



P. O. BOX 1599 PHONE (316) 838-0601
WICHITA, KANSAS 67201

WESTERN TESTING CO., INC.
FORMATION TESTING

TICKET No 1557

Elevation 1613 KB Formation Indian Cave Eff. Pay Ft.

District Pratt Date 3-8-79 Customer Order No.

COMPANY NAME Graves Drills Co. Inc.

ADDRESS 910 Union Center Wichita Kansas 67202

LEASE AND WELL NO. Youngers #1 COUNTY Barber STATE KANSAS Sec. 22 Twp. 31S Rge. 12W

Mail Invoice To Co. Name Address No. Copies Requested 5

Mail Charts To Address No. Copies Requested 5

Formation Test No. 71 Interval Tested from 2623 ft. to 2668 ft. Total Depth 2668 ft.

Packer Depth 2618 ft. Size 6 3/4 in. Packer Depth ft. Size in.

Packer Depth 2623 ft. Size 6 3/4 in. Packer Depth ft. Size in.

Depth of Selective Zone Set

Top Recorder Depth (Inside) 2627 ft. Recorder Number 3660 Cap. 4000

Bottom Recorder Depth (Outside) 2630 ft. Recorder Number 1051 Cap. 4250

Below Straddle Recorder Depth ft. Recorder Number Cap.

Drilling Contractor Company Tools Rig #1 Drill Collar Length 122 I. D. 2 1/4 in.

Mud Type Premix Viscosity 32 Weight Pipe Length 1049 I. D. 2.7 in.

Weight 9.8 Water Loss 11.5 cc. Drill Pipe Length 1431 I. D. 3.8 in.

Chlorides 45,000 P.P.M. Test Tool Length 21 in. Tool Size 5 1/2 in.

Jars: Make Serial Number Anchor Length 45 ft. Size 5 1/2 in.

Did Well Flow? NO Reversed Out NO Surface Choke Size 3/4 in. Bottom Choke Size 3/4 in.

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

Blow: Weak first Period: Weak and Died in 57 min
second Period

Recovered ft. of ~~NO RECORD~~

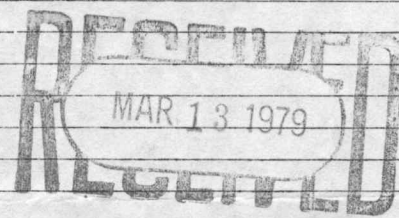
Recovered 2 ft. of mud

Recovered ft. of

Recovered ft. of

Recovered ft. of

Remarks: Read outside recorder #1051



Time Set Packer(s) 6:54 A.M. Time Started Off Bottom 8:39 A.M. Maximum Temperature 120°

Initial Hydrostatic Pressure (A) 1363 P.S.I.

Initial Flow Period 15 Minutes (B) 20 P.S.I. to (C) 20 P.S.I.

Initial Closed In Period 30 Minutes (D) 20 P.S.I.

Final Flow Period 30 Minutes (E) 10 P.S.I. to (F) 10 P.S.I.

Final Closed In Period 30 Minutes (G) 20 P.S.I.

Final Hydrostatic Pressure (H) 1343 P.S.I.

COMPANY TERMS

Western Testing Co., Inc. shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained directly or indirectly through the use of its equipment, of its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid at cost by the party for whom the test is made.

All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By H. Steenamp
Signature of Customer or his authorized representative

Western Representative Ron Emmers Thank You

FIELD INVOICE

Open Hole Test \$ 440.00
Misrun \$
Straddle Test \$
Jars \$
Selective Zone \$
Safety Joint \$
Standby \$
Evaluation \$
Extra Packer \$
Circ. Sub. \$
Mileage \$
Extra Charts \$

TOTAL \$ 440.00

WESTERN TESTING CO., INC.

Pressure Data

Date 3-8-79 Test Ticket No. 1557
 Recorder No. 1051 Capacity 4250 Location 2630 Ft.
 Clock No. _____ Elevation 1613 KB Well Temperature 120 °F

Point	Pressure	Time Given	Time Computed
A Initial Hydrostatic Mud	<u>1360</u> P.S.I.	Open Tool <u>6:54 PM</u>	
B First Initial Flow Pressure	<u>52</u> P.S.I.	First Flow Pressure <u>15</u> Mins.	<u>15</u> Mins.
C First Final Flow Pressure	<u>45</u> P.S.I.	Initial Closed-in Pressure <u>30</u> Mins.	<u>30</u> Mins.
D Initial Closed-in Pressure	<u>45</u> P.S.I.	Second Flow Pressure <u>30</u> Mins.	<u>30</u> Mins.
E Second Initial Flow Pressure	<u>45</u> P.S.I.	Final Closed-in Pressure <u>30</u> Mins.	<u>30</u> Mins.
F Second Final Flow Pressure	<u>45</u> P.S.I.		
G Final Closed-in Pressure	<u>45</u> P.S.I.		
H Final Hydrostatic Mud	<u>1345</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>10</u> Inc.		Breakdown: <u>6</u> Inc.		Breakdown: <u>10</u> Inc.	
of <u>5</u> mins. and a final inc. of <u>0</u> Min.		of <u>3</u> mins. and a final inc. of <u>0</u> Min.		of <u>5</u> mins. and a final inc. of <u>0</u> Min.		of <u>3</u> mins. and a 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>52</u>	<u>0</u>	<u>45</u>	<u>0</u>	<u>45</u>	<u>0</u>	<u>45</u>
P 2 <u>5</u>	<u>45</u>	<u>3</u>		<u>5</u>		<u>3</u>	
P 3 <u>10</u>	<u>45</u>	<u>6</u>		<u>10</u>		<u>6</u>	
P 4 <u>15</u>	<u>45</u>	<u>9</u>		<u>15</u>		<u>9</u>	
P 5 <u>20</u>		<u>12</u>		<u>20</u>		<u>12</u>	
P 6 <u>25</u>		<u>15</u>		<u>25</u>		<u>15</u>	
P 7 <u>30</u>		<u>18</u>		<u>30</u>	<u>45</u>	<u>18</u>	
P 8 <u>35</u>		<u>21</u>		<u>35</u>		<u>21</u>	
P 9 <u>40</u>		<u>24</u>		<u>40</u>		<u>24</u>	
P10 <u>45</u>		<u>27</u>		<u>45</u>		<u>27</u>	
P11 <u>50</u>		<u>30</u>	<u>45</u>	<u>50</u>		<u>30</u>	<u>45</u>
P12 <u>55</u>		<u>33</u>		<u>55</u>		<u>33</u>	
P13 <u>60</u>		<u>36</u>		<u>60</u>		<u>36</u>	
P14		<u>39</u>		<u>65</u>		<u>39</u>	
P15		<u>42</u>		<u>70</u>		<u>42</u>	
P16		<u>45</u>		<u>75</u>		<u>45</u>	
P17		<u>48</u>		<u>80</u>		<u>48</u>	
P18		<u>51</u>		<u>85</u>		<u>51</u>	
P19		<u>54</u>		<u>90</u>		<u>54</u>	
P20		<u>57</u>				<u>57</u>	
		<u>60</u>				<u>60</u>	



Home Office: Wichita, Kansas 67201

P. O. Box 1599

(316) 838-0601

Company Graves Drilling Company, Inc. Lease & Well No. Youngers #1
Elevation 1613 Kelly Bushing Formation Indian Cave Effective Pay -- Ft. Ticket No. 1557
Date 3/8/79 Sec. 22 Twp. 31S Range 12W County Barber State Kansas
Test Approved by H. Steincamp Western Representative Ron Emmons
Formation Test No. 1 Interval Tested from 2623' ft. to 2668' ft. Total Depth 2668' ft.
Packer Depth 2614 ft. Size 6 3/4 in. Packer Depth -- ft. Size -- in.
Packer Depth 2623 ft. Size 6 3/4 in. Packer Depth -- ft. Size -- in.
Depth of Selective Zone Set --
Top Recorder Depth (Inside) 2627 ft. Recorder Number 3660 Cap. 4000
Bottom Recorder Depth (Outside) 2630 ft. Recorder Number 1051 Cap. 4250
Below Straddle Recorder Depth -- ft. Recorder Number -- Cap. --
Drilling Contractor Graves Drilling Rig #1 Drill Collar Length 122 I. D. 2 1/4 in.
Mud Type premix Viscosity 32 Weight Pipe Length 1049 I. D. 2.7 in.
Weight 9.8 Water Loss N.C. 75 cc. Drill Pipe Length 1431 I. D. 3.8 in.
Chlorides 45,000 P.P.M. Test Tool Length 21' in. Tool Size 5 1/2 OD in.
Jars: Make -- Serial Number -- Anchor Length 45; ft. Size 5 1/2 OD in.
Did Well Flow? NO Reversed Out NO Surface Choke Size 3/4 in. Bottom Choke Size 3/4 in.
Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 FH in.

Blow: Weak first period; Weak and died in 57 minutes second period.

Recovered 2 ft. of mud

Recovered -- ft. of --

Recovered -- ft. of --

Recovered -- ft. of --

Recovered -- ft. of --

Remarks: READ OUTSIDE RECORDER #1051

Time Set Packer(s) 6:54 A.M. Time Started Off Bottom 8:39 P.M. Maximum Temperature 120
Initial Hydrostatic Pressure (A) 1360 P.S.I.
Initial Flow Period Minutes 15 (B) 52 P.S.I. to (C) 45 P.S.I.
Initial Closed In Period Minutes 30 (D) 45 P.S.I.
Final Flow Period Minutes 30 (E) 45 P.S.I. to (F) 45 P.S.I.
Final Closed In Period Minutes 30 (G) 45 P.S.I.
Final Hydrostatic Pressure (H) 1345 P.S.I.

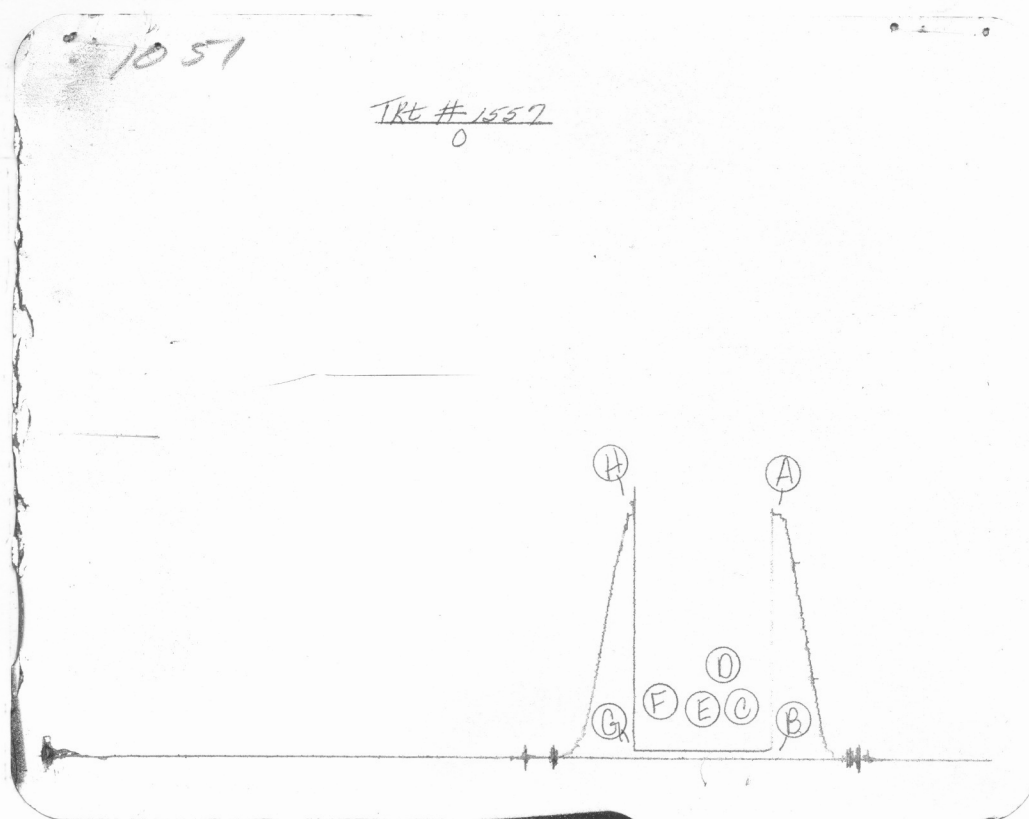
WESTERN TESTING CO., INC.

Pressure Data

Date 3/8/79 Test Ticket No. 1557
 Recorder No. 1051 Capacity 4250 Location 2630 Ft.
 Clock No. -- Elevation 1613 Kelly Bushing Well Temperature 120 °F
 Point Pressure Time Given Time Computed
 A Initial Hydrostatic Mud 1360 P.S.I. Open Tool 6:54P M
 B First Initial Flow Pressure 52 P.S.I. First Flow Pressure 15 Mins. 15 Mins.
 C First Final Flow Pressure 45 P.S.I. Initial Closed-in Pressure 30 Mins. 30 Mins.
 D Initial Closed-in Pressure 45 P.S.I. Second Flow Pressure 30 Mins. 30 Mins.
 E Second Initial Flow Pressure 45 P.S.I. Final Closed-in Pressure 30 Mins. 30 Mins.
 F Second Final Flow Pressure 45 P.S.I.
 G Final Closed-in Pressure 45 P.S.I.
 H Final Hydrostatic Mud 1345 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>6</u> Inc.		Breakdown: <u>10</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>52</u>	<u>0</u>	<u>45</u>	<u>0</u>	<u>45</u>	<u>0</u>	<u>45</u>
P 2 <u>5</u>	<u>45</u>	<u>3</u>	<u>45</u>	<u>5</u>	<u>45</u>	<u>3</u>	<u>45</u>
P 3 <u>10</u>	<u>45</u>	<u>6</u>	<u>45</u>	<u>10</u>	<u>45</u>	<u>6</u>	<u>45</u>
P 4 <u>15</u>	<u>45</u>	<u>9</u>	<u>45</u>	<u>15</u>	<u>45</u>	<u>9</u>	<u>45</u>
P 5		<u>12</u>	<u>45</u>	<u>20</u>	<u>45</u>	<u>12</u>	<u>45</u>
P 6		<u>15</u>	<u>45</u>	<u>25</u>	<u>45</u>	<u>15</u>	<u>45</u>
P 7		<u>18</u>	<u>45</u>	<u>30</u>	<u>45</u>	<u>18</u>	<u>45</u>
P 8		<u>21</u>	<u>45</u>			<u>21</u>	<u>45</u>
P 9		<u>24</u>	<u>45</u>			<u>24</u>	<u>45</u>
P 10		<u>27</u>	<u>45</u>			<u>27</u>	<u>45</u>
P 11		<u>30</u>	<u>45</u>			<u>30</u>	<u>45</u>
P 12							
P 13							
P 14							
P 15							
P 16							
P 17							
P 18							
P 19							
P 20							



This is an actual photograph of recorder chart.

POINT	PRESSURE		
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud	1363	1360	PSI
(B) First Initial Flow Pressure	20	52	PSI
(C) First Final Flow Pressure	20	45	PSI
(D) Initial Closed-in Pressure	20	45	PSI
(E) Second Initial Flow Pressure	10	45	PSI
(F) Second Final Flow Pressure	10	45	PSI
(G) Final Closed-in Pressure	20	45	PSI
(H) Final Hydrostatic Mud	1343	1345	PSI

3660

TKT # 1557

I

H

A

B

F

D

E

C

B



WESTERN TESTING CO., INC.

FORMATION TESTING

TICKET

No

1247

P. O. BOX 1599 PHONE (316) 838-0601

WICHITA, KANSAS 67201

Elevation

1613 RB

Formation

MISS

Eff. Pay Ft.

District

PRATT

Date

KANSAS 3-13-79

Customer Order No.

COMPANY NAME

Graves - Stat Drilling Co. Inc.

ADDRESS

910 Union Center Building Wichita, Kansas 67202

LEASE AND WELL NO

Youngers #1

COUNTY

PRATT

STATE

KANSAS Sec. 22 Twp. 31S Rge. 12W

Mail Invoice To

Same

No. Copies Requested

Co. Name

Address

Mail Charts To

Same

No. Copies Requested

Address

Formation Test No.

2

Interval Tested from

4282

ft. to

4310

ft.

Total Depth

4310

ft.

Packer Depth

4273

ft.

Size

6 3/4 in.

Packer Depth

—

ft.

Size

— in.

Packer Depth

4282

ft.

Size

6 3/4 in.

Packer Depth

—

ft.

Size

— in.

Depth of Selective Zone Set

Top Recorder Depth (Inside)

4286

ft.

Recorder Number

2604

Cap.

4150

Bottom Recorder Depth (Outside)

4289

ft.

Recorder Number

2606

Cap.

4150

Below Straddle Recorder Depth

ft.

Recorder Number

Cap.

Drilling Contractor

Graves Drilling

Drill Collar Length

122'

I. D.

2 1/2 in.

Mud Type

Remix

Viscosity

55

Weight Pipe Length

270

I. D.

2 1/2 in.

Weight

9.3

Water Loss

16.5 cc.

Drill Pipe Length

3869

I. D.

3.8 in.

Chlorides

16,000

P.P.M.

Test Tool Length

21 in.

Tool Size

5500 in.

Jars: Make

NO

Serial Number

NO

Anchor Length

28 ft.

Size

5500 in.

Did Well Flow?

NO

Reversed Out

NO

Surface Choke Size

3/4 in.

Bottom Choke Size

3/4 in.

Main Hole Size

7 7/8 in.

Tool Joint Size 4 1/2 FN in.

Blow:

Strong blow through out test gas to surface in 14 minutes see flow chart

Recovered

90 ft.

of

slightly oil & gas cut mud

Recovered

60 ft.

of

Heavy oil & gas cut mud

Recovered

60 ft.

of

Very Heavy oil & gas cut mud

Recovered

ft.

of

Recovered

ft.

of

Remarks:

RECEIVED
MAR 15 1979

Time Set Packer(s)

1:00

A.M.
P.M.

Time Started Off Bottom

4:00

A.M.
P.M.

Maximum Temperature

118° f

Initial Hydrostatic Pressure

(A)

2295

P.S.I.

Initial Flow Period

Minutes

15

(B)

85

P.S.I. to (C)

74

P.S.I.

Initial Closed In Period

Minutes

45

(D)

1558

P.S.I.

Final Flow Period

Minutes

60

(E)

63

P.S.I. to (F)

53

P.S.I.

Final Closed In Period

Minutes

60

(G)

1527

P.S.I.

Final Hydrostatic Pressure

(H)

2263

P.S.I.

COMPANY TERMS

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All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By

Signature of Customer or his authorized representative

Western Representative

Karl J. J. Thank you

FIELD INVOICE

Open Hole Test

\$ 460.00

Misrun

\$

Straddle Test

\$

Jars

\$

Selective Zone

\$

Safety Joint

\$

Standby

\$

Evaluation

\$

Extra Packer

\$

Circ. Sub.

\$

Mileage

\$

Extra Charts

\$

TOTAL

\$ 460.00



GAS FLOW REPORT

Nº 1393

Date 3-13-79 Ticket 1247 Company GRAVES + E/AL
Well Name and No. ~~GRAVES + E/AL~~ YOUNGER Dst No. 2 Interval Tested 4282-4310
County BARBER State KANSAS Sec. 22 Twp. 31 S Rg. 12 W

Time Gauge in Min.	P.S.I. on Merla Orifice Well Tester	Size of Orifice	P.S.I. on Pitot Tester	P.S.I. on Side Static Tester	Description of Flow
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[illegible]

Picks of water			SECOND FLOW		
2,000			Tool open		
10	10"	1"		84,600	mcf/D
20	8"			73,100	}
30	8"			23,100	
40	8"			23,100	
50	8"			23,100	
60	8"			23,100	
					No gas sample requested

GAS BOTTLE

Serial No. _____ Date Bottle Filled _____ Date to be Invoiced _____

Requisition and Provisions for high pressure stainless steel gas bottles. Western Testing Co., Inc. shall not be liable for damage of any kind to property or personnel of the one whom gas bottle is filled or for any loss suffered or sustained directly or indirectly through the use of these bottles. By signing of this ticket showing receipt of a gas testing bottle, the undersigned agrees for himself and as agent for operator, to return this bottle to Western Testing Co., Inc. within thirty (30) days free of charge, or be invoiced in the amount of \$75.00 (total charge). Should valve or seal plug be missing or damaged beyond repair, operator shall be invoiced for repairs at our invoiced price.

All charges subject to 1% per month, equal to 12% interest per annum after 30 days from date of invoice. Any expense incurred for collection will be added to the original amount.

COMPANY'S NAME_____

Authorized by _____

WESTERN TESTING CO., INC.

Pressure Data

Date 3-13-79 Test Ticket No. 1247
 Recorder No. 2604 Capacity 4150 Location 4286 Ft.
 Clock No. Elevation 1613 LB Well Temperature 118 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>2289</u>	P.S.I.	<u>1:00</u>	<u>PM</u>
B First Initial Flow Pressure	<u>79</u>	P.S.I.	<u>15</u>	Mins. <u>15</u> Mins.
C First Final Flow Pressure	<u>68</u>	P.S.I.	<u>45</u>	Mins. <u>45</u> Mins.
D Initial Closed-in Pressure	<u>1569</u>	P.S.I.	<u>60</u>	Mins. <u>60</u> Mins.
E Second Initial Flow Pressure	<u>64</u>	P.S.I.	<u>60</u>	Mins. <u>60</u> Mins.
F Second Final Flow Pressure	<u>58</u>	P.S.I.		
G Final Closed-in Pressure	<u>1523</u>	P.S.I.		
H Final Hydrostatic Mud	<u>2266</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>12</u> Inc.		Breakdown: <u>20</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>79</u>	<u>0</u>	<u>68</u>	<u>0</u>	<u>64</u>	<u>0</u>	<u>58</u>
P 2 <u>5</u>	<u>70</u>	<u>3</u>	<u>447</u>	<u>5</u>	<u>55</u>	<u>3</u>	<u>192</u>
P 3 <u>10</u>	<u>68</u>	<u>6</u>	<u>605</u>	<u>10</u>	<u>54</u>	<u>6</u>	<u>519</u>
P 4 <u>15</u>	<u>68</u>	<u>9</u>	<u>866</u>	<u>15</u>	<u>52</u>	<u>9</u>	<u>726</u>
P 5 <u>20</u>		<u>12</u>	<u>1046</u>	<u>20</u>	<u>51</u>	<u>12</u>	<u>931</u>
P 6 <u>25</u>		<u>15</u>	<u>1194</u>	<u>25</u>	<u>51</u>	<u>15</u>	<u>1102</u>
P 7 <u>30</u>		<u>18</u>	<u>1282</u>	<u>30</u>		<u>18</u>	<u>1205</u>
P 8 <u>35</u>		<u>21</u>	<u>1374</u>	<u>35</u>		<u>21</u>	<u>1274</u>
P 9 <u>40</u>		<u>24</u>	<u>1429</u>	<u>40</u>	<u>51</u>	<u>24</u>	<u>1324</u>
P10 <u>45</u>		<u>27</u>	<u>1466</u>	<u>45</u>	<u>52</u>	<u>27</u>	<u>1366</u>
P11 <u>50</u>		<u>30</u>	<u>1498</u>	<u>50</u>	<u>53</u>	<u>30</u>	<u>1395</u>
P12 <u>55</u>		<u>33</u>	<u>1521</u>	<u>55</u>	<u>58</u>	<u>33</u>	<u>1413</u>
P13 <u>60</u>		<u>36</u>	<u>1538</u>	<u>60</u>	<u>58</u>	<u>36</u>	<u>1432</u>
P14		<u>39</u>	<u>1550</u>	<u>65</u>		<u>39</u>	<u>1455</u>
P15		<u>42</u>	<u>1561</u>	<u>70</u>		<u>42</u>	<u>1461</u>
P16		<u>45</u>	<u>1569</u>	<u>75</u>		<u>45</u>	<u>1483</u>
P17		<u>48</u>		<u>80</u>		<u>48</u>	<u>1491</u>
P18		<u>51</u>		<u>85</u>		<u>51</u>	<u>1500</u>
P19		<u>54</u>		<u>90</u>		<u>54</u>	<u>1507</u>
P20		<u>57</u>				<u>57</u>	<u>1515</u>
		<u>60</u>				<u>60</u>	<u>1523</u>



Home Office: Wichita, Kansas 67201
P. O. Box 1599 (316) 838-0601

Company Graves Drilling Co., Inc. -ETAL Lease & Well No. Youngers #1
Elevation 1613 Kelly Bush. Formation Mississippi Effective Pay - Ft. Ticket No. 1247
Date 3-13-79 Sec. 22 Twp. 31S Range 12W County Pratt State Kansas
Test Approved by Harold Steincamp Western Representative Rod Tritt
Formation Test No. 2 Interval Tested from 4282 ft. to 4310 ft. Total Depth 4310 ft.
Packer Depth 4273 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.
Packer Depth 4283 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.
Depth of Selective Zone Set -
Top Recorder Depth (Inside) 4286 ft. Recorder Number 2604 Cap. 4150
Bottom Recorder Depth (Outside) 4289 ft. Recorder Number 2606 Cap. 4150
Below Straddle Recorder Depth - ft. Recorder Number - Cap. -
Drilling Contractor Graves Drilling Co., Inc. Drill Collar Length 122' I. D. 2 1/4 ID in.
Mud Type Premix Viscosity 55 Weight Pipe Length 270 I. D. 2 1/2 in.
Weight 9.3 Water Loss 16.5 cc. Drill Pipe Length 3869 I. D. 3.8 in.
Chlorides 16,000 P.P.M. Test Tool Length 21' XX Tool Size 5 1/2 OD in.
Jars: Make - Serial Number - Anchor Length 28 ft. Size 5 1/2 OD in.
Did Well Flow? NO Reversed Out - Surface Choke Size 3/4 in. Bottom Choke Size 3/4 in.
Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 FH in.

Blow: Strong blow throughout test. Gas to surface in 14 minutes. See attached sheet for gas measurements.

Recovered 90 ft. of slightly oil and gas cut mud.
Recovered 60 ft. of heavy oil and gas cut mud.
Recovered 60 ft. of very heavy oil and gas cut mud.
Recovered - ft. of -
Recovered - ft. of -
Remarks: -

Time Set Packer(s) 1:00 ~~AM~~ P.M. Time Started Off Bottom 4:00 ~~AM~~ P.M. Maximum Temperature 118
Initial Hydrostatic Pressure (A) 2289 P.S.I.
Initial Flow Period Minutes 15 (B) 79 P.S.I. to (C) 68 P.S.I.
Initial Closed In Period Minutes 45 (D) 1569 P.S.I.
Final Flow Period Minutes 60 (E) 64 P.S.I. to (F) 58 P.S.I.
Final Closed In Period Minutes 60 (G) 1523 P.S.I.
Final Hydrostatic Pressure (H) 2266 P.S.I.



Home Office: Wichita, Kansas 67201
P. O. Box 1599 (316) 838-0601

GAS FLOW REPORT

Date 3-13-79 Ticket 1247 Company Graves Drilling Co., Inc. & ETAL
Well Name and No. Youngers #1 Dst No. 2 Interval Tested 4282' - 4310'
County Barber State Kansas Sec. 22 Twp. 31S Rg. 12W

Time Gauge Pre-Flow	Time Gauge in Min.	P.S.I. on Merla Orifice Well Tester	P.S.I. on Pitot Tester	P.S.I. on Side Static Tester	P.S.I. on U-Tube Tester	Description of Flow
1:00P.M. Tool Opened PRE FLOW						
	15 min.					Gas to surface- no gauge
2:00PM SECOND FLOW						
	10 min.	10" of water	1" orifice			81,600 C.F.P.D.
	20 min.	8" of water	1" orifice			73,100 C.F.P.D.
	30 min.	8" of water	1" orifice			73,100 C.F.P.D.
	40 min.	8" of water	1" orifice			73,100 C.F.P.D.
	50 min.	8" of water	1" orifice			73,100 C.F.P.D.
	60 min.	8" of water	1" orifice			73,100 C.F.P.D.

GAS BOTTLE

Serial No. - Date Bottle Filled - Date to be Invoiced -

Requisition and Provisions for high pressure stainless steel gas bottles. Western Testing Co., Inc. shall not be liable for damage of any kind to property or personnel of the one whom gas bottle is filled or for any loss suffered or sustained directly or indirectly through the use of these bottles. By signing of this ticket showing receipt of a gas testing bottle, the undersigned agrees for himself and as agent for operator, to return this bottle to Western Testing Co., Inc. within thirty (30) days free of charge, or be invoiced in the amount of \$75.00 (total charge). Should valve or seal plug be missing or damaged beyond repair, operator shall be invoiced for repairs at our invoiced price.

All charges subject to 1% per month, equal to 12% interest per annum after 30 days from date of invoice. Any expense incurred for collection will be added to the original amount.

COMPANY'S NAME Graves Drilling Co., Inc.-ETAL

Authorized by Harold Steincamp

WESTERN TESTING CO., INC.

Pressure Data

Date 3-13-79 Test Ticket No. 1247

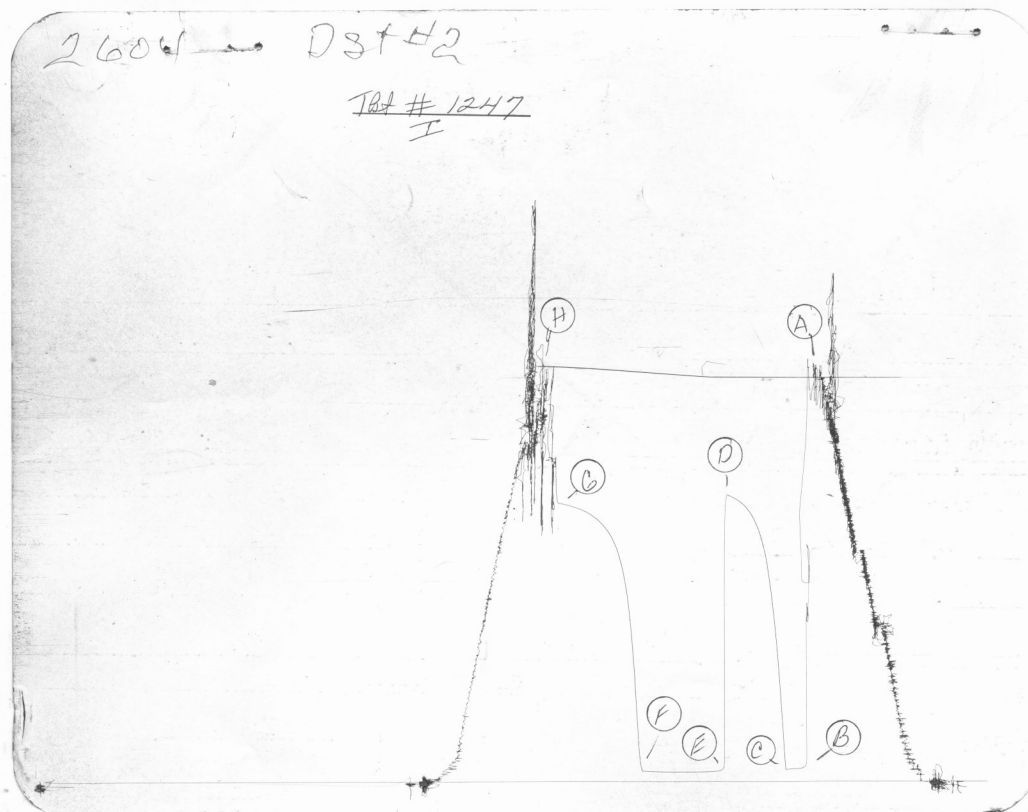
Recorder No. 2604 Capacity 4150 Location 4286 Ft.

Clock No. - Elevation 1613 Kelly Bushing Well Temperature 118 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	2289 P.S.I.	Open Tool	1:00P.	M
B First Initial Flow Pressure	79 P.S.I.	First Flow Pressure	15 Mins.	15 Mins.
C First Final Flow Pressure	68 P.S.I.	Initial Closed-in Pressure	45 Mins.	45 Mins.
D Initial Closed-in Pressure	1569 P.S.I.	Second Flow Pressure	60 Mins.	60 Mins.
E Second Initial Flow Pressure	64 P.S.I.	Final Closed-in Pressure	60 Mins.	60 Mins.
F Second Final Flow Pressure	58 P.S.I.			
G Final Closed-in Pressure	1523 P.S.I.			
H Final Hydrostatic Mud	2266 P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure Breakdown: <u>3</u> Inc. of <u>5</u> mins. and a final inc. of <u>0</u> Min.		Initial Shut-In Breakdown: <u>15</u> Inc. of <u>3</u> mins. and a final inc. of <u>0</u> Min.		Second Flow Pressure Breakdown: <u>12</u> Inc. of <u>5</u> mins. and a final inc. of <u>0</u> Min.		Final Shut-In Breakdown: <u>20</u> Inc. of <u>3</u> mins. and a 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>79</u>	<u>0</u>	<u>68</u>	<u>0</u>	<u>64</u>	<u>0</u>	<u>58</u>
P 2 <u>5</u>	<u>70</u>	<u>3</u>	<u>447</u>	<u>5</u>	<u>55</u>	<u>3</u>	<u>192</u>
P 3 <u>10</u>	<u>68</u>	<u>6</u>	<u>605</u>	<u>10</u>	<u>54</u>	<u>6</u>	<u>519</u>
P 4 <u>15</u>	<u>68</u>	<u>9</u>	<u>866</u>	<u>15</u>	<u>52</u>	<u>9</u>	<u>726</u>
P 5		<u>12</u>	<u>1046</u>	<u>20</u>	<u>51</u>	<u>12</u>	<u>931</u>
P 6		<u>15</u>	<u>1194</u>	<u>25</u>	<u>51</u>	<u>15</u>	<u>1102</u>
P 7		<u>18</u>	<u>1282</u>	<u>30</u>	<u>51</u>	<u>18</u>	<u>1205</u>
P 8		<u>21</u>	<u>1374</u>	<u>35</u>	<u>51</u>	<u>21</u>	<u>1274</u>
P 9		<u>24</u>	<u>1429</u>	<u>40</u>	<u>51</u>	<u>24</u>	<u>1324</u>
P10		<u>27</u>	<u>1466</u>	<u>45</u>	<u>52</u>	<u>27</u>	<u>1366</u>
P11		<u>30</u>	<u>1498</u>	<u>50</u>	<u>53</u>	<u>30</u>	<u>1395</u>
P12		<u>33</u>	<u>1521</u>	<u>55</u>	<u>58</u>	<u>33</u>	<u>1413</u>
P13		<u>36</u>	<u>1538</u>	<u>60</u>	<u>58</u>	<u>36</u>	<u>1432</u>
P14		<u>39</u>	<u>1550</u>			<u>39</u>	<u>1455</u>
P15		<u>42</u>	<u>1561</u>			<u>42</u>	<u>1461</u>
P16		<u>45</u>	<u>1569</u>			<u>45</u>	<u>1483</u>
P17						<u>48</u>	<u>1491</u>
P18						<u>51</u>	<u>1500</u>
P19						<u>54</u>	<u>1507</u>
P20						<u>57</u>	<u>1515</u>
						<u>60</u>	<u>1523</u>



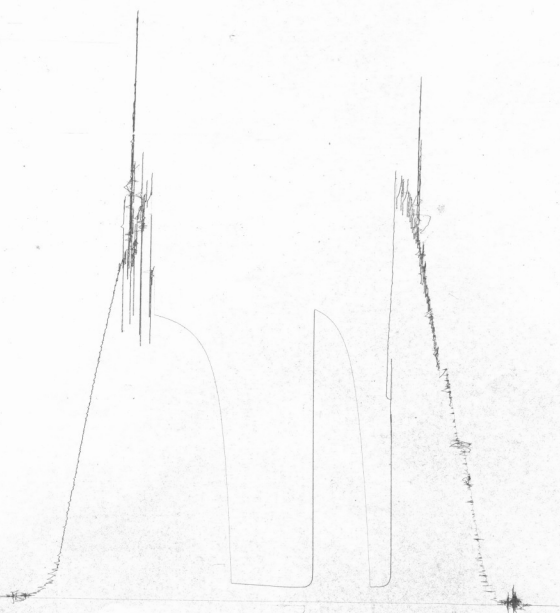
This is an actual photograph of recorder chart.

POINT	PRESSURE		
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud	2295	2289	PSI
(B) First Initial Flow Pressure	86	79	PSI
(C) First Final Flow Pressure	74	68	PSI
(D) Initial Closed-in Pressure	1558	1569	PSI
(E) Second Initial Flow Pressure	63	64	PSI
(F) Second Final Flow Pressure	53	58	PSI
(G) Final Closed-in Pressure	1527	1523	PSI
(H) Final Hydrostatic Mud	2263	2266	PSI

2606. . . . DST #2

~~Pat~~ #1247

0





P. O. BOX 1599 PHONE (316) 838-0601
WICHITA, KANSAS 67201

WESTERN TESTING CO., INC. FORMATION TESTING

TICKET No 1248

Elevation 1613 KB Formation MISS Eff. Pay Ft.

District Pratt Date 3-14-79 Customer Order No.

COMPANY NAME GRAVES & ETAL Drilling Inc.
ADDRESS 910 Union Center Building Wichita, Kansas 67202

LEASE AND WELL NO. Youngers #1 COUNTY Barber STATE KANSAS Sec. 22 Twp. 31S Rge. 12W

Mail Invoice To Same Co. Name Address No. Copies Requested

Mail Charts To Same Address No. Copies Requested

Formation Test No. 3 Interval Tested from 4310 ft. to 4330 ft. Total Depth 4330 ft.
Packer Depth 4305 ft. Size 6 3/4 in. Packer Depth ft. Size in.
Packer Depth 4310 ft. Size 6 3/4 in. Packer Depth ft. Size in.
Depth of Selective Zone Set

Top Recorder Depth (Inside) 4313 ft. Recorder Number 2604 Cap. 4150
Bottom Recorder Depth (Outside) 4316 ft. Recorder Number 2606 Cap. 4150
Below Straddle Recorder Depth ft. Recorder Number Cap.

Drilling Contractor GRAVES Drilling Drill Collar Length 122 I. D. 2 1/4 in.
Mud Type Premix Viscosity 55 Weight Pipe Length 270 I. D. 2 1/2 in.
Weight 9.3 Water Loss 16.5 cc. Drill Pipe Length 3897 I. D. 3.8 in.
Chlorides 16,000 P.P.M. Test Tool Length 21 in. Tool Size 5 7/8 in.
Jars: Make NO Serial Number Anchor Length 20 ft. Size 5500 in.
Did Well Flow? NO Reversed Out NO Surface Choke Size 3/4 in. Bottom Choke Size 3/4 in.
Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 in.

Blow: Strong blow in 15 minutes on initial flow period
Strong blow 20 min. vented through 2" - blow decreased to weak

Recovered 120 ft. of Slightly oil cut mud - didn't recover
Recovered ft. of
Recovered 190 ft. of muddy water
Recovered ft. of
Recovered ft. of Chlorides 90,000 P.P.M

Remarks:

Time Set Packer(s) 1:00 A.M. Time Started Off Bottom 3:45 A.M. Maximum Temperature 120°F
Initial Hydrostatic Pressure 2316 P.S.I.
Initial Flow Period 15 Minutes (B) 53 P.S.I. to (C) 63 P.S.I.
Initial Closed In Period 45 Minutes (D) 1558 P.S.I.
Final Flow Period 60 Minutes (E) 106 P.S.I. to (F) 159 P.S.I.
Final Closed In Period 45 Minutes (G) 1369 P.S.I.
Final Hydrostatic Pressure 2295 P.S.I.

COMPANY TERMS

Western Testing Co., Inc. shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained directly or indirectly through the use of its equipment, of its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid at cost by the party for whom the test is made.
All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

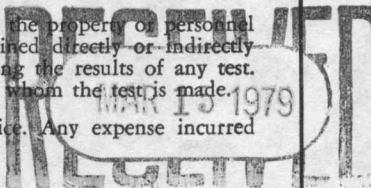
Test Approved By J. Stancamp Signature of Customer or his authorized representative

Western Representative Red Witt Thank you

FIELD INVOICE

Open Hole Test \$ 460.00
Misrun \$
Straddle Test \$
Jars \$
Selective Zone \$
Safety Joint \$
Standby \$
Evaluation \$
Extra Packer \$
Circ. Sub. \$
Mileage \$
Extra Charts \$

TOTAL \$ 460.00



WESTERN TESTING CO., INC.

Pressure Data

Date 3-14-79

Test Ticket No. 1248

Recorder No. 2604

Capacity 4150

Location 4313 Ft.

Clock No.

Elevation 1613 KB

Well Temperature 120 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>2283</u>	P.S.I.	<u>1:00</u> A M	
B First Initial Flow Pressure	<u>64</u>	P.S.I.	<u>15</u> Mins.	<u>15</u> Mins.
C First Final Flow Pressure	<u>60</u>	P.S.I.	<u>45</u> Mins.	<u>45</u> Mins.
D Initial Closed-in Pressure	<u>1563</u>	P.S.I.	<u>60</u> Mins.	<u>60</u> Mins.
E Second Initial Flow Pressure	<u>117</u>	P.S.I.	<u>45</u> Mins.	<u>54</u> Mins.
F Second Final Flow Pressure	<u>153</u>	P.S.I.		
G Final Closed-in Pressure	<u>1376</u>	P.S.I.		
H Final Hydrostatic Mud	<u>2266</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>12</u> Inc.		Breakdown: <u>18</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>64</u>	<u>0</u>	<u>60</u>	<u>0</u>	<u>117</u>	<u>0</u>	<u>153</u>
P 2 <u>5</u>	<u>58</u>	<u>3</u>	<u>215</u>	<u>5</u>	<u>111</u>	<u>3</u>	<u>228</u>
P 3 <u>10</u>	<u>60</u>	<u>6</u>	<u>569</u>	<u>10</u>	<u>108</u>	<u>6</u>	<u>438</u>
P 4 <u>15</u>	<u>60</u>	<u>9</u>	<u>832</u>	<u>15</u>	<u>109</u>	<u>9</u>	<u>607</u>
P 5 <u>20</u>		<u>12</u>	<u>1052</u>	<u>20</u>	<u>113</u>	<u>12</u>	<u>763</u>
P 6 <u>25</u>		<u>15</u>	<u>1203</u>	<u>25</u>	<u>117</u>	<u>15</u>	<u>887</u>
P 7 <u>30</u>		<u>18</u>	<u>1301</u>	<u>30</u>	<u>121</u>	<u>18</u>	<u>945</u>
P 8 <u>35</u>		<u>21</u>	<u>1370</u>	<u>35</u>	<u>126</u>	<u>21</u>	<u>1038</u>
P 9 <u>40</u>		<u>24</u>	<u>1420</u>	<u>40</u>	<u>132</u>	<u>24</u>	<u>1098</u>
P10 <u>45</u>		<u>27</u>	<u>1460</u>	<u>45</u>	<u>137</u>	<u>27</u>	<u>1153</u>
P11 <u>50</u>		<u>30</u>	<u>1485</u>	<u>50</u>	<u>143</u>	<u>30</u>	<u>1190</u>
P12 <u>55</u>		<u>33</u>	<u>1508</u>	<u>55</u>	<u>148</u>	<u>33</u>	<u>1215</u>
P13 <u>60</u>		<u>36</u>	<u>1524</u>	<u>60</u>	<u>153</u>	<u>36</u>	<u>1243</u>
P14		<u>39</u>	<u>1538</u>	<u>65</u>		<u>39</u>	<u>1270</u>
P15		<u>42</u>	<u>1555</u>	<u>70</u>		<u>42</u>	<u>1302</u>
P16		<u>45</u>	<u>1563</u>	<u>75</u>		<u>45</u>	<u>1330</u>
P17		<u>48</u>		<u>80</u>		<u>48</u>	<u>1349</u>
P18		<u>51</u>		<u>85</u>		<u>51</u>	<u>1366</u>
P19		<u>54</u>		<u>90</u>		<u>54</u>	<u>1376</u>
P20		<u>57</u>				<u>57</u>	
		<u>60</u>				<u>60</u>	



Home Office: Wichita, Kansas 67201
P. O. Box 1599 (316) 838-0601

Company Graves Drilling Co., Inc.-ETAL Lease & Well No. Youngers #1
Elevation 1613 Kelly Bush Formation Mississippi Effective Pay Ft. Ticket No. 1248
Date 3-14-79 Sec 22 Twp 31S Range 12W County Barber State Kansas
Test Approved by Harold Steincamp Western Representative Rod Tritt
Formation Test No. 3 Interval Tested from 4310 ft. to 4330 ft. Total Depth 4330 ft.
Packer Depth 4305 ft. Size 6 3/4 in. Packer Depth ft. Size in.
Packer Depth 4310 ft. Size 6 3/4 in. Packer Depth ft. Size in.
Depth of Selective Zone Set
Top Recorder Depth (Inside) 4313 ft. Recorder Number 2604 Cap. 4150
Bottom Recorder Depth (Outside) 4316 ft. Recorder Number 2606 Cap. 4150
Below Straddle Recorder Depth ft. Recorder Number Cap.
Drilling Contractor Graves Drilling Co., Inc. Drill Collar Length 122 I. D. 2 1/4 in.
Mud Type Premix Viscosity 55 Weight Pipe Length 270 I. D. 2 1/4 in.
Weight 9.3 Water Loss 16.5 cc. Drill Pipe Length 3897 I. D. 3.8 in.
Chlorides 16,000 P.P.M. Test Tool Length 21' XXX Tool Size 5 1/2 OD in.
Jars: Make Serial Number Anchor Length 20 ft. Size 5 1/2 OD in.
Did Well Flow? No Reversed Out Surface Choke Size 3/4 in. Bottom Choke Size 3/4 in.
Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 FH in.

Blow: Strong blow in 15 minutes on initial flow period. Strong blow for 20 minutes (vented through 2") blow decreased to a weak blow- blow never recovered.

Recovered 120 ft. of slightly oil cut mud.

Recovered 190 ft. of muddy water Chlorides 90,000 PPM

Recovered ft. of

Recovered ft. of

Recovered ft. of

Remarks:

Time Set Packer(s) 1:00 Δ.M. Time Started Off Bottom 3:45 Δ.M. Maximum Temperature 120
PM PM
Initial Hydrostatic Pressure (A) 2283 P.S.I.
Initial Flow Period Minutes 15 (B) 64 P.S.I. to (C) 60 P.S.I.
Initial Closed In Period Minutes 45 (D) 1563 P.S.I.
Final Flow Period Minutes 60 (E) 117 P.S.I. to (F) 153 P.S.I.
Final Closed In Period Minutes 45 (G) 1376 P.S.I.
Final Hydrostatic Pressure (H) 2266 P.S.I.

WESTERN TESTING CO., INC.

Pressure Data

Date 3-4-79 Test Ticket No. 1248
 Recorder No. 2604 Capacity 4150 Location 4313 Ft.
 Clock No. - Elevation 1613 Kelly Bushing Well Temperature 120 °F
 Point Pressure Time Given Time Computed
 A Initial Hydrostatic Mud 2283 P.S.I. Open Tool 1:00A. M
 B First Initial Flow Pressure 64 P.S.I. First Flow Pressure 15 Mins. 15 Mins.
 C First Final Flow Pressure 60 P.S.I. Initial Closed-in Pressure 45 Mins. 45 Mins.
 D Initial Closed-in Pressure 1563 P.S.I. Second Flow Pressure 60 Mins. 60 Mins.
 E Second Initial Flow Pressure 117 P.S.I. Final Closed-in Pressure 45 Mins. 54 Mins.
 F Second Final Flow Pressure 153 P.S.I.
 G Final Closed-in Pressure 1376 P.S.I.
 H Final Hydrostatic Mud 2266 P.S.I.

PRESSURE BREAKDOWN

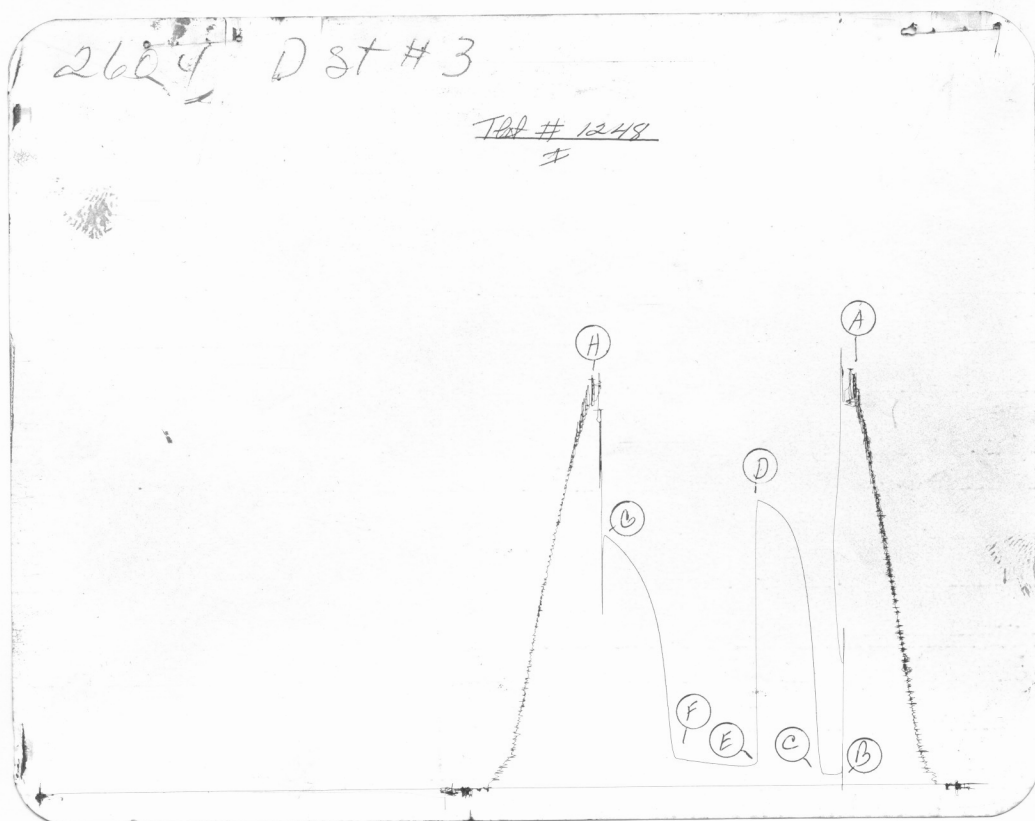
First Flow Pressure
 Breakdown: 3 Inc.
 of 5 mins. and a
 final inc. of 0 Min.

Initial Shut-In
 Breakdown: 15 Inc.
 of 3 mins. and a
 final inc. of 0 Min.

Second Flow Pressure
 Breakdown: 12 Inc.
 of 5 mins. and a
 final inc. of 0 Min.

Final Shut-In
 Breakdown: 18 Inc.
 of 3 mins. and a
 final inc. of 0 Min.

Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 <u>0</u>	<u>64</u>	<u>0</u>	<u>60</u>	<u>0</u>	<u>117</u>	<u>0</u>	<u>153</u>
P 2 <u>5</u>	<u>58</u>	<u>3</u>	<u>215</u>	<u>5</u>	<u>111</u>	<u>3</u>	<u>228</u>
P 3 <u>10</u>	<u>60</u>	<u>6</u>	<u>569</u>	<u>10</u>	<u>108</u>	<u>6</u>	<u>438</u>
P 4 <u>15</u>	<u>60</u>	<u>9</u>	<u>832</u>	<u>15</u>	<u>109</u>	<u>9</u>	<u>607</u>
P 5 _____	_____	<u>12</u>	<u>1052</u>	<u>20</u>	<u>113</u>	<u>12</u>	<u>763</u>
P 6 _____	_____	<u>15</u>	<u>1203</u>	<u>25</u>	<u>117</u>	<u>15</u>	<u>887</u>
P 7 _____	_____	<u>18</u>	<u>1301</u>	<u>30</u>	<u>121</u>	<u>18</u>	<u>975</u>
P 8 _____	_____	<u>21</u>	<u>1370</u>	<u>35</u>	<u>126</u>	<u>21</u>	<u>1038</u>
P 9 _____	_____	<u>24</u>	<u>1420</u>	<u>40</u>	<u>132</u>	<u>24</u>	<u>109</u>
P10 _____	_____	<u>27</u>	<u>1460</u>	<u>45</u>	<u>137</u>	<u>27</u>	<u>1153</u>
P11 _____	_____	<u>30</u>	<u>1485</u>	<u>50</u>	<u>143</u>	<u>30</u>	<u>1190</u>
P12 _____	_____	<u>33</u>	<u>1508</u>	<u>55</u>	<u>148</u>	<u>33</u>	<u>1215</u>
P13 _____	_____	<u>36</u>	<u>1521</u>	<u>60</u>	<u>153</u>	<u>36</u>	<u>1243</u>
P14 _____	_____	<u>39</u>	<u>1538</u>	_____	_____	<u>39</u>	<u>1270</u>
P15 _____	_____	<u>42</u>	<u>1550</u>	_____	_____	<u>42</u>	<u>1302</u>
P16 _____	_____	<u>45</u>	<u>1563</u>	_____	_____	<u>45</u>	<u>1330</u>
P17 _____	_____	_____	_____	_____	_____	<u>48</u>	<u>1349</u>
P18 _____	_____	_____	_____	_____	_____	<u>51</u>	<u>1366</u>
P19 _____	_____	_____	_____	_____	_____	<u>54</u>	<u>1376</u>
P20 _____	_____	_____	_____	_____	_____	_____	_____

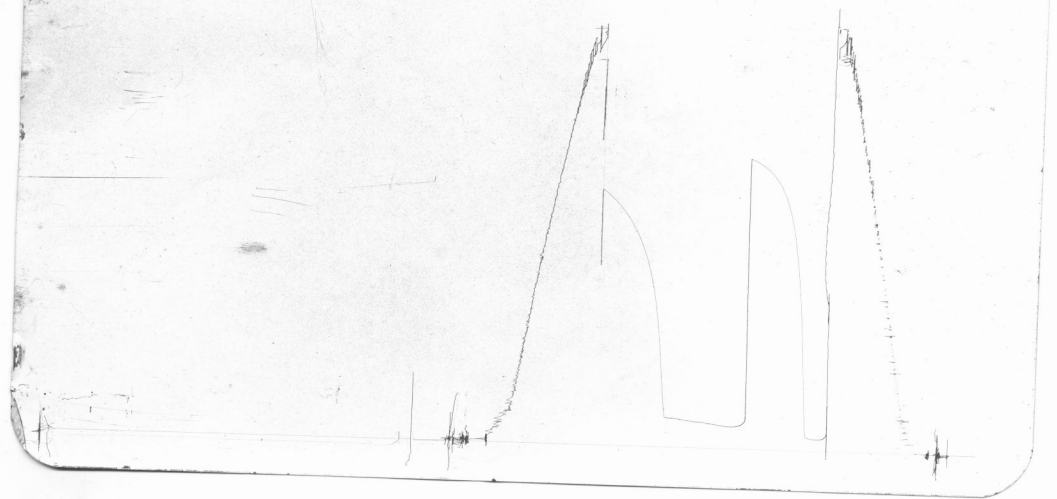


This is an actual photograph of recorder chart.

POINT	PRESSURE	
	Field Reading	Office Reading
(A) Initial Hydrostatic Mud	2316	2283
(B) First Initial Flow Pressure	53	64
(C) First Final Flow Pressure	68	60
(D) Initial Closed-in Pressure	1558	1563
(E) Second Initial Flow Pressure	106	117
(F) Second Final Flow Pressure	159	153
(G) Final Closed-in Pressure	1369	1376
(H) Final Hydrostatic Mud	2295	2266

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NOMENCLATURE

b	== Approximate Radius of Investigation	Feet
b¹	== Approximate Radius of Investigation (Net Pay Zone h¹)	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 h¹)	md
m	== Slope Extrapolated Pressure Plot (Psi²/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.