JOHNSTON TESTERS, INC.

SURFACE INFORMATION

Well Flowed	Amount
No	

Reversed Out	Amount
No	

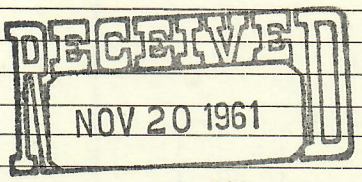
Recovered	Amount
Mud	5'

Blow: Very weak for 14 minutes, then died.

Maximum Surface Pressure: - -

Description (Rate of Flow)	Time	Pressure (P.S.I.G.)	Surface Choke
Opened Tool	4:34 AM	-	1/2"
Closed for initial shut-in	4:36 AM	-	"
Re-opened tool	5:06 AM	-	"

Remarks:



TOOL, HOLE & MUD DATA

Type Test: Dual Packer
Formation Tested: Topeka
Elevation: 3591 Ft.
All Depths Measured From: Derrick Floor.

TOOL SEQUENCE

Tool	Size/Type	Depth/Length/I.D.
Drill Pipe	4 1/2" FH	2728'
		3.8"
Drill Collars	4" H-90	180' 2 1/4"
Double Pin Sub	4 1/2" Reg.	
Circulating Sub	4 1/2" Pin	
4-stage Shut-in	4 3/4"	
Shut-in Hyd. Tool	3 1/2"	
Jar	3 1/2" HS-1	
Packer (Bob Tail)	6 5/8"	2905'
Packer (Bob Tail)	6 5/8"	2910'
Perf. Anchor	3 1/2" FH	15' 2 1/2"
Recorder Carrier	4 7/8" T	6'
Recorder Carrier	4 7/8" L	4'

Total Depth: 2935 Ft.
Main Hole Size: 7 7/8" Rat Hole Size: -
Casing Size: - Liner Size: -
Bottom Choke Size: 3/4" Open Mud Type: Chem.
Mud. Wt.: 9.3 Mud Viscosity: 42
Air Chamber Length: - - Ft. - - I.D.

Cushion Type	Amount	Pressure
- -		

TIME DATA

Initial Shut-in: - Hrs. 30 Mins.
Flow Period: 1 Hrs. - Mins.
Final Shut-in: - Hrs. 30 Mins.

Company: Texaco, Inc. P.O. Box 392, Sterling, Colorado Attn: A.R. Patten Date: 8-1-61
Well: E. A. Hamilton #A-1 Field: Wild Cat Location: 3-35-41
Test Interval: 2910' to 2935' Formation Test #: 4 Casing Test #: - -
County: Baca State: Colorado Test Ticket #: 62310 L
Tester: O. E. Chance Test Approved By: Mr. A.R. Patten No. DST Reports Requested: 5-XXX

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

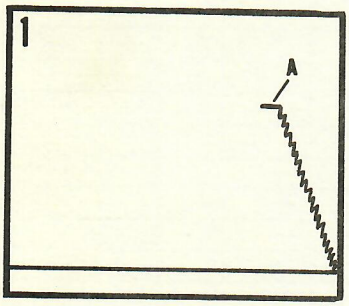
C-1, C-2, C-3, etc. Flowing Pressures

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

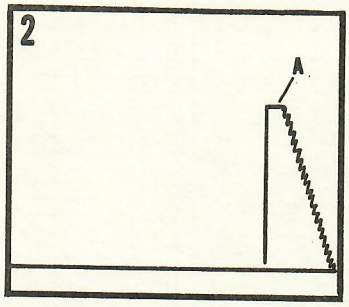
E-1, E-2, E-3, etc. The Final Shut-in Pressures

F-1, F-2, F-3, etc. Final Hyd. Mud Pressures

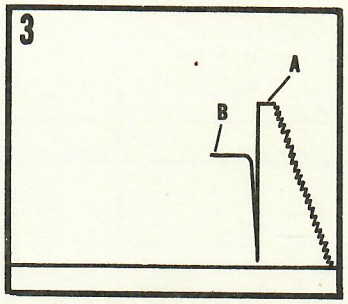
Z — Special pressure points such as pumping pressure recorded for formation breakdown.



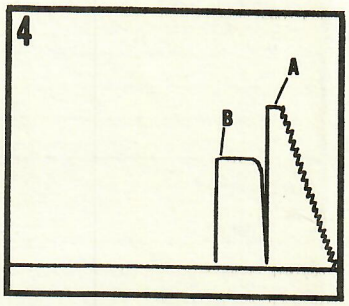
The pressure chart records the build-up in hydrostatic pressure as the testing assembly is lowered into the hole. Upon reaching the testing depth the hydrostatic head or pressure of mud column is recorded.



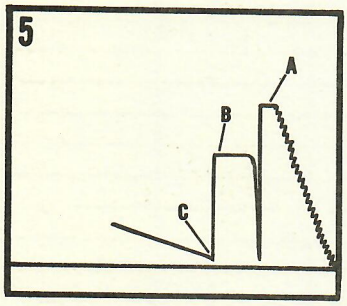
The packer is expanded and set to isolate the test zone. When the test valve is opened, a pressure drop is indicated on the pressure chart. This pressure drop is caused by removal of the hydrostatic mud pressure from the formation, allowing the formation to produce.



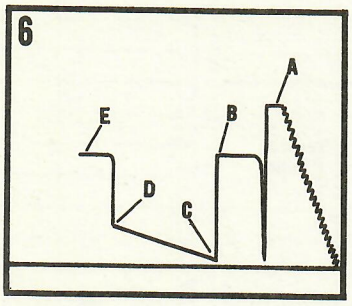
This chart shows the initial shut-in pressure. The methods by which this pressure can be taken allow only a minimum of formation fluid to be produced. This initial shut-in pressure is the best method yet devised for recording the original, undisturbed reservoir pressure of a formation.



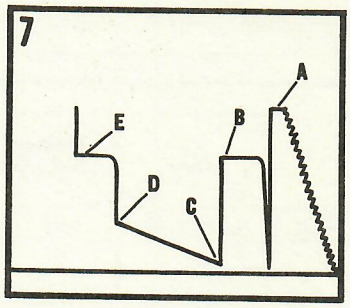
The chart indicates a pressure drop. The test tool has been opened to the surface either by breaking a disc, rotating a shut-in tool open or by reopening the main testing valve to permit the formation to produce.



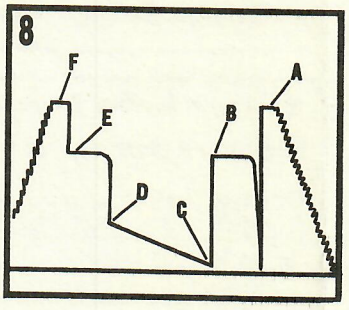
The pressure of fluid flowing from the formation into the well bore, through the perforated anchor, and into the drill pipe, is recorded on the chart.



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.

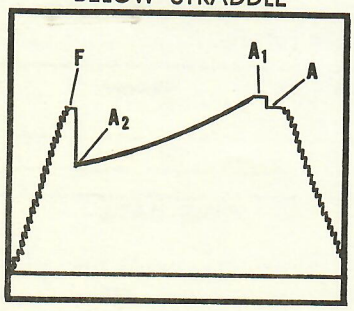


The chart shows the equalizing; the by-pass ports have been opened permitting the drilling fluid to flow through the packer to the test zone. Thus, pressure is equalized above and below the packer. The equalization of the pressure facilitates easier removal of the packer from the packer seat.



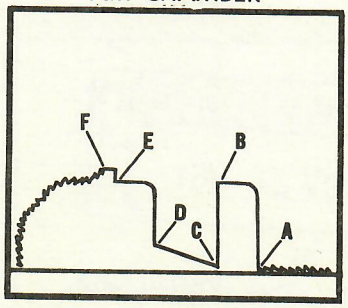
The packer has been unseated. The testing assembly is being removed from the hole.

BELOW STRADDLE



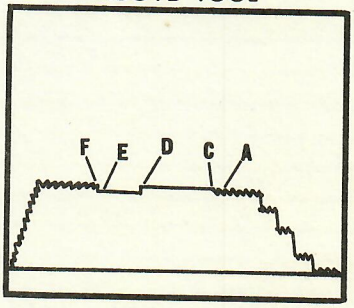
The above is a typical illustration of a chart from a recorder that is run below the bottom packer on a straddle test. Only the hydrostatic mud pressures are recorded. When the tool is opened, there is a pressure differential across the bottom packer. This differential is lessened by the rubber flow 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,

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Pressure Data Test Ticket No. 62310 L

Recorder No.	T-256				
Capacity (P.S.I.G.)	5000				
Recorder Depth	2931'				
Pressure Gradient P.S.I./Ft.					
Well Temperature °F.	- -				
A Initial Hydrostatic Mud	1497				
B Initial Shut-in	*526				
C Initial Flow	10				
D Final Flow	28				
E Final Shut-in	*296				
F Final Hydrostatic Mud	1514				

Remarks: C-1 10

C-2 17

Read on 100°F. curve.

*Shut in pressure did not reach static reservoir pressure.

JOHNSTON TESTERS, INC.

Pressure Data Test Ticket No. 62310 L

Recorder No.	L-310				
Capacity (P.S.I.G.)	4500				
Recorder Depth	2935'				
Pressure Gradient P.S.I./Ft.					
Well Temperature °F.	- -				
A Initial Hydrostatic Mud	1567				
B Initial Shut-in	*555				
C Initial Flow	45				
D Final Flow	65				
E Final Shut-in	*335				
F Final Hydrostatic Mud	1506				

Remarks: C-1 47

C-2 56

*Shut in pressure did not reach static reservoir pressure.

T# 62310 L T-256 5000# 5+