



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1232092  
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

Form must be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

- New Well       Re-Entry       Workover
- Oil       WSW       SWD       SIOW
- Gas       D&A       ENHR       SIGW
- OG       GSW       Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic       Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

- Deepening       Re-perf.       Conv. to ENHR       Conv. to SWD
- Plug Back       Conv. to GSW       Conv. to Producer
- Commingled      Permit #: \_\_\_\_\_
- Dual Completion      Permit #: \_\_\_\_\_
- SWD      Permit #: \_\_\_\_\_
- ENHR      Permit #: \_\_\_\_\_
- GSW      Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
-----------------------------------	-----------------	---

API No. 15 - \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE       NW       SE       SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_

(e.g. xx.xxxxx)

(e.g. -xxx.xxxxx)

Datum:  NAD27       NAD83       WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested  
Date: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

1232092

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
Cores Taken	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Electric Log Run	<input type="checkbox"/> Yes <input type="checkbox"/> No			
List All E. Logs Run:				

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate				
<input type="checkbox"/> Protect Casing				
<input type="checkbox"/> Plug Back TD				
<input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD: Size: \_\_\_\_\_ Set At: \_\_\_\_\_ Packer At: \_\_\_\_\_ Liner Run:  Yes  No

Date of First, Resumed Production, SWD or ENHR. \_\_\_\_\_ Producing Method:  
 Flowing  Pumping  Gas Lift  Other *(Explain)* \_\_\_\_\_

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
--	--	---





## DRILL STEM TEST REPORT

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

250 N. Water STE 300  
Wichita, KS 67202

ATTN: Keath Reavis

### **Morgan #1-17**

#### **17-4s-33w Rawlins,KS**

Start Date: 2014.10.16 @ 22:32:00

End Date: 2014.10.17 @ 06:26:30

Job Ticket #: 60150                      DST #: 1

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

Printed: 2014.10.22 @ 16:08:09



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

**17-4s-33w Rawlins,KS**

250 N. Water STE 300  
Wichita, KS 67202

**Morgan #1-17**

Job Ticket: 60150

**DST#: 1**

ATTN: Keath Reavis

Test Start: 2014.10.16 @ 22:32:00

## GENERAL INFORMATION:

Formation: **Toronto/Lansing**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:01:30

Time Test Ended: 06:26:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Donovan Baumann

Unit No: 49

**Interval: 3950.00 ft (KB) To 4010.00 ft (KB) (TVD)**

Reference Elevations: 3049.00 ft (KB)

Total Depth: 4010.00 ft (KB) (TVD)

3044.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8959 Outside**

Press@RunDepth: 1267.15 psig @ 3951.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.10.16

End Date:

2014.10.17

Last Calib.:

2014.10.17

Start Time: 22:32:05

End Time:

06:26:29

Time On Btm:

2014.10.17 @ 01:01:00

Time Off Btm:

2014.10.17 @ 04:08:30

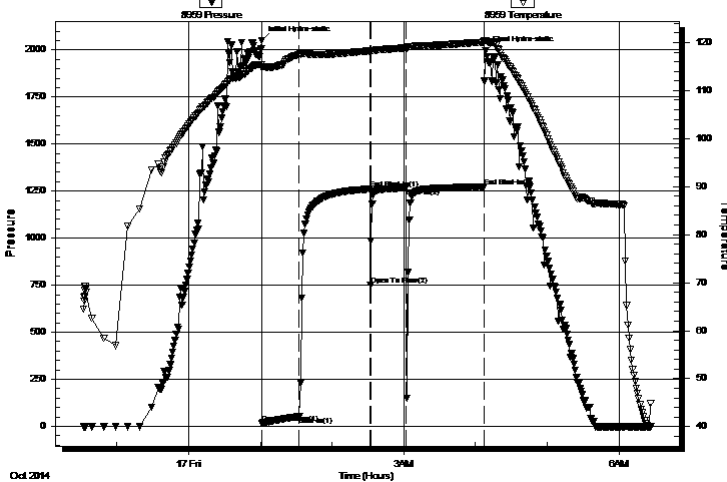
TEST COMMENT: 30 - IF - Weak surface blow built to 3" in 30 min.

60 - ISI - No return

30 - FF - No surface blow

60 - FSI - No return

Pressure vs. Time



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2050.79	115.39	Initial Hydro-static
1	16.49	114.75	Open To Flow (1)
32	53.58	117.47	Shut-In(1)
91	1261.05	118.25	End Shut-In(1)
91	749.81	117.94	Open To Flow (2)
121	1267.15	118.88	Shut-In(2)
186	1272.02	120.07	End Shut-In(2)
188	1996.42	120.43	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
73.00	Mud - 100M	0.36

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc.

**17-4s-33w Rawlins,KS**

250 N. Water STE 300  
Wichita, KS 67202

**Morgan #1-17**

Job Ticket: 60150

**DST#: 1**

ATTN: Keath Reavis

Test Start: 2014.10.16 @ 22:32:00

## Tool Information

Drill Pipe:	Length: 3769.00 ft	Diameter: 3.80 inches	Volume: 52.87 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: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 72000.00 lb
			<u>Total Volume: 53.79 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	3950.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	60.00 ft			
Tool Length:	87.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3928.00	
Hydraulic tool	5.00			3933.00	
Jars	5.00			3938.00	
Safety Joint	3.00			3941.00	
Packer	5.00			3946.00	27.00 Bottom Of Top Packer
Packer	4.00			3950.00	
Stubb	1.00			3951.00	
Recorder	0.00	8521	Inside	3951.00	
Recorder	0.00	8959	Outside	3951.00	
Perforations	23.00			3974.00	
Change Over Sub	1.00			3975.00	
Drill Pipe	31.00			4006.00	
Change Over Sub	1.00			4007.00	
Bullnose	3.00			4010.00	60.00 Bottom Packers & Anchor

**Total Tool Length: 87.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc.

**17-4s-33w Rawlins,KS**

250 N. Water STE 300  
Wichita, KS 67202

**Morgan #1-17**

Job Ticket: 60150

**DST#: 1**

ATTN: Keath Reavis

Test Start: 2014.10.16 @ 22:32:00

## 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: 58.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.57 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2100.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbf
73.00	Mud - 100M	0.359

Total Length: 73.00 ft      Total Volume: 0.359 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

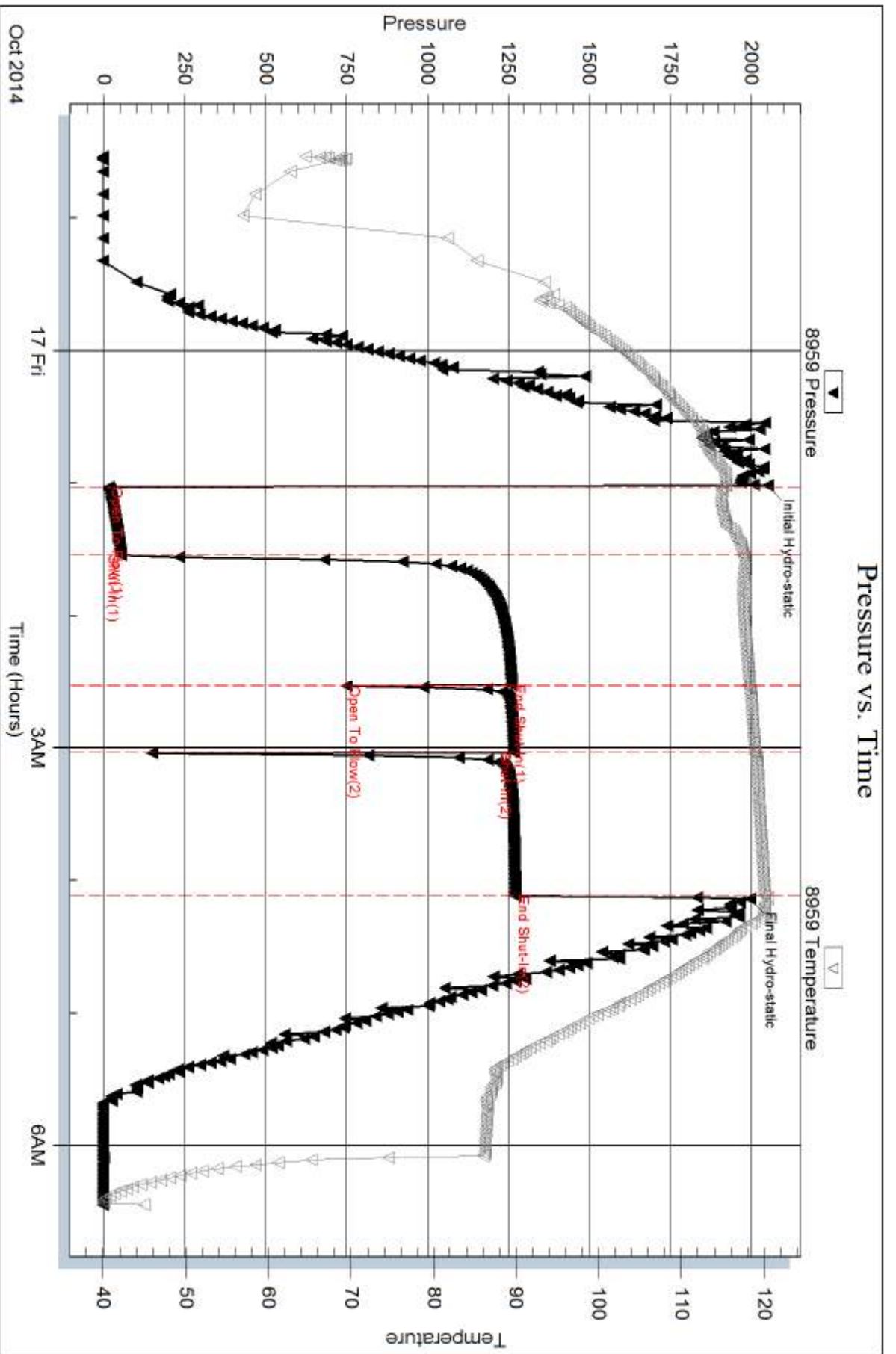
Serial #:

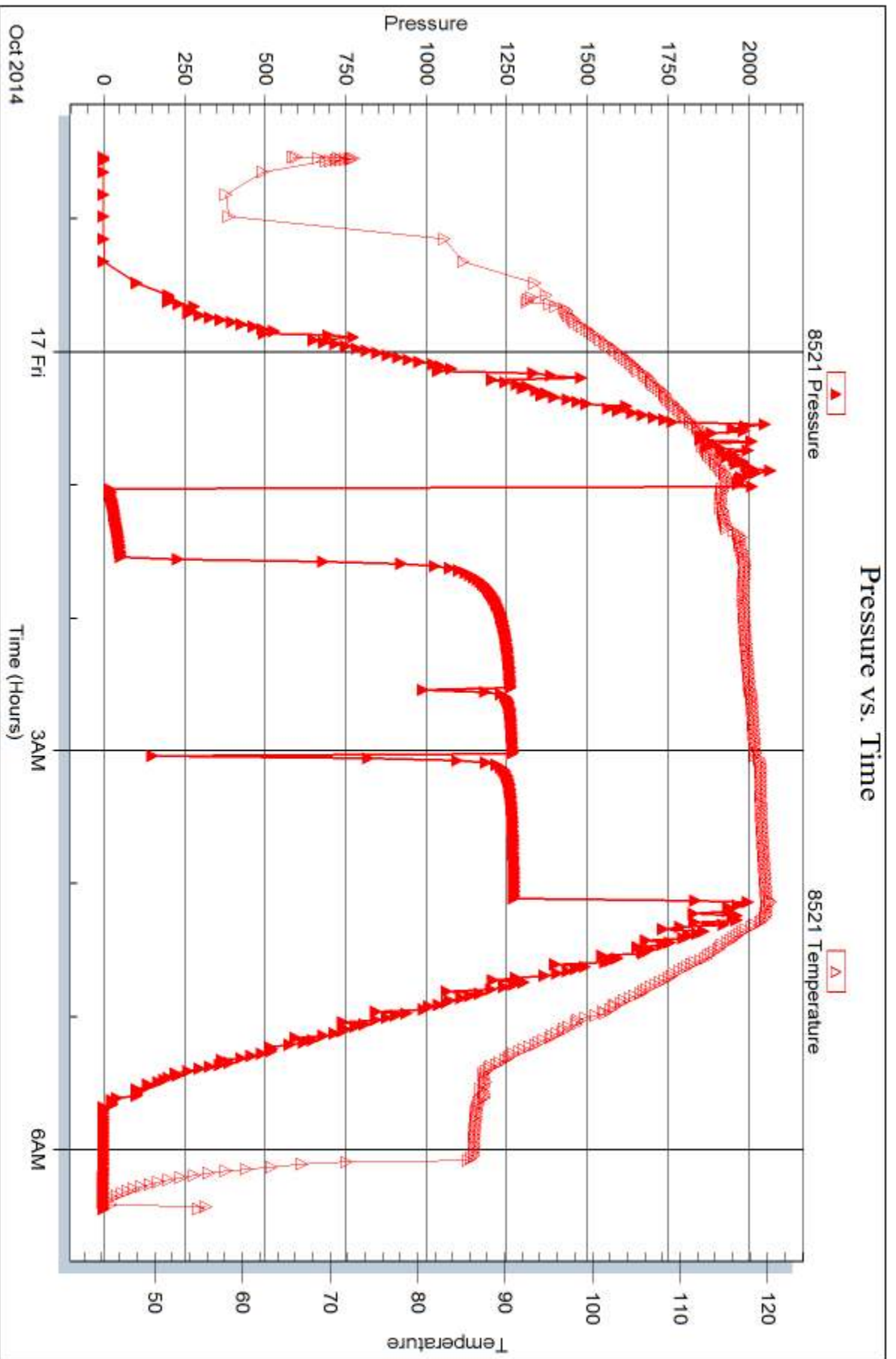
Laboratory Name:

Laboratory Location:

Recovery Comments:









## DRILL STEM TEST REPORT

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

250 N. Water STE 300  
Wichita, KS 67202

ATTN: Keath Reavis

**Morgan #1-17**

**17-4s-33w Rawlins,KS**

Start Date: 2014.10.17 @ 15:50:00

End Date: 2014.10.17 @ 23:21:30

Job Ticket #: 60851                      DST #: 2

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

Printed: 2014.10.22 @ 16:07:40



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

**17-4s-33w Rawlins,KS**

250 N. Water STE 300  
Wichita, KS 67202

**Morgan #1-17**

Job Ticket: 60851

**DST#: 2**

ATTN: Keath Reavis

Test Start: 2014.10.17 @ 15:50:00

## GENERAL INFORMATION:

Formation: **LKC "B&D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:14:00

Time Test Ended: 23:21:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Donovan Baumann

Unit No: 49

**Interval: 4008.00 ft (KB) To 4054.00 ft (KB) (TVD)**

Reference Elevations: 3049.00 ft (KB)

Total Depth: 4054.00 ft (KB) (TVD)

3044.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8959 Outside**

Press@RunDepth: 17.18 psig @ 4009.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.10.17

End Date:

2014.10.17

Last Calib.:

2014.10.17

Start Time: 15:50:05

End Time:

23:21:29

Time On Btm:

2014.10.17 @ 18:13:30

Time Off Btm:

2014.10.17 @ 21:15:30

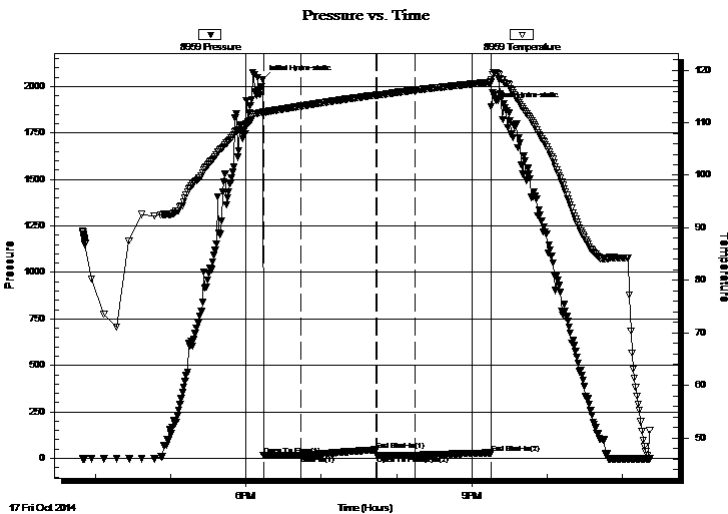
**TEST COMMENT:** 30 - IF - Weak surface blow built to 1/4" in 10 min and stayed there for the rest of the time

60 - ISI - No return

30 - FF - No surface blow

60 - FSI - No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2037.35	112.17	Initial Hydro-static
1	15.80	111.77	Open To Flow (1)
31	16.47	113.17	Shut-In(1)
90	46.15	115.26	End Shut-In(1)
91	16.78	115.28	Open To Flow (2)
121	17.18	116.20	Shut-In(2)
182	26.29	117.73	End Shut-In(2)
182	1891.11	118.26	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
3.00	Mud - 100M	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.

**17-4s-33w Rawlins,KS**

250 N. Water STE 300  
Wichita, KS 67202

**Morgan #1-17**

Job Ticket: 60851

**DST#: 2**

ATTN: Keath Reavis

Test Start: 2014.10.17 @ 15:50:00

## Tool Information

Drill Pipe:	Length: 3801.00 ft	Diameter: 3.80 inches	Volume: 53.32 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: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 54.24 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4008.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	46.00 ft			
Tool Length:	73.00 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			3986.00	
Hydraulic tool	5.00			3991.00	
Jars	5.00			3996.00	
Safety Joint	3.00			3999.00	
Packer	5.00			4004.00	27.00 Bottom Of Top Packer
Packer	4.00			4008.00	
Stubb	1.00			4009.00	
Recorder	0.00	8521	Inside	4009.00	
Recorder	0.00	8959	Outside	4009.00	
Perforations	9.00			4018.00	
Change Over Sub	1.00			4019.00	
Drill Pipe	31.00			4050.00	
Change Over Sub	1.00			4051.00	
Bullnose	3.00			4054.00	46.00 Bottom Packers & Anchor

**Total Tool Length: 73.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc.

**17-4s-33w Rawlins,KS**

250 N. Water STE 300  
Wichita, KS 67202

**Morgan #1-17**

Job Ticket: 60851

**DST#: 2**

ATTN: Keath Reavis

Test Start: 2014.10.17 @ 15:50:00

## 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: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.57 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2600.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
3.00	Mud - 100M	0.015

Total Length: 3.00 ft      Total Volume: 0.015 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

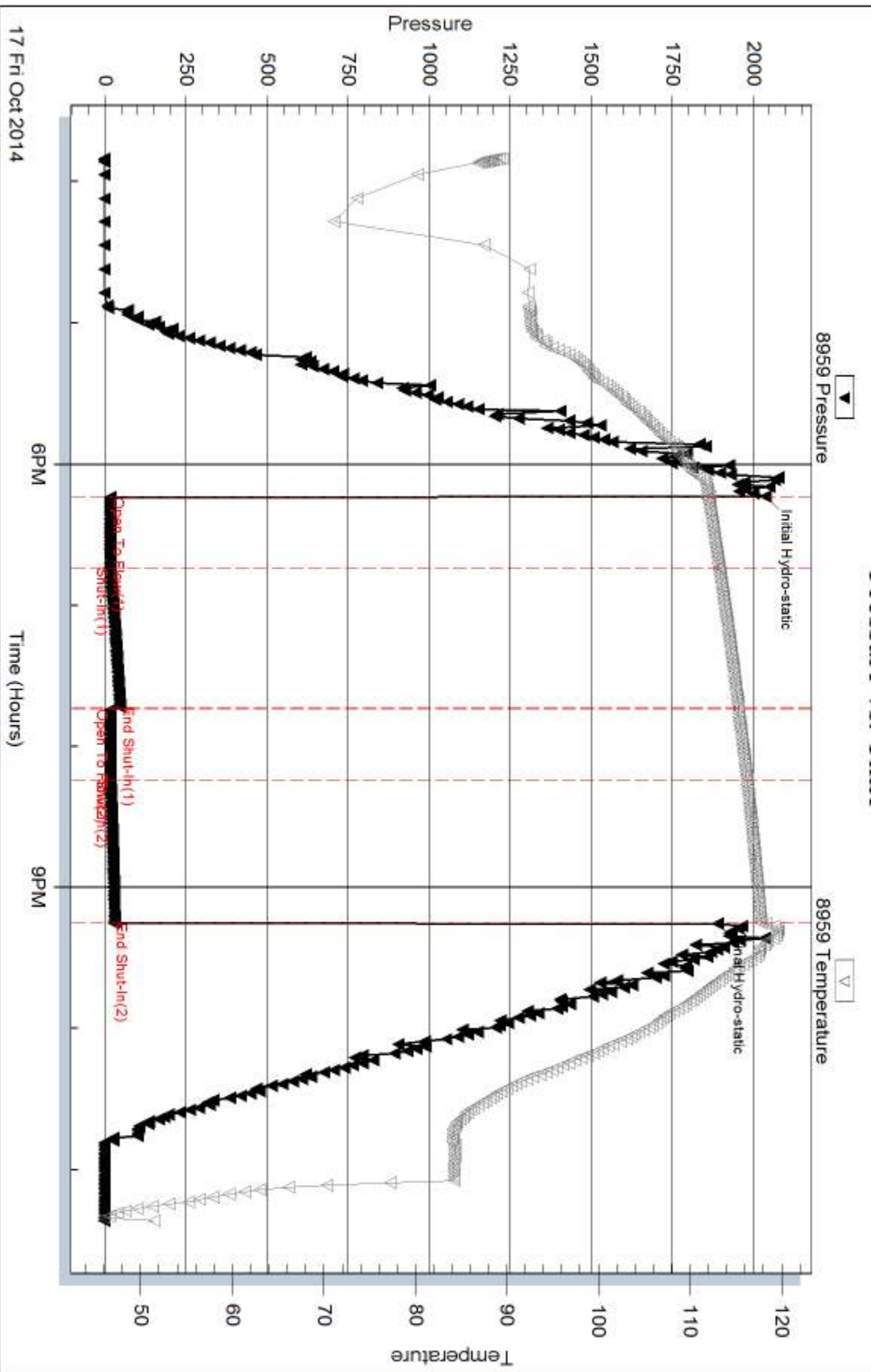
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time





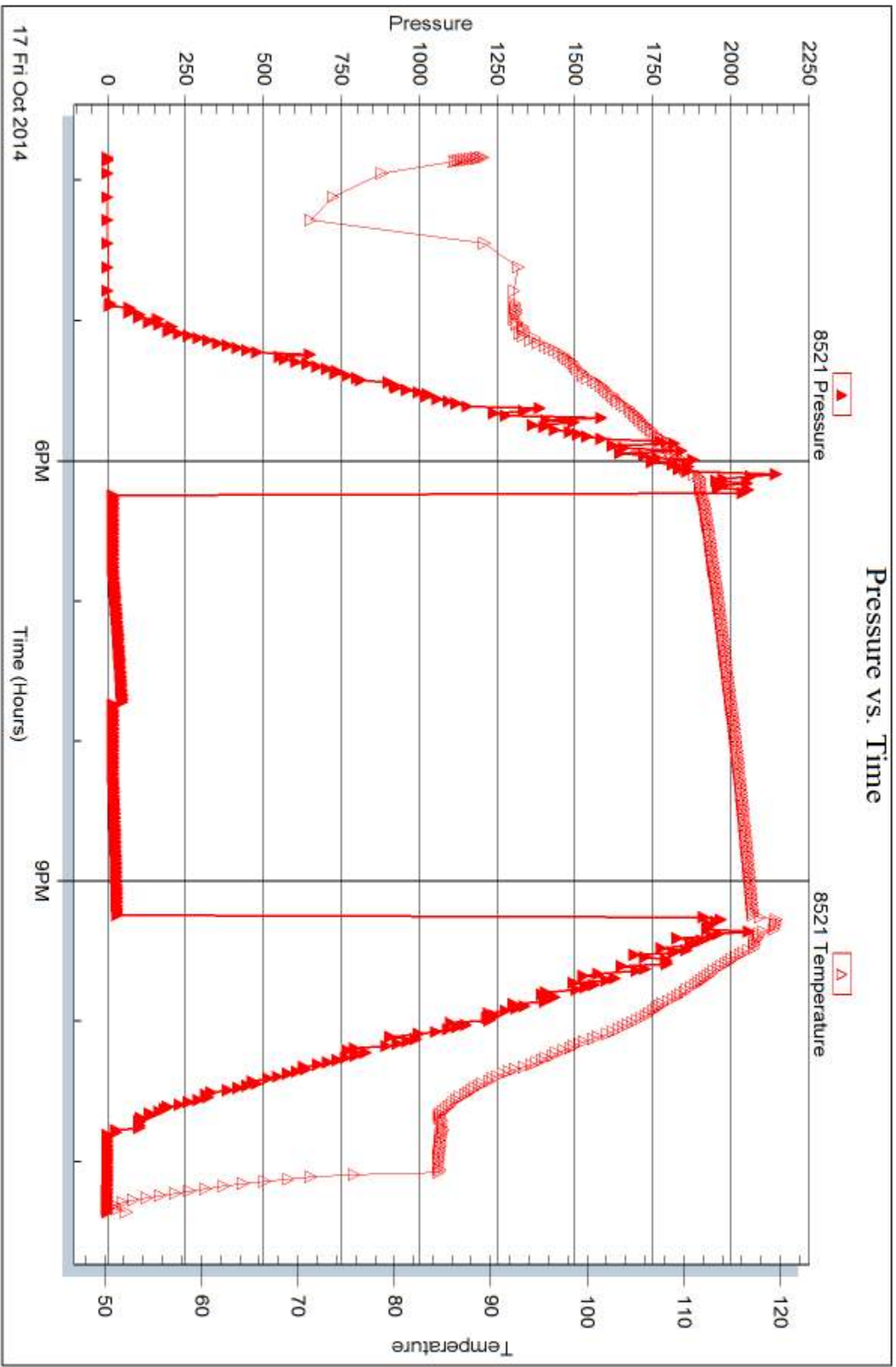
Serial #: 8521

Inside

Murfin Drilling Co., Inc.

Morgan #1-17

DST Test Number: 2





## DRILL STEM TEST REPORT

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

250 N. Water STE 300  
Wichita, KS 67202

ATTN: Keath Reavis

### **Morgan #1-17**

#### **17-4s-33w Rawlins,KS**

Start Date: 2014.10.18 @ 08:16:00

End Date: 2014.10.18 @ 15:39:30

Job Ticket #: 60852                      DST #: 3

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

Printed: 2014.10.22 @ 16:07:19



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.  
250 N. Water STE 300  
Wichita, KS 67202  
ATTN: Keath Reavis

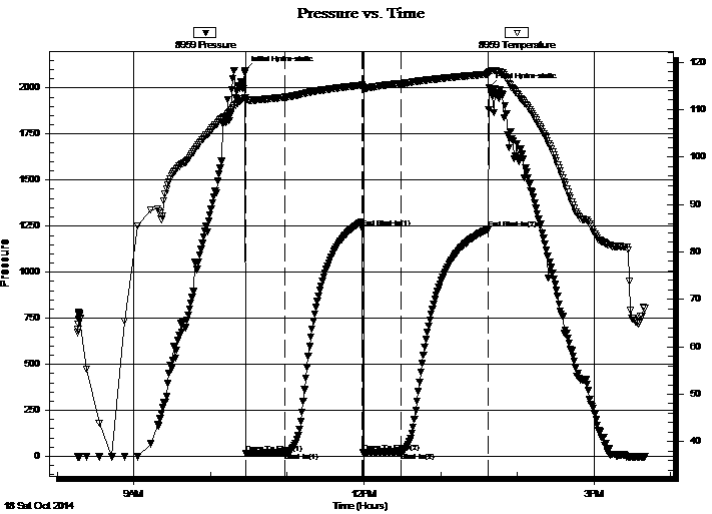
**17-4s-33w Rawlins, KS**  
**Morgan #1-17**  
Job Ticket: 60852      **DST#: 3**  
Test Start: 2014.10.18 @ 08:16:00

## GENERAL INFORMATION:

Formation: **LKC"F&G"**  
Deviated: No Whipstock: ft (KB)      Test Type: Conventional Bottom Hole (Initial)  
Time Tool Opened: 10:27:30      Tester: Donovan Baumann  
Time Test Ended: 15:39:30      Unit No: 49  
**Interval: 4047.00 ft (KB) To 4085.00 ft (KB) (TVD)**      Reference Elevations: 3049.00 ft (KB)  
Total Depth: 4085.00 ft (KB) (TVD)      3044.00 ft (CF)  
Hole Diameter: 7.88 inches Hole Condition: Good      KB to GR/CF: 5.00 ft

**Serial #: 8959      Outside**  
Press@RunDepth: 24.64 psig @ 4048.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2014.10.18      End Date: 2014.10.18      Last Calib.: 2014.10.18  
Start Time: 08:16:05      End Time: 15:39:29      Time On Btm: 2014.10.18 @ 10:27:00  
Time Off Btm: 2014.10.18 @ 13:38:00

**TEST COMMENT:** 30 - IF - Weak surface blow built to 3/4" in 30 min  
60 - ISI - No return  
30 - FF - No surface blow  
60 - FSI - No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2093.89	112.38	Initial Hydro-static
1	16.59	111.96	Open To Flow (1)
31	20.75	112.59	Shut-In(1)
92	1241.98	115.14	End Shut-In(1)
92	22.64	114.80	Open To Flow (2)
122	24.64	115.51	Shut-In(2)
190	1233.01	117.47	End Shut-In(2)
191	1999.82	117.85	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	OSM - 100M - oil spots	0.07

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc.

**17-4s-33w Rawlins,KS**

250 N. Water STE 300  
Wichita, KS 67202

**Morgan #1-17**

Job Ticket: 60852

**DST#: 3**

ATTN: Keath Reavis

Test Start: 2014.10.18 @ 08:16:00

## Tool Information

Drill Pipe:	Length: 3864.00 ft	Diameter: 3.80 inches	Volume: 54.20 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: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 55.12 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4047.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	38.00 ft			
Tool Length:	65.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4025.00	
Hydraulic tool	5.00			4030.00	
Jars	5.00			4035.00	
Safety Joint	3.00			4038.00	
Packer	5.00			4043.00	27.00 Bottom Of Top Packer
Packer	4.00			4047.00	
Stubb	1.00			4048.00	
Recorder	0.00	8521	Inside	4048.00	
Recorder	0.00	8959	Outside	4048.00	
Perforations	34.00			4082.00	
Change Over Sub	0.00			4082.00	
Drill Pipe	0.00			4082.00	
Change Over Sub	0.00			4082.00	
Bullnose	3.00			4085.00	38.00 Bottom Packers & Anchor

**Total Tool Length: 65.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc.

**17-4s-33w Rawlins,KS**

250 N. Water STE 300  
Wichita, KS 67202

**Morgan #1-17**

Job Ticket: 60852

**DST#: 3**

ATTN: Keath Reavis

Test Start: 2014.10.18 @ 08:16:00

## 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: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.57 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2600.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	OSM - 100M - oil spots	0.074

Total Length: 15.00 ft      Total Volume: 0.074 bbl

Num Fluid Samples: 0

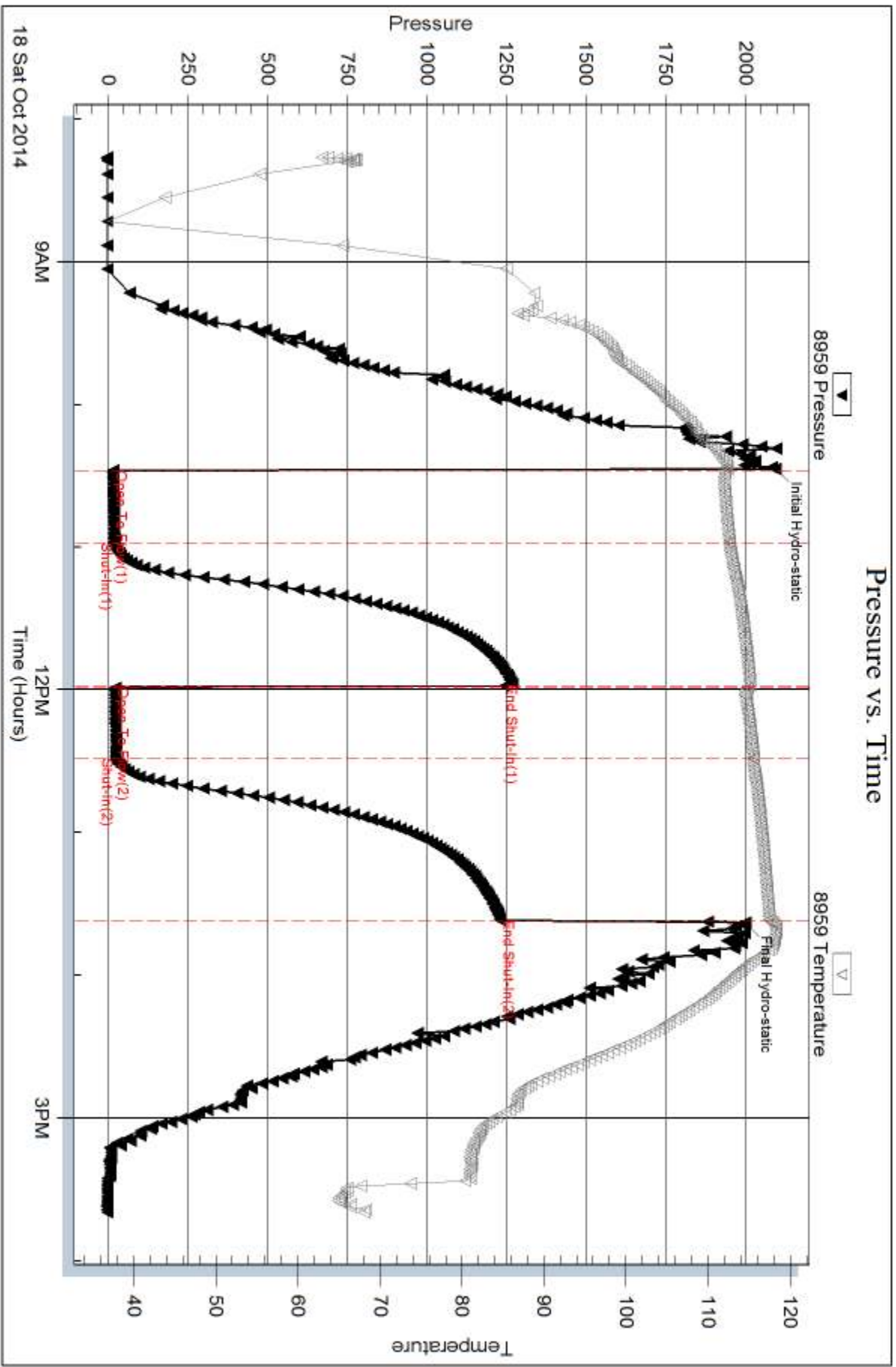
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



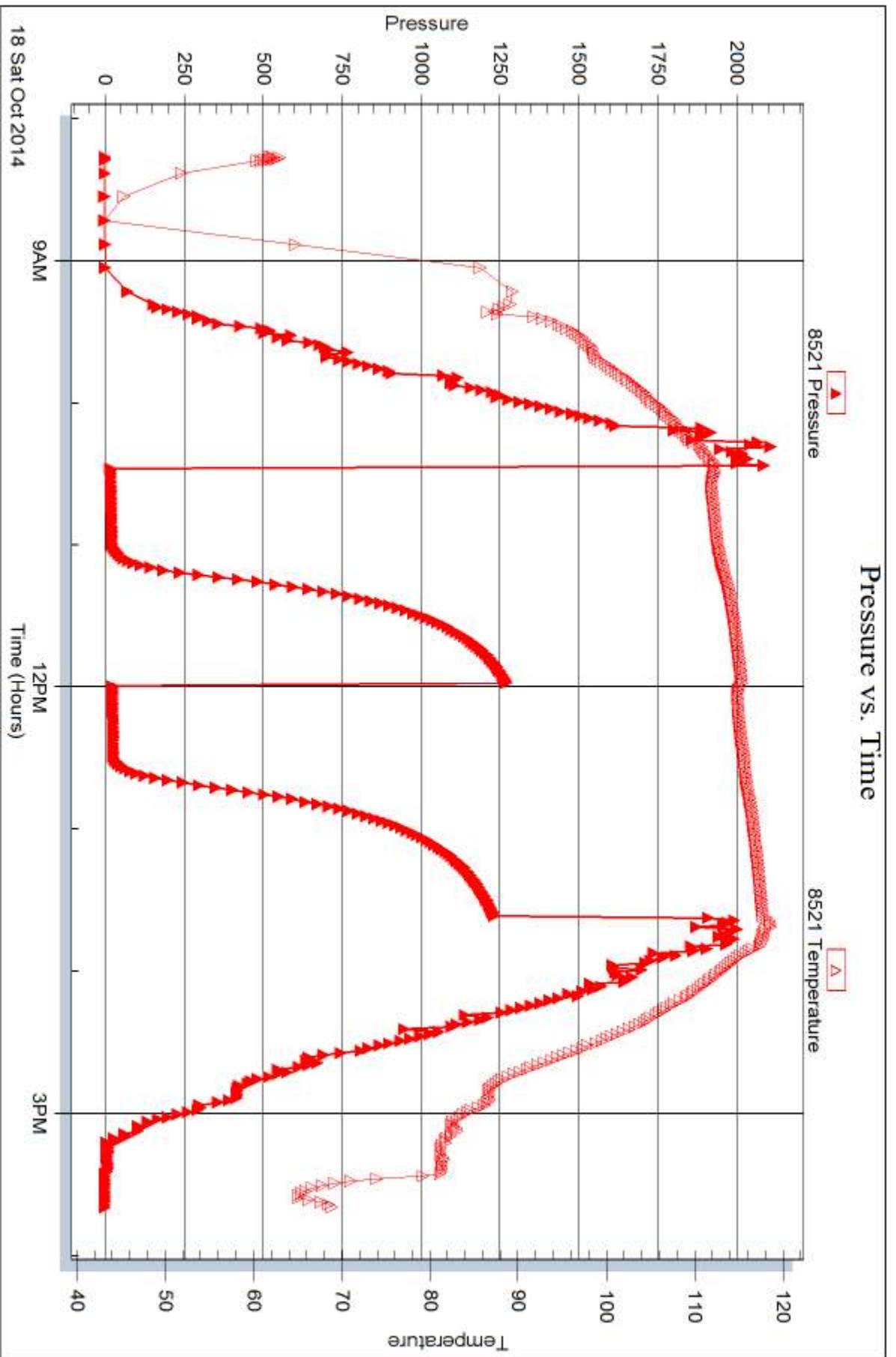
Serial #: 8521

Inside

Murfin Drilling Co., Inc.

Morgan #1-17

DST Test Number: 3







## DRILL STEM TEST REPORT

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

250 N. Water STE 300  
Wichita, KS 67202

ATTN: Keath Reavis

### **Morgan #1-17**

#### **17-4s-33w Rawlins,KS**

Start Date: 2014.10.19 @ 05:34:00

End Date: 2014.10.19 @ 13:12:30

Job Ticket #: 60853                      DST #: 4

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

Printed: 2014.10.22 @ 16:06:52



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

**17-4s-33w Rawlins, KS**

250 N. Water STE 300  
Wichita, KS 67202

**Morgan #1-17**

Job Ticket: 60853

**DST#: 4**

ATTN: Keath Reavis

Test Start: 2014.10.19 @ 05:34:00

## GENERAL INFORMATION:

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

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:01:30

Time Test Ended: 13:12:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Donovan Baumann

Unit No: 49

**Interval: 4102.00 ft (KB) To 4180.00 ft (KB) (TVD)**

Reference Elevations: 3049.00 ft (KB)

Total Depth: 4180.00 ft (KB) (TVD)

3044.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8959 Outside**

Press@RunDepth: 72.29 psig @ 4103.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.10.19

End Date:

2014.10.19

Last Calib.:

2014.10.19

Start Time: 05:34:05

End Time:

13:12:29

Time On Btm:

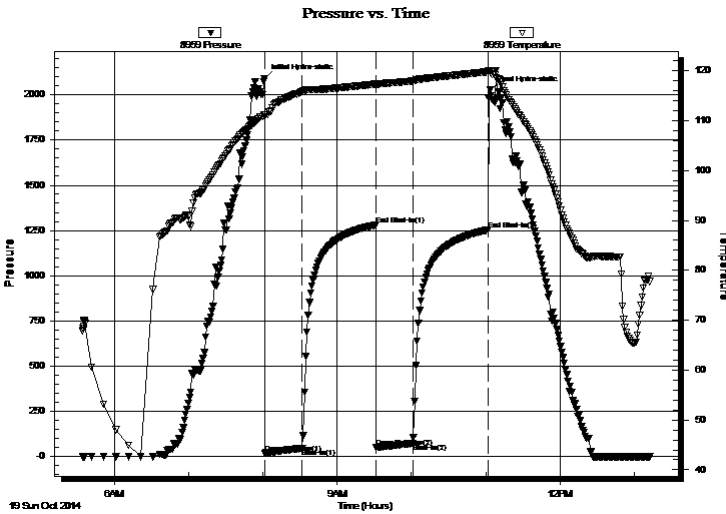
2014.10.19 @ 08:01:00

Time Off Btm:

2014.10.19 @ 11:03:30

**TEST COMMENT:** 30 - IF - Weak surface blow built to 3" in 30 min.  
60 - ISI - No return  
30 - FF - Weak surface blow built to 1" in 30 min.  
60 - FSI - No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2090.75	111.10	Initial Hydro-static
1	18.10	110.80	Open To Flow (1)
31	44.98	115.86	Shut-In(1)
90	1280.21	117.33	End Shut-In(1)
91	48.69	117.03	Open To Flow (2)
120	72.29	117.94	Shut-In(2)
181	1253.45	119.80	End Shut-In(2)
183	2026.30	120.08	Final Hydro-static

## Recovery

## Gas Rates

Length (ft)	Description	Volume (bbl)
94.00	Mud - 100M	0.46

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc.

**17-4s-33w Rawlins,KS**

250 N. Water STE 300  
Wichita, KS 67202

**Morgan #1-17**

Job Ticket: 60853

**DST#: 4**

ATTN: Keath Reavis

Test Start: 2014.10.19 @ 05:34:00

## Tool Information

Drill Pipe:	Length: 3896.00 ft	Diameter: 3.80 inches	Volume: 54.65 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: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 78000.00 lb
			<u>Total Volume: 55.57 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4102.00 ft			Final 65000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	78.00 ft			
Tool Length:	105.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4080.00	
Hydraulic tool	5.00			4085.00	
Jars	5.00			4090.00	
Safety Joint	3.00			4093.00	
Packer	5.00			4098.00	27.00 Bottom Of Top Packer
Packer	4.00			4102.00	
Stubb	1.00			4103.00	
Recorder	0.00	8521	Inside	4103.00	
Recorder	0.00	8959	Outside	4103.00	
Perforations	9.00			4112.00	
Change Over Sub	1.00			4113.00	
Drill Pipe	63.00			4176.00	
Change Over Sub	1.00			4177.00	
Bullnose	3.00			4180.00	78.00 Bottom Packers & Anchor

**Total Tool Length: 105.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc.

**17-4s-33w Rawlins,KS**

250 N. Water STE 300  
Wichita, KS 67202

**Morgan #1-17**

Job Ticket: 60853

**DST#: 4**

ATTN: Keath Reavis

Test Start: 2014.10.19 @ 05:34:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2800.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
94.00	Mud - 100M	0.462

Total Length: 94.00 ft      Total Volume: 0.462 bbl

Num Fluid Samples: 0

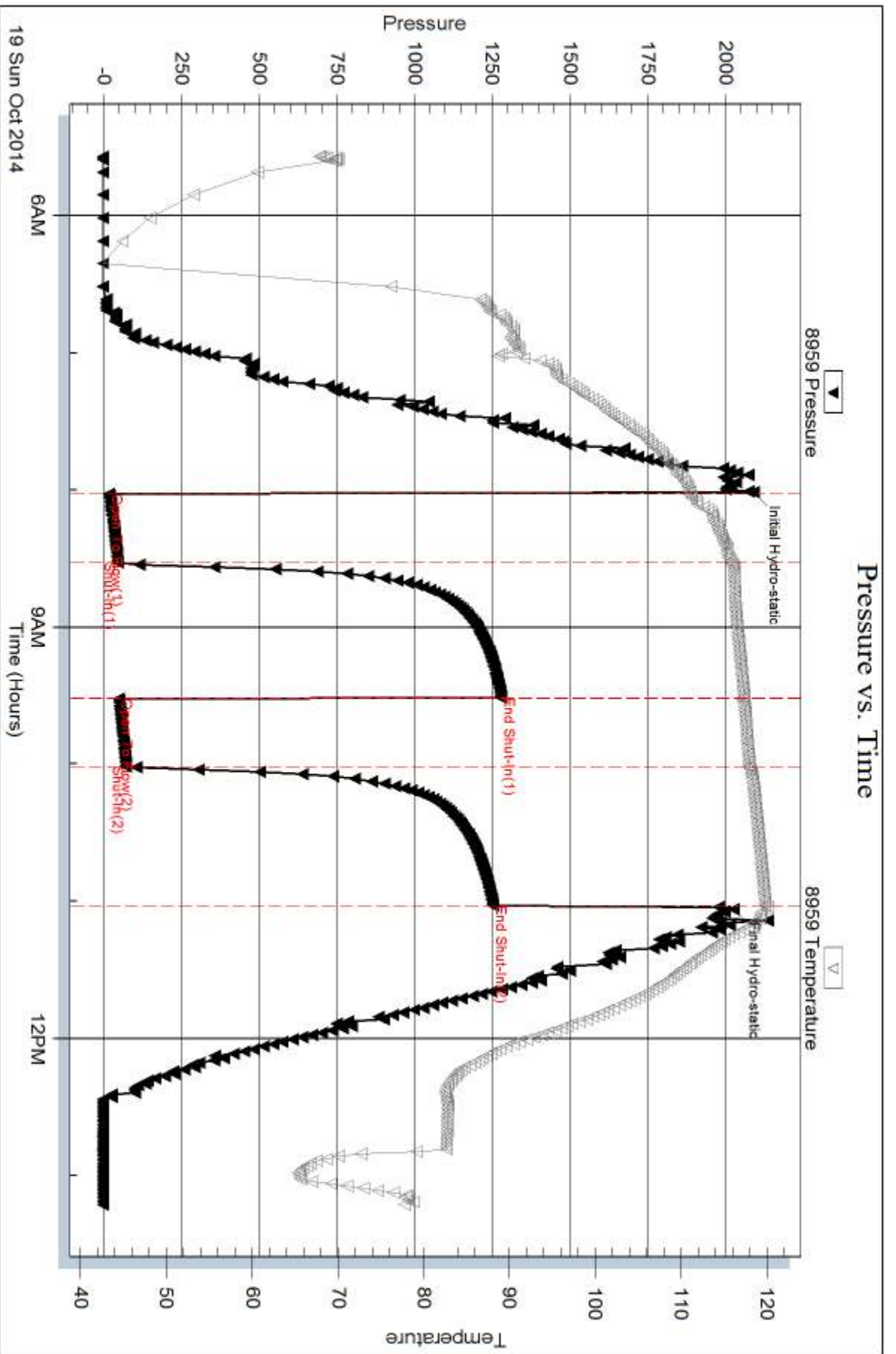
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



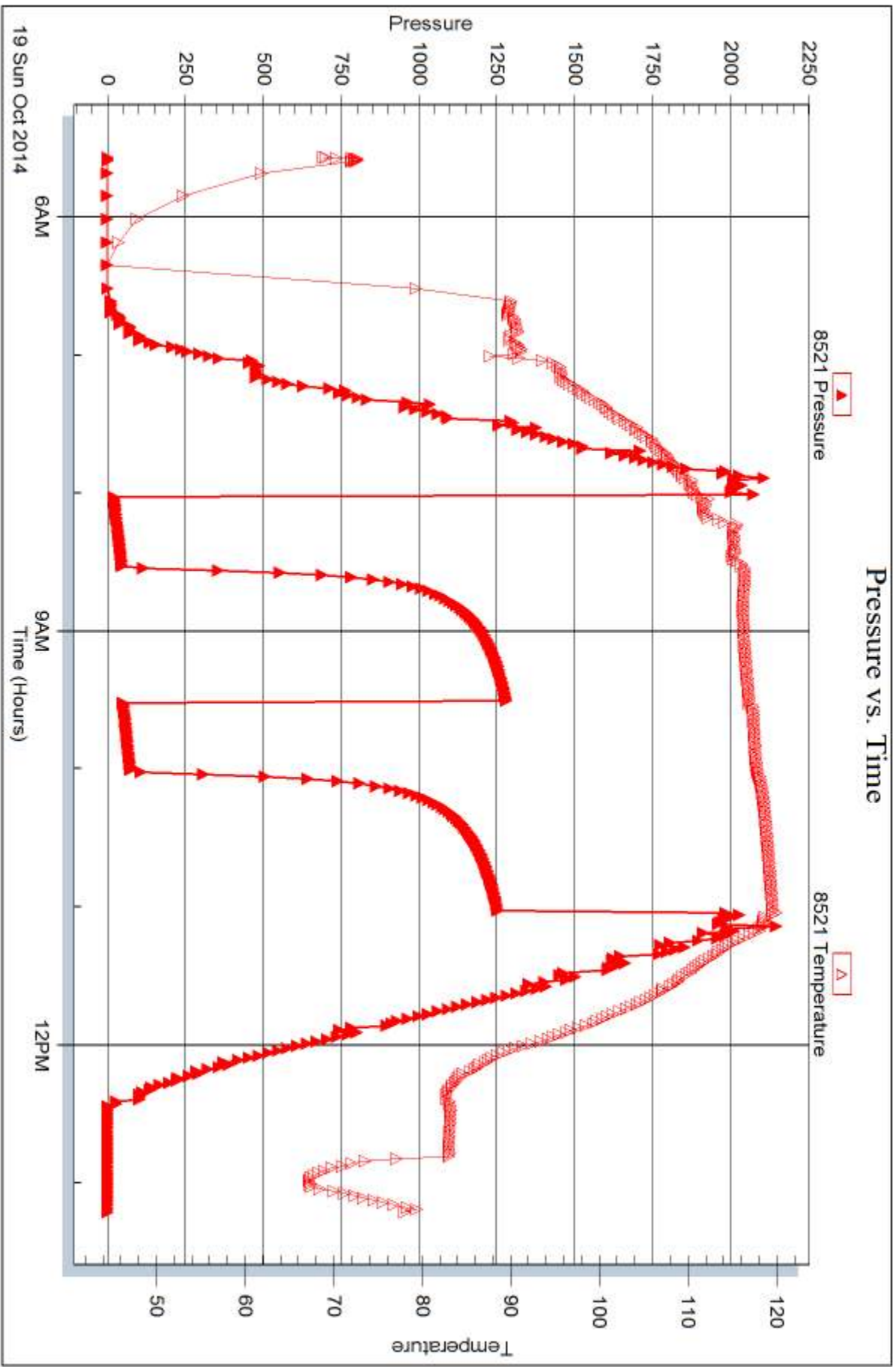
Serial #: 8521

Inside

Murfin Drilling Co., Inc.

Morgan #1-17

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 60853

Printed: 2014, 10, 22 @ 16:06:54



## DRILL STEM TEST REPORT

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

250 N. Water STE 300  
Wichita, KS 67202

ATTN: Keath Reavis

**Morgan #1-17**

**17-4s-33w Rawlins,KS**

Start Date: 2014.10.20 @ 16:30:00

End Date: 2014.10.20 @ 23:39:30

Job Ticket #: 59977                      DST #: 5

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

Printed: 2014.10.22 @ 16:06:23

Murfin Drilling Co., Inc.

17-4s-33w Rawlins,KS

Morgan #1-17

DST # 5

Pawnee & Cherokee

2014.10.20





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

**17-4s-33w Rawlins,KS**

250 N. Water STE 300  
Wichita, KS 67202

**Morgan #1-17**

Job Ticket: 59977

**DST#: 5**

ATTN: Keath Reavis

Test Start: 2014.10.20 @ 16:30:00

## GENERAL INFORMATION:

Formation: **Pawnee & Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:33:00

Time Test Ended: 23:39:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Robert Zodrow

Unit No: 49

Interval: **4380.00 ft (KB) To 4468.00 ft (KB) (TVD)**

Reference Elevations: 3049.00 ft (KB)

Total Depth: 4468.00 ft (KB) (TVD)

3044.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8959 Outside**

Press@RunDepth: 37.13 psig @ 4381.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.10.20 End Date: 2014.10.20

Last Calib.: 2014.10.20

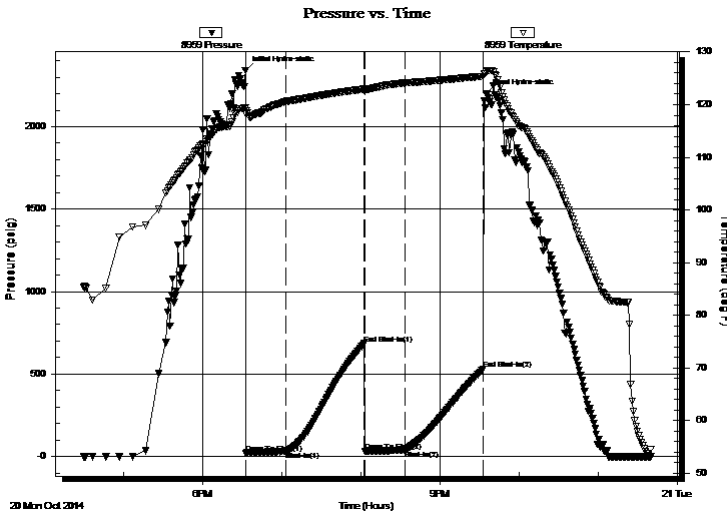
Start Time: 16:30:05 End Time: 23:39:29

Time On Btm: 2014.10.20 @ 18:32:30

Time Off Btm: 2014.10.20 @ 21:35:00

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

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2341.42	119.43	Initial Hydro-static
1	21.24	118.28	Open To Flow (1)
31	29.81	120.63	Shut-In(1)
90	683.53	122.95	End Shut-In(1)
91	32.04	122.53	Open To Flow (2)
121	37.13	124.11	Shut-In(2)
180	528.27	125.39	End Shut-In(2)
183	2199.34	126.20	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	mud 100%M	0.07

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc.

**17-4s-33w Rawlins,KS**

250 N. Water STE 300  
Wichita, KS 67202

**Morgan #1-17**

Job Ticket: 59977

**DST#: 5**

ATTN: Keath Reavis

Test Start: 2014.10.20 @ 16:30:00

## Tool Information

Drill Pipe:	Length: 4180.00 ft	Diameter: 3.88 inches	Volume: 61.13 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: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 74000.00 lb
			<u>Total Volume: 62.05 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4380.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	88.00 ft			
Tool Length:	115.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4358.00	
Hydraulic tool	5.00			4363.00	
Jars	5.00			4368.00	
Safety Joint	3.00			4371.00	
Packer	5.00			4376.00	27.00 Bottom Of Top Packer
Packer	4.00			4380.00	
Stubb	1.00			4381.00	
Recorder	0.00	8521	Inside	4381.00	
Recorder	0.00	8959	Outside	4381.00	
Perforations	19.00			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	88.00 Bottom Packers & Anchor

**Total Tool Length: 115.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co., Inc.

**17-4s-33w Rawlins,KS**

250 N. Water STE 300  
Wichita, KS 67202

**Morgan #1-17**

Job Ticket: 59977

**DST#: 5**

ATTN: Keath Reavis

Test Start: 2014.10.20 @ 16:30:00

### 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: 69.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.18 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2600.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	mud 100%M	0.074

Total Length: 15.00 ft      Total Volume: 0.074 bbl

Num Fluid Samples: 0

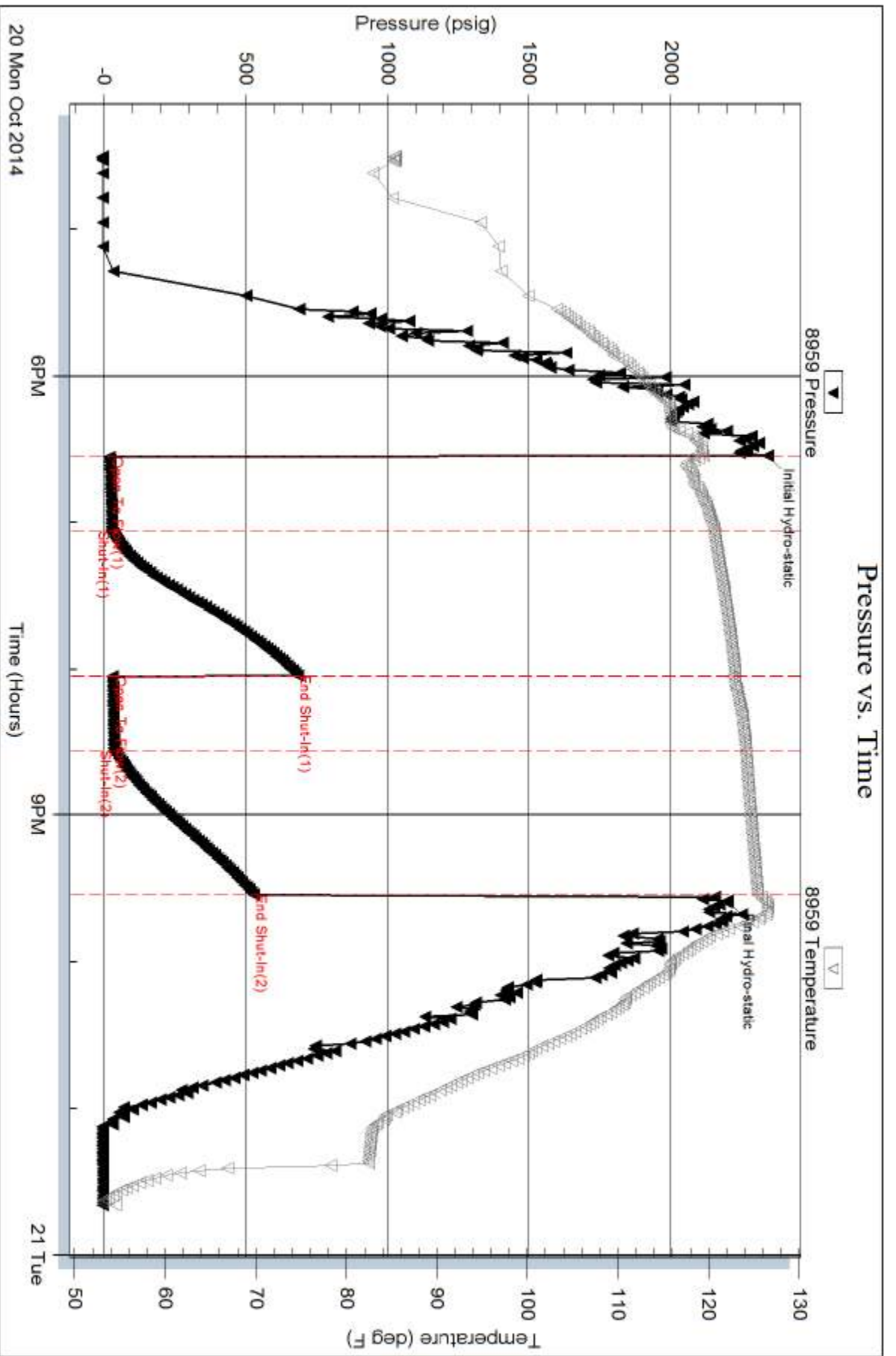
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



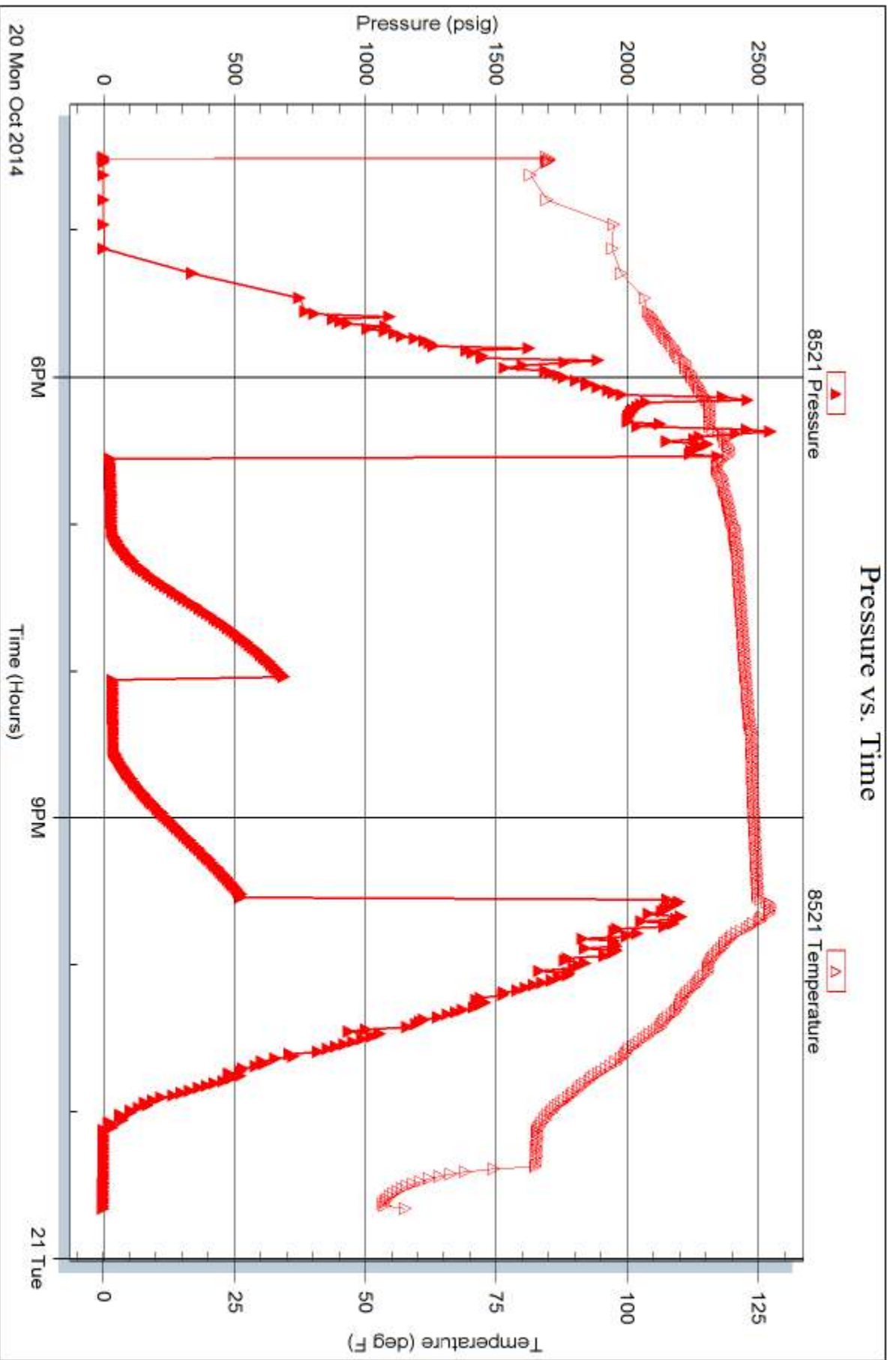
Serial #: 8521

Inside

Murfin Drilling Co., Inc.

Morgan #1-17

DST Test Number: 5





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **60150**

4/10

Well Name & No. Morgan 1-17 Test No. 1 Date 10-16-14  
 Company Muffin Drilling Co., LAC. Elevation 3049 KB 3044 GL  
 Address Muffin 250 N water STE 300 Wichita, KS, 67202  
 Co. Rep / Geo. Keith Reavys Rig Martin #7  
 Location: Sec. 17 Twp. 4 Rge. 33 Co. Rawlins State KS

Interval Tested 3950'-4010' Zone Tested Toronto/Lansing  
 Anchor Length 60' Drill Pipe Run 3769 Mud Wt. 9  
 Top Packer Depth 3945' Drill Collars Run 187 Vis 58  
 Bottom Packer Depth 3950' Wt. Pipe Run 0 WL 7.6  
 Total Depth 4010' Chlorides 2100 ppm System LCM #3

Blow Description FF-Weak surface blow built to 3 in. in 30 min.  
ISI-NO return  
FF-NO surface blow  
FBI-NO return

Rec	Feet of	%gas	%oil	%water	%mud
73'	mud			100	

Rec Total 73' BHT 120 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2051  Test 1250 T-On Location 8:05pm  
 (B) First Initial Flow 16  Jars 250 T-Started 10:32pm  
 (C) First Final Flow 54  Safety Joint 75 T-Open 1:02am 10-17-14  
 (D) Initial Shut-In 1261  Circ Sub n/c T-Pulled 4:04am  
 (E) Second Initial Flow 750  Hourly Standby \_\_\_\_\_ T-Out 6:27am  
 (F) Second Final Flow 1267  Mileage 74 R/T 114.70 Comments \_\_\_\_\_  
 (G) Final Shut-In 1272  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1996  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_

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

Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

Sub Total 1689.70  
 Total 1689.70  
 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Doncrow Barnard

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. **60851**

4/10

Well Name & No. Morgan # 1-17 Test No. 2 Date 10-17-14  
 Company Martin Drilling CO, Inc. Elevation 3049 KB 3044 GL  
 Address 250 N. Water STE 300 Wichita, KS, 67202  
 Co. Rep / Geo. Keith Reavis Rig Murfin # 7  
 Location: Sec. 17 Twp. 4 Rge. 33 Co. Rawlins State KS

Interval Tested 4008' - 4054' Zone Tested LSG "B + D"  
 Anchor Length 46' Drill Pipe Run 3801' Mud Wt. 9  
 Top Packer Depth 4003' Drill Collars Run 187 Vis 62  
 Bottom Packer Depth 4008' Wt. Pipe Run 0 WL 7.6  
 Total Depth 4054' Chlorides 2600 ppm System LCM #4

Blow Description IF - weak surface blow built to 1/4 in. in 10 min & stayed for the rest of  
ISI - the time  
ISI - No return  
FF - No surface blow  
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>3</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	Feet of	%gas	%oil	%water	%mud

Rec Total 3 BHT 118 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2037  Test 1250 T-On Location 2:58 p.m.  
 (B) First Initial Flow 16  Jars 250 T-Started 3:50pm  
 (C) First Final Flow 17  Safety Joint 75 T-Open 6:14 pm  
 (D) Initial Shut-In 46  Circ Sub n/c T-Pulled 9:14pm  
 (E) Second Initial Flow 17  Hourly Standby \_\_\_\_\_ T-Out 11:22pm  
 (F) Second Final Flow 17  Mileage 74 RT 114.70 Comments \_\_\_\_\_  
 (G) Final Shut-In 26  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1891  Straddle \_\_\_\_\_

Initial Open 30  Shale Packer \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Initial Shut-In 60  Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Final Flow 30  Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Final Shut-In 60  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1689.70  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1689.70

Approved By \_\_\_\_\_ Our Representative General Management

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. 60852

Well Name & No. morgan #1-17 Test No. 3 Date 10-18-14  
 Company Murfin Drilling Co., Inc. Elevation 3049 KB 3044 GL  
 Address 250 N. water STE 300 wichita, KS, 67202  
 Co. Rep / Geo. Keith Reavis Rig Murfin #7  
 Location: Sec. 17 Twp. 4 Rge. 33 Co. Rawlins State KS

Interval Tested 4047' - 4085' Zone Tested Lansing "F+G"  
 Anchor Length 38 Drill Pipe Run 3864' Mud Wt. 9  
 Top Packer Depth 4042' Drill Collars Run 187 Vis 62  
 Bottom Packer Depth 4047' Wt. Pipe Run Ø WL 7.6  
 Total Depth 4085' Chlorides 2600 ppm System LCM #4  
 Blow Description IF - weak surface blow built to 3/4 in. in 30 min.  
ISI - No return  
FF - No surface blow  
FSI - No return

Rec	Feet of	%gas	SPOTS %oil	%water	%mud
15	0.5M			100	
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 15 BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2094  Test 1250 T-On Location 7:30 am  
 (B) First Initial Flow 17  Jars 250 T-Started 8:16 am  
 (C) First Final Flow 21  Safety Joint 75 T-Open 10:28 am  
 (D) Initial Shut-In 1242  Circ Sub n/c T-Pulled 1:37 pm  
 (E) Second Initial Flow 23  Hourly Standby \_\_\_\_\_ T-Out 3:40 pm  
 (F) Second Final Flow 25  Mileage 74 RTT 114.70 Comments \_\_\_\_\_  
 (G) Final Shut-In 1233  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2000  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open 30  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Initial Shut-In 60  Day Standby \_\_\_\_\_ Total 1689.70  
 Final Flow 30  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 60 Sub Total 1689.70

Approved By \_\_\_\_\_ Our Representative Donovan Reavis

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. **60853**

4/10

Well Name & No. Morgan # 1-17 Test No. 4 Date 10-19-14  
 Company Murfin Drilling Co., Inc. Elevation 3049 KB 3044 GL  
 Address 250 N. Water STE 300 Wichita, KS, 67202  
 Co. Rep / Geo. Keith Reavis Rig Murfin #7  
 Location: Sec. 17 Twp. 4 Rge. 33 Co. Rawlins State KS

Interval Tested 4102' - 4180' Zone Tested Lansing "H-5"  
 Anchor Length 78' Drill Pipe Run 3896 Mud Wt. 9.2  
 Top Packer Depth 4097' Drill Collars Run 187 Vis 62  
 Bottom Packer Depth 4102' Wt. Pipe Run Ø WL 7.6  
 Total Depth 4180' Chlorides 2800 ppm System LCM #3  
 Blow Description IF - weak surface blow built to 3 in. in 30 min.  
ISI - NO return  
FF - weak surface blow built to 1 in. in 30 min.  
FSI - NO return

Rec	Feet of	%gas	%oil	%water	%mud
94	mud			100	

Rec Total 94 BHT 120 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2091  Test 1250 T-On Location 4:50am  
 (B) First Initial Flow 18  Jars 250 T-Started 5:34am  
 (C) First Final Flow 45  Safety Joint 75 T-Open 8:01am  
 (D) Initial Shut-In 1280  Circ Sub N/C T-Pulled 11:01am  
 (E) Second Initial Flow 49  Hourly Standby \_\_\_\_\_ T-Out 1:13pm  
 (F) Second Final Flow 72  Mileage 74 R/T 114.70 Comments \_\_\_\_\_  
 (G) Final Shut-In 1253  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2026  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Initial Open \_\_\_\_\_  Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Shut-In \_\_\_\_\_  Extra Recorder \_\_\_\_\_ Sub Total 1689.70  
 Final Flow \_\_\_\_\_  Day Standby \_\_\_\_\_ Total \_\_\_\_\_  
 Final Shut-In \_\_\_\_\_  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1689.70

Approved By \_\_\_\_\_

Our Representative Howard R. Raymond

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. 59977

Well Name & No. Morgan #1-17 Test No. 5 Date 10-20-2014  
 Company Murfin Drilling CO. Inc. Elevation 3049 KB 3044 GL  
 Address 250 N Water STE 300 Wichita KS, 67202  
 Co. Rep / Geo. Keith Reavis Rig Murfin #7  
 Location: Sec. 17 Twp. 45 Rge. 33 Co. Rawlins State KS.

Interval Tested 4380 - 4468 Zone Tested Pawnee & Cherokee  
 Anchor Length 88 Drill Pipe Run 4180 Mud Wt. 9.3  
 Top Packer Depth 4376 Drill Collars Run 187 Vis 69  
 Bottom Packer Depth 4380 Wt. Pipe Run 0 WL 7.2  
 Total Depth 4468 Chlorides 2600 ppm System LCM 3

Blow Description IF - Blow built to 1"  
ISI - NO return  
FF - NO blow  
FSI - NO return

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</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	Feet of	%gas	%oil	%water	%mud

Rec Total 15 BHT 125 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2341</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>16:00 10-20</u>
(B) First Initial Flow <u>21</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>16:30 10-20</u>
(C) First Final Flow <u>29</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>18:33 10-20</u>
(D) Initial Shut-In <u>683</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>21:32 10-20</u>
(E) Second Initial Flow <u>32</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>23:24 10-20</u>
(F) Second Final Flow <u>37</u>	<input checked="" type="checkbox"/> Mileage <u>74 RT</u> 114.70	Comments
(G) Final Shut-In <u>528</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2199</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer

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

Shale Packer  
 Extra Packer  
 Extra Recorder  
 Day Standby  
 Accessibility

Sub Total 1689.70

Total 1689.70  
 MP/DST Disc't

Approved By \_\_\_\_\_

Our Representative Robert Zedew

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.



**OPERATOR**

Company: Murfin Drilling Company  
 Address: 250 N. Water Suite 300  
 Wichita, KS 67202  
 Contact Geologist: Shauna Gunzelman  
 Contact Phone Nbr: 316-267-3241  
 Well Name: Morgan #1-17  
 Location: Sec. 17 - T4S - R33W  
 API: 15-153-21062-0000  
 Pool: \_\_\_\_\_  
 State: Kansas  
 Field: Wildcat  
 Country: USA



Scale 1:240 Imperial

Well Name: Morgan #1-17  
 Surface Location: Sec. 17 - T4S - R33W  
 Bottom Location: \_\_\_\_\_  
 API: 15-153-21062-0000  
 License Number: 30606  
 Spud Date: 10/13/2014  
 Region: Rawlins  
 Drilling Completed: 10/21/2014  
 Surface Coordinates: 660' FSL & 2310' FEL  
 Bottom Hole Coordinates: \_\_\_\_\_  
 Ground Elevation: 3044.00ft  
 K.B. Elevation: 3049.00ft  
 Logged Interval: 3680.00ft  
 Total Depth: 4686.00ft  
 Formation: Mississippian  
 Drilling Fluid Type: Chemical/Fresh Water Gel  
 Time: 4:45 PM  
 Time: 12:30 PM  
 To: 4686.00ft

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude: \_\_\_\_\_  
 Latitude: \_\_\_\_\_  
 N/S Co-ord: 660' FSL  
 E/W Co-ord: 2310' FEL

**LOGGED BY**



Company: Keith Reavis, Inc.  
 Address: 3420 22nd Street  
 Great Bend, KS 67530  
 Phone Nbr: 620-617-4091  
 Logged By: KLG #136  
 Name: Keith Reavis

**CONTRACTOR**

Contractor: Murfin Drilling Company  
 Rig #: 7  
 Rig Type: mud rotary  
 Spud Date: 10/13/2014  
 TD Date: 10/21/2014  
 Rig Release: \_\_\_\_\_  
 Time: 4:45 PM  
 Time: 12:30 PM  
 Time: \_\_\_\_\_

**ELEVATIONS**

K.B. Elevation: 3049.00ft  
 K.B. to Ground: 5.00ft  
 Ground Elevation: 3044.00ft

**NOTES**

Due to negative results of drill stem testing and electrical log analysis, the Morgan #1-17 was plugged and abandoned as a dry test.

The samples were saved and will be available for review at the Kansas Geological Survey Well Sample Library located in Wichita, KS.

Respectfully submitted,  
 Keith Reavis

**Murfin Drilling Company  
 daily drilling report**

DATE	7:00 AM DEPTH	REMARKS
10/15/2014		Geologist Keith Reavis on location @ 2215 hrs, 3674 ft, bit trip
10/16/2014	3782	back on bottom with button bit, drilling ahead, Tarkio, Topeka, Lecompton, Oread, Toronto, Lansing, show in Toronto and Lansing A warrant test, short trip, ctch, TOH and back in with tools
10/17/2014	4010	conduct and complete DST #1, tool plugged second flow, TIH w/bit, resume drilling, show in B zone warrants test, TOH w/bit and in w/tools, conduct and complete DST #2 (B & D zones), successful test, TOH w/tools
10/18/2014	4085	TIH w/bit, resume drilling, show in F warrants test, TOH/bit, conduct DST #3 (F & G), successful test, TOH w/tools, TIH w/bit, resume drilling, geologist Bruce Ard relieve Keith Reavis
10/19/2014	4180	show in H and J warrant test, TOH w/bit, geologist Keith Reavis resume duty, conduct DST #4, successful test, TIH w/bit resume drilling, lower KC, Marmaton
10/20/2014	4396	drilling ahead, Marmaton, Pawnee, Cherokee, run condemnation test on lower Pawnee and upper Cherokee, conduct and complete DST #5, successful test
10/21/2014	4556	TIH w/bit, slip drilling line, resume drilling, Cherokee, Mississippian, rathole to TD of 4686 ft, 1230 hrs, short trip, ctch, TOH for logs, conduct and complete logging operations, geologist off location 2230 hrs

**Murfin Drilling Company  
 well comparison sheet**

DRILLING WELL					COMPARISON WELL				COMPARISON WELL			
MDC - Morgan #1-17					Zenith - Walters #1				Amerada - Walters #1			
660' FSL & 2310' FEL					C NW SE				NE NE SW			
Sec 17-T4S-R33W					Sec 17-T4S-R33W				Sec 17-T4S-R33W			
3049 KB					3075 KB				3084 KB			
					Structural Relationship				Structural Relationship			
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Topeka	3784	-735	3782	-733	3812	-737	2	4	3818	-734	-1	1
Lecompton	3891	-842	3884	-835	3916	-841	-1	6	3920	-836	-6	1
Oread	3927	-878	3926	-877	3956	-881	3	4	3957	-882	4	5
Heebner	3952	-903	3950	-901	3981	-906	3	5	3984	-909	6	8
Toronto	3981	-932	3980	-931	4012	-937	5	6	4014	-939	7	8
Lansing	3992	-943	3991	-942	4022	-947	4	5	4024	-949	6	7
Lansing G	4080	-1031	4080	-1031	4112	-1037	6	6	4115	-1040	9	9
Stark	4179	-1130	4179	-1130	4210	-1135	5	5	4210	-1135	5	5
Base KC	4230	-1181	4229	-1180	4258	-1183	2	3	4260	-1185	4	5
Pawnee	4361	-1312	4362	-1313	4394	-1319	7	6	4390	-1315	3	2
Cherokee	4435	-1386	4432	-1383	nr				4460	-1385	-1	2
Mississippian	4617	-1568	4618	-1569					4610	-1535	-33	-34
Total Depth	4686	-1637	4690	-1641					4832	-1757	120	116

**Drill Stem Test #1**

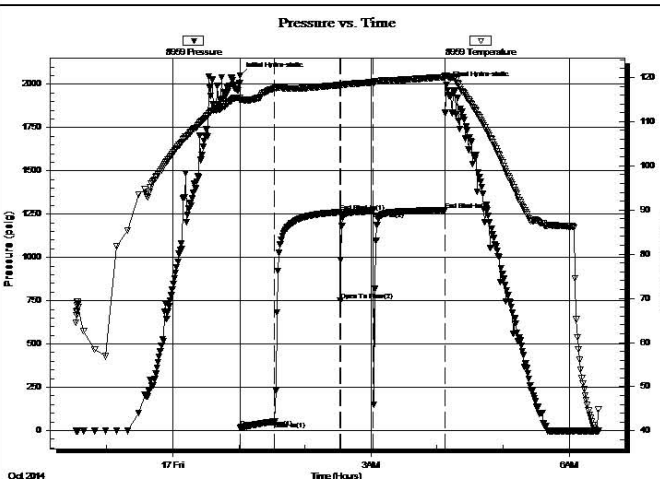
	<b>DRILL STEM TEST REPORT</b>	
	Murfin Drilling CO., Inc.	<b>17-4-33</b>
	250 N. Water STE300 Wichita, KS, 67202	<b>Morgan # 1-17</b>
ATTN: Keath Reavis	Job Ticket: 60150	DST#: 1
	Test Start: 2014.10.16 @ 22:32:00	

**GENERAL INFORMATION:**

Formation: Toronto/Lansing  
 Deviated: No Whipstock: \_\_\_\_\_ ft (KB)  
 Time Tool Opened: 01:01:30  
 Time Test Ended: 06:26:30  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Donovan Baumann  
 Unit No: 49  
 Interval: 3950.00 ft (KB) To 4010.00 ft (KB) (TVD)  
 Total Depth: 4010.00 ft (KB) (TVD)  
 Reference Elevations: 3049.00 ft (KB)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Good  
 KB to GR/CF: 5.00 ft

Serial #: 8959 Outside  
 Press@RunDepth: 1267.15 psig @ 3951.00 ft (KB)  
 Capacity: 8000.00 psig  
 Start Date: 2014.10.16  
 End Date: 2014.10.17  
 Last Calib.: 2014.10.17  
 Start Time: 22:32:05  
 End Time: 06:26:29  
 Time On Btm: 2014.10.17 @ 01:01:00  
 Time Off Btm: 2014.10.17 @ 04:08:30

TEST COMMENT: 30 - IF - Weak surface blow built to 3in. in 30 min.  
 60 - ISI - No return  
 30 - FSI - No blow tool plugged  
 60 - FSI - No return



**PRESSURE SUMMARY**

Time (Mn.)	Pressure (psig)	Temp (deg F)	Annotation
0	2050.79	115.39	Initial Hydro-static
1	16.49	114.75	Open To Flow (1)
32	53.58	117.47	Shut-In(1)
91	1261.05	118.25	End Shut-In(1)
91	749.81	117.94	Open To Flow (2)
121	1267.15	118.88	Shut-In(2)
186	1272.02	120.07	End Shut-In(2)
188	1996.42	120.43	Final Hydro-static

**Recovery**

Length (ft)	Description	Volume (bbl)
73.00	Mid - 100M	0.36

**Gas Rates**

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





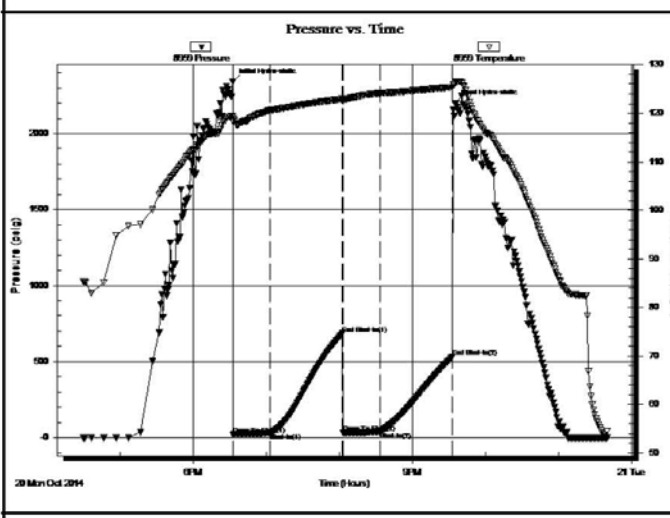


**GENERAL INFORMATION:**

Formation: **Pawnee & Cherokee**  
 Deviated: No Whipstock ft (KB)  
 Time Tool Opened: 18:33:00  
 Time Test Ended: 23:39:30  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Robert Zdrozow  
 Unit No: 49  
 Interval: **4380.00 ft (KB) To 4468.00 ft (KB) (TVD)**  
 Total Depth: 4468.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches-Hole Condition: Fair  
 Reference Elevations: 3049.00 ft (KB)  
 3044.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 8959 Outside**  
 Press@RunDepth: 37.13 psig @ 4381.00 ft (KB)  
 Start Date: 2014.10.20 End Date: 2014.10.20  
 Start Time: 16:30:05 End Time: 23:39:29  
 Capacity: 8000.00 psig  
 Last Calib.: 2014.10.20  
 Time On Btm: 2014.10.20 @ 18:32:30  
 Time Off Btm: 2014.10.20 @ 21:35:00

**TEST COMMENT:** 30-IF- Blow built to 1"  
 60-ISI- No return  
 30-FF- No blow  
 60-FSI- No return



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2341.42	119.43	Initial Hydro-static
1	21.24	118.28	Open To Flow (1)
31	29.81	120.63	Shut-In(1)
90	683.53	122.95	End Shut-In(1)
91	32.04	122.53	Open To Flow (2)
121	37.13	124.11	Shut-In(2)
180	528.27	125.39	End Shut-In(2)
183	2199.34	126.20	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
15.00	mud 100%M	0.07

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

**ROCK TYPES**

Cht	Lmst fw<7	shale, gry	Shcol
Cht vari	Lmst fw>7	Carbon Sh	Ss
sdy lmst	shale, gm	shale, red	Siltst

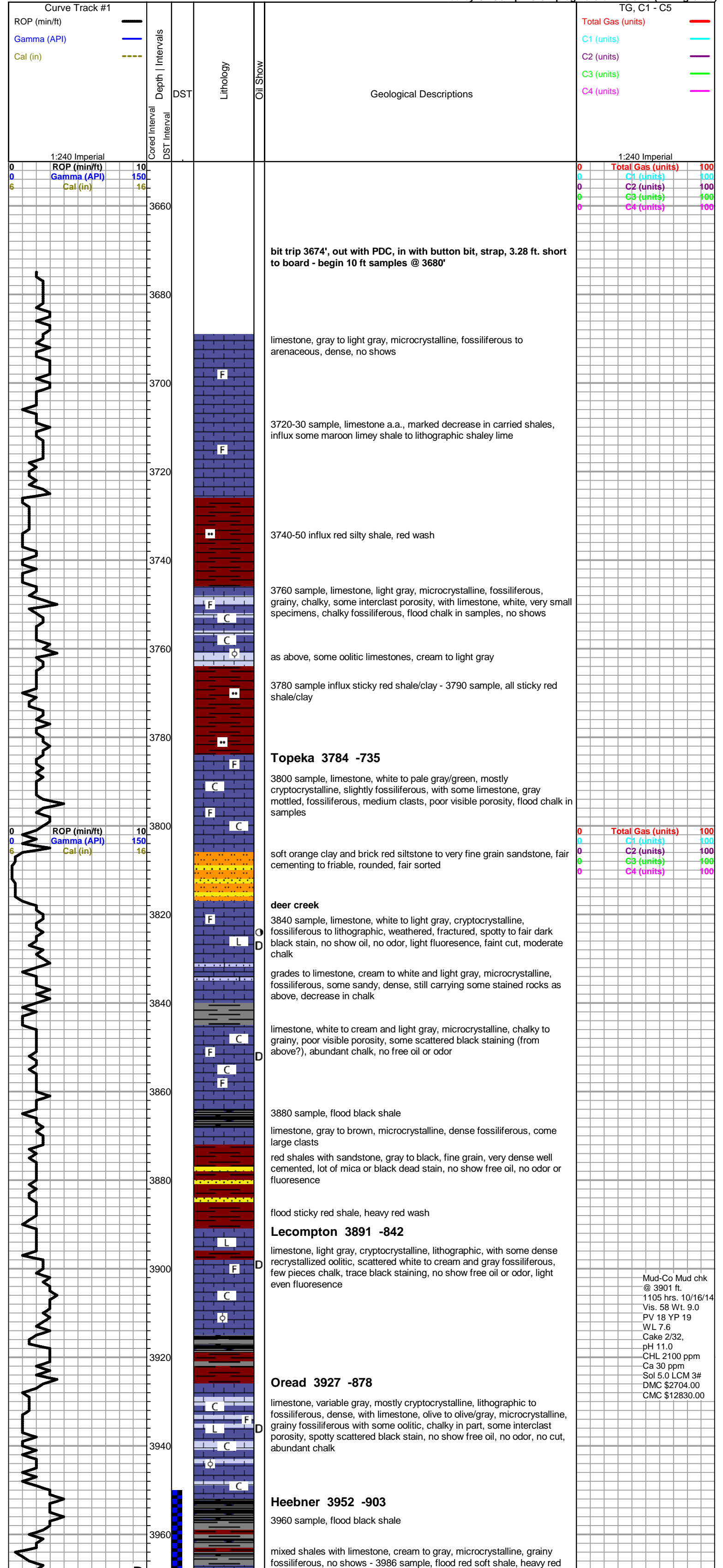
**ACCESSORIES**

<b>MINERAL</b>	<b>FOSSIL</b>	<b>STRINGER</b>	<b>TEXTURE</b>
▲ Chert, dark	∩ Bioclastic or Fragmental	■ Sandstone	C Chalky
✕ Mineral Crystals	F Fossils < 20%	■ Siltstone	L Lithogr
P Pyrite	◇ Oolite		
• Silty			
△ Chert White			

**OTHER SYMBOLS**

<b>Oil Show</b>	<b>DST</b>
● Good Show	■ DST Int
● Fair Show	■ DST alt
● Poor Show	■ Core
○ Spotted or Trace	■ tail pipe
○ Questionable Stn	
■ Dead Oil Stn	
■ Fluorescence	
* Gas	

Printed by GEOstrip VC Striplog version 4.0.8.15 (www.grsi.ca)



sand, glauconitic and micaceous

**Toronto 3981 -932**

limestone, white to light gray, oolitic to fossiliferous, chalky in part, slight pin-point porosity, most specimens with spotty but saturated black to dark brown stain, free oil on break, no odor, good green fluorescence, slight cut

**Lansing 3993 -943**

limestone, white to light gray, oolitic to sub oomoldic, chalky in part, mostly dense, grading to cryptocrystalline fossiliferous to lithographic, some calcite seams, trace stain in seams, some clingy tarry oil and stain, no free oil or odor, very slow streaming cut, abundant rose to orange fossiliferous/oolitic cherts in lower section

4020 sample, red, maroon & gray shales, 4034 sample same, heavy with limestone described below:

**4034 sample** - limestone, white to light gray, microcrystalline, grainy bioclastic to fossiliferous, chalky in part, some visible pinpoint porosity, spotty black to brown saturated stain, no show free oil, sheen on break, no odor, fair green fluorescence, very slight cut - **30 min sample** - limestone, light gray, cryptocrystalline, recrystallized fossiliferous, some good solution vugs with dark stain, sheen in cup and tray, slight show free oil, no odor, light even fluorescence, excellent cut

4034 60 min a.a. - 4040 sample LS as in cfs above, increasing red shale

4050 sample - limestone, light gray, cryptocrystalline, fossiliferous, dense, with flood white chalk, no shows

5054 30 min sample a.a.

limestone, light gray, cryptocrystalline, slightly fossiliferous, some slight surface etching, scattered spotty black staining, no show free oil, no odor, fair fluorescence, very slight cut

limestone, cream to light gray, micro-cryptocrystalline, fossiliferous to oolitic, some fair small vugs, staining in vugs, fair show free oil, no odor, good green fluorescence, good but slow cut

limestone, cream, microcrystalline, arenaceous, some oolitic, abundant secondary calcite crystals, trace pyrite, poor visible porosity, some scattered black stain, no free oil, no odor

limestone, lt gry-crm to gry-wht, dse, sli chlky, xtaln ,sli rextalized, sli fos, pvls por, ns, ? trc dos

limestone, same aa, sli cherty, lt gry-crm/org, ns noted

blk carb sh

limestone, dk brn-gry, vdse, sli rextalized to fxtaln, sli fos, pvls por, ns noted

limestone, lt gry-crm, dse, sli chlky, sli rextalized, trc fos, pscatt vis por, ? trc stn, nsfo noted

limestone, lt crm-wht, dse, chlky, xtaln to sli rextalized, sli fos, pvls por, few spls w/dk brn-blk stn & hvly tarry oil, trc fo w/brkn

limestone, gry-lt gry, dse, xtaln, sli sdy, pvls por, ns noted

limestone, lt gry-crm, dse, sli chlky, rextalized, fos, sli ooc, scatt pp & fos/occ por, blk-dk brn stn & hvly fo vis, some blk asphaltic stn, sli incr blk-dk brn hvly fo w/brkn

limestone, lt crm-wht, dse, sli chlky, sli rextalized, sli fos/sm ooc, pscatt por, sli chert, org/beige, some wht chl, ns noted

**Stark 4179 -1130**

mostly red shale, silty, with black and gray shale

limestone, light gray to cream, mostly cryptocrystalline, fossiliferous, chalky in part, poor visible porosity, no shows

limestone, as above, some cream chalky bioclastic, one piece in samples fair black stain (uphole sluff?), no other shows noted

**Base KC 4230 -1181**

limestone, mixed, gray to gray green, cream and white, micro-cryptocrystalline, fossiliferous, some sandy, chalky in part, poor visible porosity, some chalk in samples, no shows

as above, some maroon mottled limestone and limey shale, poor samples, mostly shales in samples

limestone, light gray to cream, microcrystalline, fossiliferous to bioclastic, grainy, chalky, some arenaceous, some scattered interclast pinpoint porosity, some friable, no shows

some black shales

**Pawnee 4361 -1312**

limestone, light gray to cream, micro-cryptocrystalline, lithographic to recrystallized fossiliferous, some flattened oolitic, scattered secondary calcite, poor visible porosity, barren

shale, black carbonaceous

limestone, brown mottled fossiliferous, dense, no shows

limestone, gray mottled, microcrystalline, fossiliferous, chalky to very chalky, poor visible porosity, chalky wash in samples, no shows, poor fluorescence

shale, black carbonaceous

limestone, light gray, mottled, very chalky, fossiliferous, dense to soft, poor visible porosity, no shows

**Cherokee 4435 -1386**

limestone, light gray to cream, microcrystalline, fossiliferous, some bioclastic, trace sandy, slight chalky, trace sandy soft limestone, no shows, abundant chalk in samples, abundant black and brick red shales, trace gray chert

cfs - limestone, shale and chalk a.a. with flood maroon and olive shales, maroon sandy limestone, no shows

mixed shale and siltstones

4500 sample, some limestone, gray to cream, fossiliferous, no visible porosity or shows, still mostly shale in samples

4520-30 samples, mixed shale and siltstone, abundant sandstone, maroon, very fine grain, rounded to sub-angular, fair to poor sorting, well cemented, no shows

4550 sample, a.a. with influx limestone, light gray-cream, cryptocrystalline, dense fossiliferous, no shows

4560-70 sample, shaley conglomerate, mixed shales, sands and some weathered white to opaque gray chert, large quartz grains, heavy red wash

4580 sample, a.a. influx more chert

4580 sample, a.a. influx more chert

4580 sample, a.a. influx more chert

4580 sample, a.a. influx more chert

4580 sample, a.a. influx more chert

4580 sample, a.a. influx more chert

4580 sample, a.a. influx more chert

4580 sample, a.a. influx more chert

4580 sample, a.a. influx more chert

4580 sample, a.a. influx more chert

4580 sample, a.a. influx more chert

4580 sample, a.a. influx more chert

4580 sample, a.a. influx more chert

4580 sample, a.a. influx more chert

4580 sample, a.a. influx more chert

4580 sample, a.a. influx more chert

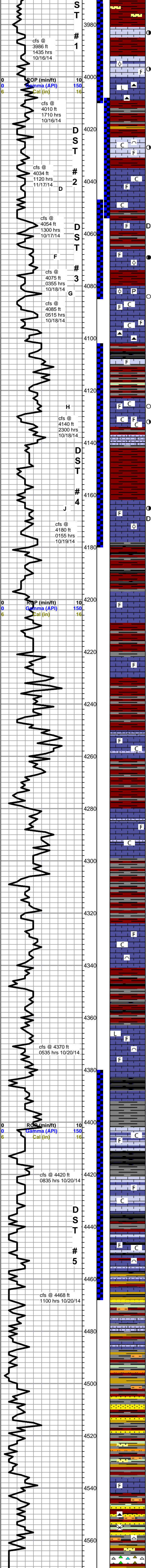
4580 sample, a.a. influx more chert

4580 sample, a.a. influx more chert

4580 sample, a.a. influx more chert

4580 sample, a.a. influx more chert

4580 sample, a.a. influx more chert



Total Gas (units) 100  
C1 (units) 100  
C2 (units) 100  
C3 (units) 100  
C4 (units) 100

Morgan Mud check @ 4037 ft. 1205 hrs. 10/17/14 Vis. 62 Wt. 9.0 PV 22 YP 20 WL 7.6 Cake 2/32, pH 10.5 CHL 2600 ppm Ca 30 ppm Sol 5.0 LCM 4# DMC \$0.00 CMC \$12830.00

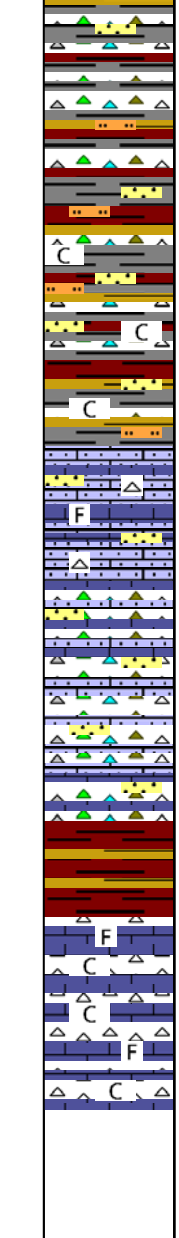
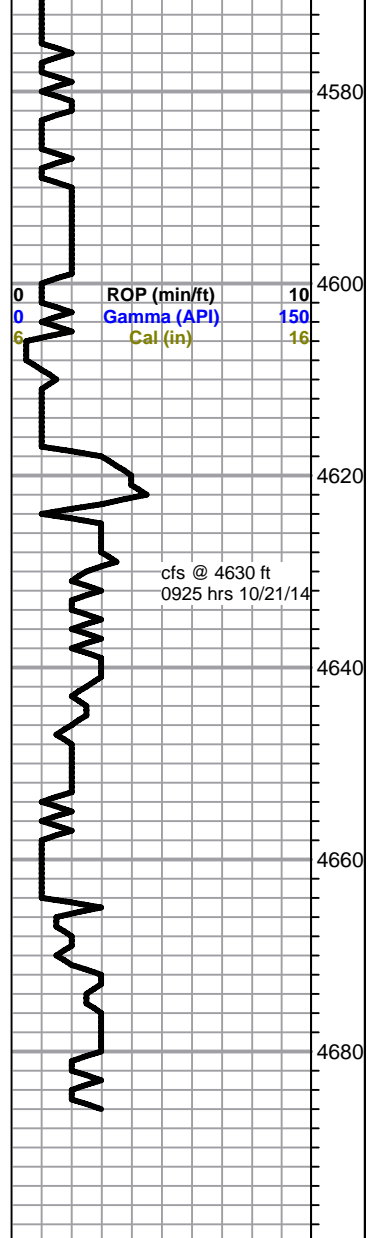
Morgan Mud check @ 4085 ft 1215 hrs 10/18/14 Vis. 62 Wt. 9.2 PV 19 YP 19 WL 7.6 Cake 2/32 pH 10.5 CHL 2800 ppm Ca 20 ppm Sol 6.4 LCM 3# DMC \$0.00 CMC \$12830.00

Well supervised by geologist Bruce Ard from 4085 ft - 4180 ft

Morgan Mud check @ 4180 ft 1145 hrs 10/19/14 Vis. 54 Wt. 9.3 PV 17 YP 18 WL 6.8 Cake 2/32 pH 11.5 CHL 2800 ppm Ca 20 ppm Sol 7.1 LCM 3# DMC \$2485.00 CMC \$15315.00

Morgan Mud check @ 4406 ft 0750 hrs 10/20/14 Vis. 69 Wt. 9.3 PV 20 YP 22 WL 7.2 Cake 2/32 pH 11.0 CHL 2600 ppm Ca 40 ppm Sol 7.1 LCM 3# DMC \$0.00 CMC \$15315.00

Morgan Mud check @ 4578 ft



4590-4600 sample, increasing cherts, decreasing shales, fresh boney white, some semi-tripolitic, with gray opaque and some yellow, mostly fresh, sharp

4610-20 sample, decrease chert, increase shales, flood chalk in samples

**Mississippian 4617 -1568**  
limestone, white to light gray, some pale yellow and maroon, microcrystalline, fossiliferous, sandy to cherty, with some very dense quartz sandstone, fine grain, well cemented, mixed cherts, sharp, fresh, fossiliferous, no shows,

as above, decreasing limestone, increasing chert, still abundant sandstone

as above, flood red, maroon and olive shales in 4670 sample

limestone, light gray, some yellow tint, micro-cryptocrystalline, fossiliferous, sandy, dense, with chert, white to frosted, fresh, sharp, fossiliferous, no shows, flood chalk in samples

Rotary TD 4686 ft @ 1230 hrs 10/21/14  
Pioneer Wireline TD 4690 ft.  
complete logging operations @ 2300 hrs 10/21/14

0	Total Gas (units)	100
0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100



# ALLIED OIL & GAS SERVICES, LLC 21150 063773

Federal Tax I.D. # 20-3651475

REMIT TO P.O. BOX 93999  
SOUTHLAKE, TEXAS 76092

SERVICE POINT:  
Colby, Ky

DATE <u>10/13/14</u>	SEC. <u>17</u>	TWP. <u>4</u>	RANGE <u>33</u>	CALLED OUT	ON LOCATION	JOB START <u>10:30pm</u>	JOB FINISH <u>11:00pm</u>
LEASE <u>Marco</u>		WELL # <u>1-17</u>	LOCATION <u>Colby N 70 Rowland Ch</u>		<u>IE</u>	COUNTY <u>Martin</u>	STATE <u>Ky</u>
OLD OR NEW (Circle one)							

CONTRACTOR Marfin 7

TYPE OF JOB Surface

HOLE SIZE 12 1/4 T.D. 220

CASING SIZE 8 5/8 DEPTH 220

TUBING SIZE DEPTH

DRILL PIPE DEPTH

TOOL DEPTH

PRES. MAX MINIMUM

MEAS. LINE SHOE JOINT

CEMENT LEFT IN CSG. 15'

PERFS.

DISPLACEMENT 13.01

OWNER Stone

CEMENT AMOUNT ORDERED 225 Com 350 CC

EQUIPMENT

PUMP TRUCK CEMENTER Alan Ryan

# 880-281 HELPER Kevin Ryan

BULK TRUCK DRIVER Marco (TWS)

# 801 DRIVER

BULK TRUCK DRIVER

COMMON	<u>225</u>	@	<u>87.90</u>	<u>4027.50</u>
POZMIX		@		
GEL		@		
CHLORIDE	<u>635</u>	@	<u>7.10</u>	<u>698.50</u>
ASC		@		
<u>Material total</u>				
<u>(1634.10/3520)</u>				
HANDLING	<u>236</u>	@	<u>2.48</u>	<u>585.92</u>
MILEAGE	<u>25</u>	@	<u>12.14</u>	<u>310.12</u>
TOTAL				

REMARKS:  
Run Log, Circulate, Mix Cement, Displace Cement, Shut in

Cement did Circulate 550 lbs  
Top it  
Thank You  
Alamy, Marco

CHARGE TO: Marfin Drilling

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

SERVICE

DEPTH OF JOB \_\_\_\_\_

PUMP TRUCK CHARGE \_\_\_\_\_ 1512.25

EXTRA FOOTAGE @ \_\_\_\_\_

MILEAGE 40 @ 7.70 308.00

MANIFOLD @ \_\_\_\_\_ 225

Water truck 50 @ 4.40 220.00

TOTAL 3,356.29

(1174.70/3520)

PLUG & FLOAT EQUIPMENT

_____	@	_____
_____	@	_____
_____	@	_____
_____	@	_____
_____	@	_____
TOTAL _____		

To: Allied Oil & Gas Services, LLC.  
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME Fred Wilton

SIGNATURE [Signature]

SALES TAX (If Any) \_\_\_\_\_

TOTAL CHARGES 8,082.29

DISCOUNT 2,828.80 (5%) IF PAID IN 30 DAYS

5,253.48 Net.

# ALLIED OIL & GAS SERVICES, LLC 064275

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999  
SOUTHLAKE, TEXAS 76092

SERVICE POINT: colley

DATE <u>10-22-14</u>	SEC <u>77</u>	TWP. <u>4</u>	RANGE <u>33</u>	CALLED OUT	ON LOCATION <u>2:00 PM</u>	JOB START <u>5:30 AM</u>	JOB FINISH <u>1:30 PM</u>
LEASE <u>morgan</u>	WELL# <u>1-17</u>	LOCATION <u>Colley 22N 16 15</u>			COUNTY <u>Howlin</u>	STATE <u>TX</u>	
OLD OR <u>(NEW)</u> (Circle one)				<u>WIND</u>			

CONTRACTOR <u>MucFin 7</u>	OWNER <u>same</u>
TYPE OF JOB <u>PTA</u>	
HOLE SIZE <u>2 7/8</u>	T.D. <u>4686'</u>
CASING SIZE	DEPTH
TUBING SIZE	DEPTH
DRILL PIPE <u>4 1/2</u>	DEPTH <u>2780'</u>
TOOL	DEPTH
PRES. MAX	MINIMUM
MEAS. LINE	SHOE JOINT
CEMENT LEFT IN CSG.	
PERFS.	
DISPLACEMENT	

CEMENT	
AMOUNT ORDERED <u>255 sls 60/40 48092.</u>	
<u>14 Flo-seal</u>	
COMMON	@
POZMIX	@
GEL	@
CHLORIDE	@
ASC	@
	@
<u>60/40 48092 255 sls @ 18.92</u>	<u>4824.60</u>
	@
	@
<u>Flo-seal 64# @ 2.97</u>	<u>190.08</u>
<u>Material Total</u>	<u>5014.68</u>
<u>(1753.14 / 35%)</u>	
	@
	@
HANDLING <u>223.87 cu/ft @ 2.48</u>	<u>679.19</u>
MILEAGE <u>2.25 to 70/mile 11.43 to 15 716.2</u>	

**EQUIPMENT**

PUMP TRUCK CEMENTER <u>Andrew Forstund</u>
# <u>423-281</u> HELPER <u>Brandon Wilkinson</u>
BULK TRUCK
# <u>818</u> DRIVER <u>Juan (TWS)</u>
BULK TRUCK
# DRIVER

**REMARKS:**

<u>50 sls @ 2780'</u>
<u>100 sls @ 1945'</u>
<u>50 sls @ 270'</u>
<u>10 sls @ 40'</u>
<u>15 sls mouse hole</u>
<u>30 sls Rat hole</u>

*thank you*

CHARGE TO: MucFin

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

To: Allied Oil & Gas Services, LLC.  
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME FRED W. H. H. H.

SIGNATURE [Signature]

**TOTAL** \_\_\_\_\_

**SERVICE**

DEPTH OF JOB <u>2780'</u>	
PUMP TRUCK CHARGE	<u>2483.50</u>
EXTRA FOOTAGE	@
MILEAGE <u>50 miles @ 7.70</u>	<u>385.00</u>
MANIFOLD	@
<u>Light vehicle @ 4.40</u>	<u>220.00</u>
	@
<u>(1866.75 / 35%)</u>	
<b>TOTAL</b>	<u>5,339.31</u>

**PLUG & FLOAT EQUIPMENT**

<u>8 1/8</u>	
<u>1 Dry hole plug @</u>	<u>110.00</u>
	@
	@
	@
	@
<b>TOTAL</b>	<u>110.00</u>

SALES TAX (If Any) \_\_\_\_\_

TOTAL CHARGES 10,143.99

DISCOUNT 3,623.89 (35%) IF PAID IN 30 DAYS

6,840.09 Net.

Morgan #1-17  
 Daily Drilling Report  
 Page Two

- 10/19/14 Depth 4180'. Cut 95'. DT: ¼hr fill premix. CT: 17 ¼ hrs. Dev.: ¾° @ 4180'. **DST #3 4047-4085 (LKC F-G):** 30-60-30-60. IF: wk surf blw built to ¾" in 30mins. Rec.: 15'OSM. HP: 2094-2000. FP: 17/21, 23/25. SIP: 1242-1233. BHT: 117°. **LKC H:** ls, dns, chalky, xln - sl rextlzed, sl foss, pr vis por, few pcs w/dk brn-blk stn & hvy tarry oil. **LKC J:** ls, dns, sl chalky, rextlzed, foss, sl ooc, scatt pp & foss/occ por, blk-dk brn stn & hvy fo vis, some blk asphaltic stn, sl incr blk-dk brn hvy fo. **DST #4 4102-4180 (LKC H-J):**
- 10/20/14 Depth 4395'. Cut 215'. DT: None. CT: 10hrs. Dev.: None. **DST #4 4102-4180 (LKC H-J):** 30-60-30-60. IF: wk surf blw built to 3" in 30mins. FF: wk surf blw built to 1" in 30mins. Rec.: 94'M. HP: 2091-2026. FP: 18/45, 49/72. SIP: 1280-1253. BHT: 120°.
- 10/21/14 Depth 4555'. Cut 160'. DT: 1½ hrs cut drlg line. CT: 16hrs. Dev.: ¾° @ 4468'. **LPaw:** lst, micro xln, foss, chalky, pr vis por, NS. **Ft Sc:** lst, very chalky, foss, dns, pr vis por, NS. **Verdigris:** lst, micro xln, foss, tr sand, sl chalky, NS. **DST #5 4380-4468 (LPaw - Verdigris):** 30-60-30-60. IF: Blw built to 1". FF: no blw. Rec.: 15'M. HP: 2341-2199. FP: 21/30, 32/37. SIP: 684-528. BHT: 125°.
- 10/22/14 RTD: 4686'. Cut 131'. DT: None. CT: 19½ hrs. Dev.: 1° @ 4686'. HC @ 12:30PM 10/21. Pioneer logged 6:30PM – 11:00PM 10/21. LTD: 4690'. Allied Plugged hole, 3:15AM-6:30AM 10/22, as follows using 60/40Poz, 4%Gel, ¼#Flo seal, 50sxs @ 2780', 100sxs @ 1945', 50sxs @ 270', 10sxs @ 40', 30sxs RH, 15sxs MH. Orders by Bruce Rodie KCC Hays.
- 10/23/14 RTD: 4686'. CT: 3½ hrs. RR @ 10:30AM 10/22/14. FINAL REPORT

Morgan #1-17 660' FSL 2310'FEL Sec. 17-4S-33W 3049' KB							Walters #1 Beren Corp Sec.17-4S-33W 3084' KB	
Formation	Sample top	Datum	Ref	Log tops	Datum	Ref	Log tops	Datum
Anhydrite	2764	+285	-5	2765	+284	-6	2794	+290
B/Anhydrite	2798	+251	-1	2800	+249	-3	2832	+252
Topeka	3787	-738	-4	3781	-732	+2	3818	-734
Heebner	3952	-903	-3	3951	-902	-2	3984	-900
Lansing	3993	-944	-4	3990	-941	-1	4024	-940
Stark	4179	-1130	-4	4179	-1130	-4	4210	-1126
BKC	4230	-1181	-5	4230	-1181	-5	4260	-1176
Pawnee	4361	-1312	-6	4361	-1312	-6	4390	-1306
Cherokee	4435	-1386	-10	4433	-1384	-8	4460	-1376
Mississippi	4617	-1568	-42	4618	-1569	-43	4610	-1526
RTD	4686						4830	
LTD				4690				