

Home Office: Wichita, Kansas 67201

P.O. Box 1599

(316) 262-5861

Company Petroleum Technical Service Lease & Well No. R. H. Donovan #1
Elevation 1563 Kelly Bushing Simpson Effective Pay - Ft. Ticket No. 8500
Date 12/27/80 Sec. 1 Twp. 34S Range 14W County Barber State Kansas
Test Approved by Jerry A. Smith Western Representative Rod Tritt
Formation Test No. 1 Interval Tested from 5035 ft. to 5045 ft. Total Depth 5045 ft.
Packer Depth 5030 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.
Packer Depth 5035 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.
Depth of Selective Zone Set -
Top Recorder Depth (Inside) 5036 ft. Recorder Number 2606 Cap. 4150
Bottom Recorder Depth (Outside) 5039 ft. Recorder Number 4332 Cap. 4200
Below Straddle Recorder Depth - ft. Recorder Number - Cap. -
Drilling Contractor Dunne-Gardner Drlg. Rig #2 Drill Collar Length 224 I. D. 2 1/4 in.
Mud Type premix-chemical Viscosity 50 Weight Pipe Length 312 I. D. 2 1/2 in.
Weight 9.0 Water Loss 8.0 cc. Drill Pipe Length 4471 I. D. 3.8 in.
Chlorides 17,500 P.P.M. Test Tool Length 28 ft. Tool Size 5 1/2 in.
Jars: Make WTC Serial Number 409 Anchor Length 10 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: Strong blow throughout test. Gas to surface at start of final flow period. See attached sheet for gas measurements.

Recovered 435 ft. of free oil
Recovered 345 ft. of gas cut muddy oil
Recovered 10 ft. of water
Recovered 190 ft. of
Recovered ft. of
Remarks:

Time Set Packer(s) 3:20 A.M. P.M. Time Started Off Bottom 7:50 ~~A.M.~~ P.M. Maximum Temperature 125°
Initial Hydrostatic Pressure (A) 2504 P.S.I.
Initial Flow Period Minutes 30 (B) 76 P.S.I. to (C) 94 P.S.I.
Initial Closed In Period Minutes 60 (D) 1908 P.S.I.
Final Flow Period Minutes 60 (E) 183 P.S.I. to (F) 185 P.S.I.
Final Closed In Period Minutes 129 (G) 1907 P.S.I.
Final Hydrostatic Pressure (H) 2286 P.S.I.



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GAS FLOW REPORT

Date 12/27/80 Ticket 8500 Company Petroleum Technical Service
Well Name and No. R. H. Donovan #1 Dst No. 0 Interval Tested 5035'-5045'
County Barber State Kansas Sec. 1 Twp. 34S Rg. 14W

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
PRE FLOW						

4:50 PM Gas to surface SECOND FLOW

10 min.	1.5 PSIG	1/2" orifice		41,000 CFPD
20 min.	.5 PSIG	1/2" orifice		16,500 CFPD (Est.)
30 min.	2.0 PSIG	1/4" orifice		12,700 CFPD
40 min.	2.5 PSIG	1/4" orifice		14,300 CFPD
50 min.	2.5 PSIG	1/4" orifice		14,300 CFPD
60 min.	2.5 PSIG	1/4" orifice		14,300 CFPD

GAS BOTTLE

Serial No. — Date Bottle Filled — Date to be Invoiced 12/27/80

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 1/2% per month, equal to 18% 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 Petroleum Technical Service

Jerry A. Smith

Authorized by —

WESTERN TESTING CO., INC.

Pressure Data

Date 12/27/80 Test Ticket No. 8500
 Recorder No. 2606 Capacity 4150 Location 5036
 Clock No. --- Elevation 1563 Kelly Bushing Well Temperature 125

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	2504 P.S.I.	Open Tool	3:20P M	
B First Initial Flow Pressure	76 P.S.I.	First Flow Pressure	30 Mins.	30 Mi
C First Final Flow Pressure	94 P.S.I.	Initial Closed-in Pressure	60 Mins.	60 Mi
D Initial Closed-in Pressure	1908 P.S.I.	Second Flow Pressure	60 Mins.	60 Mi
E Second Initial Flow Pressure	183 P.S.I.	Final Closed-in Pressure	120 Mins.	129 Mi
F Second Final Flow Pressure	185 P.S.I.			
G Final Closed-in Pressure	1907 P.S.I.			
H Final Hydrostatic Mud	2286 P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure Breakdown: <u>6</u> Inc. of <u>5</u> mins. and a final inc. of <u>0</u> Min.		Initial Shut-In Breakdown: <u>20</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>43</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 0	76	0	94	0	183	0	185
P 2 5	75	3	472	5	149	3	414
P 3 10	75	6	904	10	145	6	667
P 4 15	75	9	1381	15	147	9	1087
P 5 20	83	12	1680	20	150	12	1482
P 6 25	88	15	1760	25	156	15	1644
P 7 30	94	18	1804	30	162	18	1727
P 8		21	1830	35	166	21	1770
P 9		24	1850	40	173	24	1794
P10		27	1864	45	178	27	1813
P11		30	1873	50	180	30	1828
P12		33	1881	55	183	33	1840
P13		36	1886	60	185	36	1849
P14		39	1891			39	1855
P15		42	1895			42	1863
P16		45	1899			45	1864
P17		48	1902			48	1871
P18		51	1904			51	1875
P19		54	1906			54	1879
P20		57	1907			57	1881
		60	1908			60	1883

Pressure Data

12/27/80

Test Ticket No. 8500

Recorder No. 2606

Capacity 4150

Location 5036

Block No. --- Elevation 1563 Kelly Bushing

Well Temperature 125

Point Pressure

Time
GivenTime
Computed

Initial Hydrostatic Mud 2504 P.S.I.

Open Tool

3:20P

M

First Initial Flow Pressure 76 P.S.I.

First Flow Pressure

30

Mins

30

Mins

First Final Flow Pressure 94 P.S.I.

Initial Closed-in Pressure

60

Mins

60

Mins

Initial Closed-in Pressure 1908 P.S.I.

Second Flow Pressure

60

Mins

60

Mins

Second Initial Flow Pressure 183 P.S.I.

Final Closed-in Pressure

120

Mins

129

Mins

Second Final Flow Pressure 185 P.S.I.

Final Closed-in Pressure 1907 P.S.I.

Final Hydrostatic Mud 2286 P.S.I.

PRESSURE BREAKDOWN

First Flow Pressure

Breakdown: 6 Inc.

of 5 mins. and a

final inc. of 0 Min.

Initial Shut-In

Breakdown: 20 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: 43 Inc.

of 3 mins. and a

final inc. of 0 Min.

Point
Mins.

Press.

Point
Minutes

Press.

Point
Minutes

Press.

Point
Minutes

Press.

1

63

1885

2

66

1886

3

69

1887

4

72

1889

5

75

1890

6

78

1892

7

81

1894

8

84

1895

9

87

1896

10

90

1897

11

93

1898

12

96

1899

13

99

1899

14

102

1900

15

105

1901

16

108

1902

17

111

1903

18

114

1904

19

117

1905

20

120

1905

123

1906

126

1906

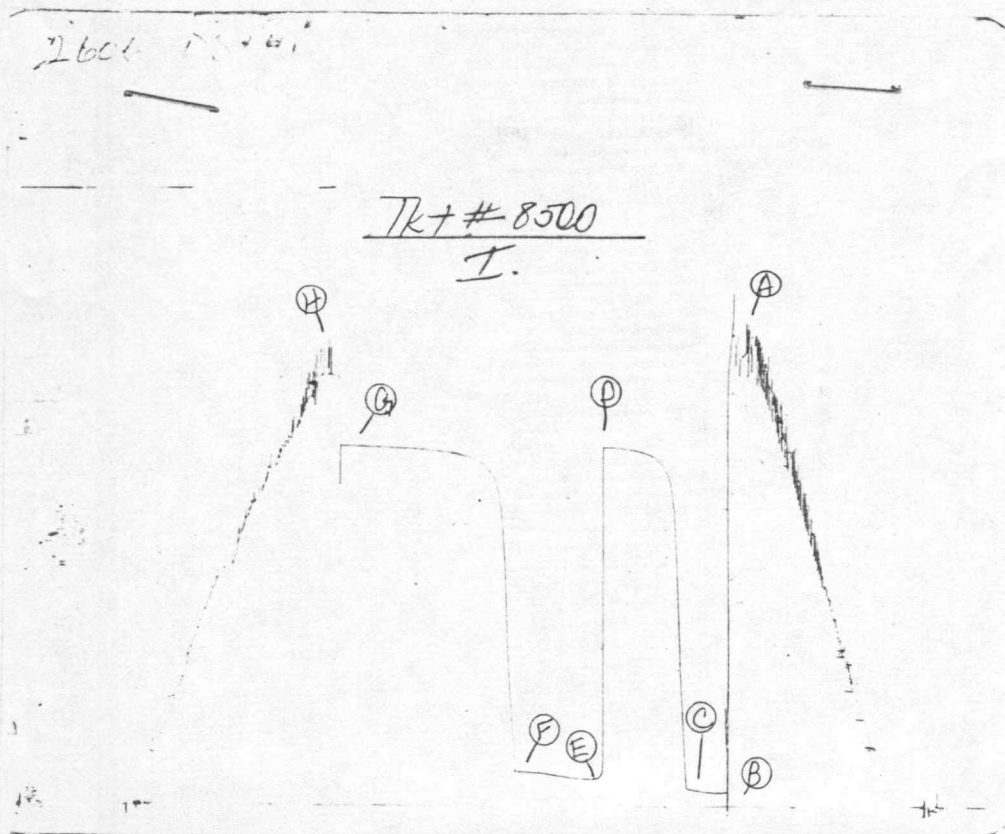
129

1907

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.



This is an actual photograph of recorder chart.

POINT	PRESSURE		
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud	2502	2504	PSI
(B) First Initial Flow Pressure	72	76	PSI
(C) First Final Flow Pressure	104	94	PSI
(D) Initial Closed-in Pressure	1926	1908	PSI
(E) Second Initial Flow Pressure	156	183	PSI
(F) Second Final Flow Pressure	187	185	PSI
(G) Final Closed-in Pressure	1926	1907	PSI
(H) Final Hydrostatic Mud	2292	2286	PSI