

Confidentiality Requested:

Yes  No

**KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION**

Form ACO-1

January 2018

**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

Gas  DH  EOR

OG  GSW

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 EOR  Conv. to SWD

Plug Back  Liner  Conv. to GSW  Conv. to Producer

Commingled Permit #: \_\_\_\_\_

Dual Completion Permit #: \_\_\_\_\_

SWD Permit #: \_\_\_\_\_

EOR Permit #: \_\_\_\_\_

GSW Permit #: \_\_\_\_\_

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: \_\_\_\_\_

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  Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

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

1. Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*
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)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____			
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	STEEPLES 1-13
Doc ID	1463722

All Electric Logs Run

DIL
DUCP
MEL
BHCS







# GEOLOGISTS' REPORT

OPERATOR **MURFIN DRILLING COMPANY, INC.**  
LEASE **STEEPLES #1-13**

LOCATION **660 FNL & 2290 FWL**  
SEC **13** TWPSP **9S** RGE **20W**

COUNTY **ROOKS** STATE **KANSAS**

FIELD **WILDCAT**

CONTRACTOR **Murfin Drilling Company**  
COMMENCED **31 May 2019** COMPLETED **8 June 2019**

MUD DISPLACED **2809** MUD TYPE **Chemical**  
DRILLING TIME KEPT FROM **3860** TO **3725**  
SAMPLES SAVED FROM **3860** TO **3725**  
SAMPLES EXAMINED FROM **3860** TO **3725**

GEOLOGICAL SUPERVISION FROM **3829** TO **3725**  
GEOLOGIST ON WELL **Paul Guizelman**

FORMATION NAME LOG TOP DATUM SAMPLE TOP DATUM

Stone Corral 1532 +557 1544 +546  
Base/Anhydrite 1564 +526 1574 +516  
Topeka 3068 -978 3069 -979  
Heubner Shale 3273 -1183 3273 -1183  
Lansing 3312 -1222 3313 -1223  
Stark Shale 3496 -1406 3496 -1406  
Base/Kansas City 3528 -1438 3528 -1438  
Arbuckle 3612 -1522 3622 -1532

Total Depth 3725 -1635 3725 -1635

Dial Induction  
Micro Resistivity  
Comp. Neutron Density

ELEVATIONS  
KB **2990 Ft.**  
CL **2085 Ft.**

ALL MEASUREMENTS FROM K.B.

CASING RECORD  
Conductor None  
Surface **8 5/8" @ 303'**  
Production None

ELECTRICAL SURVEYS  
**Pioneer Oilfield Services**  
Comp. Neutron Density



DRILL TIME (MIN/FT)	DEPTH	LITHOLOGY	REMARKS
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**REMARKS**  
API 15-163-24393-00-00  
Drilling Fluids: Morgan Mud, Inc. (David Lines, engineer)  
Drill Stem Testing: Triobite Testing, Inc. (Spencer Staab, tester)  
Gas Trailer: No Gas Trailer  
Reserve Pit Chlorides: 12,500 ppm.

**STONE CORRAL**  
1532 (+558)

**BASE/ANHYDRITE**  
1564 (+526)

1.:35 PM, 3 June 2019

**TOPEKA**  
3069 (-979)

**DEER CREEK**  
3120 (1030)

**LECOMPTON**  
3180 (-1090)

**OREAD**  
3221 (-1131)

Morgan Mud check @ 3358'  
Vis: 58, Wt: 9.1, WL: 8.0  
Chlor: 5,600, LCM: 2#

Morgan Mud check @ 3380'  
Vis: 46, Wt: 9.1, WL: 8.8  
Chlor: 8,000, LCM: 2#

**HEEBNER SHALE**  
3273 (-1183)

**TORONTO**  
3295 (-1205)

**LANSING**  
3312 (-1223)

DST #1 3272 - 3358  
30"-60"-60"-90"  
IF: Strong blow, BOB in 24 min.  
FF: Strong blow, BOB in 22 min.  
No Return blow in Shut-in  
RECOVERY:  
60 Ft. Gas In Pipe  
5 Ft. Clean Oil (33 grav. API)  
195 Ft. Watery Mud w/Oil Show  
300 Ft. Muddy Water  
(48,000 ppm chlorides)  
IHP: 1651 psi. FHP: 1602 psi.  
IFP: 51-173 psi. ISIP: 962 psi.  
FFP: 24-30 psi. FSIP: 939 psi.  
BHT: 109 deg. F.

DST #2 3356 - 3380  
30"-60"-60"-90"  
IF: Weak blow, incr to 1/4 inch.  
FF: No Blow  
RECOVERY:  
15 Ft. Clean Oil (35 grav. API)  
85 Ft. Watery Mud w/Oil Show  
890 Ft. Water  
(55,000 ppm chlorides)  
IHP: 1661 psi. FHP: 1608 psi.  
IFP: 20-25 psi. ISIP: 962 psi.  
FFP: 18-19 psi. FSIP: 55 PSI.  
BHT: 104 deg. F.

DST #3 3377 - 3398  
30"-60"-60"-90"  
IF: Strong blow BOB in 4 min.  
FF: Strong blow BOB in 8 min.  
No return blow in Shut-in  
RECOVERY:  
15 Ft. Heavy Oil Cut Mud  
(25% Oil)  
IHP: 1691 psi. FHP: 1613 psi.  
IFP: 20-25 psi. ISIP: 956 psi.  
FFP: 24-30 psi. FSIP: 590 psi.  
BHT: 104 deg. F.

**STARK SHALE**  
3496 (-1406)

Morgan Mud check @ 3492'  
Vis: 50, Wt: 9.0, WL: 2#  
Chlor: 6,500 ppm, LCM: 2#

**BASE/KANSAS CITY**  
3528 (-1438)

DST #4 3432 - 3492  
30"-60"-60"-90"  
IF: Weak 1/4 inch blow  
FF: No Blow  
RECOVERY:  
15 Ft. Heavy Oil Cut Mud  
(25% Oil)  
IHP: 1691 psi. FHP: 1613 psi.  
IFP: 20-25 psi. ISIP: 956 psi.  
FFP: 24-30 psi. FSIP: 590 psi.  
BHT: 104 deg. F.

**ARBUCKLE**  
3622 (-1532)  
\*ELOG 3612 (-1522)

DST #5 3545 - 3636  
30"-60"-60"-90"  
IF: Weak blow, incr. to 1/2 inch.  
FF: No blow  
RECOVERY:  
2 Ft. Clean Oil  
10 Ft. Slightly Oil Cut Mud  
(5% Oil, 95% Mud)  
IHP: 1794 psi. FHP: 1709 psi.  
IFP: 23-33 psi. ISIP: 1173 psi.  
FFP: 36-44 psi. FSIP: 525 psi.  
BHT: 107 deg. F.

Morgan Mud check @ 3684'  
Vis: 44, Wt: 9.1, WL: 10.0  
Chlor: 7,200 ppm, LCM: 2#

**TOTAL DEPTH**  
3725 (-1635)

1:17 PM, 8 June 2019

DST #6 3636 - 3646  
30"-60"-60"-90"  
IF: Weak blow, incr to 2 1/2 inches  
FF: Weak blow, incr to 2 inches  
RECOVERY:  
40 Ft. Watery Mud (10% Water)  
90 Ft. Watery Mud (40% Water)  
IHP: 1829 psi. FHP: 1750 psi.  
IFP: 23-42 psi. ISIP: 1173 psi.  
FFP: 47-88 psi. FSIP: 1172 psi.  
BHT: 112 deg. F.

Operator: **MURFIN DRILLING COMPANY, INC.**

Lease: **STEEPLES #1-13**

Location: **660 FNL & 2290 FWL** SEC. **13** TWPSP **9S** RGE **20W**

County: **ROOKS** State: **KANSAS**





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc**

250 N Water STE 300  
Wichita KS 67202+1216

ATTN: Paul Gunzelman

### **Steeples #1-13**

#### **13-9S-20W Rooks KS**

Start Date: 2019.06.04 @ 14:25:00

End Date: 2019.06.04 @ 23:11:45

Job Ticket #: 65124                      DST #: 1

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

Printed: 2019.06.10 @ 08:57:12



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc

**13-9S-20W Rooks KS**

250 N Water STE 300  
Wichita KS 67202+1216

**Steeple #1-13**

Job Ticket: 65124

**DST#: 1**

ATTN: Paul Gunzelman

Test Start: 2019.06.04 @ 14:25:00

## GENERAL INFORMATION:

Formation: **Toronto - LKC B**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:20:15

Time Test Ended: 23:11:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Spencer J Staab

Unit No: 84

**Interval: 3272.00 ft (KB) To 3358.00 ft (KB) (TVD)**

Reference Elevations: 2090.00 ft (KB)

Total Depth: 3358.00 ft (KB) (TVD)

2085.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8934**

**Inside**

Press@RunDepth: 284.11 psig @ 3275.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.06.04

End Date:

2019.06.04

Last Calib.:

2019.06.04

Start Time: 14:25:15

End Time:

23:11:45

Time On Btm:

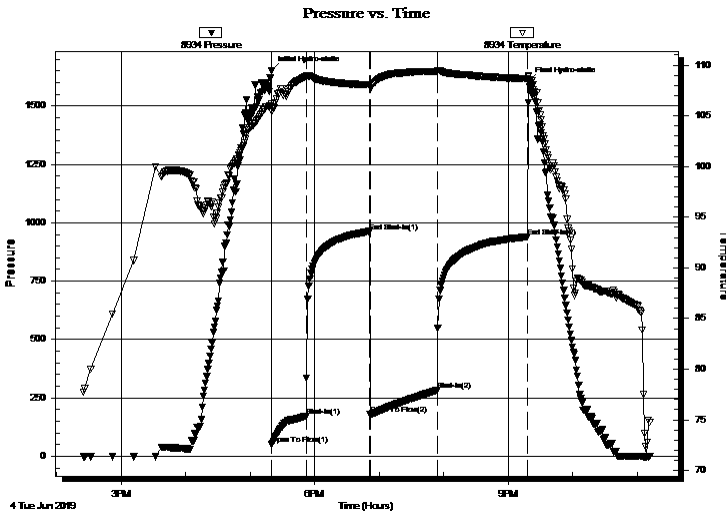
2019.06.04 @ 17:20:00

Time Off Btm:

2019.06.04 @ 21:19:00

**TEST COMMENT:** 30-IF-BOB 24 mins; Built to 26"  
60-ISI-No Return  
60-FF-BOB 22 mins; Built to 61"  
90-FSI-No Return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1651.58	106.23	Initial Hydro-static
1	51.84	105.45	Open To Flow (1)
33	173.54	108.88	Shut-In(1)
92	962.31	108.06	End Shut-In(1)
92	178.44	107.76	Open To Flow (2)
155	284.11	109.38	Shut-In(2)
239	939.78	108.65	End Shut-In(2)
239	1602.38	108.87	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
300.00	MCW 10%M 90%W	2.53
195.00	WM 40%W 60%M w /scum of oil	2.76
5.00	GO 10%G 90%O	0.07
0.00	60'GIP	0.00

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Company Inc

**13-9S-20W Rooks KS**

250 N Water STE 300  
Wichita KS 67202+1216

**Steeples #1-13**

Job Ticket: 65124

**DST#: 1**

ATTN: Paul Gunzelman

Test Start: 2019.06.04 @ 14:25:00

## Tool Information

Drill Pipe:	Length: 3066.00 ft	Diameter: 3.82 inches	Volume: 43.46 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose:	51000.00 lb
			<u>Total Volume:</u>	Tool Chased	ft
				String Weight: Initial	43000.00 lb
Drill Pipe Above KB:	9.00 ft			Final	46000.00 lb
Depth to Top Packer:	3272.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	86.00 ft				
Tool Length:	115.00 ft				
Number of Packers:	1	Diameter:	6.75 inches		
Tool Comments:					

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3244.00	
Shut In Tool	5.00			3249.00	
Hydraulic tool	5.00			3254.00	
Jars	5.00			3259.00	
Safety Joint	3.00			3262.00	
Packer	5.00			3267.00	29.00 Bottom Of Top Packer
Packer	5.00			3272.00	
Stubb	1.00			3273.00	
Perforations	1.00			3274.00	
Change Over Sub	1.00			3275.00	
Recorder	0.00	8352	Inside	3275.00	
Recorder	0.00	8934	Inside	3275.00	
Drill Pipe	62.00			3337.00	
Change Over Sub	1.00			3338.00	
Perforations	17.00			3355.00	
Bullnose	3.00			3358.00	86.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>115.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Company Inc

**13-9S-20W Rooks KS**

250 N Water STE 300  
Wichita KS 67202+1216

**Steeples #1-13**

Job Ticket: 65124

**DST#: 1**

ATTN: Paul Gunzelman

Test Start: 2019.06.04 @ 14:25:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

33 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

48000 ppm

Viscosity: 84.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5200.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
300.00	MCW 10%M 90%W	2.531
195.00	WM 40%W 60%M w /scum of oil	2.764
5.00	GO 10%G 90%O	0.071
0.00	60'GIP	0.000

Total Length: 500.00 ft

Total Volume: 5.366 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

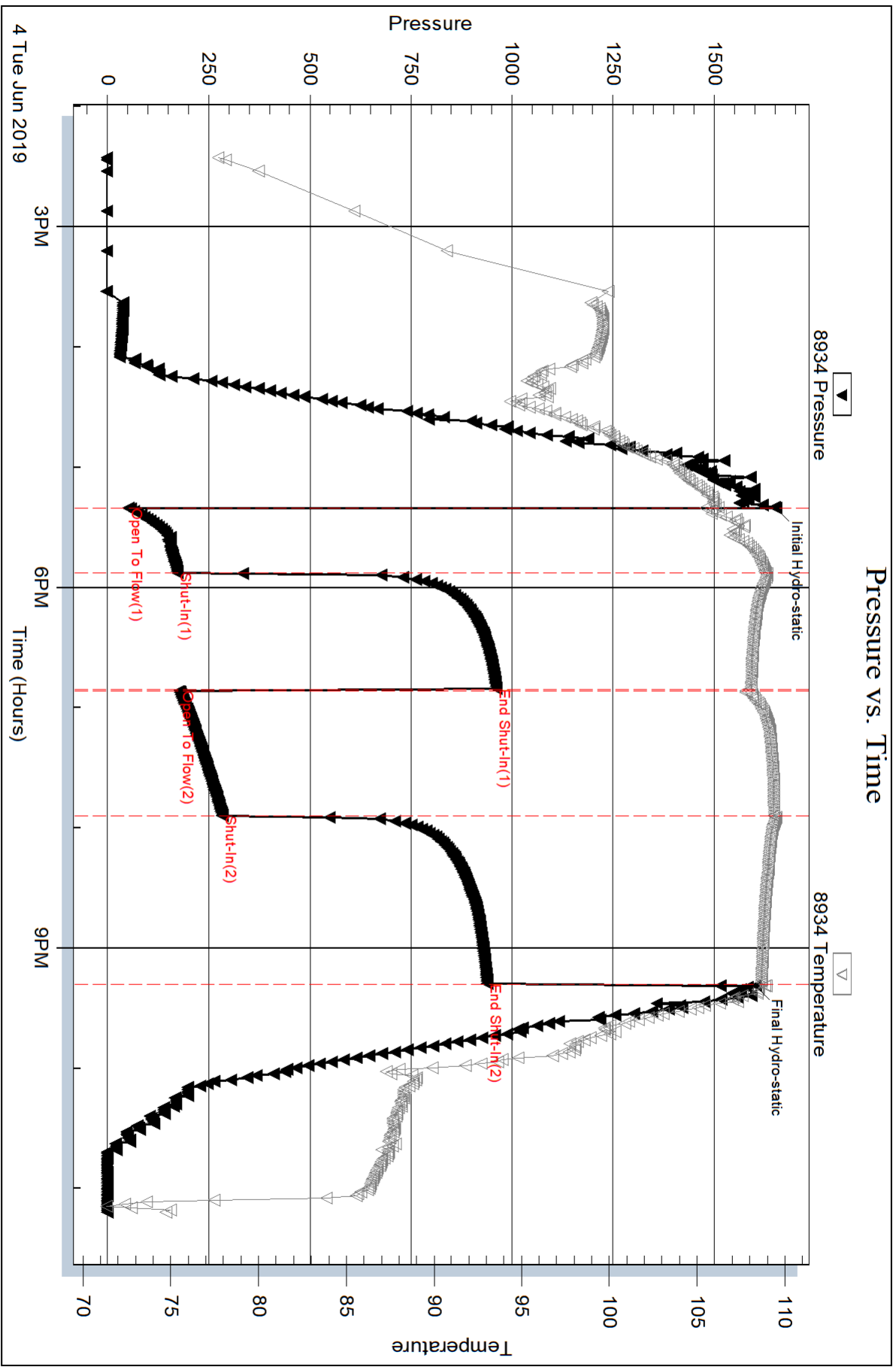
Laboratory Name:

Laboratory Location:

Recovery Comments: 2#LCM

RW=.148@76F





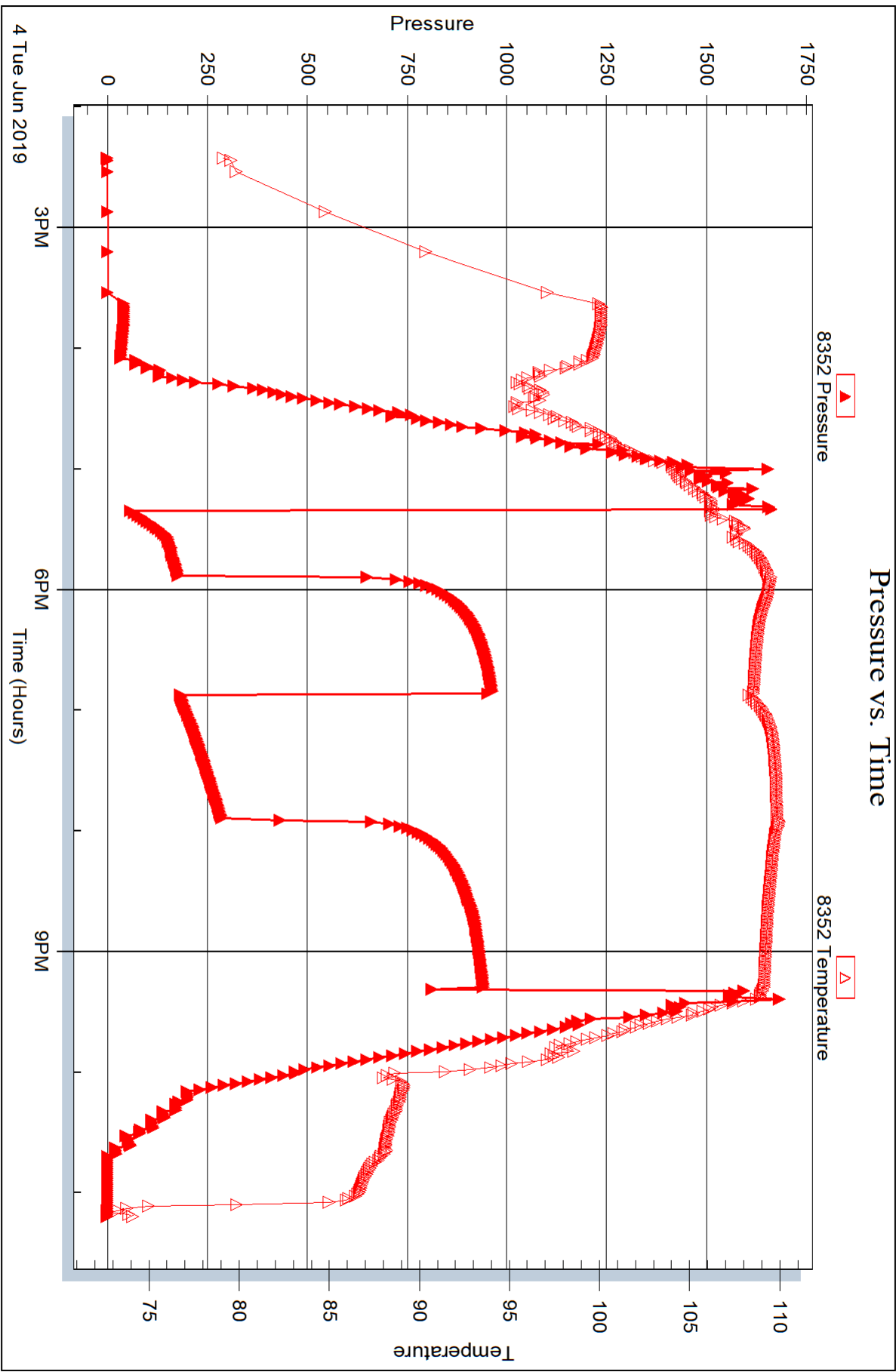
Serial #: 8352

Inside

Murfin Drilling Company Inc

Sleeples #1-13

DST Test Number: 1







## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc**

250 N Water STE 300  
Wichita KS 67202+1216

ATTN: Paul Gunzelman

### **Steeples #1-13**

#### **13-9S-20W Rooks KS**

Start Date: 2019.06.05 @ 05:27:00

End Date: 2019.06.05 @ 11:51:15

Job Ticket #: 65125                      DST #: 2

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

Printed: 2019.06.10 @ 08:56:48



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc

**13-9S-20W Rooks KS**

250 N Water STE 300  
Wichita KS 67202+1216

**Steeple #1-13**

Job Ticket: 65125

**DST#: 2**

ATTN: Paul Gunzelman

Test Start: 2019.06.05 @ 05:27:00

## GENERAL INFORMATION:

Formation: **LKC 'D'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:21:00

Time Test Ended: 11:51:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J Staab

Unit No: 84

**Interval: 3356.00 ft (KB) To 3380.00 ft (KB) (TVD)**

Reference Elevations: 2090.00 ft (KB)

Total Depth: 3380.00 ft (KB) (TVD)

2085.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8934**

**Inside**

Press@RunDepth: 19.79 psig @ 3358.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.06.05 End Date: 2019.06.05

Last Calib.: 2019.06.05

Start Time: 05:27:15 End Time: 11:51:15

Time On Btm: 2019.06.05 @ 07:20:45

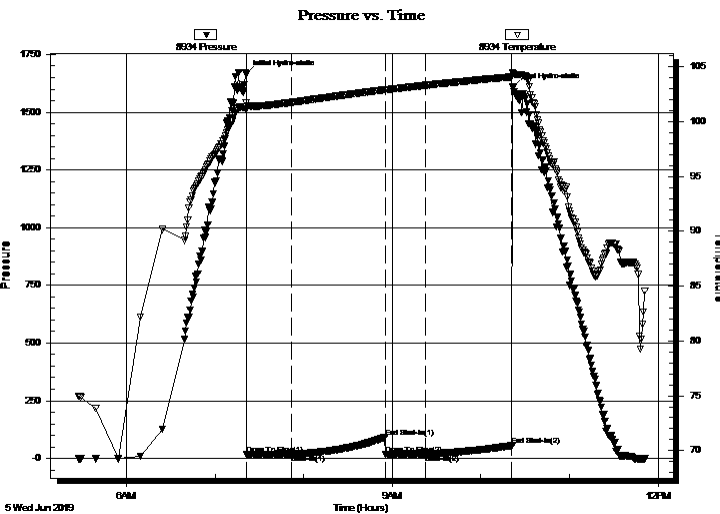
Time Off Btm: 2019.06.05 @ 10:21:30

**TEST COMMENT:** 30-IF-Weak; Built to 1/4"

60-ISI-No Return

30-FF-No Blow

60-FSI-No Return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1665.22	101.74	Initial Hydro-static
1	17.32	101.07	Open To Flow (1)
31	19.78	101.76	Shut-In(1)
95	92.78	102.92	End Shut-In(1)
95	18.34	102.88	Open To Flow (2)
122	19.79	103.32	Shut-In(2)
180	55.24	104.08	End Shut-In(2)
181	1608.46	104.49	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud 100%M	0.05

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc

**13-9S-20W Rooks KS**

250 N Water STE 300  
Wichita KS 67202+1216

**Steeples #1-13**

Job Ticket: 65125

**DST#: 2**

ATTN: Paul Gunzelman

Test Start: 2019.06.05 @ 05:27:00

## GENERAL INFORMATION:

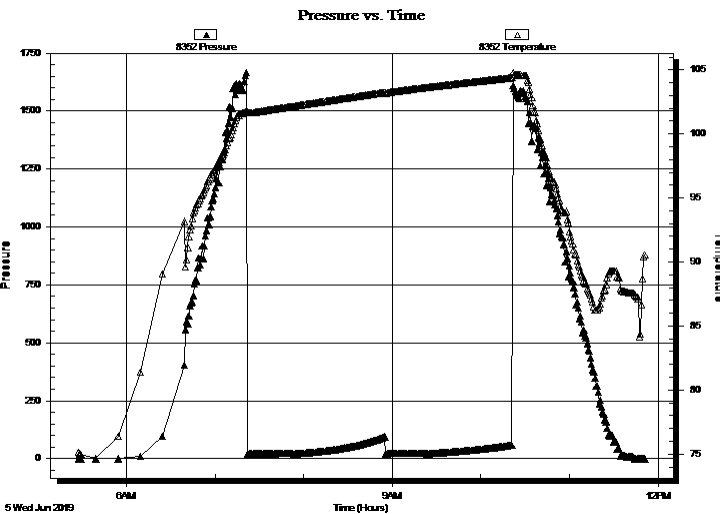
Formation: **LKC 'D'**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 07:21:00  
 Time Test Ended: 11:51:15  
 Interval: **3356.00 ft (KB) To 3380.00 ft (KB) (TVD)**  
 Total Depth: 3380.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Spencer J Staab  
 Unit No: 84  
 Reference Elevations: 2090.00 ft (KB)  
 2085.00 ft (CF)  
 KB to GR/CF: 5.00 ft

## Serial #: 8352

Inside

Press@RunDepth: psig @ 3358.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2019.06.05 End Date: 2019.06.05 Last Calib.: 2019.06.05  
 Start Time: 05:27:15 End Time: 11:51:30 Time On Btm:  
 Time Off Btm:

TEST COMMENT: 30-IF-Weak; Built to 1/4"  
 60-ISI-No Return  
 30-FF-No Blow  
 60-FSI-No Return



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud 100%M	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 Company Inc

**13-9S-20W Rooks KS**

250 N Water STE 300  
Wichita KS 67202+1216

**Steeples #1-13**

Job Ticket: 65125

**DST#: 2**

ATTN: Paul Gunzelman

Test Start: 2019.06.05 @ 05:27:00

## Tool Information

Drill Pipe:	Length: 3158.00 ft	Diameter: 3.82 inches	Volume: 44.77 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	2500.00 lb
Drill Collar:	Length: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose:	53000.00 lb
			<u>Total Volume:</u>	Tool Chased	ft
			- bbl	String Weight: Initial	43000.00 lb
Drill Pipe Above KB:	17.00 ft			Final	43000.00 lb
Depth to Top Packer:	3356.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	24.00 ft				
Tool Length:	53.00 ft				
Number of Packers:	1	Diameter:	6.75 inches		
Tool Comments:					

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3328.00	
Shut In Tool	5.00			3333.00	
Hydraulic tool	5.00			3338.00	
Jars	5.00			3343.00	
Safety Joint	3.00			3346.00	
Packer	5.00			3351.00	29.00 Bottom Of Top Packer
Packer	5.00			3356.00	
Stubb	1.00			3357.00	
Perforations	1.00			3358.00	
Recorder	0.00	8352	Inside	3358.00	
Recorder	0.00	8934	Inside	3358.00	
Perforations	19.00			3377.00	
Bullnose	3.00			3380.00	24.00 Bottom Packers & Anchor

**Total Tool Length: 53.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Company Inc

**13-9S-20W Rooks KS**

250 N Water STE 300  
Wichita KS 67202+1216

**Steeples #1-13**

Job Ticket: 65125

**DST#: 2**

ATTN: Paul Gunzelman

Test Start: 2019.06.05 @ 05:27:00

## 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:

bbbl

Water Loss: 7.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5600.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Mud 100%M	0.049

Total Length: 10.00 ft      Total Volume: 0.049 bbl

Num Fluid Samples: 0

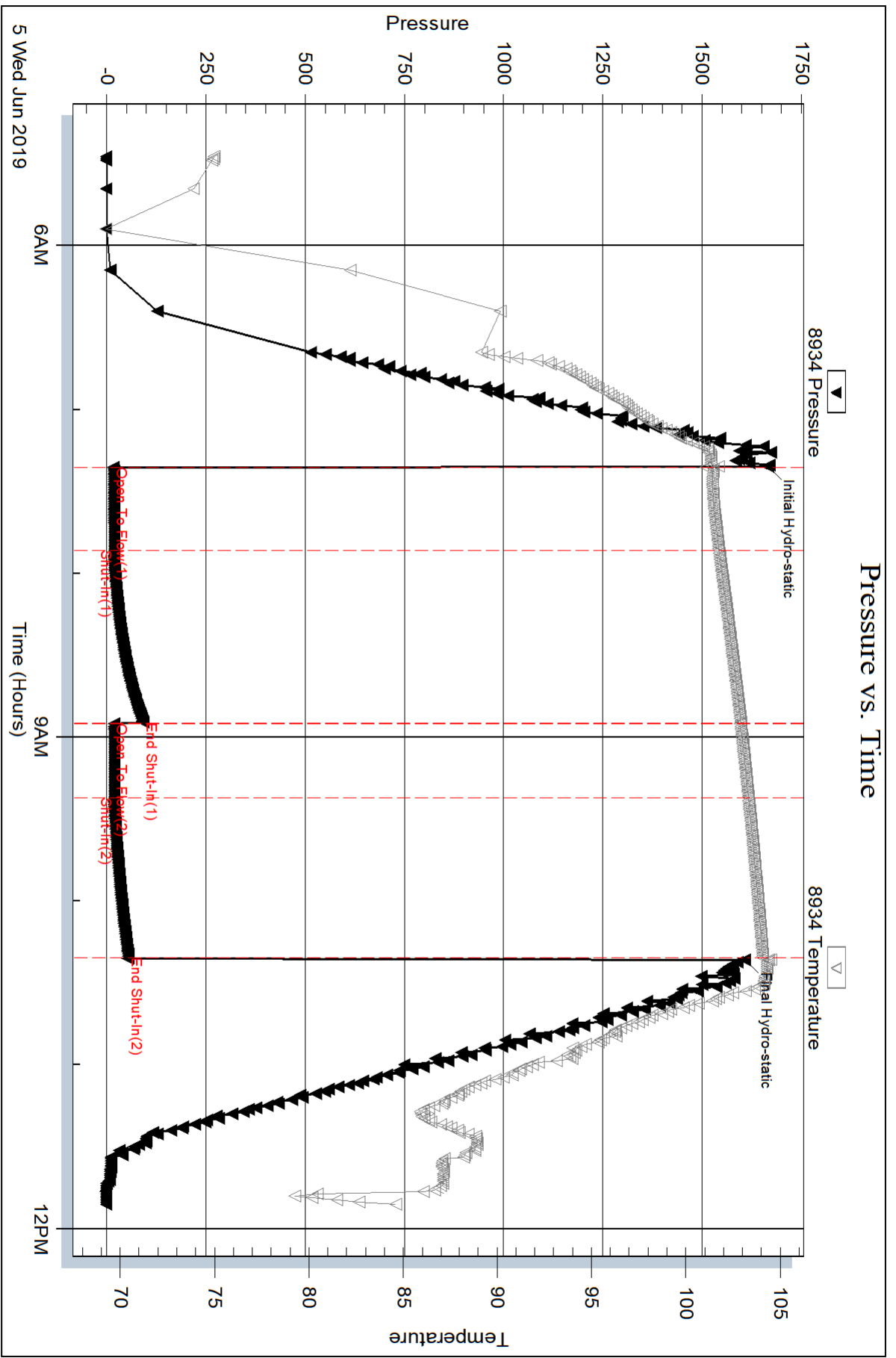
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 2#LCM





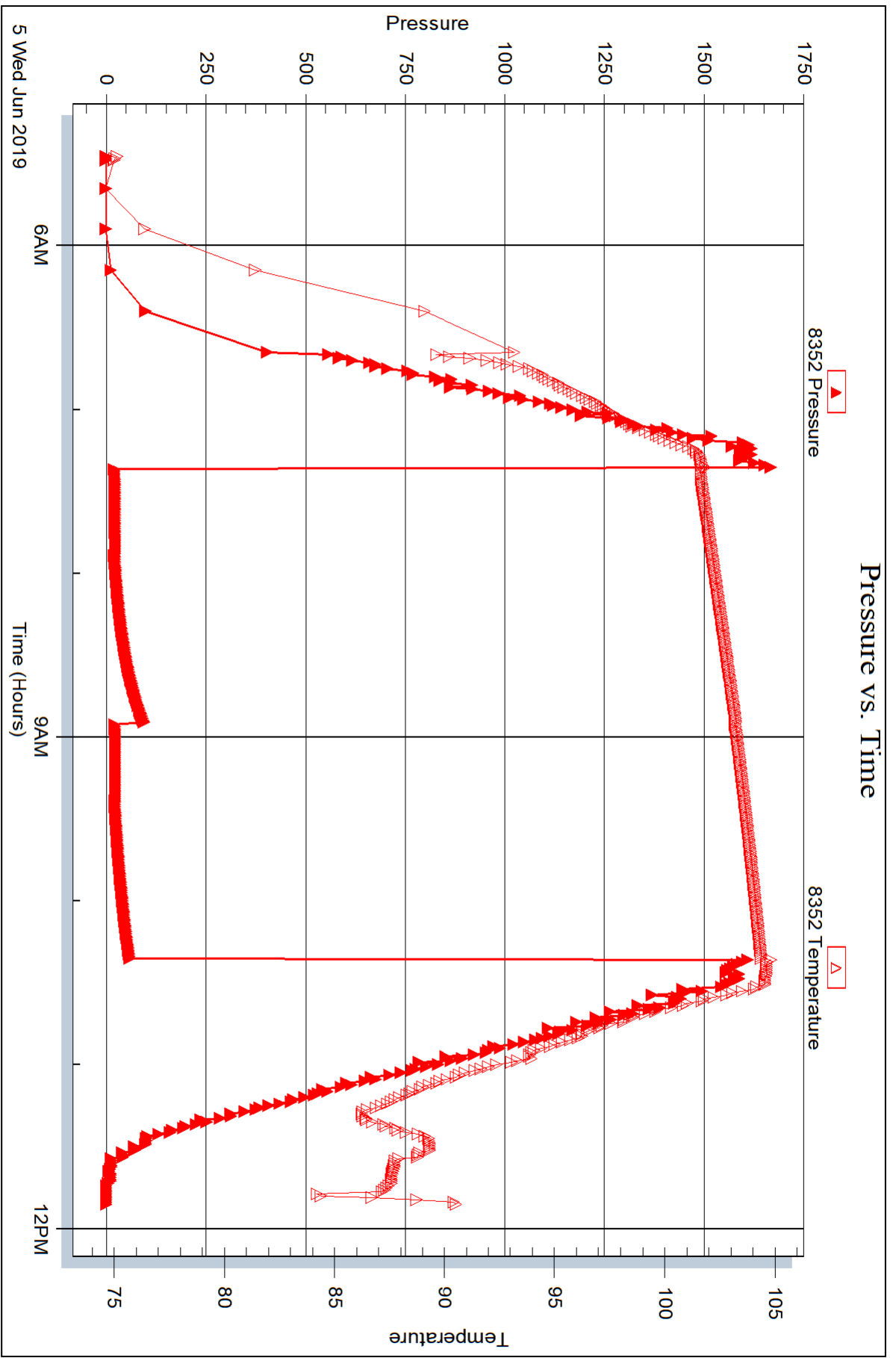
Serial #: 8352

Inside

Murfin Drilling Company Inc

Sleeples #1-13

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 65125

Printed: 2019.06.10 @ 08:56:49



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc**

250 N Water STE 300  
Wichita KS 67202+1216

ATTN: Paul Gunzelman

### **Steeples #1-13**

#### **13-9S-20W Rooks KS**

Start Date: 2019.06.05 @ 17:31:00

End Date: 2019.06.06 @ 01:27:15

Job Ticket #: 65954                      DST #: 3

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

Printed: 2019.06.10 @ 08:56:22



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc

**13-9S-20W Rooks KS**

250 N Water STE 300  
Wichita KS 67202+1216

**Steeple #1-13**

Job Ticket: 65954

**DST#: 3**

ATTN: Paul Gunzelman

Test Start: 2019.06.05 @ 17:31:00

## GENERAL INFORMATION:

Formation: **LKC 'E-F'**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 19:22:15  
 Tester: Spencer J Staab  
 Time Test Ended: 01:27:15  
 Unit No: 84  
 Interval: **3377.00 ft (KB) To 3398.00 ft (KB) (TVD)**  
 Reference Elevations: 2090.00 ft (KB)  
 Total Depth: 3398.00 ft (KB) (TVD)  
 2085.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Fair  
 KB to GR/CF: 5.00 ft

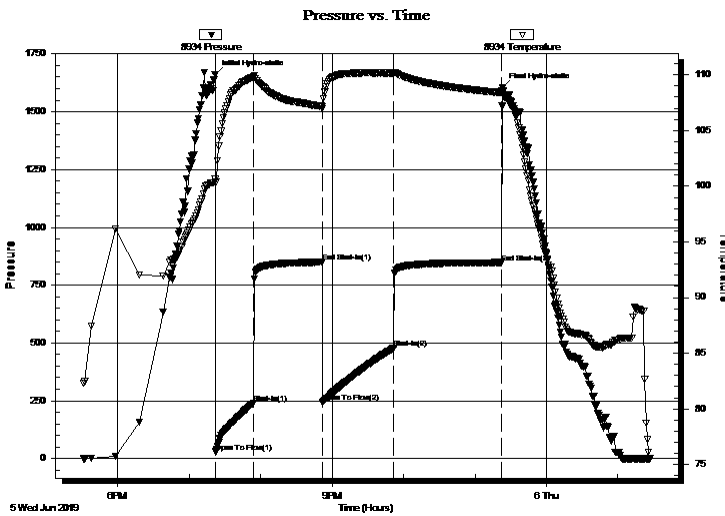
## Serial #: 8934

Inside

Press@RunDepth: 477.93 psig @ 3378.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2019.06.05 End Date: 2019.06.06 Last Calib.: 2019.06.06  
 Start Time: 17:31:15 End Time: 01:27:15 Time On Btm: 2019.06.05 @ 19:21:45  
 Time Off Btm: 2019.06.05 @ 23:23:00

TEST COMMENT: 30-IF-BOB 4 mins; Built to 47"  
 60-ISI-No Return  
 60-FF-BOB 8 mins; Built to 50"  
 90-FSI-No Return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1661.32	100.62	Initial Hydro-static
1	28.97	100.34	Open To Flow (1)
33	240.93	109.81	Shut-In(1)
90	849.02	107.18	End Shut-In(1)
90	243.08	106.94	Open To Flow (2)
150	477.93	110.16	Shut-In(2)
241	847.73	108.40	End Shut-In(2)
242	1602.50	108.36	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
890.00	SW 100%W	10.89
85.00	HMCW 20%M 80%W	1.20
15.00	CO 100%O	0.21

\* 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 Company Inc

**13-9S-20W Rooks KS**

250 N Water STE 300  
Wichita KS 67202+1216

**Steeple #1-13**

Job Ticket: 65954

**DST#: 3**

ATTN: Paul Gunzelman

Test Start: 2019.06.05 @ 17:31:00

## Tool Information

Drill Pipe:	Length: 3187.00 ft	Diameter: 3.82 inches	Volume: 45.18 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose:	55000.00 lb
			<u>Total Volume:</u>	Tool Chased	ft
			- bbl	String Weight: Initial	43000.00 lb
Drill Pipe Above KB:	25.00 ft			Final	47000.00 lb
Depth to Top Packer:	3377.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	21.00 ft				
Tool Length:	50.00 ft				
Number of Packers:	1	Diameter:	6.75 inches		
Tool Comments:					

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3349.00	
Shut In Tool	5.00			3354.00	
Hydraulic tool	5.00			3359.00	
Jars	5.00			3364.00	
Safety Joint	3.00			3367.00	
Packer	5.00			3372.00	29.00 Bottom Of Top Packer
Packer	5.00			3377.00	
Stubb	1.00			3378.00	
Recorder	0.00	8934	Inside	3378.00	
Recorder	0.00	8352	Outside	3378.00	
Perforations	17.00			3395.00	
Bullnose	3.00			3398.00	21.00 Bottom Packers & Anchor

**Total Tool Length: 50.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Company Inc

**13-9S-20W Rooks KS**

250 N Water STE 300  
Wichita KS 67202+1216

**Steeples #1-13**

Job Ticket: 65954

**DST#: 3**

ATTN: Paul Gunzelman

Test Start: 2019.06.05 @ 17:31:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

35 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

55000 ppm

Viscosity: 46.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
890.00	SW 100%W	10.894
85.00	HMCW 20%M 80%W	1.205
15.00	CO 100%O	0.213

Total Length: 990.00 ft      Total Volume: 12.312 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

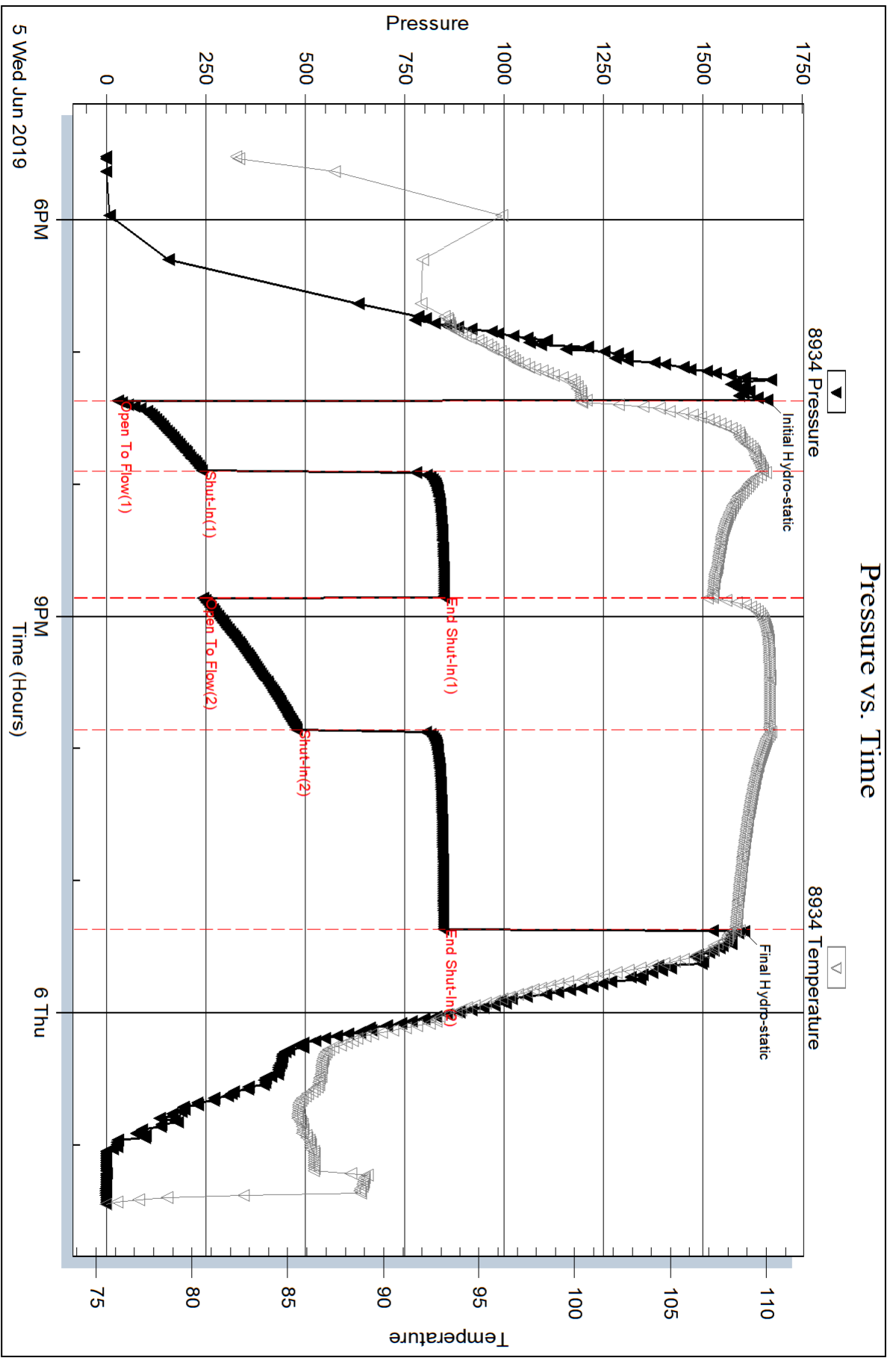
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 2#LCM

RW=.178@66F

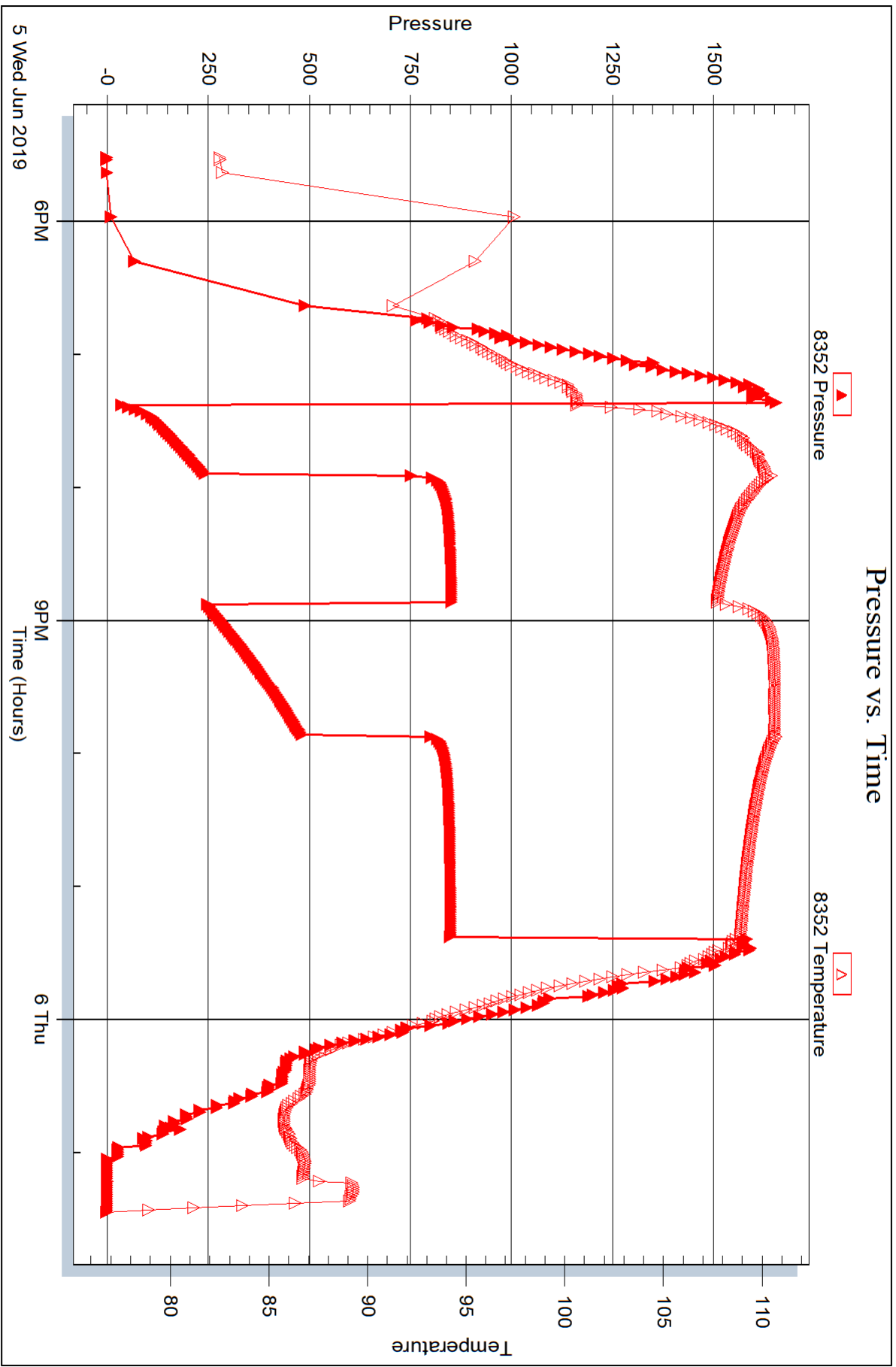


Serial #: 8352

Outside Murfin Drilling Company Inc

Sleeples #1-13

DST Test Number: 3







## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc**

250 N Water STE 300  
Wichita KS 67202+1216

ATTN: Paul Gunzelman

### **Steeples #1-13**

#### **13-9S-20W Rooks KS**

Start Date: 2019.06.06 @ 13:16:00

End Date: 2019.06.06 @ 20:00:00

Job Ticket #: 65955                      DST #: 4

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

Printed: 2019.06.10 @ 08:54:18



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc

**13-9S-20W Rooks KS**

250 N Water STE 300  
Wichita KS 67202+1216

**Steeple #1-13**

Job Ticket: 65955

**DST#: 4**

ATTN: Paul Gunzelman

Test Start: 2019.06.06 @ 13:16:00

## GENERAL INFORMATION:

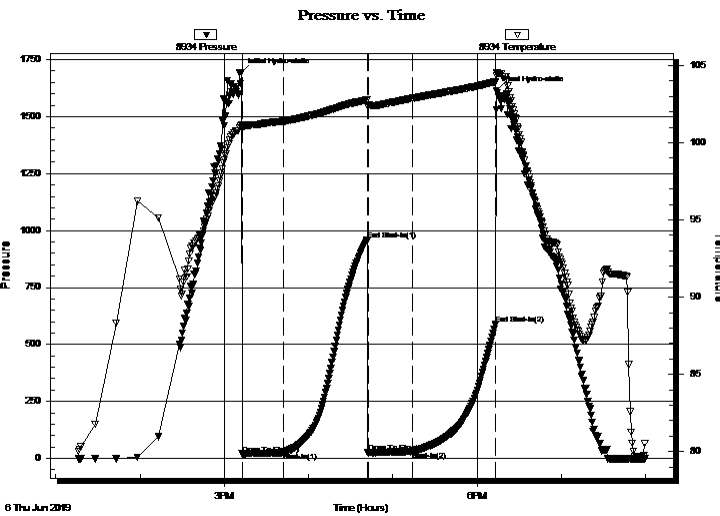
Formation: **LKC 'H-J'**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 15:12:45  
 Time Test Ended: 20:00:00  
 Interval: **3432.00 ft (KB) To 3492.00 ft (KB) (TVD)**  
 Total Depth: 3492.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Spencer J Staab  
 Unit No: 84  
 Reference Elevations: 2090.00 ft (KB)  
 2085.00 ft (CF)  
 KB to GR/CF: 5.00 ft

## Serial #: 8934

Inside

Press@RunDepth: 30.75 psig @ 3435.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2019.06.06 End Date: 2019.06.06 Last Calib.: 2019.06.06  
 Start Time: 13:16:15 End Time: 20:00:00 Time On Btm: 2019.06.06 @ 15:12:15  
 Time Off Btm: 2019.06.06 @ 18:14:00

TEST COMMENT: 30-IF-Weak; Built to 1/4"  
 60-ISI-No Return  
 30-FF-No Blow  
 60-FSI-No Return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1691.40	101.19	Initial Hydro-static
1	20.26	100.91	Open To Flow (1)
30	25.65	101.39	Shut-In(1)
90	956.99	102.78	End Shut-In(1)
91	24.85	102.48	Open To Flow (2)
122	30.75	102.89	Shut-In(2)
181	590.41	103.94	End Shut-In(2)
182	1613.56	104.56	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	HOCM 25%O 75%M	0.07

\* 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 Company Inc

**13-9S-20W Rooks KS**

250 N Water STE 300  
Wichita KS 67202+1216

**Steeples #1-13**

Job Ticket: 65955

**DST#: 4**

ATTN: Paul Gunzelman

Test Start: 2019.06.06 @ 13:16:00

## Tool Information

Drill Pipe:	Length: 3220.00 ft	Diameter: 3.82 inches	Volume: 45.64 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose:	72000.00 lb
			<u>Total Volume:</u>	Tool Chased	ft
				String Weight: Initial	43000.00 lb
Drill Pipe Above KB:	3.00 ft			Final	43000.00 lb
Depth to Top Packer:	3432.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	60.00 ft				
Tool Length:	89.00 ft				
Number of Packers:	1	Diameter:	6.75 inches		
Tool Comments:					

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3404.00	
Shut In Tool	5.00			3409.00	
Hydraulic tool	5.00			3414.00	
Jars	5.00			3419.00	
Safety Joint	3.00			3422.00	
Packer	5.00			3427.00	29.00 Bottom Of Top Packer
Packer	5.00			3432.00	
Stubb	1.00			3433.00	
Perforations	1.00			3434.00	
Change Over Sub	1.00			3435.00	
Recorder	0.00	8352	Inside	3435.00	
Recorder	0.00	8934	Inside	3435.00	
Drill Pipe	32.00			3467.00	
Change Over Sub	1.00			3468.00	
Perforations	21.00			3489.00	
Bullnose	3.00			3492.00	60.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>89.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Company Inc

**13-9S-20W Rooks KS**

250 N Water STE 300  
Wichita KS 67202+1216

**Steeples #1-13**

Job Ticket: 65955

**DST#: 4**

ATTN: Paul Gunzelman

Test Start: 2019.06.06 @ 13:16:00

## 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: 46.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	HOCM 25%O 75%M	0.074

Total Length: 15.00 ft      Total Volume: 0.074 bbl

Num Fluid Samples: 0

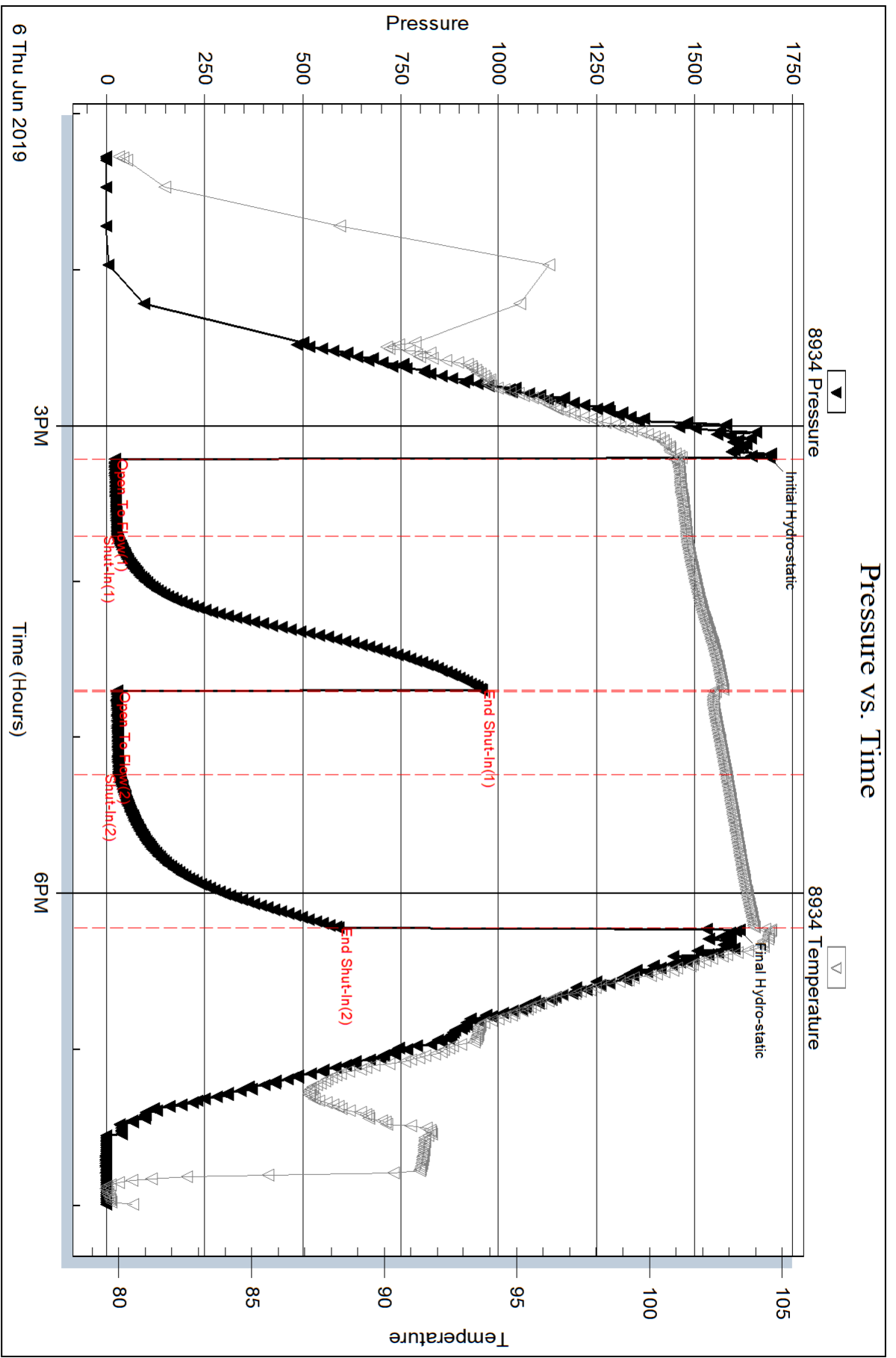
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 2#LCM





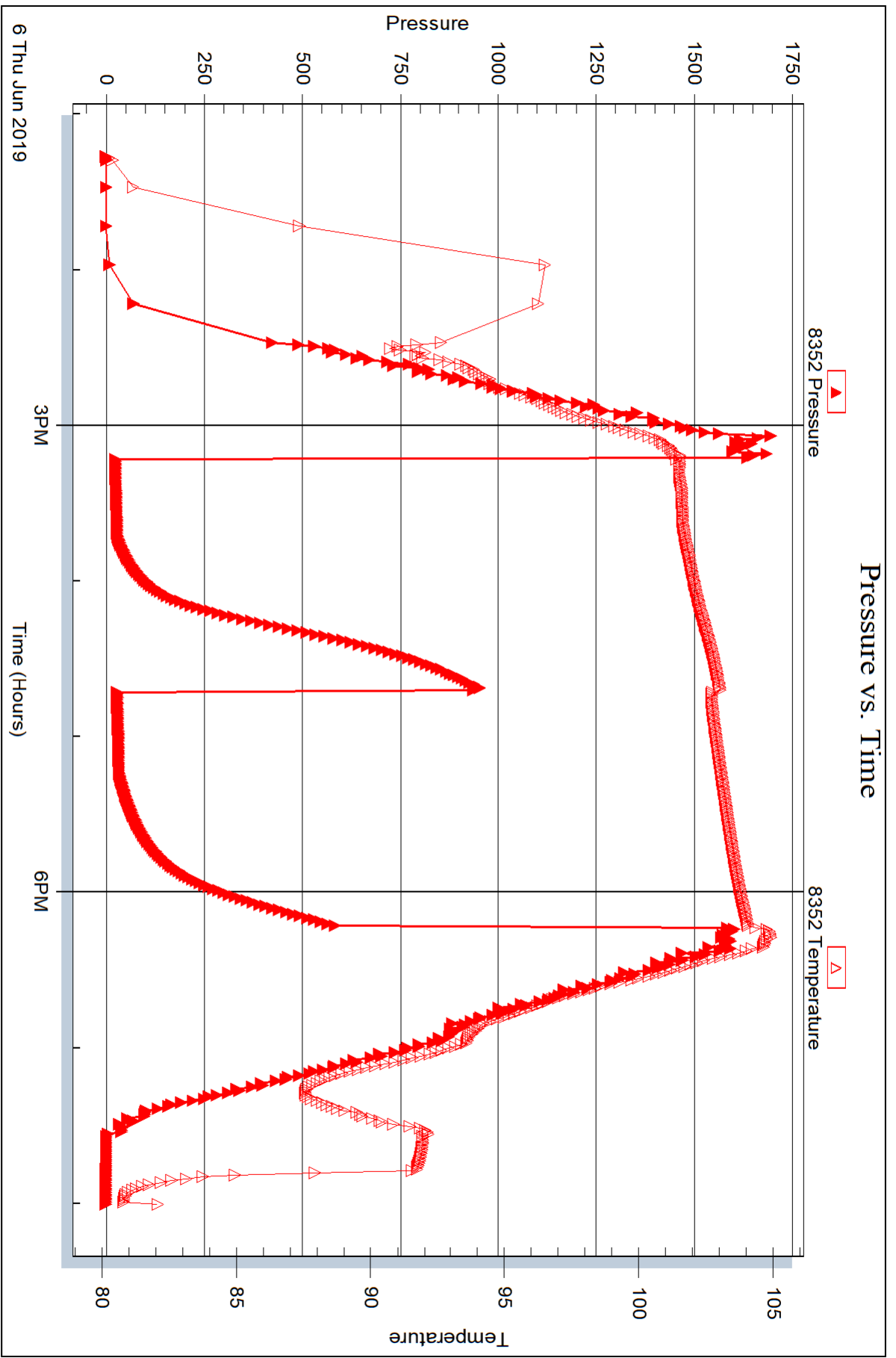
Serial #: 8352

Inside

Murfin Drilling Company Inc

Sleeples #1-13

DST Test Number: 4



Triobite Testing, Inc

Ref. No: 65955

Printed: 2019.06.10 @ 08:54:19



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc**

250 N Water STE 300  
Wichita KS 67202+1216

ATTN: Paul Gunzelman

### **Steeples #1-13**

#### **13-9S-20W Rooks KS**

Start Date: 2019.06.07 @ 11:35:00

End Date: 2019.06.07 @ 18:26:30

Job Ticket #: 65956                      DST #: 5

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

Printed: 2019.06.10 @ 08:53:45



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc

**13-9S-20W Rooks KS**

250 N Water STE 300  
Wichita KS 67202+1216

**Steeple #1-13**

Job Ticket: 65956

**DST#: 5**

ATTN: Paul Gunzelman

Test Start: 2019.06.07 @ 11:35:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:44:30

Time Test Ended: 18:26:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J Staab

Unit No: 84

**Interval: 3545.00 ft (KB) To 3636.00 ft (KB) (TVD)**

Reference Elevations: 2090.00 ft (KB)

Total Depth: 3636.00 ft (KB) (TVD)

2085.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8934**

**Inside**

Press@RunDepth: 44.98 psig @ 3548.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.06.07

End Date:

2019.06.07

Last Calib.: 2019.06.07

Start Time: 11:35:15

End Time:

18:26:30

Time On Btm: 2019.06.07 @ 13:44:00

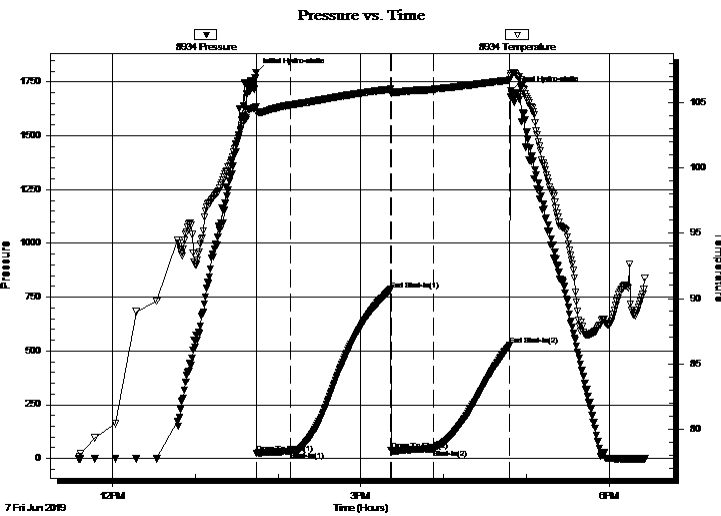
Time Off Btm: 2019.06.07 @ 16:49:00

TEST COMMENT: 30-IF-Weak; Built to 1/2"

60-ISI-No Return

30-FF-No Blow

60-FSI-No Return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1794.33	104.72	Initial Hydro-static
1	23.00	104.31	Open To Flow (1)
26	33.10	104.84	Shut-In(1)
98	785.48	106.06	End Shut-In(1)
98	36.83	105.74	Open To Flow (2)
129	44.98	106.05	Shut-In(2)
184	525.03	106.74	End Shut-In(2)
185	1709.38	107.26	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	SOCM 5%O 95%M	0.05
2.00	Clean Oil 100%O	0.01

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Company Inc

**13-9S-20W Rooks KS**

250 N Water STE 300  
Wichita KS 67202+1216

**Steeples #1-13**

Job Ticket: 65956

**DST#: 5**

ATTN: Paul Gunzelman

Test Start: 2019.06.07 @ 11:35:00

## Tool Information

Drill Pipe:	Length: 3351.00 ft	Diameter: 3.82 inches	Volume: 47.50 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 53000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 45000.00 lb
Depth to Top Packer:	3545.00 ft			Final 45000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	91.00 ft			
Tool Length:	120.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		
Tool Comments:				

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3517.00	
Shut In Tool	5.00			3522.00	
Hydraulic tool	5.00			3527.00	
Jars	5.00			3532.00	
Safety Joint	3.00			3535.00	
Packer	5.00			3540.00	29.00 Bottom Of Top Packer
Packer	5.00			3545.00	
Stubb	1.00			3546.00	
Perforations	1.00			3547.00	
Change Over Sub	1.00			3548.00	
Recorder	0.00	8352	Inside	3548.00	
Recorder	0.00	8934	Inside	3548.00	
Drill Pipe	62.00			3610.00	
Change Over Sub	1.00			3611.00	
Perforations	22.00			3633.00	
Bullnose	3.00			3636.00	91.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>120.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Company Inc

**13-9S-20W Rooks KS**

250 N Water STE 300  
Wichita KS 67202+1216

**Steeples #1-13**

Job Ticket: 65956

**DST#: 5**

ATTN: Paul Gunzelman

Test Start: 2019.06.07 @ 11:35:00

## 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: 50.00 sec/qt

Cushion Volume:

bbf

Water Loss: 9.19 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6500.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbf
10.00	SOCM 5%O 95%M	0.049
2.00	Clean Oil 100%O	0.010

Total Length: 12.00 ft      Total Volume: 0.059 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 2#LCM



Serial #: 8934

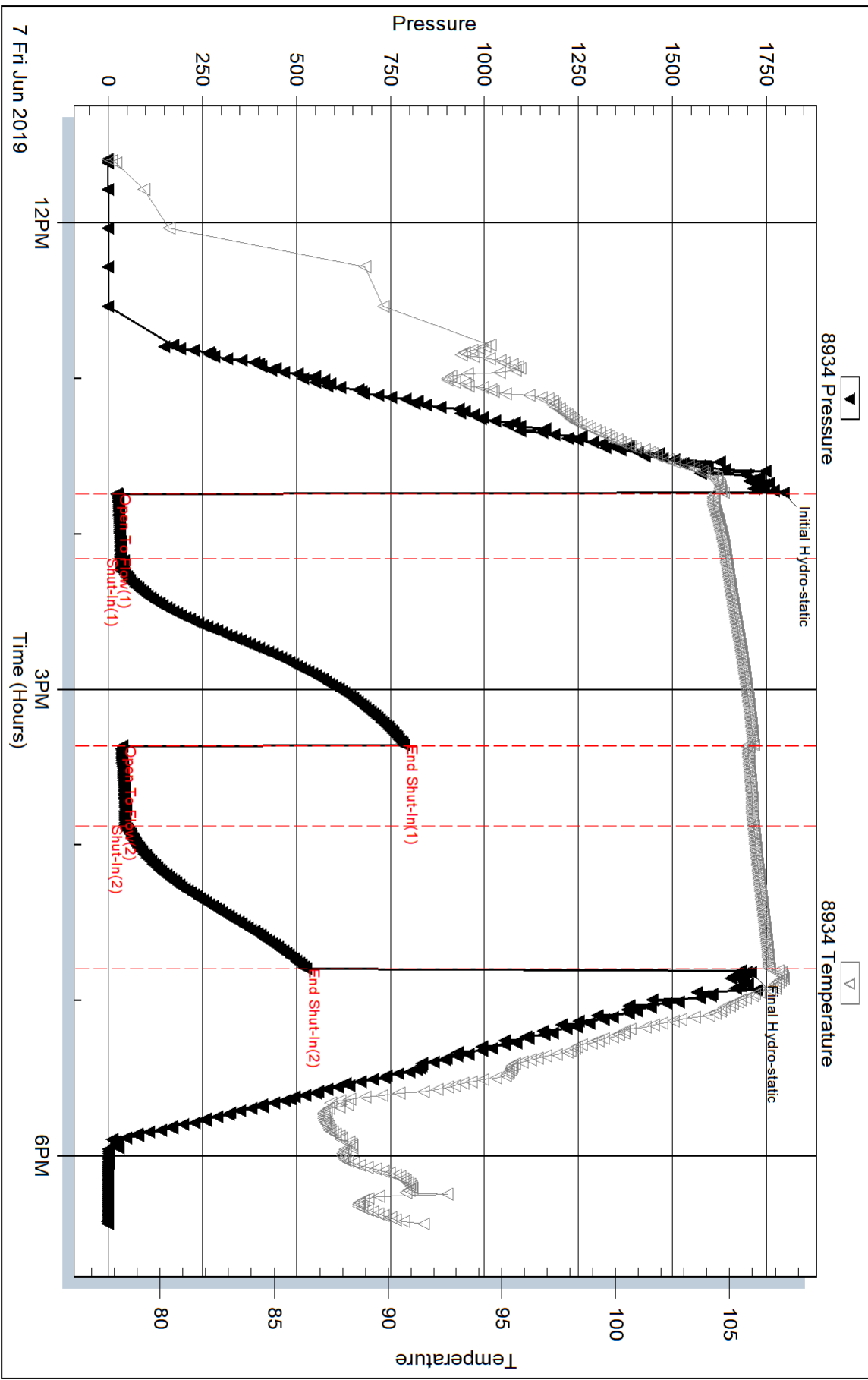
Inside

Murfin Drilling Company Inc

Sleeples #1-13

DST Test Number: 5

# Pressure vs. Time



Triobite Testing, Inc

Ref. No: 65956

Printed: 2019.06.10 @ 08:53:45

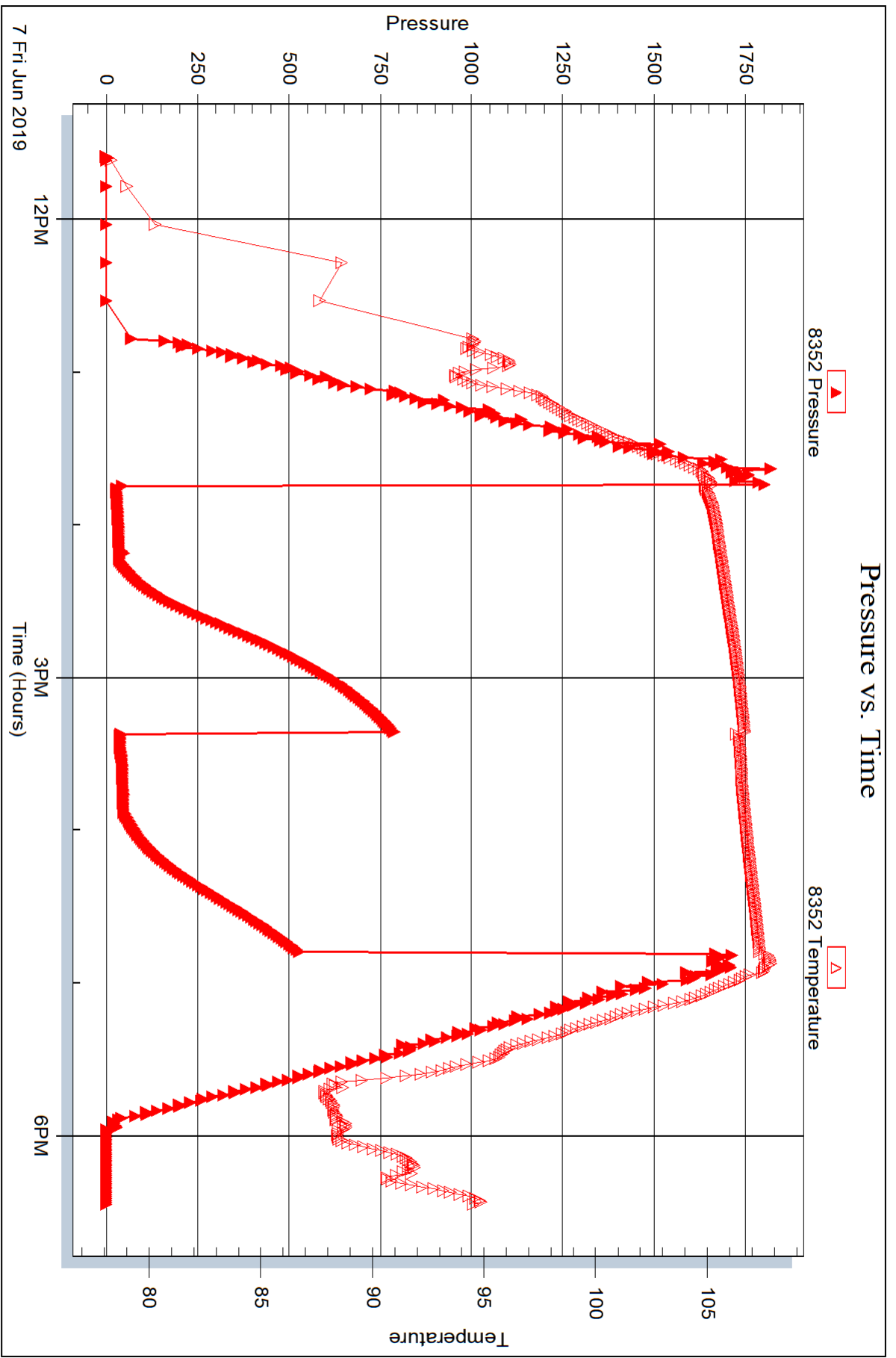
Serial #: 8352

Inside

Murfin Drilling Company Inc

Sleeples #1-13

DST Test Number: 5



Triobite Testing, Inc

Ref. No: 65956

Printed: 2019.06.10 @ 08:53:46



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc**

250 N Water STE 300  
Wichita KS 67202+1216

ATTN: Paul Gunzelman

### **Steeples #1-13**

#### **13-9S-20W Rooks KS**

Start Date: 2019.06.07 @ 23:48:00

End Date: 2019.06.08 @ 07:47:00

Job Ticket #: 65957                      DST #: 6

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

Printed: 2019.06.10 @ 08:53:15



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc

**13-9S-20W Rooks KS**

250 N Water STE 300  
Wichita KS 67202+1216

**Steeple #1-13**

Job Ticket: 65957

**DST#: 6**

ATTN: Paul Gunzelman

Test Start: 2019.06.07 @ 23:48:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:49:45

Time Test Ended: 07:47:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J Staab

Unit No: 84

**Interval: 3636.00 ft (KB) To 3646.00 ft (KB) (TVD)**

Reference Elevations: 2090.00 ft (KB)

Total Depth: 3646.00 ft (KB) (TVD)

2085.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8934 Inside**

Press@RunDepth: 88.78 psig @ 3638.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.06.07

End Date:

2019.06.08

Last Calib.:

2019.06.08

Start Time: 23:48:15

End Time:

07:47:00

Time On Btm:

2019.06.08 @ 01:48:45

Time Off Btm:

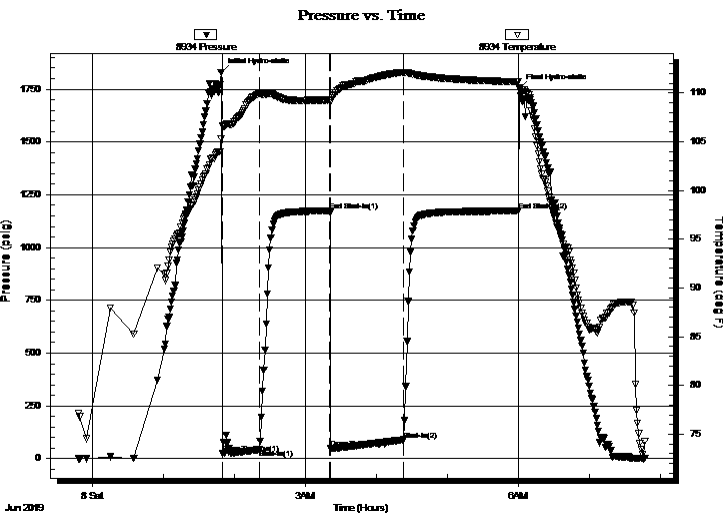
2019.06.08 @ 06:00:45

TEST COMMENT: 30-IF-Weak; Built to 2&1/2"

60-ISI-No Return

60-FF-Weak; Built to 2"

90-FSI-No Return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1829.12	105.30	Initial Hydro-static
1	23.80	106.62	Open To Flow (1)
33	42.42	109.97	Shut-In(1)
92	1173.37	109.28	End Shut-In(1)
93	47.73	109.01	Open To Flow (2)
154	88.78	112.09	Shut-In(2)
251	1172.65	111.15	End Shut-In(2)
252	1750.62	110.56	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
90.00	HWCM 40%W 60%M	0.44
40.00	WCM 10%W 90%M	0.20

\* 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 Company Inc

**13-9S-20W Rooks KS**

250 N Water STE 300  
Wichita KS 67202+1216

**Steeples #1-13**

Job Ticket: 65957

**DST#: 6**

ATTN: Paul Gunzelman

Test Start: 2019.06.07 @ 23:48:00

## Tool Information

Drill Pipe:	Length: 3446.00 ft	Diameter: 3.82 inches	Volume: 48.85 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose:	54000.00 lb
			<u>Total Volume:</u>	Tool Chased	ft
				String Weight: Initial	45000.00 lb
Drill Pipe Above KB:	25.00 ft			Final	45000.00 lb
Depth to Top Packer:	3636.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	10.00 ft				
Tool Length:	39.00 ft				
Number of Packers:	1	Diameter:	6.75 inches		
Tool Comments:					

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3608.00	
Shut In Tool	5.00			3613.00	
Hydraulic tool	5.00			3618.00	
Jars	5.00			3623.00	
Safety Joint	3.00			3626.00	
Packer	5.00			3631.00	29.00 Bottom Of Top Packer
Packer	5.00			3636.00	
Stubb	1.00			3637.00	
Perforations	1.00			3638.00	
Recorder	0.00	8934	Inside	3638.00	
Recorder	0.00	8352	Outside	3638.00	
Perforations	5.00			3643.00	
Bullnose	3.00			3646.00	10.00 Bottom Packers & Anchor

**Total Tool Length: 39.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Company Inc

**13-9S-20W Rooks KS**

250 N Water STE 300  
Wichita KS 67202+1216

**Steeples #1-13**

Job Ticket: 65957

**DST#: 6**

ATTN: Paul Gunzelman

Test Start: 2019.06.07 @ 23:48:00

## 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:

48000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbf

Water Loss: 9.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6500.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbf
90.00	HWCM 40%W 60%M	0.443
40.00	WCM 10%W 90%M	0.197

Total Length: 130.00 ft      Total Volume: 0.640 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

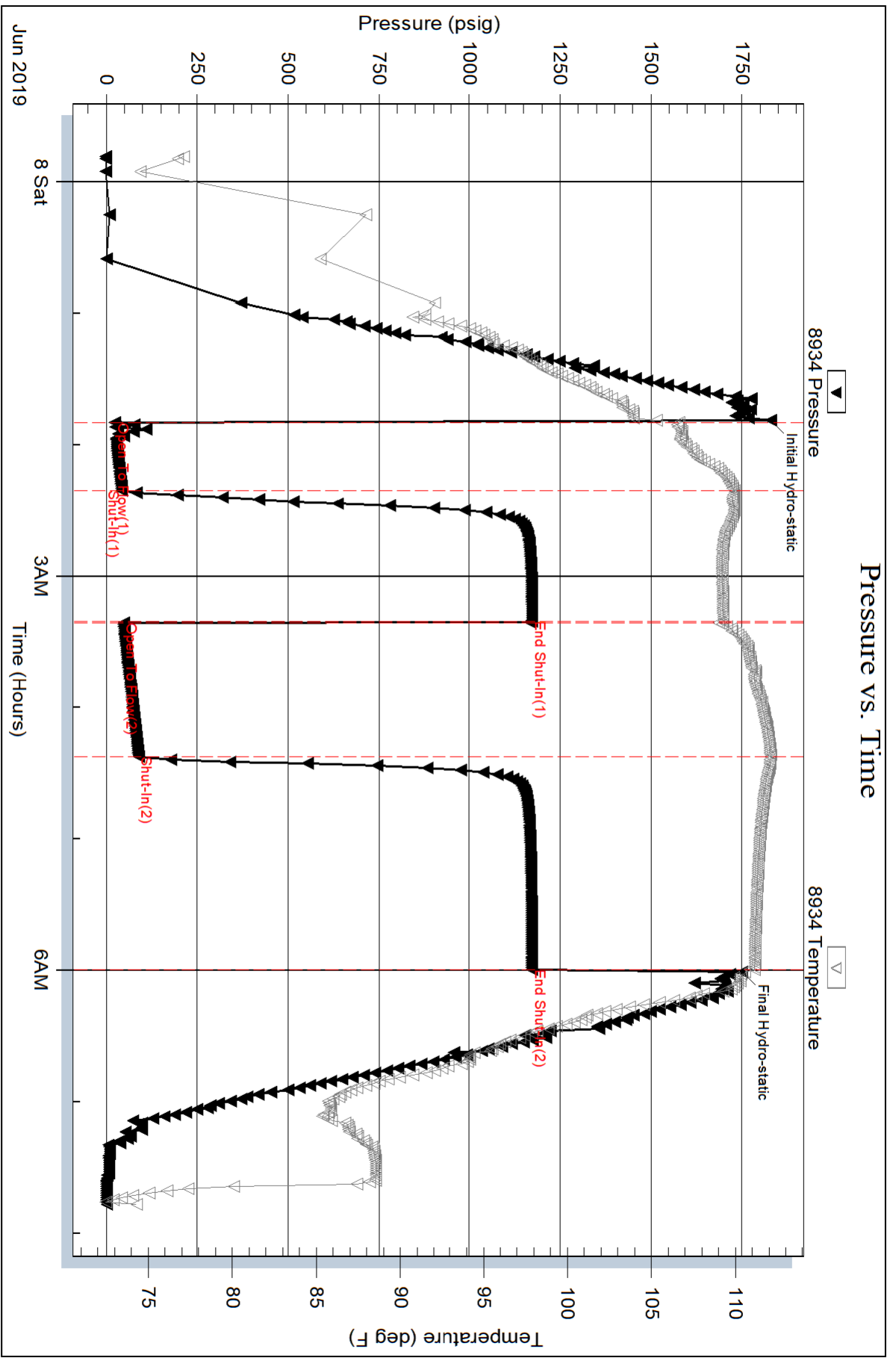
Laboratory Name:

Laboratory Location:

Recovery Comments: 2#LCM

Rw = .213@64F



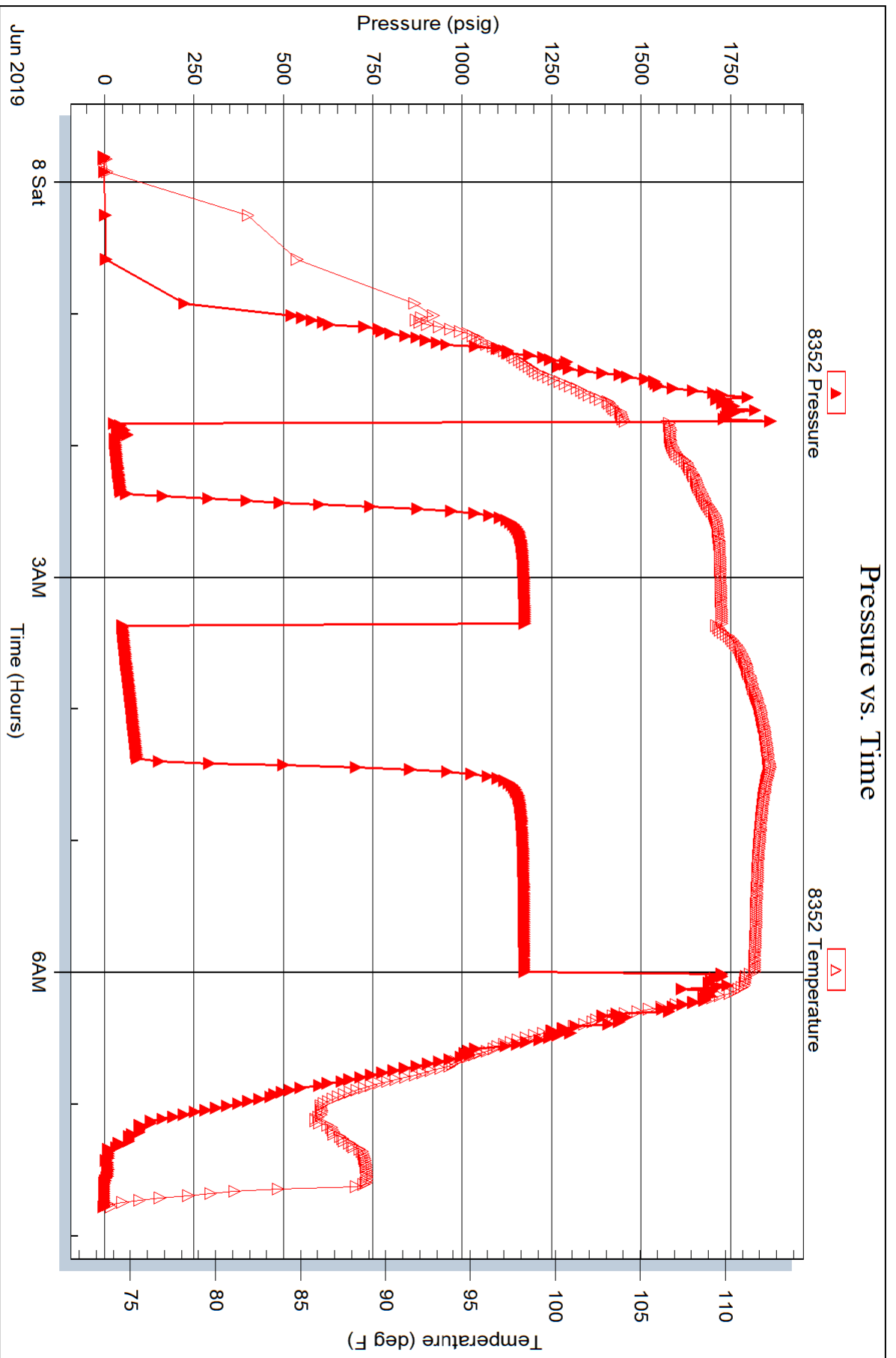


Serial #: 8352

Outside Murfin Drilling Company Inc

Sleeples #1-13

DST Test Number: 6





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 65124

Well Name & No. Steeple #1-13 Test No. 1 Date 06/04/2019  
 Company Murfin Drilling Company Inc Elevation 2090 KB 2085 GL  
 Address 250 N Water STE 300 Wichita Ks 67202 + 1216  
 Co. Rep / Geo. Paul Dangelman Rig Murfin #8  
 Location: Sec. 13 Twp 9s Rge. 20w Co. Rooks State Ks

Interval Tested 3272'-3358' Zone Tested 7oz, Lams A + B  
 Anchor Length 86' Drill Pipe Run 3066' Mud Wt. 8.8  
 Top Packer Depth 3267' Drill Collars Run 186' Vis 84  
 Bottom Packer Depth 3272' Wt. Pipe Run - WL 7.2  
 Total Depth 3358' Chlorides 5200 ppm System LCM 2H

Blow Description J7- BOB in 24 mins; Built to 26"  
JSD- No Return  
J7- BOB in 22 mins; Built to 61"  
JSD- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>300</u>	<u>MCU</u>		<u>90</u>	<u>10</u>	
<u>295</u>	<u>WM w/ seum oil</u>		<u>40</u>	<u>60</u>	
<u>5'</u>	<u>NO</u>	<u>10</u>	<u>90</u>		
	<u>60' GIP</u>	<u>100</u>			

Rec Total 500' BHT 108° Gravity 33° API RW 148 @ 76° F Chlorides 48,000 ppm

(A) Initial Hydrostatic <u>1651</u>	<input checked="" type="checkbox"/> Test <u>1200</u>	T-On Location <u>13:58</u>
(B) First Initial Flow <u>51</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>14:25</u>
(C) First Final Flow <u>173</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>17:20</u>
(D) Initial Shut-In <u>962</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>21:20</u>
(E) Second Initial Flow <u>178</u>	<input checked="" type="checkbox"/> Hourly Standby <u>21</u>	T-Out <u>23:09</u>
(F) Second Final Flow <u>284</u>	<input checked="" type="checkbox"/> Mileage <u>84127</u> 84	Comments
(G) Final Shut-In <u>939</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1602</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> EM Tool

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 60  
 Final Shut-In 90

Shale Packer  
 Extra Packer  
 Extra Recorder  
 Day Standby  
 Accessibility

Sub Total 1609

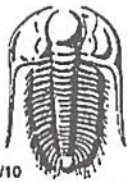
Sub Total 1609 MP/DST Disc't

Approved By \_\_\_\_\_ Our Representative Spencer A. Stahl *Thanks!*

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785-259-0056





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 65125

Well Name & No. Steeles #1-13 Test No. 2 Date 06/05/2019  
 Company 250 N Wa Murfin Dr Co Inc Elevation 2090 KB 2085 GL  
 Address 250 N Water SVE 300 Wichita KS 67202 + 1216  
 Co. Rep / Geo. Paul Jungelman Rig Murfin #8  
 Location: Sec. 13 Twp D92 Rge. 20W Co. Rooks State KS

Interval Tested 3356 - 3380 Zone Tested LAC 20'  
 Anchor Length 24' Drill Pipe Run 3158' Mud Wt. 9.1  
 Top Packer Depth 3351' Drill Collars Run 186' Vis .58  
 Bottom Packer Depth 3356' Wt. Pipe Run 186' WL 8.0  
 Total Depth 3380' Chlorides 5600 ppm System LCM 2H

Blow Description 27-Weak; Built to 4"  
58- No Return  
77- No Blow  
78- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>10'</u>	<u>Mud</u>			<u>100</u>	

Rec Total 10' BHT 104° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>1665</u>	<input checked="" type="checkbox"/> Test <u>1200</u>	T-On Location <u>05:19</u>
(B) First Initial Flow <u>17</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>05:27</u>
(C) First Final Flow <u>19</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>07:20</u>
(D) Initial Shut-In <u>92</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>10:20</u>
(E) Second Initial Flow <u>18</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>11:50</u>
(F) Second Final Flow <u>19</u>	<input checked="" type="checkbox"/> Mileage <u>84</u>	Comments
(G) Final Shut-In <u>55</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1608</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> EM Tool

Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Shale Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Extra Copies
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility	Total <u>1609</u>
	Sub Total <u>1609</u>	MP/DST Disc't

Approved By \_\_\_\_\_ Our Representative Prencer J. Paul Thanks!  
 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.

785-259-0056





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket 65954

NO.

Well Name & No. Steeles #1-13 Test No. 3 Date 06/05/2019  
 Company Murfin Drilling Company Inc Elevation 2090 KB 2085 GL  
 Address 250 N Water St E 300 Wichita KS 67202 + 6216  
 Co. Rep / Geo. Paul Mungelman Rig Murfin #8  
 Location: Sec. 13 Twp 9S Rge. 20W Co. Rooks State KS

Interval Tested 3377'-3398' Zone Tested LAC 'E & F'  
 Anchor Length 21' Drill Pipe Run 3187' Mud Wt. 9.1  
 Top Packer Depth 3372' Drill Collars Run 186' Vis 46  
 Bottom Packer Depth 3377' Wt. Pipe Run - WL 8.8  
 Total Depth 3398' Chlorides 8000 ppm System LCM 2#

Blow Description 77-BOB 4mins; Built to 47"  
75d - No Return  
77-BOB 8mins; Built to 50"  
75d -

Rec	Feet of	%gas	%oil	%water	%mud
<u>890</u>	<u>SW</u>			<u>100%</u>	
<u>85</u>	<u>HMCW</u>			<u>80%</u>	<u>20%</u>
<u>15</u>	<u>CO</u>	<u>100</u>			

Rec Total 990' BHT 108' Gravity 35 API RW 178 @ 66 °F Chlorides 55,000 ppm

(A) Initial Hydrostatic <u>1661</u>	<input checked="" type="checkbox"/> Test <u>1200</u>	T-On Location <u>17:02</u>
(B) First Initial Flow <u>28</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>17:31</u>
(C) First Final Flow <u>240</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>19:20</u>
(D) Initial Shut-In <u>849</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>23:20</u>
(E) Second Initial Flow <u>243</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>01:25 06/06/2019</u>
(F) Second Final Flow <u>477</u>	<input checked="" type="checkbox"/> Mileage <u>84</u>	Comments
(G) Final Shut-In <u>847</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1602</u>	<input type="checkbox"/> Straddle	

Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> EM Tool
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Shale Packer
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Ruined Packer
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby	<input type="checkbox"/> Extra Copies
	<input type="checkbox"/> Accessibility	Sub Total <u>0</u>
	Sub Total <u>1609</u>	Total <u>1609</u>

Approved By \_\_\_\_\_ Our Representative Spencer J. Staal

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.

785-259-0056





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket 65955

NO.

Well Name & No. Steeple #1-13 Test No. 4 Date 06/06/2019  
 Company Murfin Drilling Company Inc Elevation 2090 KB 2085 GL  
 Address 250 N. Water STE 300 Wichita KS 67202-1216  
 Co. Rep / Geo. Paul Gungelman Rig Murfin #8  
 Location: Sec. 13 Twp 9S Rge. 20W Co. Rooks State KS

Interval Tested 3432' - 3492' Zone Tested LAC '2'-J'  
 Anchor Length 60' Drill Pipe Run 3220 Mud Wt. 9.1  
 Top Packer Depth 3427' Drill Collars Run 186' Vls 46  
 Bottom Packer Depth 3432' Wt. Pipe Run — WL 8.8  
 Total Depth 3492 Chlorides 8000 ppm System LCM 2#

Blow Description 77-Weak; Built to 4"  
75A - No Return  
77 - No Blow  
75B - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>2100m</u>	<u>25</u>		<u>75</u>	
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 103° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>1691</u>	<input checked="" type="checkbox"/> Test <u>1200</u>	T-On Location <u>12:51</u>
(B) First Initial Flow <u>20</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>13:16</u>
(C) First Final Flow <u>25</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>15:13</u>
(D) Initial Shut-In <u>956</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>18:13</u>
(E) Second Initial Flow <u>24</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>19:59</u>
(F) Second Final Flow <u>30</u>	<input checked="" type="checkbox"/> Mileage <u>84</u>	Comments
(G) Final Shut-In <u>590</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1613</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> EM Tool

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 1609 MP/DST Disc't

Approved By \_\_\_\_\_ Our Representative Spencer J. Smith Thanks!  
 Tritobite 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.

785-259-0056





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket 65956

NO.

Well Name & No. Steeles #1-13 Test No. 5 Date 06/07/2019  
 Company Murfin Drilling Company Inc Elevation 2090 KB 2685 GL  
 Address 250 N Water STE 300 Wichita Ks 67202+1216  
 Co. Rep / Geo. Paul Munnelman Rig Murfin #8  
 Location: Sec. 13 Twp 9s Rge. 20w Co. Rooks State Ks

Interval Tested 3545' - 3636' Zone Tested Arbuckle  
 Anchor Length 91' Drill Pipe Run \_\_\_\_\_ Mud Wt. 9.0  
 Top Packer Depth 3540' Drill Collars Run 186' Vls 50  
 Bottom Packer Depth 3545' Wt. Pipe Run — WL 9.2  
 Total Depth 3636' Chlorides 6500 ppm System LCM 2#

Blow Description 27 Weab; Built to 1/2"  
77- No Return  
79- No Blow  
78A- No Return

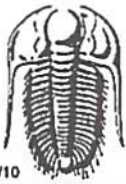
Rec	Feet of	%gas	%oil	%water	%mud
<u>10'</u>	<u>SOCM</u>	<u>5</u>		<u>9.5</u>	
<u>2'</u>	<u>Clean Oil</u>	<u>100</u>			
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____

Rec Total 12' BHT 106° Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>1794</u>	<input checked="" type="checkbox"/> Test <u>1200</u>	T-On Location <u>11:10</u>
(B) First Initial Flow <u>23</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>11:35</u>
(C) First Final Flow <u>33</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>13:40</u>
(D) Initial Shut-In <u>785</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>16:40</u>
(E) Second Initial Flow <u>36</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>18:24</u>
(F) Second Final Flow <u>44</u>	<input checked="" type="checkbox"/> Mileage <u>84</u>	Comments _____
(G) Final Shut-In <u>525</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>1709</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> EM Tool _____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Ruined Packer _____
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder _____	<input type="checkbox"/> Extra Copies _____
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby _____	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility _____	Total <u>1609</u>
	Sub Total <u>1609</u>	MP/DST Disc't _____

Approved By \_\_\_\_\_ Our Representative Spencer J. Staub Thanks!  
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 785-259-0030





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket 65957

NO.

Well Name & No. Steepler #1-13 Test No. 6 Date 06/07/2019  
 Company Murphy Drilling Co Inc Elevation 2090 KB 2085 GL  
 Address 250 N Water STE 300 Wichita KS 67202-1216  
 Co. Rep / Geo. Paul Gumpelman Rig Murphy #8  
 Location: Sec. 13 Twp 9N Rge. 20W Co. Rocks State KS

Interval Tested 3636'-3646' Zone Tested Arbuckle  
 Anchor Length 10' Drill Pipe Run 3446' Mud Wt. 9.0  
 Top Packer Depth 3631' Drill Collars Run 186' Vis 50  
 Bottom Packer Depth 3636' Wt. Pipe Run - WL 10.0  
 Total Depth 3646' Chlorides 6500 ppm System LCM 2#

Blow Description 77- Weak; Built to 2 1/2"  
75D- No Return  
77- Weak; Built to 2"  
75D- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>90'</u>	<u>HWC M</u>		<u>40</u>	<u>60</u>	
<u>90'</u>	<u>HWC M</u>		<u>10</u>	<u>90</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 130' BHT 111° Gravity - API RW 213 @ 64° F Chlorides 48000 ppm

(A) Initial Hydrostatic <u>1324</u>	<input checked="" type="checkbox"/> Test <u>1200</u>	T-On Location <u>11:25</u>
(B) First Initial Flow <u>83</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>11:48</u>
(C) First Final Flow <u>42</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>01:48 06/08/2019</u>
(D) Initial Shut-In <u>1173</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>05:48</u>
(E) Second Initial Flow <u>47</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>07:45</u>
(F) Second Final Flow <u>88</u>	<input checked="" type="checkbox"/> Mileage <u>84</u>	Comments
(G) Final Shut-In <u>1172</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1750</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> EM Tool
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Shale Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Extra Copies
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility	Total <u>1609</u>
	Sub Total <u>1609</u>	MP/DST Disc't

Approved By \_\_\_\_\_ Our Representative James J. Smith *Thanks!*  
 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.

785-259-0056



MDCI  
 Steeples #1-13  
 660FNL 2290FWL  
 Sec. 13-T9S-R20W  
 2090' KB

Formation	Sample top	Datum	Ref	Log Top	Datum	Ref
Anhydrite	1544	+546	-7	1528	+562	+9
B/Anhydrite	1574	+516	+3	1564	+526	+13
Topeka	3069	-979	+13	3068	-978	+14
Heebner	3273	-1183	+14	3273	-1183	+14
Lansing	3313	-1223	+16	3312	-1222	+16
Stark	3496	-1406	+17	3496	-1406	+17
BKC	3528	-1438	+18	3529	-1439	+17
Arbuckle	3622	-1532	-3	3612	-1522	+7
RTD	3725	-1635				
LTD				3725	-1635	



