JOHNSTON TESTERS

SURFACE INFORMATION

Description (Rate of Flow)	Time	Pressure (P.S.I.G.)	Surface Choke
Opened Tool	0459	-	-
GAS TO SURFACE	0501	150	1"
4400MCF/DAY			
CLOSED FOR INITIAL SHUT-IN	0503	-	"
RE-OPENED TOOL	0533	-	"
GAS 5600MCF/DAY	0538	200	"
GAS 7400MCF/DAY	0543	270	"
MUD AND OIL TO SURFACE IN			
FINE SPRAY	0543		
GAS 7900MCF/DAY	0548	290	"
GAS 7900MCF/DAY	0553	290	"
GAS 7400MCF/DAY	0558	270	"
GAS 7250MCF/DAY	0603	265	"
GAS 7250MCF/DAY	0608	260	"
GAS 7400MCF/DAY	0613	270	"
CLOSED FOR FINAL SHUT-IN	0613	270	"
PULLED PACKER LOOSE	0643		

RECOVERY DATA

Description	Amount
FREE OIL (GRAVITY = 40 AT 78°F.)	10 BARRELS

EQUIPMENT, HOLE & MUD DATA

Type Test CONVENTIONAL OPEN HOLE
Formation Tested UPPER MORROW
Elevation 2820 G.L. Ft
Net Productive Interval - Ft
Estimated Porosity - %
All Depths Measured From KELLY BUSHING

EQUIPMENT SEQUENCE

COMPONENTS	Size/Type	Depth/Length/ I.D.
DRILL PIPE	4½" FH	5037'/3.8
CIRCULATING SUB	4½" PLUG	
DRILL COLLAR	4½" XH	570'/2.5"
4-STAGE SHUT-IN	3½"	
HYDRAULIC TOOL	3½" C	
JARS	3½" HS-1	
SAFETY JOINT	4½" BOWEN	
CONV. PACKER	6 5/8"	5640'
PERF. ANCHOR	3½" HVY	21'
DRILL COLLAR	4½" XH	59'/2.5"
RECORDER CARRIER	3½" T	6'
RECORDER CARRIER	3½" L	4'

Total Depth 5730 Ft
Main Hole/Casing Size 7 7/8"
Rat Hole/Liner Size -
Bottom Choke Size 5/8"
Mud Type CHEM. - OIL Wt. 9.5
Viscosity 35 Water Loss 9.8 C.C

Cushion Type	Amount	Pressure
	NONE	

Remarks:

Address BOX 351; LIBERAL, KANSAS
Company ANADARKO PRODUCTION COMPANY Field N. LIBERAL
Well SALLEY A #1 Location SAC. 35 TNP 33 RNG 33
Test Interval 5640' TO 5730' Test # 1 Date 8-17-64
County SEWARD State KANSAS Field Report No. 08298 A
Technician RIDER(LIBERAL) Test Approved By MR. MAX PARIS No. Reports Requested 5

A WORLD OF EXPERIENCE

JOHNSTON TESTERS

PRESSURE DATA

Instrument No.		T-145		
Capacity (P.S.I.G.)		7000		
Instrument Depth		5720'		
Instrument Opening		INSIDE		
Pressure Gradient P.S.I./Ft.		-		
Well Temperature °F.		125		
Initial Hydrostatic Mud	A	2795		
Initial Shut-in	B	1764		
Initial Flow	C	1751		
	C-1	1740		
	C-2	1749		
Final Flow	D	1739		
Final Shut-in	E	1755		
Final Hydrostatic Mud	F	2782		

Field Report No. 08298 A

TIME DATA

Time Given	Time Computed
30 Mins.	30 Mins.
4 Mins.	3 Mins.
- Mins.	- Mins.
- Mins.	- Mins.
40 Mins.	40 Mins.
30 Mins.	31 Mins.

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel 0.02117 inches per min.

PRESSURE INCREMENTS

INITIAL SHUT-IN

FINAL SHUT-IN

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
C-1 0	1740					D 0	1739	
3	1764					3	1755	
6	1764					6	1755	
9	1764					9	1755	
12	1764					12	1755	
15	1764					15	1755	
18	1764					18	1755	
21	1764					21	1755	
24	1764					24	1755	
27	1764					27	1755	
B 30	1764					30	1755	
						E 31	1755	

A WORLD OF EXPERIENCE
JOHNSTON TESTERS

GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS

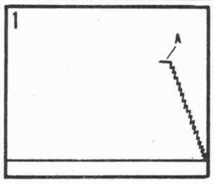
A. Initial Hyd. Mud B. Initial shut-in C. Initial flow D. Final Flow E. Final shut-in F. Final Hyd. Mud

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

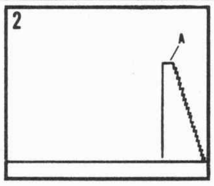
A-1, A-2, A-3, etc. Initial Hyd. Pressures
B-1, B-2, B-3, etc. The Initial Shut-in Pressures
C-1, C-2, C-3, etc. Flowing Pressures

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

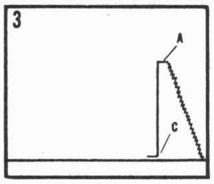
F-1, F-2, F-3, etc. Final Hyd. Mud Pressures
Z – Special pressure points such as pumping pressure recorded for formation breakdown.



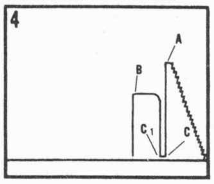
The pressure chart records the build-up in hydrostatic pressure as the testing assembly is lowered into the hole. Upon reaching the testing depth the hydrostatic head or pressure of mud column is recorded.



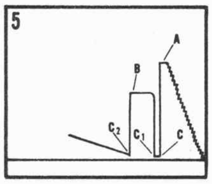
The packer is expanded and set to isolate the test zone. When the test valve is opened a pressure drop is indicated on the pressure chart. This pressure drop is caused by removal of the hydrostatic mud pressure from the formation, allowing the formation to produce.



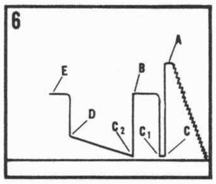
The pressure of fluid flowing from the formation into the well bore, through the perforated anchor, and into the drill pipe, is recorded on the chart.



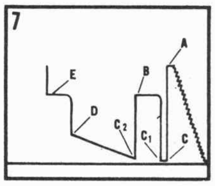
This chart shows the initial shut-in pressure. The methods by which this pressure can be taken allow only a minimum of formation fluid to be produced. This initial shut-in pressure is the best method yet devised for recording the original, undisturbed reservoir pressure of a formation.



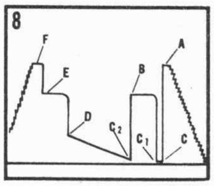
The test tool has been opened to the surface either by breaking a disc, rotating a shut-in tool open or by reopening the main testing valve to permit the formation to produce. The pressure of fluid flowing from the formation into the well bore, through the perforated anchor, and into the drill pipe, is recorded on the chart.



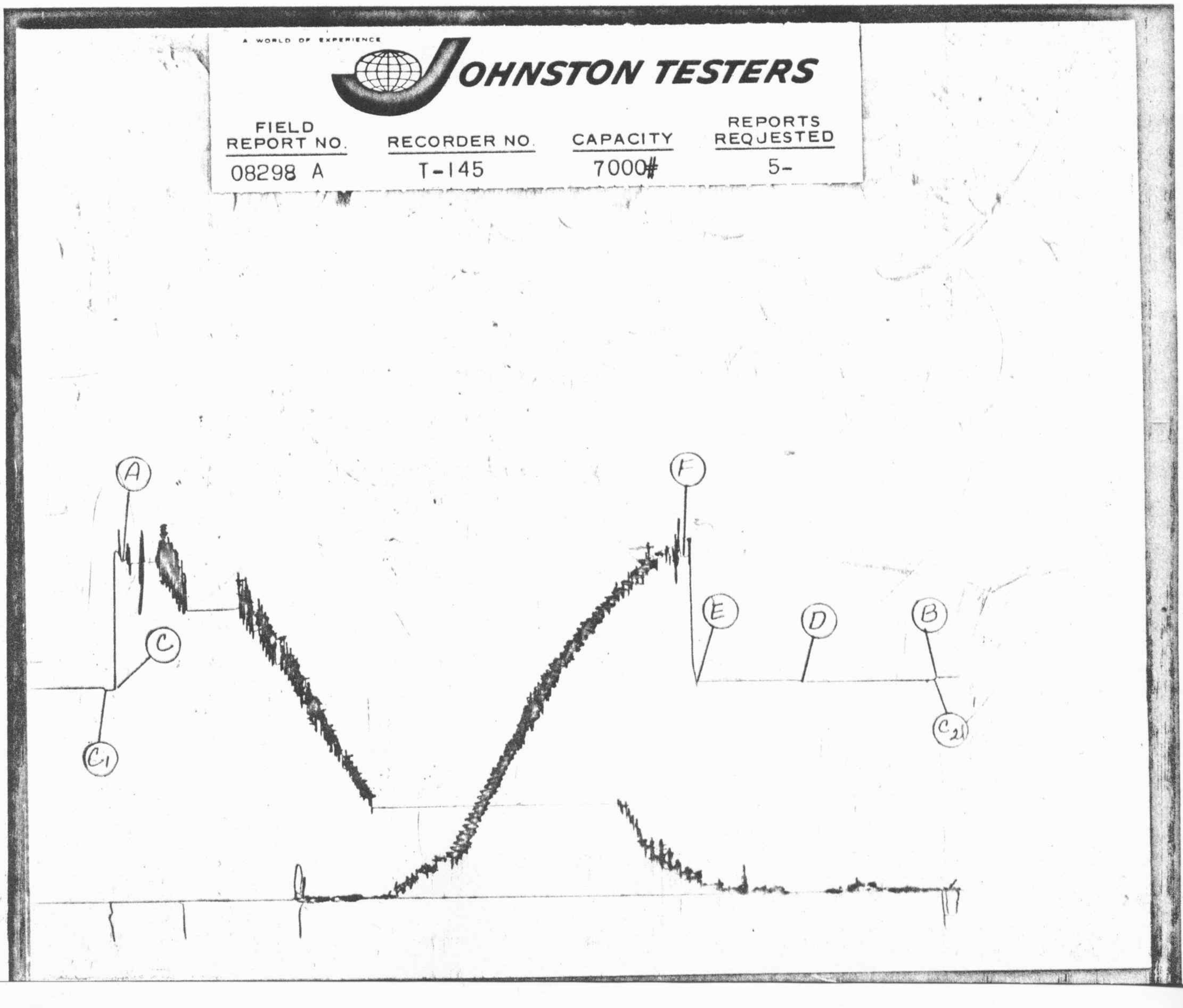
The final shut-in pressure is taken by stopping the flow of formation fluid into the drill pipe. Note the characteristic build-up curve. The well bore pressure is approaching equilibrium with the static reservoir pressure. When the shut-in curve levels-off the static reservoir pressure has been reached.



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.

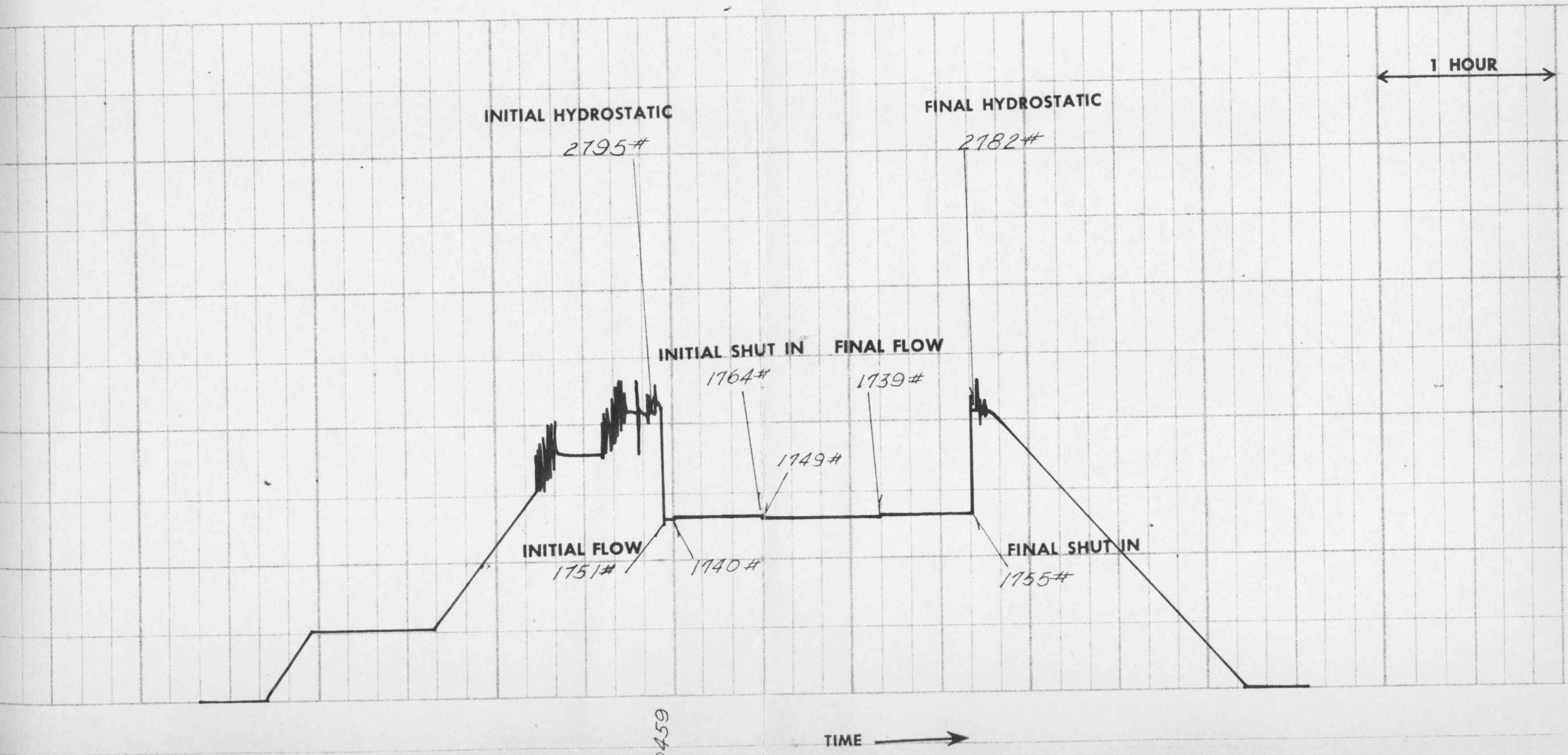


The packer has been unseated. The testing assembly is being removed from the hole.



A WORLD OF EXPERIENCE
JOHNSTON TESTERS

FIELD REPORT NO.	RECORDER NO.	CAPACITY	REPORTS REQUESTED
08298 A	T-145	7000#	5-


1 HOUR
INITIAL HYDROSTATIC
2795#
FINAL HYDROSTATIC
2782#
INITIAL SHUT IN
1764#
FINAL FLOW
1739#
1749#
INITIAL FLOW
1751#
1740#
FINAL SHUT IN
1755#
TIME

459

A WORLD OF EXPERIENCE
JOHNSTON TESTERS

SURFACE INFORMATION

Description (Rate of Flow)	Time	Pressure (P.S.I.G.)	Surface Choke
Opened Tool	0540	INCHES OF WATER	1"
STRONG BLOW			
CLOSED FOR INITIAL SHUT-IN	0545	-	"
RE-OPENED TOOL	0625	-	"
GAS TO SURFACE	0632	-	"
GAS 120.1MCF/DAY	0633	12	"
GAS 120.1MCF/DAY	0635	12	"
GAS 129.2MCF/DAY	0645	14	"
GAS 134.2MCF/DAY	0655	15	"
GAS 147MCF/DAY	0705	18	"
CLOSED FOR FINAL SHUT-IN	0705	18	"
PULLED PACKER LOOSE	0745		

EQUIPMENT, HOLE & MUD DATA

Type Test DUAL PACKER OPEN HOLE
Formation Tested CHESTER
Elevation 2820 Ft
Net Productive Interval - Ft
Estimated Porosity - %
All Depths Measured From GROUND LEVEL

EQUIPMENT SEQUENCE

COMPONENTS	Size/Type	Depth/Length/ I.D.
DRILL PIPE	4½" FH	5429'/3.8
CIRCULATING SUB	4½" B	
DRILL PIPE	4½" FH	30'/3.8"
DRILL COLLAR	4½" XH	600'2¼"
4-STAGE SHUT-IN	3½"	
HYDRAULIC TOOL	3½" C	
JARS	3½" HS-1	
CONV. PACKER	6 5/8"	6086'
BOB-TAIL PACKER	6 5/8"	6092'
PERF. ANCHOR	4½" HVY	13'
DRILL COLLAR	4½" XH	30'/2.25
PERF. ANCHOR	4½" HVY	25'
RECORDER CARRIER	4 7/8"T	6'
RECORDER CARRIER	4 7/8"L	4'

Total Depth 6170 Ft
Main Hole/Casing Size 7 7/8"
Rat Hole/Liner Size -
Bottom Choke Size 3/4"
Mud Type CHEM.-OIL Wt. 9.0
Viscosity 58 Water Loss 8 C.C

Cushion Type	Amount	Pressure
-	-	-

RECOVERY DATA

Description	Amount
GAS CUT MUD	40'(.20BBLS.)

Remarks:

Address BOX 351; LIBERAL, KANSAS

Company ANADARKO PRODUCTION COMPANY
Field EVELYN
Well SALLEY #A-1
Location SEC. 35-33-33
Test Interval 6092' TO 6170'
Test # 2
Date 8-19-64

County SEWARD
State KANSAS
Field Report No. 12042 A
Technician RINE(LIBERAL)
Test Approved By MR. MAX PARIS
No. Reports Requested 5

A WORLD OF EXPERIENCE
JOHNSTON TESTERS

PRESSURE DATA

Instrument No.		T-411		
Capacity (P.S.I.G.)		5000		
Instrument Depth		6162'		
Instrument Opening		INSIDE		
Pressure Gradient P.S.I./Ft.		-		
Well Temperature °F.		128		
Initial Hydrostatic Mud	A	2974		
Initial Shut-in	B	* 1983		
Initial Flow	C	95		
	C-1	132		
	C-2	69		
Final Flow	D	66		
Final Shut-in	E	* 1973		
Final Hydrostatic Mud	F	3043		

Field Report No. 12042 A

TIME DATA

Time Given		Time Computed	
40	Mins.		Mins.
5	Mins.		Mins.
-	Mins.		Mins.
-	Mins.		Mins.
40	Mins.		Mins.
40	Mins.		Mins.

Remarks:

**Shut in pressure did not reach static reservoir pressure.*

Clock Travel ______ inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T + \Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T + \Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T + \Delta t}{\Delta t}$

A WORLD OF EXPERIENCE
JOHNSTON TESTERS

GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS

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

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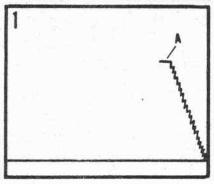

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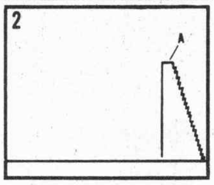

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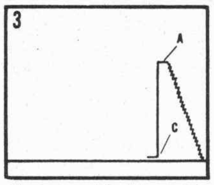

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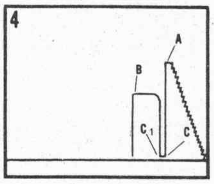

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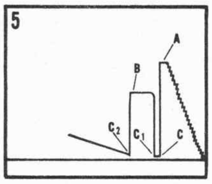

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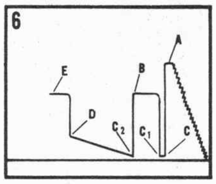

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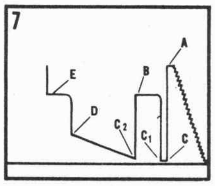

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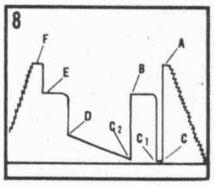

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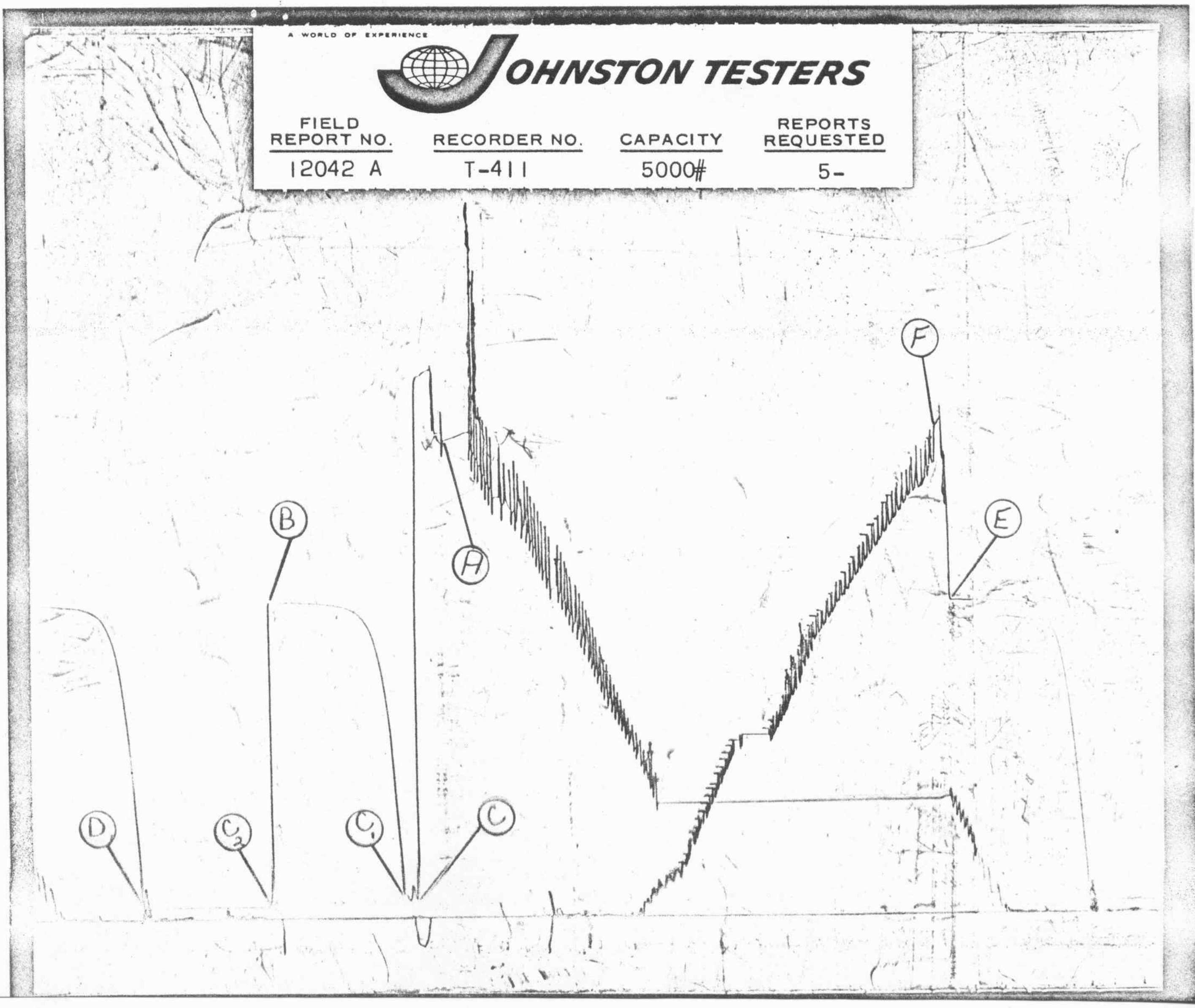
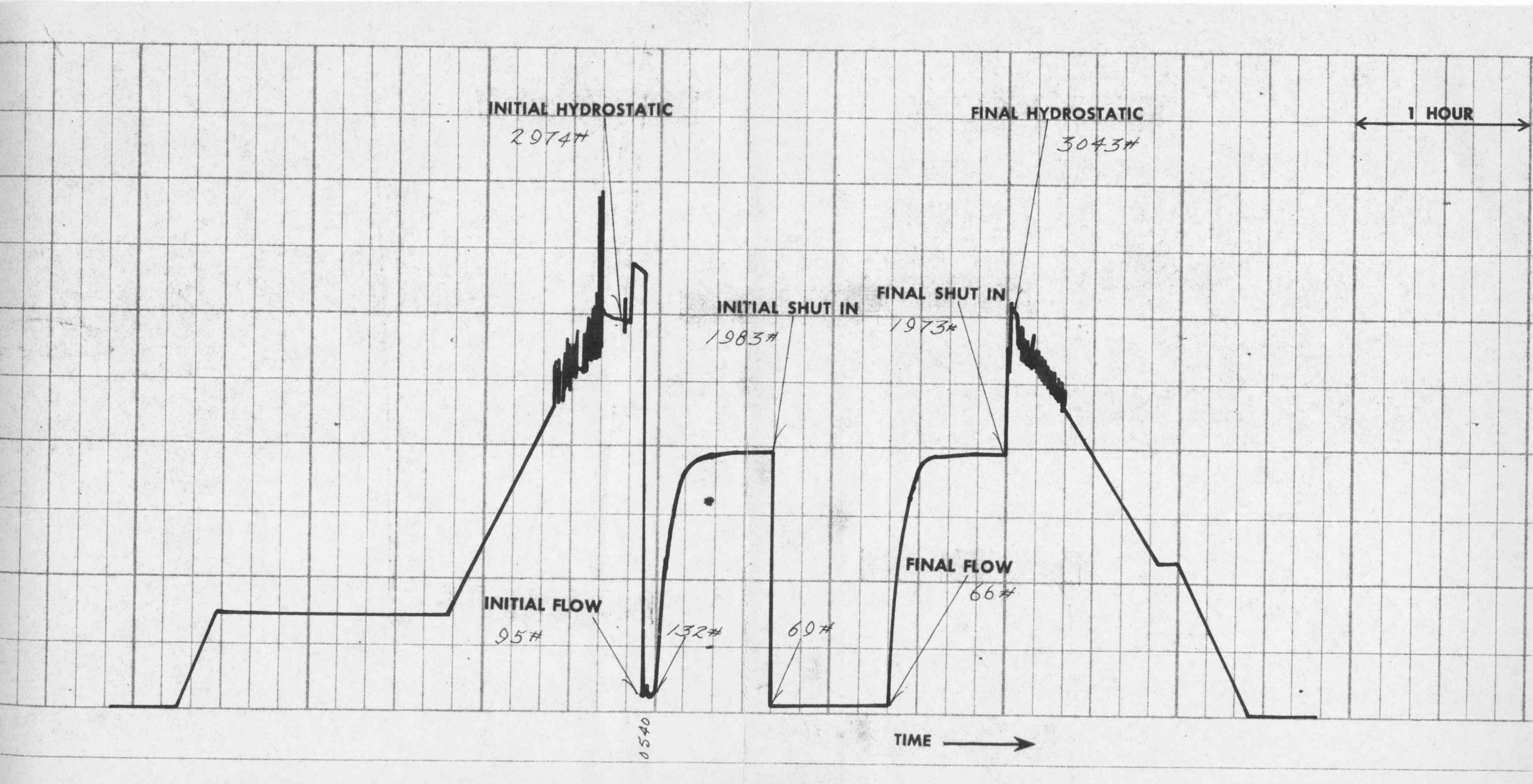


A WORLD OF EXPERIENCE
JOHNSTON TESTERS

FIELD REPORT NO.	RECORDER NO.	CAPACITY	REPORTS REQUESTED
12042 A	T-411	5000#	5-


INITIAL HYDROSTATIC
2974#
FINAL HYDROSTATIC
3043#
1 HOUR
INITIAL SHUT IN
1983#
FINAL SHUT IN
1973#
FINAL FLOW
66#
INITIAL FLOW
95#
132#
69#
0540
TIME