



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N Water STE 300
Wichita, KS 67202

ATTN: Jeff Christian

Abell Ranch #3-25

25 12s 31w Gove,KS

Start Date: 2015.01.15 @ 10:08:00

End Date: 2015.01.15 @ 19:04:45

Job Ticket #: 59562 DST #: 1

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

Printed: 2015.01.22 @ 15:38:49



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co.

25 12s 31w Gove, KS

250 N Water STE 300
Wichita, KS 67202

Abell Ranch #3-25

Job Ticket: 59562

DST#: 1

ATTN: Jeff Christian

Test Start: 2015.01.15 @ 10:08:00

GENERAL INFORMATION:

Formation: **Lecompton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:04:00

Time Test Ended: 19:04:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Bradley Walter

Unit No: 69

Interval: 3752.00 ft (KB) To 3810.00 ft (KB) (TVD)

Reference Elevations: 2852.00 ft (KB)

Total Depth: 3810.00 ft (KB) (TVD)

2841.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8365

Inside

Press@RunDepth: 162.83 psig @ 3753.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.15

End Date:

2015.01.15

Last Calib.:

2015.01.15

Start Time: 10:08:05

End Time:

19:04:45

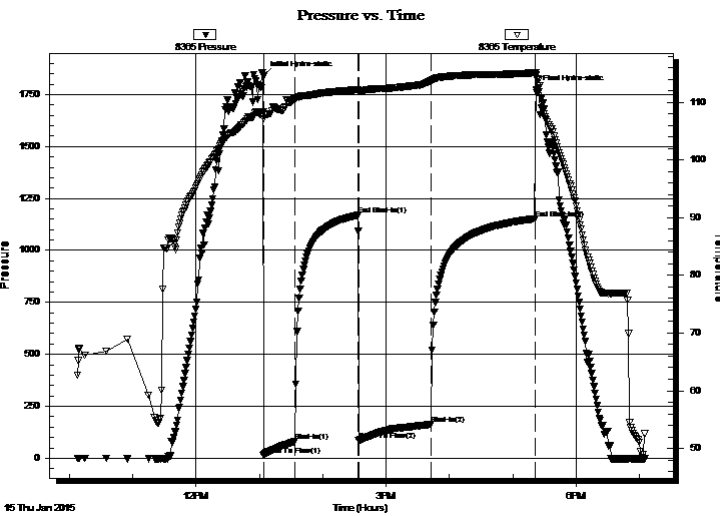
Time On Btm:

2015.01.15 @ 13:03:45

Time Off Btm:

2015.01.15 @ 17:22:00

TEST COMMENT: IF: 2 1/2" blow .
IS: No return.
FF: 2 1/2" blow .
FS: No return.



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1839.30 | 108.31 | Initial Hydro-static |
| 1 | 15.42 | 107.20 | Open To Flow (1) |
| 31 | 80.50 | 110.61 | Shut-In(1) |
| 90 | 1169.22 | 112.17 | End Shut-In(1) |
| 91 | 85.51 | 111.86 | Open To Flow (2) |
| 159 | 162.83 | 113.68 | Shut-In(2) |
| 258 | 1152.64 | 115.11 | End Shut-In(2) |
| 259 | 1775.10 | 114.62 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|----------------------------|--------------|
| 325.00 | w cm 30w 70m (oils spots) | 2.03 |
| | | |
| | | |
| | | |

Gas Rates

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



DRILL STEM TEST REPORT

Murfin Drilling Co.

25 12s 31w Gove, KS

250 N Water STE 300
Wichita, KS 67202

Abell Ranch #3-25

Job Ticket: 59562 **DST#: 1**

ATTN: Jeff Christian

Test Start: 2015.01.15 @ 10:08:00

GENERAL INFORMATION:

Formation: **Lecompton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:04:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Bradley Walter

Time Test Ended: 19:04:45

Unit No: 69

Interval: 3752.00 ft (KB) To 3810.00 ft (KB) (TVD)

Reference Elevations: 2852.00 ft (KB)

Total Depth: 3810.00 ft (KB) (TVD)

2841.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8522

Outside

Press@RunDepth: psig @ 3753.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.15

End Date: 2015.01.15

Last Calib.: 2015.01.15

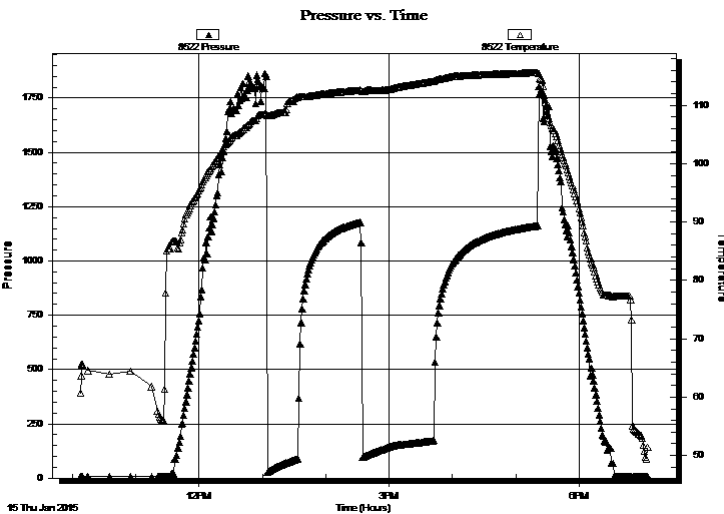
Start Time: 10:08:05

End Time: 19:04:45

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: 2 1/2" blow .
IS: No return.
FF: 2 1/2" blow .
FS: No return.



PRESSURE SUMMARY

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

| Length (ft) | Description | Volume (bbl) |
|-------------|----------------------------|--------------|
| 325.00 | w cm 30w 70m (oils spots) | 2.03 |
| | | |
| | | |
| | | |
| | | |
| | | |

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

25 12s 31w Gove, KS

250 N Water STE 300
Wichita, KS 67202

Abell Ranch #3-25

Job Ticket: 59562

DST#: 1

ATTN: Jeff Christian

Test Start: 2015.01.15 @ 10:08:00

Tool Information

| | | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------|-------------|
| Drill Pipe: | Length: 3450.00 ft | Diameter: 3.80 inches | Volume: 48.39 bbl | Tool Weight: | 2500.00 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: 278.00 ft | Diameter: 2.25 inches | Volume: 1.37 bbl | Weight to Pull Loose: | 80000.00 lb |
| | | | <u>Total Volume: 49.76 bbl</u> | Tool Chased | 0.00 ft |
| Drill Pipe Above KB: | 3.00 ft | | | String Weight: Initial | 68000.00 lb |
| Depth to Top Packer: | 3752.00 ft | | | Final | 68000.00 lb |
| Depth to Bottom Packer: | ft | | | | |
| Interval between Packers: | 58.00 ft | | | | |
| Tool Length: | 85.00 ft | | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub | 1.00 | | | 3726.00 | |
| Shut In Tool | 5.00 | | | 3731.00 | |
| Hydraulic tool | 5.00 | | | 3736.00 | |
| Jars | 5.00 | | | 3741.00 | |
| Safety Joint | 2.00 | | | 3743.00 | |
| Packer | 5.00 | | | 3748.00 | 27.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 3752.00 | |
| Stubb | 1.00 | | | 3753.00 | |
| Recorder | 0.00 | 8365 | Inside | 3753.00 | |
| Recorder | 0.00 | 8522 | Outside | 3753.00 | |
| Perforations | 21.00 | | | 3774.00 | |
| Change Over Sub | 1.00 | | | 3775.00 | |
| Drill Pipe | 31.00 | | | 3806.00 | |
| Change Over Sub | 1.00 | | | 3807.00 | |
| Bullnose | 3.00 | | | 3810.00 | 58.00 Bottom Packers & Anchor |

Total Tool Length: 85.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

25 12s 31w Gove, KS

250 N Water STE 300
Wichita, KS 67202

Abell Ranch #3-25

Job Ticket: 59562

DST#: 1

ATTN: Jeff Christian

Test Start: 2015.01.15 @ 10:08:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

40000 ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2700.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|----------------------------|---------------|
| 325.00 | w cm 30w 70m (oils spots) | 2.026 |

Total Length: 325.00 ft Total Volume: 2.026 bbl

Num Fluid Samples: 0

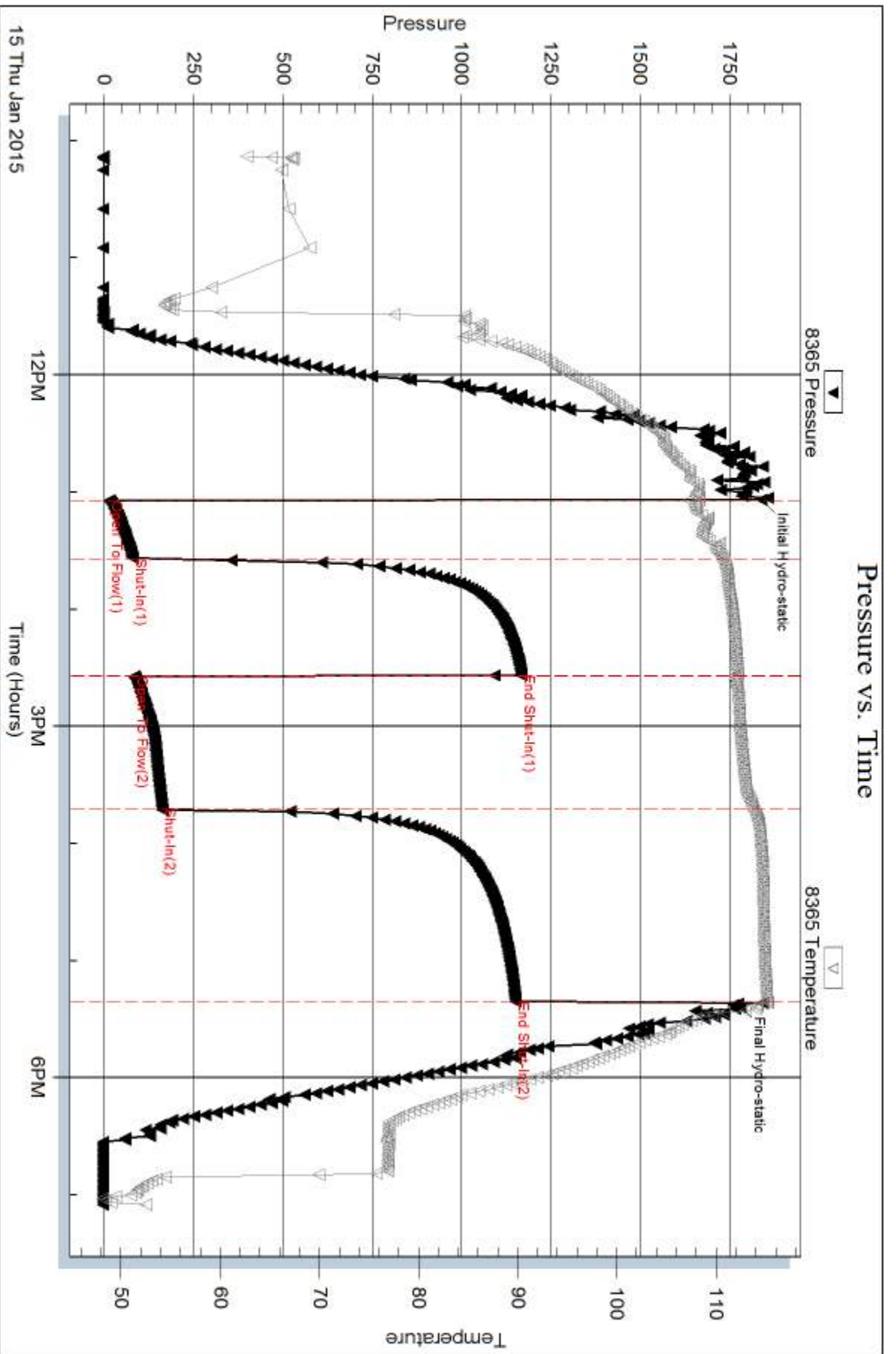
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: rw is .320 @ 39F = 40,000ppm

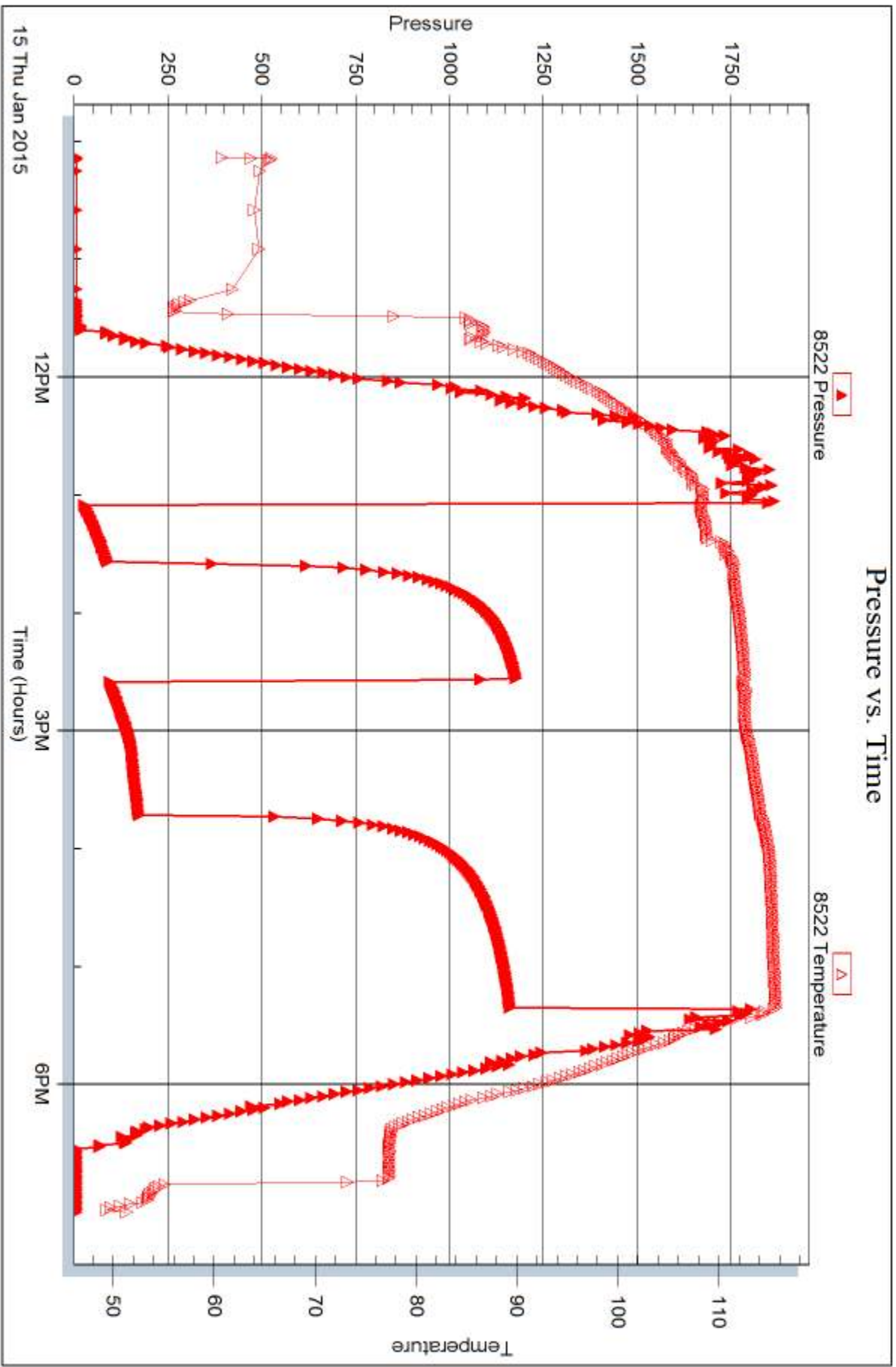


Serial #: 8522

Outside Murfin Drilling Co.

Abell Ranch #3-25

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 59562

Printed: 2015.01.22 @ 15:38:51



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N Water STE 300
Wichita, KS 67202

ATTN: Jeff Christian

Abell Ranch #3-25

25 12s 31w Gove,KS

Start Date: 2015.01.16 @ 10:21:00

End Date: 2015.01.16 @ 17:12:00

Job Ticket #: 59563 DST #: 2

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

Printed: 2015.01.22 @ 15:38:28

Murfin Drilling Co. 25 12s 31w Gove,KS Abell Ranch #3-25 DST # 2 LKC B-D 2015.01.16



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co.

25 12s 31w Gove, KS

250 N Water STE 300
Wichita, KS 67202

Abell Ranch #3-25

Job Ticket: 59563

DST#: 2

ATTN: Jeff Christian

Test Start: 2015.01.16 @ 10:21:00

GENERAL INFORMATION:

Formation: **LKC B-D**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:26:45

Time Test Ended: 17:12:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Bradley Walter

Unit No: 69

Interval: 3926.00 ft (KB) To 3974.00 ft (KB) (TVD)

Reference Elevations: 2852.00 ft (KB)

Total Depth: 3974.00 ft (KB) (TVD)

2841.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8365

Inside

Press@RunDepth: 42.04 psig @ 3927.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.16

End Date:

2015.01.16

Last Calib.:

2015.01.16

Start Time: 10:21:05

End Time:

17:11:59

Time On Btm:

2015.01.16 @ 12:26:30

Time Off Btm:

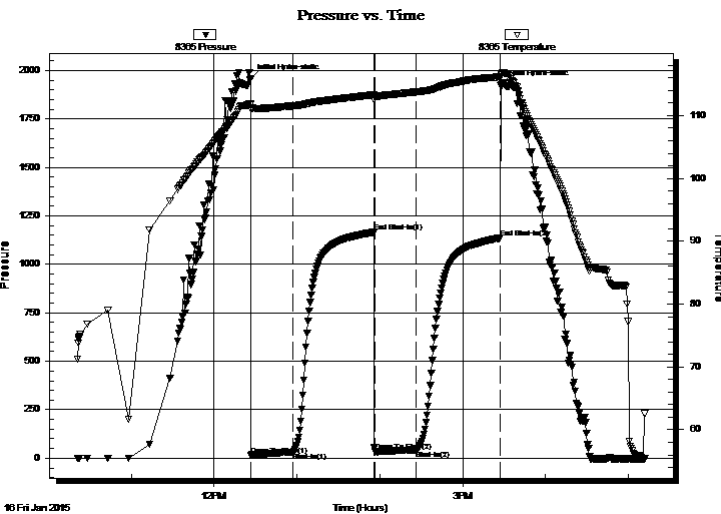
2015.01.16 @ 15:27:45

TEST COMMENT: IF: 1/4" blow, receded to surface.

IS: No return.

FF: No blow.

FS: No return.



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1959.55 | 111.81 | Initial Hydro-static |
| 1 | 15.66 | 111.05 | Open To Flow (1) |
| 31 | 31.79 | 111.54 | Shut-In(1) |
| 90 | 1165.97 | 113.31 | End Shut-In(1) |
| 90 | 34.03 | 113.03 | Open To Flow (2) |
| 120 | 42.04 | 113.77 | Shut-In(2) |
| 181 | 1136.33 | 116.15 | End Shut-In(2) |
| 182 | 1928.58 | 116.52 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 50.00 | socm 1o 99m | 0.25 |
| | | |
| | | |
| | | |
| | | |

* 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.

25 12s 31w Gove, KS

250 N Water STE 300
Wichita, KS 67202

Abell Ranch #3-25

Job Ticket: 59563

DST#: 2

ATTN: Jeff Christian

Test Start: 2015.01.16 @ 10:21:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3640.00 ft | Diameter: 3.80 inches | Volume: 51.06 bbl | Tool Weight: 2500.00 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: 278.00 ft | Diameter: 2.25 inches | Volume: 1.37 bbl | Weight to Pull Loose: 80000.00 lb |
| | | | <u>Total Volume: 52.43 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 19.00 ft | | | String Weight: Initial 68000.00 lb |
| Depth to Top Packer: | 3926.00 ft | | | Final 68000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 48.00 ft | | | |
| Tool Length: | 75.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub | 1.00 | | | 3900.00 | |
| Shut In Tool | 5.00 | | | 3905.00 | |
| Hydraulic tool | 5.00 | | | 3910.00 | |
| Jars | 5.00 | | | 3915.00 | |
| Safety Joint | 2.00 | | | 3917.00 | |
| Packer | 5.00 | | | 3922.00 | 27.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 3926.00 | |
| Stubb | 1.00 | | | 3927.00 | |
| Recorder | 0.00 | 8365 | Inside | 3927.00 | |
| Recorder | 0.00 | 8522 | Outside | 3927.00 | |
| Perforations | 11.00 | | | 3938.00 | |
| Change Over Sub | 1.00 | | | 3939.00 | |
| Drill Pipe | 31.00 | | | 3970.00 | |
| Change Over Sub | 1.00 | | | 3971.00 | |
| Bullnose | 3.00 | | | 3974.00 | 48.00 Bottom Packers & Anchor |

Total Tool Length: 75.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

25 12s 31w Gove, KS

250 N Water STE 300
Wichita, KS 67202

Abell Ranch #3-25

Job Ticket: 59563

DST#: 2

ATTN: Jeff Christian

Test Start: 2015.01.16 @ 10:21:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|-------------|---------------|
| 50.00 | socm 1o 99m | 0.246 |

Total Length: 50.00 ft Total Volume: 0.246 bbl

Num Fluid Samples: 0

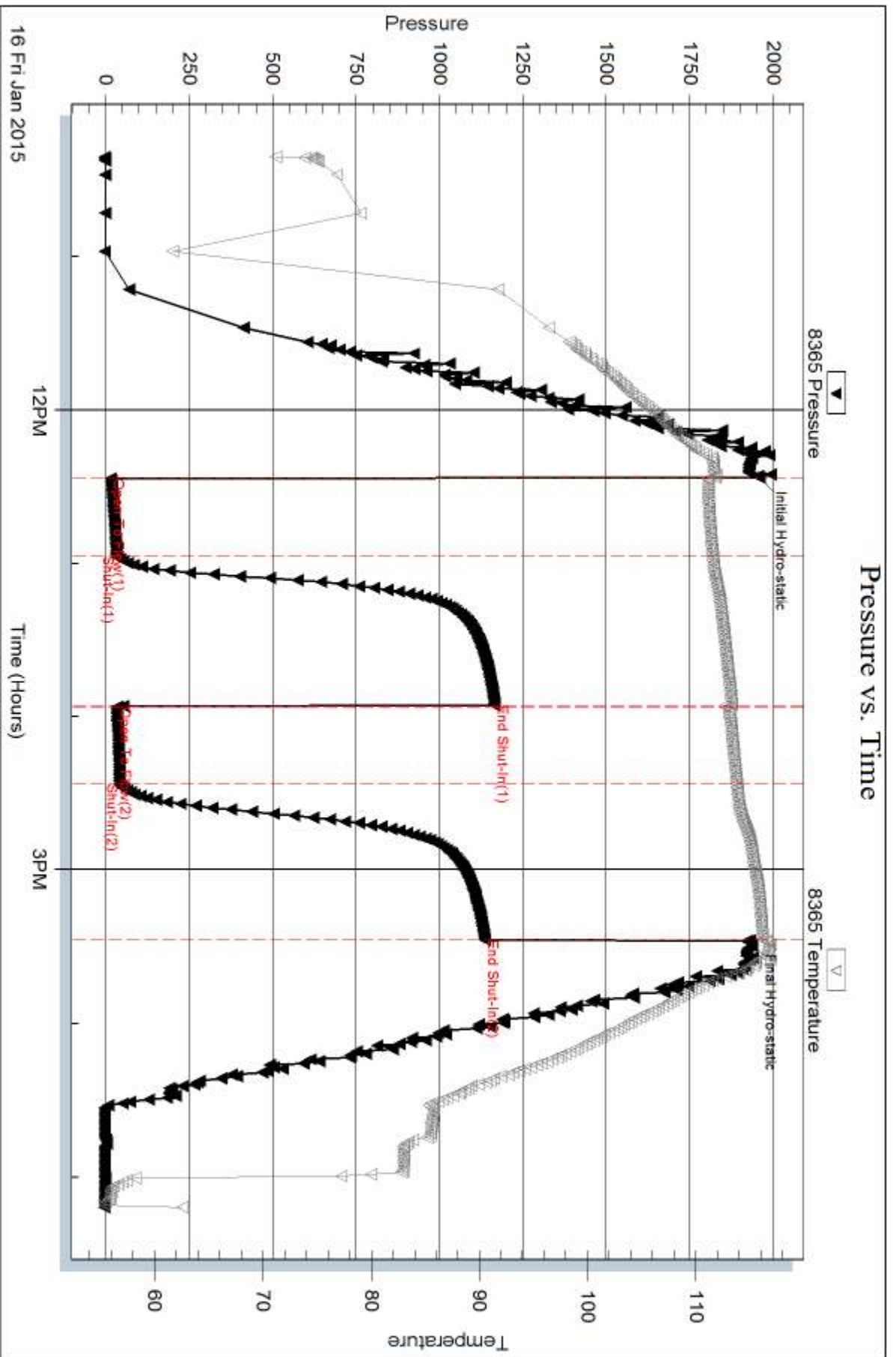
Num Gas Bombs: 0

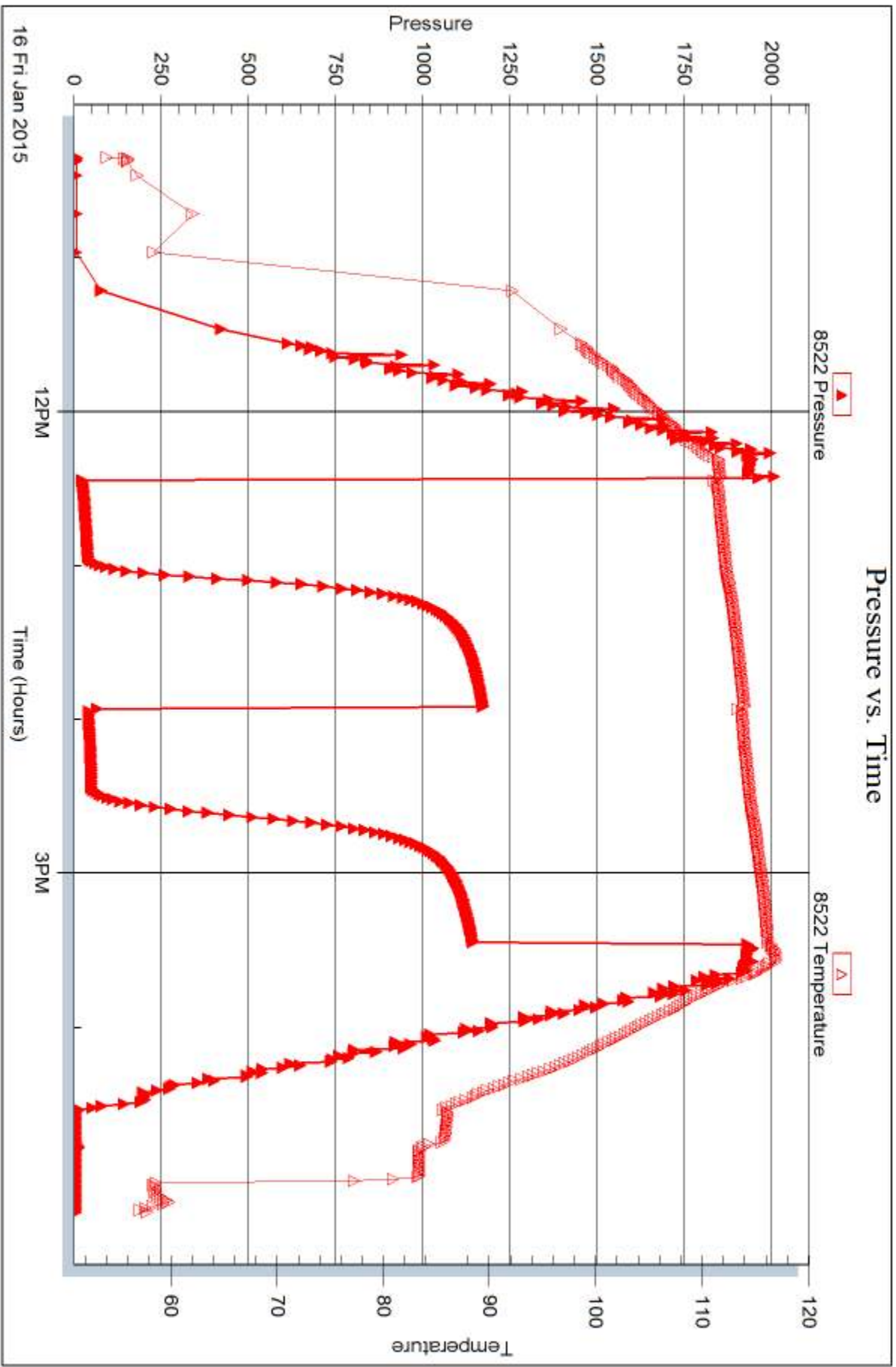
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N Water STE 300
Wichita, KS 67202

ATTN: Jeff Christian

Abell Ranch #3-25

25 12s 31w Gove,KS

Start Date: 2015.01.16 @ 22:41:00

End Date: 2015.01.17 @ 07:11:15

Job Ticket #: 59564 DST #: 3

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

Printed: 2015.01.22 @ 15:38:05



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co.

25 12s 31w Gove, KS

250 N Water STE 300
Wichita, KS 67202

Abell Ranch #3-25

Job Ticket: 59564

DST#: 3

ATTN: Jeff Christian

Test Start: 2015.01.16 @ 22:41:00

GENERAL INFORMATION:

Formation: **LKC E & F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:27:45

Time Test Ended: 07:11:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Bradley Walter

Unit No: 69

Interval: 3974.00 ft (KB) To 4005.00 ft (KB) (TVD)

Reference Elevations: 2852.00 ft (KB)

Total Depth: 4005.00 ft (KB) (TVD)

2841.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8365

Inside

Press@RunDepth: 20.11 psig @ 3975.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.16

End Date:

2015.01.17

Last Calib.:

2015.01.17

Start Time: 22:41:05

End Time:

07:11:14

Time On Btm:

2015.01.17 @ 02:27:30

Time Off Btm:

2015.01.17 @ 05:31:15

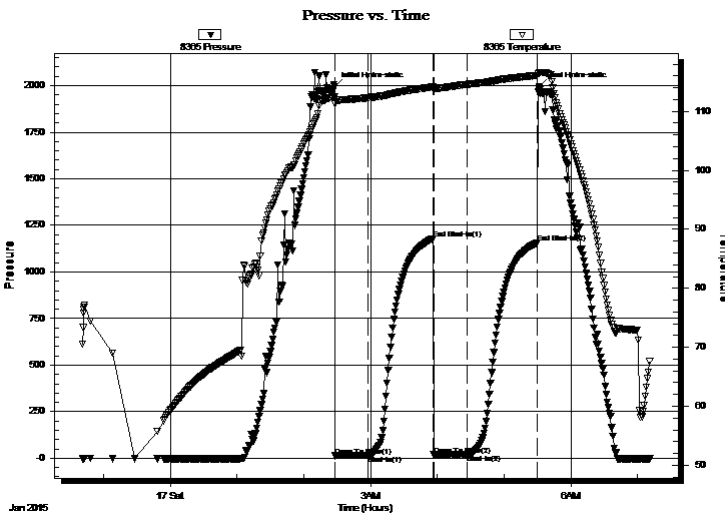
TEST COMMENT: IF: Surface blow, Died @ 5 min.

IS: No return.

FF: No blow.

FS: No return.

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1996.55 | 112.47 | Initial Hydro-static |
| 1 | 12.83 | 111.24 | Open To Flow (1) |
| 30 | 16.95 | 112.30 | Shut-In(1) |
| 89 | 1178.09 | 114.14 | End Shut-In(1) |
| 89 | 18.25 | 113.82 | Open To Flow (2) |
| 120 | 20.11 | 114.58 | Shut-In(2) |
| 183 | 1157.72 | 116.10 | End Shut-In(2) |
| 184 | 1992.92 | 116.49 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|----------------------|--------------|
| 10.00 | mud 100m (oil spots) | 0.05 |
| | | |
| | | |
| | | |
| | | |

* 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.

25 12s 31w Gove, KS

250 N Water STE 300
Wichita, KS 67202

Abell Ranch #3-25

Job Ticket: 59564

DST#: 3

ATTN: Jeff Christian

Test Start: 2015.01.16 @ 22:41:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3702.00 ft | Diameter: 3.80 inches | Volume: 51.93 bbl | Tool Weight: 2500.00 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: 278.00 ft | Diameter: 2.25 inches | Volume: 1.37 bbl | Weight to Pull Loose: 85000.00 lb |
| | | | <u>Total Volume: 53.30 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 33.00 ft | | | String Weight: Initial 68000.00 lb |
| Depth to Top Packer: | 3974.00 ft | | | Final 68000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 31.00 ft | | | |
| Tool Length: | 58.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub | 1.00 | | | 3948.00 | |
| Shut In Tool | 5.00 | | | 3953.00 | |
| Hydraulic tool | 5.00 | | | 3958.00 | |
| Jars | 5.00 | | | 3963.00 | |
| Safety Joint | 2.00 | | | 3965.00 | |
| Packer | 5.00 | | | 3970.00 | 27.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 3974.00 | |
| Stubb | 1.00 | | | 3975.00 | |
| Recorder | 0.00 | 8365 | Inside | 3975.00 | |
| Recorder | 0.00 | 8522 | Outside | 3975.00 | |
| Perforations | 27.00 | | | 4002.00 | |
| Bullnose | 3.00 | | | 4005.00 | 31.00 Bottom Packers & Anchor |

Total Tool Length: 58.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

25 12s 31w Gove, KS

250 N Water STE 300
Wichita, KS 67202

Abell Ranch #3-25

Job Ticket: 59564

DST#: 3

ATTN: Jeff Christian

Test Start: 2015.01.16 @ 22:41:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|----------------------|---------------|
| 10.00 | mud 100m (oil spots) | 0.049 |

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

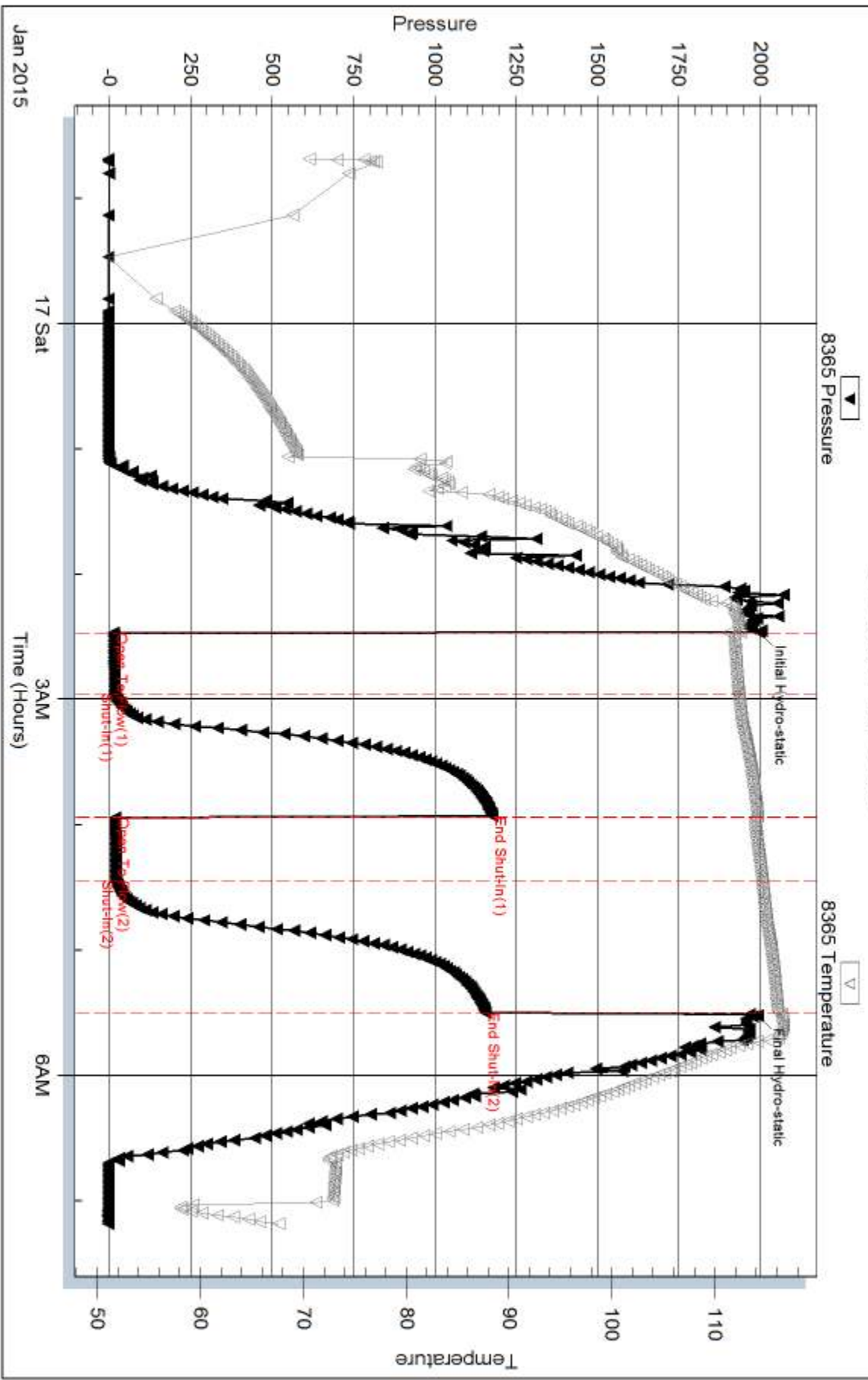
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

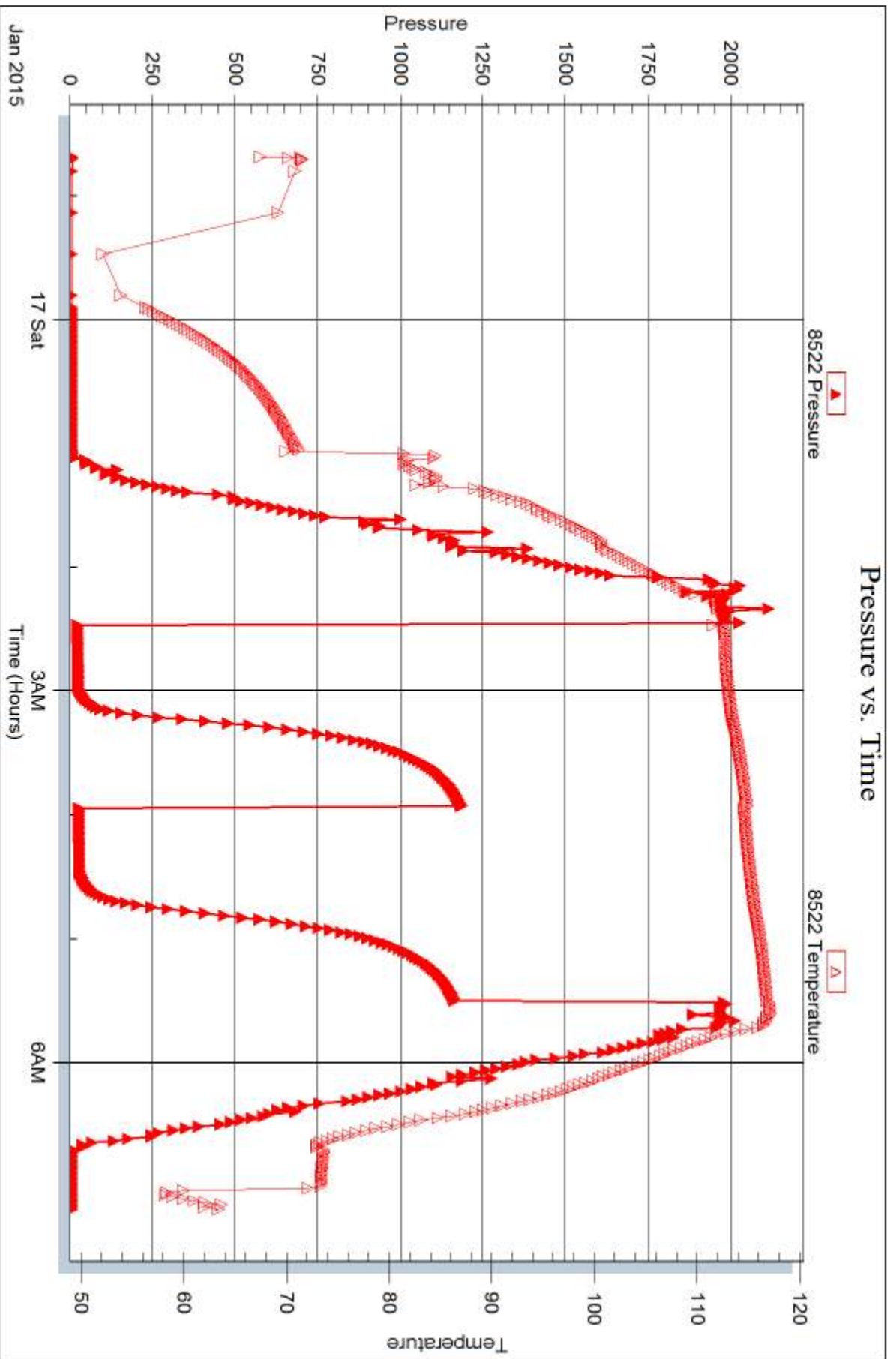


Serial #: 8522

Outside Murfin Drilling Co.

Abell Ranch #3-25

DST Test Number: 3





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N Water STE 300
Wichita, KS 67202

ATTN: Jeff Christian

Abell Ranch #3-25

25 12s 31w Gove,KS

Start Date: 2015.01.17 @ 20:35:00

End Date: 2015.01.18 @ 04:42:15

Job Ticket #: 59565 DST #: 4

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

Printed: 2015.01.22 @ 15:37:42



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co.

25 12s 31w Gove, KS

250 N Water STE 300
Wichita, KS 67202

Abell Ranch #3-25

Job Ticket: 59565

DST#: 4

ATTN: Jeff Christian

Test Start: 2015.01.17 @ 20:35:00

GENERAL INFORMATION:

Formation: **LKC H-K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:43:15

Time Test Ended: 04:42:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Bradley Walter

Unit No: 69

Interval: 4043.00 ft (KB) To 4164.00 ft (KB) (TVD)

Reference Elevations: 2852.00 ft (KB)

Total Depth: 4164.00 ft (KB) (TVD)

2841.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8365

Inside

Press@RunDepth: 311.72 psig @ 4044.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.17

End Date:

2015.01.18

Last Calib.:

2015.01.18

Start Time: 20:34:05

End Time:

04:41:14

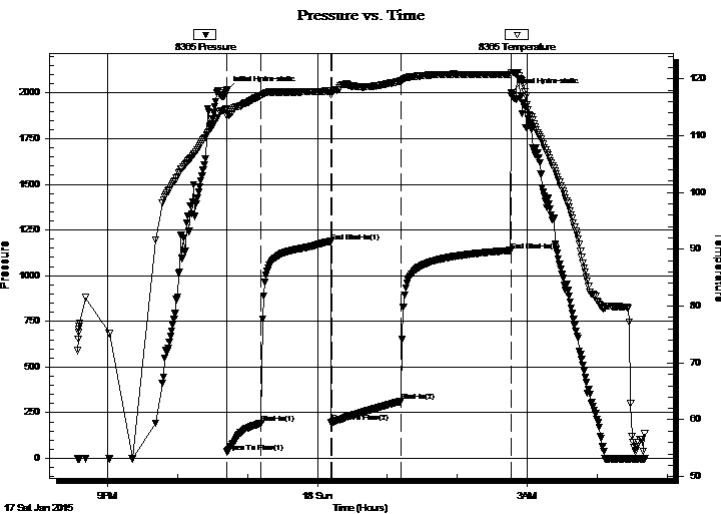
Time On Btm:

2015.01.17 @ 22:42:00

Time Off Btm:

2015.01.18 @ 02:46:30

TEST COMMENT: IF: BOB @ 23 min.
IS: No return.
FF: BOB @ 50 min.
FS: No return.



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 2015.42 | 114.64 | Initial Hydro-static |
| 1 | 34.91 | 113.48 | Open To Flow (1) |
| 30 | 191.99 | 116.99 | Shut-In(1) |
| 90 | 1187.92 | 117.84 | End Shut-In(1) |
| 90 | 196.36 | 117.60 | Open To Flow (2) |
| 150 | 311.72 | 119.59 | Shut-In(2) |
| 244 | 1138.54 | 120.72 | End Shut-In(2) |
| 245 | 2002.06 | 121.13 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-----------------------------------|--------------|
| 645.00 | mcw 45m 55w (oils spots in tool) | 6.52 |
| | | |
| | | |
| | | |
| | | |

* 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 300
Wichita, KS 67202
ATTN: Jeff Christian

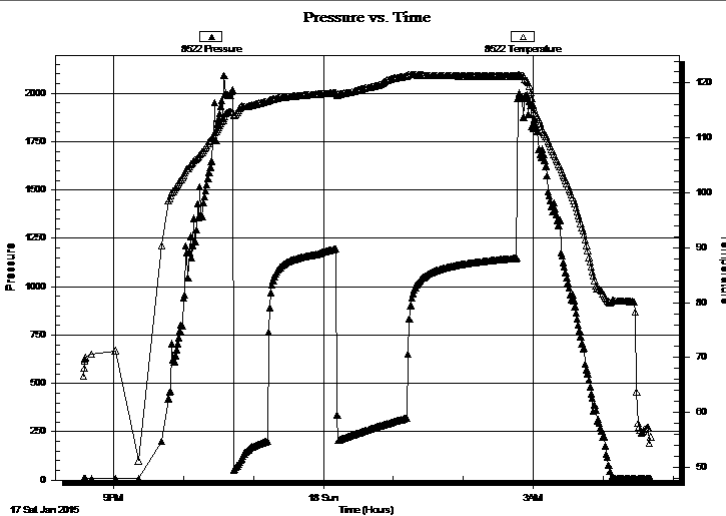
25 12s 31w Gove, KS
Abell Ranch #3-25
Job Ticket: 59565 **DST#: 4**
Test Start: 2015.01.17 @ 20:35:00

GENERAL INFORMATION:

| | | |
|---|----------------------|---|
| Formation: LKC H-K | | Test Type: Conventional Bottom Hole (Reset) |
| Deviated: No Whipstock: ft (KB) | | Tester: Bradley Walter |
| Time Tool Opened: 22:43:15 | | Unit No: 69 |
| Time Test Ended: 04:42:15 | | |
| Interval: 4043.00 ft (KB) To 4164.00 ft (KB) (TVD) | | Reference Elevations: 2852.00 ft (KB) |
| Total Depth: 4164.00 ft (KB) (TVD) | | 2841.00 ft (CF) |
| Hole Diameter: 7.88 inches | Hole Condition: Good | KB to GR/CF: 11.00 ft |

| | | | |
|--|----------------------|-------------------------|--|
| Serial #: 8522 | Outside | | |
| Press@RunDepth: psig @ 4044.00 ft (KB) | | Capacity: 8000.00 psig | |
| Start Date: 2015.01.17 | End Date: 2015.01.18 | Last Calib.: 2015.01.18 | |
| Start Time: 20:34:05 | End Time: 04:41:14 | Time On Btm: | |
| | | Time Off Btm: | |

TEST COMMENT: IF: BOB @ 23 min.
IS: No return.
FF: BOB @ 50 min.
FS: No return.



PRESSURE SUMMARY

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

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-----------------------------------|--------------|
| 645.00 | mcw 45m 55w (oils spots in tool) | 6.52 |
| | | |
| | | |
| | | |
| | | |

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.

25 12s 31w Gove, KS

250 N Water STE 300
Wichita, KS 67202

Abell Ranch #3-25

Job Ticket: 59565

DST#: 4

ATTN: Jeff Christian

Test Start: 2015.01.17 @ 20:35:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3765.00 ft | Diameter: 3.80 inches | Volume: 52.81 bbl | Tool Weight: 2500.00 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: 278.00 ft | Diameter: 2.25 inches | Volume: 1.37 bbl | Weight to Pull Loose: 85000.00 lb |
| | | | <u>Total Volume: 54.18 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 27.00 ft | | | String Weight: Initial 69000.00 lb |
| Depth to Top Packer: | 4043.00 ft | | | Final 72000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 121.00 ft | | | |
| Tool Length: | 148.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|--------------------------------|
| Change Over Sub | 1.00 | | | 4017.00 | |
| Shut In Tool | 5.00 | | | 4022.00 | |
| Hydraulic tool | 5.00 | | | 4027.00 | |
| Jars | 5.00 | | | 4032.00 | |
| Safety Joint | 2.00 | | | 4034.00 | |
| Packer | 5.00 | | | 4039.00 | 27.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 4043.00 | |
| Stubb | 1.00 | | | 4044.00 | |
| Recorder | 0.00 | 8365 | Inside | 4044.00 | |
| Recorder | 0.00 | 8522 | Outside | 4044.00 | |
| Perforations | 21.00 | | | 4065.00 | |
| Change Over Sub | 1.00 | | | 4066.00 | |
| Drill Pipe | 94.00 | | | 4160.00 | |
| Change Over Sub | 1.00 | | | 4161.00 | |
| Bullnose | 3.00 | | | 4164.00 | 121.00 Bottom Packers & Anchor |

Total Tool Length: 148.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

25 12s 31w Gove,KS

250 N Water STE 300
Wichita, KS 67202

Abell Ranch #3-25

Job Ticket: 59565

DST#: 4

ATTN: Jeff Christian

Test Start: 2015.01.17 @ 20:35:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

72000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2300.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|-----------------------------------|---------------|
| 645.00 | mcw 45m 55w (oils spots in tool) | 6.515 |

Total Length: 645.00 ft Total Volume: 6.515 bbl

Num Fluid Samples: 0

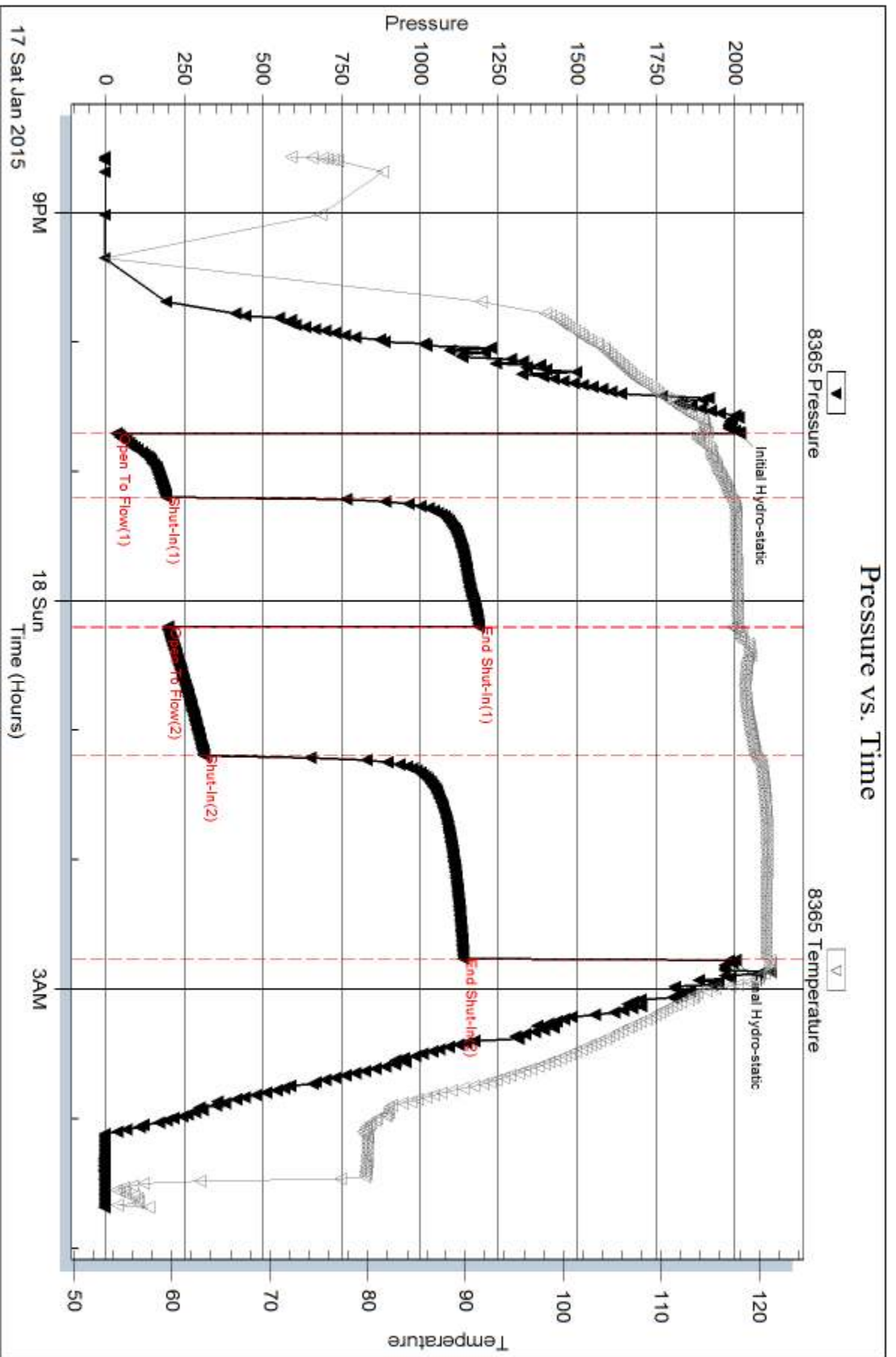
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: rw is .170 @ 45f = 72000ppm

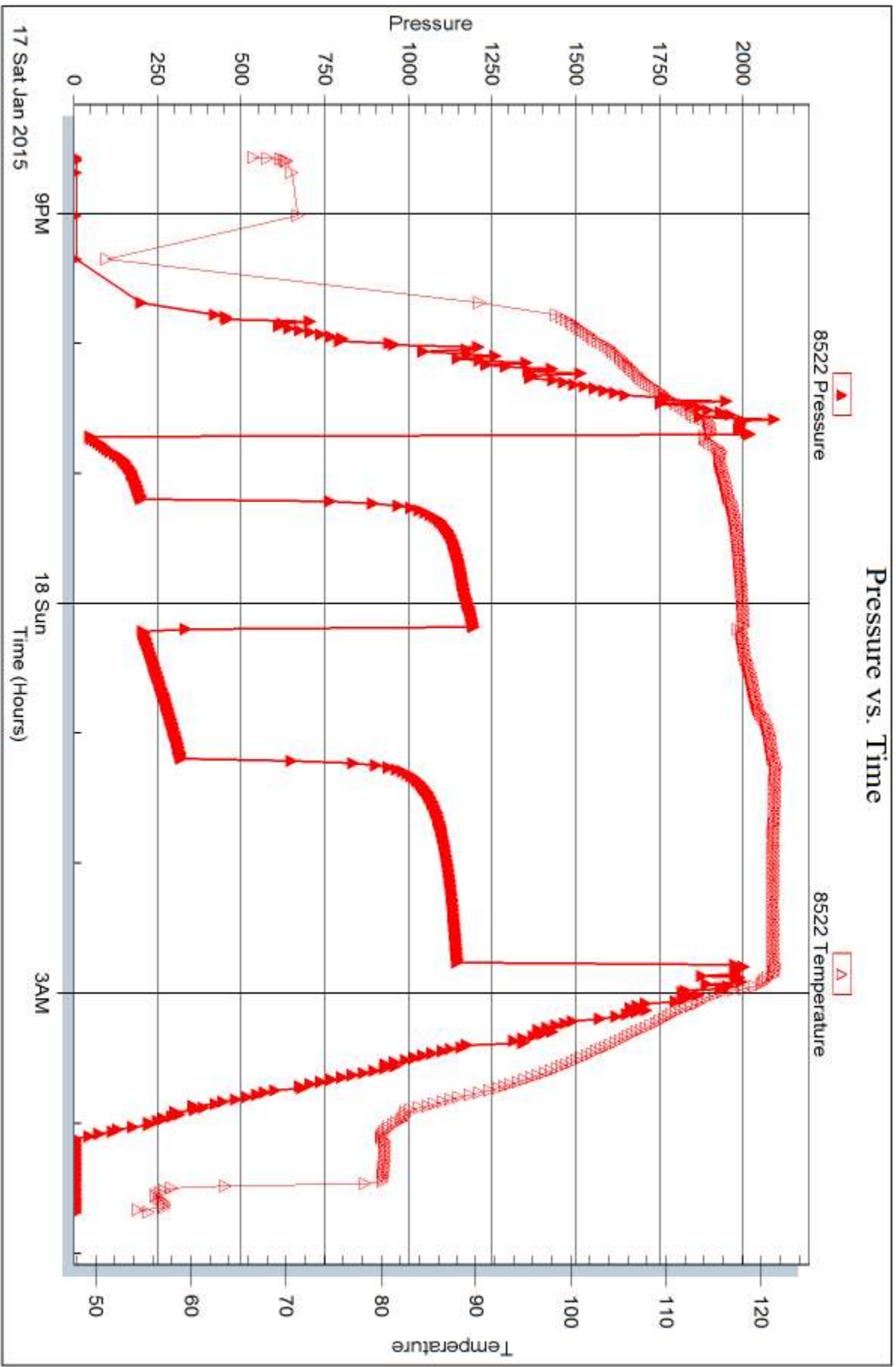


Serial #: 8522

Outside Murfin Drilling Co.

Abell Ranch #3-25

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 59565

Printed: 2015.01.22 @ 15:37:44



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N Water STE 300
Wichita, KS 67202

ATTN: Jeff Christian

Abell Ranch #3-25

25 12s 31w Gove,KS

Start Date: 2015.01.19 @ 05:43:00

End Date: 2015.01.19 @ 14:06:45

Job Ticket #: 59566 DST #: 5

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

Printed: 2015.01.22 @ 15:37:20



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co.

25 12s 31w Gove, KS

250 N Water STE 300
Wichita, KS 67202

Abell Ranch #3-25

Job Ticket: 59566

DST#: 5

ATTN: Jeff Christian

Test Start: 2015.01.19 @ 05:43:00

GENERAL INFORMATION:

Formation: **Ft. Scott - Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:56:15

Time Test Ended: 14:06:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Bradley Walter

Unit No: 69

Interval: 4372.00 ft (KB) To 4468.00 ft (KB) (TVD)

Reference Elevations: 2852.00 ft (KB)

Total Depth: 4468.00 ft (KB) (TVD)

2841.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8365

Inside

Press@RunDepth: 151.44 psig @ 4373.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.19

End Date:

2015.01.19

Last Calib.:

2015.01.19

Start Time: 05:43:05

End Time:

14:06:44

Time On Btm:

2015.01.19 @ 07:56:00

Time Off Btm:

2015.01.19 @ 11:59:30

TEST COMMENT:

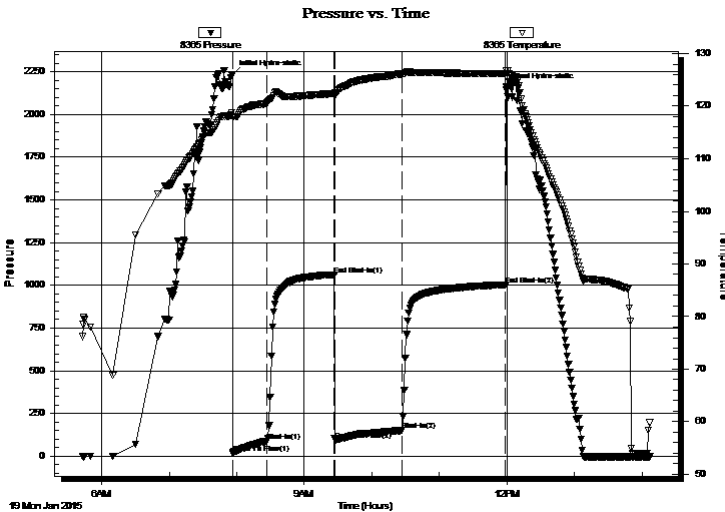
IF: 6" blow.

IS: Surface return, died @ 20 min.

FF: 9" blow.

FS: 1/2" return, receded to surface.

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 2231.84 | 118.76 | Initial Hydro-static |
| 1 | 19.28 | 117.92 | Open To Flow (1) |
| 31 | 87.18 | 120.61 | Shut-In(1) |
| 91 | 1062.68 | 122.36 | End Shut-In(1) |
| 91 | 96.17 | 122.25 | Open To Flow (2) |
| 151 | 151.44 | 126.13 | Shut-In(2) |
| 243 | 1003.81 | 126.21 | End Shut-In(2) |
| 244 | 2159.86 | 126.77 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|------------------------|--------------|
| 120.00 | gw ocm 15g 20w 25o 40m | 0.59 |
| 135.00 | gocm 10g 40o 50m | 0.66 |
| 95.00 | go 10g 90o | 1.12 |
| 0.00 | 280' 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.

25 12s 31w Gove, KS

250 N Water STE 300
Wichita, KS 67202

Abell Ranch #3-25

Job Ticket: 59566

DST#: 5

ATTN: Jeff Christian

Test Start: 2015.01.19 @ 05:43:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 4077.00 ft | Diameter: 3.80 inches | Volume: 57.19 bbl | Tool Weight: 2500.00 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: 278.00 ft | Diameter: 2.25 inches | Volume: 1.37 bbl | Weight to Pull Loose: 85000.00 lb |
| | | | <u>Total Volume: 58.56 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 10.00 ft | | | String Weight: Initial 72000.00 lb |
| Depth to Top Packer: | 4372.00 ft | | | Final 73000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 96.00 ft | | | |
| Tool Length: | 123.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub | 1.00 | | | 4346.00 | |
| Shut In Tool | 5.00 | | | 4351.00 | |
| Hydraulic tool | 5.00 | | | 4356.00 | |
| Jars | 5.00 | | | 4361.00 | |
| Safety Joint | 2.00 | | | 4363.00 | |
| Packer | 5.00 | | | 4368.00 | 27.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 4372.00 | |
| Stubb | 1.00 | | | 4373.00 | |
| Recorder | 0.00 | 8365 | Inside | 4373.00 | |
| Recorder | 0.00 | 8522 | Outside | 4373.00 | |
| Perforations | 27.00 | | | 4400.00 | |
| Change Over Sub | 1.00 | | | 4401.00 | |
| Drill Pipe | 63.00 | | | 4464.00 | |
| Change Over Sub | 1.00 | | | 4465.00 | |
| Bullnose | 3.00 | | | 4468.00 | 96.00 Bottom Packers & Anchor |

Total Tool Length: 123.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

25 12s 31w Gove, KS

250 N Water STE 300
Wichita, KS 67202

Abell Ranch #3-25

Job Ticket: 59566

DST#: 5

ATTN: Jeff Christian

Test Start: 2015.01.19 @ 05:43:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

25 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbbl |
|--------------|------------------------|----------------|
| 120.00 | gw ocm 15g 20w 25o 40m | 0.590 |
| 135.00 | gocm 10g 40o 50m | 0.664 |
| 95.00 | go 10g 90o | 1.123 |
| 0.00 | 280' GIP | 0.000 |

Total Length: 350.00 ft

Total Volume: 2.377 bbl

Num Fluid Samples: 0

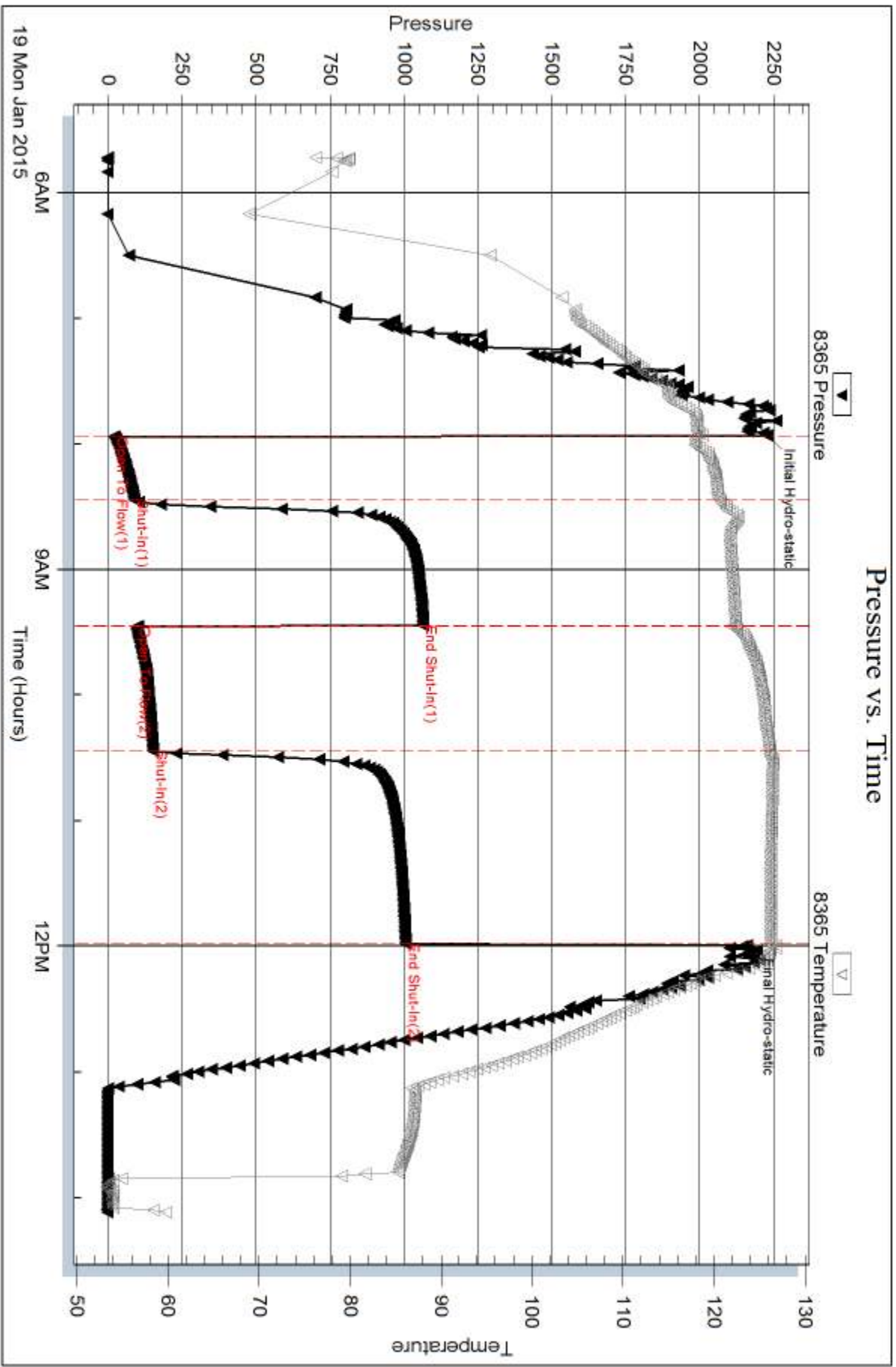
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

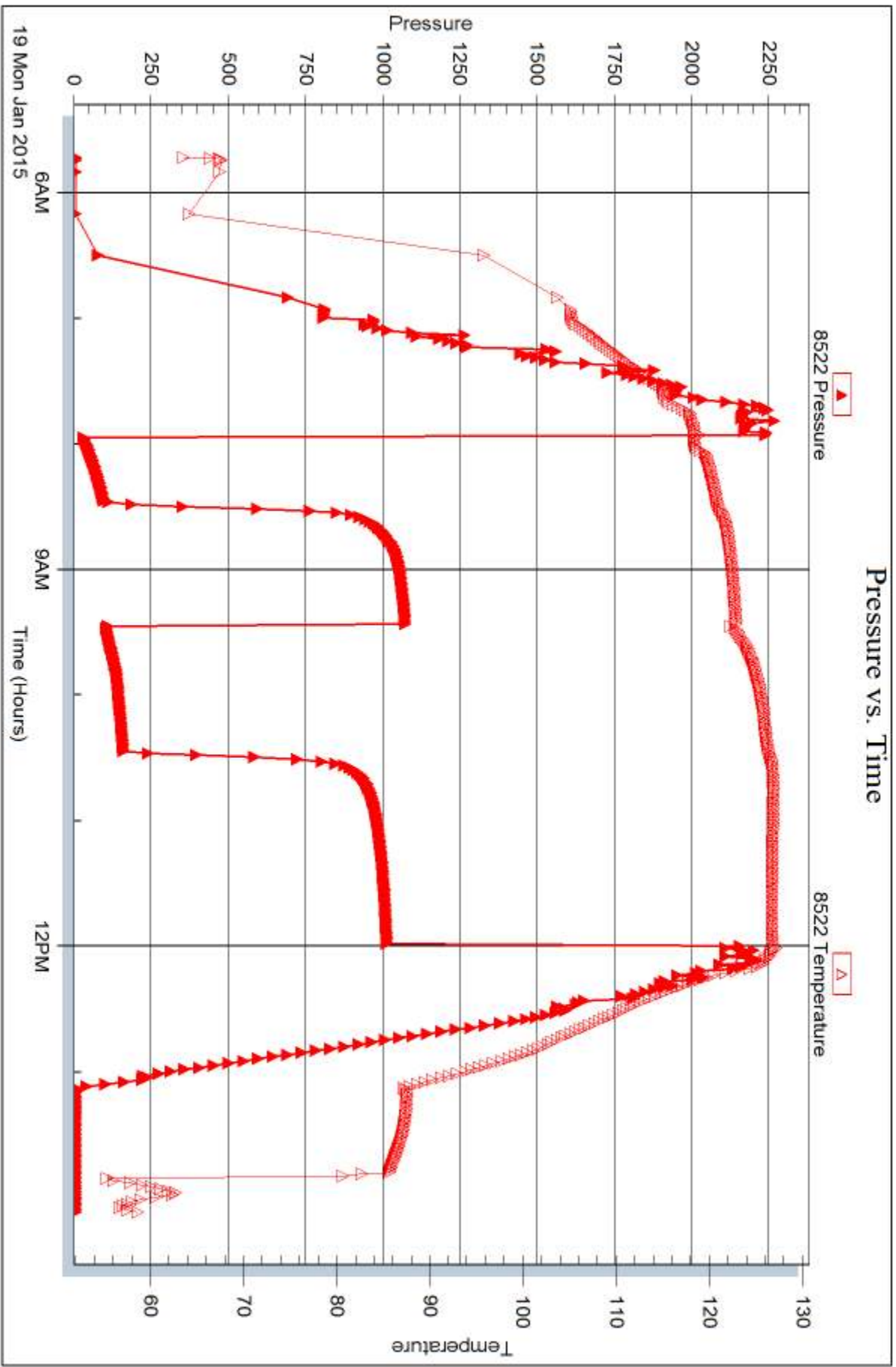


Serial #: 8522

Outside Murfin Drilling Co.

Abell Ranch #3-25

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 59566

Printed: 2015.01.22 @ 15:37:22



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N Water STE 300
Wichita, KS 67202

ATTN: Jeff Christian

Abell Ranch #3-25

25 12s 31w Gove,KS

Start Date: 2015.01.19 @ 21:57:00

End Date: 2015.01.20 @ 06:38:15

Job Ticket #: 59567 DST #: 6

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

Printed: 2015.01.22 @ 15:36:42



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co.

25 12s 31w Gove, KS

250 N Water STE 300
Wichita, KS 67202

Abell Ranch #3-25

Job Ticket: 59567

DST#: 6

ATTN: Jeff Christian

Test Start: 2015.01.19 @ 21:57:00

GENERAL INFORMATION:

Formation: **Mississippian**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:21:30

Time Test Ended: 06:38:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Bradley Walter

Unit No: 69

Interval: 4492.00 ft (KB) To 4508.00 ft (KB) (TVD)

Reference Elevations: 2852.00 ft (KB)

Total Depth: 4508.00 ft (KB) (TVD)

2841.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8365

Inside

Press@RunDepth: 278.64 psig @ 4493.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.19

End Date:

2015.01.20

Last Calib.:

2015.01.20

Start Time: 21:57:05

End Time:

06:38:15

Time On Btm:

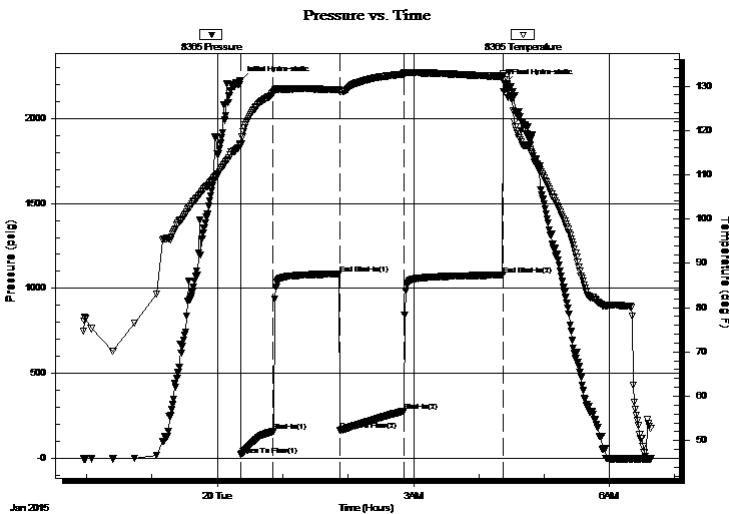
2015.01.20 @ 00:21:00

Time Off Btm:

2015.01.20 @ 04:23:45

TEST COMMENT: IF: 8" blow.
IS: Surface return.
FF: 9" blow.
FS: Surface return.

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 2224.87 | 117.00 | Initial Hydro-static |
| 1 | 20.39 | 116.50 | Open To Flow (1) |
| 30 | 158.50 | 128.52 | Shut-In(1) |
| 91 | 1084.80 | 129.16 | End Shut-In(1) |
| 92 | 163.64 | 128.82 | Open To Flow (2) |
| 151 | 278.64 | 132.74 | Shut-In(2) |
| 241 | 1078.61 | 132.23 | End Shut-In(2) |
| 243 | 2207.24 | 131.46 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-----------------|--------------|
| 570.00 | somcw 1o 5m 94w | 5.46 |
| 45.00 | oil 100o | 0.63 |
| 0.00 | 135' GIP | 0.00 |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co.

25 12s 31w Gove, KS

250 N Water STE 300
Wichita, KS 67202

Abell Ranch #3-25

Job Ticket: 59567

DST#: 6

ATTN: Jeff Christian

Test Start: 2015.01.19 @ 21:57:00

GENERAL INFORMATION:

Formation: **Mississippian**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:21:30

Time Test Ended: 06:38:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Bradley Walter

Unit No: 69

Interval: 4492.00 ft (KB) To 4508.00 ft (KB) (TVD)

Reference Elevations: 2852.00 ft (KB)

Total Depth: 4508.00 ft (KB) (TVD)

2841.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8522 Outside

Press@RunDepth: psig @ 4493.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.19

End Date:

2015.01.20

Last Calib.:

2015.01.20

Start Time: 21:57:05

End Time:

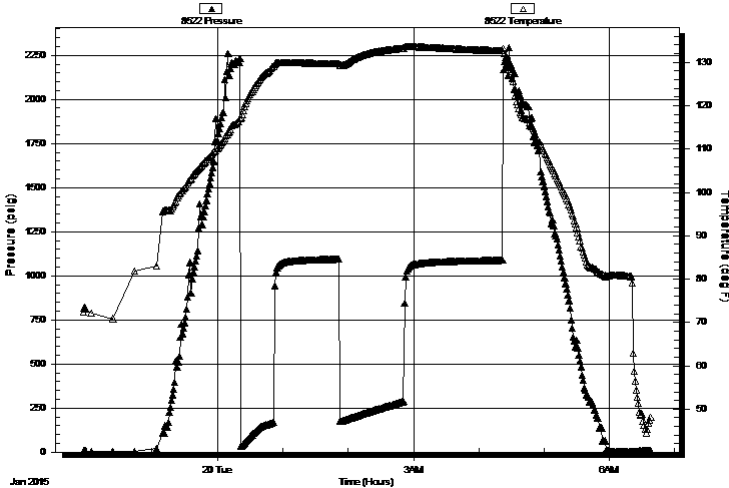
06:38:15

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: 8" blow.
IS: Surface return.
FF: 9" blow.
FS: Surface return.

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-----------------|--------------|
| 570.00 | somcw 1o 5m 94w | 5.46 |
| 45.00 | oil 100o | 0.63 |
| 0.00 | 135' 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.

25 12s 31w Gove, KS

250 N Water STE 300
Wichita, KS 67202

Abell Ranch #3-25

Job Ticket: 59567

DST#: 6

ATTN: Jeff Christian

Test Start: 2015.01.19 @ 21:57:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 4204.00 ft | Diameter: 3.80 inches | Volume: 58.97 bbl | Tool Weight: 2500.00 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: 278.00 ft | Diameter: 2.25 inches | Volume: 1.37 bbl | Weight to Pull Loose: 90000.00 lb |
| | | | <u>Total Volume: 60.34 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 17.00 ft | | | String Weight: Initial 70000.00 lb |
| Depth to Top Packer: | 4492.00 ft | | | Final 72000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 16.00 ft | | | |
| Tool Length: | 43.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub | 1.00 | | | 4466.00 | |
| Shut In Tool | 5.00 | | | 4471.00 | |
| Hydraulic tool | 5.00 | | | 4476.00 | |
| Jars | 5.00 | | | 4481.00 | |
| Safety Joint | 2.00 | | | 4483.00 | |
| Packer | 5.00 | | | 4488.00 | 27.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 4492.00 | |
| Stubb | 1.00 | | | 4493.00 | |
| Recorder | 0.00 | 8365 | Inside | 4493.00 | |
| Recorder | 0.00 | 8522 | Outside | 4493.00 | |
| Perforations | 12.00 | | | 4505.00 | |
| Bullnose | 3.00 | | | 4508.00 | 16.00 Bottom Packers & Anchor |

Total Tool Length: 43.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

25 12s 31w Gove,KS

250 N Water STE 300
Wichita, KS 67202

Abell Ranch #3-25

Job Ticket: 59567

DST#: 6

ATTN: Jeff Christian

Test Start: 2015.01.19 @ 21:57:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 50.00 sec/qt
Water Loss: 7.19 in³
Resistivity: ohm.m
Salinity: 2100.00 ppm
Filter Cake: 2.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: 29 deg API
Water Salinity: 28000 ppm

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|-----------------|---------------|
| 570.00 | somcw 1o 5m 94w | 5.463 |
| 45.00 | oil 100o | 0.631 |
| 0.00 | 135' GIP | 0.000 |

Total Length: 615.00 ft Total Volume: 6.094 bbl

Num Fluid Samples: 0

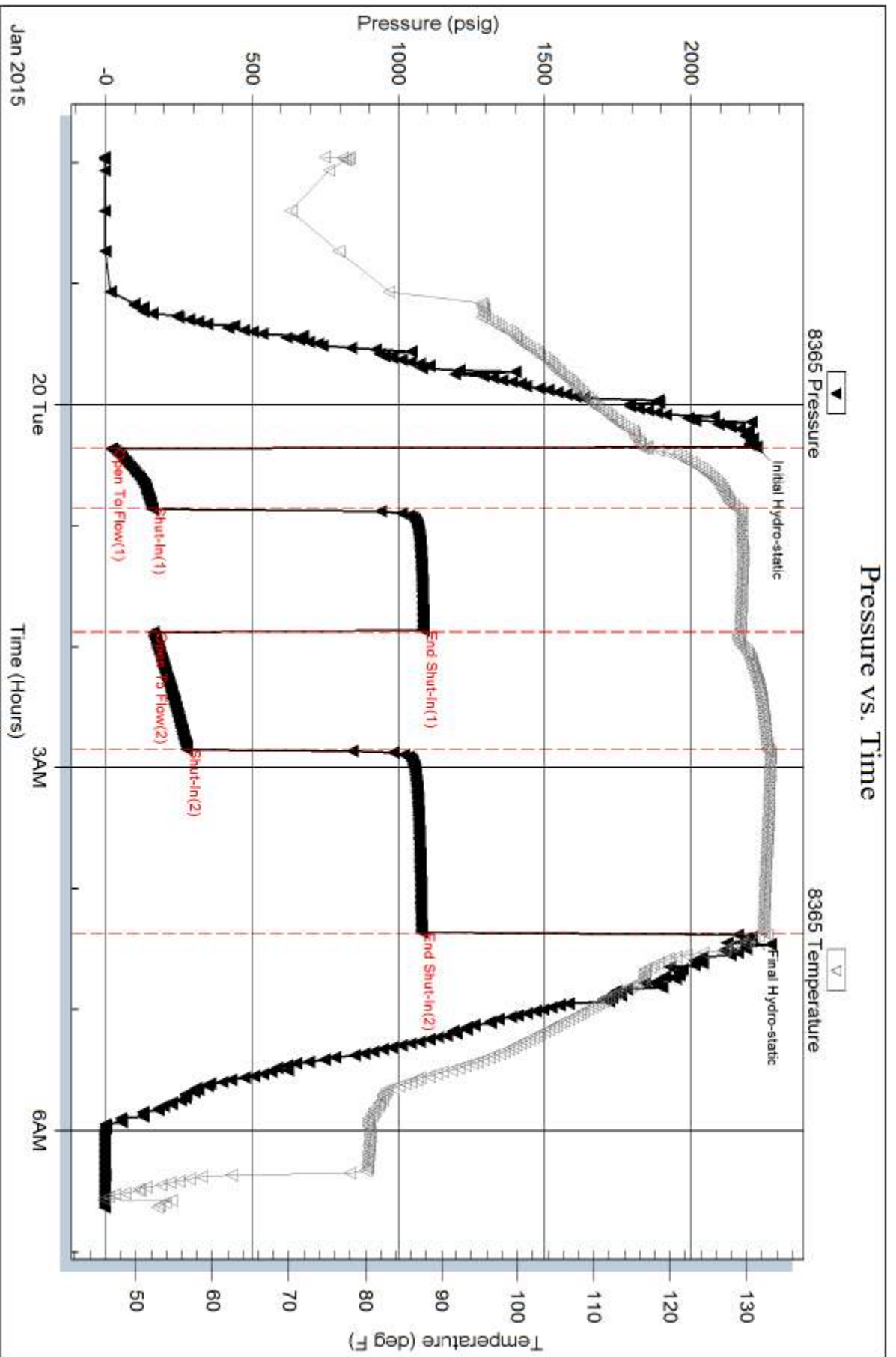
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: rw is .340 @ 50F = 28000ppm

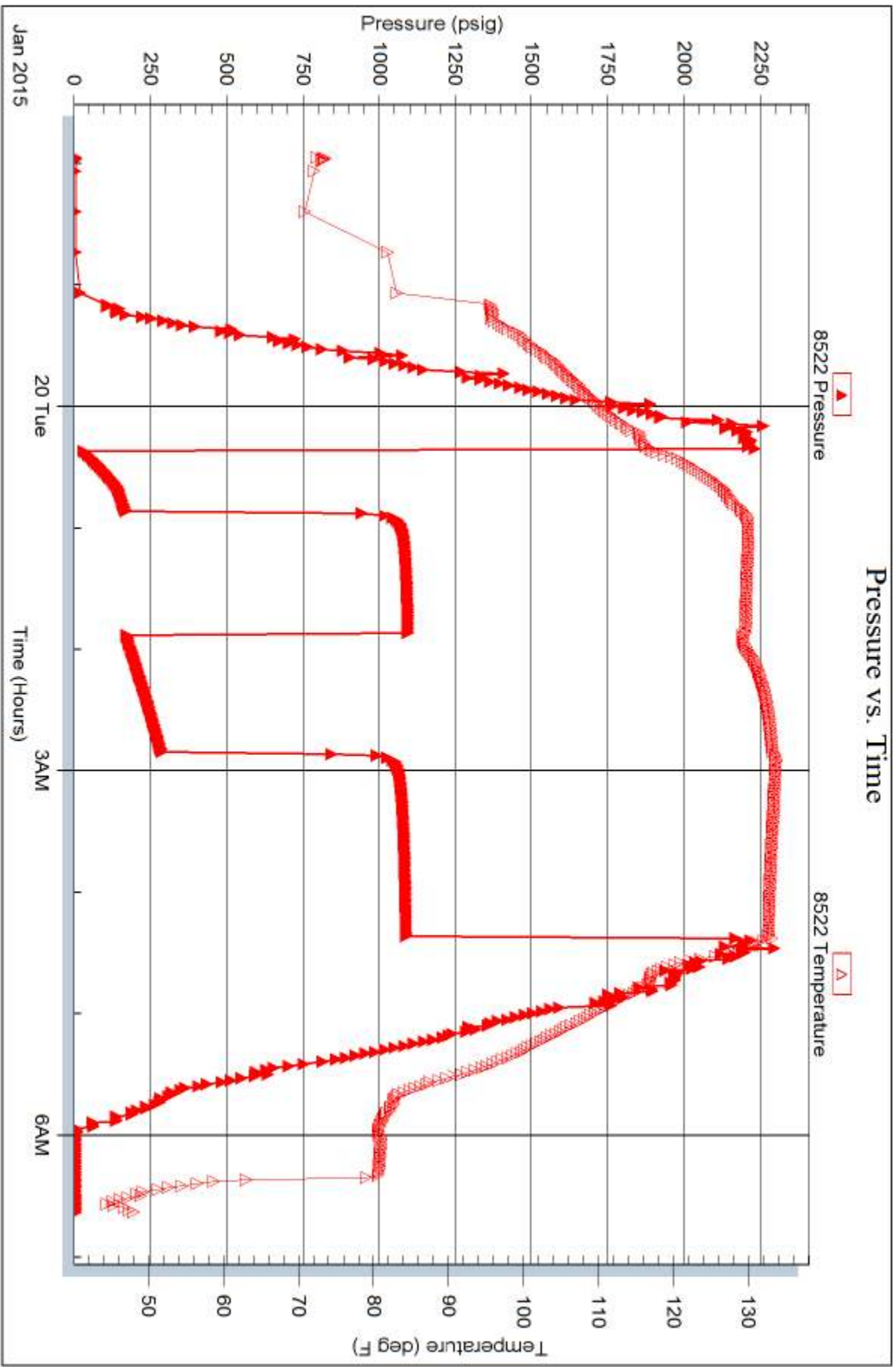


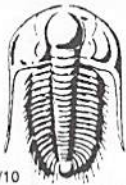
Serial #: 8522

Outside Murfin Drilling Co.

Abell Ranch #3-25

DST Test Number: 6





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59562

4/10

Well Name & No. Abell Ranch 3-25 Test No. 1 Date 1/15/2015
 Company Murfin Drilling Co, Inc Elevation 2852 KB 2841 GL
 Address 250 N Water Ste 300 Wichita, Ks 67202
 Co. Rep / Geo. Jeff Christian Rig Murfin 21
 Location: Sec. 25 Twp. 12s Rge. 31w Co. Lecompton Gore State Ks

Interval Tested 3752 - 3810 Zone Tested Lecompton
 Anchor Length 58' Drill Pipe Run 3450 Mud Wt. 9.0
 Top Packer Depth 3747 Drill Collars Run 278 Vis 66
 Bottom Packer Depth 3752 Wt. Pipe Run Ø WL 5.6
 Total Depth 3810 Chlorides 2700 ppm System LCM 4#

Blow Description IF: 2 1/2" blow.
ISI: No return.
FF: 2 1/2" blow.
FSI: No return.

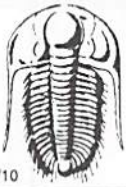
| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|------------------|------|------|-----------|-----------|
| <u>325</u> | <u>WCM</u> | | | <u>30</u> | <u>70</u> |
| | <u>OIL SPOTS</u> | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Rec Total 325 BHT 115 Gravity — API RW .320 @ 39 °F Chlorides 40,000 ppm
 (A) Initial Hydrostatic 1839 Test 1050 T-On Location 1000
 (B) First Initial Flow 15 Jars 250 T-Started 1008
 (C) First Final Flow 81 Safety Joint 75 T-Open 1304
 (D) Initial Shut-In 1169 Circ Sub N/C T-Pulled 1704
 (E) Second Initial Flow 86 Hourly Standby _____ T-Out 1905
 (F) Second Final Flow 163 Mileage 91 RT 91 Comments _____
 (G) Final Shut-In 1153 Sampler _____
 (H) Final Hydrostatic 1775 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____

Initial Open 30 Extra Packer _____ Extra Copies _____
 Initial Shut-In 60 Extra Recorder _____ Sub Total 0
 Final Flow 60 Day Standby _____ Total 1466
 Final Shut-In 90 Accessibility _____ MP/DST Disc't _____
 Sub Total 1466

Approved By _____ Our Representative Bob [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **59563**

4/10

Well Name & No. Abell Ranch 3-25 Test No. 2 Date 1/16/2015
 Company Murfin Drilling Co, Inc. Elevation 2852 KB 2841 GL
 Address 250 N Water Ste. 300 Wichita, Ks 67202
 Co. Rep / Geo. Jeff Christian Rig Murfin 21
 Location: Sec. 25 Twp. 12s Rge. 31w Co. Gove State Ks

Interval Tested 3926-3974 Zone Tested LKC B-D
 Anchor Length 48 Drill Pipe Run 3640 Mud Wt. 9.1
 Top Packer Depth 3921 Drill Collars Run 278 Vis 50
 Bottom Packer Depth 3926 Wt. Pipe Run Ø WL 6.0
 Total Depth 3974 Chlorides 1600 ppm System LCM 4#

Blow Description IF: 1/4" blow receded to a weak surface blow.
ISI: No return.
FF: No blow
FSI: No return.

| Rec | Feet of | %gas | %oil | %water | %mud |
|-----------|-------------|----------|------|-----------|------|
| <u>50</u> | <u>SOCM</u> | <u>1</u> | | <u>99</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 50 BHT 116 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 1960 ~~1712~~ Test 1050 T-On Location 1000
 (B) First Initial Flow 16 ~~19~~ Jars 250 T-Started 1021
 (C) First Final Flow 32 Safety Joint 75 T-Open 1226
 (D) Initial Shut-In 1166 Circ Sub N/C T-Pulled 1526
 (E) Second Initial Flow 34 Hourly Standby _____ T-Out 1712
 (F) Second Final Flow 42 Mileage 9124 91 Comments _____
 (G) Final Shut-In 1136 Sampler _____
 (H) Final Hydrostatic 1929 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1466
 Accessibility _____ MP/DST Disc't _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 30
 Final Shut-In 60
 Sub Total 1466

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **59564**

Well Name & No. Abell Ranch 3-25 Test No. 3 Date 1/17/2015
 Company Murfin Drilling Co, Inc Elevation 2452 KB 2841 GL
 Address 250 N Water Ste 300 Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig Murfin 21
 Location: Sec. 25 Twp. 12s Rge. 31w Co. Gove State KS

Interval Tested 3974 - 4005 Zone Tested LKC EBF
 Anchor Length 31 Drill Pipe Run 3702 Mud Wt. 9.4
 Top Packer Depth 3969 Drill Collars Run 278 Vis 52
 Bottom Packer Depth 3974 Wt. Pipe Run 0 WL 6.0
 Total Depth 4005 Chlorides 1600 ppm System LCM 4#

Blow Description IF: Surface blow, died @ 5 min.
ISI: No return.
FF: No blow
FBI: No return.

| Rec | Feet of | %gas | %oil | %water | %mud |
|-----------|--------------------|------|------|------------|------|
| <u>10</u> | <u>MUD</u> | | | <u>100</u> | |
| | <u>(OIL SPOTS)</u> | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Rec Total 10 BHT 116 Gravity — API RW — @ — °F Chlorides — ppm

| | | |
|-------------------------------------|---|--|
| (A) Initial Hydrostatic <u>1997</u> | <input checked="" type="checkbox"/> Test <u>1150</u> | T-On Location <u>2245</u> |
| (B) First Initial Flow <u>13</u> | <input checked="" type="checkbox"/> Jars <u>250</u> | T-Started <u>2241</u> |
| (C) First Final Flow <u>17</u> | <input checked="" type="checkbox"/> Safety Joint <u>75</u> | T-Open <u>0228</u> |
| (D) Initial Shut-In <u>1178</u> | <input checked="" type="checkbox"/> Circ Sub <u>N/C</u> | T-Pulled <u>0528</u> |
| (E) Second Initial Flow <u>18</u> | <input type="checkbox"/> Hourly Standby | T-Out <u>0711</u> |
| (F) Second Final Flow <u>20</u> | <input checked="" type="checkbox"/> Mileage <u>91 RT 91</u> | Comments |
| (G) Final Shut-In <u>1158</u> | <input type="checkbox"/> Sampler | |
| (H) Final Hydrostatic <u>1993</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>1566</u> |
| | <input type="checkbox"/> Accessibility | MP/DST Disc't |
| | Sub Total <u>1566</u> | |

Approved By _____

Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **59565**

Well Name & No. Abell Ranch 3-25 Test No. 4 Date 1/18/2015
 Company Moran Drilling Co, Inc Elevation 2852 KB 2841 GL
 Address 250 N Water Ste 300 Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig Moran 21
 Location: Sec. 25 Twp. 12S Rge. 31W Co. Gove State Ks

Interval Tested 4043 - 4164 Zone Tested LKC H-K
 Anchor Length 121 Drill Pipe Run 3765 Mud Wt. 9.3
 Top Packer Depth 4038 Drill Collars Run 278 Vis 50
 Bottom Packer Depth 4043 Wt. Pipe Run 0 WL 6.0
 Total Depth 4164 Chlorides 2300 ppm System LCM 4#

Blow Description IF: BOB@ 23 min
ISI: No return.
FF: BOB@ 50 min.
FSI: No return.

| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|--------------------------|------|-----------|-----------|------|
| <u>645</u> | <u>MCW</u> | | <u>55</u> | <u>45</u> | |
| | <u>oil spots in tool</u> | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Rec Total 645 BHT 121 Gravity — API RW 170 @ 45 °F Chlorides 72,000 ppm

| | | |
|-------------------------------------|---|--|
| (A) Initial Hydrostatic <u>2015</u> | <input checked="" type="checkbox"/> Test <u>1150</u> | T-On Location <u>2030</u> |
| (B) First Initial Flow <u>35</u> | <input checked="" type="checkbox"/> Jars <u>250</u> | T-Started <u>2041</u> |
| (C) First Final Flow <u>192</u> | <input checked="" type="checkbox"/> Safety Joint <u>75</u> | T-Open <u>2241</u> |
| (D) Initial Shut-In <u>1198</u> | <input checked="" type="checkbox"/> Circ Sub <u>MC</u> | T-Pulled <u>0241</u> |
| (E) Second Initial Flow <u>196</u> | <input type="checkbox"/> Hourly Standby | T-Out <u>0441</u> |
| (F) Second Final Flow <u>312</u> | <input checked="" type="checkbox"/> Mileage <u>91 RT 91</u> | Comments |
| (G) Final Shut-In <u>1139</u> | <input type="checkbox"/> Sampler | |
| (H) Final Hydrostatic <u>2002</u> | <input type="checkbox"/> Straddle | <input type="checkbox"/> Ruined Shale Packer |

| | | |
|---------------------------|---|---------------------------------------|
| Initial Open <u>30</u> | <input type="checkbox"/> Extra Packer | <input type="checkbox"/> Extra Copies |
| Initial Shut-In <u>60</u> | <input type="checkbox"/> Extra Recorder | Sub Total <u>0</u> |
| Final Flow <u>60</u> | <input type="checkbox"/> Day Standby | Total <u>1566</u> |
| Final Shut-In <u>90</u> | <input type="checkbox"/> Accessibility | MP/DST Disc't |
| | Sub Total <u>1566</u> | |

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59566

4/10

Well Name & No. Abell Ranch 3-25 Test No. 5 Date 1/19/2015
 Company Muffin Drilling Co., Inc Elevation 2852 KB 2841 GL
 Address 250 N Water St 300 Wichita, ks 67202
 Co. Rep / Geo. Jeff Christian Rig Muffin 2+
 Location: Sec. 25 Twp. 12s Rge. 31w Co. Gove State ks

Interval Tested 4372 - 4468 Zone Tested Ft Scott - Johnson
 Anchor Length 96' Drill Pipe Run 4077 Mud Wt. 9.2
 Top Packer Depth 4367 Drill Collars Run 278 Vis 54
 Bottom Packer Depth 4372 Wt. Pipe Run 0 WL 60
 Total Depth 4468 Chlorides 2,000 ppm System LCM 4#

Blow Description IF: 6" blow
ISF: ~~no return~~ surface return, died @ 20 min.
FF: 9" blow
FSI: 1/2" return, receded to a surface blow.

| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|-------------------------|-----------|-----------|-----------|-----------|
| <u>95</u> | <u>60</u> | <u>10</u> | <u>90</u> | | |
| <u>135</u> | <u>60cm</u> | <u>10</u> | <u>40</u> | | <u>50</u> |
| <u>120</u> | <u>6W0cm</u> | <u>15</u> | <u>25</u> | <u>20</u> | <u>40</u> |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of <u>280' GIP</u> | %gas | %oil | %water | %mud |

Rec Total 350 BHT 126 Gravity 25 API RW —@ —° F Chlorides — ppm

| | | |
|-------------------------------------|---|--|
| (A) Initial Hydrostatic <u>2232</u> | <input checked="" type="checkbox"/> Test <u>1150</u> | T-On Location <u>0530</u> |
| (B) First Initial Flow <u>19</u> | <input checked="" type="checkbox"/> Jars <u>250</u> | T-Started <u>0543</u> |
| (C) First Final Flow <u>87</u> | <input checked="" type="checkbox"/> Safety Joint <u>75</u> | T-Open <u>0757</u> |
| (D) Initial Shut-In <u>1063</u> | <input checked="" type="checkbox"/> Circ Sub <u>NK</u> | T-Pulled <u>1157</u> |
| (E) Second Initial Flow <u>96</u> | <input type="checkbox"/> Hourly Standby | T-Out <u>1407</u> |
| (F) Second Final Flow <u>151</u> | <input checked="" type="checkbox"/> Mileage <u>91 AT 91</u> | Comments |
| (G) Final Shut-In <u>1004</u> | <input type="checkbox"/> Sampler | |
| (H) Final Hydrostatic <u>2160</u> | <input type="checkbox"/> Straddle | <input type="checkbox"/> Ruined Shale Packer |
| | <input type="checkbox"/> Shale Packer | <input type="checkbox"/> Ruined Packer |
| | <input type="checkbox"/> Extra Packer | <input type="checkbox"/> Extra Copies |
| Initial Open <u>30</u> | <input type="checkbox"/> Extra Recorder | Sub Total <u>0</u> |
| Initial Shut-In <u>60</u> | <input type="checkbox"/> Day Standby | Total <u>1566</u> |
| Final Flow <u>60</u> | <input type="checkbox"/> Accessibility | MP/DST Disc't |
| Final Shut-In <u>90</u> | Sub Total <u>1566</u> | |

Approved By _____ Our Representative Brian [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **59567**

Well Name & No. Abell Ranch 3-25 Test No. 6 Date 1/20/2014
 Company Murfin Drilling, Inc Elevation 2852 KB 2841 GL
 Address 250 N Water Ste 300 Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig Murfin 21
 Location: Sec. 25 Twp. 12S Rge. 31W Co. Gove State KS

Interval Tested 4372 - 4468 4492 Zone Tested Mississippian
 Anchor Length 96' Drill Pipe Run 4204 Mud Wt. 9.0
 Top Packer Depth 4367 4487 Drill Collars Run 278 Vis 50
 Bottom Packer Depth 4372 4492 Wt. Pipe Run 8 WL 7.2
 Total Depth 4468 4508 Chlorides 2100 ppm System LCM 3#

Blow Description IF: 8" blow
ISI: surface return.
FF: 9" blow
FSI: surface return.

| Rec | Feet of | %gas | %oil | %water | %mud |
|-------------|---------------|------------|-----------|----------|------|
| <u>45</u> | <u>OIL</u> | <u>100</u> | | | |
| <u>5700</u> | <u>SOMCOW</u> | <u>1</u> | <u>94</u> | <u>5</u> | |
| | | | | | |
| | | | | | |
| | | | | | |
| Rec Total | <u>615</u> | | | | |

| | |
|-------------------------|-------------|
| (A) Initial Hydrostatic | <u>2225</u> |
| (B) First Initial Flow | <u>20</u> |
| (C) First Final Flow | <u>159</u> |
| (D) Initial Shut-In | <u>1065</u> |
| (E) Second Initial Flow | <u>164</u> |
| (F) Second Final Flow | <u>279</u> |
| (G) Final Shut-In | <u>1079</u> |
| (H) Final Hydrostatic | <u>2207</u> |
| Initial Open | <u>36</u> |
| Initial Shut-In | <u>60</u> |
| Final Flow | <u>60</u> |
| Final Shut-In | <u>90</u> |

Gravity 29 API RW 1340 @ 50 °F Chlorides 2130-28,000 ppm

Test 1150
 Jars 250
 Safety Joint 75
 Circ Sub N/C
 Hourly Standby
 Mileage 11 RT 91
 Sampler
 Straddle
 Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility

Sub Total 1566

T-On Location 2138
 T-Started 2157
 T-Open 0021
 T-Pulled 0421
 T-Out 0638
 Comments _____
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1566
 MP/DST Disc't _____

Approved By _____ Our Representative [Signature]
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