

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) (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	MERIEM 1-20
Doc ID	1418123

All Electric Logs Run

DIL
DUCP
MEL
BHCS



MDCI  
 Meriem #1-20  
 2235 FNL 730 FWL  
 Sec. 20-T28S-R9E  
 1415' KB

Formation	Sample tops	Datum	Ref	Log Tops	Datum	Ref
Heebner	1073	+342	-9	1070	+345	-6
Lansing	1463	-48	-9	1460	-45	-6
Kansas City	1808	-393	-4	1802	-387	+2
Mound City	1974	-559	-3	1970	-555	+1
Altamont	2138	-723	-3	2133	-718	+2
Pawnee	2220	-805	-2	2216	-801	+2
Ft Scott	2261	-846	-3	2254	-839	+4
Excello	2291	-876	-1	2287	-872	+3
Oakley	2365	-950	-1	2360	-945	+4
Mississippi	2585	-1170	-1	2580	-1165	+4
B/Cowley	2768	-1353	-1	2768	-1353	-1
Arbuckle	2915	-1500	-1	2906	-1491	+8
RTD	3000	-1585				
LTD				2994	-1579	

# Jeff Christian

Wichita, Kansas  
**PETROLEUM GEOLOGIST**

## GEOLOGICAL REPORT

DRILLING TIME AND SAMPLE LOG

OPERATOR	MURKIN DRILLING COMPANY
LEASE	MERRILL # 1-20
LOCATION	2233' NW 1/4 & 30' F.W.U.
BL	1415'
GL	1406'

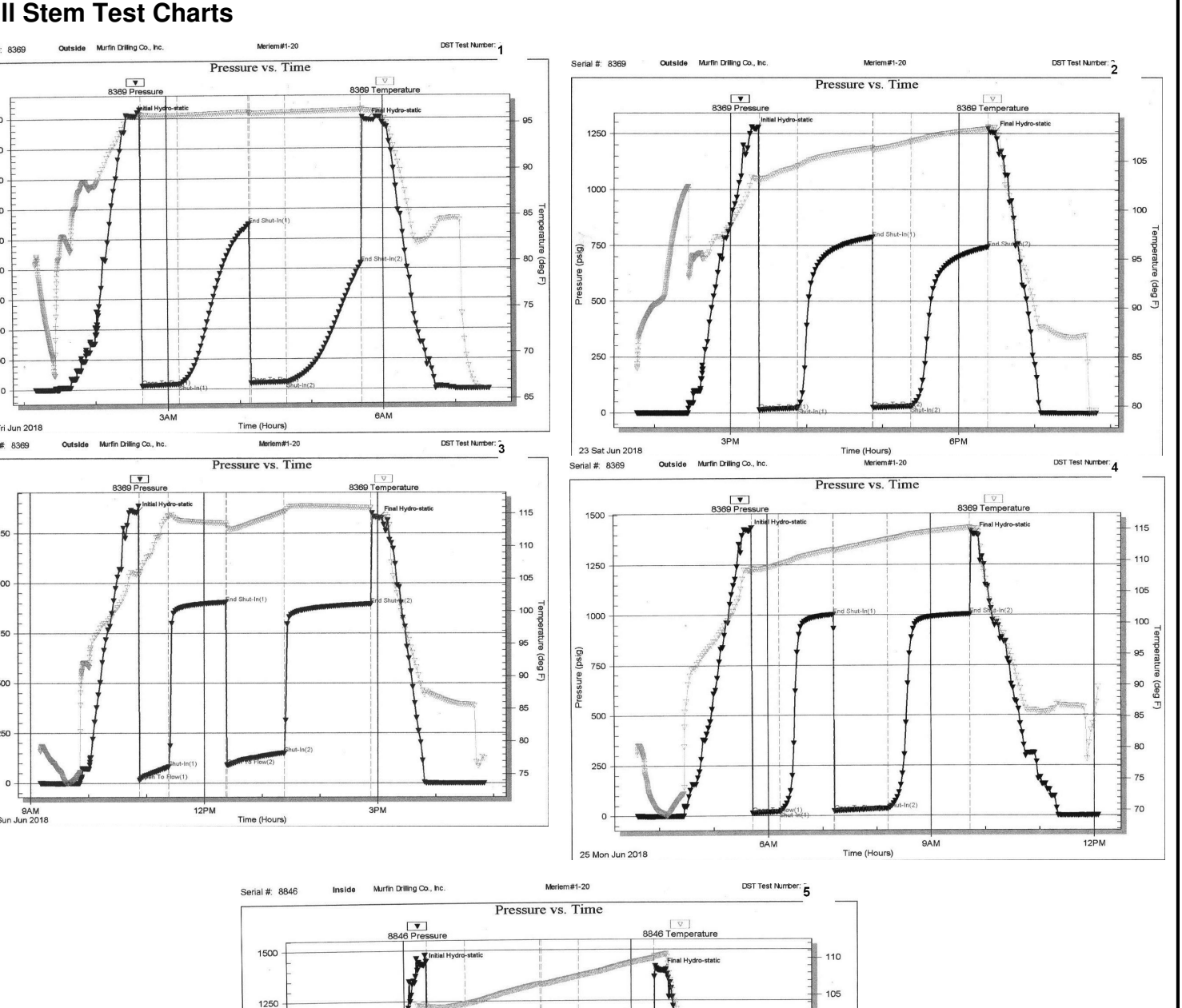
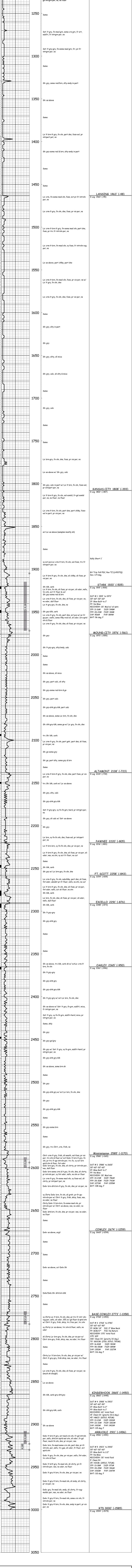
SEC.	20	TWP.	28 S	RNG.	9 E
COUNTY	ELK	STATE	KANSAS		
FILED	15-049-22416				
CONTRACTOR	C & B	DATE	RINO 2		
DRILLING STARTED	06/20/2018	COMPLETED	06/28/2018	W/ 395.5K	
MUD USE/LAUNCH	1000'	MUD TYPE	CHEMICAL	TO RTD	
DRAILING THE BENT FROM	1000'	TO RTD	PIONEER		
SAMPLES SAVED FROM	1000'	TO RTD	DIL		
SAMPLES EXAMINED FROM	1000'	TO RTD	GEOLOGICAL SUPERVISOR FROM 110'		

FORMATION	TOP	LOG	DATE	TOP	DATE
HEEBNER	1070'	(-342)	10/31	1073'	(-342)
LANASTING	1460'	(-48)	10/31	1463'	(-48)
KANSAS CITY	1802'	(-387)	10/31	1808'	(-383)
MOUND CITY	1970'	(-59)	10/31	1974'	(-59)
PAWNEE	2216'	(-801)	10/31	2220'	(-805)
EXCELLO	2288'	(-873)	10/31	2291'	(-876)
MISSISSIPPIAN	2380'	(-1165)	10/31	2385'	(-1170)
KINDERHOOK	2600'	(-1449)	10/31	2604'	(-1449)
ARBUCKLE	2994'	(-1879)	10/31	2995'	(-1880)

DATE	7:00 AM DEPTH	REMARKS
6/19/18	0	MIRT
6/20/18	0	SPUD 7:00 am
6/21/18	1250	DBLG
6/22/18	1972'	TOH with DST # 1 dev. 1/4 deg. @ 1905'
6/23/18	2600'	CEFS dev. 3/4 deg.
6/24/18	2783'	CEFS
6/25/18	2923'	OB w/ DST # 4 dev. 1 deg.
6/26/18	3000'	RTD @ 4:45 am Logged from 9 am to 12:30 pm

**Remarks**  
 5 1/2" production casing set to further test the lower Mississippian and Arbuckle formations.  
 Electric log measurements correlate about 4' high on average compared to rotary measurements.  
 Samples delivered to the Kansas Geological Survey in Wichita, KS.

Respectfully Submitted,  
*Jeff Christian*  
 Jeff Christian



Well	Depth	Pressure vs. Time
Well # 1	1915'	[Graph]
Well # 2	1915'	[Graph]
Well # 3	1915'	[Graph]
Well # 4	1915'	[Graph]
Well # 5	1915'	[Graph]



## DRILL STEM TEST REPORT

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

250 North Water Suite 300  
Wichita, KS 67202-1216

ATTN: Jeff Christian

### **Meriem #1-20**

### **20-28S-9E Elk,KS**

Start Date: 2018.06.22 @ 01:10:00

End Date: 2018.06.22 @ 07:28:00

Job Ticket #: 63398                      DST #: 1

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

Printed: 2018.06.27 @ 14:52:13



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.  
 250 North Water Suite 300  
 Wichita, KS 67202-1216  
 ATTN: Jeff Christian

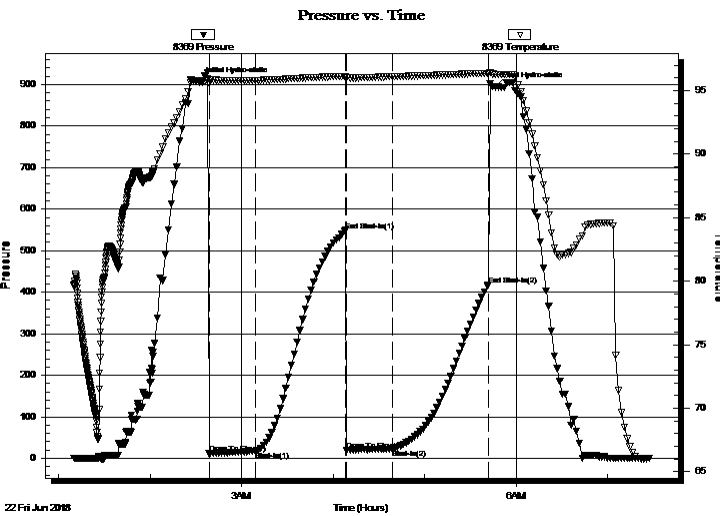
**20-28S-9E EIk, KS**  
**Meriem #1-20**  
 Job Ticket: 63398      **DST#: 1**  
 Test Start: 2018.06.22 @ 01:10:00

## GENERAL INFORMATION:

Formation: **LKC lower K - L**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 02:38:40  
 Time Test Ended: 07:28:00  
 Interval: **1915.00 ft (KB) To 1972.00 ft (KB) (TVD)**  
 Total Depth: 1972.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Jimmy Ricketts  
 Unit No: 80  
 Reference Elevations: 1415.00 ft (KB)  
 1406.00 ft (CF)  
 KB to GR/CF: 9.00 ft

**Serial #: 8369      Outside**  
 Press@RunDepth: 22.53 psig @ 1916.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2018.06.22      End Date: 2018.06.22      Last Calib.: 2018.06.22  
 Start Time: 01:10:01      End Time: 07:28:00      Time On Btm: 2018.06.22 @ 02:32:10  
 Time Off Btm: 2018.06.22 @ 05:46:30

TEST COMMENT: IF - Weak blow building to 1"  
 FF - No blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	906.02	95.78	Initial Hydro-static
7	11.02	95.55	Open To Flow (1)
37	16.21	95.80	Shut-In(1)
96	548.46	96.12	End Shut-In(1)
97	19.61	96.00	Open To Flow (2)
127	22.53	96.10	Shut-In(2)
190	417.65	96.36	End Shut-In(2)
195	893.65	96.26	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
20.00	Oil spotted mud Tr O & 100% M	0.10

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc.  
250 North Water Suite 300  
Wichita, KS 67202-1216  
ATTN: Jeff Christian

**20-28S-9E EIk,KS**  
**Meriem #1-20**  
Job Ticket: 63398      **DST#: 1**  
Test Start: 2018.06.22 @ 01:10:00

## Tool Information

Drill Pipe:	Length: 1602.00 ft	Diameter: 3.80 inches	Volume: 22.47 bbl	Tool Weight: 1900.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 305.00 ft	Diameter: 2.25 inches	Volume: 1.50 bbl	Weight to Pull Loose: 43000.00 lb
			<u>Total Volume: 23.97 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 42000.00 lb
Depth to Top Packer:	1915.00 ft			Final 42000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	57.00 ft			
Tool Length:	77.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Change Over Sub	1.00			1896.00	
Shut In Tool	5.00			1901.00	
Hydraulic tool	5.00			1906.00	
Packer	4.00			1910.00	20.00      Bottom Of Top Packer
Packer	5.00			1915.00	
Stubb	1.00			1916.00	
Recorder	0.00	8369	Outside	1916.00	
Recorder	0.00	8846	Inside	1916.00	
Perforations	15.00			1931.00	
Change Over Sub	0.50			1931.50	
Blank Spacing	31.00			1962.50	
Change Over Sub	0.50			1963.00	
Perforations	4.00			1967.00	
Bullnose	5.00			1972.00	57.00      Bottom Packers & Anchor

**Total Tool Length: 77.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc.

**20-28S-9E Eik, KS**

250 North Water Suite 300  
Wichita, KS 67202-1216

**Meriem #1-20**

Job Ticket: 63398

**DST#: 1**

ATTN: Jeff Christian

Test Start: 2018.06.22 @ 01:10:00

## 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: 55.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	Oil spotted mud Tr O & 100% M	0.098

Total Length: 20.00 ft      Total Volume: 0.098 bbl

Num Fluid Samples: 0

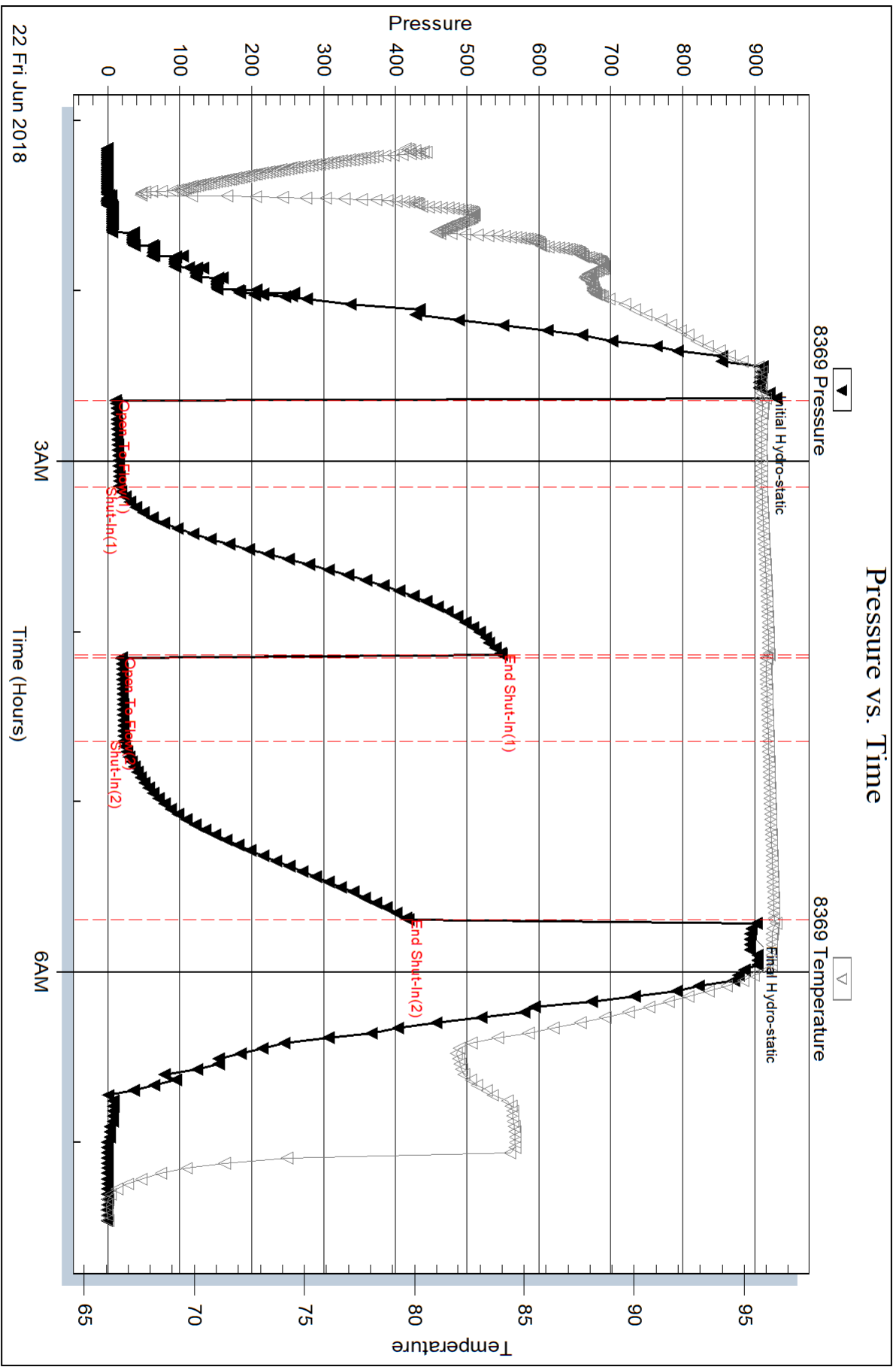
Num Gas Bombs: 0

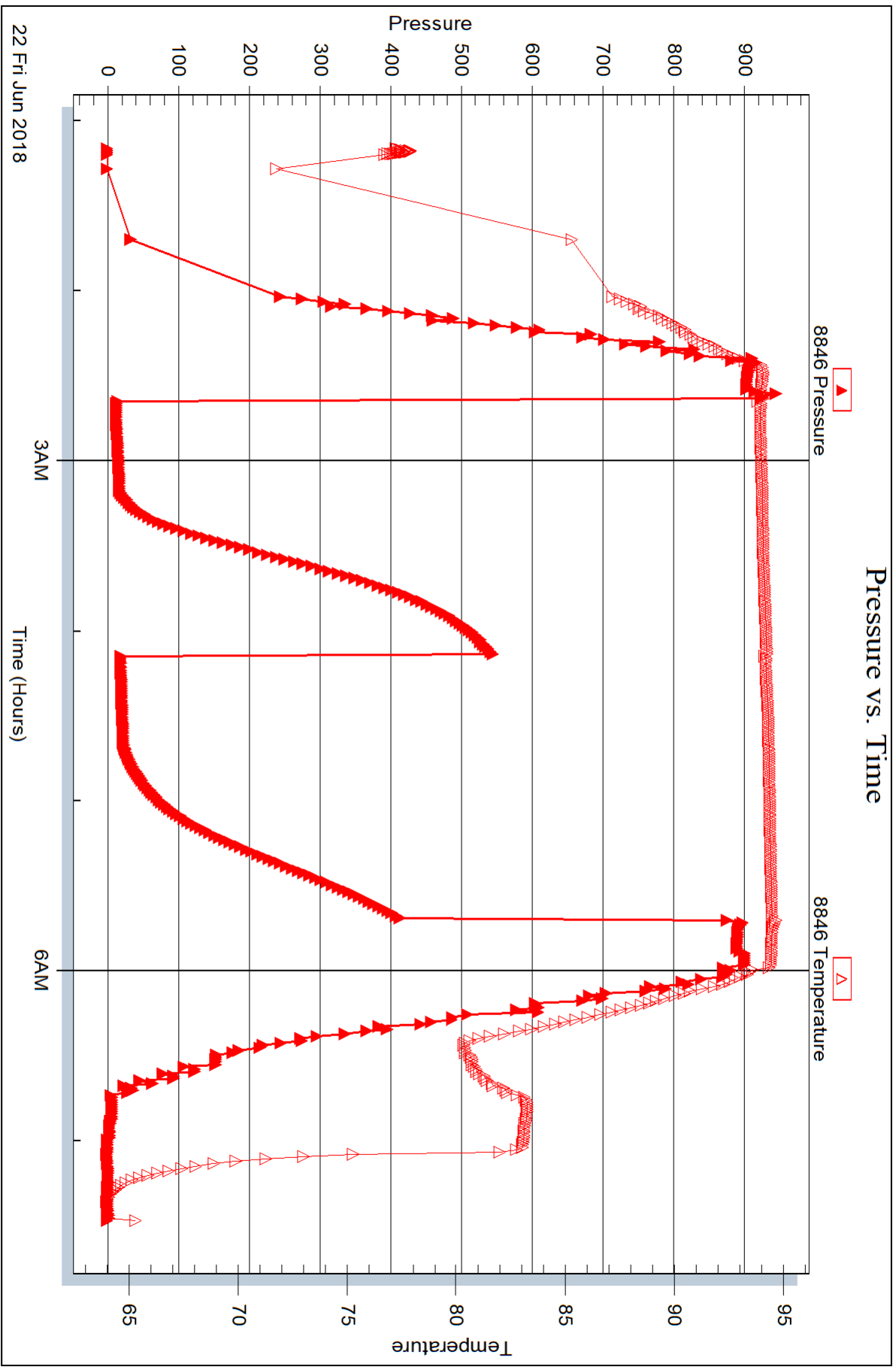
Serial #:

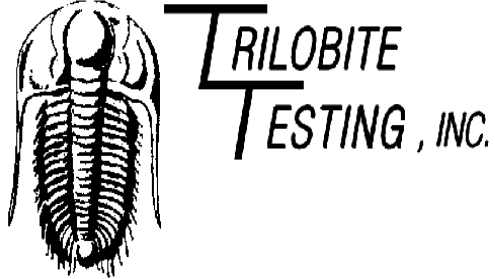
Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

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

250 North Water Suite 300  
Wichita, KS 67202-1216

ATTN: Shauna Gunzelman/Jef

**Meriem #1-20**

**20-28S-9E Elk,KS**

Start Date: 2018.06.23 @ 13:46:00

End Date: 2018.06.23 @ 19:48:39

Job Ticket #: 63399                      DST #: 2

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

Printed: 2018.06.27 @ 14:51:27



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

**20-28S-9E EIk, KS**

250 North Water Suite 300  
Wichita, KS 67202-1216

**Meriem #1-20**

Job Ticket: 63399

**DST#: 2**

ATTN: Shauna Gunzelman/Jef

Test Start: 2018.06.23 @ 13:46:00

## GENERAL INFORMATION:

Formation: **Mississippian**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:22:20

Time Test Ended: 19:48:39

Test Type: Conventional Bottom Hole (Initial)

Tester: Jimmy Ricketts

Unit No: 80

**Interval: 2588.00 ft (KB) To 2600.00 ft (KB) (TVD)**

Reference Elevations: 1415.00 ft (KB)

Total Depth: 2600.00 ft (KB) (TVD)

1406.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

**Serial #: 8369 Outside**

Press@RunDepth: 29.64 psig @ 2589.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.06.23

End Date:

2018.06.23

Last Calib.: 2018.06.23

Start Time: 13:46:01

End Time:

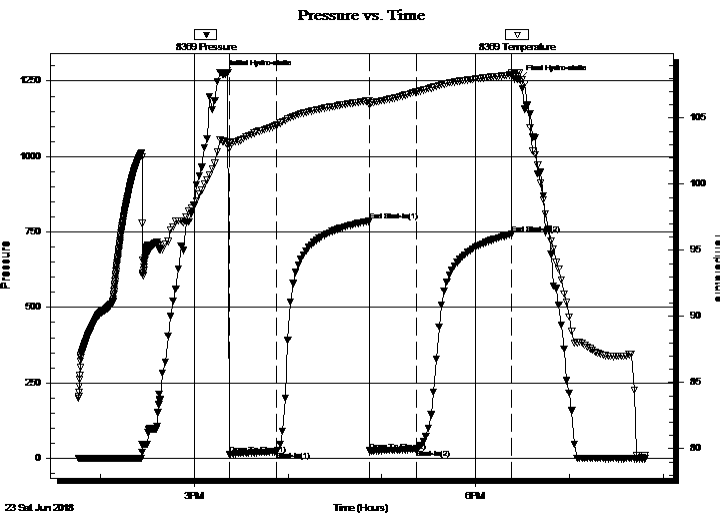
19:48:40

Time On Btm: 2018.06.23 @ 15:18:50

Time Off Btm: 2018.06.23 @ 18:27:50

TEST COMMENT: IF - Weak blow building to 1"

FF - No blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1271.74	103.21	Initial Hydro-static
4	13.74	102.68	Open To Flow (1)
34	22.66	104.47	Shut-In(1)
94	785.69	106.32	End Shut-In(1)
94	25.00	106.02	Open To Flow (2)
124	29.64	106.97	Shut-In(2)
184	742.18	108.25	End Shut-In(2)
189	1254.54	108.41	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
30.00	Drilling mud 100% M	0.15

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

Murfin Drilling Co., Inc.

**20-28S-9E EIK,KS**

250 North Water Suite 300  
Wichita, KS 67202-1216

**Meriem #1-20**

Job Ticket: 63399

**DST#: 2**

ATTN: Shauna Gunzelman/Jef

Test Start: 2018.06.23 @ 13:46:00

**GENERAL INFORMATION:**

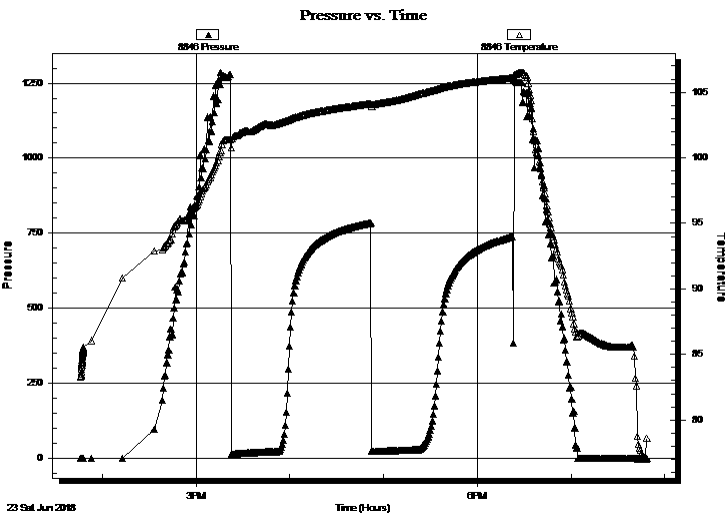
Formation: <b>Mississippian</b>				Test Type: Conventional Bottom Hole (Initial)
Deviated: No	Whipstock:	ft (KB)		Tester: Jimmy Ricketts
Time Tool Opened: 15:22:20				Unit No: 80
Time Test Ended: 19:48:39				
Interval: <b>2588.00 ft (KB) To 2600.00 ft (KB) (TVD)</b>			Reference Elevations:	1415.00 ft (KB)
Total Depth: 2600.00 ft (KB) (TVD)				1406.00 ft (CF)
Hole Diameter: 7.88 inches	Hole Condition: Fair		KB to GR/CF:	9.00 ft

**Serial #: 8846**

Inside

Press@RunDepth:                    psig @    2589.00 ft (KB)	Capacity:                                  8000.00 psig
Start Date:                            2018.06.23                   End Date:                           2018.06.23	Last Calib.:                              1899.12.30
Start Time:                            13:46:01                    End Time:                           19:48:50	Time On Btm:
	Time Off Btm:

TEST COMMENT: IF - Weak blow building to 1"  
FF - No blow



**PRESSURE SUMMARY**

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

**Recovery**

Length (ft)	Description	Volume (bbl)
30.00	Drilling mud 100% M	0.15

**Gas Rates**

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc.

**20-28S-9E EIk,KS**

250 North Water Suite 300  
Wichita, KS 67202-1216

**Meriem #1-20**

Job Ticket: 63399

**DST#: 2**

ATTN: Shauna Gunzelman/Jef

Test Start: 2018.06.23 @ 13:46:00

## Tool Information

Drill Pipe:	Length: 2294.00 ft	Diameter: 3.80 inches	Volume: 32.18 bbl	Tool Weight: 1900.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 21000.00 lb
Drill Collar:	Length: 305.00 ft	Diameter: 2.25 inches	Volume: 1.50 bbl	Weight to Pull Loose: 49000.00 lb
			<u>Total Volume: 33.68 bbl</u>	Tool Chased 1.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial 46000.00 lb
Depth to Top Packer:	2588.00 ft			Final 46000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	12.00 ft			
Tool Length:	32.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			2569.00	
Shut In Tool	5.00			2574.00	
Hydraulic tool	5.00			2579.00	
Packer	4.00			2583.00	20.00 Bottom Of Top Packer
Packer	5.00			2588.00	
Stubb	1.00			2589.00	
Recorder	0.00	8369	Outside	2589.00	
Recorder	0.00	8846	Inside	2589.00	
Perforations	6.00			2595.00	
Bullnose	5.00			2600.00	12.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>32.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc.

**20-28S-9E Eik, KS**

250 North Water Suite 300  
Wichita, KS 67202-1216

**Meriem #1-20**

Job Ticket: 63399

**DST#: 2**

ATTN: Shauna Gunzelman/Jef

Test Start: 2018.06.23 @ 13:46:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 35.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	Drilling mud 100% M	0.148

Total Length: 30.00 ft      Total Volume: 0.148 bbl

Num Fluid Samples: 0

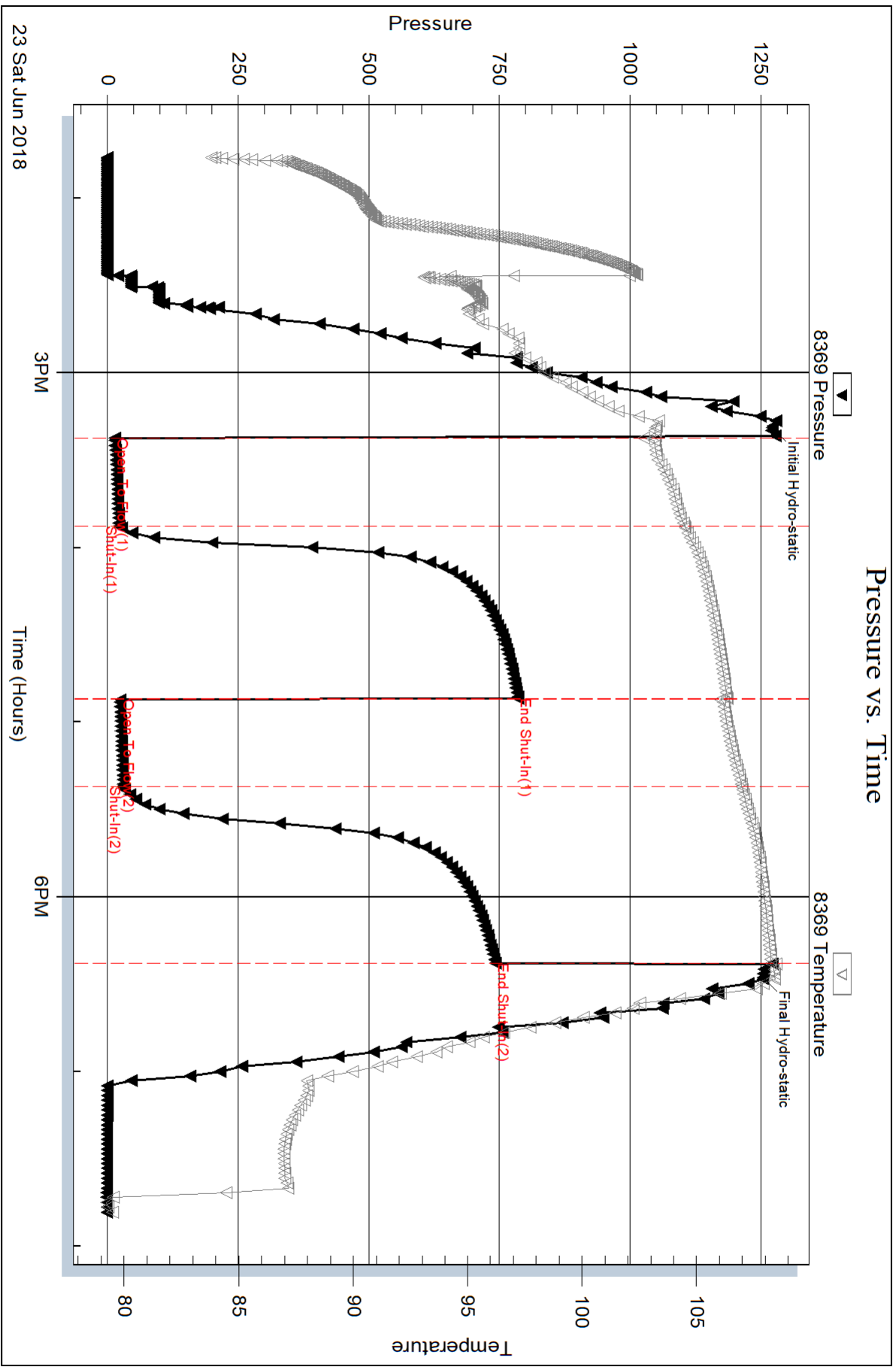
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

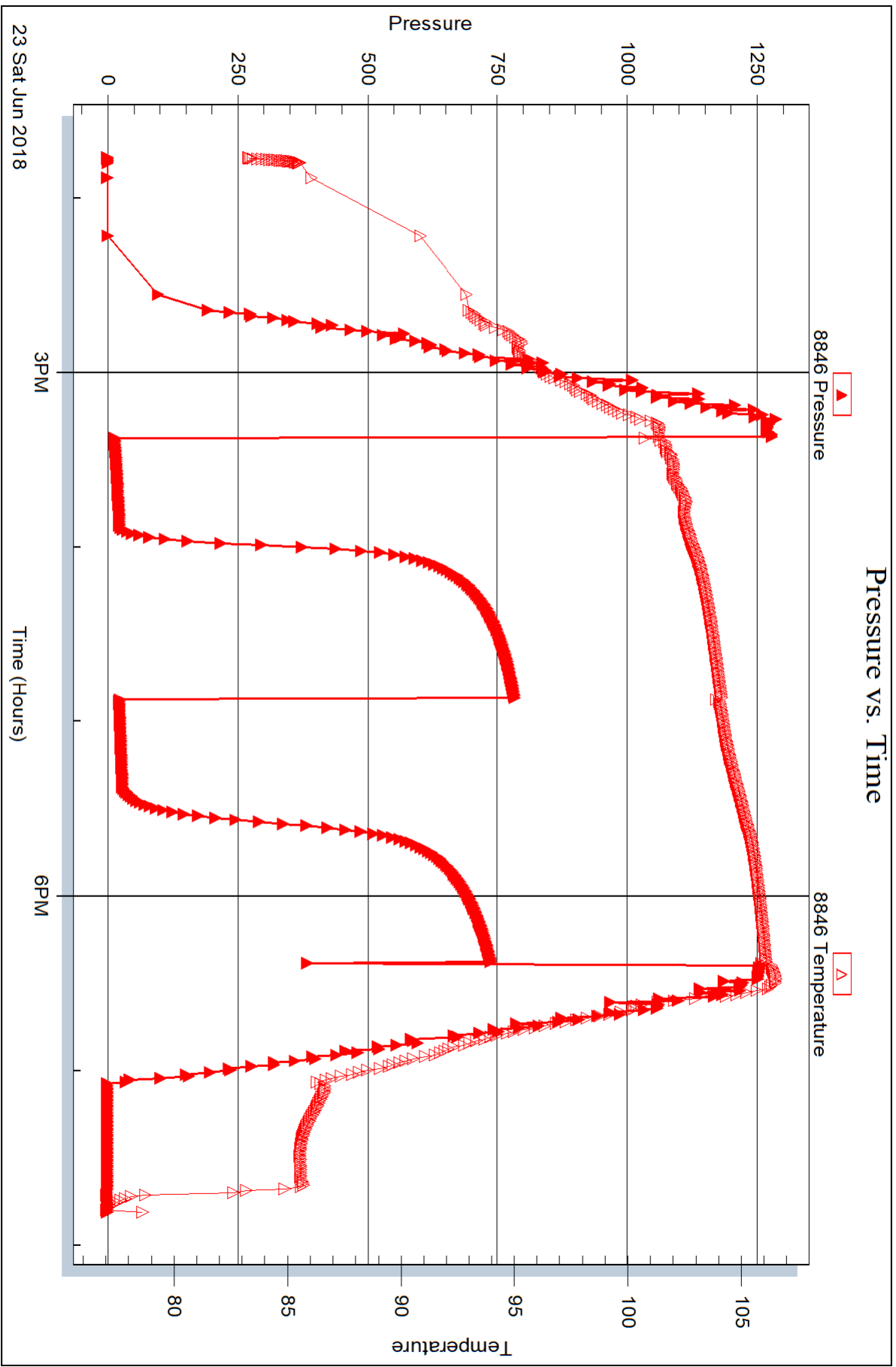


23 Sat Jun 2018

3PM

Time (Hours)

6PM



23 Sat Jun 2018



## DRILL STEM TEST REPORT

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

250 North Water Suite 300  
Wichita, KS 67202-1216

ATTN: Shauna Gunzelman/Jef

**Meriem #1-20**

**20-28S-9E Elk,KS**

Start Date: 2018.06.24 @ 09:10:00

End Date: 2018.06.24 @ 16:50:20

Job Ticket #: 63400                      DST #: 3

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

Printed: 2018.06.27 @ 14:51:07

Murfin Drilling Co., Inc.

20-28S-9E Elk,KS

Meriem #1-20

DST # 3

Lower Mississippian

2018.06.24



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

**20-28S-9E EIk, KS**

250 North Water Suite 300  
Wichita, KS 67202-1216

**Meriem #1-20**

Job Ticket: 63400

**DST#: 3**

ATTN: Shauna Gunzelman/Jef

Test Start: 2018.06.24 @ 09:10:00

## GENERAL INFORMATION:

Formation: **Lower Mississippian**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:52:40

Time Test Ended: 16:50:20

Test Type: Conventional Bottom Hole (Initial)

Tester: Jimmy Ricketts

Unit No: 80

**Interval: 2768.00 ft (KB) To 2783.00 ft (KB) (TVD)**

Reference Elevations: 1415.00 ft (KB)

Total Depth: 2783.00 ft (KB) (TVD)

1406.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

**Serial #: 8369 Outside**

Press@RunDepth: 150.31 psig @ 2769.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.06.24

End Date: 2018.06.24

Last Calib.: 1899.12.30

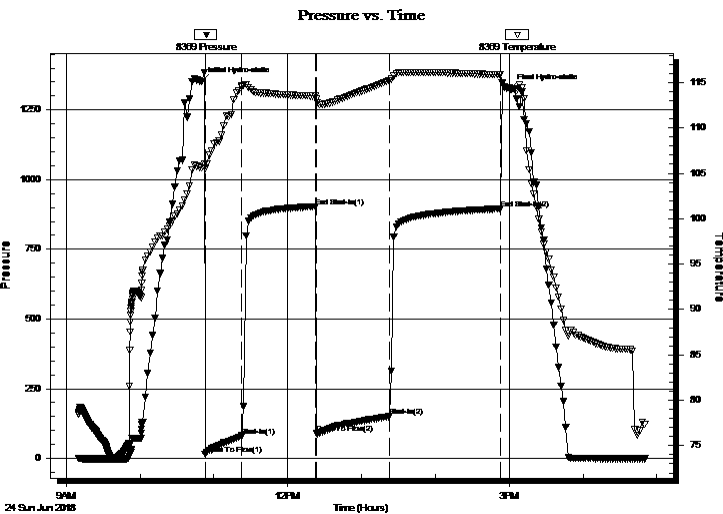
Start Time: 09:10:01

End Time: 16:50:20

Time On Btm: 2018.06.24 @ 10:50:10

Time Off Btm: 2018.06.24 @ 15:01:20

**TEST COMMENT:** IF - Weak blow building to strong blow in 14 minutes  
IS - 2" blow back  
FF - Weak blow building to strong blow in 17 minutes



## PRESSURE SUMMARY

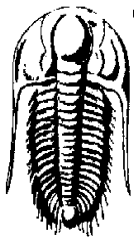
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1352.19	105.61	Initial Hydro-static
3	16.07	105.55	Open To Flow (1)
33	80.92	114.63	Shut-In(1)
93	903.50	113.50	End Shut-In(1)
93	89.83	113.18	Open To Flow (2)
153	150.31	115.24	Shut-In(2)
243	895.24	115.85	End Shut-In(2)
252	1327.22	114.27	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
70.00	Gas and heavy oil cut mud 2%G 20%O	70.341
300.00	Clean oil 100% O	2.07
375.00	Gas in pipe 100% G	5.26

## Gas Rates

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



**TRILOBITE**  
**TESTING, INC.**

**DRILL STEM TEST REPORT**

Murfin Drilling Co., Inc.

250 North Water Suite 300  
Wichita, KS 67202-1216

ATTN: Shauna Gunzelman/Jef

**20-28S-9E EIk,KS**

**Meriem #1-20**

Job Ticket: 63400

**DST#: 3**

Test Start: 2018.06.24 @ 09:10:00

**GENERAL INFORMATION:**

Formation: **Lower Mississippian**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:52:40

Time Test Ended: 16:50:20

Test Type: Conventional Bottom Hole (Initial)

Tester: Jimmy Ricketts

Unit No: 80

Interval: **2768.00 ft (KB) To 2783.00 ft (KB) (TVD)**

Total Depth: 2783.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1415.00 ft (KB)

1406.00 ft (CF)

KB to GR/CF: 9.00 ft

**Serial #: 8846** Inside

Press@RunDepth: psig @ 2769.00 ft (KB)

Start Date: 2018.06.24 End Date: 2018.06.24

Start Time: 09:10:01 End Time: 16:50:30

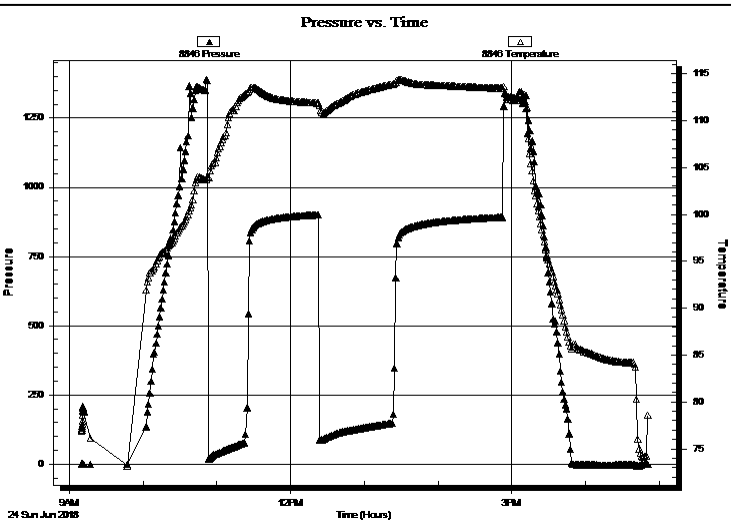
Capacity: 8000.00 psig

Last Calib.: 1899.12.30

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IF - Weak blow building to strong blow in 14 minutes  
IS - 2" blow back  
FF - Weak blow building to strong blow in 17 minutes



**PRESSURE SUMMARY**

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

**Recovery**

Length (ft)	Description	Volume (bbl)
70.00	Gas and heavy oil cut mud 2%G 20%O	70.341
300.00	Clean oil 100% O	2.07
375.00	Gas in pipe 100% G	5.26

**Gas Rates**

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc.

**20-28S-9E E1k,KS**

250 North Water Suite 300  
Wichita, KS 67202-1216

**Meriem #1-20**

Job Ticket: 63400

**DST#: 3**

ATTN: Shauna Gunzelman/Jef

Test Start: 2018.06.24 @ 09:10:00

## Tool Information

Drill Pipe:	Length: 2452.00 ft	Diameter: 3.80 inches	Volume: 34.40 bbl	Tool Weight: 1900.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 305.00 ft	Diameter: 2.25 inches	Volume: 1.50 bbl	Weight to Pull Loose: 54000.00 lb
			<u>Total Volume: 35.90 bbl</u>	Tool Chased 1.00 ft
Drill Pipe Above KB:	9.00 ft			String Weight: Initial 47000.00 lb
Depth to Top Packer:	2768.00 ft			Final 51000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	15.00 ft			
Tool Length:	35.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			2749.00	
Shut In Tool	5.00			2754.00	
Hydraulic tool	5.00			2759.00	
Packer	4.00			2763.00	20.00 Bottom Of Top Packer
Packer	5.00			2768.00	
Stubb	1.00			2769.00	
Recorder	0.00	8369	Outside	2769.00	
Recorder	0.00	8846	Inside	2769.00	
Perforations	9.00			2778.00	
Bullnose	5.00			2783.00	15.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>35.00</b>				





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc.

**20-28S-9E Eik, KS**

250 North Water Suite 300  
Wichita, KS 67202-1216

**Meriem #1-20**

Job Ticket: 63400

**DST#: 3**

ATTN: Shauna Gunzelman/Jef

Test Start: 2018.06.24 @ 09:10:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

32 deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 41.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
70.00	Gas and heavy oil cut mud 2%G 20%O 78%N	0.344
300.00	Clean oil 100% O	2.067
375.00	Gas in pipe 100% G	5.260

Total Length: 745.00 ft

Total Volume: 7.671 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

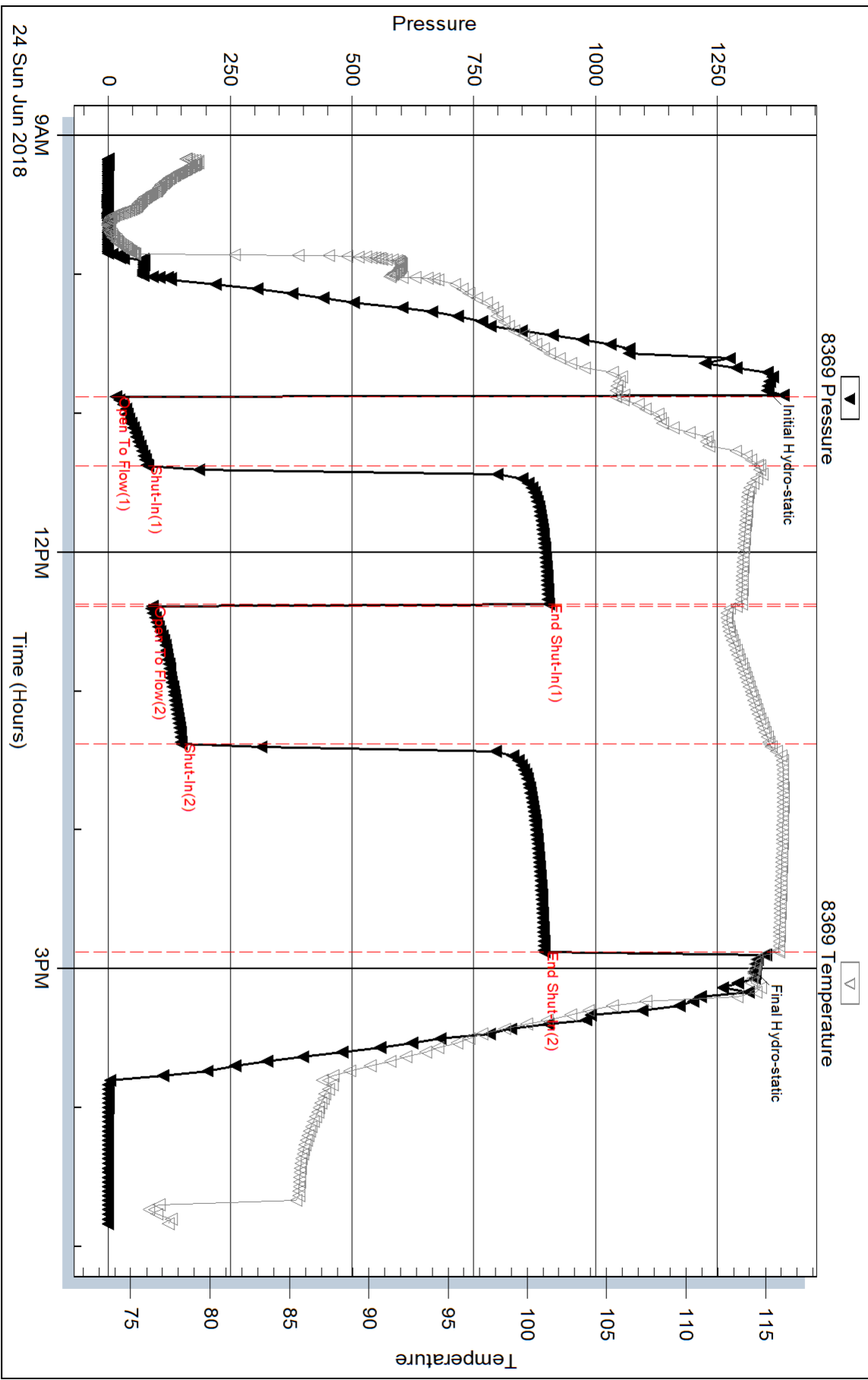
Serial #:

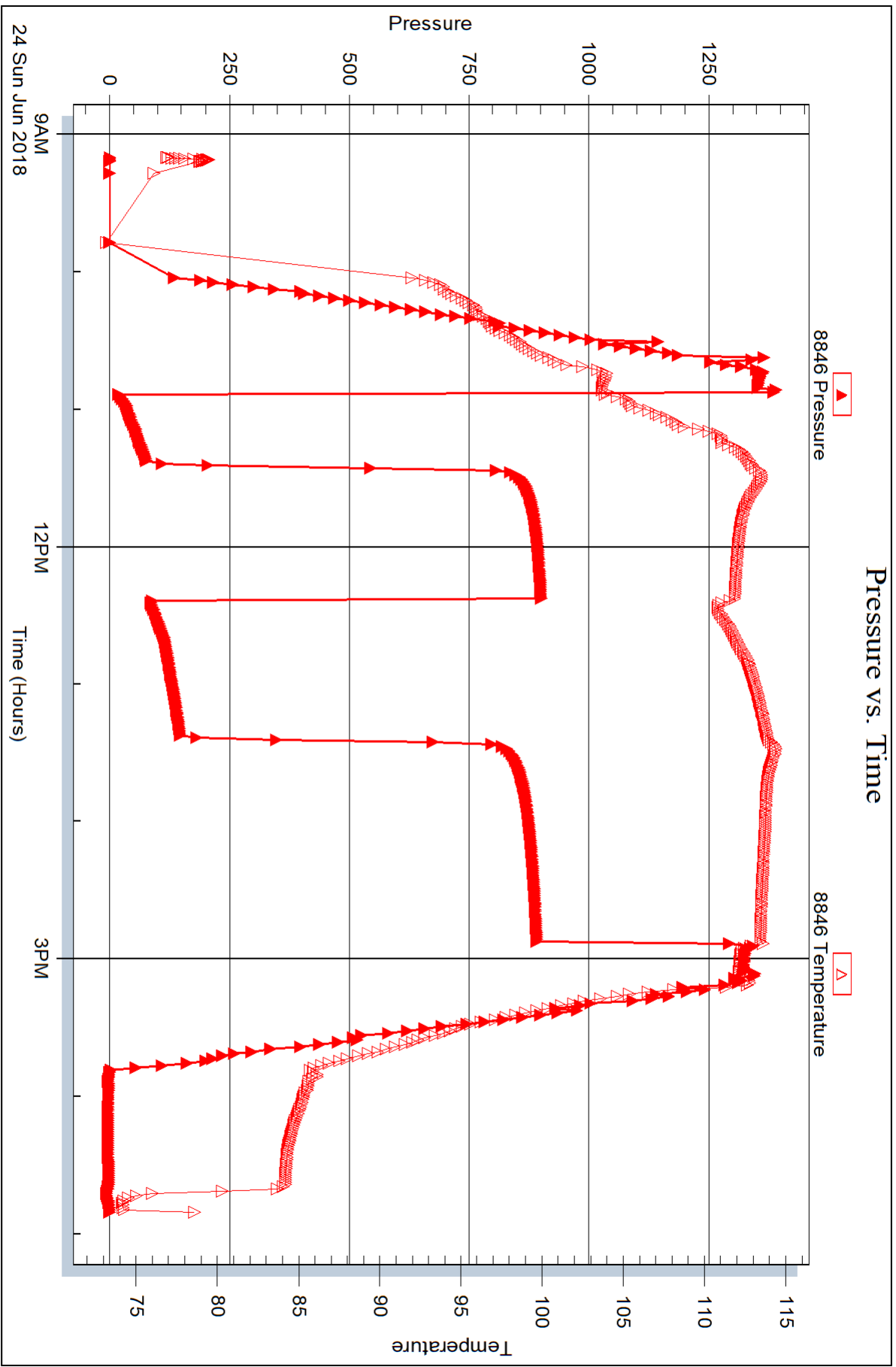
Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time







## DRILL STEM TEST REPORT

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

250 North Water Suite 300  
Wichita, KS 67202-1216

ATTN: Shauna Gunzelman/Jef

### **Meriem #1-20**

### **20-28S-9E EIk,KS**

Start Date: 2018.06.25 @ 03:36:00

End Date: 2018.06.25 @ 12:05:09

Job Ticket #: 63801                      DST #: 4

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

Printed: 2018.06.27 @ 14:50:48



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

**20-28S-9E EIk, KS**

250 North Water Suite 300  
Wichita, KS 67202-1216

**Meriem #1-20**

Job Ticket: 63801

**DST#: 4**

ATTN: Shauna Gunzelman/Jef

Test Start: 2018.06.25 @ 03:36:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:42:20

Time Test Ended: 12:05:09

Test Type: Conventional Bottom Hole (Initial)

Tester: Jimmy Ricketts

Unit No: 80

**Interval: 2908.00 ft (KB) To 2923.00 ft (KB) (TVD)**

Reference Elevations: 1415.00 ft (KB)

Total Depth: 2923.00 ft (KB) (TVD)

1406.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

**Serial #: 8369 Outside**

Press@RunDepth: 33.40 psig @ 2909.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.06.25

End Date:

2018.06.25

Last Calib.:

2018.06.25

Start Time: 03:36:01

End Time:

12:05:10

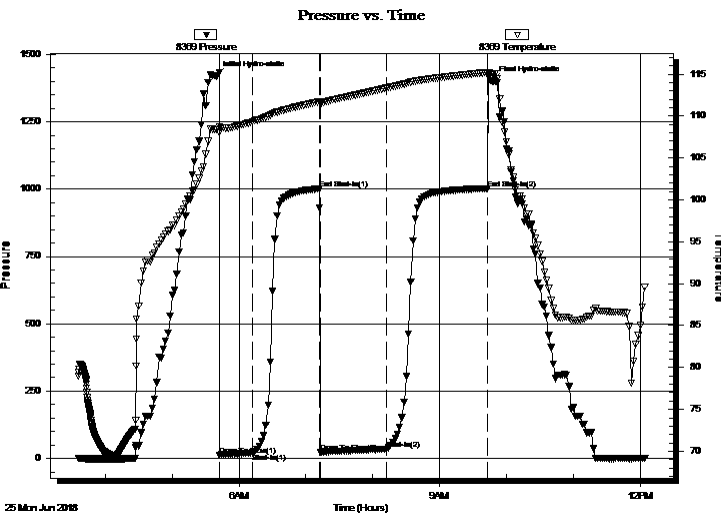
Time On Btm:

2018.06.25 @ 05:39:20

Time Off Btm:

2018.06.25 @ 09:47:09

TEST COMMENT: IF - Weak blow building to 2"  
FF - Weak blow building to 1"



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1419.81	108.36	Initial Hydro-static
3	12.53	108.01	Open To Flow (1)
33	20.52	109.34	Shut-In(1)
93	1001.14	111.72	End Shut-In(1)
94	22.31	111.49	Open To Flow (2)
153	33.40	113.34	Shut-In(2)
244	1002.34	115.20	End Shut-In(2)
248	1401.89	115.06	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
45.00	Heavy oil cut mud 40% O & 60% M	0.22
15.00	Clean oil 100% O	0.07

## Gas Rates

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



# TRILOBITE TESTING, INC.

## DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

**20-28S-9E EIk, KS**

250 North Water Suite 300  
Wichita, KS 67202-1216

**Meriem #1-20**

Job Ticket: 63801

**DST#: 4**

ATTN: Shauna Gunzelman/Jef

Test Start: 2018.06.25 @ 03:36:00

### GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:42:20

Time Test Ended: 12:05:09

Test Type: Conventional Bottom Hole (Initial)

Tester: Jimmy Ricketts

Unit No: 80

**Interval: 2908.00 ft (KB) To 2923.00 ft (KB) (TVD)**

Reference Elevations: 1415.00 ft (KB)

Total Depth: 2923.00 ft (KB) (TVD)

1406.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

**Serial #: 8846**

**Inside**

Press@RunDepth: psig @ 2909.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.06.25

End Date: 2018.06.25

Last Calib.: 1899.12.30

Start Time: 03:36:01

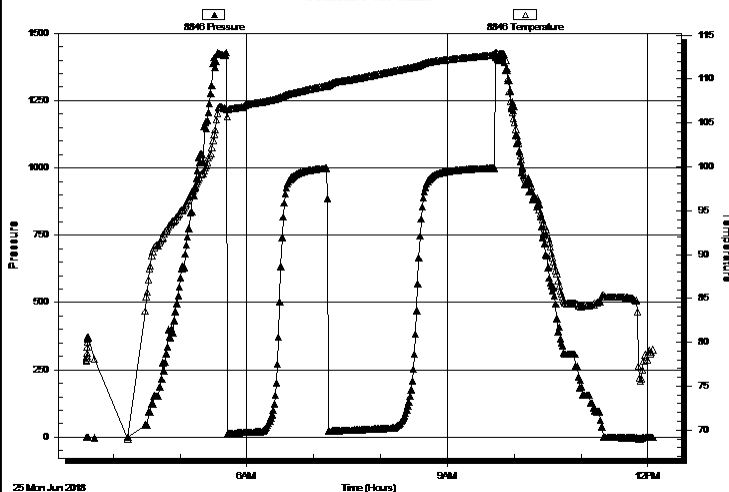
End Time: 12:05:20

Time On Btm:

Time Off Btm:

TEST COMMENT: IF - Weak blow building to 2"  
FF - Weak blow building to 1"

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
45.00	Heavy oil cut mud 40% O & 60% M	0.22
15.00	Clean oil 100% O	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.

**20-28S-9E E1k,KS**

250 North Water Suite 300  
Wichita, KS 67202-1216

**Meriem #1-20**

Job Ticket: 63801

**DST#: 4**

ATTN: Shauna Gunzelman/Jef

Test Start: 2018.06.25 @ 03:36:00

## Tool Information

Drill Pipe:	Length: 2609.00 ft	Diameter: 3.80 inches	Volume: 36.60 bbl	Tool Weight: 1900.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 305.00 ft	Diameter: 2.25 inches	Volume: 1.50 bbl	Weight to Pull Loose: 53000.00 lb
			<u>Total Volume: 38.10 bbl</u>	Tool Chased 1.00 ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial 47000.00 lb
Depth to Top Packer:	2908.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	15.00 ft			
Tool Length:	35.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			2889.00	
Shut In Tool	5.00			2894.00	
Hydraulic tool	5.00			2899.00	
Packer	4.00			2903.00	20.00 Bottom Of Top Packer
Packer	5.00			2908.00	
Stubb	1.00			2909.00	
Recorder	0.00	8369	Outside	2909.00	
Recorder	0.00	8846	Inside	2909.00	
Perforations	9.00			2918.00	
Bullnose	5.00			2923.00	15.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>35.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc.

**20-28S-9E Eik, KS**

250 North Water Suite 300  
Wichita, KS 67202-1216

**Meriem #1-20**

Job Ticket: 63801

**DST#: 4**

ATTN: Shauna Gunzelman/Jef

Test Start: 2018.06.25 @ 03:36:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

32.6 deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
45.00	Heavy oil cut mud 40% O & 60% M	0.221
15.00	Clean oil 100% O	0.074

Total Length: 60.00 ft

Total Volume: 0.295 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

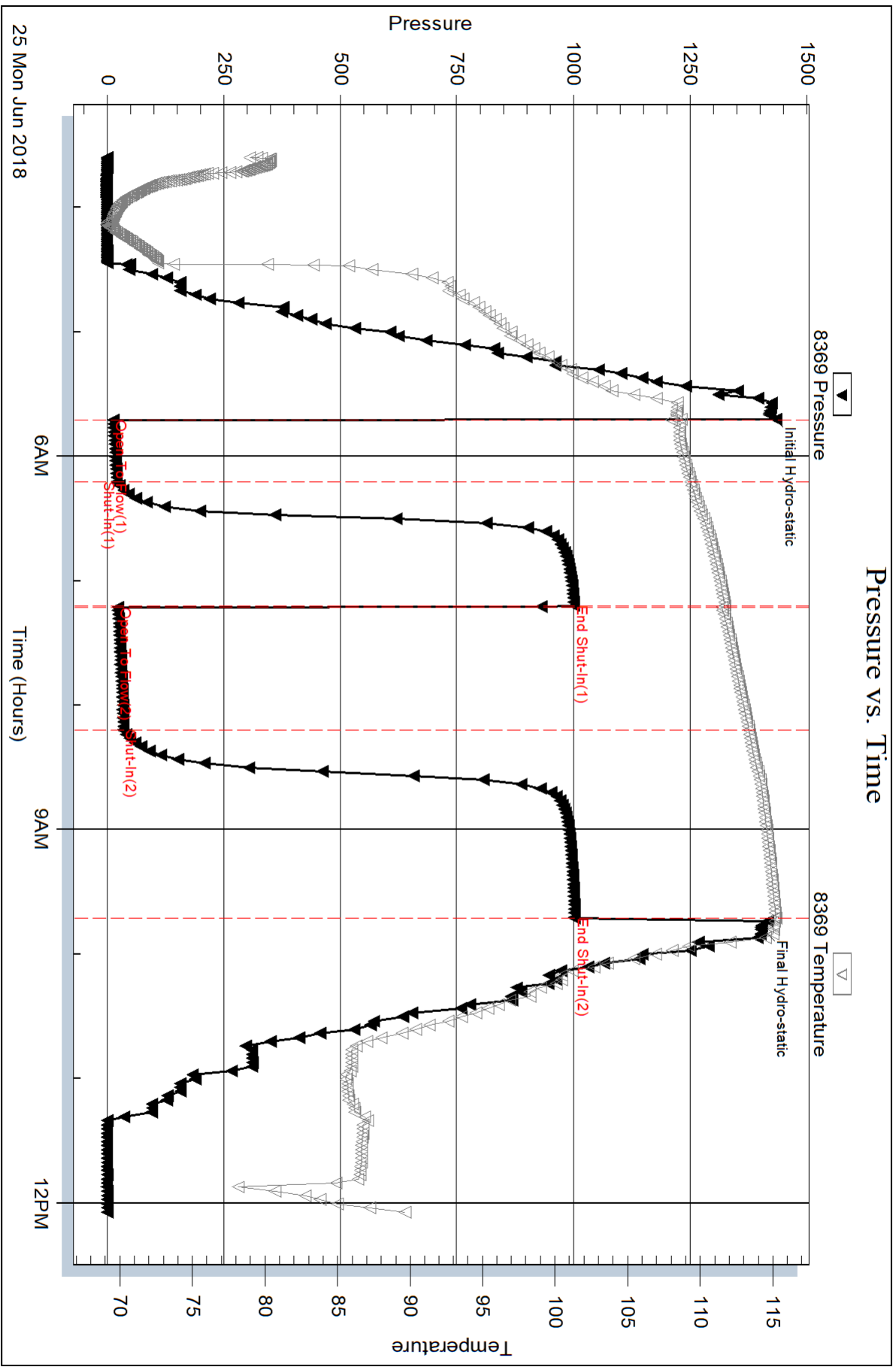
Serial #:

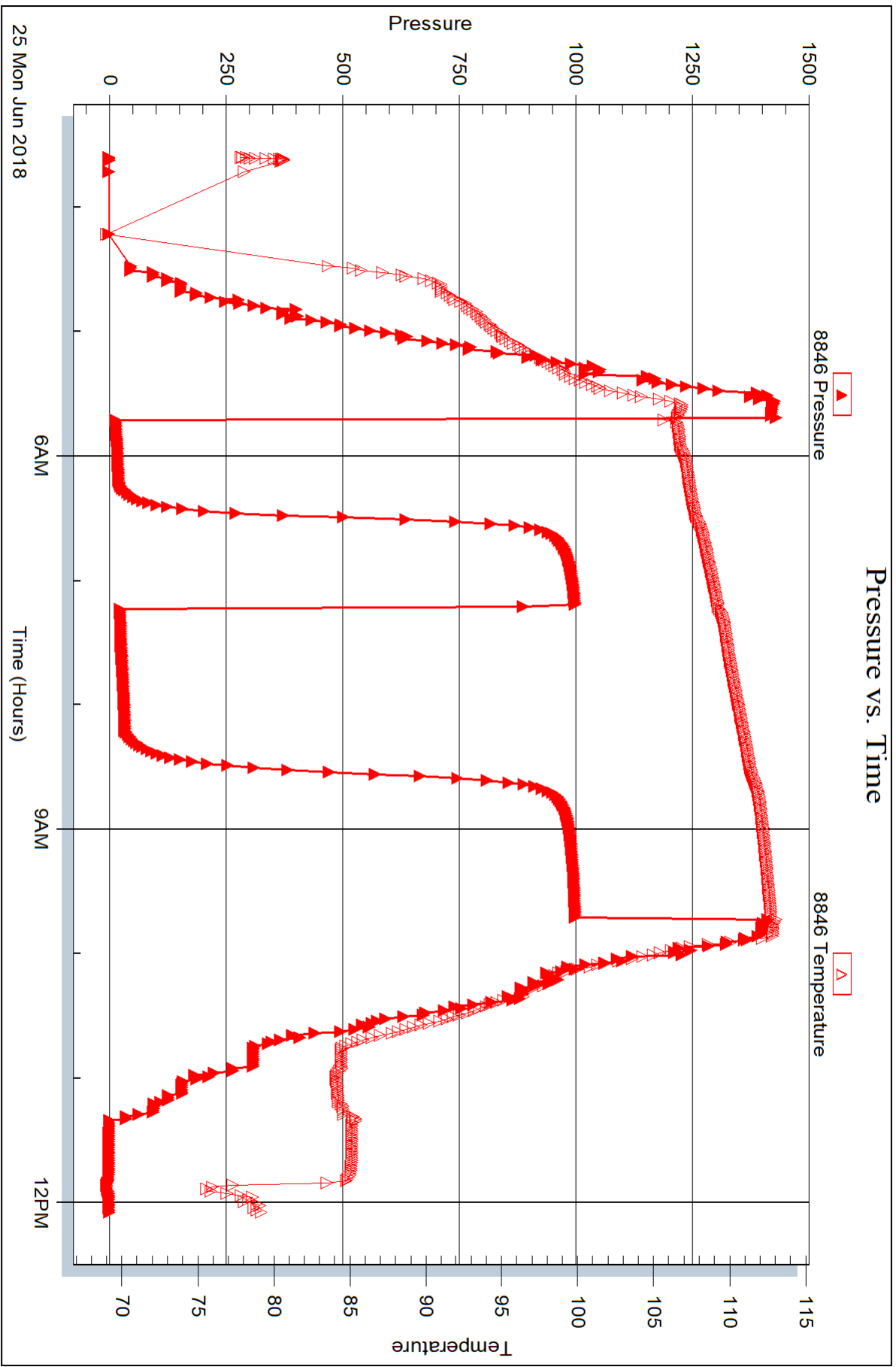
Laboratory Name:

Laboratory Location:

Recovery Comments:









## DRILL STEM TEST REPORT

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

250 North Water Suite 300  
Wichita, KS 67202-1216

ATTN: Shauna Gunzelman/Jef

### **Meriem #1-20**

### **20-28S-9E Elk,KS**

Start Date: 2018.06.25 @ 16:46:00

End Date: 2018.06.25 @ 23:04:30

Job Ticket #: 63802                      DST #: 5

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

Printed: 2018.06.27 @ 14:50:29



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

**20-28S-9E EIk, KS**

250 North Water Suite 300  
Wichita, KS 67202-1216

**Meriem #1-20**

Job Ticket: 63802

**DST#: 5**

ATTN: Shauna Gunzelman/Jef

Test Start: 2018.06.25 @ 16:46:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:17:50

Time Test Ended: 23:04:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Jimmy Ricketts

Unit No: 80

**Interval: 2923.00 ft (KB) To 2930.00 ft (KB) (TVD)**

Reference Elevations: 1415.00 ft (KB)

Total Depth: 2930.00 ft (KB) (TVD)

1406.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

**Serial #: 8846**

**Inside**

Press@RunDepth: 24.68 psig @ 2924.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.06.25

End Date:

2018.06.25

Last Calib.:

2018.06.25

Start Time: 16:46:01

End Time:

23:04:30

Time On Btm:

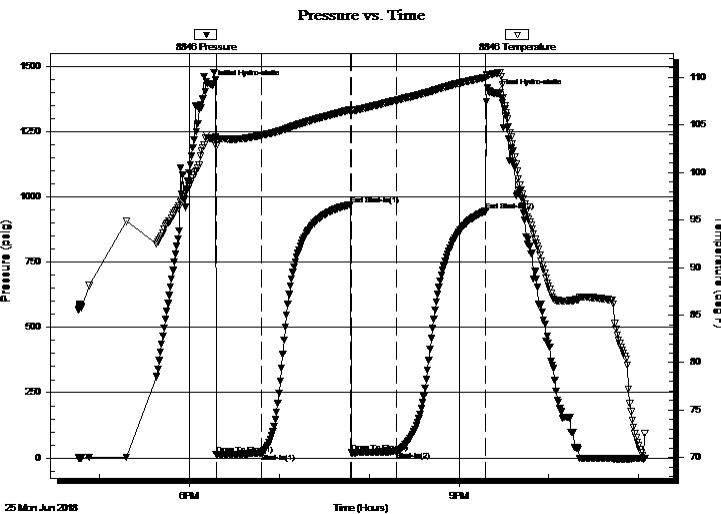
2018.06.25 @ 18:15:00

Time Off Btm:

2018.06.25 @ 21:23:50

TEST COMMENT: IF - Weak blow building to 1/2"

FF - No blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1430.31	103.61	Initial Hydro-static
3	13.39	102.75	Open To Flow (1)
33	17.71	103.91	Shut-In(1)
93	970.72	106.57	End Shut-In(1)
94	19.97	106.47	Open To Flow (2)
123	24.68	107.59	Shut-In(2)
183	945.94	109.99	End Shut-In(2)
189	1397.25	110.39	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
25.00	Heavy oil cut mud 28% O & 72% M	0.12
5.00	Clean oil 100% O	0.02

## Gas Rates

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



**TRILOBITE**  
**TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

**20-28S-9E Eik, KS**

250 North Water Suite 300  
Wichita, KS 67202-1216

**Meriem #1-20**

Job Ticket: 63802

**DST#: 5**

ATTN: Shauna Gunzelman/Jef

Test Start: 2018.06.25 @ 16:46:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:17:50

Time Test Ended: 23:04:30

Interval: **2923.00 ft (KB) To 2930.00 ft (KB) (TVD)**

Total Depth: 2930.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole (Initial)

Tester: Jimmy Ricketts

Unit No: 80

Reference Elevations: 1415.00 ft (KB)

1406.00 ft (CF)

KB to GR/CF: 9.00 ft

**Serial #: 8369** Outside

Press@RunDepth: psig @ 2924.00 ft (KB)

Start Date: 2018.06.25

End Date:

2018.06.25

Start Time: 16:48:01

End Time:

23:06:20

Capacity: 8000.00 psig

Last Calib.:

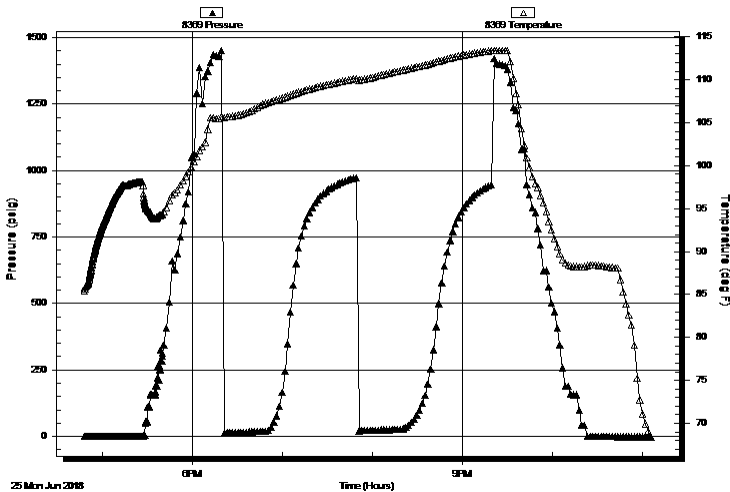
1899.12.30

Time On Btm:

Time Off Btm:

TEST COMMENT: IF - Weak blow building to 1/2"  
FF - No blow

Pressure vs. Time



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
25.00	Heavy oil cut mud 28% O & 72% M	0.12
5.00	Clean oil 100% O	0.02

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc.

**20-28S-9E EIk,KS**

250 North Water Suite 300  
Wichita, KS 67202-1216

**Meriem #1-20**

Job Ticket: 63802

**DST#: 5**

ATTN: Shauna Gunzelman/Jef

Test Start: 2018.06.25 @ 16:46:00

## Tool Information

Drill Pipe:	Length: 2609.00 ft	Diameter: 3.80 inches	Volume: 36.60 bbl	Tool Weight: 1900.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 23000.00 lb
Drill Collar:	Length: 305.00 ft	Diameter: 2.25 inches	Volume: 1.50 bbl	Weight to Pull Loose: 56000.00 lb
			<u>Total Volume: 38.10 bbl</u>	Tool Chased 1.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial 47000.00 lb
Depth to Top Packer:	2923.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	7.00 ft			
Tool Length:	27.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			2904.00	
Shut In Tool	5.00			2909.00	
Hydraulic tool	5.00			2914.00	
Packer	4.00			2918.00	20.00 Bottom Of Top Packer
Packer	5.00			2923.00	
Stubb	1.00			2924.00	
Recorder	0.00	8369	Outside	2924.00	
Recorder	0.00	8846	Inside	2924.00	
Perforations	1.00			2925.00	
Bullnose	5.00			2930.00	7.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>27.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc.

**20-28S-9E EIk,KS**

250 North Water Suite 300  
Wichita, KS 67202-1216

**Meriem #1-20**

Job Ticket: 63802

**DST#: 5**

ATTN: Shauna Gunzelman/Jef

Test Start: 2018.06.25 @ 16:46:00

## Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 10.00 lb/gal

Viscosity: 46.00 sec/qt

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

Resistivity: ohm.m

Salinity: ppm

Filter Cake: inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

Water Salinity: deg API

ppm

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
25.00	Heavy oil cut mud 28% O & 72% M	0.123
5.00	Clean oil 100% O	0.025

Total Length: 30.00 ft      Total Volume: 0.148 bbl

Num Fluid Samples: 0

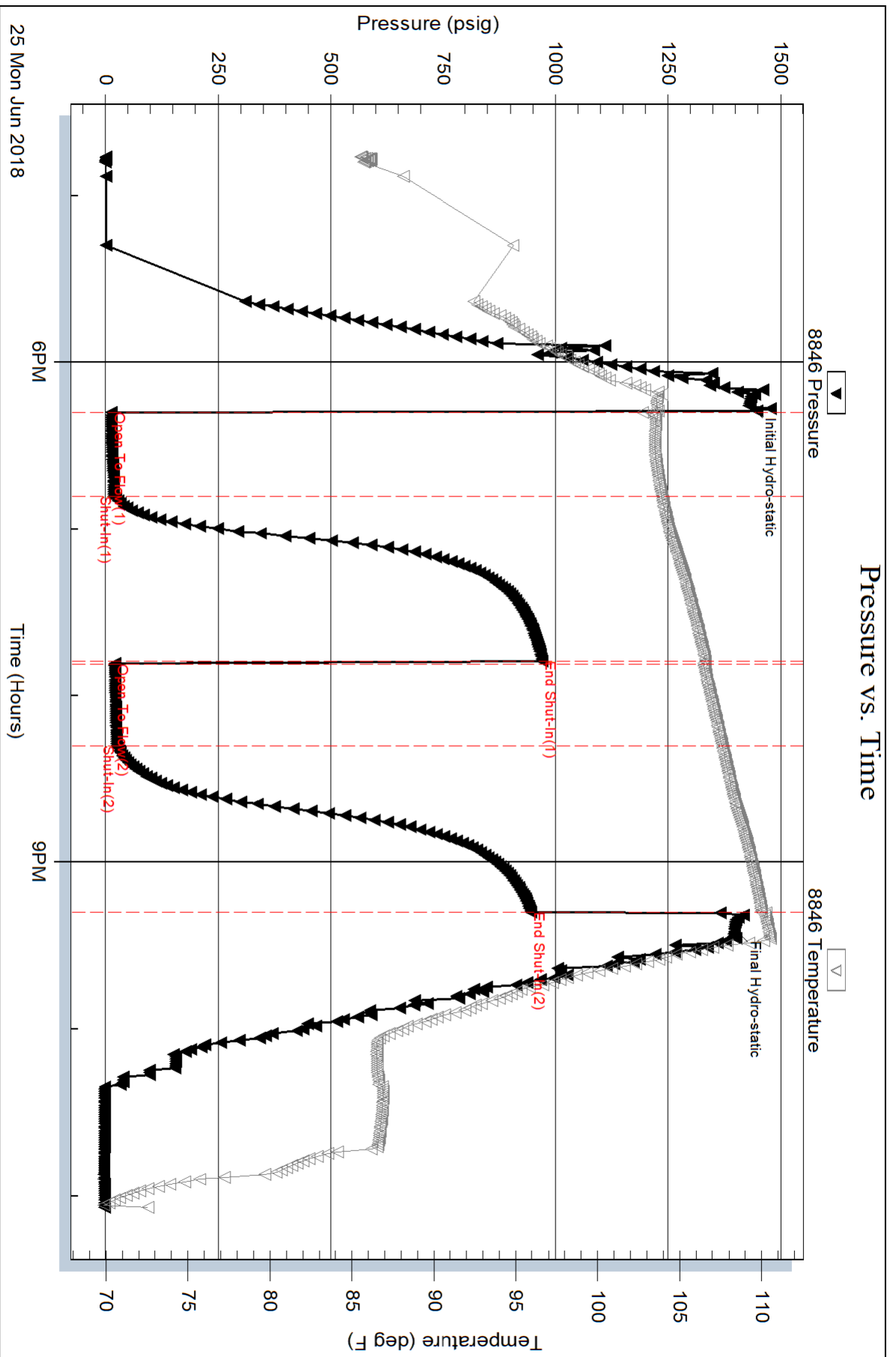
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



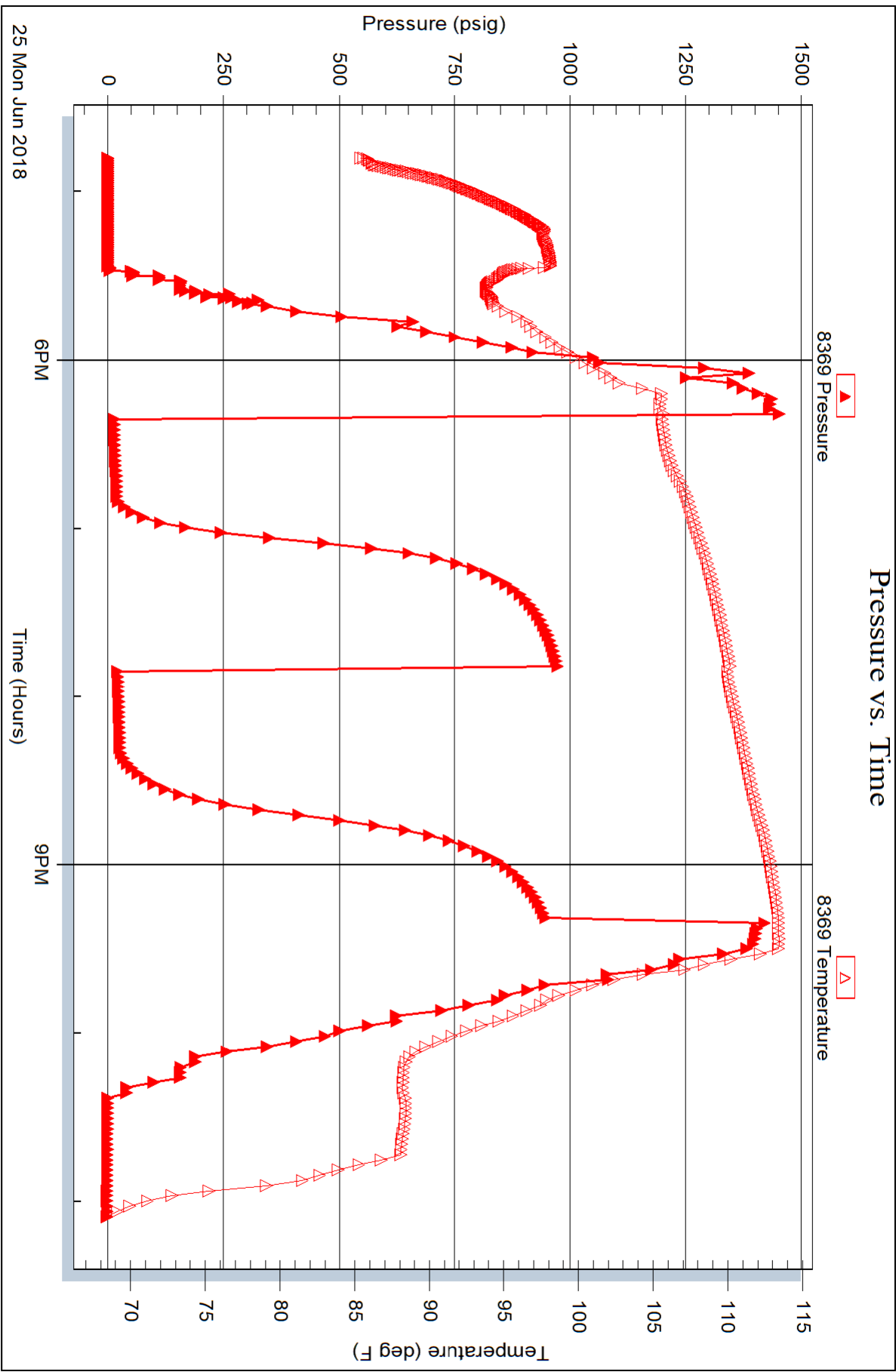


Serial #: 8369

Outside Murfin Drilling Co., Inc.

Meriem#1-20

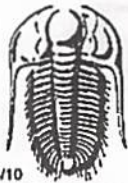
DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 63802

Printed: 2018.06.27 @ 14:50:30



# TRIBOLITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 63398

Well Name & No. Meriem # 1-20 Test No. 1 Date 6-22-18  
 Company Murfin Drilling Co., Inc. Elevation 1415 KB 1406 GL  
 Address 250 North Water Suite 300 Wichita, KS 67202-1216  
 Co. Rep / Geo. Shauna Gunzelman / Jeff Christian Rig C + G Drilling #2  
 Location: Sec. 20 Twp 28 S Rge. 9 E Co. EIK State KS

Interval Tested 1915 - 1972 Zone Tested Lower Kansas City K+L  
 Anchor Length 571 Drill Pipe Run 1603 Mud Wt. 8.7 9.4  
 Top Packer Depth 1910 Drill Collars Run 305 Vis SS SS  
 Bottom Packer Depth 1915 Wt. Pipe Run 0 WL \_\_\_\_\_  
 Total Depth 1972 Chlorides 1000 ppm System LCM \_\_\_\_\_  
 Blow Description IF - weak blow building to 1 inch IFP  
FF - ~~weak~~ No blow FFP

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>straight oil <del>at</del> mud spotted</u>	<u>TR</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 20 BHT 96 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 906  Test 1050 T-On Location 0030  
 (B) First Initial Flow 11  Jars \_\_\_\_\_ T-Started 0110  
 (C) First Final Flow 16  Safety Joint \_\_\_\_\_ T-Open 0239  
 (D) Initial Shut-In 548  Circ Sub \_\_\_\_\_ T-Pulled 0542  
 (E) Second Initial Flow 20  Hourly Standby \_\_\_\_\_ T-Out 0700  
 (F) Second Final Flow 23  Mileage 134 RT 134 Comments \_\_\_\_\_  
 (G) Final Shut-In 418  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 894  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1184  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1184

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 30  
 Final Shut-In 63

Approved By Jeff Christian Our Representative Jimmy Rutledge

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# TRIBOLITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **63399**

Well Name & No. Meriem # 1-20 Test No. 2 Date 6-23-18  
 Company Murfin Drilling Co, Inc. Elevation 1415 KB 1406 GL  
 Address 250 North Water, Suite 300, Wichita, KS. 67202-1216  
 Co. Rep / Geo. Shanna Gunzelman / Jeff Christian Rig C + G Drilling #2  
 Location: Sec. 20 Twp 28 S Rge. 9 E Co. EIK State KS.

Interval Tested 2588 - 2600 Zone Tested Mississippian  
 Anchor Length 12' Drill Pipe Run 2294 Mud Wt. 9.5  
 Top Packer Depth 2583 Drill Collars Run 305 Vis 35  
 Bottom Packer Depth 2588 Wt. Pipe Run 0 WL \_\_\_\_\_  
 Total Depth 2600 Chlorides \_\_\_\_\_ ppm System LCM \_\_\_\_\_  
 Blow Description IF- weak blow building to 1 inch IFA  
FF- No blow FFA

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>Drilling mud</u>			<u>100%</u>	
____	____	____	____	____	____
____	____	____	____	____	____
____	____	____	____	____	____
____	____	____	____	____	____

Rec Total 30 BHT 108 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>1272</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>0915</u>
(B) First Initial Flow <u>14</u>	<input type="checkbox"/> Jars _____	T-Started <u>1346</u>
(C) First Final Flow <u>23</u>	<input type="checkbox"/> Safety Joint _____	T-Open <u>1522</u>
(D) Initial Shut-In <u>786</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>1822</u>
(E) Second Initial Flow <u>25</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>1945</u>
(F) Second Final Flow <u>30</u>	<input checked="" type="checkbox"/> Mileage <u>134 RT 134</u>	Comments _____
(G) Final Shut-In <u>742</u>	<input type="checkbox"/> Sampler _____	_____
(H) Final Hydrostatic <u>1255</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Packer _____
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby _____	Total <u>1184</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1184</u>	

Approved By \_\_\_\_\_ Our Representative Jimmy Dicketh

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 63400

Well Name & No. Meriem #1-20 Test No. 3 Date 6-24-18  
 Company Martin Drilling Co., Inc. Elevation 1415 KB 1406 GL  
 Address 250 North Water, Suite 300 Wichita, KS. 67202  
 Co. Rep / Geo. Shang Ganzelman / Jeff Christian Rig C+G #2  
 Location: Sec. 20 Twp 28 S Rge. 9 E Co. E1K State KS

Interval Tested 2768-2783 Zone Tested Lower Mississippian  
 Anchor Length 15' Drill Pipe Run 2452 Mud Wt. 9.6  
 Top Packer Depth 2763 Drill Collars Run 305 Vis 41  
 Bottom Packer Depth 2768 Wt. Pipe Run 0 WL \_\_\_\_\_  
 Total Depth 2783 Chlorides \_\_\_\_\_ ppm System LCM \_\_\_\_\_

Blow Description IF- weak blow building to strong blow 14 mins into IFP  
IS- 2 inch blow back during ISP  
FF- weak blow building to strong blow 17 mins into FFP

Rec	Feet of	%gas	%oil	%water	%mud
<u>70</u>	<u>Gas + Heavy oil cut mud</u>	<u>2</u>	<u>20</u>	<u>78</u>	<u></u>
<u>300</u>	<u>clean oil</u>	<u>100</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>375</u>	<u>Gas in pipe</u>	<u>100</u>	<u>0</u>	<u>0</u>	<u>0</u>
____	____	____	____	____	____
____	____	____	____	____	____

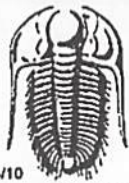
Rec Total 370 BHT 116 Gravity 32.0 API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1352  Test 1050 T-On Location 0830  
 (B) First Initial Flow 16  Jars \_\_\_\_\_ T-Started 0910  
 (C) First Final Flow 81  Safety Joint \_\_\_\_\_ T-Open 1053  
 (D) Initial Shut-In 904  Circ Sub \_\_\_\_\_ T-Pulled 1453 ~~1575~~  
 (E) Second Initial Flow 90  Hourly Standby \_\_\_\_\_ T-Out 1645 ~~1645~~  
 (F) Second Final Flow 150  Mileage 93 RT 93 Comments \_\_\_\_\_  
 (G) Final Shut-In 895  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1327  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1143  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_

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

Approved By [Signature] Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 63801

Well Name & No. Meriem # 1-20 Test No. 4 Date 6-25-18  
 Company Murfin Drilling Co, Inc. Elevation 1415 KB 1406 GL  
 Address 250 N. Water, Suite 300, Wichita, KS 67202  
 Co. Rep / Geo. Shanna Gunzelman / Jeff Christian Rig CF G #12  
 Location: Sec. 20 Twp 28 S Rge. 9 E Co. EIK State KS

Interval Tested 2908 - 2923 Zone Tested Arbuckle  
 Anchor Length 15' Drill Pipe Run 2609 Mud Wt. 9.6  
 Top Packer Depth 2903 Drill Collars Run 305 Vis 53  
 Bottom Packer Depth 2908 Wt. Pipe Run 0 WL \_\_\_\_\_  
 Total Depth 2923 Chlorides 1200 ppm System LCM  
 Blow Description IF - weak blow building to 2 inches IFP  
FF - weak blow building to 1 inch FFP

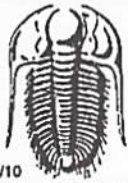
Rec	Feet of	%gas	%oil	%water	%mud
<u>45</u>	<u>Heavy mud cut oil</u>	<u>60</u>		<u>40</u>	
<u>15</u>	<u>Clean Oil</u>	<u>100</u>			
____	____	____	____	____	____
____	____	____	____	____	____
____	____	____	____	____	____

Rec Total 60 BHT 115 Gravity 32.6 API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>1420</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>0300</u>
(B) First Initial Flow <u>13</u>	<input type="checkbox"/> Jars _____	T-Started <u>0336</u>
(C) First Final Flow <u>21</u>	<input type="checkbox"/> Safety Joint _____	T-Open <u>0542</u>
(D) Initial Shut-In <u>1001</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>0942</u>
(E) Second Initial Flow <u>22</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>1200</u>
(F) Second Final Flow <u>33</u>	<input checked="" type="checkbox"/> Mileage <u>93</u> <u>RT 93</u>	Comments _____
(G) Final Shut-In <u>1002</u>	<input type="checkbox"/> Sampler _____	_____
(H) Final Hydrostatic <u>1402</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Packer _____
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby _____	Total <u>1143</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1143</u>	

Approved By [Signature] Our Representative Jimmy Pickett

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 63802

Well Name & No. Meriem # 1-20 Test No. 5 Date 6-25-18  
 Company Murfin Drilling Co, Inc. Elevation 1415 KB 1400 GL  
 Address 250 N. Water Suite 300 Wichita Ks 67202  
 Co. Rep / Geo. Shauna Gunzelman/Jeff Christian Rig C+G Drilling #2  
 Location: Sec. 20 Twp 28 S Rge. 9 E Co. ELK State KS

Interval Tested 2923-2930 Zone Tested Arbuckle  
 Anchor Length 7' Drill Pipe Run 2609 Mud Wt. 9.5  
 Top Packer Depth 2918 Drill Collars Run 305 Vis 46  
 Bottom Packer Depth 2923 Wt. Pipe Run 0 WL \_\_\_\_\_  
 Total Depth 2930 Chlorides \_\_\_\_\_ ppm System LCM  
 Blow Description IF - weak blow building to 1/2 inch IFD  
FF - No blow FFP

Rec	Feet of	%gas	%oil	%water	%mud
<u>25</u>	<u>Heavy oil cat mud</u>	<u>28</u>	<u>72</u>		
<u>5</u>	<u>clean oil</u>	<u>100</u>			
____	____	____	____	____	____
____	____	____	____	____	____
____	____	____	____	____	____

Rec Total 30 BHT 110 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1430  Test 1050 T-On Location 1600  
 (B) First Initial Flow 13  Jars \_\_\_\_\_ T-Started 1648  
 (C) First Final Flow 18  Safety Joint \_\_\_\_\_ T-Open 1820  
 (D) Initial Shut-In 971  Circ Sub \_\_\_\_\_ T-Pulled 2120  
 (E) Second Initial Flow 20  Hourly Standby \_\_\_\_\_ T-Out 2250  
 (F) Second Final Flow 25  Mileage None Comments \_\_\_\_\_  
 (G) Final Shut-In 946  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1397  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1050  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1050

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

Our Representative Jimmy Dickert

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TREATMENT REPORT



HURRICANE SERVICES INC

Customer: <b>Murfin Drilling</b>	Date: <b>6/20/2018</b>	Ticket #: <b>ICT 1123</b>
Field Rep: <b>Judd</b>		
Address:		
City, State:		
County, Zip:		

Field Order No.:		Open Hole:	<b>56</b>	<table border="1"> <tr> <th>Perf Depths (ft)</th> <th>Perfs</th> </tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr> <td><b>Total Perfs</b></td> <td><b>0</b></td> </tr> </table>	Perf Depths (ft)	Perfs																							<b>Total Perfs</b>	<b>0</b>
Perf Depths (ft)	Perfs																													
<b>Total Perfs</b>	<b>0</b>																													
Well Name:	<b>Merlum 1-20</b>	Casing Depth:	<b>56</b>																											
Location:	<b>Piedmont, Ks</b>	Casing Size:	<b>8.625"</b>																											
Formation:		Tubing Depth:																												
Type of Service:	<b>Surface</b>	Tubing Size:																												
Well Type:	<b>OIL</b>	Liner Depth:																												
Age of Well:	<b>NEW</b>	Liner Size:																												
Packer Type:		Liner Top:																												
Packer Depth:		Liner Bottom:																												
Treatment Via:	<b>Casing</b>	Total Depth:																												

TIME	INJECTION RATE FLUID	N2/O2	STP	PRESSURE ANNULUS	REMARKS	PROP (lbs)	HCL (gls)	FLUID (bbls)
					On location safety meeting. Spot in and rig up			
					Hook up to pipe			
	3.0		100.0		Break Circulation			5.00
	3.0		100.0		Mix and pump cement			13.00
	3.0		100.0		Wash pump and lines			7.00
	3.0		100.0		Displace			2.60
	3.0		100.0		Wash Cellar			
<b>TOTAL:</b>						-	-	<b>27.60</b>

SUMMARY			
Max FL Rate	Avg FL Rate	Max PSI	Avg PSI
3.0	3.0	100.0	100.0

**PRODUCTS USED**  
 65 Sack A/2%gel/3%cc/5lb/sk Phenoseal

Treater: Jake Heard

Customer: Judd

**TREATMENT REPORT**



**HURRICANE SERVICES INC**

Customer: <b>Murfin Drilling</b>	Date: <b>6/26/2018</b>	Ticket #: <b>ICT 1136</b>
Field Rep: <b>Mark Robben</b>		
Address:		
City, State:		
County, Zip:		

Field Order No.:	Open Hole: <b>7.875" 2994'</b>	<table border="1"> <thead> <tr> <th>Perf Depths (ft)</th> <th>Perfs</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr> <td><b>Total Perfs</b></td> <td><b>0</b></td> </tr> </tbody> </table>	Perf Depths (ft)	Perfs																							<b>Total Perfs</b>	<b>0</b>
Perf Depths (ft)	Perfs																											
<b>Total Perfs</b>	<b>0</b>																											
Well Name: <b>Mertum 1-20</b>	Casing Depth: <b>2989'</b>																											
Location: <b>Piedmont, Ka</b>	Casing Size: <b>8.5" 178</b>																											
Formation: <b>Mississippi</b>	Tubing Depth:																											
Type of Service: <b>Longstring</b>	Tubing Size:																											
Well Type: <b>Oil</b>	Liner Depth:																											
Age of Well: <b>New</b>	Liner Size:																											
Packer Type:	Liner Top:																											
Packer Depth:	Liner Bottom:																											
Treatment Via: <b>Casing</b>	Total Depth:																											

TIME	INJECTION RATE		PRESSURE		REMARKS	PROP (lbs)	HCL (gls)	FLUID (bbls)
	FLUID	N2/CO2	STP	ANNULUS				
					On location safety meeting. Spot in and rig up			
					Break circulation			
					Hook up to wellhead			
	6.0		200.0		Mix and pump mud flush			10.00
	6.0		210.0		Mix and pump water			5.00
	6.0		200.0		Mix and pump lead cement			85.71
	8.0		160.0		Mix and pump tail cement			47.06
					Stop			
	3.0				Wash pump and lines			10.00
	6.0				Release plug			
	8.0		160.0		Displace			1.00
	6.0		300.0		See LJR			
	3.0		600.0		Slow rate			
	3.0		1,550.0		Bump plug			70.60
					Plug rat and mouse			
					Wash up pump			
<b>TOTAL:</b>								<b>228.27</b>

SUMMARY			
Max Fl. Rate	Avg Fl. Rate	Max PSI	Avg PSI
6.0	4.9	1,550.0	420.0

**PRODUCTS USED**

175 sacks H-con 175 sacks H-long Mud flush

Treater:   Jake Heard  

Customer:   Mark Robben



TREATMENT REPORT



HURRICANE SERVICES INC

Customer:	Murfin Drilling CO	Date:	7/24/2018	Ticket #:	ICT 1230
Field Rep:	Mark Robben				
Address:					
City, State:					
County, Zip:					

Field Order No.:		Open Hole:		Perf Depths (ft)	Perfs
Well Name:	Merlum 1-20	Casing Depth:			
Location:	Piedmont, KS	Casing Size:			
Formation:		Tubing Depth:	218'		
Type of Service:	Top off	Tubing Size:	1		
Well Type:	Oil	Liner Depth:			
Age of Well:	New	Liner Size:			
Packer Type:		Liner Top:			
Packer Depth:		Liner Bottom:			
Treatment Via:	Tubing	Total Depth:			
				Total Perfs	0

TIME	INJECTION RATE		PRESSURE		REMARKS	PROP (lbs)	HCL (gls)	FLUID (bbls)
	FLUID	N2/CO2	STP	ANNULUS				
					On location safety meeting. Spot in and rig up			
					Hook up to tubing			
	1.0		200.0		Break circulation			4.00
	1.0		200.0		Mix and pump cement			8.79
					Circulate to surface			
					Pull tubing			
					Top off			
					Wash up pump and tubing			
TOTAL:								12.79

SUMMARY			
Max Fl. Rate	Avg Fl. Rate	Max PSI	Avg PSI
1.0	1.0	200.0	200.0

PRODUCTS USED

40 sacks Class A Cement

Treater: Kevin Hollar

Customer: Mark Robben