



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Charles N. Griffin**

PO Box 347
Pratt, KS 67124-0347

ATTN: Bruce Reed

Houlton #2

9-32s-12w Barber, KS

Start Date: 2012.12.12 @ 08:47:56

End Date: 2012.12.12 @ 18:16:41

Job Ticket #: 49709

DST #: 1



Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.12.13 @ 16:31:12

Charles N. Griffin

9-32s-12w Barber, KS

Houlton #2

Job Ticket #

DST #

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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Charles N. Griffin

9-32s-12w Barber, KS

PO Box 347
Pratt, KS 67124-0347

Houlton #2

Job Ticket: 49709

DST#: 1

ATTN: Bruce Reed

Test Start: 2012.12.12 @ 08:47:56

GENERAL INFORMATION:

Formation: Viola

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:47:26

Time Test Ended: 18:16:41

Test Type: Conventional Bottom Hole (Initial)

Tester: Ryan Reynolds

Unit No: 48

Interval: 4506.00 ft (KB) To 4535.00 ft (KB) (TVD)

Total Depth: 4535.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1479.00 ft (KB)

1469.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8790 Inside

Press@RunDepth: 491.18 psig @ 4507.00 ft (KB)

Start Date: 2012.12.12 End Date: 2012.12.12

Start Time: 08:48:01 End Time: 18:16:41

Capacity: 8000.00 psig

Last Calib.: 2012.12.12

Time On Btm: 2012.12.12 @ 12:46:26

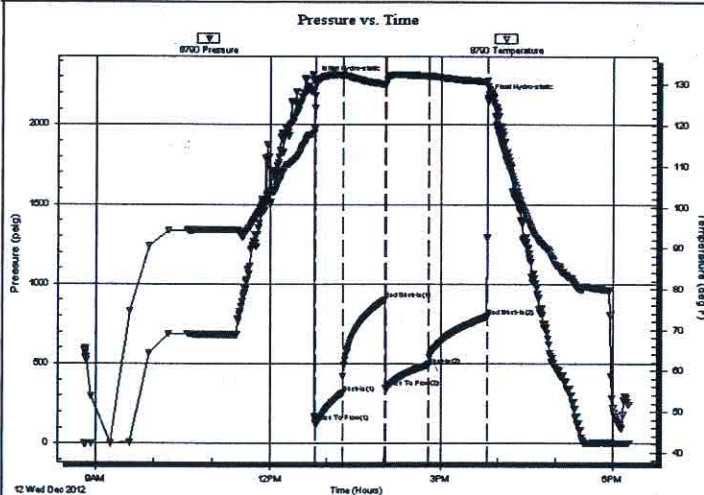
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TEST COMMENT: IF: Strong blow . BOB 2 min. No GTS.

ISI: Weak blow . 1/4" - 2"

FF: Strong blow . BOB 5 min. No GTS.

FSI: Weak blow . 1/4" - 1 1/2"



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2283.36	118.16	Initial Hydro-static
1	135.37	124.27	Open To Flow (1)
30	317.16	132.31	Shut-In(1)
75	902.32	130.15	End Shut-In(1)
75	349.58	129.84	Open To Flow (2)
121	491.18	132.12	Shut-In(2)
183	796.62	130.77	End Shut-In(2)
183	2170.66	131.03	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1110.00	MW 10% mud, 90% wtr	15.57
120.00	SLI OCMW trc% oil, 30% mud, 70% wtr	1.68
20.00	OGCWM 3% oil, 7% gas, 40% wtr, 50% ml. 0.28	

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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Charles N. Griffin

ATTN: Bruce Reed

Houlton #2

Job Ticket: 49709 DST#: 1

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Reference Elevations: 1479.00 ft (KB)

1469.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8792

Outside

Press@RunDepth: psig @ 4507.00 ft (KB)

Start Date: 2012.12.12

End Date:

2012.12.12

Start Time: 08:42:01

End Time:

18:17:56

Capacity: 8000.00 psig

8000.00 psig

Last Calib.: 2012.12.12

2012.12.12

Time On Btm:

Time Off Btm:

TEST COMMENT:

IF: Strong blow . BOB 2 min. No GTS.

ISI: Weak blow . 1/4" - 2"

FF: Strong blow . BOB 5 min. No GTS.

FSI: Weak blow . 1/4" - 1 1/2"



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
1110.00	MMV 10% mud, 90% water	15.57
120.00	SLI OCMV 3% oil, 30% mud, 70% water	1.68
20.00	OGCVM 3% oil, 7% gas, 40% water, 50% mud	0.28

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Charles N. Griffin

9-32s-12w Barber, KS

PO Box 347
Pratt, KS 67124-0347

Houlton #2

Job Ticket: 49709

DST#: 1

ATTN: Bruce Reed

Test Start: 2012.12.12 @ 08:47:56

Tool Information

Drill Pipe:	Length: 4486.00 ft	Diameter: 3.80 inches	Volume: 62.93 bbl	Tool Weight: 2400.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 75000.00 lb
			Total Volume: 62.93 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4506.00 ft			Final 63000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	29.00 ft			
Tool Length:	55.00 ft			
Number of Packers:	2	Diameter: 6.50 inches		
Tool Comments:				

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4485.00	
Hydraulic tool	5.00			4490.00	
Jars	5.00			4495.00	
Safety Joint	2.00			4497.00	
Packer	5.00			4502.00	26.00 Bottom Of Top Packer
Packer	4.00			4506.00	
Stubb	1.00			4507.00	
Recorder	0.00	8790	Inside	4507.00	
Recorder	0.00	8792	Outside	4507.00	
Perforations	25.00			4532.00	
Bullnose	3.00			4535.00	29.00 Bottom Packers & Anchor

Total Tool Length: 55.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Charles N. Griffin

9-32s-12w Barber, KS

PO Box 347
Pratt, KS 67124-0347

Houlton #2

Job Ticket: 49709

DST#: 1

ATTN: Bruce Reed

Test Start: 2012.12.12 @ 08:47:56

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

79000 ppm

Viscosity: 44.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 7800.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1110.00	MW 10%mud, 90%w tr	15.570
120.00	SLI OCMW trc%oil, 30%mud, 70%w tr	1.683
20.00	OGCWM 3%oil, 7%gas, 40%w tr, 50%mud	0.281

Total Length: 1250.00 ft

Total Volume: 17.534 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #: none

Laboratory Name:

Laboratory Location:

Recovery Comments:

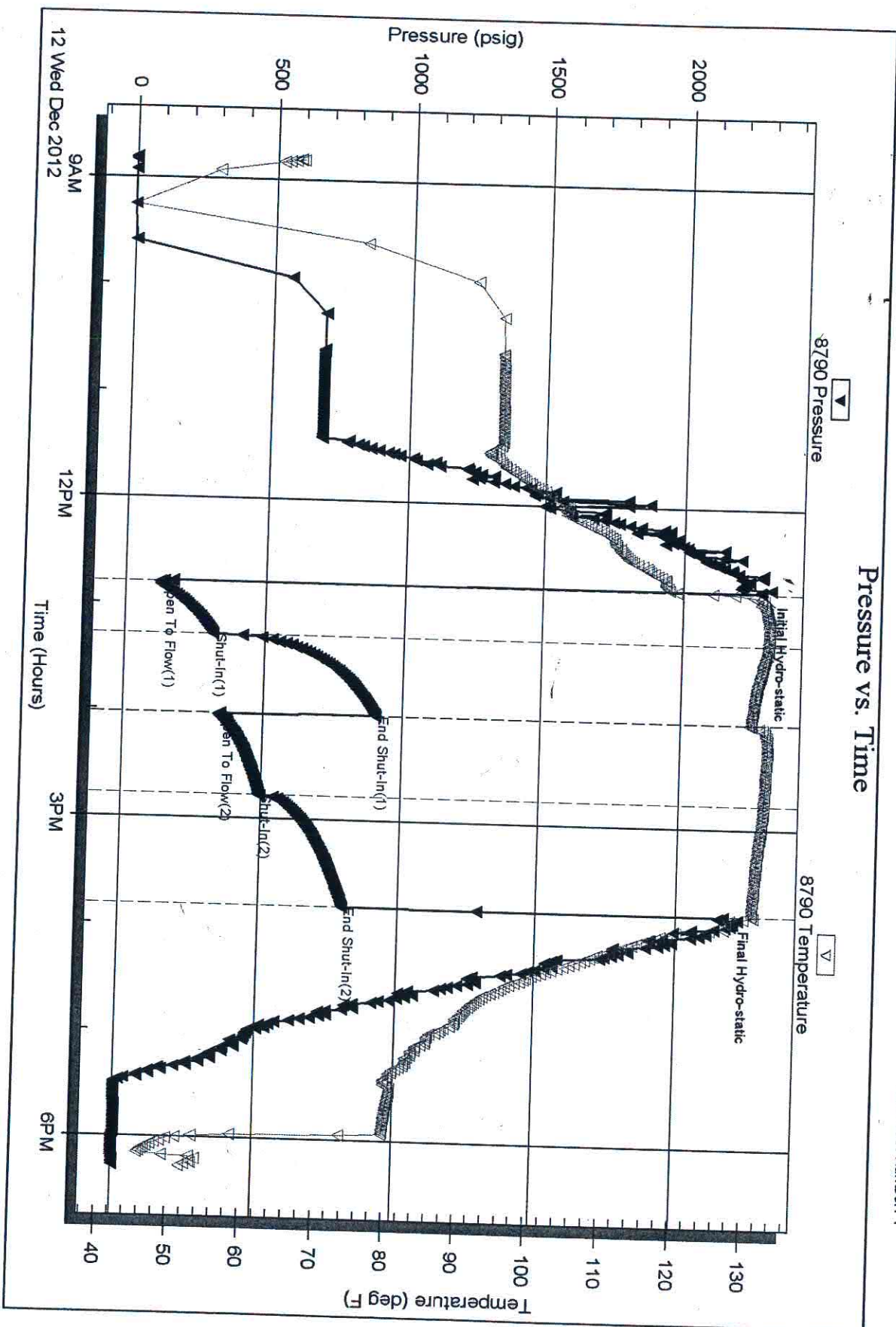
Serial #: 8790

Inside

Charles N. Griffin

Houston #2

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 49709

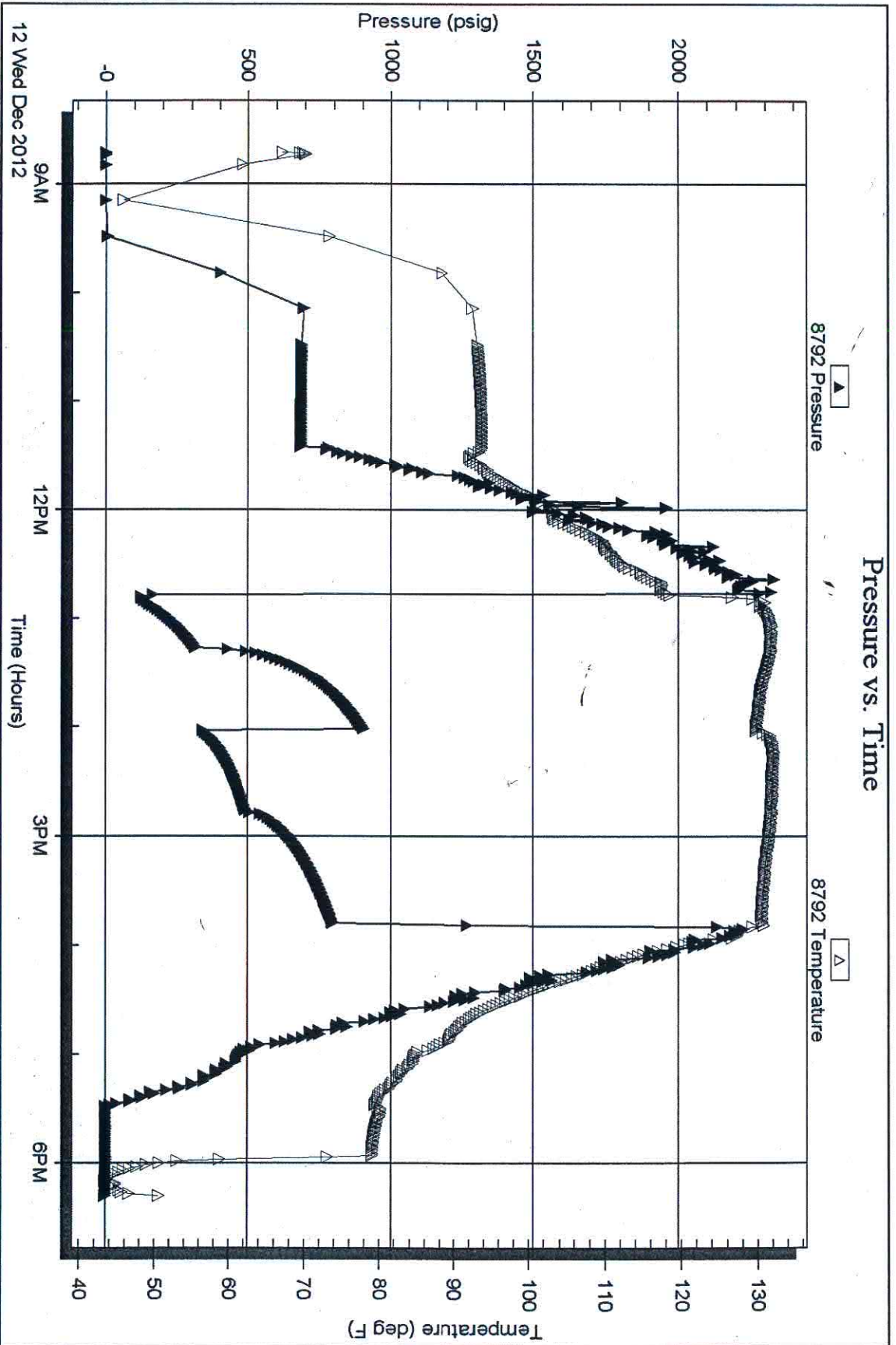
Printed: 2012.12.13 @ 16:31:16

Serial #: 8792

Outside Charles N. Griffin

Houlton #2

DST Test Number: 1





TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 49709

Well Name & No. Houlton #2 Test No. 1 Date 12-12-12
 Company Charles N. Griffin Elevation 1479 KB 1469 GL
 Address P.O. Box 347 Pratt, KS 67124-0347
 Co. Rep / Geo. Bruce Reed Rig Maverick 106
 Location: Sec. 9 Twp. 32s. Rge. 12w. Co. Barber State KS

Interval Tested 4506-4535 Zone Tested Viola
 Anchor Length 29' Drill Pipe Run 4486 Mud Wt. 9.3
 Top Packer Depth 4501 Drill Collars Run Ø Vis 44
 Bottom Packer Depth 4506 Wt. Pipe Run Ø WL 8.0
 Total Depth 4535 Chlorides 7800 ppm System LCM Ø#

Blow Description IF: Strong blow. BOB 2min. No GTS
ISI: Weak Blow. 1/4"-2"
FF: Strong blow. BOB 5min. No GTS
FSI: Weak blow. 1/4"-1 1/2"

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>OGCWM</u>	<u>7</u>	<u>3</u>	<u>40</u>	<u>50</u>
<u>120</u>	<u>STI OCMW</u>	<u>%gas</u>	<u>70</u>	<u>30</u>	<u>%mud</u>
<u>110</u>	<u>MW</u>	<u>%gas</u>	<u>90</u>	<u>10</u>	<u>%mud</u>
<u>200</u>	<u>GIP</u>	<u>100</u>	<u>%oil</u>	<u>%water</u>	<u>%mud</u>
<u>Rec</u>	<u>Feet of</u>	<u>%gas</u>	<u>%oil</u>	<u>%water</u>	<u>%mud</u>

Rec Total 1450 BHT 131 Gravity N/R API RW 14 @ 49 °F Chlorides 79000 ppm
 (A) Initial Hydrostatic 2283 ☒ Test 1250 T-On Location 0815
 (B) First Initial Flow 135 ☒ Jars 250 T-Started 0848
 (C) First Final Flow 317 ☒ Safety Joint 75 T-Open 1247
 (D) Initial Shut-In 902 ☐ Circ Sub _____ T-Pulled 1550
 (E) Second Initial Flow 350 ☐ Hourly Standby (Rst) (Pickup) T-Out 1817
 (F) Second Final Flow 491 ☒ Mileage 78+78 241.80 Comments _____
 (G) Final Shut-In 797 ☐ Sampler _____
 (H) Final Hydrostatic 2171 ☐ Straddle _____
☐ Shale Packer _____
☐ Extra Packer _____
☐ Extra Recorder _____
☐ Day Standby _____
☐ Accessibility _____

Initial Open 30
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 60
 Sub Total 1816.80

Approved By Bruce Reed Our Representative Ryan Reynolds
 Trilobite Testing Inc. shall not be liable for damaged of any kind of 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, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.