

316/624-7340

DEAN'S TESTERS

Box 1182, Liberal, Ks.

Company A. Scott Ritchie Date Dec. 14, 1978
 Well Name & No. Bromwell #1 Sec. 18 Twp. 33S Rge. 30W
 County Meade State Kans. Elevation _____
 Test Approved by Don Huber Tester Dean Blagrave

DST No. 1 Formation Marmation Test Interval 5114' to 5130' Total Depth 5198'
 Anchor Length 16 Anchor Size 4 1/2" OD Surface Choke 1/4" Bot. Choke 5/8"
 Top Packer Depth 5109' Damaged no Bottom Packer Depth 5114' Damaged yes
 Below Straddle Depth 5130' Damaged no Bot. Packer Depth _____ Damaged _____
 Recorders: Depth 5102' Make Kuster Capacity 6800 Ser. No. 10217 Inside
 Depth 5121' Make Kuster Capacity 6450 Ser. No. 6064 Outside
 Below Straddle: Depth 5193' Make H & T Capacity 6500 Ser. No. 69

PRESSURES:

Tool Open 30 min. IFP 58 psi to 58 psi
 Shut-In 60 min. ISIP 1445 psi
 Open 59 min. FFP 85 psi to 102 psi
 Shut-In 121 min. FSIP 1527 psi

Hydrostatic Pressures: Initial 2460 Final 2447 Temp 113 °F

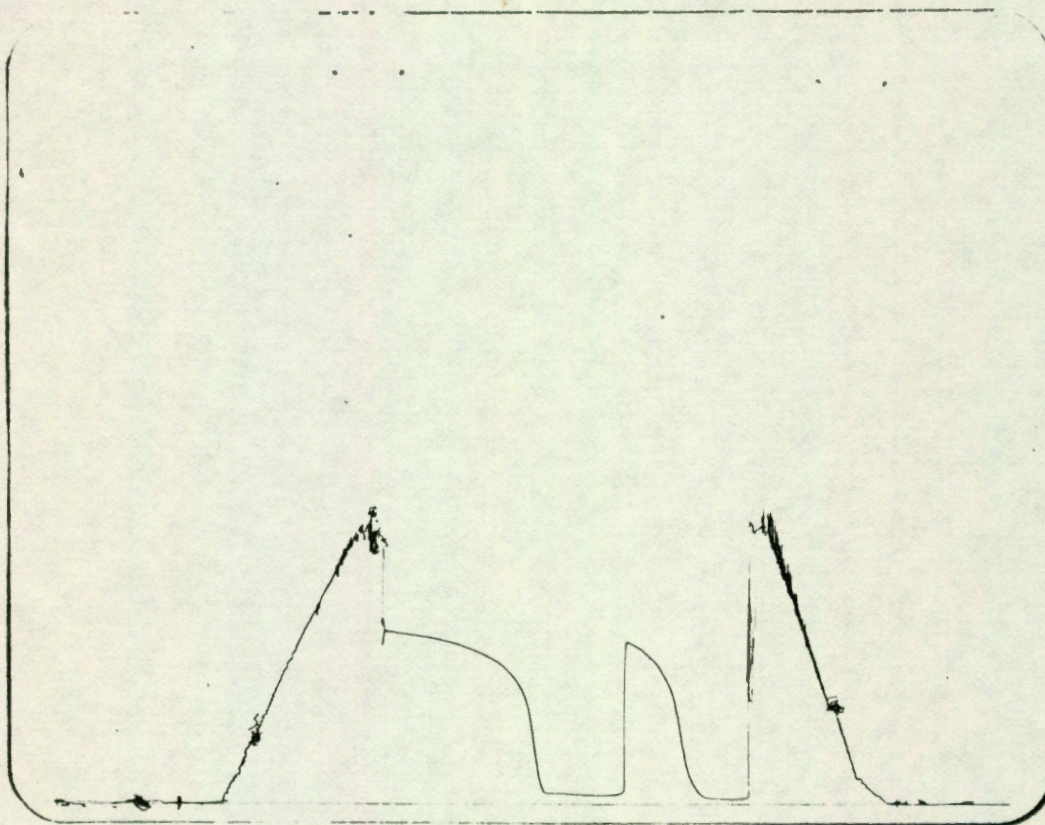
Blow Weak Increasing to Fair Both Flow Periods.

Recovery 800' Gas In Pipe, 120' Oil and Gas Cut Mud, 60' Oil Cut Salt Water.
34,000 PPM Cl.

Extra Equipment 3 Packers, Jars, Sfty. jnt., Circ. sub., Straddle.

Lengths: Tool 118' DP 4630' ID 3.8 Wt.P none ID --- DC 481 ID 2.25
 Mud Type Chemical Vis. 48 Wt. 9.1 Wtr. Loss 10.4 Chlorides 2,900 PPM

Remarks: _____



Actual photograph of test chart

	Field	Pressure Reading Office	
Initial Flow pressure	68 - 68	58 - 58	PSI
Initial Closed in pressure	1455	1445	PSI
Final Flow pressure	85 - 119	95 - 102	PSI
Final Closed in pressure	1558	1527	PSI
Initial Hydrostatic pressure	2477	2460	PSI
Final Hydrostatic pressure	2477	2447	PSI

Recovery: 800' Gas In Pipe, 120' Oil And Gas Cut Mud, 60'
Oil Cut Salt Water. 34,000 PPM Cl.

Pressure Break Down

Test ticket no. 833 Recorder no. 10217 Capacity 6800 Rec. Depth: 5102

Initial Flow pressure 58 to 58 Time Given 30 Computed 30

Initial Closed in pressure 1445 60 60

Final Flow pressure 95 to 102 60 59

Final Closed-in pressure 1527 120 121

Initial Hydrostatic pressure 2460 Final Hydrostatic press. 2447 Temp 113

Initial Flow Press.

Minutes	Press
0	58
5	51
10	47
15	47
20	51
25	54
30	58
35	
40	
45	
50	
55	
60	
65	
70	
75	
80	
85	
90	
95	
100	
105	
110	
115	
120	

Initial Closed in Press.

Minutes	Press
0	58
3	
6	113
9	
12	236
15	
18	561
21	
24	907
27	
30	1109
33	1167
36	1226
39	1267
42	1301
45	1335
48	1369
51	1390
54	1410
57	1428
60	1445
63	
66	
69	
72	
75	
78	
81	
84	
87	
90	
93	
96	
99	
102	
105	
108	
111	
114	
117	
120	

Final Flow Press

Minutes	Press
0	95
5	85
10	82
15	82
20	82
25	82
30	85
35	85
40	89
45	95
50	95
55	99
59	102
65	
70	
75	
80	
85	
90	
95	
100	
105	
110	
115	
120	
125	
130	
135	
140	
145	
150	
155	
160	
165	
170	
175	
180	

Final Closed in Press.

Minutes	Press
0	102
3	
6	356
9	
12	794
15	
18	1010
21	
24	1109
27	
30	1188
33	
36	1253
39	
42	1294
45	
48	1328
51	
54	1359
57	
60	1386
63	
66	1410
69	
72	1434
75	
78	1448
81	
84	1465
87	
90	1479
93	
96	1493
99	
102	1500
105	
108	1506
111	
114	1517
117	
120	1527

Company A. Scott Ritchie Date Dec. 17, 1978
 Well Name & No. Bromwell #1 Sec. 18 Twp. 33S Rge. 20W
 County Meade State Kans. Elevation _____
 Test Approved by Don Huber Tester R. J. Westenhaver

DST No. 2 Formation Marmation Test Interval 5584' to 5644' Total Depth 5644'
 Anchor Length 60' Anchor Size 29' x 6" OD-D.C. Surface Choke 1/4" Bot. Choke 5/8"
31' x 1 1/2" OD-Perf.
 Top Packer Depth 5579' Damaged no Bottom Packer Depth 5584' Damaged yes
 Below Straddle Depth _____ Damaged _____ Bot. Packer Depth _____ Damaged _____
 Recorders: Depth 5600' Make Kuster Capacity 6500 Ser. No. 10269 Inside
 Depth 5609' Make Kuster Capacity 6450 Ser. No. 10268 Outside
 Below Straddle: Depth _____ Make _____ Capacity _____ Ser. No. _____

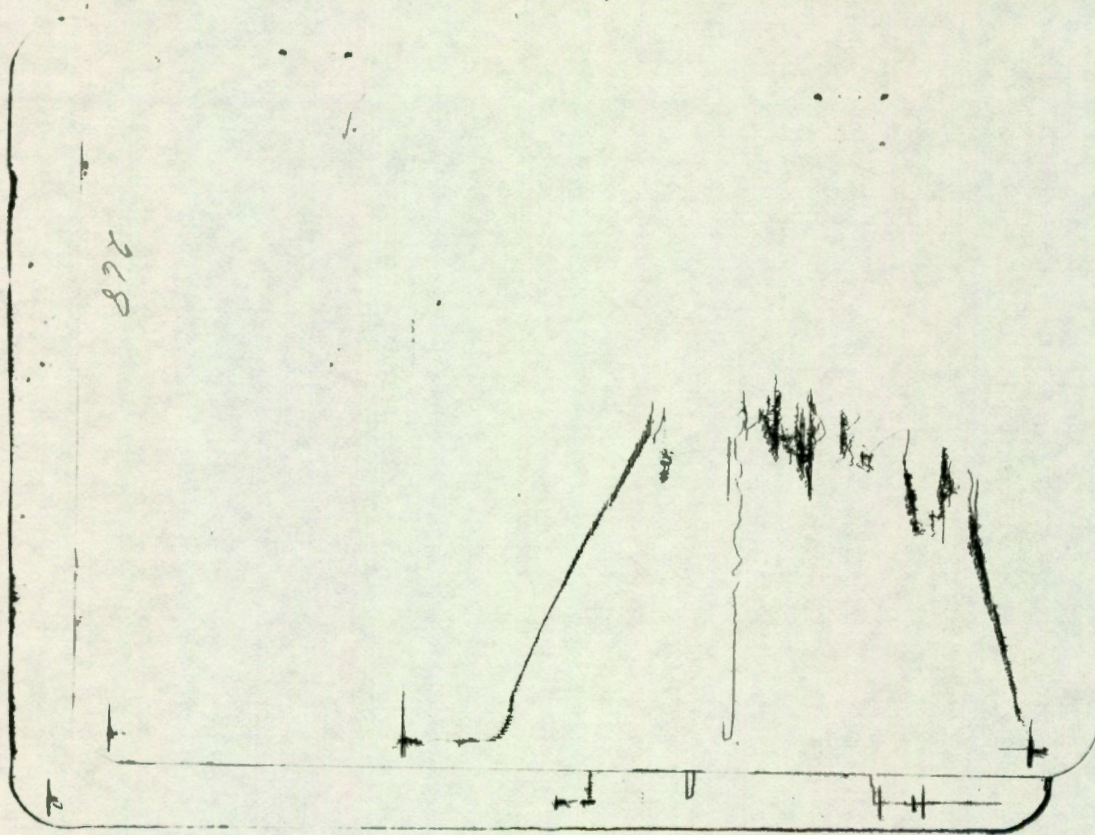
PRESSURES:

Tool Open 30 min. IFP 52 psi to 45 psi (7 Min. Pressure)
 Shut-In 60 min. ISIP ----- psi
 Open 60 min. FFP --- psi to --- psi
 Shut-In 120 min. FSIP ----- psi
 Hydrostatic Pressures: Initial 2665 Final 2623 Temp 128 °F
 Blow Strong On Initial-Fair On Final Flow.
 Recovery 20' Drilling Mud. No Show.

Extra Equipment 2 Packers, Jars, Sfty. jnt., Circ. sub.

Lengths: Tool 87' DP 5025' ID 3.8 Wt.P ---- ID ---- DC 511' ID 2.25
 Mud Type Chemical Vis. 43 Wt. 9.2 Wtr. Loss 11.6 Chlorides 3500 PPM

Remarks: Tight Hole (4400'-4500') & 5050'. Inside Recorder
Clock Ran 5 Min. Then Stopped. Outside Recorder
Ran 7 Min. Then Stopped.



Actual photograph of test chart

	Field	Pressure Reading Office	
Initial Flow pressure	----	52 - 45	PSI
Initial Closed in pressure	---	---	PSI
Final Flow pressure	---	---	PSI
Final Closed in pressure	---	---	PSI
Initial Hydrostatic pressure	2711	2665	PSI
Final Hydrostatic pressure	2613	2623	PSI

Recovery: 20' Drilling Mud. No Show.

Company A. Scott Ritchie Date Dec. 18, 1978
 Well Name & No. Bromwell #1 Sec. 18 Twp. 33S Rge. 30W
 County Meade State Kans. Elevation _____
 Test Approved by Don Huber Tester Dean Blagrave

DST No. 3 Formation Morrow Test Interval 5585' to 5690' Total Depth 5690'
 Anchor Length 105' Anchor Size 59' x 6" OD-D.C. Surface Choke 1" Bot. Choke 5/8"
46' x 1 1/2" OD-Perf.
 Top Packer Depth 5580' Damaged no Bottom Packer Depth 5585' Damaged no
 Below Straddle Depth _____ Damaged _____ Bot. Packer Depth _____ Damaged _____
 Recorders: Depth 5612' Make Kuster Capacity 6800 Ser. No. 10217 Inside
 Depth 5617' Make Kuster Capacity 6450 Ser. No. 6064 Outside
 Below Straddle: Depth _____ Make _____ Capacity _____ Ser. No. _____

PRESSURES:

Tool Open 28 min. IFP 106 psi to 102 psi
 Shut-In 60 min. ISIP 256 psi
 Open 88 min. FFP 140 psi to 106 psi
 Shut-In 120 min. FSIP 267 psi

Hydrostatic Pressures: Initial 2747 Final 2686 Temp 122 °F

Blow Strong Gas To Surface in 10 Min. Maximum Gas Gauge 241 MCF/D

Recovery 200' Gas Cut Mud.

Extra Equipment 2 Packers, Jars, Sfty. jnt., Circ. sub.

Lengths: Tool 135' DP 100' ID 3.8 Wt.P. none ID --- DC 481 ID 2.25
 Mud Type Chemical Vis. 45 Wt. 9.3 Wtr. Loss 9.6 Chlorides 3100 PPM

Remarks: _____

Pressure Break Down

st ticket no. 834 Recorder no. 10217 Capacity 6800 Rec. Depth. 5612

Initial Flow pressure 106 to 102 Time Given 30 Computed 28

Initial Closed in pressure 256 60 60

Final Flow pressure 140 to 106 90 88

Final Closed-in pressure 267 120 120

Initial Hydrostatic pressure 2647 Final Hydrostatic press. 2686 Temp 122

Initial Flow Press.

Minutes	Press
0	106
5	102
10	99
15	99
20	102
25	102
28	102
30	102
35	
40	
45	
50	
55	
60	
65	
70	
75	
80	
85	
90	
95	
100	
105	
110	
115	
120	

Initial Closed in Press.

Minutes	Press
0	102
3	
6	208
9	
12	226
15	
18	236
21	
24	239
27	
30	243
33	
36	243
39	
42	246
45	
48	250
51	
54	253
57	
60	256
63	
66	
69	
72	
75	
78	
81	
84	
87	
90	
93	
96	
99	
102	
105	
108	
111	
114	
117	
120	

Final Flow Press

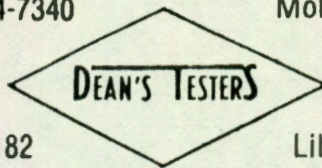
Minutes	Press
0	140
5	119
10	113
15	102
20	99
25	99
30	99
35	99
40	102
45	102
50	102
55	102
60	102
65	102
70	102
75	106
80	106
85	106
88	106
95	
100	
105	
110	
115	
120	
125	
130	
135	
140	
145	
150	
155	
160	
165	
170	
175	
180	

Final Closed in Press.

Minutes	Press
0	106
3	
6	208
9	
12	226
15	
18	236
21	
24	239
27	
30	243
33	
36	246
39	
42	250
45	
48	250
51	
54	250
57	
60	253
63	
66	256
69	
72	256
75	
78	260
81	
84	260
87	
90	263
93	
96	263
99	
102	263
105	
108	267
111	
114	267
117	
120	267

Mobile — 316/624-6247

Unit #935



P.O. Box 1182

Liberal, Kansas 67901

Company A. Scott Ritchie Well Bromwell #1

Test # 3 Interval 5585' - 5690'

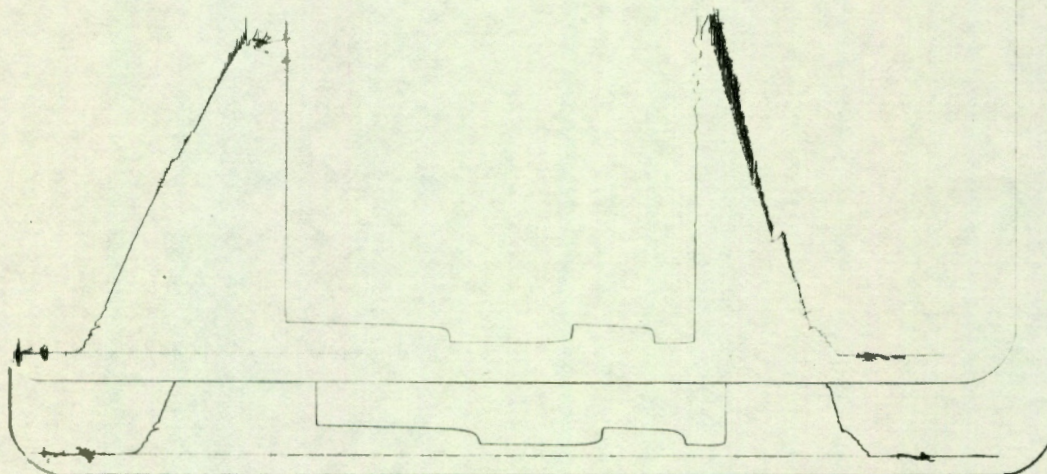
Method of Guage Merla 2" Quick-Change Orifice Well Tester

[illegible]

Surface Choke 1" Bottom Choke 5/8"

Remarks: Gas To Surface in 10 Min.

6064



Actual photograph of test chart

	Field	Pressure Reading Office	
Initial Flow pressure	102 - 119	106 - 102	PSI
Initial Closed in pressure	273	256	PSI
Final Flow pressure	119 - 119	140 - 106	PSI
Final Closed in pressure	273	267	PSI
Initial Hydrostatic pressure	2754	2747	PSI
Final Hydrostatic pressure	2703	2686	PSI

Recovery: 200' Gas Cut Mud.

Company A. Scott Ritchie Date Dec. 19, 1978
 Well Name & No. Bromwell #1 Sec. 18 Twp. 33S Rge. 30W
 County Meade State Kans. Elevation _____
 Test Approved by F. Judson Hipps Tester R.J. Westenhaver

DST No. 4 Formation Morrow Test Interval 5586' to 5647' Total Depth 5721'
 Anchor Length 61' Anchor Size 31' X 6" OD-D.C. Surface Choke 1/4" Bot. Choke 5/8"
 Top Packer Depth 5586' Damaged yes Bottom Packer Depth -- Damaged _____
 Below Straddle Depth 5647' Damaged yes Bot. Packer Depth -- Damaged _____
 Recorders: Depth 5597' Make Kuster Capacity 6500 Ser. No. 10269 Inside
 Depth 5606' Make Kuster Capacity 6450 Ser. No. 10268 Outside
 Below Straddle: Depth 5656' Make H&T Capacity 6000 Ser. No. 69

PRESSURES:

Tool Open 30 min. IFP 65 psi to 88 psi
 Shut-In 45 min. ISIP 147 psi
 Open 30 min. FFP 127 psi to 137 psi
 Shut-In 45 min. FSIP 193 psi

Hydrostatic Pressures: Initial 2766 Final 2724 Temp 124 °F

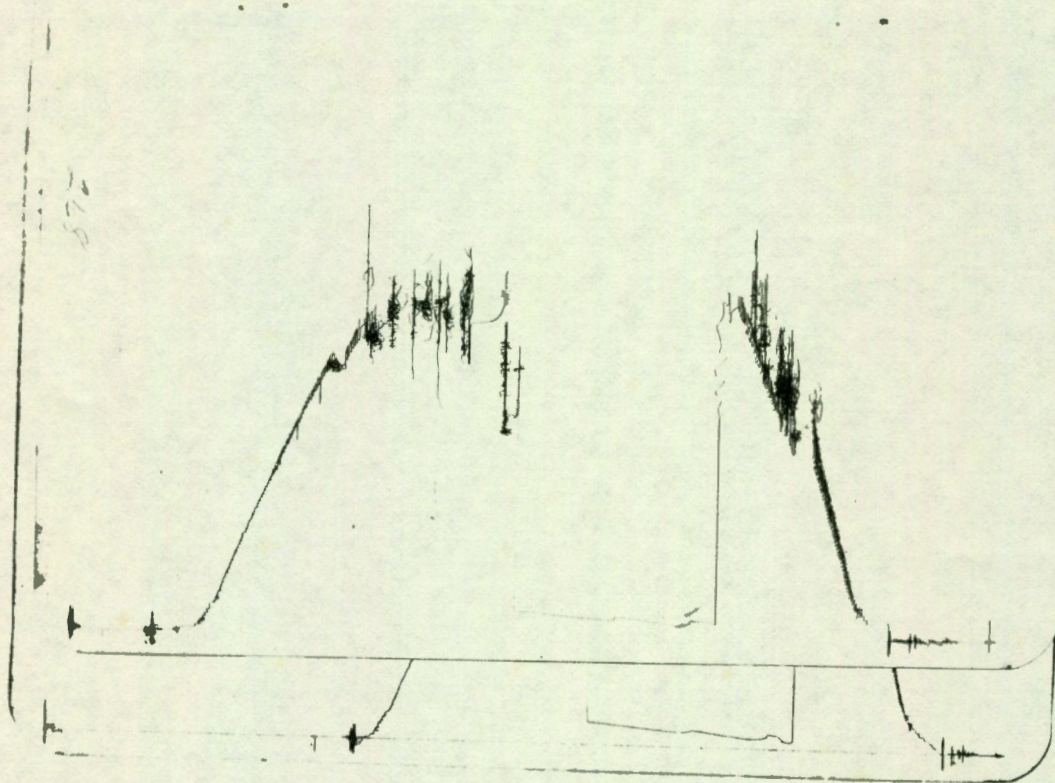
Blow Weak thruout test.

Recovery 20' Drilling Mud.

Extra Equipment Jars, Sfty.jnt., Circ.sub., Straddle

Lengths: Tool 157' DP 5150' ID 3.8" Wt.P. -- ID DC 410' ID 2.25"
 Mud Type Chemical Vis. 52 Wt. 9.3 Wtr. Loss 10 Chlorides 3,700 PPM

Remarks: _____



Actual photograph of test chart

	Pressure Reading		
	Field	Office	
Initial Flow pressure	65 - 81	65 - 88	PSI
Initial Closed in pressure	147	147	PSI
Final Flow pressure	114 - 131	127 - 137	PSI
Final Closed in pressure	196	193	PSI
Initial Hydrostatic pressure	2759	2766	PSI
Final Hydrostatic pressure	2613	2724	PSI

Recovery: 20' Drilling Mud.