



DRILL STEM TEST REPORT

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

PO Box 352
Russell KS 67665+2635

ATTN: Austin Klaus

Nuss 'C' #1

32-12S-17W Ellis,KS

Start Date: 2017.08.26 @ 08:33:00

End Date: 2017.08.26 @ 14:17:00

Job Ticket #: 63034 DST #: 1

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

Printed: 2017.08.29 @ 11:56:09



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

John O. Farmer, Inc.
PO Box 352
Russell KS 67665+2635
ATTN: Austin Klaus

32-12S-17W Ellis, KS
Nuss 'C' #1
Job Ticket: 63034 **DST#: 1**
Test Start: 2017.08.26 @ 08:33:00

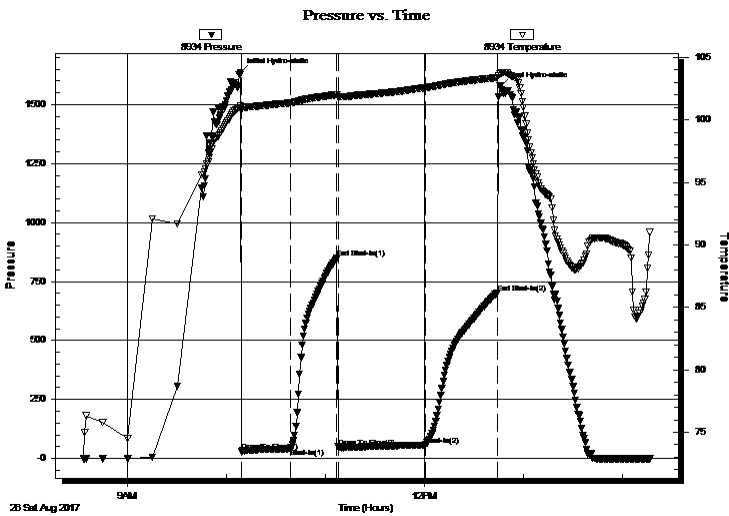
GENERAL INFORMATION:

Formation: **LKC 'A-D'**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 10:09:00
Time Test Ended: 14:17:00
Interval: **3316.00 ft (KB) To 3396.00 ft (KB) (TVD)**
Total Depth: 3396.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Poor
Test Type: Conventional Bottom Hole (Initial)
Tester: Spencer J. Staab
Unit No: 84
Reference Elevations: 2069.00 ft (KB)
2061.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8934 Inside
Press@RunDepth: 57.01 psig @ 3317.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.08.26 End Date: 2017.08.26 Last Calib.: 2017.08.26
Start Time: 08:33:15 End Time: 14:17:00 Time On Btm: 2017.08.26 @ 10:08:30
Time Off Btm: 2017.08.26 @ 12:45:45

TEST COMMENT: 30-IF-Weak Blow ; Built to 1 3/4"
30-ISI-No Return
45-FF-Weak Blow ; Built to 3/4"
45-FSI-No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1636.77	101.14	Initial Hydro-static
1	30.60	100.79	Open To Flow (1)
31	41.87	101.36	Shut-In(1)
59	848.49	102.01	End Shut-In(1)
60	49.09	101.82	Open To Flow (2)
112	57.01	102.57	Shut-In(2)
156	702.88	103.36	End Shut-In(2)
158	1578.34	103.72	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
80.00	Mud w/oil specks 100%M	0.59

Gas Rates

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



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DRILL STEM TEST REPORT

John O. Farmer, Inc.
 PO Box 352
 Russell KS 67665+2635
 ATTN: Austin Klaus

32-12S-17W Ellis, KS
Nuss 'C' #1
 Job Ticket: 63034 **DST#: 1**
 Test Start: 2017.08.26 @ 08:33:00

GENERAL INFORMATION:

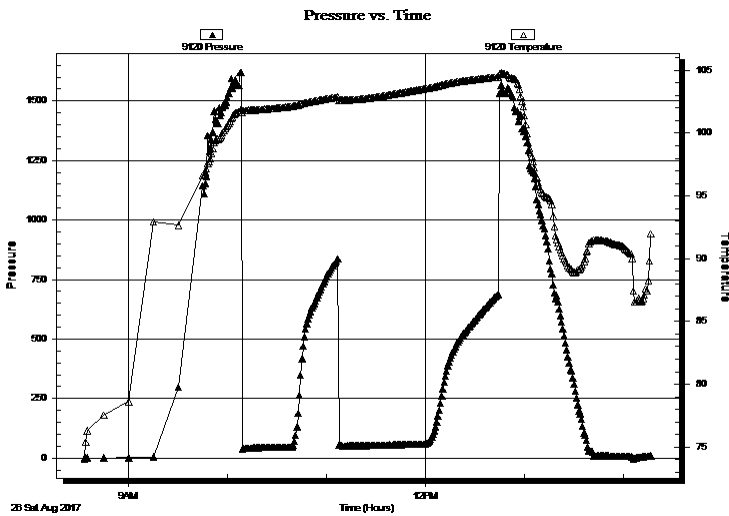
Formation: **LKC 'A-D'**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:09:00
 Time Test Ended: 14:17:00
Interval: 3316.00 ft (KB) To 3396.00 ft (KB) (TVD)
 Total Depth: 3396.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inchesHole Condition: Poor
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Spencer J. Staab
 Unit No: 84
 Reference Elevations: 2069.00 ft (KB)
 2061.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 9120 Inside

Press@RunDepth: psig @ 3317.00 ft (KB)
 Start Date: 2017.08.26 End Date: 2017.08.26
 Start Time: 08:33:15 End Time: 14:17:00
 Capacity: 8000.00 psig
 Last Calib.: 2017.08.26
 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30-IF-Weak Blow ; Built to 1 3/4"
 30-ISI-No Return
 45-FF-Weak Blow ; Built to 3/4"
 45-FSI-No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
80.00	Mud w /oil specks 100%M	0.59

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

John O. Farmer, Inc.

32-12S-17W Ellis, KS

PO Box 352
Russell KS 67665+2635

Nuss 'C' #1

Job Ticket: 63034

DST#: 1

ATTN: Austin Klaus

Test Start: 2017.08.26 @ 08:33:00

Tool Information

Drill Pipe:	Length: 3063.00 ft	Diameter: 3.80 inches	Volume: 42.97 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 249.00 ft	Diameter: 2.75 inches	Volume: 1.83 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 64000.00 lb
			<u>Total Volume: 44.80 bbl</u>	Tool Chased 4.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3316.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	80.00 ft			
Tool Length:	100.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3297.00	
Shut In Tool	5.00			3302.00	
Hydraulic tool	5.00			3307.00	
Packer	5.00			3312.00	20.00 Bottom Of Top Packer
Packer	4.00			3316.00	
Stubb	1.00			3317.00	
Recorder	0.00	9120	Inside	3317.00	
Recorder	0.00	8934	Inside	3317.00	
Perforations	1.00			3318.00	
Change Over Sub	1.00			3319.00	
Drill Pipe	63.00			3382.00	
Change Over Sub	1.00			3383.00	
Perforations	9.00			3392.00	
Bullnose	4.00			3396.00	80.00 Bottom Packers & Anchor

Total Tool Length: 100.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

John O. Farmer, Inc.

32-12S-17W Ellis,KS

PO Box 352
Russell KS 67665+2635

Nuss 'C' #1

Job Ticket: 63034

DST#: 1

ATTN: Austin Klaus

Test Start: 2017.08.26 @ 08:33:00

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: 45.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
80.00	Mud w /oil specks 100%M	0.588

Total Length: 80.00 ft Total Volume: 0.588 bbl

Num Fluid Samples: 0

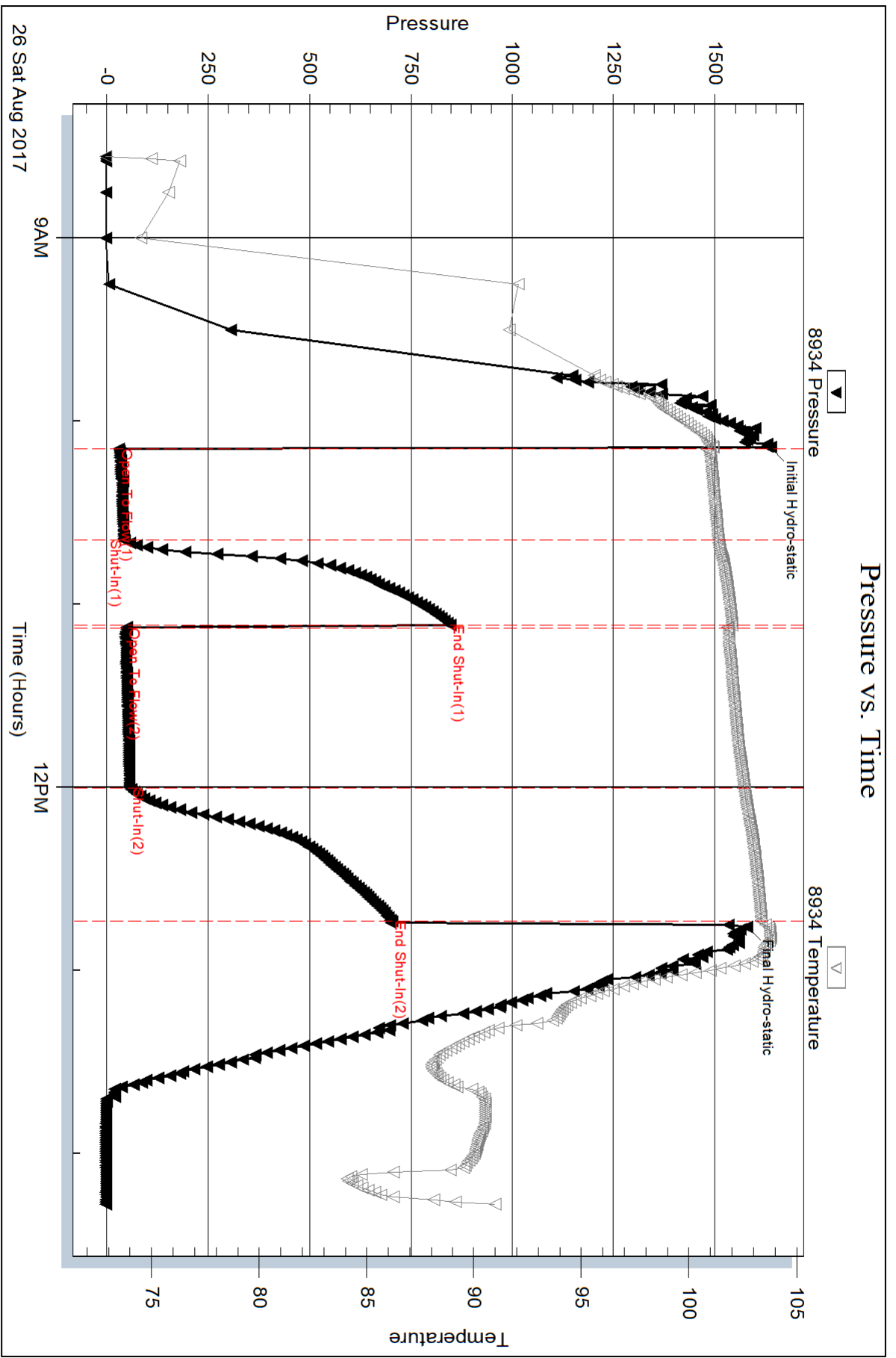
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 3#LCM



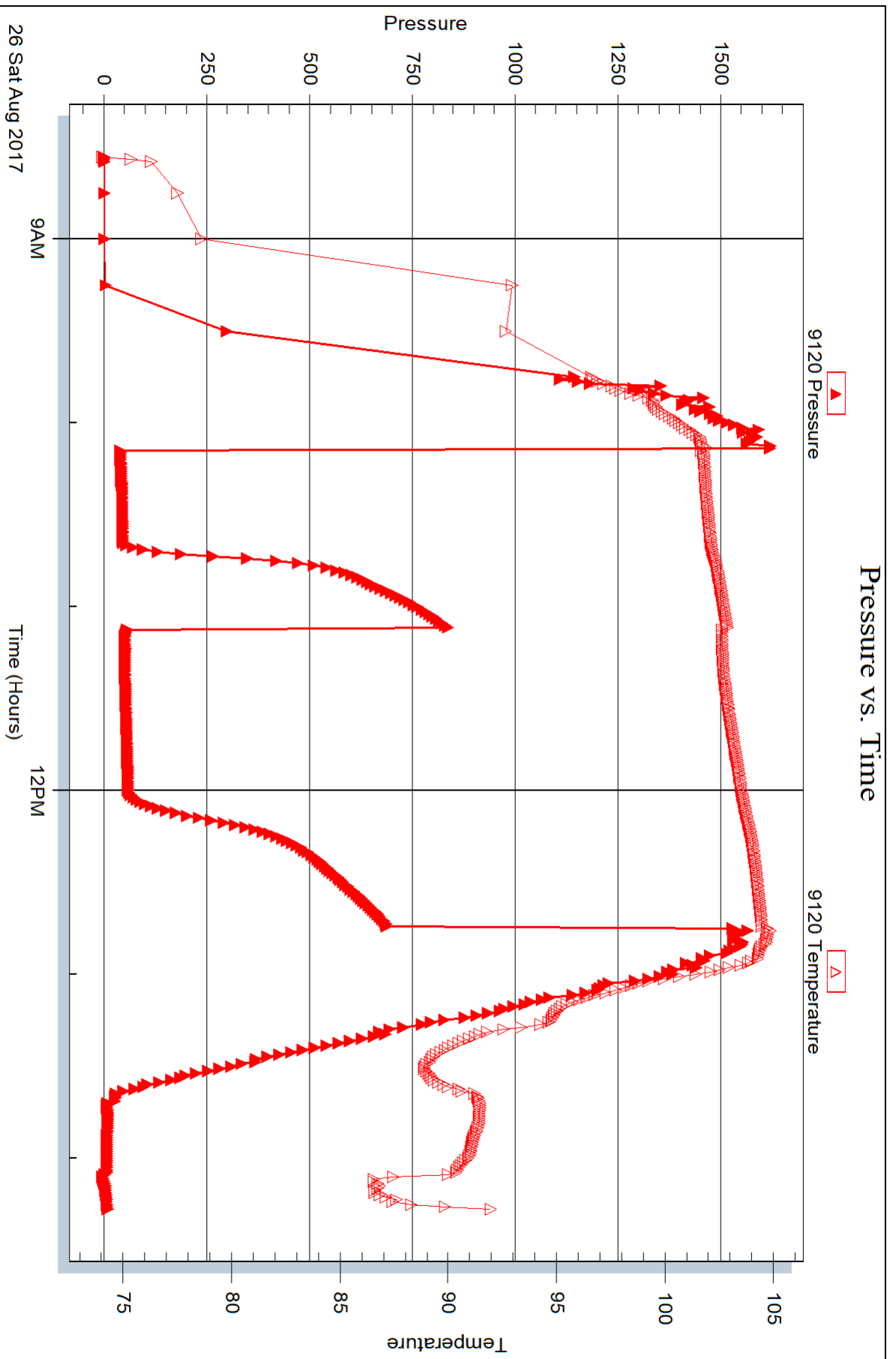
Serial #: 9120

Inside

John O. Farmer, Inc.

Nuss 'C' #1

DST Test Number: 1





DRILL STEM TEST REPORT

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

PO Box 352
Russell KS 67665+2635

ATTN: Austin Klaus

Nuss 'C' #1

32-12S-17W Ellis,KS

Start Date: 2017.08.26 @ 21:03:00

End Date: 2017.08.27 @ 03:18:45

Job Ticket #: 63034 DST #: 2

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

Printed: 2017.08.29 @ 11:54:20



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

John O. Farmer, Inc.
PO Box 352
Russell KS 67665+2635
ATTN: Austin Klaus

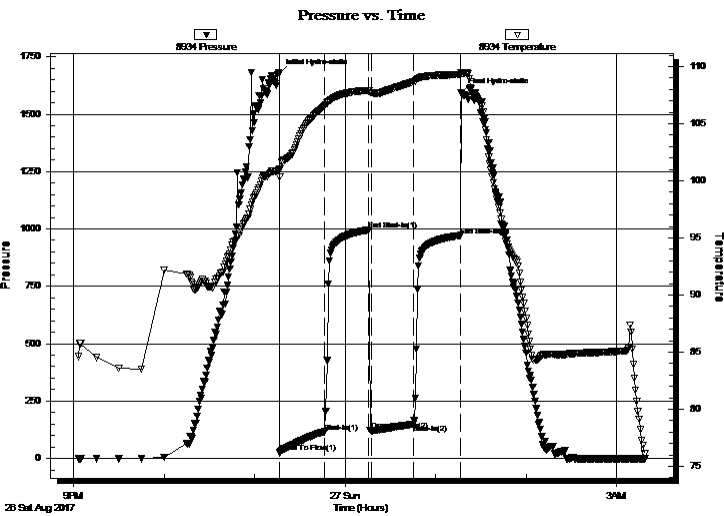
32-12S-17W Ellis,KS
Nuss 'C' #1
Job Ticket: 63034 **DST#: 2**
Test Start: 2017.08.26 @ 21:03:00

GENERAL INFORMATION:

Formation: LKC 'E-F'					
Deviated: No Whipstock:		ft (KB)		Test Type: Conventional Bottom Hole (Reset)	
Time Tool Opened: 23:16:45				Tester: Spencer J. Staab	
Time Test Ended: 03:18:45				Unit No: 84	
Interval: 3394.00 ft (KB) To 3418.00 ft (KB) (TVD)				Reference Elevations: 2069.00 ft (KB)	
Total Depth: 3418.00 ft (KB) (TVD)				2061.00 ft (CF)	
Hole Diameter: 7.88 inches	Hole Condition: Poor			KB to GR/CF: 8.00 ft	

Serial #: 8934	Outside				
Press@RunDepth: 149.83 psig @ 3396.00 ft (KB)			Capacity: 8000.00 psig		
Start Date: 2017.08.26	End Date: 2017.08.27	Last Calib.: 2017.08.27			
Start Time: 21:03:15	End Time: 03:18:45	Time On Btm: 2017.08.26 @ 23:16:30			
		Time Off Btm: 2017.08.27 @ 01:17:00			

TEST COMMENT: 30-IF-Strong Blow ; BOB in 6 mins
30-ISI-Weak Return; Built to 2 1/2"
30-FF-Strong Blow ; BOB in 8 mins
30-FSI-Weak Return; Built to



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1677.87	101.08	Initial Hydro-static
1	25.25	100.34	Open To Flow (1)
30	114.79	106.55	Shut-In(1)
60	995.77	107.92	End Shut-In(1)
61	120.84	107.72	Open To Flow (2)
89	149.83	108.66	Shut-In(2)
120	971.72	109.29	End Shut-In(2)
121	1593.13	109.49	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	OCGMW 5%O 20%G 20%M 55%W	0.44
30.00	OCWM 10%O 30%W 60%M	0.22
210.00	WMCGO 5%W 15%M 25%G 55%O	1.88
20.00	MCO 10%M 90%O	0.28
0.00	500' GIP	0.00

* 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.

32-12S-17W Ellis, KS

PO Box 352
Russell KS 67665+2635

Nuss 'C' #1

Job Ticket: 63034

DST#: 2

ATTN: Austin Klaus

Test Start: 2017.08.26 @ 21:03:00

Tool Information

Drill Pipe:	Length: 3158.00 ft	Diameter: 3.80 inches	Volume: 44.30 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 249.00 ft	Diameter: 2.75 inches	Volume: 1.83 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	50000.00 lb
			<u>Total Volume: 46.13 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial	46000.00 lb
Depth to Top Packer:	3394.00 ft			Final	49000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	24.00 ft				
Tool Length:	44.00 ft				
Number of Packers:	1	Diameter:	6.75 inches		
Tool Comments:					

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3375.00	
Shut In Tool	5.00			3380.00	
Hydraulic tool	5.00			3385.00	
Packer	5.00			3390.00	20.00 Bottom Of Top Packer
Packer	4.00			3394.00	
Stubb	1.00			3395.00	
Perforations	1.00			3396.00	
Recorder	0.00	9120	Inside	3396.00	
Recorder	0.00	8934	Outside	3396.00	
Perforations	18.00			3414.00	
Bullnose	4.00			3418.00	24.00 Bottom Packers & Anchor

Total Tool Length: 44.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

John O. Farmer, Inc.

32-12S-17W Ellis,KS

PO Box 352
Russell KS 67665+2635

Nuss 'C' #1

Job Ticket: 63034

DST#: 2

ATTN: Austin Klaus

Test Start: 2017.08.26 @ 21:03:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

19 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

50000 ppm

Viscosity: 45.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
60.00	OCGMW 5%O 20%G 20%M 55%W	0.441
30.00	OCWM 10%O 30%W 60%M	0.220
210.00	WMCGO 5%W 15%M 25%G 55%O	1.883
20.00	MCO 10%M 90%O	0.281
0.00	500' GIP	0.000

Total Length: 320.00 ft Total Volume: 2.825 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

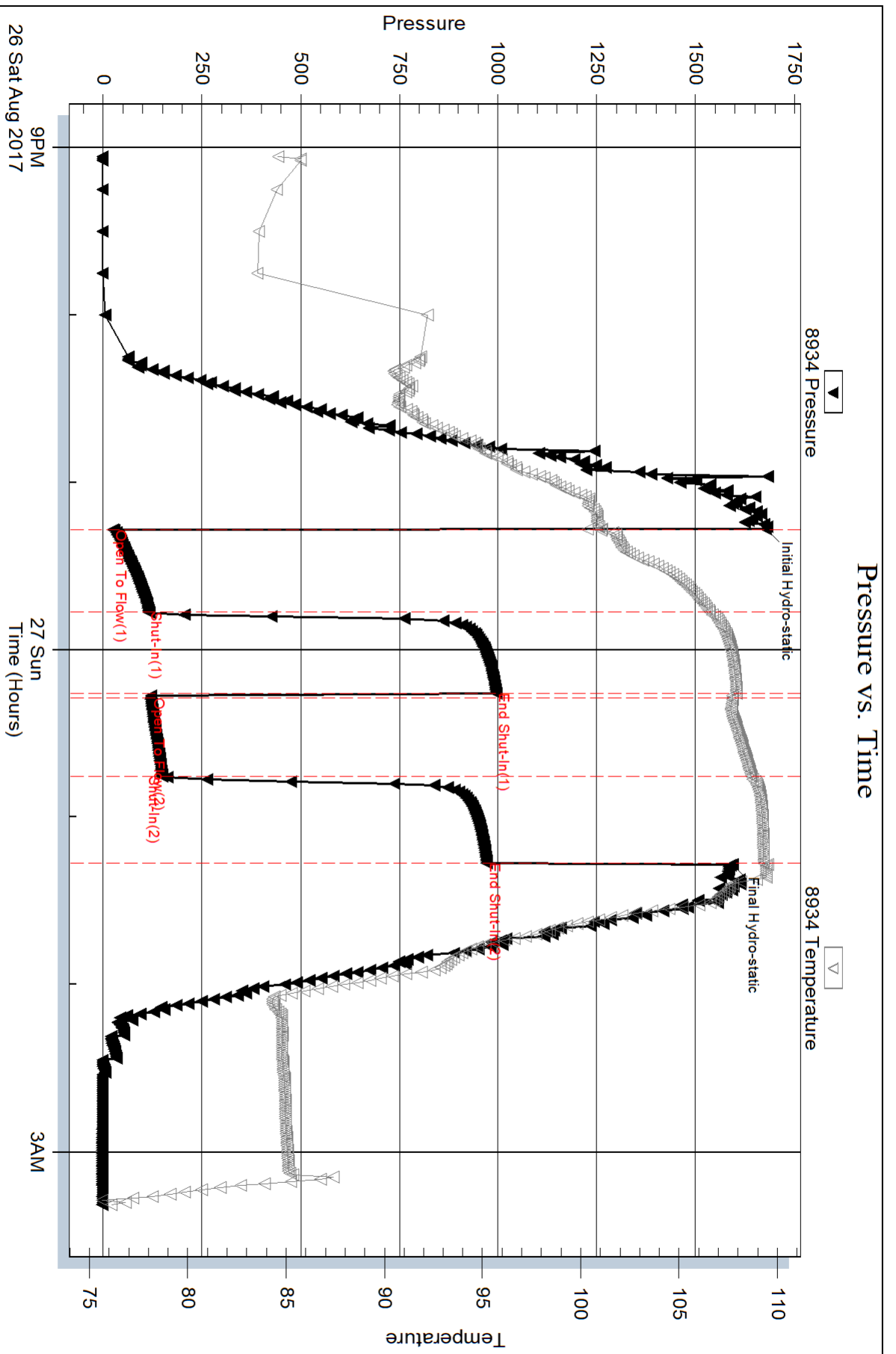
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 3#LCM

Rw = .163@68degrees



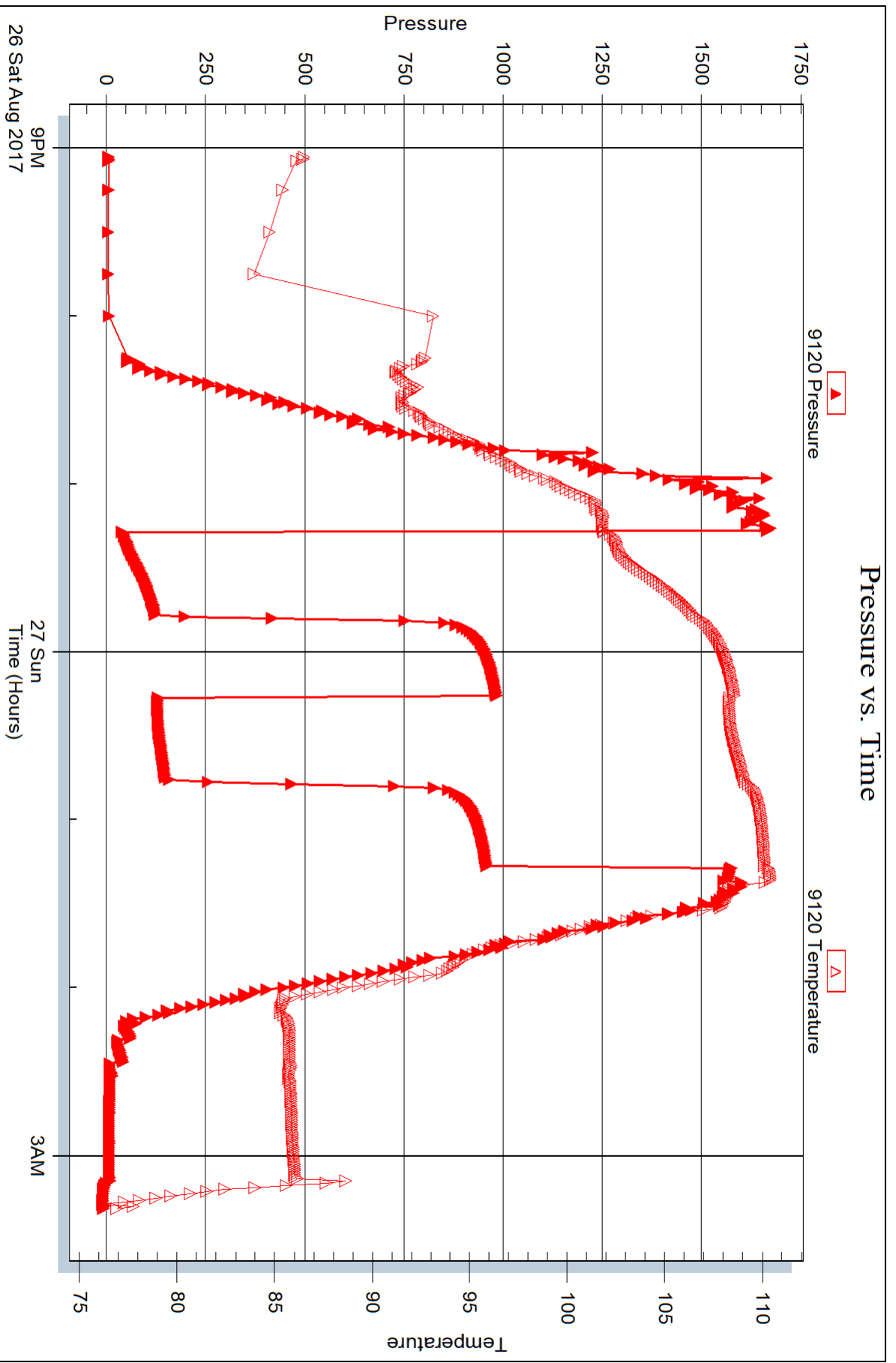
Serial #: 9120

Inside

John O. Farmer, Inc.

Nuss 'C' #1

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 63034

Printed: 2017.08.29 @ 11:54:21



DRILL STEM TEST REPORT

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

PO Box 352
Russell KS 67665+2635

ATTN: Austin Klaus

Nuss 'C' #1

32-12S-17W Ellis,KS

Start Date: 2017.08.27 @ 16:08:00

End Date: 2017.08.27 @ 21:46:00

Job Ticket #: 63036 DST #: 3

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

Printed: 2017.08.29 @ 11:53:47



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

John O. Farmer, Inc.
 PO Box 352
 Russell KS 67665+2635
 ATTN: Austin Klaus

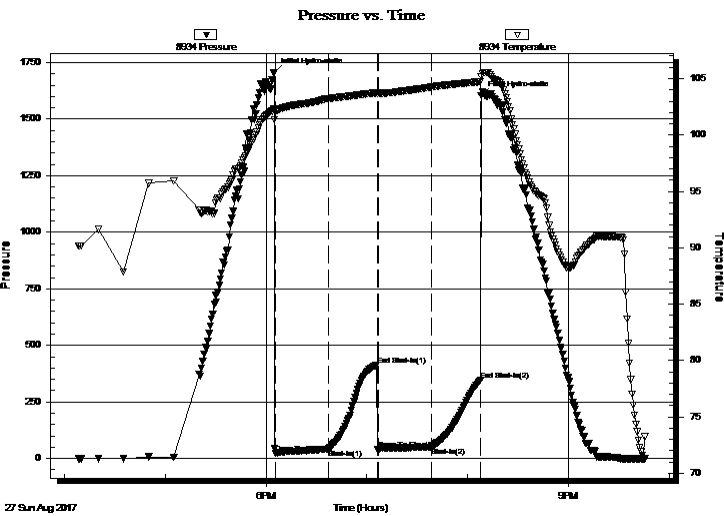
32-12S-17W Ellis, KS
Nuss 'C' #1
 Job Ticket: 63036 **DST#: 3**
 Test Start: 2017.08.27 @ 16:08:00

GENERAL INFORMATION:

Formation: **LKC 'H - J'**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 18:05:30
 Time Test Ended: 21:46:00
Interval: 3450.00 ft (KB) To 3520.00 ft (KB) (TVD)
 Total Depth: 3520.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Spencer J. Staab
 Unit No: 84
 Reference Elevations: 2069.00 ft (KB)
 2061.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8934 **Inside**
 Press@RunDepth: 51.23 psig @ 3451.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.08.27 End Date: 2017.08.27 Last Calib.: 2017.08.27
 Start Time: 16:08:15 End Time: 21:46:00 Time On Btm: 2017.08.27 @ 18:04:45
 Time Off Btm: 2017.08.27 @ 20:08:00

TEST COMMENT: 30-IF-Weak Blow ; Built to 2 1/2"
 30-ISI-No Return
 30-FF-Very Weak Blow ; Built to 1/2"; Died back to surface blow
 30-FSI-No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1705.39	102.33	Initial Hydro-static
1	23.76	102.02	Open To Flow (1)
33	40.62	103.23	Shut-In(1)
62	413.20	103.74	End Shut-In(1)
62	41.27	103.66	Open To Flow (2)
94	51.23	104.25	Shut-In(2)
123	345.77	104.73	End Shut-In(2)
124	1604.57	105.18	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
80.00	OCGM 2%O 10%G 88%M	0.59

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

John O. Farmer, Inc.
 PO Box 352
 Russell KS 67665+2635
 ATTN: Austin Klaus

32-12S-17W Ellis,KS
Nuss 'C' #1
 Job Ticket: 63036 **DST#: 3**
 Test Start: 2017.08.27 @ 16:08:00

GENERAL INFORMATION:

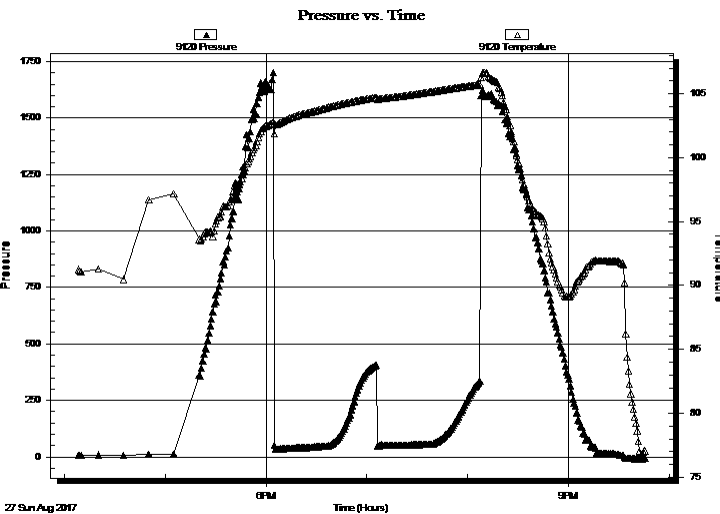
Formation: **LKC 'H - J'**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 18:05:30
 Time Test Ended: 21:46:00
Interval: 3450.00 ft (KB) To 3520.00 ft (KB) (TVD)
 Total Depth: 3520.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Spencer J. Staab
 Unit No: 84
 Reference Elevations: 2069.00 ft (KB)
 2061.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 9120

Inside

Press@RunDepth: psig @ 3451.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.08.27 End Date: 2017.08.27 Last Calib.: 2017.08.27
 Start Time: 16:08:15 End Time: 21:46:00 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30-IF-Weak Blow ; Built to 2 1/2"
 30-ISI-No Return
 30-FF-Very Weak Blow ; Built to 1/2"; Died back to surface blow
 30-FSI-No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
80.00	OCGM 2%O 10%G 88%M	0.59

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.

32-12S-17W Ellis,KS

PO Box 352
Russell KS 67665+2635

Nuss 'C' #1

Job Ticket: 63036

DST#: 3

ATTN: Austin Klaus

Test Start: 2017.08.27 @ 16:08:00

Tool Information

Drill Pipe:	Length: 3190.00 ft	Diameter: 3.80 inches	Volume: 44.75 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 249.00 ft	Diameter: 2.75 inches	Volume: 1.83 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 52000.00 lb
			<u>Total Volume: 46.58 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	9.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3450.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	70.00 ft			
Tool Length:	90.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3431.00	
Shut In Tool	5.00			3436.00	
Hydraulic tool	5.00			3441.00	
Packer	5.00			3446.00	20.00 Bottom Of Top Packer
Packer	4.00			3450.00	
Stubb	1.00			3451.00	
Recorder	0.00	9120	Inside	3451.00	
Recorder	0.00	8934	Inside	3451.00	
Perforations	1.00			3452.00	
Change Over Sub	1.00			3453.00	
Drill Pipe	62.00			3515.00	
Change Over Sub	1.00			3516.00	
Bullnose	4.00			3520.00	70.00 Bottom Packers & Anchor

Total Tool Length: 90.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

John O. Farmer, Inc.

32-12S-17W Ellis,KS

PO Box 352
Russell KS 67665+2635

Nuss 'C' #1

Job Ticket: 63036

DST#: 3

ATTN: Austin Klaus

Test Start: 2017.08.27 @ 16:08:00

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: 40.00 sec/qt

Cushion Volume: bbl

Water Loss: 10.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 12500.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
80.00	OCGM 2%O 10%G 88%M	0.588

Total Length: 80.00 ft Total Volume: 0.588 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 2&1/2#LCM

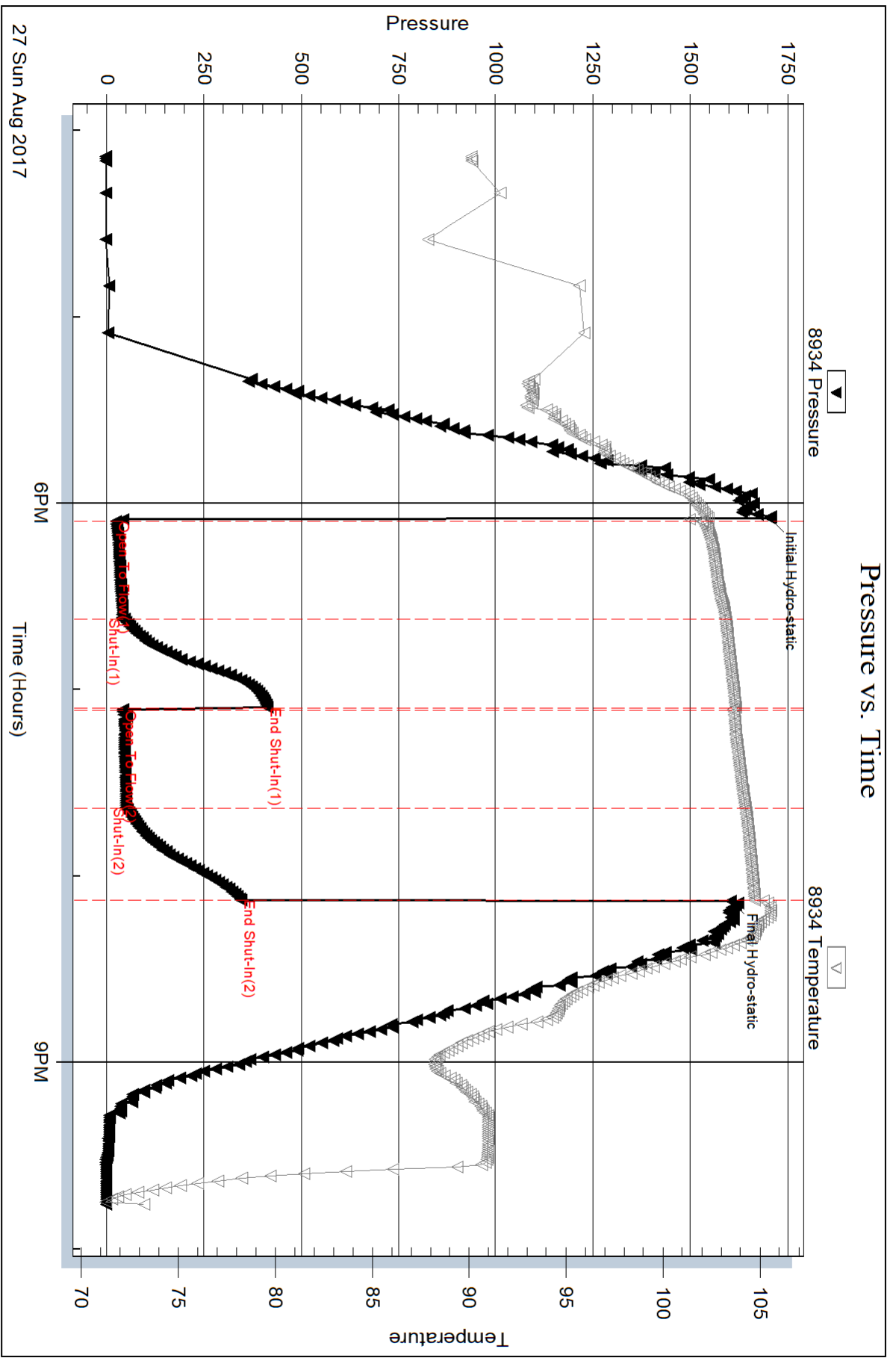
Serial #: 8934

Inside

John O. Farmer, Inc.

Nuss 'C' #1

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 63036

Printed: 2017.08.29 @ 11:53:47

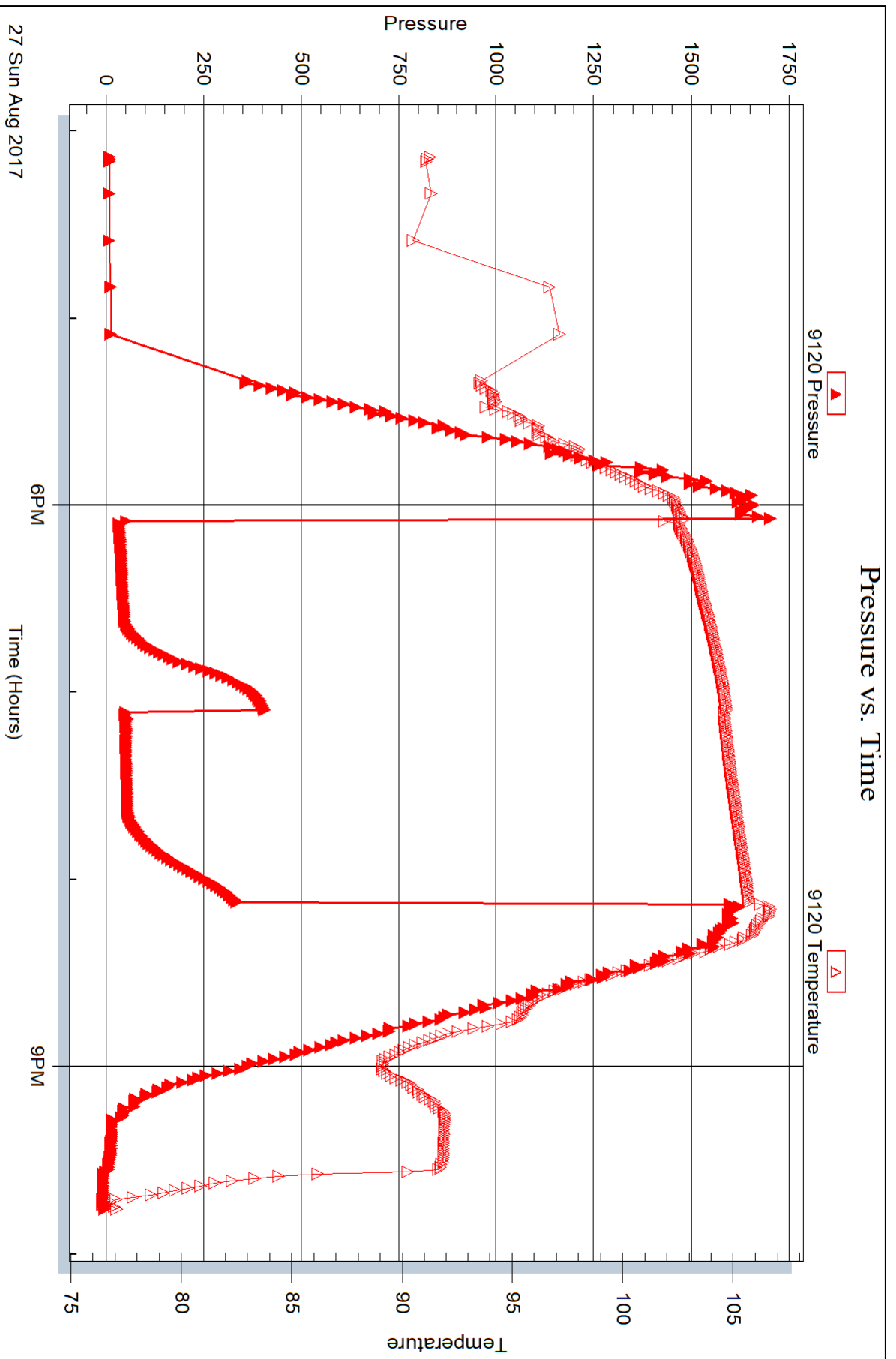
Serial #: 9120

Inside

John O. Farmer, Inc.

Nuss 'C' #1

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 63036

Printed: 2017.08.29 @ 11:53:48



DRILL STEM TEST REPORT

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

PO Box 352
Russell KS 67665+2635

ATTN: Austin Klaus

Nuss 'C' #1

32-12S-17W Ellis,KS

Start Date: 2017.08.28 @ 20:46:15

End Date: 2017.08.29 @ 01:54:30

Job Ticket #: 63037 DST #: 4

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

Printed: 2017.08.29 @ 11:48:19



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

John O. Farmer, Inc.
PO Box 352
Russell KS 67665+2635
ATTN: Austin Klaus

32-12S-17W Ellis, KS

Nuss 'C' #1

Job Ticket: 63037

DST#: 4

Test Start: 2017.08.28 @ 20:46:15

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:14:45

Time Test Ended: 01:54:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J. Staab

Unit No: 84

Interval: 3560.00 ft (KB) To 3600.00 ft (KB) (TVD)

Total Depth: 3680.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2069.00 ft (KB)

2061.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8934 Outside

Press@RunDepth: 26.04 psig @ 3572.00 ft (KB)

Start Date: 2017.08.28

End Date: 2017.08.29

Start Time: 20:46:15

End Time: 01:54:30

Capacity: 8000.00 psig

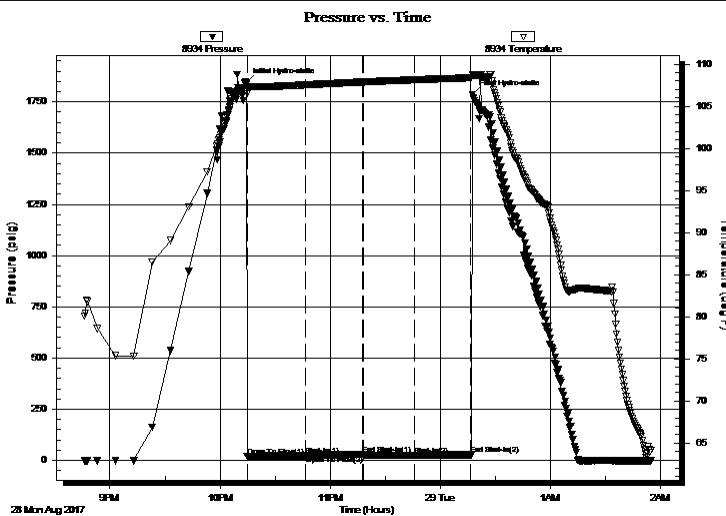
Last Calib.: 2017.08.29

Time On Btm: 2017.08.28 @ 22:14:30

Time Off Btm: 2017.08.29 @ 00:17:30

TEST COMMENT: 30-IF-Weak Blow ; Built to 1/2"; Died back to surface blow
30-ISI-No Return
30-FF-Surface Blow ; Died in 5 mins
30-FSI-No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1842.35	107.65	Initial Hydro-static
1	19.82	106.51	Open To Flow (1)
32	23.77	107.54	Shut-In(1)
64	30.44	107.88	End Shut-In(1)
64	23.73	107.88	Open To Flow (2)
92	26.04	108.14	Shut-In(2)
122	28.54	108.39	End Shut-In(2)
123	1784.13	108.76	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud w /oil specks 100%M	0.07

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

John O. Farmer, Inc.
PO Box 352
Russell KS 67665+2635
ATTN: Austin Klaus

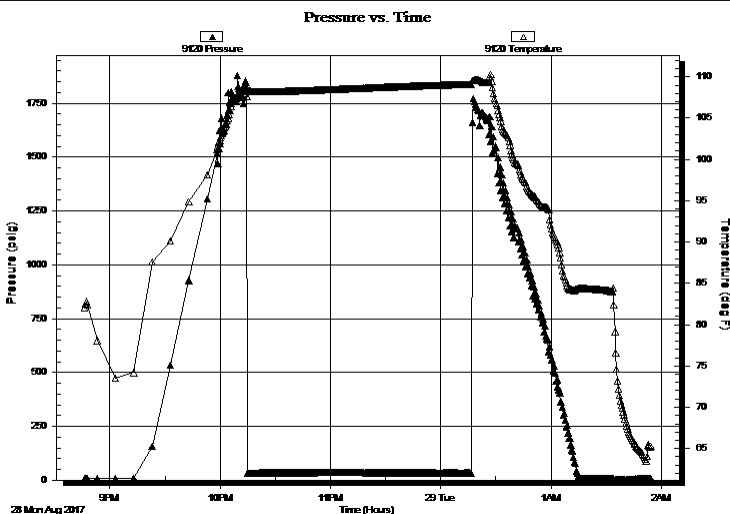
32-12S-17W Ellis, KS
Nuss 'C' #1
Job Ticket: 63037 **DST#: 4**
Test Start: 2017.08.28 @ 20:46:15

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 22:14:45
Time Test Ended: 01:54:30
Interval: **3560.00 ft (KB) To 3600.00 ft (KB) (TVD)**
Total Depth: 3680.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Reference Elevations: 2069.00 ft (KB)
2061.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 9120 **Inside**
Press@RunDepth: psig @ 3572.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.08.28 End Date: 2017.08.29 Last Calib.: 2017.08.29
Start Time: 20:46:15 End Time: 01:54:30 Time On Btm:
Time Off Btm:

TEST COMMENT: 30-IF-Weak Blow ; Built to 1/2"; Died back to surface blow
30-ISI-No Return
30-FF-Surface Blow ; Died in 5 mins
30-FSI-No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud w /oil specks 100%M	0.07

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

John O. Farmer, Inc.
 PO Box 352
 Russell KS 67665+2635
 ATTN: Austin Klaus

32-12S-17W Ellis, KS

Nuss 'C' #1

Job Ticket: 63037

DST#: 4

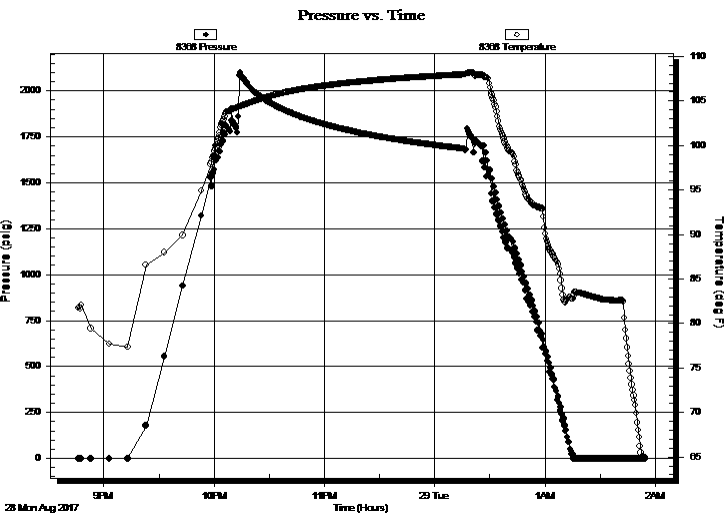
Test Start: 2017.08.28 @ 20:46:15

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 22:14:45 Tester: Spencer J. Staab
 Time Test Ended: 01:54:30 Unit No: 84
 Interval: **3560.00 ft (KB) To 3600.00 ft (KB) (TVD)** Reference Elevations: 2069.00 ft (KB)
 Total Depth: 3680.00 ft (KB) (TVD) 2061.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 8.00 ft

Serial #: 8368 Below (Straddle)
 Press@RunDepth: psig @ 3612.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.08.28 End Date: 2017.08.29 Last Calib.: 2017.08.29
 Start Time: 20:46:15 End Time: 01:54:30 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30-IF-Weak Blow ; Built to 1/2"; Died back to surface blow
 30-ISI-No Return
 30-FF-Surface Blow ; Died in 5 mins
 30-FSI-No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud w /oil specks 100%M	0.07

* 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.

32-12S-17W Ellis,KS

PO Box 352
Russell KS 67665+2635

Nuss 'C' #1

Job Ticket: 63037

DST#: 4

ATTN: Austin Klaus

Test Start: 2017.08.28 @ 20:46:15

Tool Information

Drill Pipe:	Length: 3307.00 ft	Diameter: 3.80 inches	Volume: 46.39 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 249.00 ft	Diameter: 2.75 inches	Volume: 1.83 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 53000.00 lb
			<u>Total Volume: 48.22 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3560.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	120.00 ft			
Tool Length:	148.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		
Tool Comments:				

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3533.00	
Shut In Tool	5.00			3538.00	
Hydraulic tool	5.00			3543.00	
Jars	5.00			3548.00	
Safety Joint	3.00			3551.00	
Packer	5.00			3556.00	28.00 Bottom Of Top Packer
Packer	4.00			3560.00	
Stubb	1.00			3561.00	
Perforations	11.00			3572.00	
Recorder	0.00	9120	Inside	3572.00	
Recorder	0.00	8934	Outside	3572.00	
Perforations	24.00			3596.00	
Blank Off Sub	1.00			3597.00	
top of s.packer	3.00			3600.00	120.00 Tool Interval
Packer	0.00			3600.00	
Stubb	1.00			3601.00	
Change Over Sub	1.00			3602.00	
Perforations	10.00			3612.00	
Recorder	0.00	8368	Below	3612.00	
Drill Pipe	63.00			3675.00	
Change Over Sub	1.00			3676.00	
Bullnose	4.00			3680.00	1000147.00 Bottom Packers & Anchor
Total Tool Length:	148.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

John O. Farmer, Inc.

32-12S-17W Ellis,KS

PO Box 352
Russell KS 67665+2635

Nuss 'C' #1

Job Ticket: 63037

DST#: 4

ATTN: Austin Klaus

Test Start: 2017.08.28 @ 20:46:15

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: 49.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 9500.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Mud w /oil specks 100%M	0.073

Total Length: 10.00 ft Total Volume: 0.073 bbl

Num Fluid Samples: 0

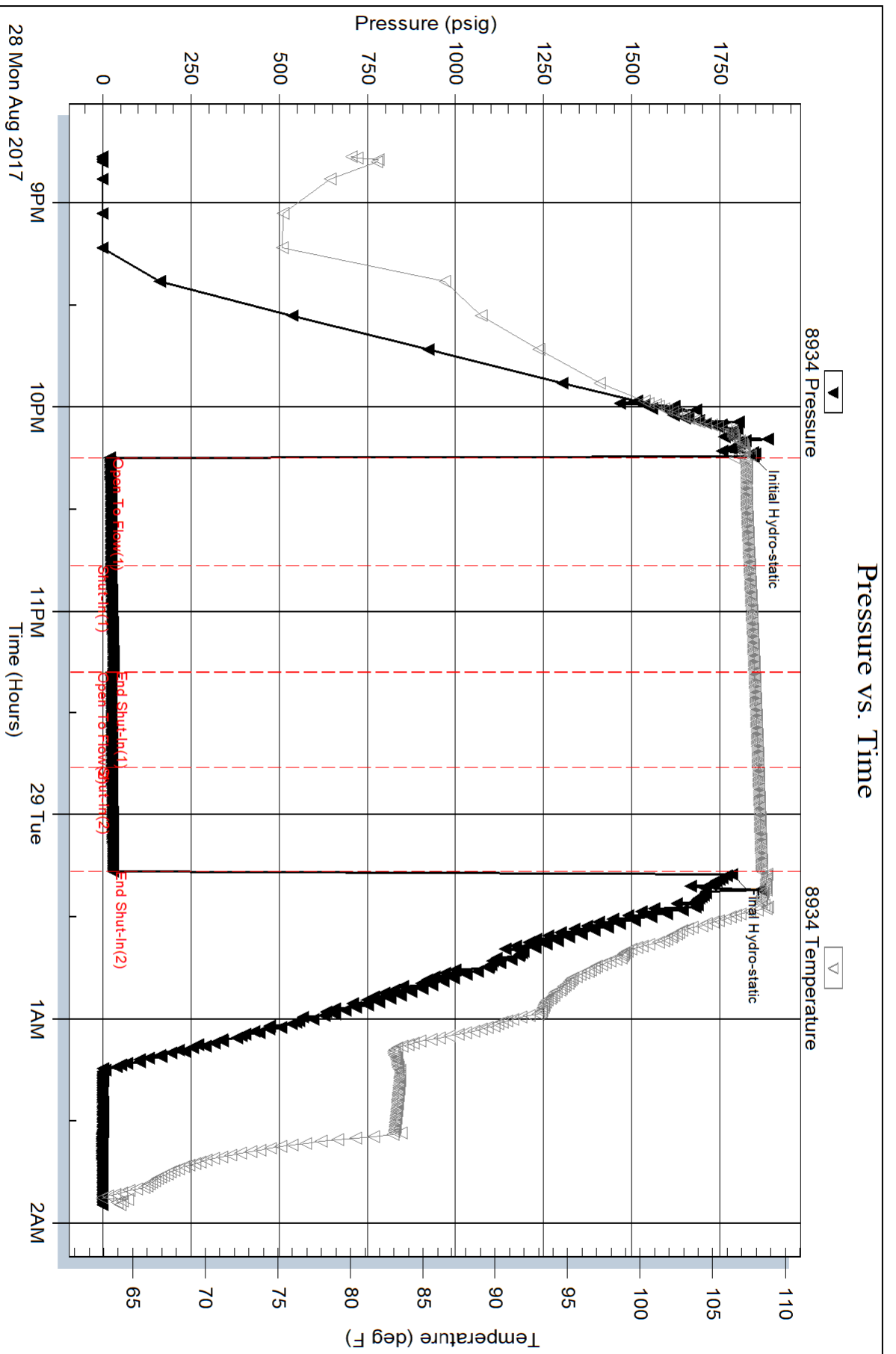
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 3&1/2#LCM



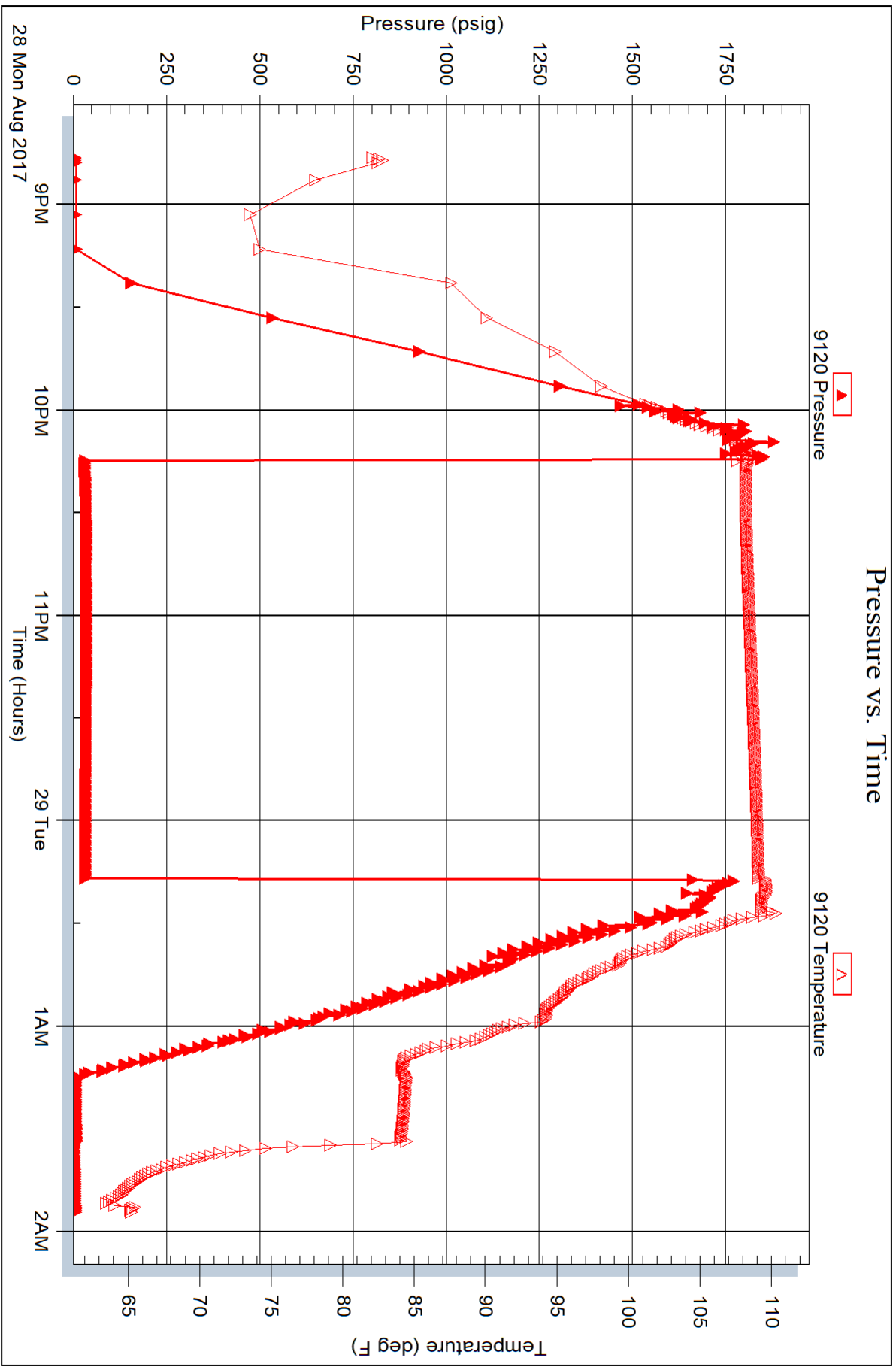
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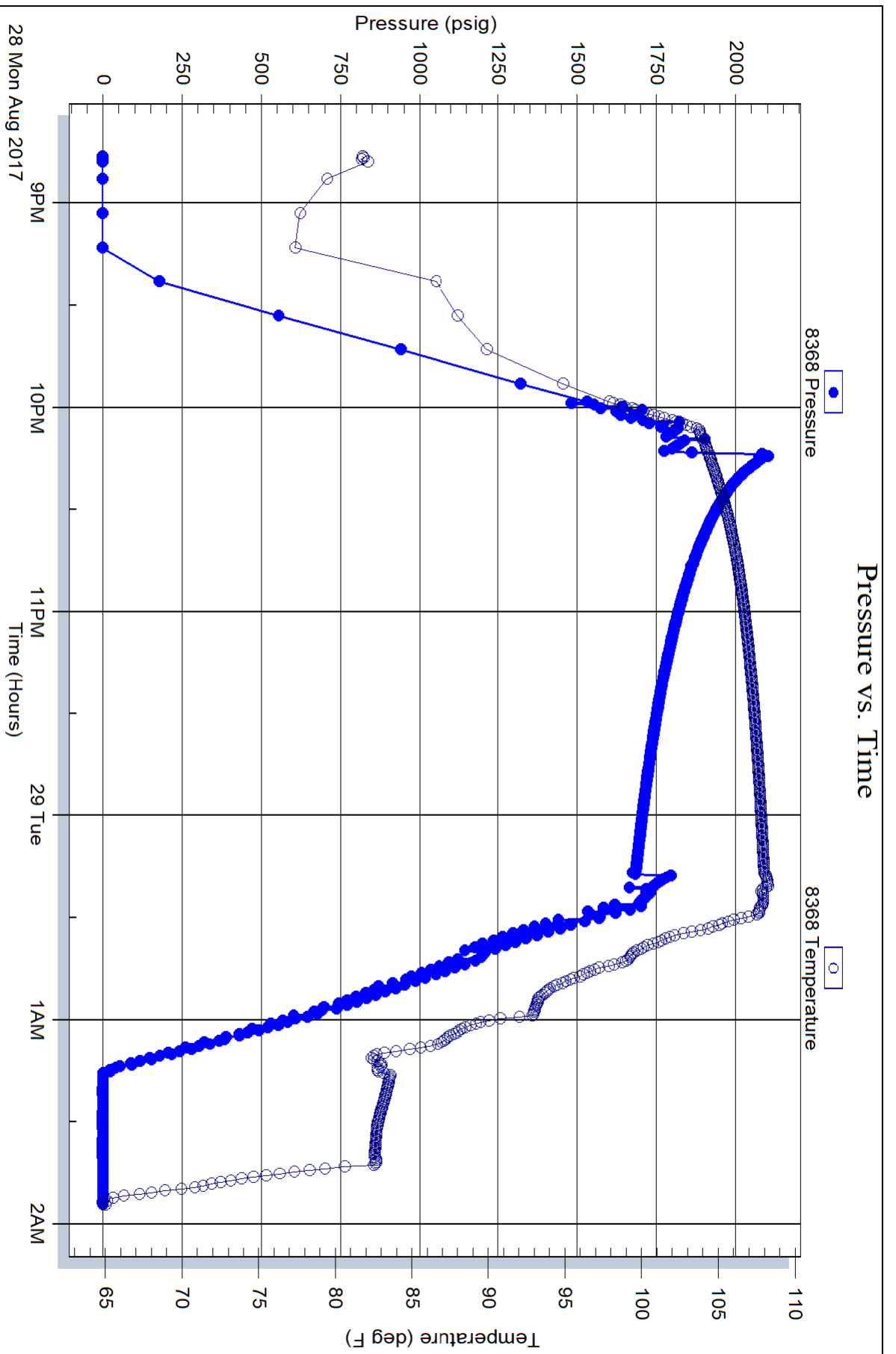
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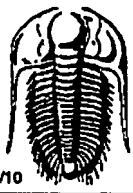
John O. Farmer, Inc.

Nuss 'C' #1

DST Test Number: 4







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63034

Well Name & No. Russ 'C' #1 Test No. 1 Date 08/26/2017
 Company John O. Farmer, Inc. Elevation 2069 KB 2061 GL
 Address 370 W. Wichita Ave PO BOX 352 Russell Ks 67665-12635
 Co. Rep / Geo. Austin Klaus Rig Discovery #2
 Location: Sec. 32 Twp. 2s Rge. 17w Co. Ellis State Ks

Interval Tested 3316' - 3396' Zone Tested LKC 'a-d'
 Anchor Length 80' Drill Pipe Run 3063' Mud Wt. 9.1
 Top Packer Depth 3311' Drill Collars Run — Vis 45
 Bottom Packer Depth 3316' Wt. Pipe Run 249' WL 8.8
 Total Depth 3396' Chlorides 6000 ppm System LCM 3#

Blow Description 17-Weak Blow; Built to 1 3/4"

~~150- No Return~~

77- Weak Blow; Built to 3/4"

~~750- No Return~~

Rec	Feet of	%gas	%oil	%water	%mud
<u>80'</u>	<u>Mud w/ oil specks</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 80' BHT 103° Gravity — API RW — @ — °F Chlorides — ppm

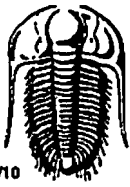
- (A) Initial Hydrostatic 1636 Test 1050
- (B) First Initial Flow 30 Jars —
- (C) First Final Flow 41 Safety Joint —
- (D) Initial Shut-In 848 Circ Sub —
- (E) Second Initial Flow 49 Hourly Standby —
- (F) Second Final Flow 57 Mileage 18 R 7 13.50
- (G) Final Shut-In 702 Sampler —
- (H) Final Hydrostatic 1578 Straddle —
- Shale Packer —
- Extra Packer —
- Extra Recorder —
- Day Standby —
- Accessibility —
- Sub Total 1063.50

T-On Location 07:15
 T-Started 08:33
 T-Open 10:08
 T-Pulled 12:38
 T-Out 14:15
 Comments tool slid 4ft to bottom
 Ruined Shale Packer —
 Ruined Packer —
 Extra Copies —
 Sub Total 0
 Total 1063.50
 MP/DST Disc't —

Initial Open 30
 Initial Shut-In 30
 Final Flow 45
 Final Shut-In 45

Approved By _____

Our Representative Spencer J. Jacob Thanks
 785-259-0056



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63035

Well Name & No. Muss 'C' #1 Test No. 2 Date 08/26/2017
 Company John O. Farmer, Inc. Elevation 2069 KB 2061 GL
 Address 370 W. Wichita Ave PO Box 352 Russell Ks 67665-2635
 Co. Rep / Geo. Austin Klaus Rig Discovery #2
 Location: Sec. 32 Twp. 12s Rge. 17w Co. Ellis State Ks

Interval Tested 3394'-3418' Zone Tested LKC 'E-7'
 Anchor Length 24' Drill Pipe Run 3158' Mud Wt. 9.1
 Top Packer Depth 3389' Drill Collars Run - Vis 45
 Bottom Packer Depth 3394' Wt. Pipe Run 249' WL 8.8
 Total Depth 3418' Chlorides 6,000 ppm System LCM 3#

Blow Description 17-Strong Blow; BOB in 6 mins
1SD-Weak Return; Built to 2 1/2"
77-Strong Blow; BOB in 8 mins
7SD-Weak Return; Built to

Rec	Feet of	%gas	%oil	%water	%mud
60'	OCJMW	20	5	55	20
30'	OCJWM		10	30	60
210'	WMCJO	25	55	5	15
20'	MCO		90		10
	500' GAP	100			

Rec Total 320' BHT 109° Gravity 19° API RW 163 @ 68 °F Chlorides 50,000 ppm

- (A) Initial Hydrostatic 1677
- (B) First Initial Flow 85
- (C) First Final Flow 114
- (D) Initial Shut-In 995
- (E) Second Initial Flow 120
- (F) Second Final Flow 149
- (G) Final Shut-In 971
- (H) Final Hydrostatic 1593

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

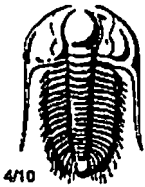
- Test 1050
- Jars
- Safety Joint
- Circ Sub
- Hourly Standby
- Mileage 1827 13.50
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility
- Sub Total 1063.50

T-On Location 20:32
 T-Started 21:03
 T-Open 23:15
 T-Pulled 01:15 08/27/2017
 T-Out 03:17

Comments _____
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1063.50
 MP/DST Disc't _____

Approved By _____

Our Representative Spencer J. Staab Thanks
 785-259-1751



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63036

Well Name & No. Nuss 'C' #1 Test No. 3 Date 08/27/2017
 Company John O. Farmer, Inc Elevation 2069 KB 2061 GL
 Address 370 W. Wichita Ave PO BOX 352 Russell KS 67665-2635
 Co. Rep / Geo. Austin Klaus Rig Discovery #2
 Location: Sec. 32 Twp. 12s Rge. 17w Co. Ellis State KS

Interval Tested 3450' - 3520' Zone Tested LHC 'A-D-J'
 Anchor Length 70' Drill Pipe Run 3190' Mud Wt. 8.8
 Top Packer Depth 3445' Drill Collars Run - Vis 40
 Bottom Packer Depth 3450' Wt. Pipe Run 249' WL 10.6
 Total Depth 3520' Chlorides 12,500 ppm System LCM 2 1/2#

Blow Description 7-9 Weak Blow; Built to 2 1/2"
150- No Return
77- Very Weak Blow; Built to 1/2" and died back to surface blow
750- No Return

Rec	Feet of	%gas	%oil	%water	%mud
80'	OC 29M	10	2	88	

Rec Total 80 BHT 1040 Gravity - API RW - @ - °F Chlorides - ppm

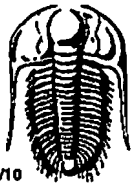
(A) Initial Hydrostatic 1705 Test 1050 T-On Location 15:30
 (B) First Initial Flow 23 Jars - T-Started 16:08
 (C) First Final Flow 40 Safety Joint - T-Open 18:05
 (D) Initial Shut-In 413 Circ Sub - T-Pulled 20:05
 (E) Second Initial Flow 41 Hourly Standby - T-Out 21:43
 (F) Second Final Flow 51 Mileage 18R7 13.50 Comments -
 (G) Final Shut-In 345 Sampler -
 (H) Final Hydrostatic 1604 Straddle -

Initial Open 30 Ruined Shale Packer -
 Initial Shut-In 30 Ruined Packer -
 Final Flow 30 Extra Copies -
 Final Shut-In 30 Extra Recorder - Sub Total 0
 Day Standby - Total 1063.50
 Accessibility - MP/DST Disc't -
 Sub Total 1063.50

Approved By _____

Our Representative Spencer J. Fernald Thanks!

785-259-0056



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63037

Well Name & No. Russ 'C' #1 Test No. 4 Date 08/28/2017
 Company John O. Farmer, Inc Elevation 2069 KB 2061 GL
 Address 870 W. Wichita Ave PO Box 352 Russell Ks 67665-2635
 Co. Rep / Geo. Austin Klaus Rig Discovery #2
 Location: Sec. 32 Twp. 24 Rge. 17W Co. Ellis State Ks

Interval Tested 3560'-3600' 80' tail pipe Zone Tested Arbuckle
 Anchor Length 40' Drill Pipe Run 3307' Mud Wt. 9.1
 Top Packer Depth 3560' Drill Collars Run - Vis 49
 Bottom Packer Depth 3600' Wt. Pipe Run 249' WL 8.8
 Total Depth 3680' Chlorides 9,500 ppm System LCM 3 1/2 #

Blow Description J7-Weak Blow, Built to 1/2"; died back to surface
JSD- No Return
J7- Surface Blow; died 5mins in
JSD- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>10'</u>	<u>Mud w/oil specks</u>			<u>100</u>	

Rec Total 10' BHT 108° Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 1842 Test 1050
 (B) First Initial Flow 19 Jars _____
 (C) First Final Flow 23 Safety Joint _____
 (D) Initial Shut-In 30 Circ Sub _____
 (E) Second Initial Flow 23 Hourly Standby _____
 (F) Second Final Flow 26 Mileage 18 R7x2 13.50
 (G) Final Shut-In 28 Sampler _____ 13.50
 (H) Final Hydrostatic 1784 Straddle 600
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1677

T-On Location 20:10
 T-Started 20:46
 T-Open 22:15
 T-Pulled 00:15 08/29/2017
 T-Out 01:52
 Comments drove back to
hays for additional
perf
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1677
 MP/DST Disc't _____

Approved By _____

Our Representative Spencer J. Juab Thanks!

785-259-0056