

15-093-30060

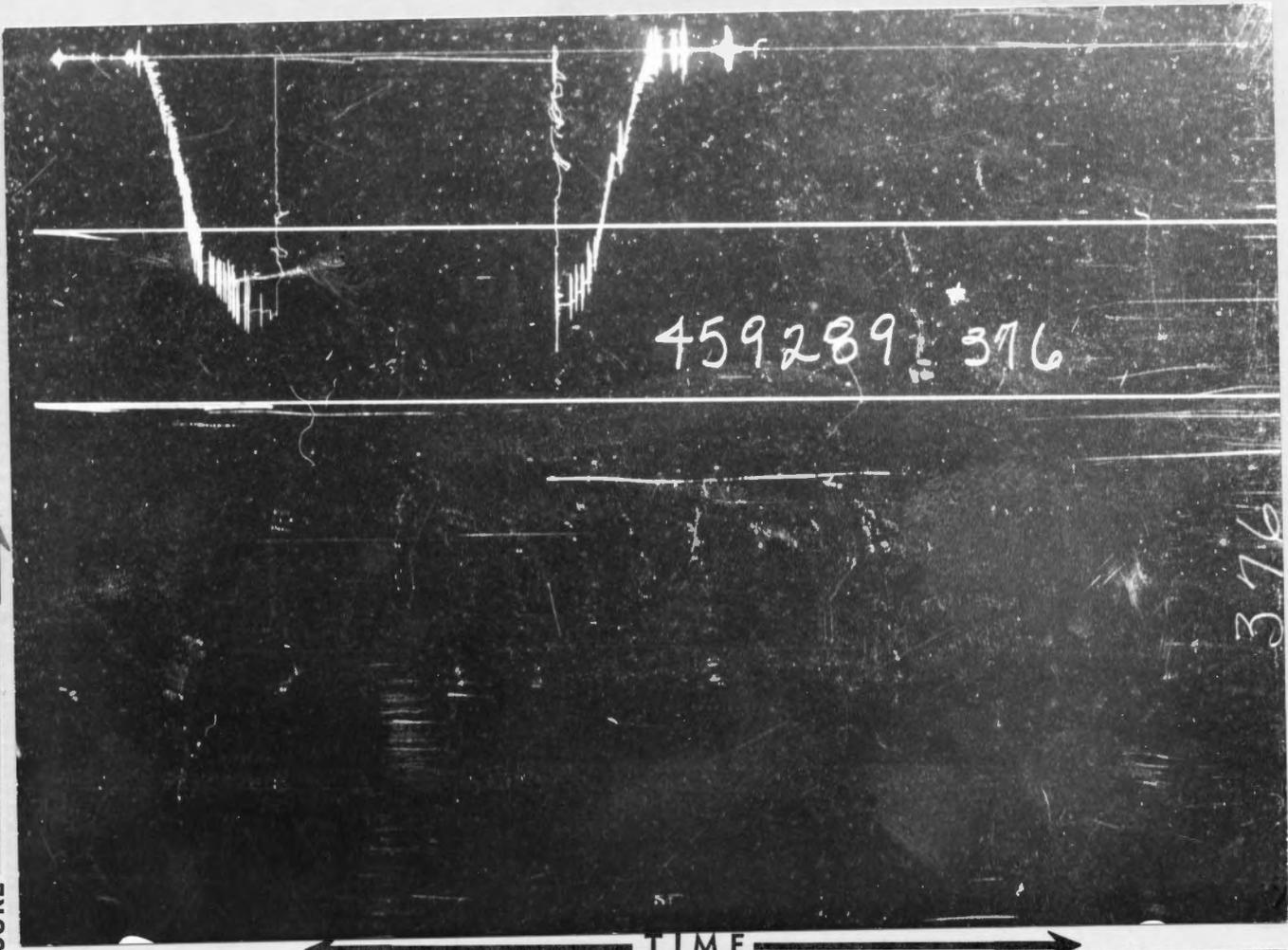
29-21s-35w

Flow Time	1st 17	Min.	2nd 30	Min.	Date	2-9-66	Ticket Number	459289
Closed In Press. Time	1st 30	Min.	2nd 90	Min.	Kind of Job	OPEN HOLE	Halliburton District	LIBERAL
Pressure Readings	Field		Office Corrected		Tester	WHITE	Witness	NCRWOOD
Depth Top Gauge	2620'	Ft.	NO	Blanked Off	Drilling Contractor	LEBEN DRILLING COMPANY		
BT. P.R.D. No.	376		12	Hour Clock	Elevation	-	Top Packer	2631'
Initial Hydro Mud Pressure	1461		1487		Total Depth	2726'	Bottom Packer	2635'
Initial Closed in Pres.	58		47		Interval Tested	2635' - 2726'	Formation Tested	KRIDER
Initial Flow Pres.	7	1	18		Casing or Hole Size	7 7/8"	Casing Top	-
	14	2	26				Casing Bot.	-
Final Flow Pres.	14	1	21		Surface Choke	1"	Bottom Choke	3/4"
Final Closed in Pres.	64		47		Size & Kind Drill Pipe	4 1/2" F.H.	Drill Collars Above Tester	-
Final Hydro Mud Pressure	1461		1468		Mud Weight	10.3	Mud Viscosity	36
Depth Cen. Gauge		Ft.		Blanked Off	Temperature	93	Anchor Size & Length	2 1/2" ID 5" OD X 35'
BT. P.R.D. No.				Hour Clock	Depths Mea. From	KELLY BUSHING	Depth of Tester Valve	2615' Ft.
Initial Hydro Mud Pres.					TYPE	AMOUNT	Depth Back Pres. Valve	- Ft.
					Cushion	NONE		
Initial Closed in Pres.					Recovered	6'	Feet of	drilling mud
Initial Flow Pres.		1			Recovered		Feet of	
Final Flow Pres.		1			Recovered		Feet of	
Final Closed in Pres.		2			Recovered		Feet of	
Final Hydro Mud Pres.					Oil A.P.I. Gravity		Water Spec. Gravity	
Depth Bot. Gauge	2722'	Ft.	YES	Blanked Off	Gas Gravity		Surface Pressure	psi
BT. P.R.D. No.	514		12	Hour Clock	Tool Opened	2:21 AM	A.M. Tool Closed	5:08 A.M. P.M.
Initial Hydro Mud Pres.	1501		1531		Remarks	Tool opened with a very weak blow - Tool		
Initial Closed in Pres.	108		92		closed @ 2:38 AM for a 30 minute initial closed			
Initial Flow Pres.	57	1	63		in pressure. Tool reopened @ 3:08 AM with a very			
Final Flow Pres.	64	2	75		weak blow - dead in 10 minutes - closed in @ 3:38.			
Final Closed in Pres.	64	1	67		Took a 90 minute final closed in pressure. Off			
Final Hydro Mud Pres.	1501		1501		bottom @ 5:08 AM.			

Legal Location Sec. - Twp. - Rng. C NW NW 29 - 21 - 35
 Lease Name HULLMAN
 Well No. 1
 Test No. 1
 Field Area WILDCAT
 County KEARNY
 State KANSAS
 Lease Owner/Company Name LEBEN DRILLING COMPANY
 Owner's District GREAT BEND, KANSAS

FORMATION TEST DATA

6

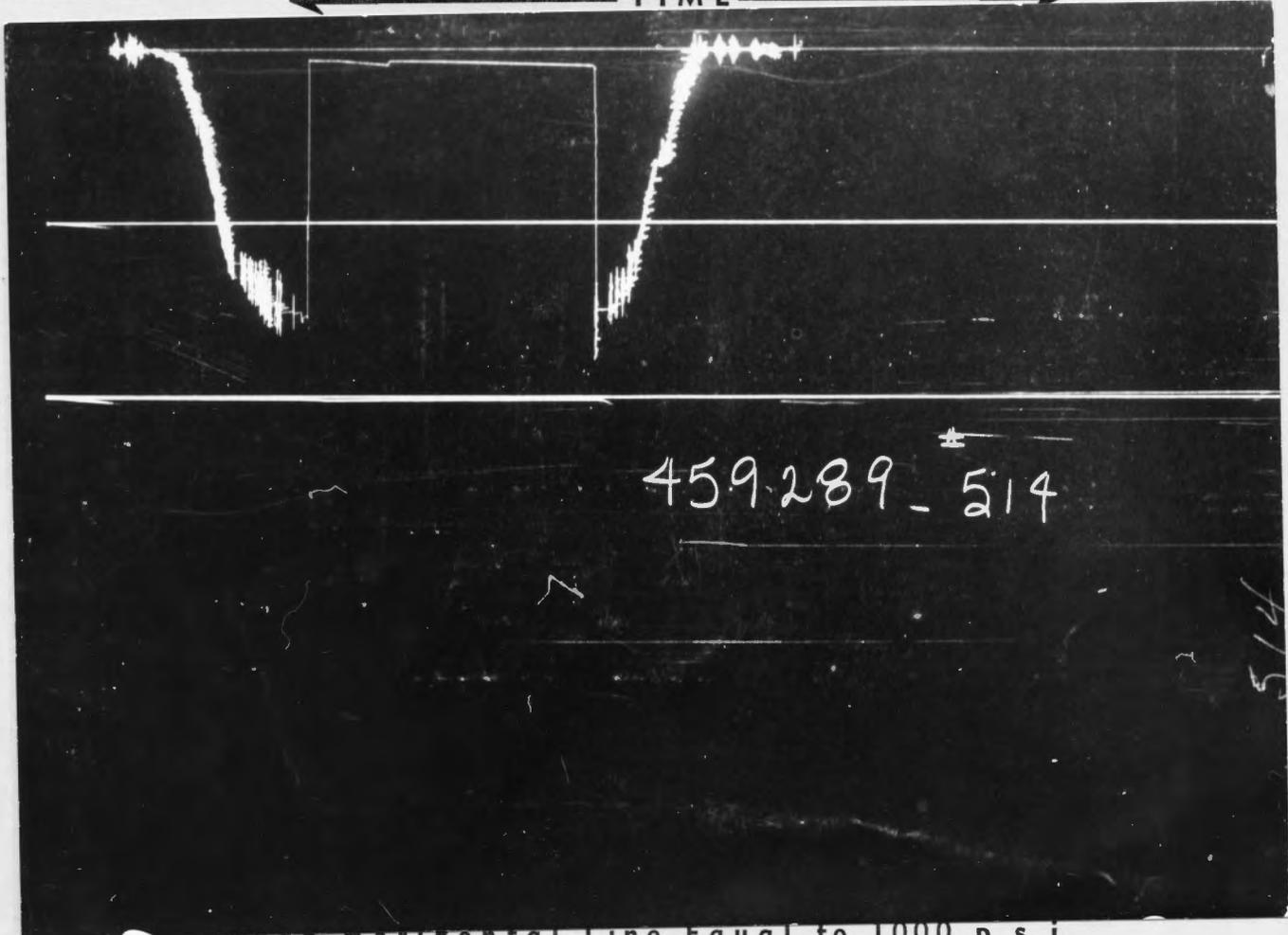


459289-376

376

PRESSURE

TIME



459289-514

514

PRESSURE

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

Flow Time	1st 15	Min.	2nd 30	Min.	Date	2-9-66	Ticket Number	459290	Legal Location Sec. - Twp. - Rng.	C NW NW 29-21-35	HULLMAN	Lease Name
Closed In Press. Time	1st 30	Min.	2nd 60	Min.	Kind of Job	OPEN HOLE	Halliburton District	LIBERAL				
Pressure Readings	Field		Office Corrected		Tester	R.W. WHITE	Witness	C. NORWOOD	Well No.	1	Test No.	2
Depth Top Gauge	2740	Ft.	no	Blanked Off	Drilling Contractor	COMPANY TOOLS	BM	LC				
BT. P.R.D. No.	514		12	Hour Clock	Elevation	Not available	Top Packer	2746'	Field Area	WILDCAT	Country	KEARNY
Initial Hydro Mud Pressure	1559		1551		Total Depth	2850'	Bottom Packer	2750'				
Initial Closed in Pres.	87		78		Interval Tested	2750' - 2820'	Formation Tested	Fort Scott Winfield	M.D. - LENGTH	29-21-35	LEBEN DRILLING COMPANY INCORPORATED	Lease Owner/Company Name
Initial Flow Pres.	7	1	17		Casing or Hole Size	7 7/8"	Casing Perfs.	Top Bot.				
Final Flow Pres.	21	1	17		Surface Choke	1"	Bottom Choke	3/4"	Field Area	WILDCAT	Country	KEARNY
Final Closed in Pres.	72		56		Size & Kind Drill Pipe	4 1/2" FH	Drill Collars Above Tester	none				
Final Hydro Mud Pressure	1559		1539		Mud Weight	10.4	Mud Viscosity	44	Field Area	WILDCAT	Country	KEARNY
Depth Cen. Gauge		Ft.		Blanked Off	Temperature	93	*F Est. Anchor Size & Length	2 1/2" OD 5" X 38"				
BT. P.R.D. No.				Hour Clock	Depths Meas. From	Kelly Bushing	Depth of Tester Valve	2735	Field Area	WILDCAT	Country	KEARNY
Initial Hydro Mud Pres.					TYPE	AMOUNT	Depth Back Pres. Valve	-				
Initial Closed in Pres.					Cushion	none			M.D. - LENGTH	29-21-35	LEBEN DRILLING COMPANY INCORPORATED	Lease Owner/Company Name
Initial Flow Pres.		1			Recovered	10	Feet of	drilling mud.				
Final Flow Pres.		2			Recovered		Feet of		M.D. - LENGTH	29-21-35	LEBEN DRILLING COMPANY INCORPORATED	Lease Owner/Company Name
Final Closed in Pres.		1			Recovered		Feet of					
Final Hydro Mud Pres.		2			Recovered		Feet of		M.D. - LENGTH	29-21-35	LEBEN DRILLING COMPANY INCORPORATED	Lease Owner/Company Name
Initial Hydro Mud Pres.					Oil A.P.I. Gravity		Water Spec. Gravity					
Depth Bot. Gauge	2816	Ft.	yes	Blanked Off	Gas Gravity		Surface Pressure	psi	M.D. - LENGTH	29-21-35	LEBEN DRILLING COMPANY INCORPORATED	Lease Owner/Company Name
BT. P.R.D. No.	376		12	Hour Clock	Tool Opened	6:00 P.M.	A.M. P.M.	Tool Closed				
Initial Hydro Mud Pres.	1590		1600		Remarks	Tool opened for a 15 minute first flow with a						
Initial Closed in Pres.	101		119			very weak blow. Closed tool for a 30 minute initial						
Initial Flow Pres.	29	1	61			closed in pressure. Reopened tool for a 30 minute						
Final Flow Pres.	43	2	72			second flow. No blow. Closed tool for a 60 minute						
Final Closed in Pres.	87		98			final closed in pressure.						
Final Hydro Mud Pres.	1590		1590									

FORMATION TEST DATA

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459290-514

514

PRESSURE

TIME

459290-376

376

Each horizontal line equal to 1000 p.s.i.

Flow Time	1st 15	Min.	2nd 30	Min.	Date	2-10-66	Ticket Number	459291 S
Closed In Press. Time	1st 30	Min.	2nd 60	Min.	Kind of Job	OPEN HOLE	Halliburton District	LIBERAL
Pressure Readings	Field		Office Corrected		Tester	R.W. WHITE	Witness	C. NORWOOD
Depth Top Gauge	2894	Ft.	no	Blanked Off	Drilling Contractor	COMPANY TOOLS	LC	
BT. P.R.D. No.	514		12	Hour Clock	Elevation	Not available	Top Packer	2900'
Initial Hydro Mud Pressure	1659		1634		Total Depth	2930'	Bottom Packer	2904'
Initial Closed in Pres.	604		601		Interval Tested	2904' - 2930'	Formation Tested	Council Grove
Initial Flow Pres.	7	1	14		Casing or Hole Size	7 7/8"	Casing Perfs. } Top Bot.	
	7	2	27					
Final Flow Pres.	14	1	16		Surface Choke	1"	Bottom Choke	3/4"
Final Closed in Pres.	575		578		Size & Kind Drill Pipe	4 1/2" FH	Drill Collars Above Tester	none
Final Hydro Mud Pressure	1645		1629		Mud Weight	10.4	Mud Viscosity	44
Depth Cen. Gauge		Ft.		Blanked Off	Temperature	90	Anchor Size & Length	ID 2 1/2" X 26" OD 5"
BT. P.R.D. No.				Hour Clock	Depths Mea. From	Kelly Bushing	Depth of Tester Valve	2890 Ft.
Initial Hydro Mud Pres.					TYPE AMOUNT		Depth Back Pres. Valve	- Ft.
Initial Closed in Pres.					Cushion	none		
Initial Flow Pres.		1			Recovered	10	Feet of drilling mud.	
Final Flow Pres.		2			Recovered		Feet of	
Final Closed in Pres.		1			Recovered		Feet of	
Final Hydro Mud Pres.		2			Recovered		Feet of	
Depth Bot. Gauge	2926	Ft.	yes	Blanked Off	Oil A.P.I. Gravity		Water Spec. Gravity	
BT. P.R.D. No.	376		12	Hour Clock	Gas Gravity		Surface Pressure	psi
Initial Hydro Mud Pres.	1662		1649		Tool Opened	10:33 A.M.	Tool Closed	12:48 P.M.
Initial Closed in Pres.	618		613		Remarks Opened tool for a 15 minute first flow with			
Initial Flow Pres.	29	1	29		a very weak blow. Closed tool for a 30 minute			
Final Flow Pres.	29	2	39		initial closed in pressure. Reopened tool for a 30			
Final Closed in Pres.	590		591		minute second flow with no blow. Closed tool for			
Final Hydro Mud Pres.	1648		1643		a 60 minute final closed in pressure.			

Legal Location Sec. - Twp. - Rng. C NW NW 29 21 35
 Lease Name HULLMAN
 Well No. 1
 Test No. 3
 Field Area WILDCAT
 County KEARNY
 State KANSAS
 Lease Owner/Company Name LEBEN DRILLING COMPANY INCORPORATED
 Owner's District GREAT BEND

FORMATION TEST DATA

Gauge No. 514		Depth 2894'			Clock 12 hour		Ticket No. 459291			
First Flow Period		Initial Closed In Pressure			Second Flow Period		Final Closed In Pressure			
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{r+\phi}{\phi}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{r+\phi}{\phi}$	PSIG Temp. Corr.
P ₀	.000	14	.000	-	16	.000	27	.000	-	20
P ₁	.103	16	.0209	.772	222	.0412	19	.0301	.949	384
P ₂			.0418	.539	437	.0824	19	.0782	.694	468
P ₃			.0627	.422	501	.1236	20	.1173	.560	507
P ₄			.0836	.348	537	.1668	20	.1564	.473	530
P ₅			.1045	.297	557	.2060	20	.1955	.411	544
P ₆			.1254	.260	573			.2346	.364	556
P ₇			.1463	.231	583			.2737	.328	564
P ₈			.1672	.208	590			.3128	.298	570
P ₉			.1881	.189	595			.3519	.273	576
P ₁₀			.2090	.174	601			.3910	.252	578

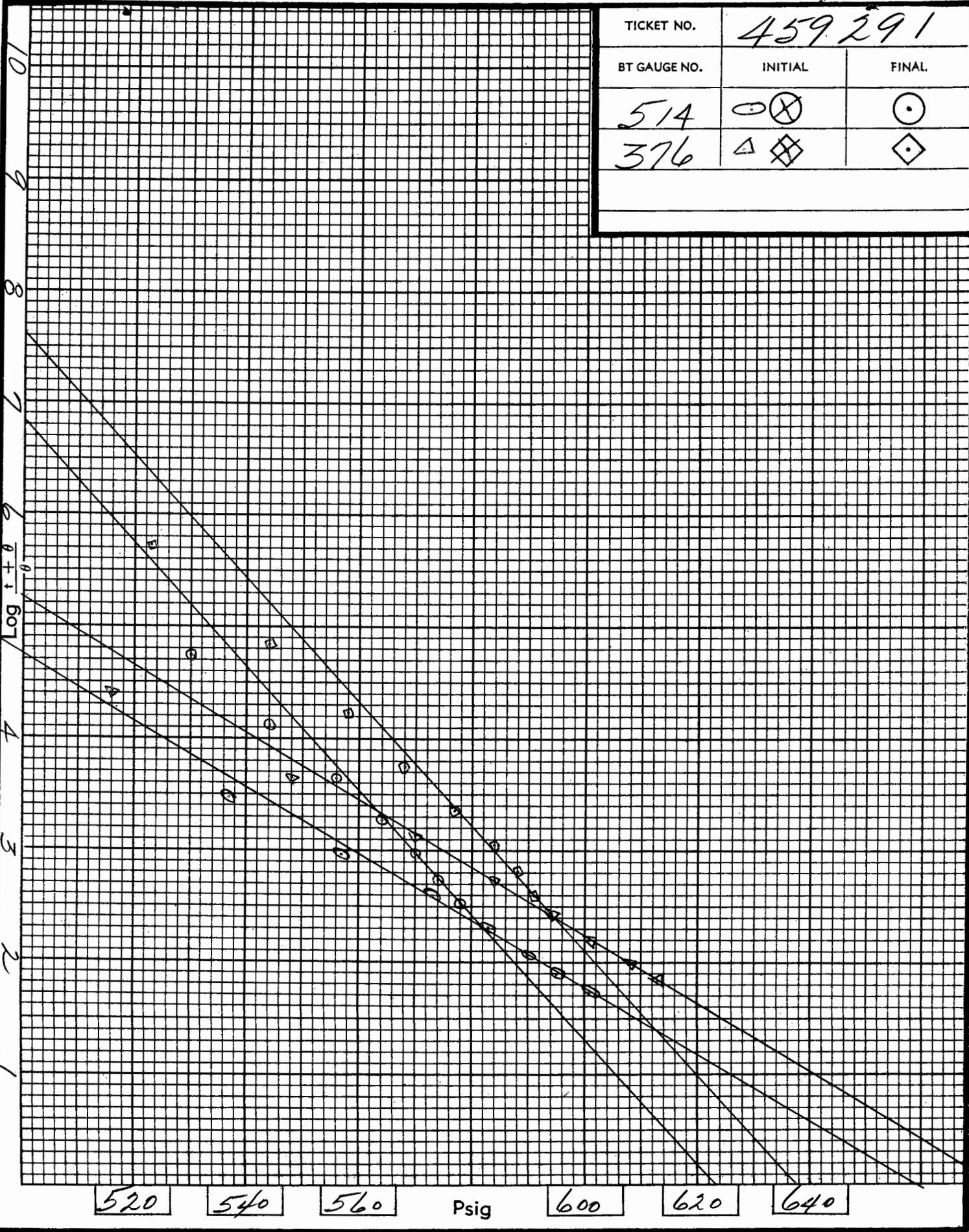
Gauge No. 376		Depth 2926'			Clock 12 hour					
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{r+\phi}{\phi}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{r+\phi}{\phi}$	PSIG Temp. Corr.
P ₀	.000	29	.000	-	29	.000	39	.000	-	35
P ₁	.112	29	.0212	.798	251	.0438	33	.0403	1964	380
P ₂			.0424	.561	455	.0876	33	.0806	.708	484
P ₃			.0636	.441	516	.1314	35	.1209	.572	523
P ₄			.0848	.365	548	.1752	35	.1612	.484	544
P ₅			.1060	.313	570	.2190	35	.2015	.422	558
P ₆			.1272	.274	584			.2418	.374	568
P ₇			.1484	.244	594			.2821	.337	577
P ₈			.1696	.220	601			.3224	.306	584
P ₉			.1908	.200	608			.3627	.281	588
P ₁₀			.2120	.184	613			.4030	.260	591
Reading Interval			3			6		6 Minutes		

REMARKS:

SPECIAL PRESSURE DATA

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TICKET NO.	459291	
BT GAUGE NO.	INITIAL	FINAL
514	○ ⊗	○ ●
376	△ ⊠	◇ ◆



EXTRAPOLATED PRESSURE GRAPH

Gas Production

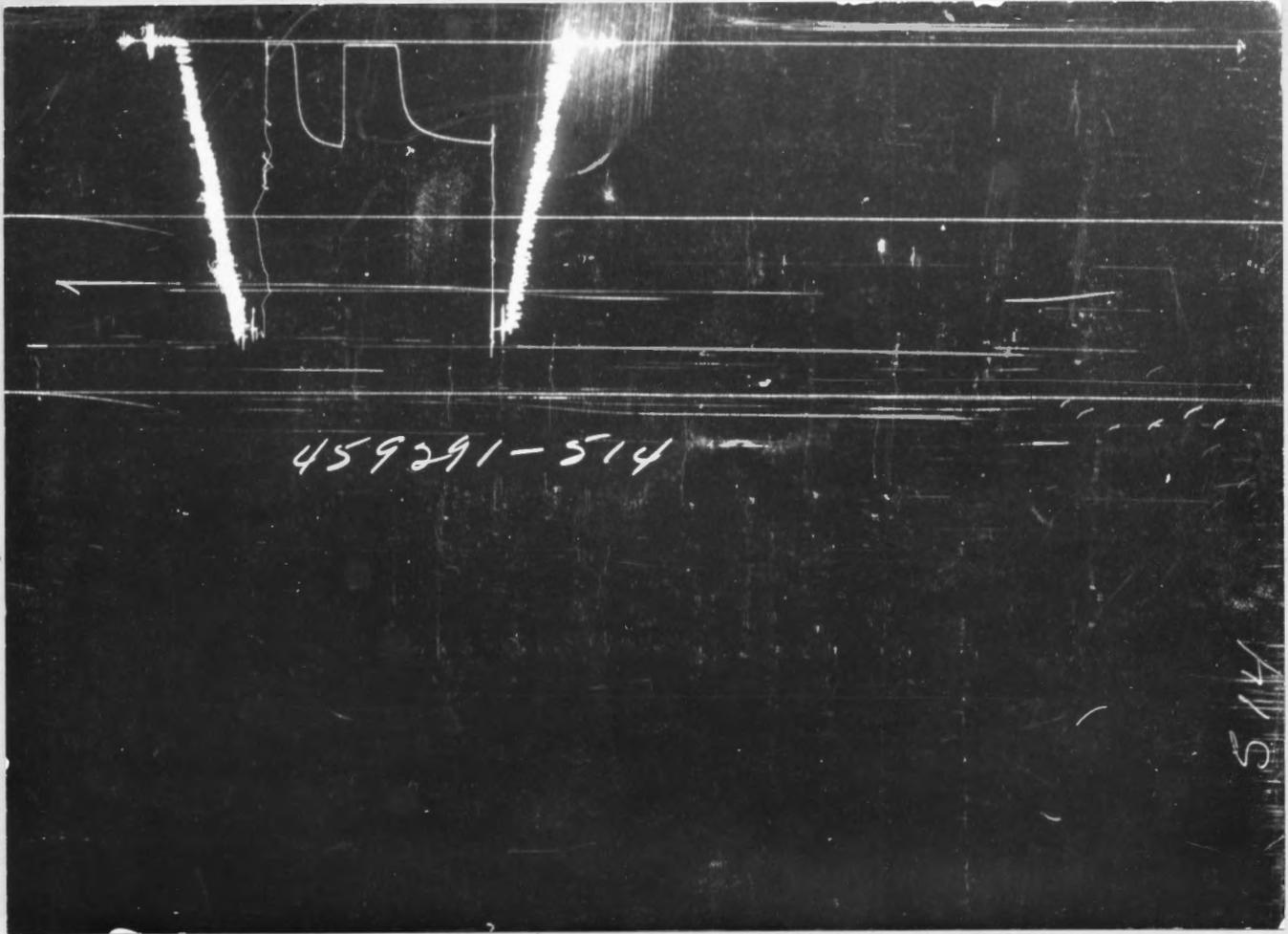
B.T. Gauge Numbers		514	376	Ticket Number		459291
Initial Hydrostatic		PRESSURE 1634	PRESSURE 1649	Elevation		- ft.
Final Hydrostatic		1629	1643	Production		Initial
1st Flow	Initial	Time -----	14	29	Rate	
	Final	15	16	29	Final	
Initial Closed In Pressure		30	601	613	Hole Size	
Final Closed In Pressure		60	578	591	Footage Tested	
2nd Flow	Initial	-----	27	39	Mud Weight	
	Final	30	20	35	Gas Viscosity	
Extrapolated Static Pressure		Initial	659	672	Gas Gravity	
		Final	623	638	Est.	
Slope $\frac{P_s - P_w}{P_s - P_w}$		Initial	331	344	Gas Compressibility	
P 10		Final	443	458	Temperature	
					90 °F	

Remarks: _____

SUMMARY

		BT Gauge Number Depth	514 2894'	BT Gauge Number Depth	376 2926'		
Product	Equation	Initial	Final	Initial	Final	Units	
Transmissibility	$\frac{Kh}{\mu} = \frac{1637 Q_r ZT}{m}$					md. ft. cp	
Theoretical Flow Capacity	$Kh = \frac{Kh}{\mu} \mu$	CHARTS INDICATE POSSIBLE DEPLETION .				md. ft.	
Average Effective Permeability	$K = \frac{Kh}{h}$ $K_1 = \frac{Kh}{h_1}$	NO CALCULATION POSSIBLE DUE TO NO				md.	
Indicated Flow Capacity	$(Kh)_s = \frac{3200 Q_r \mu ZT \text{Log}(0.472 b/r_w)}{P_s^2 - P_r^2}$	INFORMATION PRODUCTION RATE.				md. ft.	
Damage Ratio	$DR = \frac{\text{Theo. Flow Cap}}{\text{Indicated Flow Cap}} \frac{Kh}{(Kh)_s}$					—	
Indicated Flow Rate	$OF_1 = \frac{Q_r P_s^2}{P_s^2 - P_r^2}$ Max.					MCFD	
Theoretical Potential Rate	$OF_2 = \frac{Q_r P_s}{\sqrt{P_s^2 - P_r^2}}$ Min.					MCFD	
	$OF_3 = OF_1 DR$ Max.					MCFD	
	$OF_4 = OF_2 DR$ Min.					MCFD	
Approx. Radius of Investigation	$b \approx \sqrt{Kt}$ or $\sqrt{Kt_0}$					ft.	
	$b_1 \approx \sqrt{K_1 t}$ or $\sqrt{K_1 t_0}$					ft.	
Potentiometric Surface *	$\text{Pot.} = (EI - GD) + (2.319 P_s)$					ft.	

NOTICE: These calculations are based upon information furnished by you and taken from Drill Stem Test pressure charts, and are furnished 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.

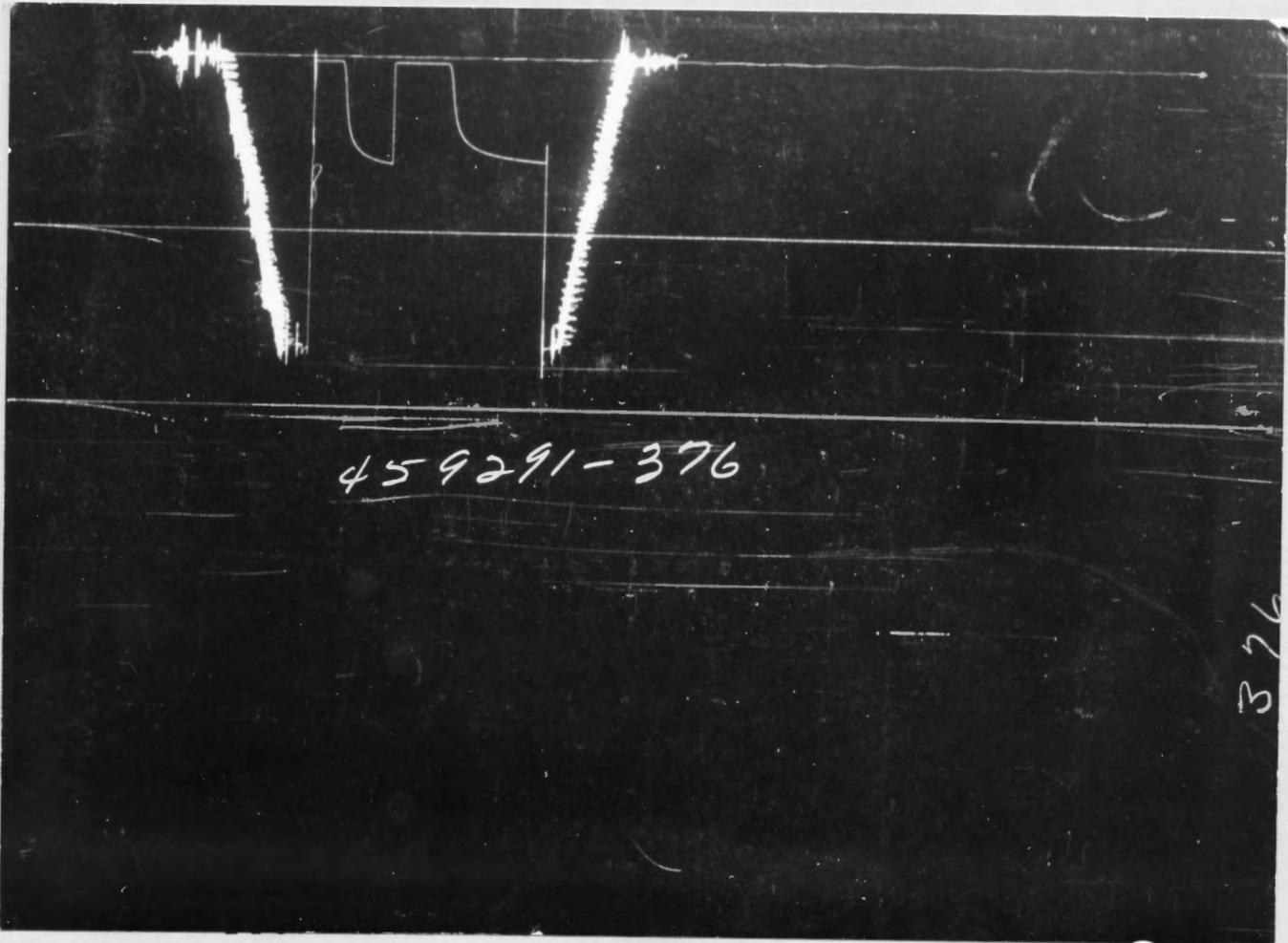


459291-514

514

PRESSURE

TIME



459291-376

376

PRESSURE

TIME

Flow Time	1st 15	Min.	2nd 30	Min.	Date	2-15-66	Ticket Number	459293 - S	Legal Location Sec. - Twp. - Rng. Lease Name	
Closed In Press. Time	1st 60	Min.	2nd 60	Min.	Kind of Job	OPEN HOLE	Helliburton District	LIBERAL		
Pressure Readings	Field		Office Corrected		Tester	MR. WHITE	Witness	MR. NOVEY		
Depth Top Gauge	4565	Ft.	NO	Blanked Off	Drilling Contractor	LEBEN DRILLING COMPANY	IC	SEC. 29 - T21 - R35 C/M/W/M Field Area WILDCAT County KEARNY State KANSAS		
BT. P.R.D. No.	514		12	Hour Clock	Elevation	3193' K.B.	Top Packer			4576'
Initial Hydro Mud Pressure	2458		2384		Total Depth	4600'	Bottom Packer			4580'
Initial Closed in Pres.	1216		1205		Interval Tested	4580'-4600' (10')	Formation Tested			BEAMER MARMATON
Initial Flow Pres.	7	1	17		Casing or Hole Size	7 7/8"	Casing Perfs. Top			
	14	2	32				Casing Perfs. Bot.			-
Final Flow Pres.	29	1	19		Surface Choke	1"	Bottom Choke			3/4"
Final Closed in Pres.	1145		1143		Size & Kind Drill Pipe	4 1/2" F.H.	Drill Collars Above Tester		2 1/4" x 240'	
Final Hydro Mud Pressure	2430		2376		Mud Weight	9.9	Mud Viscosity		46	
Depth Cen. Gauge		Ft.		Blanked Off	Temperature	105	Anchor Size & Length		ID 2 1/2" X OD 5" X 20'	
BT. P.R.D. No.				Hour Clock	Depths Mea. From	KELLY BUSHINGS	Depth of Tester Valve	4560' Ft.		
Initial Hydro Mud Pres.					TYPE AMOUNT		Depth Back Pres. Valve	- Ft.		
Initial Closed in Pres.					Cushion	-				
Initial Flow Pres.		1			Recovered	20	Feet of	Drilling mud		
Final Flow Pres.		2			Recovered		Feet of			
Final Closed in Pres.		1			Recovered		Feet of			
Final Hydro Mud Pres.		2			Recovered		Feet of			
Depth Bot. Gauge	4596	Ft.	YES	Blanked Off	Oil A.P.I. Gravity	-	Water Spec. Gravity	-		
BT. P.R.D. No.	376		12	Hour Clock	Gas Gravity	-	Surface Pressure	- psi		
Initial Hydro Mud Pres.	2467		2398		Tool Opened	9:04 PM	A.M. Tool Closed	11:50 PM		
Initial Closed in Pres.	1218		1215							
Initial Flow Pres.	29	1	29		Remarks Opened tool for 15 minute 1st flow with a very weak blow. Closed tool for 60 minute initial closed in pressure. Reopened tool for 30 minute 2nd flow with no blow. Closed tool for 60 minute final closed in pressure.					
	35	2	41							
Final Flow Pres.	43	1	30							
Final Closed in Pres.	1175		1152							
Final Hydro Mud Pres.	2438		2391							

FORMATION TEST DATA

WILDCAT
 KEARNY
 KANSAS
 SHALLOM WATER RETAINING COMPANY
 Lease Owner/Company Name
 WILDCAT
 KEARNY
 KANSAS
 WILDCAT
 KEARNY
 KANSAS
 WILDCAT
 KEARNY
 KANSAS

Gauge No. 514		Depth 4565'			Clock 12 hour		Ticket No. 459293			
First Flow Period		Initial Closed In Pressure			Second Flow Period		Final Closed In Pressure			
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\phi}{\phi}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\phi}{\phi}$	PSIG Temp. Corr.
P ₀	.000	17	.000		19	.000	32	.000		29
P ₁	.102	19	.0405		183	.215	29	.0404		182
P ₂			.0810		650			.0808		566
P ₃			.1215		876			.1212		796
P ₄			.1620		1001			.1616		916
P ₅			.2025		1071			.2020		989
P ₆			.2430		1118			.2424		1041
P ₇			.2835		1151			.2828		1077
P ₈			.3240		1175			.3232		1105
P ₉			.3645		1194			.3636		1125
P ₁₀			.4050		1205			.4040		1143

Gauge No. 376		Depth 4596'			Clock 12 hour					
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\phi}{\phi}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\phi}{\phi}$	PSIG Temp. Corr.
P ₀	.000	29	.000		30	.000	41	.000		38
P ₁	.115	30	.0414		183	.217	38	.0422		159
P ₂			.0828		640			.0844		536
P ₃			.1242		875			.1266		776
P ₄			.1656		1003			.1688		910
P ₅			.2070		1080			.2110		993
P ₆			.2484		1129			.2532		1049
P ₇			.2898		1162			.2954		1087
P ₈			.3312		1185			.3376		1115
P ₉			.3726		1202			.3798		1135
P ₁₀			.4140		1215			.4220		1152

Reading Interval

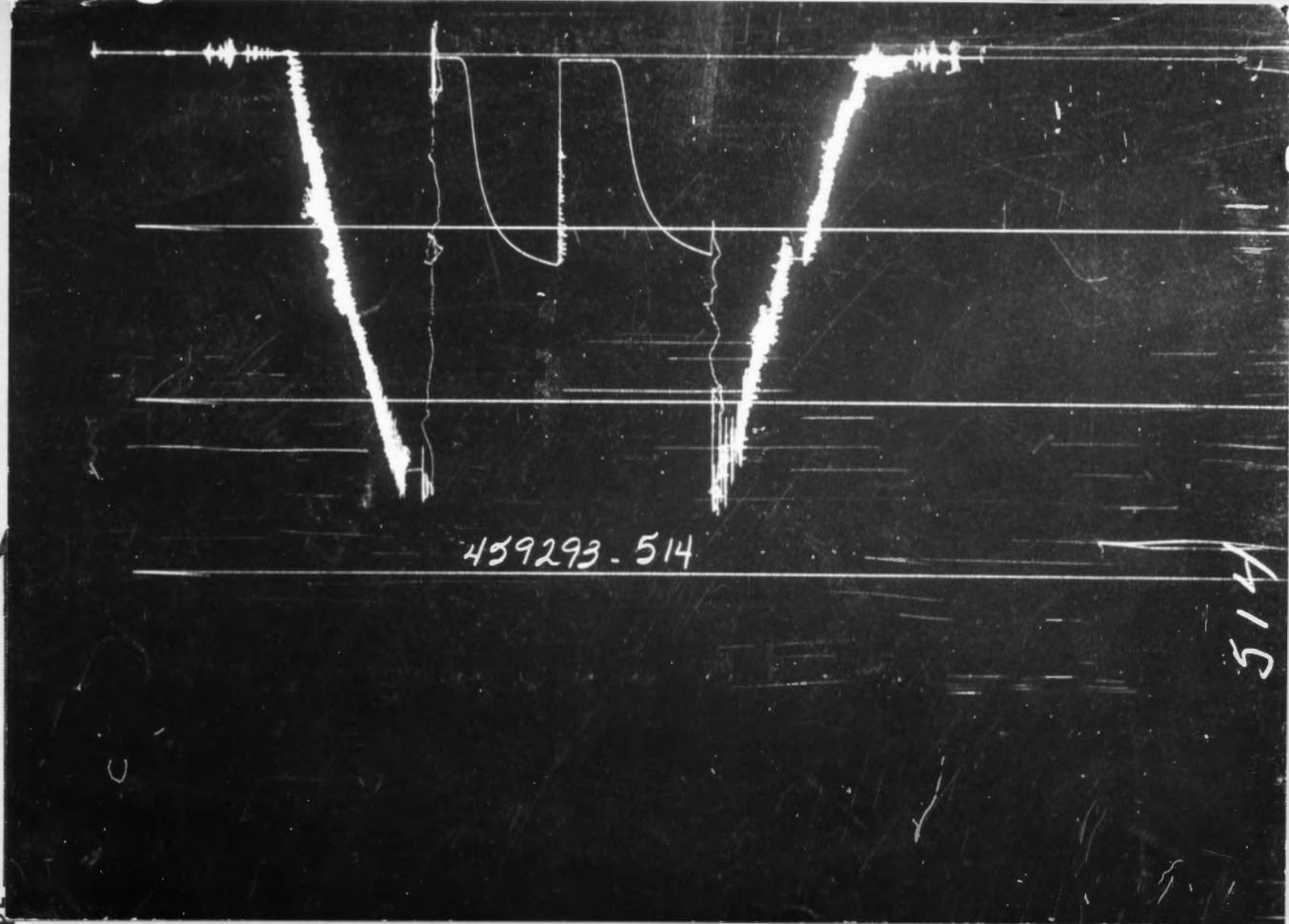
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6

Minutes

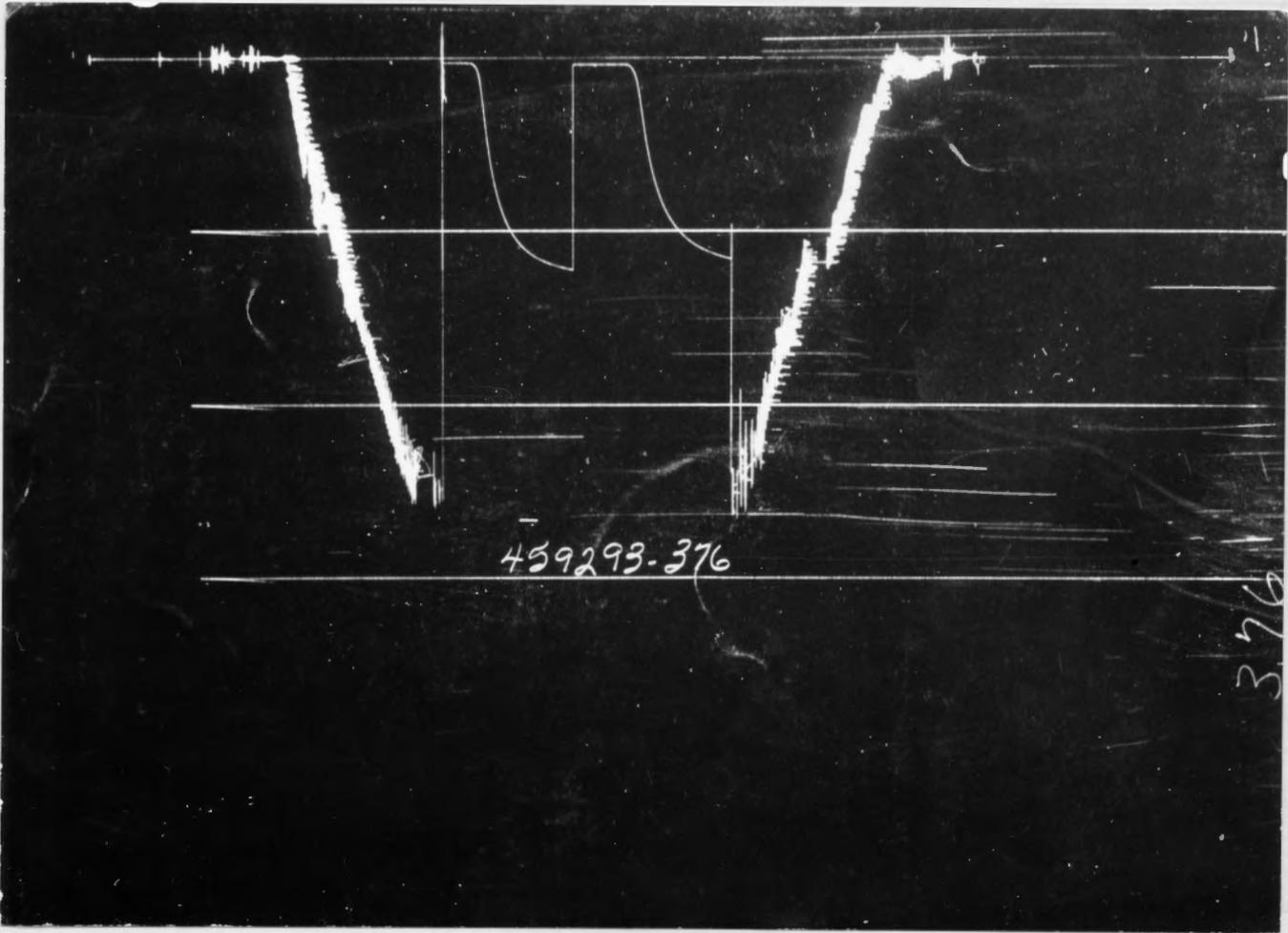
REMARKS:

SPECIAL PRESSURE DATA



PRESSURE

TIME



376

Flow Time	1st 30	Min.	2nd 30	Min.	Date	2-16-66	Ticket Number	459294 S	Legal Location Sec. - Twp. - Rng. C NW NW 29 21 35	Lease Name HULLMAN
Closed In Press. Time	1st 60	Min.	2nd 60	Min.	Kind of Job	OPEN HOLE	Halliburton District	LIBERAL		
Pressure Readings	Field		Office Corrected		Tester	R.W. WHITE	Witness	FRANK NOVEY		
Depth Top Gauge	4593	Ft.	no	Blanked Off	Drilling Contractor	LEBEN DRILLING COMPANY	LC			
BT. P.R.D. No.	514		12	Hour Clock	Elevation	3193' KB	Top Packer	4603'		
Initial Hydro Mud Pressure	2487		2413		Total Depth	4630'	Bottom Packer	4607'		
Initial Closed in Pres.	1046		1050		Interval Tested	Net pay 15' 4607' - 4630'	Formation Tested	Marmaton		
Initial Flow Pres.	14	1	22		Casing or Hole Size	7 7/8"	Casing { Top			
	29	2	43				Perfs. { Bot.			
Final Flow Pres.	36	1	26		Surface Choke	1"	Bottom Choke	3/4"		
Final Closed in Pres.	1031		1034		Size & Kind Drill Pipe	4 1/2" FH	Drill Collars Above Tester	I.D. - LENGTH 2 1/4" - 240'		
Final Hydro Mud Pressure	2430		2397		Mud Weight	9.8	Mud Viscosity	48		
Depth Cen. Gauge		Ft.		Blanked Off	Temperature	102	Anchor Size & Length	ID 2 1/2" OD 5" X 23'		
BT. P.R.D. No.				Hour Clock	Depths Mea. From	Kelly Bushing	Depth of Tester Valve	4588 Ft.		
Initial Hydro Mud Pres.					TYPE AMOUNT		Depth Back Pres. Valve	- Ft.		
Initial Closed in Pres.					Cushion	none				
Initial Flow Pres.		1			Recovered	20	Feet of	drilling mud.		
Final Flow Pres.		2			Recovered		Feet of			
Final Closed in Pres.		1			Recovered		Feet of			
Final Hydro Mud Pres.		2			Recovered		Feet of			
Depth Bot. Gauge	4626	Ft.	yes	Blanked Off	Oil A.P.I. Gravity		Water Spec. Gravity			
BT. P.R.D. No.	376		12	Hour Clock	Gas Gravity		Surface Pressure	psi		
Initial Hydro Mud Pres.	2470		2428		Tool Opened	2:07 P.M.	A.M. P.M.	Tool Closed		
Initial Closed in Pres.	1060		1060		Remarks Tool opened for a 30 minute first flow with					
Initial Flow Pres.	29	1	32		a very weak blow. Took a 60 minute initial closed					
Final Flow Pres.	36	2	55		in pressure. Reopened tool for a 30 minute second					
Final Closed in Pres.	43	1	39		flow. Closed tool for a 60 minute final closed in					
Final Hydro Mud Pres.	2438		2412		pressure.					

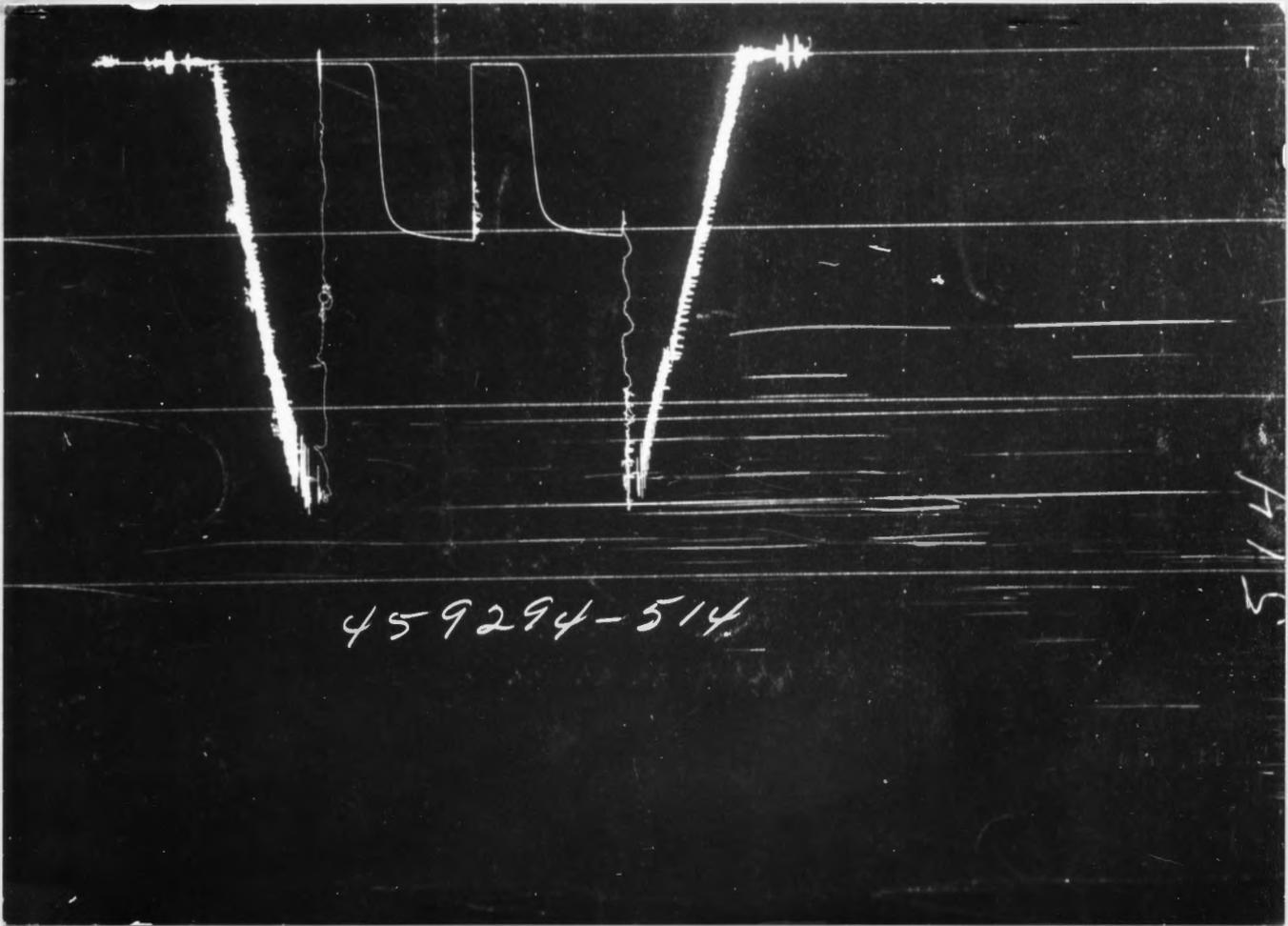
Well No. 1
Field Area WILDCAT
County KEARNY
State KANSAS
Lease Owner/Company Name SHALLOW WATER REFINING COMPANY
Owner's District WICHITA

FORMATION TEST DATA

Gauge No. 514		Depth 4593'			Clock 12 hour		Ticket No. 459294'			
First Flow Period		Initial Closed In Pressure			Second Flow Period		Final Closed In Pressure			
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\phi}{\phi}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\phi}{\phi}$	PSIG Temp. Corr.
P ₀	.000	22	.000		26	.000	43	.000		40
P ₁	.065	22	.0422		362	.0627	36	.0415		220
P ₂	.130	23	.0844		902	.1254	39	.0830		813
P ₃	.1950	26	.1266		973	.1880	40	.1245		940
P ₄			.1688		1001			.1660		977
P ₅			.2110		1017			.2075		996
P ₆			.2532		1028			.2490		1010
P ₇			.2954		1034			.2905		1019
P ₈			.3376		1041			.3320		1024
P ₉			.3798		1047			.3735		1030
P ₁₀			.4220		1050			.4150		1034
Gauge No. 376		Depth 4626'			Clock 12 hour					
P ₀	.000	32	.000		39	.000	55	.000		53
P ₁	.0697	33	.0421		445	.0673	49	.042		272
P ₂	.1394	36	.0842		915	.1346	52	.084		856
P ₃	.2090	39	.1263		983	.2020	53	.126		957
P ₄			.1684		1010			.168		990
P ₅			.2105		1027			.210		1009
P ₆			.2526		1037			.252		1020
P ₇			.2947		1044			.294		1029
P ₈			.3368		1052			.336		1036
P ₉			.3789		1056			.378		1040
P ₁₀			.4210		1060			.420		1044
Reading Interval 10		6			10		6 Minutes			
REMARKS:										

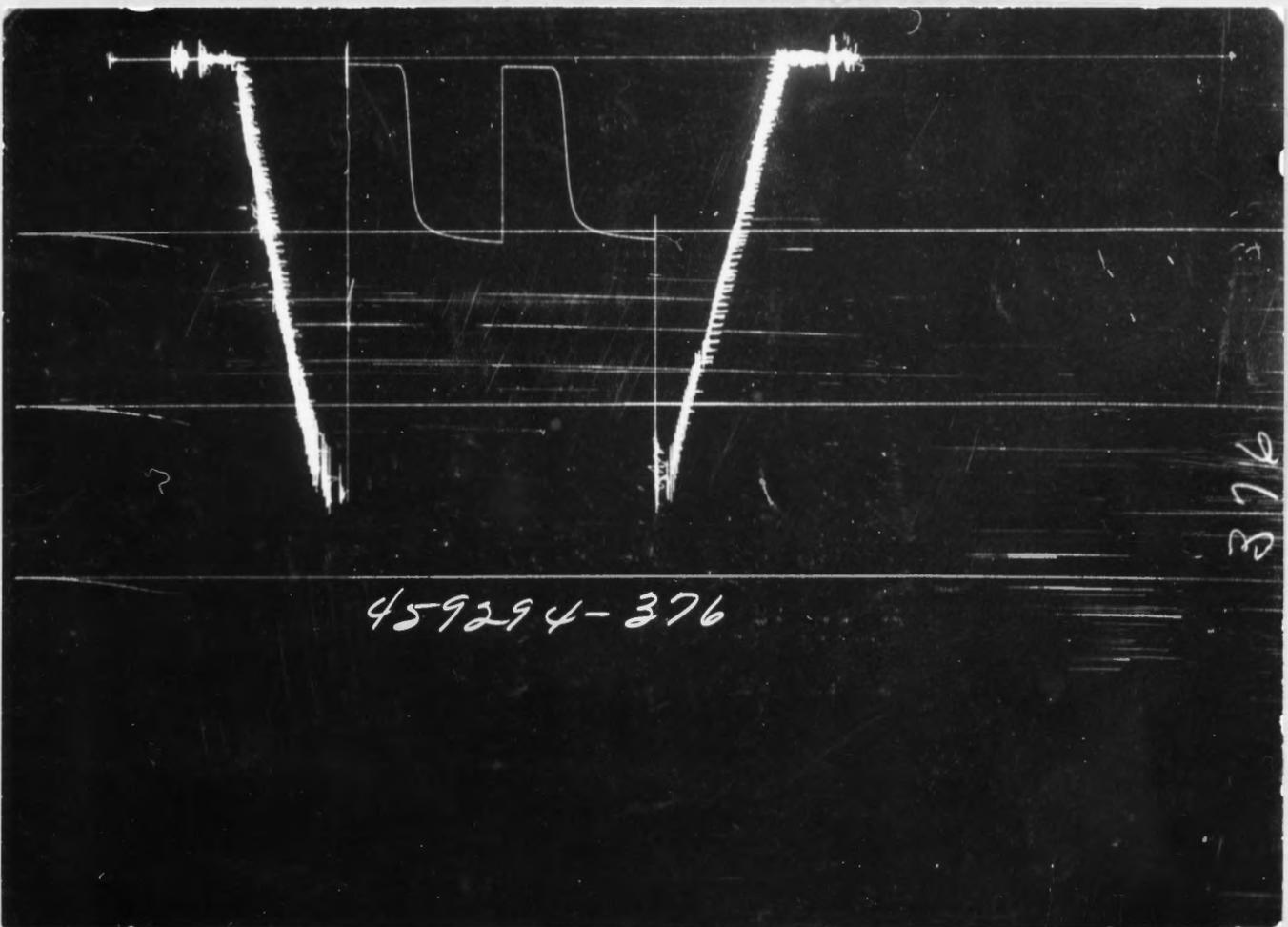
SPECIAL PRESSURE DATA

↑
PRESSURE



← TIME →

↓
PRESSURE



Flow Time	1st 30	Min.	2nd 30	Min.	Date	2-19-66	Ticket Number	407695 S
Closed In Press. Time	1st 30	Min.	2nd 30	Min.	Kind of Job	OPEN HOLE	Halliburton District	LIBERAL
Pressure Readings	Field		Office Corrected		Tester	WALLER	Witness	REESE
Depth Top Gauge	4267	Ft.	no	Blanked Off	Drilling Contractor	LEBEN DRILLING COMPANY	CS	
BT. P.R.D. No.	699		12	Hour Clock	Elevation	3193' KB	Top Packer	4272'
Initial Hydro Mud Pressure	2223		2309		Total Depth	4700'	Bottom Packer	4282'
Initial Closed in Pres.	1156		1152		Interval Tested	net pay 10' 4700' - 4282'	Formation Tested	LANSING
Initial Flow Pres.	229		229		Casing or Hole Size	7 7/8"	Casing Perfs.	Top Bot.
Final Flow Pres.	351		343		Surface Choke	1"	Bottom Choke	3/4"
Final Closed in Pres.	1156		1150		Size & Kind Drill Pipe	4 1/2" PH	Drill Collars Above Tester	I.D. - LENGTH 2 3/4" K 329"
Final Hydro Mud Pressure	2239		2300		Mud Weight	9.8	Mud Viscosity	53
Depth Cen. Gauge		Ft.		Blanked Off	Temperature	110	Anchor Size & Length	ID 2.97" 10.5 OD 5" X
BT. P.R.D. No.				Hour Clock	Depths Mea. From	KELLY BUSHING	Depth of Tester Valve	4265' Ft.
Initial Hydro Mud Pres.					Cushion		Depth Back Pres. Valve	Ft.
Initial Closed in Pres.					Recovered	pin in circulator sub broke	Mea. From Tester Valve	
Initial Flow Pres.					Recovered	actual recovery 120' saltwater		
Final Flow Pres.					Recovered	estimated 450' saltwater		
Final Closed in Pres.					Recovered			
Final Hydro Mud Pres.					Oil A.P.I. Gravity		Water Spec. Gravity	
Depth Bot. Gauge	4296	Ft.	ves	Blanked Off	Gas Gravity		Surface Pressure	psi
BT. P.R.D. No.	196		12	Hour Clock	Tool Opened	10:30 am	A.M. Tool Closed	12:30 pm A.M. P.M.
Initial Hydro Mud Pres.	2300		2302		Remarks	Set hookwall at 10:27 Opened tool at 10:30		
Initial Closed in Pres.	hydrostatic release				am with weak blow building to strong blow. Closed for			
Initial Flow Pres.	1885				30 minute initial closed in pressure. Reopened for			
Final Flow Pres.	2				second flow with weak blow, increased to strong.			
Final Closed in Pres.					Closed for 30 minute initial closed in pressure.			
Final Hydro Mud Pres.	2270		2282					

FORMATION TEST DATA

Legal Location Sec. - Twp. - Rng. 20-13S-35W
 Lease Name HULLMAN
 Well No. 1
 Test No. 5
 Field Area N. TARTT
 County DEWAR
 SHALLOO WATER PUMPING COMPANY
 Lease Owner/Company Name
 State KANSAS
 Owner's District

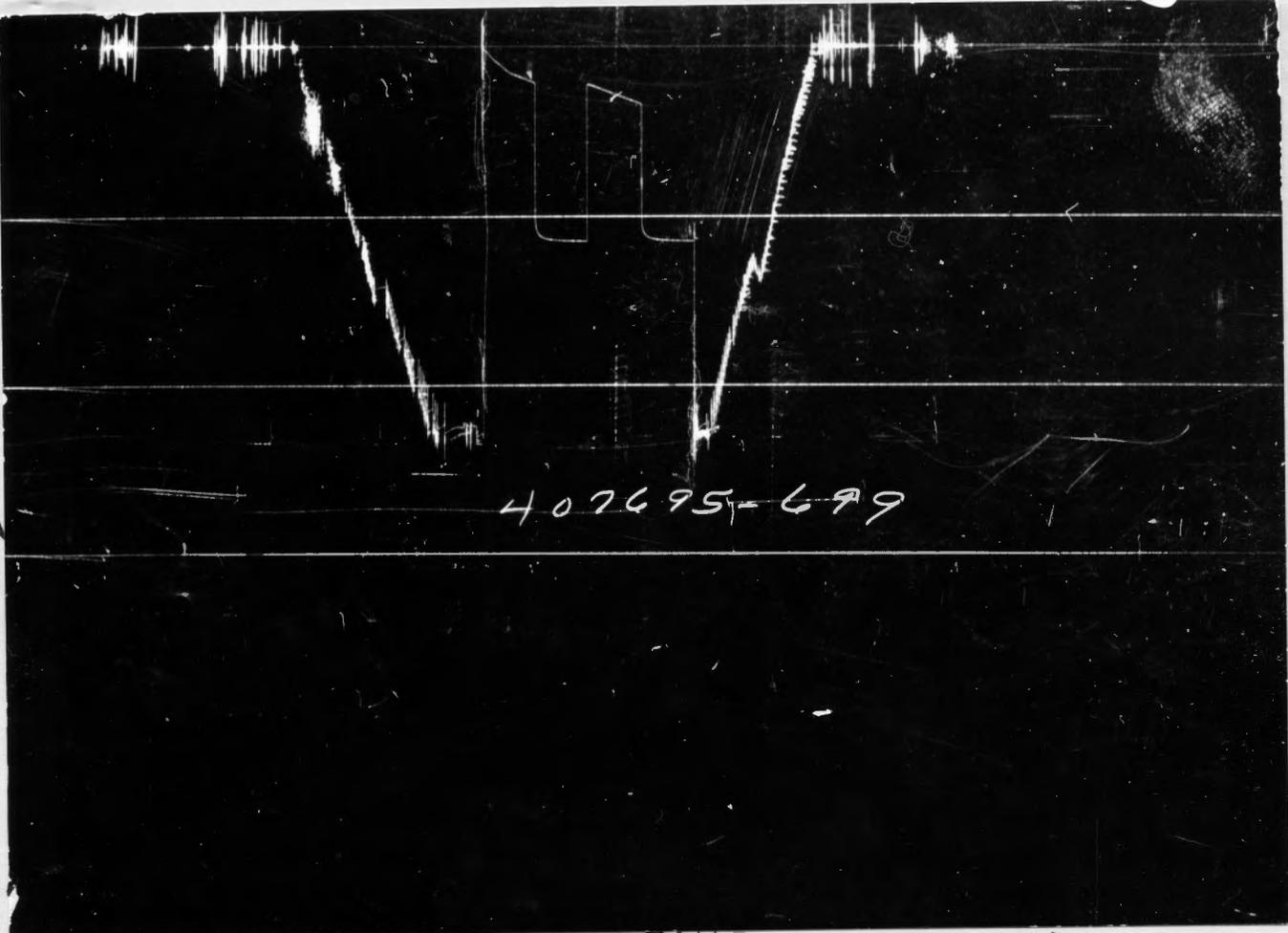
Gauge No. 699		Depth 4267'			Clock 12 hour		Ticket No. 407695			
First Flow Period		Initial Closed In Pressure			Second Flow Period		Final Closed In Pressure			
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\phi}{\phi}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\phi}{\phi}$	PSIG Temp. Corr.
P ₀	.000	9	.000		219	.000	229	.000		343
P ₁	.041	75	.0203		1123	.0424	246	.0206		1126
P ₂	.082	127	.0406		1138	.0848	272	.0412		1138
P ₃	.123	168	.0609		1144	.1272	297	.0618		1144
P ₄	.164	193	.0812		1149	.1696	320	.0824		1149
P ₅	.205	219	.1015		1150	.212	343	.1030		1150
P ₆			.1218		1152			.1236		1150
P ₇			.1421		1152			.1442		1150
P ₈			.1624		1152			.1648		1150
P ₉			.1827		1152			.1854		1150
P ₁₀			.2030		1152			.2060		1150

Gauge No. 196		Depth 4296'			Clock 12 hour					
P ₀			HYDROSTATIC RELEASE							
P ₁										
P ₂										
P ₃										
P ₄										
P ₅										
P ₆										
P ₇										
P ₈										
P ₉										
P ₁₀										
Reading Interval ⁶		3			6		3			Minutes

REMARKS:

SPECIAL PRESSURE DATA

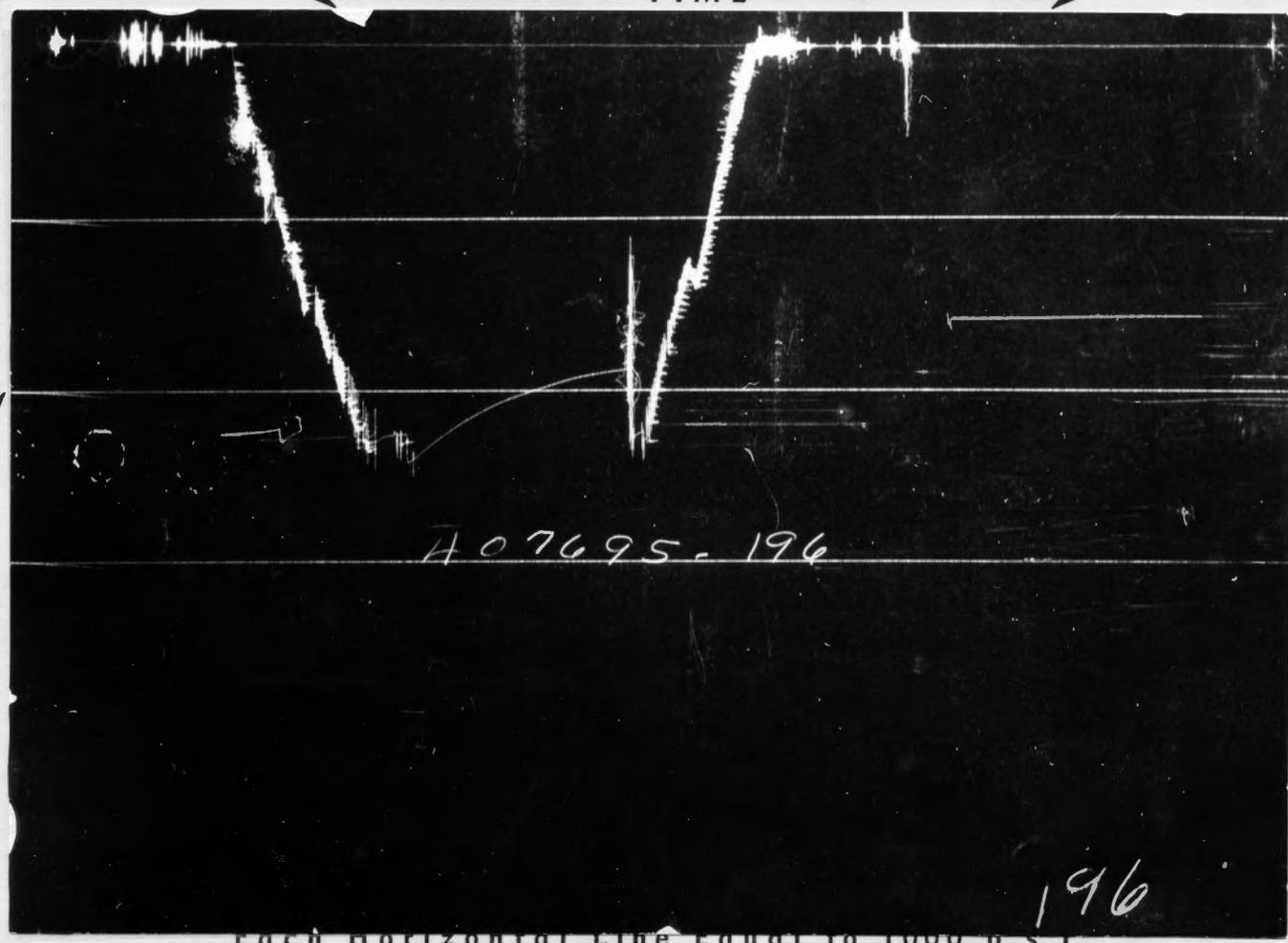
↑
PRESSURE
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407695-699

← TIME →

↑
PRESSURE
↓



407695-196

196

Each horizontal line equal to 1000 p.s.i.

Flow Time	1st 17	Min.	2nd 30	Min.	Date	2-20-66	Ticket Number	407696 S	Legal Location Sec. - Twp. - Rng. 29 13S 35W	HULLMAN Lessee Name
Closed In Press. Time	1st 46	Min.	2nd 60	Min.	Kind of Job	OPEN HOLE	Halliburton District	LIBERAL		
Pressure Readings	Field		Office Corrected		Tester	R.D. WALLER	Witness	D. REESE		
Depth Top Gauge	4245	Ft.	no	Blanked Off	Drilling Contractor	LEBEN DRILLING COMPANY	LC			
BT. P.R.D. No.	699		12	Hour Clock	Elevation	3193'	Top Packer	4252'		
Initial Hydro Mud Pressure	2254		2248		Total Depth	4700'	Bottom Packer	4260'		
Initial Closed in Pres.	1126		1132		Interval Tested	Net pay 8' 4260' - 4700'	Formation Tested	Lansing		
Initial Flow Pres.	-	1	8		Casing or Hole Size	7 7/8"	Casing Perfs.	Top		
	15	2	17					Bot.		
Final Flow Pres.	-	1	9		Surface Choke	1"	Bottom Choke	1"		
Final Closed in Pres.	1126		1119		Size & Kind Drill Pipe	4 1/2" FH	Drill Collars Above Tester	I.D. - LENGTH 2 3/4" - 329'		
Final Hydro Mud Pressure	2254		2248		Mud Weight	9.5	Mud Viscosity	53		
Depth Cen. Gauge		Ft.		Blanked Off	Temperature	110	Anchor Size & Length	ID 2.87" OD 5" X 8'		
BT. P.R.D. No.				Hour Clock	Depths Mea. From	Kelly Bushing	Depth of Tester Valve	4243 Ft.		
Initial Hydro Mud Pres.					TYPE AMOUNT		Depth Back Pres. Valve	- Ft.		
Initial Closed in Pres.					Cushion	none				
Initial Flow Pres.		1			Recovered	5	Feet of filtrate cut mud.			
Final Flow Pres.		2			Recovered		Feet of			
Final Closed in Pres.		1			Recovered		Feet of			
Final Hydro Mud Pres.		2			Recovered		Feet of			
Depth Bot. Gauge	4274	Ft.	yes	Blanked Off	Oil A.P.I. Gravity		Water Spec. Gravity			
BT. P.R.D. No.	196		12	Hour Clock	Gas Gravity		Surface Pressure	psi		
Initial Hydro Mud Pres.	2255		2263		Tool Opened	11:58 P.M.	Tool Closed	1:31 A.M.		
Initial Closed in Pres.	HYDROSTATIC				Remarks	Opened tool for a 17 minute first flow with				
Initial Flow Pres.	RELEASE	2				no blow. Took a 46 minute initial closed in pres-				
Final Flow Pres.		1				sure. Reopened tool for a 30 minute second flow				
Final Closed in Pres.		2				with slight blow. Closed tool for a 60 minute				
Final Hydro Mud Pres.	2270		2263			final closed in pressure.				

FORMATION TEST DATA

Well No. 1
Test No. 7
Field Area N. LARKIN
County KEARNY
State KANSAS
SHALLOW WATER REFINING COMPANY
Lessee Owner/Company Name
KANSAS CITY
Owner's District

Gauge No. 699		Depth 4245'		Clock 12 hour		Ticket No. 407696				
First Flow Period		Initial Closed In Pressure			Second Flow Period		Final Closed In Pressure			
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\phi}{\phi}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\phi}{\phi}$	PSIG Temp. Corr.
P ₀	.000	8	.000		9	.000	17	.000		17
P ₁	.112	9	.0348		782	.210	17	.0418		823
P ₂			.0696		968			.0836		956
P ₃			.0043		1033			.1254		1014
P ₄			.1391		1070			.1672		1047
P ₅			.1739		1093			.2090		1068
P ₆			.2087		1108			.2508		1085
P ₇			.2435		1119			.2926		1096
P ₈			.2783		1126			.3344		1106
P ₉			.3200		*1132			.3762		1114
P ₁₀								.4180		1119

Gauge No. 196		Depth 4274'		Clock 12 hour	
P ₀					
P ₁			HYDROSTATIC RELEASE -	1792	
P ₂					
P ₃					
P ₄					
P ₅					
P ₆					
P ₇					
P ₈					
P ₉					
P ₁₀					

Reading Interval 5 6 Minutes

REMARKS: * - Last Interval equals 6 minutes

SPECIAL PRESSURE DATA

PRESSURE

PRESSURE

407696-689

TIME

TIME

407696-196