

DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

Box 783188
Wichita Ks 67278-3188

ATTN: Justin Clegg/Adam EI

Nau 25C#1

25-26s-23w Ford,KS

Start Date: 2012.10.28 @ 22:00:32

End Date: 2012.10.29 @ 05:24:26

Job Ticket #: 48586 DST #: 1

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

Printed: 2012.11.05 @ 15:43:33



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc

25-26s-23w Ford,KS

Box 783188
Wichita Ks 67278-3188

Nau 25C#1

Job Ticket: 48586

DST#: 1

ATTN: Justin Clegg/Adam El

Test Start: 2012.10.28 @ 22:00:32

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:35:57

Time Test Ended: 05:24:26

Test Type: Conventional Bottom Hole (Initial)

Tester: Ray Schwager

Unit No: 42

Interval: 4740.00 ft (KB) To 4773.00 ft (KB) (TVD)

Reference Elevations: 2430.00 ft (KB)

Total Depth: 4773.00 ft (KB) (TVD)

2418.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 12.00 ft

Serial #: 8369 Inside

Press @ RunDepth: 23.59 psig @ 4745.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.10.28

End Date:

2012.10.29

Last Calib.:

2012.10.29

Start Time: 22:00:32

End Time:

05:24:26

Time On Btm:

2012.10.29 @ 00:31:27

Time Off Btm:

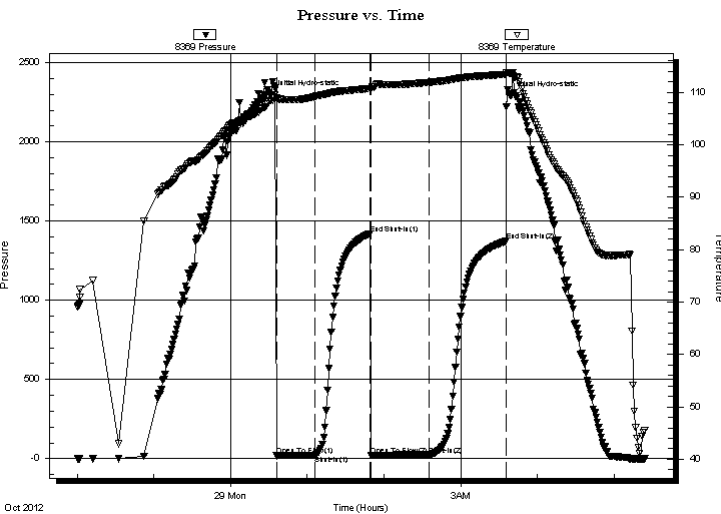
2012.10.29 @ 03:39:26

TEST COMMENT: 30-IFP-surface bl thru-out

45-ISIP-no bl

45-FFP-no bl

60-FSIP-no bl



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2299.82	108.39	Initial Hydro-static
5	18.64	108.90	Open To Flow (1)
35	21.18	109.18	Shut-In(1)
78	1420.89	110.74	End Shut-In(1)
79	21.96	110.78	Open To Flow (2)
124	23.59	111.92	Shut-In(2)
184	1373.16	113.43	End Shut-In(2)
188	2294.26	113.69	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud	0.14

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc

25-26s-23w Ford,KS

Box 783188
Wichita Ks 67278-3188

Nau 25C#1

Job Ticket: 48586

DST#: 1

ATTN: Justin Clegg/Adam El

Test Start: 2012.10.28 @ 22:00:32

Tool Information

Drill Pipe:	Length: 4722.00 ft	Diameter: 3.80 inches	Volume: 66.24 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: 75000.00 lb
			<u>Total Volume: 66.24 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer:	4740.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	33.00 ft			
Tool Length:	61.00 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			4713.00	
Shut In Tool	5.00			4718.00	
Hydraulic tool	5.00			4723.00	
Jars	5.00			4728.00	
Safety Joint	2.00			4730.00	
Packer	5.00			4735.00	28.00 Bottom Of Top Packer
Packer	5.00			4740.00	
Stubb	1.00			4741.00	
Perforations	4.00			4745.00	
Recorder	0.00	8369	Inside	4745.00	
Recorder	0.00	8700	Outside	4745.00	
Perforations	25.00			4770.00	
Bullnose	3.00			4773.00	33.00 Bottom Packers & Anchor

Total Tool Length: 61.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc

25-26s-23w Ford,KS

Box 783188
Wichita Ks 67278-3188

Nau 25C#1

Job Ticket: 48586

DST#: 1

ATTN: Justin Clegg/Adam El

Test Start: 2012.10.28 @ 22:00:32

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: 51.00 sec/qt

Cushion Volume: bbl

Water Loss: 8.28 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 3700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Mud	0.140

Total Length: 10.00 ft Total Volume: 0.140 bbl

Num Fluid Samples: 0

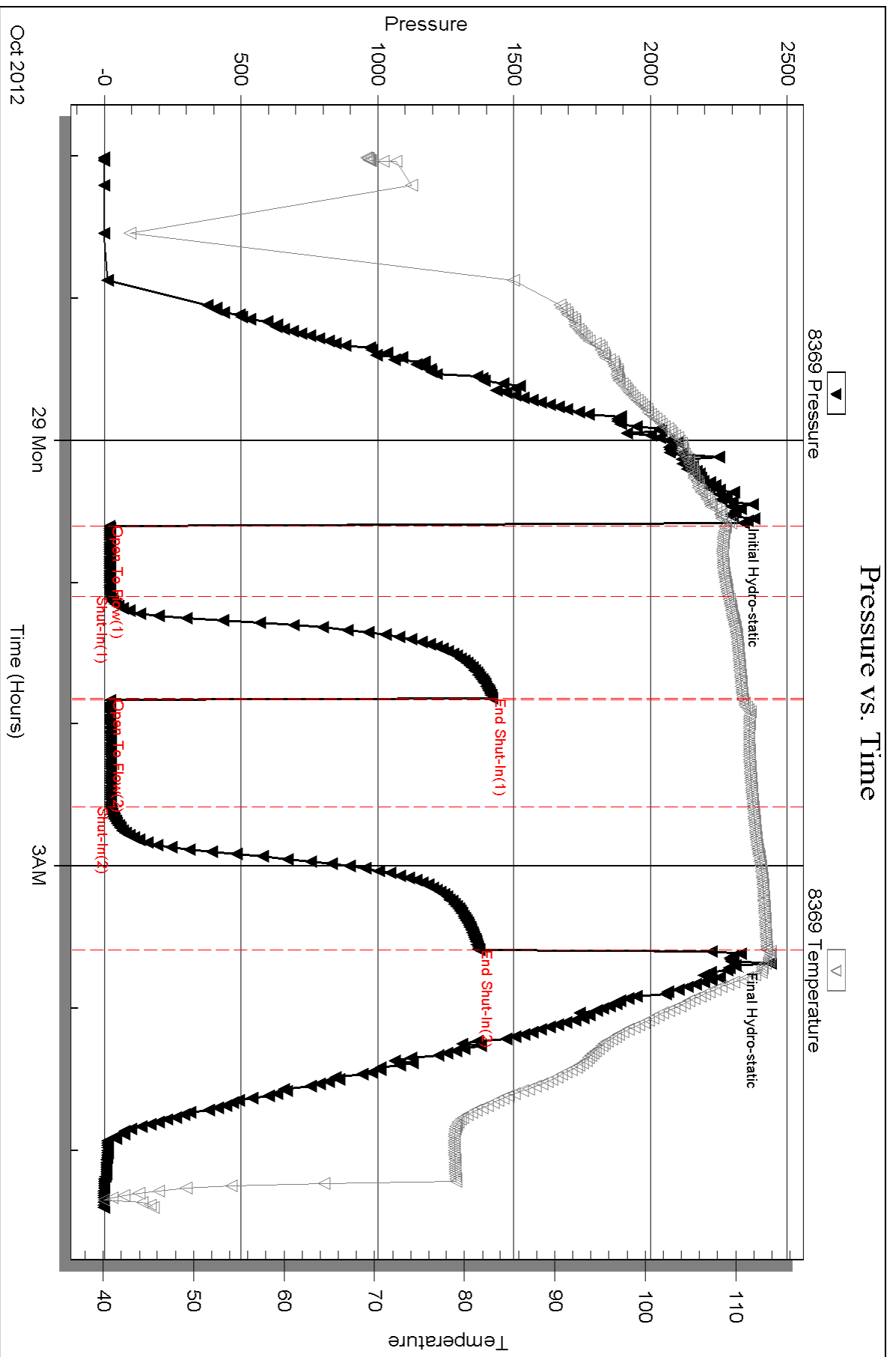
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

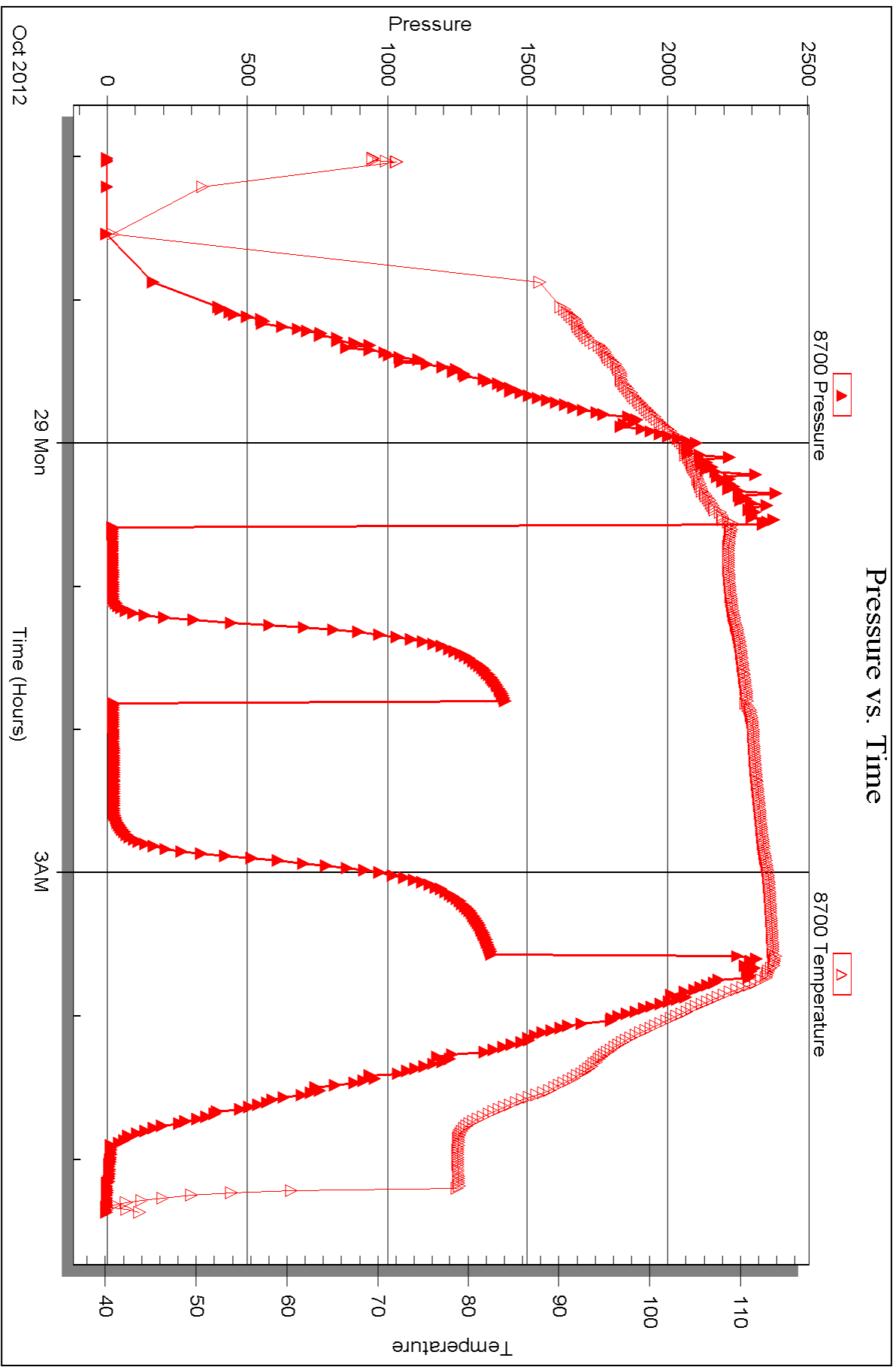


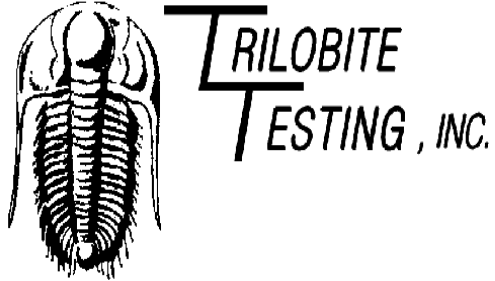
Serial #: 8700

Outside Ritchie Exploration Inc

Nau 25C#1

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

Box 783188
Wichita Ks 67278-3188

ATTN: Justin Clegg/Adam El

Nau 25C#1

25-26s-23w Ford,KS

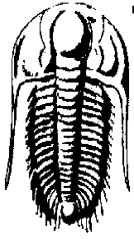
Start Date: 2012.10.29 @ 20:15:27

End Date: 2012.10.30 @ 02:11:21

Job Ticket #: 48587 DST #: 2

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

Printed: 2012.11.05 @ 15:42:42



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc

25-26s-23w Ford,KS

Box 783188
Wichita Ks 67278-3188

Nau 25C#1

Job Ticket: 48587

DST#: 2

ATTN: Justin Clegg/Adam El

Test Start: 2012.10.29 @ 20:15:27

GENERAL INFORMATION:

Formation: **Huck**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:26:52

Time Test Ended: 02:11:21

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 42

Interval: 4859.00 ft (KB) To 4886.00 ft (KB) (TVD)

Reference Elevations: 2430.00 ft (KB)

Total Depth: 4486.00 ft (KB) (TVD)

2418.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 12.00 ft

Serial #: 8369 Inside

Press @ Run Depth: psig @ 4863.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.10.29

End Date:

2012.10.30

Last Calib.: 2012.10.30

Start Time: 20:15:27

End Time:

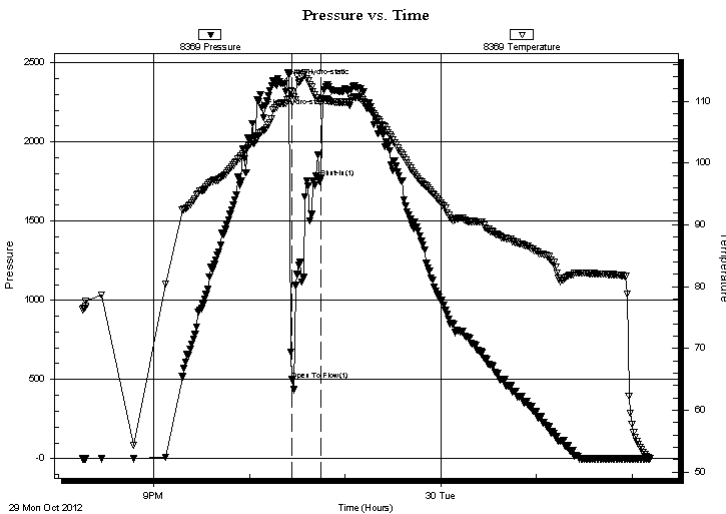
02:11:21

Time On Btm: 2012.10.29 @ 22:19:52

Time Off Btm: 2012.10.29 @ 22:53:52

TEST COMMENT: 20-IFP-strg bl , GTS in 3 min
lost packer seat approx 15 min into test

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2370.01	109.70	Initial Hydro-static
7	498.44	111.47	Open To Flow (1)
25	1771.09	110.24	Shut-In(1)
34	2324.19	109.88	Final Hydro-static

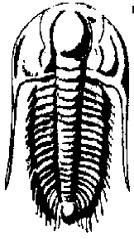
Recovery

Length (ft)	Description	Volume (bbl)
1620.00	GCM 10%G90%M	22.72

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.75	47.00	959.06

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc

25-26s-23w Ford,KS

Box 783188
Wichita Ks 67278-3188

Nau 25C#1

Job Ticket: 48587

DST#: 2

ATTN: Justin Clegg/Adam El

Test Start: 2012.10.29 @ 20:15:27

Tool Information

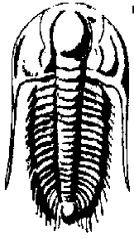
Drill Pipe:	Length: 4850.00 ft	Diameter: 3.80 inches	Volume: 68.03 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 95000.00 lb
			<u>Total Volume: 68.03 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer:	4859.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	27.00 ft			
Tool Length:	50.00 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			4837.00	
Shut In Tool	5.00			4842.00	
Hydraulic tool	5.00			4847.00	
Safety Joint	2.00			4849.00	
Packer	5.00			4854.00	23.00 Bottom Of Top Packer
Packer	5.00			4859.00	
Stubb	1.00			4860.00	
Perforations	3.00			4863.00	
Recorder	0.00	8369	Inside	4863.00	
Recorder	0.00	8700	Outside	4863.00	
Perforations	20.00			4883.00	
Bullnose	3.00			4886.00	27.00 Bottom Packers & Anchor

Total Tool Length: 50.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc

25-26s-23w Ford,KS

Box 783188
Wichita Ks 67278-3188

Nau 25C#1

Job Ticket: 48587

DST#: 2

ATTN: Justin Clegg/Adam El

Test Start: 2012.10.29 @ 20:15:27

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: 50.00 sec/qt

Cushion Volume: bbl

Water Loss: 7.90 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 4700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1620.00	GCM 10%G90%M	22.724

Total Length: 1620.00 ft Total Volume: 22.724 bbl

Num Fluid Samples: 0

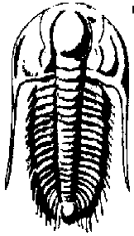
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

GAS RATES

Ritchie Exploration Inc

25-26s-23w Ford,KS

Box 783188
Wichita Ks 67278-3188

Nau 25C#1

Job Ticket: 48587

DST#: 2

ATTN: Justin Clegg/Adam El

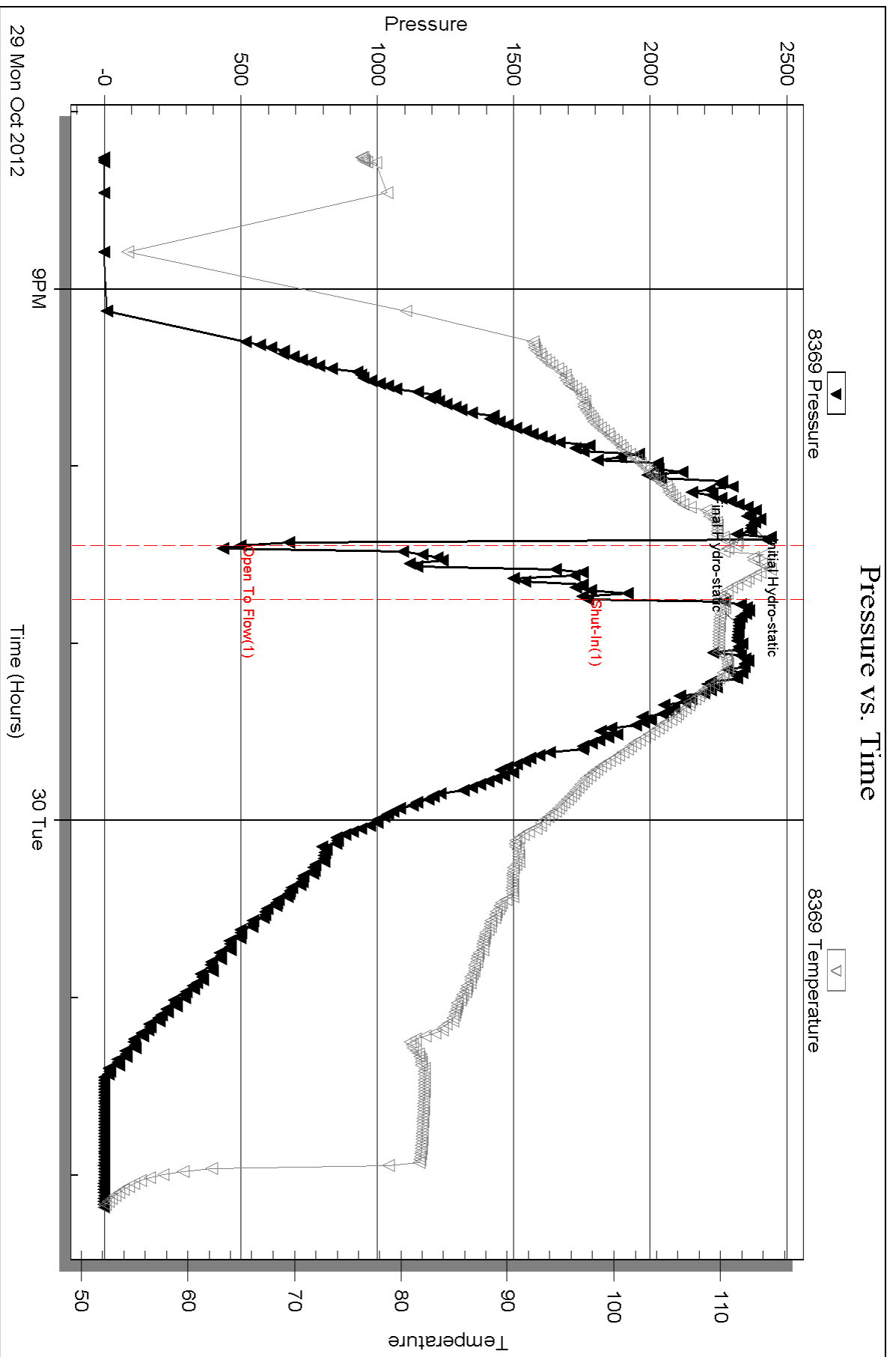
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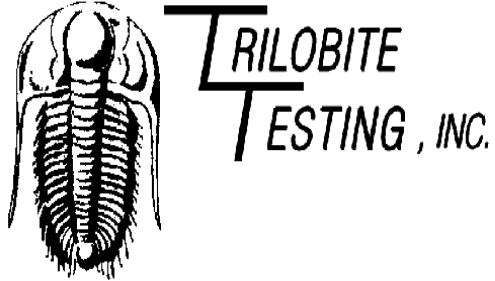
Gas Rates Information

Temperature: 59 (deg F)
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
1	10	0.75	47.00	959.06





DRILL STEM TEST REPORT

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Wichita Ks 67278-3188

ATTN: Justin Clegg/Adam EI

Nau 25C#1

25-26s-23w Ford,KS

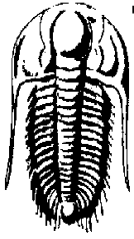
Start Date: 2012.10.30 @ 02:35:39

End Date: 2012.10.30 @ 11:57:34

Job Ticket #: 48588 DST #: 3

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

Printed: 2012.11.05 @ 15:41:03



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc

25-26s-23w Ford,KS

Box 783188
Wichita Ks 67278-3188

Nau 25C#1

Job Ticket: 48588

DST#: 3

ATTN: Justin Clegg/Adam El

Test Start: 2012.10.30 @ 02:35:39

GENERAL INFORMATION:

Formation: **Huck**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:16:34

Time Test Ended: 11:57:34

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 42

Interval: 4810.00 ft (KB) To 4886.00 ft (KB) (TVD)

Reference Elevations: 2430.00 ft (KB)

Total Depth: 4886.00 ft (KB) (TVD)

2418.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 12.00 ft

Serial #: 8369

Inside

Press @ Run Depth: 316.32 psig @ 4819.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.10.30

End Date:

2012.10.30

Last Calib.: 2012.10.30

Start Time: 02:35:39

End Time:

11:57:34

Time On Btm: 2012.10.30 @ 05:11:04

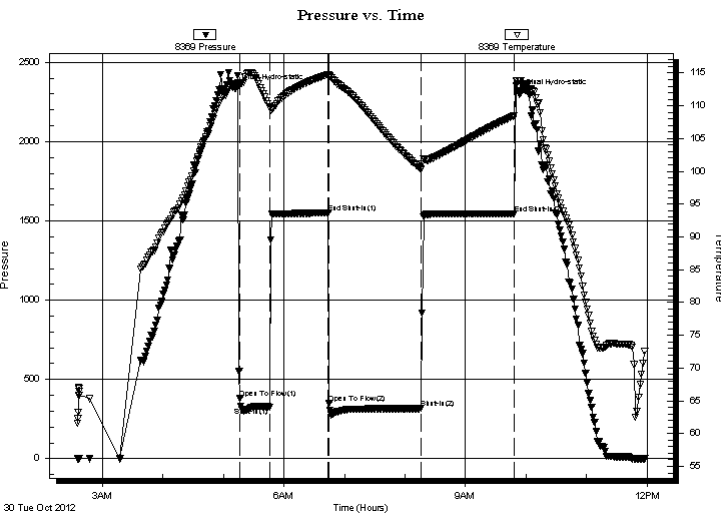
Time Off Btm: 2012.10.30 @ 09:53:33

TEST COMMENT: 30-IFP-strg bl GTS in 3 min

60-ISIP-no bl

90-FFP-GTS

90-FSIP-no bl



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2337.89	113.29	Initial Hydro-static
6	381.45	113.19	Open To Flow (1)
35	326.54	109.78	Shut-In(1)
93	1550.67	114.81	End Shut-In(1)
94	350.81	114.54	Open To Flow (2)
185	316.32	100.28	Shut-In(2)
278	1547.38	108.51	End Shut-In(2)
283	2301.06	113.82	Final Hydro-static

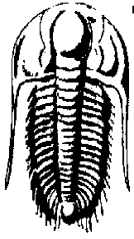
Recovery

Length (ft)	Description	Volume (bbl)
140.00	GCM 15%G85%M	1.96

* Recovery from multiple tests

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.75	50.00	1005.92
Last Gas Rate	0.75	80.00	1474.51
Max. Gas Rate	0.75	80.00	1474.51



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc

25-26s-23w Ford,KS

Box 783188
Wichita Ks 67278-3188

Nau 25C#1

Job Ticket: 48588

DST#: 3

ATTN: Justin Clegg/Adam El

Test Start: 2012.10.30 @ 02:35:39

Tool Information

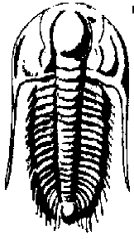
Drill Pipe:	Length: 4812.00 ft	Diameter: 3.80 inches	Volume: 67.50 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 67.50 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 57000.00 lb
Depth to Top Packer:	4810.00 ft			Final 57000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	76.00 ft			
Tool Length:	104.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Change Over Sub	1.00			4783.00	
Shut In Tool	5.00			4788.00	
Hydraulic tool	5.00			4793.00	
Jars	5.00			4798.00	
Safety Joint	2.00			4800.00	
Packer	5.00			4805.00	28.00 Bottom Of Top Packer
Packer	5.00			4810.00	
Stubb	1.00			4811.00	
Perforations	8.00			4819.00	
Recorder	0.00	8369	Inside	4819.00	
Recorder	0.00	8700	Outside	4819.00	
Blank Spacing	64.00			4883.00	
Bullnose	3.00			4886.00	76.00 Bottom Packers & Anchor

Total Tool Length: 104.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc

25-26s-23w Ford,KS

Box 783188
Wichita Ks 67278-3188

Nau 25C#1

Job Ticket: 48588

DST#: 3

ATTN: Justin Clegg/Adam El

Test Start: 2012.10.30 @ 02:35:39

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: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.89 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
140.00	GCM 15%G85%M	1.964

Total Length: 140.00 ft Total Volume: 1.964 bbl

Num Fluid Samples: 0

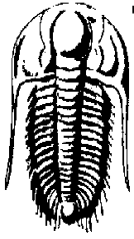
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

GAS RATES

Ritchie Exploration Inc

25-26s-23w Ford,KS

Box 783188
Wichita Ks 67278-3188

Nau 25C#1

Job Ticket: 48588

DST#: 3

ATTN: Justin Clegg/Adam El

Test Start: 2012.10.30 @ 02:35:39

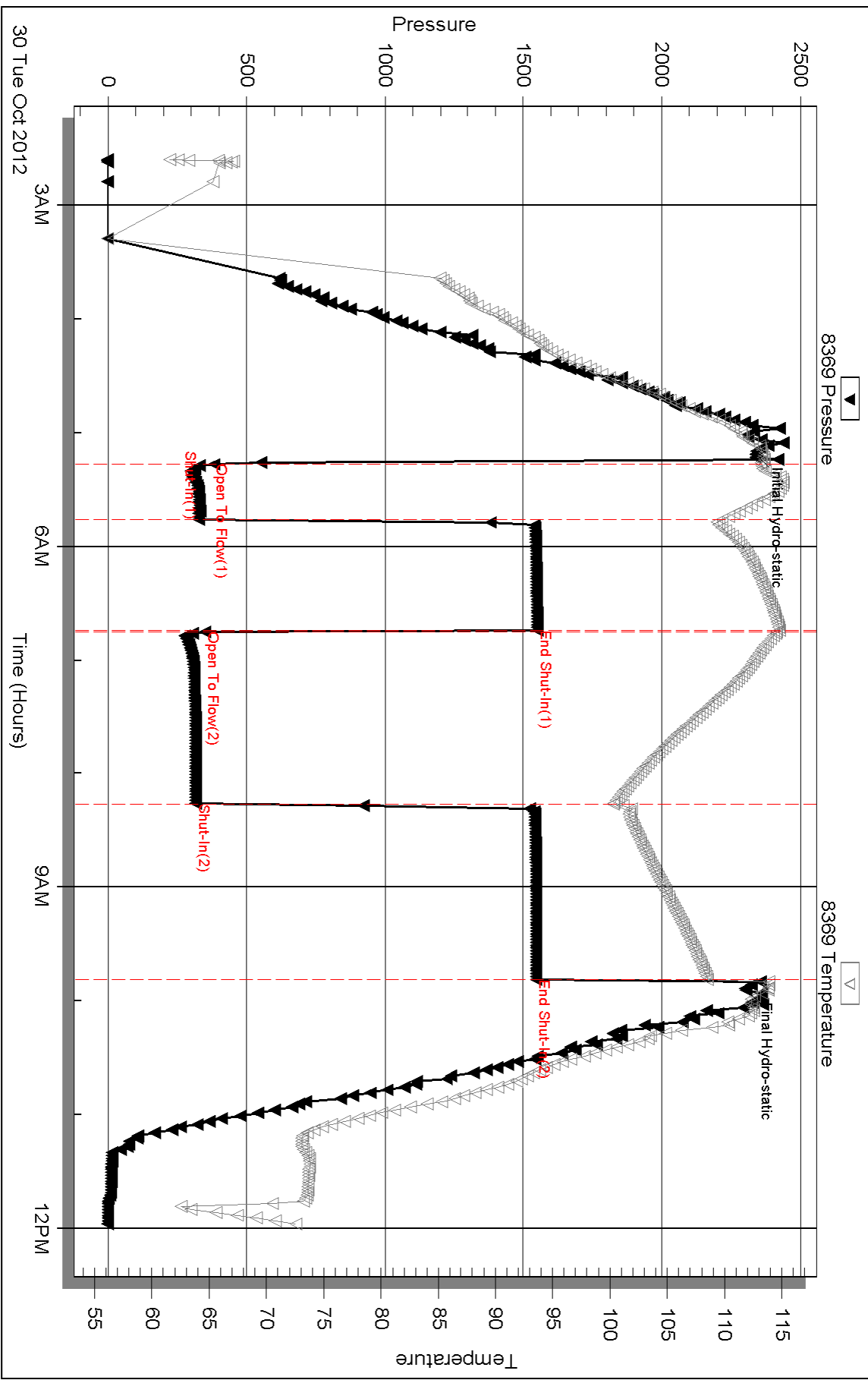
Gas Rates Information

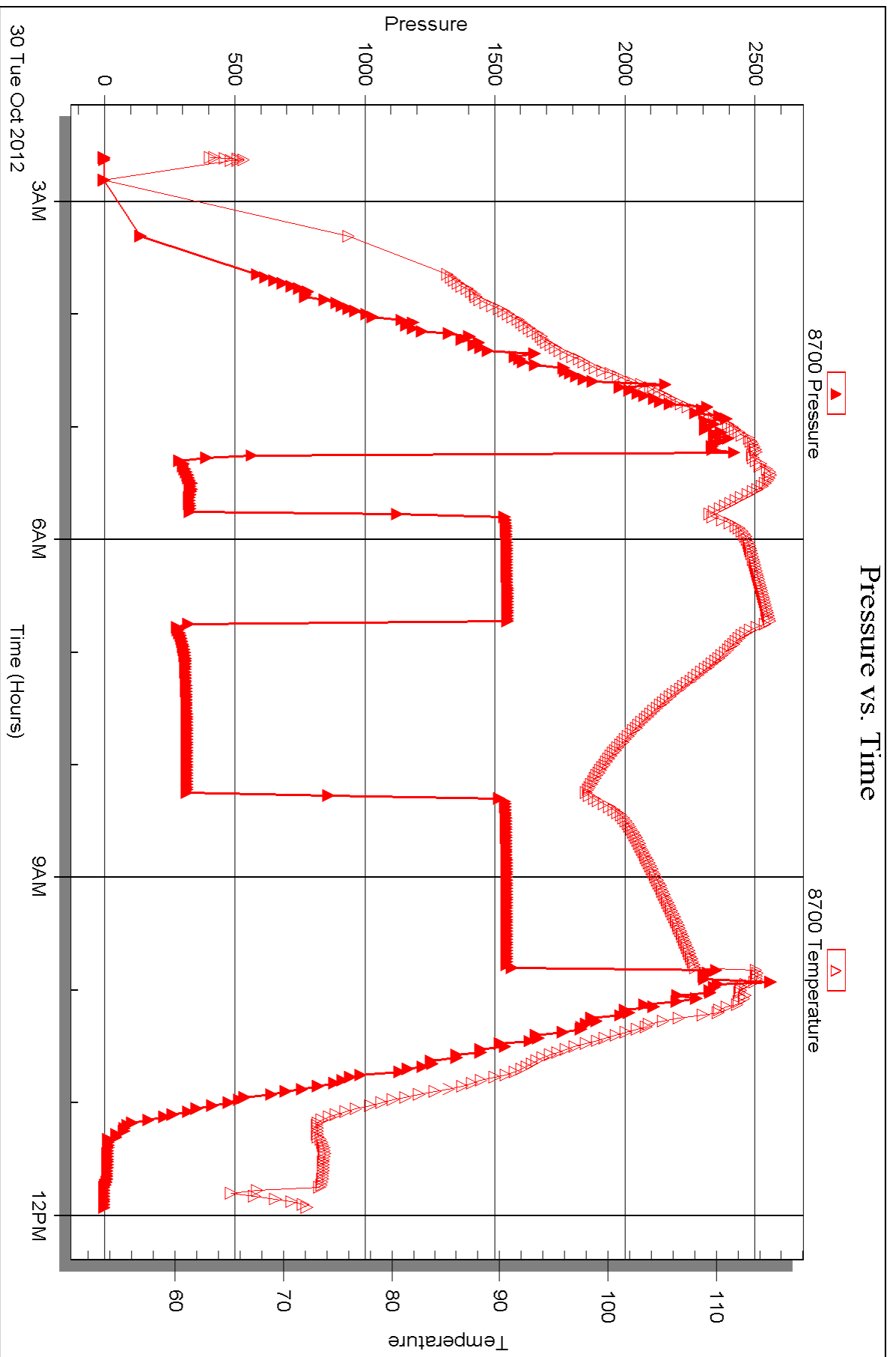
Temperature: 59 (deg F)
Relative Density: 0.65
Z Factor: 0.8

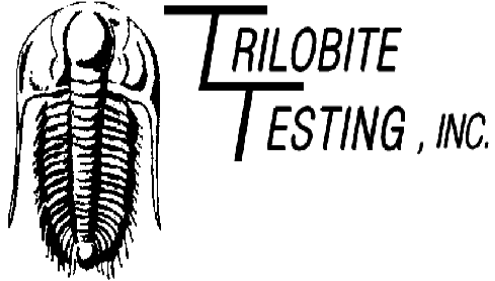
Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
1	5	0.75	50.00	1005.92
1	15	0.75	70.00	1318.32
1	25	0.75	80.00	1474.51
-	5	0.75	60.00	1162.12
2	15	0.75	70.00	1318.32
2	25	0.75	80.00	1474.51
2	35	0.75	80.00	1474.51
2	45	0.75	80.00	1474.51
2	55	0.75	80.00	1474.51
2	65	0.75	80.00	1474.51
2	75	0.75	80.00	1474.51
2	85	0.75	80.00	1474.51

Pressure vs. Time







DRILL STEM TEST REPORT

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Box 783188
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ATTN: Justin Clegg/Adam El

Nau 25C#1

25-26s-23w Ford,KS

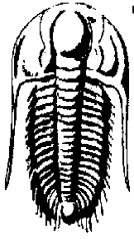
Start Date: 2012.10.31 @ 06:30:36

End Date: 2012.10.31 @ 15:13:01

Job Ticket #: 48589 DST #: 4

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

Printed: 2012.11.05 @ 15:39:25



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc

25-26s-23w Ford,KS

Box 783188
Wichita Ks 67278-3188

Nau 25C#1

Job Ticket: 48589

DST#: 4

ATTN: Justin Clegg/Adam El

Test Start: 2012.10.31 @ 06:30:36

GENERAL INFORMATION:

Formation: **Miss**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:16:31

Time Test Ended: 15:13:01

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 42

Interval: 4967.00 ft (KB) To 4995.00 ft (KB) (TVD)

Reference Elevations: 2430.00 ft (KB)

Total Depth: 4995.00 ft (KB) (TVD)

2418.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 12.00 ft

Serial #: 8369 Inside

Press @ Run Depth: 799.08 psig @ 4968.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.10.31

End Date: 2012.10.31

Last Calib.: 2012.10.31

Start Time: 06:30:36

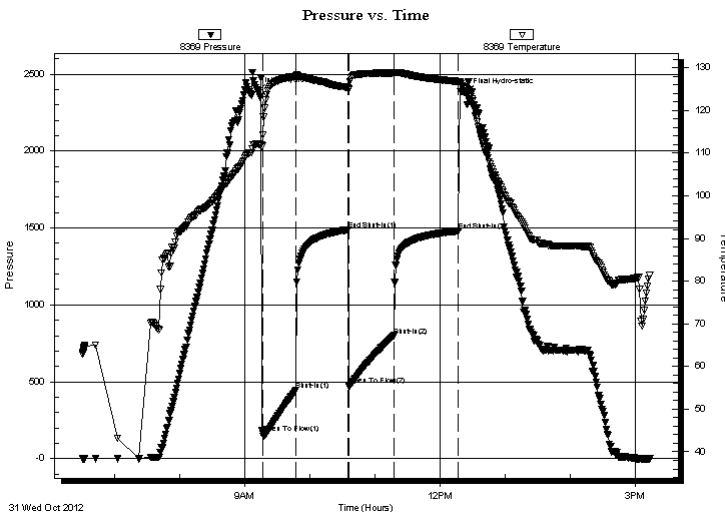
End Time: 15:13:01

Time On Btm: 2012.10.31 @ 09:12:01

Time Off Btm: 2012.10.31 @ 12:23:30

TEST COMMENT: 30-IFP-strg bl in 3 min
45-ISIP-no bl
45-FFP-strg bl in 6 min
60-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2383.39	112.13	Initial Hydro-static
5	162.69	114.18	Open To Flow (1)
35	444.47	128.04	Shut-In(1)
83	1488.08	125.37	End Shut-In(1)
84	475.45	124.93	Open To Flow (2)
126	799.08	128.78	Shut-In(2)
185	1480.53	126.78	End Shut-In(2)
192	2381.38	125.39	Final Hydro-static

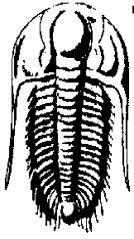
Recovery

Length (ft)	Description	Volume (bbl)
1600.00	SOCWater w /1%to2%oil thru-out	22.44

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc

25-26s-23w Ford,KS

Box 783188
Wichita Ks 67278-3188

Nau 25C#1

Job Ticket: 48589

DST#: 4

ATTN: Justin Clegg/Adam El

Test Start: 2012.10.31 @ 06:30:36

Tool Information

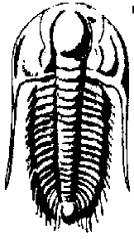
Drill Pipe:	Length: 4969.00 ft	Diameter: 3.80 inches	Volume: 69.70 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 69.70 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4967.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	28.00 ft			
Tool Length:	56.00 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			4940.00	
Shut In Tool	5.00			4945.00	
Hydraulic tool	5.00			4950.00	
Jars	5.00			4955.00	
Safety Joint	2.00			4957.00	
Packer	5.00			4962.00	28.00 Bottom Of Top Packer
Packer	5.00			4967.00	
Stubb	1.00			4968.00	
Recorder	0.00	8369	Inside	4968.00	
Recorder	0.00	8700	Outside	4968.00	
Perforations	24.00			4992.00	
Bullnose	3.00			4995.00	28.00 Bottom Packers & Anchor

Total Tool Length: 56.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc

25-26s-23w Ford,KS

Box 783188
Wichita Ks 67278-3188

Nau 25C#1

Job Ticket: 48589

DST#: 4

ATTN: Justin Clegg/Adam El

Test Start: 2012.10.31 @ 06:30:36

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:

68000 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.74 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1600.00	SOCWater w /1%to2%oil thru-out	22.444

Total Length: 1600.00 ft Total Volume: 22.444 bbl

Num Fluid Samples: 0

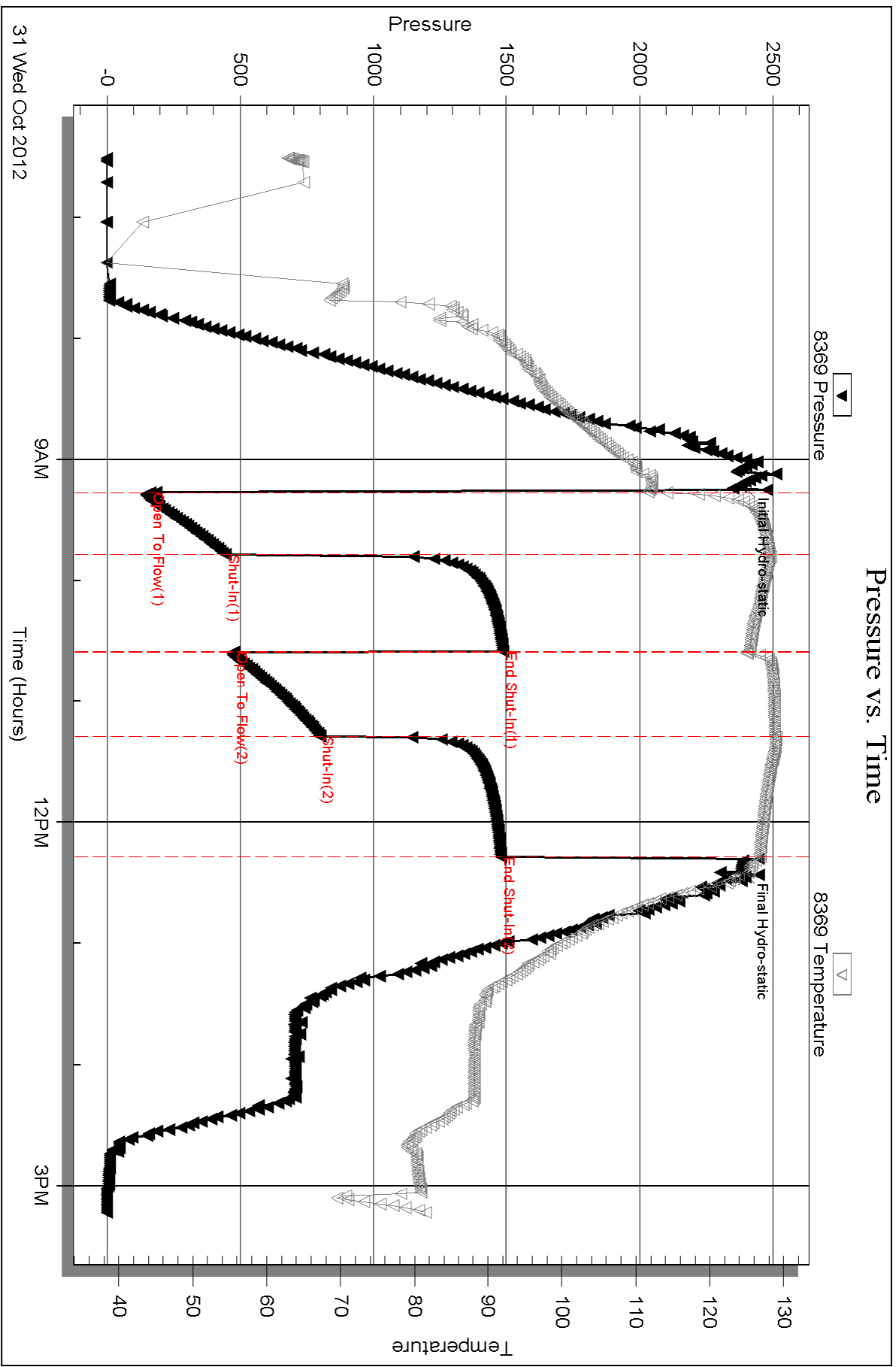
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .10@ 76F



31 Wed Oct 2012

9AM

Time (Hours)

12PM

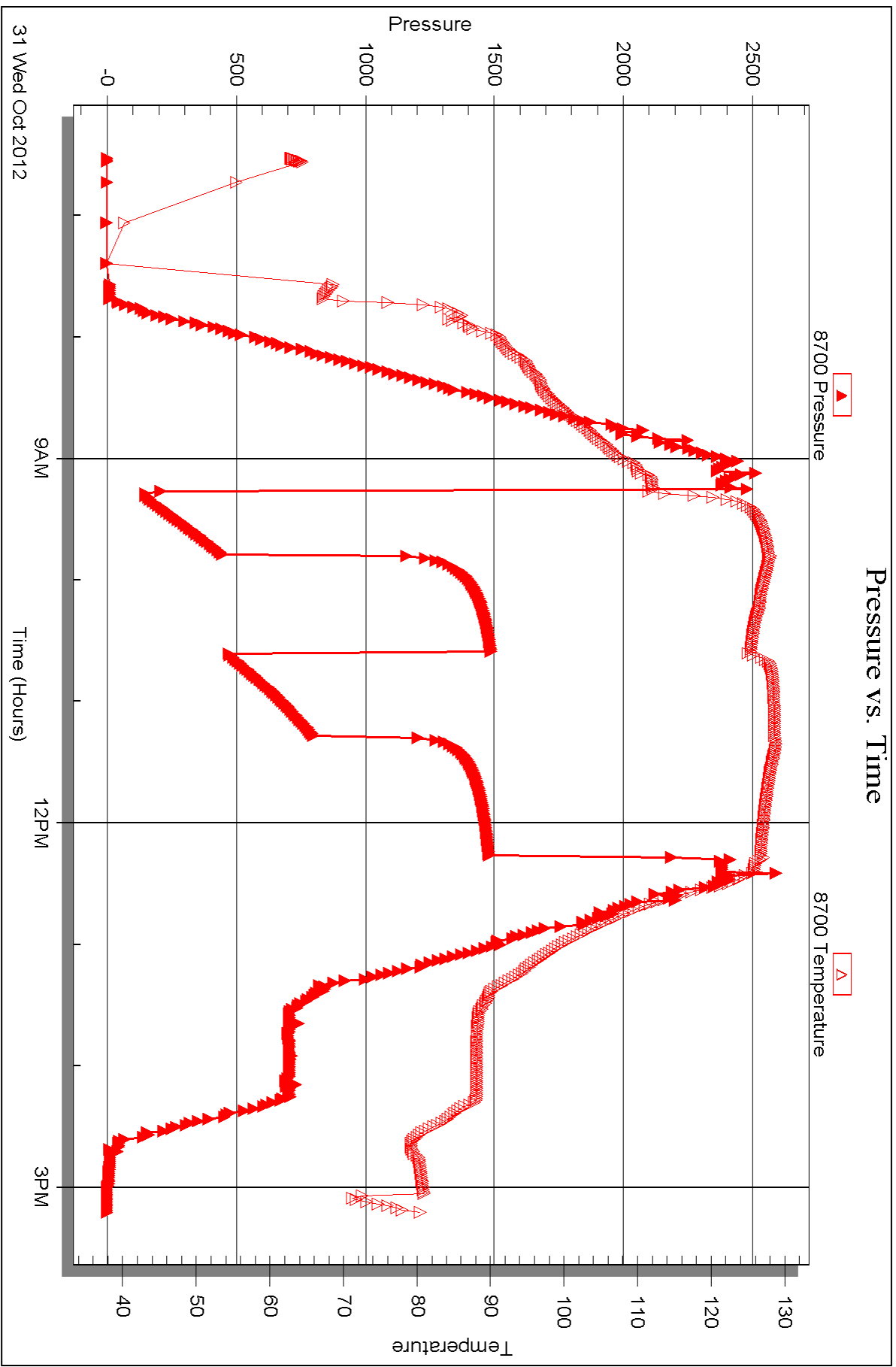
3PM

Serial #: 8700

Outside Ritchie Exploration Inc

Nau 25C#1

DST Test Number: 4



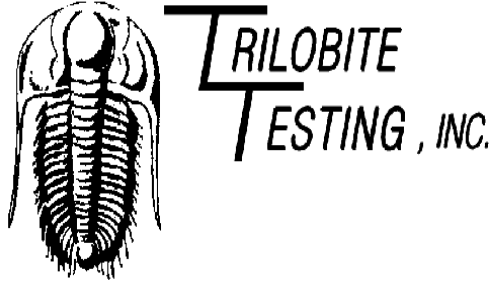
31 Wed Oct 2012

9AM

Time (Hours)

12PM

3PM



DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

Box 783188
Wichita Ks 67278-3188

ATTN: Justin Clegg/Adam El

Nau 25C#1

25-26s-23w Ford,KS

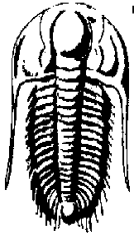
Start Date: 2012.11.01 @ 01:09:42

End Date: 2012.11.01 @ 09:18:12

Job Ticket #: 49729 DST #: 5

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

Printed: 2012.11.05 @ 15:37:53



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Ritchie Exploration Inc

25-26s-23w Ford,KS

Box 783188
Wichita Ks 67278-3188

Nau 25C#1

Job Ticket: 49729

DST#: 5

ATTN: Justin Clegg/Adam El

Test Start: 2012.11.01 @ 01:09:42

GENERAL INFORMATION:

Formation: **Miss.**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:38:12

Time Test Ended: 09:18:12

Test Type: Conventional Bottom Hole (Initial)

Tester: Gary Pevoteaux

Unit No: 56

Interval: 4999.00 ft (KB) To 5025.00 ft (KB) (TVD)

Reference Elevations: 2430.00 ft (KB)

Total Depth: 5025.00 ft (KB) (TVD)

2418.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 12.00 ft

Serial #: 8352 Outside

Press @ Run Depth: 680.35 psig @ 5000.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.11.01 End Date: 2012.11.01

Last Calib.: 2012.11.01

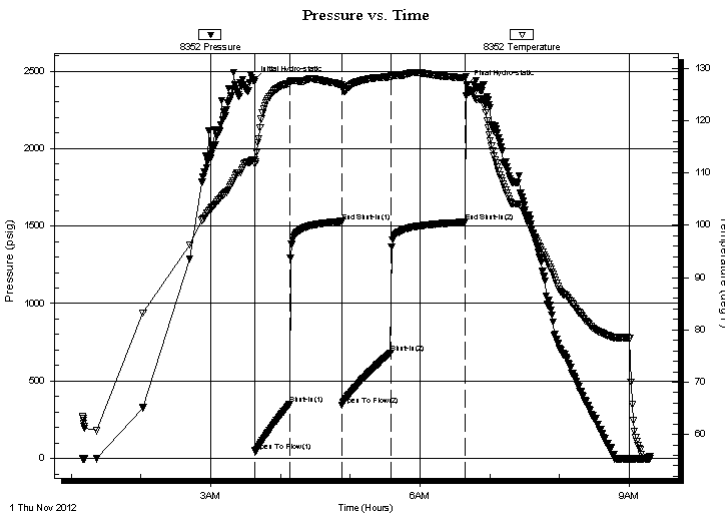
Start Time: 01:09:47 End Time: 09:18:11

Time On Btm: 2012.11.01 @ 03:36:42

Time Off Btm: 2012.11.01 @ 06:40:27

TEST COMMENT: IF: Strong blow . B.O.B. in 4 mins.
IS: No blow .
FF: Strong blow . B.O.B. in 7 mins.
FS: No blow .

PRESSURE SUMMARY



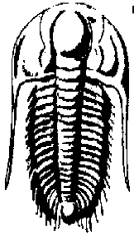
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2439.56	112.55	Initial Hydro-static
2	48.78	111.81	Open To Flow (1)
32	351.71	127.22	Shut-In(1)
76	1530.38	126.88	End Shut-In(1)
77	344.61	126.33	Open To Flow (2)
118	680.35	128.40	Shut-In(2)
183	1525.40	128.20	End Shut-In(2)
184	2410.13	126.78	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
65.00	SOCMW 1%o 37% m 62% w	0.91
125.00	MW w few o specs. 11% m 89% w	1.75
1270.00	SW	17.81

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc

25-26s-23w Ford,KS

Box 783188
Wichita Ks 67278-3188

Nau 25C#1

Job Ticket: 49729

DST#: 5

ATTN: Justin Clegg/Adam El

Test Start: 2012.11.01 @ 01:09:42

Tool Information

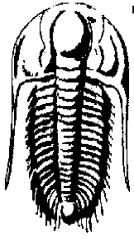
Drill Pipe:	Length: 5001.00 ft	Diameter: 3.80 inches	Volume: 70.15 bbl	Tool Weight: 2400.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 24000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 77000.00 lb
			<u>Total Volume: 70.15 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 59000.00 lb
Depth to Top Packer:	4999.00 ft			Final 63000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	26.00 ft			
Tool Length:	54.00 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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C.O. Sub	1.00			4972.00	
Shut in tool	5.00			4977.00	
HMV	5.00			4982.00	
Jars	5.00			4987.00	
Safety Joint	3.00			4990.00	
Packer	4.00			4994.00	28.00 Bottom Of Top Packer
Packer	5.00			4999.00	
Stubb	1.00			5000.00	
Recorder	0.00	8370	Inside	5000.00	
Recorder	0.00	8352	Outside	5000.00	
Perforations	20.00			5020.00	
Bullnose	5.00			5025.00	26.00 Bottom Packers & Anchor

Total Tool Length: 54.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc

25-26s-23w Ford,KS

Box 783188
Wichita Ks 67278-3188

Nau 25C#1

Job Ticket: 49729

DST#: 5

ATTN: Justin Clegg/Adam El

Test Start: 2012.11.01 @ 01:09:42

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:	69000 ppm
Viscosity: 55.00 sec/qt	Cushion Volume: bbl		
Water Loss: 11.58 in ³	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 6500.00 ppm			
Filter Cake: 0.20 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
65.00	SOCMW 1%o 37%m 62%w	0.912
125.00	MW w few o specs.11%m 89%w	1.753
1270.00	SW	17.815

Total Length: 1460.00 ft Total Volume: 20.480 bbl

Num Fluid Samples: 0

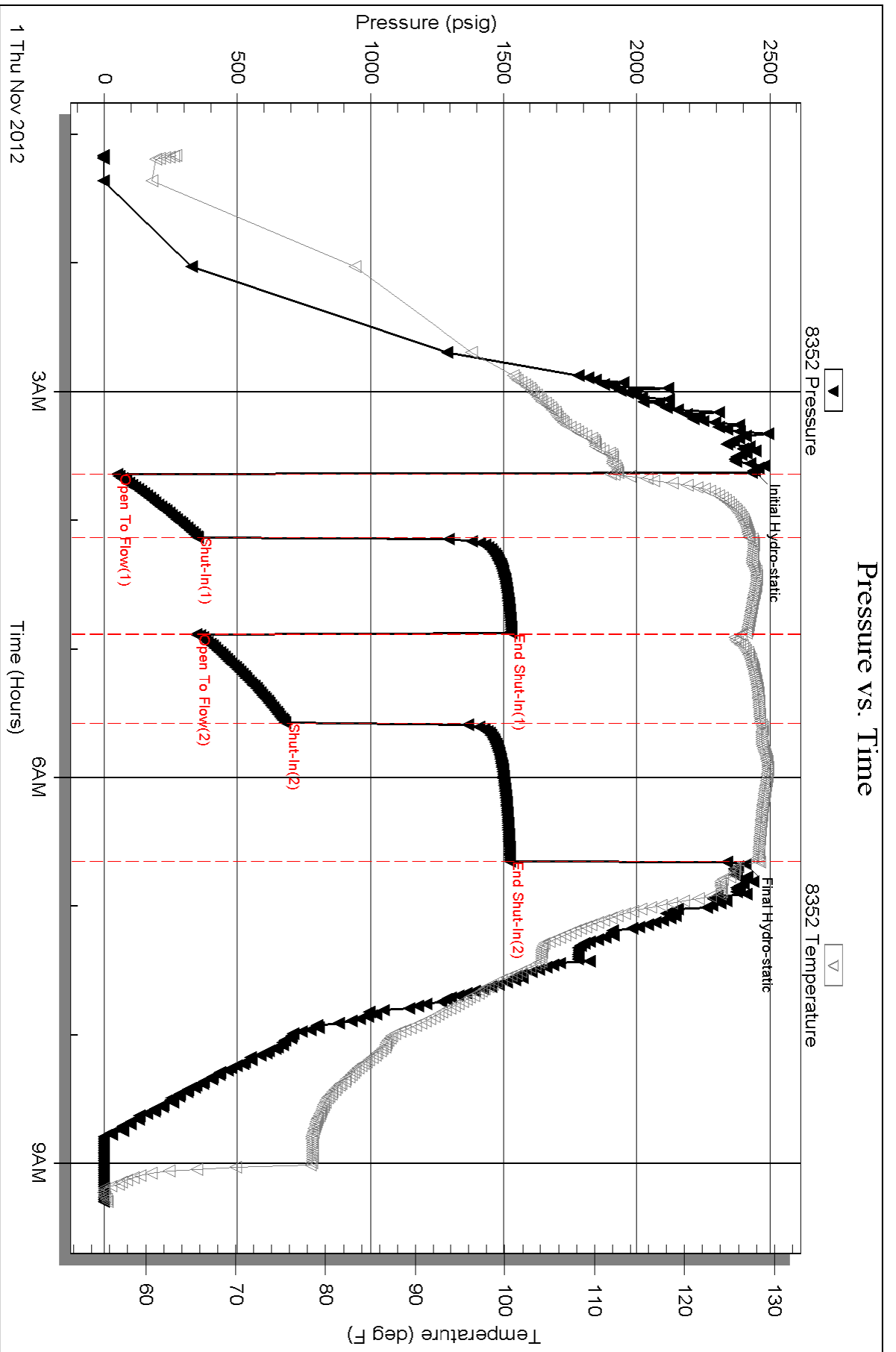
Num Gas Bombs: 0

Serial #: none

Laboratory Name:

Laboratory Location:

Recovery Comments: Rw .14 ohms @56deg



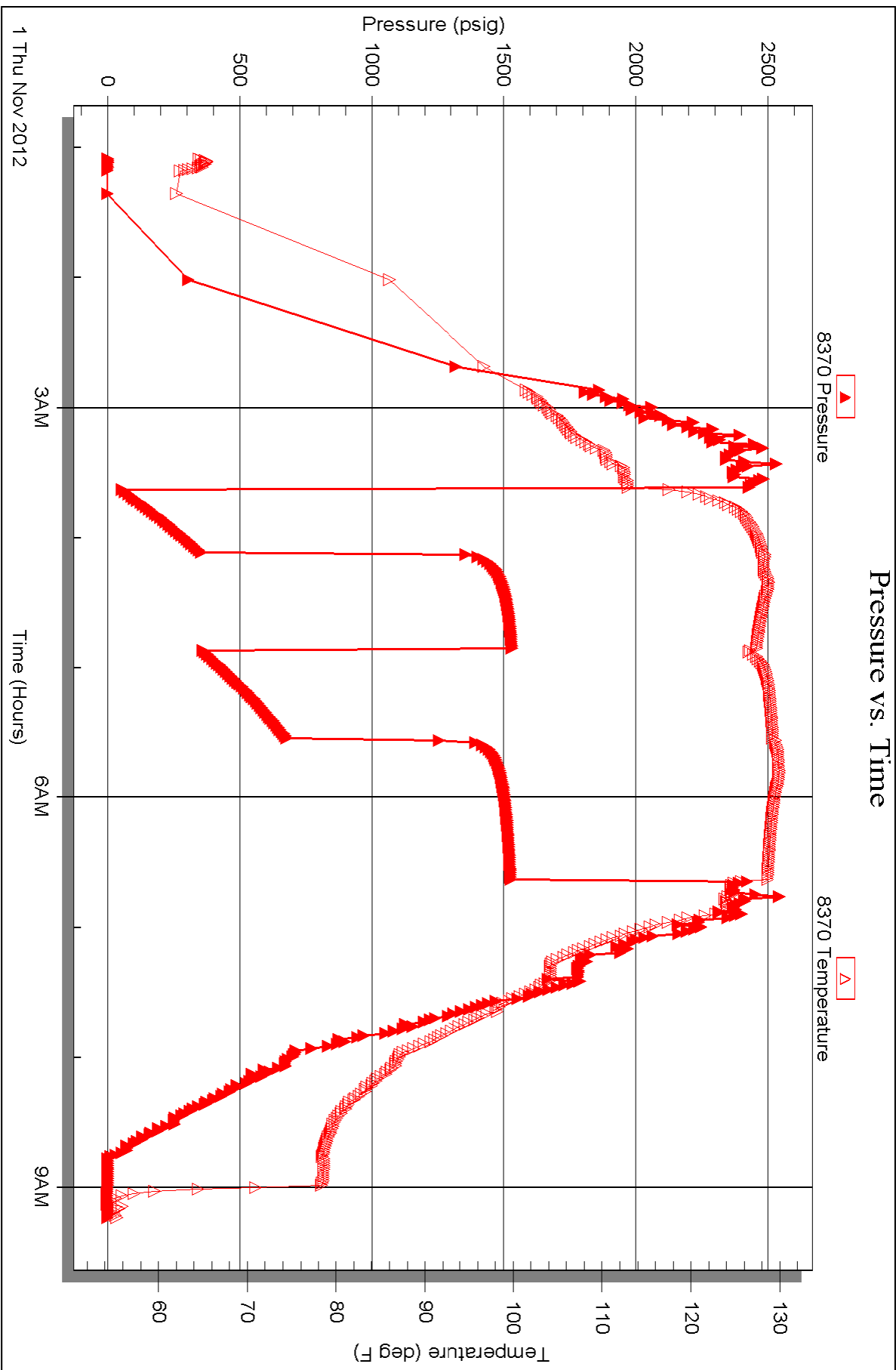
Serial #: 8370

Inside

Richie Exploration Inc

Nau 25C#1

DST Test Number: 5





TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 48586

Well Name & No. NAU 25C #1 Test No. 1 Date 10-28-12
 Company RITCHE Exploration Inc Elevation 2430 KB 2418 GL
 Address 8100 E 22ND ST. N. #700 Box 783188 WICHITA KS 67278-3188
 Co. Rep / Geo. Adam Eldani Rig Duke rig 1
 Location: Sec. 25 Twp. 26^S Rge. 23^W Co. FORD State Ks

Interval Tested 4740-4773 Zone Tested PAWNEE
 Anchor Length 33 Drill Pipe Run 4722 Mud Wt. 9.2
 Top Packer Depth 4735 Drill Collars Run - Vis 51
 Bottom Packer Depth 4740 Wt. Pipe Run - WL 8.4
 Total Depth 4773 Chlorides 3700 ppm System LCM 1#
 Blow Description IFP - SURFACE Blow thru-out
TSTP - NO Blow
FFP - NO Blow
FSTP - NO Blow

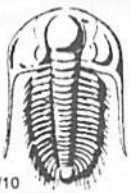
Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>Mud</u>				

Rec Total 10 BHT 113 Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic <u>2299</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>2050</u>
(B) First Initial Flow <u>18</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>2200</u>
(C) First Final Flow <u>21</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>0035</u>
(D) Initial Shut-In <u>1420</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>0335</u>
(E) Second Initial Flow <u>21</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>0524</u>
(F) Second Final Flow <u>23</u>	<input checked="" type="checkbox"/> Mileage <u>204RT</u> 154rt 238.70	Comments <u>Motel</u>
(G) Final Shut-In <u>1373</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2294</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Open <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u>45</u>	<input type="checkbox"/> Day Standby	Total <u>1813.70</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1813.70</u>	

Approved By _____ Our Representative RAY SCHWAGER Thank you

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. 48587

Well Name & No. NAU 25C #1 Test No. 2 Date 10-29-12
 Company RITCHE Exploration Inc Elevation 2430 KB 2418 GL
 Address 8100 E. 22nd ST. N. #700 Box 783188 Wichita, KS 67278-3188
 Co. Rep / Geo. Adam Eldan Rig Duka rig
 Location: Sec. 25 Twp. 26^s Rge. 23^w Co. Ford State K

Interval Tested 4859-4886 Zone Tested Huck
 Anchor Length 27 Drill Pipe Run 4850 Mud Wt. 9.3
 Top Packer Depth 4854 Drill Collars Run - Vis 50
 Bottom Packer Depth 4859 Wt. Pipe Run - WL 8
 Total Depth 4886 Chlorides 4700 ppm System LCM 1#
 Blow Description IFF - STRONG Blow, 3min GTS
ISTP -
FFP -
FSIP -

Rec	Feet of	%gas	%oil	%water	%mud
<u>1620</u>	<u>GCM</u>	<u>10</u>			<u>90</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 <u>lost packer seat</u>	%gas	%oil	%water	%mud

Rec Total 1620 BHT _____ Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic Test 1250 T-On Location 1915
 (B) First Initial Flow Jars T-Started 2015
 (C) First Final Flow Safety Joint 75 T-Open 2230
 (D) Initial Shut-In Circ Sub T-Pulled 2245
 (E) Second Initial Flow Hourly Standby T-Out 0210
 (F) Second Final Flow Mileage 238.70 Comments _____
 (G) Final Shut-In Sampler motel
 (H) Final Hydrostatic Straddle Ruined Shale Packer _____
 Shale Packer Ruined Packer _____
 Extra Packer Extra Copies _____
 Initial Open 20 Extra Recorder Sub Total 0
 Initial Shut-In - Day Standby Total 1563.70
 Final Flow - Accessibility MP/DST Disc't _____
 Final Shut-In - Sub Total 1563.70

Approved By _____ Our Representative Ray Schwager Thank you
 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. 48588

Well Name & No. NAU 25C#1 Test No. 3 Date 10-30-12
 Company Ritchie Exploration Inc Elevation 2430 KB 2418 GL
 Address 8100 E. 22nd ST. N. #700 Box 783188 WICHITA, K 67278-3188
 Co. Rep / Geo. Adam Eldan Rig Duke rig
 Location: Sec. 25 Twp. 26^s Rge. 23^w Co. Ford State K

Interval Tested 4810-4886 Zone Tested Huck
 Anchor Length 76 Drill Pipe Run 4812 Mud Wt. 9.3
 Top Packer Depth 4808 Drill Collars Run - Vis 50
 Bottom Packer Depth 4810 Wt. Pipe Run - WL 8
 Total Depth 4886 Chlorides 4700 ppm System LCM 1#

Blow Description IFP - STRONG BLOW GTS IN 3MIN
ISIP - NO BLOW
FFP - GTS
FSIP - NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>140</u>	<u>GCM</u>	<u>15</u>		<u>85</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

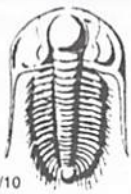
Rec Total 140 BHT 108 Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic <u>2337</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>0210</u>
(B) First Initial Flow <u>381</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>0235</u>
(C) First Final Flow <u>326</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>0515</u>
(D) Initial Shut-In <u>1550</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>1015 0945</u>
(E) Second Initial Flow <u>350</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>1157</u>
(F) Second Final Flow <u>316</u>	<input checked="" type="checkbox"/> Mileage <u>238.70</u>	Comments
(G) Final Shut-In <u>1547</u>	<input type="checkbox"/> Sampler	<u>MoTel</u>
(H) Final Hydrostatic <u>2301</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
	<input type="checkbox"/> Day Standby	Total <u>1813.70</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't

Initial Open 30
 Initial Shut-In 60
 Final Flow 90
 Final Shut-In ~~90~~ 90

Sub Total 1813.70

Approved By [Signature] Our Representative Ray Schwager Thank you
 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. 48589

Well Name & No. NAU 25C #1 Test No. 4 Date 10-31-12
 Company R. T. Richie Exploration Inc Elevation 2430 KB 2418 GL
 Address 8100 E. 22nd ST. N. #700 Box 783188 WICHITA, KS 67278-3188
 Co. Rep / Geo. Adam Eldani Rig Duke rig 1
 Location: Sec. 25 Twp. 26^s Rge. 23^w Co. Ford State Ko

Interval Tested 4967-4995 Zone Tested MISS
 Anchor Length 28 Drill Pipe Run 4969 Mud Wt. 9.3
 Top Packer Depth 4962 Drill Collars Run - Vis 52
 Bottom Packer Depth 4967 Wt. Pipe Run - WL 8.8
 Total Depth 4995 Chlorides 4700 ppm System LCM 2#

Blow Description TFP - STRONG BLOW IN 3min
ISIP - NO BLOW
FFP - STRONG BLOW IN 6min
FSIP - NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>1600</u>	<u>SOCK WATER</u>				
	<u>Approx 1% to 2% oil</u>				
	<u>THRU-OUT</u>				

Rec Total 1600 BHT 126 Gravity - API RW .10 @ 76 ° F Chlorides 68000 ppm

(A) Initial Hydrostatic 2383 Test 1250 T-On Location 0510
 (B) First Initial Flow 162 Jars T-Started 0630
 (C) First Final Flow 444 Safety Joint 75 T-Open 0915
 (D) Initial Shut-In 1488 Circ Sub 50 T-Pulled 1215
 (E) Second Initial Flow 475 Hourly Standby T-Out 1513
 (F) Second Final Flow 799 Mileage 238.70 Comments _____
 (G) Final Shut-In 1480 Sampler motel
 (H) Final Hydrostatic 2381 Straddle Ruined Shale Packer
 Shale Packer Ruined Packer
 Extra Packer Extra Copies

Initial Open 30
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 60
 Sub Total 1613.70
 MP/DST Disc't _____

Approved By _____ Our Representative RAY Schwager *Thank you*

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. 49729

4/10

Well Name & No. ~~R-304~~ #1 NAU 25C Test No. S Date 11/1/12
 Company RITCHIE EXPLORATION INC. Elevation 2430 KB 2418 GL
 Address 8100 E. 22ND ST. N, #700, WICHITA KS. 67278
 Co. Rep / Geo. JUSTIN CLEGG / ADAM ELDANZ Rig DUKE DRILL. #1
 Location: Sec. 25 Twp. 26S Rge. 23S Co. FORD State KS

Interval Tested 4999 ~ 5025' Zone Tested MISS.
 Anchor Length 26' Drill Pipe Run 5001' Mud Wt. 9.2
 Top Packer Depth 4994' Drill Collars Run 0 Vis SS
 Bottom Packer Depth 4999' Wt. Pipe Run 0 WL 11.6 cc
 Total Depth 5025' Chlorides 6500 ppm System LCM II
 Blow Description IF: Strong blow. B.O.B. in 4 mins. ISS: No blow.

FF: Strong blow, B.O.B. in 7 mins. FSI: No blow.

Rec	Feet of	%gas	%oil	%water	%mud
65	SOCMW		62	37	
125	MW w few specs		89	11	
1270	SW				

Rec Total 1460 Fluid BHT 128° Gravity N/A API RW .14 @ 56 °F Chlorides 69,000 ppm

(A) Initial Hydrostatic 2440	<input checked="" type="checkbox"/> Test 1350	T-On Location 0031
(B) First Initial Flow 49	<input checked="" type="checkbox"/> Jars 250	T-Started 0109
(C) First Final Flow 352	<input checked="" type="checkbox"/> Safety Joint 75	T-Open 0338
(D) Initial Shut-In 1530	<input type="checkbox"/> Circ Sub	T-Pulled 0638
(E) Second Initial Flow 345	<input type="checkbox"/> Hourly Standby	T-Out 0918
(F) Second Final Flow 680	<input checked="" type="checkbox"/> Mileage 150 232.50	Comments
(G) Final Shut-In 1525	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic 2410	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Open 30	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In 45	<input type="checkbox"/> Extra Recorder	Sub Total 0
Final Flow 45	<input type="checkbox"/> Day Standby	Total 1907.50
Final Shut-In 60	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total 1907.50	

Approved By *[Signature]* Our Representative *[Signature]*
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