WESTERN TESTERS

Home Office: Great Bend, Kansas

P. O. Box 793 GLadstone 3-7903

Company Pickrell Drilling Co. Lease & Well No. Betz Estate #2

Elevation 2273 Derrick Floor; Formation-Miss. Ticket Number 8214

Date Dec. 2, 1964 Sec. 9 Twp. 20 Range 21 County Ness State Kansas

Test Approved by George E. Link Western Representative Bill Hager

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Formation Test No. 1 O.K. X Misrun ____ Interval Tested From 4440' to 4450' Total Depth 4450'

Size Main Hole 7 7/8 Rat Hole None Conv. X B.T. ____ Damaged X Yes ____ No Conv. ____ B.T. X Damaged X Yes ____ No

Packer Depth 4435 Ft. Size 6 3/4 Packer Depth 4440 Ft. Size 6 3/4

Straddle ____ Yes X No ____ Conv. ____ B.T. ____ Damaged ____ Yes ____ No

Packer Depth ____ Ft Size ____

Tool Size 5 1/2 OD Tool Jt. Size 4 1/2" FH Anchor Length 10 Ft. Size 5 1/2" OD

RECORDERS Depth 4443 Ft Clock No. 6893 Depth 4446 Ft. Clock No. 156

Top Make Kuster Cap. 4300 No. 1566 Inside ____ Outside ____ Bottom Make Western Cap. 4000 No. 21 Inside ____ Outside ____

Below Straddle: Depth ____ Clock No. ____ Inside ____ Outside ____ Depth ____ Ft. Clock No. ____ Inside ____ Outside ____

Top Make ____ Cap. ____ No. ____ Inside ____ Outside ____ Bottom Make ____ Cap. ____ No. ____ Inside ____ Outside ____

Time Set Packer 12:08 P M

Tool Open I.F.P. From 12:10 M to 12:20 M Hr. 10 Min. From (B) 38 P.S.I. To (C) 48 P.S.I.

Tool Closed I.C.I.P. From 12:21 M. to 12:51 M. Hr. 30 Min. (D) 1250 P.S.I.

Tool Open F.F.P. From 12:52 M. to 2:22 M. 1 Hr. 30 Min. From (E) 56 P.S.I. To (F) 71 P.S.I.

Tool Closed F.C.I.P. From 2:23 M. to 2:53 M. Hr. 30 Min. (G) 1177 P.S.I.

Inital Hydrostatic Pressure (A) 2417 P.S.I. Final Hydrostatic Pressure (H) 2400 P.S.I.

SURFACE INFORMATION Size Choke 3/8 In. Max. Press. P.S.I. Time Description of Flow

____ ____ ____ M. ____

____ ____ ____ M. ____

____ ____ ____ M. ____

BLOW Weak steady blow throughout test. Bottom Choke Size 3/4 in.

Did Well Flow ____ Yes X No Recovery Total Ft. 130' heavy oil cut

Mud

Reversed Out ____ Yes X No Mud Type starch Viscosity 46 Weight 10. Maximum Temp. 124 °F

EXTRA EQUIPMENT: Dual Packers yes Safety Joint ____ Jars: Size ____ Make ____ Ser. No. ____

Type Circ. Sub plug Did Tool Plug? partly Where? anchor Did Packer Hold? yes

Length Drill Pipe 3272 ft. I.D. Drill Pipe 3.8 in. Length Weight Pipe 1050 ft. I.D. Weight Pipe 2.7 in. Length Drill Collars ____ ft.

I. D. Drill Collars ____ in. Length D. S. T. Tool 28 ft.

Remarks

Misrun packer failure at 4410'-4450'
Slid tool to bottom 4' on last test at 4440' -4450'

WHELAN PRINTERS

WESTERN TESTING CO., INC.
Pressure Data

Date December 2,1964 — Test Ticket No. 8214

Recorder No. 1566 — Capacity 4300 — Location 4443 Ft.

Clock No. 6893 — Elevation 2273 Derrick Floor — Well Temperature 124 °F

Point		Pressure	
A	Initial Hydrostatic Mud	2417	P.S.I.
B	First Initial Flow Pressure	38	P.S.I.
C	First Final Flow Pressure	48	P.S.I.
D	Initial Closed-in Pressure	1250	P.S.I.
E	Second Initial Flow Pressure	56	P.S.I.
F	Second Final Flow Pressure	71	P.S.I.
G	Final Closed-in Pressure	1177	P.S.I.
H	Final Hydrostatic Mud	2400	P.S.I.

	Time Given	Time Computed
Opened Tool	12:08 P M	
First Flow Pressure	10 Mins.	10 Mins.
Initial Closed-in Pressure	30 Mins.	33 Mins.
Second Flow Pressure	90 Mins.	85 Mins.
Final Closed-in Pressure	30 Mins.	33 Mins.

PRESSURE BREAKDOWN

First Flow Press.

Breakdown: 2 Inc. of 5 mins. and a final inc. of 0 Min.

Point Mins.	Press.
P 1 0	38
P 2 5	40
P 3 10	48
P 4	
P 5	
P 6	
P 7	
P 8	
P 9	
P10	
P11	
P12	
P13	
P14	
P15	
P16	
P17	
P18	
P19	
P20	

Initial Shut-In

Breakdown: 11 Inc. of 3 mins. and a final inc. of 0 Min.

Point Minutes	Press.
0	48
3	489
6	875
9	982
12	1053
15	1107
18	1141
21	1177
24	1194
27	1222
30	1239
33	1250

Second Flow Pressure

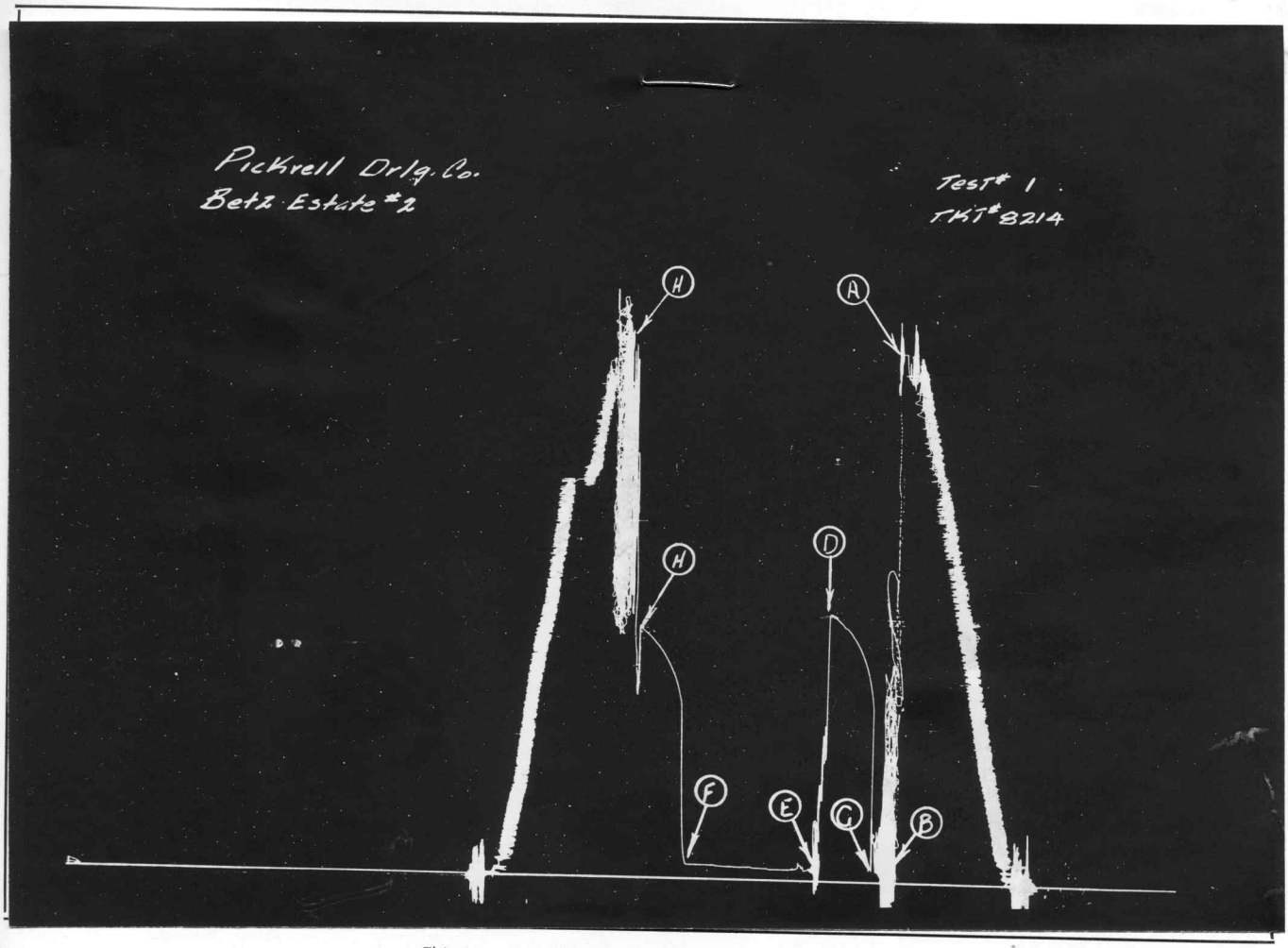
Breakdown: 17 Inc. of 5 mins. and a final inc. of 0 Min.

Point Minutes	Press.
0	56
5	56
10	57
15	59
20	61
25	62
30	64
35	64
40	65
45	65
50	66
55	66
60	67
65	67
70	68
75	69
80	70
85	71

Final Shut-In

Breakdown: 11 Inc. of 3 mins. and a final inc. of 0 Min.

Point Minutes	Press.
0	71
3	259
6	607
9	898
12	965
15	1010
18	1055
21	1085
24	1109
27	1136
30	1158
33	1177



This is an actual photograph of recorder chart.

COMPANY PICKRELL DRILLING CO. LEASE AND WELL NO. BETZ #2 SEC. 9 TWP. 20 RGE. 21 TEST NO. 1 DATE 12-2-64

POINT		PRESSURE	
(A)	Initial Hydrostatic Mud	2417	PSI
(B)	First Initial Flow Pressure	38	PSI
(C)	First Final Flow Pressure	48	PSI
(D)	Initial Closed-in Pressure	1250	PSI
(E)	Second Initial Flow Pressure	56	PSI
(F)	Second Final Flow Pressure	71	PSI
(G)	Final Closed-in Pressure	1177	PSI
(H)	Final Hydrostatic Mud	2400	PSI

Home Office: Great Bend, Kansas

P. O. Box 793 GLadstone 3-7903

Company Pickrell Drilling Co. Lease & Well No. Betz Estate #2

Elevation 2273 Derrick Floor;Formation=Miss. Ticket Number 8215

Date Dec.3,1964 Sec. 9 Twp. 20 Range 21 County Ness State Kansas

Test Approved by George E. Link Western Representative Bill Hager

Formation Test No. 2 O.K. X Misrun ____ Interval Tested From 4439' to 4454' Total Depth 4454'

Size Main Hole 7 7/8 Rat Hole None Conv. X B.T. ____ Damaged X Yes ____ No Conv. ____ B.T. X Damaged X Yes ____ No

Packer Depth 4434 Ft. Size 6 3/4 Packer Depth 4439 Ft. Size 6 3/4

Straddle ____ Yes X No ____ Conv. ____ B.T. ____ Damaged ____ Yes ____ No

Packer Depth ____ Ft Size ____

Tool Size 5 1/2"OD Tool Jt. Size 4 1/2" FH Anchor Length 15 Ft. Size 5 1/2" OD

RECORDERS

Top: Depth 4442 Ft Clock No 6893 — Bottom: Depth 4445 Ft. Clock No. 156

Top Make Kuster Cap. 4300 No. 1566 Inside ____ Outside ____ — Bottom Make Western Cap. 4000 No. 21 Inside ____ Outside ____

Below Straddle: Depth ____ Clock No ____ Inside ____ Outside ____ — Depth ____ Ft. Clock No. ____ Inside ____ Outside ____

Top Make ____ Cap. ____ No. ____ Inside ____ Outside ____ — Bottom Make ____ Cap. ____ No. ____ Inside ____ Outside ____

Time Set Packer 3:20 A M

Tool Open I.F.P. From 3:22 M to 3:27 M Hr. 5 Min. From (B) 56 P.S.I. To (C) 56 P.S.I.

Tool Closed I.C.I.P. From 3:28 M. to 3:58 M. Hr. 30 Min. (D) 1274 P.S.I.

Tool Open F.F.P. From 3:59 M. to 5:29 M. 1 Hr. 30 Min. From (E) 71 P.S.I. To (F) 165 P.S.I.

Tool Closed F.C.I.P. From 5:30 M. to 6:00 M. Hr. 30 Min. (G) 1055 P.S.I.

Inital Hydrostatic Pressure (A) 2367 P.S.I. Final Hydrostatic Pressure (H) 2353 P.S.I.

SURFACE INFORMATION	Size Choke	Max. Press. P.S.I.	Time	Description of Flow
	3/8 In.		M.	
			M.	
			M.	

BLOW Fair blow throughout test. Bottom Choke Size 3/4 in.

Did Well Flow ____ Yes X No Recovery Total Ft. 340' fluid - 154' slightly oil cut mud - 186' heavy oil cut mud. Mud

Reversed Out ____ Yes X No Mud Type starch Viscosity 46 Weight 10 Maximum Temp. 124 °F

EXTRA EQUIPMENT: Dual Packers yes Safety Joint ____ Jars: Size ____ Make ____ Ser. No. ____

Type Circ. Sub. plug Did Tool Plug? partly Where? anchor Did Packer Hold? yes

Length Drill Pipe 3370 ft. I.D. Drill Pipe 3.8 in. Length Weight Pipe 1050 ft. I.D. Weight Pipe 2.7 in. Length Drill Collars ____ ft.

I. D. Drill Collars ____ in. Length D. S. T. Tool 34 ft.

Remarks

Slid tool 5' to bottom.
Due to plugging action for first 50 minutes no breakdown was made thru this period.

WHELAN PRINTERS

WESTERN TESTING CO., INC.
Pressure Data

Date December 3, 1964 Test Ticket No. 8215

Recorder No. 1566 Capacity 4300 Location 4442 Ft.

Clock No. 6893 Elevation 2273 Derrick Floor Well Temperature 124 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	2367	P.S.I.	Opened Tool	3:20 A M	
B First Initial Flow Pressure	56	P.S.I.	First Flow Pressure	5 Mins.	5 Mins.
C First Final Flow Pressure	56	P.S.I.	Initial Closed-in Pressure	30 Mins.	30 Mins.
D Initial Closed-in Pressure	1274	P.S.I.	Second Flow Pressure	90 Mins.	88 Mins.
E Second Initial Flow Pressure	71	P.S.I.	Final Closed-in Pressure	30 Mins.	30 Mins.
F Second Final Flow Pressure	165	P.S.I.			
G Final Closed-in Pressure	1055	P.S.I.			
H Final Hydrostatic Mud	2353	P.S.I.			

PRESSURE BREAKDOWN

First Flow Press.
Breakdown: 1 Inc.
of 5 mins. and a
final inc. of 0 Min.

Point Mins.	Press.
P 1 0	56
P 2 5	56
P 3	
P 4	
P 5	
P 6	
P 7	
P 8	
P 9	
P10	
P11	
P12	
P13	
P14	
P15	
P16	
P17	
P18	
P19	
P20	

Initial Shut-In
Breakdown: 10 Inc.
of 3 mins. and a
final inc. of 0 Min.

Point Minutes	Press.
0	56
3	634
6	916
9	1032
12	1111
15	1162
18	1194
21	1220
24	1242
27	1257
30	1274

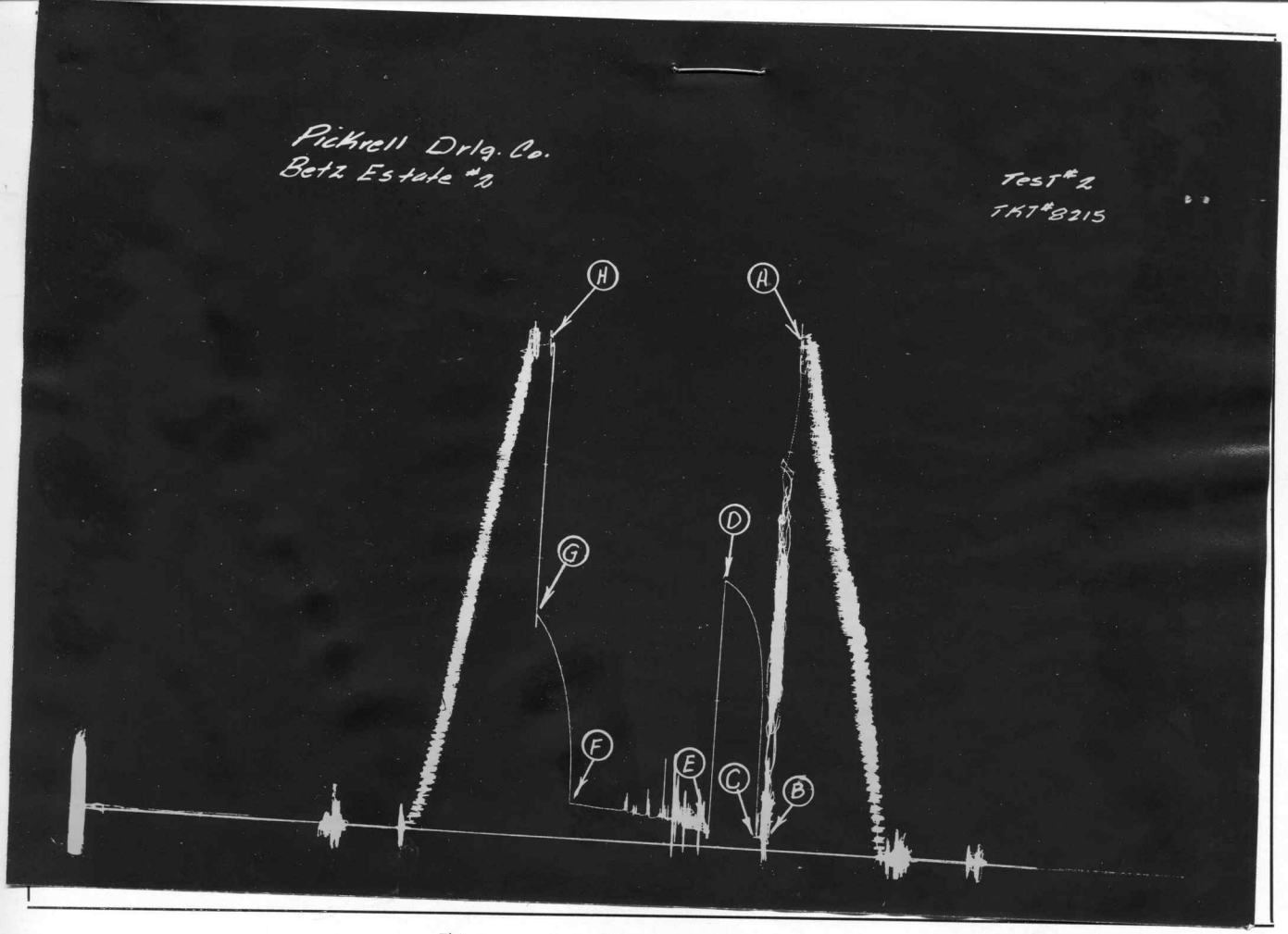
Second Flow Pressure
Breakdown: 17 Inc.
of 5 mins. and a
final inc. of 3 Min.

Point Minutes	Press.
0	71
5	=
10	=
15	=
20	=
25	=
30	=
35	=
40	=
45	=
50	=
55	149
60	151
65	153
70	155
75	158
80	163
85	164
88	165

Final Shut-In
Breakdown: 10 Inc.
of 3 mins. and a
final inc. of 0 Min.

Point Minutes	Press.
0	165
3	493
6	636
9	731
12	797
15	868
18	929
21	976
24	1006
27	1044
30	1055

Due to plugging action for first 50 minutes no breakdown was made thru this period.



This is an actual photograph of recorder chart.

POINT		PRESSURE	
(A)	Initial Hydrostatic Mud	2367	PSI
(B)	First Initial Flow Pressure	56	PSI
(C)	First Final Flow Pressure	56	PSI
(D)	Initial Closed-in Pressure	1274	PSI
(E)	Second Initial Flow Pressure	71	PSI
(F)	Second Final Flow Pressure	165	PSI
(G)	Final Closed-in Pressure	1055	PSI
(H)	Final Hydrostatic Mud	2353	PSI

COMPANY Pickrell Drilling Co. LEASE AND WELL NO. Betz Estate #2 SEC. 9 TWP. 20 RGE. 21 TEST NO. 2 DATE 12-3-64

Home Office: Great Bend, Kansas

P. O. Box 793 GLadstone 3-7903

Company Pickrell Drilling Co. Lease & Well No. Betts #2

Elevation 2273 Derrick Floor; Formation=Miss. Ticket Number 5503

Date 12-3-64 Sec. 9 Twp. 20 Range 21 County Ness State Kansas

Test Approved by George E. Link Western Representative Jack Toelkes

Formation Test No. 3 O.K. X Misrun ____ Interval Tested From 4453' to 4459' Total Depth 4459'

Size Main Hole 7 7/8 Rat Hole ____ Conv. ____ B.T. X Damaged ____ Yes X No Conv. ____ B.T. X Damaged ____ Yes X No

Packer Depth 4448 Ft. Size 6 3/4 Packer Depth 4453 Ft. Size 6 3/4

Straddle ____ Yes X No ____ Conv. ____ B.T. ____ Damaged ____ Yes ____ No

Packer Depth ____ Ft Size ____

Tool Size 5 1/2"OD Tool Jt. Size 4 1/2"FH Anchor Length 6 Ft. Size 5 1/2" OD

RECORDERS

Depth 4443 Ap Ft Clock No. 6892 Depth 4456 Ft. Clock No. 142

Top Make Amerada Cap. 4382 No. 1567 Inside Outside

Bottom Make Western Cap. 3000 No. 30 Inside Outside

Below Straddle: Depth ____ Clock No. ____ Inside Outside Depth ____ Ft. Clock No. ____ Inside Outside

Top Make ____ Cap. ____ No. ____ Inside Outside Bottom Make ____ Cap. ____ No. ____ Inside Outside

Time Set Packer 6:56 P M

Tool Open I.F.P. From 6:58 P M to 7:03P M Hr. 5 Min. From (B) 34 P.S.I. To (C) 38 P.S.I.

Tool Closed I.C.I.P. From 7:03 P M. to 7:33P M. Hr. 30 Min. (D) 1301 P.S.I.

Tool Open F.F.P. From 7:33P M. to 9:03P M. 1 Hr. 30 Min. From (E) 56 P.S.I. To (F) 129 P.S.I.

Tool Closed F.C.I.P. From 9:03P M. to 9:33P M. Hr. 30 Min. (G) 1107 P.S.I.

Inital Hydrostatic Pressure (A) 2392 P.S.I. Final Hydrostatic Pressure (H) 2381 P.S.I.

SURFACE INFORMATION

Size Choke	Max. Press. P.S.I.	Time	Description of Flow
3/4 In.		M.	
		M.	
		M.	

BLOW Weak build to fair Bottom Choke Size 3/4 in.

Did Well Flow ____ Yes X No Recovery Total Ft. 20' oil cut muddy water - 124' muddy salt water - 124' salt water Mud

Reversed Out ____ Yes X No Mud Type starch Viscosity 48 Weight 9.6 Maximum Temp. 118 °F

EXTRA EQUIPMENT: Dual Packers yes Safety Joint ____ Jars: Size ____ Make ____ Ser. No. ____

Type Circ. Sub. plug Did Tool Plug? no Where? ____ Did Packer Hold? yes

Length Drill Pipe 3378 ft. I.D. Drill Pipe 3.8 in. Length Weight Pipe 1050 ft. I.D. Weight Pipe 2.7 in. Length Drill Collars ____ ft.

I. D. Drill Collars ____ in. Length D. S. T. Tool 31 ft.

Remarks

Tool slid 4' to bottom.

WHELAN PRINTERS

WESTERN TESTING CO., INC.
Pressure Data

Date December 3,1964 — Test Ticket No. 5503

Recorder No. 1567 — Capacity 4300 — Location 4443 Ft.

Clock No. 6892 — Elevation 2273 Derrick Floor — Well Temperature 118 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	2392	P.S.I.	Opened Tool 6:56P M	
B First Initial Flow Pressure	34	P.S.I.	First Flow Pressure 5 Mins.	5 Mins.
C First Final Flow Pressure	38	P.S.I.	Initial Closed-in Pressure 30 Mins.	32 Mins.
D Initial Closed-in Pressure	1301	P.S.I.	Second Flow Pressure 90 Mins.	90 Mins.
E Second Initial Flow Pressure	56	P.S.I.	Final Closed-in Pressure 30 Mins.	30 Mins.
F Second Final Flow Pressure	129	P.S.I.		
G Final Closed-in Pressure	1107	P.S.I.		
H Final Hydrostatic Mud	2381	P.S.I.		

PRESSURE BREAKDOWN

First Flow Press.
Breakdown: 1 Inc. of 5 mins. and a final inc. of 0 Min.

Point Mins.	Press.
P 1 0	34
P 2 5	38
P 3	
P 4	
P 5	
P 6	
P 7	
P 8	
P 9	
P10	
P11	
P12	
P13	
P14	
P15	
P16	
P17	
P18	
P19	
P20	

Initial Shut-In
Breakdown: 10 Inc. of 3 mins. and a final inc. of 2 Min.

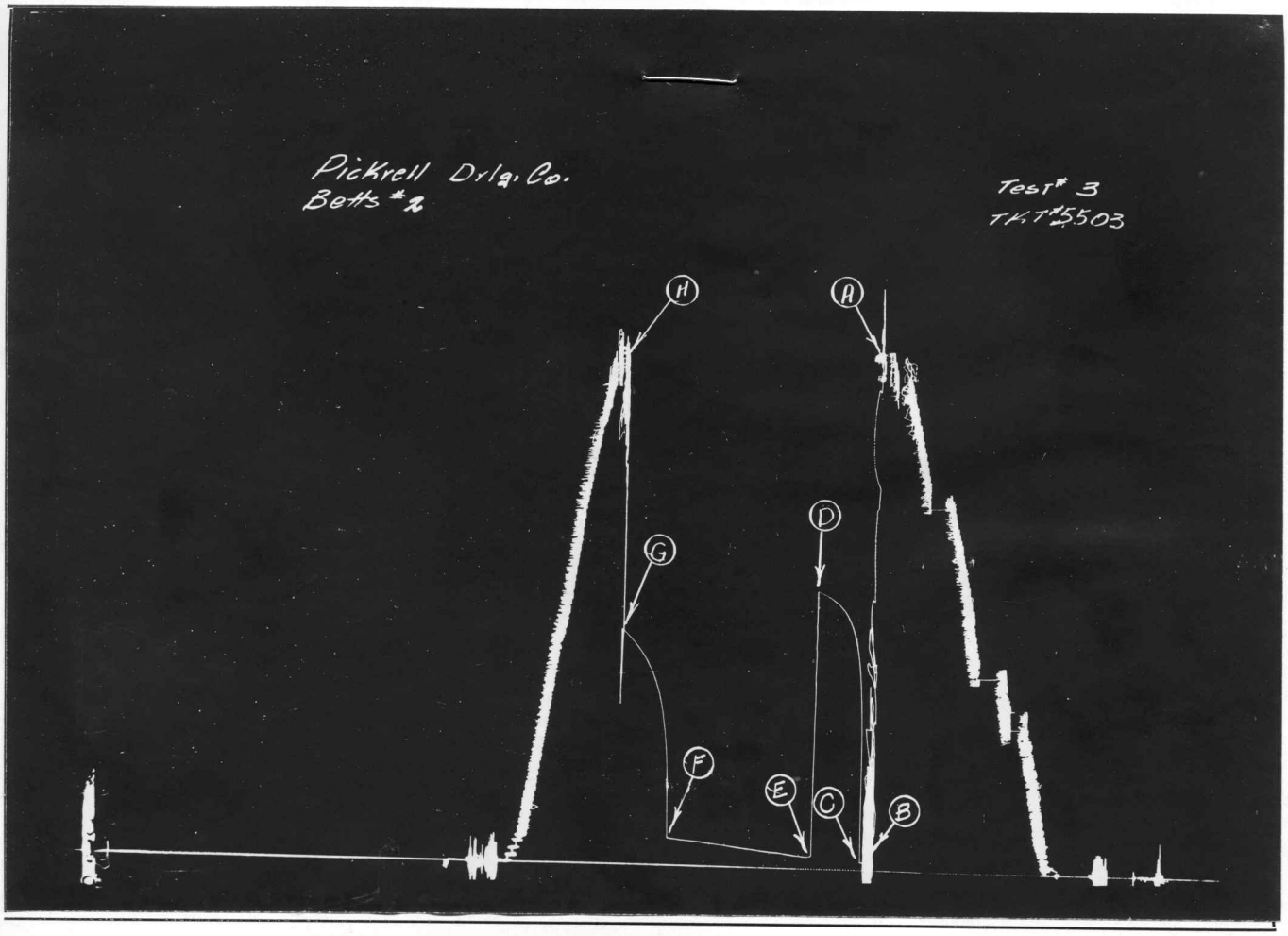
Point Minutes	Press.
0	38
3	730
6	1004
9	1094
12	1156
15	1204
18	1234
21	1255
24	1271
27	1284
30	1296
32	1301

Second Flow Pressure
Breakdown: 18 Inc. of 5 mins. and a final inc. of 0 Min.

Point Minutes	Press.
0	56
5	57
10	62
15	69
20	73
25	76
30	81
35	86
40	90
45	95
50	99
55	103
60	110
65	112
70	115
75	118
80	122
85	125
90	129

Final Shut-In
Breakdown: 10 Inc. of 3 mins. and a final inc. of 0 Min.

Point Minutes	Press.
0	129
3	577
6	715
9	818
12	892
15	943
18	987
21	1021
24	1049
27	1070
30	1107



This is an actual photograph of recorder chart.

POINT		PRESSURE	
(A)	Initial Hydrostatic Mud	2392	PSI
(B)	First Initial Flow Pressure	34	PSI
(C)	First Final Flow Pressure	38	PSI
(D)	Initial Closed-in Pressure	1301	PSI
(E)	Second Initial Flow Pressure	56	PSI
(F)	Second Final Flow Pressure	129	PSI
(G)	Final Closed-in Pressure	1107	PSI
(H)	Final Hydrostatic Mud	2381	PSI

COMPANY Pickrell Drilling Co. LEASE AND WELL NO. Betts #2 SEC. 9 TWP. 20 RGE. 21 TEST NO. 3 DATE 12-3-64