WESTERN TESTERS

Home Office: Great Bend, Kansas
P. O. Box 793 (316) 793-7903

Company Graham-Michaelis Drilling Inc. Lease & Well No. Murray-Crawford 1-16

Elevation 2134 Ground Level Formation Mississippian Effective Pay _____ Ft. Ticket No. 15066

Date 9-24-70 Sec. 16 Twp. 31 Range 18 County Comanche State Kansas

Test Approved by John L. James Western Representative Leon Elmore

Formation Test No. 1 O.K. X Misrun _____ Interval Tested From 5040' to 5090' Total Depth 5090'

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

Packer Depth 5035 Ft. Size 6 3/4" Packer Depth 5040 Ft. Size 6 3/4"

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

Packer Depth _____ Ft. Size _____

Tool Size 5 1/2" O.D. Tool Jt. Size 4 1/2" F.H. Anchor Length 50 Ft. Size 33'-D.C. 17'-5 1/2

RECORDERS Depth 5045 Ft. Clock No. 6866 Depth 5048 Ft. Clock No. 8377

Top Make Kuster Cap. 4500 No. 3085 Inside ~~Outside~~ Bottom Make Kuster Cap. 4400 No. 2603 ~~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 4:21 A.M

Tool Open I.F.P. From 4:24 M. to 4:34A. M. Hr. 10 Min. From (B) 81 P.S.I. To (C) 160 P.S.I.

Tool Closed I.C.I.P. From 4:34 M. to 5:04A. M. Hr. 30 Min. (D) 1534 P.S.I.

Tool Open F.F.P. From 5:04 M. to 6:34A. M. Hr. 90 Min. From (E) 210 P.S.I. To (F) 330 P.S.I.

Tool Closed F.C.I.P. From 6:34 M. to 7:14A. M. Hr. 45 Min. (G) 1349 P.S.I.

Initial Hydrostatic Pressure (A) 2796 P.S.I. Final Hydrostatic Pressure (H) 2781 P.S.I.

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

BLOW Good thru out test Bottom Choke Size 3/4 In.

Did Well Flow _____ Yes X No Recovery Total Ft. 150 feet oil & gas cut mud - 650 feet oil cut salt water
2175 feet gas in pipe

Reversed Out _____ Yes X No Mud Type Starch Viscosity 46 Weight 9.1 Water Loss 3.2 cc. Maximum Temp. 122 °F

Type Circ. Sub. Plug Did Tool Plug? No Jars: Size 4½ O.D. Make WTC Ser. No. 410

EXTRA EQUIPMENT: Dual Packers Yes Safety Joint Yes Did Packer Hold? Yes Where? _____

Length Drill Pipe 4500 ft. I.D. Drill Pipe 3.8 in. Length Weight Pipe _____ ft. I.D. Weight Pipe _____ in. Length Drill Collars 548 ft.

I. D. Drill Collars 2 1/4 in. Length D.S.T. Tool 43 ft.

Remarks

FORM WTC 3

WESTERN TESTING CO., INC.
Pressure Data

Date 9-24-70 Test Ticket No. 15066

Recorder No. 3085 Capacity 4500 Location 5045 Ft.

Clock No. 6866 Elevation 2134 Ground Level Well Temperature 122 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	2796 P.S.I.	Open Tool	4:21 A. M	
B First Initial Flow Pressure	81 P.S.I.	First Flow Pressure	10 Mins.	10 Mins.
C First Final Flow Pressure	160 P.S.I.	Initial Closed-in Pressure	30 Mins.	30 Mins.
D Initial Closed-in Pressure	1534 P.S.I.	Second Flow Pressure	90 Mins.	90 Mins.
E Second Initial Flow Pressure	210 P.S.I.	Final Closed-in Pressure	45 Mins.	44 Mins.
F Second Final Flow Pressure	330 P.S.I.			
G Final Closed-in Pressure	1349 P.S.I.			
H Final Hydrostatic Mud	2781 P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure
Breakdown: 2 Inc. of 5 mins. and a final inc. of ____ Min.

Point Mins.	Press.
P 1 0	81
P 2 5	131
P 3 10	160
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 ____ Min.

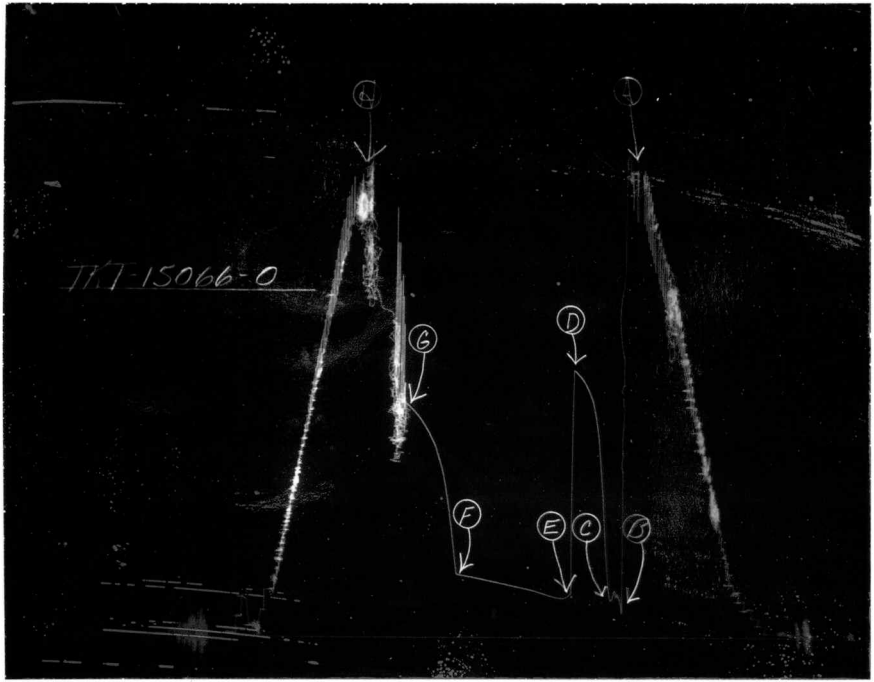
Point Minutes	Press.
0	160
3	370
6	718
9	974
12	1200
15	1319
18	1397
21	1451
24	1484
27	1511
30	1534

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

Point Minutes	Press.
0	210
5	195
10	198
15	205
20	217
25	229
30	239
35	248
40	258
45	265
50	274
55	282
60	291
65	298
70	303
75	312
80	317
85	325
90	330

Final Shut-In
Breakdown: 14 Inc. of 3 mins. and a final inc. of 2 Min.

Point Minutes	Press.
0	330
3	562
6	734
9	876
12	965
15	1039
18	1094
21	1143
24	1184
27	1217
30	1249
33	1279
36	1302
39	1323
42	1339
44	1349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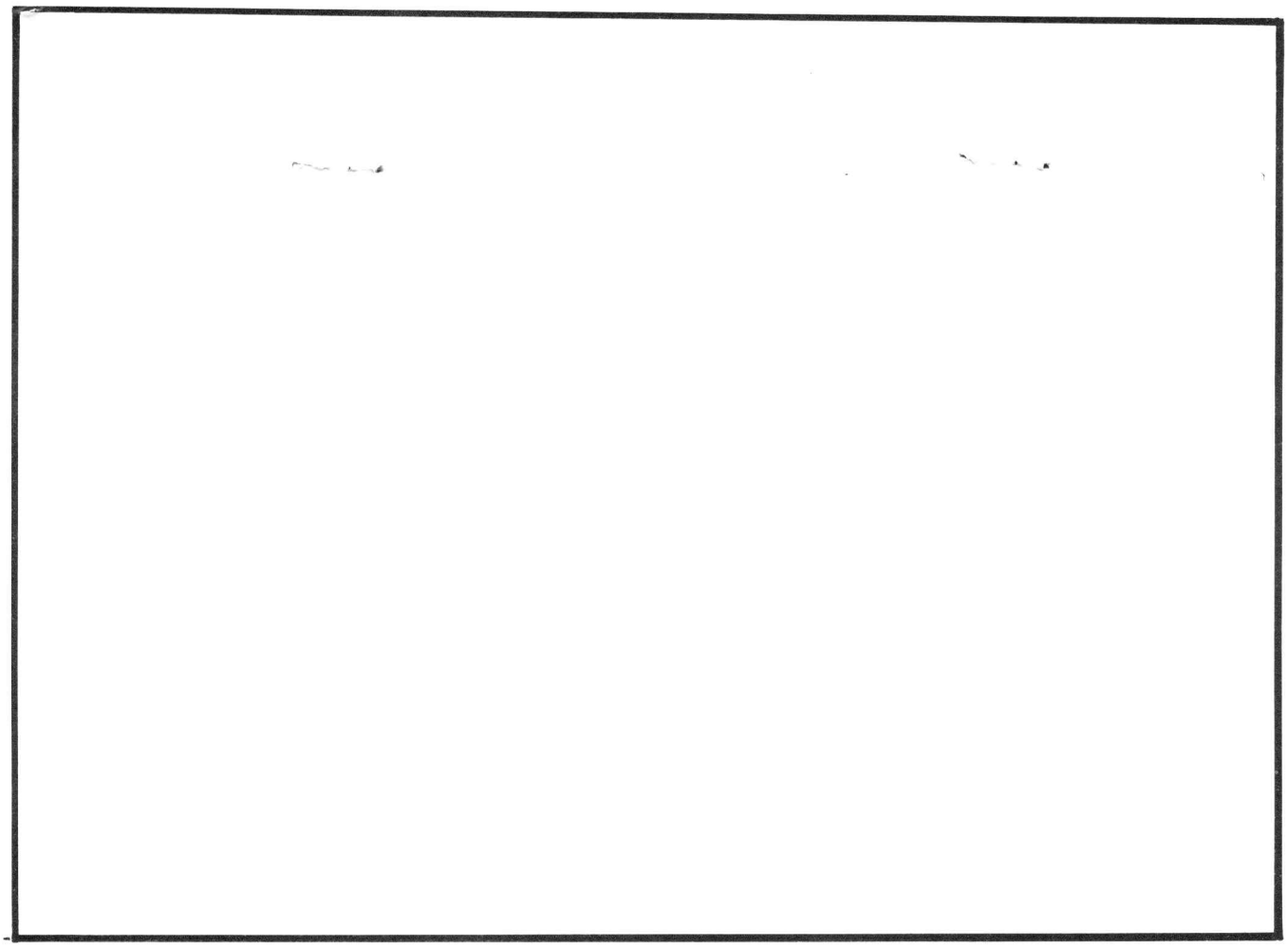

This is an actual photograph of recorder chart.

POINT		PRESSURE Field Reading	Office Reading	
(A)	Initial Hydrostatic Mud	2828	2796	PSI
(B)	First Initial Flow Pressure	83	81	PSI
(C)	First Final Flow Pressure	161	160	PSI
(D)	Initial Closed-in Pressure	1534	1534	PSI
(E)	Second Initial Flow Pressure	215	210	PSI
(F)	Second Final Flow Pressure	334	330	PSI
(G)	Final Closed-in Pressure	1337	1349	PSI
(H)	Final Hydrostatic Mud	2794	2781	PSI

COMPANY Graham-Michaelis Drilling Inc. LEASE AND WELL NO. Murray-Crawford 1-16 SEC. 16 TWP. 31 RGE. 18W TEST NO. 1 DATE 9-24-70