



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

Company **Mimwell Exploration Co.** Lease & Well No. **Woodward # 1**
Elevation **1108 Kelly Bushing** Formation **Mississippian** Effective Pay _____ Ft. Ticket No. **11078**
Date **5-31-68** Sec. **23** Twp. **16s** Range **16e** County **Osage** State **Kansas**
Test Approved by **J. Copeland Landes** Western Representative **Norman Allen**

Formation Test No. **1** O.K. Misrun Interval Tested From **1559'** to **1583'** Total Depth **1583'**
Size Main Hole **7 7/8** Rat Hole _____ Conv. B.T. _____ Damaged Yes No Conv. B.T. _____ Damaged Yes No
Packer Depth **1553** Ft. Size **6 3/4** Packer Depth **1553** Ft. Size **6 3/4**
Straddle Yes _____ No Conv. _____ B.T. _____ Damaged Yes _____ No

Packer Depth _____ Ft. Size _____
Tool Size **5 1/2" OD** Tool Jt. Size **3 1/2" IF** Anchor Length **25** Ft. Size **5 1/2" OD**

RECORDERS Depth **1574** Ft. Clock No. **6899** Depth **1577** Ft. Clock No. **6861**
Top Make **Kuster** Cap. **3150** No. **1561** Inside _____ Outside _____ Bottom Make **Kuster** Cap. **3200** No. **1560** Inside _____ Outside _____
Below Straddle: Depth _____ Clock No. _____ Inside _____ Outside _____
Top Make _____ Cap. _____ No. _____ Inside _____ Outside _____

Time Set Packer **4:56 A.** M
Tool Open I.F.P. From **5:00** M. to **5:15 A** M. Hr. **15** Min. From (B) **26** P.S.I. To (C) **28** P.S.I.
Tool Closed I.C.I.P. From **5:15** M. to **5:45 A** M. Hr. **30** Min. (D) **429** P.S.I.
Tool Open F.F.P. From **5:45** M. to **7:45 A** M. **2** Hr. **---** Min. From (E) **31** P.S.I. To (F) **36** P.S.I.
Tool Closed F.C.I.P. From **7:45** M. to **8:15 A** M. Hr. **30** Min. (G) **315** P.S.I.
Initial Hydrostatic Pressure (A) **738** P.S.I. Final Hydrostatic Pressure (H) **707** P.S.I.

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

BLOW **Weak to very weak 20 minutes.** Bottom Choke Size **3/4** In.
Did Well Flow Yes No _____ Recovery Total Ft. **40 feet mud with specks of oil**

Reversed Out Yes No _____ Mud Type **Chem.** Viscosity **38** Weight **9.2** Water Loss **9.6** cc. Maximum Temp. **93** °F
Type Circ. Sub. **pin** Did Tool Plug? **no** Jars: Size **3 1/2" IF** Make **WTC** Ser. No. **402**
EXTRA EQUIPMENT: Dual Packers **yes** Safety Joint **no** Did Packer Hold? **yes** Where? _____
Length Drill Pipe **1381** ft. I.D. Drill Pipe **2.7** in. Length Weight Pipe _____ ft. I.D. Weight Pipe _____ in. Length Drill Collars **150** ft.
I. D. Drill Collars **2 1/4** in. Length D.S.T. Tool **52** ft.

Remarks _____

WESTERN TESTING CO., INC.

Pressure Data

Date 5-31-68 Test Ticket No. 11078
 Recorder No. 1561 Capacity 3160 Location 1574 Ft.
 Clock No. 6899 Elevation 1108 Kelly Bushing Well Temperature 93 °F

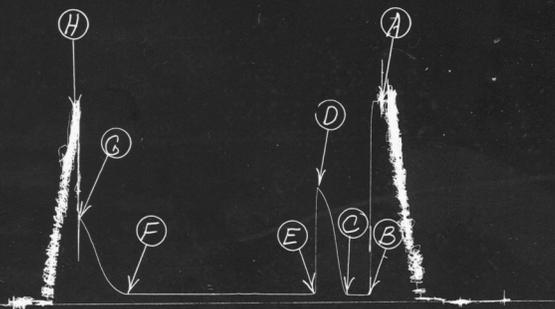
Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>738</u> P.S.I.	Opened Tool	<u>5:00 A.</u> M	
B First Initial Flow Pressure	<u>26</u> P.S.I.	First Flow Pressure	<u>15</u> Mins.	<u>15</u> Mins.
C First Final Flow Pressure	<u>28</u> P.S.I.	Initial Closed-in Pressure	<u>30</u> Mins.	<u>27</u> Mins.
D Initial Closed-in Pressure	<u>429</u> P.S.I.	Second Flow Pressure	<u>120</u> Mins.	<u>122</u> Mins.
E Second Initial Flow Pressure	<u>31</u> P.S.I.	Final Closed-in Pressure	<u>30</u> Mins.	<u>32</u> Mins.
F Second Final Flow Pressure	<u>36</u> P.S.I.			
G Final Closed-in Pressure	<u>315</u> P.S.I.			
H Final Hydrostatic Mud	<u>707</u> P.S.I.			

PRESSURE BREAKDOWN

Point Mins.	First Flow Press.		Initial Shut-In		Second Flow Pressure		Final Shut-In	
	Breakdown:	Inc.	Breakdown:	Inc.	Breakdown:	Inc.	Breakdown:	Inc.
	<u>3</u>		<u>9</u>		<u>24</u>		<u>10</u>	
	of <u>5</u> mins.	and a	of <u>3</u> mins.	and a	of <u>5</u> mins.	and a	of <u>3</u> mins.	and a
	final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>2</u> Min.		final inc. of <u>2</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.	
P 1 <u>0</u>	<u>26</u>	<u>0</u>	<u>28</u>	<u>0</u>	<u>31</u>	<u>0</u>	<u>36</u>	
P 2 <u>5</u>	<u>26</u>	<u>3</u>	<u>48</u>	<u>5</u>	<u>31</u>	<u>3</u>	<u>41</u>	
P 3 <u>10</u>	<u>28</u>	<u>6</u>	<u>96</u>	<u>10</u>	<u>31</u>	<u>6</u>	<u>49</u>	
P 4 <u>15</u>	<u>28</u>	<u>9</u>	<u>126</u>	<u>15</u>	<u>31</u>	<u>9</u>	<u>64</u>	
P 5 _____		<u>12</u>	<u>238</u>	<u>20</u>	<u>31</u>	<u>12</u>	<u>81</u>	
P 6 _____		<u>15</u>	<u>323</u>	<u>25</u>	<u>33</u>	<u>15</u>	<u>114</u>	
P 7 _____		<u>18</u>	<u>369</u>	<u>30</u>	<u>33</u>	<u>18</u>	<u>147</u>	
P 8 _____		<u>21</u>	<u>403</u>	<u>35</u>	<u>33</u>	<u>21</u>	<u>191</u>	
P 9 _____		<u>24</u>	<u>417</u>	<u>40</u>	<u>33</u>	<u>24</u>	<u>231</u>	
P10 _____		<u>27</u>	<u>429</u>	<u>45</u>	<u>35</u>	<u>27</u>	<u>273</u>	
P11 _____				<u>50</u>	<u>35</u>	<u>30</u>	<u>301</u>	
P12 _____				<u>55</u>	<u>35</u>	<u>32</u>	<u>315</u>	
P13 _____				<u>60</u>	<u>35</u>			
P14 _____				<u>65</u>	<u>35</u>			
P15 _____				<u>70</u>	<u>35</u>			
P16 _____				<u>75</u>	<u>35</u>			
P17 _____				<u>80</u>	<u>36</u>			
P18 _____				<u>85</u>	<u>36</u>			
P19 _____				<u>90</u>	<u>36</u>			
P20 _____				<u>95</u>	<u>36</u>			
				<u>100</u>	<u>36</u>			
				<u>105</u>	<u>36</u>			
				<u>110</u>	<u>36</u>			
				<u>115</u>	<u>36</u>			
				<u>120</u>	<u>36</u>			
				<u>122</u>	<u>36</u>			

Winwell Exploration Co.
Woodward #1

T.K.T. # 11078
Test # 1



This is an actual photograph of recorder chart.

POINT	PRESSURE		
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud	747	738	PSI
(B) First Initial Flow Pressure	23	26	PSI
(C) First Final Flow Pressure	25	28	PSI
(D) Initial Closed-in Pressure	425	429	PSI
(E) Second Initial Flow Pressure	25	31	PSI
(F) Second Final Flow Pressure	31	36	PSI
(G) Final Closed-in Pressure	315	315	PSI
(H) Final Hydrostatic Mud	723	707	PSI



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

Company Winwell Exploration Co. Lease & Well No. Woodward # 1
Elevation 1108 Kelly Bushing Formation Mississippian Effective Pay _____ Ft. Ticket No. 11079
Date 6-1-68 Sec. 23 Twp. 16s Range 16e County Osage State Kansas
Test Approved by O. G. McDowell Western Representative Norman Allen

Formation Test No. 2 O.K. Misrun _____ Interval Tested From 1558' to 1604' Total Depth 1604'
Size Main Hole 7 7/8 Rat Hole _____ Conv. B.T. _____ Damaged _____ Yes No Conv. B.T. _____ Damaged _____ Yes No
Packer Depth 1553 Ft. Size 6 3/4 Packer Depth 1558 Ft. Size 6 3/4
Straddle _____ Yes _____ No Conv. _____ B.T. _____ Damaged _____ Yes _____ No
Packer Depth _____ Ft. Size _____

Tool Size 5 1/2"OD Tool Jt. Size 3 1/2"IF Anchor Length 46 Ft. Size 5 1/2"OD

RECORDERS Depth 1597 Ft. Clock No. 6861 Depth 1600 Ft. Clock No. 6899
Top Make Kuster Cap. 3150 No. 1560 ~~Inside~~ Outside Bottom Make Kuster Cap. 3200 No. 1561 ~~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 3:26 P. M
Tool Open I.F.P. From 3:30 M. to 4:00P. M. Hr. 30 Min. From (B) 39 P.S.I. To (C) 47 P.S.I.
Tool Closed I.C.I.P. From 4:00 M. to 5:00P. M. 1 Hr. Min. (D) 522 P.S.I.
Tool Open F.F.P. From 5:00 M. to 7:00P. M. 2 Hr. Min. From (E) 54 P.S.I. To (F) 85 P.S.I.
Tool Closed F.C.I.P. From 7:00 M. to 8:00P. M. 1 Hr. Min. (G) 431 P.S.I.
Initial Hydrostatic Pressure (A) 753 P.S.I. Final Hydrostatic Pressure (H) 741 P.S.I.

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

BLOW Weak to very weak thru out test Bottom Choke Size 3/4 In.
Did Well Flow _____ Yes No _____ Recovery Total Ft. 135' Thin mud with specks of oil thruout

Reversed Out _____ Yes No _____ Mud Type Chem Viscosity 38 Weight 9.2 Water Loss 9.6 cc. Maximum Temp. 93 °F
Type Circ. Sub. Pfn Did Tool Plug? No Jars: Size 3 1/2IF Make WTC Ser. No. 402
EXTRA EQUIPMENT: Dual Packers Yes Safety Joint No Did Packer Hold? Yes Where? _____
Length Drill Pipe 1381 ft. I.D. Drill Pipe 2.7 in. Length Weight Pipe _____ ft. I.D. Weight Pipe _____ in. Length Drill Collars 150 ft.
I. D. Drill Collars 2 1/4 in. Length D.S.T. Tool 73 ft.

Remarks

WESTERN TESTING CO., INC.
Pressure Data

Date 6-1-68 Test Ticket No. 11079
 Recorder No. 1560 Capacity 3150 Location 1597 Ft.
 Clock No. 6861 Elevation 1108 Kelly Bushing Well Temperature 93 °F

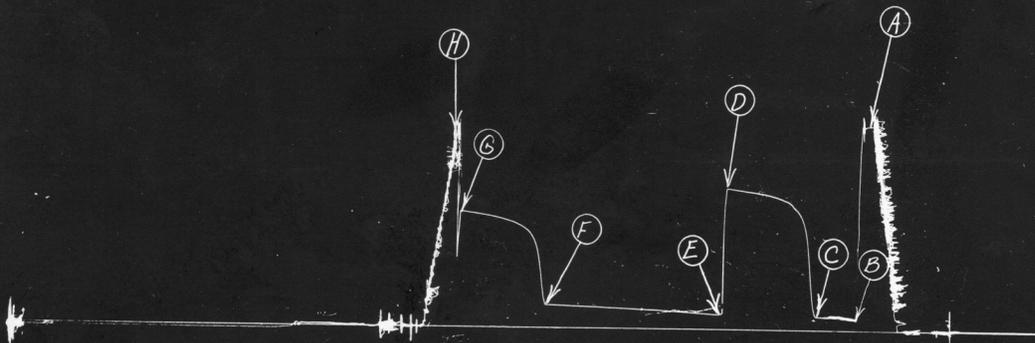
Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	753	P.S.I.	3:30 P.	
B First Initial Flow Pressure	39	P.S.I.	30	28
C First Final Flow Pressure	47	P.S.I.	60	60
D Initial Closed-in Pressure	522	P.S.I.	120	120
E Second Initial Flow Pressure	54	P.S.I.	60	60
F Second Final Flow Pressure	85	P.S.I.		
G Final Closed-in Pressure	431	P.S.I.		
H Final Hydrostatic Mud	741	P.S.I.		

PRESSURE BREAKDOWN

Point Mins.	First Flow Press.	Point Minutes	Initial Shut-In	Point Minutes	Second Flow Pressure	Point Minutes	Final Shut-In
	Breakdown: <u>5</u> Inc. of <u>5</u> mins. and a final inc. of <u>3</u> Min.		Breakdown: <u>20</u> Inc. of <u>3</u> mins. and a final inc. of <u>0</u> Min.		Breakdown: <u>24</u> Inc. of <u>5</u> mins. and a final inc. of <u>0</u> Min.		Breakdown: <u>20</u> Inc. of <u>3</u> mins. and a final inc. of <u>0</u> Min.
	Press.		Press.		Press.		Press.
P 1	39	0	47	0	54	0	85
P 2	41	3	122	5	54	3	176
P 3	42	6	312	10	56	6	280
P 4	44	9	406	15	58	9	334
P 5	45	12	432	20	60	12	357
P 6	47	15	451	25	61	15	369
P 7	47	18	468	30	63	18	380
P 8		21	476	35	65	21	386
P 9		24	486	40	67	24	392
P 10		27	489	45	69	27	398
P 11		30	493	50	70	30	403
P 12		33	498	55	71	33	408
P 13		36	501	60	72	36	412
P 14		39	504	65	73	39	415
P 15		42	507	70	75	42	418
P 16		45	510	75	77	45	421
P 17		48	512	80	78	48	424
P 18		51	515	90	80	51	426
P 19		54	518	95	80	54	428
P 20		57	520	100	81	57	430
		60	522	105	83	60	431
				110	84		
				115	85		
				120	85		

Winwell Exploration Co
Woodward #1

T.K.T.# 11079
Test # 2



This is an actual photograph of recorder chart.

POINT	PRESSURE		
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud	755	753	PSI
(B) First Initial Flow Pressure	39	39	PSI
(C) First Final Flow Pressure	47	47	PSI
(D) Initial Closed-in Pressure	520	522	PSI
(E) Second Initial Flow Pressure	54	54	PSI
(F) Second Final Flow Pressure	86	85	PSI
(G) Final Closed-in Pressure	425	431	PSI
(H) Final Hydrostatic Mud	747	741	PSI



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

Company Winnell Exploration Co. Lease & Well No. Woodward # 1
Elevation 1100 Kelly Bushing Formation Arbuckle Effective Pay _____ Ft. Ticket No. 11080
Date 6-3-68 Sec. 23 Twp. 16s Range 16e County Osage State Kansas
Test Approved by O. G. McDowell Western Representative Norman Allen

Formation Test No. 3 O.K. Misrun Interval Tested From 1980' to 1996' Total Depth 2075'
Size Main Hole 7/8 Rat Hole Conv. B.T. Damaged Yes No Conv. B.T. Damaged Yes No
Packer Depth 1980 Ft. Size 6 3/4 Packer Depth 1995 Ft. Size 6 3/4
Straddle Yes No Conv. B.T. Damaged Yes No

Packer Depth _____ Ft. Size _____
Tool Size 5 1/2" OD Tool Jt. Size 3 1/2" IF Anchor Length 16 & 79 Ft. Size 5 1/2" OD & D.P.

RECORDERS Depth 1985 Ft. Clock No. 6861 Depth 1988 Ft. Clock No. 6899
Top Make Kuster Cap. 3150 No. 1560 Inside 1561 Inside
Bottom Make Kuster Cap. 3200 No. 1561 Outside 1561 Outside
Below Straddle: Depth 2015 Clock No. 149 Inside 149 Inside
Top Make WTC Cap. 4000 No. 29 Outside 29 Outside
Bottom Make _____ Cap. _____ No. _____ Outside _____ Outside

Time Set Packer 3:56 A. M
Tool Open I.F.P. From 4:00 M. to 4:30 A M. Hr. 30 Min. From (B) 32 P.S.I. To (C) 169 P.S.I.
Tool Closed I.C.I.P. From 4:30 M. to 5:00 A M. Hr. 30 Min. (D) 701 P.S.I.
Tool Open F.F.P. From 6:00 M. to 6:00 A M. Hr. 1 Min. From (E) 188 P.S.I. To (F) 425 P.S.I.
Tool Closed F.C.I.P. From 6:00 M. to 7:00 A M. Hr. 1 Min. (G) 701 P.S.I.
Initial Hydrostatic Pressure (A) 979 P.S.I. Final Hydrostatic Pressure (H) 967 P.S.I.

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

BLOW Fair throughout test. Bottom Choke Size 3/4 In.
Did Well Flow Yes No Recovery Total Ft. 900 feet salt water.

Reversed Out Yes No Mud Type Chem. Viscosity 47 Weight 9.6 Water Loss 8.8 cc. Maximum Temp. 97 °F
Type Circ. Sub. pin Did Tool Plug? no Jars: Size 3 1/2" IF Make WTC Ser. No. 402
EXTRA EQUIPMENT: Dual Packers yes Safety Joint no Did Packer Hold? yes Where? _____
Length Drill Pipe 1905 ft. I.D. Drill Pipe 2.7 in. Length Weight Pipe _____ ft. I.D. Weight Pipe _____ in. Length Drill Collars 60 ft.
I. D. Drill Collars _____ in. Length D.S.T. Tool 110 ft.

Remarks Salt water checked 25,000 parts per million
Mud report for 6-2-68 checked 1200 parts per million.

WESTERN TESTING CO., INC.
Pressure Data

Date 6-3-68 Test Ticket No. 11082
 Recorder No. 1560 Capacity 3150 Location 1985 Ft.
 Clock No. 6861 Elevation 1108 Kelly Dushing Well Temperature 97 °F

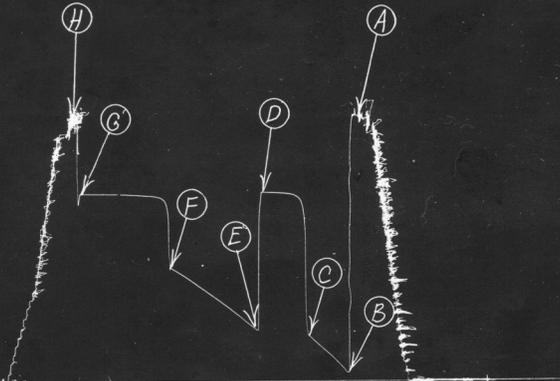
Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>979</u> P.S.I.	Opened Tool	<u>3:56 A.</u> M	
B First Initial Flow Pressure	<u>32</u> P.S.I.	First Flow Pressure	<u>30</u> Mins.	<u>30</u> Mins.
C First Final Flow Pressure	<u>169</u> P.S.I.	Initial Closed-in Pressure	<u>30</u> Mins.	<u>31</u> Mins.
D Initial Closed-in Pressure	<u>701</u> P.S.I.	Second Flow Pressure	<u>60</u> Mins.	<u>60</u> Mins.
E Second Initial Flow Pressure	<u>188</u> P.S.I.	Final Closed-in Pressure	<u>60</u> Mins.	<u>60</u> Mins.
F Second Final Flow Pressure	<u>425</u> P.S.I.			
G Final Closed-in Pressure	<u>701</u> P.S.I.			
H Final Hydrostatic Mud	<u>967</u> P.S.I.			

PRESSURE BREAKDOWN

First Flow Press.		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>6</u> Inc.		Breakdown: <u>10</u> Inc.		Breakdown: <u>12</u> Inc.		Breakdown: <u>21</u> Inc.	
of <u>5</u> mins. and a		of <u>3</u> mins. and a		of <u>5</u> mins. and a		of <u>3</u> mins. and a	
final inc. of <u>--</u> Min.		final inc. of <u>1</u> Min.		final inc. of <u>--</u> Min.		final inc. of <u>--</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 <u>0</u>	<u>32</u>	<u>0</u>	<u>169</u>	<u>0</u>	<u>188</u>	<u>0</u>	<u>425</u>
P 2 <u>5</u>	<u>50</u>	<u>3</u>	<u>549</u>	<u>5</u>	<u>206</u>	<u>3</u>	<u>657</u>
P 3 <u>10</u>	<u>80</u>	<u>6</u>	<u>665</u>	<u>10</u>	<u>229</u>	<u>6</u>	<u>681</u>
P 4 <u>15</u>	<u>103</u>	<u>9</u>	<u>686</u>	<u>15</u>	<u>253</u>	<u>9</u>	<u>687</u>
P 5 <u>20</u>	<u>130</u>	<u>12</u>	<u>690</u>	<u>20</u>	<u>274</u>	<u>12</u>	<u>690</u>
P 6 <u>25</u>	<u>153</u>	<u>15</u>	<u>695</u>	<u>25</u>	<u>294</u>	<u>15</u>	<u>692</u>
P 7 <u>30</u>	<u>169</u>	<u>18</u>	<u>698</u>	<u>30</u>	<u>315</u>	<u>18</u>	<u>695</u>
P 8		<u>21</u>	<u>700</u>	<u>35</u>	<u>335</u>	<u>21</u>	<u>696</u>
P 9		<u>24</u>	<u>701</u>	<u>40</u>	<u>354</u>	<u>24</u>	<u>698</u>
P 10		<u>27</u>	<u>701</u>	<u>45</u>	<u>375</u>	<u>27</u>	<u>700</u>
P 11		<u>30</u>	<u>701</u>	<u>50</u>	<u>394</u>	<u>30</u>	<u>701</u>
P 12		<u>31</u>	<u>701</u>	<u>55</u>	<u>409</u>	<u>33</u>	<u>701</u>
P 13				<u>60</u>	<u>425</u>	<u>36</u>	<u>701</u>
P 14						<u>39</u>	<u>701</u>
P 15						<u>42</u>	<u>701</u>
P 16						<u>45</u>	<u>701</u>
P 17						<u>48</u>	<u>701</u>
P 18						<u>51</u>	<u>701</u>
P 19						<u>54</u>	<u>701</u>
P 20						<u>57</u>	<u>701</u>
						<u>60</u>	<u>701</u>

Winwell Exploration
Woodward #1

T.K.T.# 11050
Test # 3



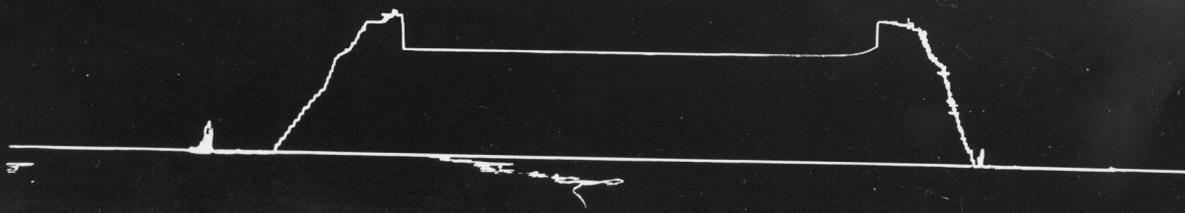
This is an actual photograph of recorder chart.

POINT	PRESSURE		
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud	982	979	PSI
(B) First Initial Flow Pressure	31	32	PSI
(C) First Final Flow Pressure	165	169	PSI
(D) Initial Closed-in Pressure	700	701	PSI
(E) Second Initial Flow Pressure	188	188	PSI
(F) Second Final Flow Pressure	417	425	PSI
(G) Final Closed-in Pressure	700	701	PSI
(H) Final Hydrostatic Mud	974	967	PSI

T.K.T.# 11080

(straddle) Test # 3

Below straddle
chart



NOMENCLATURE

b	= Approximate Radius of Investigation	Feet
b¹	= Approximate Radius of Investigation (Net Pay Zone h ¹)	Feet
D.R.	= Damage Ratio	—
EI	= Elevation	Feet
GD	= B.T. Gauge Depth (From Surface Reference)	Feet
h	= Interval Tested	Feet
h¹	= Net Pay Thickness	Feet
K	= Permeability	md
K¹	= Permeability (From Net Pay Zone h ¹)	md
m	= Slope Extrapolated Pressure Plot (Psi ² /cycle Gas)	psi/cycle
OF¹	= Maximum Indicated Flow Rate	MCF/D
OF²	= Minimum Indicated Flow Rate	MCF/D
OF³	= Theoretical Open Flow Potential with/Damage Removed Max.	MCF/D
OF⁴	= Theoretical Open Flow Potential with/Damage Removed Min.	MCF/D
P^S	= Extrapolated Static Pressure	Psig.
P^F	= Final Flow Pressure	Psig.
P^{DT}	= Potentiometric Surface (Fresh Water*)	Feet
Q	= Average Adjusted Production Rate During Test	bbls/day
Q¹	= Theoretical Production w/Damage Removed	bbls/day
Q^g	= Measured Gas Production Rate	MCF/D
R	= Corrected Recovery	bbls
r^w	= Radius of Well Bore	Feet
t	= Flow Time	Minutes
t^o	= Total Flow Time	Minutes
T	= Temperature Rankine	°R
Z	= Compressibility Factor	—
u	= Viscosity Gas or Liquid	CP
Log	= Common Log	

* Potentiometric Surface Reference to Rotary Table When Elevation Not Given, Fresh Water Corrected to 100° F.