

15-093-30067

30-21s-35w

Flow Time	1st 30	Min.	2nd 60	Min.	Date	11-20-66	Ticket Number	459449 S	Legal Location Sec. - Twp. - Rng.	30 21 35	Lease Name	1	Well No.	1	Test No.	1	Field Area	County	KEARNY	State	KANSAS	Shallow Water Refining Company	Great Bend	Owner's District	
Closed In Press. Time	1st 45	Min.	2nd 45	Min.	Kind of Job	OPEN HOLE	Helliburton District	LIBERAL																	
Pressure Readings	Field		Office Corrected		Tester	R.W. WHITE	Witness	FRANK NOVEY																	
Depth Top Gauge	4503	Ft.	no	Blanked Off	Drilling Contractor	LEBEN DRILLING COMPANY		LC																	
BT. P.R.D. No.	538		12	Hour Clock	Elevation	-	Top Packer	4513'																	
Initial Hydro Mud Pressure	2320		2302		Total Depth	4537'	Bottom Packer	4517'																	
Initial Closed in Pres.	1243		1235		Interval Tested	4517' - 4537'	Formation Tested	Marmaton																	
Initial Flow Pres.	82	1	70		Casing or Hole Size	7 7/8"	Casing Perfs.	Top																	
	477	2	500					Bot.																	
Final Flow Pres.	493	1	469		Surface Choke	1"	Bottom Choke	3/4"																	
	900	2	905																						
Final Closed in Pres.	1226		1230		Size & Kind Drill Pipe	4 1/2" FH	Drill Collars Above Tester	2 1/2" - 270'																	
Final Hydro Mud Pressure	2287		2289		Mud Weight	9.5	Mud Viscosity	34																	
Depth Cen. Gauge		Ft.		Blanked Off	Temperature	109	*F Est. Anchor Size & Length	ID 2.37" OD 5" X 20'																	
BT. P.R.D. No.				Hour Clock	Depths Mea. From	Kelly Bushing	Depth of Tester Valve	4498																	
Initial Hydro Mud Pres.					TYPE	AMOUNT	Depth Back Pres. Valve	-																	
Initial Closed in Pres.					Cushion	none																			
Initial Flow Pres.		1			Recovered	2000	Feet of	salt water.																	
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	4533	Ft.	yes	Blanked Off	Oil A.P.I. Gravity	-	Water Spec. Gravity	-																	
BT. P.R.D. No.	536		12	Hour Clock	Gas Gravity	-	Surface Pressure	-																	
Initial Hydro Mud Pres.	2352		2315		Tool Opened	5:16 A.M.	A.M. P.M.	Tool Closed	8:14 A.M.																
Initial Closed in Pres.	1253		1242		Remarks	Opened tool for a 30 minute first flow with fair blow increasing to good blow. Took a 45 minute initial closed in pressure. Re-																			
Initial Flow Pres.	100	1	58			opened tool for a 60 minute final flow with good blow throughout test. Closed tool for a 45 minute final closed in pressure.																			
Final Flow Pres.	498	2	507																						
Final Closed in Pres.	515	1	505																						
Final Hydro Mud Pres.	515	2	911																						

FORMATION TEST DATA

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Gauge No. 538		Depth 4503'		Clock 12 hour		Ticket No. 459449				
First Flow Period		Initial Closed In Pressure			Second Flow Period		Final Closed In Pressure			
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
P ₀	.000	70	.000	-	469	.000	500	.000	-	905
P ₁	.0337	177	.0327	.855	1109	.0416	544	.0358	1.261	1158
P ₂	.0674	246	.0654	.611	1158	.0832	595	.0716	.983	1182
P ₃	.1011	310	.0981	.485	1184	.1248	611	.1074	.829	1197
P ₄	.1348	367	.1308	.405	1200	.1664	701	.1432	.725	1205
P ₅	.1685	421	.1635	.349	1210	.2080	740	.1790	.648	1213
P ₆	.2020	469	.1962	.307	1220	.2496	779	.2148	.588	1218
P ₇			.2289	.274	1226	.2912	815	.2506	.539	1222
P ₈			.2616	.248	1230	.3328	848	.2864	.499	1226
P ₉			.2940	.227	1235	.3744	876	.3220	.465	1230
P ₁₀			-		-	.4160	905	-		-

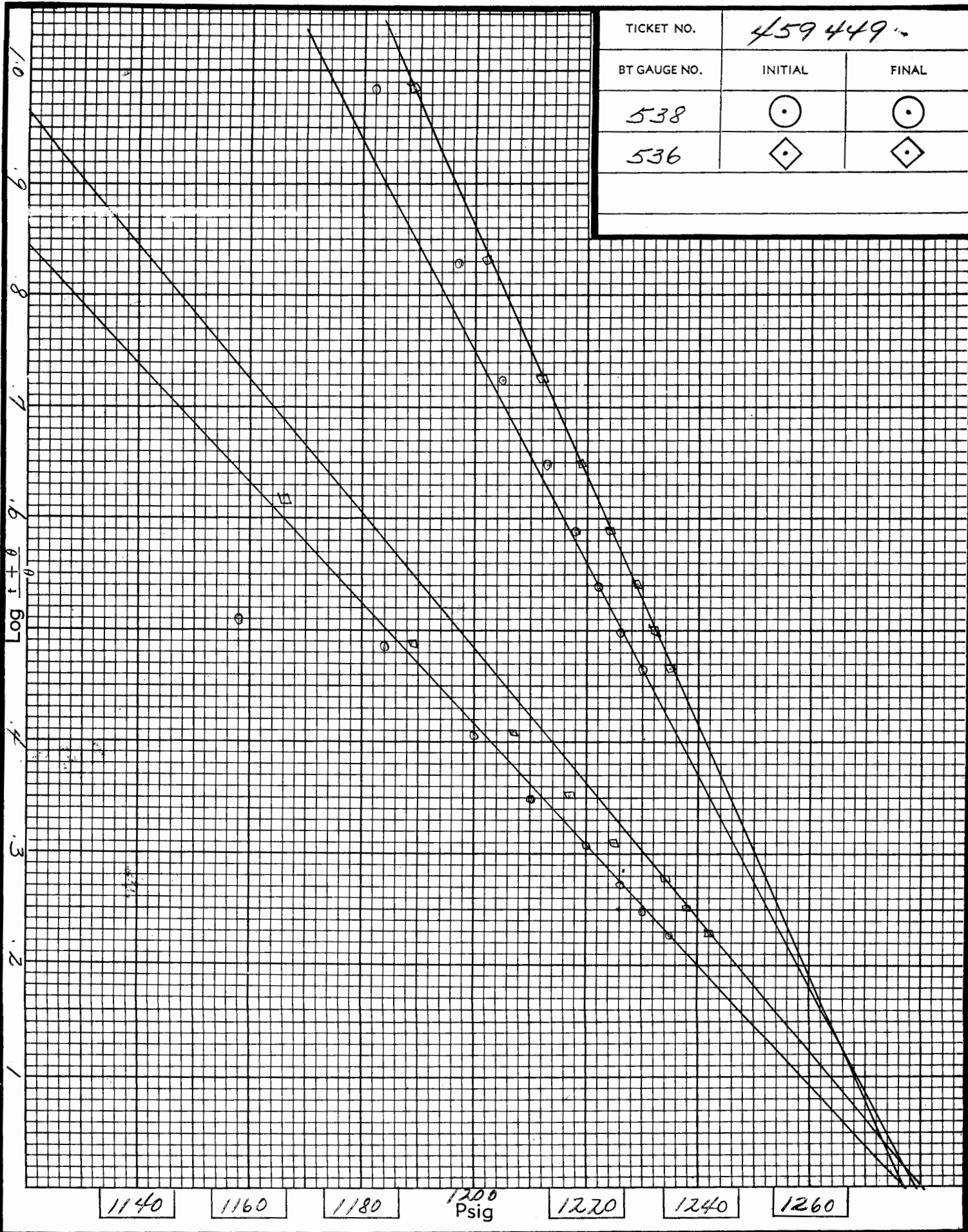
Gauge No. 536		Depth 4533'		Clock 12 hour						
P ₀	.000	58	.000	-	505	.000	507	.000	-	911
P ₁	.0335	213	.0321	.861	1117	.0409	551	.0352	1.263	1163
P ₂	.0670	267	.0642	.616	1166	.0818	608	.0704	.985	1189
P ₃	.1005	347	.0963	.489	1189	.1227	662	.1056	.831	1202
P ₄	.1340	404	.1284	.409	1207	.1636	708	.1408	.726	1212
P ₅	.1675	458	.1605	.352	1217	.2045	749	.1760	.649	1219
P ₆	.2010	505	.1926	.310	1225	.2454	789	.2112	.589	1224
P ₇			.2247	.277	1234	.2863	823	.2464	.541	1229
P ₈			.2568	.251	1238	.3272	854	.2816	.500	1234
P ₉			.2890	.229	1242	.3681	884	.3170	.466	1235
P ₁₀			-		-	.4090	911	-		-

Reading Interval 5 5 6 5 Minutes

REMARKS:

SPECIAL PRESSURE DATA

TICKET NO.	459449	
BT GAUGE NO.	INITIAL	FINAL
538	○	○
536	◇	◇



EXTRAPOLATED PRESSURE GRAPH

Liquid Production

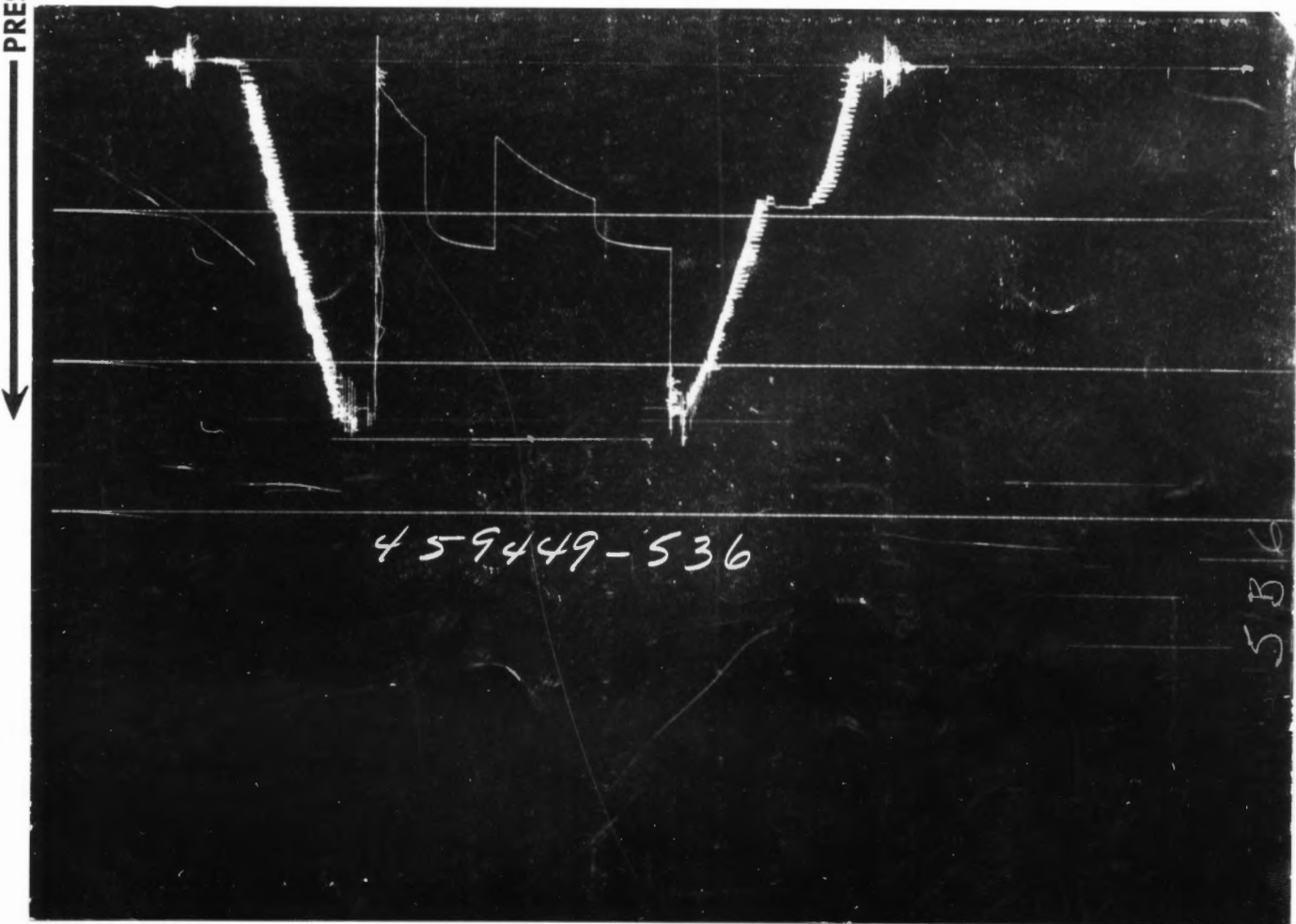
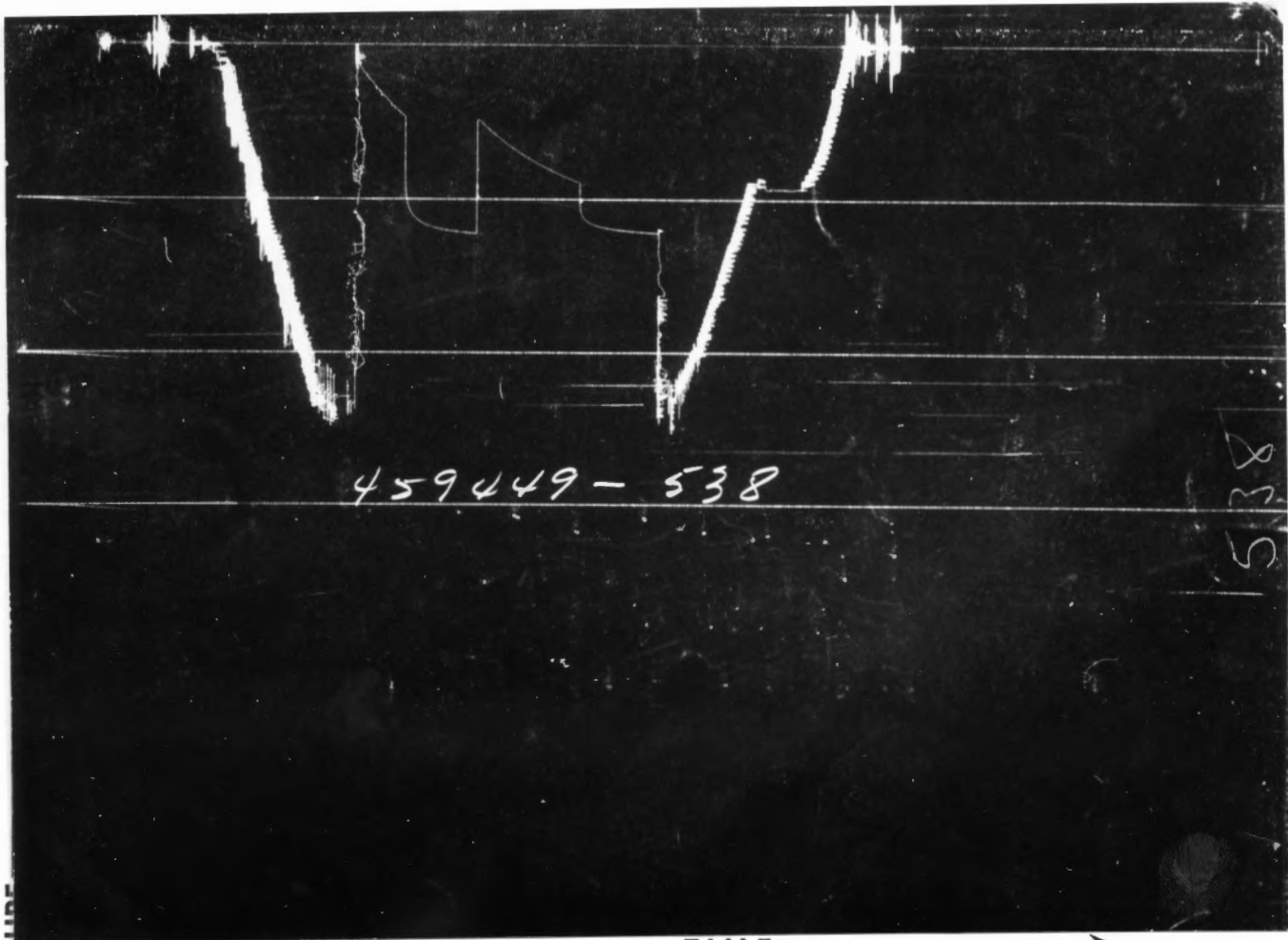
B.T. Gauge Numbers		538	536	Ticket Number	459449		
Initial Hydrostatic		<small>PRESSURE</small> 2302	<small>PRESSURE</small> 2315	Elevation	- ft.		
Final Hydrostatic		2289	2300	Indicated Production	1st Flow - bbls. day		
1st Flow	Initial	<small>Time</small> ----- 70	58		Total Flow	419.8 bbls. day	
	Final	30	469	505	Drill Collar Length	270 ft.	
Initial Closed In Pressure		45	1235	Drill Collar I.D.		2½ in.	
2nd Flow	Initial	-----	498	507	Drill Pipe Factor		0.01422 bbls. ft.
	Final	60	905	911	Hole Size		7 7/8 in.
Final Closed In Pressure		45	1230	1235	Footage Tested	6 ft.	
Extrapolated Static Pressure	Initial	-	-	Mud Weight		9.5 lbs. gal.	
	Final	1279	1277	Viscosity, Oil or Water		0.68 cp	
Slope XXXXXX P10	Initial	-	-	Oil API Gravity		-	
	Final	1174	1188	Water Specific Gravity Calc.		1.043	

Remarks: Calculations based on total recovery of 2000 ft. of salt water during total of 90 minute flow period.

SUMMARY		Gauge No. 538 Depth 4503'		Gauge No. 536 Depth 4533'		Units
Product	Equation	Initial	Final	Initial	Final	
Production	$Q = \frac{1440 R}{t}$		419.8		419.8	bbls. day
Transmissability	$\frac{Kh}{\mu} = \frac{162.6 Q}{m}$		650.2		767.0	md. ft. cp
Indicated Flow Capacity	$Kh = \frac{Kh}{\mu} \mu$		442.1		521.6	md. ft.
Average Effective	$K = \frac{Kh}{h}$		-		-	md.
Permeability	$K_r = \frac{Kh}{h_r}$		73.683		86.930	md.
Damage Ratio	$DR = .183 \frac{P_s - P_f}{m}$		0.652		0.753	-
Theoretical Potential w/Damage Removed	$Q_1 = Q DR$		419.8		419.8	bbls. day
Approx. Radius of Investigation	$b \approx \sqrt{Kt}$ or $\sqrt{Kt_0}$		-		-	ft.
	$b_1 \approx \sqrt{K_1 t}$ or $\sqrt{K_1 t_0}$		66.49		72.2	ft.
Potentiometric Surface *	Pot. = EI - GD + 2.319 Ps		-1537.		1571.	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.

INTERPRETATIONS AND CALCULATIONS



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

Flow Time	1st 30	Min.	2nd 60	Min.	Date	11-21-66	Ticket Number	459450 - S	Lard Location Sec. - Typ. - Bldg. SEC. 30 - 21 - 35
Closed In Press. Time	1st 45	Min.	2nd 45	Min.	Kind of Job	OPEN HOLE	Holliburton District	LIBERAL	
Pressure Readings	Field		Office Corrected		Tester	MR. WHITE	Witness	MR. NOVEY	
Depth Top Gauge	4579	Ft.	NO	Blanked Off	Drilling Contractor	LEBEN DRILLING COMPANY	IC		
BT. P.R.D. No.	538		12	Hour Clock	Elevation	-	Top Packer	4589'	
Initial Hydro Mud Pressure	2353		2351		Total Depth	4649'	Bottom Packer	4593'	
Initial Closed in Pres.	982		984		Interval Tested	4593'-4649'	Formation Tested	LOWER MARMATON	
Initial Flow Pres.	16	1	21		Casing or Hole Size	7 7/8"	Casing } Top		
	24	2	31				Casing } Bot.	-	
Final Flow Pres.	24	1	21		Surface Choke	1"	Bottom Choke	3/4"	
	33	2	25						
Final Closed in Pres.	787		761		Size & Kind Drill Pipe	4 1/2" F.H.	Drill Collars Above Tester	2 1/2" x 270'	
Final Hydro Mud Pressure	2336		2326		Mud Weight	9.6	Mud Viscosity	40	
Depth Cen. Gauge		Ft.		Blanked Off	Temperature	109	Anchor Size & Length	ID 2.37" X OD 5.00" 28'	
BT. P.R.D. No.				Hour Clock	Depths Meas. From	KELLY BUSHINGS	Depth of Tester Valve	4574' 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		
Final Closed in Pres.					Oil A.P.I. Gravity	-	Water Spec. Gravity	-	
Depth Bot. Gauge	4642	Ft.	YES	Blanked Off	Gas Gravity	-	Surface Pressure	- psi	
BT. P.R.D. No.	536		12	Hour Clock	Tool Opened	8:30 AM	A.M. Tool Closed	11:30 AM A.M. P.M.	
Initial Hydro Mud Pres.	2385		2380		Remarks Opened tool for 30 minute 1st flow with a				
Initial Closed in Pres.	1007		1003		very weak blow that died in 10 minutes. Closed				
Initial Flow Pres.	50	1	43		tool for 45 minute initial closed in pressure.				
Final Flow Pres.	58	2	58		Reopened tool for 60 minute 2nd flow with no blow.				
Final Closed in Pres.	793		782		Closed tool for 45 minute final closed in pressure.				
Final Hydro Mud Pres.	2369		2354		Unable to calculate due to insufficient closures and no production.				

FORMATION TEST DATA

no production.

STEVENS
Lessee Name

1
Well No.

2
Test No.

WILDCAT
County
KEARNY
SHALLOW WATER REFINING COMPANY
Lessee Owner/Company Name

State
KANSAS
MITCHITA
Owner's District

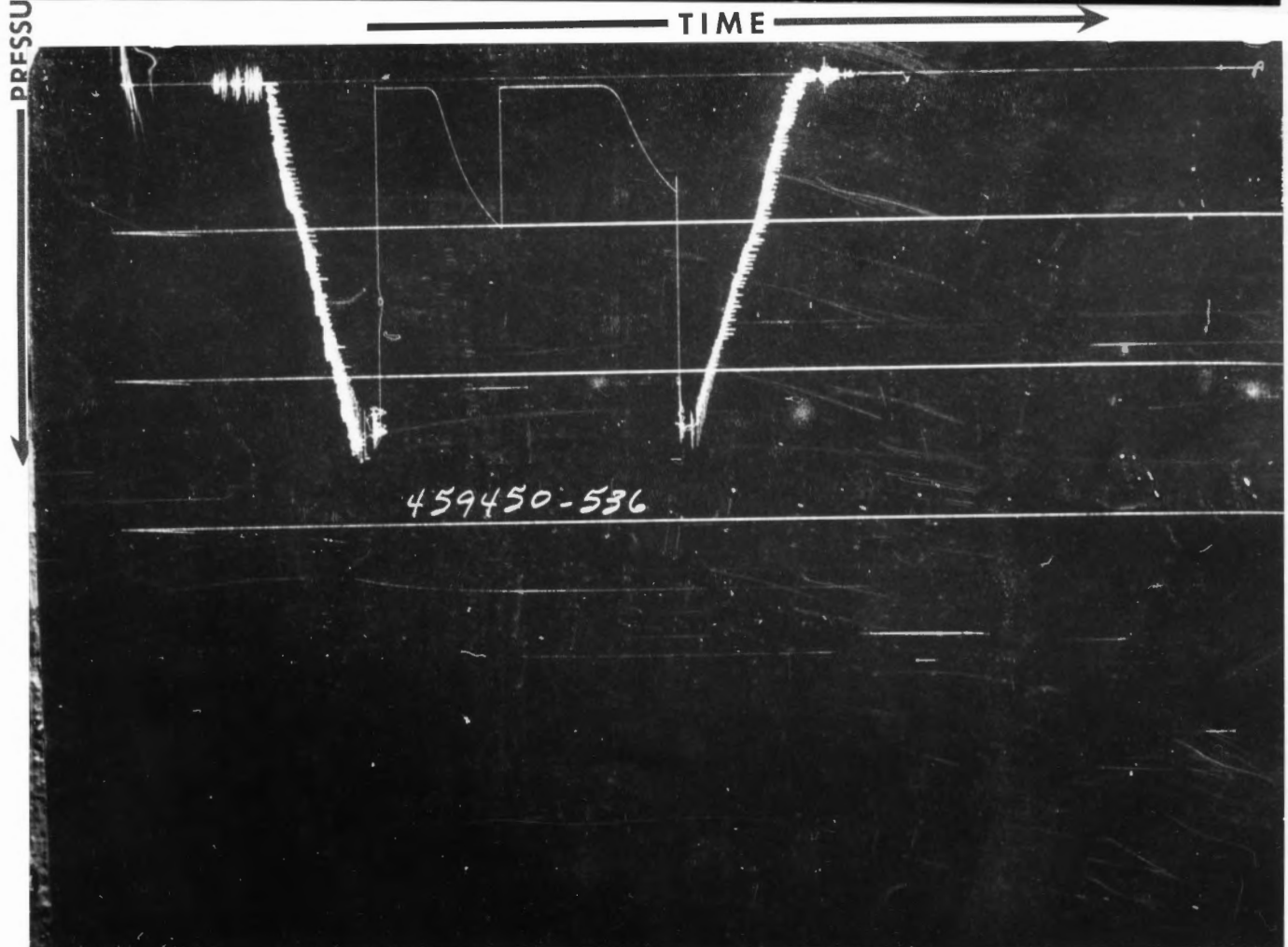
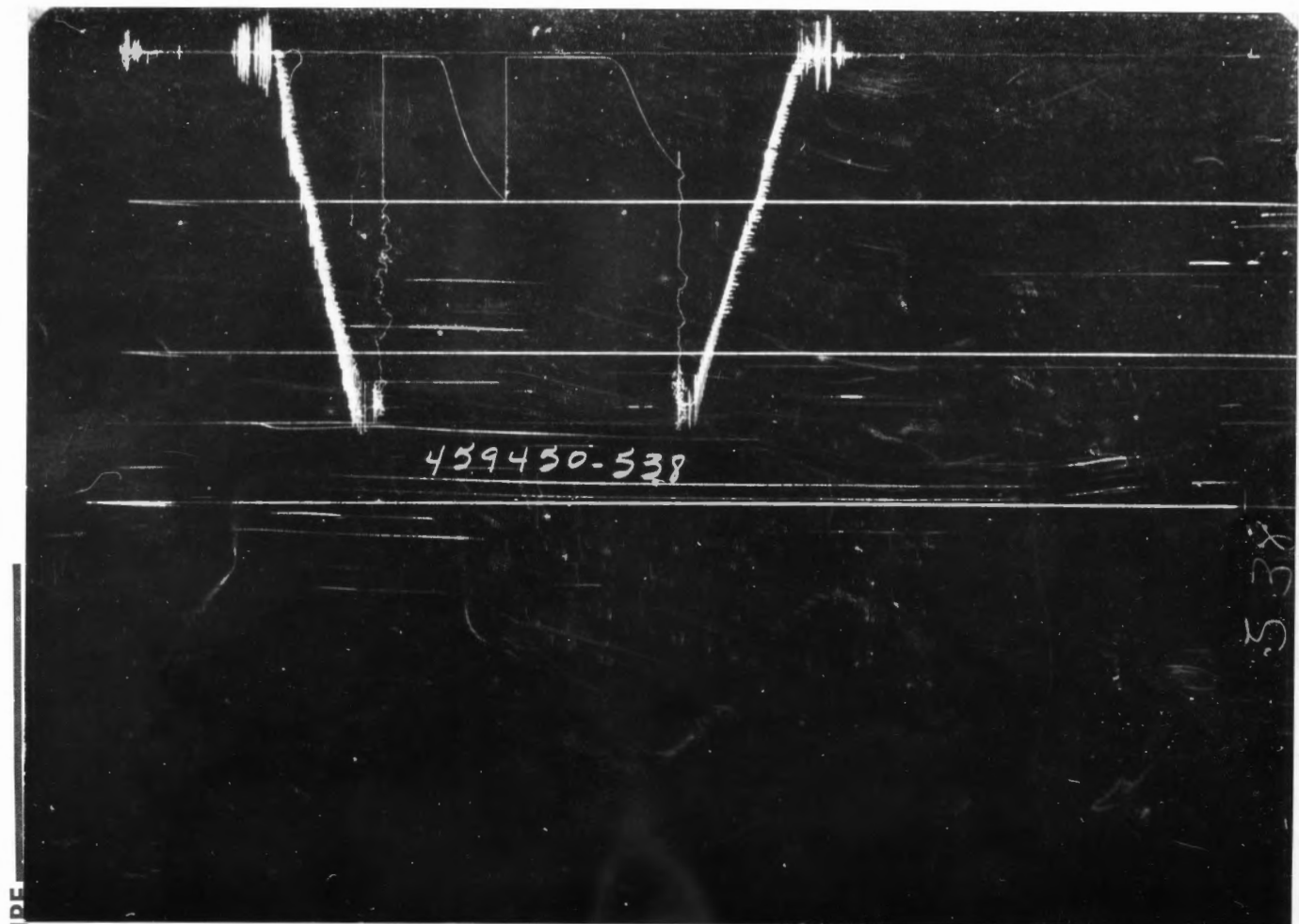
Gauge No. 538		Depth 4579'		Clock 12 hour		Ticket No. 459450				
First Flow Period		Initial Closed In Pressure			Second Flow Period		Final Closed In Pressure			
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\bullet}{\bullet}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\bullet}{\bullet}$	PSIG Temp. Corr.
P ₀	.000	21	.000		21	.000	31	.000		25
P ₁	.207	21	.0331		62	.410	25	.0338		43
P ₂			.0662		216			.0676		97
P ₃			.0993		403			.1014		203
P ₄			.1324		562			.1352		336
P ₅			.1655		685			.1690		452
P ₆			.1986		778			.2028		552
P ₇			.2317		863			.2366		637
P ₈			.2648		930			.2704		703
P ₉			.2980		984			.3040		761
P ₁₀										

Gauge No. 536		Depth 4642'		Clock 12 hour						
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\bullet}{\bullet}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\bullet}{\bullet}$	PSIG Temp. Corr.
P ₀	.000	43	.000		45	.000	58	.000		50
P ₁	.208	45	.0339		83	.421	50	.0338		71
P ₂			.0678		231			.0676		130
P ₃			.1017		420			.1014		246
P ₄			.1356		580			.1352		372
P ₅			.1695		705			.1690		483
P ₆			.2034		802			.2028		582
P ₇			.2373		884			.2366		662
P ₈			.2712		952			.2704		728
P ₉			.3050		1003			.3040		782
P ₁₀										

Reading Interval 5 5 Minutes

REMARKS:

SPECIAL PRESSURE DATA



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