



DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc.**

8100 E 22 nd St N #700
Wichita KS 67278

ATTN: John Goldsmith

D Schumacher #1

23-15s-36w Logan,KS

Start Date: 2015.08.07 @ 17:38:15

End Date: 2015.08.08 @ 00:49:30

Job Ticket #: 61450 DST #: 1

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2015.08.13 @ 09:51:07



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Ritchie Exploration Inc.
 8100 E 22 nd St N #700
 Wichita KS 67278
 ATTN: John Goldsmith

23-15s-36w Logan,KS

D Schumacher #1

Job Ticket: 61450

DST#: 1

Test Start: 2015.08.07 @ 17:38:15

GENERAL INFORMATION:

Formation: **Toronto**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 19:45:00
 Time Test Ended: 00:49:30
 Interval: **3996.00 ft (KB) To 4046.00 ft (KB) (TVD)**
 Total Depth: 4046.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Mike Roberts
 Unit No: 65
 Reference Elevations: 3305.00 ft (KB)
 3294.00 ft (CF)
 KB to GR/CF: 11.00 ft

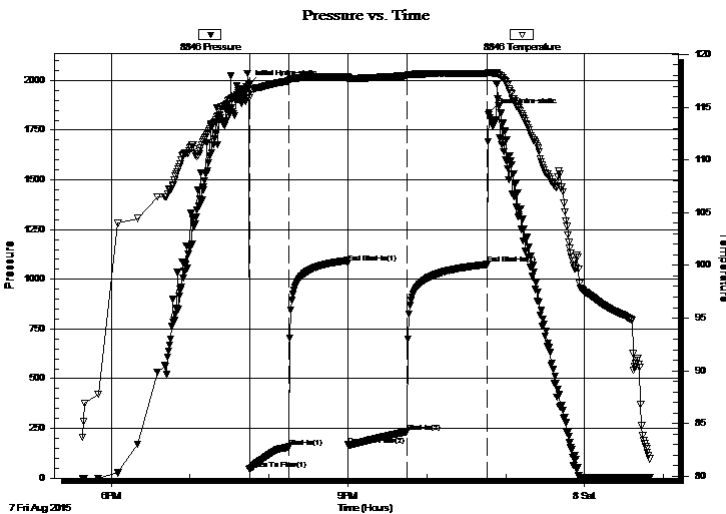
Serial #: 8846

Inside

Press@RunDepth: 232.63 psig @ 3998.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.08.07 End Date: 2015.08.08 Last Calib.: 2015.08.08
 Start Time: 17:38:15 End Time: 00:49:30 Time On Btm: 2015.08.07 @ 19:44:45
 Time Off Btm: 2015.08.07 @ 22:47:30

TEST COMMENT: IF: Built to 9 1/2" blow
 IS: No return blow
 FF: BOB in 37 min.
 FS: No return blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1976.89	116.95	Initial Hydro-static
1	43.98	115.89	Open To Flow (1)
31	157.29	117.49	Shut-In(1)
75	1082.67	117.91	End Shut-In(1)
76	167.89	117.65	Open To Flow (2)
121	232.63	117.98	Shut-In(2)
181	1074.60	118.16	End Shut-In(2)
183	1838.74	118.29	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
122.00	mcw 40% m 60% w	0.60
122.00	ocmw 2% o 13% m 85% w	0.60
186.00	mud 100% m	2.61
30.00	ocm 2% o 98% m	0.42

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc.

23-15s-36w Logan,KS

8100 E 22 nd St N #700
Wichita KS 67278

D Schumacher #1

Job Ticket: 61450

DST#: 1

ATTN: John Goldsmith

Test Start: 2015.08.07 @ 17:38:15

Tool Information

Drill Pipe:	Length: 3736.00 ft	Diameter: 3.80 inches	Volume: 52.41 bbl	Tool Weight: 1500.00 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: 244.00 ft	Diameter: 2.25 inches	Volume: 1.20 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 53.61 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	3996.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	50.00 ft			
Tool Length:	78.00 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			3969.00	
Shut In Tool	5.00			3974.00	
Hydraulic tool	5.00			3979.00	
Jars	5.00			3984.00	
Safety Joint	3.00			3987.00	
Packer	5.00			3992.00	28.00 Bottom Of Top Packer
Packer	4.00			3996.00	
Stubb	1.00			3997.00	
Perforations	1.00			3998.00	
Recorder	0.00	8846	Inside	3998.00	
Recorder	0.00	8737	Outside	3998.00	
Change Over Sub	1.00			3999.00	
Drill Pipe	31.00			4030.00	
Change Over Sub	1.00			4031.00	
Perforations	10.00			4041.00	
Bullnose	5.00			4046.00	50.00 Bottom Packers & Anchor
Total Tool Length:	78.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc.

23-15s-36w Logan,KS

8100 E 22 nd St N #700
Wichita KS 67278

D Schumacher #1

Job Ticket: 61450

DST#: 1

ATTN: John Goldsmith

Test Start: 2015.08.07 @ 17:38:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

20000 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.35 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
122.00	mcw 40%m 60%w	0.600
122.00	ocmw 2%o 13%m 85%w	0.600
186.00	mud 100%m	2.609
30.00	ocm 2%o 98%m	0.421

Total Length: 460.00 ft Total Volume: 4.230 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW= .35@ 76.4 =20,000 ppm

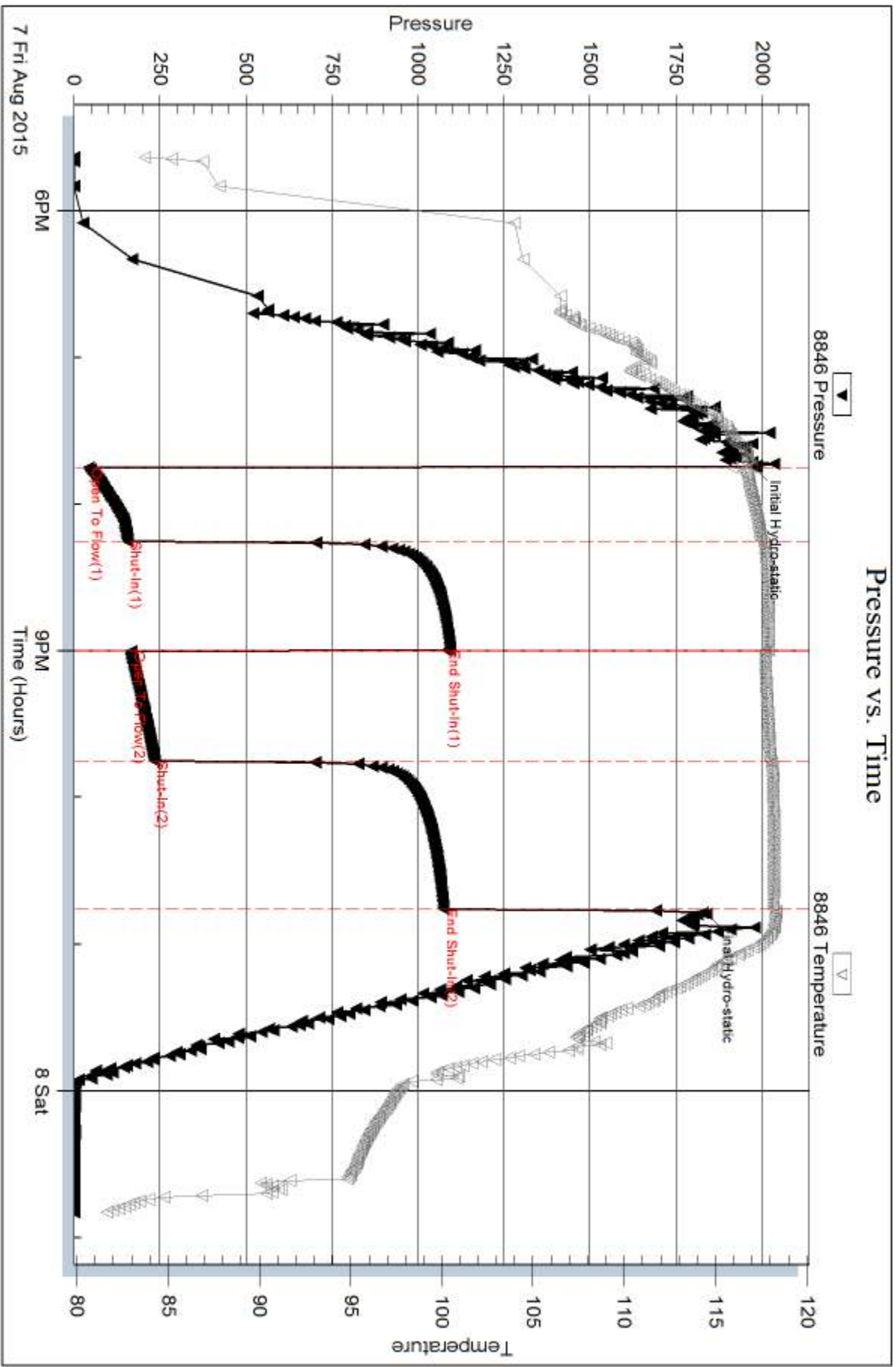
Serial #: 8846

Inside

Ritchie Exploration Inc.

D Schumacher #1

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 61450

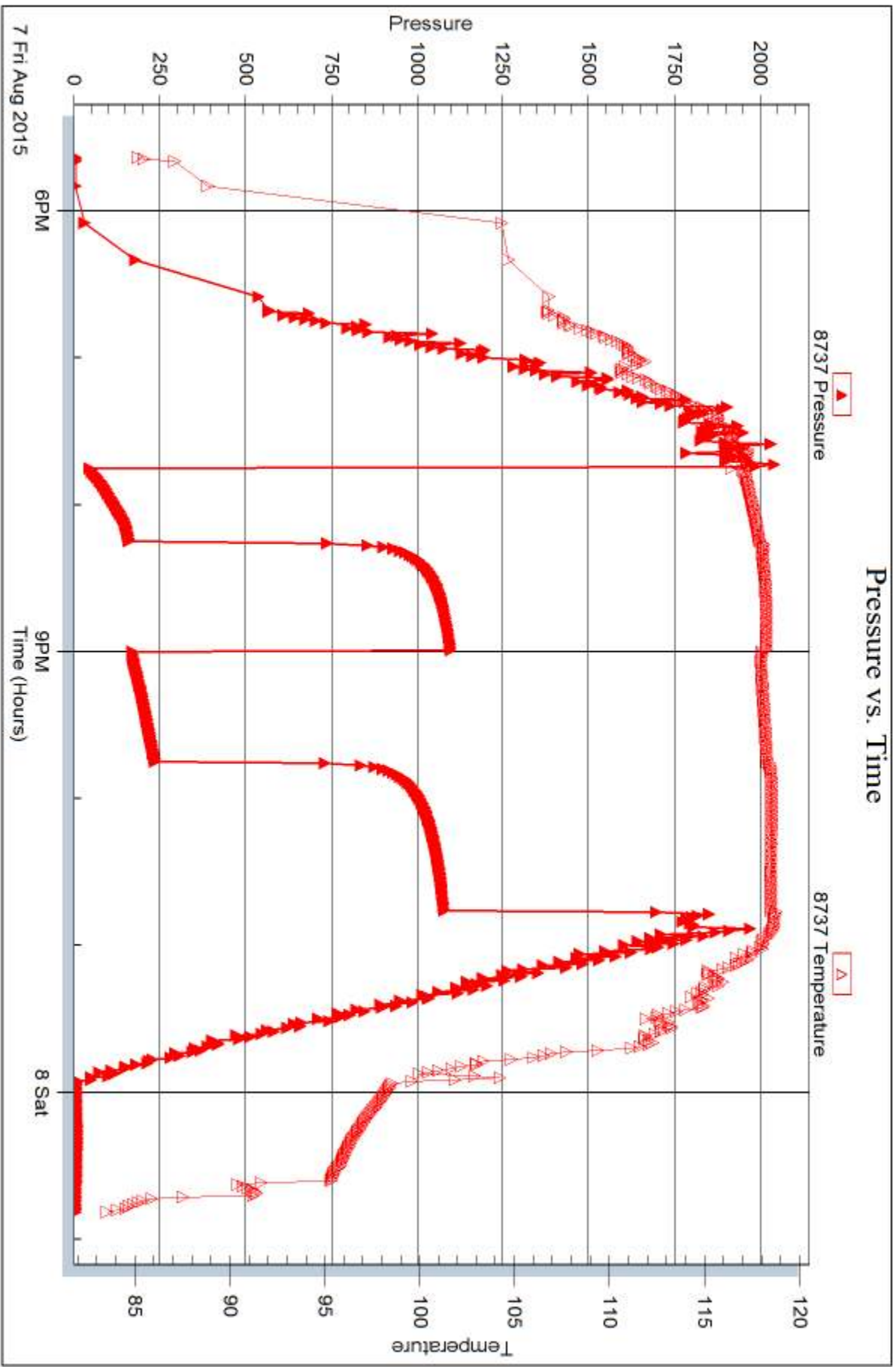
Printed: 2015.08.13 @ 09:51:08

Serial #: 8737

Outside Ritchie Exploration Inc.

D Schumacher #1

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 61450

Printed: 2015.08.13 @ 09:51:08



DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc.**

8100 E 22 nd St N #700
Wichita KS 67278

ATTN: John Goldsmith

D Schumacher #1

23-15s-36w Logan,KS

Start Date: 2015.08.08 @ 14:00:15

End Date: 2015.08.08 @ 20:13:30

Job Ticket #: 64451 DST #: 2

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2015.08.13 @ 09:50:38



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Ritchie Exploration Inc.
8100 E 22 nd St N #700
Wichita KS 67278
ATTN: John Goldsmith

23-15s-36w Logan,KS

D Schumacher #1

Job Ticket: 64451

DST#: 2

Test Start: 2015.08.08 @ 14:00:15

GENERAL INFORMATION:

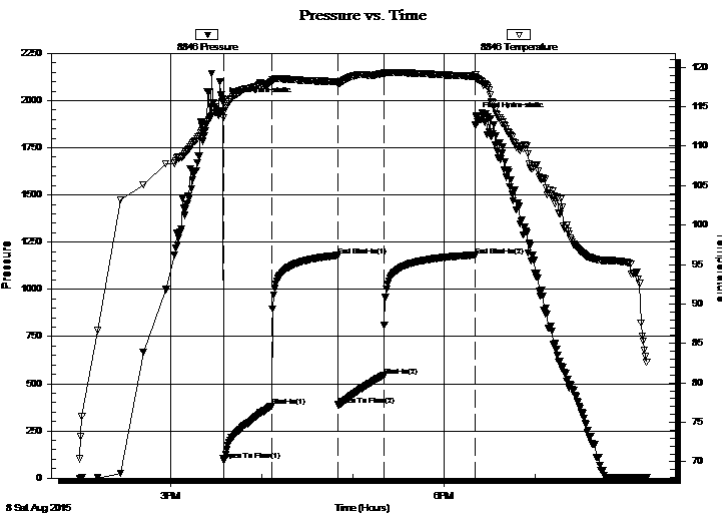
Formation: **LKC C-F**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 15:35:00
 Time Test Ended: 20:13:30
 Interval: **4081.00 ft (KB) To 4174.00 ft (KB) (TVD)**
 Total Depth: 4174.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 65
 Reference Elevations: 3305.00 ft (KB)
 3294.00 ft (CF)
 KB to GR/CF: 11.00 ft

Serial #: 8846

Inside

Press@RunDepth: 542.35 psig @ 4083.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.08.08 End Date: 2015.08.08 Last Calib.: 2015.08.08
 Start Time: 14:00:15 End Time: 20:13:30 Time On Btm: 2015.08.08 @ 15:34:30
 Time Off Btm: 2015.08.08 @ 18:21:00

TEST COMMENT: IF:BOB in 4 min.
 IS:No return blow
 FF:BOB in 5 min.
 FS:No return blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1995.82	114.52	Initial Hydro-static
1	92.19	114.26	Open To Flow (1)
32	381.33	118.21	Shut-In(1)
76	1176.70	118.16	End Shut-In(1)
76	388.18	117.92	Open To Flow (2)
106	542.35	119.24	Shut-In(2)
166	1177.85	118.84	End Shut-In(2)
167	1916.89	118.68	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
244.00	mcw 10%m 90%w	1.20
248.00	mcw 30%m 70%w	3.48
620.00	mud 100%m	8.70

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc.

23-15s-36w Logan,KS

8100 E 22 nd St N #700
Wichita KS 67278

D Schumacher #1

Job Ticket: 64451

DST#: 2

ATTN: John Goldsmith

Test Start: 2015.08.08 @ 14:00:15

Tool Information

Drill Pipe:	Length: 3829.00 ft	Diameter: 3.80 inches	Volume: 53.71 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 244.00 ft	Diameter: 2.25 inches	Volume: 1.20 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 54.91 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4081.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	93.00 ft			
Tool Length:	121.00 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			4054.00	
Shut In Tool	5.00			4059.00	
Hydraulic tool	5.00			4064.00	
Jars	5.00			4069.00	
Safety Joint	3.00			4072.00	
Packer	5.00			4077.00	28.00 Bottom Of Top Packer
Packer	4.00			4081.00	
Stubb	1.00			4082.00	
Perforations	1.00			4083.00	
Recorder	0.00	8846	Inside	4083.00	
Recorder	0.00	8737	Outside	4083.00	
Change Over Sub	1.00			4084.00	
Drill Pipe	64.00			4148.00	
Change Over Sub	1.00			4149.00	
Perforations	20.00			4169.00	
Bullnose	5.00			4174.00	93.00 Bottom Packers & Anchor
Total Tool Length:	121.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc.

23-15s-36w Logan,KS

8100 E 22 nd St N #700
Wichita KS 67278

D Schumacher #1

Job Ticket: 64451

DST#: 2

ATTN: John Goldsmith

Test Start: 2015.08.08 @ 14:00:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

16000 ppm

Viscosity: 67.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.75 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
244.00	mcw 10%m 90%w	1.200
248.00	mcw 30%m 70%w	3.479
620.00	mud 100%m	8.697

Total Length: 1112.00 ft Total Volume: 13.376 bbl

Num Fluid Samples: 0

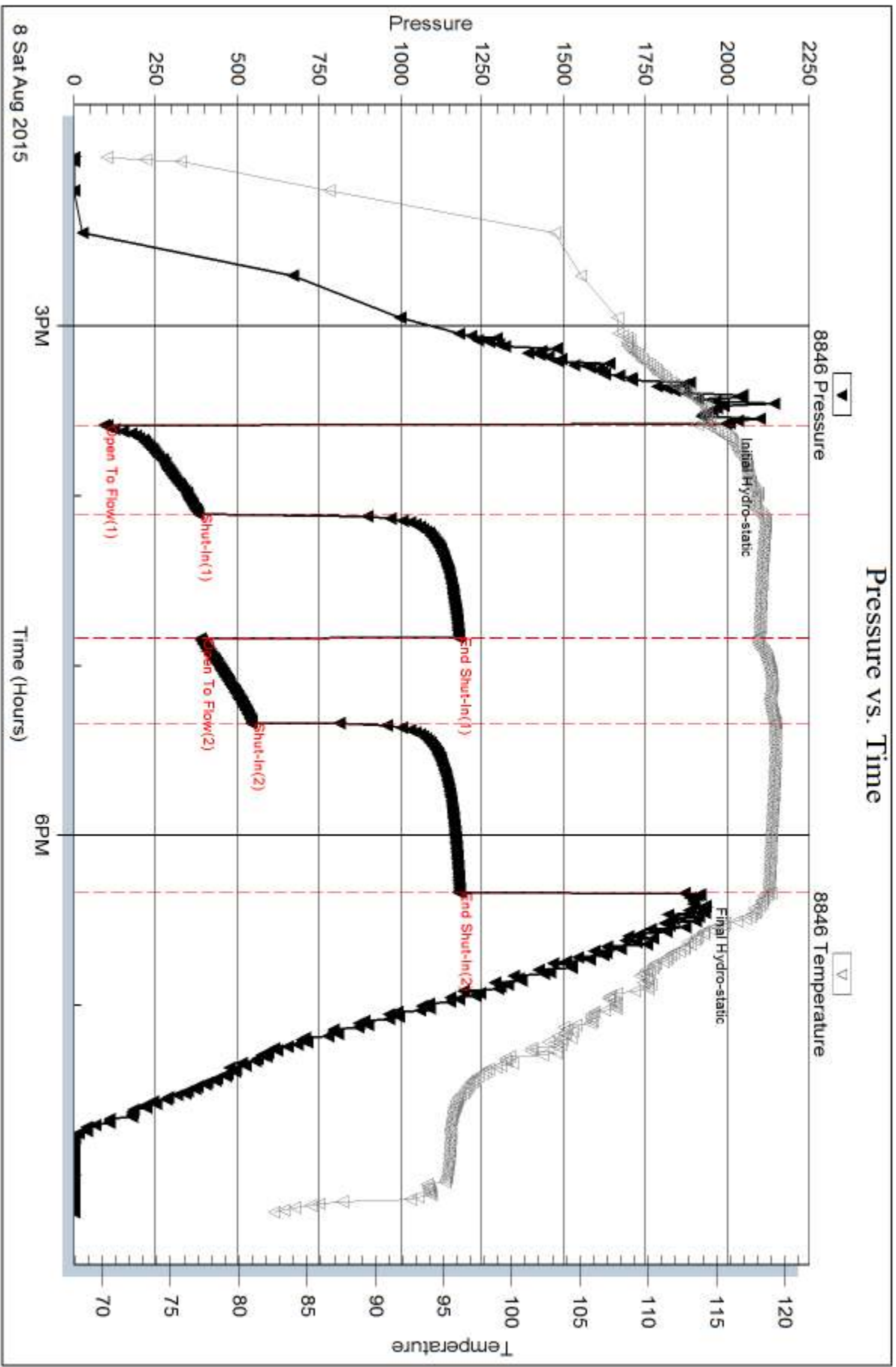
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW=.38 @ 82.6*= 16,000 ppm

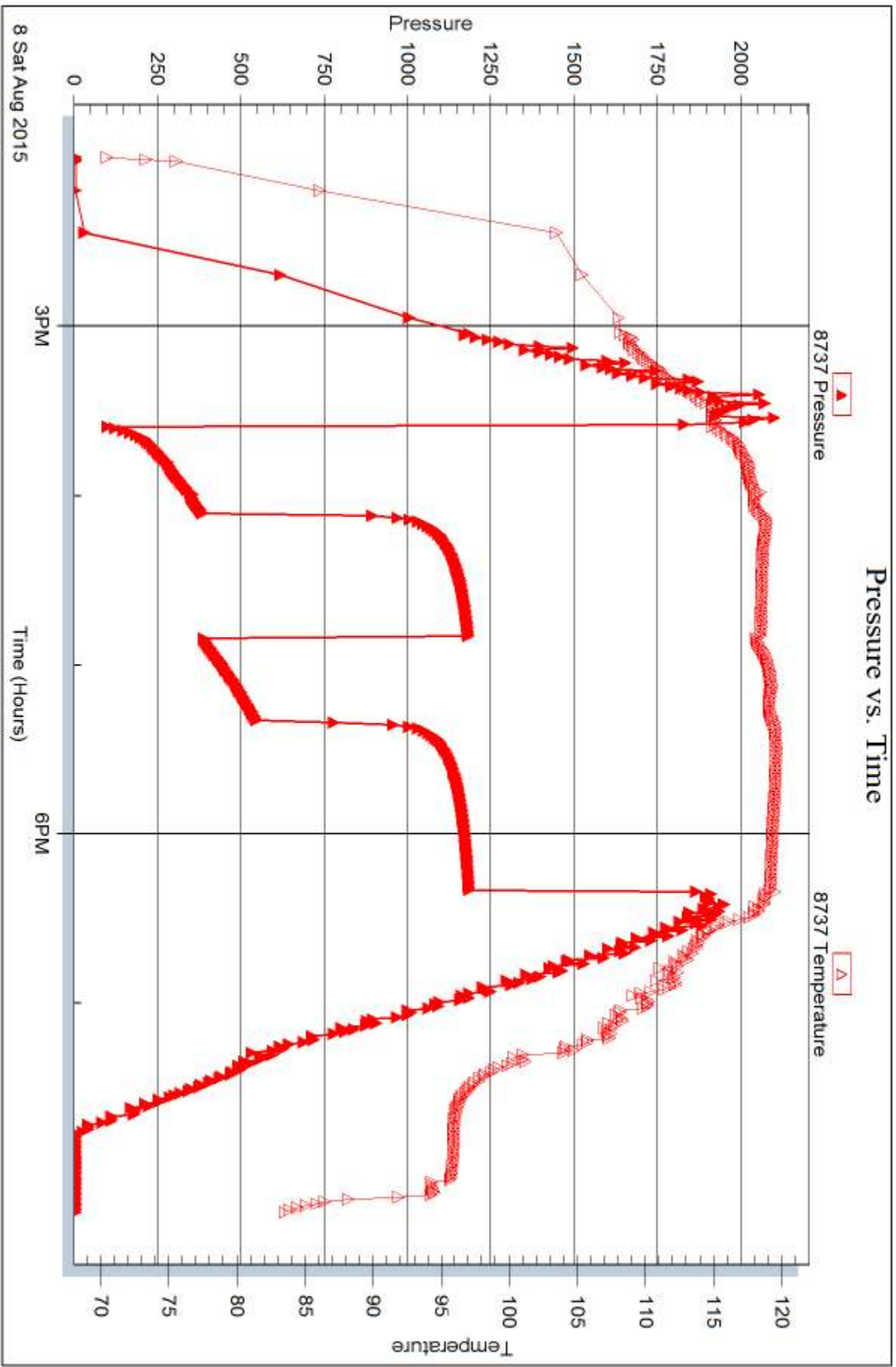


Serial #: 8737

Outside Ritchie Exploration Inc.

D Schumacher #1

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 64451

Printed: 2015.08.13 @ 09:50:39



DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc.**

8100 E 22 nd St N #700
Wichita KS 67278

ATTN: John Goldsmith

D Schumacher #1

23-15s-36w Logan,KS

Start Date: 2015.08.09 @ 23:42:15

End Date: 2015.08.10 @ 08:17:30

Job Ticket #: 64452 DST #: 3

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2015.08.13 @ 09:50:01



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Ritchie Exploration Inc.
 8100 E 22 nd St N #700
 Wichita KS 67278
 ATTN: John Goldsmith

23-15s-36w Logan,KS

D Schumacher #1

Job Ticket: 64452

DST#: 3

Test Start: 2015.08.09 @ 23:42:15

GENERAL INFORMATION:

Formation: **Altamont A**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 01:38:00
 Time Test Ended: 08:17:30
 Interval: **4418.00 ft (KB) To 4480.00 ft (KB) (TVD)**
 Total Depth: 4480.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 65
 Reference Elevations: 3305.00 ft (KB)
 3294.00 ft (CF)
 KB to GR/CF: 11.00 ft

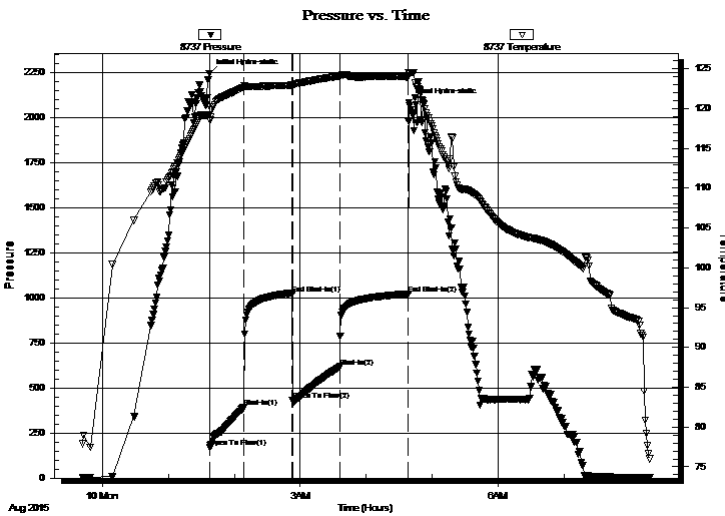
Serial #: 8737

Outside

Press@RunDepth: 618.66 psig @ 4421.00 ft (KB)
 Start Date: 2015.08.09 End Date: 2015.08.10
 Start Time: 23:42:15 End Time: 08:17:30
 Capacity: 8000.00 psig
 Last Calib.: 2015.08.10
 Time On Btm: 2015.08.10 @ 01:37:45
 Time Off Btm: 2015.08.10 @ 04:38:45

TEST COMMENT: IF:BOB in 3 min.
 IS:Return blow built to 1/8"
 FF:BOB in 3 min.
 FS:No return blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2248.34	119.25	Initial Hydro-static
1	170.37	118.54	Open To Flow (1)
31	394.05	122.69	Shut-In(1)
75	1021.36	122.94	End Shut-In(1)
75	430.70	122.75	Open To Flow (2)
119	618.66	124.08	Shut-In(2)
181	1021.35	123.99	End Shut-In(2)
181	2084.11	124.42	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
122.00	gcmo 10%g 10%m 80%o	0.60
122.00	gcmo 10%g 30%m 60%o	0.60
248.00	mcgo 25%m 25%g 50%o	3.48
124.00	mcgo 10%m 25%g 65%o	1.74
826.00	mcgo 5%m 10%g 85%o	11.59

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc.

23-15s-36w Logan,KS

8100 E 22 nd St N #700
Wichita KS 67278

D Schumacher #1

Job Ticket: 64452

DST#: 3

ATTN: John Goldsmith

Test Start: 2015.08.09 @ 23:42:15

Tool Information

Drill Pipe:	Length: 4178.00 ft	Diameter: 3.80 inches	Volume: 58.61 bbl	Tool Weight: 1500.00 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: 244.00 ft	Diameter: 2.25 inches	Volume: 1.20 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 59.81 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 73000.00 lb
Depth to Top Packer:	4418.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	62.00 ft			
Tool Length:	90.00 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			4391.00	
Shut In Tool	5.00			4396.00	
Hydraulic tool	5.00			4401.00	
Jars	5.00			4406.00	
Safety Joint	3.00			4409.00	
Packer	5.00			4414.00	28.00 Bottom Of Top Packer
Packer	4.00			4418.00	
Stubb	1.00			4419.00	
Perforations	2.00			4421.00	
Recorder	0.00	8846	Inside	4421.00	
Recorder	0.00	8737	Outside	4421.00	
Change Over Sub	1.00			4422.00	
Drill Pipe	32.00			4454.00	
Change Over Sub	1.00			4455.00	
Perforations	20.00			4475.00	
Bullnose	5.00			4480.00	62.00 Bottom Packers & Anchor
Total Tool Length:	90.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc.

23-15s-36w Logan,KS

8100 E 22 nd St N #700
Wichita KS 67278

D Schumacher #1

Job Ticket: 64452

DST#: 3

ATTN: John Goldsmith

Test Start: 2015.08.09 @ 23:42:15

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 30 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 0 ppm
Viscosity: 54.00 sec/qt	Cushion Volume: bbl	
Water Loss: 8.77 in ³	Gas Cushion Type:	
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig	
Salinity: 6600.00 ppm		
Filter Cake: 1.00 inches		

Recovery Information

Recovery Table

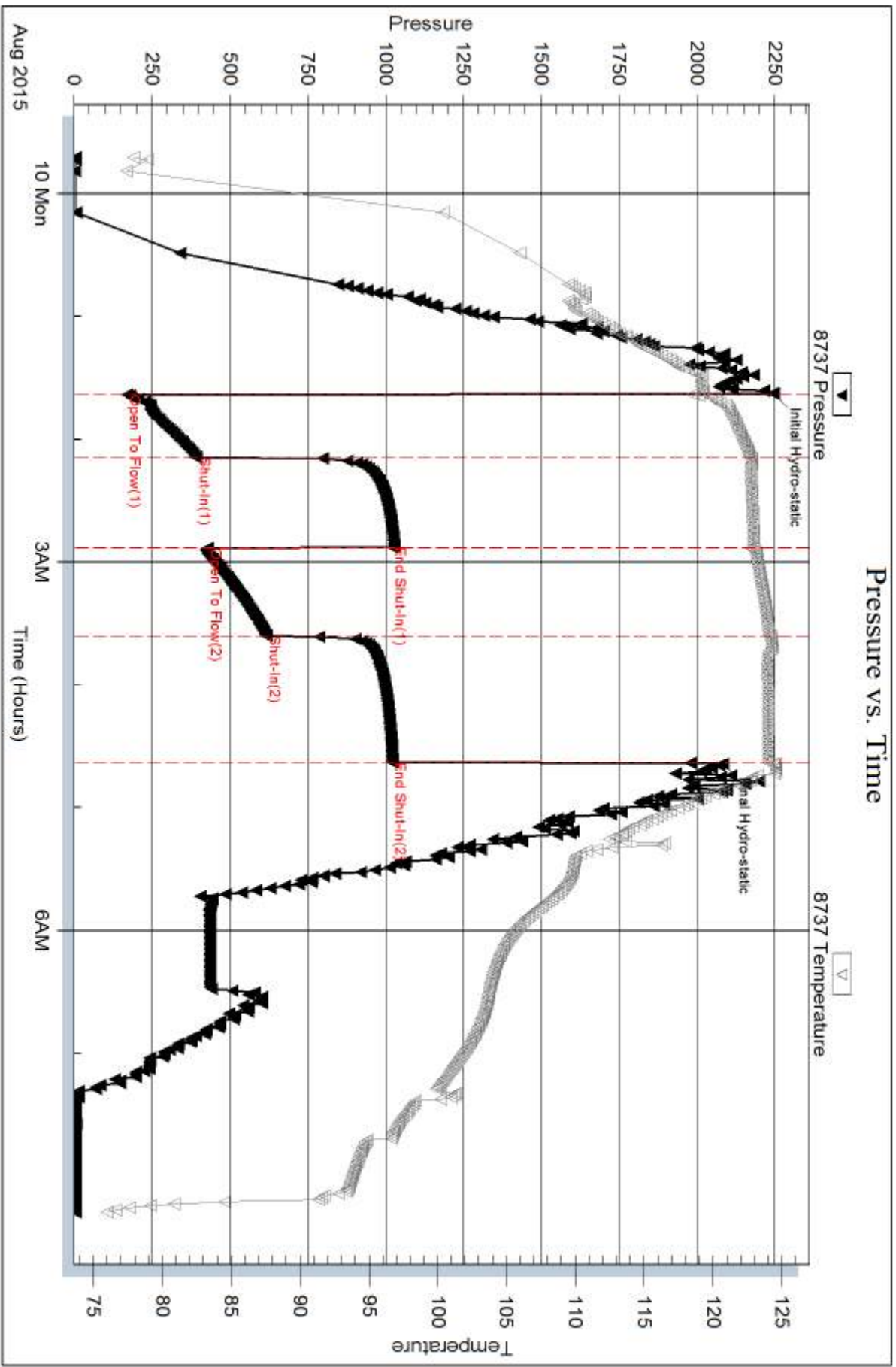
Length ft	Description	Volume bbl
122.00	gcmo 10%g 10%m 80%o	0.600
122.00	gcmo 10%g 30%m 60%o	0.600
248.00	mcgo 25%m 25%g 50%o	3.479
124.00	mcgo 10%m 25%g 65%o	1.739
826.00	mcgo 5%m 10%g 85%o	11.587

Total Length: 1442.00 ft Total Volume: 18.005 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: API= 29@70* corrected to 30 @ 60*
.....NO WATER



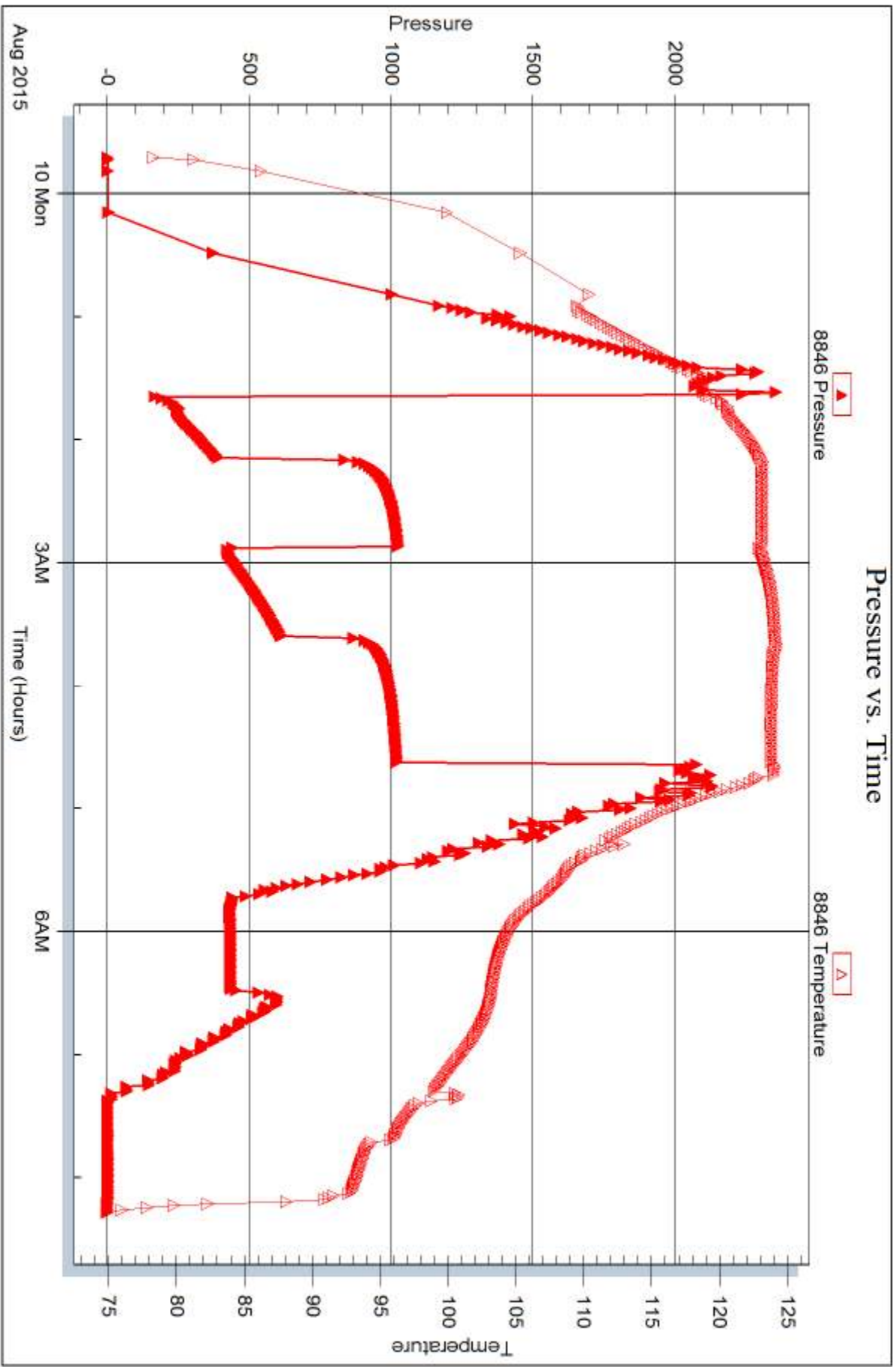
Serial #: 8846

Inside

Ritchie Exploration Inc.

D Schumacher #1

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 64452

Printed: 2015.08.13 @ 09:50:02



DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc.**

8100 E 22 nd St N #700
Wichita KS 67278

ATTN: John Goldsmith

D Schumacher #1

23-15s-36w Logan,KS

Start Date: 2015.08.10 @ 16:08:15

End Date: 2015.08.10 @ 21:50:15

Job Ticket #: 64453 DST #: 4

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2015.08.13 @ 09:48:36



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Ritchie Exploration Inc.
8100 E 22 nd St N #700
Wichita KS 67278
ATTN: John Goldsmith

23-15s-36w Logan,KS

D Schumacher #1

Job Ticket: 64453

DST#: 4

Test Start: 2015.08.10 @ 16:08:15

GENERAL INFORMATION:

Formation: **Altamont B**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:02:30

Time Test Ended: 21:50:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

Interval: 4475.00 ft (KB) To 4500.00 ft (KB) (TVD)

Reference Elevations: 3305.00 ft (KB)

Total Depth: 4500.00 ft (KB) (TVD)

3294.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

Serial #: 8846

Inside

Press@RunDepth: 23.33 psig @ 4495.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.08.10

End Date:

2015.08.10

Last Calib.:

2015.08.10

Start Time: 16:08:15

End Time:

21:50:15

Time On Btm:

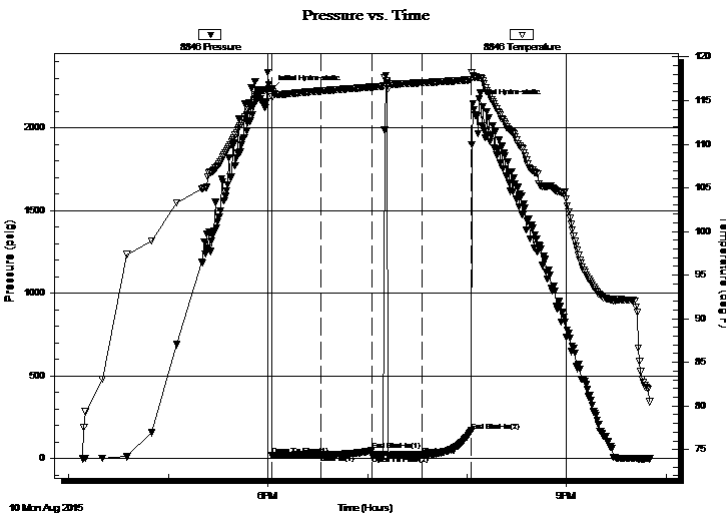
2015.08.10 @ 18:02:15

Time Off Btm:

2015.08.10 @ 20:03:30

TEST COMMENT: IF:No blow
IS:No return blow
FF:No blow ---flushed tool blow that died instantly
FS:No return blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2230.32	116.38	Initial Hydro-static
1	21.42	115.40	Open To Flow (1)
30	23.21	116.11	Shut-In(1)
61	48.66	116.57	End Shut-In(1)
61	20.82	116.55	Open To Flow (2)
91	23.33	117.06	Shut-In(2)
121	167.99	117.40	End Shut-In(2)
122	2147.80	117.81	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	mud w ith oil spots 100%m	0.01

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc.

23-15s-36w Logan,KS

8100 E 22 nd St N #700
Wichita KS 67278

D Schumacher #1

Job Ticket: 64453

DST#: 4

ATTN: John Goldsmith

Test Start: 2015.08.10 @ 16:08:15

Tool Information

Drill Pipe:	Length: 4209.00 ft	Diameter: 3.80 inches	Volume: 59.04 bbl	Tool Weight: 1500.00 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: 244.00 ft	Diameter: 2.25 inches	Volume: 1.20 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 60.24 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 76000.00 lb
Depth to Top Packer:	4475.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	25.00 ft			
Tool Length:	53.00 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			4448.00	
Shut In Tool	5.00			4453.00	
Hydraulic tool	5.00			4458.00	
Jars	5.00			4463.00	
Safety Joint	3.00			4466.00	
Packer	5.00			4471.00	28.00 Bottom Of Top Packer
Packer	4.00			4475.00	
Stubb	1.00			4476.00	
Perforations	19.00			4495.00	
Recorder	0.00	8846	Inside	4495.00	
Recorder	0.00	8737	Outside	4495.00	
Bullnose	5.00			4500.00	25.00 Bottom Packers & Anchor

Total Tool Length: 53.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc.

23-15s-36w Logan,KS

8100 E 22 nd St N #700
Wichita KS 67278

D Schumacher #1

Job Ticket: 64453

DST#: 4

ATTN: John Goldsmith

Test Start: 2015.08.10 @ 16:08:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.58 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 7200.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	mud w ith oil spots 100%m	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

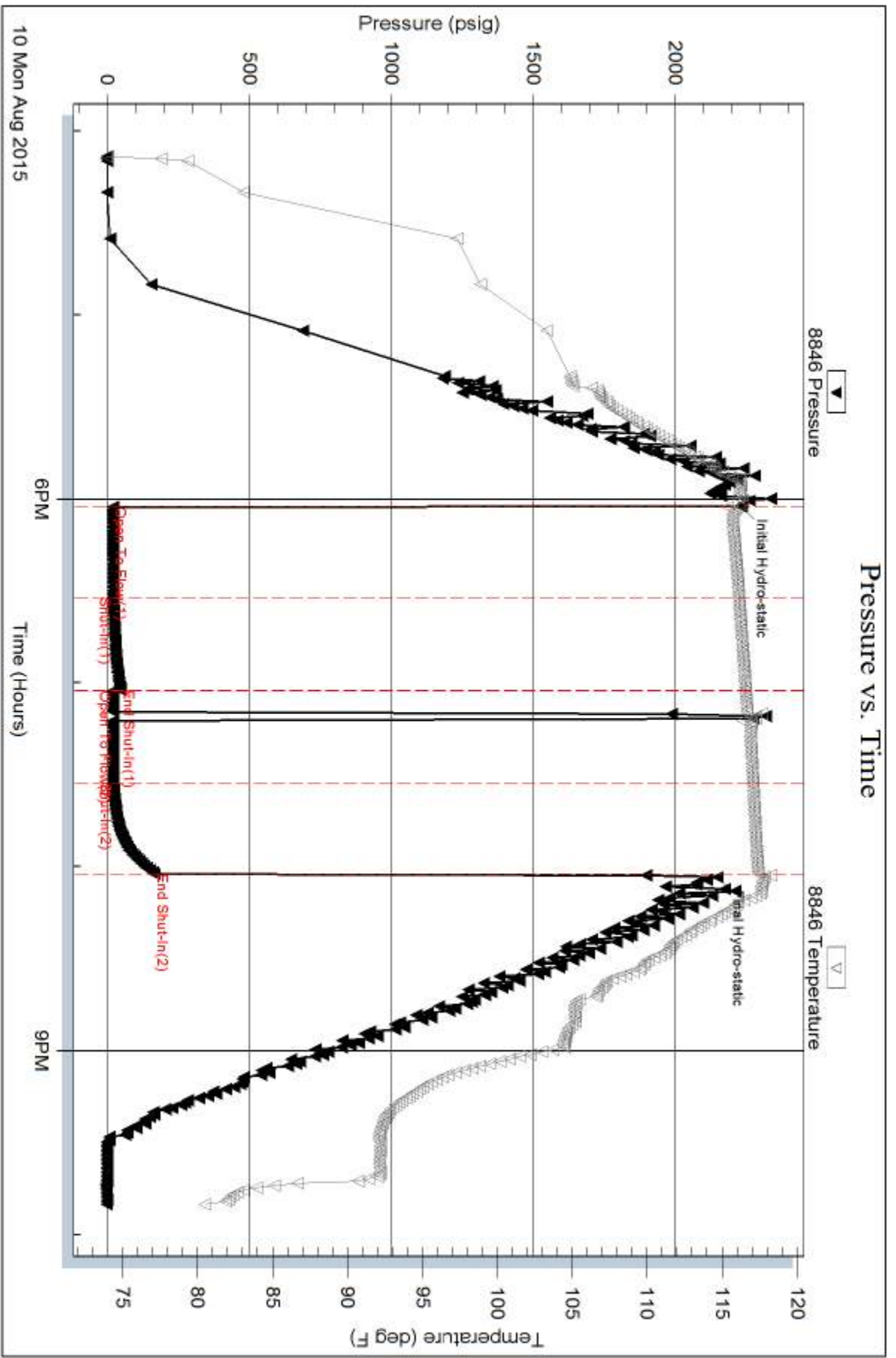
Serial #: 8846

Inside

Ritchie Exploration Inc.

D Schumacher #1

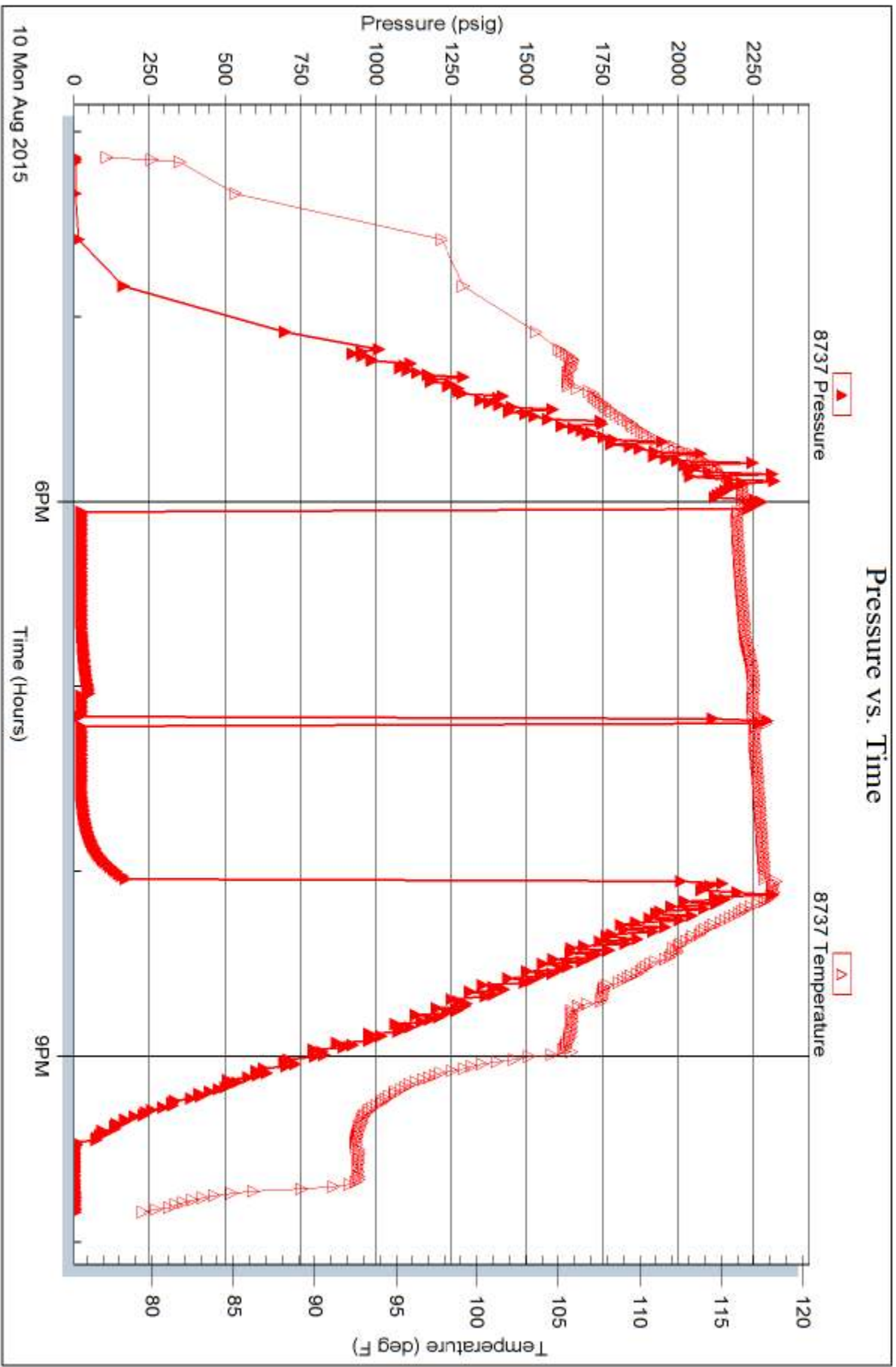
DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 64453

Printed: 2015.08.13 @ 09:48:37





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61450

Well Name & No. Schumacher #1 D. Test No. 1 Date 8-7-15
 Company Ritchie Exploration Inc. Elevation 3305 KB 3294 GL
 Address B100 E 22ND ST N #700 Wichita KS 67278
 Co. Rep / Geo. John Goldsmith Rig Martin 21
 Location: Sec. 23 Twp. 15s Rge. 36w Co. Logan State KS

Interval Tested 3996-4046 Zone Tested Toronto
 Anchor Length 50 Drill Pipe Run 3236 Mud Wt. 9.0
 Top Packer Depth 3991 Drill Collars Run 244' Vis 58
 Bottom Packer Depth 3996 Wt. Pipe Run Ø WL 6.4
 Total Depth 4046 Chlorides 4000 ppm System LCM 3
 Blow Description IF: Built to 9 1/2 Blow
IS: No Return Blow
FF: BOB in 37 Min
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>Ø ocm</u>	<u>2</u>		<u>98</u>	
<u>186</u>	<u>MVD</u>			<u>100</u>	
<u>122</u>	<u>OCMW</u>	<u>2</u>	<u>85</u>	<u>13</u>	
<u>122</u>	<u>MCW</u>		<u>60</u>	<u>40</u>	

Rec Total 460 BHT 119 Gravity — API RW 135 @ 76.4°F Chlorides 20000 ppm
 (A) Initial Hydrostatic 1976 Test \$1150.00 T-On Location 15:35
 (B) First Initial Flow 43 Jars 250.00 T-Started 17:38
 (C) First Final Flow 157 Safety Joint 75.00 T-Open 19:45
 (D) Initial Shut-In 1082 Circ Sub NC T-Pulled 22:45
 (E) Second Initial Flow 167 Hourly Standby _____ T-Out 00:49
 (F) Second Final Flow 232 Mileage 100 RT \$100.00 Comments _____
 (G) Final Shut-In 1074 Sampler 83 _____
 (H) Final Hydrostatic 1838 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility 1558 _____
 Sub Total \$1575.00/-

Initial Open 30
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 60
 Sub Total 0
 Total 1558
 MP/DST Disc't _____

Approved By [Signature] Our Representative [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.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **64451**

Well Name & No. Schumacher #1-D Test No. 2 Date 8-8-15
 Company Ritchie Exploration Inc Elevation 3305 KB 3294 GL
 Address 8100 E 22nd ST N #700 Wichita KS 67278
 Co. Rep / Geo. John Goldsmith Rig Martin 21
 Location: Sec. 23 Twp. 15s Rge. 36w Co. Logan State KS

Interval Tested 4081-4174 Zone Tested C-F
 Anchor Length 93 Drill Pipe Run 3829 Mud Wt. 9.1
 Top Packer Depth 4076 Drill Collars Run 244 Vis 67
 Bottom Packer Depth 4081 Wt. Pipe Run Ø WL 8.8
 Total Depth 4174 Chlorides 6000 ppm System LCM 3
 Blow Description IF: BOB in 4 Min
IS: No Return Blow
FF: BOB in 5 Min
FS: No Return Blow

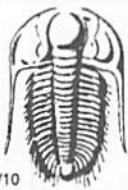
Rec	Feet of	%gas	%oil	%water	%mud
<u>620</u>	<u>MUD</u>			<u>100</u>	
<u>248</u>	<u>MCW</u>		<u>70</u>	<u>30</u>	
<u>244</u>	<u>MCW</u>		<u>90</u>	<u>10</u>	

Rec Total 1112 BHT 119 Gravity — API RW 38 @ 82°F Chlorides 16000 ppm

(A) Initial Hydrostatic <u>1995</u>	<input checked="" type="checkbox"/> Test <u>1150.00</u>	T-On Location <u>13:35</u>
(B) First Initial Flow <u>92</u>	<input checked="" type="checkbox"/> Jars <u>250.00</u>	T-Started <u>14:00</u>
(C) First Final Flow <u>381</u>	<input checked="" type="checkbox"/> Safety Joint <u>75.00</u>	T-Open <u>15:35</u>
(D) Initial Shut-In <u>1176</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>18:20</u>
(E) Second Initial Flow <u>388</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>20:13</u>
(F) Second Final Flow <u>542</u>	<input checked="" type="checkbox"/> Mileage <u>100 RT @ 100.00</u>	Comments
(G) Final Shut-In <u>1177</u>	<input type="checkbox"/> Sampler <u>83</u>	
(H) Final Hydrostatic <u>1916</u>	<input type="checkbox"/> Straddle	
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Extra Copies
Initial Open <u>30</u>	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
Initial Shut-In <u>45</u>	<input type="checkbox"/> Accessibility <u>1558</u>	Total <u>1558</u>
Final Flow <u>30</u>	Sub Total <u>1575.00</u>	MP/DST Disc't
Final Shut-In <u>60</u>		

Approved By [Signature] Our Representative Mike Roberts

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **64452**

Well Name & No. Schumacher #1-D Test No. 3 Date 8-9-15
 Company Ritchie Exploration Inc Elevation 3305 KB 3294 GL
 Address 8100 E 22nd St. N #700 Wichita KS 67278
 Co. Rep / Geo. John Goldsmith Rig Murfin 21
 Location: Sec. 23 Twp. 15S Rge. 36W Co. Logan State KS

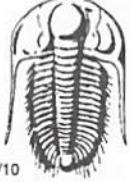
Interval Tested 4418-4480 Zone Tested Altamont A
 Anchor Length 62 Drill Pipe Run 4178 Mud Wt. 9.3
 Top Packer Depth 4413 Drill Collars Run 244 Vis 54
 Bottom Packer Depth 4418 Wt. Pipe Run 6 WL 8.8
 Total Depth 4480 Chlorides 6600 ppm System LCM 3
 Blow Description IF: BOB in 3 Min
IS: Return Blow Built to 1/8"
FF: BOB in 3 Min
FS: No Return Blow

Rec	Feet of		%gas	%oil	%water	%mud
826	mcgo		10	85	5	
124	mcgo		25	65	10	
248	mcgo		25	50	25	
122	gc mo	collars	10	60	30	
122	gc mo	collars	10	80	10	

Rec Total _____ BHT 125 Gravity 30 API RW _____ @ _____ F Chlorides _____ ppm
 (A) Initial Hydrostatic 2248 Test \$150.00 T-On Location 22:30
 (B) First Initial Flow 170 Jars \$250.00 T-Started 23:42
 (C) First Final Flow 394 Safety Joint 75.00 T-Open 01:38
 (D) Initial Shut-In 1021 Circ Sub NC T-Pulled 04:38
 (E) Second Initial Flow 430 Hourly Standby _____ T-Out 08:17
 (F) Second Final Flow 618 Mileage 100 RT \$100.00 Comments _____
 (G) Final Shut-In 1021 Sampler 83 _____
 (H) Final Hydrostatic 2084 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1558
 Accessibility 1558 MP/DST Disc't _____
 Sub Total \$1575.00

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **64453**

Well Name & No. Schumacher #1-D Test No. 4 Date 8-10-15
 Company Ritchie Exploration Inc Elevation 3305 KB 3294 GL
 Address 8100 E 22nd St. N #700 Wichita KS 67278
 Co. Rep / Geo. John Goldsmith Rig Murfin 21
 Location: Sec. 23 Twp. 15S Rge. 36W Co. Logan State KS

Interval Tested 4475-4500 Zone Tested Altament B
 Anchor Length 25 Drill Pipe Run 4209 Mud Wt. 9.1
 Top Packer Depth 4470 Drill Collars Run 244 Vis 50
 Bottom Packer Depth 4475 Wt. Pipe Run 0 WL 9.6
 Total Depth 4500 Chlorides 7200 ppm System LCM 2

Blow Description IF: No Blow
IS: No Return Blow
FF: No Blow - Flushed - Weak Blow Dried Instantly -
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>MUD with oil spots</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 2 BHT 125 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2230</u>	<input checked="" type="checkbox"/> Test <u>\$1150.00</u>	T-On Location <u>15:30</u>
(B) First Initial Flow <u>21</u>	<input checked="" type="checkbox"/> Jars <u>\$250.00</u>	T-Started <u>16:08</u>
(C) First Final Flow <u>23</u>	<input checked="" type="checkbox"/> Safety Joint <u>\$75.00</u>	T-Open <u>18:03</u>
(D) Initial Shut-In <u>48</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>20:03</u>
(E) Second Initial Flow <u>20</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>21:50</u>
(F) Second Final Flow <u>23</u>	<input checked="" type="checkbox"/> Mileage <u>100RT \$100.00 x 2</u>	Comments <u>Mileage x 2</u>
(G) Final Shut-In <u>167</u>	<input type="checkbox"/> Sampler <u>83+83</u>	<u>Lodged Tools</u>
(H) Final Hydrostatic <u>2147</u>	<input type="checkbox"/> Straddle	<u>21:30 8-12-15</u>

Initial Open 30
 Initial Shut-In 30
 Final Flow 30
 Final Shut-In 30

Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby ? 1.5d 11.75h
 Accessibility 1641
 Sub Total \$1575.00/-

Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 800
 Total 2441
 MP/DST Disc't

Approved By [Signature] Our Representative [Signature]

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