIDE WALL CORES DESCRIPTION

WELL :	30/10-5	RUN N°	3
LICENCE :		PAGE N°	2
		DATE :	16/11/74

SERVICE COMPANY :	SVE
ASKED :	30
RECOVERED :	30
SHOT :	17
LOST :	0
FULL BULLET :	17

tr : trace - M : medium - G : good

N°	DEPTHS	REC	LITHOLOGY	Fluorescence	CUT
19	1985		misfire		
20	1976,5		misfire		
21	1967		misfire		
22	1984,5		misfire		
23	1975		misfire		
24	1966,5		misfire		
25	1983,5		misfire		
26	1973,5		misfire		
27	1964,5		misfire		
28	1982		misfire		
29	1973		misfire		
30	1963,5		misfire		
			reservoir run taken at the ESSO's request		
			for the misfire shots see clabs run 5		
			for shots below 4012 depths uncertain - not taken in charge		

SIDE WALL CORES DESCRIPTION

WELL : 30/10-5	RUN N° 4
LICENCE :	PAGE N° 1
	DATE : 16/11/74

SERVICE COMPANY :	SYE
ASKED :	30
RECOVERED :	26
SHOT :	30
LOST :	4
FULL BULLET :	26

tr : trace · M : medium · G : good

N°	DEPTHS	REC %	LITHOLOGY	Fluorescence	CUT
1	1825	100	shale dark greenish grey tough medium hard		
2	1775	60	shale a.a		
3	1725	100	shale medium hard dark grey waxy		
4	1824,8	100	shale a.a		
5	1774,8	100	shale a.a		
6	1724,8	100	shal a a		
7	1650	100	shal a a breciati appearance		
8	1550	100	shal a a		
9	1475	100	shal a a		
10	1649,8	100	shal a a waxy slick surface / break calcareous		
11	1549,8	100	shal a.a		
12	1474,8	/	lost		
13	1425	100	shal a a hard		
14	1348	100	shal a a		
15	1312,5	100	shal a a		
16	1424,8	100	shal a a		
17	1347,8	/	lost		
18	1312,25	100	shal a a medium hard		

SIDE WALL CORES DESCRIPTION

WELL : 80/10-5	RUN N° 4
LICENCE :	PAGE N° 2
	DATE : 16/11/74

SERVICE COMPANY :	SDE
ASKED :	30
RECOVERED :	26
SHOT :	30
LOST :	4
FULL BULLET :	26

tr : trace - M : medium - G : good

N°	DEPTHS	REC %	LITHOLOGY	Fluorescence	CUT
19	1280	100	Shale brown finely micaceous medium hard non calcareous		
20	1250	70	Shale a.a		
[redacted]	1190	100	Shale a.a calcareous slightly silty		
* 22	1279,8	/	lost		
* 23	1249,8	/	lost		
* 24	1189,8	100	Shale a.a		
25	1150	100	Shale a.a		
26	1010	100	Shale a.a very calcareous		
27	875	100	Shale grey silty calcareous medium soft		
* 28	1149,8	100	Shale brownish finely micaceous medium hard calcareous		
* [redacted]	1009,8	100	Shale a.a very calcareous		
* 30	874,8	80	Silt shaly pink green grey calcareous		
			* Esso's set		
			made a class 9bis* in part of 9		
[redacted]					

SIDE WALL CORES DESCRIPTION

WELL :	30/10-5
LICENCE :	
RUN N°	5
PAGE N°	1
DATE :	16/11/1974

SERVICE COMPANY :	SE
ASKED :	30
RECOVERED :	30
SHOT :	28
LOST :	0
FULL BULLET :	28

tr : trace - M : medium - G : good

N°	DEPTHS	REC %	LITHOLOGY	Fluorescence	CUT
* 1	2569,8	100	Shale dark grey green slightly micro micaceous waxy		
* 2	2484,8	20	Shale a.a with streaks of hard grey brown marl		
* 3	2475,8	80	Shale dark gray dens waxy hard non calcareous		
* 4	2464,8	40	Shale a.a		
* 5	2443,8	90	Shale a.a		
* 6	2435	90	Shale a.a		
7	2432	50	Shale a.a hard calcareous		
8	2384,8	60	Shale a.a		
9	1986,5	70	Sand very fine grained silty slightly argillaceous subrounded non calcareous		
10	1986	70	Sand a.a more silty micromicaceous		
11	1985	70	Shale silty with silt stringers gas odor		
12	1984,5	30	Sand very fine / silt Soft friable subrounded oil odor straw cut yellow fluo		
13	1983,5	45	Sand a.a		
14	1982	45	Sand a.a		
15	1977,5	40	Sand a.a		
16	1976,5	40	Sand a.a		
17	1975	40	Sand a.a		
18	1973,5	45	Sand a.a		

SIDE WALL CORES DESCRIPTION

WELL : 30/10-5	RUN N° 5
LICENCE :	PAGE N° 2
	DATE : 16/11/74

SERVICE COMPANY :	S2E
ASKED :	30
RECOVERED :	30
SHOT :	28
LOST :	0
FULL BULLET :	28

tr : trace - M^d : medium - G : good

N°	DEPTHS	REC %	LITHOLOGY	Fluorescence	CUT
19	1973	50	Sand a a		
20	1968	40	Sand a a with dull yellow/white fluo		
21	1967	25	Sand a a gas odor no direct fluo white fluo on cut		
22	1966,5	20	Shale grey silty streaks		
23	1964,5	100	Shale dark grey calcareous medium soft slightly sticky		
24	1963,5	100	Shale a a with fragments of tuffaceous limestone siltstone dolomit		
25	1474		miss fire		
26	1345	100	Shale dark grey calcareous		
27	1282	100	Shale a a hard		
28	1258	100	Shale very silty micaceous calcareous		
29	924	100	Shale a a		
30	927		miss fire		

* Esso's set

Esso Exploration Norway
P O Box 560

4001 Stavanger

OD /75/JAa/II ~~7345 Frigg~~ ~~7280.5 30/10-1~~ 7915.3 30/10-5

LOGS FROM WELLS 30/10-1 AND 30/10-5.

We refer to telephoneconversations with yours mr. Doug Grout.

The Petroleum Engineering Directorate of the Department of Energy in U.K. and the Norwegian Petroleum Directorate are currently cooperating on a log analysis study of the Frigg field. The study is conducted by the Petroleum Engineering Directorate, with one log analyst from the Norwegian Petroleum Directorate assigned to the study group.

In order to make the analysis complete, it is necessary also to include the logs from the Esso wells 30/10-1 and 30/10-5.

The Norwegian Petroleum Directorate requests if these logs can be made available to the Petroleum Engineering Directorate. At your choice this can be done directly from Esso to the british authorities, or from this directorate.

We hope for a favourable consideration of this request.

By authority

Jarl A Aagedal

Hans Lye

ELF NORGE A/S

30/10-5

Transfer of Bottom Hole Sample from MFE Chamber

16th April 1975
24th April 1975

N.B. – Only the chapters marked with a cross appear in this report.

N.B. – Only the subjects marked with a cross appear in this chapter.

Object:

To transfer, under pressure, reservoir fluid caught in Johnston MFE chambers during a Drill Stem Test on well 30/10-5.

Description:

The Drill Stem Test was carried out in the perforated interval 3638 - 3644 metres, Dowell Schlumberger running the testing tools.

Three MFE chambers were run and fluid under pressure was caught in two of them.

Of these two, one was checked at the well site, the contents recombined and one 600 cc sample transferred to a shipping bottle. The remainder of the sample was then depressurised and caught in a Jerrycan. The sample proved to be mud and water with some gas.

The second chamber, was shipped to the Elf Base at Dusevik where the above recombination was carried out. This sample was found to be mud and gas.

☐ **9** 1 – Surface sample

☒ **9** 2 – Bottom hole sample

N.B.- Only the subjects marked with a cross appear in this chapter.

FLOPETROL

BOTTOM HOLE SAMPLE

Base: North Sea
Date of Sampling: 18.4.75

Customer: ELF NORGE A/S
Field: _____ Well: 30/10-5
Service Order No.: _____ Sampling No.: 1
Perforations: 3638 - 3644 metre

Nature of Fluid Sampled: Water, mud and gas
Sampling Depth:

Reservoir and Well Charisteristics

Producing Zone:
Interval Sampled: As Perforations

Depth Origin: RKB
Z:
Tubing - Diameter: _____ Shoe: _____
Casing - Diameter: _____ Shoe: _____

Static Bottom Hole Conditions
I.S.I.P.: _____ at depth: _____ date _____
Last Pressure Measurement: _____ at depth: _____ date _____
Temperature: _____ at depth: _____ date _____

Sampling and Transfer Conditions

Sample Type and No.: DOWELL MFE
Capacity: 2.5 Litre

Time at which Sample was taken:
Timing { Descent Started: _____ Out of Well: _____

☐ Well closed since: _____
☐ Well flowing on Choke: _____
Time since closing in: _____
Duration of flowing on this Choke: _____

Conditions of Production during Operation or before closing in
Bottom (_____ m-ft) { Pressure: _____ Temp.: _____
Head { Pressure: _____ Temp.: _____
Separator { Pressure: _____ Temp.: _____
Flow Rates: _____ st.cu.ft/day m³/day B.O.P.D.
W.L.R.: _____ %
Production G.O.R.: _____
Gravity { Gas (air=1) _____ Oil: _____

Opening Pressure of 1st Valve: 1640 psig

Bubble Point Pressure measured in Sample:
Temp.: _____ Pressure: _____

Estimated Bubble Point at Bottom:
Temp.: _____ Pressure: _____

Transfer ☐ By Gravity ☒ By Pump
Pressure: 5000 psig Temp.: 40°F

Volume Hg { Collected at End of Transfer: 590 cc Remaining in Bottle: 35 cc

Final Conditions in Bottle after Decompression
Pressure: 1000 psig Temp.: 40°F

Volume Hg withdrawn for Decompression of shipping Bottle:
.5 cc

Indentification of Sample

Bottle No. 2757.2 sent the _____ by: _____ Order No.: _____
Destination: ELF

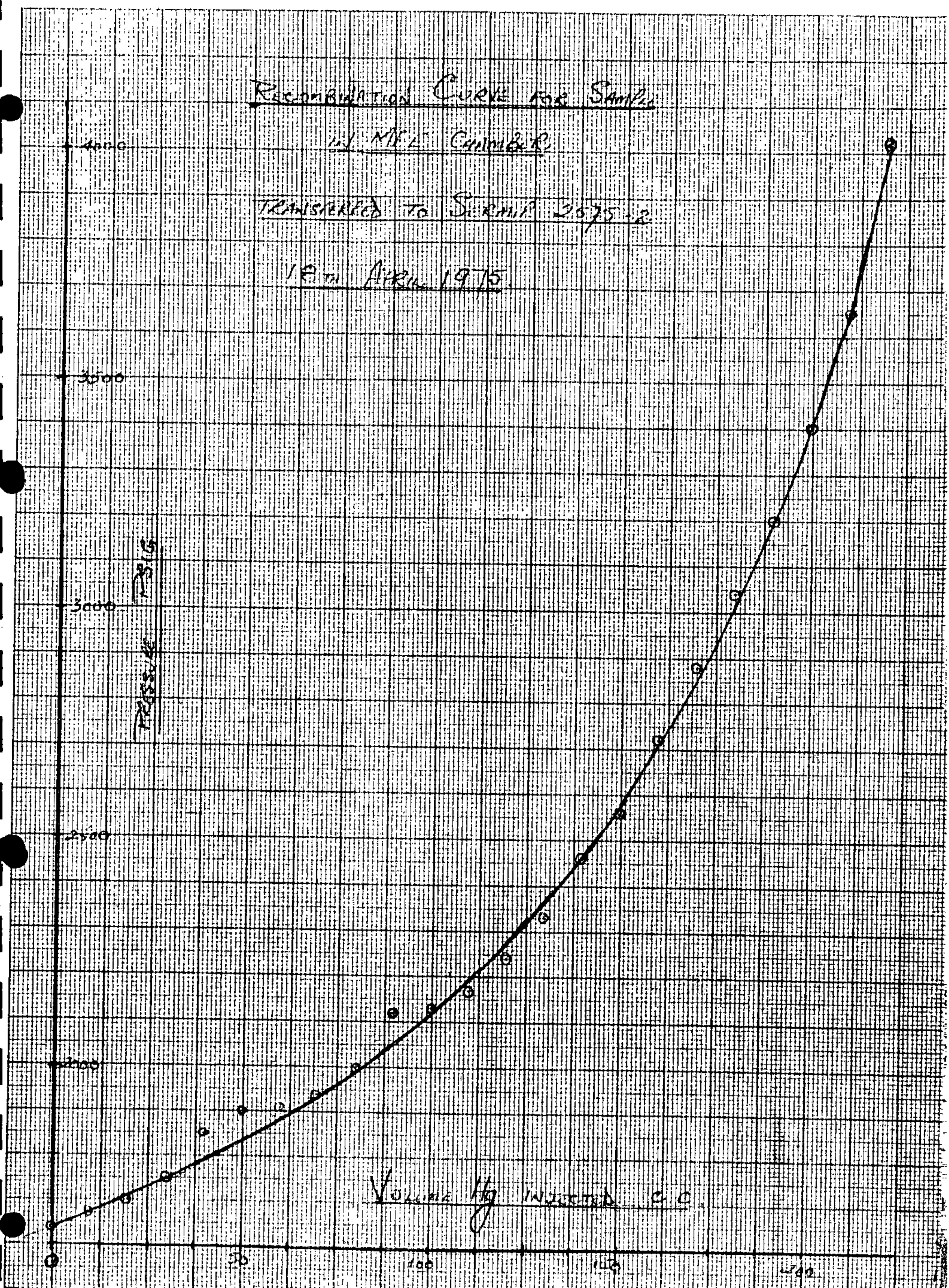
Coupled with
Bottom Hole Sample No.
Surface Sample No.

	Liquid	Gas

COMMENTS:
Sample caught during D.S.T.
Sample transferred at well Site.

Chief Operator
JOHN SELF

Symbole: 1109 GD 03


RECOMBINATION CURVE FOR SAMPLE
18TH APRIL 1975.
4000
3500
3000
2500
2000
PRESSURE PSIG
0
50
100
150
200
VOLUME Hg INJECTED C.C.

FLOPETROL

Base: North Sea

Date of Sampling: 18.4.75

Customer: ELF NORGE A/S

Field: _____ Well: 30/10-5

Service Order No.: _____ Sampling No.: 2

Perforations: 3638 - 3644 metres

BOTTOM HOLE SAMPLE

Nature of Fluid Sampled: Mud & Gas

Sampling Depth:

Reservoir and Well Charisteristics

Producing Zone:

Interval Sampled: As Perforations

Depth Origin: _____ Z: _____

Tubing - Diameter: _____ Shoe: _____

Casing - Diameter: _____ Shoe: _____

Static Bottom Hole Conditions

I.S.I.P.: _____ at depth: _____ date _____

Last Pressure Measurement: _____ at depth: _____ date _____

Temperature: _____ at depth: _____ date _____

Sampling and Transfer Conditions

Sample Type and No.: DOWELL MFE

Capacity: 2.5 Litre

Time at which Sample was taken:

Timing { Descent Started: _____ Out of Well: _____

☐ Well closed since: _____ Time since closing in: _____

☐ Well flowing on Choke: _____ Duration of flowing on this Choke: _____

Conditions of Production during Operation or before closing in

Bottom (_____ m-ft) { Pressure: _____ Temp.: _____

Head { Pressure: _____ Temp.: _____

Separator { Pressure: _____ Temp.: _____

Flow Rates: st.cu.ft/day m³/day B.O.P.D.

W.L.R.: _____ %

Production G.O.R.: _____

Gravity { Gas (air=1) _____ Oil: _____

Opening Pressure of 1st Valve: 1530 Psig

Bubble Point Pressure measured in Sample:

Temp.: _____ Pressure: _____

Estimated Bubble Point at Bottom:

Temp.: _____ Pressure: _____

Transfer ☐ By Gravity ☒ By Pump

Pressure: 5500 psig Temp.: 64°F

Volume Hg { Collected at End of Transfer: 620 cc Remaining in Bottle: 5 cc

Final Conditions in Bottle after Decompression

Pressure: 1650 psig Temp.: 64°F

Volume Hg withdrawn for Decompression of shipping Bottle: 10 cc

Indentification of Sample

Bottle No. 2575.6 sent the _____ by: _____ Order No.: _____

Destination: _____

Coupled with

Bottom Hole Sample No.: Remainder of sample in 5 litre Plastic Bottle

Surface Sample No.: Liquid | Gas

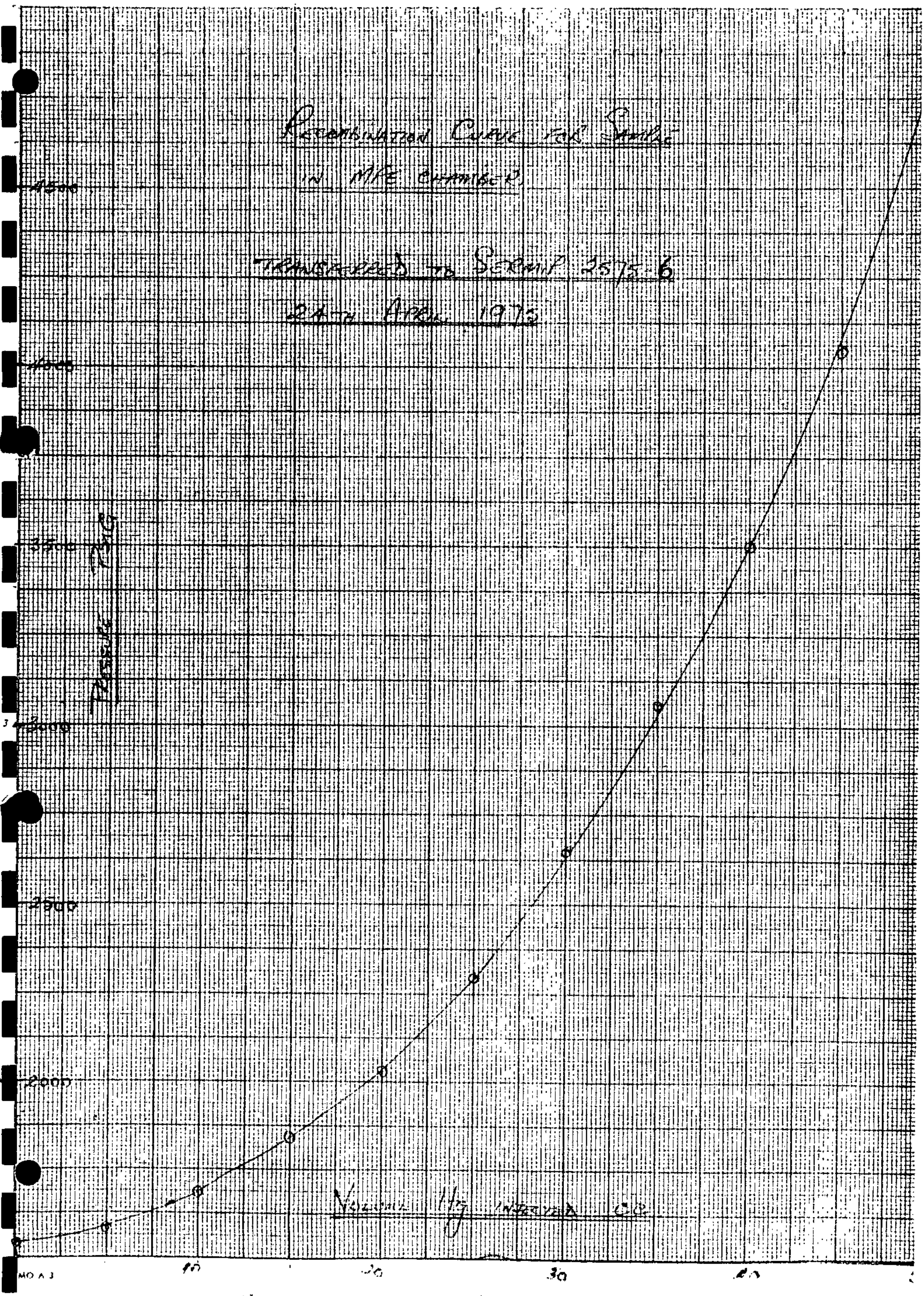
COMMENTS:

Sample caught during D.S.T.
Transfer effected at Elf Base, Dusevik
24.4.75

Chief Operator

JOHN SELF

Symbole: 1109 GO 03


RECOMBINATION CURVE FOR SAMPLE
IN MFE CHAMBER
24TH APRIL 1973
4500
4000
3500
3000
2500
2000
10
20
30
40
MO A 3