

6 7 8
1 11 21 31 10 20 30

PRESSURE vs DEPTH PLOT

Well: 2/4-4AX
Loc: Ekofisk
KB below:

▲ 30" @ 425'

▲ 20" @ 1879'

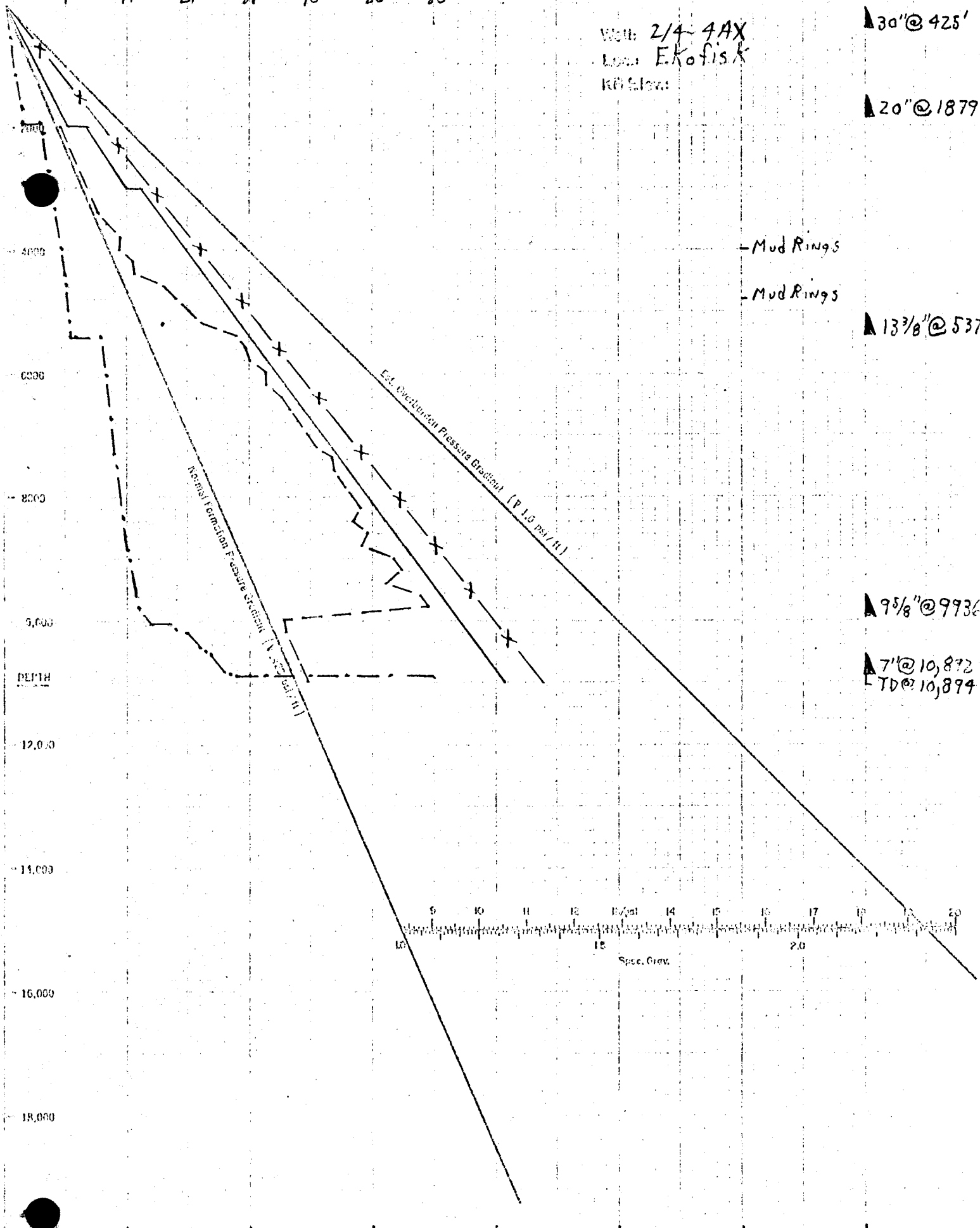
- Mud Rings

- Mud Rings

▲ 13 3/8" @ 537'

▲ 9 5/8" @ 9936'

▲ 7" @ 10,872'
TD @ 10,894'



9 10 11 12 13 14 15 16 17 18 19 20
10 15 2.0
Spec. Grav.

— Mud Weight
--- Sonic
-.- Penetration

—X— FRACTURE GRADIENT $(.8 \text{ psi/ft} = 15.4 \text{ ppG})$

Well: 2/4-4AX
Field: EKOFISK 13 JUNI 1970 - 27 AUG. 1970 - 68 Days

P. R. Co. - NORWAY
WELL RECAP

1	MUD TYPE		Lignosulfonate	Lignosulfonate	Lignosulfonate		
2	MUD WEIGHT	PPG	12.6-14.3	14.1-14.4	14.3-14.4	12.6-14.4	
3	INTERVAL EXAMINED	ft	1879-5400	5400-10,025	10,025-10,894	1879-10,894	
4	TOTAL FOOTAGE	ft	3521	4625	869	9015	
5	HRS DRILLING	hrs	78.5	100	65.5	244	
6	PENETRATION (4÷5)	ft/hr	44.6	46.2	13.3	36.95	
7	MUD COST ^{CURRENT} (1973)	\$	105,727	58,540	14,398	178,665	
8	MUD COST/FT (7÷4)	\$/ft	30.03	12.66	16.57	19.82	
9	HRS. CONDITIONING HOLE	hrs	24	—	—	24	
10	CONDITIONING COST (^{OX} Rig Cost)	\$	45,600	—	—	45,600	
11	CONDITIONING COST/FT (10÷4)	\$/ft	12.95	—	—	5.06	
12			04 JULI 1970	17 JULI 1970	03 AUG. 1970	03 AUG. 1970	
13	ROTATING COST (5X RIG COST)	\$	149,150	190,000	124,450	463,600	
14	ROTATING COST/FT (13÷4)	\$/ft	42.36	41.08	143.21	51.43	
15	FISHING HRS	hrs	—	—	—	—	
16	FISHING COST (15X RIG COST)	\$	—	—	—	—	
17	FISHING COST/FT (15÷4)	\$/ft	—	—	—	—	
18	TOTAL COST (7+10+13+16)	\$	300,477	248,540	138,848	687,865	
19	TOTAL COST/FT (18÷4)	\$/ft	85.34	53.74	159.78	76.30	
20	COMMENTS				CORED		

RIG COST = 900/HR.

17 1/2"

12 1/4"

8 1/2"

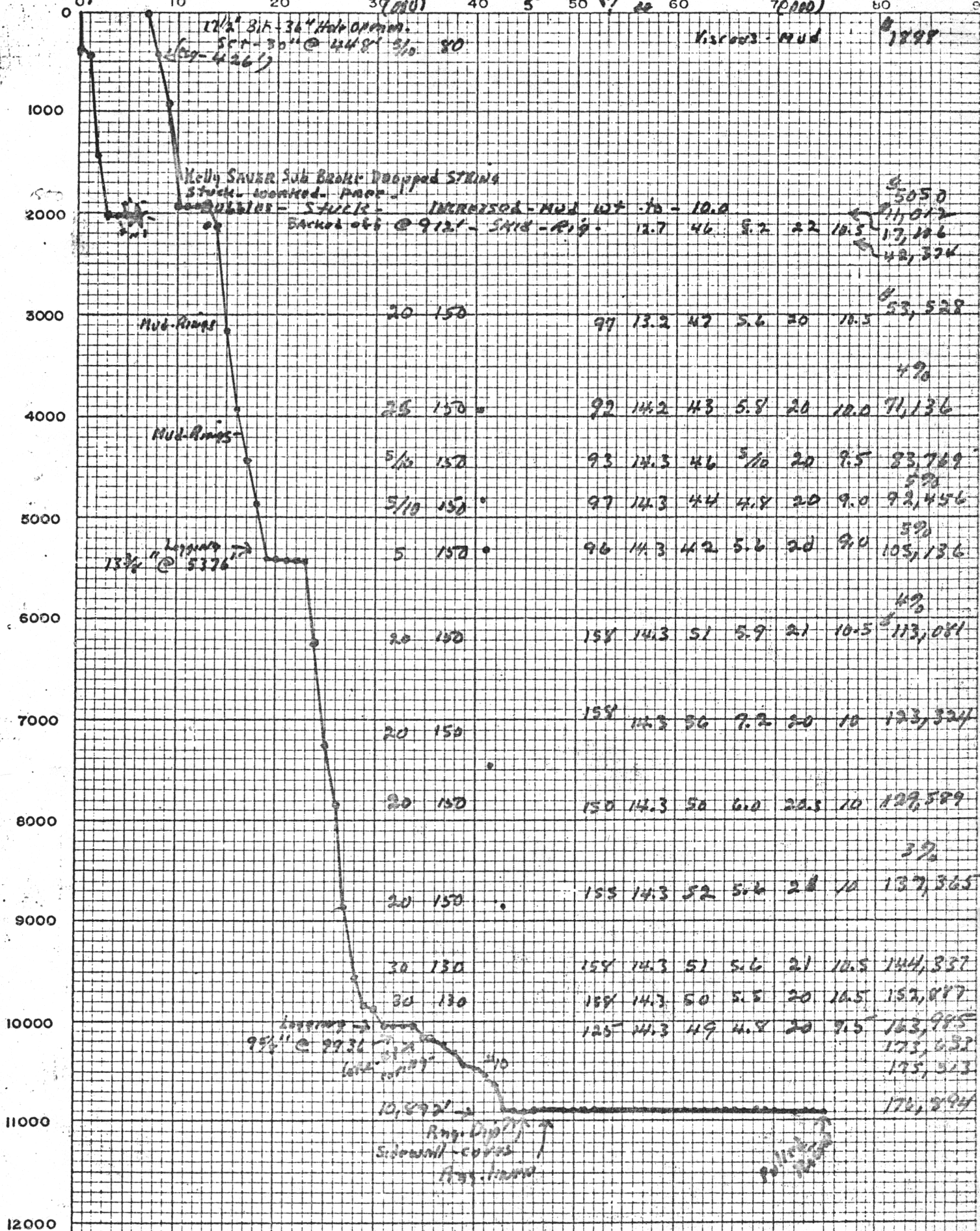
51 Days

Well: EKOFISK - 4XA Contractor: NEPTUNE Rig No. 7 Country NORWAY AREA: North Sea

SPUD: June 15, 1970

Completed:

BIT DEVIATION RPM WT Vis. Wt. CI Ph. Oil Sol.



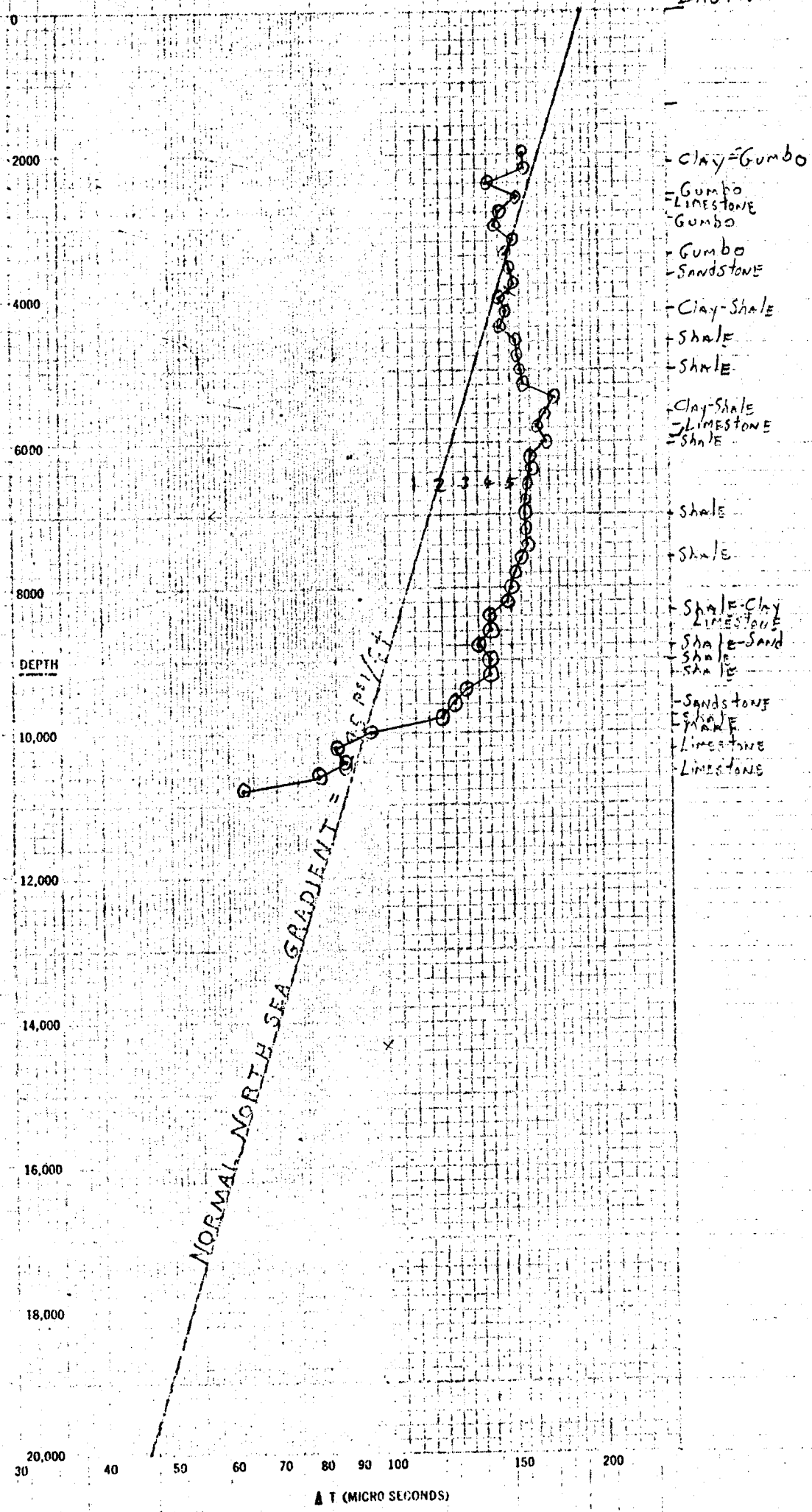
WELL: 2/4-4AX
 LOCATION: EK. fish
 KB ELEV:

13.8

Data Sheet For Well Log Values
 Shale Δt , Pressure Gradient, and Mud Weight

Depth	Δt	VP	MW	Depth	Δt	VP	MW	Depth	Δt	VP	MW
2000	156	.450	8.65	7600	155	.717	13.79				
2200	158	.450	8.65	7800	152	.715	13.75				
2400	140	.450	8.65	8000	150	.715	13.75				
2600	154	.450	8.65	8200	147	.707	13.60				
2800	145	.450	8.65	8400	140	.680	13.08				
3000	143	.450	8.65	8600	140	.690	13.27				
3200	152	.455	8.75	8800	135	.665	12.79				
3400	148	.450	8.65	9000	140	.705	13.56				
3600	150	.470	9.04	9200	140	.707	13.60				
3800	152	.500	9.61	9400	130	.665	12.79				
4000	145	.465	8.94	9600	125	.645	12.40				
4200	148	.500	9.61	9800	120	.625	12.02				
4400	145	.485	9.33	10,000	95	.455	8.75				
4600	153	.565	10.86	10,200	85	.450	8.65				
4800	154	.585	11.25	10,400	87	.450	8.65				
5000	155	.605	11.63	10,600	80	.450	8.65				
5200	156	.625	12.02	10,800	65	.450	8.65				
5400	172	.710	13.65	11,000							
5600	167	.705	13.56								
5800	163	.690	13.27								
6000	168	.715	13.75								
6200	160	.690	13.27								
6400	160	.705	13.56								
6600	158	.705	13.56								
6800	157	.705	13.56								
7000	157	.710	13.65								
7200	157	.715	13.75								
7400	158	.725	13.94								

PLIOSTOTENE
MIocene
OLIGOCENE
Eocene
 Paleoc.
 Dan.
CRETACEOUS



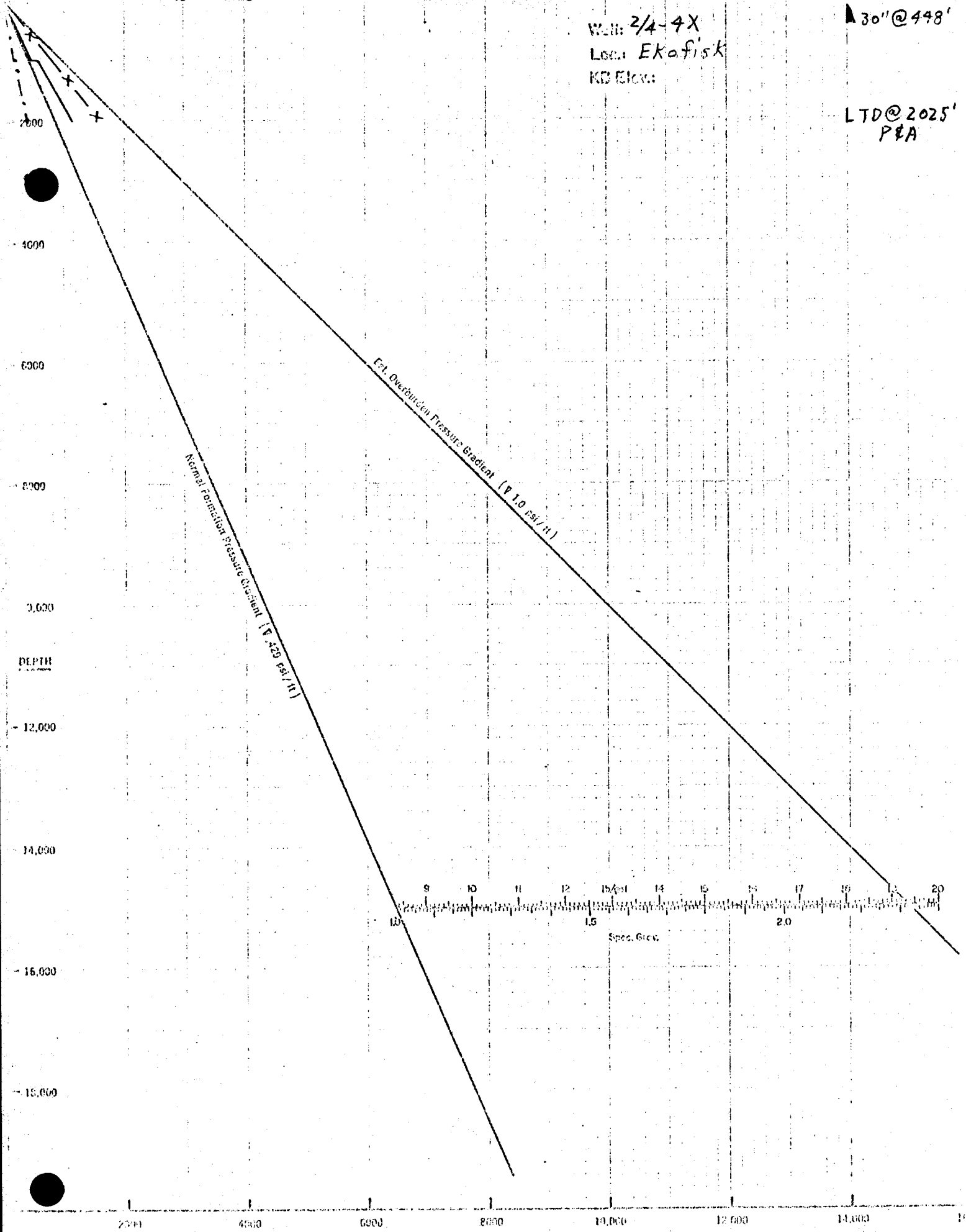
5 1 6
25 5 15 25

PRESSURE vs DEPTH PLOT

Well: 2/4-4X
Loc: Ekofisk
KB Elev:

30" @ 448'

LTD @ 2025'
P&A



— Mud Weight
- - - Penetration

— X —
FRACTURE GRADIENT (1.8psi/ft = 15.4ppg)

In addition to the initial subsea 5000 psi B.O.P. test, the preventors are to be tested to 2500 psi the first trip out of the hole after 12:01 a.m. each Tuesday.

Mud Logging:

The Geoservice mud logging unit is to be in service when the well is spudded. A geologist will be on board to furnish information to the mud logger as to frequency, number, and kind of samples to be collected.

Drill Stem Testing:

There will be no open hole drill stem testing.

Hole Deviation Surveys:

An instrument to measure hole deviation is available on the rig. Surveys should be made every trip out of the hole. Intermediate surveys are to be made only if deviation is a problem. Surveys below 8000' are not required unless there is reason to believe a serious hole deviation problem is occurring that will have to be corrected. The final hole deviation and direction can be taken from the dipmeter log.

Logging Program:

See Geological Prognosis.

Coring Program:

See Geological Prognosis.

Lost Circulation Procedure:

Diaseal_M

Diaseal M is never added to the drilling mud nor is it slurried as a pill in drilling mud. It is always mixed with water either fresh, salty or salt saturated. It is always pumped down as a separate pill but is preceded and followed by drilling mud. The amount to be used varies from 25 to 200 barrels depending upon the amount of open hole and experience in the area. Some operators are twice the open hole volume as a guide.

Conventional lost circulation material such as nut hulls or fibers can be added to the slurry. Successful jobs have been done with and without the addition of these conventional lost circulation materials. 10 lb/bbl of fibrous material such as Baroid's Fiber-tex (Magcobar's Magco-Fiber) or 20 lb/bbl of medium nut hulls such as Baroid's Wall Nut (Magcobar's Tuf-Plug) are recommended.

The general procedure for using Diaseal "M" when circulation is lost is as follows:

1. Pull off bottom or just above the loss zone. Put the kelly back on and ~~continue~~ to work the pipe.
2. Mix the slurry as conditions dictate. If pill is to be mixed in suction pit, run necessary amount of water into pit with guns on pit. As water fills suction pit, begin opening sacks of Diaseal "M" and mix contents with water by maximum agitation from guns. As slurry becomes viscous, begin addition of lost circulation material.
- 2a. If Diaseal "M" slurry is already mixed and being held in readiness in standby pit, agitate vigorously, add lost circulation material if it has not already been added. Slurry is ready for use when thoroughly mixed and agitated.
3. When mixing is complete, pump the mixture in the hole and displace the slurry from the pipe with mud.
4. Pull up in the surface pipe and fill the hole with mud through the fill-up line.
5. If the hole does not fill with one foot of mud out of pits, mix another pit of Diaseal "M" slurry and repeat procedure.
6. If the hole does fill, proceed as follows:
 - a) For depths less than 7000 feet, close the pipe rams, pump slowly through the fill-up line at 0-300 psi and squeeze, and hold available pressure for 10 mins.
 - b) For depths more than 7000 or when a squeeze pressure cannot be established, wait two hours, then if the hole will stand full, go to bottom and drill.

Diaseal "M" slurries can be put in place through the bit nozzles. In the Texas Panhandle mud losses have been sealed by pulling off bottom, ~~pumping down a pre-mixed Diaseal "M" slurry of 25 to 50 barrels followed by mud.~~ This restores circulation and drilling is continued.

Mud Program:

36" hole 470 RKB (170 bbls w/o washout)

Drill hole with sea water. After reaching total depth, slug the hole with 200 bbls of "thick" mud having a viscosity in excess of 100 sec/qt. Build mud as follows:

- 10 - 20 ppb Attapulgite clay for salt water mud
- 5 - 10 ppb Bentonite
- 1 - 2 ppb Flosal
- 1/4 - 1/2 ppb Lime.

26" hole to 2000 RKB (1117 bbls w/o washout)

Drill the hole with sea water. Pump slugs of thick mud through the hole frequently to clean. After the hole has been drilled, pump a volume of thick mud equal to the hole volume (1117 bbl). Mix the thick mud as above. Fill the pits with thick mud and mix volume while displacing to have desired volume. Keep the mud thick while pumping into the hole.

17½" Hole to 5500' RKB (1650 bbls W/O washout).

Drill the plug with sea water. Immediately after drilling the plug displace the hole (650 bbls.) with 12.5 ppg. mud previously prepared in the pits as follows:

Material.

Sea Water	-
Bentonite	- 15 - 20 PPB
Caustic Soda	- ½ - 1 PPB
Teck. Grade CMC	- ½ - 1 PPB
Lignosulfate	- 6 PPB
Desco	- 1 PPB
Detergent	- 2 PPB
Barite	- As needed.
Flosal	- .2 - 4 PPB
Oil	- 4%

Properties.

Weight	12.5 ppg increase
	14.0 ppg at 3500'
Viscosity	38 - 45 sec. 1qt
Fluid Loss	8 - 10 cc/30 min
Alkalinity	.5 - 1.0 PF
Oil	3 - 4%

Drill out below the 20" casing with the prepared mud as above. Control the drilling rate as required to maintain the desired mud properties. As drilling proceeds regulate the mud properties as follows:

Depth	Weight PPG	Viscosity Sec/qt.	Fluid-loss cc. 30/min	Alk	% Solids
2000' to 3000'	12.5-13.0	38-40	8-10	.5-1.0	20-22
3000' to 3500'	13.0-14.0	38-45	8-10	.5-1.0	24-26
3500' to 4000'	14.0-14.3	38-45	8-10	.5-1.0	26-28
4000' to 5500'	14.3	40-45	6- 8	.5-1.0	26-28

Below the 20" casing control the flow properties with Lignosulfonate and Desco mixed at a 4:1 ratio. Maintain concentration of Detergent at 2 PPB to 4800'. At 4800' add an additional 2 PPB of Detergent and 4 PPB of Soltex. Control the fluidloss with C.M.C.

To minimize the balling problem trips or short trips should be made at approximately 4000' and 4800'. The need for additional trips for hole conditioning will be decided as the hole condition dictates or as the drilling supervisor feels the need.

Cleaning of the riser, by pumping fluid into the kill lines to increase the velocity within the riser, is recommended frequently to eliminate the mud ring problem.

12 1/4" Hole to 10,000' RKB (1482 bbls - W/O washout.)

While waiting on cement and nipping up, clean the mud pits. Salvage

all surface volume possible and condition the mud in the pits.
Pretreat with 1 PPB Sodium Bicarbonate.

Drill the plug with the conditioned mud, treat the cement contaminated mud returns with Bicarbonate of Soda and Water as necessary. Below the 13 3/8" casing maintain the mud as follows:

Properties.

Weight	14.3 PPG
Viscosity	40-50 sec/qt
Fluid loss	4- 6 cc/30 min
Alkalinity	.5-1.0 P.f.
Solids	26-28%
Calcium	800 PPM or less.

Materials.

Detergent	-	3-4 PPB
Soltex	-	4 PPB
Oil	-	3-4 %

Control the drilling rate as required to maintain mud properties to 6500' and make short trips as needed to minimize balling. At 6500' discontinue adding detergent.

Control the flow properties with Lignosulfonate and Desco mixed at a 4:1 ratio.

Control the fluid loss with C.M.C.

8 1/2" Hole to 11,000' (778 bbls W/O washout.)

Condition the mud as above and drill out below the 9 5/8" casing with the same type mud and maintain as follows:

Properties.

Weight	14.3 PPG
Viscosity	40-45 Sec/qt
Water loss	4- 6 cc/30 min
Alkalinity	05-1.0 P.f.

Solids	26 - 27%
Oil	4 - 4%

~~Attached is a list of the chemical and trade name of drilling mud additives used in our operations.~~

General:

A Daily drilling report from 0600 to 0600 hrs is to be called to the Stavanger Office at 08:30 a.m. daily unless advised otherwise. All information reported over the radio should be in code.

Attached are "Casing Setting Report" and "Cementing Report" forms that are to be filled out when casing is set.

Attached also is a plot of torque in AMPS versus a torque readings in ft-lbs for rotary table RPM ranging from 40 to 250 RPM.

A drillpipe float may not be used after the first 17 1/2" bit run.

P.W. REYNOLDS

BAZ/GJ
6/10/70



BAROID DIVISION NATIONAL LEAD COMPANY

10

DRILLING MUD RECORD

COMPANY Phillips Petroleum Co. STATE Norway CASING PROGRAM: 13 3/8 inch at 5376 ft.
WELL 2/4 - 4x + 2/4 - 4AX COUNTY North Sea 9 5/8 inch at 9936 ft.
DATE 9-1-70 CONTRACTOR Neptune Rig 7 LOCATION 2/4 7 inch at 10,892 ft.
STOCKPOINT Stavanger BAROID ENGINEER Witt - Whatley - Carlile - Evansec TWP RNG TOTAL DEPTH 10,894 ft.

DATE	DEPTH feet	WEIGHT lb/gal	VISCOSITY Sec	FILTRATION		SAND %	SALT		pH	-VISCOSITY			GELS		FILTRATE ANALYSIS				RETORT ANALYSIS			REMARKS AND TREATMENT
				cc	Cake 32nd		NaCl ppm	Cl ppm		cp	Pv	Yp	in	10 min	Cl ppm	Ca ppm	SO ₄ ppm	Alk Pf	Oil %	Water %	Solids %	
JUNE 15	400	8.8	100	NC																		Set 30" casing @ 448'
16	800	8.8	100	NC																		Drig 26" hole w/ seawater
17	1600	8.8	100	NC																		Spotting 20 bbls mud after each single-twisted off below Kelly
18	2025	10	100	NC																		Raised mud wt. to 10 ppg. Pump down 1200 bbl. Pipe stuck @ 1500'
19	2025	11.0	100	NC																		Backed off @ 940'. Set cmt plug to abandon hole.
20	2025	8.8	100	NC																		Cutting 30" casing.
21	200	8.8	100	NC																		Drig 36" hole w/ seawater
22	426	8.8	100	NC																		Set 30" casing @ 425'
23	1200	10.0	100	NC																		Drig 26" hole w/ seawater
24	1920	10.0	100	NC																		Drilled to 1920'. Spotted 1100 bbls
25	1920	10.0	100	NC																		10 lb. mud. Ran 26" casing to 1878'
26	1920	10.0	100	NC																		Running Riser + BOP.
27	1920	12.6	41	5.2	2	0			10.5	25	5	0	3	22,500	760		1.2	2	84	14		Drilled out cmt - Displace seawater
28	2130	12.8	41	5.2	2	1/4			10.5	25	7	1	4	22,000	260		1.0	2	84	14		Drig Gumbo w/ 17 1/2" bit
29	3150	14.1	47	5.6	2	1/2			10.0	29	9	2	7	20,000	300		.7	3	74	23		Drig @ 70 ft/hr.
30	3916	14.2	43	5.4	2	1/2			10.0	24	8	2	9	20,000	580		.6	4	71	25		Drig Gumbo w/ Abt mud Rings
July 1	4425	14.3	46	5.2	2	1/2			9.5	18	15	5	14	20,000	1320		.4	5	68	27		Drig @ Controlled Rate
2	4876	14.3	44	4.8	2	1/4			9.0	21	17	3	11	20,000	980		.15	5	64	26		Abt mud Rings
3	5400	14.3	42	5.8	2	TR			9.0	18	15	4	19	20,000	1440		.1	5	68	27		Drilled to 5400' - E log stopped at 2400'. Trip to condition hole
4	5400	14.4	44	6.0	2	TR			8.5	20	17	5	22	20,000	1720		.1	4	70	26		Ran E logs - Set 13 3/8" casing
5	5400	14.4	44	6.0	2	TR			8.5	20	17	5	22	20,000	1720		.1	4	70	26		To 5376'. N. pipe up.
6	5400	14.4	44	6.0	2	TR			8.5	20	17	5	22	20,000	1720		.1	4	70	26		Hit cmt cement mud @ 490' Drilled from cmt @ 4790
7	5400	14.1	47	6.0	2	TR			11.0	25	14	2	12	21,000	400		1.5	4	70	26		Drilled out cement - Cold mud
8	6200	14.3	51	5.9	2	TR			10.5	25	15	2	12	21,000	400		.8	4	71	25		Drilling Gumbo
9	7300	14.3	56	7.2	2	1/4			10.0	26	15	3	15	20,000	360		.5	3	71	26		Drig ahead w/ some V's trouble
10	7900	14.3	50	6.0	2	1/4			10.0	26	11	3	10	21,000	400		.5	3	71	26		Drig in soft cmt.
11	8865	14.3	52	5.6	2	1/4			10.0	26	16	2	15	21,000	280		.6	3	71	26		NORMAL DRILLING



BAROID DIVISION NATIONAL LEAD COMPANY

DRILLING MUD RECORD

COMPANY Phillips Petroleum Co. STATE Norway CASING PROGRAM: 13 3/8 inch at 5376 ft.
WELL 2/4 - 4X + 2/4 - 4AX COUNTY North Sea 9 5/8 inch at 9936 ft.
DATE 9-1-70 CONTRACTOR Neptune Rig 7 LOCATION 2/4 7 inch at 10,892 ft.
STOCKPOINT Stavanger BAROID ENGINEER Witt-Whatley-Carlile-Evans SEC TWP RNG TOTAL DEPTH 10,894 ft.

DATE	DEPTH	WEIGHT	VISCOSITY	FILTRATION	SAND	SALT	pH	VISCOSITY	GELS	FILTRATE ANALYSIS				RETORT ANALYSIS			REMARKS AND TREATMENT				
	feet	lb/gal	Sec	cc	Cake 32nd	%	NaCl ppm	Cl ppm		cp	Pv	Yp	in	10min	Cl ppm	Ca ppm		SO ₄ ppm	Alk Pf	Oil %	Water %
July 12	9600	14.3	51	5.6	2	1/4			10.0	26	16	2	15	19,500	260		.7	3	71	26	NORMAL Drilling
13	9814	14.3	50	5.5	2	1/2			10.5	26	16	2	15	19,500	260		.7	3	71	26	E. Log - Drilling Deeper
14	9864	14.3	54	5.4	2	1/4			10.0	29	17	3	17	20,000	360		.3	3	71	26	Drilling
15	10,025	14.4	49	4.8	2	3/4			9.5	24	15	3	12	20,000	240		.2	2	72	26	Running E. Logs
16	10,025	14.4	49	4.8	2	3/4			9.5	24	15	3	12	20,000	240		.2	2	72	26	Condition mud for 9 7/8 casing
17	10,025	14.4	59	5.2	2	1/2			9.0	28	34	4	11	19,000	280		.15	2	72	26	Ran 9 7/8" casing to 9936.
18	10,025	14.3	53	3.6	2	1/2			10.0	32	16	2	11	18,000	100		.9	6	68	26	Drilling cut cement
19	10,158	14.4	50	4.2	2	3/4			10.5	27	11	2	8	18,000	100		1.9	6	68	26	Cut Core #1
20	10,202	14.3	48	4.0	2	3/4			10.0	28	7	1	5	18,000	100		1.0	4	70	26	Cut Core #2 and #3
21	10,220	14.3	47	4.5	2	1/2			10.5	27	12	1	5	18,500	160		.8	4	70	26	Cut Core #4 and #5
22	10,300	14.4	46	4.4	2	1/2			10.5	26	12	1	5	18,500	200		.45	4	70	26	Drilling Ahead w/ 8 1/2" bit.
23	10,440	14.4	46	4.3	2	3/4			10.5	27	11	1	5	18,800	200		.80	5	68	27	Core #6 and #7
24	10,488	14.3	45	4.5	2	1/2			10.0	27	11	1	5	18,500	200		.65	5	68	27	Core #8 and #9
25	10,554	14.4	47	4.6	2	1/2			10.0	27	12	1	5	18,500	200		.7	5	68	27	Core #10 + #11
26	10,638	14.3	46	4.7	2	1/2			10.0	27	11	0	5	18,600	200		.85	5	68	27	Core #12 - NORMAL Drilg
27	10,844	14.3	48	4.4	2	1/2			10.0	27	11	1	5	17,500	140		.8	5	68	27	Circ for E Logs
28	10,892	14.3	48	4.4	2	1/2			10.0	27	11	1	5	17,500	140		.8	5	68	27	Running E. Logs
29	10,894	14.4	55	4.4	2	1/2			9.5	34	18	2	11	17,000	140		.6	5	67	28	Condition mud for
30	10,894	14.4	53	4.4	2	1/2			9.5	34	18	2	11	17,000	140		.6	5	67	28	Run 7" Liner to 10,892.
31	10,892	14.4	53	4.4	2	1/2			9.5	34	18	2	11	17,000	140		.6	5	67	28	Attempt to Kill Gas Leak between 13 3/8 + 20" casing
August 1	10,892	14.4	53	4.4	2	1/2			9.5	34	18	2	11	17,000	140		.6	5	67	28	W.C.C. Pressure test cmt.
2	10,892	14.4	53	4.4	2	1/2			9.5	34	18	2	11	17,000	140		.6	5	67	28	Going in hole w/ tubing
3	10,848	14.2	45	5.2	2	3/4			11.0	22	10	2	8	17,000	160		2.3	4	68	28	Circ TD 10,848 - Condition mud prior to Bond log
4	10,844	14.3	48	5.4	2	1/2			11.0	27	12	1	10	17,000	160		2.0	4	68	28	Logging + Squeeze
5	10,894	14.3	47	6.0	2	1/4			11.0	26	11	1	6	17,500	200		1.5	4	70	26	PERF + SQUEEZE #2
6	10,894	14.3	46	5.9	2	1/4			11.0	26	10	0	5	18,000	160		1.3	4	70	26	Drilg CMT
7	10,894	14.3	48	5.9	2	1/4			11.0	26	10	0	5	18,000	160		1.2	4	70	26	Drilg CMT - SQUEEZE
8	10,894	14.4	47	5.9	2	TR			11.0	32	11	0	10	17,960	200		1.5	4	69	27	Drilg RETAINER - Mix 32 bbls hi vis mud to flush hole.
9	10,894	14.3	48	6.2	2	TR			10.5	25	10	0	8	18,200	160		.5	4	70	26	Testing Well

TOTAL DEPTH 10,894 ft.

STOCKPOINT Stavanger

DATE _____

LOCATION 2/4

SEC_____TWP_____RNG_____

TOTAL DEPTH 10,894 ft.

[illegible]

DRILLING MUD RECORD

BR-1907-5

PRINTED IN U.S.A.

CONTRACTOR Naptime RIG NO. 7
 COMPANY Phillips FIELD EKO FISK
 LEASE 2/4 WELL NO. 4X 44AX
 STATE NORWAY COUNTY N. S
 SEC. / T'SHIP / RANGE 56° 34' 28.4" N 03° 082 E

RIG MAKE NA-1
 RIG SIZE 1320
 PUMP NO. 1 _____
 PUMP NO. 2 _____
 MUD TYPE _____

COLLARS: OD X ID X LENGTH

X X

X X

DRILL PIPE

TOOL JOINT

MO. / DAY / YR T.P. SLEWERS

SPUD

UNDER SURFACE

UNDER INTER.

TOTAL DEPTH

WATER SOURCE

FUEL SOURCE

RUN NO.	SIZE	MAKE	TYPE	SERIAL NO.	JETS - 32nds Reg. R or RO			DEPTH OUT	FEET	HOURS	FEET PER HOUR	CUM. HOURS	WT. 1000 LBS.	R.P.M.	PUMP PRESS.	PUMP NO.1		PUMP NO.2		MUD PROPERTIES						Ver. Dev.	Dull. Cond. 1/4 1/8						
					1	2	3									Liner	SPM	Liner	SPM	Wt.	W.L.	F.V.	P.V.	Y.P.	T		S	G					
1	17 1/2	HTC	OSC-3	63266	20	20	20	448	448	5 1/2																					W/36" Hole opener		
2	26	HTC	OSC3A	NK 340	0	0	0	115.0	102	12	✓																						
3	26	HTC	OSC3A	260161	0	0	0	2025	875	30	✓																				Lost in hole 3 1/2" x 4"		
4	17 1/2	HTC	OSC-3	63194	0	0	0	425	176	8 1/2														1	1	I					to start 3 1/2" x 4"		
5	26	HTC	OSC-3	KE884	R	R	R	1920	1495	36														2	1	I							
6	17 1/2	HTC	OSC-3	63194	20	20	20	Drilling Current in 20" casing																									Drilling Cam-26"
7	17 1/2	Reed	YT3A	675944	20	20	20	3916	696	39															2	1	I						
8	17 1/2	HTC	OSC-3	63194	20	20	20	5400	484	3 1/2															2	2	I					Drill Cement 4 1/2"	
9	12 1/4	HTC	XIG	59396	16	16	16	8534	2134	38	✓														3	1	I						
10	12 1/4	Reed	YT3A	183	16	16	18	8865	1379	27															4	1	I						
11	12 1/4	HTC	OSC-3	75649	16	16	18	9750	885	22 1/2															4	4	I						
12	12 1/4	Reed	YT3A	148	16	16	18	10025	275	12					3000	7	35	7	35						3	1	I						
13	6"	HTC	H7J	943347	Drill Current top of liner																												
14	6"	SEC	MYN	186051																													
15	6"	SEC	N44	943346																													
16	8 1/2	HTC	XIG	87147																													
17	8 1/2	SEC	N44	277919	13	13	14																										
18	8 1/2	Reed	SSIG	NGP 111	13	13	14																										
19	8 1/2	Reed	SSIG	NGP 112																													
20	8 1/2	SEC	N44	241787																													
21	6"	Reed	HTC	NRW054																													

CONTRACTOR Napfune RIG NO. 7
 COMPANY Phillips FIELD EKO FISK
 LEASE 3/4 WELL NO. 4X 44AX
 STATE Norway COUNTY N. S
 SEC. / TSHIP/RANGE 56° 24' 28.4" N 03° 08.2 E

RIG MAKE NA-1
 RIG SIZE 1320
 PUMP NO. 1 _____
 PUMP NO. 2 _____
 MUD TYPE _____

COLLARS: OD X ID X LENGTH

X X

X X

DRILL PIPE

TOOL JOINT

MO. / DAY / YR. 1968

3RD

UNDER SURFACE

UNDER INTER.

TOTAL DEPTH

WATER SOURCE

FUEL SOURCE

RUN NO.	SIZE	MAKE	TYPE	SERIAL NO.	JETS - 32nds Reg. R or RO			DEPTH OUT	FEET	HOURS	FEET PER HOUR	CUM. HOURS	WT. 1000 LBS.	R.P.M.	PUMP PRESS.	PUMP NO. 1		PUMP NO. 2		MUD PROPERTIES						Ver. Dev.	Dull. Cond. 1/2 1/8					
					1	2	3									Liner	SPM	Liner	SPM	Wt.	WL	F.V.	P.V.	Y.P.	T		W	G				
1	17 1/2	HTC	OSC-3	63266	20	20	20	478	1418	5 1/2																				W/36" Hole opener		
2	26	HTC	OSC-3A	NK 340	0	0	0	1150	702	12																						
3	26	HTC	OSC-3A	260161	0	0	0	2025	875	30																				Lost in hole		
4	17 1/2	HTC	OSC-3	63194	0	0	0	425	76	8 1/2														1	1	I				to start 4" HAX		
5	26	HTC	OSC-3	KE884	R	R	R	1920	1495	30														2	1	I						
6	17 1/2	HTC	OSC-3	63194	20	20	20	Drilling Cement in 20" Casing																			1	1	I			Drilling Cement 36"
7	17 1/2	Reed	YT3A	675944	20	20	20	3916	596	39														2	1	I						
8	17 1/2	HTC	OSC-3	63194	20	20	20	5400	484	3 1/2														2	2	I				Drill Cement 4 1/2"		
9	12 1/4	Hico	V14	59396	16	16	16	7534	2134	38														3	1	I						
10	12 1/4	Reed	V14	183	16	16	18	8865	379	27														4	1	I						
11	12 1/4	HTC	OSC-3	75649	16	16	18	9280	885	2 1/2														4	4	I						
12	12 1/4	Reed	YT3A	148	16	16	18	10025	275	12						3000	7	35	7	35				3	1	I						
13	6"	HTC	H7N	10848	Drill out Cement top of liner																											
14	6"	HTC	H7N																													
15	6"	HTC	MYN1																													
16	6"	Reed	YS																													

CONTRACTOR <u>NEPTUNE</u>		RIG NO. <u>7</u>	RIG MAKE _____	COLLARS: OD X ID X LENGTH		MO. / DAY / YR.		T.P.-DRILLERS
COMPANY <u>Phillips</u>		FIELD <u>Ekofisk</u>	RIG SIZE _____	_____ x _____ x _____		SPUD _____ / _____ / _____		
LEASE <u>2/4</u>		WELL NO. <u>4AX14X</u>	PUMP NO. 1 _____	_____ x _____ x _____		UNDER SURFACE _____ / _____ / _____		
STATE <u>Norway</u>		COUNTY _____	PUMP NO. 2 _____	DRILL PIPE _____		UNDER INTER. _____ / _____ / _____		WATER SOURCE _____
SEC./T'SHIP/RANGE _____			MUD TYPE _____	TOOL JOINT _____		TOTAL DEPTH _____ / _____ / _____		FUEL SOURCE _____

RUN NO.	SIZE	MAKE	TYPE	SERIAL NO.	JETS - 32nds Reg. R or RO			DEPTH OUT	FEET	HOURS	FEET PER HOUR	CUM. HOURS	WT. 1000 LBS.	R.P.M.	PUMP PRESS	PUMP NO. 1		PUMP NO. 2		MUD PROPERTIES								Ver. Dev.	Dull. Cond. 1/4 1/8				Date																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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