JOHNSTON TESTERS, INC.

SURFACE INFORMATION

Well Flowed	Amount
GAS	998,000 CF/DAY

Reversed Out	Amount
NO	

Recovered	Amount
GAS CUT DRILLING MUD	5'

Blow VERY STRONG.

Maximum Surface Pressure 20#

Description (Rate of Flow)	Time	Pressure (P.S.I.G.)	Surface Choke
Opened Tool	2:13 AM	-	1"
CLOSED FOR INITIAL SHUT-IN	2:15 AM	-	"
GAS TO SURFACE	2:20 AM	0	"
RE-OPENED TOOL	2:45 AM	-	"
998 MCF GAS/DAY	3:00 AM	20	"
943 MCF GAS/DAY	3:15 AM	-	"
887 MCF GAS/DAY	3:30 AM	-	"
824 MCF GAS/DAY	3:45 AM	-	"
734 MCF GAS/DAY	4:00 AM	-	"
734 MCF GAS/DAY	4:15 AM	-	"
CLOSED TOOL	4:15 AM	-	"

Remarks:

TOOL, HOLE & MUD DATA

Type Test CONVENTIONAL
Formation Tested CHESTER
Elevation 2731.60 Ft.
All Depths Measured From KELLY BUSHING.

TOOL SEQUENCE

Tool	Size/Type	Depth/Length/I.D.
DRILL PIPE	4½" FH	5546' 3.8"
DRILL COLLARS	4½" H-90	180' 2¼"
DOUBLE PIN SUB	4½" FH	
CIRCULATING SUB	4½" B	
4-STAGE SHUT-IN	3½"	
HYDRAULIC TOOL	3½" SHUT-IN	
JAR	3½" HS-1	
PACKER-BOB TAIL	6 5/8"	5760'
PERF. ANCHOR	3½" HVY.	30' 2½"
RECORDER CARRIER	4 7/8" T	6'
RECORDER CARRIER	4 7/8" L	4'

Total Depth 5800 Ft.
Main Hole Size 7 7/8" Rat Hole Size -
Casing Size - Liner Size -
Bottom Choke Size 3/4" Mud Type CHEM.
Mud. Wt. 9.1 Mud Viscosity 60
Air Chamber Length - Ft. - I.D.

Cushion Type	Amount	Pressure
-	-	

TIME DATA

Initial Shut-in - Hrs. 30 Mins.
Flow Period 1 Hrs. 32 Mins.
Final Shut-in - Hrs. 30 Mins.

Company CABOT CORPORATION BOX 1101; PAMPA, TEXAS Date 9-3-61
Well HANDY #1 Field S. KISMIT Location SEC. 29-33S-31W
Test Interval 5760' TO 5800' Formation Test # 2 Casing Test # - -

County SEWARD State KANSAS Test Ticket # 62913 L
Tester R. W. RINE Test Approved By MR. J. C. ROSS No. DST Reports Requested 12-xxxx

JOHNSTON TESTERS, INC.

Pressure Data Test Ticket No. 62913 L

Recorder No.	T-247				
Capacity (P.S.I.G.)	5000				
Recorder Depth	5795'				
Pressure Gradient P.S.I./Ft.					
Well Temperature °F.	130				
A Initial Hydrostatic Mud	2829				
B Initial Shut-in	*1888				
C Initial Flow	458				
D Final Flow	180				
E Final Shut-in	*1730				
F Final Hydrostatic Mud	2792				

Remarks: C-1 344
C-2 241

DISTRIBUTION FOR ALL TESTS RUN ON THIS WELL LISTED UNDERNEATH CHART:

*Shut in pressure did not reach static reservoir pressure.

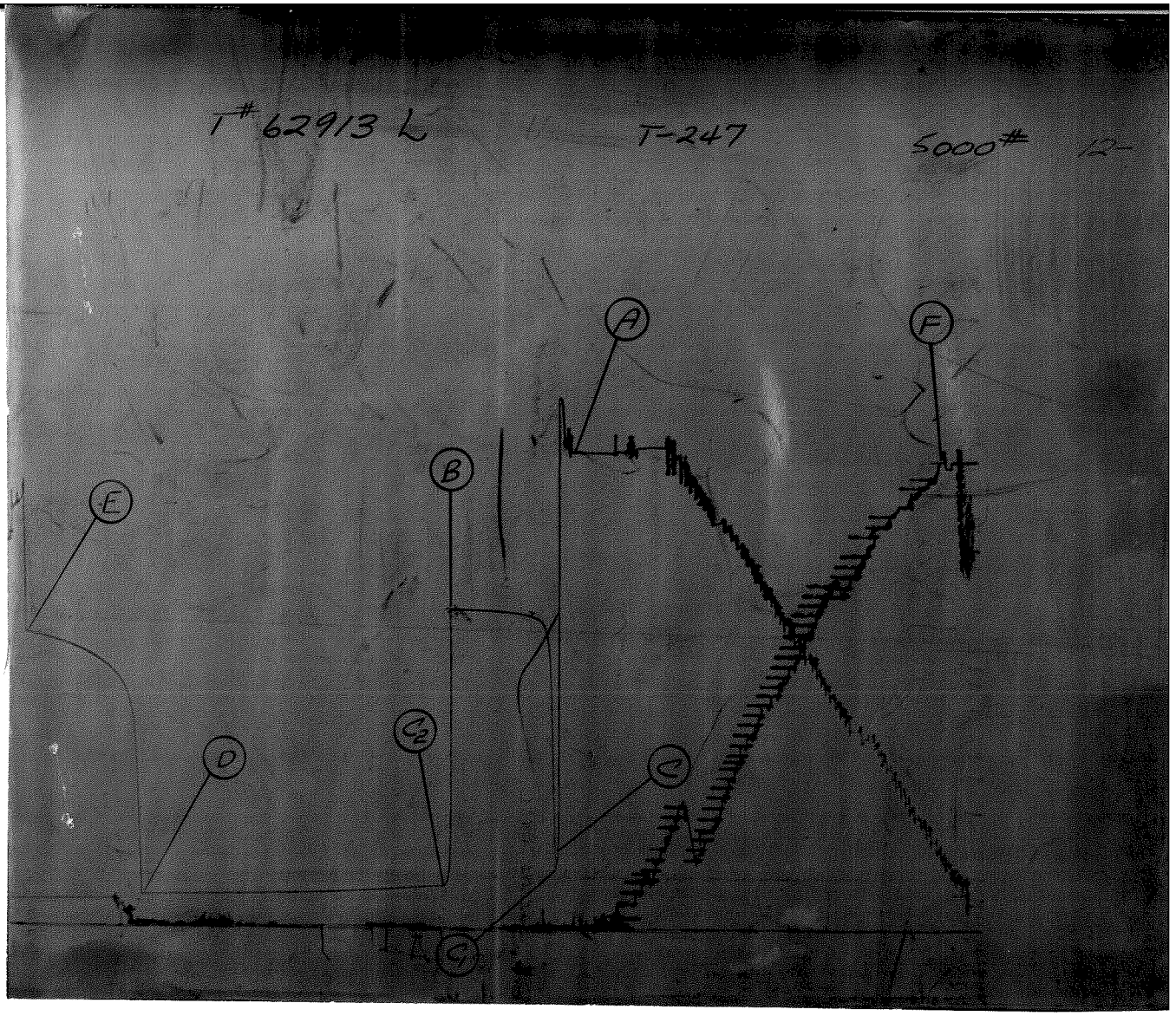
4: CABOT CORP.
Box 1101
PAMPA, TEXAS

2: GULF OIL CORP.
316 UNION CENTER BLDG.
WICHITA, KANSAS
ATTN: MR. K. W. BUMGARNER

2: THE ATLANTIC REFINING CO.
Box 9048
AMARILLO, TEXAS
ATTN: MR. E. C HARPSTRITE

2: GULF OIL CORP.
600 BRANIFF BLDG.
OKLAHOMA CITY 2, OKLA.

2: THE ATLANTIC REFINING CO.
2915 CLASSEN BLVD.
OKLAHOMA CITY 1, OKLAHOMA
ATTN: MR. B. J. SMITH


1# 62913 L
T-247
5000#
12-
A
F
B
E
D
C2
C1
C

JOHNSTON TESTERS, INC.

Pressure Breakdown Data

Date 9-3-61 Test Ticket No. 62913 L

Recorder No. T-247 Capacity 5000# Recorder Depth 5795'

Clock No. 2062 Clock travel 0.02076 inches per min. Well Temperature 130 °F.

Point		Pressure
A	Initial Hydrostatic Mud	2829
B	Initial Shut-in	1888
C	Initial Flow	458
D	Final Flow	180
E	Final Shut-in	1730
F	Final Hydrostatic Mud	2792

	Time Given	Time Computed
Opened Tool	2:13 A. M.	
Initial Shut-in	30 Mins.	31 Mins.
Flow	92 Mins.	88 Mins.
Final Shut-in	30 Mins.	33 Mins.

Remarks:

PRESSURE INCREMENTS

INITIAL SHUT-IN

Breakdown: 10 increments of 3 mins. and a final increment of 1 mins.

Point Minutes	Pressure	T + Δt / Δt
C-1 0	344	
3	1753	
6	1838	
9	1857	
12	1867	
15	1873	
18	1877	
21	1880	
24	1883	
27	1886	
30	1887	
B 31	1888	

FLOW PERIOD

Breakdown: 17 increments of 5 mins. and a final increment of 3 mins.

Point Minutes	Pressure	T + Δt / Δt
C 0	458	
C-1 1	344	
INITIAL SHUT-IN		
C-2	241	
5	236	
10	229	
15	218	
20	211	
25	206	
30	201	
35	198	
40	195	
45	193	
50	190	
55	189	
60	187	
65	186	
70	184	
75	183	
80	181	
85	180	
D 88	180	

FINAL SHUT-IN

Breakdown: 11 increments of 3 mins. and a final increment of — mins.

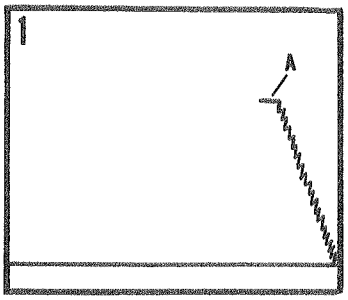
Point Minutes	Pressure	T + Δt / Δt
D 0	180	
3	1251	
6	1438	
9	1513	
12	1563	
15	1602	
18	1633	
21	1658	
24	1679	
27	1695	
30	1713	
E 33	1730	

GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS

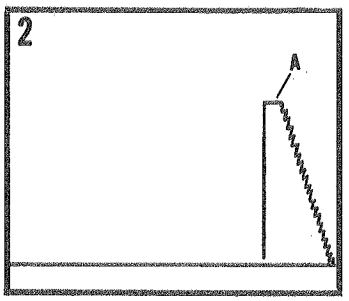
A. Initial Hyd. Mud B. Initial shut-in C. Initial flow D. Final Flow E. Final shut-in F. Final Hyd. Mud

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

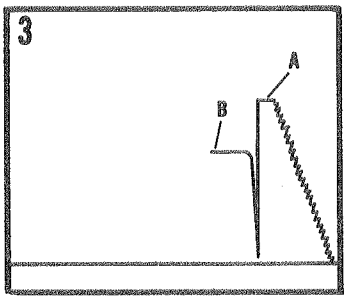
A-1, A-2, A-3, etc. Initial Hyd. Pressures
B-1, B-2, B-3, etc. The Initial Shut-in Pressures
C-1, C-2, C-3, etc. Flowing Pressures
D-1, D-2, D-3, etc. The Final Flow Pressures or Final Shut-in Pressures
E-1, E-2, E-3, etc. The Final Shut-in Pressures
F-1, F-2, F-3, etc. Final Hyd. Mud Pressures
Z — Special pressure points such as pumping pressure recorded for formation breakdown.



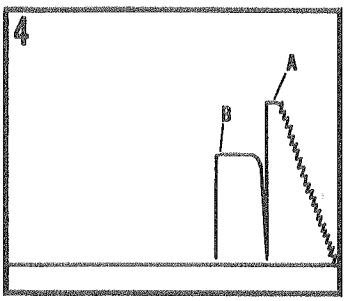
The pressure chart records the build-up in hydrostatic pressure as the testing assembly is lowered into the hole. Upon reaching the testing depth the hydrostatic head or pressure of mud column is recorded.



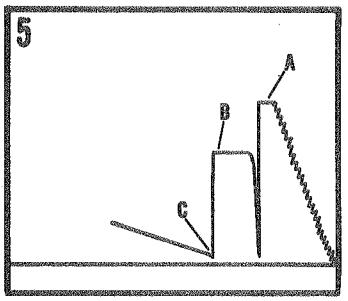
The packer is expanded and set to isolate the test zone. When the test valve is opened, a pressure drop is indicated on the pressure chart. This pressure drop is caused by removal of the hydrostatic mud pressure from the formation, allowing the formation to produce.



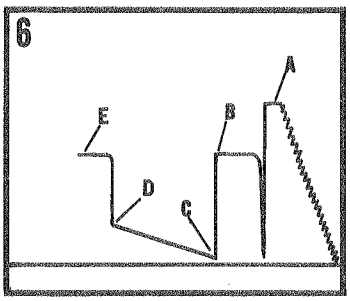
This chart shows the initial shut-in pressure. The methods by which this pressure can be taken allow only a minimum of formation fluid to be produced. This initial shut-in pressure is the best method yet devised for recording the original, undisturbed reservoir pressure of a formation.



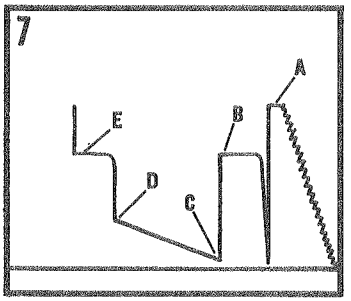
The chart indicates a pressure drop. The test tool has been opened to the surface either by breaking a disc, rotating a shut-in tool open or by reopening the main testing valve to permit the formation to produce.



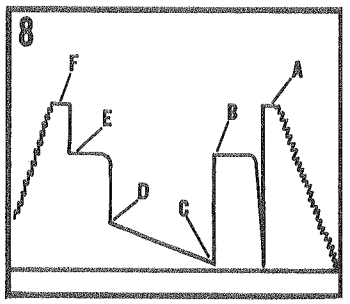
The pressure of fluid flowing from the formation into the well bore, through the perforated anchor, and into the drill pipe, is recorded on the chart.



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.

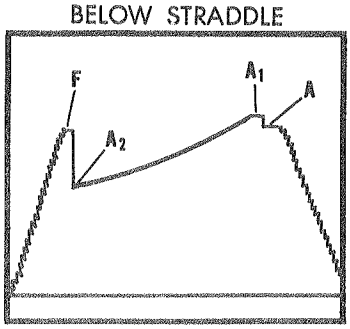


The chart shows the equalizing; the by-pass ports have been opened permitting the drilling fluid to flow through the packer to the test zone. Thus, pressure is equalized above and below the packer. The equalization of the pressure facilitates easier removal of the packer from the packer seat.



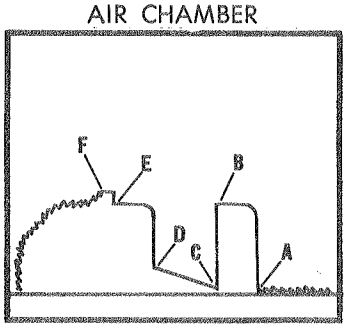
The packer has been unseated. The testing assembly is being removed from the hole.

BELOW STRADDLE



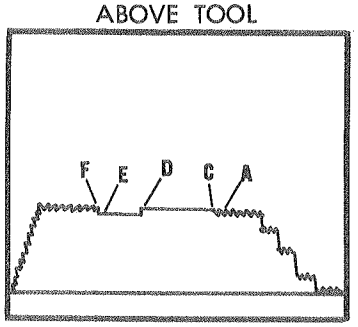
The above is a typical illustration of a chart from a recorder that is run below the bottom packer on a straddle test. Only the hydrostatic mud pressures are recorded. When the tool is opened, there is a pressure differential across the bottom packer. This differential is lessened by the rubber flow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