



Home Office: Wichita, Kansas 67201
P.O. Box 1599 (316) 262-5861

Company Graves Drilling Company, Inc. Lease & Well No. Sloan #1
Elevation 1855 Kelly Bushing Base-Kansas City Effective Pay --- Ft. Ticket No. 721
Date 9/3/80 Sec. 2 Twp. 24S Range 12W County Stafford State Kansas
Test Approved by R. M. Lineham Western Representative Dan Delaney
Formation Test No. 1 Interval Tested from 3643 ft. to 3680 ft. Total Depth 3680 ft.
Packer Depth 3643 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.
Packer Depth 3638 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.
Depth of Selective Zone Set -
Top Recorder Depth (Inside) 3647 ft. Recorder Number 6234 Cap. 4500
Bottom Recorder Depth (Outside) 3650 ft. Recorder Number 4339 Cap. 4300
Below Straddle Recorder Depth - ft. Recorder Number - Cap. -
Drilling Contractor Brandt Drlg. Rig #2 Drill Collar Length 121 I. D. 2.2 in.
Mud Type drispac Viscosity 42 Weight Pipe Length 279 I. D. 2.7 in.
Weight 9.7 Water Loss 11.6 cc. Drill Pipe Length 322 I. D. 3.8 in.
Chlorides 24,000 P.P.M. Test Tool Length 21 ft. Tool Size 4 1/2 in.
Jars: Make - Serial Number - Anchor Length 37 ft. Size 5 1/2 in.
Did Well Flow? No Reversed Out No Surface Choke Size 1/2 in. Bottom Choke Size 1/2 in.
Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 in.

Initial flow very weak blow; died in three minutes; flushed tool, weak blow.
Final flow no blow.

Recovered 10 ft. of mud
Recovered - ft. of -
Recovered - ft. of -
Recovered - ft. of -
Recovered - ft. of -
Remarks: -

Time Set Packer(s) 9:15 ~~P.M.~~ ^{A.M.} Time Started Off Bottom 10:30 ~~P.M.~~ ^{A.M.} Maximum Temperature 107°
Initial Hydrostatic Pressure 1855 (A) 1855 P.S.I.
Initial Flow Period 15 Minutes (B) 50 P.S.I. to (C) 48 P.S.I.
Initial Closed In Period 30 Minutes (D) 1031 P.S.I.
Final Flow Period 10 Minutes (E) 64 P.S.I. to (F) 53 P.S.I.
Final Closed In Period 18 Minutes (G) 624 P.S.I.
Final Hydrostatic Pressure 1837 (H) 1837 P.S.I.

WESTERN TESTING CO., INC.

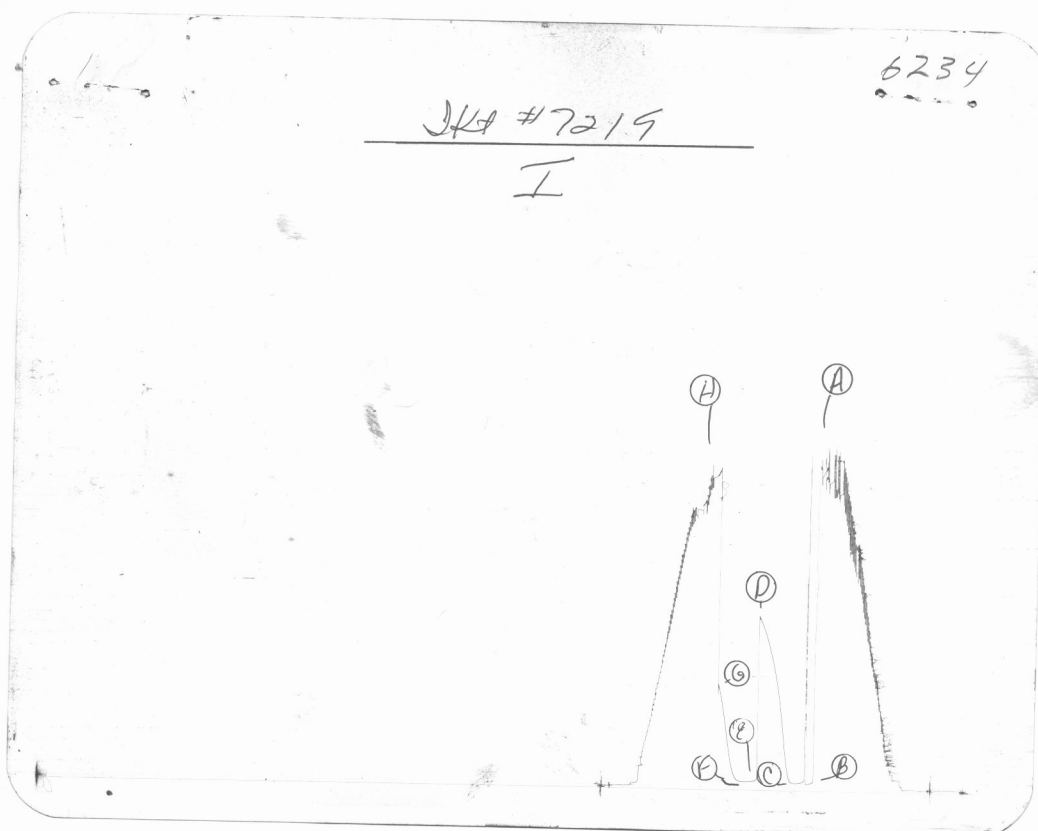
Pressure Data

Date 9-3-80 Test Ticket No. 7219
 Recorder No. 6234 Capacity 4500 Location 3647 Ft.
 Clock No. ----- Elevation 1855 Kelly Bushing Well Temperature 107 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	1855	P.S.I.	9:15 A	M
B First Initial Flow Pressure	50	P.S.I.	15	Mins. 15 Mins.
C First Final Flow Pressure	48	P.S.I.	30	Mins. 30 Mins.
D Initial Closed-in Pressure	1031	P.S.I.	10	Mins. 10 Mins.
E Second Initial Flow Pressure	64	P.S.I.	20	Mins. 18 Mins.
F Second Final Flow Pressure	53	P.S.I.		
G Final Closed-in Pressure	624	P.S.I.		
H Final Hydrostatic Mud	1837	P.S.I.		

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>3</u> Inc.		Breakdown: <u>10</u> Inc.		Breakdown: <u>2</u> Inc.		Breakdown: <u>6</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>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 <u>0</u>	<u>50</u>	<u>0</u>	<u>48</u>	<u>0</u>	<u>64</u>	<u>0</u>	<u>53</u>
P 2 <u>5</u>	<u>44</u>	<u>3</u>	<u>76</u>	<u>5</u>	<u>53</u>	<u>3</u>	<u>71</u>
P 3 <u>10</u>	<u>52</u>	<u>6</u>	<u>193</u>	<u>10</u>	<u>53</u>	<u>6</u>	<u>138</u>
P 4 <u>15</u>	<u>48</u>	<u>9</u>	<u>374</u>			<u>9</u>	<u>259</u>
P 5		<u>12</u>	<u>543</u>			<u>13</u>	<u>401</u>
P 6		<u>15</u>	<u>664</u>			<u>15</u>	<u>538</u>
P 7		<u>18</u>	<u>775</u>			<u>18</u>	<u>624</u>
P 8		<u>21</u>	<u>854</u>				
P 9		<u>24</u>	<u>941</u>				
P10		<u>27</u>	<u>1000</u>				
P11		<u>30</u>	<u>1031</u>				
P12							
P13							
P14							
P15							
P16							
P17							
P18							
P19							
P20							



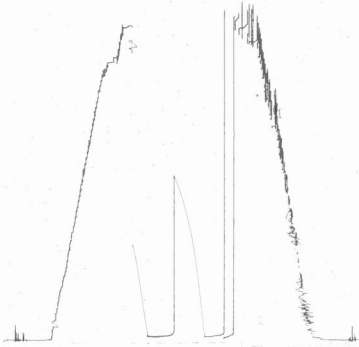
This is an actual photograph of recorder chart.

POINT	PRESSURE	
	Field Reading	Office Reading
(A) Initial Hydrostatic Mud	1893	1855
(B) First Initial Flow Pressure	45	50
(C) First Final Flow Pressure	45	48
(D) Initial Closed-in Pressure	1022	1031
(E) Second Initial Flow Pressure	45	64
(F) Second Final Flow Pressure	45	53
(G) Final Closed-in Pressure	628	624
(H) Final Hydrostatic Mud	1887	1837

4339

Spk #7219

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Company Graves Drilling Company, Inc. Lease & Well No. Sloan #1
Elevation 1855 Kelly Bushing Viola Effective Pay -- Ft. Ticket No. 7220
Date 9/4/80 Sec. 2 Twp. 24S Range 12W County Stafford State Kansas
Test Approved by R. M. Lineham Western Representative Dan Delaney
Formation Test No. 2 Interval Tested from 3771 ft. to 3785 ft. Total Depth 3785 ft.
Packer Depth 3771 ft. Size 6 in. 3/4 Packer Depth - ft. Size - in.
Packer Depth 3766 ft. Size 6 in. 3/4 Packer Depth - ft. Size - in.
Depth of Selective Zone Set -
Top Recorder Depth (Inside) 3175 ft. Recorder Number 6234 Cap. 4500
Bottom Recorder Depth (Outside) 3178 ft. Recorder Number 4339 Cap. 4300
Below Straddle Recorder Depth - ft. Recorder Number - Cap. -
Drilling Contractor Brandt Drlg. Rig #2 Drill Collar Length 121 I. D. 2.2 in.
Mud Type drispac Viscosity 42 Weight Pipe Length 279 I. D. 2.7 in.
Weight 9.7 Water Loss 11.6 cc. Drill Pipe Length 3350 I. D. 3.8 in.
Chlorides 24,000 P.P.M. Test Tool Length 21 ft. Tool Size 4 1/2 in.
Jars: Make - Serial Number - Anchor Length 14 ft. Size 5 1/2 in.
Did Well Flow? No Reversed Out No Surface Choke Size 1/2 in. Bottom Choke Size 1/2 in.
Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 XHn

Initial flow period, weak blow throughout. Fihal flow period no blow.
Blow: Flushed tool, no help.

Recovered 15 ft. of mud
Recovered ft. of
Recovered ft. of
Recovered ft. of
Recovered ft. of

Remarks:

Time Set Packer(s) 3:55 A.M. P.M. Time Started Off Bottom 5:25 A.M. P.M. Maximum Temperature 109°
Initial Hydrostatic Pressure (A) 1896 P.S.I.
Initial Flow Period Minutes 15 (B) 53 P.S.I. to (C) 46 P.S.I.
Initial Closed In Period Minutes 27 (D) 55 P.S.I.
Final Flow Period Minutes 15 (E) 46 P.S.I. to (F) 56 P.S.I.
Final Closed In Period Minutes 27 (G) 55 P.S.I.
Final Hydrostatic Pressure (H) 1880 P.S.I.

WESTERN TESTING CO., INC.

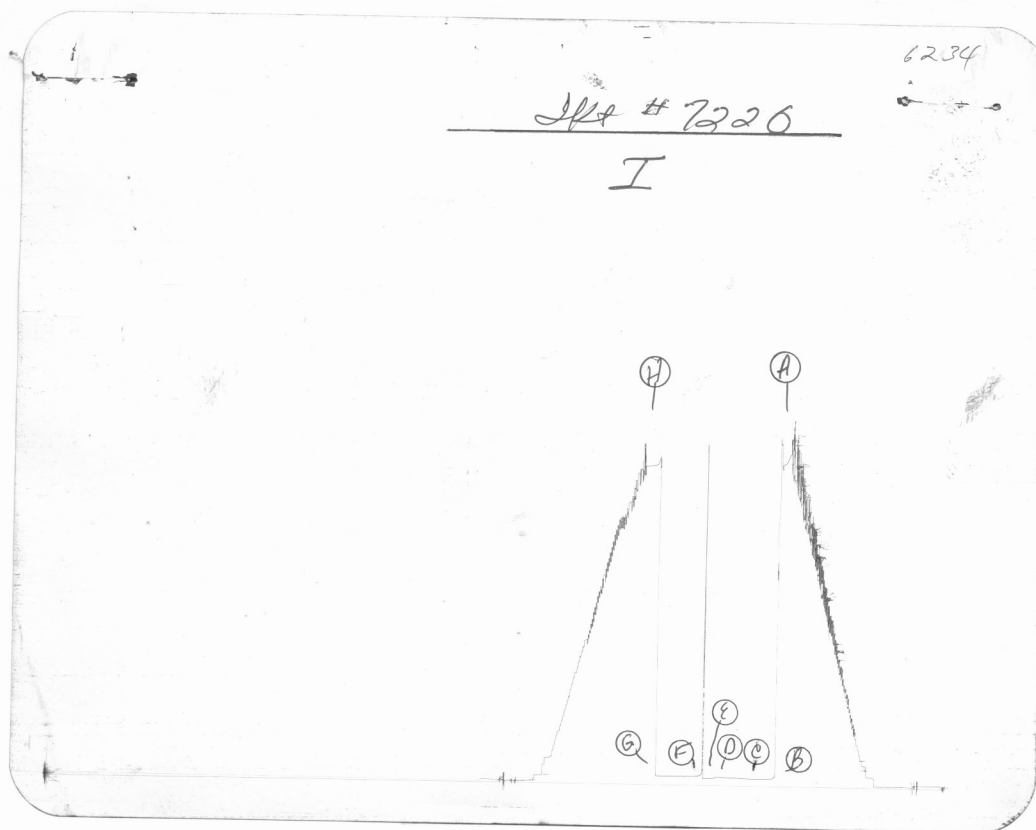
Pressure Data

Date 9-4-80 Test Ticket No. 7220
 Recorder No. 6234 Capacity 4500 Location 3175 Ft.
 Clock No. ----- Elevation 1855 Kelly Bushing Well Temperature 109 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>1896</u> P.S.I.	Open Tool	<u>3:55 A M</u>	
B First Initial Flow Pressure	<u>53</u> P.S.I.	First Flow Pressure	<u>15</u> Mins.	<u>15</u> Mins.
C First Final Flow Pressure	<u>46</u> P.S.I.	Initial Closed-in Pressure	<u>30</u> Mins.	<u>27</u> Mins.
D Initial Closed-in Pressure	<u>55</u> P.S.I.	Second Flow Pressure	<u>15</u> Mins.	<u>15</u> Mins.
E Second Initial Flow Pressure	<u>46</u> P.S.I.	Final Closed-in Pressure	<u>30</u> Mins.	<u>27</u> Mins.
F Second Final Flow Pressure	<u>56</u> P.S.I.			
G Final Closed-in Pressure	<u>55</u> P.S.I.			
H Final Hydrostatic Mud	<u>1880</u> P.S.I.			

PRESSURE BREAKDOWN.

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>3</u> Inc.		Breakdown: <u>9</u> Inc.		Breakdown: <u>3</u> Inc.		Breakdown: <u>9</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>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 <u>0</u>	<u>53</u>	<u>0</u>	<u>46</u>	<u>0</u>	<u>46</u>	<u>0</u>	<u>56</u>
P 2 <u>5</u>	<u>46</u>	<u>3</u>	<u>47</u>	<u>5</u>	<u>44</u>	<u>3</u>	<u>56</u>
P 3 <u>10</u>	<u>46</u>	<u>6</u>	<u>48</u>	<u>10</u>	<u>63</u>	<u>6</u>	<u>55</u>
P 4 <u>15</u>	<u>46</u>	<u>9</u>	<u>49</u>	<u>15</u>	<u>56</u>	<u>9</u>	<u>55</u>
P 5		<u>12</u>	<u>49</u>			<u>12</u>	<u>55</u>
P 6		<u>15</u>	<u>50</u>			<u>15</u>	<u>55</u>
P 7		<u>18</u>	<u>51</u>			<u>18</u>	<u>55</u>
P 8		<u>21</u>	<u>53</u>			<u>21</u>	<u>55</u>
P 9		<u>24</u>	<u>54</u>			<u>24</u>	<u>55</u>
P10		<u>27</u>	<u>55</u>			<u>27</u>	<u>55</u>
P11							
P12							
P13							
P14							
P15							
P16							
P17							
P18							
P19							
P20							

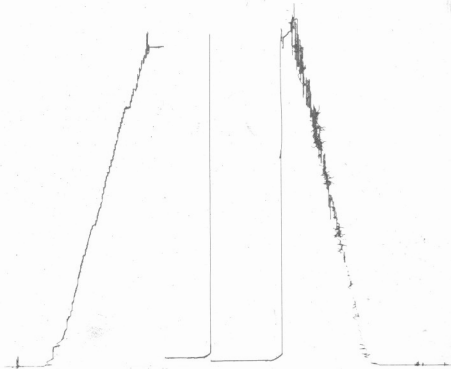


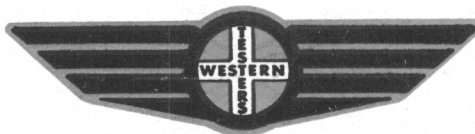
This is an actual photograph of recorder chart.

POINT	PRESSURE	
	Field Reading	Office Reading
(A) Initial Hydrostatic Mud	1927	1896 PSI
(B) First Initial Flow Pressure	34	53 PSI
(C) First Final Flow Pressure	34	46 PSI
(D) Initial Closed-in Pressure	45	55 PSI
(E) Second Initial Flow Pressure	34	46 PSI
(F) Second Final Flow Pressure	45	56 PSI
(G) Final Closed-in Pressure	45	55 PSI
(H) Final Hydrostatic Mud	1904	1880 PSI

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JKT # 7220
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P.O. Box 1599

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Company Graves Drilling Company, Inc. Lease & Well No. Sloan #1
Elevation 1855 Kelly Bushing Viola Effective Pay ---- Ft. Ticket No. 7221
Date 9/4/80 Sec. 2 Twp. 24S Range 12W County Stafford State Kansas
Test Approved by R. M. Linchan Western Representative Dan Delaney

Formation Test No. 3 Interval Tested from 3785 ft. to 3815 ft. Total Depth 3815 ft.

Packer Depth 3785 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.

Packer Depth 3780 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.

Depth of Selective Zone Set -

Top Recorder Depth (Inside) 3802 ft. Recorder Number 6234 Cap. 4500

Bottom Recorder Depth (Outside) 3805 ft. Recorder Number 4339 Cap. 4300

Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor Brandt Drlg. Rig #2 Drill Collar Length 121 I. D. 2.2 in.

Mud Type drispac Viscosity 48 Weight Pipe Length 279 I. D. 2.7 in.

Weight 9.7 Water Loss 18.6 cc. Drill Pipe Length 3364 I. D. 3.8 in.

Chlorides 28,000 P.P.M. Test Tool Length 21 ft. Tool Size 4 1/2 in.

Jars: Make -- Serial Number - Anchor Length 30 ft. Size 5 1/2 in.

Did Well Flow? No Reversed Out No Surface Choke Size 1/2 in. Bottom Choke Size 1/2 in.

Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 XH in.

Blow: Initial flow, weak blow slowly building.

Final flow weak blow.

Recovered 60 ft. of mud

Recovered ft. of

Recovered ft. of

Recovered ft. of

Recovered ft. of

Remarks:

Time Set Packer(s) 3:10 A.M. Time Started Off Bottom 5:10 A.M. Maximum Temperature 108°
P.M. P.M.

Initial Hydrostatic Pressure (A) 1948 P.S.I.

Initial Flow Period Minutes 15 (B) 60 P.S.I. to (C) 55 P.S.I.

Initial Closed In Period Minutes 45 (D) 757 P.S.I.

Final Flow Period Minutes 30 (E) 73 P.S.I. to (F) 64 P.S.I.

Final Closed In Period Minutes 27 (G) 101 P.S.I.

Final Hydrostatic Pressure (H) 1889 P.S.I.

WESTERN TESTING CO., INC.

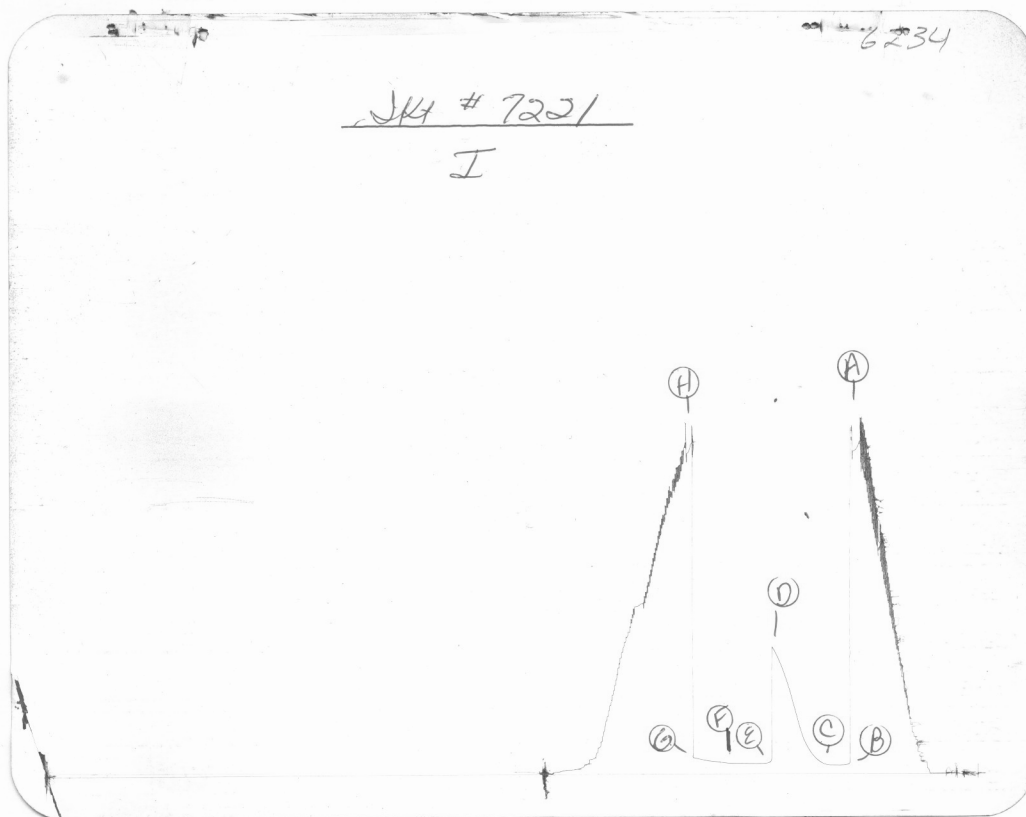
Pressure Data

Date 9-4-80 Test Ticket No. 7221
 Recorder No. 6234 Capacity 4500 Location 3802 Ft.
 Clock No. - Elevation 1855 Kelly Bushing Well Temperature 108 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>1948</u>	P.S.I.	<u>3:10P</u>	<u>M</u>
B First Initial Flow Pressure	<u>60</u>	P.S.I.	<u>15</u>	<u>15</u> Mins.
C First Final Flow Pressure	<u>55</u>	P.S.I.	<u>45</u>	<u>45</u> Mins.
D Initial Closed-in Pressure	<u>757</u>	P.S.I.	<u>30</u>	<u>30</u> Mins.
E Second Initial Flow Pressure	<u>73</u>	P.S.I.	<u>30</u>	<u>27</u> Mins.
F Second Final Flow Pressure	<u>64</u>	P.S.I.		
G Final Closed-in Pressure	<u>101</u>	P.S.I.		
H Final Hydrostatic Mud	<u>1889</u>	P.S.I.		

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>3</u> Inc.		Breakdown: <u>15</u> Inc.		Breakdown: <u>6</u> Inc.		Breakdown: <u>9</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>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 <u>0</u>	<u>60</u>	<u>0</u>	<u>55</u>	<u>0</u>	<u>73</u>	<u>0</u>	<u>64</u>
P 2 <u>5</u>	<u>55</u>	<u>3</u>	<u>57</u>	<u>5</u>	<u>66</u>	<u>3</u>	<u>69</u>
P 3 <u>10</u>	<u>55</u>	<u>6</u>	<u>71</u>	<u>10</u>	<u>64</u>	<u>6</u>	<u>71</u>
P 4 <u>15</u>	<u>55</u>	<u>9</u>	<u>87</u>	<u>15</u>	<u>64</u>	<u>9</u>	<u>76</u>
P 5		<u>12</u>	<u>112</u>	<u>20</u>	<u>64</u>	<u>12</u>	<u>78</u>
P 6		<u>15</u>	<u>145</u>	<u>25</u>	<u>64</u>	<u>15</u>	<u>79</u>
P 7		<u>18</u>	<u>183</u>	<u>30</u>	<u>64</u>	<u>18</u>	<u>84</u>
P 8		<u>21</u>	<u>241</u>			<u>21</u>	<u>89</u>
P 9		<u>24</u>	<u>317</u>			<u>24</u>	<u>92</u>
P10		<u>27</u>	<u>404</u>			<u>27</u>	<u>101</u>
P11		<u>30</u>	<u>482</u>				
P12		<u>33</u>	<u>554</u>				
P13		<u>36</u>	<u>622</u>				
P14		<u>39</u>	<u>678</u>				
P15		<u>42</u>	<u>727</u>				
P16		<u>45</u>	<u>757</u>				
P17							
P18							
P19							
P20							

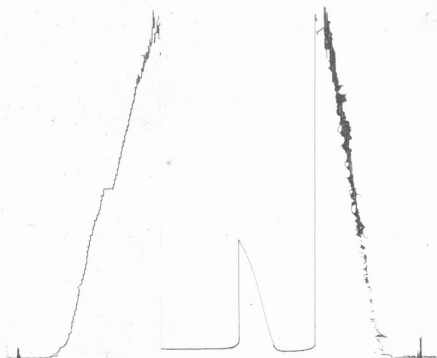


This is an actual photograph of recorder chart.

POINT	PRESSURE	
	Field Reading	Office Reading
(A) Initial Hydrostatic Mud	1927	1948
(B) First Initial Flow Pressure	57	60
(C) First Final Flow Pressure	57	55
(D) Initial Closed-in Pressure	752	757
(E) Second Initial Flow Pressure	68	73
(F) Second Final Flow Pressure	68	64
(G) Final Closed-in Pressure	91	101
(H) Final Hydrostatic Mud	1916	1889

SLT # 2221

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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^{OT}	= 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.