FLUID SAMPLER DATA

Sampler Pressure _____ P.S.I.G. at Surface
Recovery: Cu. Ft. Gas _____
cc. Oil _____
cc. Water _____
cc. Mud _____
Tot. Liquid cc. _____
Gravity _____ ° API @ _____ °F.
Gas/Oil Ratio _____ cu. ft./bbl.

	RESISTIVITY	CHLORIDE CONTENT
Recovery Water	_____ @ _____ °F.	_____ ppm
Recovery Mud	_____ @ _____ °F.	
Recovery Mud Filtrate	_____ @ _____ °F.	_____ ppm
Mud Pit Sample	_____ @ _____ °F.	
Mud Pit Sample Filtrate	_____ @ _____ °F.	_____ ppm
Mud Weight	10 vis	47 cp

Date 7-5-69 Ticket Number 084373
Kind of Job OPEN HOLE Halliburton District GREAT BEND
Tester MR. MOORE Witness MR. ROACH
Drilling Contractor WOODMAN-IANNITTI DRILLING COMPANY DR

EQUIPMENT & HOLE DATA

Formation Tested Mississippi
Elevation 1438' GL Ft.
Net Productive Interval 18 Ft.
All Depths Measured From Kelly Bushing
Total Depth 3892 Ft.
Main Hole/Casing Size 7 7/8
Drill Collar Length - I.D. -
Drill Pipe Length 3865 I.D. 3.826
Packer Depth(s) 3870 Ft.
Depth Tester Valve 3848 Ft.

Cushion TYPE - AMOUNT - Ft. Depth Back Pres. Valve 3847 Surface Choke 1" Bottom Choke 3/4"

Recovered 215 Feet of gassy oil spec. mud
Recovered 15 Feet of muddy water
Recovered Feet of
Recovered Feet of
Recovered Feet of

Mea. From Tester Valve

Remarks Opened tool for 30 minute first flow with a good blow. Closed tool for 60 minute first closed in pressure. Reopened tool for 90 minute second flow with a good blow, gas to surface in 58 minute. Closed tool for 60 minute second closed in pressure. UNABLE TO PERFORM CALCULATION SERVICE DUE TO INSUFFICIENT CLOSURE OF THE CLOSED IN PRESSURES.

TEMPERATURE	Gauge No. 698 Depth: 3857 Ft.	Gauge No. 697 Depth: 3888 Ft.	Gauge No. Depth: Ft.	TIME
	12 Hour Clock	12 Hour Clock	Hour Clock	Tool Opened A.M. P.M.
Est. °F.	Blanked Off No	Blanked Off Yes	Blanked Off	
3886' Actual 117 °F.	Pressures	Pressures	Pressures	Tool Closed A.M. P.M.

		Field	Office	Field	Office	Field	Office	Reported Minutes	Computed Minutes
Initial Hydrostatic			2049	1840	2167				
First Period Flow	Initial		27	40	96			——	——
	Final		58	60	65			30	30
	Closed in		637	651	643			60	60
Second Period Flow	Initial		73	50	99			——	——
	Final		84	90	94			90	90
	Closed in		632	640	641			60	60
Third Period Flow	Initial							——	——
	Final								
	Closed in								
Final Hydrostatic			2026	1840	2135			——	——

Legal Location Sec. - Twp. - Rng. 20-28S-5W-NW-SE-SW
Lease Name ALTHOUSE
Well No. 4
Test No. 1
Field Area -
Tested Interval 3870'-3892'
County KINGMAN
State KANSAS
Lease Owner/Company Name SHALLOW WATER REFINING COMPANY

PRINTED IN U.S.A.

FORMATION TEST DATA

LITTLE'S 83429 15M 4/69—33, 34-13

5

Gauge No. 698			Depth 3857'			Clock No. -			12 hour		Ticket No. 084373		
	First Flow Period		First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
0	.000	27	.000		58	.000	73	.000		84					
1	.0337	36	.0403		148	.100	61	.0396		176					
2	.0674	36	.0806		225	.200	70	.0792		256					
3	.1011	46	.1209		295	.300	75	.1188		328					
4	.1348	51	.1612		362	.400	77	.1584		393					
5	.1685	55	.2015		422	.500	80	.1980		447					
6	.2020	58	.2418		474	.600	84	.2376		495					
7			.2821		525			.2772		537					
8			.3224		566			.3168		574					
9			.3627		602			.3564		605					
10			.4030		637			.3960		632					
11															
12															
13															
14															
15															

Gauge No. 697				Depth 3888'			Clock No. -			hour 12				
0	.000	96	.000		65	.000	99	.000		94					
1	.0338	98	.0408		156	.1023	71	.0400		187					
2	.0676	52	.0816		234	.2046	78	.0800		269					
3	.1014	57	.1224		305	.3069	82	.1200		341					
4	.1352	60	.1632		373	.4092	85	.1600		403					
5	.1690	63	.2040		429	.5115	89	.2000		458					
6	.2030	65	.2448		482	.6140	94	.2400		506					
7			.2856		530			.2800		547					
8			.3264		574			.3200		583					
9			.3672		612			.3600		615					
10			.4080		643			.4000		641					
11															
12															
13															
14															
15															
Reading Interval		5		6			15			6					Minutes

REMARKS:

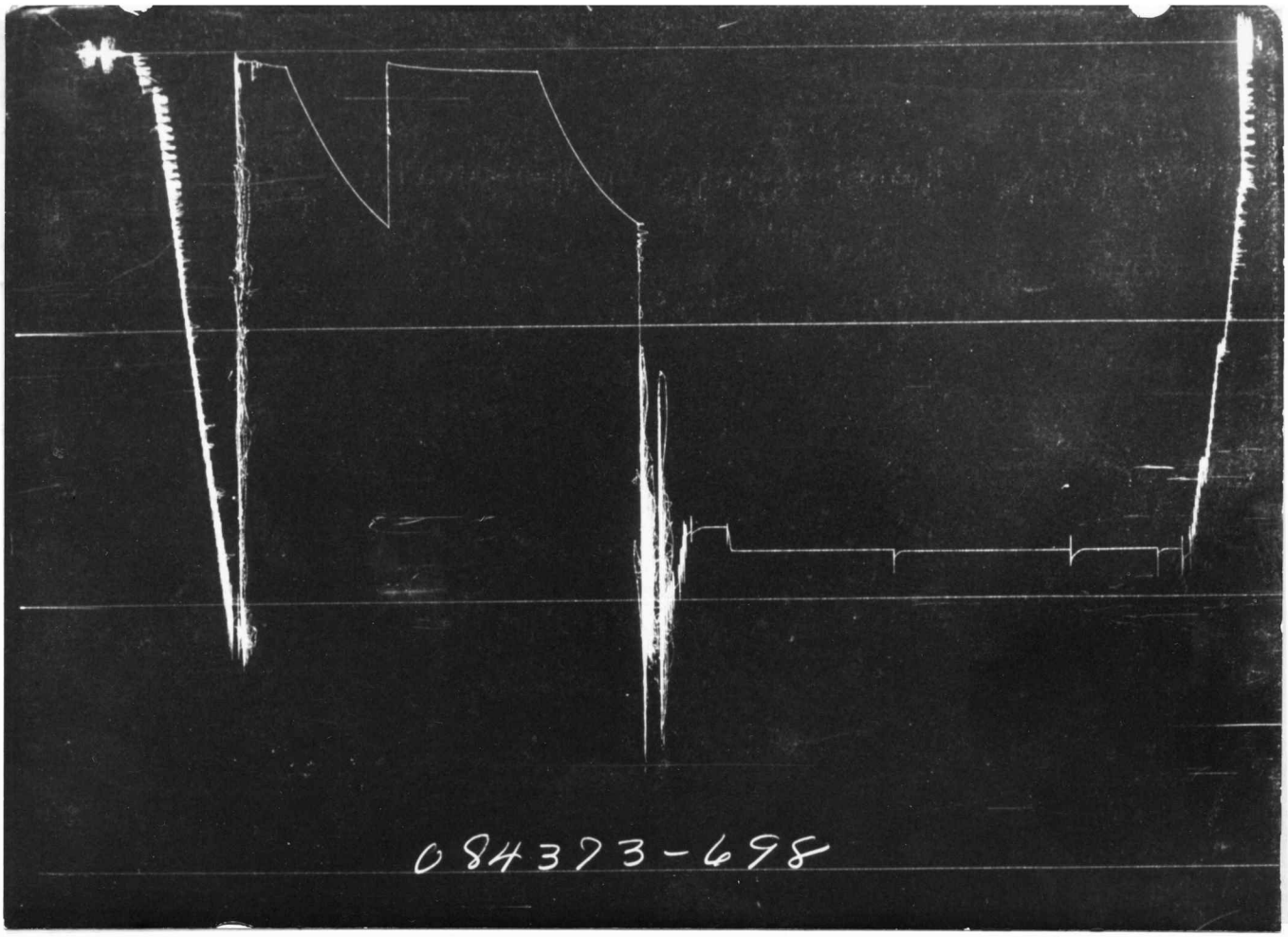
U1

SPECIAL PRESSURE DATA

LITTLE'S 83428 10M 4/69—13, 14-13

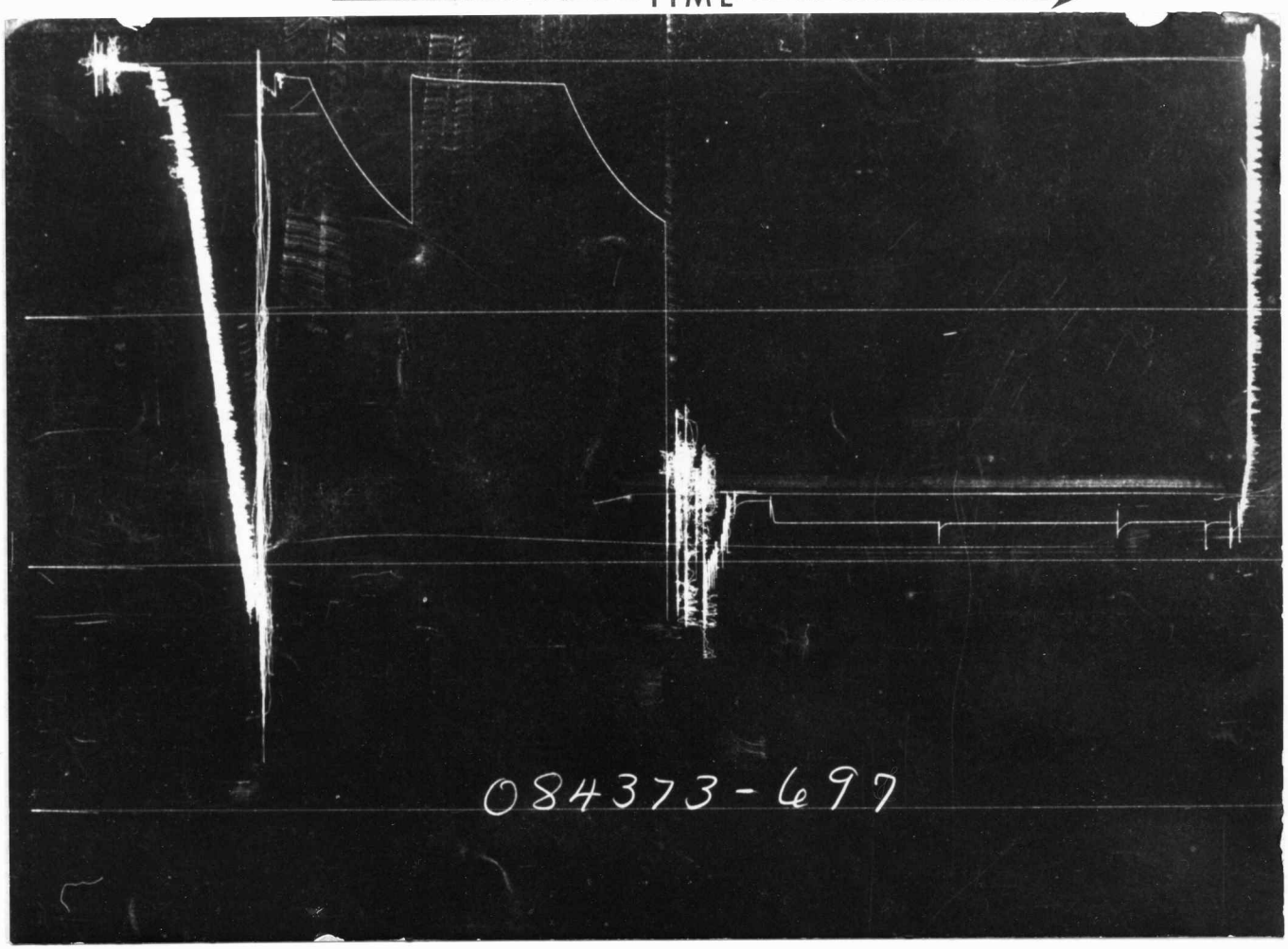
084373

	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	5.75	2.75	12	
Water Cushion Valve				
Drill Pipe	4½	3.826	3865	
Drill Collars				
Handling Sub & Choke Assembly				
Dual CIP Valve	5	.87	60.92	
Dual CIP Sampler				
Hydro-Spring Tester	5	.75	60.21	3848
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5	3.06	49.63	3857
Hydraulic Jar	5	.87	39.46	
VR Safety Joint	5	1	33.40	
Pressure Equalizing Crossover				
Packer Assembly	6 3/4	1.53	48.89	3865
Distributor				
Packer Assembly	6 3/4	1.53	48.89	3870
Flush Joint Anchor	5	2.37	18	
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case	5	3.06	49.63	3888
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars				
Flush Joint Anchor				
Blanked-Off B.T. Running Case				

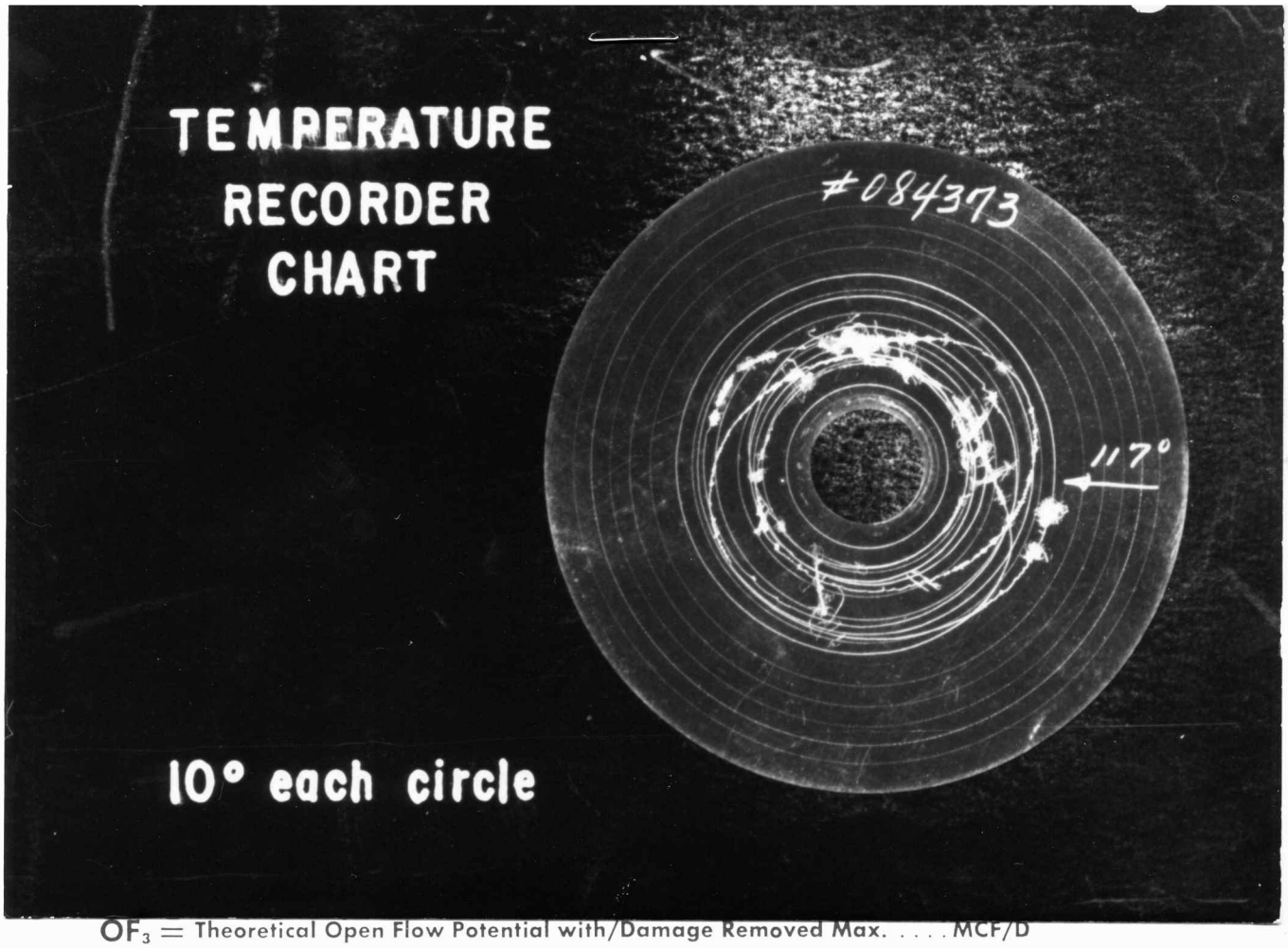


PRESSURE

TIME



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



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_{ot} = 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.