JOHNSTON TESTERS, INC.

SURFACE INFORMATION

Well Flowed	Amount
No	

Reversed Out	Amount
No	

Recovered	Amount
Drilling mud with few oil specks in top of tool	80'

Blow: Weak

Maximum Surface Pressure: -

Description (Rate of Flow)	Time	Pressure (P.S.I.G.)	Surface Choke
Opened Tool	1658	-	1"
Closed for initial shut-in	1703	-	"
Re-opened tool	1733	-	"

Remarks:

TOOL, HOLE & MUD DATA

Type Test: Conventional
Formation Tested: Miss. Chat
Elevation: 1285 D.F.
All Depths Measured From: Kelly Bushing

TOOL SEQUENCE

Tool	Size/Type	Depth/Leng I.D.
Drill Pipe	4½" FH	4144' 3.
Circulating Sub	4½" Plug	
Drill Pipe	4½" FH	30' 3.8'
Drill Collars	4½" H-90	210' 2¼
Cross-over Sub	4½" FH	
Cross-over Sub	3½" R	
4-stage Shut-in	3½"	
Hydraulic Tool	3½" C	
Jar	3½" HS-1	
Safety Joint	4½" Homco	
Packer Bob Tail	6 5/8"	4411'
Perf. Anchor	3½" Hvy.	13'
Recorder Carrier	4 7/8" T	6'
Recorder Carrier	4 7/8" L	6'

Total Depth: 4436
Main Hole Size: 7 7/8" Rat Hole Size: -
Casing Size: - Liner Size: -
Bottom Choke Size: 3/4" Mud Type: Starch
Mud. Wt.: 10.2 Mud Viscosity: 47
Air Chamber Length: - Ft.: -

Cushion Type	Amount	Pressure
-	-	-

TIME DATA

Initial Shut-in	-	Hrs.	30	Mi
Flow Period	1	Hrs.	20	Mi
Final Shut-in	-	Hrs.	30	Mi

Company: Helmerich & Payne Inc., 6th. Floor, First National Bldg., Tulsa, Okla. Date: 12-8-61
Well: Rump #1 Field: Wild Cat Location: 27-33S-5W
Test Interval: 4411' to 4436' Formation Test #: 1 Casing Test #: -

County: Harper State: Kansas Field Report No.: 63269 L
Tester: Guy M. Knipe Test Approved By: Mr. Tom M. Carroll Jr. No. DST Reports Requested: 5x

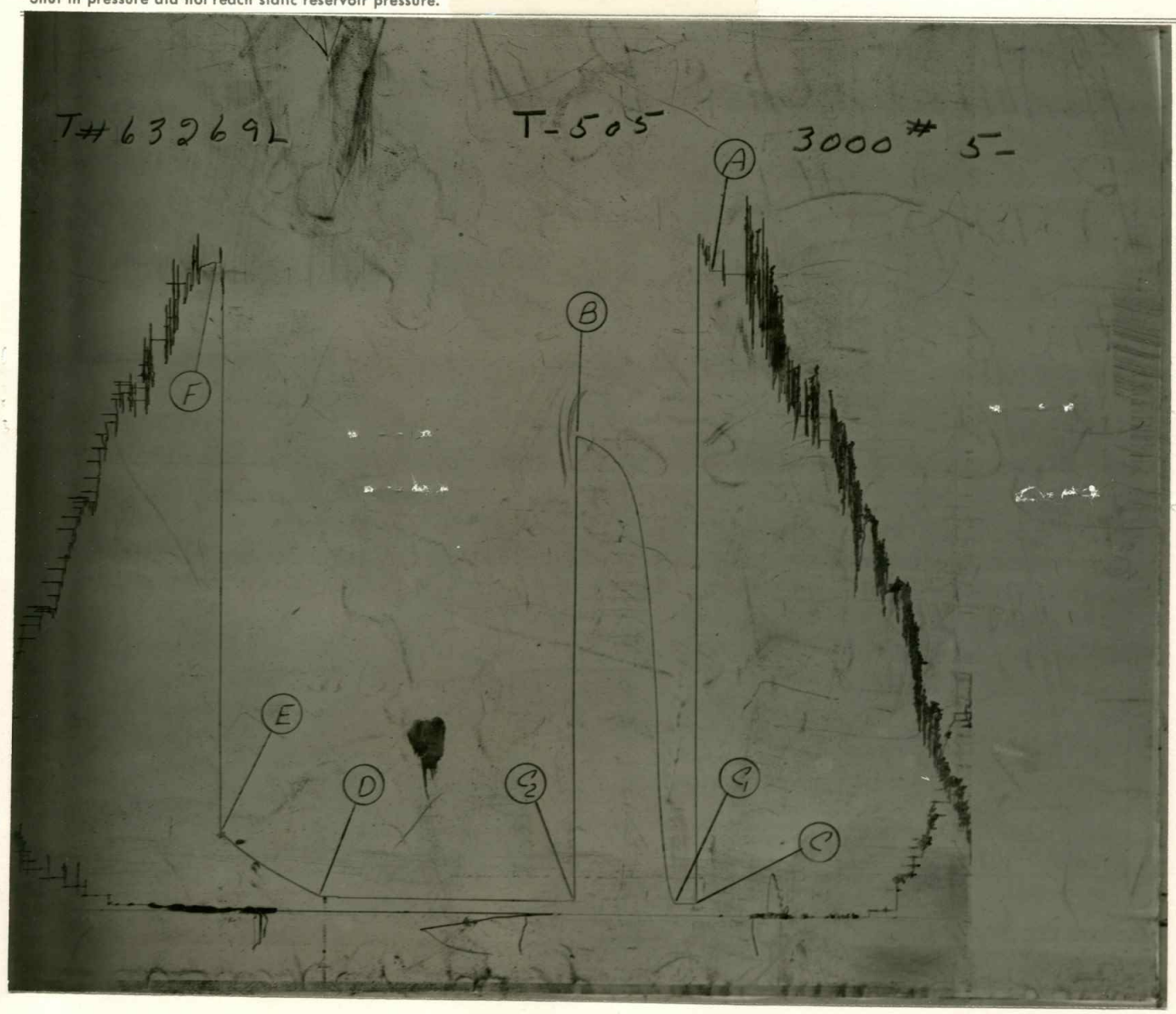
JOHNSTON TESTERS, INC.

Pressure Data Field Report No. 63269 L

Recorder No.		T-505				
Capacity (P.S.I.G.)		3000				
Recorder Depth		4424'				
Pressure Gradient P.S.I./Ft.						
Well Temperature °F.		129				
A Initial Hydrostatic Mud		2398				
B Initial Shut-in	*	1772				
C Initial Flow		35				
D Final Flow		50				
E Final Shut-in	*	285				
F Final Hydrostatic Mud		2411				
Remarks: C-1		34				
C-2		43				

Distr bution for all tests run on this well listed underneath chart

*Shut in pressure did not reach static reservoir pressure.



GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS

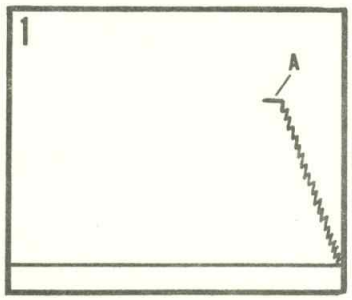
A. Initial Hyd. Mud B. Initial shut-in C. Initial flow D. Final Flow E. Final shut-in F. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings, (testing different zones).

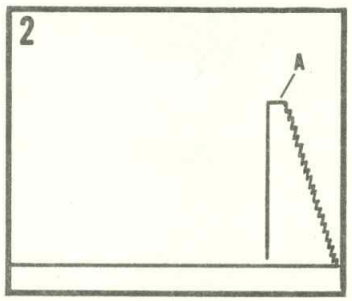
A-1, A-2, A-3, etc. Initial Hyd. Pressures
B-1, B-2, B-3, etc. The Initial Shut-in Pressures
C-1, C-2, C-3, etc. Flowing Pressures

D-1, D-2, D-3, etc. The Final Flow Pressures or Final Shut-in Pressures
E-1, E-2, E-3, etc. The Final Shut-in Pressures

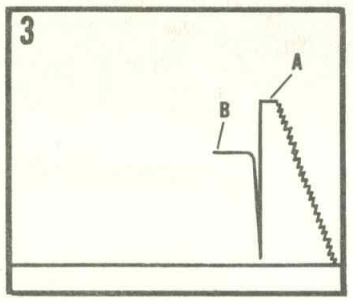
F-1, F-2, F-3, etc. Final Hyd. Mud Pressures
Z — Special pressure points such as pumping pressure recorded for formation breakdown.



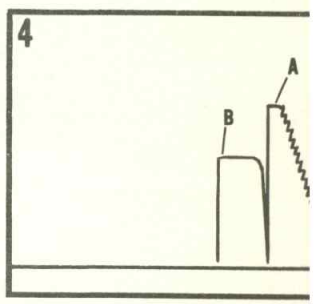
The pressure chart records the build-up in hydrostatic pressure as the testing assembly is lowered into the hole. Upon reaching the testing depth the hydrostatic head or pressure of mud column is recorded.



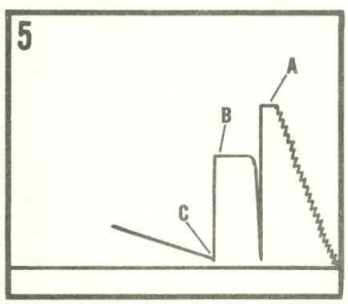
The packer is expanded and set to isolate the test zone. When the test valve is opened, a pressure drop is indicated on the pressure chart. This pressure drop is caused by removal of the hydrostatic mud pressure from the formation, allowing the formation to produce.



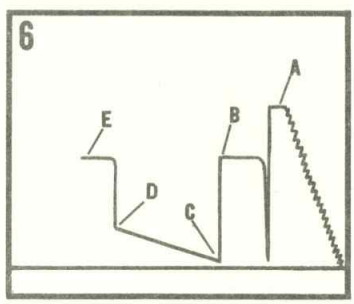
This chart shows the initial shut-in pressure. The methods by which this pressure can be taken allow only a minimum of formation fluid to be produced. This initial shut-in pressure is the best method yet devised for recording the original, undisturbed reservoir pressure of a formation.



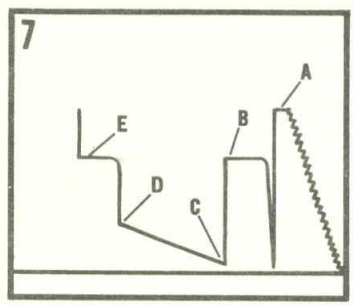
The chart indicates a pressure dr
The test tool has been opened
the surface either by breaking a d
rotating a shut-in tool open or
reopening the main testing valve
permit the formation to produce.



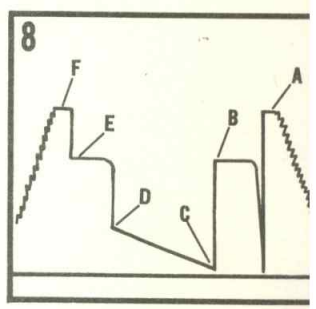
The pressure of fluid flowing from the formation into the well bore, through the perforated anchor, and into the drill pipe, is recorded on the chart.



The final shut-in pressure is taken by stopping the flow of formation fluid into the drill pipe. Note the characteristic build-up curve. The well bore pressure is approaching equilibrium with the static reservoir pressure. When the shut-in curve levels-off the static reservoir pressure has been reached.

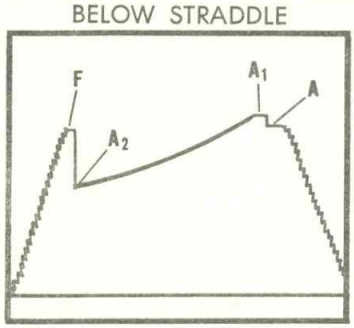


The chart shows the equalizing; the by-pass ports have been opened permitting the drilling fluid to flow through the packer to the test zone. Thus, pressure is equalized above and below the packer. The equalization of the pressure facilitates easier removal of the packer from the packer seat.



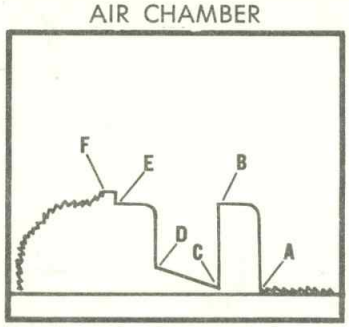
The packer has been unseated.
testing assembly is being remo
from the hole.

BELOW STRADDLE



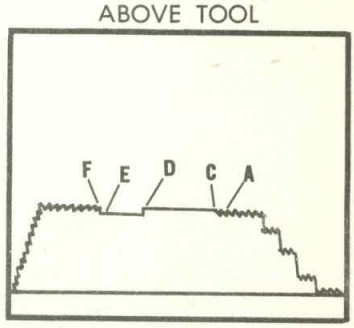
The above is a typical illustration of a chart from a recorder that is run below the bottom packer on a straddle test. Only the hydrostatic mud pressures are recorded. When the tool is opened, there is a pressure differential across the bottom packer. This differential is lessened by the rubber flow of the packer element, which in turn causes a draw-down in pressure. If the below straddle chart reads the same as a chart that is run to record pressures of the test zone, then the bottom packer has failed. If this occurs, all zones below the top packer are being tested.

AIR CHAMBER

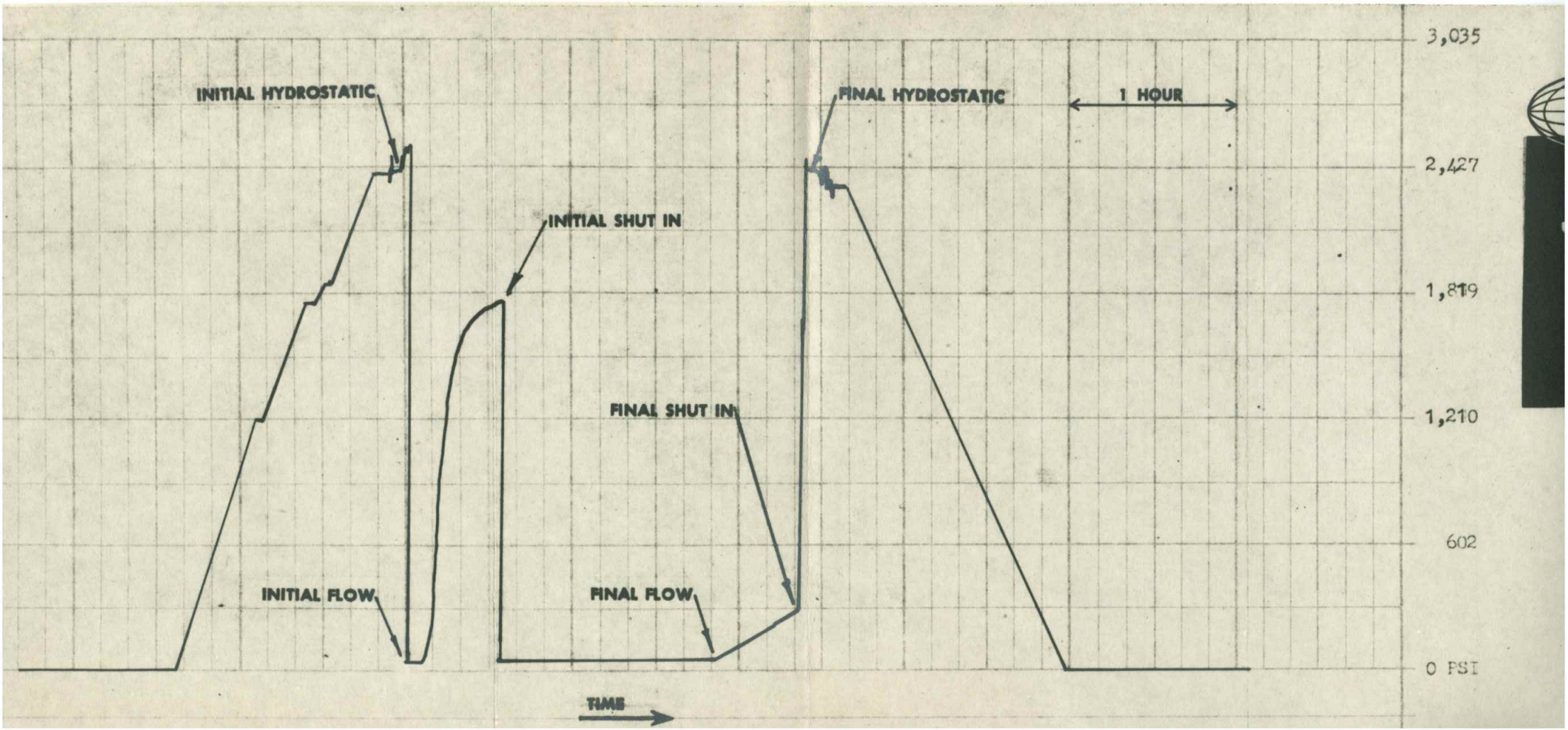


In this case a recorder has been run in an air chamber. The hydrostatic mud pressures are not influencing the recorder while going in or coming out of the hole due to the main tester valve being closed. The flow pressures and shut-in pressures are recorded while the main tester valve is opened.

ABOVE TOOL



In this case a recorder has been run above the main tester valve with a fluid cushion used in the drill pipe. No pressure is recorded as the testing tool is being lowered into the hole. Then the fluid cushion pressure is recorded as the drill pipe is filled with fluid. As more stands are run into the hole, the recorder registers the hydrostatic pressures of the cushion. When the main testing valve is opened the pressure of the cushion column or the flowing pressure of the formation, (which ever is greater), is recorded.


INITIAL HYDROSTATIC
INITIAL SHUT IN
FINAL HYDROSTATIC
1 HOUR
FINAL SHUT IN
INITIAL FLOW
FINAL FLOW
TIME
3,035
2,427
1,819
1,210
602
0 PSI