NOMENCLATURE

b	=	Approximate Radius of Investigation	Feet
b^1	=	Approximate Radius of Investigation (Net Pay Zone h^1)	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^1)	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^{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	——
u	=	Viscosity Gas or Liquid	CP
Log	=	Common Log	

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

	1st Min.	2nd Min.				
Flow Time	30	30	Date	4-3-67	Ticket Number	470617 - S
Closed In Press. Time	30	30	Kind of Job	OPEN HOLE	Halliburton District	HILL CITY
Pressure Readings	Field	Office Corrected	Tester	MR. JOSLIN	Witness	MR. BLANDIN
Depth Top Gauge	3583 Ft.	Blanked NO Off	Drilling Contractor	GARVEY DRILLING INCORPORATED INC		
BT. P.R.D. No.	698	Hour 12 Clock	Elevation	2298' K.B.	Top Packer	-
Initial Hydro Mud Pressure	-	1834	Total Depth	3618'	Bottom Packer	3582'
Initial Closed in Pres.	-	515	Interval Tested	3582'-3618'	Formation Tested	LOWER KANSAS CITY
Initial Flow Pres.	- 1	23	Casing or Hole Size	7 7/8"	Casing Perfs. Top	
	- 2	37			Bot.	-
Final Flow Pres.	- 1	29	Surface Choke	1/4"	Bottom Choke	3/4"
	- 2	39				I.D. - LENGTH
Final Closed in Pres.	-	513	Size & Kind Drill Pipe	4 1/2" F.H.	Drill Collars Above Tester	-
Final Hydro Mud Pressure	-	1816	Mud Weight	9.7	Mud Viscosity	41
Depth Cen. Gauge	Ft.	Blanked Off	Temperature	106 °F Est. / 113 °F Actual	Anchor Size & Length	ID 2.76" OD 5.00" X 36'
BT. P.R.D. No.		Hour Clock	Depths Mea. From	KELLY BUSHINGS	Depth of Tester Valve	3577' Ft.
Initial Hydro Mud Pres.			Cushion TYPE / AMOUNT	- Ft.	Depth Back Pres. Valve	- Ft.
Initial Closed in Pres.			Recovered	50 Feet of Mud		
Initial Flow Pres.	1		Recovered	Feet of		
	2					
Final Flow Pres.	1		Recovered	Feet of		
	2					
Final Closed in Pres.			Recovered	Feet of		
Final Hydro Mud Pres.			Oil A.P.I. Gravity	-	Water Spec. Gravity	-
Depth Bot. Gauge	3614 Ft.	Blanked YES Off	Gas Gravity	-	Surface Pressure	- psi
BT. P.R.D. No.	697	Hour 12 Clock	Tool Opened	2:00 AM A.M. P.M.	Tool Closed	4:00 AM A.M. P.M.
Initial Hydro Mud Pres.	1909	1858	Remarks	Opened tool for 30 minute 1st flow with a		
Initial Closed in Pres.	540	534		weak blow for 17 minutes. Closed tool for 30		
Initial Flow Pres.	30 1	52		minute initial closed in pressure. Reopened tool		
	70 2	95				
Final Flow Pres.	90 1	56		for 30 minute 2nd flow with no blow. Closed tool		
	90 2	84				
Final Closed in Pres.	530	528		for 30 minute final closed in pressure.		
Final Hydro Mud Pres.	1869	1833				

Legal Location Sec. - Twp. - Rng.: SEC. 7 - 8 - 23
Lease Name: MONTGOMERY
Well No.: 2
Test No.: 1
Field Area: ----
County: GRAHAM
State: KANSAS
Lease Owner/Company Name: CITIES SERVICE OIL COMPANY
Owner's District: RUSSELL
Mea. From Tester Valve

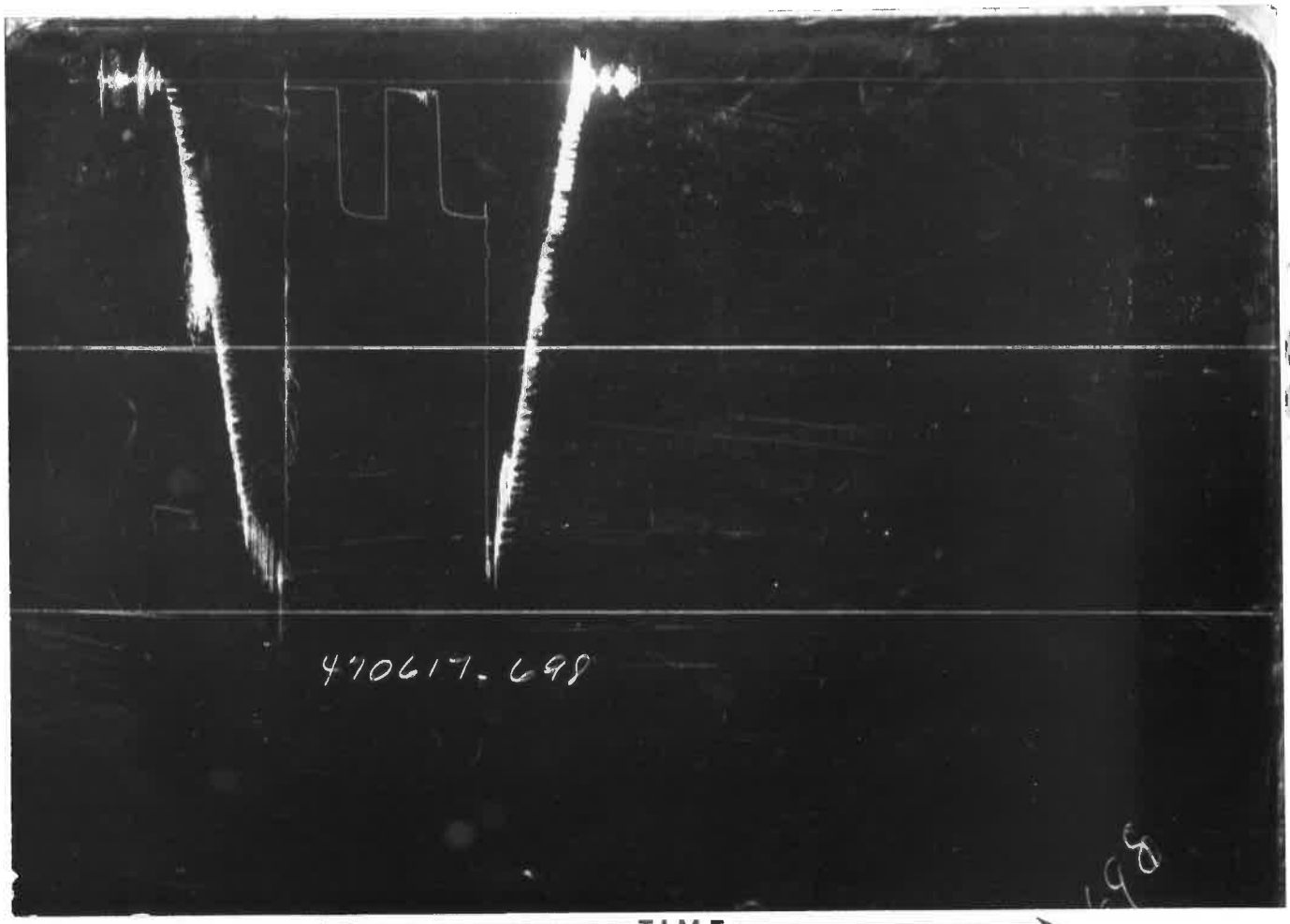
FORMATION TEST DATA

5

Gauge No.	698		Depth	3583'		Clock	12	hour	Ticket No.	470617		
	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	23	.000		29	.000	37		.000		39	
P_1	.212	29	.0201		464	.206	39		.0201		425	
P_2			.0402		490				.0402		486	
P_3			.0603		499				.0603		496	
P_4			.0804		504				.0804		502	
P_5			.1005		507				.1005		505	
P_6			.1206		510				.1206		508	
P_7			.1407		512				.1407		510	
P_8			.1608		514				.1608		512	
P_9			.1809		515				.1809		513	
P_{10}			.2010		515				.2010		513	
Gauge No.	697		Depth	3614'		Clock	12	hour				
P_0	.000	52	.000		56	.000	95		.000		84	
P_1	.217	56	.0201		444	.211	84		.0198		442	
P_2			.0402		478				.0396		486	
P_3			.0603		493				.0594		499	
P_4			.0804		503				.0792		506	
P_5			.1005		509				.0990		512	
P_6			.1206		516				.1188		516	
P_7			.1407		521				.1386		519	
P_8			.1608		527				.1584		523	
P_9			.1809		531				.1782		526	
P_{10}			.2010		534				.1980		528	
Reading Interval				3						3		Minutes

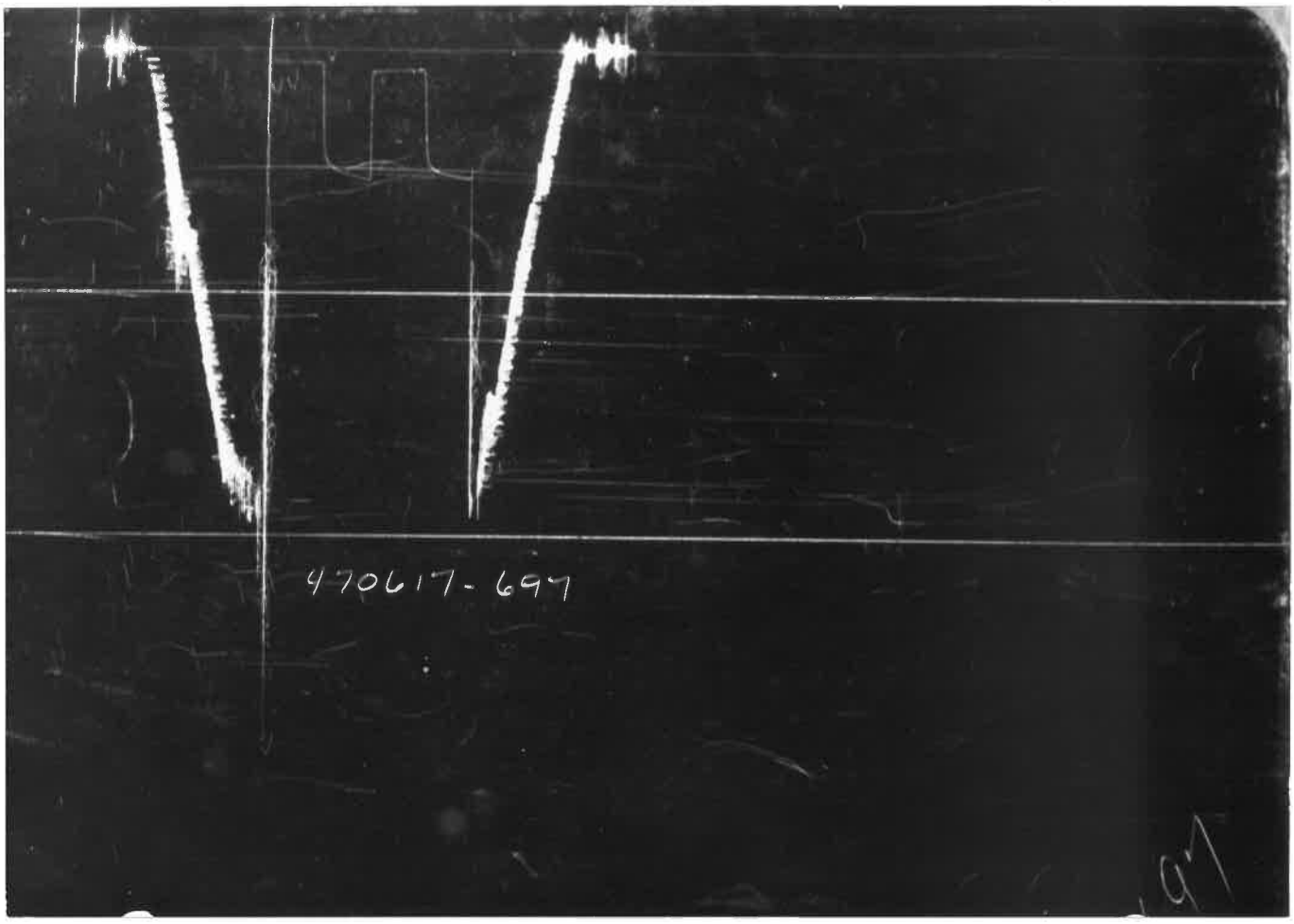
REMARKS:

SPECIAL PRESSURE DATA



PRESSURE

TIME



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

	1st Min.	2nd Min.				
Flow Time	30	30	Date	4-3-67	Ticket Number	470618 S
Closed In Press. Time	30	30	Kind of Job	OPEN HOLE	Halliburton District	HILL CITY
Pressure Readings	Field	Office Corrected	Tester	H. JOSLIN	Witness	R. BLANDIN
Depth Top Gauge	3624 Ft.	Blanked Off: no	Drilling Contractor	GARVEY DRILLING COMPANY LC		
BT. P.R.D. No.	698	Hour Clock: 12	Elevation	2298' KB	Top Packer	-
Initial Hydro Mud Pressure	-	1894	Total Depth	3645'	Bottom Packer	3623'
Initial Closed in Pres.	-	743	Interval Tested	3623' - 3645'	Formation Tested	Lower Kansas City
Initial Flow Pres.	- 1	38	Casing or Hole Size	7 7/8"	Casing Perfs. Top	
	- 2	98			Casing Perfs. Bot.	
Final Flow Pres.	- 1	80	Surface Choke	½"	Bottom Choke	3/4"
	- 2	118				I.D. - LENGTH
Final Closed in Pres.	-	717	Size & Kind Drill Pipe	4 ½" FH	Drill Collars Above Tester	none
Final Hydro Mud Pressure	-	1864	Mud Weight	9.8	Mud Viscosity	43
Depth Cen. Gauge	Ft.	Blanked Off	Temperature	106 °F Est. / 113 °F Actual	Anchor Size & Length	ID 2.76" OD 5" X 22'
BT. P.R.D. No.		Hour Clock	Depths Mea. From	Kelly Bushing	Depth of Tester Valve	3618 Ft.
Initial Hydro Mud Pres.			Cushion TYPE / AMOUNT	none Ft.	Depth Back Pres. Valve	none Ft.
Initial Closed in Pres.			Recovered	100 Feet of gas.		
Initial Flow Pres.	1		Recovered	108 Feet of heavy oil & gas cut mud.		
	2			100 muddy oil.		
Final Flow Pres.	1		Recovered	40 Feet of oil cut muddy water.		
	2					
Final Closed in Pres.			Recovered	20 Feet of water.		
Final Hydro Mud Pres.			Oil A.P.I. Gravity		Water Spec. Gravity	
Depth Bot. Gauge	3641 Ft.	Blanked Off: yes	Gas Gravity	-	Surface Pressure	- psi
BT. P.R.D. No.	697	Hour Clock: 12	Tool Opened	3:30 P.M. A.M. P.M.	Tool Closed	5:30 P.M. A.M. P.M.
Initial Hydro Mud Pres.	1919	1899	Remarks	Opened tool for a 30 minute initial flow.		
Initial Closed in Pres.	750	745		Took a 30 minute initial closed in pressure. Re-		
Initial Flow Pres.	60 1	47				
	96 2	117		opened tool for a 30 minute final flow with weak blow		
Final Flow Pres.	100 1	92				
	126 2	132		increased to fair in 10 minutes - lasting through-		
Final Closed in Pres.	720	721		out test. Closed tool for a 30 minute final closed		
Final Hydro Mud Pres.	1889	1873		in pressure.		

Legal Location Sec. - Twp. - Rng.: 7 8 30

Lease Name: MONTGOMERY

Well No.: 2

Test No.: 2

Field Area: --

County: GRAHAM

State: KANSAS

Lease Owner/Company Name: STATES SERVICE CO. COMPANY

Owner's Direct: RUSSELL

Mea. From Tester Valve

FORMATION TEST DATA

5

Gauge No. 698	Depth 3624'	Clock 12 hour	Ticket No. 470618

	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	38	.000		80	.000	98	.000		118
P_1	.043	46	.0197		168	.0412	95	.020		199
P_2	.086	56	.0394		364	.0824	101	.040		323
P_3	.129	66	.0591		545	.1236	107	.060		477
P_4	.172	73	.0788		624	.1648	113	.080		575
P_5	.215	80	.0985		665	.2060	118	.100		627
P_6			.1182		690			.120		657
P_7			.1379		708			.140		680
P_8			.1576		721			.160		696
P_9			.1773		734			.180		707
P_{10}			.1970		743			.200		717

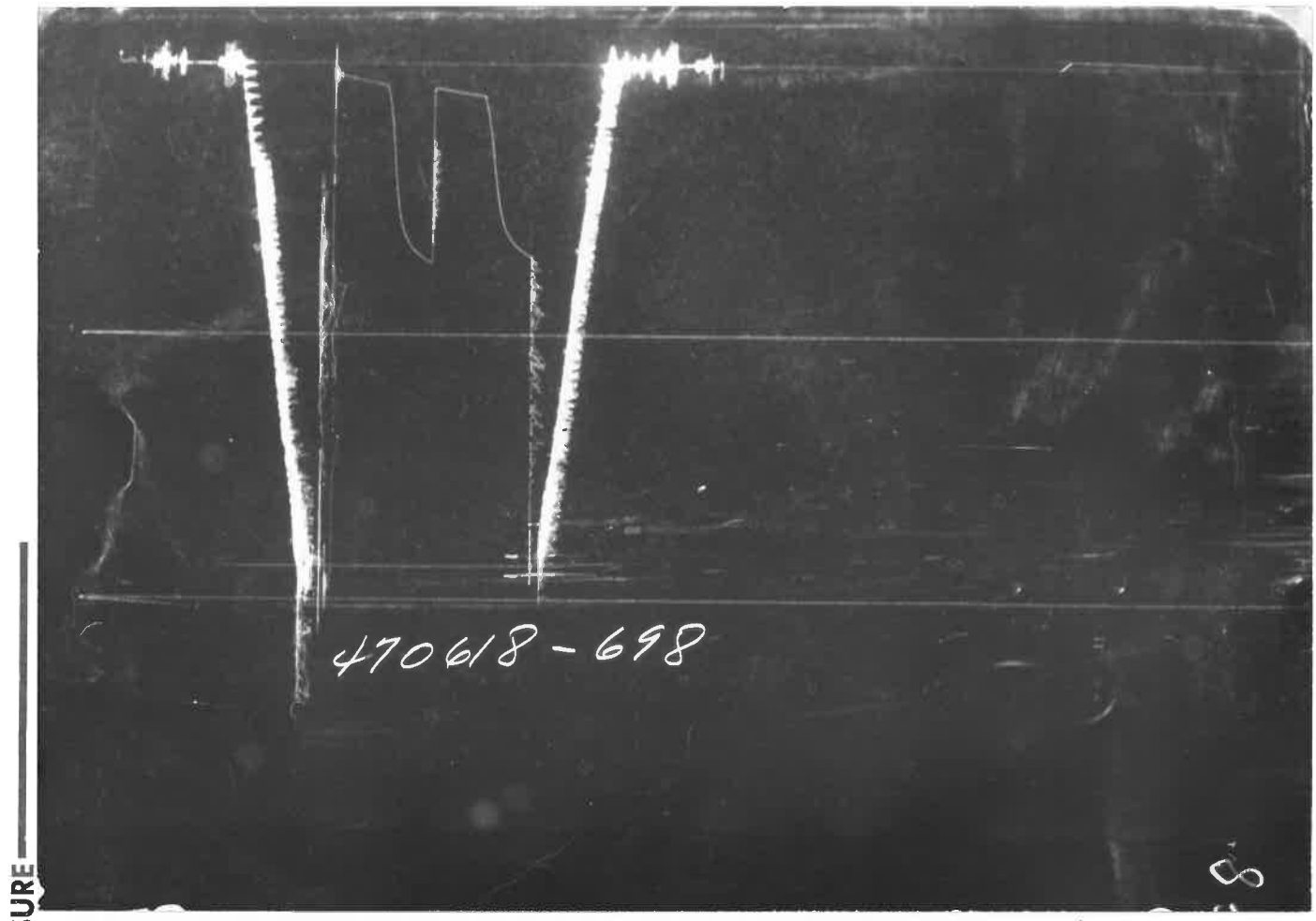
Gauge No. 697	Depth 3641'	Clock 12 hour

P_0	.000	47	.000		92	.000	117	.000		132
P_1	.0434	60	.0196		176	.0422	110	.0198		210
P_2	.0868	79	.0392		367	.0844	116	.0396		355
P_3	.1302	78	.0588		547	.1266	121	.0594		498
P_4	.1736	85	.0784		631	.1688	127	.0792		589
P_5	.2170	92	.0980		670	.2110	132	.0990		636
P_6			.1176		694			.1188		664
P_7			.1372		712			.1386		686
P_8			.1568		723			.1584		700
P_9			.1764		736			.1782		713
P_{10}			.1960		745			.1980		721
Reading Interval		6		3			6		3	Minutes

REMARKS:

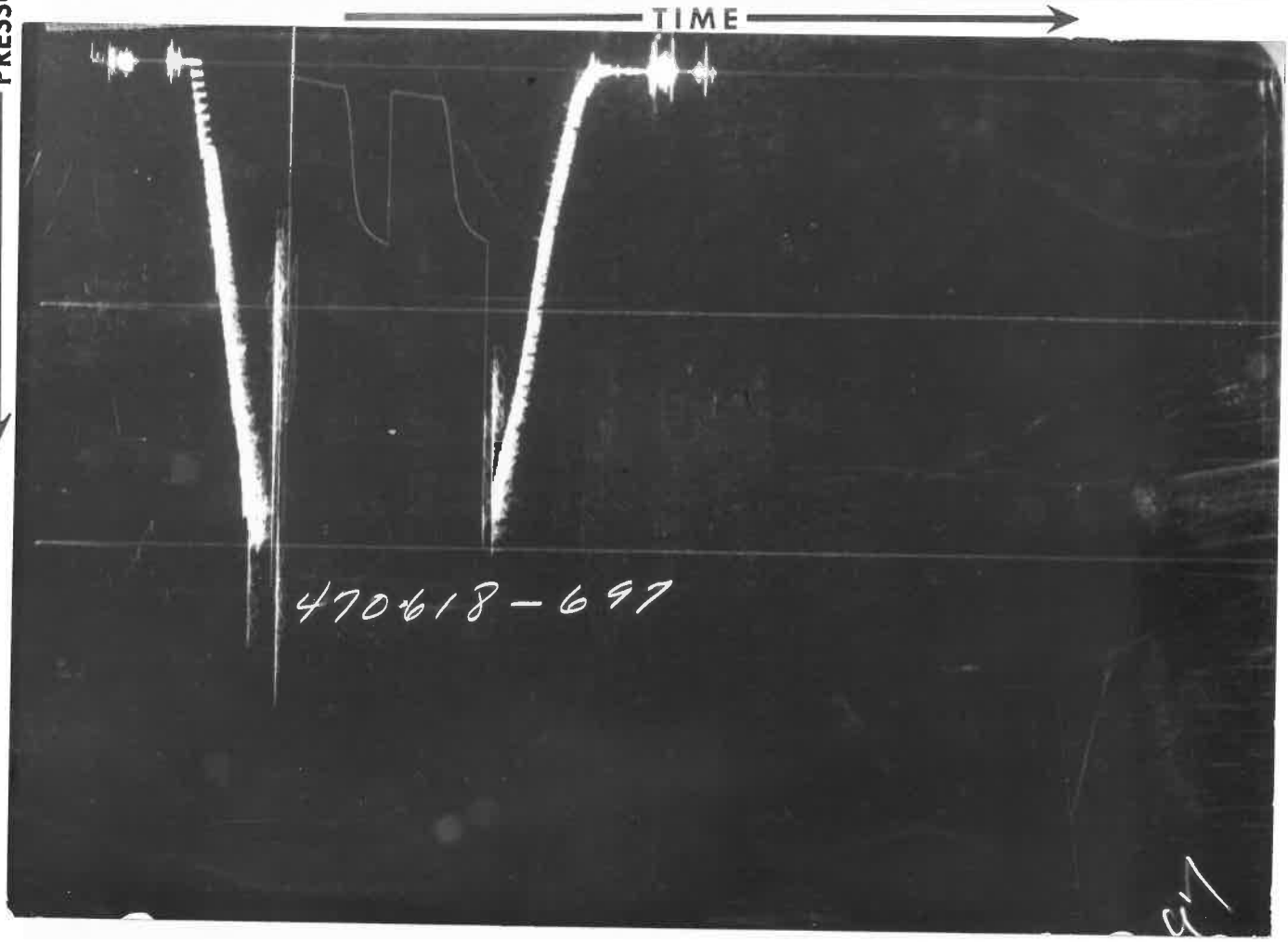
SPECIAL PRESSURE DATA

5



PRESSURE

TIME



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