



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

Company Robert E. Campbell Oil & Gas Operations Lease & Well No. Klaver #2
 Elevation 1567 Kelly Bush. Formation Lansing Effective Pay - Ft. Ticket No. 22651
 Date 10-10-77 Sec. 9 Twp. 29S Range 6W County Kingman State Kansas
 Test Approved by Innes Phillips Western Representative Norman Allen

Formation Test No. 1 O.K. Misrun Interval Tested From 3274' to 3295' Total Depth 3295'
 Size Main Hole 7 7/8 Hole Conv. B.T. Damaged Yes No Conv. B.T. Damaged Yes No
 Top Packer Depth 3269 Ft. Size 6 3/4 Bottom Packer Depth 3274 Ft. Size 6 3/4
 Straddle Conv. B.T. Damaged Yes No Packer Depth - Ft. Size -
 Tool Size 4 1/2 OD Tool Joint Size 3 1/2 IF Anchor Length 21 Ft. Size 4 1/2 OD Surface Choke Size 1/4 In. Bottom Choke Size 3/4 In.

RECORDERS Depth 3288 Ft. Clock No. 6800 Depth 3291 Ft. Clock No. 8474
 Top Make Kuster Cap. 3150 No. 1564 Inside Outside Bottom Make Kuster Cap. 4500 No. 3085 Inside Outside
 Below Straddle: Depth - Rec. No. - Clock No. - Inside Outside Depth - Ft. Rec. No. - Clock No. - Inside Outside

Time Set Packer 8:58A. M
 Tool Open I.F.P. From 9:00A M. to 9:15A M. - Hr. 15 Min. From (B) 55 P.S.I. To (C) 91 P.S.I.
 Tool Closed I.C.I.P. From 9:15A M. to 10:00A M. - Hr. 45 Min (D) 1181 P.S.I.
 Tool Open F.F.P. From 10:00A M. to 10:45A M. - Hr. 45 Min. From (E) 139 P.S.I. To (F) 289 P.S.I.
 Tool Closed F.C.I.P. From 10:45A M. to 11:45A M. - Hr. 60 Min. (G) 1124 P.S.I.
 Initial Hydrostatic Pressure (A) 1580 P.S.I. Final Hydrostatic Pressure (H) 1576 P.S.I. Maximum Temp. 112

INFORMATION

BLOW Strong blow throughout test. Gas to surface in 15 minutes, see attached sheet for gas measurements.

Did Well Flow Gas Yes No Recovery Total Ft. 1300' of gassy oil, 80' of muddy gassy oil (ground out 75% oil, 25% mud)

Reversed Out Yes No Mud Type Chem Viscosity 35 Weight 9.1 Water Loss 36 cc. Chlorides 16,500 PPM

EXTRA EQUIPMENT: Type Circ. Sub. Pin Safety Joint Jars: Size - In. Make - Ser. No. -
 Dual Packer Yes Did Packers Hold? Yes Did Tool Plug? No Where? -

DRILLING CONTRACTOR Search Drlg. Co. Length Drill Pipe? 3254 Ft. I.D. Drill Pipe 3.8 In. Tool Joint Size 4 1/2 In.
 Length Weight Pipe - Ft. I.D. Weight Pipe - In. Tool Joint Size - In. Length Drill Collars - Ft. I.D. Drill Collars - In.
 Tool Joint Size - In. Length D.S.T. Tool 41 Ft.

Remarks: Oil checked 34°F. gravity corrected.
Reversed out with circ. sub.
Read outside recorder #3085



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GAS FLOW REPORT

Date 10-10-77 Ticket 22651 Company Robert E. Campbell Oil & Gas Operations
 Well Name and No. Klaver #2 Dst No. 1 Interval Tested 3274' - 3295'
 County Kingman State Kansas Sec. 9 Twp. 29S Rg. 6W

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						

SECOND FLOW						
10:10AM	10 min.	20" of water	1/4"	choke		7,510 C.F.P.D.
10:15AM	15 min.	15" of water	1/4"	choke		6,550 C.F.P.D.
10:20AM	20 min.	15" of water	1/4"	choke		6,550 C.F.P.D.
10:25AM	25 min.	14" of water	1/4"	choke		6,330 C.F.P.D.
10:30AM	30 min.	13" of water	1/4"	choke		6,100 C.F.P.D.
10:35AM	35 min.	11" of water	1/4"	choke		5,600 C.F.P.D.
10:45AM	40 min.	11" of water	1/4"	choke		5,600 C.F.P.D.

GAS BOTTLE

Serial No. 211 Date Bottle Filled 10-10-77 Date to be Invoiced 10-10-77

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 Robert E. Campbell Oil & Gas Operations

Authorized by Innes Phillips

WESTERN TESTING CO., INC.
Pressure Data

Date 10-10-77

Test Ticket No. 22651

Recorder No. 3085 Capacity 4500 Location 3291 Ft.

Clock No. 8474 Elevation 1567 Kelly Bush. Well Temperature 112 °F

Point	Pressure		Open Tool	Time Given	Time Computed
A Initial Hydrostatic Mud	<u>1580</u>	<u>P.S.I.</u>		<u>8:58 A.</u>	<u>M</u>
B First Initial Flow Pressure	<u>55</u>	<u>P.S.I.</u>	First Flow Pressure	<u>15</u> Mins.	<u>15</u> Mins.
C First Final Flow Pressure	<u>91</u>	<u>P.S.I.</u>	Initial Closed-in Pressure	<u>45</u> Mins.	<u>45</u> Mins.
D Initial Closed-in Pressure	<u>1181</u>	<u>P.S.I.</u>	Second Flow Pressure	<u>45</u> Mins.	<u>45</u> Mins.
E Second Initial Flow Pressure	<u>139</u>	<u>P.S.I.</u>	Final Closed-in Pressure	<u>60</u> Mins.	<u>60</u> Mins.
F Second Final Flow Pressure	<u>289</u>	<u>P.S.I.</u>			
G Final Closed-in Pressure	<u>1124</u>	<u>P.S.I.</u>			
H Final Hydrostatic Mud	<u>1576</u>	<u>P.S.I.</u>			

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: 9 Inc.
of 5 mins. and a
final inc. of 0 Min.

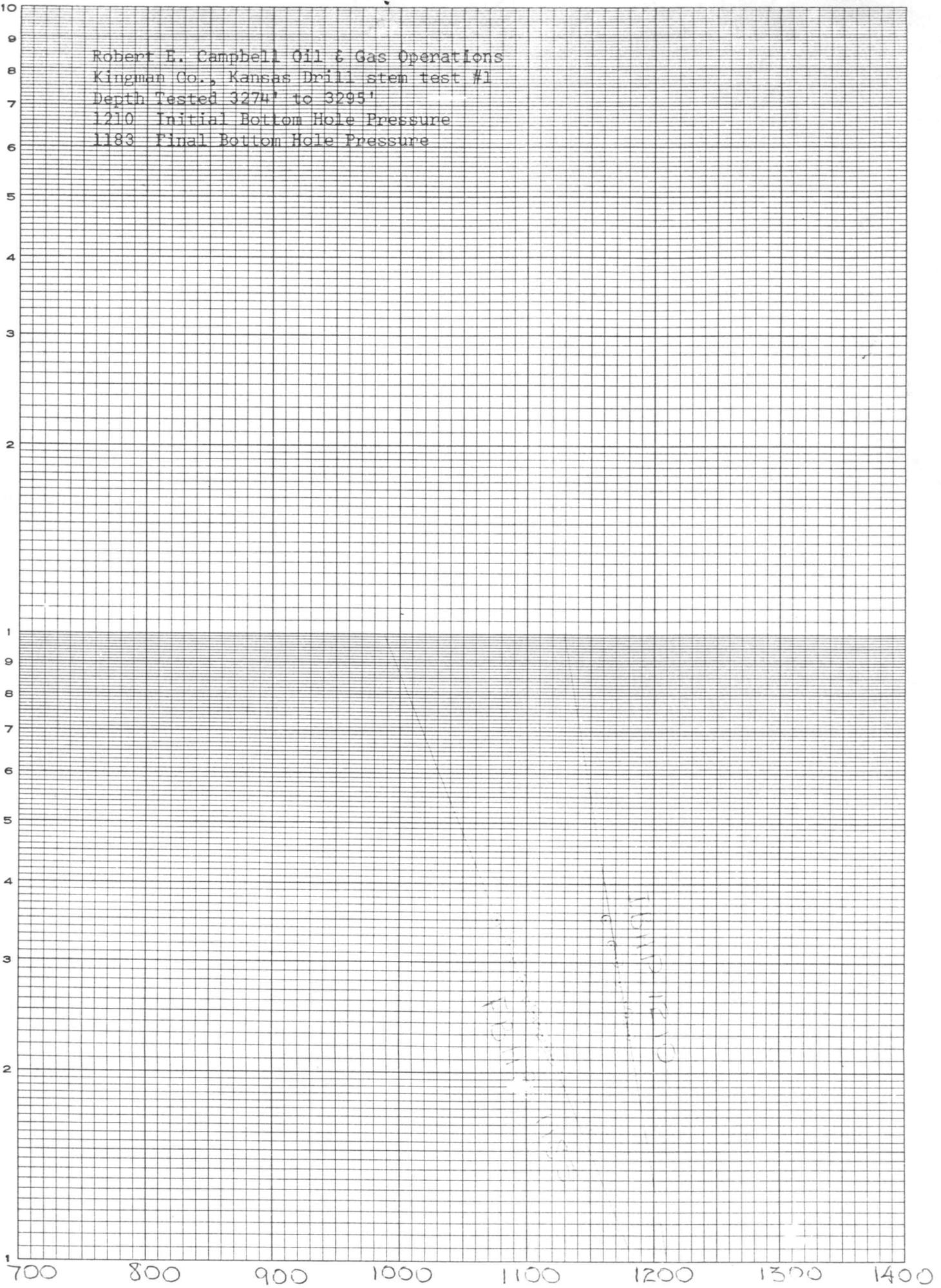
Final Shut-In
Breakdown: 20 Inc.
of 3 mins. and a
final inc. of 0 Min.

Point Mins.	First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes
P 1 <u>0</u>	<u>55</u>	<u>0</u>	<u>91</u>	<u>0</u>	<u>139</u>	<u>0</u>	<u>289</u>	<u>0</u>
P 2 <u>5</u>	<u>65</u>	<u>3</u>	<u>902</u>	<u>3</u>	<u>139</u>	<u>3</u>	<u>858</u>	<u>3</u>
P 3 <u>10</u>	<u>74</u>	<u>6</u>	<u>1055</u>	<u>6</u>	<u>151</u>	<u>6</u>	<u>963</u>	<u>6</u>
P 4 <u>15</u>	<u>91</u>	<u>9</u>	<u>1097</u>	<u>9</u>	<u>174</u>	<u>9</u>	<u>1007</u>	<u>9</u>
P 5		<u>12</u>	<u>1123</u>	<u>12</u>	<u>196</u>	<u>12</u>	<u>1030</u>	<u>12</u>
P 6		<u>15</u>	<u>1039</u>	<u>15</u>	<u>217</u>	<u>15</u>	<u>1051</u>	<u>15</u>
P 7		<u>18</u>	<u>1150</u>	<u>18</u>	<u>236</u>	<u>18</u>	<u>1062</u>	<u>18</u>
P 8		<u>21</u>	<u>1157</u>	<u>21</u>	<u>253</u>	<u>21</u>	<u>1071</u>	<u>21</u>
P 9		<u>24</u>	<u>1162</u>	<u>24</u>	<u>275</u>	<u>24</u>	<u>1078</u>	<u>24</u>
P10		<u>27</u>	<u>1166</u>	<u>27</u>	<u>289</u>	<u>27</u>	<u>1088</u>	<u>27</u>
P11		<u>30</u>	<u>1171</u>	<u>30</u>		<u>30</u>	<u>1092</u>	<u>30</u>
P12		<u>33</u>	<u>1173</u>	<u>33</u>		<u>33</u>	<u>1097</u>	<u>33</u>
P13		<u>36</u>	<u>1178</u>	<u>36</u>		<u>36</u>	<u>1102</u>	<u>36</u>
P14		<u>39</u>	<u>1179</u>	<u>39</u>		<u>39</u>	<u>1106</u>	<u>39</u>
P15		<u>42</u>	<u>1180</u>	<u>42</u>		<u>42</u>	<u>1111</u>	<u>42</u>
P16		<u>45</u>	<u>1181</u>	<u>45</u>		<u>45</u>	<u>1113</u>	<u>45</u>
P17						<u>48</u>	<u>1116</u>	<u>48</u>
P18						<u>51</u>	<u>1118</u>	<u>51</u>
P19						<u>54</u>	<u>1121</u>	<u>54</u>
P20						<u>57</u>	<u>1122</u>	<u>57</u>
						<u>60</u>	<u>1124</u>	<u>60</u>

EUGENE DIETZGEN CO.
MADE IN U. S. A.

NO. 341-L210 DIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
2 CYCLES X 10 DIVISIONS PER INCH

Robert E. Campbell Oil & Gas Operations
Kingman Co., Kansas Drill stem test #1
Depth Tested 3274' to 3295'
1210 Initial Bottom Hole Pressure
1183 Final Bottom Hole Pressure



Liquid Production

B.T. Gauge Numbers 3085			Ticket Number	22651
Initial Hydrostatic		PRESSURE	Elevation	1567 Kelly Bush
		1580		
Final Hydrostatic		1516	Indicated Production	1st Flow bbls. day
1st Flow	Initial	-----	Total Flow	bbls. day
	Final	55		
		15	Drill Collar Length	ft.
Initial Closed In Pressure		45	Drill Collar I.D.	in.
		1181		
2nd Flow	Initial	-----	Drill Pipe Factor	.0142 bbls. ft.
	Final	45	Hole Size	7 7/8 in.
		289	Footage Tested	21 ft.
Final Closed In Pressure		60	Mud Weight	9.1 lbs. gal.
		1124	Viscosity, Oil or Water	2.4 cp
Extrapolated Static Pressure	Initial	1210	Oil API Gravity	34 —
	Final	1183	Water Specific Gravity	—
Slope psi/cycle	Initial	81		
	Final	195		

Remarks: _____

SUMMARY

Gauge
No.
Depth

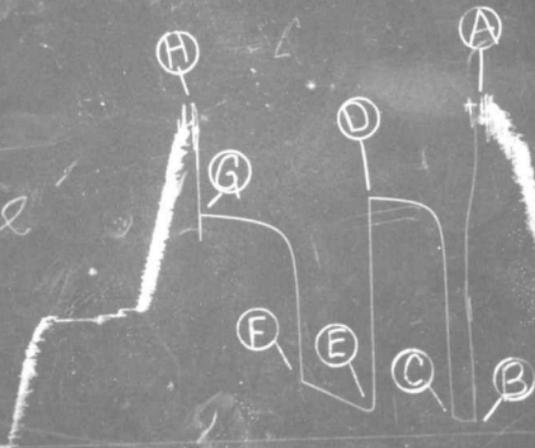
Product	Equation	INITIAL	FINAL	Units
Production	$Q = \frac{1440 R}{t}$		470.4	bbls. day
Transmissibility	$\frac{Kh}{\mu} = \frac{162.6 Q}{m}$		392.24	md. ft. / cp
Indicated Flow Capacity	$Kh = \frac{Kh}{\mu} \mu$		941.37	md. ft.
Average Effective Permeability	$K = \frac{Kh}{h}$		44.82	md.
	$K_1 = \frac{Kh}{h_1}$		44.82	md.
Damage Ratio	$DR = .183 \frac{Ps - Pf}{m}$.979	—
Theoretical Potential w/Damage Removed	$Q_1 = Q DR$		Less than one	bbls. day
Approx. Radius of Investigation	$b \approx \sqrt{Kt}$ or $\sqrt{Kt_0}$		4490	ft.
	$b_1 \approx \sqrt{K_1 t}$ or $\sqrt{K_1 t_0}$		4490	ft.
Potentiometric Surface *	Pot. = EI - CD + 2.319 Ps		1019.4	ft.

NOTICE: These calculations are based upon information furnished by you and taken from Drill Stem Test pressure charts, and are furnished for your information. In furnishing such calculations and elevations based thereon, Western Testing Co., Inc. is merely expressing its opinion. You agree that Western Testing Co., Inc. makes no warranty express or implied as to the accuracy of such calculations or opinions, and that Western Testing Co., Inc. shall not be liable for any loss or damage, whether due to negligence or otherwise, in connection with such calculations and opinions.

INTERPRETATIONS AND CALCULATIONS

TK# 22651

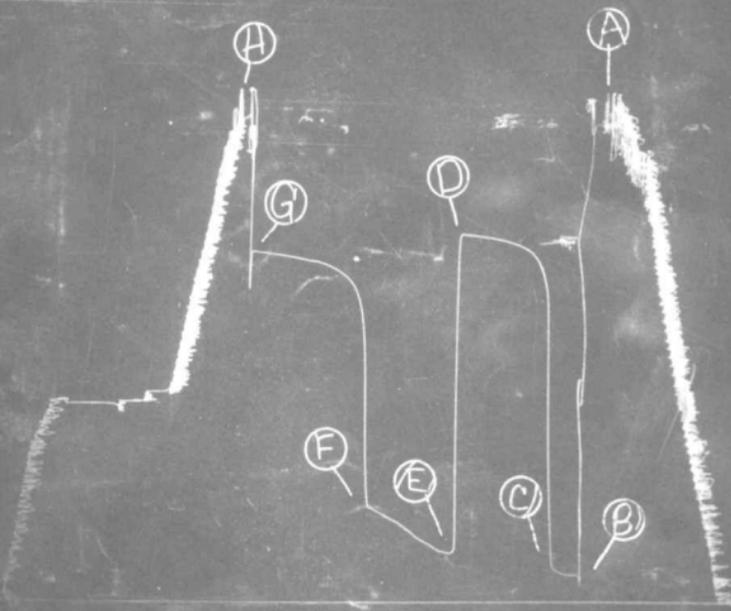
O.



2085

TK#22651

I.





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

Company Robert E. Campbell Oil & Gas Operations Lease & Well No. #2 Klaver
Elevation 1547 Kelly Bush. Formation Mississippi Effective Pay - Ft. Ticket No. 22625
Date 10-12-77 Sec. 9 Twp. 29S Range 6W County Kingman State Ks

Test Approved by Innes Phillips Western Representative Tim Wilson

Formation Test No. 2 O.K. Misrun Interval Tested From 4100' to 4112' Total Depth 4112'

Size Main Hole 7 7/8 Rat Hole Conv. B.T. Damaged Yes No Conv. B.T. Damaged Yes No

Top Packer Depth 4095 Ft. Size 6 3/4 Bottom Packer Depth 4100 Ft. Size 6 3/4

Straddle Conv. B.T. Damaged Yes No Packer Depth Ft. Size

Tool Size 4 1/2 OD Tool Joint Size 3 1/2 IF Anchor Length 12 Ft. Size 4 1/2 OD Surface Choke Size 3/4 In. Bottom Choke Size 3/4 In.

RECORDERS Depth 4105 Ft. Clock No. 9102 Depth 4108 Ft. Clock No. 9727

Top Make Kuster Cap. 3150 No. 1562 Inside Outside Bottom Make Kuster Cap. 3200 No. 1561 Inside Outside

Below Straddle: Depth Rec. No. Clock No. Depth Ft. Rec. No. Clock No.

Time Set Packer 1:03 P M

Tool Open I.F.P. From 1:05P M. to 1:35P M. - Hr. 30 Min. From (B) 35 P.S.I. To (C) 46 P.S.I.

Tool Closed I.C.I.P. From 1:35P M. to 2:20P M. - Hr. 45 Min (D) 1349 P.S.I.

Tool Open F.F.P. From 2:20P M. to 3:20P M. - Hr. 60 Min. From (E) 62 P.S.I. To (F) 86 P.S.I.

Tool Closed F.C.I.P. From 3:20P M. to 4:20P M. - Hr. 60 Min. (G) 1290 P.S.I.

Initial Hydrostatic Pressure (A) 1900 P.S.I. Final Hydrostatic Pressure (H) 1971 P.S.I. Maximum Temp. 128

INFORMATION

BLOW Very strong, gas to surface in sixteen minutes, see attached gas sheet.

Did Well Flow Yes No Recovery Total Ft. 30' mud, 60' muddy water -20% water, 60' muddy water -70% water 150' total recovery

Chlorides checked: 86,000 PPM

Reversed Out Yes No Mud Type Chem. Viscosity 41 Weight 9.0 Water Loss 14.4 cc. Chlorides 15000 PPM

EXTRA EQUIPMENT: Type Circ. Sub. Pin Safety Joint Jars: Size In. Make Ser. No.

Dual Packer Did Packers Hold? Did Tool Plug? No Where?

DRILLING CONTRACTOR Search Rig #1 Length Drill Pipe? 4081 Ft. I.D. Drill Pipe 3.8 In. Tool Joint Size 4 1/2 XH In.

Length Weight Pipe Ft. I.D. Weight Pipe In. Tool Joint Size In. Length Drill Collars Ft. I.D. Drill Collars In.

Tool Joint Size In. Length D.S.T. Tool 31 Ft.

Remarks:

Fluid 150' gas cut muddy water, See attached gas sheet.

Read outside recorder #1561



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

GAS FLOW REPORT

Date 10-12-77 Ticket 22625 Company Robert E. Campbell Oil & Gas Operations
 Well Name and No. #2 Klaver Dst No. 2 Interval Tested 4100' - 4112'
 County Kingman State Ks Sec. 9 Twp. 29S Rg. 6W

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
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PRE FLOW

Gas to surface in sixteen minutes						
1:25 P.M.	20 Min.	2.5 PSIG	¼" Choke			14,300 C.F.P.D.
1:30 P.M.	25 Min.	5.5 PSIG	¼" Choke			21,800 C.F.P.D.
1:35 P.M.	30 Min.	9.0 PSIG	¼" Choke			29,000 C.F.P.D.
Tool shut in 45 minutes						

SECOND FLOW

2:20 P.M.	0	7 PSIG	¼" Choke			25,000 C.F.P.D.
2:25 P.M.	5	12 PSIG	¼" Choke			34,000 C.F.P.D.
2:30 P.M.	10 Min.	12½ PSIG	¼" Choke			34,950 C.F.P.D.
2:35 P.M.	15 Min.	12½ PSIG	¼" Choke			34,950 C.F.P.D.
2:40 P.M.	20 Min.	14 PSIG	¼" Choke			37,600 C.F.P.D.
2:45 P.M.	25 Min.	16 PSIG	¼" Choke			43,900 C.F.P.D.
2:50 P.M.	30 Min.	18 PSIG	¼" Choke			43,900 C.F.P.D.
2:55 P.M.	35 Min.	20½ PSIG	¼" Choke			47,900 C.F.P.D.
3:00 P.M.	40 Min.	21½ PSIG	¼" Choke			49,750 C.F.P.D.
3:05 P.M.	45 Min.	22½ PSIG	¼" Choke			51,000 C.F.P.D.
3:10 P.M.	50 Min.	23½ PSIG	¼" Choke			52,300 C.F.P.D.
3:15 P.M.	55 Min.	24 PSIG	¼" Choke			53,200 C.F.P.D.
3:20 P.M.	60 Min.	24 PSIG	¼" Choke			53,200 C.F.P.D.

GAS BOTTLE

Serial No. 623 Date Bottle Filled 10-12-77 Date to be Invoiced 10-12-77

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 Robert E. Campbell Oil & Gas Operation

Authorized by Innes Phillips

WESTERN TESTING CO., INC.
Pressure Data

Date 10-12-77

Test Ticket No. 22625

Recorder No. 1561 Capacity 3200 Location 4108 Ft.

Clock No. 9727 Elevation 1547 Kelly Bushing Well Temperature 128 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>1990</u> P.S.I.	Open Tool	<u>1:03P</u> M	
B First Initial Flow Pressure	<u>35</u> P.S.I.	First Flow Pressure	<u>30</u> Mins.	<u>30</u> Mins.
C First Final Flow Pressure	<u>46</u> P.S.I.	Initial Closed-in Pressure	<u>45</u> Mins.	<u>45</u> Mins.
D Initial Closed-in Pressure	<u>1349</u> P.S.I.	Second Flow Pressure	<u>60</u> Mins.	<u>60</u> Mins.
E Second Initial Flow Pressure	<u>62</u> P.S.I.	Final Closed-in Pressure	<u>60</u> Mins.	<u>57</u> Mins.
F Second Final Flow Pressure	<u>86</u> P.S.I.			
G Final Closed-in Pressure	<u>1290</u> P.S.I.			
H Final Hydrostatic Mud	<u>1971</u> 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: 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: 19 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>35</u>	<u>0</u>	<u>46</u>	<u>0</u>	<u>62</u>	<u>0</u>	<u>95</u>
P 2 <u>5</u>	<u>28</u>	<u>3</u>	<u>516</u>	<u>5</u>	<u>61</u>	<u>3</u>	<u>487</u>
P 3 <u>10</u>	<u>31</u>	<u>6</u>	<u>792</u>	<u>10</u>	<u>64</u>	<u>6</u>	<u>736</u>
P 4 <u>15</u>	<u>35</u>	<u>9</u>	<u>975</u>	<u>15</u>	<u>66</u>	<u>9</u>	<u>888</u>
P 5 <u>20</u>	<u>38</u>	<u>12</u>	<u>1087</u>	<u>20</u>	<u>69</u>	<u>12</u>	<u>979</u>
P 6 <u>25</u>	<u>41</u>	<u>15</u>	<u>1157</u>	<u>25</u>	<u>75</u>	<u>15</u>	<u>1045</u>
P 7 <u>30</u>	<u>46</u>	<u>18</u>	<u>1207</u>	<u>30</u>	<u>79</u>	<u>18</u>	<u>1091</u>
P 8		<u>21</u>	<u>1242</u>	<u>35</u>	<u>82</u>	<u>21</u>	<u>1126</u>
P 9		<u>24</u>	<u>1267</u>	<u>40</u>	<u>87</u>	<u>24</u>	<u>1153</u>
P10		<u>27</u>	<u>1288</u>	<u>45</u>	<u>90</u>	<u>27</u>	<u>1176</u>
P11		<u>30</u>	<u>1303</u>	<u>50</u>	<u>93</u>	<u>30</u>	<u>1196</u>
P12		<u>33</u>	<u>1316</u>	<u>55</u>	<u>95</u>	<u>33</u>	<u>1211</u>
P13		<u>36</u>	<u>1328</u>	<u>60</u>	<u>86</u>	<u>36</u>	<u>1226</u>
P14		<u>39</u>	<u>1337</u>			<u>39</u>	<u>1239</u>
P15		<u>42</u>	<u>1345</u>			<u>42</u>	<u>1249</u>
P16		<u>45</u>	<u>1349</u>			<u>45</u>	<u>1259</u>
P17						<u>48</u>	<u>1268</u>
P18						<u>51</u>	<u>1276</u>
P19						<u>54</u>	<u>1283</u>
P20						<u>57</u>	<u>1290</u>

TK# 22625

(A)

(A)

(D)

(G)

(D)

(F)

(E)

(C)

(B)

