



DRILL STEM TEST REPORT

Prepared For: **John O. Farmer, Inc.**

PO Box 352
Russell KS 67665

ATTN: Austin Klaus

Hageman #1

36-8s-18w Rooks, KS

Start Date: 2014.11.21 @ 07:05:00

End Date: 2014.11.21 @ 13:11:00

Job Ticket #: 62534 DST #: 1

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

Printed: 2014.11.26 @ 10:45:08

John O. Farmer, Inc. 36-8s-18w Rooks, KS Hageman #1 DST # 1 LKC 2014.11.21



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

John O. Farmer, Inc.

36-8s-18w Rooks, KS

PO Box 352
Russell KS 67665

Hageman #1

Job Ticket: 62534

DST#: 1

ATTN: Austin Klaus

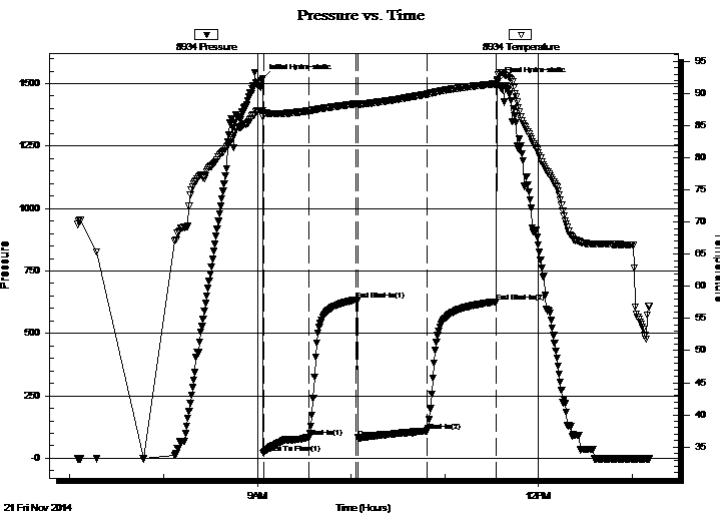
Test Start: 2014.11.21 @ 07:05:00

GENERAL INFORMATION:

Formation: **LKC**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 09:03:45
 Time Test Ended: 13:11:00
 Interval: **3136.00 ft (KB) To 2115.00 ft (KB) (TVD)**
 Total Depth: 3215.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Brett Dickinson
 Unit No: 59
 Reference Elevations: 2024.00 ft (KB)
 2019.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8934 Inside
 Press@RunDepth: 109.78 psig @ 3137.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.11.21 End Date: 2014.11.21 Last Calib.: 2014.11.21
 Start Time: 07:05:05 End Time: 13:10:59 Time On Btm: 2014.11.21 @ 09:03:15
 Time Off Btm: 2014.11.21 @ 11:34:15

TEST COMMENT: IF-9" blow
 IS-No blow
 FF-BOB in 32 min
 FS-No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1519.07	87.29	Initial Hydro-static
1	19.78	86.35	Open To Flow (1)
30	83.11	87.29	Shut-In(1)
60	634.58	88.38	End Shut-In(1)
62	81.60	88.30	Open To Flow (2)
106	109.78	89.91	Shut-In(2)
150	627.10	91.49	End Shut-In(2)
151	1507.34	92.98	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
90.00	25%O 75%M	0.44
185.00	SGMCO 5%G 75%O 20%M	2.32

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

John O. Farmer, Inc.

36-8s-18w Rooks, KS

PO Box 352
Russell KS 67665

Hageman #1

Job Ticket: 62534

DST#: 1

ATTN: Austin Klaus

Test Start: 2014.11.21 @ 07:05:00

Tool Information

Drill Pipe:	Length: 3020.00 ft	Diameter: 3.80 inches	Volume: 42.36 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 45000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 35000.00 lb
Depth to Top Packer:	3136.00 ft			Final 35000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	79.00 ft			
Tool Length:	99.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3121.00	
Hydraulic tool	5.00			3126.00	
Packer	5.00			3131.00	20.00 Bottom Of Top Packer
Packer	5.00			3136.00	
Stubb	1.00			3137.00	
Recorder	0.00	8934	Inside	3137.00	
Recorder	0.00	8736	Outside	3137.00	
Perforations	10.00			3147.00	
Change Over Sub	1.00			3148.00	
Drill Pipe	63.00			3211.00	
Change Over Sub	1.00			3212.00	
Bullnose	3.00			3215.00	79.00 Bottom Packers & Anchor

Total Tool Length: 99.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

John O. Farmer, Inc.

36-8s-18w Rooks, KS

PO Box 352
Russell KS 67665

Hageman #1

Job Ticket: 62534

DST#: 1

ATTN: Austin Klaus

Test Start: 2014.11.21 @ 07:05:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: sec/qt

Cushion Volume:

bbbl

Water Loss: in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
90.00	25%O 75%M	0.443
185.00	SGMCO 5%G 75%O 20%M	2.322

Total Length: 275.00 ft Total Volume: 2.765 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

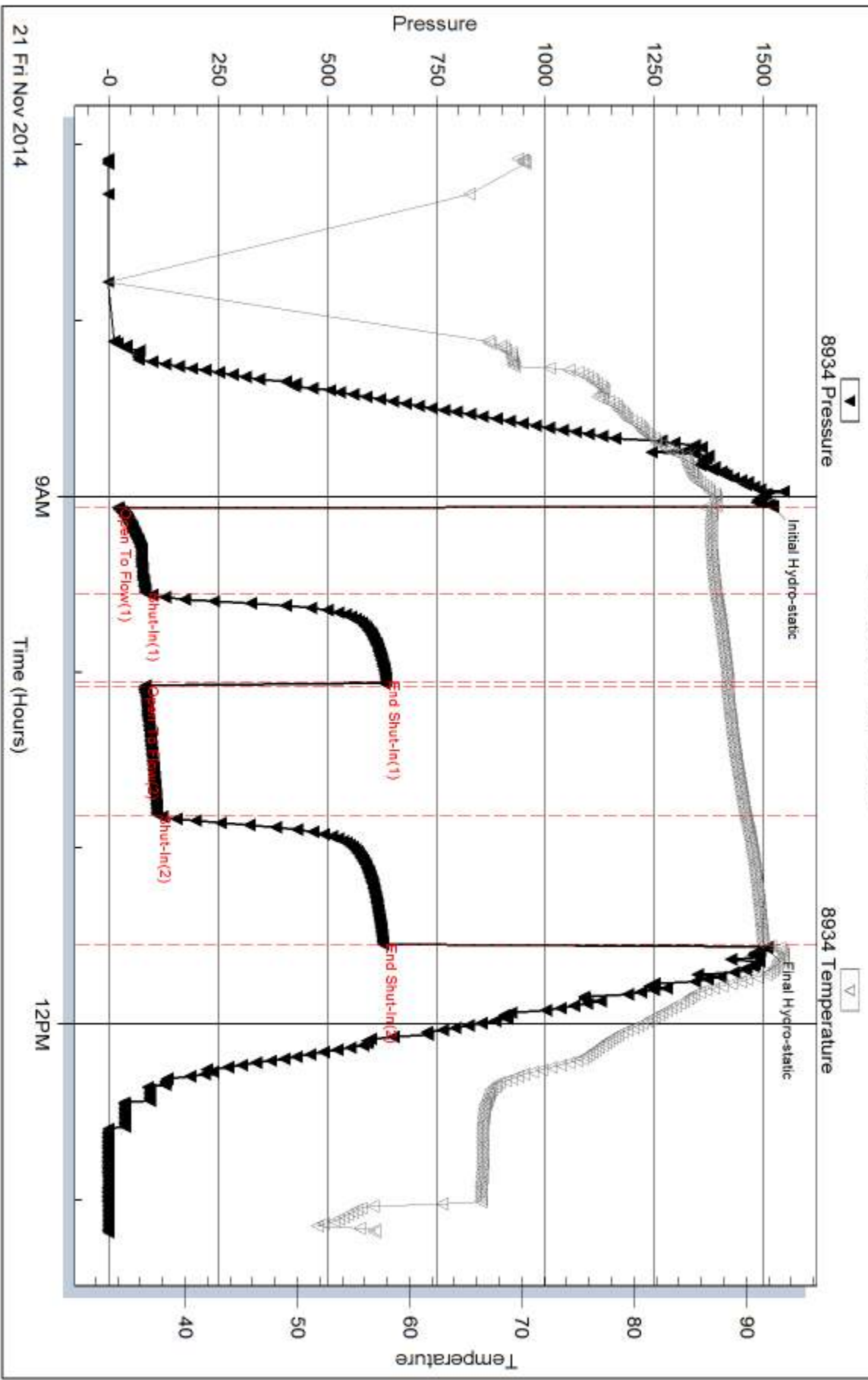
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

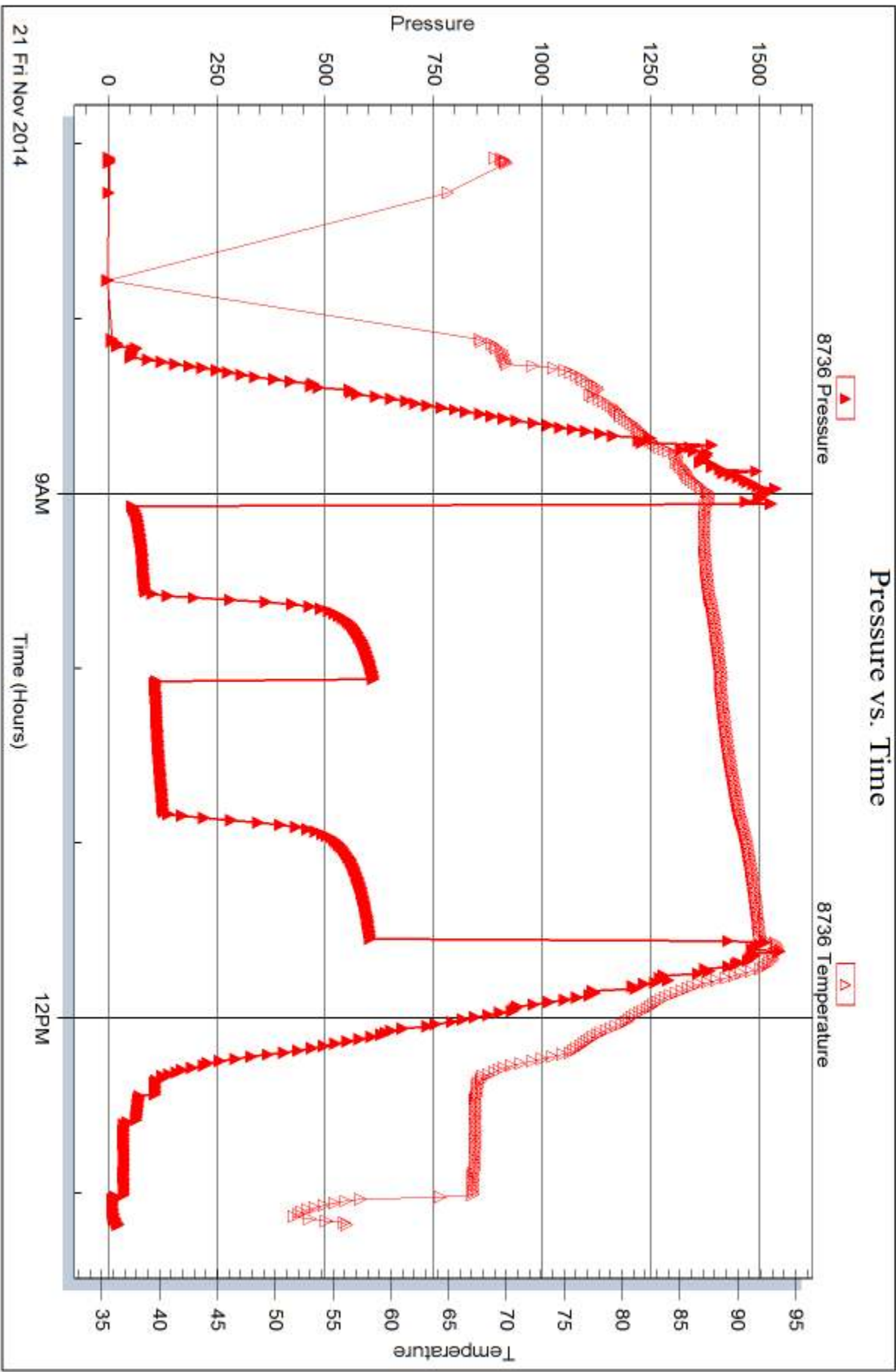


Serial #: 8736

Outside John O. Farmer, Inc.

Hegeman #1

DST Test Number: 1



21 Fri Nov 2014

9AM

Time (Hours)

12PM



DRILL STEM TEST REPORT

Prepared For: **John O. Farmer, Inc.**

PO Box 352
Russell KS 67665

ATTN: Austin Klaus

Hageman #1

36-8s-18w Rooks, KS

Start Date: 2014.11.21 @ 19:35:00

End Date: 2014.11.22 @ 00:43:45

Job Ticket #: 62535 DST #: 2

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

Printed: 2014.11.26 @ 10:44:47



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

John O. Farmer, Inc.

36-8s-18w Rooks, KS

PO Box 352
Russell KS 67665

Hageman #1

Job Ticket: 62535

DST#: 2

ATTN: Austin Klaus

Test Start: 2014.11.21 @ 19:35:00

GENERAL INFORMATION:

Formation: **KC "C"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:16:00

Time Test Ended: 00:43:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3212.00 ft (KB) To 3238.00 ft (KB) (TVD)

Reference Elevations: 2024.00 ft (KB)

Total Depth: 3238.00 ft (KB) (TVD)

2019.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8934

Inside

Press@RunDepth: 56.34 psig @ 3213.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.21

End Date:

2014.11.22

Last Calib.:

2014.11.22

Start Time: 19:35:05

End Time:

00:43:44

Time On Btm:

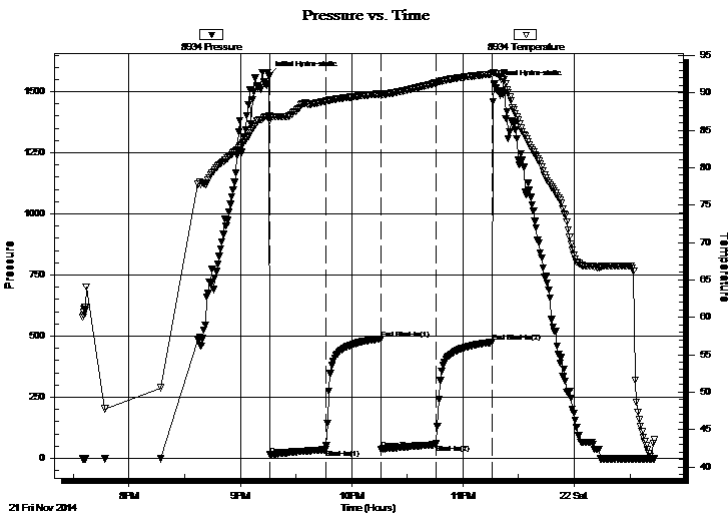
2014.11.21 @ 21:15:30

Time Off Btm:

2014.11.21 @ 23:16:45

TEST COMMENT: IF-1 1/2" blow
IS-No blow
FF-Weak surface blow
FS-No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1564.14	86.90	Initial Hydro-static
1	13.98	86.31	Open To Flow (1)
31	38.38	88.88	Shut-In(1)
60	489.26	89.86	End Shut-In(1)
61	38.37	89.71	Open To Flow (2)
90	56.34	91.31	Shut-In(2)
120	474.83	92.50	End Shut-In(2)
122	1528.76	92.69	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
65.00	OS MCW 30%M 70%W	0.32

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

John O. Farmer, Inc.

36-8s-18w Rooks, KS

PO Box 352
Russell KS 67665

Hageman #1

Job Ticket: 62535

DST#: 2

ATTN: Austin Klaus

Test Start: 2014.11.21 @ 19:35:00

Tool Information

Drill Pipe:	Length: 3085.00 ft	Diameter: 3.80 inches	Volume: 43.27 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 34000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 34000.00 lb
Depth to Top Packer:	3212.00 ft			Final 34000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	26.00 ft			
Tool Length:	46.00 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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Shut In Tool	5.00			3197.00	
Hydraulic tool	5.00			3202.00	
Packer	5.00			3207.00	20.00 Bottom Of Top Packer
Packer	5.00			3212.00	
Stubb	1.00			3213.00	
Recorder	0.00	8934	Inside	3213.00	
Recorder	0.00	8736	Outside	3213.00	
Perforations	22.00			3235.00	
Bullnose	3.00			3238.00	26.00 Bottom Packers & Anchor
Total Tool Length:	46.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

John O. Farmer, Inc.

36-8s-18w Rooks, KS

PO Box 352
Russell KS 67665

Hageman #1

Job Ticket: 62535

DST#: 2

ATTN: Austin Klaus

Test Start: 2014.11.21 @ 19:35:00

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: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 750.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
65.00	OS MCW 30%M 70%W	0.320

Total Length: 65.00 ft Total Volume: 0.320 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8934

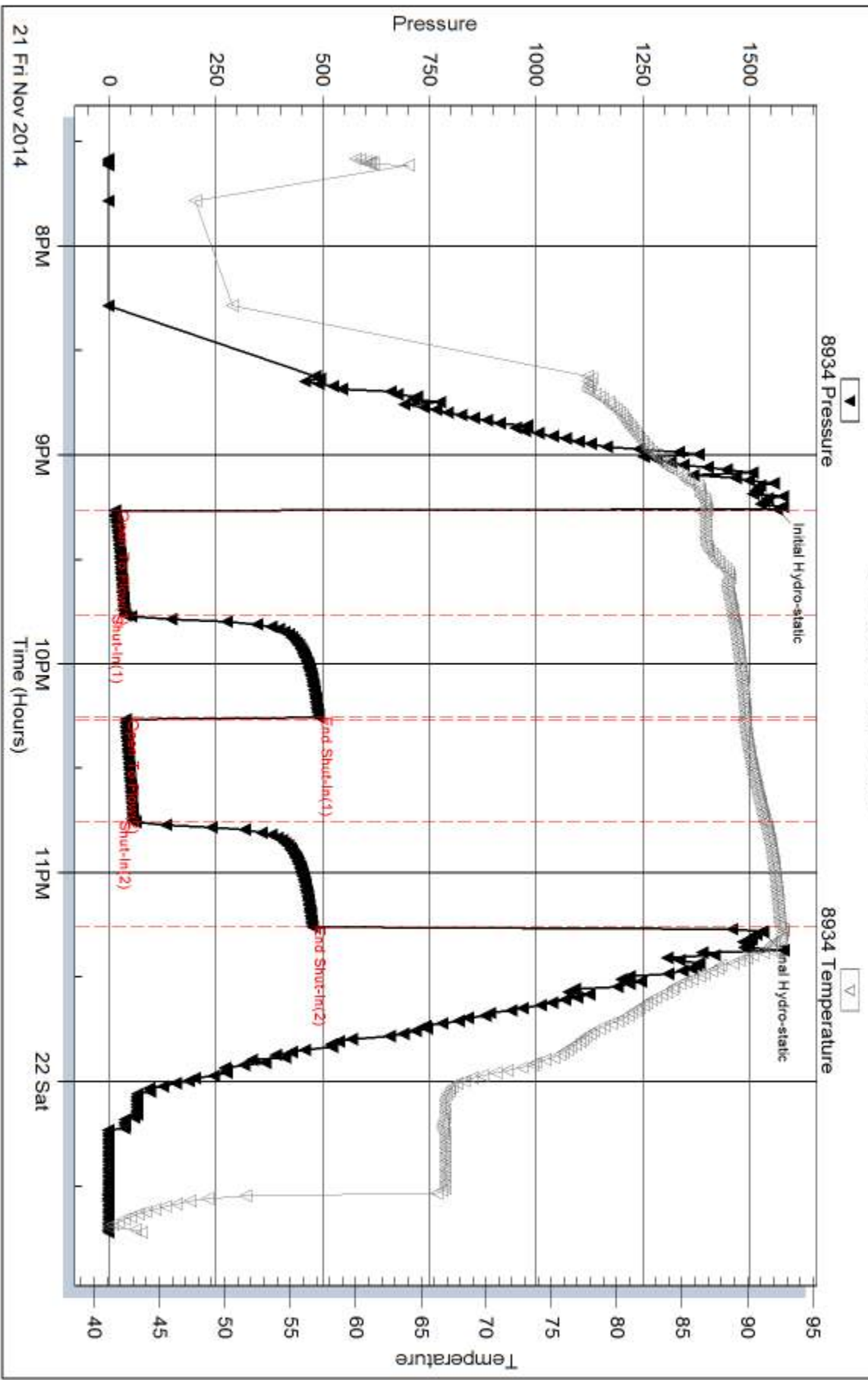
Inside

John O. Farmer, Inc.

Hegeman #1

DST Test Number: 2

Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 62535

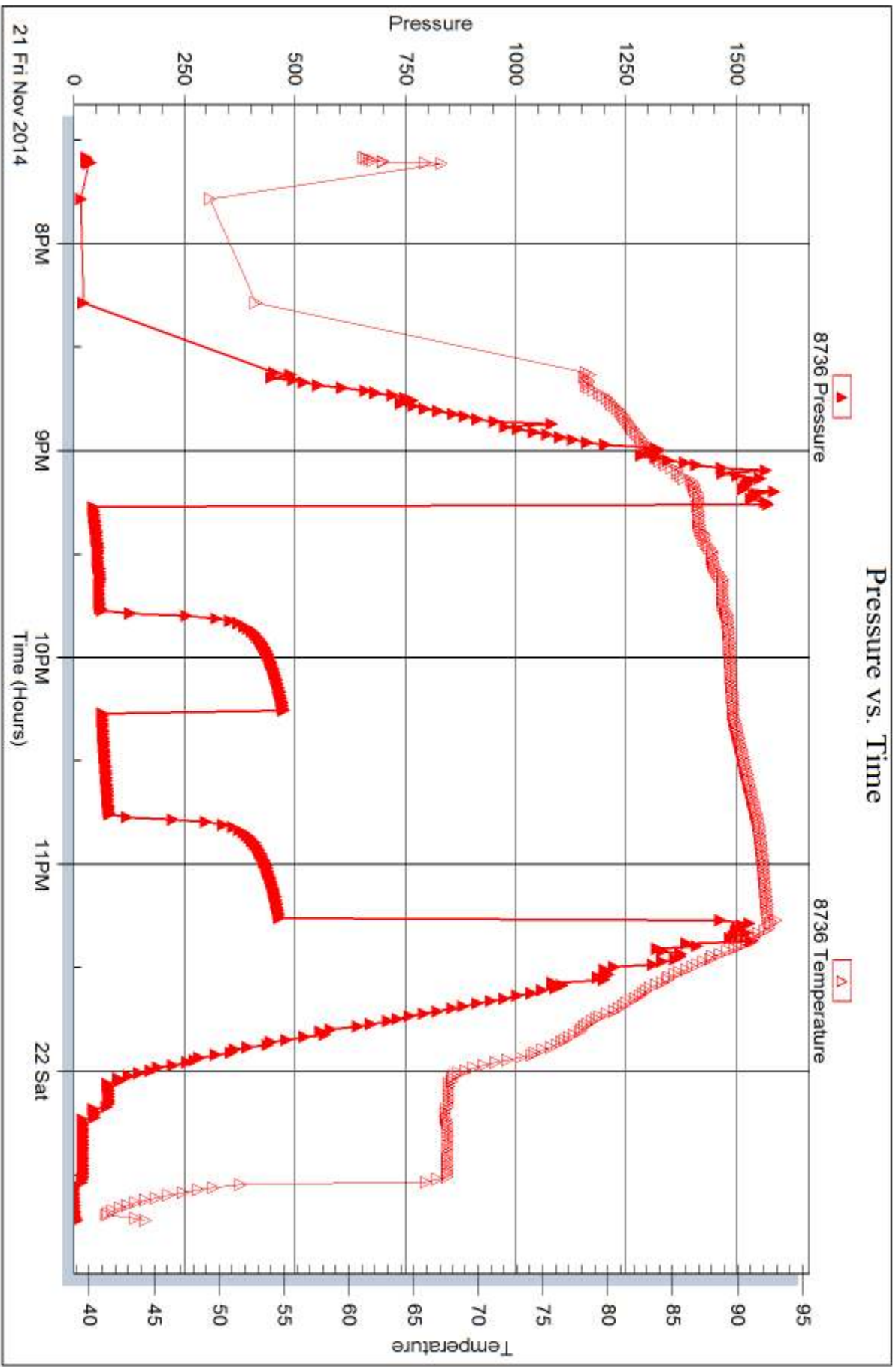
Printed: 2014, 11, 26 @ 10:44:48

Serial #: 8736

Outside John O. Farmer, Inc.

Hegeman #1

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 62535

Printed: 2014.11.26 @ 10:44:48



DRILL STEM TEST REPORT

Prepared For: **John O. Farmer, Inc.**

PO Box 352
Russell KS 67665

ATTN: Austin Klaus

Hageman #1

36-8s-18w Rooks, KS

Start Date: 2014.11.22 @ 09:25:00

End Date: 2014.11.22 @ 15:12:15

Job Ticket #: 62536 DST #: 3

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

Printed: 2014.11.26 @ 10:44:25



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

John O. Farmer, Inc.

36-8s-18w Rooks, KS

PO Box 352
Russell KS 67665

Hageman #1

Job Ticket: 62536

DST#: 3

ATTN: Austin Klaus

Test Start: 2014.11.22 @ 09:25:00

GENERAL INFORMATION:

Formation: **KC"E-F"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:49:30

Time Test Ended: 15:12:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3256.00 ft (KB) To 3282.00 ft (KB) (TVD)

Reference Elevations: 2024.00 ft (KB)

Total Depth: 3282.00 ft (KB) (TVD)

2019.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8934

Inside

Press@RunDepth: 64.42 psig @ 3257.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.22 End Date: 2014.11.22

Last Calib.: 2014.11.22

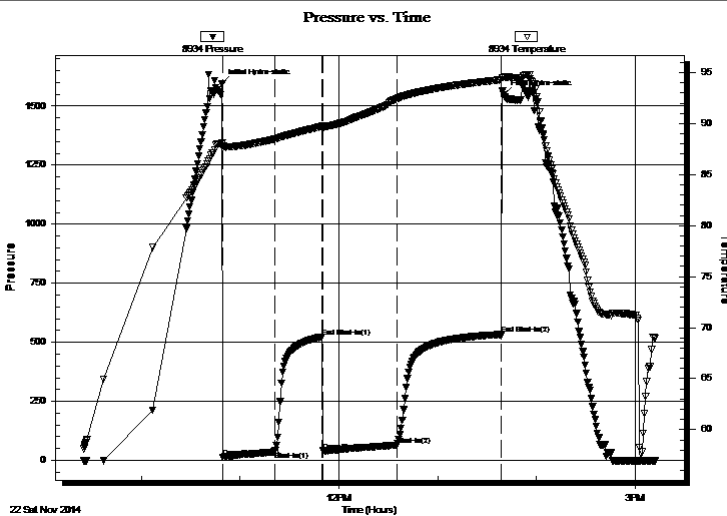
Start Time: 09:25:05 End Time: 15:12:14

Time On Btm: 2014.11.22 @ 10:49:00

Time Off Btm: 2014.11.22 @ 13:40:00

TEST COMMENT: IF-1/4" blow
IS-No blow
FF-1/4" blow
FS-No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1594.93	88.15	Initial Hydro-static
1	13.98	87.59	Open To Flow (1)
32	35.84	88.46	Shut-In(1)
61	522.97	89.73	End Shut-In(1)
62	39.97	89.61	Open To Flow (2)
106	64.42	92.42	Shut-In(2)
170	532.92	94.28	End Shut-In(2)
171	1548.21	94.54	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
69.00	OS MCW 40%M 60%W	0.34
1.00	Free Oil	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

John O. Farmer, Inc.

36-8s-18w Rooks, KS

PO Box 352
Russell KS 67665

Hageman #1

Job Ticket: 62536

DST#: 3

ATTN: Austin Klaus

Test Start: 2014.11.22 @ 09:25:00

Tool Information

Drill Pipe:	Length: 3148.00 ft	Diameter: 3.80 inches	Volume: 44.16 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	35000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
				String Weight: Initial	35000.00 lb
Drill Pipe Above KB:	32.00 ft			Final	35000.00 lb
Depth to Top Packer:	3256.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	26.00 ft				
Tool Length:	46.00 ft				
Number of Packers:	2	Diameter:	6.75 inches		
Tool Comments:					

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3241.00	
Hydraulic tool	5.00			3246.00	
Packer	5.00			3251.00	20.00 Bottom Of Top Packer
Packer	5.00			3256.00	
Stubb	1.00			3257.00	
Recorder	0.00	8934	Inside	3257.00	
Recorder	0.00	8736	Outside	3257.00	
Perforations	22.00			3279.00	
Bullnose	3.00			3282.00	26.00 Bottom Packers & Anchor
Total Tool Length:	46.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

John O. Farmer, Inc.

36-8s-18w Rooks, KS

PO Box 352
Russell KS 67665

Hageman #1

Job Ticket: 62536

DST#: 3

ATTN: Austin Klaus

Test Start: 2014.11.22 @ 09:25:00

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:

35000 ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 750.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
69.00	OS MCW 40%M 60%W	0.339
1.00	Free Oil	0.005

Total Length: 70.00 ft Total Volume: 0.344 bbl

Num Fluid Samples: 0

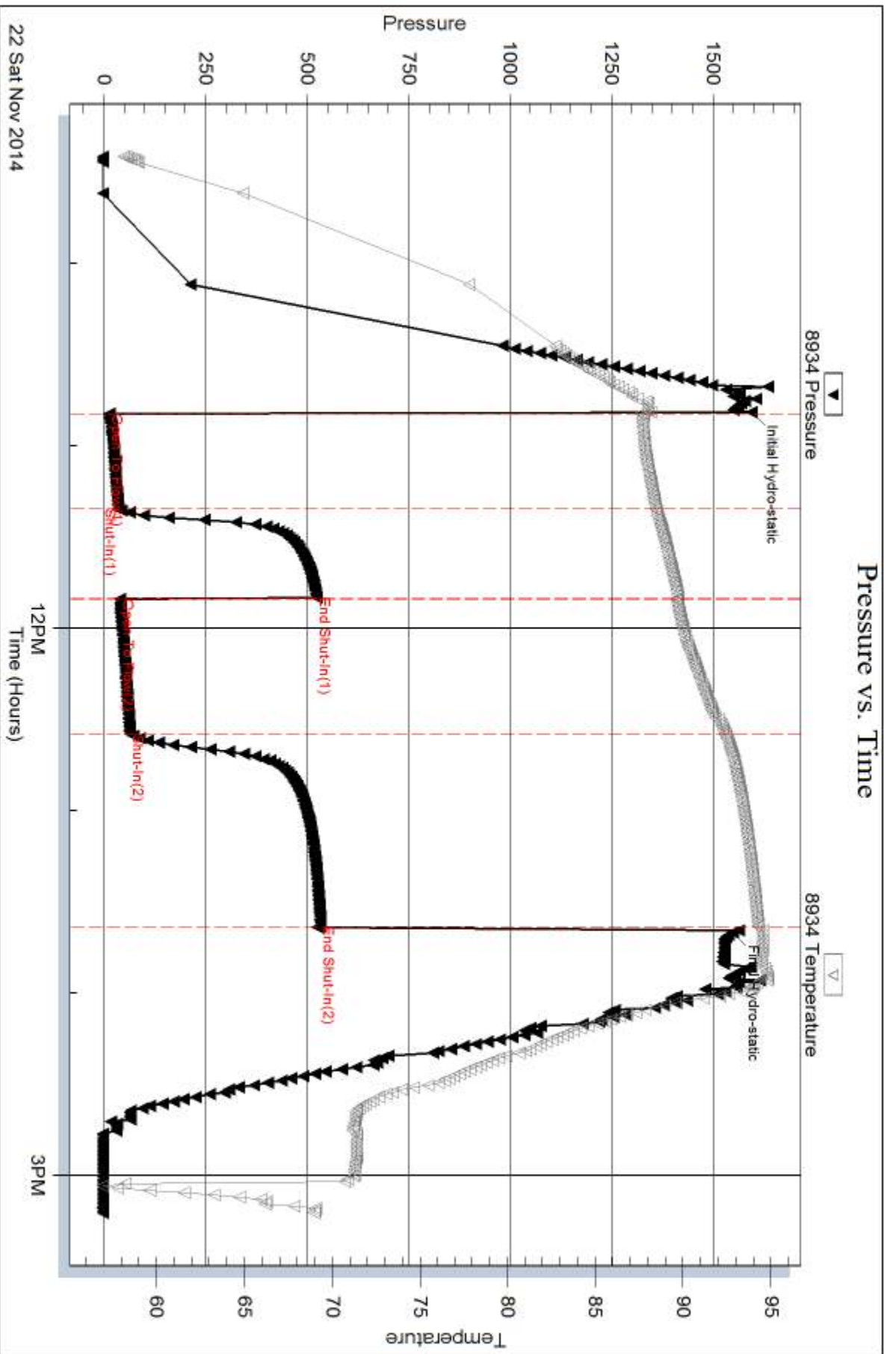
Num Gas Bombs: 0

Serial #:

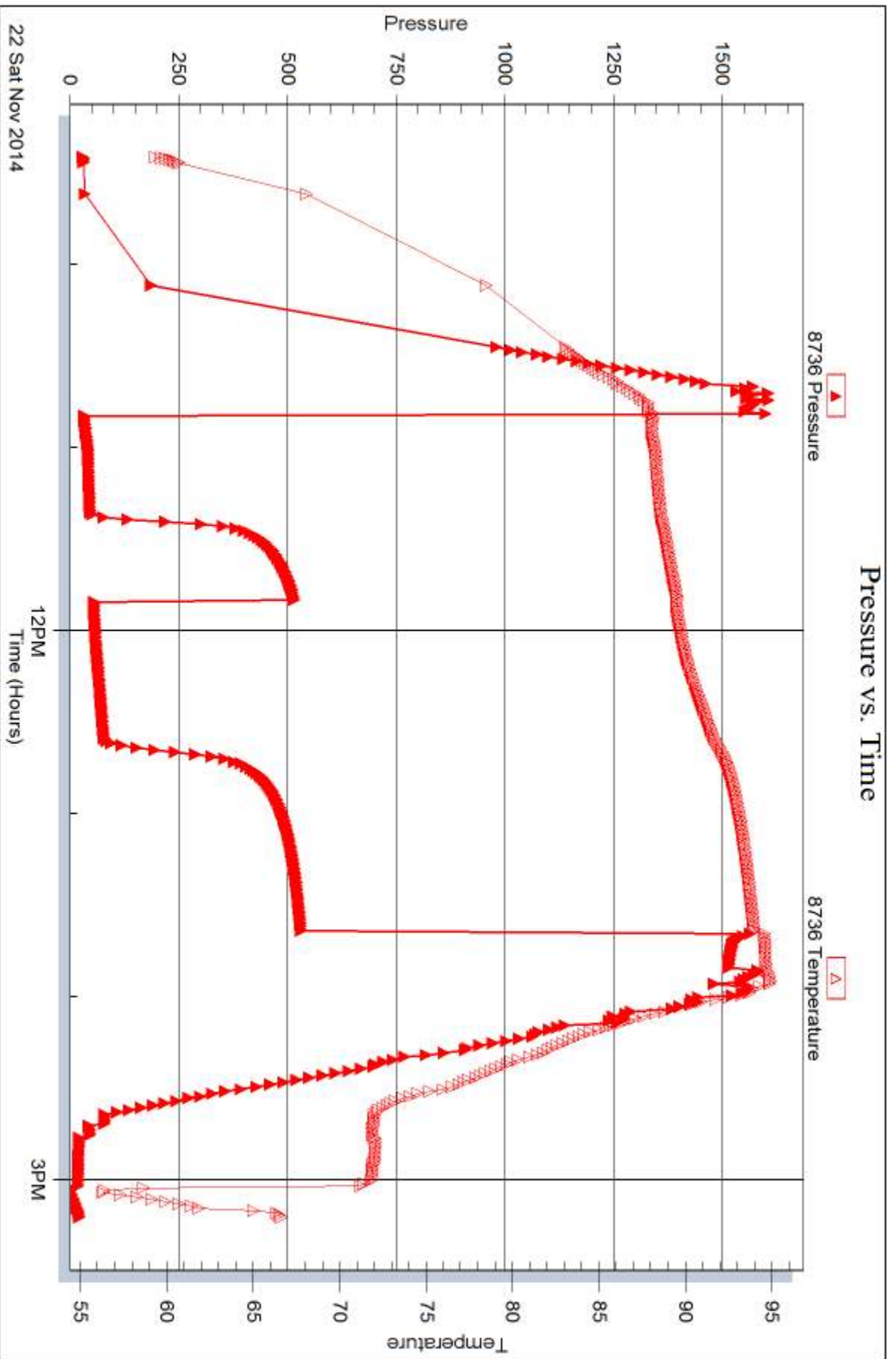
Laboratory Name:

Laboratory Location:

Recovery Comments:



22 Sat Nov 2014





DRILL STEM TEST REPORT

Prepared For: **John O. Farmer, Inc.**

PO Box 352
Russell KS 67665

ATTN: Austin Klaus

Hageman #1

36-8s-18w Rooks, KS

Start Date: 2014.11.23 @ 02:00:00

End Date: 2014.11.23 @ 09:30:15

Job Ticket #: 62537 DST #: 4

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

Printed: 2014.11.26 @ 10:44:01



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

John O. Farmer, Inc.

36-8s-18w Rooks, KS

PO Box 352
Russell KS 67665

Hageman #1

Job Ticket: 62537

DST#: 4

ATTN: Austin Klaus

Test Start: 2014.11.23 @ 02:00:00

GENERAL INFORMATION:

Formation: **KC H-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:42:00

Time Test Ended: 09:30:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3297.00 ft (KB) To 3400.00 ft (KB) (TVD)

Reference Elevations: 2024.00 ft (KB)

Total Depth: 3400.00 ft (KB) (TVD)

2019.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8934

Inside

Press@RunDepth: 193.56 psig @ 3298.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.23

End Date:

2014.11.23

Last Calib.:

2014.11.23

Start Time: 02:00:05

End Time:

09:30:14

Time On Btm:

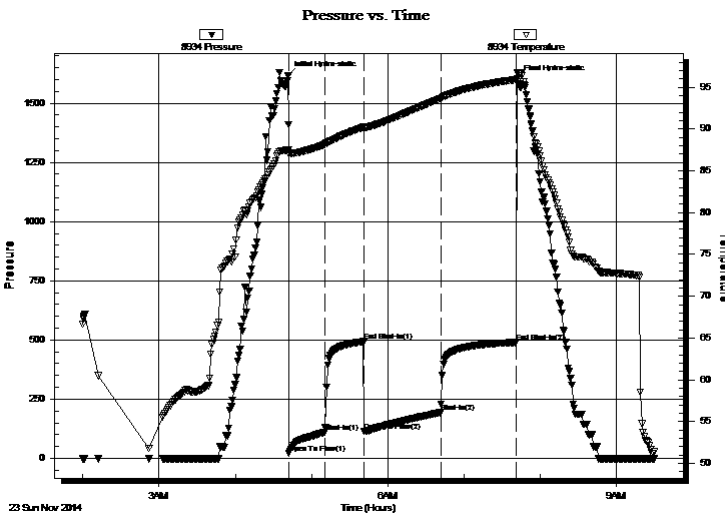
2014.11.23 @ 04:41:30

Time Off Btm:

2014.11.23 @ 07:41:30

TEST COMMENT: IF-BOB in 17 min
IS-1/4" blow
FF-BOB in 15 min
FS-1" blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1617.63	87.50	Initial Hydro-static
1	21.16	87.03	Open To Flow (1)
29	111.13	88.17	Shut-In(1)
60	493.02	90.21	End Shut-In(1)
60	113.56	90.11	Open To Flow (2)
120	193.56	93.64	Shut-In(2)
180	489.67	95.89	End Shut-In(2)
180	1602.39	96.68	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
125.00	V SOMCW 3%O 77%W 20%M	0.66
125.00	SOWCM 10%O 30%W 60%M	1.75
190.00	GO 35%G 65%O	2.67

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

John O. Farmer, Inc.

36-8s-18w Rooks, KS

PO Box 352
Russell KS 67665

Hageman #1

Job Ticket: 62537

DST#: 4

ATTN: Austin Klaus

Test Start: 2014.11.23 @ 02:00:00

Tool Information

Drill Pipe:	Length: 3180.00 ft	Diameter: 3.80 inches	Volume: 44.61 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 45000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial 34000.00 lb
Depth to Top Packer:	3297.00 ft			Final 35000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	103.00 ft			
Tool Length:	123.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3282.00	
Hydraulic tool	5.00			3287.00	
Packer	5.00			3292.00	20.00 Bottom Of Top Packer
Packer	5.00			3297.00	
Stubb	1.00			3298.00	
Recorder	0.00	8934	Inside	3298.00	
Recorder	0.00	8736	Outside	3298.00	
Perforations	4.00			3302.00	
Change Over Sub	1.00			3303.00	
Drill Pipe	93.00			3396.00	
Change Over Sub	1.00			3397.00	
Bullnose	3.00			3400.00	103.00 Bottom Packers & Anchor

Total Tool Length: 123.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

John O. Farmer, Inc.

36-8s-18w Rooks, KS

PO Box 352
Russell KS 67665

Hageman #1

Job Ticket: 62537

DST#: 4

ATTN: Austin Klaus

Test Start: 2014.11.23 @ 02:00:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

34 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

58000 ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 750.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
125.00	VSOMCW 3%O 77%W 20%M	0.660
125.00	SOWCM 10%O 30%W 60%M	1.753
190.00	GO 35%G 65%O	2.665

Total Length: 440.00 ft Total Volume: 5.078 bbl

Num Fluid Samples: 0

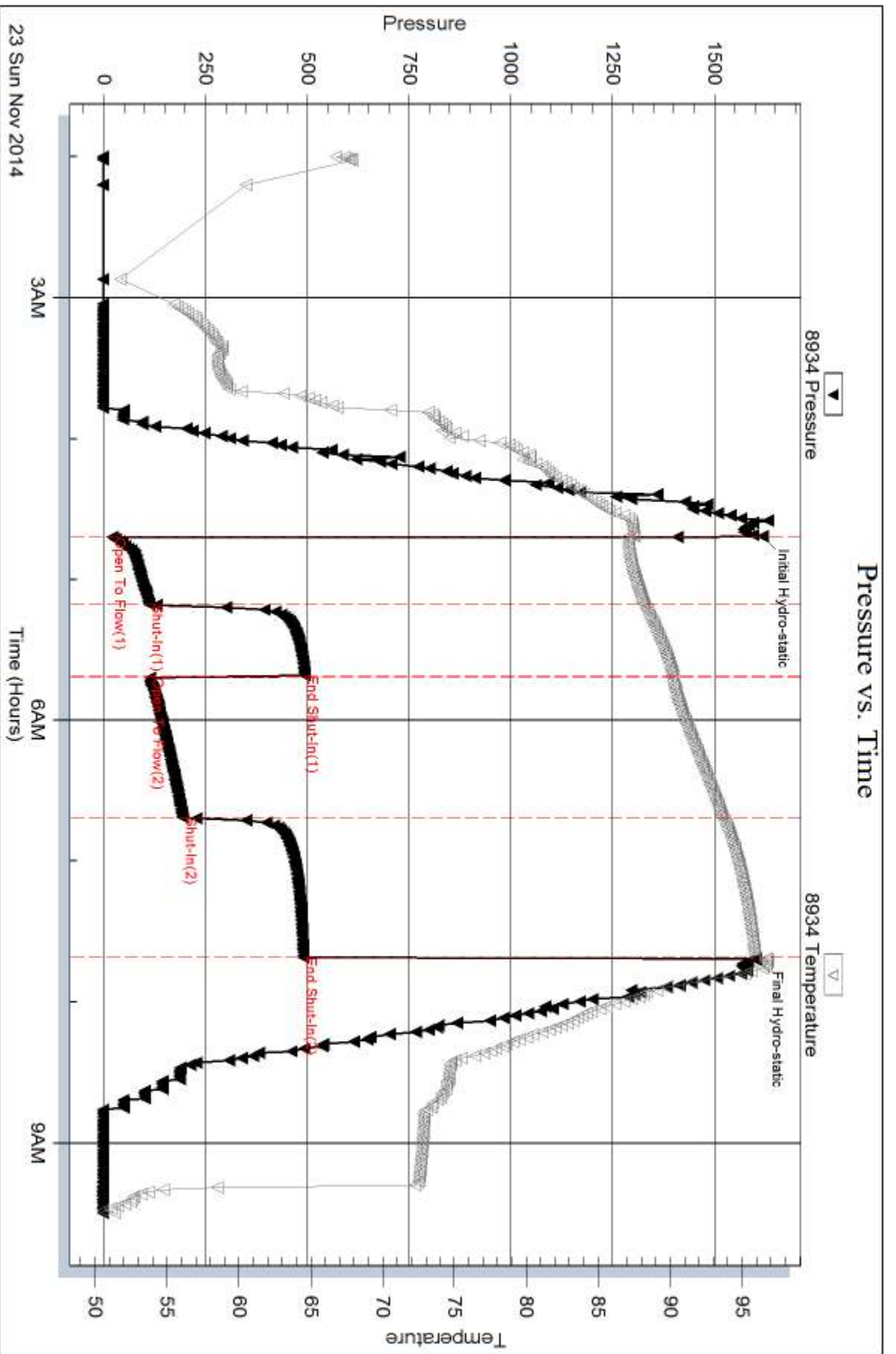
Num Gas Bombs: 0

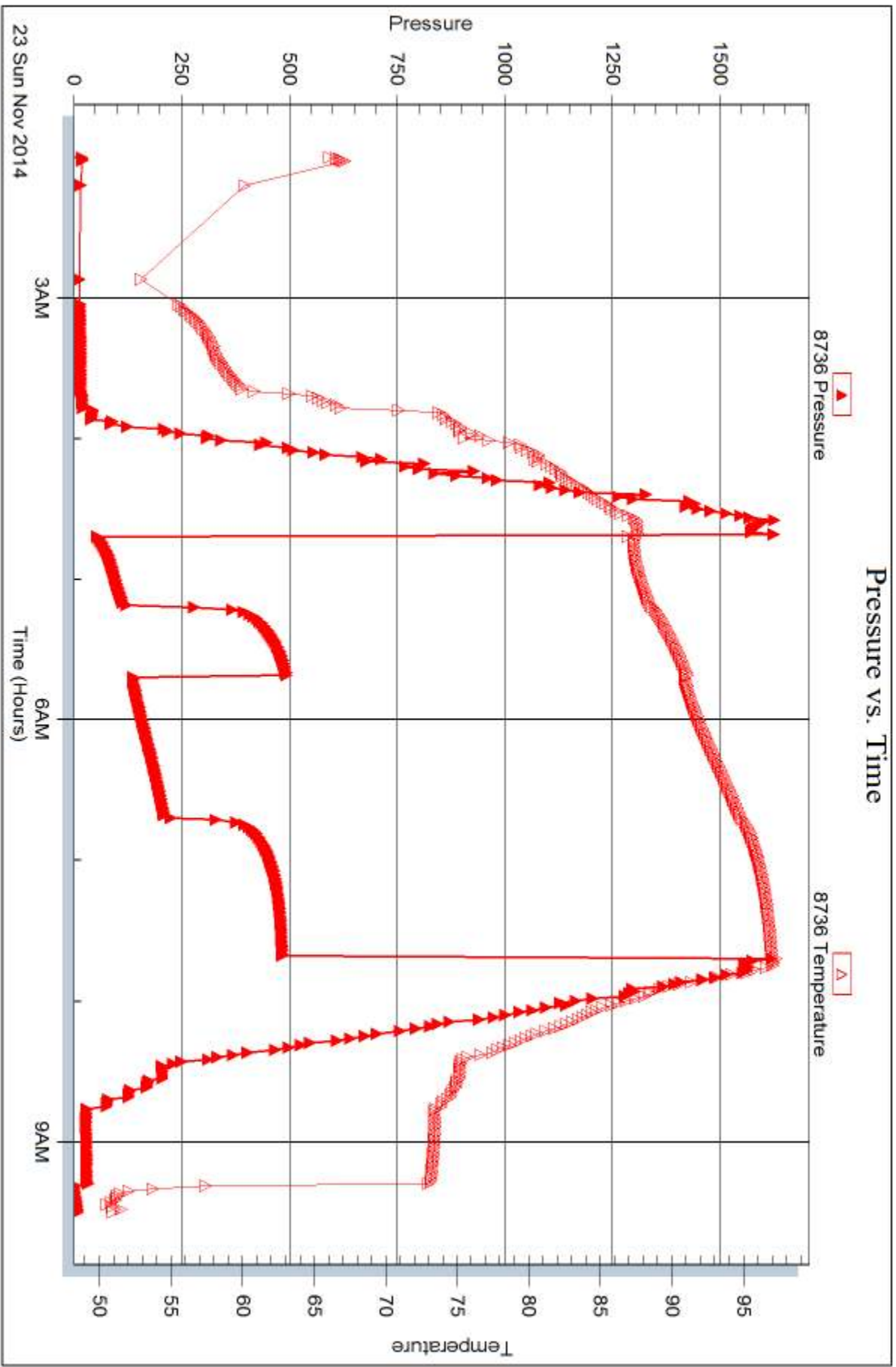
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **John O. Farmer, Inc.**

PO Box 352
Russell KS 67665

ATTN: Austin Klaus

Hageman #1

36-8s-18w Rooks, KS

Start Date: 2014.11.23 @ 21:05:00

End Date: 2014.11.24 @ 02:30:15

Job Ticket #: 62538 DST #: 5

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

Printed: 2014.11.26 @ 10:43:28



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

John O. Farmer, Inc.

36-8s-18w Rooks, KS

PO Box 352
Russell KS 67665

Hageman #1

Job Ticket: 62538

DST#: 5

ATTN: Austin Klaus

Test Start: 2014.11.23 @ 21:05:00

GENERAL INFORMATION:

Formation: **Arb.**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:44:45

Time Test Ended: 02:30:15

Test Type: Conventional Straddle (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3404.00 ft (KB) To 3460.00 ft (KB) (TVD)

Reference Elevations: 2024.00 ft (KB)

Total Depth: 3510.00 ft (KB) (TVD)

2019.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8957

Inside

Press@RunDepth: 22.41 psig @ 3405.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.23

End Date:

2014.11.24

Last Calib.: 2014.11.24

Start Time: 21:05:05

End Time:

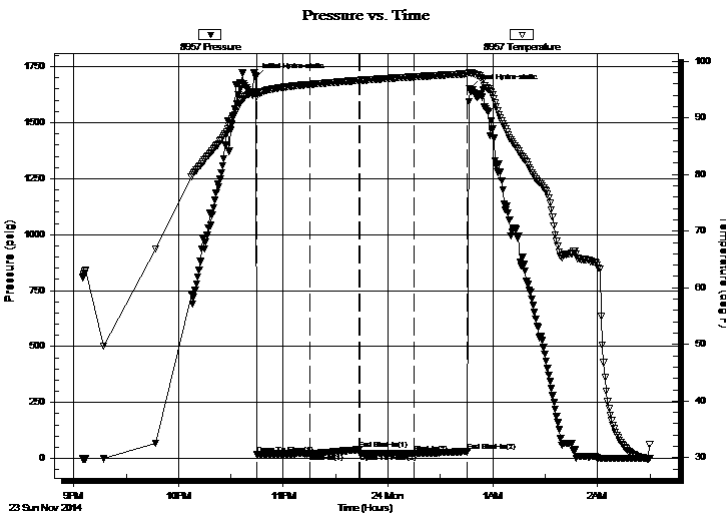
02:30:14

Time On Btm: 2014.11.23 @ 22:44:15

Time Off Btm: 2014.11.24 @ 00:46:45

TEST COMMENT: IF-1/4in blow
IS-No blow
FF-No blow
FS-No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1701.54	94.49	Initial Hydro-static
1	17.30	93.74	Open To Flow (1)
31	21.42	95.90	Shut-In(1)
60	38.86	96.60	End Shut-In(1)
60	22.05	96.61	Open To Flow (2)
91	22.41	97.25	Shut-In(2)
122	30.82	97.79	End Shut-In(2)
123	1650.56	98.01	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud	0.02

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

John O. Farmer, Inc.

36-8s-18w Rooks, KS

PO Box 352
Russell KS 67665

Hageman #1

Job Ticket: 62538

DST#: 5

ATTN: Austin Klaus

Test Start: 2014.11.23 @ 21:05:00

Tool Information

Drill Pipe:	Length: 3270.00 ft	Diameter: 3.80 inches	Volume: 45.87 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 40000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 35000.00 lb
Depth to Top Packer:	3404.00 ft			Final 35000.00 lb
Depth to Bottom Packer:	3460.00 ft			
Interval between Packers:	56.00 ft			
Tool Length:	130.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Shut In Tool	5.00			3389.00	
Hydraulic tool	5.00			3394.00	
Packer	5.00			3399.00	20.00 Bottom Of Top Packer
Packer	5.00			3404.00	
Stubb	1.00			3405.00	
Recorder	0.00	8957	Inside	3405.00	
Recorder	0.00	8736	Outside	3405.00	
Perforations	7.00			3412.00	
Change Over Sub	1.00			3413.00	
Drill Pipe	32.00			3445.00	
Change Over Sub	1.00			3446.00	
Perforations	10.00			3456.00	
Blank Off Sub	4.00			3460.00	56.00 Tool Interval
Packer	5.00			3465.00	
Perforations	12.00			3477.00	
Recorder	0.00	8934	Below	3477.00	
Change Over Sub	1.00			3478.00	
Drill Pipe	32.00			3510.00	
Change Over Sub	1.00			3511.00	
Bullnose	3.00			3514.00	54.00 Bottom Packers & Anchor

Total Tool Length: 130.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

John O. Farmer, Inc.

36-8s-18w Rooks, KS

PO Box 352
Russell KS 67665

Hageman #1

Job Ticket: 62538

DST#: 5

ATTN: Austin Klaus

Test Start: 2014.11.23 @ 21:05:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: sec/qt

Cushion Volume:

bbl

Water Loss: in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

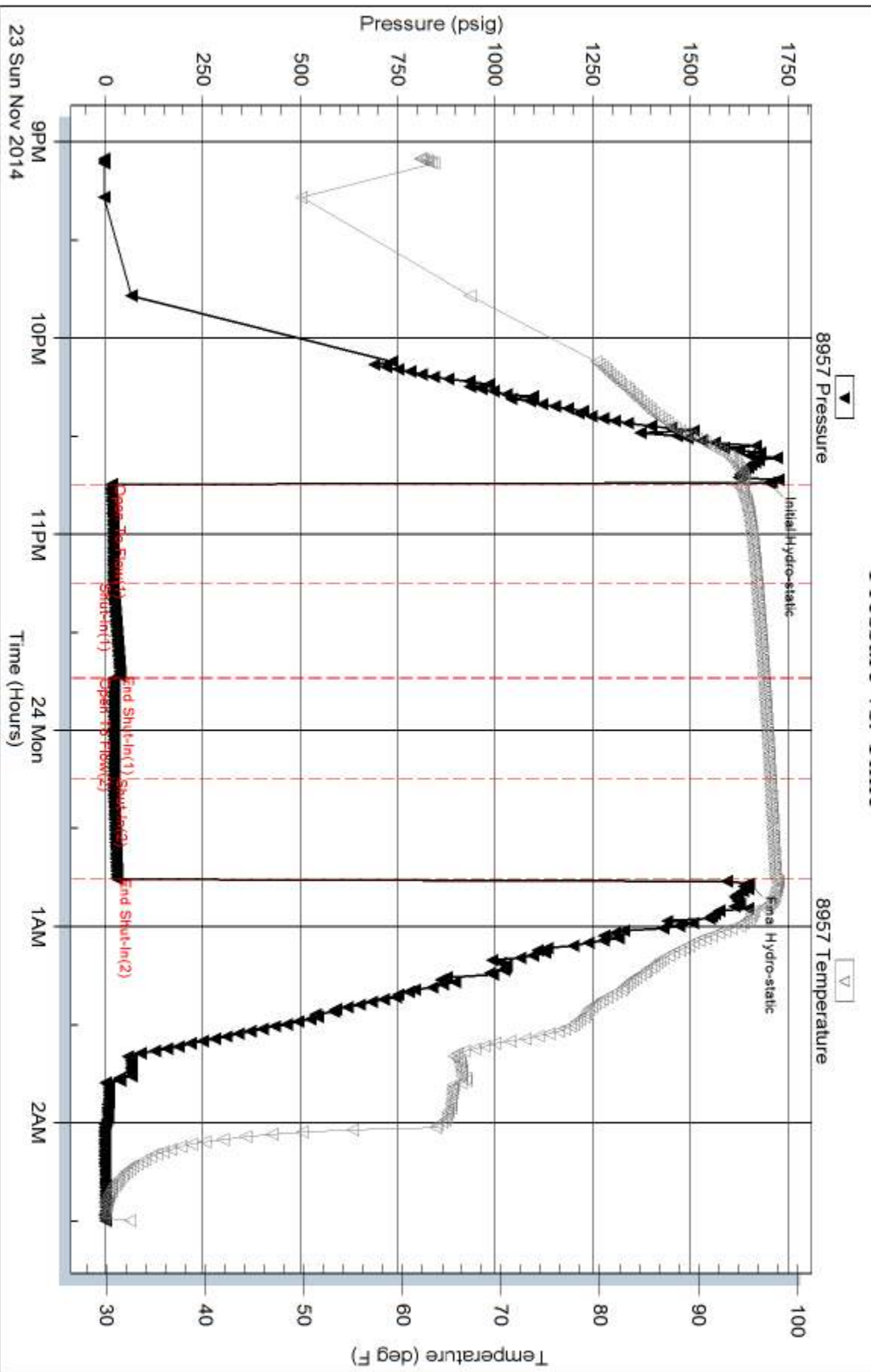
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

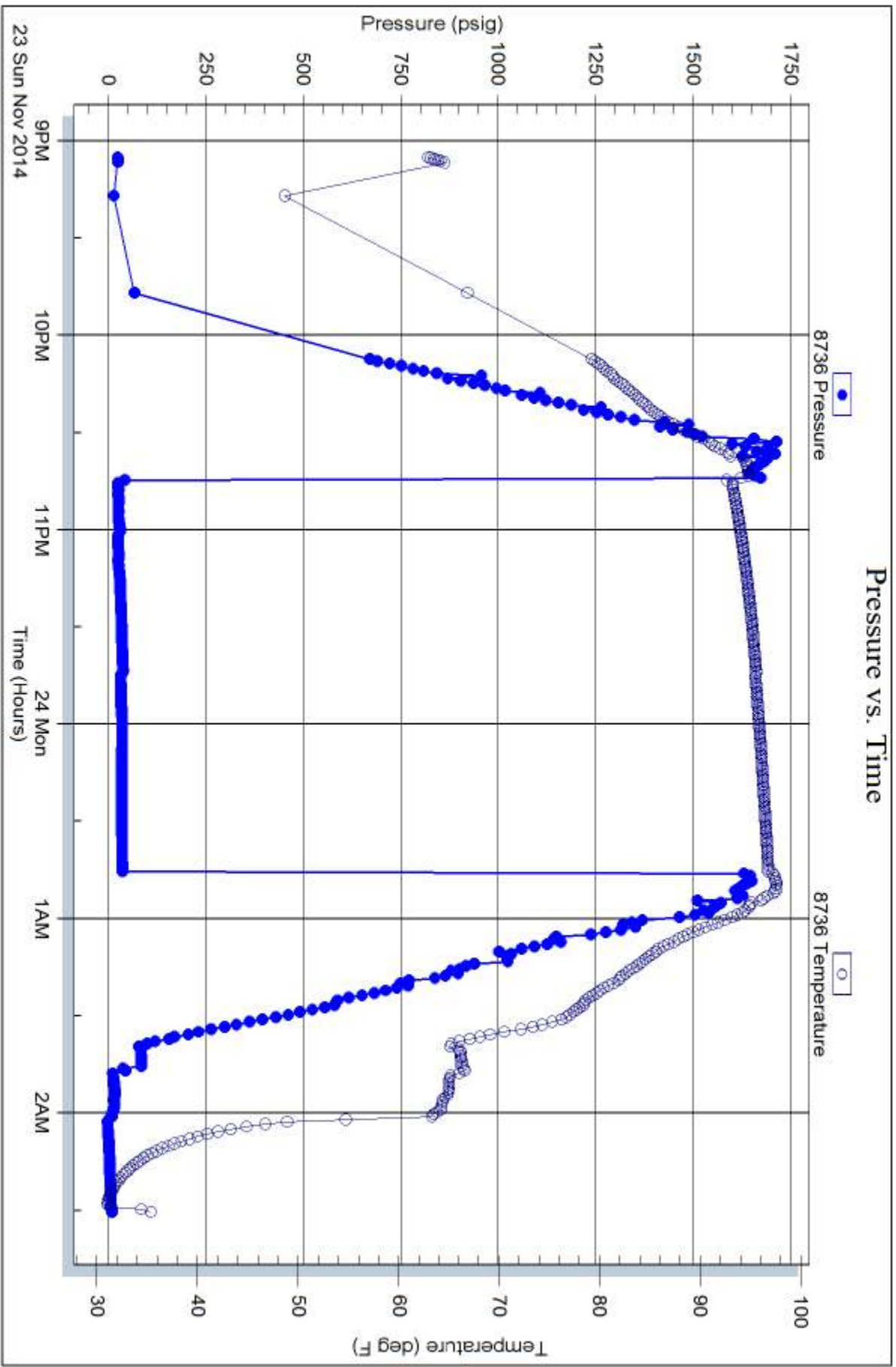


Serial #: 8736

Outside John O. Farmer, Inc.

Hegeman #1

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 62538

Printed: 2014.11.26 @ 10:43:30

4/10

Well Name & No. Hageman #1 Test No. 1 Date 11/21/14
 Company John O. Farmer, Inc Elevation 2024 KB 2019 GL
 Address _____
 Co. Rep / Geo. Austin Klaus Rig WW #6
 Location: Sec. 36 Twp. 8s Rge. 18w Co. Rooks State KS

Interval Tested 3136-3215 Zone Tested LKC
 Anchor Length 79 Drill Pipe Run _____ Mud Wt. _____
 Top Packer Depth 3131 Drill Collars Run 120 Vis _____
 Bottom Packer Depth 3136 Wt. Pipe Run _____ WL _____
 Total Depth 3215 Chlorides _____ ppm System LCM _____
 Blow Description IF-9in blow
ISI-No blow
EF-BOBIN 32min
PSI-No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>90</u>	<u>OCM</u>	<u>25</u>		<u>75</u>	
<u>185</u>	<u>SGMCO</u>	<u>5</u>	<u>75</u>	<u>20</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 275 BHT 91 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

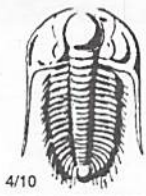
(A) Initial Hydrostatic 1519 Test 1150 T-On Location 6:40
 (B) First Initial Flow 20 Jars _____ T-Started 7:05
 (C) First Final Flow 83 Safety Joint _____ T-Open 9:05
 (D) Initial Shut-In 635 Circ Sub _____ T-Pulled 11:35
 (E) Second Initial Flow 82 Hourly Standby _____ T-Out 13:15
 (F) Second Final Flow 110 Mileage 66-T 102.30 Comments _____
 (G) Final Shut-In 627 Sampler _____
 (H) Final Hydrostatic 4507 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

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

Sub Total 1252.30 MP/DST Disc't _____

Approved By _____ Our Representative Brian D...

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. 62535

Well Name & No. Hageman #1 Test No. 2 Date 11/21/14
 Company John O. Farmer, Inc. Elevation 2024 KB 2019 GL
 Address PO Box 352 Russell KS 67665
 Co. Rep / Geo. Austin Klaus Rig WW #6
 Location: Sec. 36 Twp. 8s Rge. 18w Co. Rooks State KS

Interval Tested 3212 - 3238 Zone Tested KC^{cc}
 Anchor Length 26 Drill Pipe Run _____ Mud Wt. 9.2
 Top Packer Depth 3207 Drill Collars Run 120 Vis 57
 Bottom Packer Depth 3212 Wt. Pipe Run — WL 7.6
 Total Depth 3238 Chlorides 750 ppm System LCM 4#
 Blow Description IF - 1 1/2 in blow
ISI - No blow
FF - weak surface blow
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>65</u>	<u>05 MCW</u>			<u>70</u>	<u>30</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 65 BHT 93 Gravity _____ API RW .19 @ 40 °F Chlorides 72,000 ppm
 (A) Initial Hydrostatic 1,564 Test 1150 T-On Location 19:20
 (B) First Initial Flow 14 Jars _____ T-Started 19:35
 (C) First Final Flow 38 Safety Joint _____ T-Open 21:15
 (D) Initial Shut-In 489 Circ Sub _____ T-Pulled 23:15
 (E) Second Initial Flow 38 Hourly Standby _____ T-Out 00:45
 (F) Second Final Flow 56 Mileage 66RT 102.30 Comments _____
 (G) Final Shut-In 474 Sampler _____
 (H) Final Hydrostatic 1,529 Straddle _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Initial Open 30 Shale Packer _____
 Initial Shut-In 30 Extra Packer _____
 Final Flow 30 Extra Recorder _____ Sub Total 0
 Final Shut-In 30 Day Standby _____ Total 1252.30
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1252.30

Approved By _____ Our Representative Butt D...

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. 62536

Well Name & No. Hageman #1 Test No. 3 Date 11/22/14
 Company John O. Farmer, Inc. Elevation 2024 KB 2019 GL
 Address PO Box 352 Russell KS 67665
 Co. Rep / Geo. Austin Klaus Rig WW#6
 Location: Sec. 36 Twp. 8s Rge. 18w Co. Rooks State KS

Interval Tested 3256 - 3282 Zone Tested KC "E-F"
 Anchor Length 26 Drill Pipe Run _____ Mud Wt. 9.2
 Top Packer Depth 3251 Drill Collars Run 120 Vis 57
 Bottom Packer Depth 3256 Wt. Pipe Run _____ WL 7.6
 Total Depth 3282 Chlorides 750 ppm System LCM 4#
 Blow Description IF - 1/4 in blow
ISI - No blow
FF - 1/4 in blow
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>69</u>	<u>OSMCW</u>			<u>60</u>	<u>40</u>
<u>1</u>	<u>Free Oil</u>				

Rec Total 70 BHT 94 Gravity _____ API RW .25 @ 35 °F Chlorides 35,000 ppm
 (A) Initial Hydrostatic 1595 Test 1150 T-On Location 9:25
 (B) First Initial Flow 14 Jars _____ T-Started 9:25
 (C) First Final Flow 36 Safety Joint _____ T-Open 10:47
 (D) Initial Shut-In 523 Circ Sub _____ T-Pulled 13:32
 (E) Second Initial Flow 40 Hourly Standby _____ T-Out 15:10
 (F) Second Final Flow 64 Mileage 66CT 102.30 Comments _____
 (G) Final Shut-In 533 Sampler _____
 (H) Final Hydrostatic 1548 Straddle _____
 Initial Open 30 Shale Packer _____
 Initial Shut-In 30 Shale Packer _____
 Final Flow 43 Extra Packer _____
 Final Shut-In 60 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1252.30 MP/DST Disc't _____

Approved By _____ Our Representative Brett Johnson
 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. 62537

Well Name & No. Hageman #1 Test No. 4 Date 11/23/14
 Company John O. Farmer, Inc. Elevation 2024 KB 2019 GL
 Address PO Box 352 Russell KS 67665
 Co. Rep / Geo. Austin Klaus Rig WW #6
 Location: Sec. 36 Twp. 8s Rge. 18w Co. Rooks State KS

Interval Tested 3297-3400 Zone Tested KC^u H-K^u
 Anchor Length 103 Drill Pipe Run 3180 Mud Wt. 9.2
 Top Packer Depth 3292 Drill Collars Run 120 Vis 57
 Bottom Packer Depth 3297 Wt. Pipe Run - WL 2.6
 Total Depth 3400 Chlorides 250 ppm System LCM 4[#]
 Blow Description IF - BOB in 17min
ISF - 1/4 in
FF - BOB in 15min
FSI - 1 in blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>125</u>	<u>V50 MCW</u>	<u>3</u>	<u>77</u>	<u>20</u>	<u></u>
125	<u>SOWCM</u>	<u>10</u>	<u>30</u>	<u>60</u>	<u></u>
190	<u>60</u>				
		<u>35</u>	<u>65</u>		

Rec Total ~~440~~ 440 BHT Gravity 34 API RW .15 @ 60 °F Chlorides 58,000 ppm

(A) Initial Hydrostatic <u>1,618</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>00:50</u>
(B) First Initial Flow <u>21</u>	<input type="checkbox"/> Jars	T-Started <u>2:00</u>
(C) First Final Flow <u>111</u>	<input type="checkbox"/> Safety Joint	T-Open <u>4:42</u>
(D) Initial Shut-In <u>493</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>7:42</u>
(E) Second Initial Flow <u>114</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>9:30</u>
(F) Second Final Flow <u>194</u>	<input checked="" type="checkbox"/> Mileage <u>66.7</u> 102.30	Comments
(G) Final Shut-In <u>490</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1,602</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	Total <u>1252.30</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1252.30</u>	

Approved By _____ Our Representative Butt Dick

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. 62538

Well Name & No. Hageman #1 Test No. 5 Date 11/23/14
 Company John O. Farmer, Inc. Elevation 2027 KB 2019 GL
 Address PO Box 352 Russell KS 67665
 Co. Rep / Geo. Austin Klaus Rig WW #6
 Location: Sec. 36 Twp. 8s Rge. 18w Co. Reeks State KS

Interval Tested 3404 - 3460 Zone Tested Arb.
 Anchor Length 56 Drill Pipe Run _____ Mud Wt. _____
 Top Packer Depth 3399, 3404 Drill Collars Run 120 Vis _____
 Bottom Packer Depth 3460 Wt. Pipe Run - WL _____
 Total Depth 3510 Chlorides _____ ppm System LCM _____
 Blow Description IF - 1/4 in blow
ISF - No blow
FF - No blow
FSF - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Mud</u>				
_____	_____				
_____	_____				
_____	_____				

Rec Total 5 BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1,702 Test 1150 T-On Location 20:45
 (B) First Initial Flow 17 Jars _____ T-Started 21:05
 (C) First Final Flow 21 Safety Joint _____ T-Open 22:45
 (D) Initial Shut-In 39 Circ Sub _____ T-Pulled 00:45
 (E) Second Initial Flow 22 Hourly Standby _____ T-Out 2:30
 (F) Second Final Flow 22 Mileage 66.7 102.30 Comments _____
 (G) Final Shut-In 31 Sampler _____
 (H) Final Hydrostatic 1,651 Straddle 600 Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1852.30
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1852.30

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

Approved By _____ Our Representative Butt Dickerson

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