



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co. Inc.**

250 N. Wate STE 300
Wichita KS 67202

ATTN: Saman Sharifaie

Smith A #2-21

21-2S-37W Cheyenne,KS

Start Date: 2019.07.02 @ 01:11:00

End Date: 2019.07.02 @ 08:43:50

Job Ticket #: 65255 DST #: 1

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

Printed: 2019.07.08 @ 11:56:37



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

21-2S-37W Cheyenne, KS

250 N. Wate STE 300
Wichita KS 67202

Smith A #2-21

Job Ticket: 65255

DST#: 1

ATTN: Saman Sharifaie

Test Start: 2019.07.02 @ 01:11:00

GENERAL INFORMATION:

Formation: **LKC " A "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:56:10

Time Test Ended: 08:43:50

Test Type: Conventional Bottom Hole (Initial)

Tester: Ryan Nichols

Unit No: 71

Interval: 4292.00 ft (KB) To 4361.00 ft (KB) (TVD)

Reference Elevations: 3416.00 ft (KB)

Total Depth: 4361.00 ft (KB) (TVD)

3411.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8366 Outside

Press@RunDepth: 9.74 psig @ 4293.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.07.02 End Date: 2019.07.02

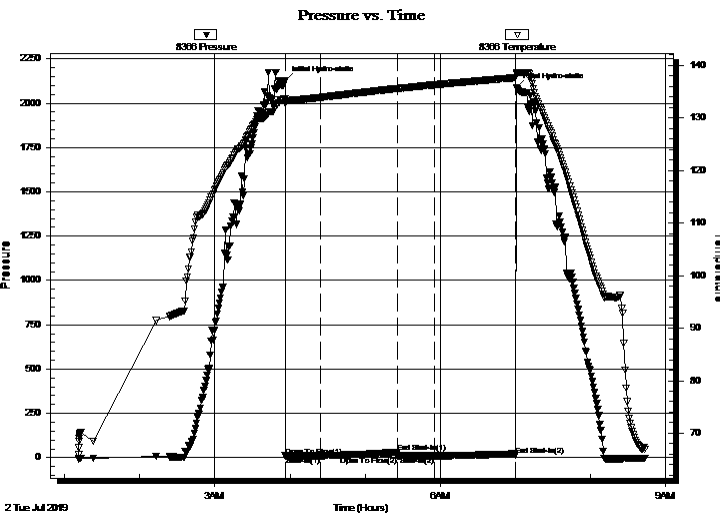
Last Calib.: 2019.07.02

Start Time: 01:11:01 End Time: 08:43:50

Time On Btm: 2019.07.02 @ 03:56:00

Time Off Btm: 2019.07.02 @ 07:00:50

TEST COMMENT: 30 IF - Blow built to 1" died back to 1/4"
60 ISI - No return
30 FF - No blow
60 FSI - No return



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 2127.67 | 133.76 | Initial Hydro-static |
| 1 | 10.39 | 132.73 | Open To Flow (1) |
| 29 | 10.50 | 133.93 | Shut-In(1) |
| 90 | 30.60 | 135.62 | End Shut-In(1) |
| 91 | 9.03 | 135.62 | Open To Flow (2) |
| 120 | 9.74 | 136.32 | Shut-In(2) |
| 185 | 13.35 | 137.67 | End Shut-In(2) |
| 185 | 2086.32 | 138.52 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 2.00 | Mud 100%M | 0.01 |
| | | |
| | | |
| | | |
| | | |

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co. Inc.

21-2S-37W Cheyenne,KS

250 N. Wate STE 300
Wichita KS 67202

Smith A #2-21

Job Ticket: 65255

DST#: 1

ATTN: Saman Sharifaie

Test Start: 2019.07.02 @ 01:11:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 4106.00 ft | Diameter: 3.80 inches | Volume: 57.60 bbl | Tool Weight: 2000.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 0.00 inches | Volume: 0.00 bbl | Weight set on Packer: 20000.00 lb |
| Drill Collar: | Length: 177.00 ft | Diameter: 2.25 inches | Volume: 0.87 bbl | Weight to Pull Loose: 68000.00 lb |
| | | | <u>Total Volume: 58.47 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 19.00 ft | | | String Weight: Initial 60000.00 lb |
| Depth to Top Packer: | 4292.00 ft | | | Final 60000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 69.00 ft | | | |
| Tool Length: | 97.00 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 | | | 4269.00 | |
| Hydraulic tool | 5.00 | | | 4274.00 | |
| Jars | 5.00 | | | 4279.00 | |
| Safety Joint | 3.00 | | | 4282.00 | |
| Packer | 5.00 | | | 4287.00 | 28.00 Bottom Of Top Packer |
| Packer | 5.00 | | | 4292.00 | |
| Stubb | 1.00 | | | 4293.00 | |
| Recorder | 0.00 | 8353 | Inside | 4293.00 | |
| Recorder | 0.00 | 8366 | Outside | 4293.00 | |
| Perforations | 32.00 | | | 4325.00 | |
| Blank Spacing | 33.00 | | | 4358.00 | |
| Bullnose | 3.00 | | | 4361.00 | 69.00 Bottom Packers & Anchor |

Total Tool Length: 97.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

21-2S-37W Cheyenne,KS

250 N. Wate STE 300
Wichita KS 67202

Smith A #2-21

Job Ticket: 65255

DST#: 1

ATTN: Saman Sharifaie

Test Start: 2019.07.02 @ 01:11:00

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: 64.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|-------------|---------------|
| 2.00 | Mud 100%M | 0.010 |

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

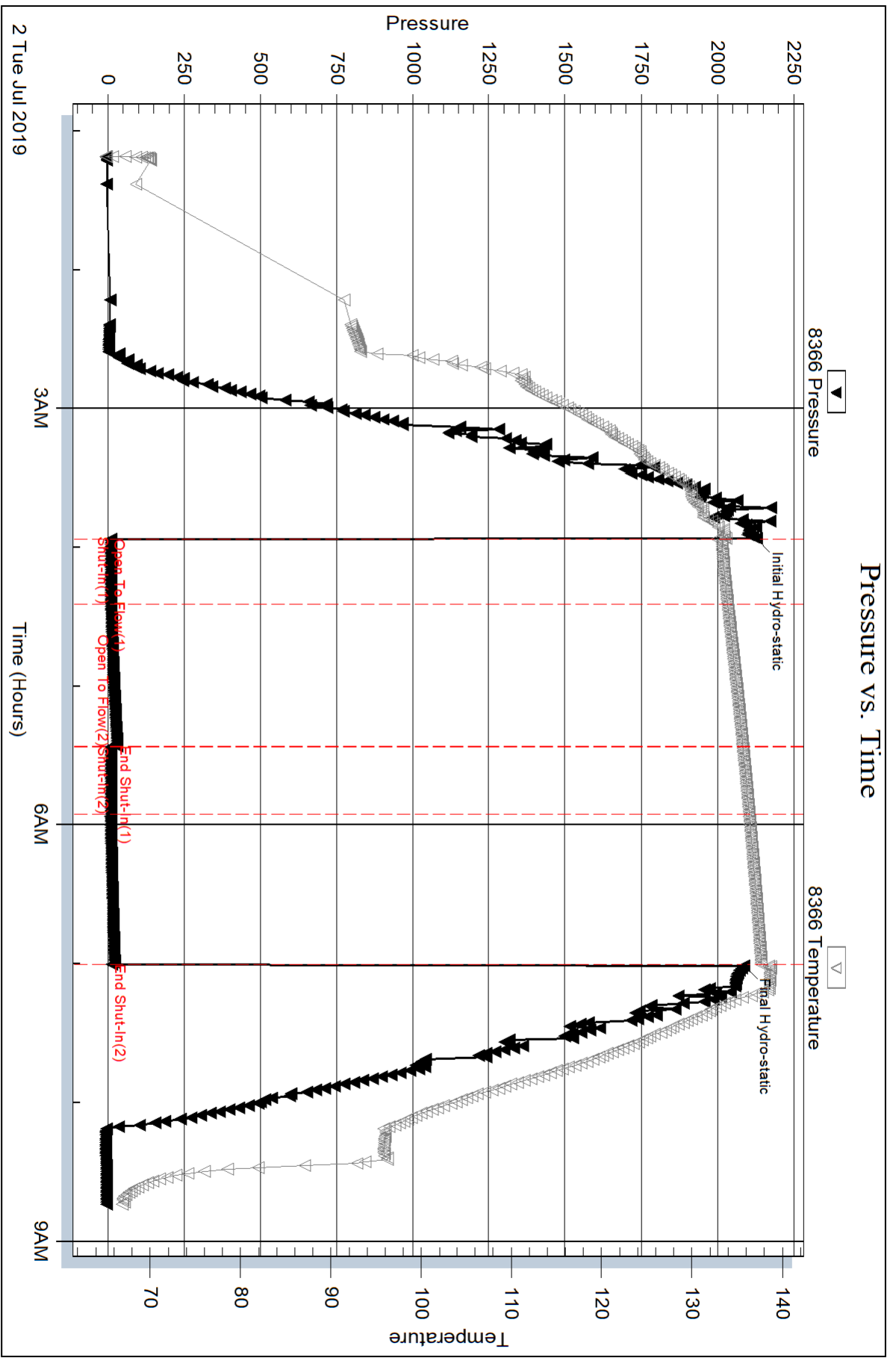
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



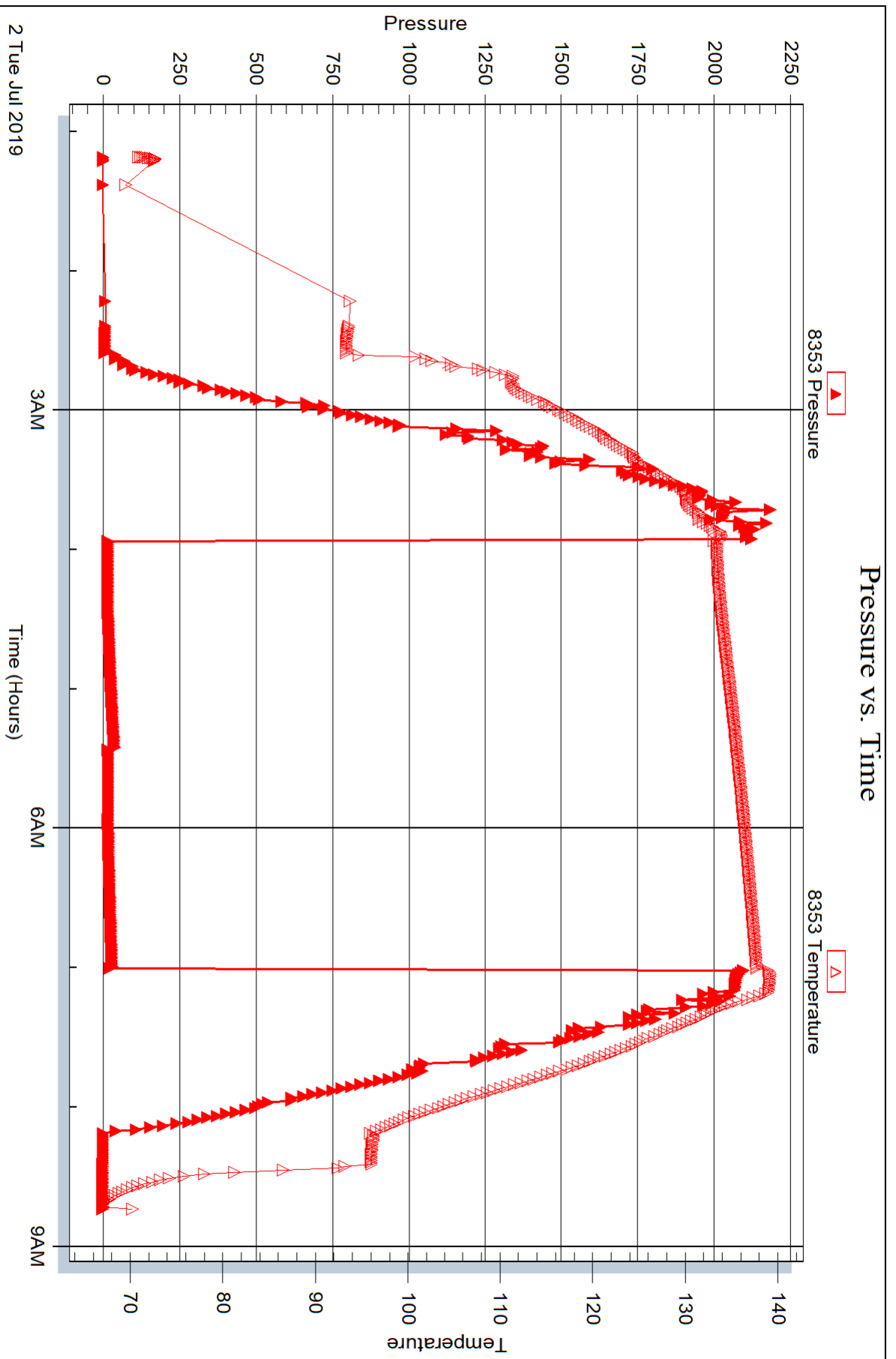
Serial #: 8353

Inside

Murfin Drilling Co. Inc.

Smith A #2-21

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co. Inc.**

250 N. Wate STE 300
Wichita KS 67202

ATTN: Saman Sharifaie

Smith A #2-21

21-2S-37W Cheyenne,KS

Start Date: 2019.07.02 @ 17:22:00

End Date: 2019.07.03 @ 01:19:50

Job Ticket #: 65256 DST #: 2

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

Printed: 2019.07.08 @ 11:54:16



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

21-2S-37W Cheyenne, KS

250 N. Wate STE 300
Wichita KS 67202

Smith A #2-21

Job Ticket: 65256

DST#: 2

ATTN: Saman Sharifaie

Test Start: 2019.07.02 @ 17:22:00

GENERAL INFORMATION:

Formation: **LKC " D "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:13:20

Time Test Ended: 01:19:50

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 71

Interval: 4361.00 ft (KB) To 4418.00 ft (KB) (TVD)

Reference Elevations: 3416.00 ft (KB)

Total Depth: 4418.00 ft (KB) (TVD)

3411.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8366 Outside

Press@RunDepth: 14.76 psig @ 4362.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.07.02

End Date:

2019.07.03

Last Calib.: 2019.07.03

Start Time: 17:22:01

End Time:

01:19:50

Time On Btm: 2019.07.02 @ 20:13:10

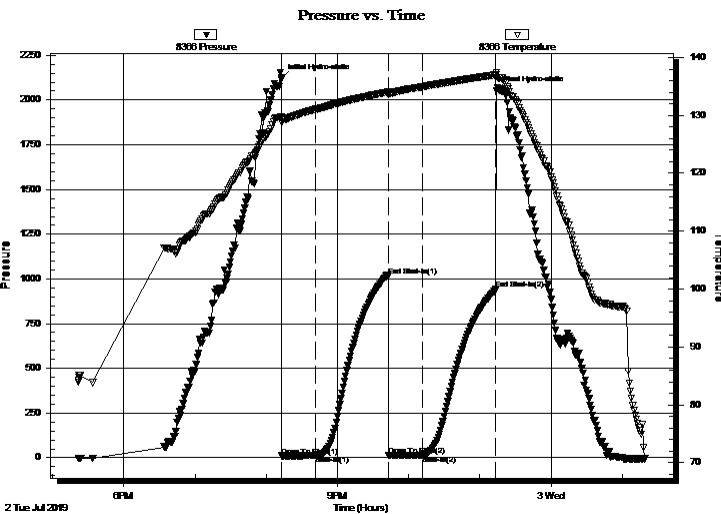
Time Off Btm: 2019.07.02 @ 23:14:00

TEST COMMENT: 30 IF - Blow built to 1/2" died back to 1/4"

60 ISI - No return

30 FF - No blow

60 FSI - No return



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 2122.22 | 129.67 | Initial Hydro-static |
| 1 | 10.44 | 128.85 | Open To Flow (1) |
| 29 | 12.46 | 131.02 | Shut-In(1) |
| 90 | 1017.63 | 134.02 | End Shut-In(1) |
| 90 | 13.28 | 133.55 | Open To Flow (2) |
| 119 | 14.76 | 134.92 | Shut-In(2) |
| 181 | 941.52 | 137.00 | End Shut-In(2) |
| 181 | 2052.08 | 137.42 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------------|--------------|
| 5.00 | OCM - 20%o - 80%M | 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

Murfin Drilling Co. Inc.

21-2S-37W Cheyenne,KS

250 N. Wate STE 300
Wichita KS 67202

Smith A #2-21

Job Ticket: 65256

DST#: 2

ATTN: Saman Sharifaie

Test Start: 2019.07.02 @ 17:22:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 4168.00 ft | Diameter: 3.80 inches | Volume: 58.47 bbl | Tool Weight: 2000.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 0.00 inches | Volume: 0.00 bbl | Weight set on Packer: 20000.00 lb |
| Drill Collar: | Length: 177.00 ft | Diameter: 2.25 inches | Volume: 0.87 bbl | Weight to Pull Loose: 70000.00 lb |
| | | | <u>Total Volume: 59.34 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 12.00 ft | | | String Weight: Initial 62000.00 lb |
| Depth to Top Packer: | 4361.00 ft | | | Final 62000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 57.00 ft | | | |
| Tool Length: | 85.00 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 | | | 4338.00 | |
| Hydraulic tool | 5.00 | | | 4343.00 | |
| Jars | 5.00 | | | 4348.00 | |
| Safety Joint | 3.00 | | | 4351.00 | |
| Packer | 5.00 | | | 4356.00 | 28.00 Bottom Of Top Packer |
| Packer | 5.00 | | | 4361.00 | |
| Stubb | 1.00 | | | 4362.00 | |
| Recorder | 0.00 | 8353 | Inside | 4362.00 | |
| Recorder | 0.00 | 8366 | Outside | 4362.00 | |
| Perforations | 20.00 | | | 4382.00 | |
| Blank Spacing | 33.00 | | | 4415.00 | |
| Bullnose | 3.00 | | | 4418.00 | 57.00 Bottom Packers & Anchor |

Total Tool Length: 85.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

21-2S-37W Cheyenne,KS

250 N. Wate STE 300
Wichita KS 67202

Smith A #2-21

Job Ticket: 65256

DST#: 2

ATTN: Saman Sharifaie

Test Start: 2019.07.02 @ 17:22:00

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:

ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|-------------------|---------------|
| 5.00 | OCM - 20%o - 80%M | 0.025 |

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

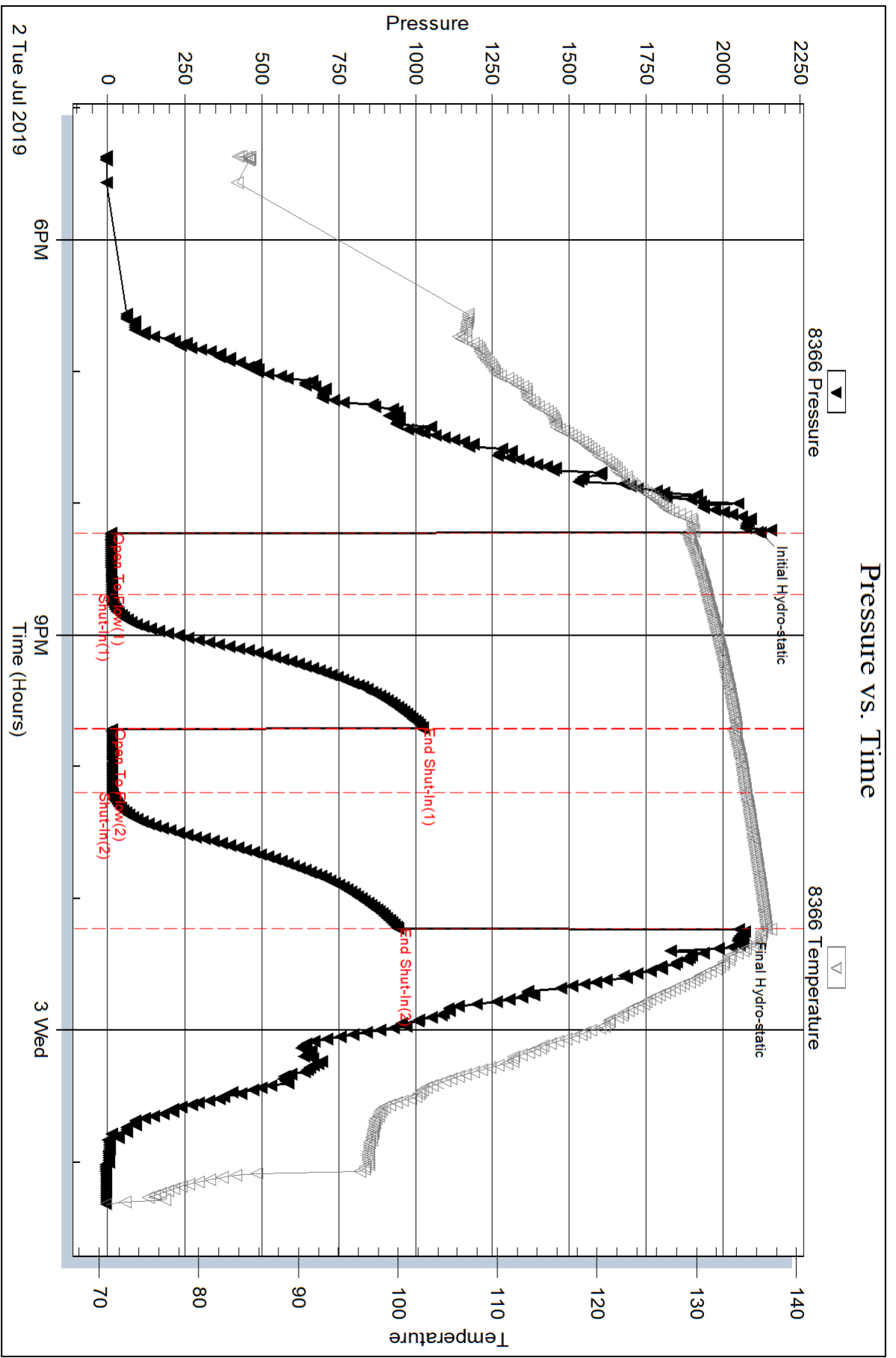
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



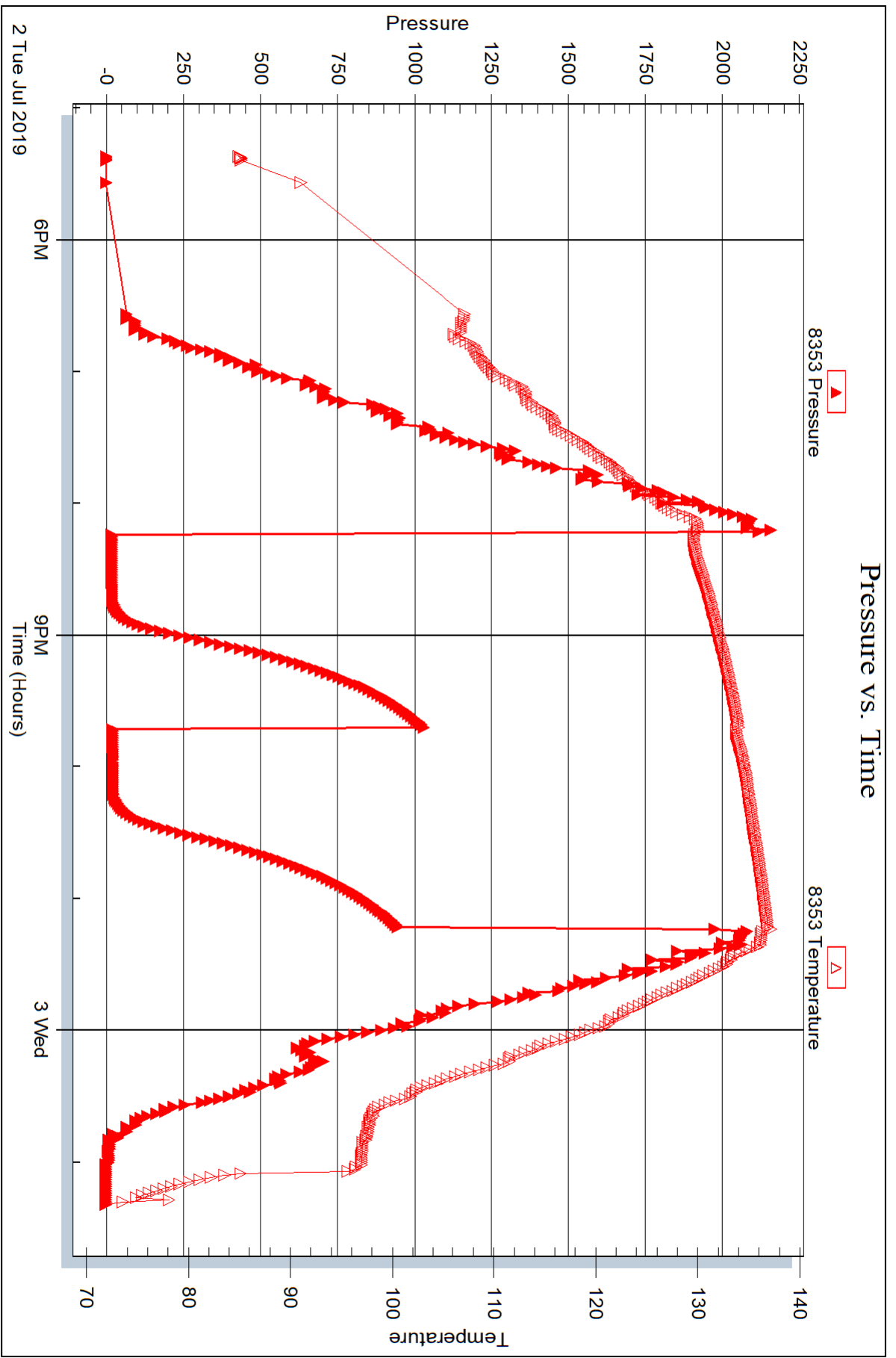
Serial #: 8353

Inside

Murfin Drilling Co. Inc.

Smith A #2-21

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 65256

Printed: 2019.07.08 @ 11:54:17



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co. Inc.**

250 N. Wate STE 300
Wichita KS 67202

ATTN: Saman Sharifaie

Smith A #2-21

21-2S-37W Cheyenne,KS

Start Date: 2019.07.03 @ 12:16:00

End Date: 2019.07.03 @ 20:31:50

Job Ticket #: 65257 DST #: 3

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

Printed: 2019.07.08 @ 11:53:16



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

21-2S-37W Cheyenne, KS

250 N. Wate STE 300
Wichita KS 67202

Smith A #2-21

Job Ticket: 65257

DST#: 3

ATTN: Saman Sharifaie

Test Start: 2019.07.03 @ 12:16:00

GENERAL INFORMATION:

Formation: **LKC " G "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:12:20

Time Test Ended: 20:31:50

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 71

Interval: 4418.00 ft (KB) To 4476.00 ft (KB) (TVD)

Reference Elevations: 3416.00 ft (KB)

Total Depth: 4476.00 ft (KB) (TVD)

3411.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8366

Outside

Press@RunDepth: 51.46 psig @ 4419.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.07.03

End Date:

2019.07.03

Last Calib.:

2019.07.03

Start Time: 12:16:01

End Time:

20:31:50

Time On Btm:

2019.07.03 @ 14:12:10

Time Off Btm:

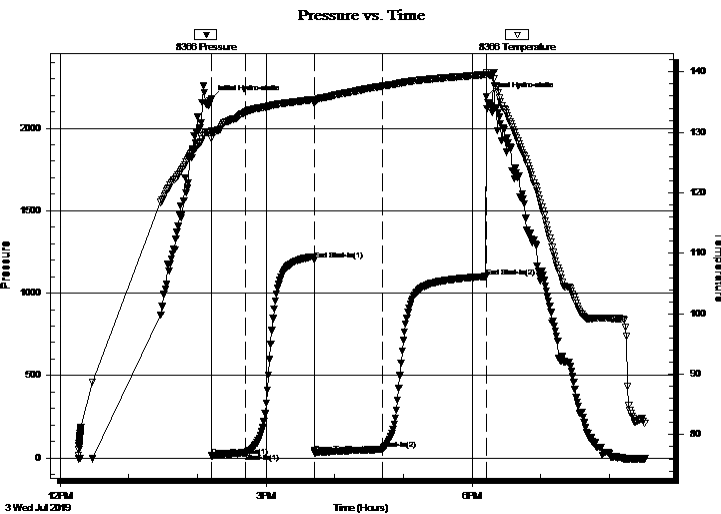
2019.07.03 @ 18:12:50

TEST COMMENT: 30 IF - Blow built to 2 1/2"

60 ISI - No return

60 FF - Blow built to 4"

90 FSI - No return



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 2176.51 | 130.29 | Initial Hydro-static |
| 1 | 12.50 | 129.00 | Open To Flow (1) |
| 30 | 29.81 | 133.34 | Shut-In(1) |
| 90 | 1200.17 | 135.43 | End Shut-In(1) |
| 90 | 30.02 | 135.06 | Open To Flow (2) |
| 150 | 51.46 | 137.63 | Shut-In(2) |
| 241 | 1100.30 | 139.55 | End Shut-In(2) |
| 241 | 2193.10 | 139.91 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|---------------------------|--------------|
| 60.00 | GOCM - 20%G - 40%o - 40%M | 0.30 |
| 40.00 | GOCM - 10%G - 30%o - 60%M | 0.20 |
| 0.00 | 80' GIP | 0.00 |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co. Inc.

21-2S-37W Cheyenne,KS

250 N. Wate STE 300
Wichita KS 67202

Smith A #2-21

Job Ticket: 65257

DST#: 3

ATTN: Saman Sharifaie

Test Start: 2019.07.03 @ 12:16:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 4230.00 ft | Diameter: 3.80 inches | Volume: 59.34 bbl | Tool Weight: 2000.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 0.00 inches | Volume: 0.00 bbl | Weight set on Packer: 20000.00 lb |
| Drill Collar: | Length: 177.00 ft | Diameter: 2.25 inches | Volume: 0.87 bbl | Weight to Pull Loose: 80000.00 lb |
| | | | <u>Total Volume: 60.21 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 17.00 ft | | | String Weight: Initial 62000.00 lb |
| Depth to Top Packer: | 4418.00 ft | | | Final 62000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 58.00 ft | | | |
| Tool Length: | 86.00 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 | | | 4395.00 | |
| Hydraulic tool | 5.00 | | | 4400.00 | |
| Jars | 5.00 | | | 4405.00 | |
| Safety Joint | 3.00 | | | 4408.00 | |
| Packer | 5.00 | | | 4413.00 | 28.00 Bottom Of Top Packer |
| Packer | 5.00 | | | 4418.00 | |
| Stubb | 1.00 | | | 4419.00 | |
| Recorder | 0.00 | 8353 | Inside | 4419.00 | |
| Recorder | 0.00 | 8366 | Outside | 4419.00 | |
| Perforations | 21.00 | | | 4440.00 | |
| Blank Spacing | 33.00 | | | 4473.00 | |
| Bullnose | 3.00 | | | 4476.00 | 58.00 Bottom Packers & Anchor |

Total Tool Length: 86.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

21-2S-37W Cheyenne,KS

250 N. Wate STE 300
Wichita KS 67202

Smith A #2-21

Job Ticket: 65257

DST#: 3

ATTN: Saman Sharifaie

Test Start: 2019.07.03 @ 12:16:00

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbbl |
|--------------|---------------------------|----------------|
| 60.00 | GOCM - 20%G - 40%o - 40%M | 0.295 |
| 40.00 | GOCM - 10%G - 30%o - 60%M | 0.197 |
| 0.00 | 80' GIP | 0.000 |

Total Length: 100.00 ft Total Volume: 0.492 bbl

Num Fluid Samples: 0

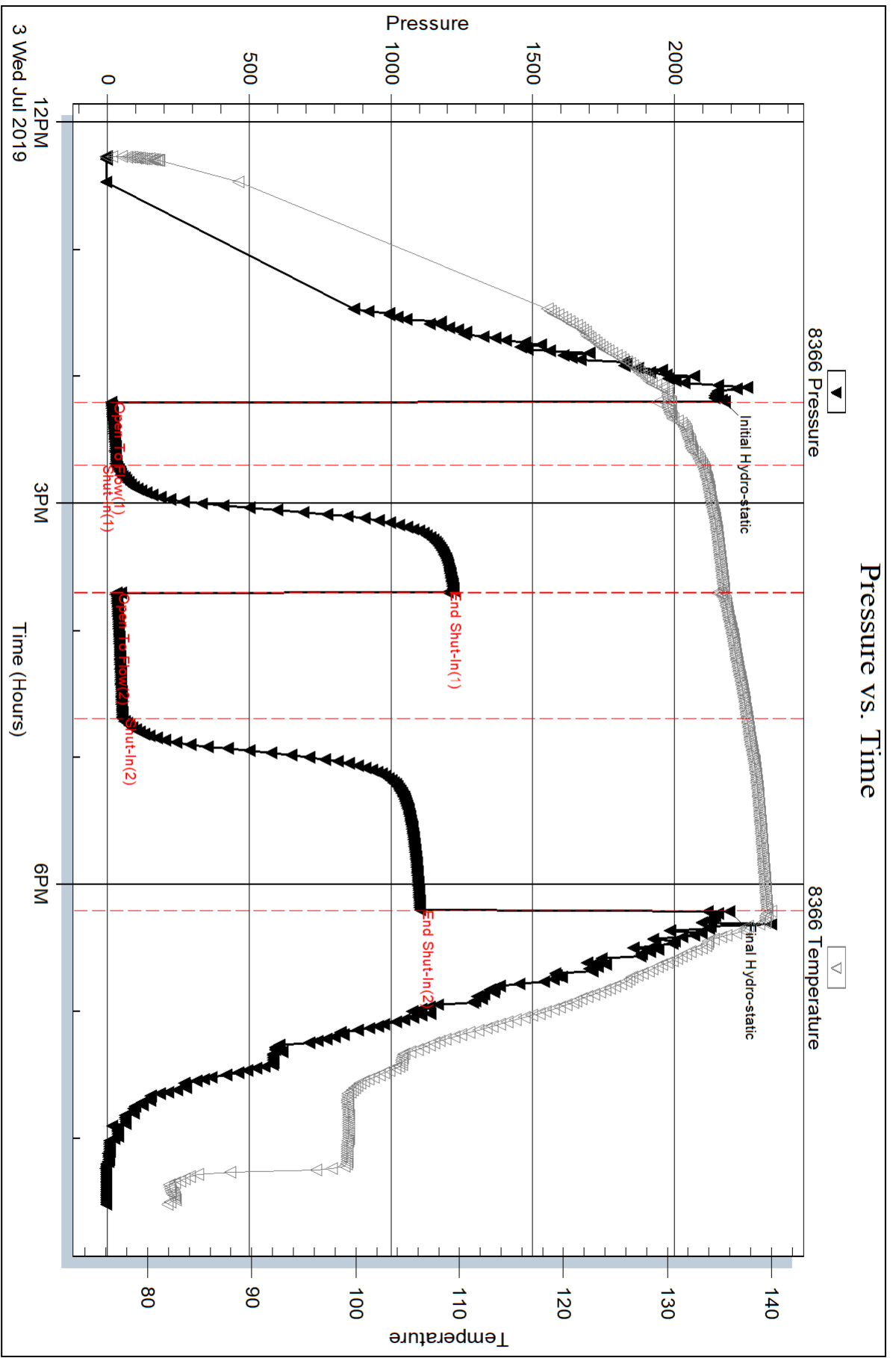
Num Gas Bombs: 0

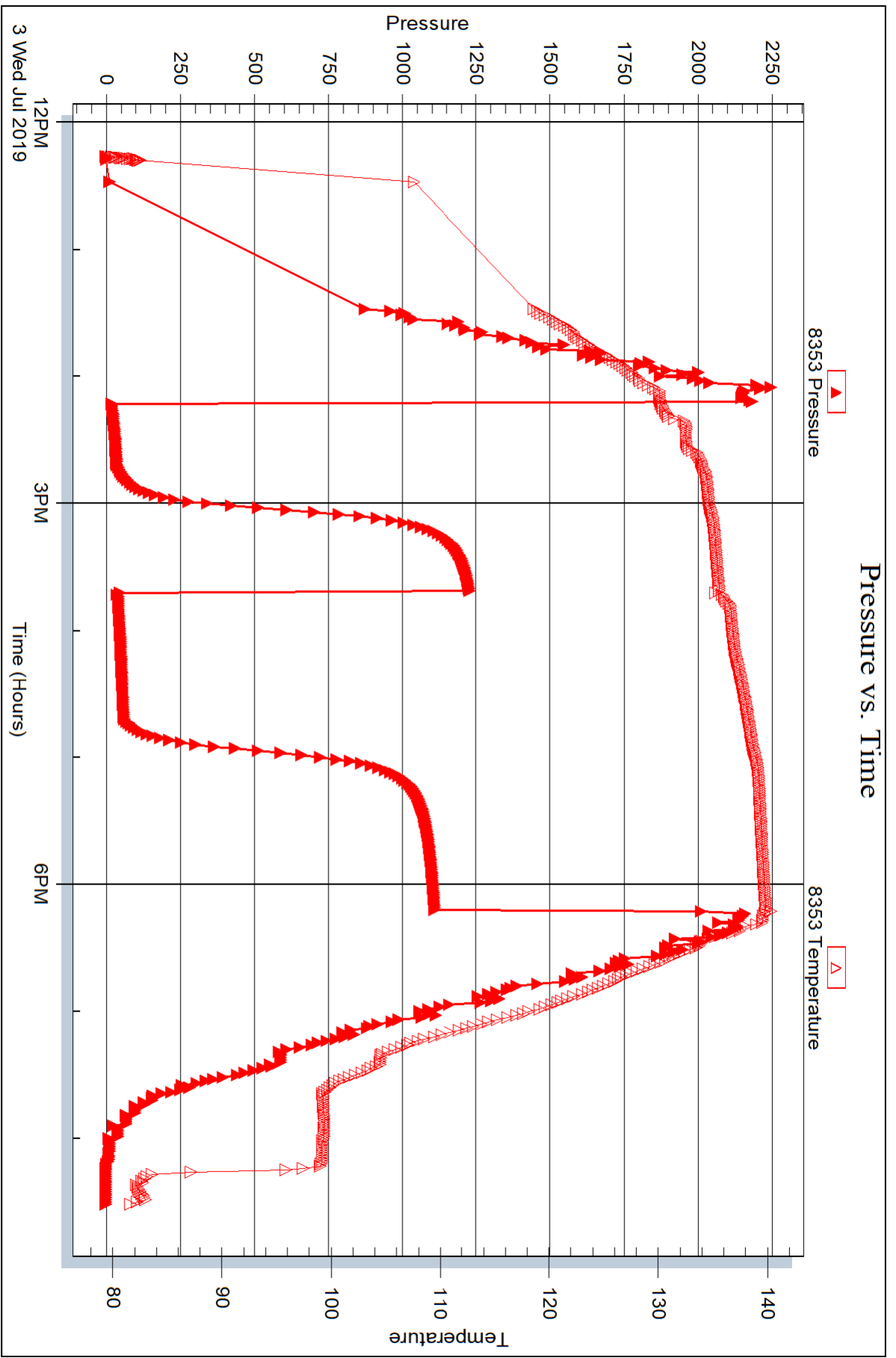
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co. Inc.**

250 N. Wate STE 300
Wichita KS 67202

ATTN: Saman Sharifaie

Smith A #2-21

21-2S-37W Cheyenne,KS

Start Date: 2019.07.04 @ 09:32:00

End Date: 2019.07.04 @ 18:25:00

Job Ticket #: 65258 DST #: 4

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

Printed: 2019.07.08 @ 11:51:34



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

21-2S-37W Cheyenne, KS

250 N. Wate STE 300
Wichita KS 67202

Smith A #2-21

Job Ticket: 65258

DST#: 4

ATTN: Saman Sharifaie

Test Start: 2019.07.04 @ 09:32:00

GENERAL INFORMATION:

Formation: **LKC " H - J "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:47:10

Time Test Ended: 18:25:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 71

Interval: 4476.00 ft (KB) To 4570.00 ft (KB) (TVD)

Reference Elevations: 3416.00 ft (KB)

Total Depth: 4570.00 ft (KB) (TVD)

3411.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8366

Outside

Press@RunDepth: 218.03 psig @ 4477.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.07.04

End Date:

2019.07.04

Last Calib.:

2019.07.04

Start Time: 09:32:01

End Time:

18:25:00

Time On Btm:

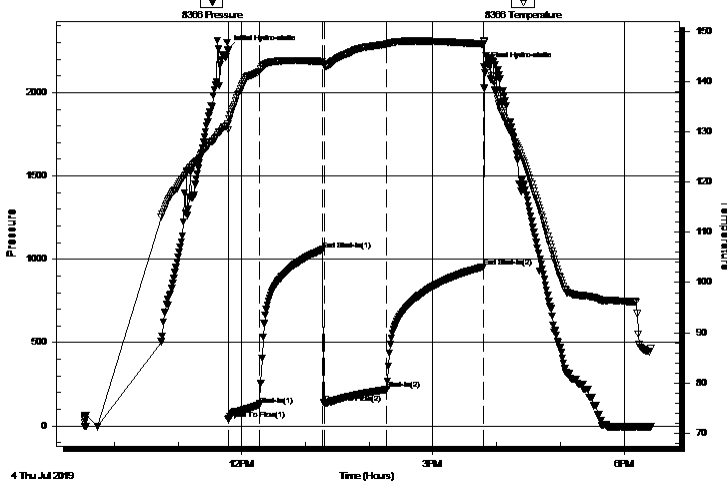
2019.07.04 @ 11:46:50

Time Off Btm:

2019.07.04 @ 15:48:10

TEST COMMENT: 30 IF - BOB @ 6 mins
60 ISI - Return built to 5" died back to 3"
60 FF - BOB @ 8 mins
90 FSI - Return built to 9" died back to 2"

Pressure vs. Time



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 2255.54 | 131.68 | Initial Hydro-static |
| 1 | 37.87 | 130.48 | Open To Flow (1) |
| 30 | 124.59 | 142.07 | Shut-In(1) |
| 90 | 1058.85 | 144.09 | End Shut-In(1) |
| 91 | 137.12 | 143.27 | Open To Flow (2) |
| 150 | 218.03 | 147.53 | Shut-In(2) |
| 241 | 954.65 | 147.56 | End Shut-In(2) |
| 242 | 2156.56 | 147.93 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|---------------------------|--------------|
| 120.00 | GMCO - 30%G - 25%M - 45%o | 0.59 |
| 470.00 | GO - 40%G - 60%o | 6.07 |
| 0.00 | 1323' GIP | 0.00 |
| | | |
| | | |

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

21-2S-37W Cheyenne, KS

250 N. Wate STE 300
Wichita KS 67202

Smith A #2-21

Job Ticket: 65258

DST#: 4

ATTN: Saman Sharifaie

Test Start: 2019.07.04 @ 09:32:00

GENERAL INFORMATION:

Formation: **LKC " H - J "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:47:10

Time Test Ended: 18:25:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 71

Interval: 4476.00 ft (KB) To 4570.00 ft (KB) (TVD)

Total Depth: 4570.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3416.00 ft (KB)

3411.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8353 Inside

Press@RunDepth: psig @ 4477.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.07.04 End Date: 2019.07.04

Last Calib.: 2019.07.04

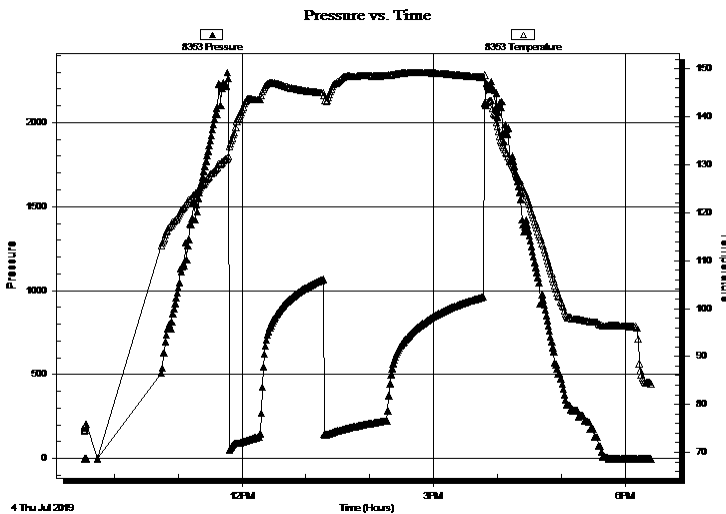
Start Time: 09:32:01 End Time: 18:24:49

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 IF - BOB @ 6 mins
60 ISI - Return built to 5" died back to 3"
60 FF - BOB @ 8 mins
90 FSI - Return built to 9" died back to 2"

PRESSURE SUMMARY



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

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|---------------------------|--------------|
| 120.00 | GMCO - 30%G - 25%M - 45%o | 0.59 |
| 470.00 | GO - 40%G - 60%o | 6.07 |
| 0.00 | 1323' GIP | 0.00 |
| | | |
| | | |
| | | |

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co. Inc.

21-2S-37W Cheyenne,KS

250 N. Wate STE 300
Wichita KS 67202

Smith A #2-21

Job Ticket: 65258

DST#: 4

ATTN: Saman Sharifaie

Test Start: 2019.07.04 @ 09:32:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 4293.00 ft | Diameter: 3.80 inches | Volume: 60.22 bbl | Tool Weight: 2000.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 0.00 inches | Volume: 0.00 bbl | Weight set on Packer: 20000.00 lb |
| Drill Collar: | Length: 177.00 ft | Diameter: 2.25 inches | Volume: 0.87 bbl | Weight to Pull Loose: 90000.00 lb |
| | | | <u>Total Volume: 61.09 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 22.00 ft | | | String Weight: Initial 62000.00 lb |
| Depth to Top Packer: | 4476.00 ft | | | Final 68000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 94.00 ft | | | |
| Tool Length: | 122.00 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 | | | 4453.00 | |
| Hydraulic tool | 5.00 | | | 4458.00 | |
| Jars | 5.00 | | | 4463.00 | |
| Safety Joint | 3.00 | | | 4466.00 | |
| Packer | 5.00 | | | 4471.00 | 28.00 Bottom Of Top Packer |
| Packer | 5.00 | | | 4476.00 | |
| Stubb | 1.00 | | | 4477.00 | |
| Recorder | 0.00 | 8353 | Inside | 4477.00 | |
| Recorder | 0.00 | 8366 | Outside | 4477.00 | |
| Perforations | 25.00 | | | 4502.00 | |
| Blank Spacing | 65.00 | | | 4567.00 | |
| Bullnose | 3.00 | | | 4570.00 | 94.00 Bottom Packers & Anchor |

Total Tool Length: 122.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

21-2S-37W Cheyenne,KS

250 N. Wate STE 300
Wichita KS 67202

Smith A #2-21

Job Ticket: 65258

DST#: 4

ATTN: Saman Sharifaie

Test Start: 2019.07.04 @ 09:32:00

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:

ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|---------------------------|---------------|
| 120.00 | GMCO - 30%G - 25%M - 45%o | 0.590 |
| 470.00 | GO - 40%G - 60%o | 6.074 |
| 0.00 | 1323' GIP | 0.000 |

Total Length: 590.00 ft Total Volume: 6.664 bbl

Num Fluid Samples: 0

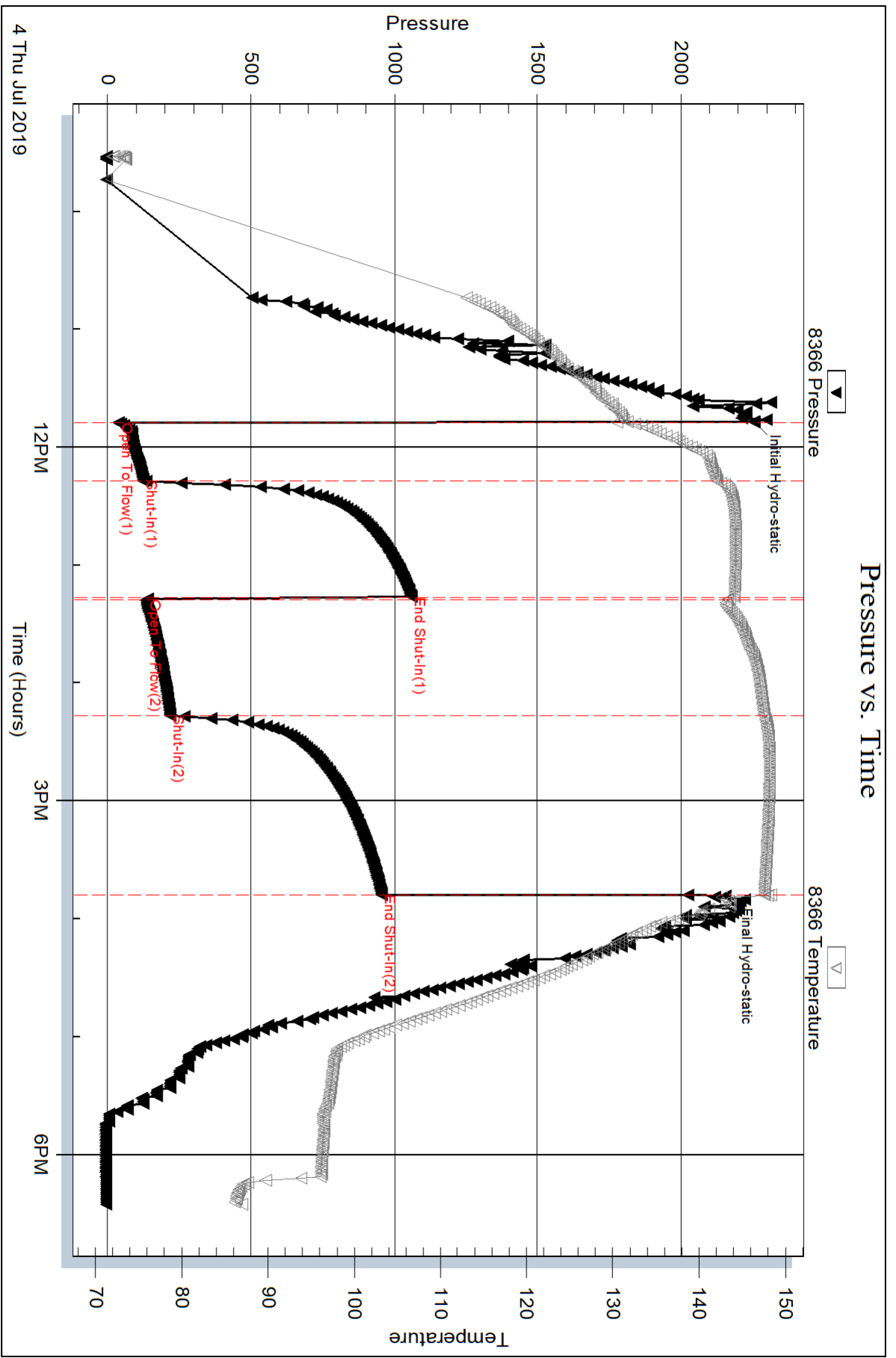
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity = 38 @ 90 DEG F = 35 COR 60 DEG F



Serial #: 8353

Inside

Murfin Drilling Co. Inc.

Smith A #2-21

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 65258

Printed: 2019.07.08 @ 11:51:36



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co. Inc.**

250 N. Wate STE 300
Wichita KS 67202

ATTN: Saman Sharifaie

Smith A #2-21

21-2S-37W Cheyenne,KS

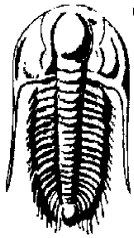
Start Date: 2019.07.05 @ 21:05:00

End Date: 2019.07.06 @ 08:01:10

Job Ticket #: 65259 DST #: 5

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

Printed: 2019.07.08 @ 11:48:41



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

21-2S-37W Cheyenne, KS

250 N. Wate STE 300
Wichita KS 67202

Smith A #2-21

Job Ticket: 65259

DST#: 5

ATTN: Saman Sharifaie

Test Start: 2019.07.05 @ 21:05:00

GENERAL INFORMATION:

Formation: **Ft. Scott - Celia**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:25:40

Time Test Ended: 08:01:10

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 71

Interval: 4722.00 ft (KB) To 4860.00 ft (KB) (TVD)

Total Depth: 4860.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3416.00 ft (KB)

3411.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8366 Outside

Press@RunDepth: 1044.72 psig @ 4723.00 ft (KB)

Start Date: 2019.07.05

End Date:

2019.07.06

Start Time: 21:05:01

End Time:

08:01:10

Capacity: 8000.00 psig

Last Calib.: 2019.07.06

Time On Btm: 2019.07.06 @ 00:25:30

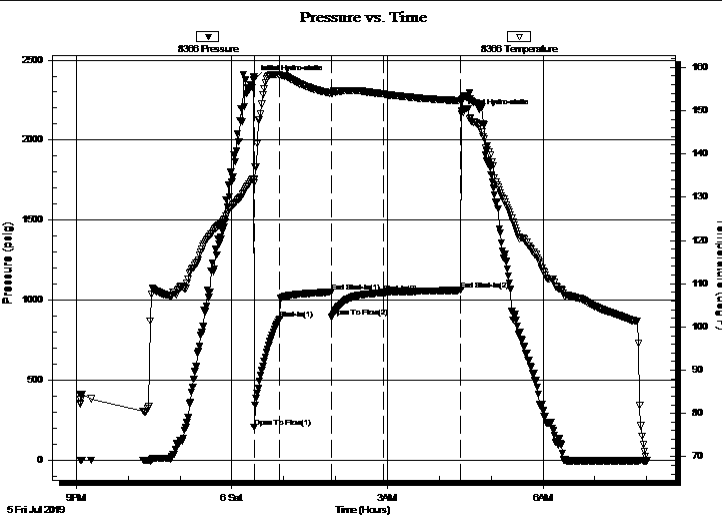
Time Off Btm: 2019.07.06 @ 04:25:30

TEST COMMENT: 30 IF - BoB @ 1 1/2 mins

60 ISI - No return

60 FF - BoB @ 5 mins

90 FSI - No return



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 2380.24 | 134.17 | Initial Hydro-static |
| 1 | 204.66 | 133.34 | Open To Flow (1) |
| 30 | 880.69 | 158.18 | Shut-In(1) |
| 90 | 1049.62 | 153.97 | End Shut-In(1) |
| 90 | 894.32 | 153.88 | Open To Flow (2) |
| 150 | 1044.72 | 153.88 | Shut-In(2) |
| 240 | 1060.30 | 152.28 | End Shut-In(2) |
| 240 | 2166.38 | 151.88 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------------|--------------|
| 60.00 | WCM - 45%W - 55%M | 0.30 |
| 1769.00 | MCW - 10%W - 90%M | 23.20 |
| 441.00 | WCM - 40%W - 60%M | 6.19 |
| 120.00 | Mud 100%M | 1.68 |
| | | |
| | | |

* 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. Inc.

21-2S-37W Cheyenne,KS

250 N. Wate STE 300
Wichita KS 67202

Smith A #2-21

Job Ticket: 65259

DST#: 5

ATTN: Saman Sharifaie

Test Start: 2019.07.05 @ 21:05:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 4474.00 ft | Diameter: 3.80 inches | Volume: 62.76 bbl | Tool Weight: 2000.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 0.00 inches | Volume: 0.00 bbl | Weight set on Packer: 20000.00 lb |
| Drill Collar: | Length: 237.00 ft | Diameter: 2.25 inches | Volume: 1.17 bbl | Weight to Pull Loose: 90000.00 lb |
| | | | <u>Total Volume: 63.93 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 17.00 ft | | | String Weight: Initial 65000.00 lb |
| Depth to Top Packer: | 4722.00 ft | | | Final 78000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 138.00 ft | | | |
| Tool Length: | 166.00 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 | | | 4699.00 | |
| Hydraulic tool | 5.00 | | | 4704.00 | |
| Jars | 5.00 | | | 4709.00 | |
| Safety Joint | 3.00 | | | 4712.00 | |
| Packer | 5.00 | | | 4717.00 | 28.00 Bottom Of Top Packer |
| Packer | 5.00 | | | 4722.00 | |
| Stubb | 1.00 | | | 4723.00 | |
| Recorder | 0.00 | 8353 | Inside | 4723.00 | |
| Recorder | 0.00 | 8366 | Outside | 4723.00 | |
| Perforations | 5.00 | | | 4728.00 | |
| Blank Spacing | 129.00 | | | 4857.00 | |
| Bullnose | 3.00 | | | 4860.00 | 138.00 Bottom Packers & Anchor |

Total Tool Length: 166.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

21-2S-37W Cheyenne,KS

250 N. Wate STE 300
Wichita KS 67202

Smith A #2-21

Job Ticket: 65259

DST#: 5

ATTN: Saman Sharifaie

Test Start: 2019.07.05 @ 21:05:00

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: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|-------------------|---------------|
| 60.00 | WCM - 45%W - 55%M | 0.295 |
| 1769.00 | MCW - 10%W - 90%M | 23.202 |
| 441.00 | WCM - 40%W - 60%M | 6.186 |
| 120.00 | Mud 100%M | 1.683 |

Total Length: 2390.00 ft Total Volume: 31.366 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

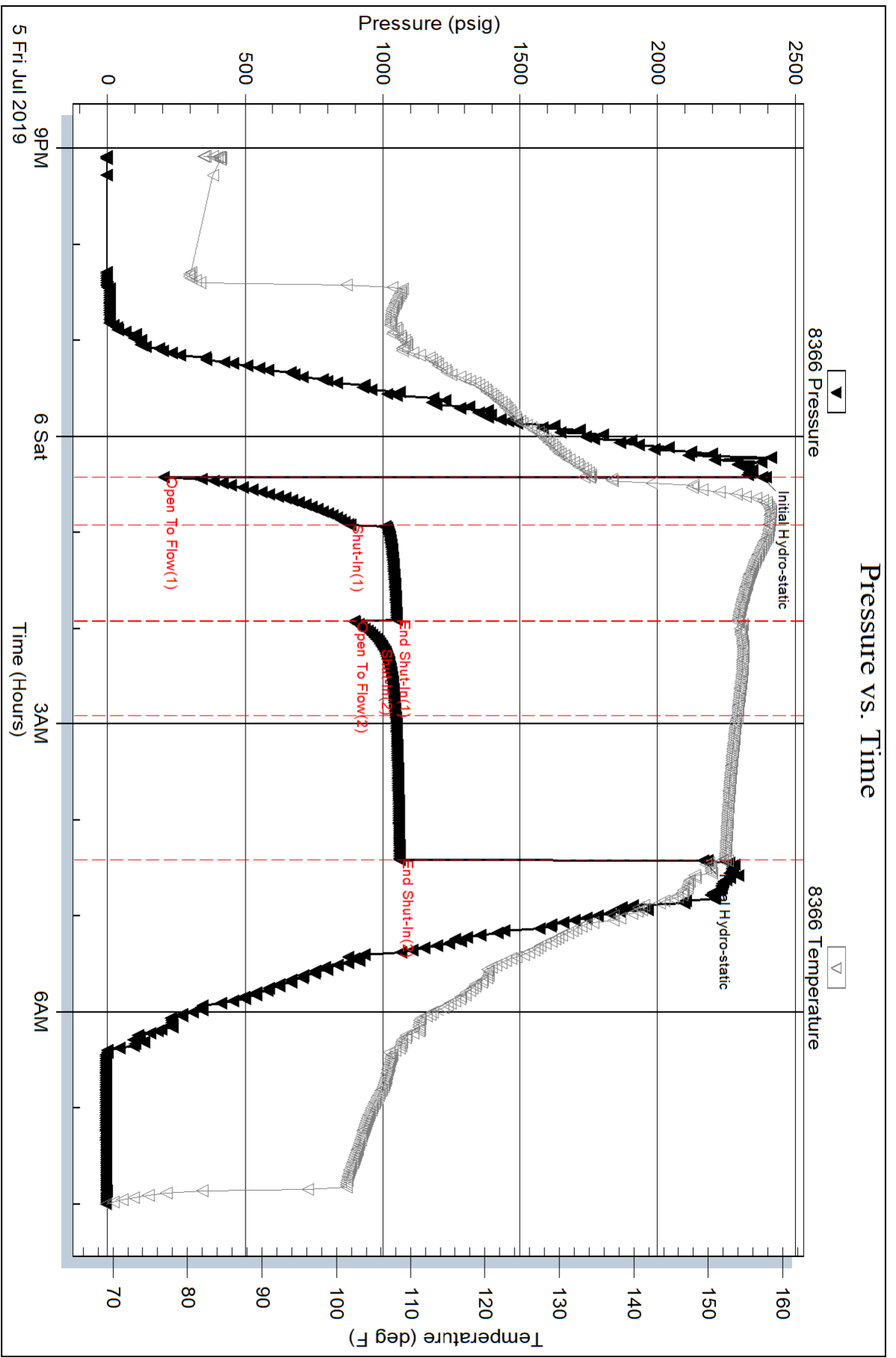
Recovery Comments: RW = .285 @ 55 DEG F
Chlorides = 30,000 ppm

Serial #: 8366

Outside Murfin Drilling Co. Inc.

Smith A #2-21

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 65259

Printed: 2019.07.08 @ 11:48:42

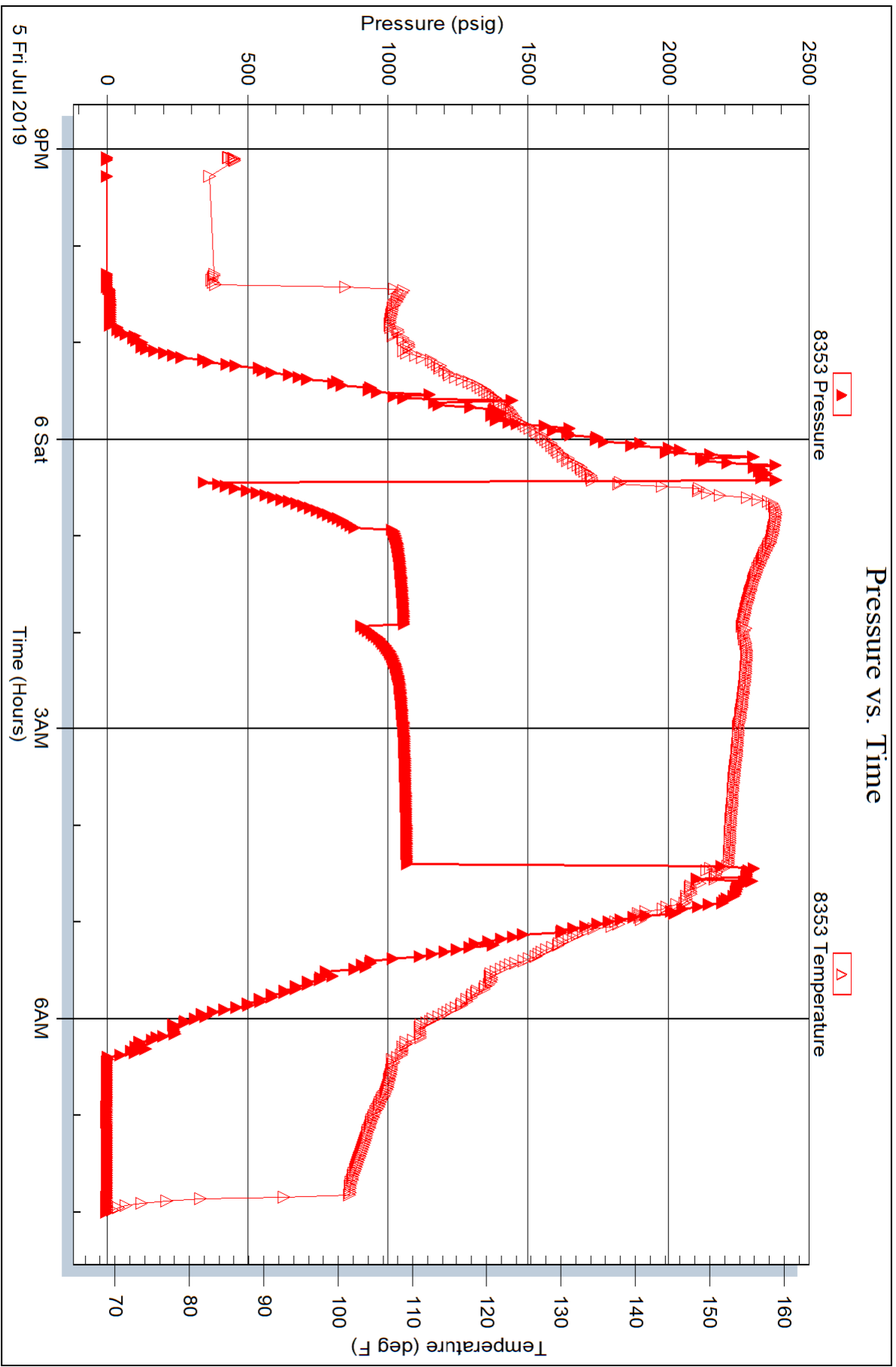
Serial #: 8353

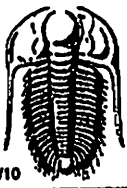
Inside

Murfin Drilling Co. Inc.

Smith A #2-21

DST Test Number: 5





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65255

Well Name & No. Smith A #2-21 Test No. 1 Date 1/2/19
 Company Martin Drilling Co. Inc. Elevation 3416 KB 3411 GL
 Address 250 N. Water STE 300 Wichita KS 67202
 Co. Rep / Geo. Saman Sharitaie Rig Martin #3
 Location: Sec. 21 Twp 25 Rge. 37W Co. Cheyenne State KS

Interval Tested 4292-4361 Zone Tested LKL "A"
 Anchor Length 69' Drill Pipe Run 4106' Mud Wt. 8.9
 Top Packer Depth 4287 Drill Collars Run 177' Vis 64
 Bottom Packer Depth 4292 Wt. Pipe Run 0' WL 5.6
 Total Depth 4361 Chlorides 600 ppm System LCM 4
 Blow Description 30 IF - Blow built to 1" died back to 1/4"
60 ISI - No return
30 FF - No blow
60 FSI - No return

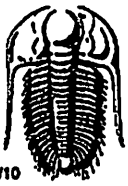
| Rec | Feet of | %gas | %oil | %water | %mud |
|-----------|------------|------|------|------------|------|
| <u>2'</u> | <u>Mud</u> | | | <u>100</u> | |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |

Rec Total 2' BHT 138° Gravity — API RW — @ — F Chlorides — ppm

| | | |
|-------------------------------------|---|--|
| (A) Initial Hydrostatic <u>2128</u> | <input checked="" type="checkbox"/> Test <u>1300</u> | T-On Location <u>00:45</u> |
| (B) First Initial Flow <u>10</u> | <input checked="" type="checkbox"/> Jars <u>250</u> | T-Started <u>01:11</u> |
| (C) First Final Flow <u>11</u> | <input checked="" type="checkbox"/> Safety Joint <u>75</u> | T-Open <u>03:56</u> |
| (D) Initial Shut-In <u>31</u> | <input type="checkbox"/> Circ Sub | T-Pulled <u>07:00</u> |
| (E) Second Initial Flow <u>9</u> | <input type="checkbox"/> Hourly Standby | T-Out <u>08:45</u> |
| (F) Second Final Flow <u>10</u> | <input checked="" type="checkbox"/> Mileage <u>120 120 RT</u> | Comments <u>waited on cat</u> |
| (G) Final Shut-In <u>13</u> | <input type="checkbox"/> Sampler | |
| (H) Final Hydrostatic <u>2086</u> | <input type="checkbox"/> Straddle | <input type="checkbox"/> EM Tool |
| Initial Open <u>30</u> | <input type="checkbox"/> Shale Packer | <input type="checkbox"/> Ruined Shale Packer |
| Initial Shut-In <u>60</u> | <input type="checkbox"/> Extra Packer | <input type="checkbox"/> Ruined Packer |
| Final Flow <u>30</u> | <input type="checkbox"/> Extra Recorder | <input type="checkbox"/> Extra Copies |
| Final Shut-In <u>60</u> | <input type="checkbox"/> Day Standby | Sub Total <u>0</u> |
| | <input type="checkbox"/> Accessibility | Total <u>1745</u> |
| | Sub Total <u>1745</u> | MP/DST Disc't <u>—</u> |

Approved By _____ Our Representative [Signature]

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65256

Well Name & No. Smith A # 2-21 Test No. 2 Date 1/2/19
 Company Murfin Drilling Co. Inc. Elevation 3416 KB 3411 GL
 Address 250 N. Water STE 300 Wichita KS 67202
 Co. Rep / Geo. Saman Sharifaie Rig Murfin # 3
 Location: Sec. 21 Twp 2S Rge. 37W Co. Cheyenne State KS

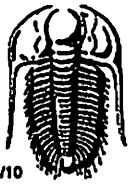
Interval Tested 4361 - 4418 Zone Tested LKC "D"
 Anchor Length 57' Drill Pipe Run 4168' Mud Wt. 9.1
 Top Packer Depth 4356 Drill Collars Run 177' Vls 51
 Bottom Packer Depth 4361 Wt. Pipe Run 0' WL 7.2
 Total Depth 4418 Chlorides 1200 ppm System LCM 3
 Blow Description 30 FF - Blow built to 1/2" died back to 1/4"
60 FSI - No return
30 FF - No blow
60 FSI - No return

| Rec | Feet of | %gas | %oil | %water | %mud |
|-----------|------------|-----------|------|-----------|------|
| <u>5'</u> | <u>OCM</u> | <u>20</u> | | <u>80</u> | |
| 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 137° Gravity — API RW — @ — °F Chlorides — ppm

| | | |
|-------------------------------------|---|--|
| (A) Initial Hydrostatic <u>2122</u> | <input checked="" type="checkbox"/> Test 1300 | T-On Location <u>17:00</u> |
| (B) First Initial Flow <u>10</u> | <input checked="" type="checkbox"/> Jars 250 | T-Started <u>17:22</u> |
| (C) First Final Flow <u>12</u> | <input checked="" type="checkbox"/> Safety Joint 75 | T-Open <u>20:13</u> |
| (D) Initial Shut-In <u>1018</u> | <input type="checkbox"/> Circ Sub | T-Pulled <u>23:13</u> |
| (E) Second Initial Flow <u>13</u> | <input type="checkbox"/> Hourly Standby | T-Out <u>01:30</u> |
| (F) Second Final Flow <u>15</u> | <input checked="" type="checkbox"/> Mileage <u>120 RT</u> 120 | Comments _____ |
| (G) Final Shut-In <u>942</u> | <input type="checkbox"/> Sampler | _____ |
| (H) Final Hydrostatic <u>2052</u> | <input type="checkbox"/> Straddle | <input type="checkbox"/> EM Tool |
| Initial Open <u>30</u> | <input type="checkbox"/> Shale Packer | <input type="checkbox"/> Ruined Shale Packer |
| Initial Shut-In <u>60</u> | <input type="checkbox"/> Extra Packer | <input type="checkbox"/> Ruined Packer |
| Final Flow <u>30</u> | <input type="checkbox"/> Extra Recorder | <input type="checkbox"/> Extra Copies |
| Final Shut-In <u>60</u> | <input type="checkbox"/> Day Standby | Sub Total <u>0</u> |
| | <input type="checkbox"/> Accessibility | Total <u>1745</u> |
| | Sub Total <u>1745</u> | MP/DST Disc't _____ |

Approved By _____ Our Representative [Signature]
 Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65257

Well Name & No. Smith A #2-21 Test No. 3 Date 7/3/19
 Company Martin Drilling Co. Inc. Elevation 3416 KB 3411 GL
 Address 250 N. Water STE 300 Wichita KS 67202
 Co. Rep / Geo. Saman Sharifae Rig Martin #3
 Location: Sec. 21 Twp 25 Rge. 37W Co. Cheyenne State KS

Interval Tested 4418 - 4476 Zone Tested LKC "G"
 Anchor Length 58' Drill Pipe Run 4230' Mud Wt. 9.0
 Top Packer Depth 4413 Drill Collars Run 177' Vis 56
 Bottom Packer Depth 4418 Wt. Pipe Run 0' WL 6.8
 Total Depth 4496 Chlorides 800 ppm System LCM 4
 Blow Description 30 IF - Blow built to 2 1/2"
60 ISI - No return
60 FF - Blow built to 4"
90 FSI - No return

| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|-------------|-----------|-----------|-----------|-----------|
| <u>40'</u> | <u>60CM</u> | <u>10</u> | <u>30</u> | <u>60</u> | <u>60</u> |
| <u>60'</u> | <u>60CM</u> | <u>20</u> | <u>40</u> | <u>40</u> | <u>40</u> |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |

Rec Total 100' BHT 140° Gravity — API RW — @ — F Chlorides — ppm

| | | |
|-------------------------------------|---|--|
| (A) Initial Hydrostatic <u>2177</u> | <input checked="" type="checkbox"/> Test <u>1300</u> | T-On Location <u>12:00</u> |
| (B) First Initial Flow <u>13</u> | <input checked="" type="checkbox"/> Jars <u>250</u> | T-Started <u>12:16</u> |
| (C) First Final Flow <u>30</u> | <input checked="" type="checkbox"/> Safety Joint <u>75</u> | T-Open <u>14:13</u> |
| (D) Initial Shut-In <u>1200</u> | <input type="checkbox"/> Circ Sub | T-Pulled <u>18:12</u> |
| (E) Second Initial Flow <u>30</u> | <input type="checkbox"/> Hourly Standby | T-Out <u>18:30 20:30</u> |
| (F) Second Final Flow <u>51</u> | <input checked="" type="checkbox"/> Mileage <u>120 RT</u> 120 | Comments _____ |
| (G) Final Shut-In <u>1100</u> | <input type="checkbox"/> Sampler | _____ |
| (H) Final Hydrostatic <u>2193</u> | <input type="checkbox"/> Straddle | <input type="checkbox"/> EM Tool |
| Initial Open <u>30</u> | <input type="checkbox"/> Shale Packer | <input type="checkbox"/> Ruined Shale Packer |
| Initial Shut-In <u>60</u> | <input type="checkbox"/> Extra Packer | <input type="checkbox"/> Ruined Packer |
| Final Flow <u>60</u> | <input type="checkbox"/> Extra Recorder | <input type="checkbox"/> Extra Copies |
| Final Shut-In <u>90</u> | <input type="checkbox"/> Day Standby | Sub Total <u>0</u> |
| | <input type="checkbox"/> Accessibility | Total <u>1745</u> |
| | Sub Total <u>1745</u> | MP/DST Disc't _____ |

Approved By _____ Our Representative [Signature]

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65258

Well Name & No. Smith A #2-21 Test No. 4 Date 7/10/19
 Company Martin Drilling Co. Inc. Elevation 3416 KB 3411 GL
 Address 250 N. Water STE 300 Wichita KS 67202
 Co. Rep / Geo. Saman Sharifaie Rig Martin #3
 Location: Sec. 21 Twp 25 Rge. 37W Co. Cheyenne State KS

Interval Tested 4476 - 4570 Zone Tested LKC "H-J"
 Anchor Length 94' Drill Pipe Run 4293' Mud Wt. 9.0
 Top Packer Depth 4471 Drill Collars Run 177' Vis 56
 Bottom Packer Depth 4476 Wt. Pipe Run 0' WL 6.8
 Total Depth 4570 Chlorides 800 ppm System LCM 4

Blow Description 30 IFE - BoB @ 6 mins
60 ISE - Return built to 5" died back to 3"
60 FE - BoB @ 8 mins
90 FST - Return built to 9" died back to 2"

| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|-------------|-----------|-----------|-----------|------|
| <u>470</u> | <u>GO</u> | <u>40</u> | <u>60</u> | | |
| <u>120</u> | <u>GMLC</u> | <u>30</u> | <u>45</u> | <u>25</u> | |
| | | | | | |
| | | | | | |
| | | | | | |

Rec Total 590 BHT 148° Gravity 35 COR 60 API RW @ — ° F Chlorides — ppm

| | | |
|-------------------------------------|---|----------------------------------|
| (A) Initial Hydrostatic <u>2256</u> | <input type="checkbox"/> Test <u>1300</u> | T-On Location <u>09:00</u> |
| (B) First Initial Flow <u>38</u> | <input type="checkbox"/> Jars <u>250</u> | T-Started <u>09:32</u> |
| (C) First Final Flow <u>125</u> | <input type="checkbox"/> Safety Joint <u>75</u> | T-Open <u>11:47</u> |
| (D) Initial Shut-In <u>1059</u> | <input type="checkbox"/> Circ Sub | T-Pulled <u>15:47</u> |
| (E) Second Initial Flow <u>137</u> | <input type="checkbox"/> Hourly Standby | T-Out <u>18:30</u> |
| (F) Second Final Flow <u>218</u> | <input type="checkbox"/> Mileage <u>120</u> | Comments <u>1323' GIP</u> |
| (G) Final Shut-In <u>955</u> | <input type="checkbox"/> Sampler | |
| (H) Final Hydrostatic <u>2157</u> | <input type="checkbox"/> Straddle | <input type="checkbox"/> EM Tool |

Initial Open 30 Shale Packer
 Initial Shut-In 60 Extra Packer
 Final Flow 60 Extra Recorder
 Final Shut-In 90 Day Standby
 Accessibility
 Sub Total 1745 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. 65259

Well Name & No. Smith A # 2-21 Test No. 5 Date 7/5/19
 Company Murfin Drilling Co. Inc. Elevation 3416 KB 3411 GL
 Address 250 N. Water STE 300 Wichita KS 67202
 Co. Rep / Geo. Saman Sharifae Rig Murfin # 3
 Location: Sec. 21 Twp 2S Rge. 37W Co. Cheyenne State KS

Interval Tested 4722-4860 Zone Tested Ft. Scott - Celis
 Anchor Length 138' Drill Pipe Run 4474' Mud Wt. 9.1
 Top Packer Depth 4717 Drill Collars Run 237' Vis 60
 Bottom Packer Depth 4722 Wt. Pipe Run 00' WL 6.8
 Total Depth 4860 Chlorides 800 ppm System LCM 3
 Blow Description 30 IF - Bob @ 1 1/2 mins
60 ISI - No return
60 FF - Bob @ 5 mins
90 FSI - No return

| Rec | Feet of | %gas | %oil | %water | %mud |
|--------------|------------|------|-----------|------------|------|
| <u>120'</u> | <u>Mud</u> | | | <u>100</u> | |
| <u>441'</u> | <u>WCM</u> | | <u>40</u> | <u>60</u> | |
| <u>1769'</u> | <u>MCW</u> | | <u>90</u> | <u>10</u> | |
| <u>60'</u> | <u>WCM</u> | | <u>45</u> | <u>55</u> | |

Rec Total 2390' BHT 1520 Gravity — API RW 1285 @ 55 °F Chlorides 30,000 ppm

| | | |
|-------------------------------------|---|--|
| (A) Initial Hydrostatic <u>2380</u> | <input checked="" type="checkbox"/> Test <u>1300</u> | T-On Location <u>20:30</u> |
| (B) First Initial Flow <u>205</u> | <input checked="" type="checkbox"/> Jars <u>250</u> | T-Started <u>21:05</u> |
| (C) First Final Flow <u>881</u> | <input checked="" type="checkbox"/> Safety Joint <u>75</u> | T-Open <u>00:25</u> |
| (D) Initial Shut-In <u>1050</u> | <input type="checkbox"/> Circ Sub | T-Pulled <u>04:24</u> |
| (E) Second Initial Flow <u>894</u> | <input type="checkbox"/> Hourly Standby <u>1.5h 150</u> | T-Out <u>08:00</u> |
| (F) Second Final Flow <u>1045</u> | <input checked="" type="checkbox"/> Mileage <u>120 RY</u> 120 | Comments <u>Waited on lat till 10:00</u> |
| (G) Final Shut-In <u>1060</u> | <input type="checkbox"/> Sampler | |
| (H) Final Hydrostatic <u>2166</u> | <input type="checkbox"/> Straddle | <input type="checkbox"/> EM Tool |
| Initial Open <u>30</u> | <input type="checkbox"/> Shale Packer | <input type="checkbox"/> Ruined Shale Packer |
| Initial Shut-In <u>60</u> | <input type="checkbox"/> Extra Packer | <input type="checkbox"/> Ruined Packer |
| Final Flow <u>60</u> | <input type="checkbox"/> Extra Recorder | <input type="checkbox"/> Extra Copies |
| Final Shut-In <u>90</u> | <input type="checkbox"/> Day Standby | Sub Total <u>0</u> |
| | <input type="checkbox"/> Accessibility | Total <u>1745</u> |
| | Sub Total <u>1745</u> | MP/DST Disc't |

Approved By _____ Our Representative [Signature]

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