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 35 ° API @ 72 °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	9.6 vis	50 cp	

Date 6-1-71 Ticket Number 503513
Kind of Job OPEN HOLE Halliburton District GREAT BEND
Tester L. MOORE Witness PAUL LACEY
Drilling Contractor GABBERT-JONES DRILLING COMPANY SM S

EQUIPMENT & HOLE DATA

Formation Tested Mississippi
Elevation 2317' Kelly bushing Ft.
Net Productive Interval 14' Ft.
All Depths Measured From Kelly bushing
Total Depth 4950' Ft.
Main Hole/Casing Size 7 7/8"
Drill Collar Length 368.95-907.23' I.D. 2.25" -2.764"
Drill Pipe Length 3673.82' I.D. 3.826"
Packer Depth(s) 4924-4929' Ft.
Depth Tester Valve 4909' Ft.

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

Recovered 1000 Feet of gassy-muddy-froggy oil
Recovered Feet of
Recovered Feet of
Recovered Feet of
Recovered Feet of

Meas. From Tester Valve

Remarks Tool opened for 31 minute first flow with a strong blow with gas to the surface in 3 minutes. Closed tool for 29 minute first closed in pressure. Tool reopened for 90 minute second flow. Took 60 minute second closed in pressure. SEE PRODUCTION TEST DATA SHEET.

TEMPERATURE	Gauge No. 684 Depth: 4914 Ft.	Gauge No. 528 Depth: 4945 Ft.	Gauge No. Depth: Ft.	TIME
	12 Hour Clock	12 Hour Clock	Hour Clock	Tool Opened 7:00 A.M. P.M.
Est. °F.	Blanked Off no	Blanked Off yes	Blanked Off	
4944' Actual 112 °F.	Pressures	Pressures	Pressures	Tool Closed 10:30 A.M. P.M.

		Field	Office	Field	Office	Field	Office	Reported Minutes	Computed Minutes
Initial Hydrostatic		-	2567	2572	2581				
First Period Flow	Initial	-	141	146	234			___	___
	Final	-	145	154	154			30	31
	Closed in	-	1473	1468	1472			30	29
Second Period Flow	Initial	-	139	129	167			___	___
	Final	-	142	146	148			90	90
	Closed in	-	1328	1287	1326			60	60
Third Period Flow	Initial							___	___
	Final								
	Closed in								
Final Hydrostatic		-	2552	2555	2560			___	___

Legal Location Sec. - Twp. - Rng. 23 27S 21W C SE SW
Lease Name BIRNEY
Well No. 1
Test No. 1
Field Area WILDCAT
Tested Interval 4929-4950'
County FORD
State KANSAS
Lease Owner/Company Name BEARDMORE OIL COMPANY

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FORMATION TEST DATA

LITTLE'S 83429 15M 4/69—33, 34-13

(5)

Casing perfs. _____ Bottom choke 3/4" Surf. temp _____ °F Ticket No. 503513

Gas gravity _____ Oil gravity 35 @ 72°F GOR _____

Spec. gravity _____ Chlorides _____ ppm Res. _____ @ _____ °F

Date 6-1-71 Time 7:00 a.m. p.m.	Surf. Choke Size	Surface Pressure psi	Gas Rate MCF	Liquid Rate BPD	Remarks
					Gas measured from 2" flow line.
7:03	1"				Gas to the surface in 3 minutes.
		Inches in water			
7:10	1"	25	699	None	Measurments are inches in water.
7:15	1"	28	747	None	Measured with 2" pitot tube.
7:20	1"	28	747	None	After trapped gas sample.
7:25	1"	30	770	None	
7:30	Closed in.				
8:00	1"				
8:10	1"	28	747	None	
8:15	1"	27	731	None	
8:20	1"	26	714	None	
8:25	1"	25 1/4	701	None	
8:30	1"	24 1/2	691	None	
8:35	1"	24	683	None	
8:40	1"	23	668	None	
8:45	1"	22 3/4	664	None	
8:50	1"	22	652	None	
8:55	1"	21 3/4	638	None	
9:05	1"	20	621	None	
9:10	1"	20	621	None	
9:15	1"	19	606	None	
9:20	1"	19	606	None	
9:25	Stabilized @		606	None	
9:30					Closed in.
10:30					Came off bottom.

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PRODUCTION TEST DATA

LITTLE'S 83432 5M 4/69—43-13

(5)

Gauge No.	684	Depth	4914'	Clock No.	7098	12 hour	Ticket No.	503513	

	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	141	.000		145	.000	139	.000		142					
1	.205	145	.0203	1.045	1304	.1007	136	.0266	1.497	1149					
2			.0406	.781	1395	.2014	137	.0532	1.209	1205					
3			.0609	.640	1417	.3021	139	.0798	1.046	1228					
4			.0812	.547	1432	.4028	140	.1064	.934	1246					
5			.1015	.479	1443	(.4470-S	145)	.1330	.850	1260					
6			.1218	.428	1451	.5035	140	.1596	.783	1272					
7			.1421	.387	1459	.6040	142	.1862	.727	1281					
8			.1624	.354	1465			.2128	.681	1290					
9			.1827	.326	1470			.2394	.641	1296					
10			.1960*	.310	1473			.2660	.606	1303					
11								.2926	.575	1308					
12								.3192	.548	1315					
13								.3458	.523	1319					
14								.3724	.501	1322					
15								.3990	.481	1328					

Gauge No.	528	Depth	4945'	Clock No.	3459	12 hour			
0	.000	234	.000		154	.000	167	.000		148					
1	.205	154	.0204	1.043	1266	.0998	144	.0265	1.496	1145					
2			.0408	.779	1391	.1996	144	.0530	1.208	1202					
3			.0612	.638	1415	.2994	145	.0795	1.045	1226					
4			.0816	.545	1429	.3992	147	.1060	.933	1244					
5			.1020	.478	1441	(.4410-S	152)	.1325	.849	1258					
6			.1224	.427	1450	.4990	146	.1590	.782	1270					
7			.1428	.386	1457	.5990	148	.1855	.727	1280					
8			.1632	.353	1464			.2120	.680	1288					
9			.1836	.325	1468			.2385	.640	1295					
10			.1970*	.309	1472			.2650	.605	1301					
11								.2915	.574	1307					
12								.3180	.547	1312					
13								.3445	.522	1318					
14								.3710	.500	1322					
15								.3970	.480	1326					

Reading Interval - 3 15 4 Minutes

REMARKS: S= surface closure. *Last interval is equal to 2 minutes.

(27)

Gas Production

B.T. Gauge Numbers			684	528	Ticket Number		503513	
			PRESSURE	PRESSURE				
Initial Hydrostatic			2567	2581	Elevation		2317	ft.
Final Hydrostatic			2552	2560	Production Rate	1st Flow	-	MCF
1st Flow	Initial	Time	141	234		2nd Flow	606	MCF
	Final	31	145	154		3rd Flow	-	MCF
	Closed In Pressure	29	1473	1472	Hole Size		7.875	in.
2nd Flow	Initial	Time	139	167	Footage Tested	Net	14	ft.
	Final	90	142	148	Mud Weight		9.6	lbs./gal.
	Closed In Pressure	60	1328	1326	Gas Viscosity		0.016	cp
3rd Flow	Initial	Time			Gas Gravity	Est.	0.65	—
	Final				Gas Compressibility		0.83	—
	Closed In Pressure				Temperature		112°	°F
Extrapolated Static Pressure		1st	1529	1527				
		2nd	1417**	1417**				
		3rd	-	-				
Slope P/10		1st	-	-				
		2nd	1326	1326				
		3rd	-	-				

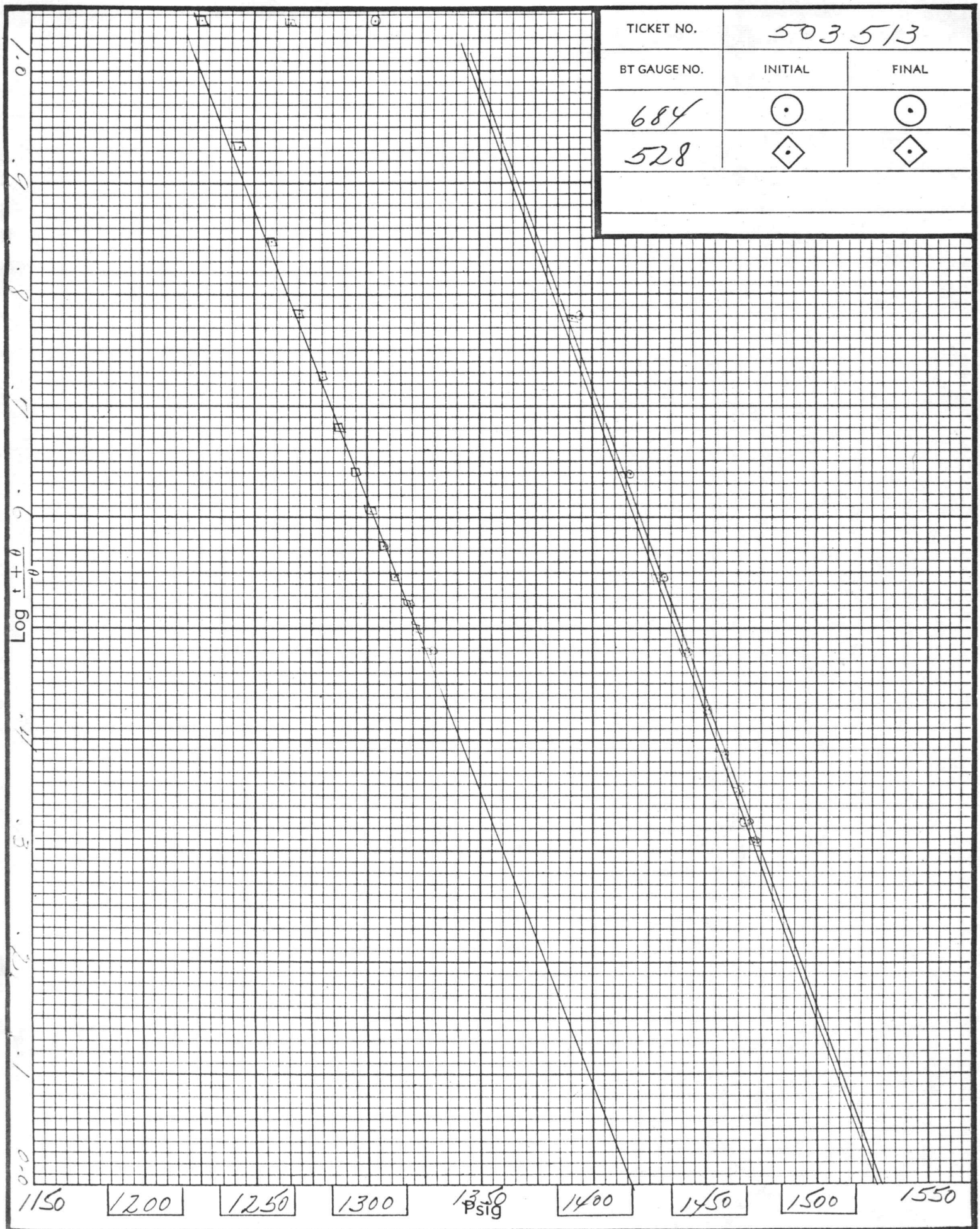
Remarks: *The initial closed in pressure may be supercharged in view of the possibility that the tools were plugging. The final flow does not indicate pressure loss which generally is indicative if depletion is occuring. No calculations attempted for first flow and closed in pressure.

**Both gauges extrapolate to approximately the same value.

SUMMARY

PRODUCT	EQUATION	B.T. Gauge No. 684 Depth 4914' FIRST	SECOND	THIRD	B.T. Gauge No. 528 Depth 4945' FIRST	SECOND	THIRD	UNITS
Transmissability	$\frac{Kh}{\mu} = \frac{1637\ Q_g\ ZT}{m}$		938.5			938.5		md. ft. / cp
Theoretical Flow Capacity	$Kh = \frac{Kh}{\mu}\ \mu$		15.01			15.01		md. ft.
Average Effective	$K = \frac{Kh}{h}$		-			-		md.
Permeability	$K_1 = \frac{Kh}{h_1}$		1.073			1.073		md.
Indicated Flow Capacity	$(Kh)_2 = \frac{3200\ Q_g\ \mu\ ZT\ \mathrm{Log}(0.472\ b/r_w)}{P_s^2 - P_F^2}$		9.33			9.34		md. ft.
Damage Ratio	$DR = \frac{\text{Theo. Flow Cap}}{\text{Indicated Flow Cap}}\ \frac{Kh}{(Kh)_2}$		1.60			1.60		—
Indicated Flow Rate	$OF_1 = \frac{Q_g\ P_s^2}{P_s^2 - P_F^2}$ Max.		612			612		MCFD
	$OF_2 = \frac{Q_g\ P_s}{\sqrt{P_s^2 - P_F^2}}$ Min.		609			609		MCFD
Theoretical Potential Rate	$OF_3 = OF_1\ DR$ Max.		984			984		MCFD
	$OF_4 = OF_2\ DR$ Min.		979			979		MCFD
Approx. Radius of Investigation	$b \backsimeq \sqrt{Kt}$ or $\sqrt{Kt_0}$		-			-		ft.
	$b_1 \backsimeq \sqrt{K_1 t}$ or $\sqrt{K_1 t_0}$		11.7			11.7		ft.
Potentiometric Surface *	$Pot. = (EI - GD) + (2.319\ Ps)$		689			658		ft.

NOTICE: These calculations are based upon information furnished by you and taken from Drill Stem Test pressure charts, and are furnished you for your information. In furnishing such calculations and evaluations based thereon, Halliburton is merely expressing its opinion. You agree that Halliburton makes no warranty express or implied as to the accuracy of such calculations or opinions, and that Halliburton shall not be liable for any loss or damage, whether due to negligence or otherwise, in connection with such calculations and opinions.



EXTRAPOLATED PRESSURE GRAPH

(5)

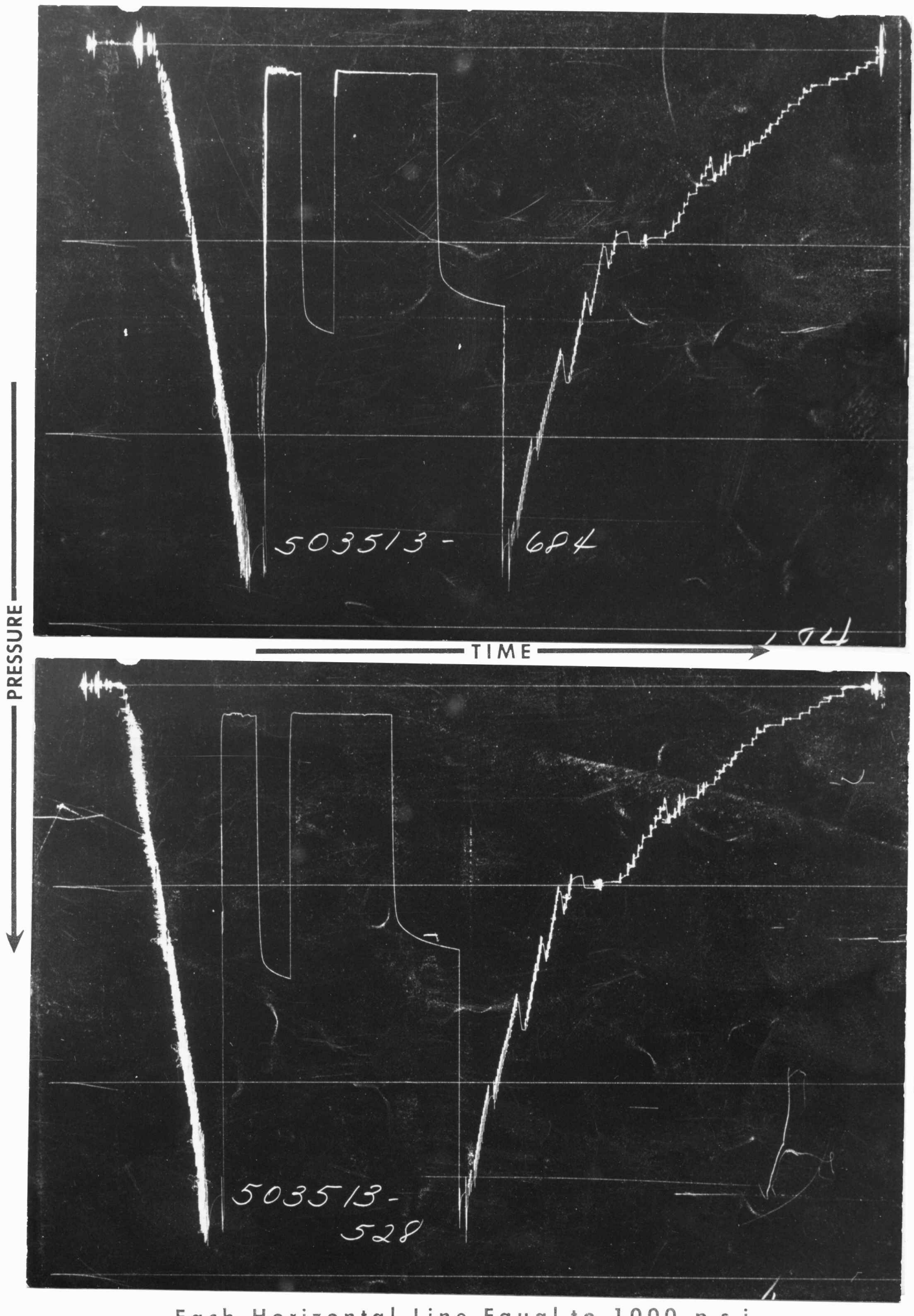
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LITTLE 5 89427 10M 4/69—BX.205

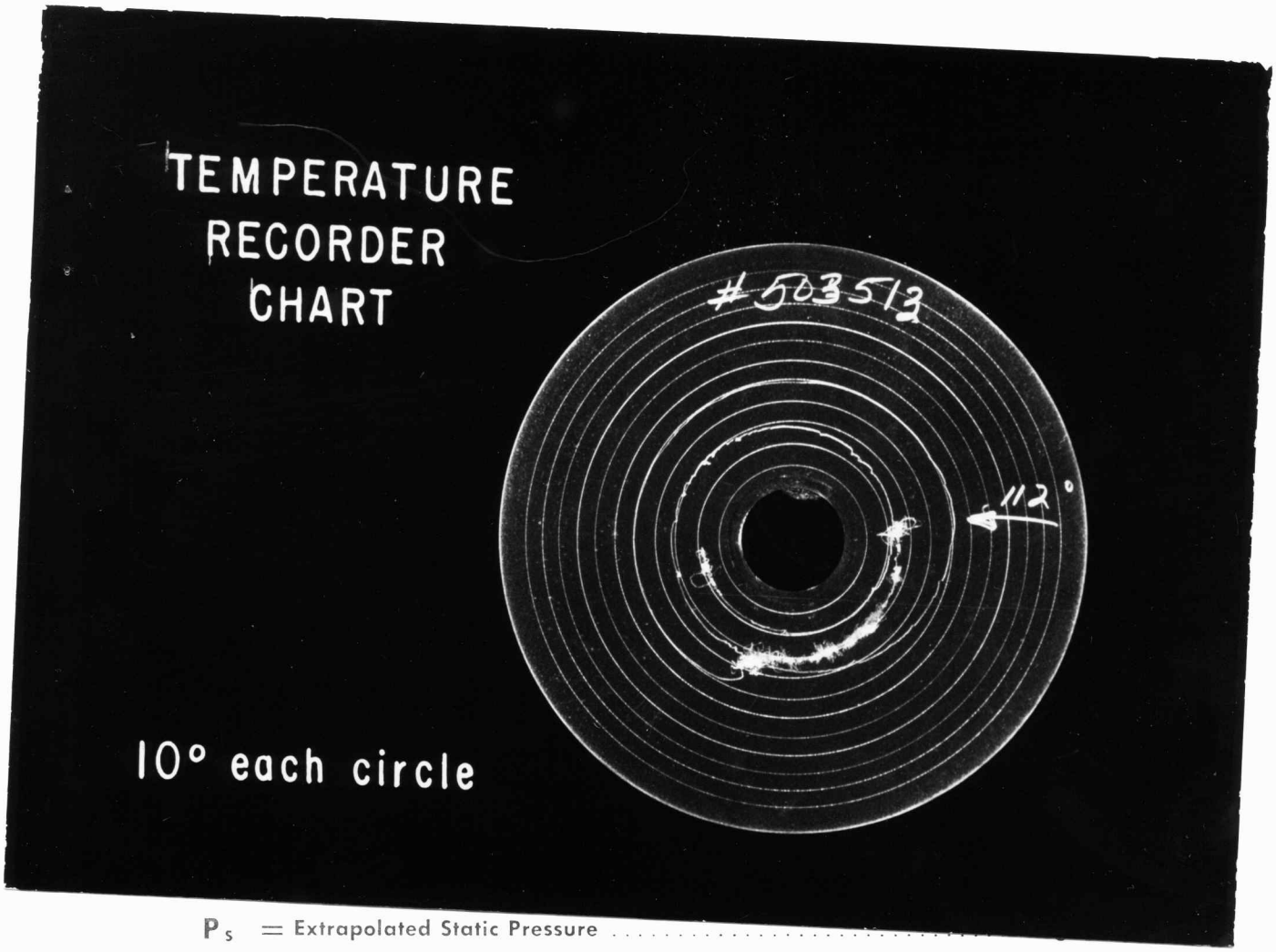
503513



	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	5.75"	2.75"	12"	
Water Cushion Valve				
Drill Pipe	4½"	3.826"	3673.82'	
Drill Collars	-	2.25"	368.95'	
Weight Pipe	4½"	2.50"	907.23'	
Handling Sub & Choke Assembly				
Dual CIP Valve	5"	.87"	60.92"	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	60.21"	4909'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.06"	49.63"	4914'
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"	4924'
Distributor				
Packer Assembly	6 3/4"	1.53"	48.89"	4929'
Flush Joint Anchor	5"	2.37"	12'	
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				
Flush Joint Anchor				
Blanked-Off B.T. Running Case	5"	3.06"	61.63"	4945'



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



P_s	= Extrapolated Static Pressure	
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.

FLUID SAMPLE DATA

Sampler Pressure _____ P.S.I.G. at Surface
Recovery: Cu. Ft. Gas _____
cc. Oil _____
cc. Water _____
cc. Mud _____
Tot. Liquid cc. _____
Gravity 35 ° API @ 62 °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	9.9	vis 46	cp

Date 6-2-71 Ticket Number 503514
Kind of Job OPEN HOLE Halliburton District GREAT BEND
Tester MR. MOORE Witness MR. ZORGER
Drilling Contractor GABBERT & JONES DRILLING COMPANY

EQUIPMENT & HOLE DATA

Formation Tested Mississippi Dolomite
Elevation 2317' Ft.
Net Productive Interval 10' Ft.
All Depths Measured From Kelly Bushing
Total Depth 4960' Ft.
Main Hole/Casing Size 7 7/8"
Drill Collar Length 389.65' I.D. 2.25"
Drill Pipe Length 3629.42'-907.23'WP I.D. 3.826"-2.76"WP
Packer Depth(s) 4950' Ft.
Depth Tester Valve 4935' Ft.

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

Recovered 280 Feet of Free oil
Recovered 230 Feet of Muddy oil
Recovered 100 Feet of Water
Recovered Feet of
Recovered Feet of

Meas. From Tester Valve

Remarks Opened tool for 61 minute first flow with a good blow increasing to strong throughout test. Closed tool for 33 minute initial closed in pressure. Reopened tool for 62 minute second flow with a strong blow; gas to surface in 75 minutes-too small to measure. Closed tool for 88 minute second closed in pressure.

TEMPERATURE	Gauge No. 528		Gauge No. 684		Gauge No.		TIME	
	Depth: 4940' Ft.		Depth: 4955' Ft.		Depth: Ft.			
	12 Hour Clock		12 Hour Clock		Hour Clock		Tool Opened	3:34 P.M.
Est. °F.	Blanked Off NO		Blanked Off YES		Blanked Off			
4954'@							Tool Closed	7:38 P.M.
Actual 119 °F.	Pressures		Pressures		Pressures			
	Field	Office	Field	Office	Field	Office	Reported Minutes	Computed Minutes
Initial Hydrostatic	-	2573	2502	2584				
First Period Flow Initial	-	22	35	31			___	___
First Period Flow Final	-	127	141	134			60	61
First Period Closed in	-	1424	1439	1434			32	33
Second Period Flow Initial	-	150	141	156			___	___
Second Period Flow Final	-	218	229	225			62	62
Second Period Closed in	-	1461	1475	1470			90	88
Third Period Flow Initial							___	___
Third Period Flow Final								
Third Period Closed in								
Final Hydrostatic	-	2478	2484	2492			___	___

Legal Location Sec. - Twp. - Rng. 23 - 27S - 21W
Lease Name BIRNEY
Well No. 1
Test No. 2
Tested Interval 4950' - 4960'
Field Area WILDCAT
County FORD
State KANSAS
Lease Owner/Company Name BEARDMORE OIL COMPANY

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FORMATION TEST DATA

LITTLE'S

Gauge No.	528	Depth	4940'	Clock No.	3459	12 hour	Ticket No.	503514

	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	22	.000	---	127	.000	150	.000	---	218					
1	.0654	45	.0201	1.319	710	.0398	145**	.0527	1.214	1123					
2	.1308	64	.0402	1.038	1012	.0862	159	.1054	.938	1287					
3	.1962	85	.0603	.881	1162	.1326	165	.1581	.786	1351					
4	.2616	100	.0804	.775	1251	.1790	174	.2108	.685	1385					
5	.3271	113	.1005	.696	1303	.2254	183	.2635	.610	1406					
6	.3990	127*	.1206	.634	1341	.2718	191	.3162	.551	1421					
7			.1407	.583	1367	.3182	201	.3689	.504	1432					
8			.1608	.541	1388	.3646	209	.4216	.465	1441					
9			.1809	.505	1403	.4110	218	.4743	.432	1449					
10			.2010	.474	1415			.5270	.404	1455					
11			.2210	.448	1424			.5800	.379	1461					
12															
13															
14															
15															

Gauge No.	684	Depth	4955'	Clock No.	7098	12 hour

0	.000	31	.000	---	134	.000	156	.000	---	225					
1	.0657	50	.0201	1.321	729	.0399	153**	.0527	1.215	1137					
2	.1315	71	.0402	1.040	1026	.0864	166	.1054	.940	1300					
3	.1972	91	.0603	.883	1174	.1329	171	.1581	.788	1361					
4	.2630	107	.0804	.777	1261	.1794	181	.2108	.686	1394					
5	.3287	120	.1005	.698	1315	.2259	191	.2635	.611	1415					
6	.4010	134*	.1206	.635	1353	.2724	199	.3162	.552	1430					
7			.1407	.585	1379	.3189	208	.3689	.505	1441					
8			.1608	.543	1399	.3654	216	.4216	.466	1451					
9			.1809	.507	1414	.4120	225	.4743	.433	1457					
10			.2010	.476	1425			.5270	.405	1464					
11			.2210	.449	1434			.5800	.380	1470					
12															
13															
14															
15															
Reading Interval	10		3			7		8							Minutes

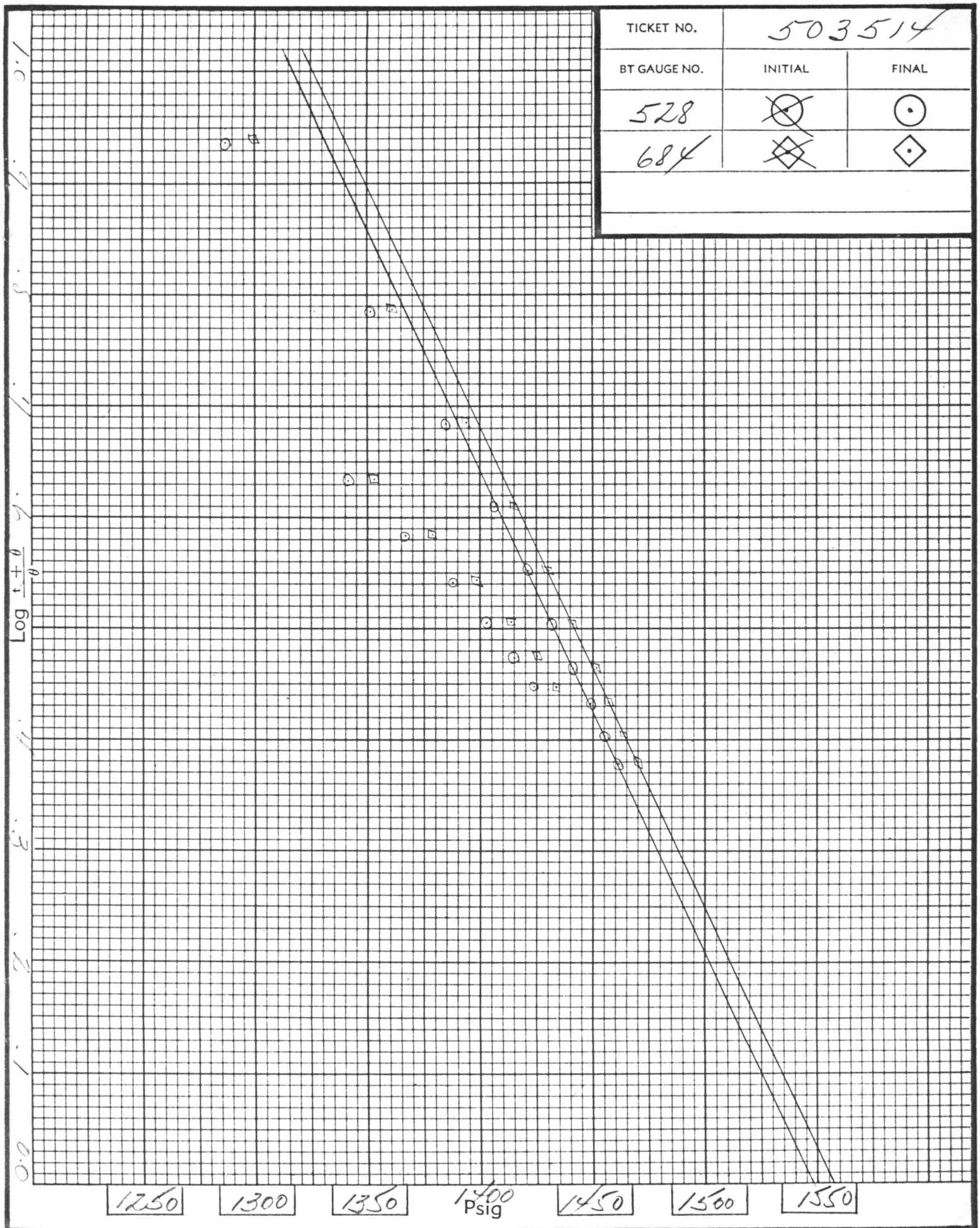
REMARKS: *Last interval equal to 11 minutes **First interval equal to 6 minutes

(27)

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SPECIAL PRESSURE DATA

LITTLE'S



EXTRAPOLATED PRESSURE GRAPH

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LITTLE'S 83427 10M 4/69 - 11X.205

Liquid Production

B.T. Gauge Numbers			528	684	Ticket Number		503514
			PRESSURE	PRESSURE			
Initial Hydrostatic			2573	2584	Elevation		2317 ft.
Final Hydrostatic			2478	2492	Indicated Production	1st Flow	- bbls./day
1st Flow	Initial	Time	22	31		2nd Flow	49 bbls./day
	Final	61	127	134		3rd Flow	- bbls./day
	Closed In Pressure	33	1424	1434	Drill Collar Length		907.23'FW-389.65' ft.
2nd Flow	Initial	Time	150	156	Drill Collar I.D.		0.00742-0.0049 in.
	Final	62	218	225	Drill Pipe Factor		0.01422 bbls./ft.
	Closed In Pressure	88	1461	1470	Hole Size		7.875 in.
3rd Flow	Initial	Time			Footage Tested		10 ft.
	Final				Mud Weight		9.9 lbs./gal.
	Closed In Pressure				Viscosity, Oil/~~Gas/Water~~		4.5 cp
Extrapolated Static Pressure		1st	*	*	Oil API Gravity		35° —
		2nd	1548	1557	Water Specific Gravity		- —
		3rd	-	-	Temperature		119 °F
Slope P/10		1st	-	-			
		2nd	1317	1326			
		3rd	-				

Remarks: *Initial closed in pressure has insufficient closure for extrapolation purposes.

Production rate indicates total fluids.

SUMMARY

PRODUCT	EQUATION	B.T. Gauge No. 528 Depth 4940' FIRST	SECOND	THIRD	B.T. Gauge No. 684 Depth 4955' FIRST	SECOND	THIRD	UNITS
Production	$Q = \frac{1440\ R}{t}$		48.9			48.9		bbls. day
Transmissability	$\frac{Kh}{\mu} = \frac{162.6\ Q}{m}$		34.52			34.52		md. ft. / cp
Indicated Flow Capacity	$Kh = \frac{Kh}{\mu}\ \mu$		155.03			155.03		md. ft.
Average Effective Permeability	$K = \frac{Kh}{h}$		15.503			15.503		md.
	$K_1 = \frac{Kh}{h_1}$		-			-		md.
Damage Ratio	$DR = .183\ \frac{Ps - Pf}{m}$		1.05			1.05		—
Theoretical Potential w/Damage Removed	$Q_1 = Q\ DR$		51.5			51.6		bbls. day
Approx. Radius of Investigation	$b \backsimeq \sqrt{Kt}$ or $\sqrt{Kt_0}$		43.6			43.6		ft.
	$b_1 \backsimeq \sqrt{K_1 t}$ or $\sqrt{K_1 t_0}$		-			-		ft.
Potentiometric Surface *	$Pot. = El - GD + 2.319\ Ps$		967			973		ft.

NOTICE: These calculations are based upon information furnished by you and taken from Drill Stem Test pressure charts, and are furnished you for your information. In furnishing such calculations and evaluations based thereon, Halliburton is merely expressing its opinion. You agree that Halliburton makes no warranty express or implied as to the accuracy of such calculations or opinions, and that Halliburton shall not be liable for any loss or damage, whether due to negligence or otherwise, in connection with such calculations and opinions.

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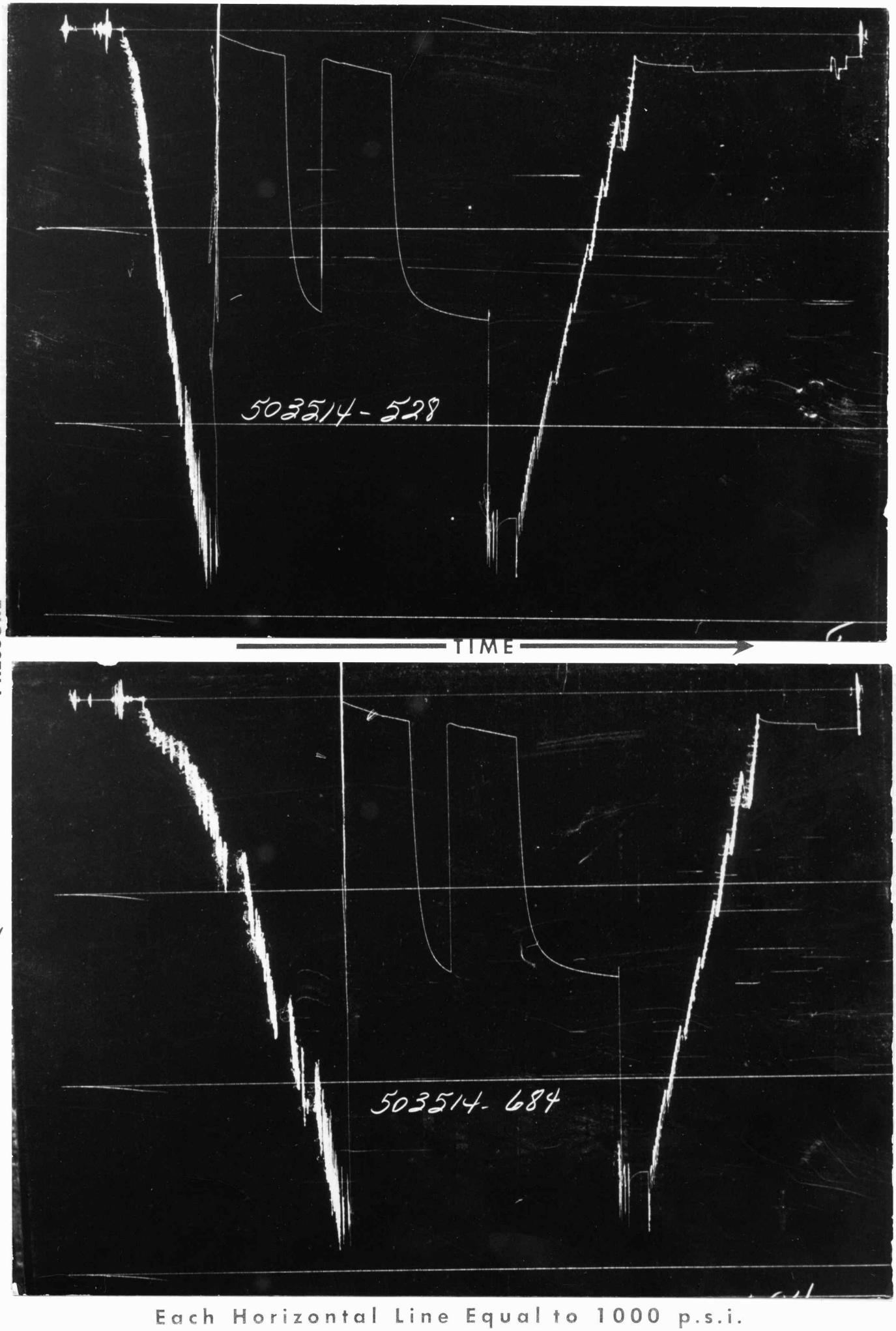
INTERPRETATIONS AND CALCULATIONS

LITTLE'S 83415 5M 8/67-5440

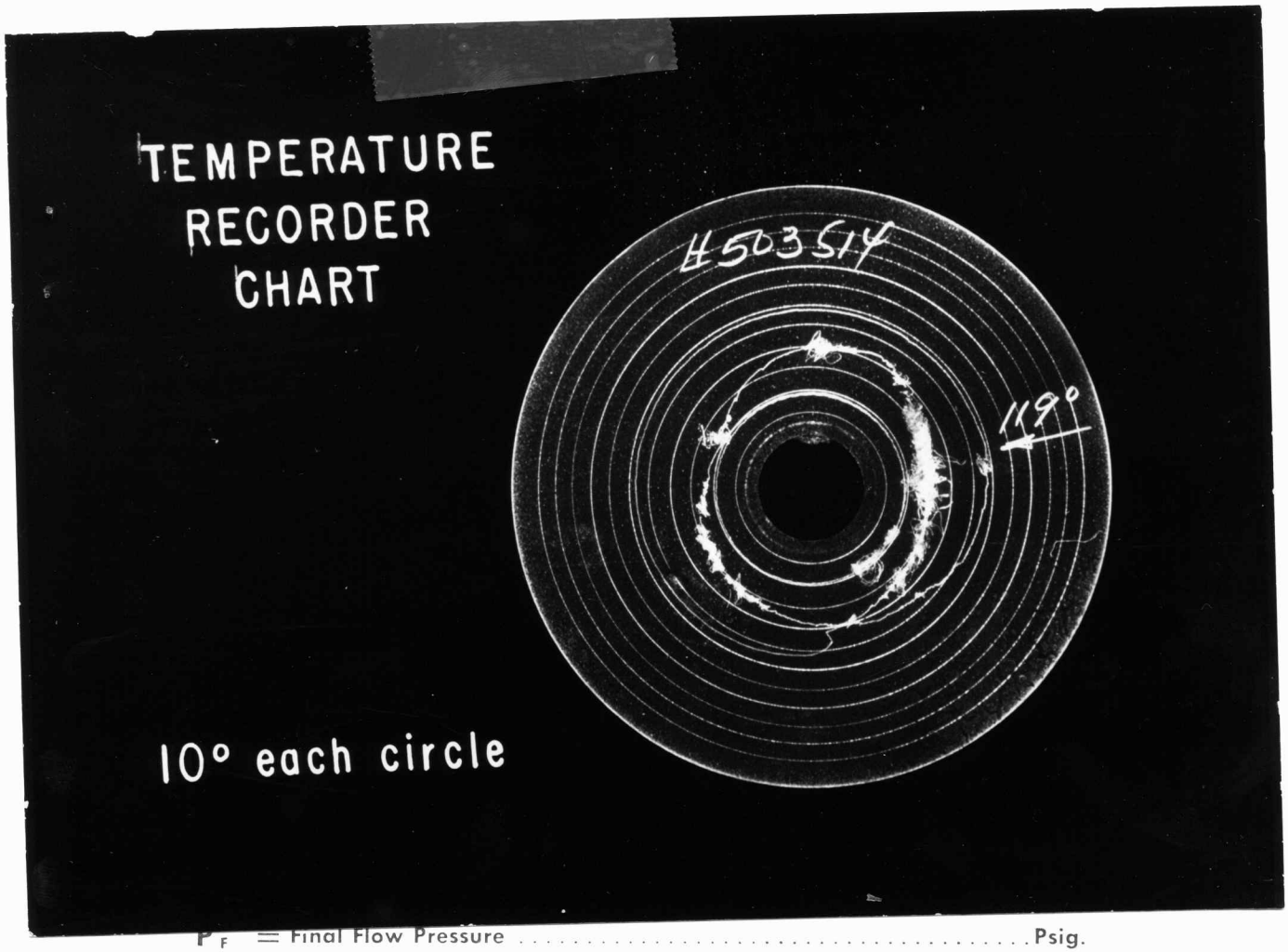
503514



	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	5.75"	2.75"	12"	
Water Cushion Valve				
Drill Pipe	4 1/2"	3.826"	3629.42'	
Drill Collars	6"	2.25"	389.65'	
	4 1/2"	2.76"	907.23'	TWEIGHT PIPE
Handling Sub & Choke Assembly				
Dual CIP Valve	5"	.87"	60.92"	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	60.21"	4935'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.06"	49.63"	4940'
Hydraulic Jar	5"	.87"	39.46"	
VR Safety Joint	5"	1"	33.40"	
Pressure Equalizing Crossover				
Packer Assembly				
Distributor				
Packer Assembly	6 3/4"	1.53"	48.89"	4950'
Flush Joint Anchor	5"	2.37"	3'	
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				
Flush Joint Anchor				
Blanked-Off B.T. Running Case	5"	3.06"	61.63"	4955'



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



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.