

DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration INC**

8100 E 22nd St N #700
Wichita KS 67278

ATTN: Justin Clegg/ Mike E

Galen Durler #1

14-26s-23w Ford,KS

Start Date: 2013.08.09 @ 22:33:39

End Date: 2013.08.10 @ 09:11:24

Job Ticket #: 47521 DST #: 1

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

Printed: 2013.08.12 @ 11:09:00

Ritchie Exploration INC
14-26s-23w Ford,KS
Galen Durler #1
DST # 1
Huck
2013.08.09



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Ritchie Exploration INC
8100 E 22nd St N #700
Wichita KS 67278
ATTN: Justin Clegg/ Mike E

14-26s-23w Ford,KS

Galen Durler #1

Job Ticket: 47521

DST#: 1

Test Start: 2013.08.09 @ 22:33:39

GENERAL INFORMATION:

Formation: **Huck**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 03:26:54
 Time Test Ended: 09:11:24
 Interval: **4838.00 ft (KB) To 4904.00 ft (KB) (TVD)**
 Total Depth: 4904.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Chris Staats
 Unit No: 47
 Reference Elevations: 2436.00 ft (KB)
 2425.00 ft (CF)
 KB to GR/CF: 11.00 ft

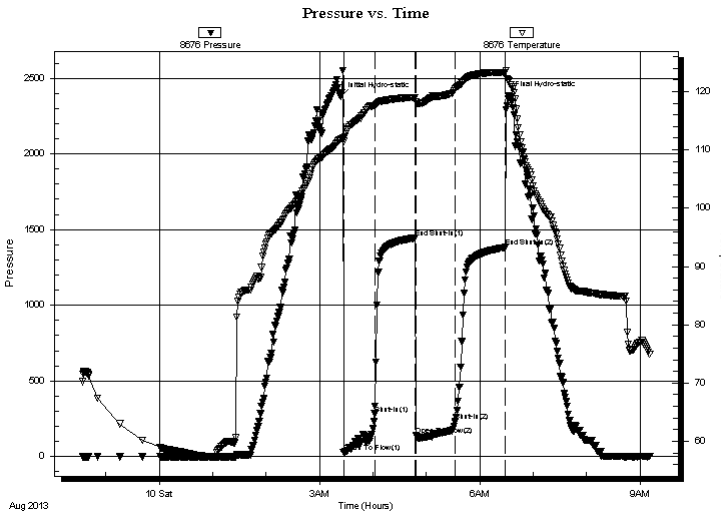
Serial #: 8676

Outside

Press @ Run Depth: 234.78 psig @ 4839.00 ft (KB)
 Start Date: 2013.08.09 End Date: 2013.08.10
 Start Time: 22:33:44 End Time: 09:11:24
 Capacity: 8000.00 psig
 Last Calib.: 2013.08.10
 Time On Btm: 2013.08.10 @ 03:23:39
 Time Off Btm: 2013.08.10 @ 06:31:39

TEST COMMENT: IF: Strong blow BOB 20 min
 IS: No blow back
 FF: Strong blow BOB 16 min
 FS: Weak blow back 1"

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2380.01	111.78	Initial Hydro-static
4	28.43	111.47	Open To Flow (1)
38	283.38	117.58	Shut-In(1)
84	1444.56	119.02	End Shut-In(1)
85	140.69	118.20	Open To Flow (2)
129	234.78	120.53	Shut-In(2)
186	1382.88	123.21	End Shut-In(2)
188	2385.32	122.06	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	640 GIP	0.00
60.00	G,O,M 10%gas 40%mud 50%oil	0.84
60.00	M,O,G 20%mud 30%oil 50%gas	0.84
60.00	O,M,G 5%oil 45%mud 50%gas	0.84
180.00	O,G,M 5%oil 10%gas 85%mud	2.52

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration INC

14-26s-23w Ford,KS

8100 E 22nd St N #700
Wichita KS 67278

Galen Durler #1

Job Ticket: 47521

DST#: 1

ATTN: Justin Clegg/ Mike E

Test Start: 2013.08.09 @ 22:33:39

Tool Information

Drill Pipe:	Length: 4815.00 ft	Diameter: 3.80 inches	Volume: 67.54 bbl	Tool Weight: 2200.00 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: 85000.00 lb
			<u>Total Volume: 67.54 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 75000.00 lb
Depth to Top Packer:	4838.00 ft			Final 75000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	66.00 ft			
Tool Length:	95.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4810.00	
Shut In Tool	5.00			4815.00	
Hydraulic tool	5.00			4820.00	
Jars	5.00			4825.00	
Safety Joint	3.00			4828.00	
Packer	5.00			4833.00	29.00 Bottom Of Top Packer
Packer	5.00			4838.00	
Stubb	1.00			4839.00	
Recorder	0.00	8676	Outside	4839.00	
Recorder	0.00	6773	Inside	4839.00	
Change Over Sub	1.00			4840.00	
Drill Pipe	31.00			4871.00	
Change Over Sub	1.00			4872.00	
Perforations	29.00			4901.00	
Bullnose	3.00			4904.00	66.00 Bottom Packers & Anchor

Total Tool Length: 95.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration INC

14-26s-23w Ford,KS

8100 E 22nd St N #700
Wichita KS 67278

Galen Durler #1

Job Ticket: 47521

DST#: 1

ATTN: Justin Clegg/ Mike E

Test Start: 2013.08.09 @ 22:33:39

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:

ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 11.57 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 4200.00 ppm

Filter Cake: 0.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	640 GIP	0.000
60.00	G,O,M 10%gas 40%mud 50%oil	0.842
60.00	M,O,G 20%mud 30%oil 50%gas	0.842
60.00	O,M,G 5%oil 45%mud 50%gas	0.842
180.00	O,G,M 5%oil 10%gas 85%mud	2.525

Total Length: 360.00 ft

Total Volume: 5.051 bbl

Num Fluid Samples: 0

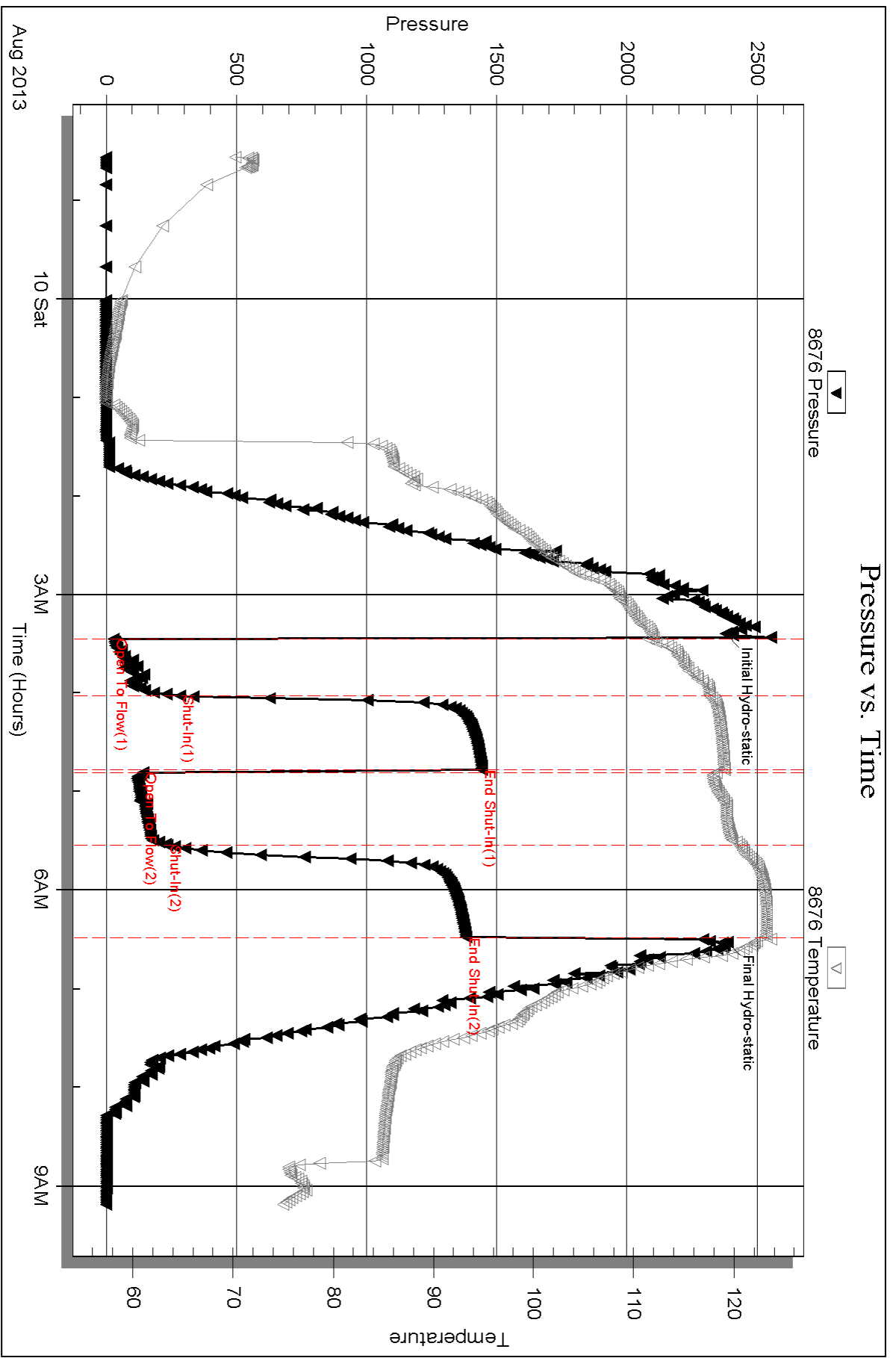
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



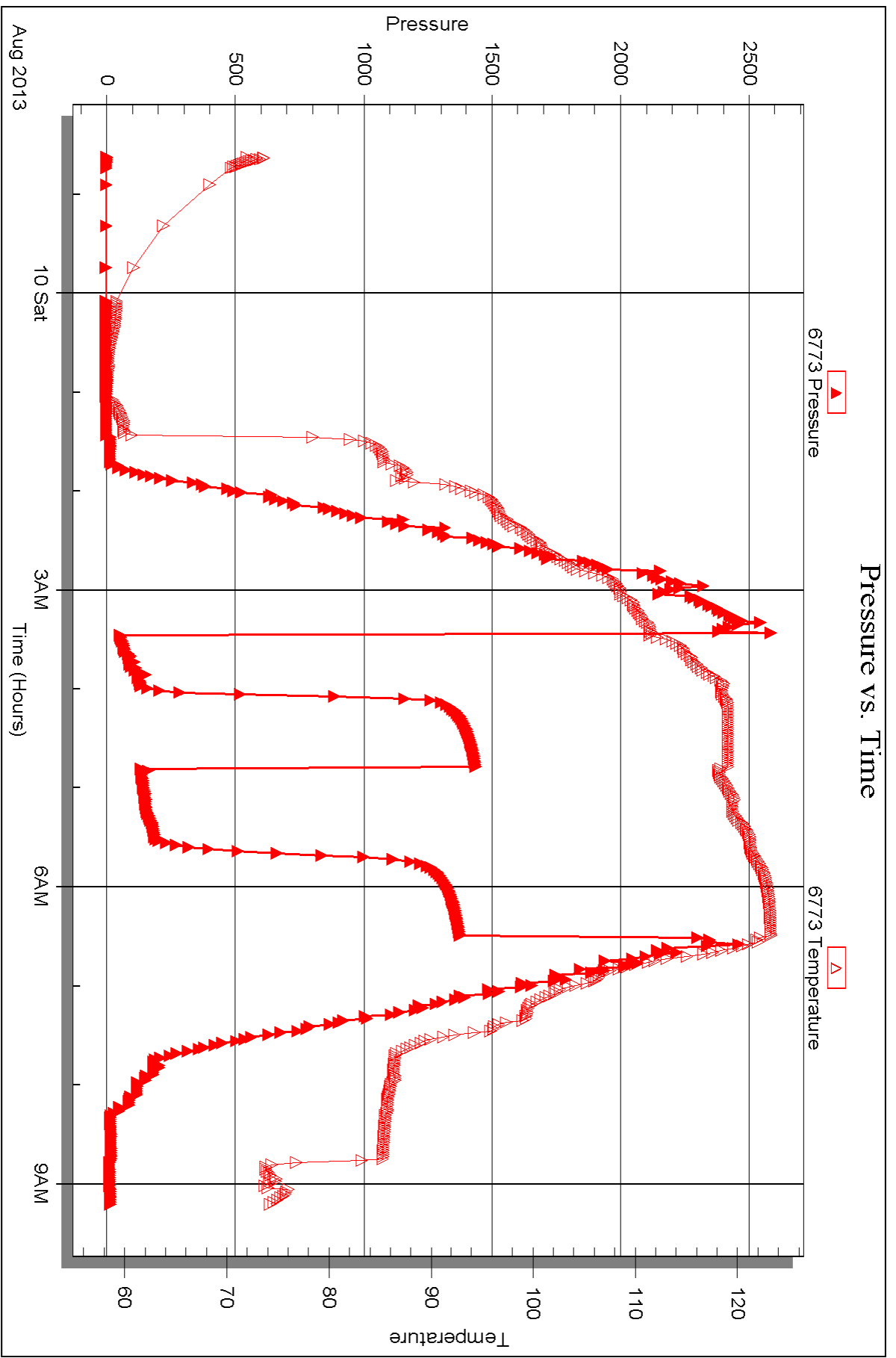
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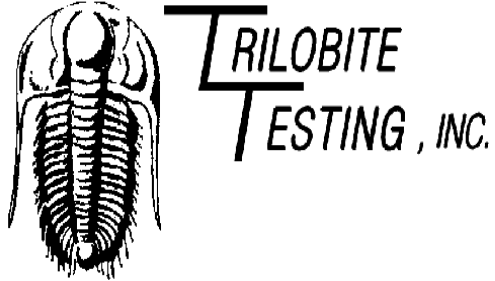
Inside

Ritchie Exploration INC

Galen Durler #1

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration INC**

8100 E 22nd St N #700
Wichita KS 67278

ATTN: Justin Clegg/ Mike E

Galen Durler #1

14-26s-23w Ford,KS

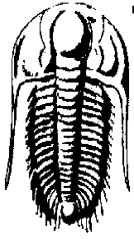
Start Date: 2013.08.10 @ 23:24:14

End Date: 2013.08.11 @ 08:47:44

Job Ticket #: 47522 DST #: 2

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

Printed: 2013.08.12 @ 11:07:05



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Ritchie Exploration INC
 8100 E 22nd St N #700
 Wichita KS 67278
 ATTN: Justin Clegg/ Mike E

14-26s-23w Ford,KS

Galen Durler #1

Job Ticket: 47522

DST#: 2

Test Start: 2013.08.10 @ 23:24:14

GENERAL INFORMATION:

Formation: **Mississippi**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 03:21:44
 Time Test Ended: 08:47:44
 Interval: **4894.00 ft (KB) To 4990.00 ft (KB) (TVD)**
 Total Depth: 4990.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Chris Staats
 Unit No: #47
 Reference Elevations: 2436.00 ft (KB)
 2425.00 ft (CF)
 KB to GR/CF: 11.00 ft

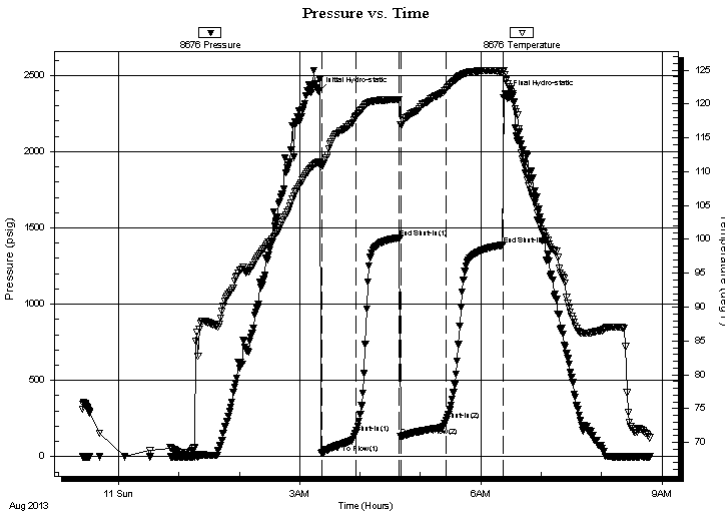
Serial #: 8676

Outside

Press @ Run Depth: 240.17 psig @ 4895.00 ft (KB)
 Start Date: 2013.08.10 End Date: 2013.08.11
 Start Time: 23:24:19 End Time: 08:47:44
 Capacity: 8000.00 psig
 Last Calib.: 2013.08.11
 Time On Btm: 2013.08.11 @ 03:18:44
 Time Off Btm: 2013.08.11 @ 06:24:59

TEST COMMENT: IF: Fair blow 7"
 IS: No blow back
 FF: Fair blow 7 1/2 "
 FS: No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2395.71	111.38	Initial Hydro-static
3	21.40	110.92	Open To Flow (1)
37	155.46	118.06	Shut-In(1)
80	1435.52	120.66	End Shut-In(1)
82	131.33	116.98	Open To Flow (2)
127	240.17	122.21	Shut-In(2)
183	1387.32	124.81	End Shut-In(2)
187	2376.76	123.58	Final Hydro-static

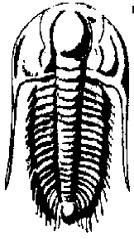
Recovery

Length (ft)	Description	Volume (bbl)
0.00	435' GIP	0.00
120.00	G,O,M 5%gas 5%oil 90%mud	1.68
60.00	G,O,M 10%gas 10%oil 80%mud	0.84
60.00	G,O,M 15%gas 5%oil 80%mud	0.84
120.00	G,O,M 30%gas 5%oil 60%mud	1.68

* Recovery from multiple tests

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration INC

14-26s-23w Ford,KS

8100 E 22nd St N #700
Wichita KS 67278

Galen Durler #1

Job Ticket: 47522

DST#: 2

ATTN: Justin Clegg/ Mike E

Test Start: 2013.08.10 @ 23:24:14

Tool Information

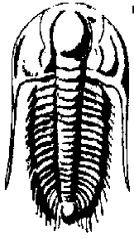
Drill Pipe:	Length: 4878.00 ft	Diameter: 3.80 inches	Volume: 68.43 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 68.43 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 75000.00 lb
Depth to Top Packer:	4894.00 ft			Final 75000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	96.00 ft			
Tool Length:	125.00 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			4866.00	
Shut In Tool	5.00			4871.00	
Hydraulic tool	5.00			4876.00	
Jars	5.00			4881.00	
Safety Joint	3.00			4884.00	
Packer	5.00			4889.00	29.00 Bottom Of Top Packer
Packer	5.00			4894.00	
Stubb	1.00			4895.00	
Recorder	0.00	8676	Outside	4895.00	
Recorder	0.00	6773	Inside	4895.00	
Change Over Sub	0.50			4895.50	
Drill Pipe	62.00			4957.50	
Change Over Sub	0.50			4958.00	
Perforations	29.00			4987.00	
Bullnose	3.00			4990.00	96.00 Bottom Packers & Anchor

Total Tool Length: 125.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration INC

14-26s-23w Ford,KS

8100 E 22nd St N #700
Wichita KS 67278

Galen Durler #1

Job Ticket: 47522

DST#: 2

ATTN: Justin Clegg/ Mike E

Test Start: 2013.08.10 @ 23:24:14

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:

ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 12.38 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 4100.00 ppm

Filter Cake: 0.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
0.00	435' GIP	0.000
120.00	G,O,M 5%gas 5%oil 90%mud	1.683
60.00	G,O,M 10%gas 10%oil 80%mud	0.842
60.00	G,O,M 15%gas 5%oil 80%mud	0.842
120.00	G,O,M 30%gas 5%oil 60%mud	1.683

Total Length: 360.00 ft

Total Volume: 5.050 bbl

Num Fluid Samples: 0

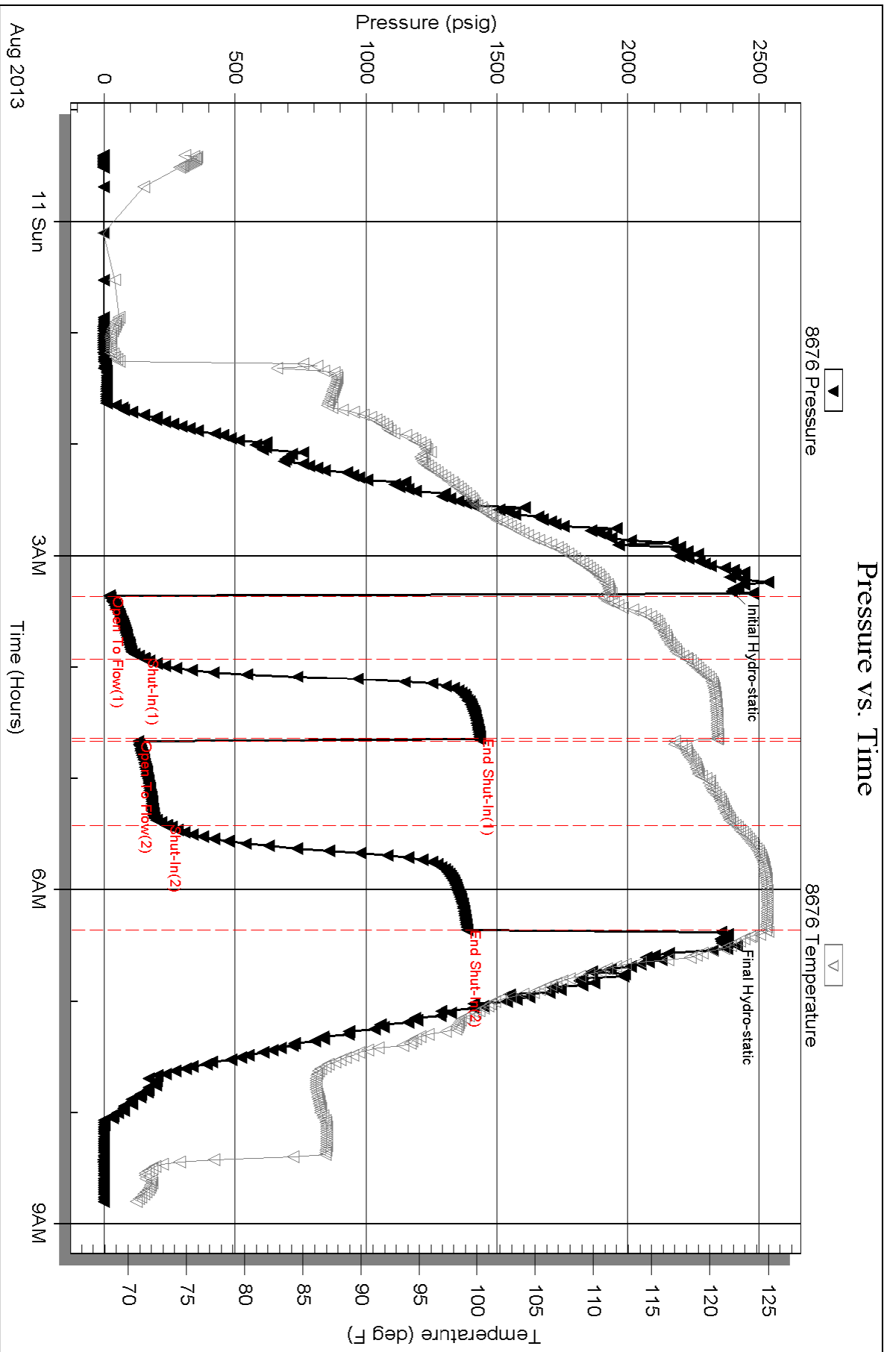
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



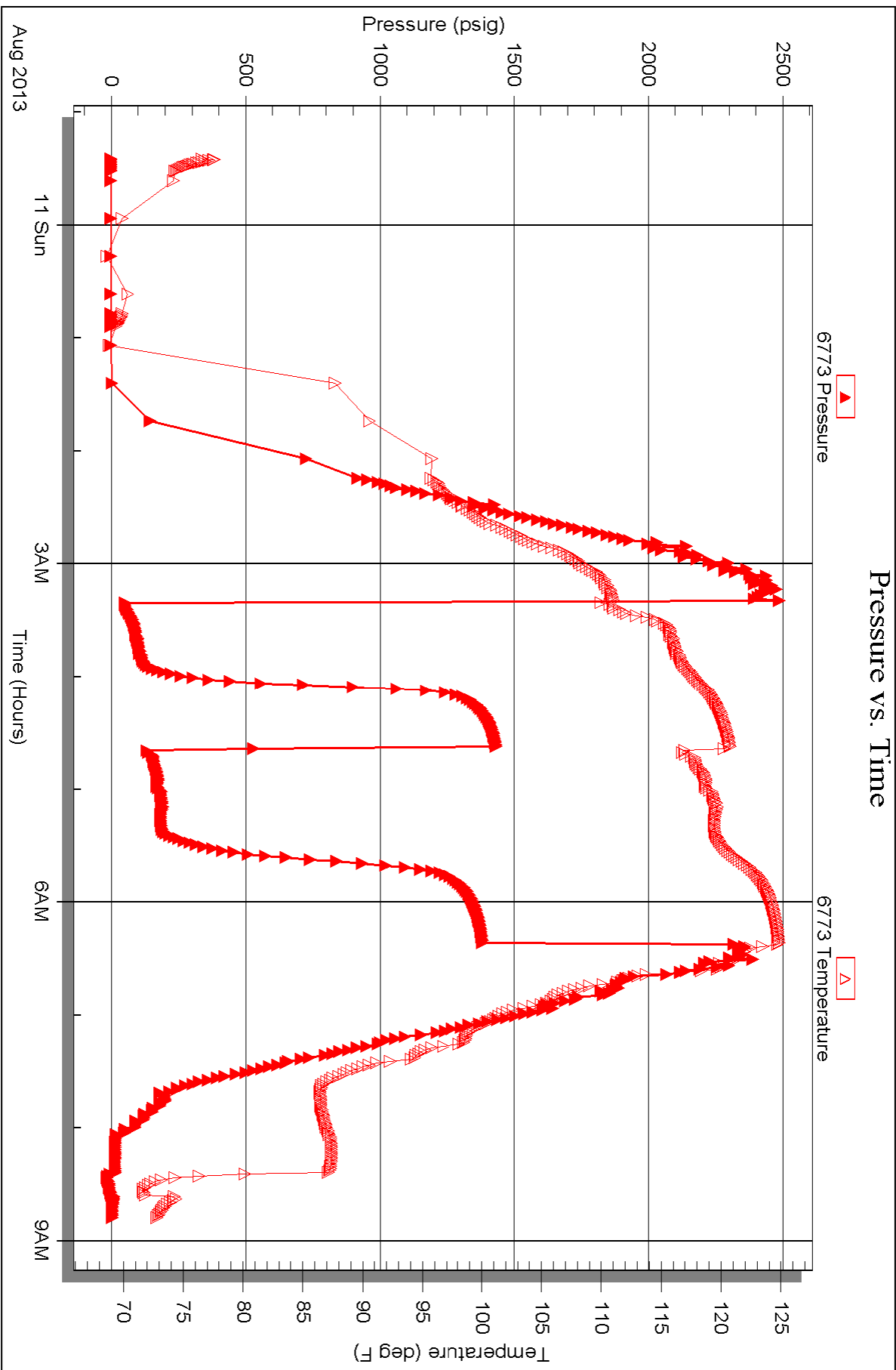
Serial #: 6773

Inside

Richie Exploration INC

Galen Durler #1

DST Test Number: 2





TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 47521

4/10

Well Name & No. Galen Durler #1 Test No. 1 Date 8-9-13
 Company Ritchie Exploration INC Elevation 2436 KB 2425 GL
 Address 8100 E 22ND STN #700 Wichita KS 67278
 Co. Rep / Geo. Josh Clegg / Mike Emseibrecht Rig Val #1
 Location: Sec. 14 Twp. 26 Rge. 23 Co. FORD State KS

Interval Tested 4838 - 4904 Zone Tested HUCK
 Anchor Length 66' Drill Pipe Run 4815 Mud Wt. 9.0
 Top Packer Depth 4833 Drill Collars Run 0 Vis 54
 Bottom Packer Depth 4838 Wt. Pipe Run 0 WL 11.6
 Total Depth 4904 Chlorides 4,200 ppm System LCM 2#

Blow Description IFI: Strong blow BOB 20 min
ISI: NO blow back
FF: Strong blow BOB 16 min
FSL: Weak blow back 1"

Rec	Feet of	%gas	%oil	%water	%mud
	<u>640' GIP</u>				
Rec <u>60'</u>	Feet of <u>60 M</u>	<u>10</u> %gas	<u>50</u> %oil	<u>40</u> %water	<u>40</u> %mud
Rec <u>60'</u>	Feet of <u>M, 0, 6</u>	<u>50</u> %gas	<u>30</u> %oil	<u>20</u> %water	<u>20</u> %mud
Rec <u>60'</u>	Feet of <u>60 0, M, 6</u>	<u>50</u> %gas	<u>5</u> %oil	<u>45</u> %water	<u>45</u> %mud
Rec <u>180'</u>	Feet of <u>0, 6, M</u>	<u>10</u> %gas	<u>5</u> %oil	<u>85</u> %water	<u>85</u> %mud

Rec Total 360' BHT 120" Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic 2380 Test 1250 T-On Location 22:00
 (B) First Initial Flow 28 Jars 250 T-Started 22:33
 (C) First Final Flow 283 Safety Joint 75 T-Open 3:26
 (D) Initial Shut-In 1444 Circ Sub T-Pulled 6:30
 (E) Second Initial Flow 140 Hourly Standby T-Out 9:00
 (F) Second Final Flow 234 Mileage 170 miles 263.50 Comments _____
 (G) Final Shut-In 1382 Sampler _____
 (H) Final Hydrostatic 2385 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 1838.50
 Total 1838.50
 MP/DST Disc't _____

Approved By Mike Emseibrecht Our Representative Ch. [Signature]

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.



TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 47522

Well Name & No. Galen Durler #1 Test No. 2 Date 8-10
 Company Ritchie Exploration INC Elevation 2436 KB 2425 GL
 Address 8100 E 22ND ST N 700 Wichita KS 67278
 Co. Rep / Geo. Justin Clegg / Mike Engelbrocht Rig Val #1
 Location: Sec. 14 Twp. 26 Rge. 23 Co. Ford State KS

Interval Tested 4894 - 4990 Zone Tested MISS
 Anchor Length 96' Drill Pipe Run 4941 Mud Wt. 9.4
 Top Packer Depth 4889 Drill Collars Run 0 Vis 48
 Bottom Packer Depth 4894 Wt. Pipe Run 0 WL 12.4
 Total Depth 4990 Chlorides 4100 ppm System LCM 2#

Blow Description IF: Fair Blow 7"
ISI: NO blow back
FF: Fair blow 7 1/2"
FSI: NO blow back

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>120'</u>	Feet of <u>435' GIP</u>				
Rec <u>60'</u>	Feet of <u>60, M</u>	<u>5</u>	<u>5</u>	<u>90</u>	<u>0</u>
Rec <u>60'</u>	Feet of <u>60, M</u>	<u>10</u>	<u>10</u>	<u>80</u>	<u>0</u>
Rec <u>60'</u>	Feet of <u>60, M</u>	<u>15</u>	<u>5</u>	<u>80</u>	<u>0</u>
Rec <u>120'</u>	Feet of <u>60, M</u>	<u>30</u>	<u>5</u>	<u>60</u>	<u>0</u>
Rec Total <u>360'</u>	BHT <u>12.3</u>	Gravity <u>-</u>	API RW <u>-</u>	@ <u>-</u>	°F Chlorides <u>-</u> ppm

(A) Initial Hydrostatic 2395 Test 1250 T-On Location 22:50
 (B) First Initial Flow 21 Jars 250 T-Started 23:24
 (C) First Final Flow 155 Safety Joint 75 T-Open 3:21
 (D) Initial Shut-In 1435 Circ Sub _____ T-Pulled 6:25
 (E) Second Initial Flow 131 Hourly Standby _____ T-Out 8:35
 (F) Second Final Flow 240 Mileage ~~30 miles~~ 263.50 Comments _____
 (G) Final Shut-In 1387 Sampler _____
 (H) Final Hydrostatic 2376 Straddle _____
 Shale Packer _____
 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 1838.50
 Total 1838.50
 MP/DST Disc't _____

Approved By Mike Engelbrocht Our Representative Chris Staw

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.