



Home Office: Great Bend, Kansas
P. O. Box 793 Gladstone 3-7903

Company Reichs Oil & Gas Lease & Well No. Bertholf #1
Elevation 1713' K.B. Ticket Number 3200
Date 9-17-63 Sec. 1 Twp. 30 Range 10 County Kingman State Kansas
Test Approved by Nelson R. Thomas Western Representative George Tow

Formation Test No. 1 O.K. ☒ Misrun ☐ Interval Tested From 1695' to 1713' Total Depth 1713'
Size Main Hole 7 7/8" Rat Hole None Conv. ☒ B.T. ☐ Damaged Yes ☒ No ☐ Conv. B.T. ☐ Damaged Yes ☒ No ☐
Packer Depth 1695 Ft. Size 6 3/4" Packer Depth 1690 Ft. Size 6 3/4"
Straddle Yes ☐ No ☒ Conv. ☐ B.T. ☐ Damaged Yes ☐ No ☐
Packer Depth 1695 Ft. Size 6 3/4"
Tool Size 5 1/2" OD Tool Jt. Size 4 1/2" FH Anchor Length 18 Ft. Size 5 1/2" OD

RECORDERS Depth 1704 Ft. Clock No. 6806 Depth 1707 Ft. Clock No. 4
Top Make Amareda Cap. 4200# No. 1558 Inside ☐ Outside ☒ Bottom Make Western Cap. 4000# No. 4 Inside ☐ Outside ☒
Below Straddle: Depth 1704 Ft. Clock No. 6806 Inside ☐ Outside ☒ Depth 1707 Ft. Clock No. 4 Inside ☐ Outside ☒
Top Make Amareda Cap. 4200# No. 1558 Inside ☐ Outside ☒ Bottom Make Western Cap. 4000# No. 4 Inside ☐ Outside ☒

Time Set Packer 1:30A M
Tool Open I.F.P. From 1:32A M to 1:42A M - Hr. 10 Min. From (B) 48 P.S.I. To (C) 48 P.S.I.
Tool Closed I.C.I.P. From 1:42A M. to 2:12A M. - Hr. 30 Min. (D) 119 P.S.I.
Tool Open F.F.P. From 2:12A M. to 3:12A M. - Hr. 1 Min. From (E) 54 P.S.I. To (F) 54 P.S.I.
Tool Closed F.C.I.P. From 3:12A M. to 3:42A M. - Hr. 30 Min. (G) 122 P.S.I.
Initial Hydrostatic Pressure (A) 851 P.S.I. Final Hydrostatic Pressure (H) 828 P.S.I.

SURFACE Size Choke 1/2 In. Max. Press. P.S.I. Time Description of Flow
INFORMATION Pair blow throughout test

BLOW Pair blow throughout test Bottom Choke Size 3/4 in.
Did Well Flow Yes ☒ No ☐ Recovery Total Ft. 65' Watery Mud

Reversed Out Yes ☒ No ☐ Mud Type Starch Viscosity 33 Weight 110 Maximum Temp. 110 °F
EXTRA EQUIPMENT: Dual Packers Yes Safety Joint No Jars: Size No Make No Ser. No. Yes
Type Circ. Sub. Plug Did Tool Plug? No Where? No Did Packer Hold? Yes
Length Drill Pipe 1615 ft. I.D. Drill Pipe 3.8 in. Length Weight Pipe 30 ft. I.D. Weight Pipe 60 in. Length Drill Collars 2.25 in. Length D. S. T. Tool 30 ft.

Remarks

WESTERN TESTING CO., INC. Pressure Data

Date 9-17-63 Test Ticket No. 3200
Recorder No. 1558 Capacity 4200 Location 1704 Fr.
Clock No. 4806 Elevation 1718' K.B. Well Temperature 84 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>851</u>	P.S.I.	<u>1:30 A</u>	<u>1:30 AM</u>
B First Initial Flow Pressure	<u>48</u>	P.S.I.	<u>10</u> Mins.	<u>10</u> Mins.
C First Final Flow Pressure	<u>48</u>	P.S.I.	<u>30</u> Mins.	<u>27</u> Mins.
D Initial Closed-in Pressure	<u>169</u>	P.S.I.	<u>60</u> Mins.	<u>60</u> Mins.
E Second Initial Flow Pressure	<u>54</u>	P.S.I.	<u>30</u> Mins.	<u>30</u> Mins.
F Second Final Flow Pressure	<u>54</u>	P.S.I.		
G Final Closed-in Pressure	<u>122</u>	P.S.I.		
H Final Hydrostatic Mud	<u>828</u>	P.S.I.		

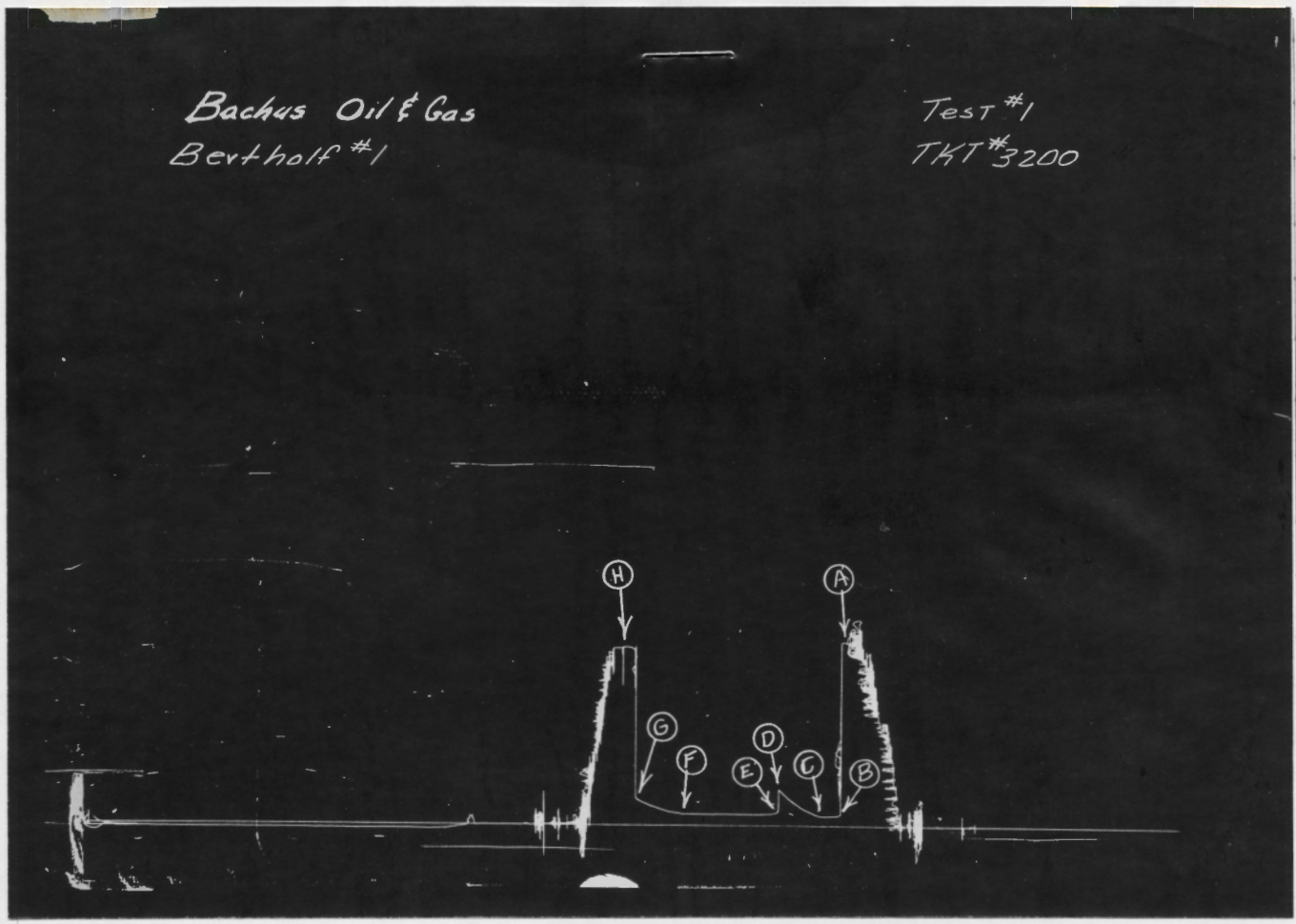
PRESSURE BREAKDOWN

First Flow Press. Breakdown: 2 Inc. of 5 mins. and a final inc. of - Min.
Initial Shut-In Breakdown: 9 Inc. of 3 mins. and a final inc. of - Min.
Second Flow Pressure Breakdown: 12 Inc. of 5 mins. and a final inc. of - Min.
Final Shut-In Breakdown: 10 Inc. of 3 mins. and a final inc. of - Min.

Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 <u>0</u>	<u>48</u>	<u>0</u>	<u>48</u>	<u>0</u>	<u>54</u>	<u>0</u>	<u>54</u>
P 2 <u>5</u>	<u>48</u>	<u>3</u>	<u>50</u>	<u>5</u>	<u>54</u>	<u>3</u>	<u>59</u>
P 3 <u>10</u>	<u>48</u>	<u>6</u>	<u>60</u>	<u>10</u>	<u>54</u>	<u>6</u>	<u>62</u>
P 4		<u>9</u>	<u>69</u>	<u>15</u>	<u>54</u>	<u>9</u>	<u>64</u>
P 5		<u>12</u>	<u>80</u>	<u>20</u>	<u>54</u>	<u>12</u>	<u>71</u>
P 6		<u>15</u>	<u>94</u>	<u>25</u>	<u>54</u>	<u>15</u>	<u>75</u>
P 7		<u>18</u>	<u>112</u>	<u>30</u>	<u>54</u>	<u>18</u>	<u>84</u>
P 8		<u>21</u>	<u>128</u>	<u>35</u>	<u>54</u>	<u>21</u>	<u>92</u>
P 9		<u>24</u>	<u>149</u>	<u>40</u>	<u>54</u>	<u>24</u>	<u>101</u>
P10		<u>27</u>	<u>169</u>	<u>45</u>	<u>54</u>	<u>27</u>	<u>111</u>
P11				<u>50</u>	<u>54</u>	<u>30</u>	<u>122</u>
P12				<u>55</u>	<u>54</u>		
P13				<u>60</u>	<u>54</u>		
P14							
P15							
P16							
P17							
P18							
P19							
P20							

Bachus Oil & Gas
Bertholf #1

Test #1
TKT #3200



This is an actual photograph of recorder chart.

POINT

PRESSURE

(A)	Initial Hydrostatic Mud	851	PSI
(B)	First Initial Flow Pressure	48	PSI
(C)	First Final Flow Pressure	48	PSI
(D)	Initial Closed-in Pressure	169	PSI
(E)	Second Initial Flow Pressure	54	PSI
(F)	Second Final Flow Pressure	54	PSI
(G)	Final Closed-in Pressure	122	PSI
(H)	Final Hydrostatic Mud	828	PSI

CSW SW



Home Office: Great Bend, Kansas
P. O. Box 793 Gladstone 3-7903

Company Bachus Oil Company Lease & Well No. Bertholf #1
Elevation 1718' K.B. Ticket Number 3001
Date 9-19-63 Sec. 1 Twp. 31 Range 10 County Kingman State Kansas
Test Approved by Nelson R. Thomas Western Representative George Tew

Formation Test No. 2 O.K. ☒ Misrun ☐ Interval Tested From 2498' to 2555' Total Depth 2555'
Size Main Hole 7 7/8" Rat Hole None Conv. ☒ B.T. ☐ Damaged ☒ Yes ☒ No ☐ Conv. ☐ B.T. ☒ Damaged ☒ Yes ☒ No ☐
Packer Depth 2498 Ft. Size 6 3/4" Packer Depth 2493 Ft. Size 6 3/4"
Straddle ☐ Yes ☒ No ☒ Conv. ☐ B.T. ☐ Damaged ☐ Yes ☐ No ☐
Packer Depth 31' 4 1/2" DP Ft. Size 26' 5 1/2" OD
Tool Size 5 1/2" OD Tool Jt. Size 4 1/2" FH Anchor Length 57 Ft. Size 26' 5 1/2" OD

RECORDERS Depth 2515 Ft. Clock No. 6806 Depth 2518 Ft. Clock No. 4
Top Make Amerada Cap. 4200# No. 1558 Inside ☒ Outside ☐ Bottom Make Western Cap. 4000# No. 4 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 11:24A M
Tool Open I.F.P. From 11:27A M to 11:42A M - Hr. 15 Min. From (B) 71 P.S.I. To (C) 76 P.S.I.
Tool Closed I.C.I.P. From 11:42A M. to 12:12A M. - Hr. 30 Min. (D) 491 P.S.I.
Tool Open F.F.P. From 12:12A M. to 2:12A M. 2 Hr. - Min. From (E) 91 P.S.I. To (F) 151 P.S.I.
Tool Closed F.C.I.P. From 2:12A M. to 2:42A M. - Hr. 30 Min. (G) 981 P.S.I.
Initial Hydrostatic Pressure (A) 1242 P.S.I. Final Hydrostatic Pressure (H) 1240 P.S.I.

SURFACE Size Choke 1/2 In. Max. Press. P.S.I. Time Description of Flow
INFORMATION (See Attached Note) M.
 M.
 M.

BLOW Strong gas to surface in 20 mins. Bottom Choke Size 3/4 in.
Did Well Flow ☒ Yes ☐ No Recovery Total Ft. 330' 210' G.C.M. - 120' G.C. Wtr. Mud

Reversed Out ☐ Yes ☒ No Mud Type Oil Viscosity 32 Weight Maximum Temp. 91 °F
EXTRA EQUIPMENT: Dual Packers ☒ Safety Joint ☒ Jars: Size No Make Ser. No.
Type Circ. Sub. Plug Did Tool Plug? ☒ No Where? Did Packer Hold? ☒ Yes
Length Drill Pipe 2383 ft. I.D. Drill Pipe 3.8 in. Length Weight Pipe ft. I.D. Weight Pipe in. Length Drill Collars 60 ft.
I. D. Drill Collars 2125 in. Length D. S. T. Tool 112 ft.

Remarks

P. O. Box 793
GREAT BEND, KANSAS

Company **Bachus Oil & Gas** Lease & Well No. **Bertholf #1**

Test No. **2** Interval Tested From **2498** To **2555**

Inches of Wtr.

Description of Flow

Time

12:52

1.4

164,000

12:57

1.6

175,000

1:12

1.8

190,000

1:27

3

240,000

1:42

5

310,000

1:57

6.5

359,000

2:12

8.5

403,000

Size Choke

Surface

 $\frac{1}{2}$

In.

Bottom

 $\frac{3}{4}$

In.

Remarks.

WESTERN TESTING CO., INC. Pressure Data

Date 9-19-63 Test Ticket No. 3001
Recorder No. 1558 Capacity 4200# Location 2515 Ft.
Clock No. 6806 Elevation 1718' K.B. Well Temperature 91 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>1242</u> P.S.I.	Opened Tool	<u>11:24 A</u>	<u>11:24 AM</u>
B First Initial Flow Pressure	<u>71</u> P.S.I.	First Flow Pressure	<u>15</u> Mins.	<u>16</u> Mins.
C First Final Flow Pressure	<u>76</u> P.S.I.	Initial Closed-in Pressure	<u>30</u> Mins.	<u>30</u> Mins.
D Initial Closed-in Pressure	<u>491</u> P.S.I.	Second Flow Pressure	<u>120</u> Mins.	<u>117</u> Mins.
E Second Initial Flow Pressure	<u>91</u> P.S.I.	Final Closed-in Pressure	<u>30</u> Mins.	<u>30</u> Mins.
F Second Final Flow Pressure	<u>151</u> P.S.I.			
G Final Closed-in Pressure	<u>981</u> P.S.I.			
H Final Hydrostatic Mud	<u>1240</u> P.S.I.			

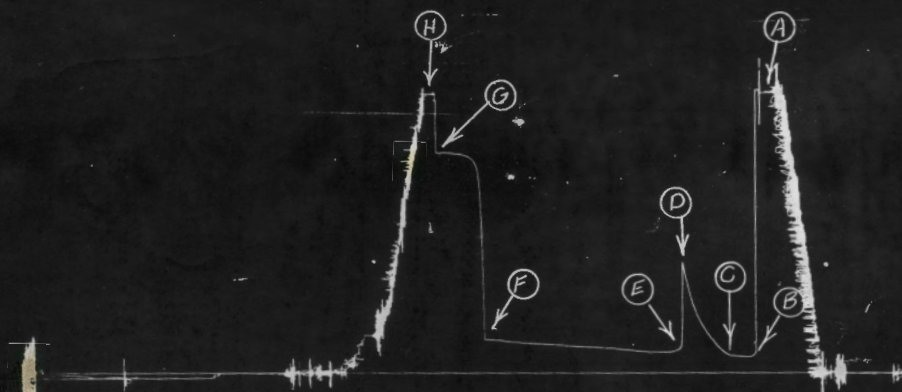
PRESSURE BREAKDOWN

First Flow Press. Breakdown: 3 Inc. of 5 mins. and a final inc. of 1 Min.
Initial Shut-In Breakdown: 10 Inc. of 3 mins. and a final inc. of - Min.
Second Flow Pressure Breakdown: 23 Inc. of 5 mins. and a final inc. of 2 Min.
Final Shut-In Breakdown: 10 Inc. of 3 mins. and a final inc. of - Min.

Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 <u>0</u>	<u>71</u>	<u>0</u>	<u>76</u>	<u>0</u>	<u>91</u>	<u>0</u>	<u>151</u>
P 2 <u>5</u>	<u>73</u>	<u>3</u>	<u>90</u>	<u>5</u>	<u>94</u>	<u>3</u>	<u>722</u>
P 3 <u>10</u>	<u>73</u>	<u>6</u>	<u>109</u>	<u>10</u>	<u>95</u>	<u>6</u>	<u>914</u>
P 4 <u>15</u>	<u>75</u>	<u>9</u>	<u>130</u>	<u>15</u>	<u>95</u>	<u>9</u>	<u>956</u>
P 5 <u>16</u>	<u>76</u>	<u>12</u>	<u>157</u>	<u>20</u>	<u>96</u>	<u>12</u>	<u>966</u>
P 6		<u>15</u>	<u>191</u>	<u>25</u>	<u>98</u>	<u>15</u>	<u>972</u>
P 7		<u>18</u>	<u>227</u>	<u>30</u>	<u>101</u>	<u>18</u>	<u>975</u>
P 8		<u>21</u>	<u>272</u>	<u>35</u>	<u>104</u>	<u>21</u>	<u>978</u>
P 9		<u>24</u>	<u>325</u>	<u>40</u>	<u>108</u>	<u>24</u>	<u>980</u>
P10		<u>27</u>	<u>413</u>	<u>45</u>	<u>112</u>	<u>27</u>	<u>981</u>
P11		<u>30</u>	<u>491</u>	<u>50</u>	<u>114</u>	<u>30</u>	<u>981</u>
P12				<u>55</u>	<u>117</u>		
P13				<u>60</u>	<u>119</u>		
P14				<u>65</u>	<u>122</u>		
P15				<u>70</u>	<u>124</u>		
P16				<u>75</u>	<u>126</u>		
P17				<u>80</u>	<u>129</u>		
P18				<u>85</u>	<u>132</u>		
P19				<u>90</u>	<u>134</u>		
P20				<u>95</u>	<u>139</u>		
				<u>100</u>	<u>141</u>		
				<u>105</u>	<u>143</u>		
				<u>110</u>	<u>146</u>		
				<u>115</u>	<u>149</u>		
				<u>117</u>	<u>151</u>		

Bachus Oil & Gas
Bertholf #1

Test #2
TKT#3001



This is an actual photograph of recorder chart.

POINT

PRESSURE

(A) Initial Hydrostatic Mud	1242	PSI
(B) First Initial Flow Pressure	71	PSI
(C) First Final Flow Pressure	76	PSI
(D) Initial Closed-in Pressure	491	PSI
(E) Second Initial Flow Pressure	91	PSI
(F) Second Final Flow Pressure	151	PSI
(G) Final Closed-in Pressure	981	PSI
(H) Final Hydrostatic Mud	1240	PSI

CSW 5W

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.