

Oljedirektoratet
Lagårdsvn. 80
4000 STAVANGER

Lenning:GG

February 16, 1977

61.06.00
61.07.00
60.03.03

ABANDONMENT OF WELLS 30/7-4 AND 30/7-5

Enclosed are the abandonment reports from well 30/7-4 and 30/7-5.

Please note that a side scan sonar survey of the area will be made after the final completion of the well presently being drilled.

Yours faithfully
for Norsk Hydro a.s

K. Lenning

Enclosures:

Drilling Dept.

Lenning:GG

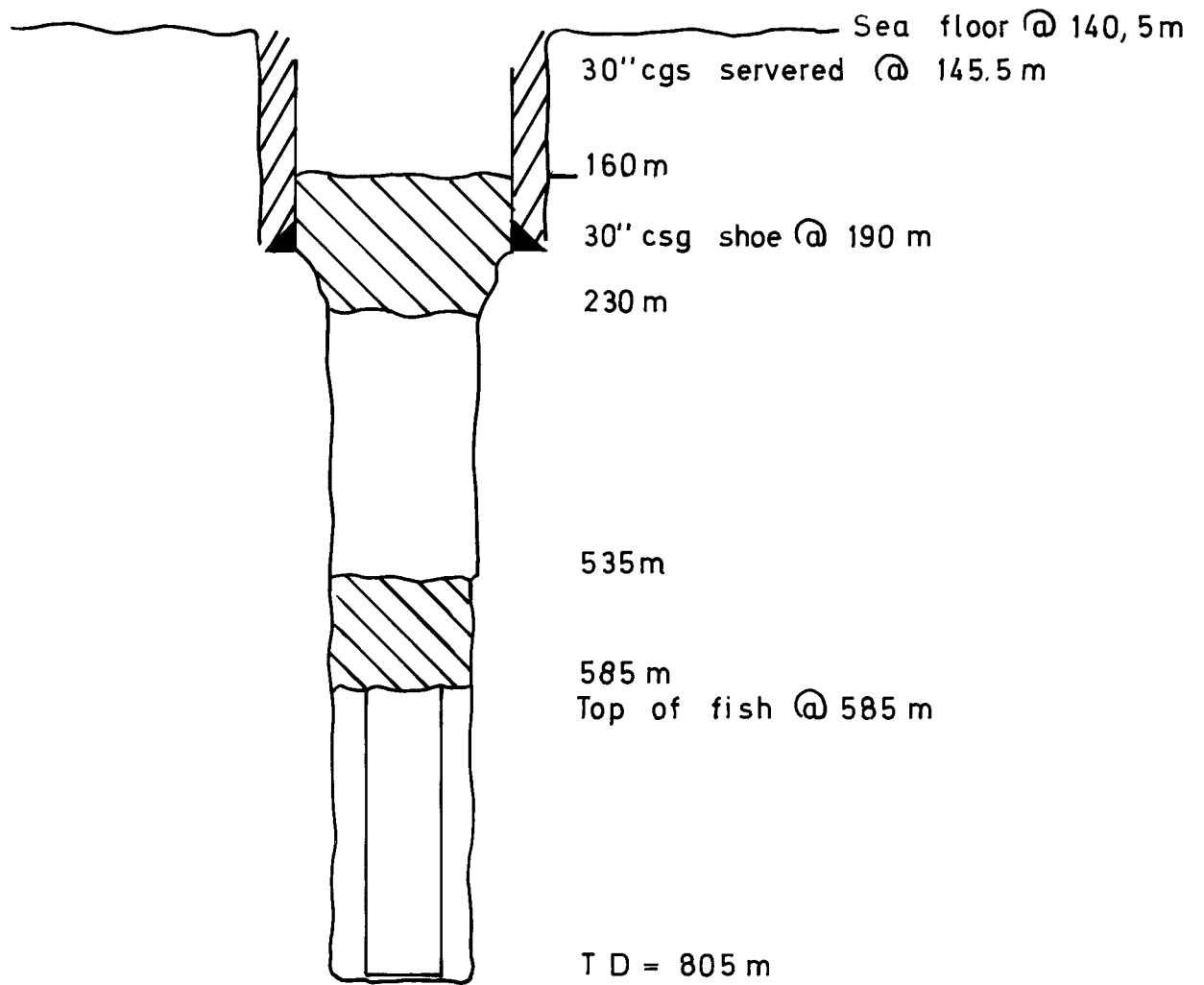
February 15, 1977

ABANDONMENT OF WELL 30/7-5

Well 30/7-5 was abandoned on Feb. 13, 1977

1. The 20" casing parted while running the casing in the hole. 18 joints (218 m) were left in the hole. Top of fish was at 585 m.
2. A plug of class G neat cement was spotted from 585 m to 535 m.
3. A second cement plug was set from 230 m to 160 m. The 30" casing shoe is at 190 m.
4. The 30" casing was severed at 145.5 m (5 m below the sea floor) with a shaped charge. The wellhead was retrieved.
5. Diver inspection of the sea floor in the vicinity of the wellhead has been postponed due to bad weather.
6. A side scan sonar survey of the area will be made after completion of the planned well. This survey will cover the area around all spud in attempts.

ABANDONMENT OF WELL 30/7-5



2. GEOLOGICAL DATA AND OBJECTIVES

<u>Depth R.K.B.</u>	<u>Geological age</u>	<u>Lithology</u>
140 - 750 m	Pleistocene to Miocene	Sand and Clay, with possible boulder beds in upper part. Some sandy shell beds and thin beds of lignite.
750 - 1140 m	Oligocene	Clay and claystone with sand and occasional sandstone beds with glauconite. Shell beds less frequent than above.
1140 - 1770 m	Eocene	Clay and claystone often silty with thin beds of siltstone and fine sand or sandstone
1770 - 1990 m	Eocene	The Frigg sand interval. Medium to fine grained sand, (unconsolidated) with beds of siltstone and shale. The sand is most probably stained with heavy oil and may have a small column of gas at the top.
1990 - 2350 m	Paleocene	Shale interbedded with fine to coarse grained sand and hard sandstone beds. Possible oil stains in porous sands
2350 - 3700 m	Upper Cretaceous	Mainly Claystone and shale, calcareous, with thin beds of limestone. Some marl in the upper part, and occasional traces of pyrite in the lower part.

<u>Depth R. K.B.</u>	<u>Geological age</u>	<u>Lithology</u>
2700 - 3925 m	Lower Cretaceous	Alternating shale and limestone. Part of the limestone could be porous and hydrocarbon bearing.
3925 - 4300m	Upper to Middle Jurassic	Shale, radioactive, and calcareous, with occasional traces of pyrite. Possibly some stringers of sandstones, hydrocarbon bearing.
4200 - 4750m	Dogger- Liassic	Interbedded sandstones and siltstones and shale. Main target.
4750 - 5000m	Triassic	Alternating shale and siltstones often red, with some sandstone. Possibly with small traces of Anhydrite.

Objectives

The main objective in this well is to test possible lower Jurassic sandstones of Dogger and Liassic age. The secondary objective is to test a possible lower cretaceous limestone reservoir and possible upper Jurassic sandstones. This well will also penetrate into what is belived to be a Triassic section. The gas and oil bearing Eocene sands tested by the 3077-2 well will also be penetrated by this well.

PROGNOSIS, WELL 30/7-4

DEPTH KB	LITHO SECTION	FORMA- TIONS	STAGES SHOWS	DESCRIPTIONS.	CASING PROGRAM	MUD WT SG	LOGGING PROGRAM	SAMPLING PROGRAM	DEV. SURVEY
50									
100									
134				134 m Seabed					
150			P		30" Hole	1.20	GR		
200			S			1.02			
250			C	Sd w Cl, occ shell beds, occ boulder beds, Lignite					
300			O						
350			M						
400			Z				{BHC}		
450			M				{GR}		
500			C						
550			O						
600			M						
650			Z						
700			M						
750			C		20" Hole	1.08			
800			O	Cl / Clst, w Sd / Sst, Glauc, w occ Shell beds.		1.08			
850			M				{ISF}		
900			Z				{BHC}		
950			M				{GR}		
1000			C		13 3/8"		{SP}		
1050			O						
1100			M		9 5/8"				
1140			Z						
1150			M						
1200			C						
1250			O						

Two dry and three wet samples (min 500gr.)
Sampling intervals: max 10m. reduce to 5m

SPERRY SUN single shot survey, at intervals not exceeding 90m. to TD.

DEPTH KC	LITHO TESTING	FORI- ATIONS	STAGES	SHALES	DESCRIPTIONS.	CASING PROGRAM	MUD WT SG	LOGGING PROGRAM	SAMPLING PROGRAM	DEV. SURVEY
							(1.08)			
-1300					<u>Cl/Clst</u> , w <u>Sltst</u> , w					
-1350					occ <u>Sd/Sst</u> , f					
-1400										
-1450										
-1500										
-1550										
-1600										
-1650										
-1700										
-1750										
-1800										
-1850					<u>Sd</u> , f-m, unconsol, w intbd <u>Sltst</u> , <u>Sh</u> .					
-1900										
-1950										
-2000										
-2050					<u>Sh</u> w intb <u>Sd/Sst</u> f - crs.					
-2100										
-2150										
-2200										
-2250										
-2300					<u>Lst</u> , brn, often w <u>Sd</u> incl.					
-2350					2350					
-2400					<u>Lst</u> brn, chk, w <u>Sd</u> grains.					
-2450					<u>Sh</u> , w tr <u>Sd</u> .		(1.10)			

Eocene

* FERRUGINOUS SAND

Paleocene

13 3/8"

9 5/8"



DEPTH KC	LOGS	FORMATIONS	STAGES	DESCRIPTIONS.	CASING PROGRAM	MUD WT SG	LOGGING PROGRAM	SAMPLING PROGRAM	DEV. SURVEY
2500									
2550									
2600					13 3/8"				
2650				Sh calc occ pyritic w Mrl sft.	17 1/2" Hole	1.21 1.33			
2700									
2750									
2800									
2850			UPPER						
2900									
2950									
3000									
3050				Sh gy brn occ pyritic					
3100			CRETA						
3150									
3200			SCOC						
3250									
3300									
3350									
3400									
3450									
3500									
3550				⊙ <u>1st</u> stringer.					
3600									
3650									
3700		M1		3700	9 5/8"				

{ SF
 BHC
 GR
 SP
 }
 { CNL
 FDC
 CAL
 GR
 HDT;
 CST
 }

DEPTH KC	LITHO SECTION	FORMA- TIONS	STAGES SHOWS	DESCRIPTIONS.	CASING PROGRAM	MUD WT SG	LOGGING PROGRAM	SAMPLING PROGRAM	DEV. SURVEY
-3750				<u>Lst</u> dns, w, <u>sh.</u> calc hd and/or possible porous <u>Lst</u> development	9 5/8" 12 1/4" Hole	↓ 174			
-3800		<i>Kick</i> 3784				1.86	{ SF BHC GR SP } { CNL FDC CAL GR } HDT CST		
-3850									
-3900		M2		3925					
-3950			UPPER						
-4000				<u>Sh</u> dk gy, carb, radio active, pyrite, w <u>lst</u> and ? <u>Sst</u> stringers					
-4050									
-4100			JURASSIC						
-4150									
-4200									
-4250									
-4300				4300					
-4350			DOGGER	<u>Sst.</u> f-crs w/ <u>Sltst.</u>					
-4400				<u>Sh</u> w/ <u>Sltst</u> pyrite					
-4450									
-4500									
-4550				4550					
-4600			LIASSIC	<u>Sh</u> and <u>Sst.</u> f-m					
-4650									
-4700									
-4750				?					
-4800			TRIASSIC	<u>Sh</u> / <u>Sltst.</u> / <u>Sh</u> red w trace <u>Anhd</u>					
-4850									
-4900									
-4950					8 3/8" Hole TD	2.16			
				T.D 5000m					

PORE PRESSURE CORRELATIONS

30/7-4

The pore pressure profile, well 30/7-4, showed in fig.1 is based on data from surrounding wells and is the best estimate of formation pressures as function of depth.

Correlation of data with depth and geological age are shown in the cross-section plots fig. 2 and 3. The plots are made up in true north-south and east-west directions respectively, and include the following wells.

Well	30/10-5	Norway
Well	3/29 -1	U.K
Well	3/25 -1	U.K
Well	30/7 -3	Norway
Well	30/7 -2	Norway
Well	3/14 -1	U.K
Well	30/5 -1	Norway

From well 3/25-1 and 30/10-5, it is evident that a build up of formation pressure, will occur in the shale, capping the Turonian limestone. Equivalent pore pressure in the limestone is estimated to 14.0 ppg.

Another build up to 16.5 - 17.0 ppg seems to appear through Lower Cretaceous into upper Jurassic sandstone.

Different methods have been used to calculate the pressures of the previously mentioned wells.

✓ Formation Matrix Stress Technique has been used to estimate the pore pressure from sonic and resistivity logs.

Some data are taken from drilling parameters (dc-exp), and is estimated by use of Equivalent depth and Ratio methods, together with a few exact measurements of the pressure from DST and FIT tests.

A cross section plot of the frac. pressure in north-south direction is shown in fig. 5, and is correlated with depth and formations into a frac. profile fig. 4.

The data in this plot are based upon leak off tests from the wells marked in fig. 4, and is the basis for the predicted fracture pressure as function of depth used in the planning of this well.

DEPTH

PORE PRESSURE PROFILE BASED ON INFORMATION FROM:

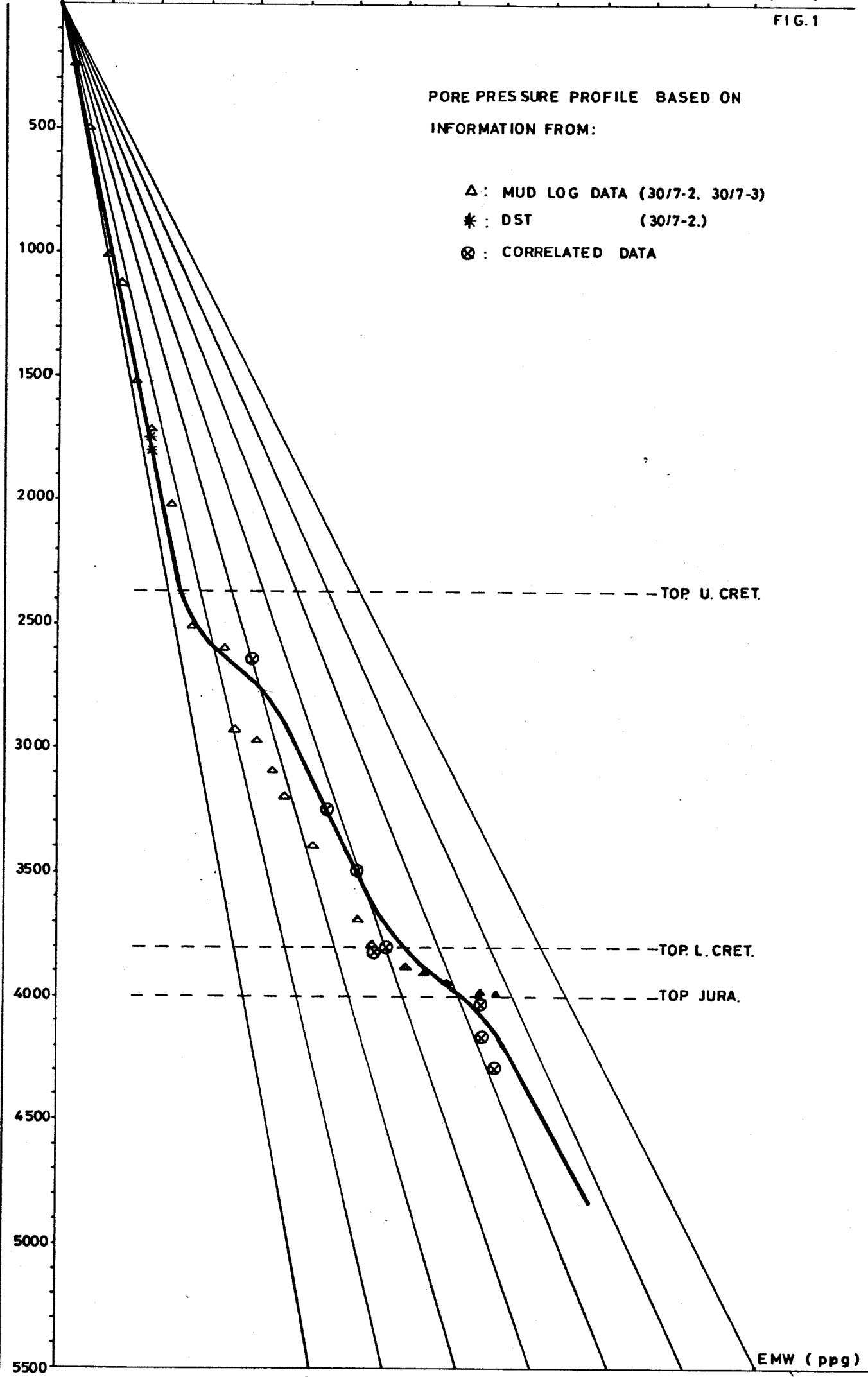
- △ : MUD LOG DATA (30/7-2, 30/7-3)
- * : DST (30/7-2.)
- ⊗ : CORRELATED DATA

500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500

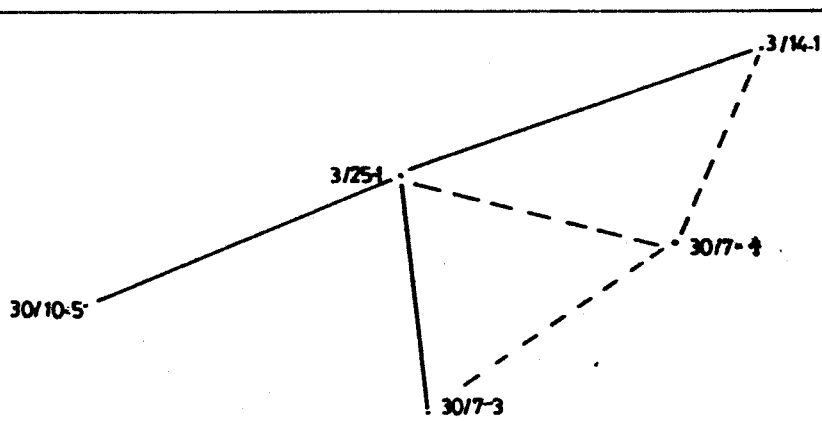
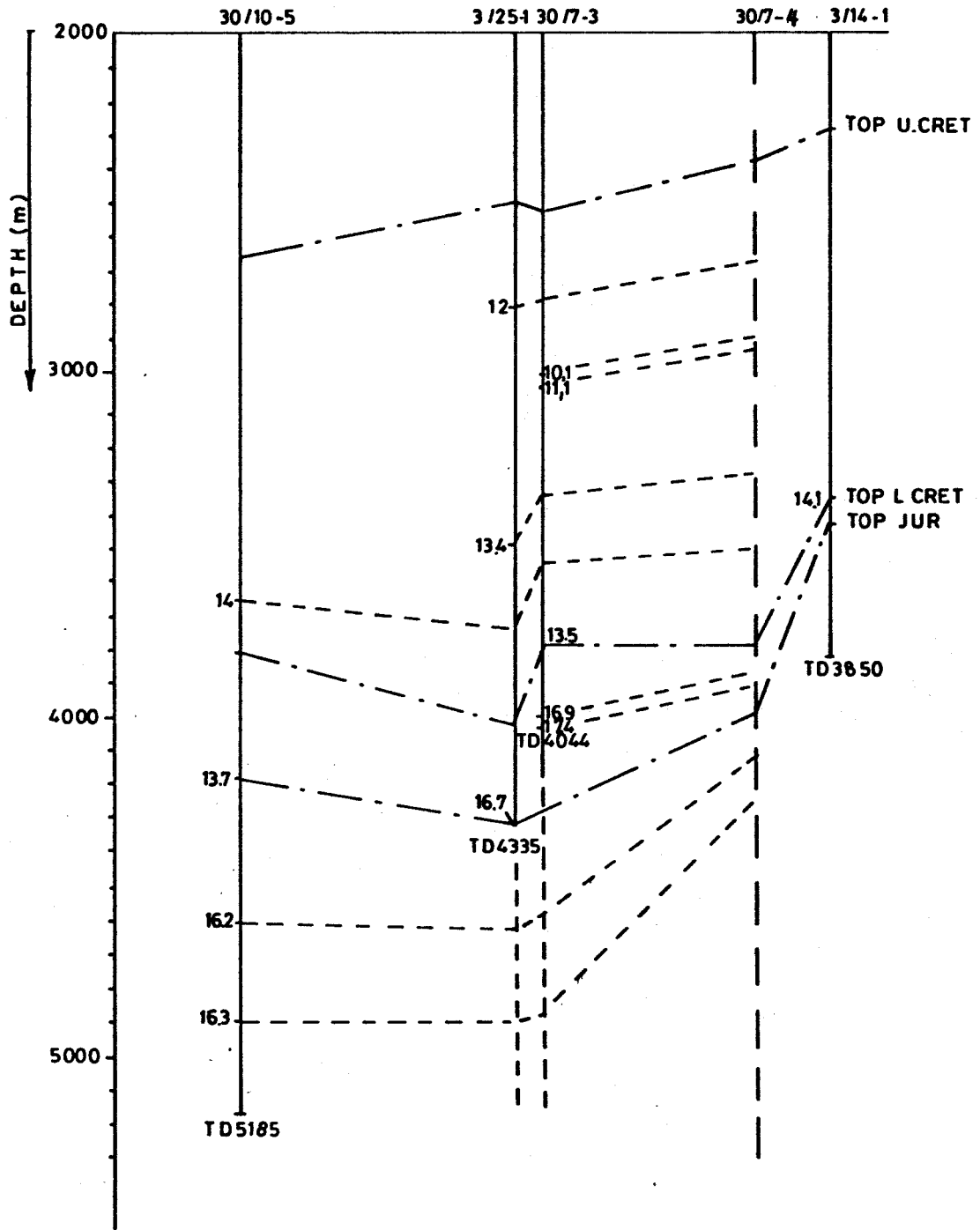
--- TOP U. CRET.
--- TOP L. CRET.
--- TOP JURA.

EMW (ppg)

8 10 12 14 16 18 20

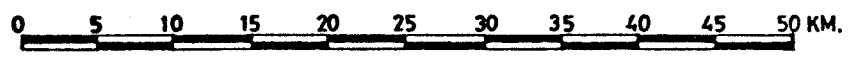
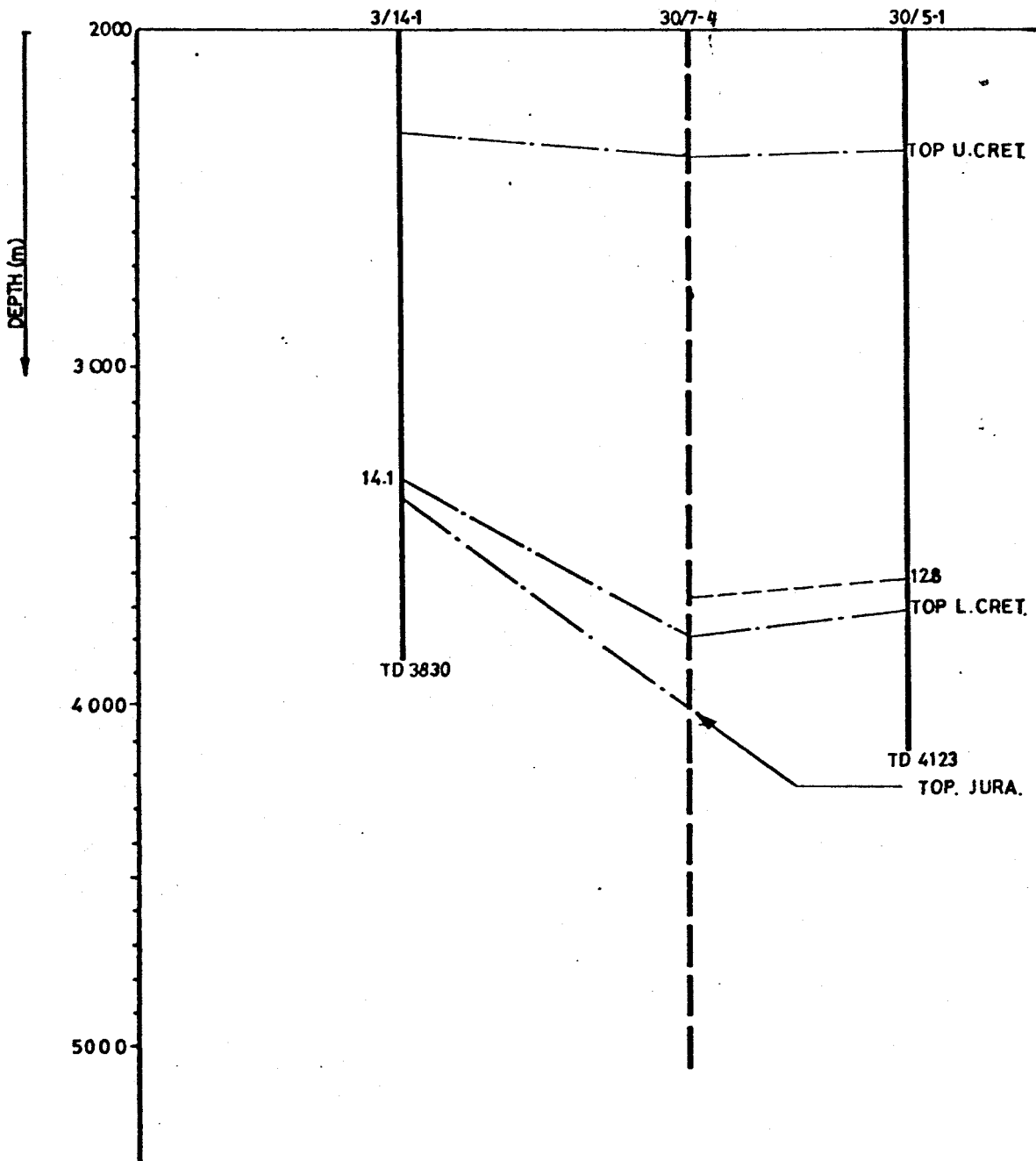


PORE PRESSURE IN DEPTH CORRELATED WITH TRUE "N - S" SPASING



PORE PRESSURE IN DEPTH CORRELATED WITH TRUE

"E-W" SPASING



DEPTH

500

1000

1500

2000

2500

3000

3500

4000

4500

5000

5500

FRAC PRESSURE PROFILE BASED ON INFORMATION FROM:

◇ CORRELATED DATA

□ LEAK OF TESTS (3017-2)

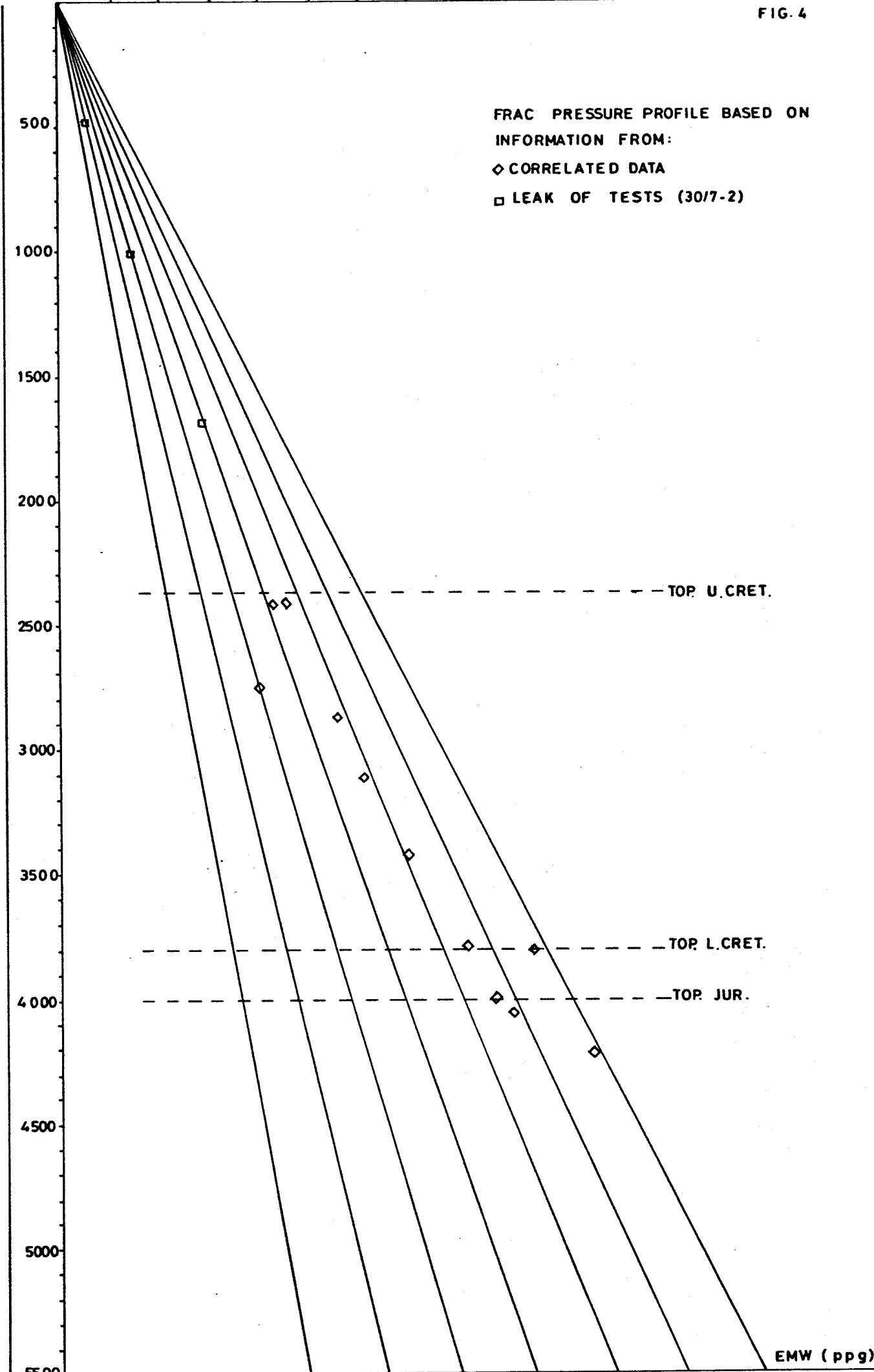
TOP. U. CRET.

TOP. L. CRET.

TOP. JUR.

EMW (ppg)

8 10 12 14 16 18 20



FRAC. PRESSURE IN DEPTH CORRELATION WITH TRUE "N-S" SPACING

