



WESTERN TESTING CO., INC.
FORMATION TESTING

TICKET No 7597

P. O. BOX 1599 WICHITA, KANSAS 67201
PHONE (316) 262-5861

Elevation Formation CHKDICE-HUCK Eff. Pay Ft.

District PLATT Date 10-21-80 Customer Order No.
COMPANY NAME IMPERIAL OIL CO.
ADDRESS FOURTH FINANCIAL CENTER WICHITA KS
LEASE AND WELL NO. Woolery #3-18 COUNTY KIOWA STATE KS Sec. 8 Twp 30 Rge 20W
Mail Invoice To Co. Name Address No. Copies Requested REG
Mail Charts To Co. Name Address No. Copies Requested REG

Formation Test No. 1 Interval Tested from 5058 ft. to 5131 ft. Total Depth 5131 ft.
Packer Depth 5054 ft. Size 6 3/4 in. Packer Depth ft. Size in.
Packer Depth 5059 ft. Size 6 3/4 in. Packer Depth ft. Size in.
Depth of Selective Zone Set
Top Recorder Depth (Inside) 5064 ft. Recorder Number 11018 Cap. 4425
Bottom Recorder Depth (Outside) 5069 ft. Recorder Number 11019 Cap. 4500
Below Straddle Recorder Depth ft. Recorder Number Cap.
Drilling Contractor WHITE & ELLIS #9 Drill Collar Length I. D. in.
Mud Type Viscosity Weight Pipe Length I. D. in.
Weight Water Loss cc. Drill Pipe Length 5032 I. D. 4.0 in.
Chlorides P.P.M. Test Tool Length 26 ft. Tool Size 3 1/2 in.
Jars: Make WTC Serial Number 3660 Anchor Length 73 ft. Size 4 1/2 in.
Did Well Flow? Reversed Out Surface Choke Size 1/2 in. Bottom Choke Size 1/2 in.
Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 x 1 1/2 in.

Blow: STRONG - 6TS IN 15 MINUTES
Gas to surface See attached sheet for gas measurement
Recovered 180 ft. of 695 8.95 ACEFO THROUGH 1/4 ORIFICE
Recovered 180 ft. of Oil & Gas Cut Mud
Remarks:

Time On Location 5:00 AM P.M. Time Pick Up Tool 7:00 AM P.M. Time Off Location AM P.M.
Time Set Packer(s) 9:40 AM P.M. Time Started Off Bottom 5:40 AM P.M. Maximum Temperature 125°
Initial Hydrostatic Pressure (A) 2444 P.S.I.
Initial Flow Period Minutes 60 (B) 66 P.S.I. to (C) 55 P.S.I.
Initial Closed In Period Minutes 120 (D) 322 P.S.I.
Final Flow Period Minutes 180 (E) 77 P.S.I. to (F) 100 P.S.I.
Final Closed In Period Minutes 120 (G) 366 P.S.I.
Final Hydrostatic Pressure (H) 2322 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 [Signature]
Signature of Customer or his authorized representative

Western Representative [Signature] Stuart Stover

FIELD INVOICE

Open Hole Test \$1650.00
Misrun \$
Straddle Test \$
Jars \$2300.00
Selective Zone \$
Safety Joint \$1550.00
Standby \$
Evaluation \$
Extra Packer \$
Circ. Sub. \$
Mileage 60 \$45.00
Fluid Sampler \$
Extra Charts \$
Insurance \$
TOTAL \$1045.00



**GAS FLOW REPORT**

**Nº 1972**

Date 10-21-80 Ticket 7596 Company Imperial  
 Well Name and No. Woolery Dst No. 1 Interval Tested 5058'-5131'  
 County KIOWA State KANSAS Sec. 8 Twp. 20S Rg. 20W

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
<b>GTS in 15 MINUTES PRE FLOW</b>					
20	2.0	1/4			12.7 <del>ACFPD</del>
30	3.0	1/4			15.7
40	4.0	1/4			18.7
50	6.0	1/4	OK		22.9
60	6.0	1/4			22.7

<b>SECOND FLOW</b>					
15	2.0	1/4			12.7 <del>ACFPD</del>
30	2.0	1/4			12.7
45	2.0	1/4			12.7
60	2.0	1/4			12.7
75	1.7	"			11.02
90	1.5	"	OK		11.02
105	1.3	"			11.02
120	1.0	"			9.95
135	1.0	"			9.95
150	1.0	"			9.95
165	1.0	"			9.95
180	1.0	"			9.95

**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 10 - - 80 Test Ticket No. 7597  
 Recorder No. 11018 Capacity 4425 Location 5064 Ft.  
 Clock No. \_\_\_\_\_ Elevation \_\_\_\_\_ Well Temperature 125 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>2484</u>	P.S.I.	<u>9:40 P</u>	
B First Initial Flow Pressure	<u>100</u>	P.S.I.	<u>60</u> Mins.	<u>55</u> Mins.
C First Final Flow Pressure	<u>67</u>	P.S.I.	<u>130</u> Mins.	<u>114</u> Mins.
D Initial Closed-in Pressure	<u>333</u>	P.S.I.	<u>180</u> Mins.	<u>180</u> Mins.
E Second Initial Flow Pressure	<u>102</u>	P.S.I.	<u>150</u> Mins.	<u>120</u> Mins.
F Second Final Flow Pressure	<u>109</u>	P.S.I.		
G Final Closed-in Pressure	<u>364</u>	P.S.I.		
H Final Hydrostatic Mud	<u>2360</u>	P.S.I.		

### PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>11</u> Inc.		Breakdown: <u>38</u> Inc.		Breakdown: <u>36</u> Inc.		Breakdown: <u>40</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>100</u>	0	<u>67</u>	0	<u>102</u>	0	<u>109</u>
P 2	<u>82</u>	3	<u>129</u>	5	<u>95</u>	3	<u>207</u>
P 3	<u>71</u>	6	<u>240</u>	10	<u>89</u>	6	<u>260</u>
P 4	<u>67</u>	9	<u>280</u>	15	<u>88</u>	9	<u>284</u>
P 5		12	<u>307</u>	20	<u>87</u>	12	<u>300</u>
P 6		15	<u>318</u>	25	<del>85</del>	15	<u>311</u>
P 7		18	<u>322</u>	30	<u>84</u>	18	<u>320</u>
P 8		21	<u>327</u>	35		21	<u>327</u>
P 9		24	<u>331</u>	40		24	<u>331</u>
P10		27	<u>333</u>	45		27	<u>333</u>
P11		30	<u>336</u>	50	<u>84</u>	30	<u>337</u>
P12	<u>67</u>	33	<u>340</u>	55	<u>85</u>	33	<u>339</u>
P13		36	<u>341</u>	60	<del>86</del>	36	<u>340</u>
P14		39	<u>342</u>	65	<del>87</del>	39	<u>342</u>
P15		42	<u>343</u>	70	<u>88</u>	42	<u>343</u>
P16		45	<u>344</u>	75	<del>89</del>	45	<u>344</u>
P17		48	<u>343</u>	80	<u>90</u>	48	<u>346</u>
P18		51		85	<u>91</u>	51	<u>347</u>
P19		54		90	<u>92</u>	54	<u>348</u>
P20		57		<u>95</u>	<u>94</u>	57	<u>350</u>
		60	<u>343</u>	<u>100</u>	<u>95</u>	60	<u>351</u>

WESTERN TESTING CO., INC.

Pressure Data

Date \_\_\_\_\_

Test Ticket No. 7597

Recorder No. \_\_\_\_\_ Capacity \_\_\_\_\_ Location \_\_\_\_\_ Ft.

Clock No. \_\_\_\_\_ Elevation \_\_\_\_\_ Well Temperature \_\_\_\_\_ °F

Point	Pressure	Time Given	Time Computed
A Initial Hydrostatic Mud _____ P.S.I.	Open Tool _____ M _____		
B First Initial Flow Pressure _____ P.S.I.	First Flow Pressure _____ Mins. _____ Mins.		
C First Final Flow Pressure _____ P.S.I.	Initial Closed-in Pressure _____ Mins. _____ Mins.		
D Initial Closed-in Pressure _____ P.S.I.	Second Flow Pressure _____ Mins. _____ Mins.		
E Second Initial Flow Pressure _____ P.S.I.	Final Closed-in Pressure _____ Mins. _____ Mins.		
F Second Final Flow Pressure _____ P.S.I.			
G Final Closed-in Pressure _____ P.S.I.			
H Final Hydrostatic Mud _____ P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ 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 _____		63	<u>343</u>	<u>105</u>	<u>99</u> <u>96</u>	63	<u>352</u>
P 2 _____		66	<u>343</u>	<u>110</u>	<u>98</u>	66	<u>353</u>
P 3 _____		69	<u>343</u>	<u>115</u>	<u>98</u>	69	<u>354</u>
P 4 _____		72	<u>342</u>	<u>120</u>	<u>99</u>	72	<u>355</u>
P 5 _____		75	<u>342</u>	<u>125</u>	<u>99</u>	75	<u>356</u>
P 6 _____		78	<u>341</u> <del>342</del>	<u>130</u>	<u>100</u>	78	<u>357</u>
P 7 _____		81	<u>340</u>	<u>135</u> ✓	<u>101</u>	81	<u>358</u>
P 8 _____		84	<u>339</u>	<u>140</u>	<u>102</u>	84	<u>359</u>
P 9 _____		87	<u>338</u>	<u>145</u>	<u>103</u>	87	<u>360</u>
P10 _____		90	<u>338</u>	<u>150</u> ✓	<u>104</u>	90	<u>360</u>
P11 _____		93	<u>337</u>	<u>155</u>	<u>105</u>	93	<u>361</u>
P12 _____		96	<u>337</u>	<u>160</u>	<u>106</u>	96	<u>361</u>
P13 _____		99	<u>336</u>	<u>165</u> ✓	<u>107</u>	99	<u>361</u>
P14 _____		102	<u>335</u>	<u>170</u>	<u>108</u>	102	<u>362</u>
P15 _____		105	<u>335</u>	<u>175</u>	<u>109</u>	105	<u>362</u>
P16 _____		108	<u>334</u>	<u>180</u> ✓	<u>109</u>	108	<u>362</u>
P17 _____		111	<u>333</u>			111	<u>363</u>
P18 _____		114	<u>333</u>			114	<u>363</u>
P19 _____		117				117	<u>364</u>
P20 _____		120				120	<u>364</u>

Company Imperial Oil Company Lease & Well No. Woolery #3-18  
 Elevation ----- Formation Cherokee-Huck Effective Pay ----- Ft. Ticket No. 7597  
 Date 10/21/80 Sec. 8 Twp. 30S Range 20W County Kiowa State Kansas  
 Test Approved by H. B. H----- Western Representative Stuart Stover

Formation Test No. I Interval Tested from 5058' ft. to 5131 ft. Total Depth 5131 ft.  
 Packer Depth 5054 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.  
 Packer Depth 5059 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.

Depth of Selective Zone Set -  
 Top Recorder Depth (Inside) 5064 ft. Recorder Number 11018 Cap. 4425  
 Bottom Recorder Depth (Outside) 5069 ft. Recorder Number 11019 Cap. 4500  
 Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor White & Ellis Drilling Rig #9 Drill Collar Length - I. D. - in.  
 Mud Type - Viscosity - Weight Pipe Length - I. D. - in.  
 Weight - Water Loss - cc. Drill Pipe Length 5032 I. D. 4.0 in.  
 Chlorides ----- P.P.M. Test Tool Length 26 ft. Tool Size 3 1/2 in.  
 Jars: Make WTC Serial Number 3660 Anchor Length 73 ft. Size 4 1/2 in.  
 Did Well Flow? - Reversed Out - Surface Choke Size 1/2 in. Bottom Choke Size 1/2 in.  
 Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 XH in.

Blow: Strong. Gas to surface in fifteen minutes. See attached sheet for gas measurements.

Recovered 180 ft. of oil and gas cut mud  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Remarks: \_\_\_\_\_

Time Set Packer(s) 9:40 ~~A.M.~~ P.M. Time Started Off Bottom 5:40 ~~A.M.~~ P.M. Maximum Temperature 125°  
 Initial Hydrostatic Pressure ..... (A) 2484 P.S.I.  
 Initial Flow Period ..... Minutes 55 (B) 100 P.S.I. to (C) 67 P.S.I.  
 Initial Closed In Period ..... Minutes 114 (D) 333 P.S.I.  
 Final Flow Period ..... Minutes 180 (E) 102 P.S.I. to (F) 109 P.S.I.  
 Final Closed In Period ..... Minutes 120 (G) 364 P.S.I.  
 Final Hydrostatic Pressure ..... (H) 2360 P.S.I.

## GAS FLOW REPORT

Date 10/21/80 Ticket 7596 Company Imperial Oil Company  
 Well Name and No. Woolery #3-18 Dst No. 1 Interval Tested 5058'-5131'  
 County Kiowa State Kansas Sec. 8 Twp. 30S Rg. 20W

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
<b>PRE FLOW</b>						
Gas to surface in fifteen minutes.						
	20 min.	2.0 PSIG	1/4" orifice			12,700 CFPD
	30 min.	3.0 PSIG	1/4" orifice			15,700 CFPD
	40 min.	4.0 PSIG	1/4" orifice			18,500 CFPD
	50 min.	6.0 PSIG	1/4" orifice			22,900 CFPD
	60 min.	6.0 PSIG	1/4" orifice			22,900 CFPD

<b>SECOND FLOW</b>						
	15 min.	2.0 PSIG	1/4" orifice			12,700 CFPD
	30 min.	2.0 PSIG	1/4" orifice			12,700 CFPD
	45 min.	2.0 PSIG	1/4" orifice			12,700 CFPD
	60 min.	2.0 PSIG	1/4" orifice			12,700 CFPD
	75 min.	1.5 PSIG	1/4" orifice			11,020 CFPD
	90 min.	1.5 PSIG	1/4" orifice			11,020 CFPD
	105 min.	1.5 PSIG	1/4" orifice			11,020 CFPD
	120 min.	1.0 PSIG	1/4" orifice			8,950 CFPD
	135 min.	1.0 PSIG	1/4" orifice			8,950 CFPD
	150 min.	1.0 PSIG	1/4" orifice			8,950 CFPD
	165 min.	1.0 PSIG	1/4" orifice			8,950 CFPD
	180 min.	1.0 PSIG	1/4" orifice			8,950 CFPD

### GAS BOTTLE

Serial No. --- Date Bottle Filled ---- Date to be Invoiced 10/21/80

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 Imperial Oil Company

Authorized by H-----B. H-----

**WESTERN TESTING CO., INC.**

**Pressure Data**

Date 10/21/80 Test Ticket No. 7597  
 Recorder No. 11018 Capacity 4425 Location 5064 Ft.  
 Clock No. ----- Elevation ----- Well Temperature 125 °F

Point	Pressure			Time Given	Time Computed
A Initial Hydrostatic Mud	2484	P.S.I.	Open Tool	9:40P	M
B First Initial Flow Pressure	100	P.S.I.	First Flow Pressure	60	Mins. 55 Mins.
C First Final Flow Pressure	67	P.S.I.	Initial Closed-in Pressure	120	Mins. 114 Mins.
D Initial Closed-in Pressure	333	P.S.I.	Second Flow Pressure	180	Mins. 180 Mins.
E Second Initial Flow Pressure	102	P.S.I.	Final Closed-in Pressure	120	Mins. 120 Mins.
F Second Final Flow Pressure	109	P.S.I.			
G Final Closed-in Pressure	364	P.S.I.			
H Final Hydrostatic Mud	2360	P.S.I.			

**PRESSURE BREAKDOWN**

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In		
Breakdown: <u>11</u> Inc.		Breakdown: <u>38</u> Inc.		Breakdown: <u>36</u> Inc.		Breakdown: <u>40</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	0	100	0	67	0	102	0	109
P 2	5	82	3	129	5	95	3	207
P 3	10	71	6	240	10	89	6	260
P 4	15	67	9	280	15	88	9	284
P 5	20	67	12	307	20	87	12	300
P 6	25	67	15	318	25	85	15	311
P 7	30	67	18	322	30	84	18	320
P 8	35	67	21	327	35	84	21	327
P 9	40	67	24	331	40	84	24	331
P10	45	67	27	333	45	84	27	333
P11	50	67	30	336	50	84	30	337
P12	55	67	33	340	55	85	33	339
P13		67	36	341	60	86	36	340
P14			39	342	65	87	39	342
P15			42	343	70	88	42	343
P16			45	344	75	89	45	344
P17			48	343	80	90	48	346
P18			51	343	85	91	51	347
P19			54	343	90	92	54	348
P20			57	343	95	94	57	350
			60	343	100	95	60	351

WESTERN TESTING CO., INC.

Pressure Data

Date 10/21/80 Test Ticket No. 7597  
 Recorder No. 11018 Capacity 4425 Location 5064 Ft.  
 Clock No. ----- Elevation ----- Well Temperature 125 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>2484</u> P.S.I.	Open Tool	<u>9:40P</u>	<u>M</u>
B First Initial Flow Pressure	<u>100</u> P.S.I.	First Flow Pressure	<u>60</u> Mins.	<u>55</u> Mins.
C First Final Flow Pressure	<u>67</u> P.S.I.	Initial Closed-in Pressure	<u>120</u> Mins.	<u>114</u> Mins.
D Initial Closed-in Pressure	<u>333</u> P.S.I.	Second Flow Pressure	<u>180</u> Mins.	<u>180</u> Mins.
E Second Initial Flow Pressure	<u>102</u> P.S.I.	Final Closed-in Pressure	<u>120</u> Mins.	<u>120</u> Mins.
F Second Final Flow Pressure	<u>109</u> P.S.I.			
G Final Closed-in Pressure	<u>364</u> P.S.I.			
H Final Hydrostatic Mud	<u>2360</u> P.S.I.			

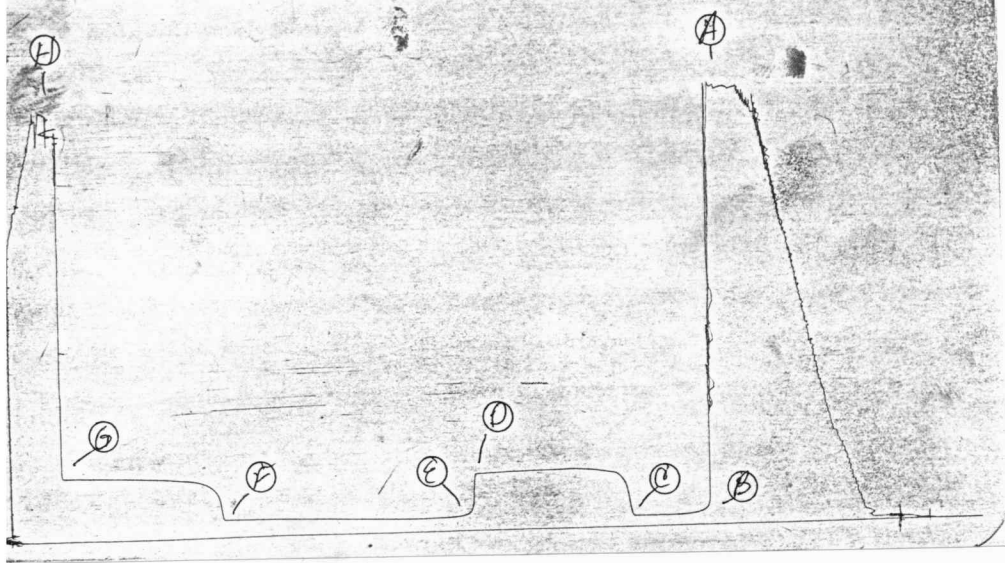
PRESSURE BREAKDOWN

Point	First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
	Breakdown:		Breakdown:		Breakdown:		Breakdown:	
	<u>11</u> Inc.		<u>38</u> Inc.		<u>36</u> Inc.		<u>40</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	Press.	Point	Press.	Point	Press.	Point	Press.	
Mins.		Minutes		Minutes		Minutes		
P 1		63	343	105	96	63	352	
P 2		66	343	110	97	66	353	
P 3		69	343	115	98	69	354	
P 4		72	342	120	99	72	355	
P 5		75	342	125	99	75	356	
P 6		78	341	130	100	78	357	
P 7		81	340	135	101	81	358	
P 8		84	339	140	102	84	359	
P 9		87	338	145	103	87	360	
P10		90	338	150	104	90	360	
P11		93	337	155	105	93	361	
P12		96	337	160	106	96	361	
P13		99	336	165	107	99	361	
P14		102	335	170	108	102	362	
P15		105	335	175	109	105	362	
P16		108	334	180	109	108	362	
P17		111	333			111	363	
P18		114	333			114	363	
P19						117	364	
P20						120	364	

11010 - 1791

321 # 7597

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WESTERN TESTING CO., INC.  
FORMATION TESTING

TICKET No 7598

P. O. BOX 1599 PHONE (316) 262-5861  
WICHITA, KANSAS 67201

Elevation \_\_\_\_\_ Formation MISSISSIPPI Eff. Pay \_\_\_\_\_ Ft.

District Pratt Date 10-23-80 Customer Order No. \_\_\_\_\_

COMPANY NAME Imperial Oil Co.

ADDRESS 720 FOURTH FINANCIAL CENTER WICHITA KS 67202

LEASE AND WELL NO. Woolley 318 COUNTY KIOWA STATE KS Sec. 18 Twp 30S Rge 20W

Mail Invoice To \_\_\_\_\_ Co. Name \_\_\_\_\_ Address \_\_\_\_\_ No. Copies Requested REG

Mail Charts To \_\_\_\_\_ Address \_\_\_\_\_ No. Copies Requested REG

Formation Test No. 2 Interval Tested from 5126 ft. to 5160 ft. Total Depth 5160 ft.

Packer Depth 5126 ft. Size 6 3/4 in. Packer Depth \_\_\_\_\_ ft. Size \_\_\_\_\_ in.

Packer Depth 5126 ft. Size 6 3/4 in. Packer Depth \_\_\_\_\_ ft. Size \_\_\_\_\_ in.

Depth of Selective Zone Set \_\_\_\_\_

Top Recorder Depth (Inside) 5131 ft. Recorder Number 11018 Cap. 4485

Bottom Recorder Depth (Outside) 5134 ft. Recorder Number 11019 Cap. 4500

Below Straddle Recorder Depth \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_

Drilling Contractor WHITE & ELLIS #9 Drill Collar Length 30 ft. I. D. 2 1/4 in.

Mud Type \_\_\_\_\_ Viscosity \_\_\_\_\_ Weight Pipe Length \_\_\_\_\_ I. D. \_\_\_\_\_ in.

Weight \_\_\_\_\_ Water Loss \_\_\_\_\_ cc. Drill Pipe Length \_\_\_\_\_ I. D. 4.0 in.

Chlorides \_\_\_\_\_ P.P.M. Test Tool Length 26 ft. Tool Size 3 1/2 in.

Jars: Make WTC Serial Number 3660 Anchor Length 34 ft. Size 4 1/2 in.

Did Well Flow? \_\_\_\_\_ Reversed Out \_\_\_\_\_ Surface Choke Size 1/2 in. Bottom Choke Size 1/2 in.

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

Blow: \_\_\_\_\_

Recovered \_\_\_\_\_ ft. of

Recovered \_\_\_\_\_ ft. of

Recovered \_\_\_\_\_ ft. of

Recovered \_\_\_\_\_ ft. of

Recovered \_\_\_\_\_ ft. of

Remarks: MISRUN- PACKER FAILURE

Time On Location 9:00 A.M. Time Pick Up Tool 10:00 A.M. Time Off Location 3:30 A.M.

Time Set Packer(s) 11:30 P.M. Time Started Off Bottom 11:40 P.M. Maximum Temperature \_\_\_\_\_

Initial Hydrostatic Pressure \_\_\_\_\_ (A) 2517 P.S.I.

Initial Flow Period \_\_\_\_\_ Minutes (B) \_\_\_\_\_ P.S.I. to (C) \_\_\_\_\_ P.S.I.

Initial Closed In Period \_\_\_\_\_ Minutes (D) \_\_\_\_\_ P.S.I.

Final Flow Period \_\_\_\_\_ Minutes (E) \_\_\_\_\_ P.S.I. to (F) \_\_\_\_\_ P.S.I.

Final Closed In Period \_\_\_\_\_ Minutes (G) \_\_\_\_\_ P.S.I.

Final Hydrostatic Pressure \_\_\_\_\_ (H) 2480 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 [Signature]  
Signature of Customer or his authorized representative

Western Representative [Signature]

FIELD INVOICE

Open Hole Test	\$ _____
Misrun	\$ <u>1200.00</u>
Straddle Test	\$ _____
Jars	\$ <u>300.00</u>
Selective Zone	\$ _____
Safety Joint	\$ <u>50.00</u>
Standby	\$ _____
Evaluation	\$ _____
Extra Packer	\$ _____
Circ. Sub.	\$ _____
Mileage	\$ _____
Fluid Sampler	\$ _____
Extra Charts	\$ _____
Insurance	\$ _____
TOTAL	\$ <u>650.00</u>

Hank Hawley

Company Imperial Oil Company Lease & Well No. Woolery #3-18  
 Elevation - Formation Mississippi Effective Pay - Ft. Ticket No. 7598  
 Date 10-23-80 Sec. 18 Twp. 30S Range 20W County Kiowa State Kansas  
 Test Approved by Hank Harvey Western Representative Stuart Stover

Formation Test No. 2 Interval Tested from 5126 ft. to 5160 ft. Total Depth 5160 ft.  
 Packer Depth 5121 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.  
 Packer Depth 5126 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.

Depth of Selective Zone Set -  
 Top Recorder Depth (Inside) 5131 ft. Recorder Number 11018 Cap. 4425  
 Bottom Recorder Depth (Outside) 5134 ft. Recorder Number 11019 Cap. 4500  
 Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor White & Ellis #9 Drill Collar Length 30 I. D. 2 1/4 in.  
 Mud Type - Viscosity - Weight Pipe Length - I. D. - in.  
 Weight - Water Loss - cc. Drill Pipe Length - I. D. 4.0 in.  
 Chlorides - P.P.M. Test Tool Length 26 ft. Tool Size 3 1/2 in.  
 Jars: Make WTC Serial Number 3660 Anchor Length 34 ft. Size 4 1/2 in.  
 Did Well Flow? - Reversed Out - Surface Choke Size 1/2 in. Bottom Choke Size 1/2 in.  
 Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 XH in.

Blow: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of  
 Recovered \_\_\_\_\_ ft. of  
 Recovered \_\_\_\_\_ ft. of  
 Recovered \_\_\_\_\_ ft. of  
 Recovered \_\_\_\_\_ ft. of

Remarks: MISRUN - PACKER FAILURE

Time Set Packer(s) 11:30 A.M. P.M. Time Started Off Bottom 11:40 A.M. P.M. Maximum Temperature -  
 Initial Hydrostatic Pressure (A) 2517 P.S.I.  
 Initial Flow Period (B) -- Minutes P.S.I. to (C) -- P.S.I.  
 Initial Closed In Period (D) -- Minutes P.S.I.  
 Final Flow Period (E) -- Minutes P.S.I. to (F) -- P.S.I.  
 Final Closed In Period (G) -- Minutes P.S.I.  
 Final Hydrostatic Pressure (H) 2480 P.S.I.

11018-81011  
8652-7598

TK# 7598  
I





WESTERN TESTING CO., INC.

FORMATION TESTING

TICKET No 7599

P. O. BOX 1599 WICHITA, KANSAS 67201

Elevation \_\_\_\_\_ Formation MISSISSIPPI Eff. Pay \_\_\_\_\_ Ft.

District Pratt Date 10-23-80 Customer Order No. \_\_\_\_\_

COMPANY NAME Imperial O.I. Co. ADDRESS 720 Fourth Financial Center Wichita Ks 67202

LEASE AND WELL NO. Ubokey #3-18 COUNTY KIOWA STATE KS Sec. 18 Twp 30S Rge 20W

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

Mail Charts To Same Address No. Copies Requested RCG

Formation Test No. 3 Interval Tested from 5142 ft. to 5170 ft. Total Depth 5170 ft.

Packer Depth 5075 ft. Size 6 3/4 in. Packer Depth = ft. Size = in.

Packer Depth 5142 ft. Size 6 3/4 in. Packer Depth = ft. Size = in.

Depth of Selective Zone Set \_\_\_\_\_

Top Recorder Depth (Inside) 5147 ft. Recorder Number 11018 Cap. 4425

Bottom Recorder Depth (Outside) 5150 ft. Recorder Number 11019 Cap. 4500

Below Straddle Recorder Depth \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_

Drilling Contractor WHITE ELLIS #9 Drill Collar Length 30 I. D. 2 1/4 in.

Mud Type \_\_\_\_\_ Viscosity \_\_\_\_\_ Weight Pipe Length \_\_\_\_\_ I. D. \_\_\_\_\_ in.

Weight \_\_\_\_\_ Water Loss \_\_\_\_\_ cc. Drill Pipe Length 5019 I. D. 4.0 in.

Chlorides \_\_\_\_\_ P.P.M. Test Tool Length 93 ft. Tool Size 3 1/2 in.

Jars: Make W.I.T.C. Serial Number 3660 Anchor Length 28 ft. Size 4 1/2 in.

Did Well Flow? \_\_\_\_\_ Reversed Out \_\_\_\_\_ Surface Choke Size 1/2 in. Bottom Choke Size 1/2 in.

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

Blow: Weak blow on 1st flow. 6000 Blow on 2nd flow. initial flow period. OPEDED 2 FNCH Blow DICD + DIDNT COME BACK final flow period

Recovered 70 ft. of DRUG MUD

Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Remarks: \_\_\_\_\_

Time On Location 1:00 AM/PM Time Pick Up Tool 2:00 AM/PM Time Off Location 12:00 AM/PM

Time Set Packer(s) 4:00 AM/PM Time Started Off Bottom 8:00 AM/PM Maximum Temperature 120°

Initial Hydrostatic Pressure (A) 2610 P.S.I.

Initial Flow Period Minutes 60 (B) 122 P.S.I. to (C) 122 P.S.I.

Initial Closed In Period Minutes 60 (D) 188 P.S.I.

Final Flow Period Minutes 60 (E) 133 P.S.I. to (F) 133 P.S.I.

Final Closed In Period Minutes 60 (G) 1526 P.S.I.

Final Hydrostatic Pressure (H) 2588 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 Herb B. Harvey Signature of Customer or his authorized representative

Western Representative Stuart Stover

FIELD INVOICE

Table with 2 columns: Item, Amount. Includes Open Hole Test \$650.00, Misrun \$, Straddle Test \$, Jars \$200.00, Selective Zone \$, Safety Joint \$150.00, Standby \$, Evaluation \$, Extra Packer \$, Circ. Sub. \$, Mileage \$, Fluid Sampler \$, Extra Charts \$, Insurance \$, TOTAL \$1000.00

WESTERN TESTING CO., INC.

Pressure Data

Date 10-23-80

Test Ticket No. 7599

Recorder No. 11018

Capacity 4425

Location 5147 Ft.

Clock No. \_\_\_\_\_ Elevation \_\_\_\_\_

Well Temperature 120 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>2592</u> P.S.I.	Open Tool	<u>4:00 P</u> M	
B First Initial Flow Pressure	<u>135</u> P.S.I.	First Flow Pressure	<u>60</u> Mins.	<u>60</u> Mins.
C First Final Flow Pressure	<u>119</u> P.S.I.	Initial Closed-in Pressure	<u>60</u> Mins.	<u>57</u> Mins.
D Initial Closed-in Pressure	<u>188</u> P.S.I.	Second Flow Pressure	<u>60</u> Mins.	<u>60</u> Mins.
E Second Initial Flow Pressure	<u>166</u> P.S.I.	Final Closed-in Pressure	<u>60</u> Mins.	<u>60</u> Mins.
F Second Final Flow Pressure	<u>129</u> P.S.I.			
G Final Closed-in Pressure	<u>1526</u> P.S.I.			
H Final Hydrostatic Mud	<u>2564</u> P.S.I.			

PRESSURE BREAKDOWN

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

Initial Shut-In  
Breakdown: 19 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: 20 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 0	<u>135</u>	0	<u>119</u>	0	<u>166</u>	0	<u>129</u>	
P 2 5	<u>128</u>	3	<u>119</u>	5	<del>166</del> <u>137</u>	3	<u>500</u>	
P 3 10	<u>120</u>	6	<u>120</u>	10	<u>129</u>	6	<u>525</u>	
P 4 15	<u>118</u>	9	<u>124</u>	15	<u>127</u>	9	<u>622</u>	
P 5 20	<u>119</u>	12	<u>129</u>	20	<u>124</u>	12	<u>744</u>	
P 6 25		15	<u>130</u>	25	<u>124</u>	15	<u>854</u>	
P 7 30		18	<u>132</u>	30	<u>125</u>	18	<u>953</u>	
P 8 35		21	<u>134</u>	35	<u>126</u>	21	<u>1026</u>	
P 9 40		24	<u>136</u>	40	<u>127</u>	24	<u>1095</u>	
P10 45		27	<del>136</del> <u>138</u>	45	<u>128</u>	27	<u>1156</u>	
P11 50		30	<u>142</u>	50	<u>129</u>	30	<u>1218</u>	
P12 55		33	<u>151</u>	55	<u>129</u>	33	<u>1271</u>	
P13 60		<u>119</u>	36	<u>160</u>	60	<u>129</u>	36	<u>1319</u>
P14			39	<u>168</u>	65		39	<u>1362</u>
P15			42	<u>176</u>	70		42	<u>1394</u>
P16		45	<u>180</u>	75		45	<u>1430</u>	
P17		48	<u>182</u>	80		48	<u>1457</u>	
P18		51	<u>184</u>	85		51	<u>1480</u>	
P19		54	<u>186</u>	90		54	<u>1500</u>	
P20		57	<u>188</u>			57	<u>1515</u>	
		<u>60</u>				60	<u>1526</u>	

Company Imperial Oil Company Lease & Well No. Woolery #3-18  
 Elevation - Formation Mississippi Effective Pay - Ft. Ticket No. 7599  
 Date 10-23-80 Sec. 18 Twp. 30S Range 20W County Kiowa State Kansas  
 Test Approved by Hank Harvey Western Representative Stuart Stover

Formation Test No. 3 Interval Tested from 5142 ft. to 5170 ft. Total Depth 5170 ft.  
 Packer Depth 5075 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.  
 Packer Depth 5142 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.

Depth of Selective Zone Set -  
 Top Recorder Depth (Inside) 5147 ft. Recorder Number 11018 Cap. 4426  
 Bottom Recorder Depth (Outside) 5150 ft. Recorder Number 11019 Cap. 4500  
 Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor White & Ellis #9 Drill Collar Length 30 I. D. 2 1/4 in.  
 Mud Type - Viscosity - Weight Pipe Length - I. D. - in.  
 Weight - Water Loss - cc. Drill Pipe Length 5019 I. D. 4.0 in.  
 Chlorides - P.P.M. Test Tool Length 93 ft. Tool Size 3 1/2 in.  
 Jars: Make WTC Serial Number 3660 Anchor Length 28 ft. Size 4 1/2 in.  
 Did Well Flow? - Reversed Out - Surface Choke Size 1/2 in. Bottom Choke Size 1/2 in.  
 Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 XH in.

Blow: Weak blow on initial flow period. Good blow on final flow period. Opened two inch blow died & didn't come back.

Recovered 70 ft. of drilling mud  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Remarks: \_\_\_\_\_  
 \_\_\_\_\_

Time Set Packer(s) 4:00 ~~A.M.~~ P.M. Time Started Off Bottom 8:00 ~~A.M.~~ P.M. Maximum Temperature 120  
 Initial Hydrostatic Pressure ..... (A) 2592 P.S.I.  
 Initial Flow Period ..... Minutes 60 (B) 135 P.S.I. to (C) 119 P.S.I.  
 Initial Closed In Period ..... Minutes 57 (D) 188 P.S.I.  
 Final Flow Period ..... Minutes 60 (E) 166 P.S.I. to (F) 129 P.S.I.  
 Final Closed In Period ..... Minutes 60 (G) 1526 P.S.I.  
 Final Hydrostatic Pressure ..... (H) 2564 P.S.I.

**WESTERN TESTING CO., INC.**

**Pressure Data**

Date 10/23/80 Test Ticket No. 7599  
 Recorder No. 11018 Capacity 4425 Location 5147 Ft.  
 Clock No. --- Elevation --- Well Temperature 120 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>2592</u> P.S.I.	Open Tool	<u>4:00P</u> M	
B First Initial Flow Pressure	<u>135</u> P.S.I.	First Flow Pressure	<u>60</u> Mins.	<u>60</u> Mins.
C First Final Flow Pressure	<u>119</u> P.S.I.	Initial Closed-in Pressure	<u>60</u> Mins.	<u>57</u> Mins.
D Initial Closed-in Pressure	<u>188</u> P.S.I.	Second Flow Pressure	<u>60</u> Mins.	<u>60</u> Mins.
E Second Initial Flow Pressure	<u>166</u> P.S.I.	Final Closed-in Pressure	<u>60</u> Mins.	<u>60</u> Mins.
F Second Final Flow Pressure	<u>129</u> P.S.I.			
G Final Closed-in Pressure	<u>1526</u> P.S.I.			
H Final Hydrostatic Mud	<u>2564</u> P.S.I.			

**PRESSURE BREAKDOWN**

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

**Initial Shut-In**  
 Breakdown: 19 Inc.  
 of 3 mins. and a  
 final inc. of 0 Min.

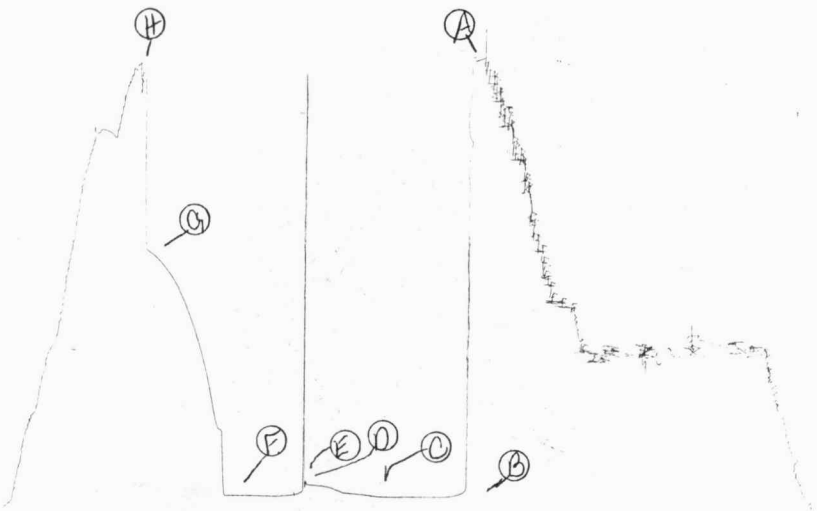
**Second Flow Pressure**  
 Breakdown: 12 Inc.  
 of 5 mins. and a  
 final inc. of 0 Min.

**Final Shut-In**  
 Breakdown: 20 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>135</u>	<u>0</u>	<u>119</u>	<u>0</u>	<u>166</u>	<u>0</u>	<u>129</u>
P 2 <u>5</u>	<u>128</u>	<u>3</u>	<u>119</u>	<u>5</u>	<u>137</u>	<u>3</u>	<u>500</u>
P 3 <u>10</u>	<u>120</u>	<u>6</u>	<u>120</u>	<u>10</u>	<u>129</u>	<u>6</u>	<u>525</u>
P 4 <u>15</u>	<u>118</u>	<u>9</u>	<u>124</u>	<u>15</u>	<u>127</u>	<u>9</u>	<u>622</u>
P 5 <u>20</u>	<u>119</u>	<u>12</u>	<u>129</u>	<u>20</u>	<u>124</u>	<u>12</u>	<u>744</u>
P 6 <u>25</u>	<u>119</u>	<u>15</u>	<u>130</u>	<u>25</u>	<u>124</u>	<u>15</u>	<u>854</u>
P 7 <u>30</u>	<u>119</u>	<u>18</u>	<u>132</u>	<u>30</u>	<u>125</u>	<u>18</u>	<u>953</u>
P 8 <u>35</u>	<u>119</u>	<u>21</u>	<u>134</u>	<u>35</u>	<u>126</u>	<u>21</u>	<u>1026</u>
P 9 <u>40</u>	<u>119</u>	<u>24</u>	<u>136</u>	<u>40</u>	<u>127</u>	<u>24</u>	<u>1095</u>
P10 <u>45</u>	<u>119</u>	<u>27</u>	<u>138</u>	<u>45</u>	<u>128</u>	<u>27</u>	<u>1156</u>
P11 <u>50</u>	<u>119</u>	<u>30</u>	<u>142</u>	<u>50</u>	<u>129</u>	<u>30</u>	<u>1218</u>
P12 <u>55</u>	<u>119</u>	<u>33</u>	<u>151</u>	<u>55</u>	<u>129</u>	<u>33</u>	<u>1271</u>
P13 <u>60</u>	<u>119</u>	<u>36</u>	<u>160</u>	<u>60</u>	<u>129</u>	<u>36</u>	<u>1319</u>
P14		<u>39</u>	<u>168</u>			<u>39</u>	<u>1363</u>
P15		<u>42</u>	<u>176</u>			<u>42</u>	<u>1396</u>
P16		<u>45</u>	<u>180</u>			<u>45</u>	<u>1430</u>
P17		<u>48</u>	<u>182</u>			<u>48</u>	<u>1457</u>
P18		<u>51</u>	<u>184</u>			<u>51</u>	<u>1480</u>
P19		<u>54</u>	<u>186</u>			<u>54</u>	<u>1500</u>
P20		<u>57</u>	<u>188</u>			<u>57</u>	<u>1515</u>
						<u>60</u>	<u>1526</u>

11018-7599

TR# 7599  
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WESTERN TESTING CO., INC.

FORMATION TESTING

TICKET No 7696

P. O. BOX 1599 PHONE (316) 262-5861 WICHITA, KANSAS 67201

Elevation 2250 K.B. Formation Miss. Eff. Pay Ft.

District PRATT Date 10-24-80 Customer Order No.

COMPANY NAME Imperial Oil Company ADDRESS 720 Fourth Financial Center - Wichita, Ks. 67202 LEASE AND WELL NO. Woolery 3-18 COUNTY KIOWA STATE KS. Sec. 18 Twp 30S Rge 20W

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

Formation Test No. 4 Interval Tested from 5154 ft. to 5200 ft. Total Depth 5200 ft. Packer Depth 5149 ft. Size 6 3/4 in. Packer Depth 5154 ft. Size 6 3/4 in.

Depth of Selective Zone Set Top Recorder Depth (Inside) 5184 ft. Recorder Number 2604 Cap. 4150 Bottom Recorder Depth (Outside) 5189 ft. Recorder Number 6244 Cap. 5200 Below Straddle Recorder Depth ft. Recorder Number Cap.

Drilling Contractor White & Ellis #9 Drill Collar Length 30 I. D. 2.2 in. Mud Type Mon Pac Viscosity 48 Weight Pipe Length I. D. in. Weight 9.2 Water Loss 16.0 cc. Drill Pipe Length 5095 I. D. 3.8 in. Chlorides 26,000 P.P.M. Test Tool Length 29 ft. Tool Size 5 1/2 in. Jars: Make Wit. Serial Number 408 Anchor Length 46 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 1/4 in.

Blow: STRONG Dying TO WEAK DURING INITIAL Flow Period WEAK Blow dying in 20 min. FIDAL Flow Period Recovered 558 ft. of DRlg mud - GAS CUT Chlorides 32,000 p.p.m.

Recovered ft. of Recovered ft. of Recovered ft. of Recovered ft. of Recovered ft. of Remarks: Slid Tool 5' TO Bottom AFTER Tool opened

Time On Location 11:30 A.M. Time Pick Up Tool 12:30 P.M. Time Off Location 11:00 A.M. Time Set Packer(s) 2:40 P.M. Time Started Off Bottom 6:40 P.M. Maximum Temperature 120 Initial Hydrostatic Pressure (A) 2527 P.S.I. Initial Flow Period Minutes 60 (B) 191 P.S.I. to (C) 298 P.S.I. Initial Closed In Period Minutes 60 (D) 1443 P.S.I. Final Flow Period Minutes 60 (E) 320 P.S.I. to (F) 320 P.S.I. Final Closed In Period Minutes 60 (G) 1119 P.S.I. Final Hydrostatic Pressure (H) 2516 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 [Signature] Signature of Customer or his authorized representative

Western Representative [Signature] Thank you

FIELD INVOICE

Open Hole Test \$ 650.00 Misrun \$ Straddle Test \$ Jars \$ 300.00 Selective Zone \$ Safety Joint \$ 50.00 Standby \$ Evaluation \$ Extra Packer \$ Circ. Sub. \$ Mileage 60 \$ 45.00 Fluid Sampler \$ Extra Charts \$ Insurance \$ TOTAL \$ 1045.00

WESTERN TESTING CO., INC.

Pressure Data

Date 10-24-80 Test Ticket No. 7696  
 Recorder No. 2604 Capacity 4150 Location 5184 Ft.  
 Clock No. \_\_\_\_\_ Elevation 2250 KB Well Temperature 120 °F

Point	Pressure	Time Given	Time Computed
A Initial Hydrostatic Mud	<u>2543</u> P.S.I.	<u>2:40 P</u> M	
B First Initial Flow Pressure	<u>193</u> P.S.I.	<u>60</u> Mins.	<u>60</u> Mins.
C First Final Flow Pressure	<u>315</u> P.S.I.	<u>60</u> Mins.	<u>64</u> Mins.
D Initial Closed-in Pressure	<u>2025*</u> P.S.I.	<u>60</u> Mins.	<u>60</u> Mins.
E Second Initial Flow Pressure	<u>340</u> P.S.I.	<u>60</u> Mins.	<u>60</u> Mins.
F Second Final Flow Pressure	<u>336</u> P.S.I.		
G Final Closed-in Pressure	<u>1403*</u> P.S.I.		
H Final Hydrostatic Mud	<u>2550</u> P.S.I.		

\* PRESSURES questionable due to tool leak

PRESSURE BREAKDOWN

Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 0	<u>193</u>	0	<u>315</u>	0	<u>340</u>	0	<u>336</u>
P 2 5	<u>213</u>	3	<u>410</u>	5	<u>336</u>	3	<u>359</u>
P 3 10	<u>295</u>	6	<u>527</u>	10		6	<u>404</u>
P 4 15	<u>288</u>	9	<u>640</u>	15		9	<u>463</u>
P 5 20		12	<u>750</u>	20		12	<u>520</u>
P 6 25		15	<u>840</u>	25		15	<u>575</u>
P 7 30		18	<u>920</u>	30		18	<u>634</u>
P 8 35		21	<u>1004</u>	35		21	<u>700</u>
P 9 40		24	<u>1080</u>	40		24	<u>750</u>
P10 45	<u>288</u>	27	<u>1140</u>	45		27	<u>811</u>
P11 50	<u>296</u>	30	<u>1194</u>	50		30	<u>864</u>
P12 55	<u>318</u>	33	<u>1268</u>	55		33	<u>918</u>
P13 60	<u>315</u>	36	<u>1300</u>	60	<u>336</u>	36	<u>972</u>
P14		39	<u>1339</u>	65		39	<u>1029</u>
P15		42	<u>1370</u>	70		42	<u>1075</u>
P16		45	<u>1395</u>	75		45	<u>1115</u>
P17		48	<u>1425</u>	80		48	<u>1159</u>
P18		51	<u>1445</u>	85		51	<u>1192</u>
P19		54	<u>1706*</u>	90		54	<u>1226</u>
P20		57	<u>1859*</u>			57	<u>1397*</u>
		60	<u>1784*</u>			60	<u>1403*</u>
		63	<u>1954*</u>				
		66	<u>2025*</u>				

Company Imperial Oil Company Lease & Well No. Woolery #3-18  
 Elevation 2250 Kelly Bushing Formation Mississippi Effective Pay - Ft. Ticket No. 7696  
 Date 10-24-80 Sec. 18 Twp. 30S Range 20W County Kiowa State Kansas  
 Test Approved by Hank Harvey Western Representative Dave Sloan

Formation Test No. 4 Interval Tested from 5154 ft. to 5200 ft. Total Depth 5200 ft.  
 Packer Depth 5149 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.  
 Packer Depth 5154 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.

Depth of Selective Zone Set -  
 Top Recorder Depth (Inside) 5184 ft. Recorder Number 2604 Cap. 4150  
 Bottom Recorder Depth (Outside) 5189 ft. Recorder Number 6246 Cap. 5200  
 Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor White & Ellis #9 Drill Collar Length 30 I. D. 2.2 in.  
 Mud Type Monpac Viscosity 48 Weight Pipe Length - I. D. - in.  
 Weight 9.2 Water Loss 16.0 cc. Drill Pipe Length 5095 I. D. 3.8 in.  
 Chlorides 26,000 P.P.M. Test Tool Length 29 ft. Tool Size 5 1/2 OD in.  
 Jars: Make WTC Serial Number 408 Anchor Length 46 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 XH in.

Blow: Strong - dying to weak during initial flow period. Weak blow dying in 20 minutes final flow period.

Recovered 558 ft. of drilling mud - gas cut chlorides 32,000 PPM  
 Recovered          ft. of           
 Recovered          ft. of           
 Recovered          ft. of           
 Recovered          ft. of         

Remarks: Slid Tool 5 feet to bottom after tool opened.

Time Set Packer(s) 2:40 ~~A.M.~~ P.M. Time Started Off Bottom 6:40 ~~A.M.~~ P.M. Maximum Temperature 120  
 Initial Hydrostatic Pressure ..... (A) 2563 P.S.I.  
 Initial Flow Period ..... Minutes 60 (B) 193 P.S.I. to (C) 215 P.S.I.  
 Initial Closed In Period ..... Minutes 66 (D) 2025 \* P.S.I.  
 Final Flow Period ..... Minutes 60 (E) 340 P.S.I. to (F) 336 P.S.I.  
 Final Closed In Period ..... Minutes 60 (G) 1403 \* P.S.I.  
 Final Hydrostatic Pressure ..... (H) 2550 P.S.I.

**WESTERN TESTING CO., INC.**

**Pressure Data**

Date 10/24/80 Test Ticket No. 7696  
 Recorder No. 2604 Capacity 4150 Location 5184 Ft.  
 Clock No. -- Elevation 2250 Kelly Bushing Well Temperature 120 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	2563	P.S.I.	2:40P	M
B First Initial Flow Pressure	193	P.S.I.	60	Mins. 60
C First Final Flow Pressure	315	P.S.I.	60	Mins. 66
D Initial Closed-in Pressure	2025 *	P.S.I.	60	Mins. 60
E Second Initial Flow Pressure	340	P.S.I.	60	Mins. 60
F Second Final Flow Pressure	336	P.S.I.		
G Final Closed-in Pressure	1403 *	P.S.I.		
H Final Hydrostatic Mud	2550	P.S.I.		

\* Pressures questionable due to tool leak

**PRESSURE BREAKDOWN**

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

**Initial Shut-In**  
 Breakdown: 22 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: 20 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	0	193	0	315	0	340	0	336
P 2	5	213	3	410	5	336	3	359
P 3	10	295	6	527	10	336	6	406
P 4	15	288	9	640	15	336	9	463
P 5	20	288	12	750	20	336	12	520
P 6	25	288	15	840	25	336	15	575
P 7	30	288	18	920	30	336	18	634
P 8	35	288	21	1004	35	336	21	700
P 9	40	288	24	1080	40	336	24	750
P10	45	288	27	1140	45	336	27	811
P11	50	296	30	1194	50	336	30	864
P12	55	318	33	1268	55	336	33	918
P13	60	315	36	1300	60	336	36	972
P14			39	1339			39	1029
P15			42	1370			42	1075
P16			45	1395			45	1115
P17			48	1425			48	1159
P18			51	1445			51	1192
P19			54	1706 *			54	1226
P20			57	1859 *			57	1397 *
WTC - 4			60	1784 *			60	1403 *
			63	1954 *				
			66					

