



DRILL STEM TEST REPORT

Prepared For: **TDI, Inc**

1310 Bison Rd
Hays KS 67601

ATTN: Herb Deines

Lester #1

2-17s-19w Rush KS

Start Date: 2014.07.20 @ 21:15:00

End Date: 2014.07.21 @ 04:46:30

Job Ticket #: 59326 DST #: 1

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.07.21 @ 11:18:26



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TDI, Inc

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Hays KS 67601

ATTN: Herb Deines

2-17s-19w Rush KS

Lester #1

Job Ticket: 59326

DST#: 1

Test Start: 2014.07.20 @ 21:15:00

GENERAL INFORMATION:

Formation: **Cong. Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:01:30

Time Test Ended: 04:46:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3880.00 ft (KB) To 3970.00 ft (KB) (TVD)

Total Depth: 3970.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2129.00 ft (KB)

2121.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8648 Inside

Press@RunDepth: 122.27 psig @ 3949.00 ft (KB)

Start Date: 2014.07.20

End Date:

2014.07.21

Start Time: 21:15:05

End Time:

04:46:29

Capacity: 8000.00 psig

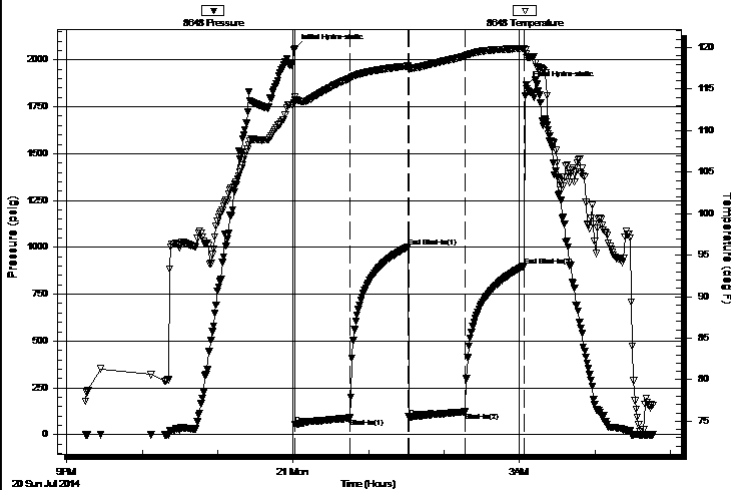
Last Calib.: 2014.07.21

Time On Btm: 2014.07.21 @ 00:01:15

Time Off Btm: 2014.07.21 @ 03:05:00

TEST COMMENT: 45 - IF- 6 1/2" blow
45 - ISI- No return
45 - FF- 3 3/4" blow
45 - FSI- No return

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2062.16	114.00	Initial Hydro-static
1	52.82	113.33	Open To Flow (1)
44	89.55	116.28	Shut-In(1)
90	1002.54	117.77	End Shut-In(1)
91	95.33	117.40	Open To Flow (2)
136	122.27	118.96	Shut-In(2)
183	902.03	119.90	End Shut-In(2)
184	1865.66	119.21	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	MW, 2%W. 98%M	0.87
93.00	Mud, 100%M	1.30

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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2121.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8940 Outside

Press@RunDepth: psig @ 3949.00 ft (KB)

Start Date: 2014.07.20

End Date:

2014.07.21

Start Time: 21:15:05

End Time:

04:46:29

Capacity: 8000.00 psig

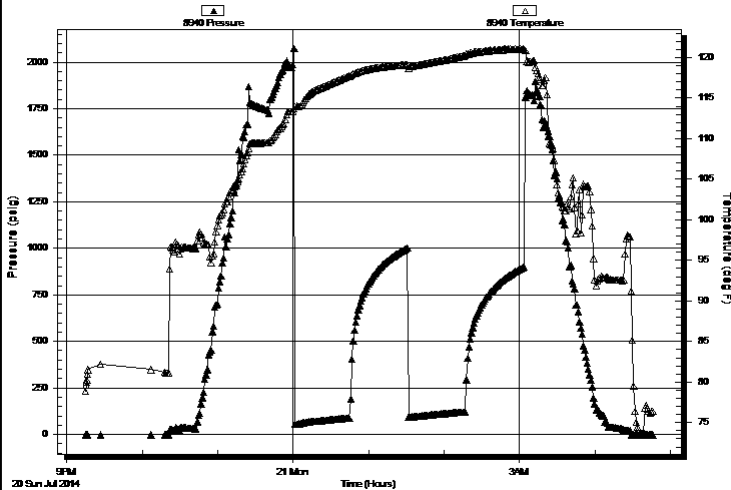
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Time On Btm:

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Pressure vs. Time



PRESSURE SUMMARY

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**TRILOBITE
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DRILL STEM TEST REPORT

TOOL DIAGRAM

TDI, Inc

1310 Bison Rd
Hays KS 67601

ATTN: Herb Deines

2-17s-19w Rush KS

Lester #1

Job Ticket: 59326

DST#: 1

Test Start: 2014.07.20 @ 21:15:00

Tool Information

Drill Pipe:	Length:	3879.00 ft	Diameter:	3.80 inches	Volume:	54.41 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight to Pull Loose:	48000.00 lb
					Total Volume:	54.41 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		20.00 ft					String Weight: Initial	44000.00 lb
Depth to Top Packer:		3880.00 ft					Final	44000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		90.00 ft						
Tool Length:		111.00 ft						
Number of Packers:		2	Diameter:	6.75 inches				
Tool Comments:								

Tool Description

Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00		3860.00	
Shut In Tool	5.00		3865.00	
Hydraulic tool	5.00		3870.00	
Packer	5.00		3875.00	21.00 Bottom Of Top Packer
Packer	5.00		3880.00	
Stubb	1.00		3881.00	
Perforations	4.00		3885.00	
Change Over Sub	1.00		3886.00	
Drill Pipe	62.00		3948.00	
Change Over Sub	1.00		3949.00	
Recorder	0.00	8648 Inside	3949.00	
Recorder	0.00	8940 Outside	3949.00	
Perforations	18.00		3967.00	
Bullnose	3.00		3970.00	90.00 Bottom Packers & Anchor

Total Tool Length: 111.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

TDI, Inc

2-17s-19w Rush KS

1310 Bison Rd
Hays KS 67601

Lester #1

Job Ticket: 59326

DST#: 1

ATTN: Herb Deines

Test Start: 2014.07.20 @ 21:15:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 68.00 sec/qt

Water Loss: 9.59 in³

Resistivity: ohm.m

Salinity: 5200.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	MW, 2%W, 98%M	0.870
93.00	Mud, 100%M	1.305

Total Length: 155.00 ft

Total Volume: 2.175 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

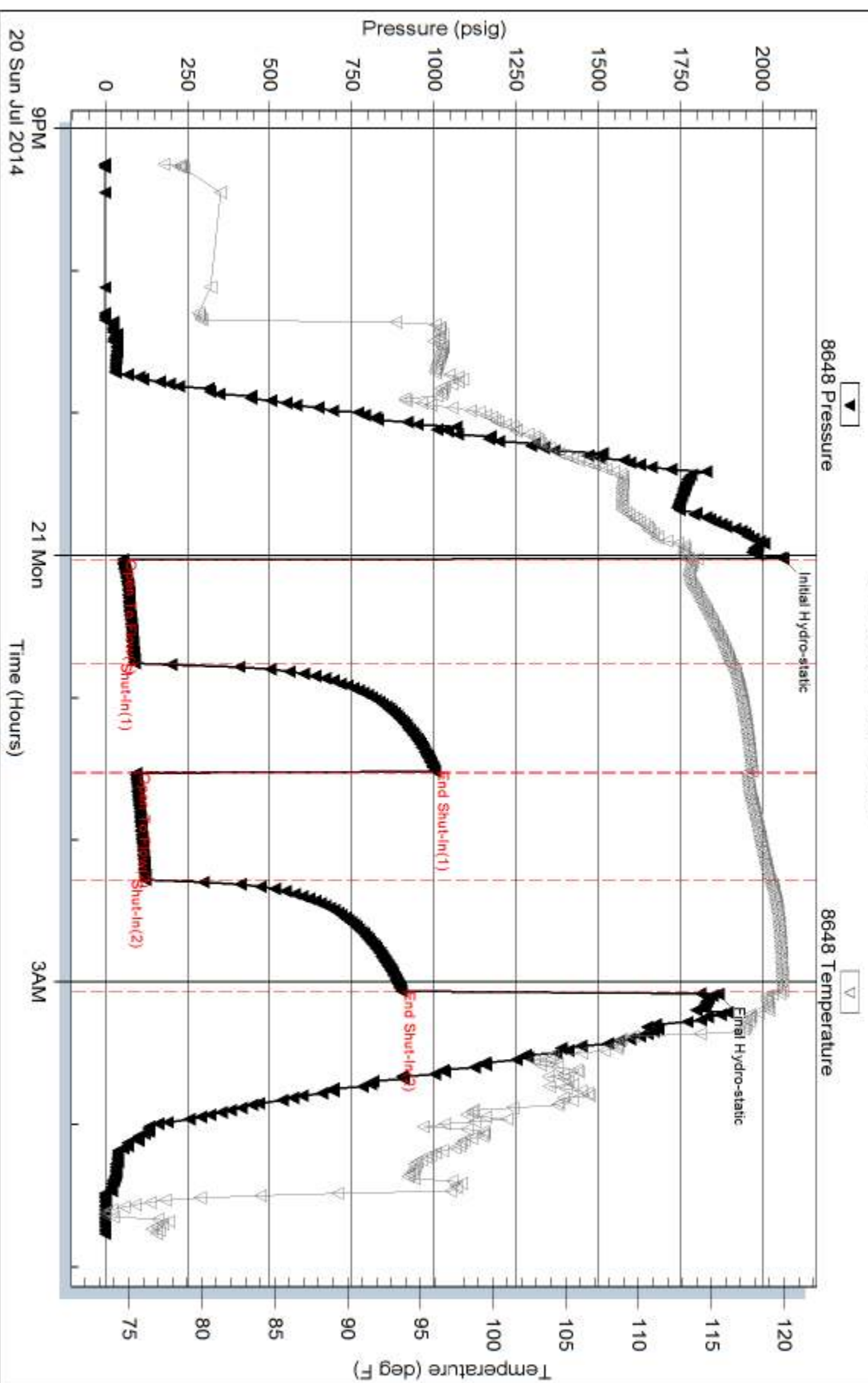
Serial #: 8648

Inside TDI, Inc

Lester #1

DST Test Number: 1

Pressure vs. Time

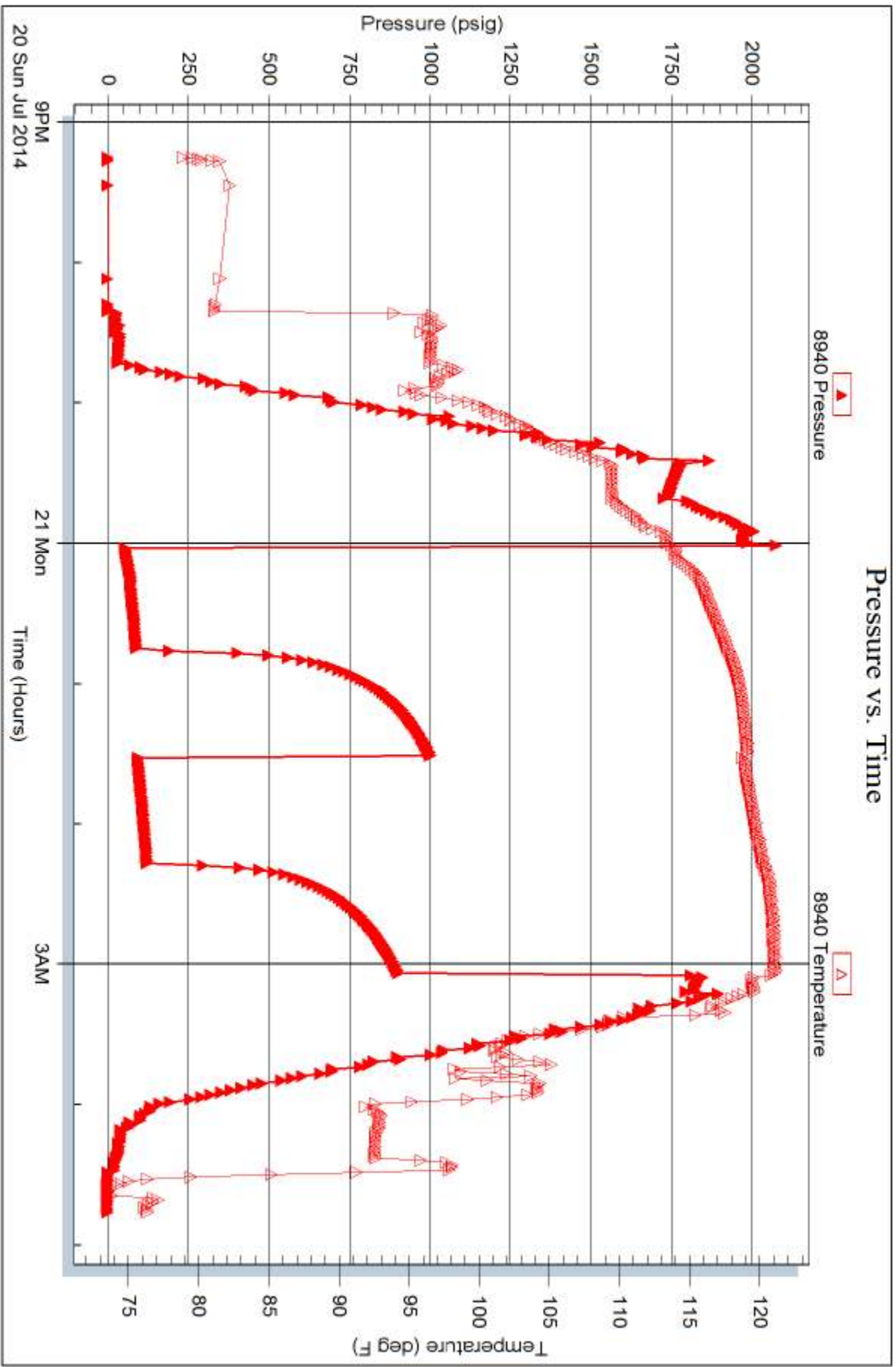


Serial #: 8940

Outside TDI, Inc

Lester #1

DST Test Number: 1





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59326

Well Name & No. Lester #1 Test No. 1 Date 7-20-14
 Company TDI, Inc Elevation 2129 KB 2121 GL
 Address 1310 Bison Rd, Hays KS, 67601
 Co. Rep / Geo. Herb Rig Southwind #1
 Location: Sec. 2 Twp. 17s Rge. 19w Co. Rush State KS

Interval Tested 3880-3970 Zone Tested Long
 Anchor Length 96' Drill Pipe Run 3879 Mud Wt. 9.2
 Top Packer Depth 3875 Drill Collars Run — Vis 68
 Bottom Packer Depth 3880 Wt. Pipe Run — WL 9.6
 Total Depth 3970 Chlorides 5,200 ppm System LCM 1

Blow Description IF- 6 1/2" blow
ISI- No return
FF- 3.75" blow
FSI-

Rec	Feet of	%gas	%oil	%water	%mud
<u>62</u>	<u>MW</u>			<u>2</u>	<u>98</u>
<u>93</u>	<u>Mud</u>				<u>100</u>

Rec Total 155 BHT — Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2062</u>	☒ Test <u>1150</u>	T-On Location <u>2100</u>
(B) First Initial Flow <u>52</u>	☐ Jars <u>—</u>	T-Started <u>2115</u>
(C) First Final Flow <u>89</u>	☐ Safety Joint <u>—</u>	T-Open <u>1202</u>
(D) Initial Shut-In <u>1002</u>	☐ Circ Sub <u>—</u>	T-Pulled <u>0302</u>
(E) Second Initial Flow <u>95</u>	☐ Hourly Standby <u>—</u>	T-Out <u>0447</u>
(F) Second Final Flow <u>122</u>	☒ Mileage <u>53RT</u> <u>82.15</u>	Comments <u>—</u>
(G) Final Shut-In <u>902</u>	☐ Sampler <u>—</u>	
(H) Final Hydrostatic <u>1865</u>	☐ Straddle <u>—</u>	

Initial Open <u>45</u>	☐ Shale Packer <u>—</u>	☐ Ruined Shale Packer <u>—</u>
Initial Shut-In <u>45</u>	☐ Extra Packer <u>—</u>	☐ Ruined Packer <u>—</u>
Final Flow <u>45</u>	☐ Extra Recorder <u>—</u>	☐ Extra Copies <u>—</u>
Final Shut-In <u>45</u>	☐ Day Standby <u>—</u>	Sub Total <u>0</u>
	☐ Accessibility <u>—</u>	Total <u>1232.15</u>
	Sub Total <u>1232.15</u>	MP/DST Disc't <u>—</u>

Approved By — Our Representative Cody Bledorn
 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.