



DRILL STEM TEST REPORT

Prepared For: **Jaspar Co**

PO Box 1120
Hays KS 67601

ATTN: Jeff Lawler

Larry #1

20-9s-19w Rooks,KS

Start Date: 2017.11.15 @ 03:26:00

End Date: 2017.11.15 @ 11:58:30

Job Ticket #: 63180 DST #: 1

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

Printed: 2017.11.21 @ 08:19:00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Jaspar Co
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler

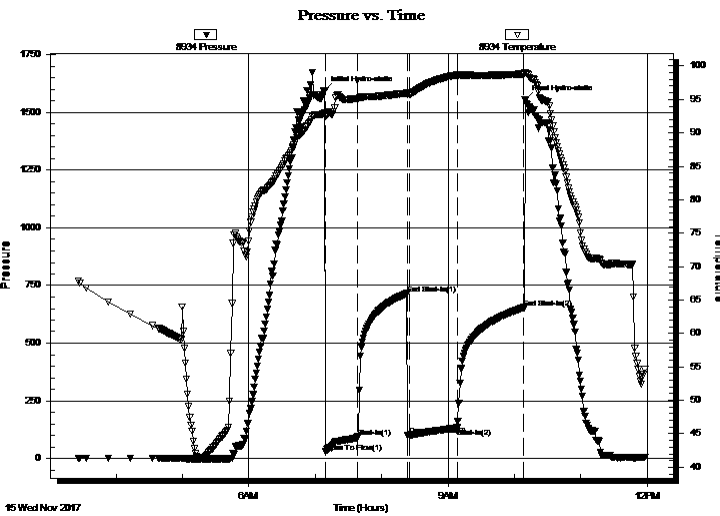
20-9s-19w Rooks,KS
Larry #1
Job Ticket: 63180 **DST#: 1**
Test Start: 2017.11.15 @ 03:26:00

GENERAL INFORMATION:

Formation: **Toronto - LKC 'A'**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 07:09:00
Time Test Ended: 11:58:30
Interval: **3290.00 ft (KB) To 3350.00 ft (KB) (TVD)**
Total Depth: 3350.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Spencer J. Staab
Unit No: 84
Reference Elevations: 2146.00 ft (KB)
2141.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8934 Outside
Press@RunDepth: 132.36 psig @ 3291.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.11.15 End Date: 2017.11.15 Last Calib.: 2017.11.15
Start Time: 03:26:15 End Time: 11:58:30 Time On Btm: 2017.11.15 @ 07:08:45
Time Off Btm: 2017.11.15 @ 10:09:30

TEST COMMENT: 30-IF-Fair Blow ; BOB in 20 mins
45-ISI-No Return
45-FF-Fair Blow ; Built to 9 1/2"
60-FSI-Weak Blow ; Died 20 mins in



PRESSURE SUMMARY

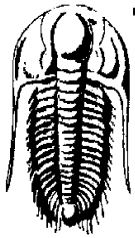
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1596.19	92.93	Initial Hydro-static
1	28.31	92.39	Open To Flow (1)
30	89.67	95.14	Shut-In(1)
75	714.90	95.93	End Shut-In(1)
76	99.29	95.76	Open To Flow (2)
120	132.36	98.65	Shut-In(2)
180	653.70	98.81	End Shut-In(2)
181	1554.55	99.04	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	MW 30%M 70%W	0.59
60.00	WCM 5%W 95%M	0.84
75.00	OCM 7%O 93%M	1.05
15.00	MCO 5%M 95%O	0.21

Gas Rates

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



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Jaspar Co
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler

20-9s-19w Rooks, KS

Larry #1

Job Ticket: 63180

DST#: 1

Test Start: 2017.11.15 @ 03:26:00

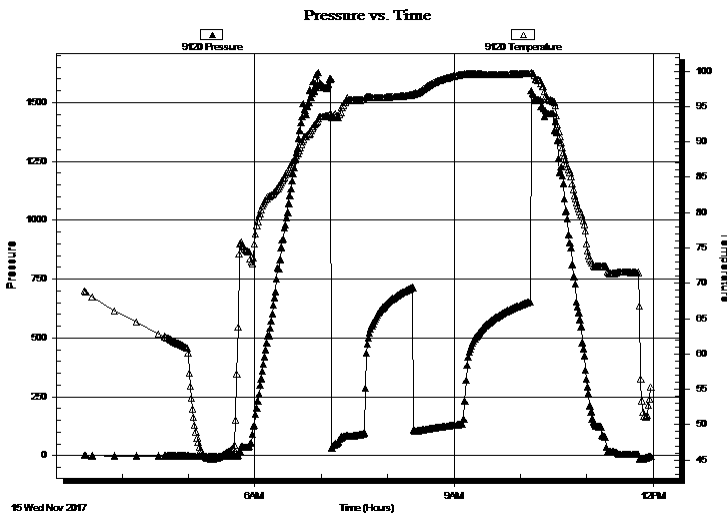
GENERAL INFORMATION:

Formation: **Toronto - LKC 'A'**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 07:09:00 Tester: Spencer J. Staab
 Time Test Ended: 11:58:30 Unit No: 84
 Interval: **3290.00 ft (KB) To 3350.00 ft (KB) (TVD)** Reference Elevations: 2146.00 ft (KB)
 Total Depth: 3350.00 ft (KB) (TVD) 2141.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

Serial #: 9120 Inside

Press@RunDepth: psig @ 3291.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.11.15 End Date: 2017.11.15 Last Calib.: 2017.11.15
 Start Time: 03:26:15 End Time: 11:58:30 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30-IF-Fair Blow ; BOB in 20 mins
 45-ISI-No Return
 45-FF-Fair Blow ; Built to 9 1/2"
 60-FSI-Weak Blow ; Died 20 mins in



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
120.00	MW 30%M 70%W	0.59
60.00	WCM 5%W 95%M	0.84
75.00	OCM 7%O 93%M	1.05
15.00	MCO 5%M 95%O	0.21

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler

20-9s-19w Rooks,KS
Larry #1
Job Ticket: 63180 **DST#: 1**
Test Start: 2017.11.15 @ 03:26:00

Tool Information

Drill Pipe:	Length: 3175.00 ft	Diameter: 3.80 inches	Volume: 44.54 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 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: 50000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 34000.00 lb
Depth to Top Packer:	3290.00 ft			Final 34000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	60.00 ft			
Tool Length:	80.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

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

Change Over Sub	1.00			3271.00	
Shut In Tool	5.00			3276.00	
Hydraulic tool	5.00			3281.00	
Packer	5.00			3286.00	20.00 Bottom Of Top Packer
Packer	4.00			3290.00	
Stubb	1.00			3291.00	
Recorder	0.00	9120	Inside	3291.00	
Recorder	0.00	8934	Outside	3291.00	
Perforations	22.00			3313.00	
Change Over Sub	1.00			3314.00	
Drill Pipe	32.00			3346.00	
Change Over Sub	1.00			3347.00	
Bullnose	3.00			3350.00	60.00 Bottom Packers & Anchor

Total Tool Length: 80.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co

20-9s-19w Rooks,KS

PO Box 1120
Hays KS 67601

Larry #1

Job Ticket: 63180

DST#: 1

ATTN: Jeff Lawler

Test Start: 2017.11.15 @ 03:26:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

35 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

56000 ppm

Viscosity: 68.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
120.00	MW 30%M 70%W	0.590
60.00	WCM 5%W 95%M	0.842
75.00	OCM 7%O 93%M	1.052
15.00	MCO 5%M 95%O	0.210

Total Length: 270.00 ft

Total Volume: 2.694 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

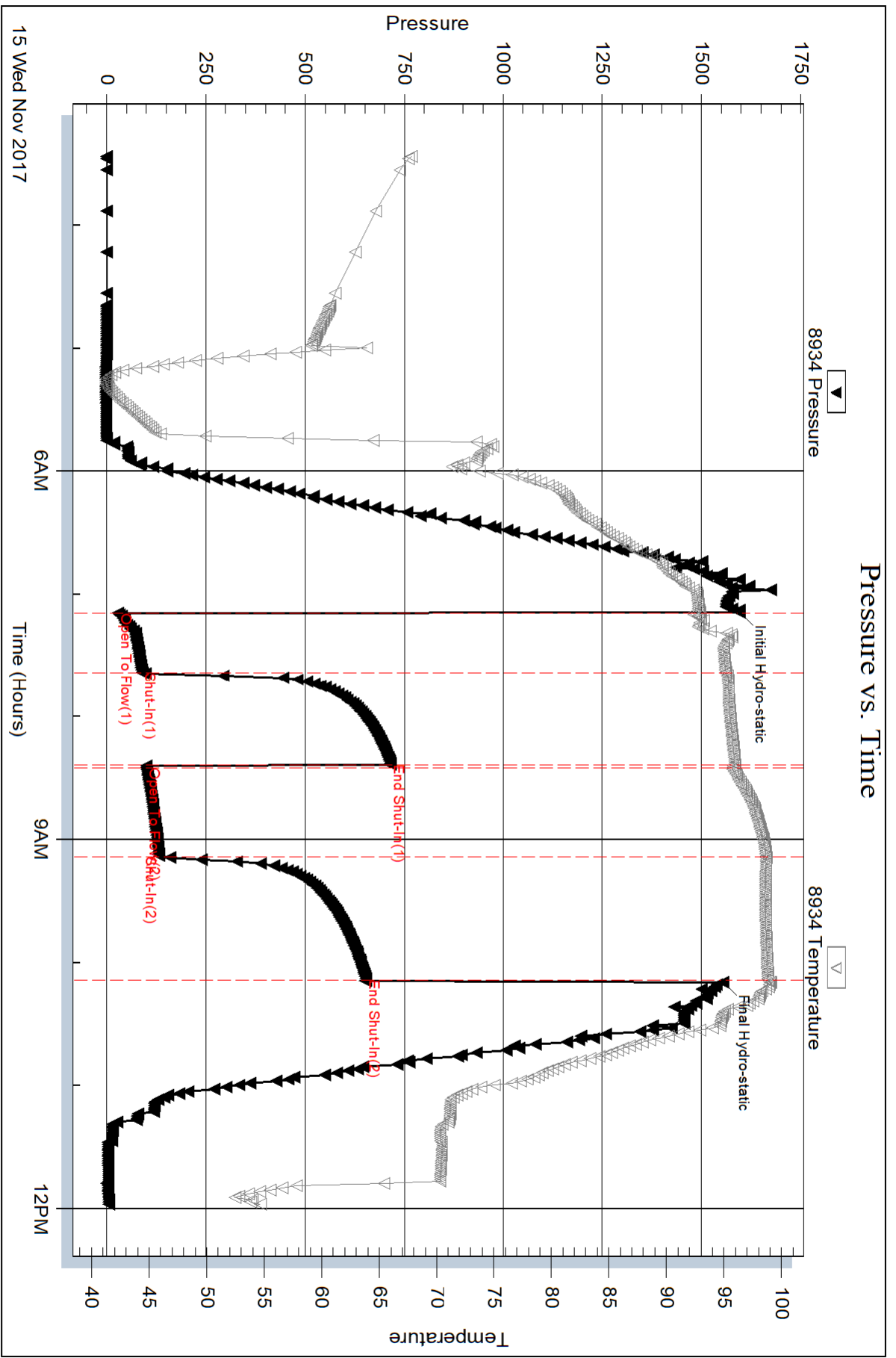
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 4#LCM

RW=.195@50degrees



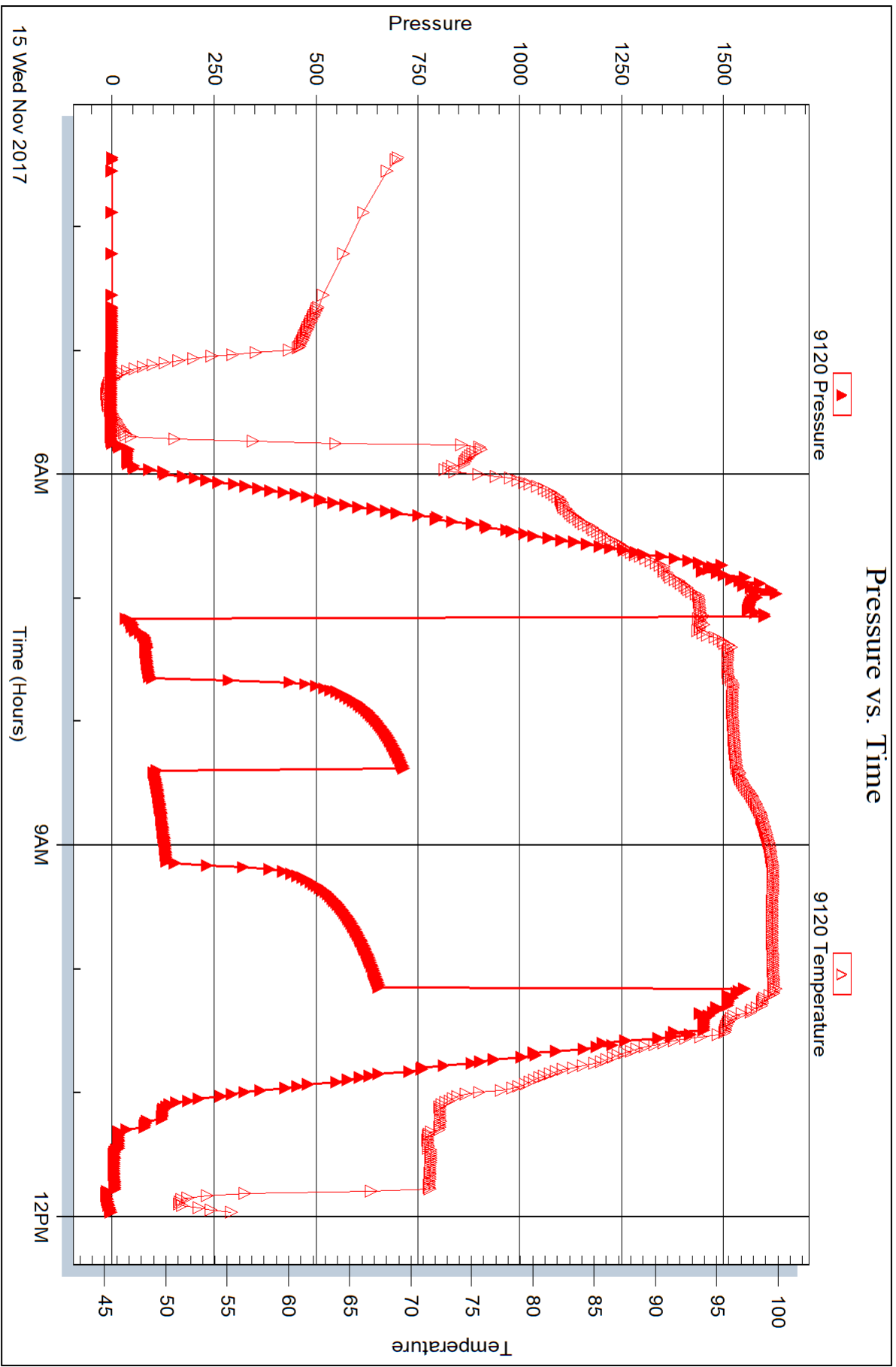
Serial #: 9120

Inside

Jaspar Co

Larry #1

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Jaspar Co**

PO Box 1120
Hays KS 67601

ATTN: Jeff Lawler

Larry #1

20-9s-19w Rooks,KS

Start Date: 2017.11.15 @ 20:22:00

End Date: 2017.11.16 @ 02:43:30

Job Ticket #: 63181 DST #: 2

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

Printed: 2017.11.21 @ 08:18:36

Jaspar Co
20-9s-19w Rooks,KS
Larry #1
DST # 2
LKC 'C-D'
2017.11.15



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Jaspar Co
 PO Box 1120
 Hays KS 67601
 ATTN: Jeff Lawler

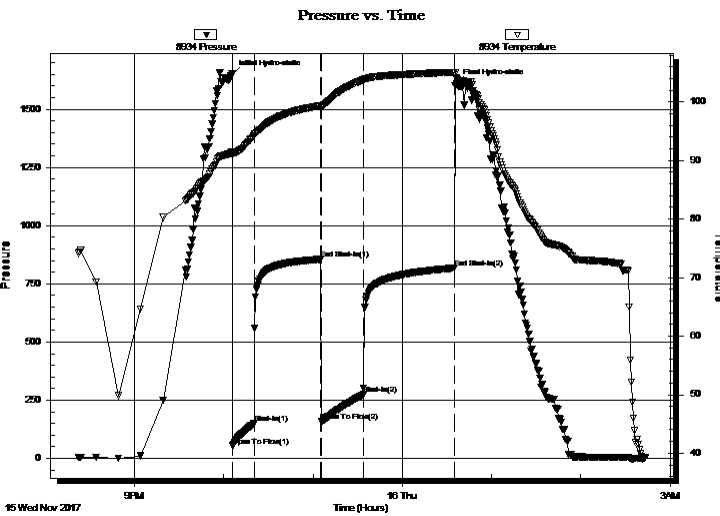
20-9s-19w Rooks,KS
Larry #1
 Job Ticket: 63181 **DST#: 2**
 Test Start: 2017.11.15 @ 20:22:00

GENERAL INFORMATION:

Formation: **LKC 'C-D'**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 22:05:45
 Time Test Ended: 02:43:30
 Interval: **3354.00 ft (KB) To 3414.00 ft (KB) (TVD)**
 Total Depth: 3414.00 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: 2146.00 ft (KB)
 2141.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8934 Inside
 Press@RunDepth: 273.64 psig @ 3355.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.11.15 End Date: 2017.11.16 Last Calib.: 2017.11.16
 Start Time: 20:22:15 End Time: 02:43:30 Time On Btm: 2017.11.15 @ 22:05:30
 Time Off Btm: 2017.11.16 @ 00:36:30

TEST COMMENT: 15-IF-Strong Blow ; BOB in 5 mins
 45-ISI-Weak Surface Blow @ 7 mins; died after 8 mins
 30-FF-Strong Blow ; BOB in 6 mins
 60-FSI-No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1650.16	91.45	Initial Hydro-static
1	53.93	90.96	Open To Flow (1)
15	151.57	94.23	Shut-In(1)
60	854.61	99.34	End Shut-In(1)
61	157.84	99.23	Open To Flow (2)
89	273.64	103.74	Shut-In(2)
150	816.19	105.03	End Shut-In(2)
151	1608.41	103.94	Final Hydro-static

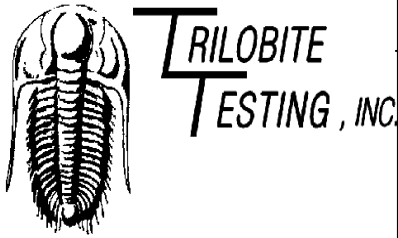
Recovery

Length (ft)	Description	Volume (bbl)
525.00	MW 30%M 70%W	6.27
10.00	MW 50%M 50%W	0.14

* Recovery from multiple tests

Gas Rates

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



DRILL STEM TEST REPORT

Jaspar Co
 PO Box 1120
 Hays KS 67601
 ATTN: Jeff Lawler

20-9s-19w Rooks, KS

Larry #1

Job Ticket: 63181 **DST#: 2**

Test Start: 2017.11.15 @ 20:22:00

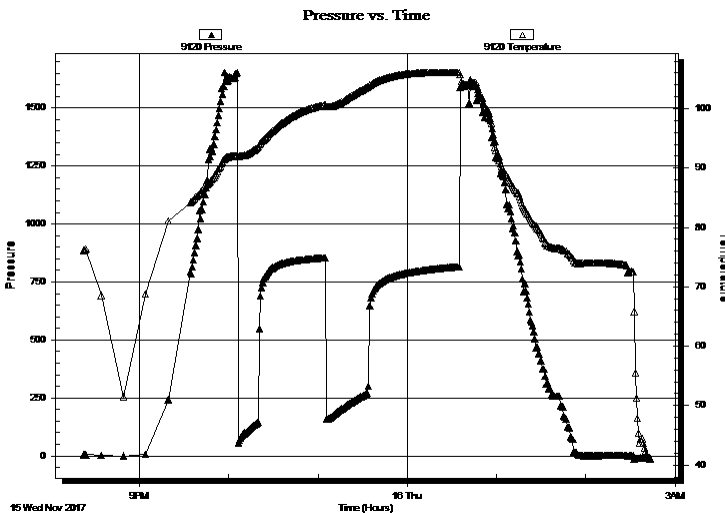
GENERAL INFORMATION:

Formation: **LKC 'C-D'**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 22:05:45
 Time Test Ended: 02:43:30
 Interval: **3354.00 ft (KB) To 3414.00 ft (KB) (TVD)**
 Total Depth: 3414.00 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: 2146.00 ft (KB)
 2141.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 9120 Inside

Press@RunDepth: psig @ 3355.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2017.11.15 End Date: 2017.11.16	Last Calib.: 2017.11.16
Start Time: 20:22:15 End Time: 02:43:30	Time On Btm: Time Off Btm:

TEST COMMENT: 15-IF-Strong Blow ; BOB in 5 mins
 45-ISI-Weak Surface Blow @ 7 mins; died after 8 mins
 30-FF-Strong Blow ; BOB in 6 mins
 60-FSI-No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
525.00	MW 30%M 70%W	6.27
10.00	MW 50%M 50%W	0.14

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler

20-9s-19w Rooks, KS
Larry #1
Job Ticket: 63181 **DST#: 2**
Test Start: 2017.11.15 @ 20:22:00

Tool Information

Drill Pipe:	Length: 3242.00 ft	Diameter: 3.80 inches	Volume: 45.48 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 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:	42000.00 lb
			<u>Total Volume:</u> - bbl	Tool Chased	ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial	34000.00 lb
Depth to Top Packer:	3354.00 ft			Final	35000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	60.00 ft				
Tool Length:	80.00 ft				
Number of Packers:	1	Diameter: 6.75 inches			

Tool Comments:

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

Change Over Sub	1.00			3335.00	
Shut In Tool	5.00			3340.00	
Hydraulic tool	5.00			3345.00	
Packer	5.00			3350.00	20.00 Bottom Of Top Packer
Packer	4.00			3354.00	
Stubb	1.00			3355.00	
Recorder	0.00	9120	Inside	3355.00	
Recorder	0.00	8934	Inside	3355.00	
Perforations	22.00			3377.00	
Change Over Sub	1.00			3378.00	
Drill Pipe	32.00			3410.00	
Change Over Sub	1.00			3411.00	
Bullnose	3.00			3414.00	60.00 Bottom Packers & Anchor

Total Tool Length: 80.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co

20-9s-19w Rooks,KS

PO Box 1120
Hays KS 67601

Larry #1

Job Ticket: 63181

DST#: 2

ATTN: Jeff Lawler

Test Start: 2017.11.15 @ 20:22:00

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:

70000 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
525.00	MW 30%M 70%W	6.271
10.00	MW 50%M 50%W	0.140

Total Length: 535.00 ft Total Volume: 6.411 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

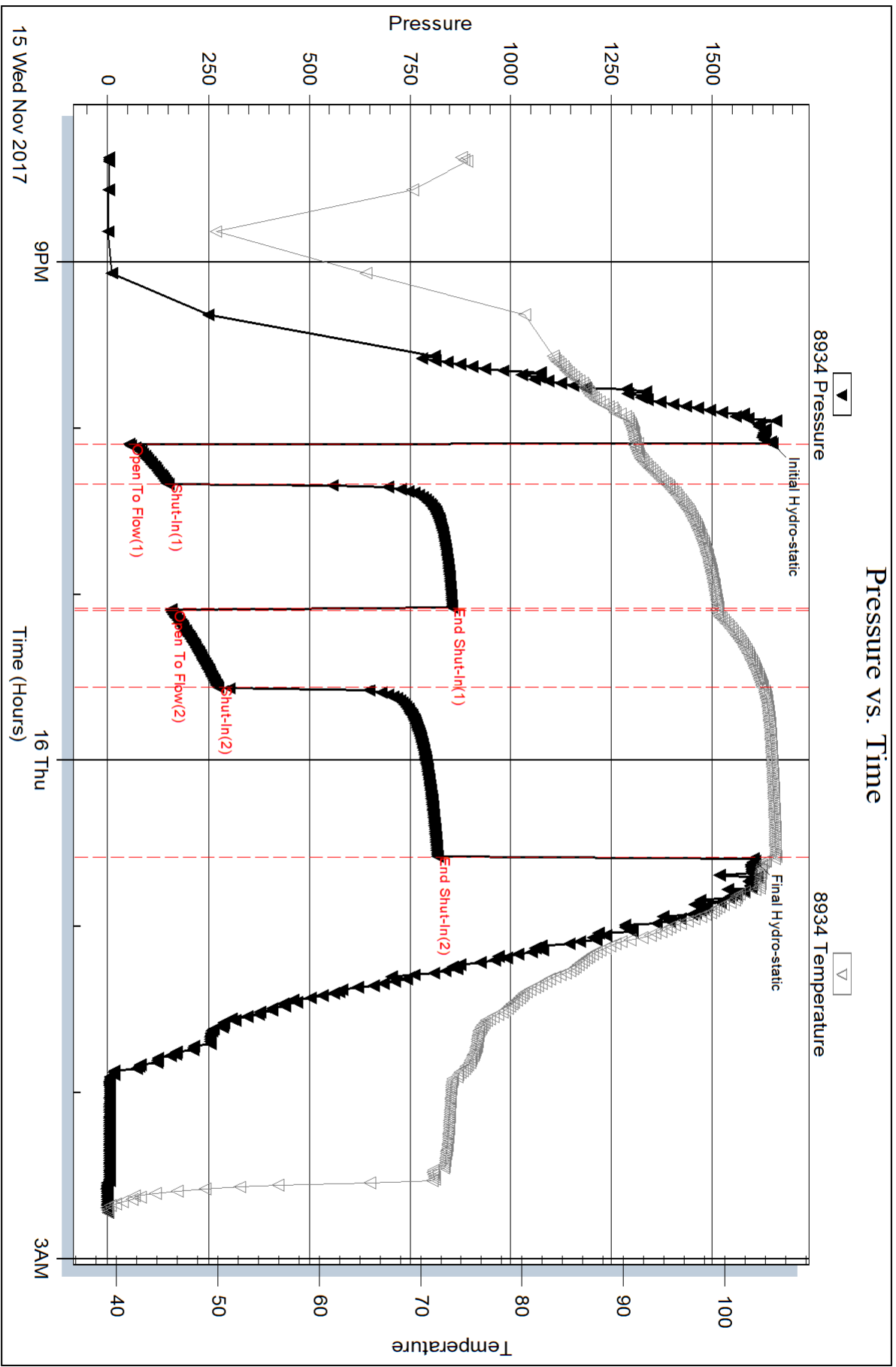
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 2&1/2#LCM

Rw = .223@36degrees

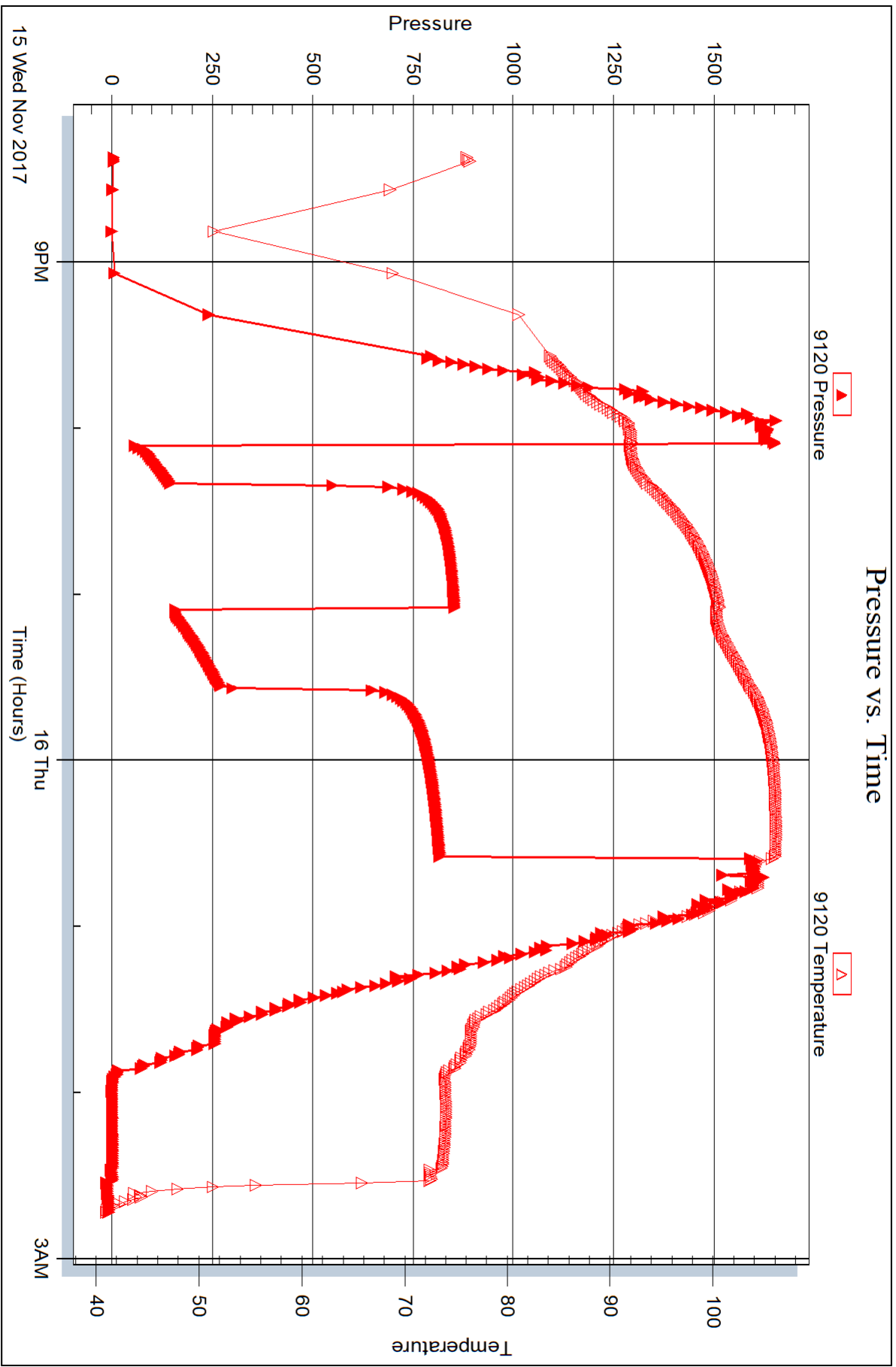


Serial #: 9120

Inside Jasper Co

Larry #1

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Jaspar Co**

PO Box 1120
Hays KS 67601

ATTN: Jeff Lawler

Larry #1

20-9s-19w Rooks,KS

Start Date: 2017.11.16 @ 09:34:00

End Date: 2017.11.16 @ 15:44:15

Job Ticket #: 63182 DST #: 3

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

Printed: 2017.11.21 @ 08:18:12

Jaspar Co
20-9s-19w Rooks,KS
Larry #1
DST # 3
LKC 'E-F'
2017.11.16



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Jaspar Co
 PO Box 1120
 Hays KS 67601
 ATTN: Jeff Lawler

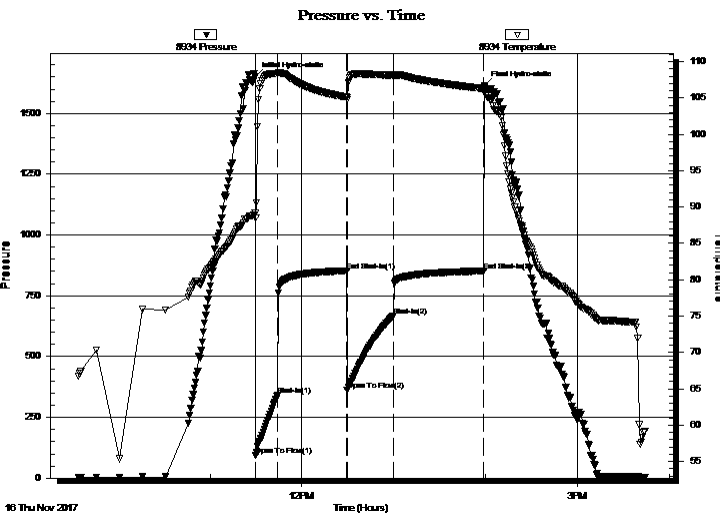
20-9s-19w Rooks,KS
Larry #1
 Job Ticket: 63182 **DST#: 3**
 Test Start: 2017.11.16 @ 09:34:00

GENERAL INFORMATION:

Formation: **LKC 'E-F'**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 11:30:00
 Time Test Ended: 15:44:15
 Interval: **3414.00 ft (KB) To 3430.00 ft (KB) (TVD)**
 Total Depth: 3430.00 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: 2146.00 ft (KB)
 2141.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8934 Outside
 Press@RunDepth: 666.71 psig @ 3417.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.11.16 End Date: 2017.11.16 Last Calib.: 2017.11.16
 Start Time: 09:34:15 End Time: 15:44:15 Time On Btm: 2017.11.16 @ 11:29:45
 Time Off Btm: 2017.11.16 @ 13:59:15

TEST COMMENT: 15-IF-Strong Blow ; BOB in 2 mins
 45-ISI-Weak Blow ; Built to 1 1/4"
 30-FF-Strong Blow ; BOB in 1 1/2 mins
 60-FSI-Weak Surface Blow @ 12 mins; Died after 5 mins



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1652.21	89.14	Initial Hydro-static
1	93.45	88.48	Open To Flow (1)
15	341.04	108.38	Shut-In(1)
60	852.87	105.09	End Shut-In(1)
60	362.28	104.80	Open To Flow (2)
90	666.71	108.11	Shut-In(2)
149	851.78	106.29	End Shut-In(2)
150	1614.40	106.49	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1100.00	Water 100%W	14.34
300.00	MCW 5%M 95%W	4.21

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler

20-9s-19w Rooks,KS
Larry #1
Job Ticket: 63182 **DST#: 3**
Test Start: 2017.11.16 @ 09:34:00

Tool Information

Drill Pipe:	Length: 3296.00 ft	Diameter: 3.80 inches	Volume: 46.23 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 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:	50000.00 lb
			<u>Total Volume:</u>	Tool Chased	ft
				String Weight: Initial	34000.00 lb
Drill Pipe Above KB:	22.00 ft			Final	41000.00 lb
Depth to Top Packer:	3414.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	16.00 ft				
Tool Length:	36.00 ft				
Number of Packers:	1	Diameter: 6.75 inches			

Tool Comments:

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

Change Over Sub	1.00			3395.00	
Shut In Tool	5.00			3400.00	
Hydraulic tool	5.00			3405.00	
Packer	5.00			3410.00	20.00 Bottom Of Top Packer
Packer	4.00			3414.00	
Stubb	1.00			3415.00	
Perforations	2.00			3417.00	
Recorder	0.00	9120	Inside	3417.00	
Recorder	0.00	8934	Outside	3417.00	
Perforations	10.00			3427.00	
Bullnose	3.00			3430.00	16.00 Bottom Packers & Anchor

Total Tool Length: 36.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co

20-9s-19w Rooks,KS

PO Box 1120
Hays KS 67601

Larry #1

Job Ticket: 63182

DST#: 3

ATTN: Jeff Lawler

Test Start: 2017.11.16 @ 09:34:00

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:

94000 ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1100.00	Water 100%W	14.337
300.00	MCW 5%M 95%W	4.208

Total Length: 1400.00 ft Total Volume: 18.545 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

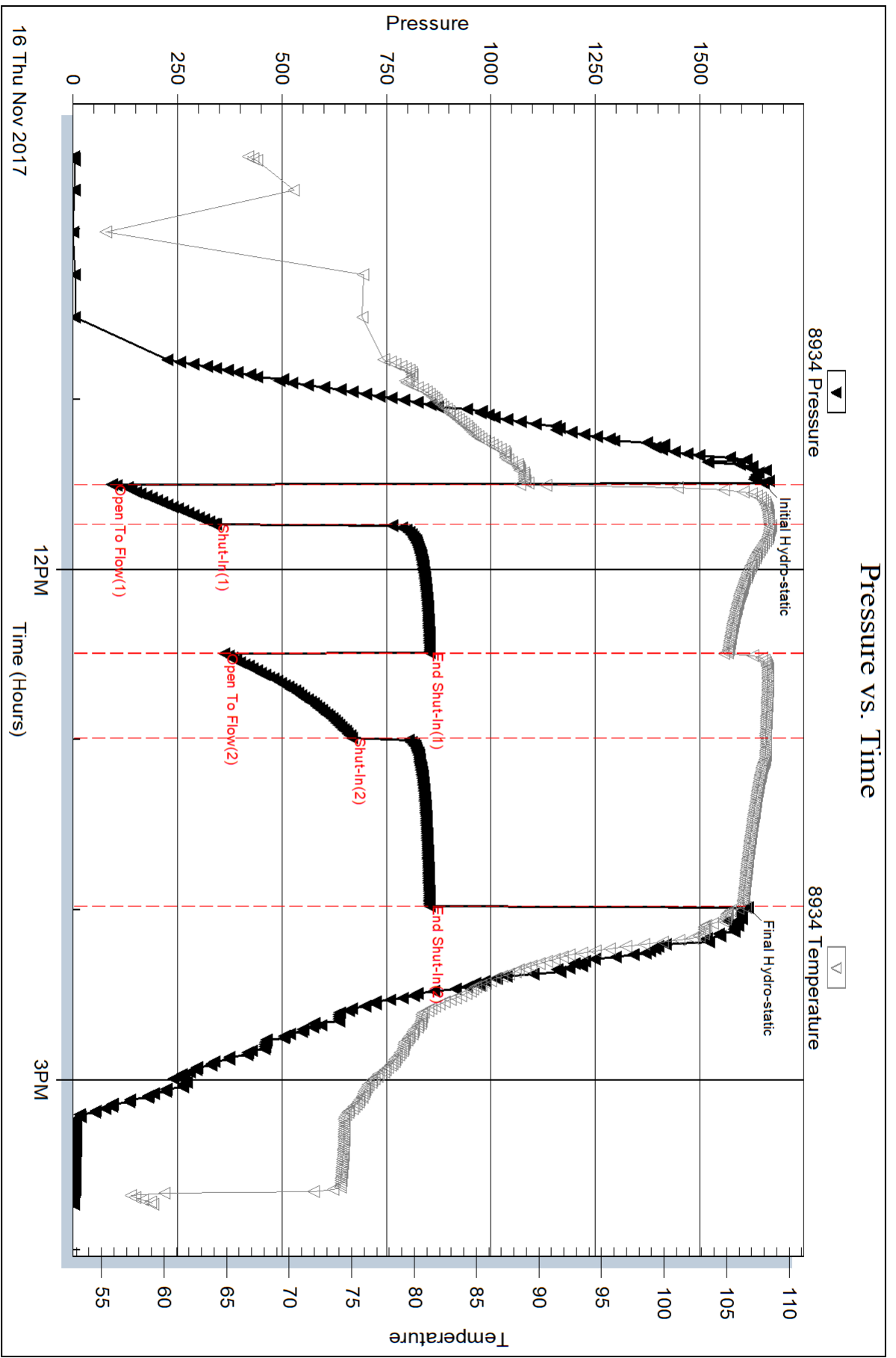
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 2#LCM

RW=.999@60degrees

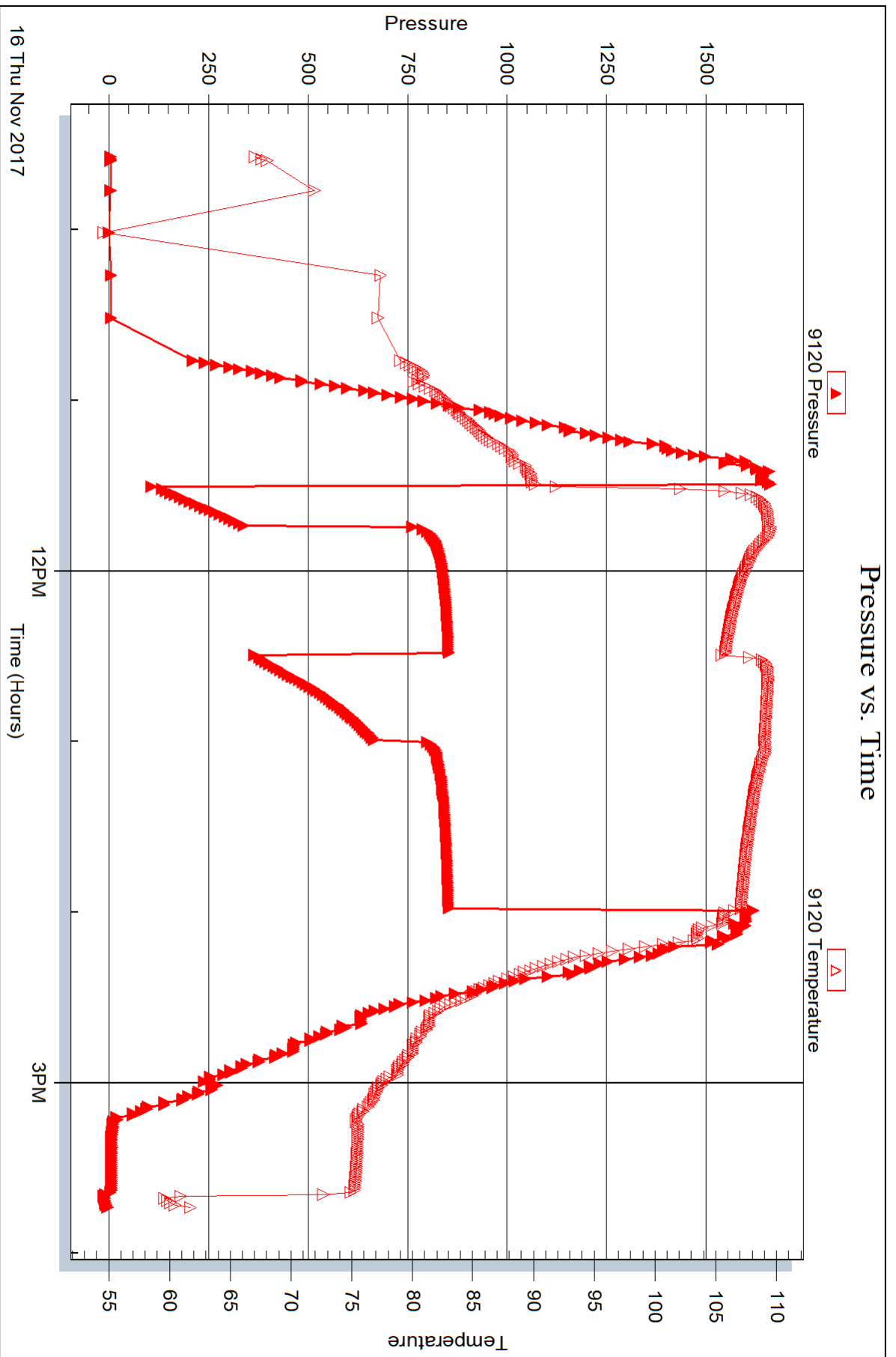


Serial #: 9120

Inside Jasper Co

Larry #1

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 63182

Printed: 2017.11.21 @ 08:18:13



DRILL STEM TEST REPORT

Prepared For: **Jaspar Co**

PO Box 1120
Hays KS 67601

ATTN: Jeff Lawler

Larry #1

20-9s-19w Rooks,KS

Start Date: 2017.11.17 @ 00:14:00

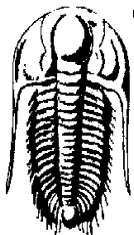
End Date: 2017.11.17 @ 07:06:15

Job Ticket #: 63183 DST #: 4

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

Printed: 2017.11.21 @ 08:17:48

Jaspar Co
20-9s-19w Rooks,KS
Larry #1
DST # 4
LKC-H-I
2017.11.17



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Jaspar Co
PO Box 1120
Hays KS 67601

20-9s-19w Rooks,KS

Larry #1

Job Ticket: 63183

DST#: 4

ATTN: Jeff Lawler

Test Start: 2017.11.17 @ 00:14:00

GENERAL INFORMATION:

Formation: **LKC 'H-I'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:32:45

Time Test Ended: 07:06:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J. Staab

Unit No: 84

Interval: **3458.00 ft (KB) To 3509.00 ft (KB) (TVD)**

Reference Elevations: 2146.00 ft (KB)

Total Depth: 3509.00 ft (KB) (TVD)

2141.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8934

Inside

Press@RunDepth: 150.97 psig @ 3463.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.11.17

End Date:

2017.11.17

Last Calib.:

2017.11.17

Start Time: 00:14:15

End Time:

07:06:15

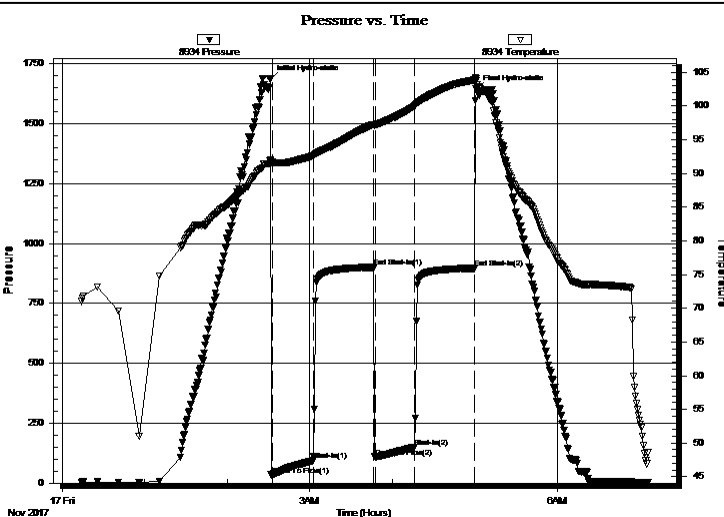
Time On Btm:

2017.11.17 @ 02:31:30

Time Off Btm:

2017.11.17 @ 05:01:00

TEST COMMENT: 30-IF-Fair Blow ; BOB in 17 mins
45-ISI-Weak Blow ; Built to 1/2"; Died back to 1/4"
30-FF-Fair Blow ; BOB in 16 mins
45-FSI-Weak Blow ; Built to 1"; Died back to 1/4"



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1685.75	91.94	Initial Hydro-static
2	34.42	91.66	Open To Flow (1)
31	94.51	92.64	Shut-In(1)
75	900.65	97.28	End Shut-In(1)
76	109.57	97.19	Open To Flow (2)
105	150.97	100.01	Shut-In(2)
149	896.32	103.88	End Shut-In(2)
150	1643.87	104.11	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	OCWM 2%O 28%W 70%M	0.30
120.00	OCMW 1%O 10%M 89%W	1.14
60.00	OCWM 3%O 27%W 70%M	0.84
10.00	OCM 5%O 95%M	0.14
30.00	MCGO 5%M 10%G 85%O	0.42

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler

20-9s-19w Rooks,KS
Larry #1
Job Ticket: 63183 **DST#: 4**
Test Start: 2017.11.17 @ 00:14:00

Tool Information

Drill Pipe:	Length: 3336.00 ft	Diameter: 3.80 inches	Volume: 46.80 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 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	ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial	34000.00 lb
Depth to Top Packer:	3458.00 ft			Final	35000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	51.00 ft				
Tool Length:	71.00 ft				
Number of Packers:	1	Diameter: 6.75 inches			

Tool Comments:

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

Change Over Sub	1.00			3439.00	
Shut In Tool	5.00			3444.00	
Hydraulic tool	5.00			3449.00	
Packer	5.00			3454.00	20.00 Bottom Of Top Packer
Packer	4.00			3458.00	
Stubb	1.00			3459.00	
Perforations	3.00			3462.00	
Change Over Sub	1.00			3463.00	
Recorder	0.00	9120	Inside	3463.00	
Recorder	0.00	8934	Inside	3463.00	
Drill Pipe	32.00			3495.00	
Change Over Sub	1.00			3496.00	
Perforations	10.00			3506.00	
Bullnose	3.00			3509.00	51.00 Bottom Packers & Anchor

Total Tool Length: 71.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co

20-9s-19w Rooks,KS

PO Box 1120
Hays KS 67601

Larry #1

Job Ticket: 63183

DST#: 4

ATTN: Jeff Lawler

Test Start: 2017.11.17 @ 00:14:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

74000 ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
60.00	OCWM 2%O 28%W 70%M	0.295
120.00	OCMW 1%O 10%M 89%W	1.137
60.00	OCWM 3%O 27%W 70%M	0.842
10.00	OCM 5%O 95%M	0.140
30.00	MCGO 5%M 10%G 85%O	0.421

Total Length: 280.00 ft

Total Volume: 2.835 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

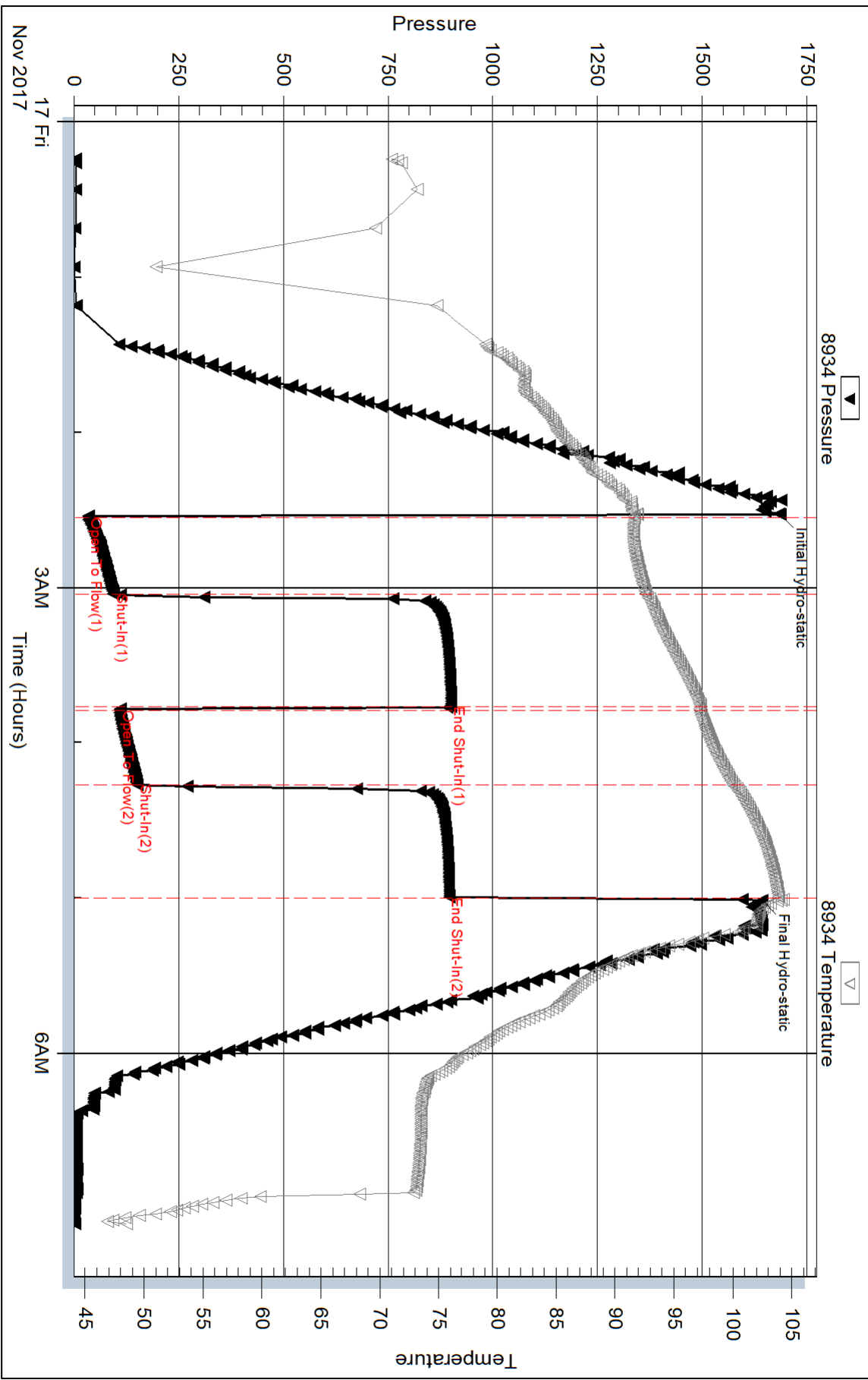
Laboratory Name:

Laboratory Location:

Recovery Comments: 2#LCM

RW=.149@51degrees

Pressure vs. Time

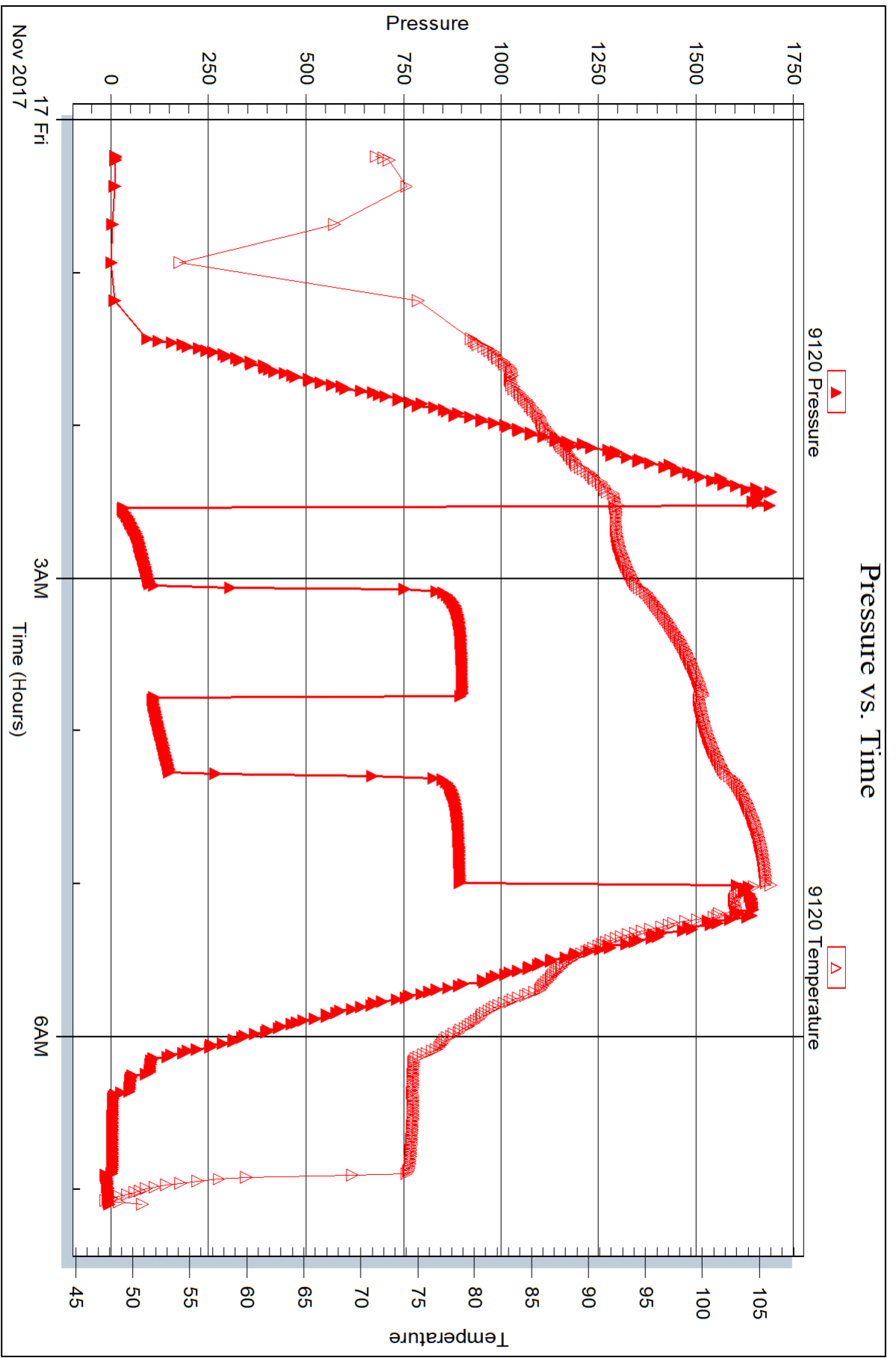


Serial #: 9120

Inside Jasper Co

Larry #1

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 63183

Printed: 2017.11.21 @ 08:17:49



DRILL STEM TEST REPORT

Prepared For: **Jaspar Co**
PO Box 1120
Hays KS 67601

ATTN: Jeff Lawler

Larry #1

20-9s-19w Rooks,KS

Start Date: 2017.11.17 @ 13:55:15

End Date: 2017.11.17 @ 21:04:00

Job Ticket #: 63184 DST #: 5

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

Printed: 2017.11.21 @ 08:17:23

Jaspar Co
20-9s-19w Rooks,KS
Larry #1
DST # 5
LKC 'J'
2017.11.17



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Jaspar Co
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler

20-9s-19w Rooks,KS
Larry #1
Job Ticket: 63184 **DST#: 5**
Test Start: 2017.11.17 @ 13:55:15

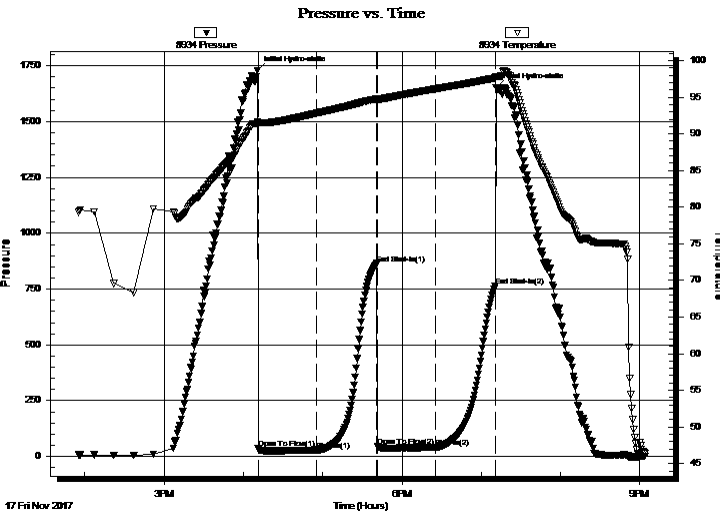
GENERAL INFORMATION:

Formation: **LKC 'J'**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 16:11:00
Time Test Ended: 21:04:00
Interval: 3507.00 ft (KB) To 3525.00 ft (KB) (TVD)
Total Depth: 3525.00 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: 2146.00 ft (KB)
2141.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8934 Outside

Press@RunDepth: 40.63 psig @ 3512.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.11.17 End Date: 2017.11.17 Last Calib.: 2017.11.17
Start Time: 13:55:15 End Time: 21:04:00 Time On Btm: 2017.11.17 @ 16:10:45
Time Off Btm: 2017.11.17 @ 19:11:15

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



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1729.15	91.70	Initial Hydro-static
1	36.17	91.24	Open To Flow (1)
45	29.29	92.82	Shut-In(1)
91	864.28	94.79	End Shut-In(1)
91	44.49	94.60	Open To Flow (2)
135	40.63	96.14	Shut-In(2)
180	763.41	97.61	End Shut-In(2)
181	1653.60	97.86	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
57.00	HOCM 40%O 60%M	0.28
5.00	Clean Oil 100%O	0.02

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Jaspar Co
PO Box 1120
Hays KS 67601

20-9s-19w Rooks,KS

Larry #1

Job Ticket: 63184 **DST#: 5**

ATTN: Jeff Lawler

Test Start: 2017.11.17 @ 13:55:15

GENERAL INFORMATION:

Formation: **LKC 'J'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:11:00

Time Test Ended: 21:04:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J. Staab

Unit No: 84

Interval: **3507.00 ft (KB) To 3525.00 ft (KB) (TVD)**

Total Depth: 3525.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2146.00 ft (KB)

2141.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: **9120** Inside

Press@RunDepth: psig @ 3512.00 ft (KB)

Start Date: 2017.11.17

End Date:

2017.11.17

Start Time: 13:55:15

End Time:

21:04:00

Capacity: 8000.00 psig

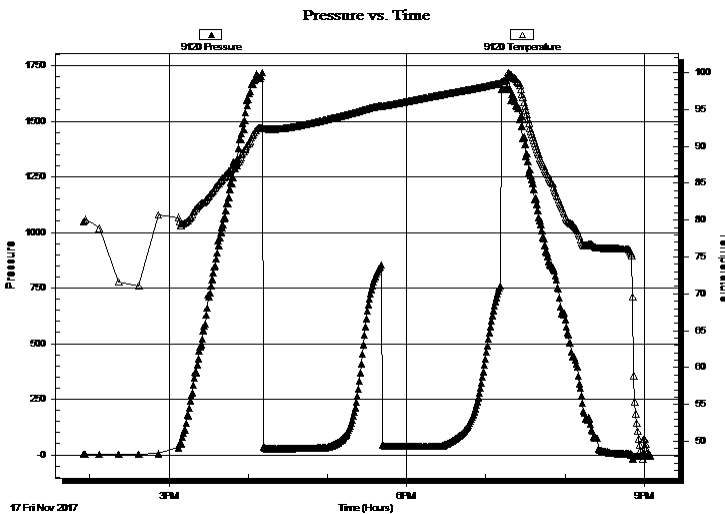
Last Calib.: 2017.11.17

Time On Btm:

Time Off Btm:

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

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
57.00	HOCM 40%O 60%M	0.28
5.00	Clean Oil 100%O	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

Jaspar Co
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler

20-9s-19w Rooks, KS
Larry #1
Job Ticket: 63184 **DST#: 5**
Test Start: 2017.11.17 @ 13:55:15

Tool Information

Drill Pipe:	Length: 3399.00 ft	Diameter: 3.80 inches	Volume: 47.68 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 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	ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial	35000.00 lb
Depth to Top Packer:	3507.00 ft			Final	35000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	18.00 ft				
Tool Length:	38.00 ft				
Number of Packers:	1	Diameter: 6.75 inches			

Tool Comments:

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

Change Over Sub	1.00			3488.00	
Shut In Tool	5.00			3493.00	
Hydraulic tool	5.00			3498.00	
Packer	5.00			3503.00	20.00 Bottom Of Top Packer
Packer	4.00			3507.00	
Stubb	1.00			3508.00	
Perforations	4.00			3512.00	
Recorder	0.00	9120	Inside	3512.00	
Recorder	0.00	8934	Outside	3512.00	
Perforations	10.00			3522.00	
Bullnose	3.00			3525.00	18.00 Bottom Packers & Anchor

Total Tool Length: 38.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co

20-9s-19w Rooks,KS

PO Box 1120
Hays KS 67601

Larry #1

Job Ticket: 63184

DST#: 5

ATTN: Jeff Lawler

Test Start: 2017.11.17 @ 13:55:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

35 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8500.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
57.00	HOCM 40%O 60%M	0.280
5.00	Clean Oil 100%O	0.025

Total Length: 62.00 ft Total Volume: 0.305 bbl

Num Fluid Samples: 0

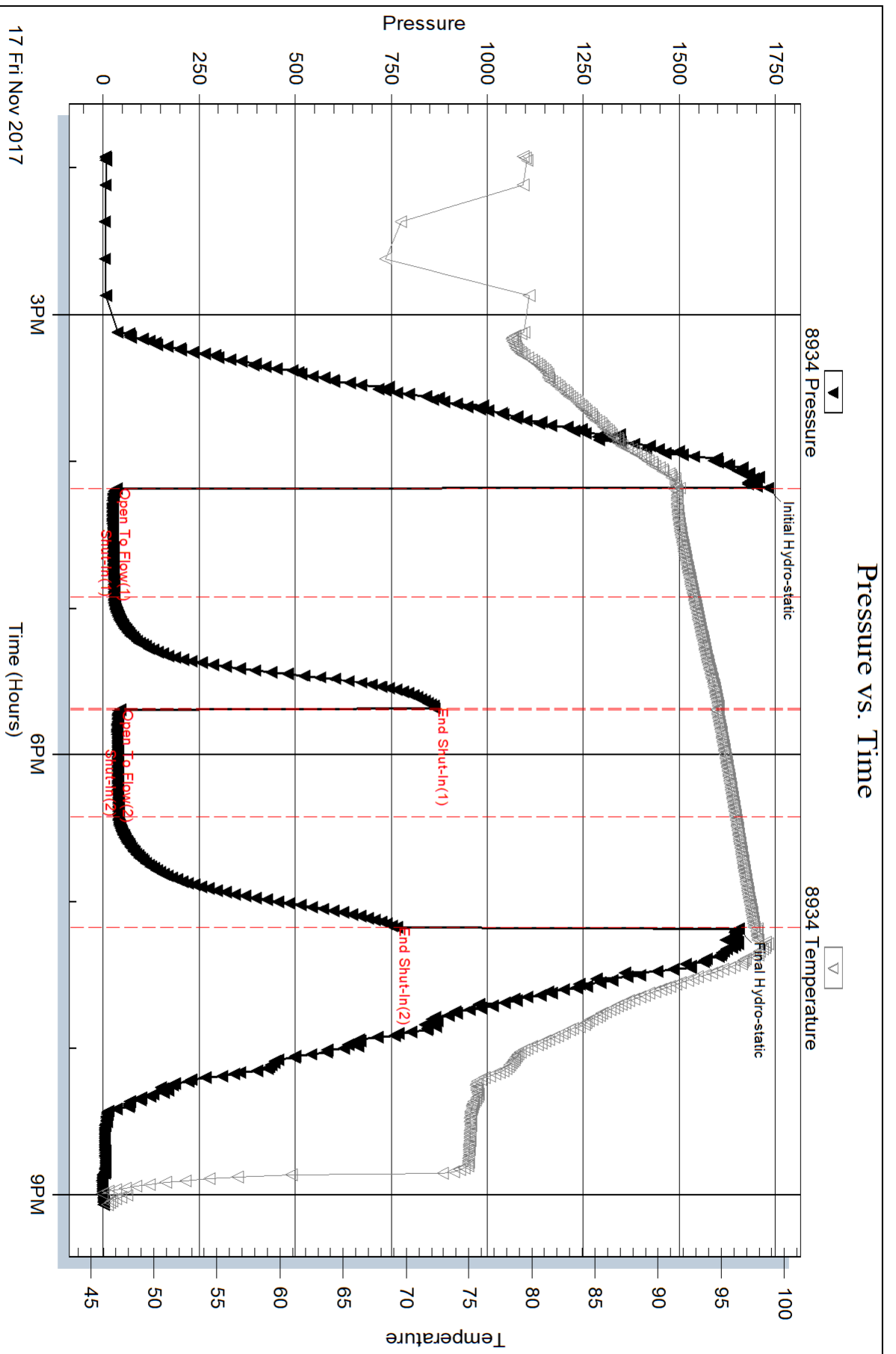
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 3&1/2#LCM

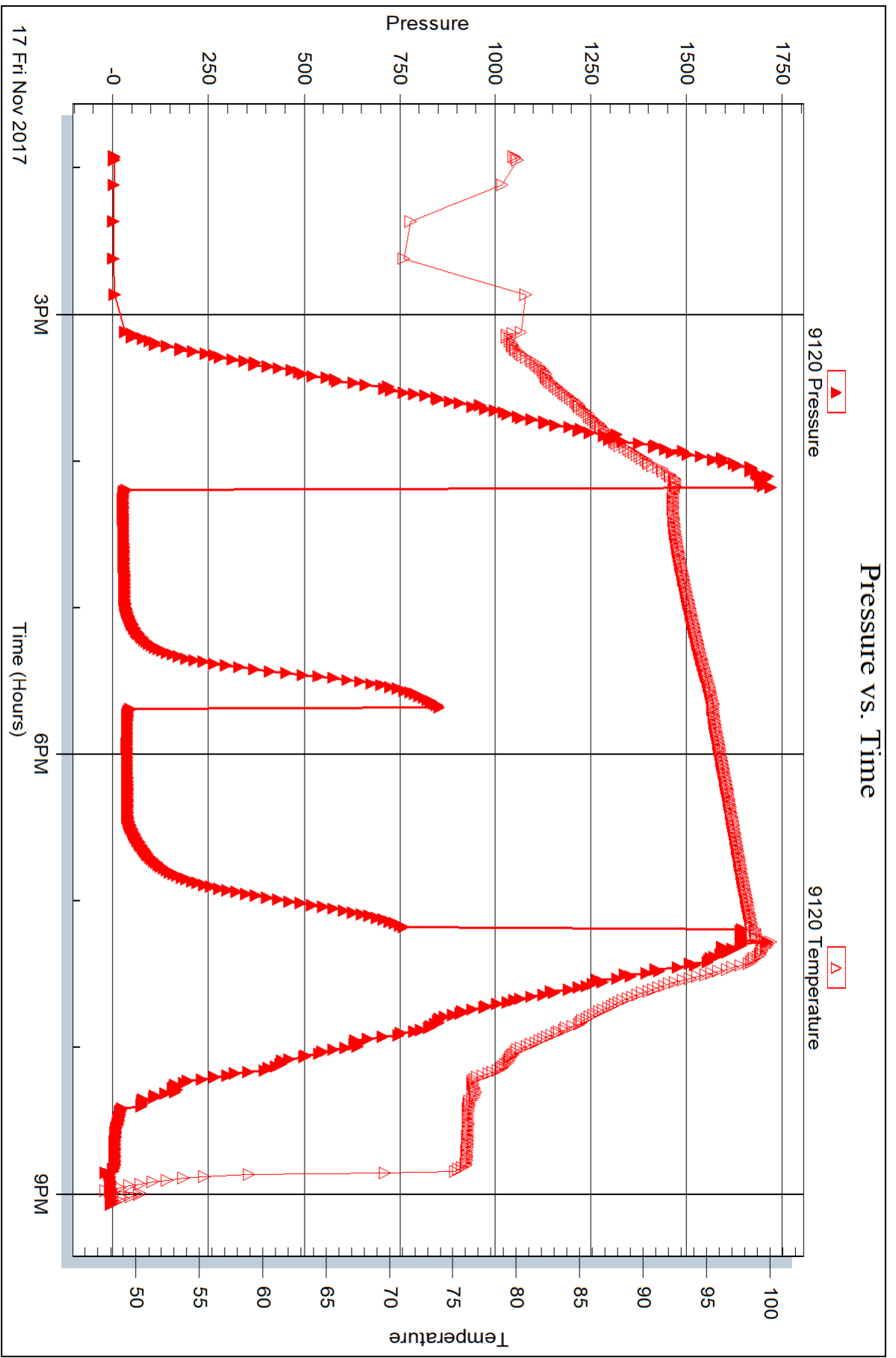


Serial #: 9120

Inside Jasper Co

Larry #1

DST Test Number: 5





DRILL STEM TEST REPORT

Prepared For: **Jaspar Co**

PO Box 1120
Hays KS 67601

ATTN: Jeff Lawler

Larry #1

20-9s-19w Rooks,KS

Start Date: 2017.11.18 @ 08:18:00

End Date: 2017.11.18 @ 12:58:45

Job Ticket #: 63185 DST #: 6

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

Printed: 2017.11.21 @ 08:16:56



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Jaspar Co
 PO Box 1120
 Hays KS 67601
 ATTN: Jeff Lawler

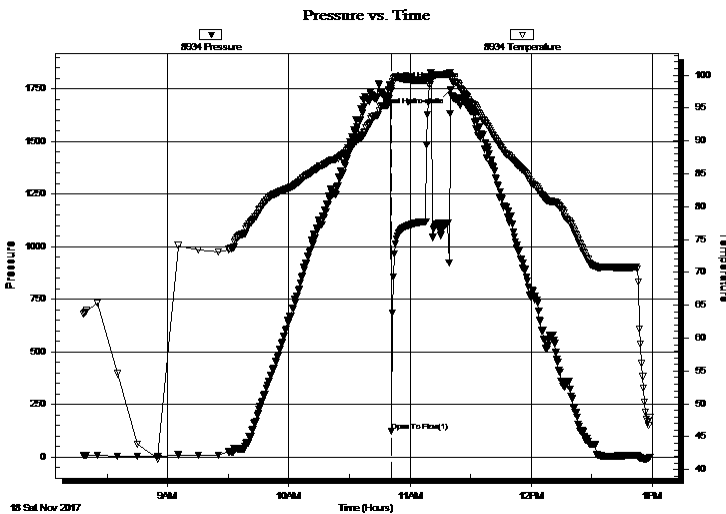
20-9s-19w Rooks, KS
Larry #1
 Job Ticket: 63185 **DST#: 6**
 Test Start: 2017.11.18 @ 08:18:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:50:45
 Time Test Ended: 12:58:45
Interval: 3582.00 ft (KB) To 3593.00 ft (KB) (TVD)
 Total Depth: 3350.00 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: 2146.00 ft (KB)
 2141.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8934 Outside
 Press@RunDepth: psig @ 3583.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.11.18 End Date: 2017.11.18 Last Calib.: 2017.11.18
 Start Time: 08:18:15 End Time: 12:58:45 Time On Btm: 2017.11.18 @ 10:50:30
 Time Off Btm: 2017.11.18 @ 11:20:15

TEST COMMENT: IF-Weak Blow ; Built to 1"; Started to die back; Flushed Tool; No Help



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1760.16	97.90	Initial Hydro-static
1	123.27	97.68	Open To Flow (1)
30	1746.51	99.69	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud w/show oil	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

Jaspar Co
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler

20-9s-19w Rooks,KS
Larry #1
Job Ticket: 63185 **DST#: 6**
Test Start: 2017.11.18 @ 08:18:00

Tool Information

Drill Pipe:	Length: 3463.00 ft	Diameter: 3.80 inches	Volume: 48.58 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 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:	42000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial	34000.00 lb
Depth to Top Packer:	3582.00 ft			Final	34000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	11.00 ft				
Tool Length:	31.00 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			3563.00	
Shut In Tool	5.00			3568.00	
Hydraulic tool	5.00			3573.00	
Packer	5.00			3578.00	20.00 Bottom Of Top Packer
Packer	4.00			3582.00	
Stubb	1.00			3583.00	
Recorder	0.00	9120	Inside	3583.00	
Recorder	0.00	8934	Outside	3583.00	
Perforations	7.00			3590.00	
Bullnose	3.00			3593.00	11.00 Bottom Packers & Anchor
Total Tool Length:	31.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co

20-9s-19w Rooks,KS

PO Box 1120
Hays KS 67601

Larry #1

Job Ticket: 63185

DST#: 6

ATTN: Jeff Lawler

Test Start: 2017.11.18 @ 08:18:00

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: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8500.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud w/show oil	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

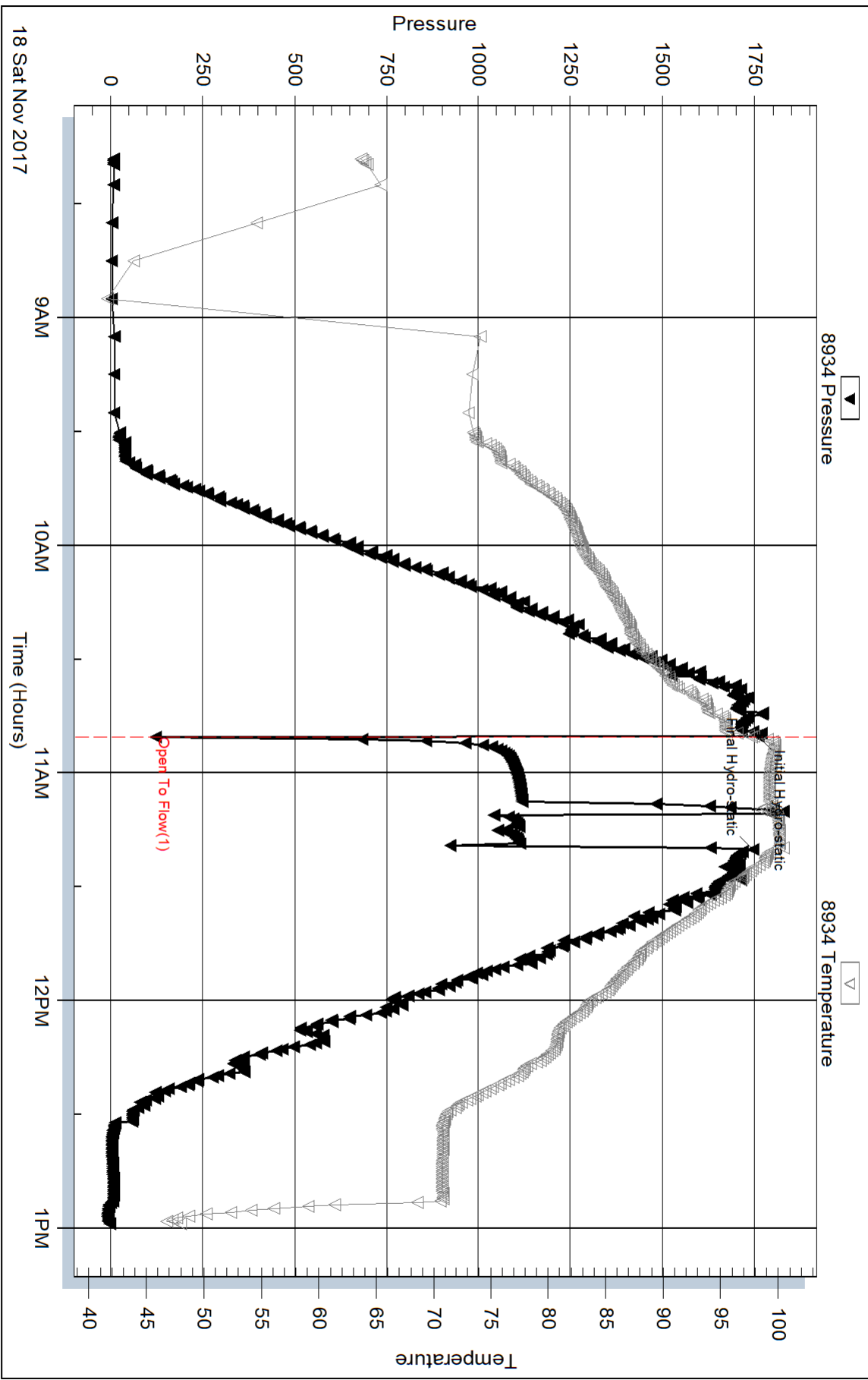
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 3&1/2#LCM

Pressure vs. Time

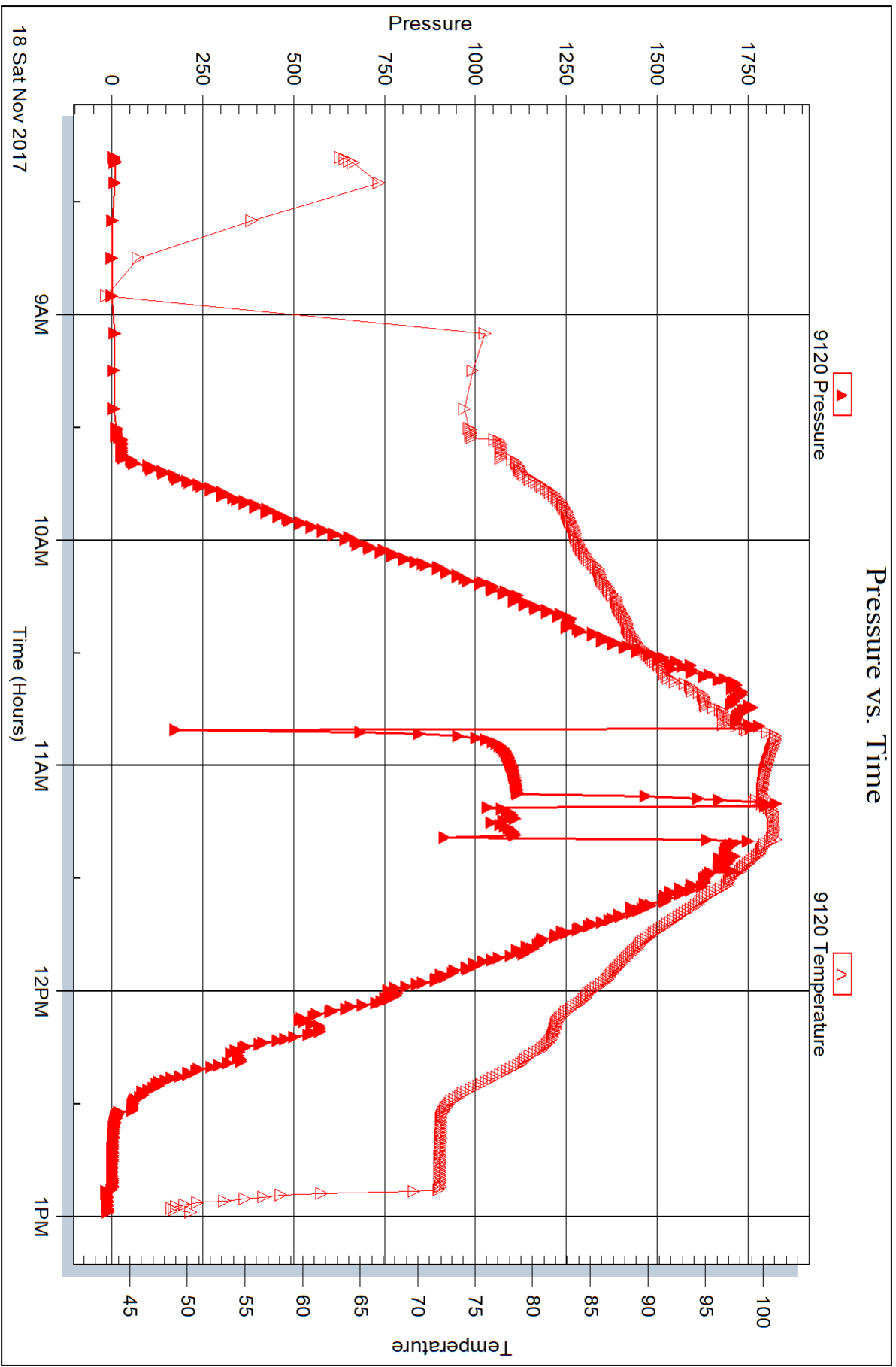


Serial #: 9120

Inside Jasper Co

Larry #1

DST Test Number: 6





DRILL STEM TEST REPORT

Prepared For: **Jaspar Co**

PO Box 1120
Hays KS 67601

ATTN: Jeff Lawler

Larry #1

20-9s-19w Rooks,KS

Start Date: 2017.11.18 @ 18:29:00

End Date: 2017.11.19 @ 02:24:30

Job Ticket #: 63186 DST #: 7

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

Printed: 2017.11.21 @ 08:16:23

Jaspar Co
20-9s-19w Rooks,KS
Larry #1
DST # 7
Arbuckle
2017.11.18



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Jaspar Co
 PO Box 1120
 Hays KS 67601
 ATTN: Jeff Lawler

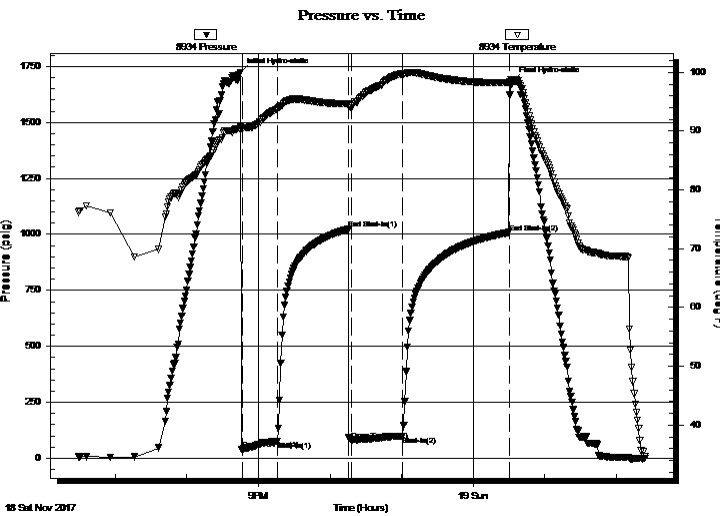
20-9s-19w Rooks,KS
Larry #1
 Job Ticket: 63186 **DST#: 7**
 Test Start: 2017.11.18 @ 18:29:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 20:46:15 Tester: Spencer J. Staab
 Time Test Ended: 02:24:30 Unit No: 84
 Interval: **3540.00 ft (KB) To 3595.00 ft (KB) (TVD)** Reference Elevations: 2146.00 ft (KB)
 Total Depth: 3595.00 ft (KB) (TVD) 2141.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

Serial #: 8934 Inside
 Press@RunDepth: 100.08 psig @ 3543.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.11.18 End Date: 2017.11.19 Last Calib.: 2017.11.19
 Start Time: 18:29:15 End Time: 02:24:30 Time On Btm: 2017.11.18 @ 20:44:45
 Time Off Btm: 2017.11.19 @ 00:33:00

TEST COMMENT: 30-IF-Fair Blow ; Built to 9"
 60-ISI-No Return
 45-FF-Fair Blow ; BOB in 31 mins
 90-FSI-Weak Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1722.97	90.67	Initial Hydro-static
2	41.23	90.58	Open To Flow (1)
31	76.02	93.84	Shut-In(1)
91	1022.85	94.63	End Shut-In(1)
94	82.90	94.10	Open To Flow (2)
137	100.08	99.69	Shut-In(2)
226	1008.35	98.21	End Shut-In(2)
229	1681.58	98.80	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
190.00	HMCO 40%M 60%O	1.57
30.00	MCO 20%M 80%O	0.42

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler

20-9s-19w Rooks,KS
Larry #1
Job Ticket: 63186 **DST#: 7**
Test Start: 2017.11.18 @ 18:29:00

Tool Information

Drill Pipe:	Length: 3432.00 ft	Diameter: 3.80 inches	Volume: 48.14 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 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:	42000.00 lb
			<u>Total Volume:</u>	Tool Chased	ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial	34000.00 lb
Depth to Top Packer:	3540.00 ft			Final	35000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	55.00 ft				
Tool Length:	75.00 ft				
Number of Packers:	1	Diameter:	6.75 inches		

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Change Over Sub	1.00			3521.00	
Shut In Tool	5.00			3526.00	
Hydraulic tool	5.00			3531.00	
Packer	5.00			3536.00	20.00 Bottom Of Top Packer
Packer	4.00			3540.00	
Stubb	1.00			3541.00	
Perforations	1.00			3542.00	
Change Over Sub	1.00			3543.00	
Recorder	0.00	9120	Inside	3543.00	
Recorder	0.00	8934	Inside	3543.00	
Drill Pipe	32.00			3575.00	
Change Over Sub	1.00			3576.00	
Perforations	16.00			3592.00	
Bullnose	3.00			3595.00	55.00 Bottom Packers & Anchor

Total Tool Length: 75.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co

20-9s-19w Rooks,KS

PO Box 1120
Hays KS 67601

Larry #1

Job Ticket: 63186

DST#: 7

ATTN: Jeff Lawler

Test Start: 2017.11.18 @ 18:29:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

25 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 9000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
190.00	HMCO 40%M 60%O	1.572
30.00	MCO 20%M 80%O	0.421

Total Length: 220.00 ft

Total Volume: 1.993 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

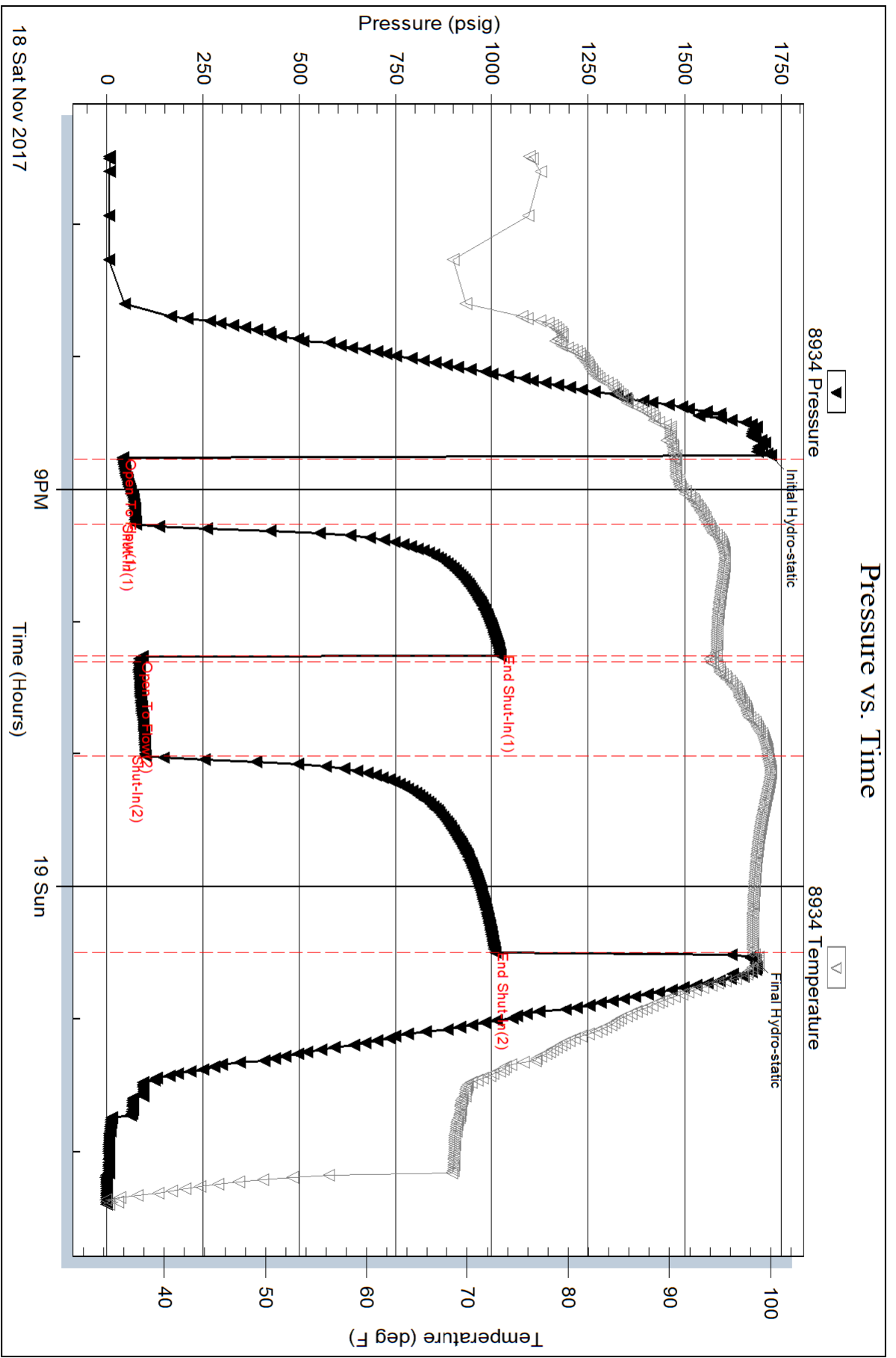
Recovery Comments: 2#LCM

Serial #: 8934

Inside Jasper Co

Larry #1

DST Test Number: 7



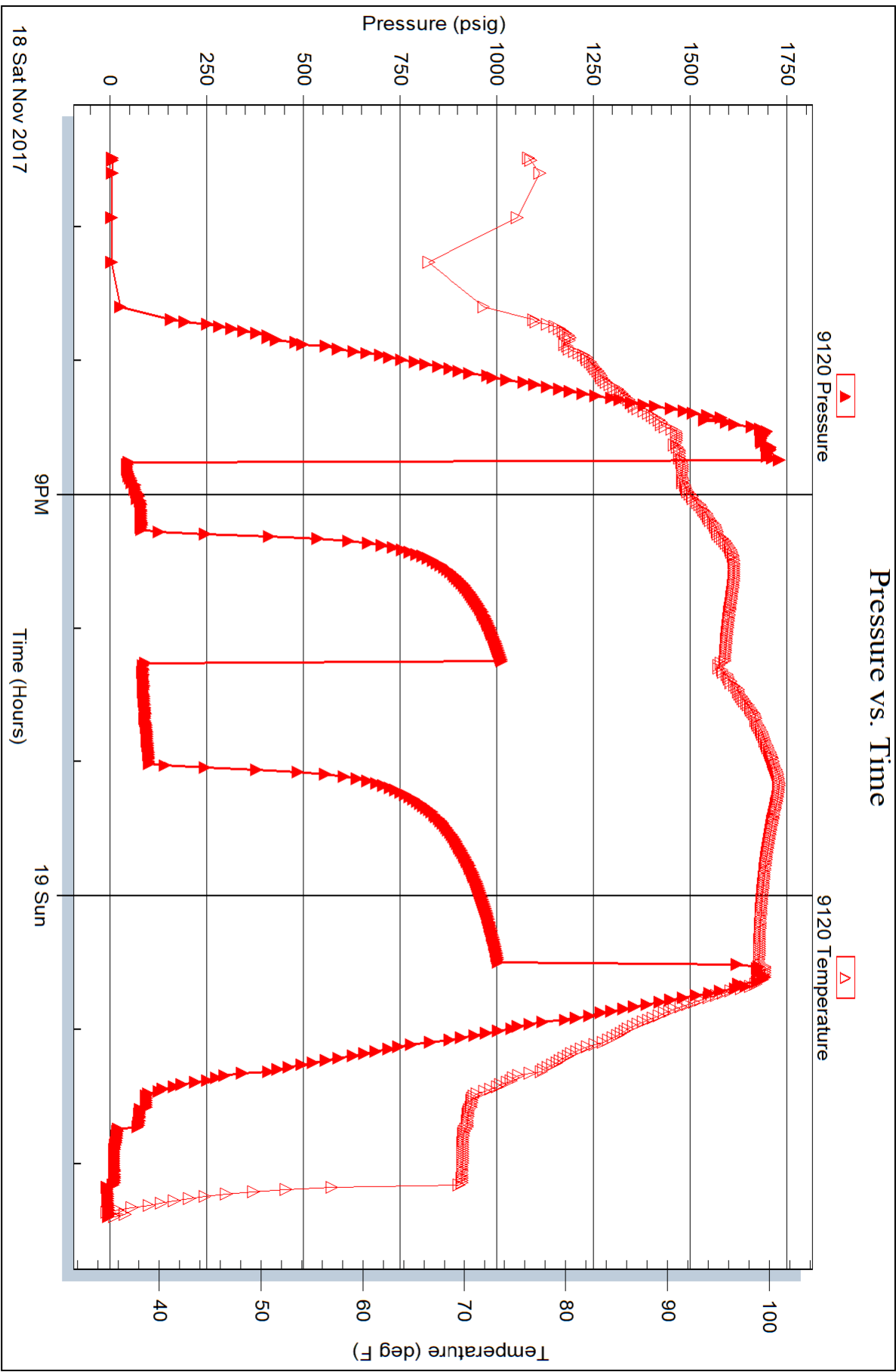
Serial #: 9120

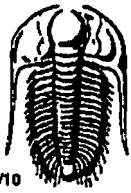
Inside

Jaspar Co

Larry #1

DST Test Number: 7





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63180

Well Name & No. Larry #1 Test No. 1 Date 11/15/2017
 Company Jasper Co Elevation 2146 KB 2141 GL
 Address PO Box 1120 Hays KS 67601
 Co. Rep / Geo. Jeff Lawler Rig WW #8
 Location: Sec. 20 Twp. 9s Rge. 19w Co. Rooks State Ks

Interval Tested 3290' - 3350' Zone Tested Toronto - LHC 'a'
 Anchor Length 60' Drill Pipe Run 3175' Mud Wt. 8.6
 Top Packer Depth 3285' Drill Collars Run 120' Vis 6.8
 Bottom Packer Depth 3290' Wt. Pipe Run - WL 7.6
 Total Depth 3350' Chlorides 2500 ppm System LCM 4#

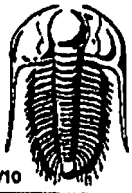
Blow Description 77- Fair Blow; BOB in 20 mins
75D- No Return
77- Fair Blow, Built to 9 1/2"
75D- Weak Blow; Did 20 min in

Rec	Feet of	%gas	%oil	%water	%mud
<u>120'</u>	<u>MW</u>			<u>70</u>	<u>30</u>
<u>60'</u>	<u>UCM</u>			<u>5</u>	<u>95</u>
<u>75'</u>	<u>OCM</u>		<u>7</u>		<u>93</u>
<u>15'</u>	<u>MCB</u>	<u>95</u>			<u>5</u>

Rec Total 280' BHT 98° Gravity 35° API RW .195 @ 50° F Chlorides 56,000 ppm

(A) Initial Hydrostatic 1596 Test 1050 T-On Location 02:15
 (B) First Initial Flow 88 Jars _____ T-Started 03:26
 (C) First Final Flow 89 Safety Joint _____ T-Open 07:09
 (D) Initial Shut-In 714 Circ Sub _____ T-Pulled 10:09
 (E) Second Initial Flow 99 Hourly Standby _____ T-Out 11:59
 (F) Second Final Flow 132 Mileage 74 R7 55.50 Comments _____
 (G) Final Shut-In 653 Sampler _____
 (H) Final Hydrostatic 1554 Straddle _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Initial Open 30 Shale Packer _____
 Initial Shut-In 45 Extra Packer _____
 Final Flow 45 Extra Recorder _____
 Final Shut-In 60 Day Standby _____
 Accessibility _____
 Sub Total 1105.50 Sub Total 0
 Total 1105.50 MP/DST Disc't _____

Approved By _____ Our Representative Spencer J. Staab Thanks!
785-259-0056



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63181

Well Name & No. Larry #1 Test No. 2 Date 11/15/2017
 Company Jasper Co Elevation 2146 KB 2141 GL
 Address PO BOX 1120 Hays KS 67601
 Co. Rep / Geo. Jeff Lawler Rig WW #8
 Location: Sec. 20 Twp. 9s Rge. 19w Co. Rooks State KS

Interval Tested 3354' - 3414' Zone Tested LAC 'C-D'
 Anchor Length 60' Drill Pipe Run 3242' Mud Wt. 9.0
 Top Packer Depth 3349' Drill Collars Run 120' Vis 55
 Bottom Packer Depth 3354' Wt. Pipe Run - WL 7.6
 Total Depth 3414' Chlorides 3,000 ppm System LCM 2 1/2 #

Blow Description 77- Strong Blow, BOB in 5 mins
75A- Weak Surface Blow @ 7 min; died after 8 mins
77- Strong Blow, BOB in 6 mins
75B- No Return

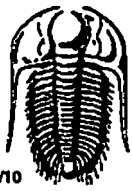
Rec	Feet of	%gas	%oil	%water	%mud
<u>525</u>	<u>MW</u>			<u>70</u>	<u>30</u>
<u>10'</u>	<u>MW</u>			<u>50</u>	<u>50</u>

Rec Total 535' BHT 105° Gravity - API RW 223 @ 36 °F Chlorides 70,000 ppm

(A) Initial Hydrostatic 1650 Test 1050 T-On Location 20:05
 (B) First Initial Flow 53 Jars _____ T-Started 20:22
 (C) First Final Flow 151 Safety Joint _____ T-Open 22:05
 (D) Initial Shut-In 854 Circ Sub _____ T-Pulled 00:35 11/16/2017
 (E) Second Initial Flow 157 Hourly Standby _____ T-Out 02:43
 (F) Second Final Flow 273 Mileage 7427 55.50 Comments _____
 (G) Final Shut-In 816 Sampler _____
 (H) Final Hydrostatic 1608 Straddle _____

Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Initial Open 15
 Initial Shut-In 45
 Final Flow 30
 Final Shut-In 60
 Sub Total 0
 Total 1105.50
 MP/DST Disc't _____
 Sub Total 1105.50

Approved By _____ Our Representative Spencer J. Jacob Thanks!
 785-259-0056



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63182

Well Name & No. Larry #1 Test No. 3 Date 11/16/2017
 Company Jasper Co Elevation 2146 KB 2141 GL
 Address PO BOX 1120 Hays KS 67601
 Co. Rep / Geo. Jeff Lawler Rig WW#8
 Location: Sec. 20 Twp. 9s Rge. 19w Co. Rocks State Ks

Interval Tested 3414' - 3430' Zone Tested LAC 'E-7'
 Anchor Length 16' Drill Pipe Run 3296' Mud Wt. 9.1
 Top Packer Depth 3409' Drill Collars Run 120' Vis 56
 Bottom Packer Depth 3414' Wt. Pipe Run - WL 7.6
 Total Depth 3430' Chlorides 3000 ppm System LCM 2#

Blow Description: D7-Strong Blow; BOB in 2 mins
D5-Weak Blow; Built to 1/4"
F7-Strong Blow; BOB in 1/2 mins
F5-Weak Surface Blow @ 12 mins; Died 5 mins after

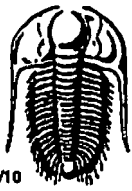
Rec	Feet of	%gas	%oil	%water	%mud
<u>1100'</u>	<u>Water</u>		<u>100</u>		
<u>300'</u>	<u>MCGW</u>		<u>95</u>	<u>5</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 1400' BHT 106° Gravity - API RW 999 @ 60 °F Chlorides 94,000 ppm

(A) Initial Hydrostatic 1652 Test 1050 T-On Location 09:22
 (B) First Initial Flow 93 Jars _____ T-Started 09:34
 (C) First Final Flow 341 Safety Joint _____ T-Open 11:29
 (D) Initial Shut-In 852 Circ Sub _____ T-Pulled 13:59
 (E) Second Initial Flow 362 Hourly Standby _____ T-Out 15:43
 (F) Second Final Flow 666 Mileage 74R7 55.50 Comments _____
 (G) Final Shut-In 851 Sampler _____
 (H) Final Hydrostatic 1614 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 15
 Initial Shut-In 45
 Final Flow 30
 Final Shut-In 60
 Sub Total 1105.50
 Total 1105.50
 MP/DST Disc't _____

Approved By _____ Our Representative Spencer J. Steab Thanks!
 785-259-0056



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63183

Well Name & No. Larry #1 Test No. 4 Date 11/16/2017
 Company Jasper Co Elevation 2146 KB 2141 GL
 Address PO Box 1120 Hays KS 67601
 Co. Rep / Geo. Jeff Lawler Rig WW#8
 Location: Sec. 20 Twp. 9s Rge. 19w Co. Rooks State KS

Interval Tested 3458' - 3509' Zone Tested LKC 'A-D'
 Anchor Length 51' Drill Pipe Run 3336' Mud Wt. 9.1
 Top Packer Depth 3453' Drill Collars Run 120' Vis 56
 Bottom Packer Depth 3458' Wt. Pipe Run - WL 7.6
 Total Depth 3509' Chlorides 3000 ppm System LCM 2#

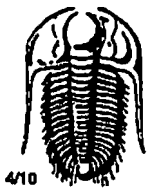
Blow Description 77 - Fair Blow; BOB in 17 mins
151 - Weak Blow; Built to 1/2"; Died back to 1/4"
77 - Fair Blow; BOB in 16 mins
75 - Weak Blow; Built to 1"

Rec	Feet of	%gas	%oil	%water	%mud
60'	OCWM	2	28	70	
120'	OCMW	1	89	10	
60'	OCWM	3	27	70	
10'	OCM	5		95	
30'	MC10	10	85	5	

Rec Total 280' BHT 103° Gravity 36° API RW .149 @ 51 °F Chlorides 74,000 ppm

(A) Initial Hydrostatic 1685 Test 1050 T-On Location 23:55
 (B) First Initial Flow 34 Jars _____ T-Started 00:14 11/17/2017
 (C) First Final Flow 94 Safety Joint _____ T-Open 02:30
 (D) Initial Shut-In 900 Circ Sub _____ T-Pulled 05:00
 (E) Second Initial Flow 109 Hourly Standby _____ T-Out 07:04
 (F) Second Final Flow 150 Mileage 7427 55.50 Comments _____
 (G) Final Shut-In 896 Sampler _____
 (H) Final Hydrostatic 1643 Straddle _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Initial Open 30 Shale Packer _____
 Initial Shut-In 45 Extra Packer _____
 Final Flow 30 Extra Recorder _____
 Final Shut-In 45 Day Standby _____
 Accessibility _____
 Sub Total 1105.50 Sub Total 0
 Total 1105.50 MP/DST Disc't _____

Approved By _____ Our Representative Spencer J. Staab Thanks
 785-259-0056



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63184

Well Name & No. Larry #1 Test No. 5 Date 11/17/2017
 Company Jasper Co Elevation 2146 KB 2141 GL
 Address PO BOX 1120 Hays Ks 67601
 Co. Rep / Geo. Jeff Lawler Rig WW#8
 Location: Sec. 20 Twp. 9s Rge. 19w Co. Rooks State Ks

Interval Tested 3507' - 3525' Zone Tested LHC 'J'
 Anchor Length 18' Drill Pipe Run 3399' Mud Wt. 9.1
 Top Packer Depth 3502' Drill Collars Run 120' Vis 54
 Bottom Packer Depth 3507' Wt. Pipe Run - WL 7.6
 Total Depth 3525 Chlorides 8500 ppm System LCM 3 1/2#

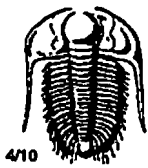
Blow Description 17-Weak Blow, Built to 1 3/4"
1SD- No Return
77-Weak Blow, Built to 1 3/4"
75- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>57'</u>	<u>40CM</u>	<u>40</u>		<u>60</u>	
<u>5'</u>	<u>Clean Oil</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 Total 62 BHT 97° Gravity 35° API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 1729 Test 1050 T-On Location 13:40
 (B) First Initial Flow 36 Jars _____ T-Started 13:55
 (C) First Final Flow 29 Safety Joint _____ T-Open 16:10
 (D) Initial Shut-In 864 Circ Sub _____ T-Pulled 19:10
 (E) Second Initial Flow 44 Hourly Standby _____ T-Out 21:02
 (F) Second Final Flow 40 Mileage 7427 55.50 Comments _____
 (G) Final Shut-In 763 Sampler _____
 (H) Final Hydrostatic 1653 Straddle _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Initial Open 45 Shale Packer _____
 Initial Shut-In 45 Extra Packer _____
 Final Flow 45 Extra Recorder _____
 Final Shut-In 45 Day Standby _____
 Accessibility _____
 Sub Total 1105.50 Sub Total 0
 Total 1105.50 MP/DST Disc't _____

Approved By _____ Our Representative Spencer J. Staal Thanks!
785-259-0056



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63185

Well Name & No. Larry #1 Test No. 6 Date 11/18/2017
 Company Imper Co Elevation 2146 KB 2141 GL
 Address PO BOX 1120 Hays Ks 67601
 Co. Rep / Geo. Jeff Lawler Rig WW#8
 Location: Sec. 20 Twp. 9S Rge. RW Co. Rooks State Ks

Interval Tested 3582' - 3593' Zone Tested Arbuckle
 Anchor Length 11' Drill Pipe Run 3463' Mud Wt. 9.1
 Top Packer Depth 3578' Drill Collars Run 120' Vis 54
 Bottom Packer Depth 3582' Wt. Pipe Run - WL 7.6
 Total Depth 3593 Chlorides 8500 ppm System LCM 3 1/2#

Blow Description 7 - Weak Blow; Built to 1"; started to die back; Flushed; No help
7SD -
77 -
7SD -

Rec	Feet of	%gas	%oil	%water	%mud
<u>5'</u>	<u>Mud w/ serum oil</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 5' BHT 99° Gravity - API RW - @ - °F Chlorides - ppm

- (A) Initial Hydrostatic 1760
- (B) First Initial Flow 123
- (C) First Final Flow -
- (D) Initial Shut-In -
- (E) Second Initial Flow -
- (F) Second Final Flow -
- (G) Final Shut-In -
- (H) Final Hydrostatic 1776

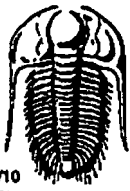
- Test 850
- Jars
- Safety Joint
- Circ Sub
- Hourly Standby
- Mileage 74 R7 55.50
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility
- Sub Total 905.50

- T-On Location 08:02
- T-Started 08:18
- T-Open 10:50
- T-Pulled 11:20
- T-Out 12:58
- Comments tool plugged 2 mins after opening; slid 6 ft. to bottom
- Ruined Shale Packer
- Ruined Packer
- Extra Copies
- Sub Total 0
- Total 1105.50
- MP/DST Disc't

Initial Open 20 - Flushed @ 11:10
 Initial Shut-In -
 Final Flow -
 Final Shut-In -

Approved By _____

Our Representative Spencer J. Staal Thanks!
 785-259-0056



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63186

Well Name & No. Larry #1 Test No. 7 Date 11/18/2017
 Company Jasper Co Elevation 2146 KB 2141 GL
 Address PO Box 1120 Hays Ks 67601
 Co. Rep / Geo. Jeff Lawler Rig WW#8
 Location: Sec. 20 Twp. 9s Rge. 19w Co. Rooks State Ks

Interval Tested 3540' - 3595' Zone Tested Arbuckle
 Anchor Length 55' Drill Pipe Run 3432' Mud Wt. 9.1
 Top Packer Depth 3535' Drill Collars Run 120' Vis 48
 Bottom Packer Depth 3540' Wt. Pipe Run - WL 8
 Total Depth 3595' Chlorides 9000 ppm System LCM 2

Blow Description 17- Fair Blow; Built to 9"
ISD- No Return
77- Fair Blow; Built to BOB in 31 mins
7SD- Weak Return

Rec	Feet of	%gas	%oil	%water	%mud
190'	HMCO	60		40	
30'	HMCO MCO	80		20	

Rec Total 220' BHT 98° Gravity 25° API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 1722 Test 1050 T-On Location 18:12
 (B) First Initial Flow 41 Jars _____ T-Started 18:29
 (C) First Final Flow 76 Safety Joint _____ T-Open 20:44
 (D) Initial Shut-In 1022 Circ Sub _____ T-Pulled 00:29 11/19/2017
 (E) Second Initial Flow 82 Hourly Standby _____ T-Out 02:22
 (F) Second Final Flow 100 Mileage 74R7 55.50 Comments _____
 (G) Final Shut-In 1008 Sampler _____
 (H) Final Hydrostatic 1681 Straddle _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Initial Open 30 Shale Packer _____
 Initial Shut-In 60 Extra Packer _____
 Final Flow 45 Extra Recorder _____
 Final Shut-In 90 Day Standby _____
 Accessibility _____
 Sub Total 1105.50 Sub Total 0
 Total 1150.50 MP/DST Disc't _____

Approved By _____ Our Representative Spencer J. Jacob Thanks
785-259-0056