



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

Company Graves Drilling Co., Inc. Lease & Well No. Raff #1
Elevation 1115 Kelly Bushings Formation Viola Effective Pay _____ Ft. Ticket No. 20038
Date 5-9-74 Sec. 9 Twp. 23S Range 14E County Coffey State Kansas
Test Approved by John C. Graves Western Representative Norman Allen
Formation Test No. 1 O.K. ☒ Misrun _____ Interval Tested From 2030' to 2040' Total Depth 2040'
Size Main Hole 7 7/8" Rat Hole _____ Conv. _____ B.T. ☒ Damaged _____ Yes ☒ No Conv. ☒ B.T. _____ Damaged _____ Yes ☒ No
Top Packer Depth 2025 Ft. Size 6 3/4" Bottom Packer Depth 2030 Ft. Size 6 3/4"
Straddle No Conv. _____ B.T. _____ Damaged _____ Yes _____ No Packer Depth _____ Ft. Size _____
Tool Size 5 1/2" O.D. Tool Joint Size 4 1/2" F.H. Anchor Length 10 Ft. Size 5 1/2" O.D. Surface Choke Size 3/4 In. Bottom Choke Size 3/4 In.
RECORDERS Depth 2033 Ft. Clock No. 8476 Depth 2036 Ft. Clock No. 9102
Top Make Kuster Cap. 4200 No. 1559 Inside _____ Outside _____ Bottom Make Kuster Cap. 4000 No. 3351 Inside _____ Outside _____
Below Straddle: Depth _____ Rec. No. _____ Clock No. _____ Inside _____ Outside _____
Time Set Packer 7:25 A. M _____
Tool Open I.F.P. From 7:30 M. to 7:35A M. Hr. 5 Min. From (B) 6 P.S.I. To (C) 6 P.S.I.
Tool Closed I.C.I.P. From 7:35 M. to 7:55A M. Hr. 20 Min (D) 589 P.S.I.
Tool Open F.F.P. From 7:55 M. to 8:15A M. Hr. 20 Min. From (E) 17 P.S.I. To (F) 19 P.S.I.
Tool Closed F.C.I.P. From 8:15 M. to 8:35A M. Hr. 20 Min. (G) 569 P.S.I.
Initial Hydrostatic Pressure (A) 1052 P.S.I. Final Hydrostatic Pressure (H) 1013 P.S.I. Maximum Temp. 101

INFORMATION

BLOW Good surge when tool opened - Flushed tool once (good surge)
Did Well Flow _____ Yes ☒ No _____ Recovery Total Ft. 3 feet free oil (Oil checked 32 gravity corrected)
5 feet drilling mud
Reversed Out _____ Yes ☒ No _____ Mud Type Chem. Viscosity 48 Weight 9.6 Water Loss 11.2 cc. Chlorides 1200
EXTRA EQUIPMENT: Type Circ. Sub. Pin Safety Joint No Jars: Size _____ In. Make _____ Ser. No. _____
Dual Packer Yes Did Packers Hold? Yes Did Tool Plug? No Where? _____
DRILLING CONTRACTOR Jackman & Jackman Length Drill Pipe? 1770 Ft. I.D. Drill Pipe 2.7 In. Tool Joint Size 3 1/2 I.F. In.
Length Weight Pipe _____ Ft. I.D. Weight Pipe _____ In. Tool Joint Size _____ In. Length Drill Collars 240 Ft. I.D. Drill Collars 2 1/4 In.
Tool Joint Size 4 1/2" FH In. Length D.S.T. Tool 30 Ft.
Remarks:

WESTERN TESTING CO., INC.

Pressure Data

Date 5-9-74 Test Ticket No. 20038
 Recorder No. 1559 Capacity 4200 Location 2033 Ft.
 Clock No. 8476 Elevation 1115 Kelly Bushings Well Temperature 101 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	1052	P.S.I.	7:25 A.	M
B First Initial Flow Pressure	6	P.S.I.	5	5 Mins.
C First Final Flow Pressure	6	P.S.I.	20	20 Mins.
D Initial Closed-in Pressure	589	P.S.I.	20	20 Mins.
E Second Initial Flow Pressure	17	P.S.I.	20	20 Mins.
F Second Final Flow Pressure	19	P.S.I.		
G Final Closed-in Pressure	569	P.S.I.		
H Final Hydrostatic Mud	1013	P.S.I.		

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>1</u> Inc.		Breakdown: <u>6</u> Inc.		Breakdown: <u>4</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>2</u> Min.		final inc. of <u>0</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>6</u>	<u>0</u>	<u>6</u>	<u>0</u>	<u>17</u>	<u>0</u>	<u>19</u>
P 2 <u>5</u>	<u>6</u>	<u>3</u>	<u>21</u>	<u>5</u>	<u>17</u>	<u>3</u>	<u>33</u>
P 3		<u>6</u>	<u>44</u>	<u>10</u>	<u>17</u>	<u>6</u>	<u>67</u>
P 4		<u>9</u>	<u>121</u>	<u>15</u>	<u>19</u>	<u>9</u>	<u>165</u>
P 5		<u>12</u>	<u>324</u>	<u>20</u>	<u>19</u>	<u>12</u>	<u>385</u>
P 6		<u>15</u>	<u>506</u>			<u>15</u>	<u>508</u>
P 7		<u>18</u>	<u>569</u>			<u>18</u>	<u>554</u>
P 8		<u>20</u>	<u>589</u>			<u>20</u>	<u>569</u>
P 9							
P10							
P11							
P12							
P13							
P14							
P15							
P16							
P17							
P18							
P19							
P20							

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^{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.