



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water Ste 250
Wichita, KS 67202

ATTN: Jeff Christian

Youngmeyer A #2-14

14-29S-8E Elk,KS

Start Date: 2017.07.11 @ 19:33:54

End Date: 2017.07.12 @ 02:14:09

Job Ticket #: 63608 DST #: 1

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

Printed: 2017.07.17 @ 10:19:24



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co
 250 N Water Ste 250
 Wichita, KS 67202
 ATTN: Jeff Christian

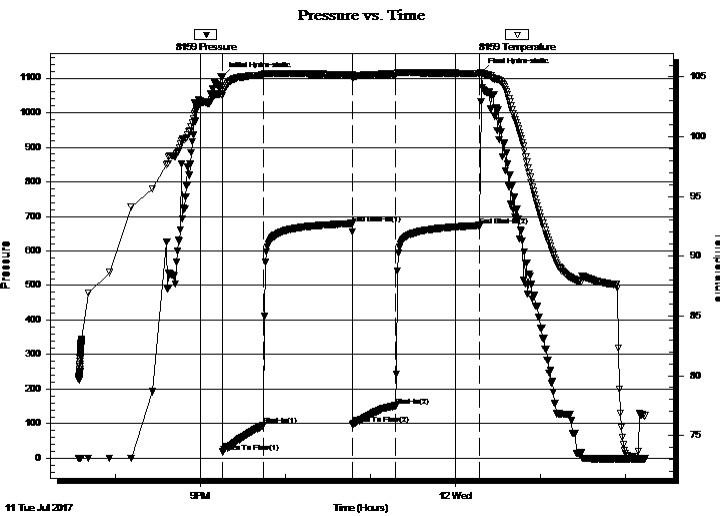
14-29S-8E EIk, KS
Youngmeyer A #2-14
 Job Ticket: 63608 **DST#: 1**
 Test Start: 2017.07.11 @ 19:33:54

GENERAL INFORMATION:

Formation: **Hertha**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 21:15:24
 Time Test Ended: 02:14:09
 Interval: **2204.00 ft (KB) To 2216.00 ft (KB) (TVD)**
 Total Depth: 2216.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Leal Cason
 Unit No: 74
 Reference Elevations: 1550.00 ft (KB)
 1541.00 ft (CF)
 KB to GR/CF: 9.00 ft

Serial #: 8159 Inside
 Press@RunDepth: 151.65 psig @ 2205.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.07.11 End Date: 2017.07.12 Last Calib.: 2017.07.12
 Start Time: 19:33:55 End Time: 02:14:09 Time On Btm: 2017.07.11 @ 21:15:09
 Time Off Btm: 2017.07.12 @ 00:18:24

TEST COMMENT: IF: Fair Blow , Built to 7 inches
 IS: No Blow Back
 FF: Weak Surface Blow
 FS: No Blow Back



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1103.41 | 103.74 | Initial Hydro-static |
| 1 | 18.37 | 103.44 | Open To Flow (1) |
| 30 | 96.51 | 105.17 | Shut-In(1) |
| 92 | 679.20 | 105.18 | End Shut-In(1) |
| 93 | 99.08 | 104.97 | Open To Flow (2) |
| 123 | 151.65 | 105.25 | Shut-In(2) |
| 182 | 673.55 | 105.30 | End Shut-In(2) |
| 184 | 1116.52 | 105.38 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|---------------|--------------|
| 270.00 | MCW 30%M 70%W | 1.59 |
| | | |
| | | |
| | | |
| | | |

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co
 250 N Water Ste 250
 Wichita, KS 67202
 ATTN: Jeff Christian

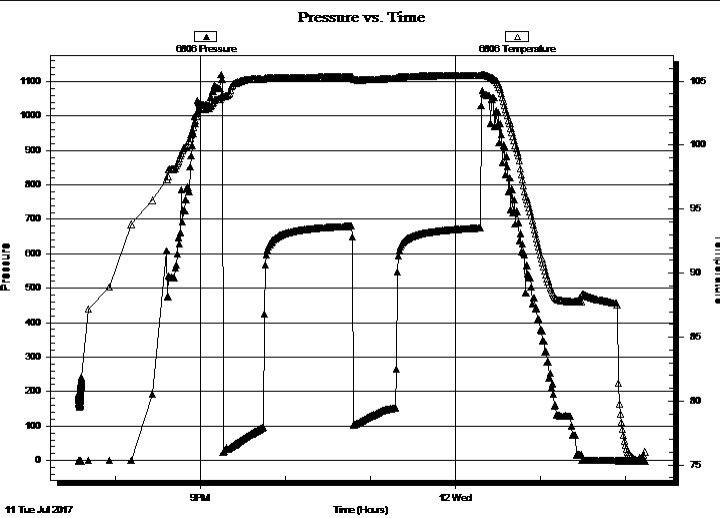
14-29S-8E EIk,KS
Youngmeyer A #2-14
 Job Ticket: 63608 **DST#: 1**
 Test Start: 2017.07.11 @ 19:33:54

GENERAL INFORMATION:

Formation: **Hertha**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 21:15:24 Tester: Leal Cason
 Time Test Ended: 02:14:09 Unit No: 74
 Interval: **2204.00 ft (KB) To 2216.00 ft (KB) (TVD)** Reference Elevations: 1550.00 ft (KB)
 Total Depth: 2216.00 ft (KB) (TVD) 1541.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 9.00 ft

Serial #: 6806 Outside
 Press@RunDepth: psig @ 2205.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.07.11 End Date: 2017.07.12 Last Calib.: 2017.07.12
 Start Time: 19:33:55 End Time: 02:14:09 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF: Fair Blow , Built to 7 inches
 IS!: No Blow Back
 FF: Weak Surface Blow
 FS!: No Blow Back



| PRESSURE SUMMARY | | | |
|------------------|-----------------|--------------|------------|
| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
| | | | |
| | | | |
| | | | |
| | | | |

| Recovery | | |
|-------------|---------------|--------------|
| Length (ft) | Description | Volume (bbl) |
| 270.00 | MCW 30%M 70%W | 1.59 |
| | | |
| | | |
| | | |
| | | |

| Gas Rates | | | |
|-----------|----------------|-----------------|------------------|
| | Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
| | | | |
| | | | |
| | | | |



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

14-29S-8E EIk, KS

250 N Water Ste 250
Wichita, KS 67202

Youngmeyer A #2-14

Job Ticket: 63608

DST#: 1

ATTN: Jeff Christian

Test Start: 2017.07.11 @ 19:33:54

Tool Information

| | | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------|-------------|
| Drill Pipe: | Length: 1944.00 ft | Diameter: 3.80 inches | Volume: 27.27 bbl | Tool Weight: | 2100.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 0.00 inches | Volume: 0.00 bbl | Weight set on Packer: | 25000.00 lb |
| Drill Collar: | Length: 241.00 ft | Diameter: 2.25 inches | Volume: 1.19 bbl | Weight to Pull Loose: | 50000.00 lb |
| | | | <u>Total Volume: 28.46 bbl</u> | Tool Chased | ft |
| Drill Pipe Above KB: | 7.00 ft | | | String Weight: Initial | 45000.00 lb |
| Depth to Top Packer: | 2204.00 ft | | | Final | 45000.00 lb |
| Depth to Bottom Packer: | ft | | | | |
| Interval between Packers: | 12.00 ft | | | | |
| Tool Length: | 38.00 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 | | | 2183.00 | |
| Hydraulic tool | 5.00 | | | 2188.00 | |
| Jars | 5.00 | | | 2193.00 | |
| Safety Joint | 2.00 | | | 2195.00 | |
| Packer | 5.00 | | | 2200.00 | 26.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 2204.00 | |
| Stubb | 1.00 | | | 2205.00 | |
| Recorder | 0.00 | 8159 | Inside | 2205.00 | |
| Recorder | 0.00 | 6806 | Outside | 2205.00 | |
| Perforations | 8.00 | | | 2213.00 | |
| Bullnose | 3.00 | | | 2216.00 | 12.00 Bottom Packers & Anchor |

Total Tool Length: 38.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

14-29S-8E EIk, KS

250 N Water Ste 250
Wichita, KS 67202

Youngmeyer A #2-14

Job Ticket: 63608

DST#: 1

ATTN: Jeff Christian

Test Start: 2017.07.11 @ 19:33:54

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:

82000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 10.37 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 740.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|---------------|---------------|
| 270.00 | MCW 30%M 70%W | 1.592 |

Total Length: 270.00 ft Total Volume: 1.592 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW w as .085 @ 80 degrees

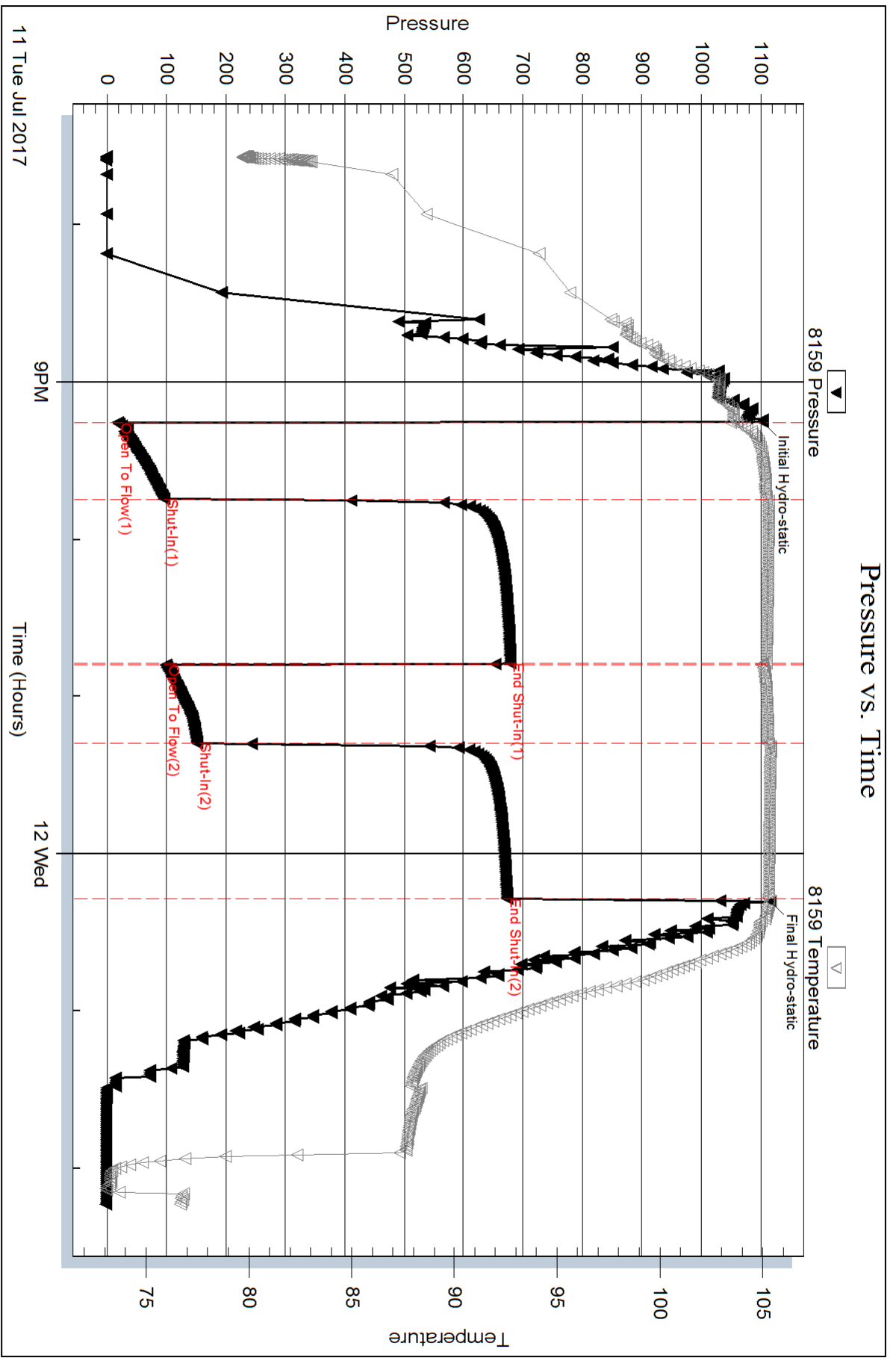
Serial #: 8159

Inside

Murfin Drilling Co

Youngmeyer A #2-14

DST Test Number: 1

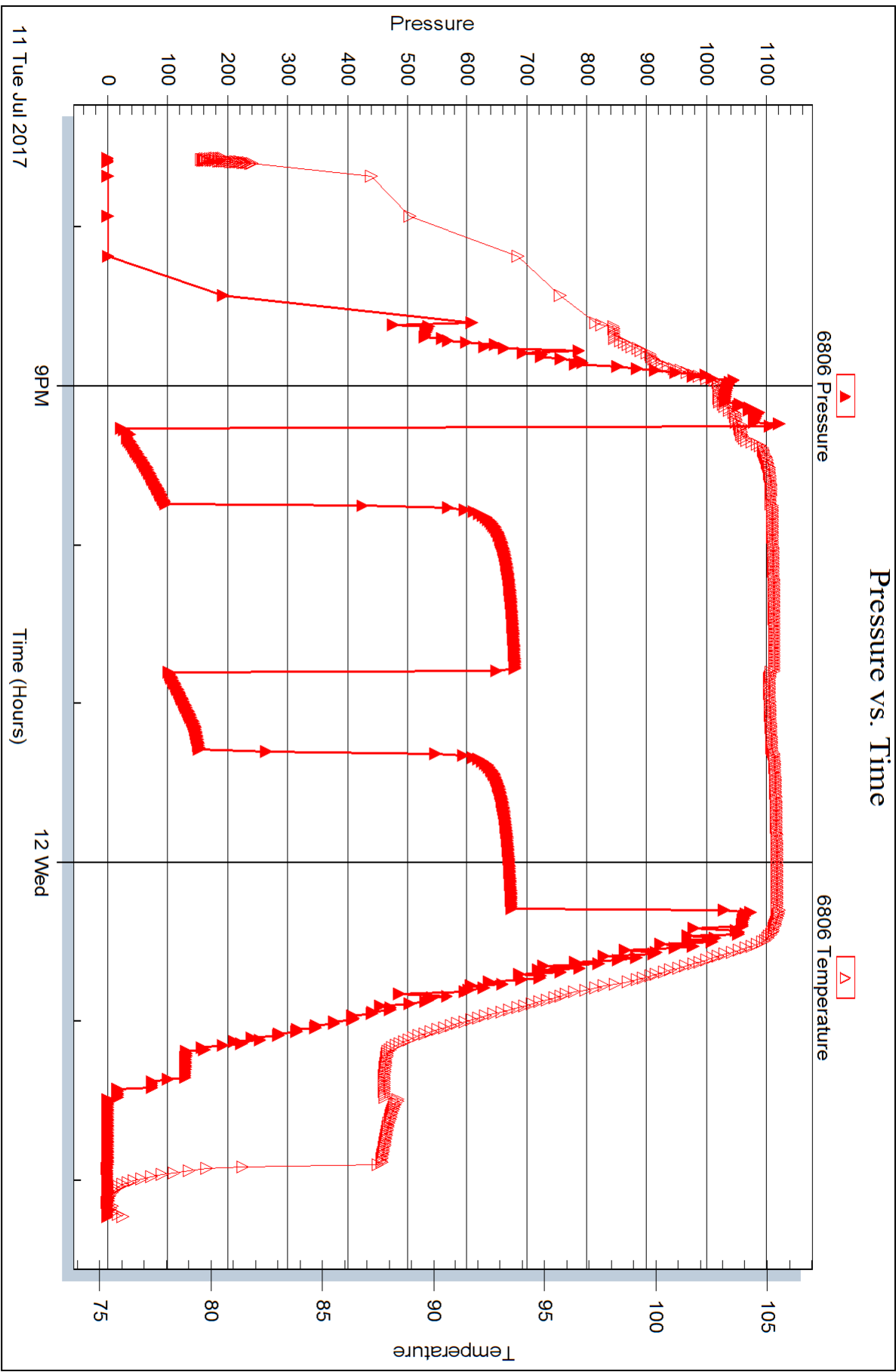


Serial #: 6806

Outside Murfin Drilling Co

Youngmeyer A #2-14

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 63608

Printed: 2017.07.17 @ 10:19:25



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water Ste 250
Wichita, KS 67202

ATTN: Jeff Christian

Youngmeyer A #2-14

14-29S-8E Elk,KS

Start Date: 2017.07.13 @ 08:52:24

End Date: 2017.07.13 @ 15:47:47

Job Ticket #: 63609 DST #: 2

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

Printed: 2017.07.17 @ 10:18:29

Murfin Drilling Co
14-29S-8E Elk,KS
Youngmeyer A #2-14
DST # 2
Mississippi
2017.07.13



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water Ste 250
Wichita, KS 67202
ATTN: Jeff Christian

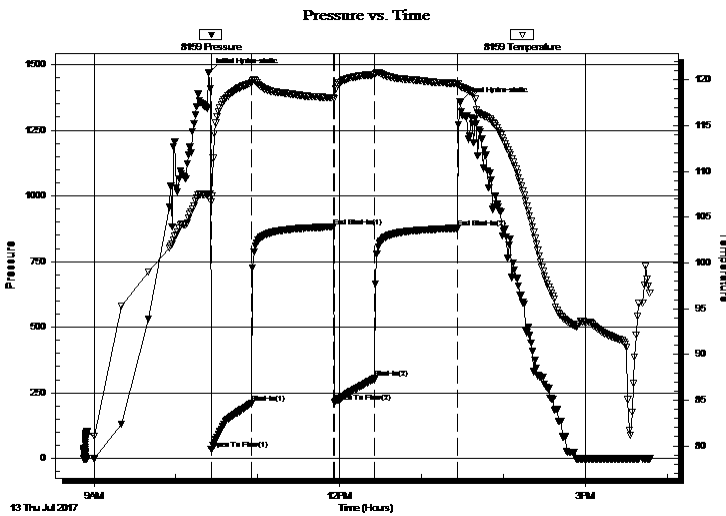
14-29S-8E EIk, KS
Youngmeyer A #2-14
Job Ticket: 63609 **DST#: 2**
Test Start: 2017.07.13 @ 08:52:24

GENERAL INFORMATION:

Formation: **Mississippi**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 10:25:47
Time Test Ended: 15:47:47
Interval: **2805.00 ft (KB) To 2820.00 ft (KB) (TVD)**
Total Depth: 2820.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Reset)
Tester: Leal Cason
Unit No: 74
Reference Elevations: 1550.00 ft (KB)
1541.00 ft (CF)
KB to GR/CF: 9.00 ft

Serial #: 8159 **Inside**
Press@RunDepth: 304.36 psig @ 2806.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.07.13 End Date: 2017.07.13 Last Calib.: 2017.07.13
Start Time: 08:52:25 End Time: 15:47:47 Time On Btm: 2017.07.13 @ 10:24:17
Time Off Btm: 2017.07.13 @ 13:28:17

TEST COMMENT: IF: Weak Blow , Built to 3 1/2 inches by 16 minutes, Died Off to 2 inches @ 30 minutes
IS: No Blow Back
FF: Weak Blow , Built to 1 1/2 inches
FS: No Blow Back



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1470.50 | 107.55 | Initial Hydro-static |
| 2 | 35.90 | 106.67 | Open To Flow (1) |
| 31 | 208.88 | 119.67 | Shut-In(1) |
| 92 | 882.05 | 118.04 | End Shut-In(1) |
| 92 | 215.29 | 117.95 | Open To Flow (2) |
| 122 | 304.36 | 120.57 | Shut-In(2) |
| 183 | 876.42 | 119.59 | End Shut-In(2) |
| 184 | 1357.45 | 119.25 | Final Hydro-static |

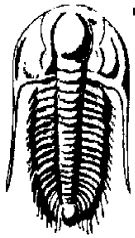
Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-----------------------|--------------|
| 427.00 | GCMW 5%G 95%W | 3.79 |
| 124.00 | GMCW 5%G 30%M 65%W | 1.74 |
| 2.00 | SOSWCM -1%O 30%W 69%M | 0.03 |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co

250 N Water Ste 250
Wichita, KS 67202

ATTN: Jeff Christian

14-29S-8E EIk, KS

Youngmeyer A #2-14

Job Ticket: 63609

DST#: 2

Test Start: 2017.07.13 @ 08:52:24

GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:25:47

Time Test Ended: 15:47:47

Test Type: Conventional Bottom Hole (Reset)

Tester: Leal Cason

Unit No: 74

Interval: **2805.00 ft (KB) To 2820.00 ft (KB) (TVD)**

Total Depth: 2820.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 1550.00 ft (KB)

1541.00 ft (CF)

KB to GR/CF: 9.00 ft

Serial #: **6806** Outside

Press@RunDepth: psig @ 2806.00 ft (KB)

Start Date: 2017.07.13

End Date:

2017.07.13

Start Time: 08:52:25

End Time:

15:48:03

Capacity: 8000.00 psig

Last Calib.:

2017.07.13

Time On Btm:

Time Off Btm:

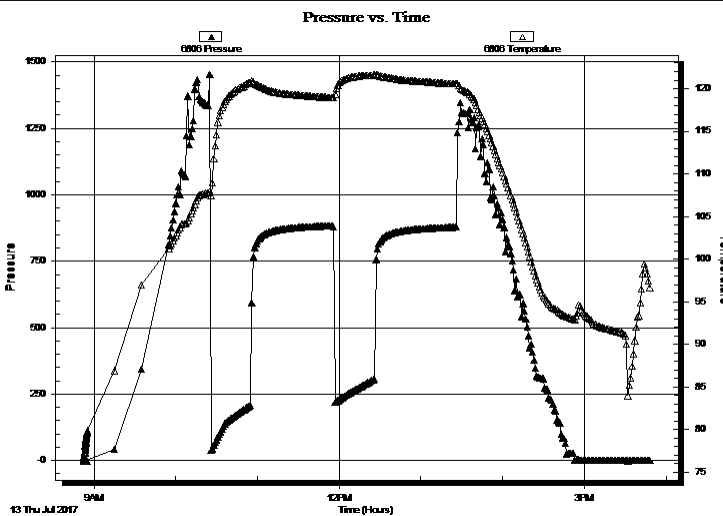
TEST COMMENT: IF: Weak Blow , Built to 3 1/2 inches by 16 minutes, Died Off to 2 inches @ 30 minutes

IS! No Blow Back

FF: Weak Blow , Built to 1 1/2 inches

FS! No Blow Back

PRESSURE SUMMARY



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

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-----------------------|--------------|
| 427.00 | GCMW 5%G 95%W | 3.79 |
| 124.00 | GMCW 5%G 30%M 65%W | 1.74 |
| 2.00 | SOSWCM -1%O 30%W 69%M | 0.03 |
| | | |
| | | |

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

14-29S-8E EIk, KS

250 N Water Ste 250
Wichita, KS 67202

Youngmeyer A #2-14

Job Ticket: 63609

DST#: 2

ATTN: Jeff Christian

Test Start: 2017.07.13 @ 08:52:24

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 2541.00 ft | Diameter: 3.80 inches | Volume: 35.64 bbl | Tool Weight: 2100.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 0.00 inches | Volume: 0.00 bbl | Weight set on Packer: 25000.00 lb |
| Drill Collar: | Length: 241.00 ft | Diameter: 2.25 inches | Volume: 1.19 bbl | Weight to Pull Loose: 65000.00 lb |
| | | | <u>Total Volume: 36.83 bbl</u> | Tool Chased ft |
| Drill Pipe Above KB: | 3.00 ft | | | String Weight: Initial 55000.00 lb |
| Depth to Top Packer: | 2805.00 ft | | | Final 60000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 15.00 ft | | | |
| Tool Length: | 41.00 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 | | | 2784.00 | |
| Hydraulic tool | 5.00 | | | 2789.00 | |
| Jars | 5.00 | | | 2794.00 | |
| Safety Joint | 2.00 | | | 2796.00 | |
| Packer | 5.00 | | | 2801.00 | 26.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 2805.00 | |
| Stubb | 1.00 | | | 2806.00 | |
| Recorder | 0.00 | 8159 | Inside | 2806.00 | |
| Recorder | 0.00 | 6806 | Outside | 2806.00 | |
| Perforations | 11.00 | | | 2817.00 | |
| Bullnose | 3.00 | | | 2820.00 | 15.00 Bottom Packers & Anchor |

Total Tool Length: 41.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

14-29S-8E EIk,KS

250 N Water Ste 250
Wichita, KS 67202

Youngmeyer A #2-14

Job Ticket: 63609

DST#: 2

ATTN: Jeff Christian

Test Start: 2017.07.13 @ 08:52:24

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:

42000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 10.37 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 740.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|-----------------------|---------------|
| 427.00 | GCMW 5%G 95%W | 3.794 |
| 124.00 | GMCW 5%G 30%M 65%W | 1.739 |
| 2.00 | SOSWCM -1%O 30%W 69%M | 0.028 |

Total Length: 553.00 ft Total Volume: 5.561 bbl

Num Fluid Samples: 0

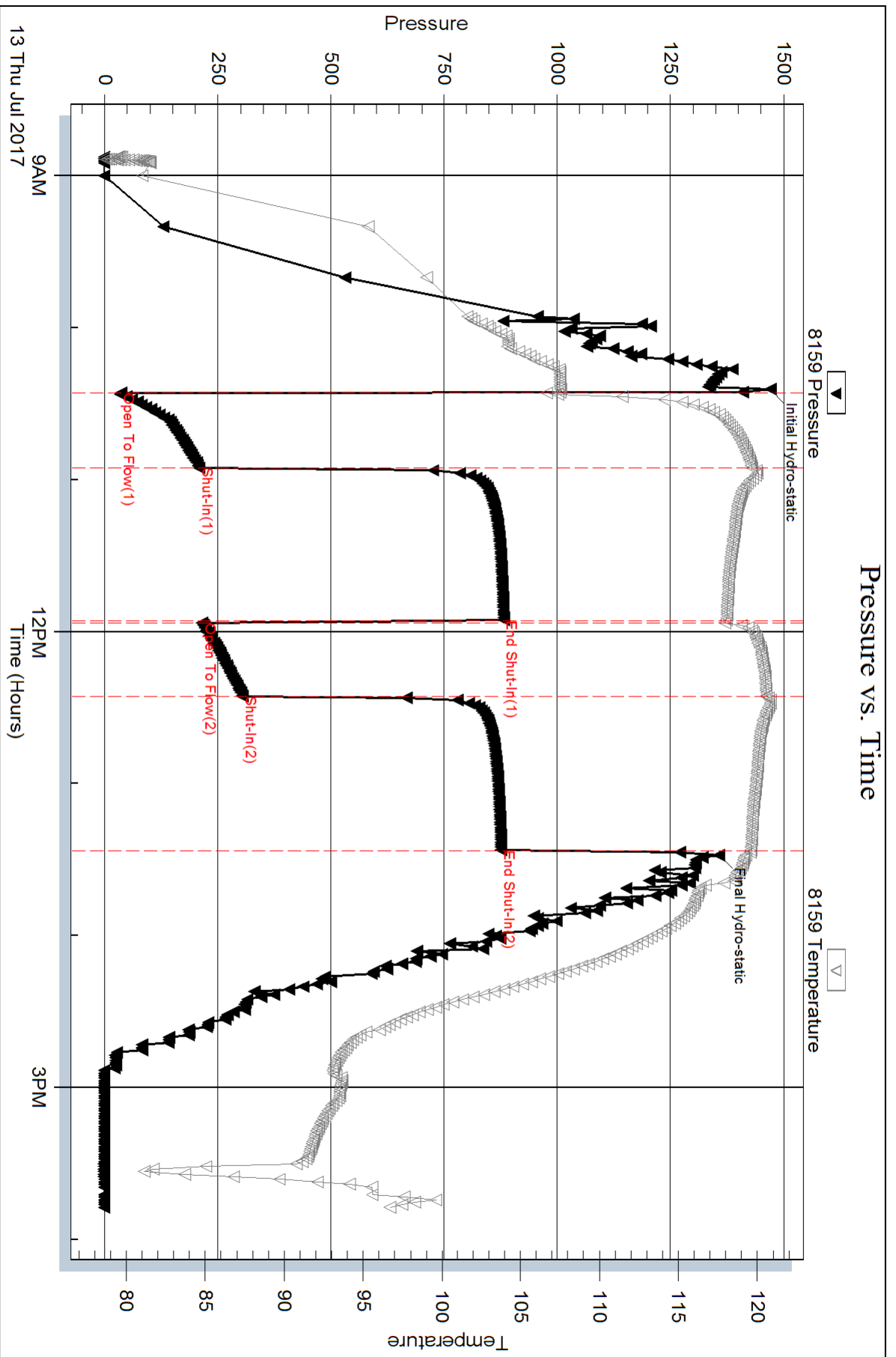
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW w as .13 @ 94 degrees

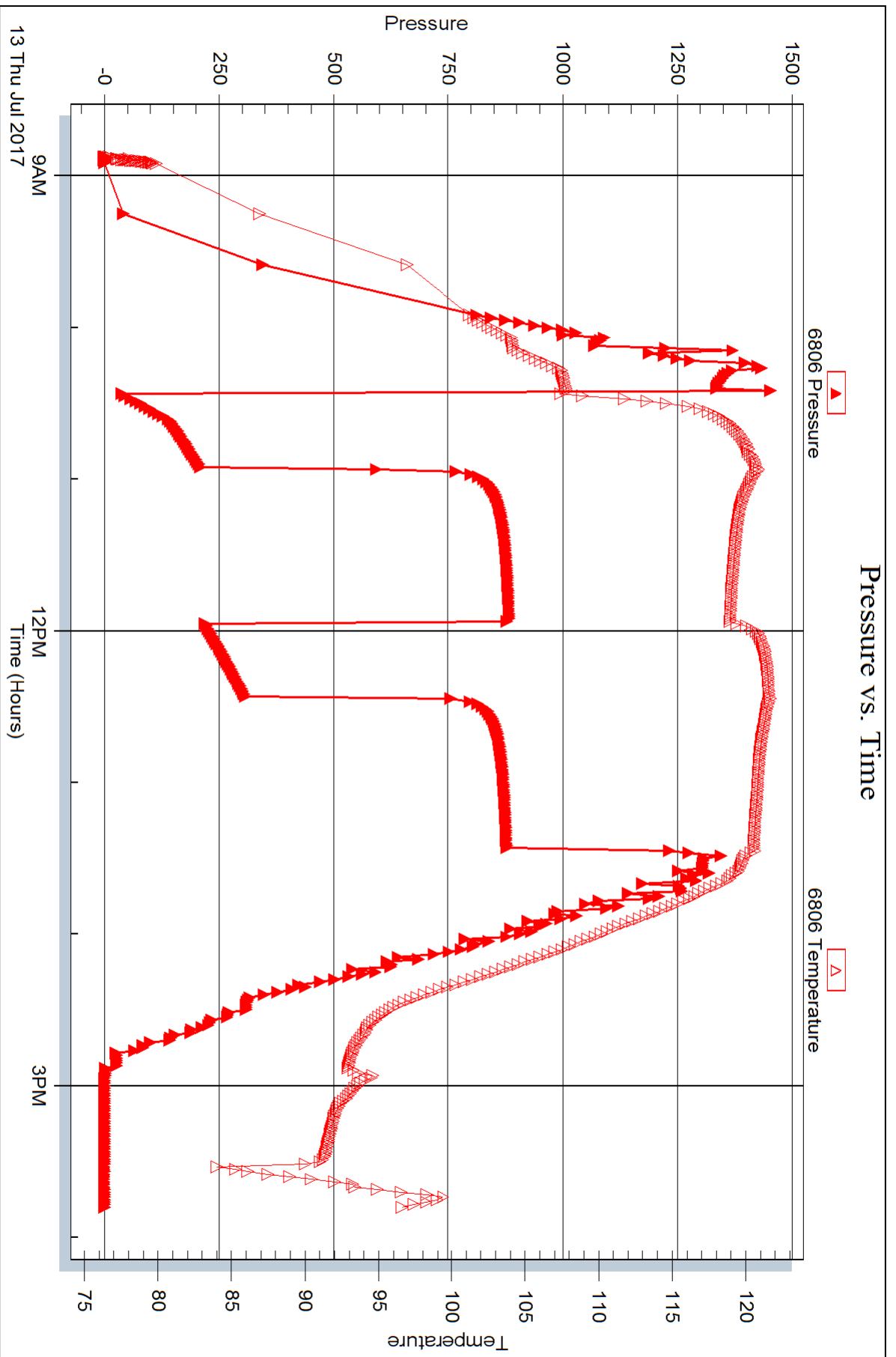


Serial #: 6806

Outside Murfin Drilling Co

Youngmeyer A #2-14

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water Ste 250
Wichita, KS 67202

ATTN: Jeff Christian

Youngmeyer A #2-14

14-29S-8E Elk,KS

Start Date: 2017.07.14 @ 11:49:15

End Date: 2017.07.14 @ 19:19:45

Job Ticket #: 63610 DST #: 3

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

Printed: 2017.07.17 @ 10:18:08

Murfin Drilling Co

14-29S-8E Elk,KS

Youngmeyer A #2-14

DST # 3

Lower Mississippi

2017.07.14



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co
 250 N Water Ste 250
 Wichita, KS 67202
 ATTN: Jeff Christian

14-29S-8E EIk, KS
Youngmeyer A #2-14
 Job Ticket: 63610 **DST#: 3**
 Test Start: 2017.07.14 @ 11:49:15

GENERAL INFORMATION:

Formation: **Lower Mississippi**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 13:44:15
 Time Test Ended: 19:19:45
 Interval: **2965.00 ft (KB) To 3002.00 ft (KB) (TVD)**
 Total Depth: 3002.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Leal Cason
 Unit No: 74
 Reference Elevations: 1550.00 ft (KB)
 1541.00 ft (CF)
 KB to GR/CF: 9.00 ft

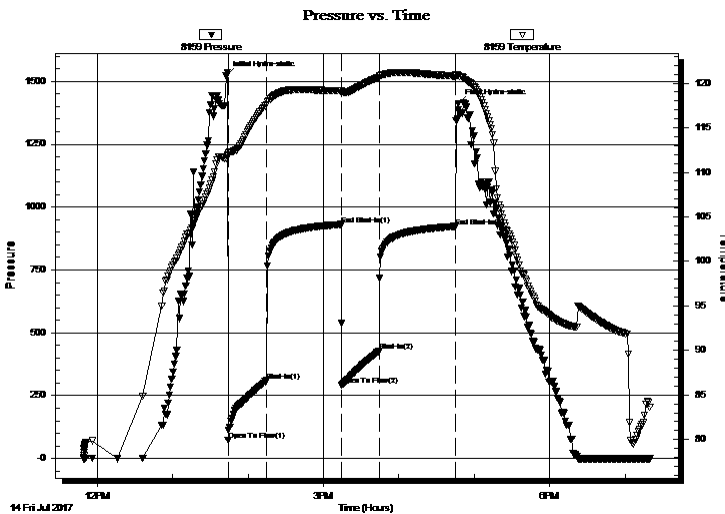
Serial #: 8159

Inside

Press@RunDepth: 427.25 psig @ 2966.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.07.14 End Date: 2017.07.14 Last Calib.: 2017.07.14
 Start Time: 11:49:16 End Time: 19:19:45 Time On Btm: 2017.07.14 @ 13:42:30
 Time Off Btm: 2017.07.14 @ 16:47:15

TEST COMMENT: IF: Fair Blow , Built to 8 inches
 IS: No Blow Back
 FF: Fair Blow , BOB in 8 Minutes
 FS: No Blow Back

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1521.79 | 111.57 | Initial Hydro-static |
| 2 | 73.22 | 111.89 | Open To Flow (1) |
| 32 | 308.94 | 117.61 | Shut-In(1) |
| 92 | 930.73 | 119.15 | End Shut-In(1) |
| 93 | 292.25 | 118.95 | Open To Flow (2) |
| 122 | 427.25 | 120.67 | Shut-In(2) |
| 183 | 922.96 | 120.79 | End Shut-In(2) |
| 185 | 1410.87 | 120.83 | Final Hydro-static |

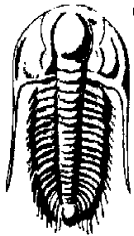
Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|---------------|--------------|
| 675.00 | Water | 7.27 |
| 124.00 | MCW 40%M 60%W | 1.74 |
| | | |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water Ste 250
Wichita, KS 67202
ATTN: Jeff Christian

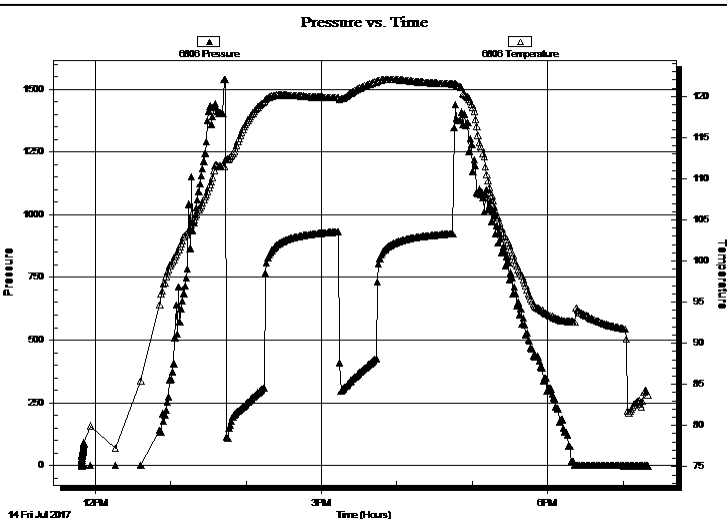
14-29S-8E E1k,KS
Youngmeyer A #2-14
Job Ticket: 63610 **DST#: 3**
Test Start: 2017.07.14 @ 11:49:15

GENERAL INFORMATION:

| | |
|---|---|
| Formation: Lower Mississippi | |
| Deviated: No Whipstock: ft (KB) | Test Type: Conventional Bottom Hole (Reset) |
| Time Tool Opened: 13:44:15 | Tester: Leal Cason |
| Time Test Ended: 19:19:45 | Unit No: 74 |
| Interval: 2965.00 ft (KB) To 3002.00 ft (KB) (TVD) | Reference Elevations: 1550.00 ft (KB) |
| Total Depth: 3002.00 ft (KB) (TVD) | 1541.00 ft (CF) |
| Hole Diameter: 7.88 inches Hole Condition: Good | KB to GR/CF: 9.00 ft |

| | |
|--|---|
| Serial #: 6806 Outside | |
| Press@RunDepth: psig @ 2966.00 ft (KB) | Capacity: 8000.00 psig |
| Start Date: 2017.07.14 End Date: 2017.07.14 | Last Calib.: 2017.07.14 |
| Start Time: 11:49:16 End Time: 19:19:45 | Time On Btm: |
| | Time Off Btm: |

TEST COMMENT: IF: Fair Blow , Built to 8 inches
IS: No Blow Back
FF: Fair Blow , BOB in 8 Minutes
FS: No Blow Back



PRESSURE SUMMARY

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

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|---------------|--------------|
| 675.00 | Water | 7.27 |
| 124.00 | MCW 40%M 60%W | 1.74 |
| | | |
| | | |
| | | |
| | | |

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

14-29S-8E EIk, KS

250 N Water Ste 250
Wichita, KS 67202

Youngmeyer A #2-14

Job Ticket: 63610

DST#: 3

ATTN: Jeff Christian

Test Start: 2017.07.14 @ 11:49:15

Tool Information

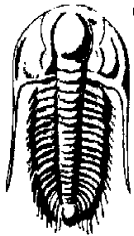
| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 2701.00 ft | Diameter: 3.80 inches | Volume: 37.89 bbl | Tool Weight: 2100.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 0.00 inches | Volume: 0.00 bbl | Weight set on Packer: 25000.00 lb |
| Drill Collar: | Length: 241.00 ft | Diameter: 2.25 inches | Volume: 1.19 bbl | Weight to Pull Loose: 65000.00 lb |
| | | | <u>Total Volume: 39.08 bbl</u> | Tool Chased ft |
| Drill Pipe Above KB: | 3.00 ft | | | String Weight: Initial 58000.00 lb |
| Depth to Top Packer: | 2965.00 ft | | | Final 62000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 37.00 ft | | | |
| Tool Length: | 63.00 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 | | | 2944.00 | |
| Hydraulic tool | 5.00 | | | 2949.00 | |
| Jars | 5.00 | | | 2954.00 | |
| Safety Joint | 2.00 | | | 2956.00 | |
| Packer | 5.00 | | | 2961.00 | 26.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 2965.00 | |
| Stubb | 1.00 | | | 2966.00 | |
| Recorder | 0.00 | 8159 | Inside | 2966.00 | |
| Recorder | 0.00 | 6806 | Outside | 2966.00 | |
| Perforations | 33.00 | | | 2999.00 | |
| Bullnose | 3.00 | | | 3002.00 | 37.00 Bottom Packers & Anchor |

Total Tool Length: 63.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

14-29S-8E EIk, KS

250 N Water Ste 250
Wichita, KS 67202

Youngmeyer A #2-14

Job Ticket: 63610

DST#: 3

ATTN: Jeff Christian

Test Start: 2017.07.14 @ 11:49:15

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:

40000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 10.37 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 740.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|---------------|---------------|
| 675.00 | Water | 7.273 |
| 124.00 | MCW 40%M 60%W | 1.739 |

Total Length: 799.00 ft Total Volume: 9.012 bbl

Num Fluid Samples: 0

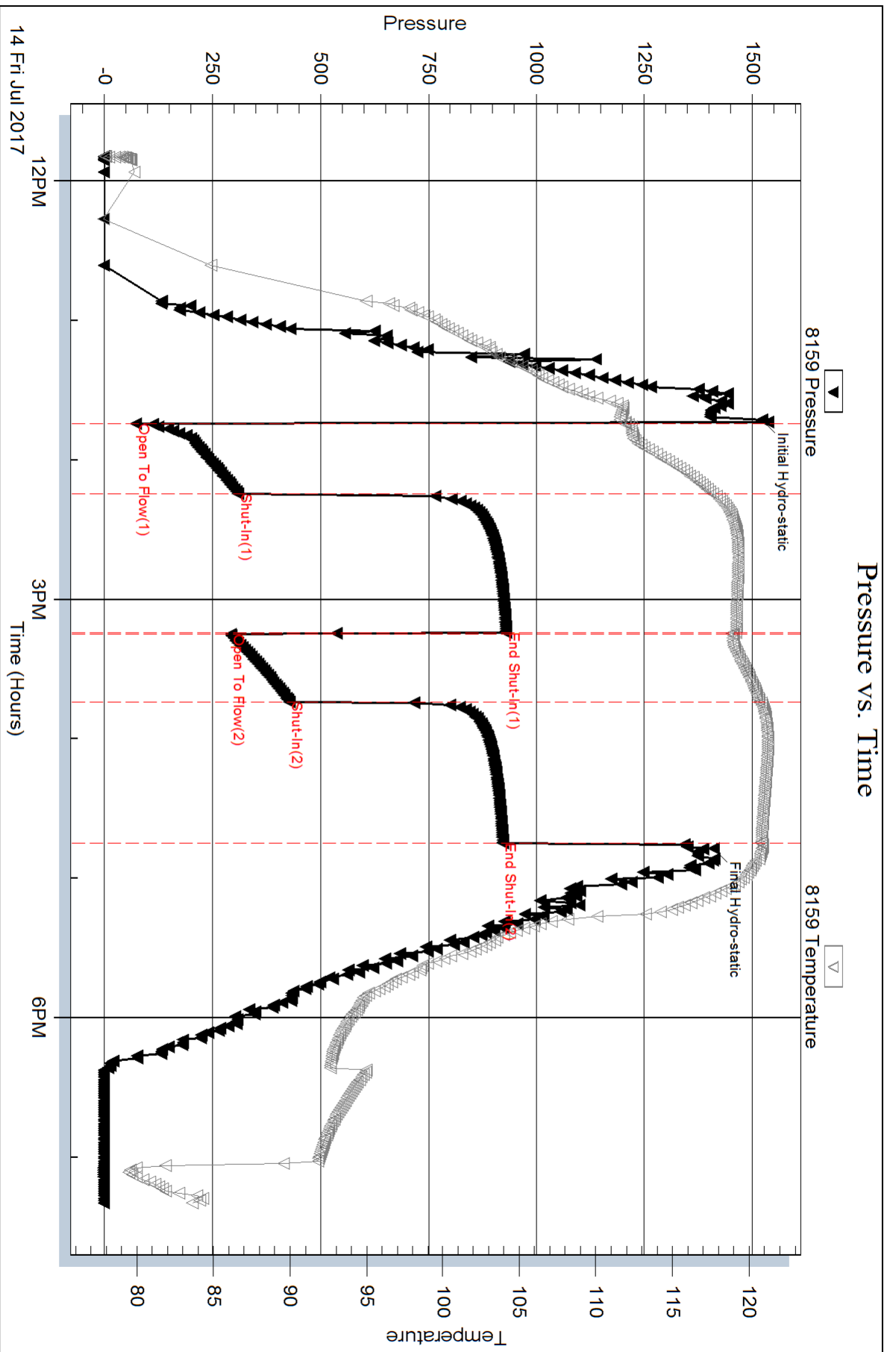
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW w as .16 @ 80 degrees

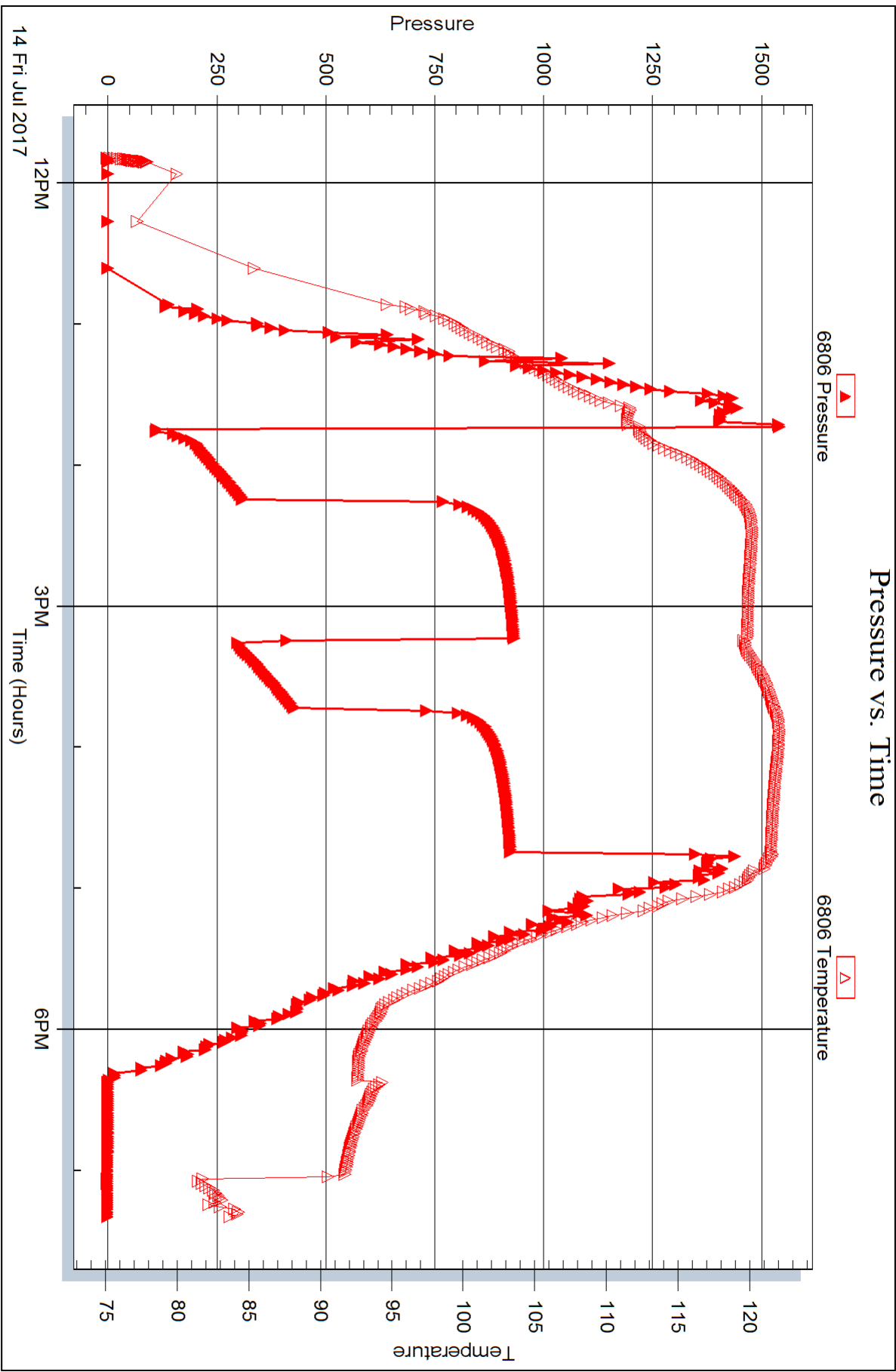


Serial #: 6806

Outside Murfin Drilling Co

Youngmeyer A #2-14

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 63610

Printed: 2017.07.17 @ 10:18:09



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water Ste 250
Wichita, KS 67202

ATTN: Jeff Christian

Youngmeyer A #2-14

14-29S-8E Elk,KS

Start Date: 2017.07.15 @ 09:48:10

End Date: 2017.07.15 @ 17:00:25

Job Ticket #: 63611 DST #: 4

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

Printed: 2017.07.17 @ 10:17:46

Murfin Drilling Co
14-29S-8E Elk,KS
Youngmeyer A #2-14
DST # 4
Arbuckle
2017.07.15



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co
 250 N Water Ste 250
 Wichita, KS 67202
 ATTN: Jeff Christian

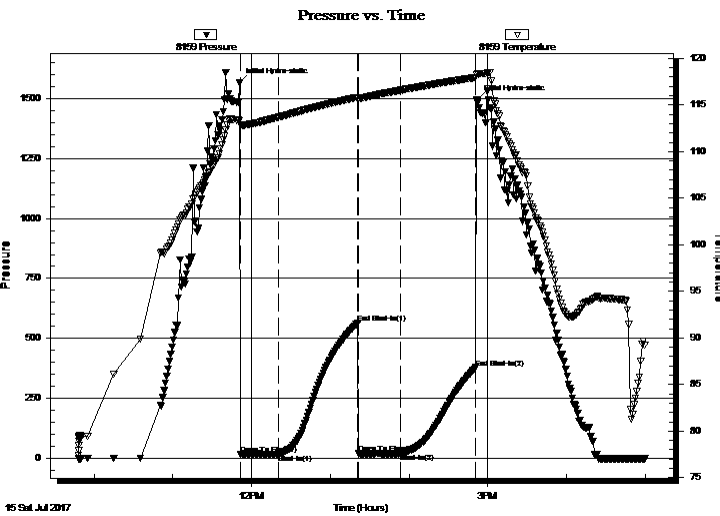
14-29S-8E E1k, KS
Youngmeyer A #2-14
 Job Ticket: 63611 **DST#: 4**
 Test Start: 2017.07.15 @ 09:48:10

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 11:51:25
 Time Test Ended: 17:00:25
 Interval: **3136.00 ft (KB) To 3154.00 ft (KB) (TVD)**
 Total Depth: 3154.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Leal Cason
 Unit No: 74
 Reference Elevations: 1550.00 ft (KB)
 1541.00 ft (CF)
 KB to GR/CF: 9.00 ft

Serial #: 8159 **Inside**
 Press@RunDepth: 20.96 psig @ 3137.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.07.15 End Date: 2017.07.15 Last Calib.: 2017.07.15
 Start Time: 09:48:11 End Time: 17:00:25 Time On Btm: 2017.07.15 @ 11:50:40
 Time Off Btm: 2017.07.15 @ 14:51:55

TEST COMMENT: IF: Weak Surface Blow
 IS: No Blow Back
 FF: No Blow
 FS: No Blow Back



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1563.90 | 113.33 | Initial Hydro-static |
| 1 | 18.42 | 112.82 | Open To Flow (1) |
| 30 | 18.82 | 113.67 | Shut-In(1) |
| 91 | 565.29 | 115.83 | End Shut-In(1) |
| 91 | 20.08 | 115.69 | Open To Flow (2) |
| 123 | 20.96 | 116.57 | Shut-In(2) |
| 180 | 377.93 | 117.94 | End Shut-In(2) |
| 182 | 1495.09 | 118.30 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 2.00 | Mud | 0.01 |
| | | |
| | | |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co
 250 N Water Ste 250
 Wichita, KS 67202
 ATTN: Jeff Christian

14-29S-8E EIk, KS
Youngmeyer A #2-14
 Job Ticket: 63611 **DST#: 4**
 Test Start: 2017.07.15 @ 09:48:10

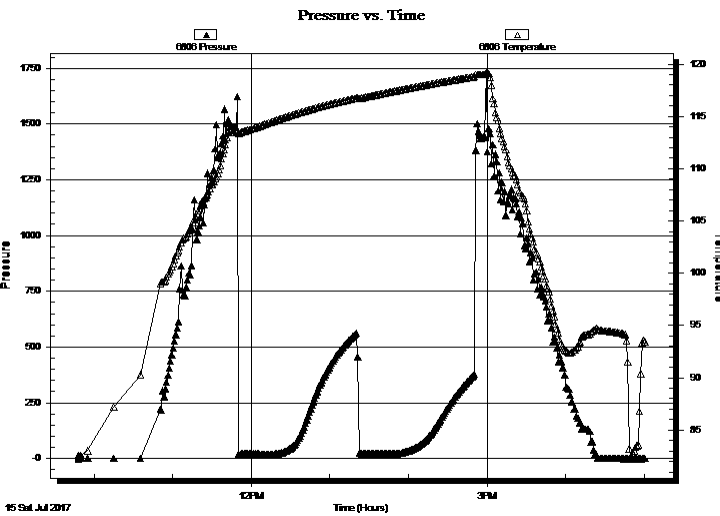
GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 11:51:25
 Time Test Ended: 17:00:25
 Interval: **3136.00 ft (KB) To 3154.00 ft (KB) (TVD)**
 Total Depth: 3154.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Leal Cason
 Unit No: 74
 Reference Elevations: 1550.00 ft (KB)
 1541.00 ft (CF)
 KB to GR/CF: 9.00 ft

Serial #: 6806 Outside

Press@RunDepth: psig @ 3137.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.07.15 End Date: 2017.07.15 Last Calib.: 2017.07.15
 Start Time: 09:48:11 End Time: 17:00:25 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF: Weak Surface Blow
 IS: No Blow Back
 FF: No Blow
 FS: No Blow Back



PRESSURE SUMMARY

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

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 2.00 | Mud | 0.01 |
| | | |
| | | |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

14-29S-8E EIk,KS

250 N Water Ste 250
Wichita, KS 67202

Youngmeyer A #2-14

Job Ticket: 63611

DST#: 4

ATTN: Jeff Christian

Test Start: 2017.07.15 @ 09:48:10

Tool Information

| | | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------|-------------|
| Drill Pipe: | Length: 2891.00 ft | Diameter: 3.80 inches | Volume: 40.55 bbl | Tool Weight: | 2100.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 0.00 inches | Volume: 0.00 bbl | Weight set on Packer: | 25000.00 lb |
| Drill Collar: | Length: 241.00 ft | Diameter: 2.25 inches | Volume: 1.19 bbl | Weight to Pull Loose: | 70000.00 lb |
| | | | <u>Total Volume: 41.74 bbl</u> | Tool Chased | ft |
| Drill Pipe Above KB: | 22.00 ft | | | String Weight: Initial | 60000.00 lb |
| Depth to Top Packer: | 3136.00 ft | | | Final | 60000.00 lb |
| Depth to Bottom Packer: | ft | | | | |
| Interval between Packers: | 18.00 ft | | | | |
| Tool Length: | 44.00 ft | | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | | |

Tool Comments: Shale Packer On Bottom

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

| | | | | | |
|----------------|-------|------|---------|---------|-------------------------------|
| Shut In Tool | 5.00 | | | 3115.00 | |
| Hydraulic tool | 5.00 | | | 3120.00 | |
| Jars | 5.00 | | | 3125.00 | |
| Safety Joint | 2.00 | | | 3127.00 | |
| Packer | 5.00 | | | 3132.00 | 26.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 3136.00 | |
| Stubb | 1.00 | | | 3137.00 | |
| Recorder | 0.00 | 8159 | Inside | 3137.00 | |
| Recorder | 0.00 | 6806 | Outside | 3137.00 | |
| Perforations | 14.00 | | | 3151.00 | |
| Bullnose | 3.00 | | | 3154.00 | 18.00 Bottom Packers & Anchor |

Total Tool Length: 44.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

14-29S-8E EIk, KS

250 N Water Ste 250
Wichita, KS 67202

Youngmeyer A #2-14

Job Ticket: 63611

DST#: 4

ATTN: Jeff Christian

Test Start: 2017.07.15 @ 09:48:10

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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 10.36 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 740.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|-------------|---------------|
| 2.00 | Mud | 0.010 |

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

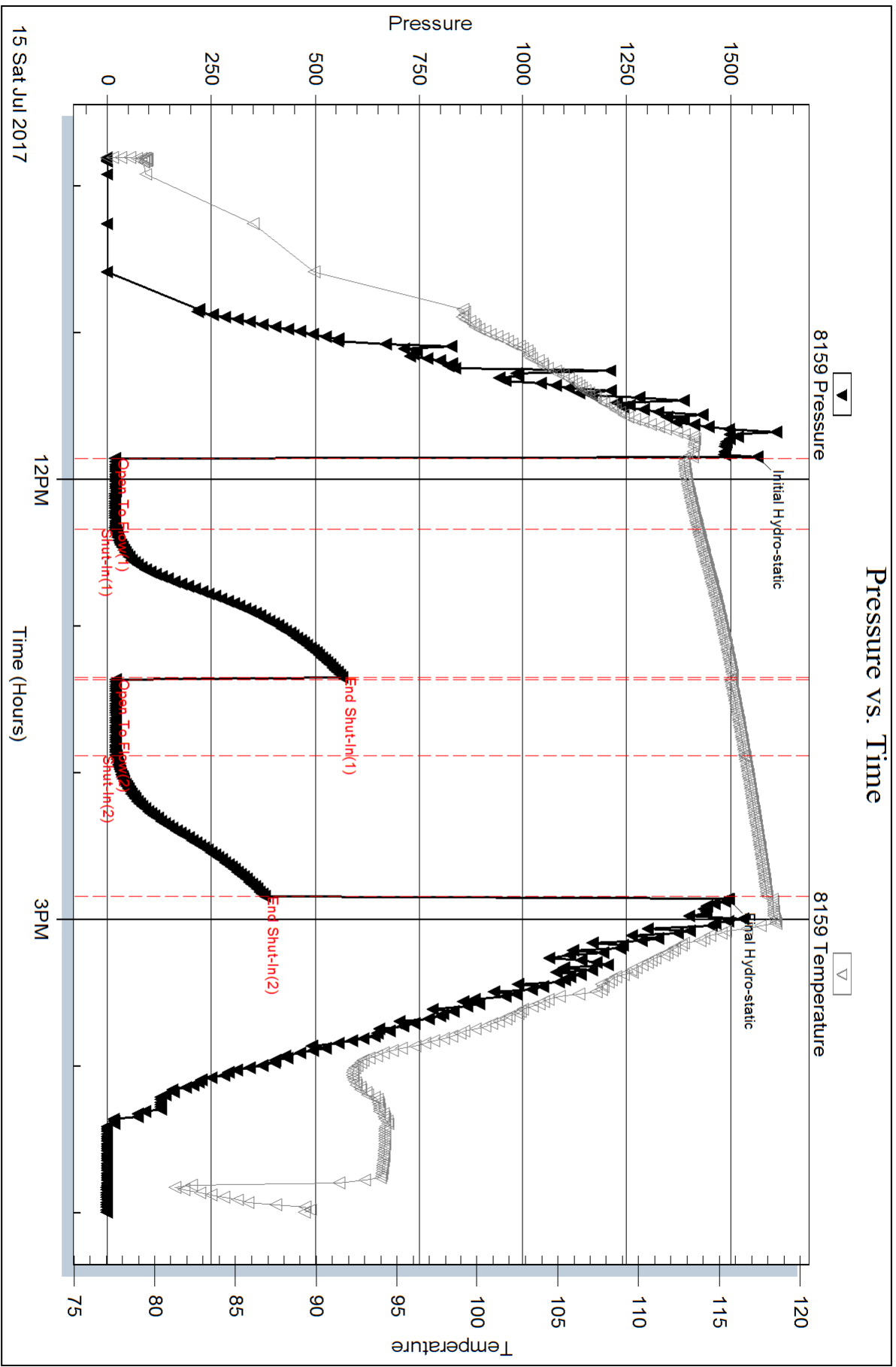
Serial #: 8159

Inside

Murfin Drilling Co

Youngmeyer A #2-14

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 63611

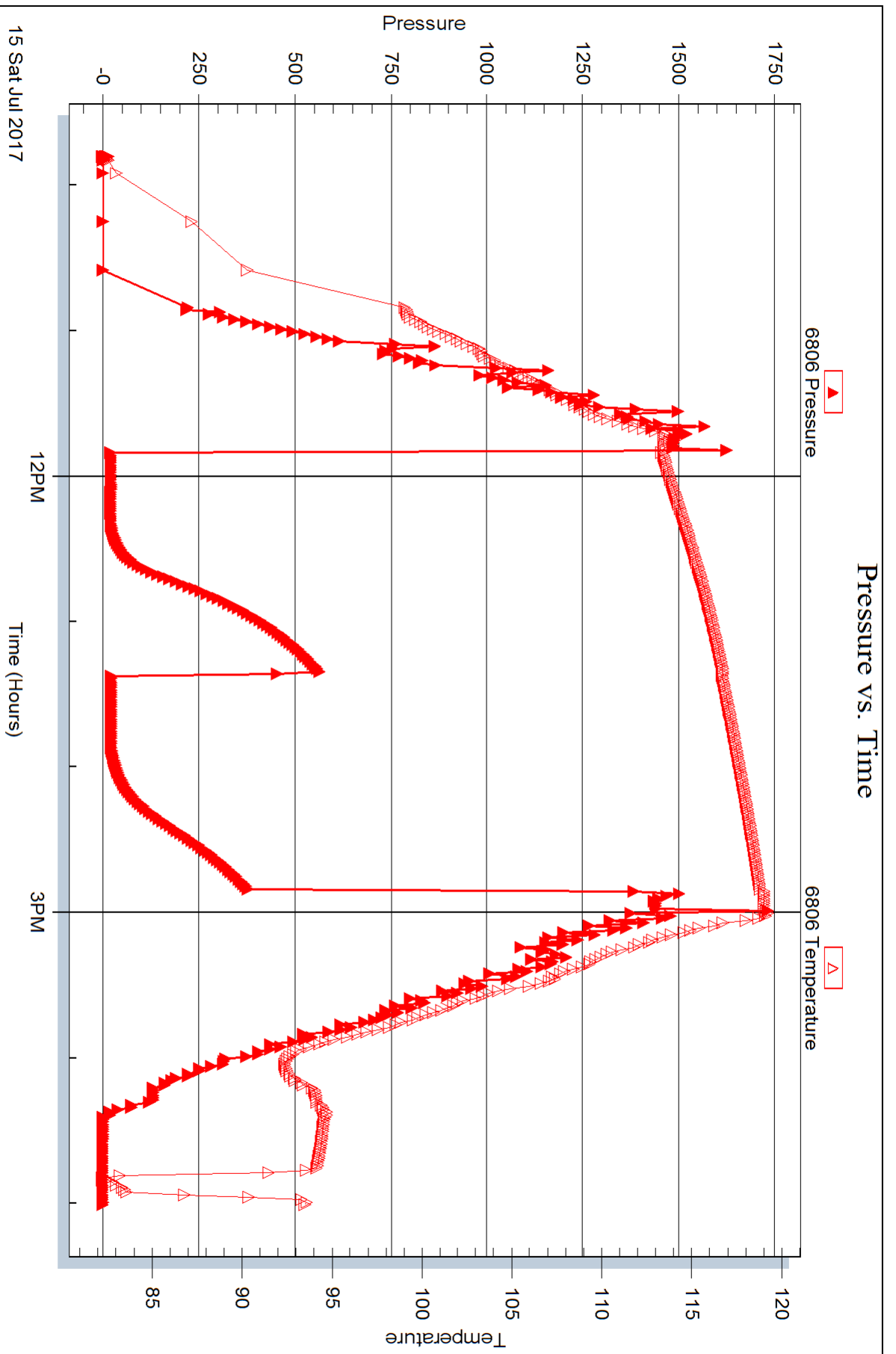
Printed: 2017.07.17 @ 10:17:47

Serial #: 6806

Outside Murfin Drilling Co

Youngmeyer A #2-14

DST Test Number: 4





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water Ste 250
Wichita, KS 67202

ATTN: Jeff Christian

Youngmeyer A #2-14

14-29S-8E Elk,KS

Start Date: 2017.07.15 @ 22:28:44

End Date: 2017.07.16 @ 04:32:29

Job Ticket #: 63612 DST #: 5

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

Printed: 2017.07.17 @ 10:17:13



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co
 250 N Water Ste 250
 Wichita, KS 67202
 ATTN: Jeff Christian

14-29S-8E EIk, KS
Youngmeyer A #2-14
 Job Ticket: 63612 **DST#: 5**
 Test Start: 2017.07.15 @ 22:28:44

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:55:29
 Time Test Ended: 04:32:29
 Interval: **3154.00 ft (KB) To 3161.00 ft (KB) (TVD)**
 Total Depth: 3161.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Leal Cason
 Unit No: 74
 Reference Elevations: 1550.00 ft (KB)
 1541.00 ft (CF)
 KB to GR/CF: 9.00 ft

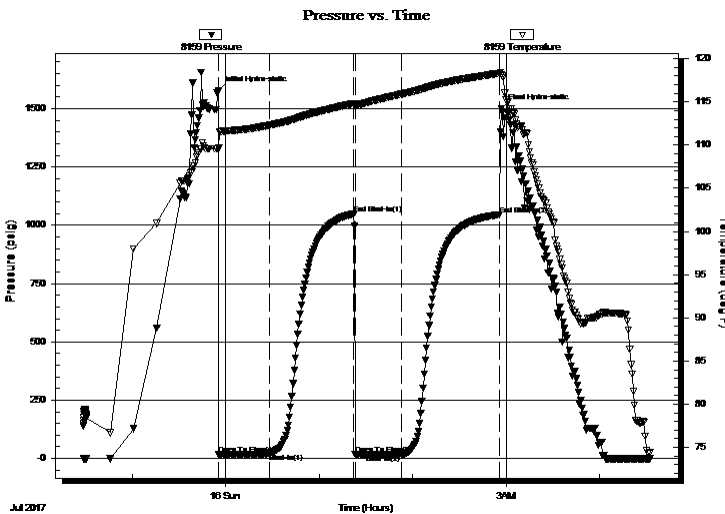
Serial #: 8159

Inside

Press@RunDepth: 16.37 psig @ 3155.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.07.15 End Date: 2017.07.16 Last Calib.: 2017.07.16
 Start Time: 22:28:45 End Time: 04:32:29 Time On Btm: 2017.07.15 @ 23:55:14
 Time Off Btm: 2017.07.16 @ 02:56:59

TEST COMMENT: IF: Weak Surface Blow
 IS: No Blow Back
 FF: No Blow
 FS: No Blow Back

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1575.86 | 109.70 | Initial Hydro-static |
| 1 | 16.47 | 109.63 | Open To Flow (1) |
| 33 | 23.50 | 112.28 | Shut-In(1) |
| 87 | 1049.23 | 114.83 | End Shut-In(1) |
| 88 | 17.21 | 114.55 | Open To Flow (2) |
| 118 | 16.37 | 115.88 | Shut-In(2) |
| 181 | 1045.67 | 118.32 | End Shut-In(2) |
| 182 | 1500.72 | 118.13 | Final Hydro-static |

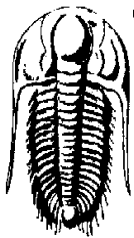
Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 2.00 | Mud | 0.01 |
| | | |
| | | |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water Ste 250
Wichita, KS 67202
ATTN: Jeff Christian

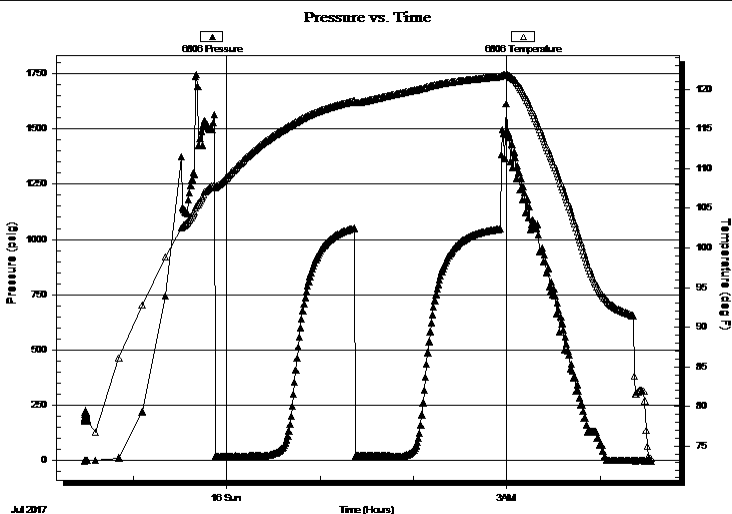
14-29S-8E EIk, KS
Youngmeyer A #2-14
Job Ticket: 63612 **DST#: 5**
Test Start: 2017.07.15 @ 22:28:44

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened: 23:55:29 Tester: Leal Cason
Time Test Ended: 04:32:29 Unit No: 74
Interval: 3154.00 ft (KB) To 3161.00 ft (KB) (TVD) Reference Elevations: 1550.00 ft (KB)
Total Depth: 3161.00 ft (KB) (TVD) 1541.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 9.00 ft

Serial #: 6806 Outside
Press@RunDepth: psig @ 3155.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.07.15 End Date: 2017.07.16 Last Calib.: 2017.07.16
Start Time: 22:28:45 End Time: 04:32:29 Time On Btm:
Time Off Btm:

TEST COMMENT: IF: Weak Surface Blow
IS: No Blow Back
FF: No Blow
FS: No Blow Back



PRESSURE SUMMARY

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

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 2.00 | Mud | 0.01 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

14-29S-8E EIk, KS

250 N Water Ste 250
Wichita, KS 67202

Youngmeyer A #2-14

Job Ticket: 63612

DST#: 5

ATTN: Jeff Christian

Test Start: 2017.07.15 @ 22:28:44

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 2891.00 ft | Diameter: 3.80 inches | Volume: 40.55 bbl | Tool Weight: 2100.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 0.00 inches | Volume: 0.00 bbl | Weight set on Packer: 25000.00 lb |
| Drill Collar: | Length: 241.00 ft | Diameter: 2.25 inches | Volume: 1.19 bbl | Weight to Pull Loose: 70000.00 lb |
| | | | <u>Total Volume: 41.74 bbl</u> | Tool Chased ft |
| Drill Pipe Above KB: | 4.00 ft | | | String Weight: Initial 60000.00 lb |
| Depth to Top Packer: | 3154.00 ft | | | Final 60000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 7.00 ft | | | |
| Tool Length: | 33.00 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 | | | 3133.00 | |
| Hydraulic tool | 5.00 | | | 3138.00 | |
| Jars | 5.00 | | | 3143.00 | |
| Safety Joint | 2.00 | | | 3145.00 | |
| Packer | 5.00 | | | 3150.00 | 26.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 3154.00 | |
| Stubb | 1.00 | | | 3155.00 | |
| Recorder | 0.00 | 8159 | Inside | 3155.00 | |
| Recorder | 0.00 | 6806 | Outside | 3155.00 | |
| Perforations | 3.00 | | | 3158.00 | |
| Bullnose | 3.00 | | | 3161.00 | 7.00 Bottom Packers & Anchor |

Total Tool Length: 33.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

14-29S-8E EIk, KS

250 N Water Ste 250
Wichita, KS 67202

Youngmeyer A #2-14

Job Ticket: 63612

DST#: 5

ATTN: Jeff Christian

Test Start: 2017.07.15 @ 22:28:44

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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 10.37 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 740.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|-------------|---------------|
| 2.00 | Mud | 0.010 |

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

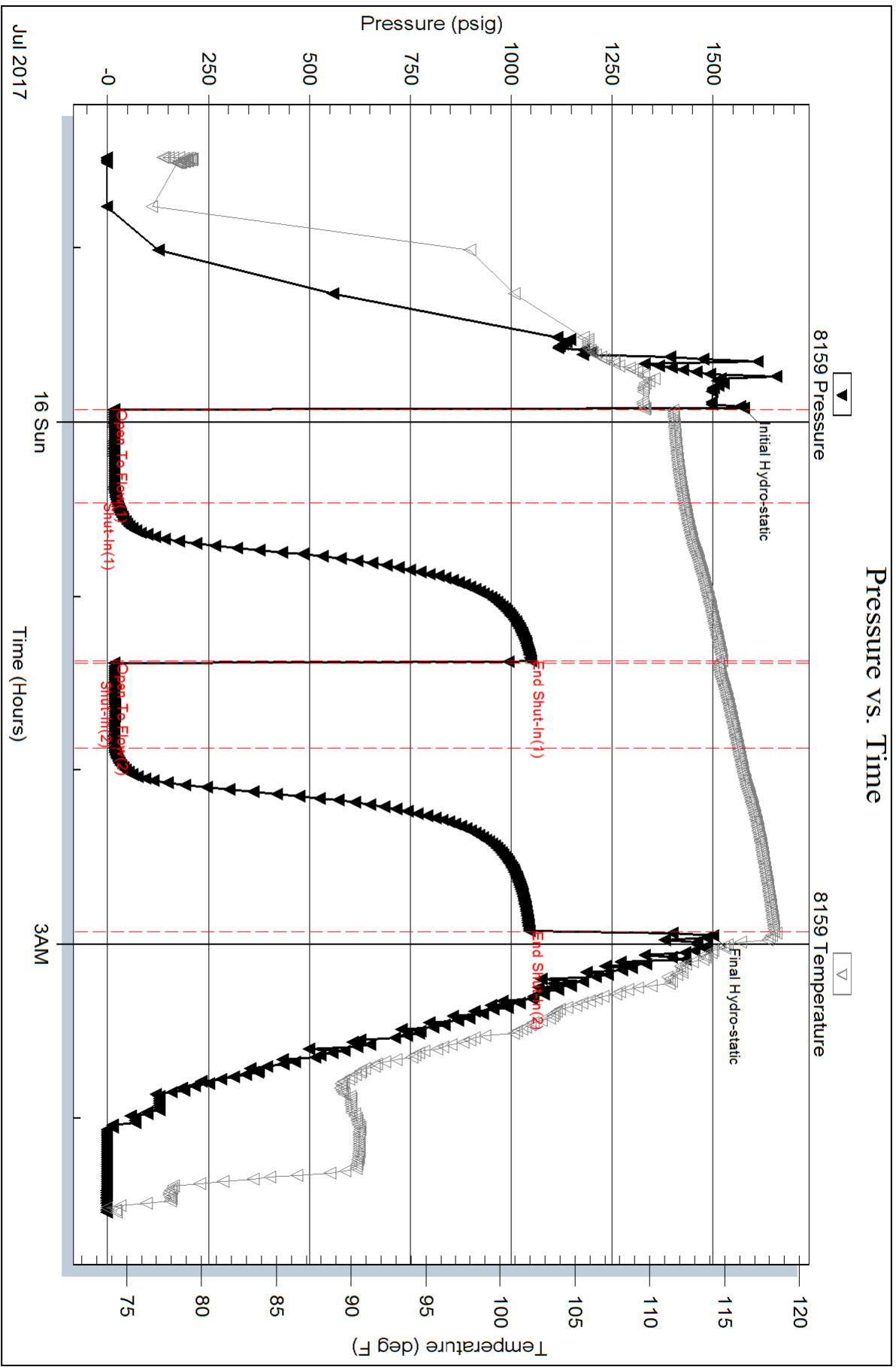
Num Gas Bombs: 0

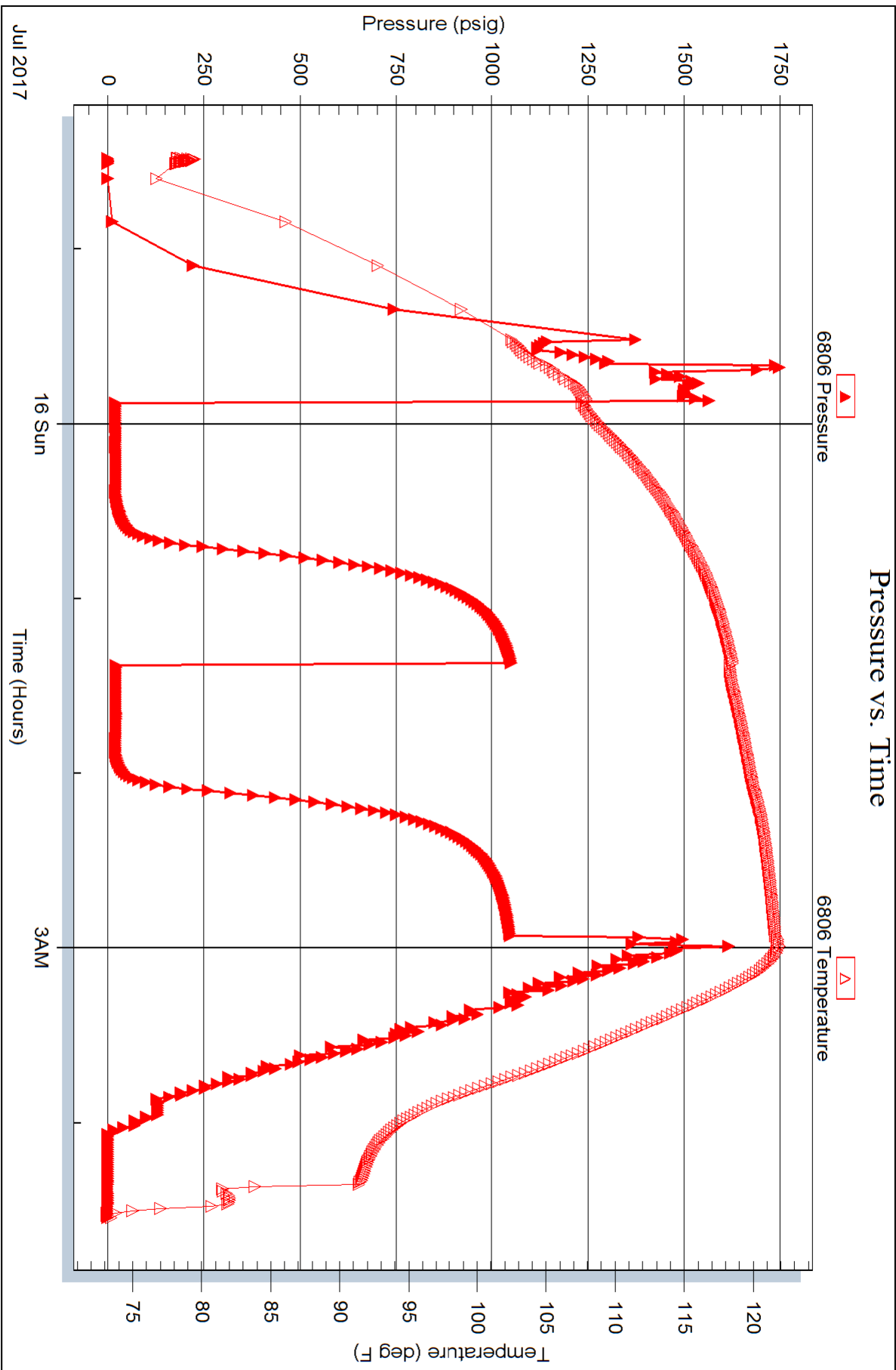
Serial #:

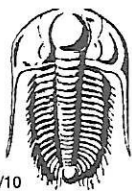
Laboratory Name:

Laboratory Location:

Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63608**

Well Name & No. Youngmeyer A 2-14 Test No. 1 Date 07/11/17
 Company Murfin Drilling Co Elevation 1550 KB 1541 GL
 Address 250 N. Water St 300 Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig C+G 2
 Location: Sec. 14 Twp. 29S Rge. 8E Co. E1K State KS

Interval Tested 2204 - 2216 Zone Tested Hertha
 Anchor Length 12 Drill Pipe Run 1944 Mud Wt. 9.3
 Top Packer Depth 2199 Drill Collars Run 241 Vis 5.3
 Bottom Packer Depth 2204 Wt. Pipe Run 0 WL 10.4
 Total Depth 2216 Chlorides 740 ppm System LCM 1

Blow Description IF: Fair Blow, Built to 7 inches

ISI: No Blow Back

FF: Weak Surface Blow

FSI: No Blow Back

| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|------------|------|-----------|-----------|------|
| <u>270</u> | <u>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 | Feet of | %gas | %oil | %water | %mud |

Rec Total 270 BHT 105 Gravity N/C API RW .085 @ 80° F Chlorides 82000 ppm

(A) Initial Hydrostatic 1103
 (B) First Initial Flow 18
 (C) First Final Flow 96
 (D) Initial Shut-In 679
 (E) Second Initial Flow 99
 (F) Second Final Flow 151
 (G) Final Shut-In 673
 (H) Final Hydrostatic 1116

Test 1050
 Jars 250
 Safety Joint 75
 Circ Sub
 Hourly Standby
 Mileage (2802) 210
 Sampler
 Straddle
 Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility
 Sub Total 1585

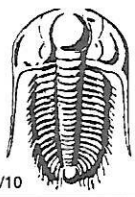
T-On Location 18:45
 T-Started 19:33
 T-Open 21:15
 T-Pulled 00:17
 T-Out 02:14
 Comments Motel
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1585
 MP/DST Disc't

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

Approved By [Signature]

Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63609**

Well Name & No. Youngmeyer A 2-14 Test No. 2 Date 07/13/17
 Company Martin Drilling CO Elevation 1550 KB 1541 GL
 Address 250 N. Water St E 300 Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig C+G 2
 Location: Sec. 14 Twp. 29S Rge. 8E Co. E1K State KS

Interval Tested 2805 - 2820 Zone Tested Mississippi
 Anchor Length 15 Drill Pipe Run 2541 Mud Wt. 9.3
 Top Packer Depth 2800 Drill Collars Run 241 Vis 55
 Bottom Packer Depth 2805 Wt. Pipe Run 0 WL 8.1
 Total Depth 2820 Chlorides 710 ppm System LCM 2

Blow Description IF: Weak Blow, Built to 3 1/2 inches by 16 minutes, Died off to 2 inches @ 30 min.
ISI: NO Blow Back
OFF: Weak Blow, Built to 1 1/2 inches
FSI: NO Blow Back

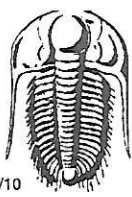
| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|--------------------|-----------|-----------|-----------|----------|
| <u>2</u> | <u>505 WCM</u> | <u>-1</u> | <u>30</u> | <u>69</u> | <u>0</u> |
| <u>124</u> | <u>GMCW</u> | <u>5</u> | <u>65</u> | <u>30</u> | <u>0</u> |
| <u>427</u> | <u>Gassy water</u> | <u>5</u> | <u>95</u> | <u>0</u> | <u>0</u> |
| | | | | | |
| | | | | | |

Rec Total 553 BHT 119 Gravity N/C API RW .13 @ 94 ° F Chlorides 47000 ppm

| | | |
|-------------------------------------|---|--|
| (A) Initial Hydrostatic <u>1470</u> | <input checked="" type="checkbox"/> Test <u>1050</u> | T-On Location <u>08:30</u> |
| (B) First Initial Flow <u>36</u> | <input checked="" type="checkbox"/> Jars <u>250</u> | T-Started <u>08:52</u> |
| (C) First Final Flow <u>209</u> | <input checked="" type="checkbox"/> Safety Joint <u>75</u> | T-Open <u>10:25</u> |
| (D) Initial Shut-In <u>882</u> | <input type="checkbox"/> Circ Sub | T-Pulled <u>13:26</u> |
| (E) Second Initial Flow <u>215</u> | <input type="checkbox"/> Hourly Standby | T-Out <u>15:47</u> |
| (F) Second Final Flow <u>304</u> | <input checked="" type="checkbox"/> Mileage <u>(2807)</u> 210 | Comments <u>Motel</u> |
| (G) Final Shut-In <u>876</u> | <input type="checkbox"/> Sampler | |
| (H) Final Hydrostatic <u>1357</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>60</u> | <input type="checkbox"/> Extra Packer | <input type="checkbox"/> Extra Copies |
| Final Flow <u>30</u> | <input type="checkbox"/> Extra Recorder | Sub Total <u>0</u> |
| Final Shut-In <u>60</u> | <input type="checkbox"/> Day Standby | Total <u>1585</u> |
| | <input type="checkbox"/> Accessibility | MP/DST Disc't |
| | Sub Total <u>1585</u> | |

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63610**

Well Name & No. Youngmeyer A 2-14 Test No. 3 Date 07/14/17
 Company Martin Drilling Co Elevation 1550 KB 1541 GL
 Address 250 N. Water Ste 300 Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig C+G 2
 Location: Sec. 14 Twp. 29S Rge. 8E Co. E1K State KS

Interval Tested 2965 - 3002 Zone Tested Lower Mississippi
 Anchor Length 37 Drill Pipe Run 2701 Mud Wt. 9.2
 Top Packer Depth 2960 Drill Collars Run 241 Vis 44
 Bottom Packer Depth 2965 Wt. Pipe Run 0 WL 8.8
 Total Depth 3002 Chlorides 650 ppm System LCM 3

Blow Description IF: Fair Blow, Built to 8 inches

FSI: NO BLOW BACK

FF: Fair Blow, BOB in 8 minutes

FSI: NO BLOW BACK

| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|--------------|------|------|-----------|-----------|
| <u>124</u> | <u>MCW</u> | | | <u>60</u> | <u>40</u> |
| <u>675</u> | <u>Water</u> | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

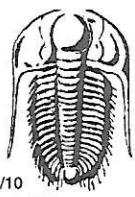
Rec Total 799 BHT 121 Gravity N/C API RW .16 @ 80° F Chlorides 40000 ppm

(A) Initial Hydrostatic 1522 Test 1050 T-On Location 11:15
 (B) First Initial Flow 73 Jars 250 T-Started 11:49
 (C) First Final Flow 309 Safety Joint 75 T-Open 13:44
 (D) Initial Shut-In 931 Circ Sub _____ T-Pulled 16:45
 (E) Second Initial Flow 292 Hourly Standby _____ T-Out 19:19
 (F) Second Final Flow 427 Mileage 2801 210 Comments Motel
 (G) Final Shut-In 923 Sampler _____
 (H) Final Hydrostatic 1411 Straddle _____

Initial Open 30 Shale Packer _____ Ruined Shale Packer _____
 Initial Shut-In 60 Extra Packer _____ Ruined Packer _____
 Final Flow 30 Extra Recorder _____ Extra Copies _____
 Final Shut-In 60 Day Standby _____ Sub Total 0
 Total 1585
 Sub Total 1585 Accessibility _____ MP/DST Disc't _____

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63611**

Well Name & No. Youngmeyer A 2-14 Test No. 4 Date 07/15/17
 Company Murfin Drilling Co Elevation 1550 KB 1541 GL
 Address 250 N. Water Ste 300 Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig C+G2
 Location: Sec. 14 Twp. 29S Rge. 8E Co. E1K State KS

Interval Tested 3136 - 3154 Zone Tested Arbuckle
 Anchor Length 18 Drill Pipe Run 2891 Mud Wt. 9.2
 Top Packer Depth 3131 Drill Collars Run 241 Vis 45
 Bottom Packer Depth 3136 Wt. Pipe Run 0 WL 9.2
 Total Depth 3154 Chlorides 620 ppm System LCM 3

Blow Description IF: weak surface blow
ISI: NO Blow Back
FF: NO Blow
FSI: NO Blow Back

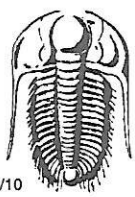
| Rec | Feet of | %gas | %oil | %water | %mud |
|----------|------------|------|------|--------|------|
| <u>2</u> | <u>Mud</u> | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Rec Total 2 BHT 119 Gravity NIC API RW NIC @ NK °F Chlorides NIC ppm

| | | |
|-------------------------------------|--|--|
| (A) Initial Hydrostatic <u>1564</u> | <input checked="" type="checkbox"/> Test <u>1050</u> | T-On Location <u>09:15</u> |
| (B) First Initial Flow <u>18</u> | <input checked="" type="checkbox"/> Jars <u>250</u> | T-Started <u>09:48</u> |
| (C) First Final Flow <u>19</u> | <input checked="" type="checkbox"/> Safety Joint <u>75</u> | T-Open <u>11:51</u> |
| (D) Initial Shut-In <u>565</u> | <input type="checkbox"/> Circ Sub | T-Pulled <u>14:50</u> |
| (E) Second Initial Flow <u>20</u> | <input type="checkbox"/> Hourly Standby | T-Out <u>17:00</u> |
| (F) Second Final Flow <u>21</u> | <input checked="" type="checkbox"/> Mileage <u>(290)</u> 210 | Comments <u>Motel</u> |
| (G) Final Shut-In <u>378</u> | <input type="checkbox"/> Sampler | |
| (H) Final Hydrostatic <u>1495</u> | <input type="checkbox"/> Straddle | |
| | <input checked="" type="checkbox"/> Shale Packer <u>250</u> | <input type="checkbox"/> Ruined Shale Packer |
| Initial Open <u>30</u> | <input type="checkbox"/> Extra Packer | <input type="checkbox"/> Ruined Packer |
| Initial Shut-In <u>60</u> | <input type="checkbox"/> Extra Recorder | <input type="checkbox"/> Extra Copies |
| Final Flow <u>30</u> | <input type="checkbox"/> Day Standby | Sub Total <u>0</u> |
| Final Shut-In <u>60</u> | <input type="checkbox"/> Accessibility | Total <u>1835</u> |
| | Sub Total <u>1835</u> | MP/DST Disc't |

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63612**

Well Name & No. Youngmeyer A 2-14 Test No. 5 Date 07/15/17
 Company Martin Drilling Co Elevation 1550 KB 1541 GL
 Address 250 N Water Ste 250 Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig C+G2
 Location: Sec. 14 Twp. 29S Rge. 8E Co. E1K State KS

Interval Tested 3154 - 3161 Zone Tested Arbuckle
 Anchor Length 7 Drill Pipe Run 2891 Mud Wt. 9.3
 Top Packer Depth 3149 Drill Collars Run 241 Vis 55
 Bottom Packer Depth 3154 Wt. Pipe Run 0 WL 7.6
 Total Depth 3161 Chlorides 730 ppm System LCM 2.5

Blow Description IF: weak surface blow
ISI: NO Blow Back
FF: NO Blow

FSI: NO Blow Back

| Rec | Feet of | %gas | %oil | %water | %mud |
|----------|------------|------|------|--------|------|
| <u>2</u> | <u>Mud</u> | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Rec Total 2 BHT 118 Gravity N/C API RW N/C @ N/C °F Chlorides N/C ppm

| | | |
|-------------------------------------|--|--|
| (A) Initial Hydrostatic <u>1576</u> | <input checked="" type="checkbox"/> Test <u>1050</u> | T-On Location <u>22:00</u> |
| (B) First Initial Flow <u>16</u> | <input checked="" type="checkbox"/> Jars <u>250</u> | T-Started <u>22:28</u> |
| (C) First Final Flow <u>23</u> | <input checked="" type="checkbox"/> Safety Joint <u>75</u> | T-Open <u>23:55</u> |
| (D) Initial Shut-In <u>1049</u> | <input type="checkbox"/> Circ Sub | T-Pulled <u>02:55</u> |
| (E) Second Initial Flow <u>17</u> | <input type="checkbox"/> Hourly Standby | T-Out <u>04:32</u> |
| (F) Second Final Flow <u>16</u> | <input checked="" type="checkbox"/> Mileage <u>(280)</u> 210 | Comments <u>MOTEL</u> |
| (G) Final Shut-In <u>1046</u> | <input type="checkbox"/> Sampler | |
| (H) Final Hydrostatic <u>1501</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>60</u> | <input type="checkbox"/> Extra Packer | <input type="checkbox"/> Extra Copies |
| Final Flow <u>30</u> | <input type="checkbox"/> Extra Recorder | Sub Total <u>0</u> |
| Final Shut-In <u>60</u> | <input type="checkbox"/> Day Standby | Total <u>1585</u> |
| | <input type="checkbox"/> Accessibility | MP/DST Disc't |
| | Sub Total <u>1585</u> | |

Approved By Jeff Christian Our Representative [Signature]

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