

FLUID SAMPLE DATA				Date 4-23-72		Ticket Number 449997	
Sampler Pressure <u>434</u> P.S.I.G. at Surface Recovery: Cu. Ft. Gas _____ cc. Oil _____ cc. Water <u>2200</u> cc. Mud _____ Tot. Liquid cc. _____ Gravity _____ ° API @ _____ °F. Gas/Oil Ratio _____ cu. ft./bbl.				Kind of Job OPEN HOLE		Halliburton District FARMINGTON	
				Tester MR. SMITH		Witness MR. MICHELL	
				Drilling Contractor ALLISON DRILLING COMPANY DR S			
EQUIPMENT & HOLE DATA							
				Formation Tested Dakato			
				Elevation 6901' Ft.			
				Net Productive Interval - Ft.			
				All Depths Measured From Rotary Kelly Bushing			
				Total Depth 2736' Ft.			
				Main Hole/Casing Size 7 7/8"			
				Drill Collar Length 526' I.D. 2 1/2"			
				Drill Pipe Length 2119' I.D. 3.340"			
				Packer Depth(s) 2689'-2692' Ft.			
				Depth Tester Valve 2666' Ft.			
TYPE		AMOUNT		Depth Back Pres. Valve		Surface Choke	
Cushion				Ft.		Bottom Choke 3/4" Adj. Choke 3/4"	
Recovered	60	Feet of	drilling mud				
Recovered	932	Feet of	muddy water				
Recovered		Feet of					
Recovered		Feet of					
Recovered		Feet of					
Remarks Opened tool for 15 minute first flow with a fair blow, increased to a good blow. Closed tool for 30 minute first closed in pressure. Reopened tool for 60 minute second flow with a fair blow increasing to a good blow. Closed tool for 60 minute second closed in pressure.							
TEMPERATURE		Gauge No. 349		Gauge No. 283		Gauge No.	
		Depth: 2677 Ft.		Depth: 2732 Ft.		Depth: _____ Ft.	
Est. _____ °F.		12 Hour Clock		12 Hour Clock		Hour Clock	
		Blanked Off No		Blanked Off Yes		Blanked Off	
Actual 94 °F.		Pressures		Pressures		Pressures	
		Field	Office	Field	Office	Field	Office
Initial Hydrostatic		1305.6	1309	1327.6	1329		
First Period	Flow Initial	66.0	74	77.7	89		
	Flow Final	197.9	197	220.2	216		
	Closed in	763.2	776	779.4	795		
Second Period	Flow Initial	197.9	209	220.2	233		
	Flow Final	434.4	435	153.9	458		
	Closed in	763.2	772	779.4	791		
Third Period	Flow Initial						
	Flow Final						
Final Hydrostatic		1292.4	1309	1314.4	1329		

Legal Location Sec. - Twp. - Rng. **5-17N-8W**

Field Area **WILDCAT**

County **MC KINLEY**

State **NEW MEXICO**

SANTA FE RAILROAD

Well No. **#30**

Test No. **1**

Tested Interval **2692'-2736'**

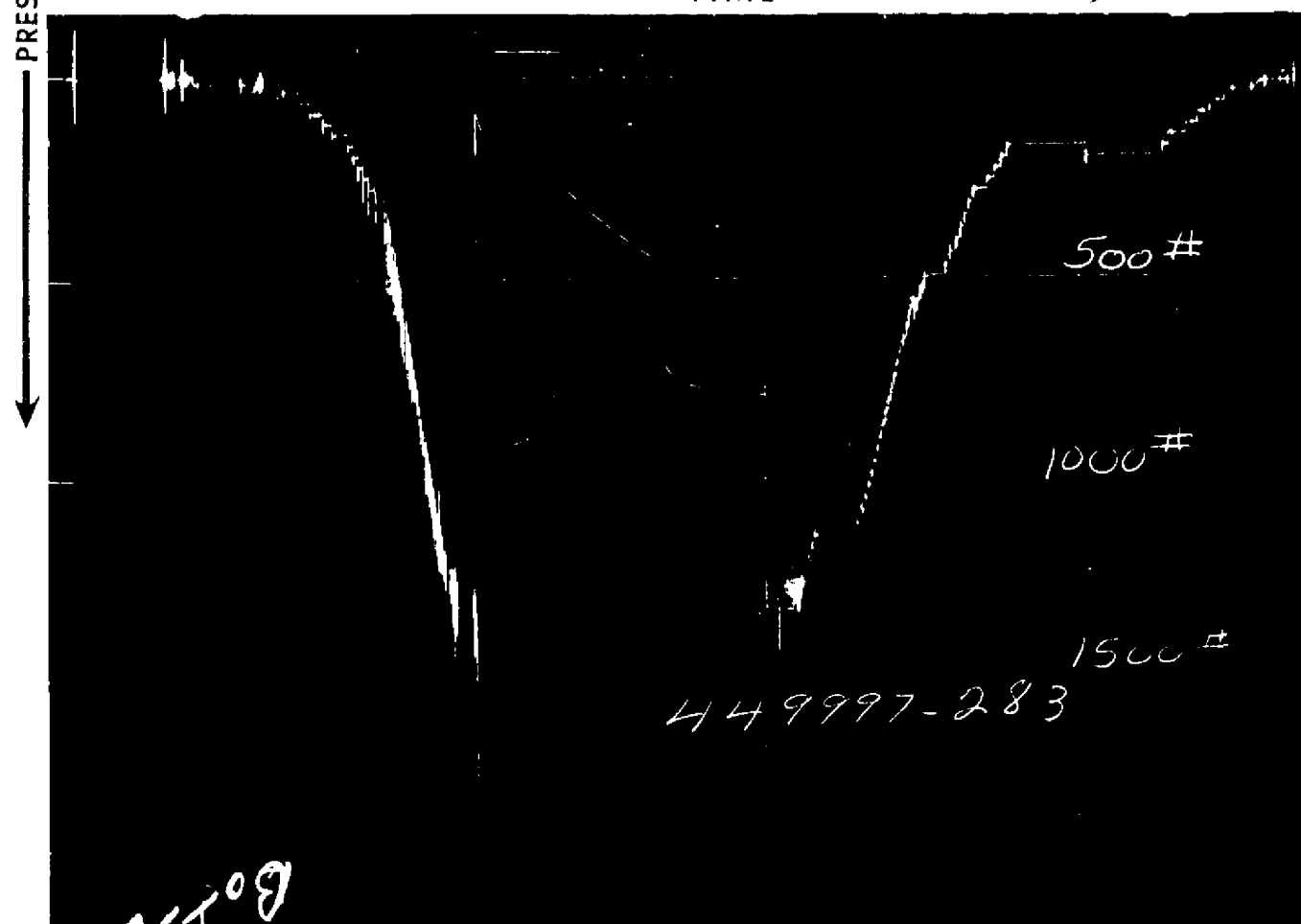
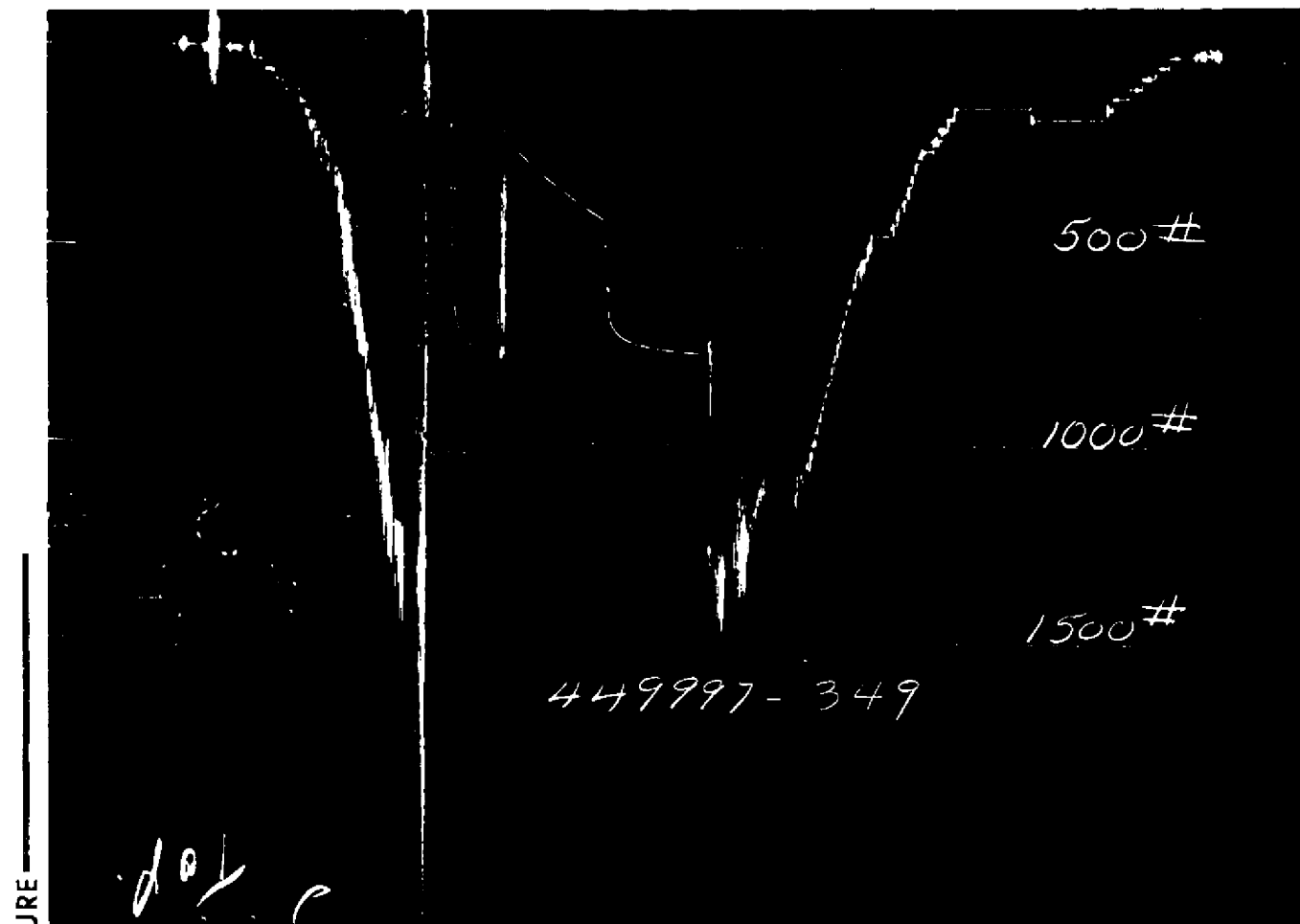
Lease Owner/Company Name **TESORO PETROLEUM CORPORATION**

Gauge No. 349		Depth		2677'		Clock No. 10444		12 hour		Ticket No. 449997	
First Flow Period		Closed In Pressure		Second Flow Period		Closed In Pressure		Third Flow Period		Closed In Pressure	
Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log } \frac{t + \theta}{\theta}$	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log } \frac{t + \theta}{\theta}$	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log } \frac{t + \theta}{\theta}$
0	.000 74	.000		.000	209	.000					
1	.0188 99	.0211		.0657	272	.0067					
2	.0376 121	.0422		.1314	312	.0134					
3	.0564 148	.0633		.1971	348	.0200					
4	.0752 171	.0844		.2628	379	.0267					
5	.0940 197	.1055		.3285	409	.0334					
6		.1266		.3940	435	.0401					
7		.1477				.0468					
8		.1688				.0535					
9		.1899				.0601					
10		.2110				.0668					
11						.1337					
12						.2005					
13						.2673					
14						.3342					
15						.4010					

Gauge No. 283		Depth		2732'		Clock No. 283		12 hour	
First Flow Period		Closed In Pressure		Second Flow Period		Closed In Pressure		Third Flow Period	
Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log } \frac{t + \theta}{\theta}$	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log } \frac{t + \theta}{\theta}$	Time Defl. .000"	PSIG Temp. Corr.
0	.000 89	.000		.000	233	.000			
1	.0194 120	.0204		.0675	288	.0068			
2	.0388 141	.0408		.1350	329	.0135			
3	.0582 168	.0612		.2025	364	.0203			
4	.0776 193	.0816		.2700	398	.0271			
5	.0970 216	.1020		.3375	429	.0338			
6		.1224		.4050	458	.0406			
7		.1428				.0474			
8		.1632				.0541			
9		.1836				.0609			
10		.2040				.0677			
11						.1353			
12						.2030			
13						.2707			
14						.3383			
15						.4060			
Reading Interval 3		3		10		*		Minutes	

REMARKS: * First 10 intervals equal to 1 minute each; last 5 intervals equal to 10 minutes each.

	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	6"	3"	1'	
Water Cushion Valve				
Drill Pipe	4"	3.340"	2119'	
Drill Collars	6"	2½"	526'	
Handling Sub & Choke Assembly				
Dual CIP Valve				
Dual CIP Sampler				
Hydro-Spring Tester	5"	¾"	4'	2666'
Multiple CIP Sampler	5"	3"	3'	
Extension Joint	5"	¾"	4'	
AP Running Case	5"	2½"	4'	2677'
Hydraulic Jar	5"	1"	6'	
VR Safety Joint	5"	1"	3'	
Pressure Equalizing Crossover				
Packer Assembly	6 ¾"	2"	6'	2689'
Distributor				
Packer Assembly	6 ¾"	2"	4'	2692'
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars	6"	2½"	29'	
Flush Joint Anchor	5"	2"	9'	
Blanked-Off B.T. Running Case	5"	2½"	5'	2732'



Each Horizontal Line Equal to 1000 p.s.i.

NOMENCLATURE

b	= Approximate Radius of Investigation	Feet
b_1	= Approximate Radius of Investigation (Net Pay Zone h)	Feet
D.R.	= Damage Ratio	—
El	= Elevation	Feet
GD	= B.T. Gauge Depth (From Surface Reference)	Feet
h	= Interval Tested	Feet
h_1	= Net Pay Thickness	Feet
K	= Permeability	md
K_1	= Permeability (From Net Pay Zone h)	md
m	= Slope Extrapolated Pressure Plot (Psi ² /cycle Gas)	psi/cycle
OF ₁	= Maximum Indicated Flow Rate	MCF/D
OF ₂	= Minimum Indicated Flow Rate	MCF/D
OF ₃	= Theoretical Open Flow Potential with/Damage Removed Max.	MCF/D
OF ₄	= Theoretical Open Flow Potential with/Damage Removed Min.	MCF/D
P_s	= Extrapolated Static Pressure	Psig.
P_f	= Final Flow Pressure	Psig.
P_o	= Potentiometric Surface (Fresh Water *)	Feet
Q	= Average Adjusted Production Rate During Test	bbls/day
Q ₁	= Theoretical Production w/Damage Removed	bbls/day
Q _g	= Measured Gas Production Rate	MCF/D
R	= Corrected Recovery	bbls
r_w	= Radius of Well Bore	Feet
t	= Flow Time	Minutes
t_o	= Total Flow Time	Minutes
T	= Temperature Rankine	°R
Z	= Compressibility Factor	—
μ	= Viscosity Gas or Liquid	CP
Log	= Common Log	

* Potentiometric Surface Reference to Rotary Table When Elevation Not Given.
Fresh Water Corrected to 100 °F.