

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](mailto: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
--	---

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
---	---	------------------------------------

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:	
----------------	-------	---------	------------	--

Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	CULWELL 'J' 2-19
Doc ID	1509517

All Electric Logs Run

DIL
DUCP
MEL
BHCS



MDCI  
 Culwell 'J' #2-19  
 2310FSL 1485FEL  
 Sec. 19-T2S-R37W  
 3404' KB

Formation	Sample top	Datum	Ref	Log Top	Datum	Ref
Anhydrite	3282	+122	+3	3280	+124	+5
B/Anhydrite	3315	+89	+3	3316	+88	+2
Topeka	4088	-684	4	4088	-684	+4
Oread	4238	-834	+5	4237	-833	+6
Lansing	4309	-905	+12	4309	-905	+12
Stark	4541	-1137	+5	4544	-1140	+2
Mound City	4593	-1189	+4	4596	-1192	+1
Ft Scott	4723	-1319	+4	4722	-1318	+5
Oakley	4797	-1393	+5	4794	-1390	+8
RTD	5023	-1619		5020	-1616	
LTD	5100					



**CEMENT TREATMENT REPORT**

<b>Customer:</b> Murfin Drilling Company	<b>Well:</b> Culwell 'J' #2-19	<b>Ticket:</b> ITC 3183
<b>City, State:</b> Oakley KS	<b>County:</b> Cheyenne KS	<b>Date:</b> 2/3/2020
<b>Field Rep:</b> Jay Ruzicka	<b>S-T-R:</b> 19-2S-37W	<b>Service:</b> Surface

Downhole Information	Calculated Slurry	Product	% / #	#
<b>Hole Size:</b> 12 1/4 in	<b>Weight:</b> 14.8 # / sx	<b>Class A</b>		
<b>Hole Depth:</b> 303 ft	<b>Water / Sx:</b> 6.89 gal / sx	<b>Poz</b>		
<b>Casing Size:</b> 8 5/8 in	<b>Yield:</b> 1.41 ft <sup>3</sup> / sx	<b>Gol</b>		
<b>Casing Depth:</b> 303 ft	<b>Bbls / Ft.:</b> 1.41	<b>CaCl</b>		
<b>Tubing / Liner:</b> in	<b>Depth:</b> 1.41 ft	<b>Gypsum</b>		
<b>Depth:</b> ft	<b>Annular Volume:</b> 1.41 bbis	<b>Metso</b>		
<b>Tool / Packer:</b>	<b>Excess:</b>	<b>Kol Seal</b>		
<b>Depth:</b> ft	<b>Total Slurry:</b> 71.5 bbis	<b>Flo Seal</b>		
<b>Displacement:</b> 18.0 bbis	<b>Total Sacks:</b> 285 sx	<b>Salt (bww)</b>		
		<b>Total</b>		

TIME	RATE	PSI	BBLs	REMARKS
545P				Got to location/ Safty meeting
715P	3.3	140.0	5.0	H2O Ahead
717P	6.0	500.0	71.5	Cement
725P				Shut down and washed up
735P	3.3	240.0	18.0	Displaced H2O
745P				Shut in
750P				Rigged down
800P				Left location

CREW		UNIT	SUMMARY		
<b>Cementer:</b>	Josh Mosier	67	<b>Average Rate</b>	<b>Average Pressure</b>	<b>Total Fluid</b>
<b>Pump Operator:</b>	Cory Davis	231	4.2 bpm	293 psi	95 bbis
<b>Bulk #1:</b>	Kale Ochs	242			
<b>Bulk #2:</b>					



**CEMENT TREATMENT REPORT**

Customer: <b>Murfin Drilling</b>	Well: <b>Culwell J 2-19</b>	Ticket: <b>ICT 3258</b>
City, State:	County: <b>Cheyenne KS</b>	Date: <b>2/14/2020</b>
Field Rep:	S-T-R: <b>19-2S-37W</b>	Service: <b>Longstring</b>

Downhole Information	
Hole Size:	7 7/8 in
Hole Depth:	5100 ft
Casing Size:	5 1/2 in
Casing Depth:	5095 ft
Tubing / Liner:	in
Depth:	ft
Tool / Packer:	
Depth:	ft
Displacement:	120.8 bbbls

Calculated Slurry	
Weight:	12 # / sx
Water / Sx:	gal / sx
Yield:	2.56 ft <sup>3</sup> / sx
Bbls / Ft:	
Depth:	ft
Annular Volume:	0 bbbls
Excess:	
Total Slurry:	205.2 bbbls
Total Sacks:	450 sx

Product	% / #	#
Class A		
Poz		
Gel		
CaCl		
Gypsum		
Metso		
Kol Seal		
Flo Seal		
Salt (bww)		
<b>Total</b>		<b>-</b>

TIME	RATE	PSI	BBLs	REMARKS
430A				ON LOCATION
500A				GET FOLLOWING FROM CO MAN 7 7/8 OPEN HOLE, 4900 FT TD, 4895 TOTAL PIPE, 40.98 FT SHOE JOINT, TURBOLIZERS ON JOINTS 1-13, 34, 44 BASKETS ON JOINTS 11, 35, 46
845A				CASING ON BOTTOM
900A				CIRCULATE
900A				EQUIPMENT ON LOCATION
905A				SAFETY MEETING
910A				RIG UP
950A	4.0	210.0	5.0	H2O AHEAD
954A	4.0	240.0	12.0	MUDFLUSH
958A	4.0	260.0	5.0	H2O SPACER
1001A	6.7	390.0	148.2	LEAD CEMENT 450SKS H-CON MIXED AT 12 PPG MUD SCALE VERIFIED
1030A	6.0	220.0	51.6	TAIL CEMENT 200 SKS HS-LONG MIXED AT 14.8 MUD SCALE VERIFIED
1048A				SHUT DOWN
1050A				DROP PLUG/WASH PUMP & LINES
1054A	6.0	220.0	25.0	DISPLACE H2O
1100A	6.0	420.0	25.0	DISPLACE H2O
1106A	6.0	1,010.0	25.0	DISPLACE H2O
1111A	6.0	1,350.0	25.0	DISPLACE H2O
1113A	4.0	1,430.0	10.0	DISPLACE H2O
1114A	4.0	1,510.0	5.5	DISPLACE H2O
1115A		2,500.0		PLUG LANDED
				CHECK FLOATS/THEY HELD
				RIG DOWN
				LEFT LOCATION
				CEMENT TO SURFOACE CIRCULATE 10 BBLs TO PIT

CREW		UNIT	SUMMARY		
Cementer:	Jimmie Cottrell	73	Average Rate	Average Pressure	Total Fluid
Pump Operator:	Jeff Jackson	271	5.15455 bpm	813 psi	337 bbbls
Bulk #1:	Cory Davis	205			
Bulk #2:	John Polley	194/254			

# Robert D. Hendrix

Petroleum Geologist

## GEOLOGIST'S REPORT DRILLING TIME AND SAMPLE LOG

COMPANY: **Murfin Drilling Company Inc.**

LEASE: **Culwell 'J' #2-19**

FIELD: **Wildcat**

LOCATION: **2310' fnl & 1485' fel**

SEC: **19 TWP 2s RGE 37W**

COUNTY: **Cheyenne STATE Kansas**

CONTRACTOR: **Murfin Drilling Co. Inc. Rlg #3**

SPUD: **2/3/2020 COMP 2/13/2020**

RTD UP: **5:100' LTYE MUD 5:00'**

MUD UP: **3600'**

SAMPLES SAVED FROM: **3990' TO 4900'**

DRILLING TIME KEPT FROM: **3990' TO 4900'**

SAMPLES EXAMINED FROM: **3990' TO 4900'**

GEOLOGICAL SUPERVISION FROM: **3993'**

GEOLOGIST ON WELL: **Robert D. Hendrix**

FORMER VEHICLES: **McKendree / Sonic  
Fraser / Verline Services**

DRILL COMP: **potterly / Dural Industries**

FORMATION TOPS: **ELECTRIC LOG**

Annville: **4090 (+124)**

Lansing: **4309 (-905)**

Stark Shale: **4544 (-1140)**

Mound City: **4596 (-1192)**

FT Scott: **4722 (-1318)**

Oakley: **4794 (-1390)**

Mississippian: **5020 (-1616)**

KB: **3404'**

DF: \_\_\_\_\_

GL: **3399'**

MEASUREMENTS ARE ALL FROM: **Kelly Bushing**

CASING: \_\_\_\_\_

CONDUCTOR: \_\_\_\_\_

SURFACE: **5-8' @ 303'**

PRODUCTION: **5-12' @ 5100'**

ELECTRICAL SURVEYS

DATE: \_\_\_\_\_

TIME: \_\_\_\_\_

BY: \_\_\_\_\_

REMARKS:

AP# 15-023-31532

### LEGEND

	Anhydrite		Sandstone		Limestone		Shale		Carb Sh		Cherty LS		Chert		Dolomite
--	-----------	--	-----------	--	-----------	--	-------	--	---------	--	-----------	--	-------	--	----------

DEPTH	DRILLING TIME IN MINUTES PER FOOT	LITHOLOGY	GAS UNIT	SAMPLE DESCRIPTION	REMARKS
3260					<b>Anhydrite 3282 (+122)</b>
3300					<b>Base Anhydrite 3315 (+89)</b>
4000				Shale: red, gray, silty Limestone: white, f-xln, chalky, fossiliferous, no vis por Limestone: white, f-mxln, oolitic, chalky, fossiliferous, no vis por Shale: gray, red, silty Limestone: gray to white, f-mxln, sl chalky, mostly dense, sl fossiliferous, no vis por Shale: red, gray, silty Shale: red, gray, silty Limestone: tan to white, f-xln, chalky, fossiliferous, pr vug por, 10% sample gilsonite, info, no odor Shale: red, gray, green, silty Limestone: white to gray, f-xln, chalky, oolitic, fossiliferous, no vis por, ns Shale: red, gray, silty Limestone: white to gray, f-xln, chalky, oolitic, fossiliferous, sl vug por, 10% sample gilsonite, info, no odor Shale: red, gray, silty Limestone: tan to white, f-xln, chalky, oolitic, fossiliferous, pr vug por, 10% sample gilsonite, info, no odor Shale: red, gray, silty Limestone: white to gray, f-xln, chalky, oolitic, fossiliferous, no vis por, ns Shale: red, gray, silty Limestone: tan to gray, f-xln, sl chalky, dense, fossiliferous, no vis por Siltstone: gray to brown, v-fxn, silty, dense, no vis por Shale: gray, blocky, silty Shale: gray, green, silty	Geologist on location 3993' at 12:06 am 2/7/2020 Bit Trip at 3893' to change from PDC to button. Strap out of hole was 1.69' long to board.  wt 8.7, vis. 57, lcm 2# Morgan Mud, Cade Lines  8:00am, 2/7/2020  <b>Topeka 4088 (-684)</b>
4200					<b>Oread 4238 (-834)</b>
4300					<b>Lansing 4309 (-905)</b>
4400					<b>Mound City 4593 (-1189)</b>
4500					<b>Stark Shale 4541 (-1137)</b>
4600					<b>Mound City 4723 (-1319)</b>
4700					<b>Oakley 4797 (-1393)</b>
4800					<b>FT Scott 4723 (-1319)</b>
4900					<b>Mississippian 5023 (-1619)</b>
5100					<b>RTD 5100 (-1696)</b>





## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita KS 67202

ATTN: Robert Hendrix

### **Culwell J #2-19**

#### **19-2s-37w Cheyenne,KS**

Start Date: 2020.02.08 @ 03:26:00

End Date: 2020.02.08 @ 10:36:39

Job Ticket #: 66472                      DST #: 1

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

Printed: 2020.02.13 @ 14:30:18



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

**19-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Culwell J #2-19**

Job Ticket: 66472

**DST#: 1**

ATTN: Robert Hendrix

Test Start: 2020.02.08 @ 03:26:00

## GENERAL INFORMATION:

Formation: **Oread**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:05:40

Time Test Ended: 10:36:39

Test Type: Conventional Bottom Hole (Initial)

Tester: Ryan Nichols

Unit No: 71

**Interval: 4191.00 ft (KB) To 4266.00 ft (KB) (TVD)**

Reference Elevations: 3404.00 ft (KB)

Total Depth: 4266.00 ft (KB) (TVD)

3399.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8366 Outside**

Press@RunDepth: 21.62 psig @ 4192.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2020.02.08

End Date:

2020.02.08

Last Calib.: 2020.02.08

Start Time: 03:26:01

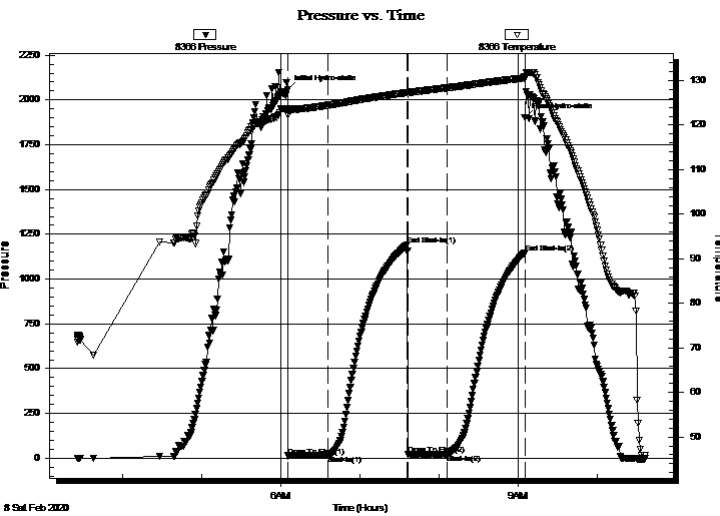
End Time:

10:36:40

Time On Btm: 2020.02.08 @ 06:05:30

Time Off Btm: 2020.02.08 @ 09:05:30

**TEST COMMENT:** 30 IF - Surface blow built to 1/4" died @ 25 mins  
60 ISI - No return  
30 FF - No blow  
60 FSI - No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2057.86	123.72	Initial Hydro-static
1	12.92	122.42	Open To Flow (1)
30	16.65	124.43	Shut-In(1)
91	1190.62	127.31	End Shut-In(1)
91	20.62	126.95	Open To Flow (2)
121	21.62	128.36	Shut-In(2)
180	1145.80	130.55	End Shut-In(2)
180	1903.71	130.84	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	OCM - 40%o - 60%M	0.05

## Gas Rates

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



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

250 N Water STE 300  
Wichita KS 67202

ATTN: Robert Hendrix

**19-2s-37w Cheyenne,KS**

**Culwell J #2-19**

Job Ticket: 66472

**DST#: 1**

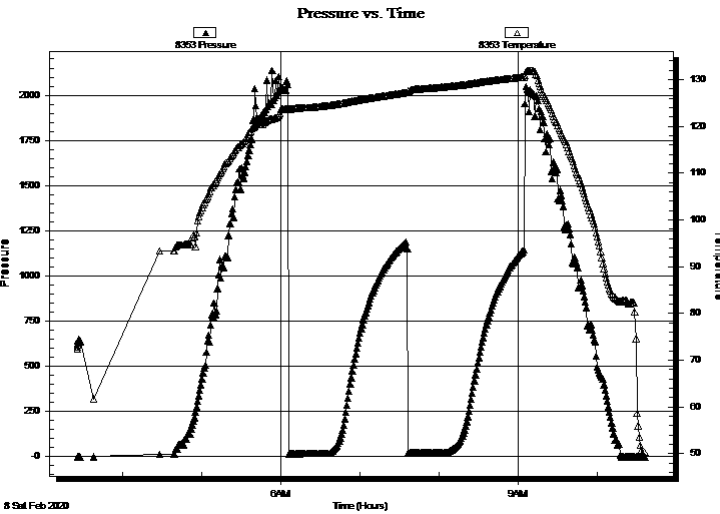
Test Start: 2020.02.08 @ 03:26:00

**GENERAL INFORMATION:**

Formation: **Oread**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 06:05:40  
 Time Test Ended: 10:36:39  
 Interval: **4191.00 ft (KB) To 4266.00 ft (KB) (TVD)**  
 Total Depth: 4266.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Ryan Nichols  
 Unit No: 71  
 Reference Elevations: 3404.00 ft (KB)  
 3399.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 8353 Inside**  
 Press@RunDepth: psig @ 4192.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2020.02.08 End Date: 2020.02.08 Last Calib.: 2020.02.08  
 Start Time: 03:26:01 End Time: 10:36:40 Time On Btm:  
 Time Off Btm:

TEST COMMENT: 30 IF - Surface blow built to 1/4" died @ 25 mins  
 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	OCM - 40%o - 60%M	0.05

**Gas Rates**

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co. Inc.

**19-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Culwell J #2-19**

Job Ticket: 66472

**DST#: 1**

ATTN: Robert Hendrix

Test Start: 2020.02.08 @ 03:26:00

## Tool Information

Drill Pipe:	Length: 4042.00 ft	Diameter: 3.80 inches	Volume: 56.70 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose: 72000.00 lb
			<u>Total Volume: 57.43 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4191.00 ft			Final 65000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	75.00 ft			
Tool Length:	103.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4168.00	
Hydraulic tool	5.00			4173.00	
Jars	5.00			4178.00	
Safety Joint	3.00			4181.00	
Packer	5.00			4186.00	28.00 Bottom Of Top Packer
Packer	5.00			4191.00	
Stubb	1.00			4192.00	
Recorder	0.00	8353	Inside	4192.00	
Recorder	0.00	8366	Outside	4192.00	
Perforations	6.00			4198.00	
Blank Spacing	65.00			4263.00	
Bullnose	3.00			4266.00	75.00 Bottom Packers & Anchor

**Total Tool Length: 103.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co. Inc.

**19-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Culwell J #2-19**

Job Ticket: 66472

**DST#: 1**

ATTN: Robert Hendrix

Test Start: 2020.02.08 @ 03:26:00

## 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: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.58 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	OCM - 40%o - 60%M	0.049

Total Length: 10.00 ft      Total Volume: 0.049 bbl

Num Fluid Samples: 0

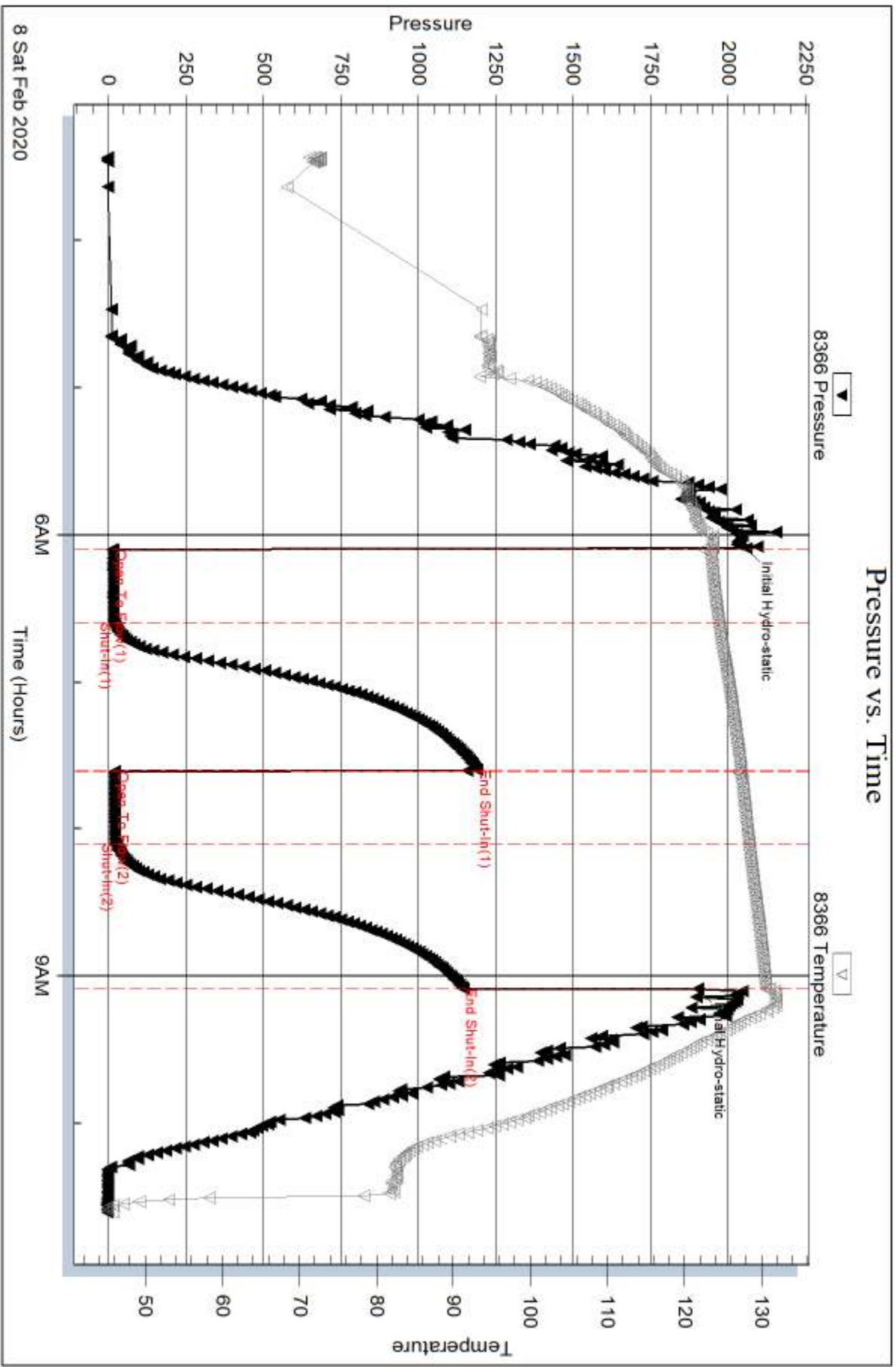
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



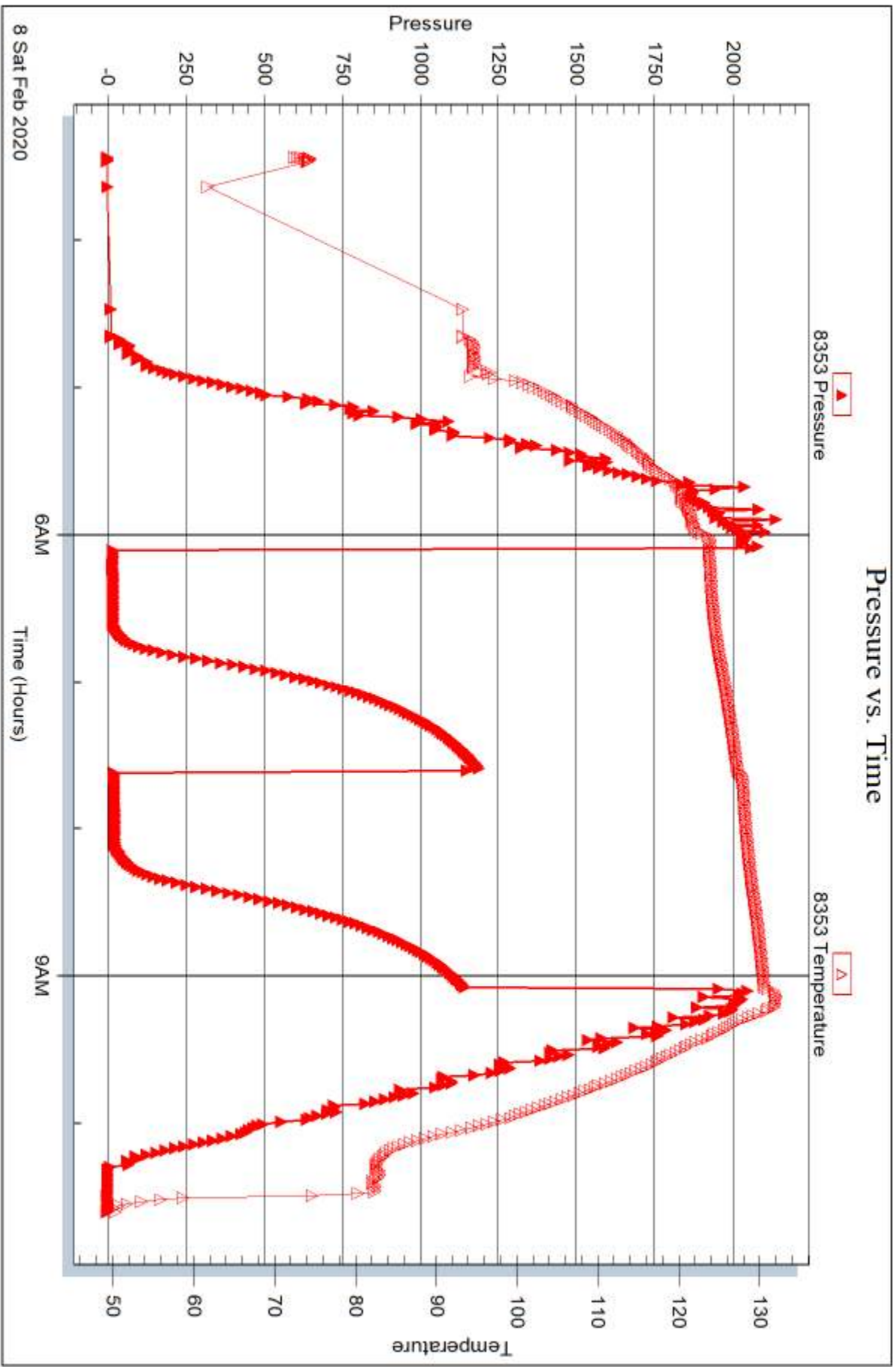
Serial #: 8353

Inside

Murfin Drilling Co. Inc.

Oilwell J #2-19

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 66472

Printed: 2020.02.13 @ 14:30:18



## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita KS 67202

ATTN: Robert Hendrix

### **Culwell J #2-19**

#### **19-2s-37w Cheyenne,KS**

Start Date: 2020.02.08 @ 21:05:00

End Date: 2020.02.09 @ 05:19:20

Job Ticket #: 66473                      DST #: 2

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

Printed: 2020.02.13 @ 14:29:14





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

**19-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Culwell J #2-19**

Job Ticket: 66473

**DST#: 2**

ATTN: Robert Hendrix

Test Start: 2020.02.08 @ 21:05:00

## GENERAL INFORMATION:

Formation: **LKC "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:16:40

Time Test Ended: 05:19:20

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 71

**Interval: 4269.00 ft (KB) To 4350.00 ft (KB) (TVD)**

Reference Elevations: 3404.00 ft (KB)

Total Depth: 4350.00 ft (KB) (TVD)

3399.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8366 Outside**

Press@RunDepth: 105.87 psig @ 4270.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2020.02.08

End Date:

2020.02.09

Last Calib.:

2020.02.09

Start Time: 21:05:01

End Time:

05:19:20

Time On Btm:

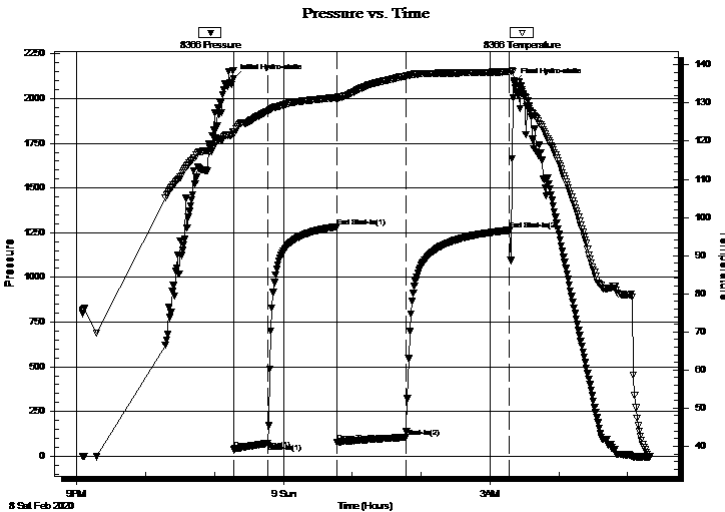
2020.02.08 @ 23:16:30

Time Off Btm:

2020.02.09 @ 03:20:50

**TEST COMMENT:** 30 IF - Blow built to 4"  
60 ISI - No return  
60 FF - Blow built to 4"  
90 FSI - No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2112.68	122.54	Initial Hydro-static
1	37.63	121.74	Open To Flow (1)
30	71.59	127.86	Shut-In(1)
90	1283.56	131.46	End Shut-In(1)
91	75.74	130.89	Open To Flow (2)
151	105.87	137.04	Shut-In(2)
241	1264.07	138.24	End Shut-In(2)
245	2090.68	135.97	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
180.00	OCM - 15%o - 85%M	1.18
20.00	OCM - 45%o - 55%M	0.28

\* Recovery from multiple tests

## Gas Rates

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



# TRILOBITE TESTING, INC.

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

19-2s-37w Cheyenne,KS

250 N Water STE 300  
Wichita KS 67202

Culwell J #2-19

Job Ticket: 66473

DST#: 2

ATTN: Robert Hendrix

Test Start: 2020.02.08 @ 21:05:00

### GENERAL INFORMATION:

Formation: **LKC "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:16:40

Time Test Ended: 05:19:20

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 71

**Interval: 4269.00 ft (KB) To 4350.00 ft (KB) (TVD)**

Reference Elevations: 3404.00 ft (KB)

Total Depth: 4350.00 ft (KB) (TVD)

3399.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

### Serial #: 8353

Inside

Press@RunDepth: psig @ 4270.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2020.02.08 End Date: 2020.02.09

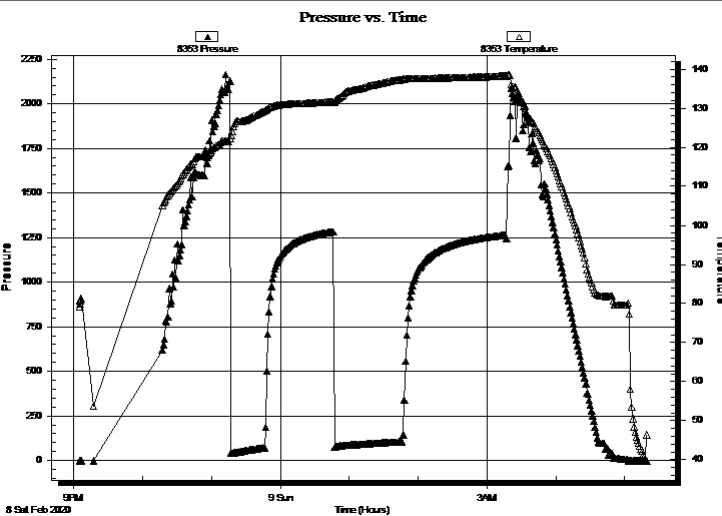
Last Calib.: 2020.02.09

Start Time: 21:05:01 End Time: 05:19:10

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 IF - Blow built to 4"  
60 ISI - No return  
60 FF - Blow built to 4"  
90 FSI - No return



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
180.00	OCM - 15% <sub>o</sub> - 85%M	1.18
20.00	OCM - 45% <sub>o</sub> - 55%M	0.28

### Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co. Inc.

**19-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Culwell J #2-19**

Job Ticket: 66473

**DST#: 2**

ATTN: Robert Hendrix

Test Start: 2020.02.08 @ 21:05:00

## Tool Information

Drill Pipe:	Length: 4104.00 ft	Diameter: 3.80 inches	Volume: 57.57 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose: 100000.0 lb
			<u>Total Volume: 58.30 bbl</u>	Tool Chased 5.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4269.00 ft			Final 65000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	81.00 ft			
Tool Length:	109.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Shut In Tool	5.00			4246.00	
Hydraulic tool	5.00			4251.00	
Jars	5.00			4256.00	
Safety Joint	3.00			4259.00	
Packer	5.00			4264.00	28.00 Bottom Of Top Packer
Packer	5.00			4269.00	
Stubb	1.00			4270.00	
Recorder	0.00	8353	Inside	4270.00	
Recorder	0.00	8366	Outside	4270.00	
Perforations	12.00			4282.00	
Blank Spacing	65.00			4347.00	
Bullnose	3.00			4350.00	81.00 Bottom Packers & Anchor

**Total Tool Length: 109.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co. Inc.

**19-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Culwell J #2-19**

Job Ticket: 66473

**DST#: 2**

ATTN: Robert Hendrix

Test Start: 2020.02.08 @ 21:05:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.58 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
180.00	OCM - 15%o - 85%M	1.177
20.00	OCM - 45%o - 55%M	0.281

Total Length: 200.00 ft      Total Volume: 1.458 bbl

Num Fluid Samples: 0

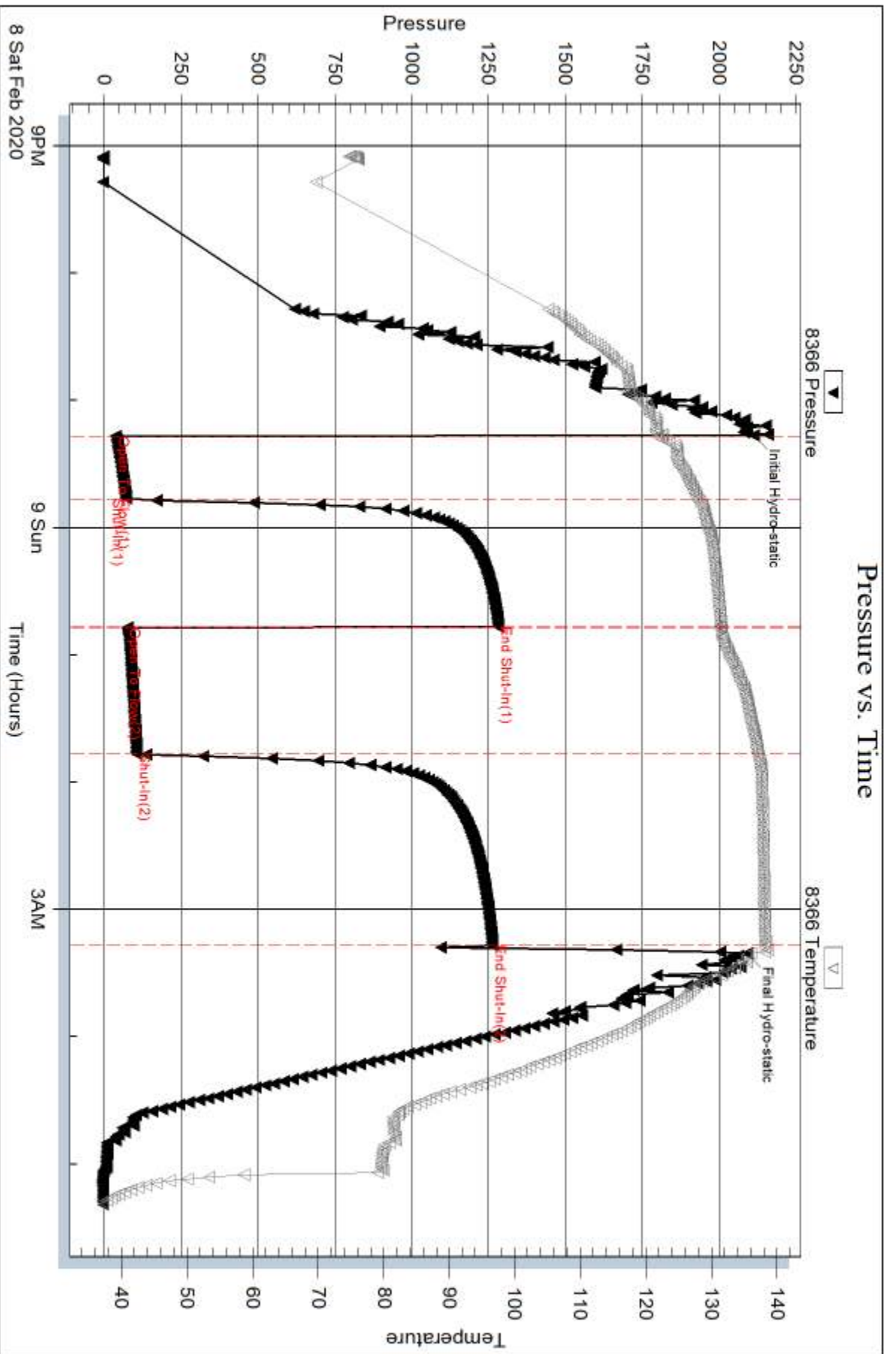
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



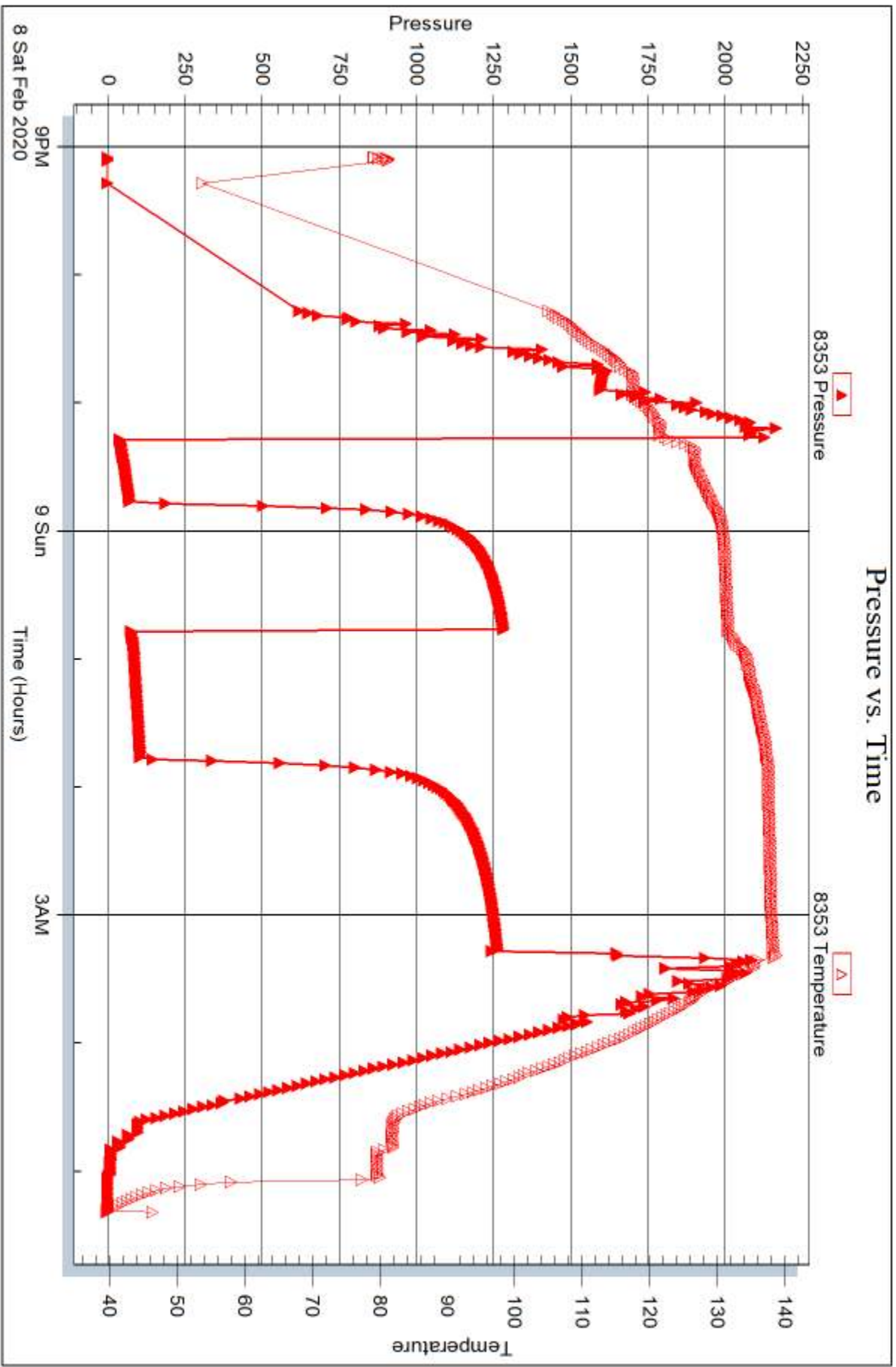
Serial #: 8353

Inside

Murfin Drilling Co. Inc.

Oilwell J #2-19

DST Test Number: 2



Trilobe Testing, Inc

Ref. No: 66473

Printed: 2020.02.13 @ 14:29:15



## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita KS 67202

ATTN: Robert Hendrix

### **Culwell J #2-19**

#### **19-2s-37w Cheyenne,KS**

Start Date: 2020.02.09 @ 23:58:00

End Date: 2020.02.10 @ 09:05:00

Job Ticket #: 66474                      DST #: 3

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

Printed: 2020.02.13 @ 14:28:49

Murfin Drilling Co. Inc.

19-2s-37w Cheyenne,KS

Culwell J #2-19

DST # 3

LKC " D - G "

2020.02.09



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

**19-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Culwell J #2-19**

Job Ticket: 66474

**DST#: 3**

ATTN: Robert Hendrix

Test Start: 2020.02.09 @ 23:58:00

## GENERAL INFORMATION:

Formation: **LKC " D - G "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:49:20

Time Test Ended: 09:05:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 71

**Interval: 4342.00 ft (KB) To 4460.00 ft (KB) (TVD)**

Reference Elevations: 3404.00 ft (KB)

Total Depth: 4460.00 ft (KB) (TVD)

3399.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8366 Outside**

Press@RunDepth: 58.68 psig @ 4343.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2020.02.09

End Date:

2020.02.10

Last Calib.: 2020.02.10

Start Time: 23:58:01

End Time:

09:05:00

Time On Btm: 2020.02.10 @ 02:49:10

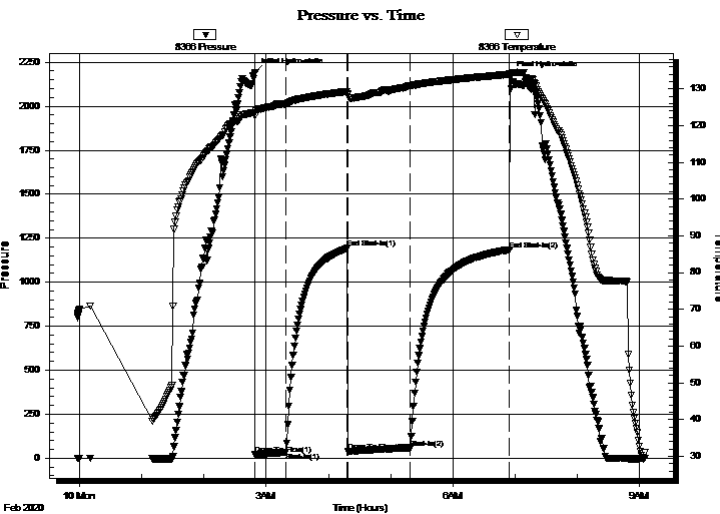
Time Off Btm: 2020.02.10 @ 06:55:00

TEST COMMENT: 30 IF - Blow built to 2" (in diesel)

60 ISI - No return

60 FF - Surface blow

90 FSI - No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2192.37	123.25	Initial Hydro-static
1	21.07	122.70	Open To Flow (1)
30	34.04	125.79	Shut-In(1)
89	1192.25	129.29	End Shut-In(1)
90	37.90	128.66	Open To Flow (2)
150	58.68	130.85	Shut-In(2)
246	1184.59	133.92	End Shut-In(2)
246	2172.42	134.06	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
70.00	Mud w/oil spots in tool - 100%M	0.34

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

**19-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Culwell J #2-19**

Job Ticket: 66474

**DST#: 3**

ATTN: Robert Hendrix

Test Start: 2020.02.09 @ 23:58:00

## GENERAL INFORMATION:

Formation: **LKC " D - G "**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 02:49:20  
 Time Test Ended: 09:05:00  
 Interval: **4342.00 ft (KB) To 4460.00 ft (KB) (TVD)**  
 Total Depth: 4460.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Ryan Nichols  
 Unit No: 71  
 Reference Elevations: 3404.00 ft (KB)  
 3399.00 ft (CF)  
 KB to GR/CF: 5.00 ft

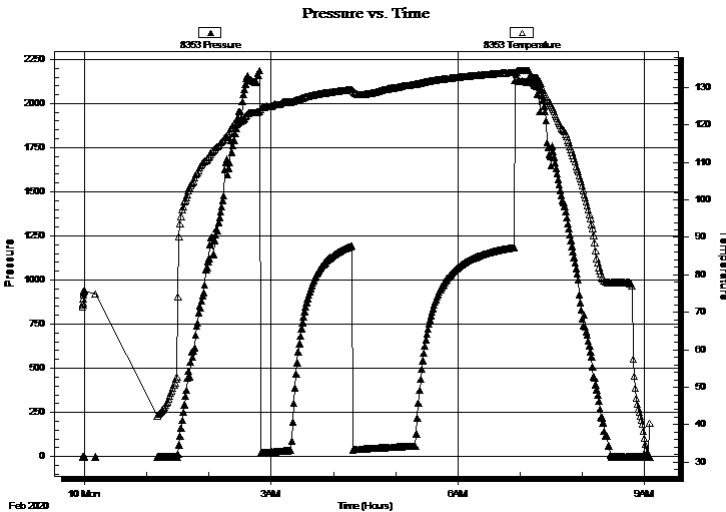
**Serial #: 8353**

**Inside**

Press@RunDepth: psig @ 4343.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2020.02.09 End Date: 2020.02.10 Last Calib.: 2020.02.10  
 Start Time: 23:58:01 End Time: 09:05:00 Time On Btm:  
 Time Off Btm:

**TEST COMMENT:** 30 IF - Blow built to 2" (in diesel)  
 60 ISI - No return  
 60 FF - Surface blow  
 90 FSI - No return

## PRESSURE SUMMARY



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

## Recovery

Length (ft)	Description	Volume (bbl)
70.00	Mud w/oil spots in tool - 100%M	0.34

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co. Inc.

**19-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Culwell J #2-19**

Job Ticket: 66474

**DST#: 3**

ATTN: Robert Hendrix

Test Start: 2020.02.09 @ 23:58:00

## Tool Information

Drill Pipe:	Length: 4199.00 ft	Diameter: 3.80 inches	Volume: 58.90 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose:	100000.0 lb
			<u>Total Volume: 59.63 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial	65000.00 lb
Depth to Top Packer:	4342.00 ft			Final	65000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	118.00 ft				
Tool Length:	146.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

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

Shut In Tool	5.00			4319.00	
Hydraulic tool	5.00			4324.00	
Jars	5.00			4329.00	
Safety Joint	3.00			4332.00	
Packer	5.00			4337.00	28.00 Bottom Of Top Packer
Packer	5.00			4342.00	
Stubb	1.00			4343.00	
Recorder	0.00	8353	Inside	4343.00	
Recorder	0.00	8366	Outside	4343.00	
Perforations	18.00			4361.00	
Blank Spacing	96.00			4457.00	
Bullnose	3.00			4460.00	118.00 Bottom Packers & Anchor

**Total Tool Length: 146.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co. Inc.

**19-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Culwell J #2-19**

Job Ticket: 66474

**DST#: 3**

ATTN: Robert Hendrix

Test Start: 2020.02.09 @ 23:58:00

### 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: 65.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
70.00	Mud w /oil spots in tool - 100%M	0.344

Total Length: 70.00 ft      Total Volume: 0.344 bbl

Num Fluid Samples: 0

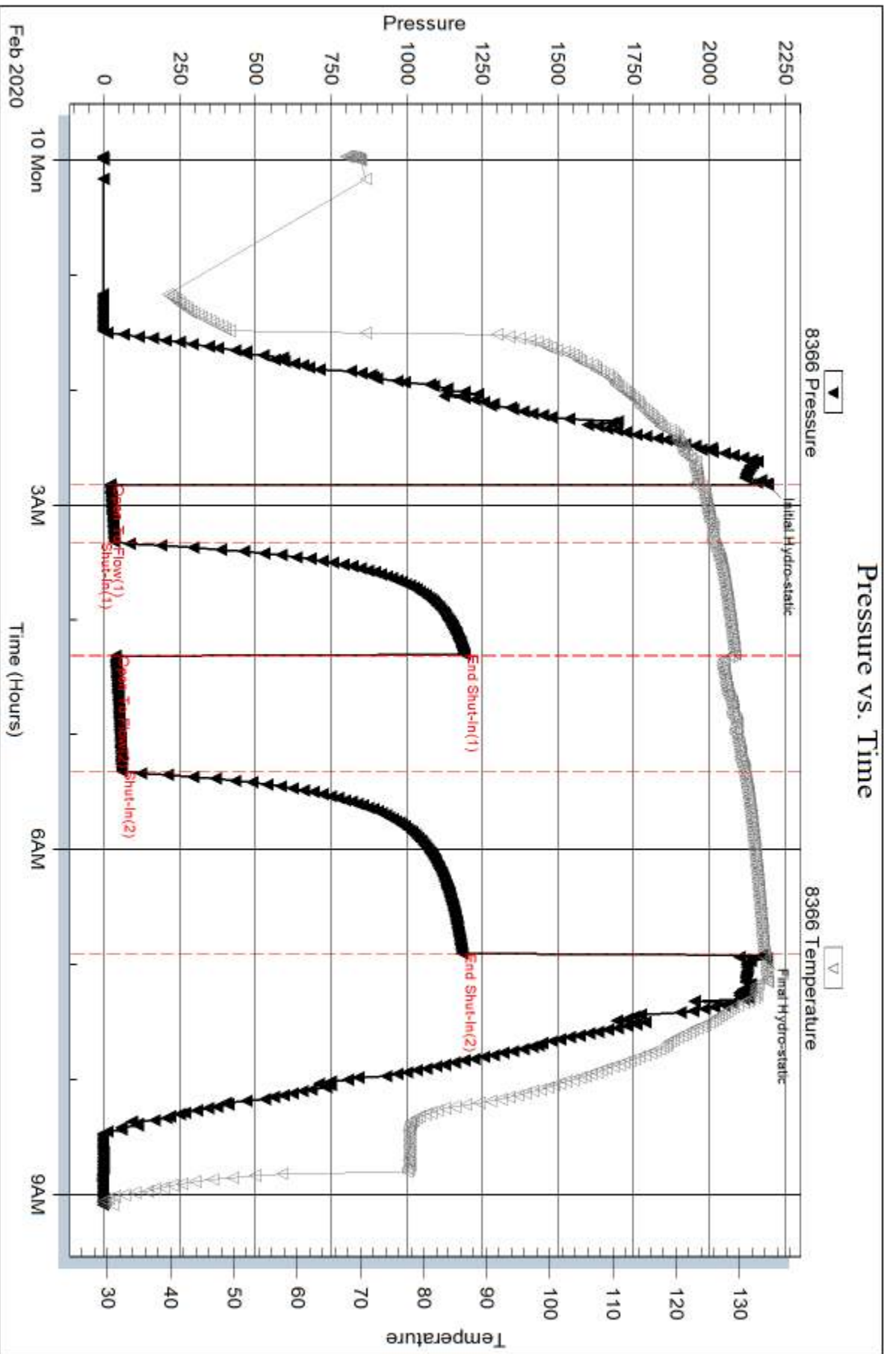
Num Gas Bombs: 0

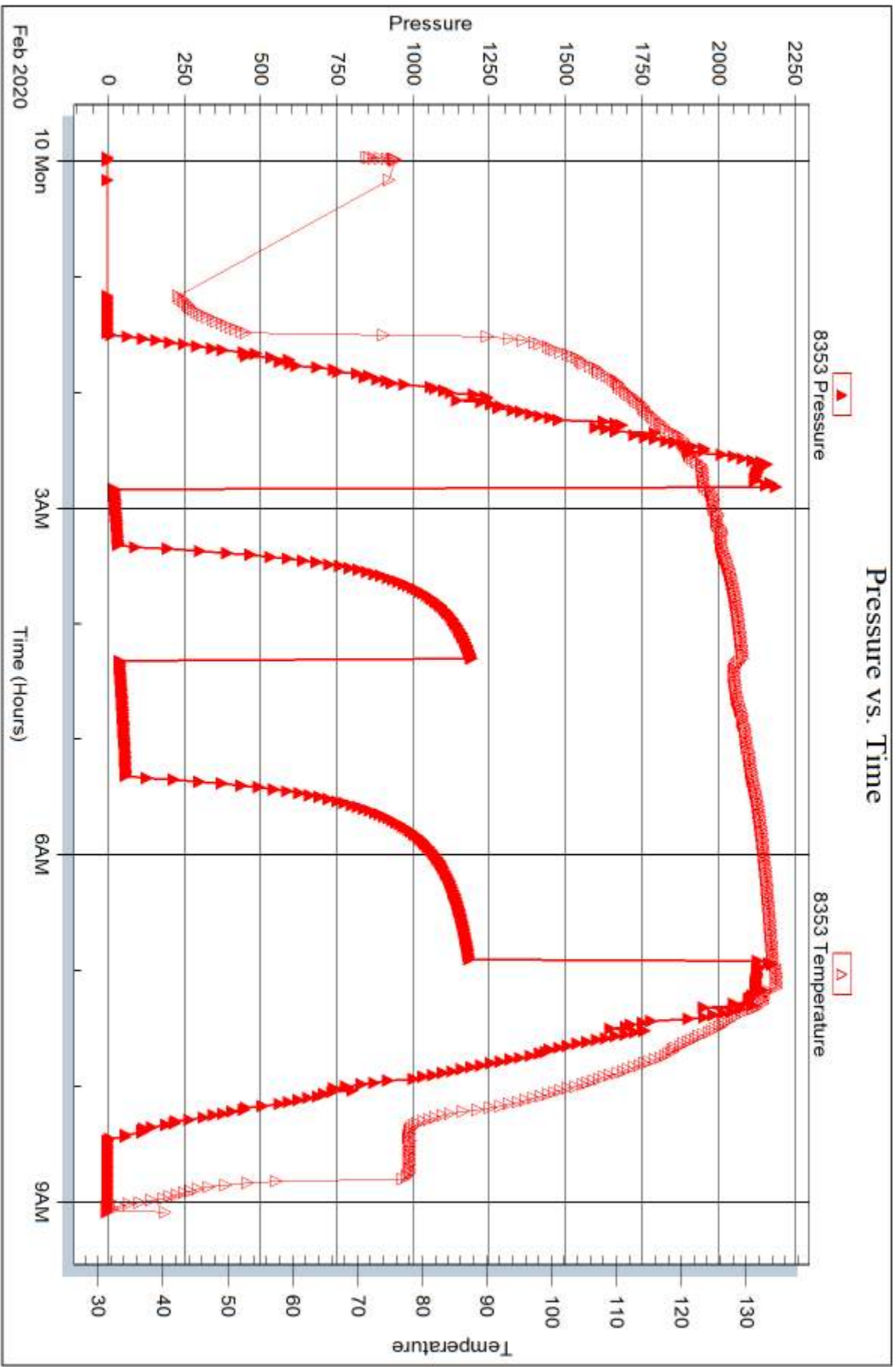
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita KS 67202

ATTN: Robert Hendrix

### **Culwell J #2-19**

#### **19-2s-37w Cheyenne,KS**

Start Date: 2020.02.10 @ 21:38:00

End Date: 2020.02.11 @ 04:27:30

Job Ticket #: 66475                      DST #: 4

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

Printed: 2020.02.13 @ 14:28:25



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

**19-2s-37w Cheyenne, KS**

250 N Water STE 300  
Wichita KS 67202

**Culwell J #2-19**

Job Ticket: 66475

**DST#: 4**

ATTN: Robert Hendrix

Test Start: 2020.02.10 @ 21:38:00

## GENERAL INFORMATION:

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

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:41:30

Time Test Ended: 04:27:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 71

**Interval: 4456.00 ft (KB) To 4540.00 ft (KB) (TVD)**

Reference Elevations: 3404.00 ft (KB)

Total Depth: 4540.00 ft (KB) (TVD)

3399.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8366 Outside**

Press@RunDepth: 23.32 psig @ 4457.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2020.02.10

End Date:

2020.02.11

Last Calib.: 2020.02.11

Start Time: 21:38:01

End Time:

04:27:30

Time On Btm: 2020.02.10 @ 23:41:20

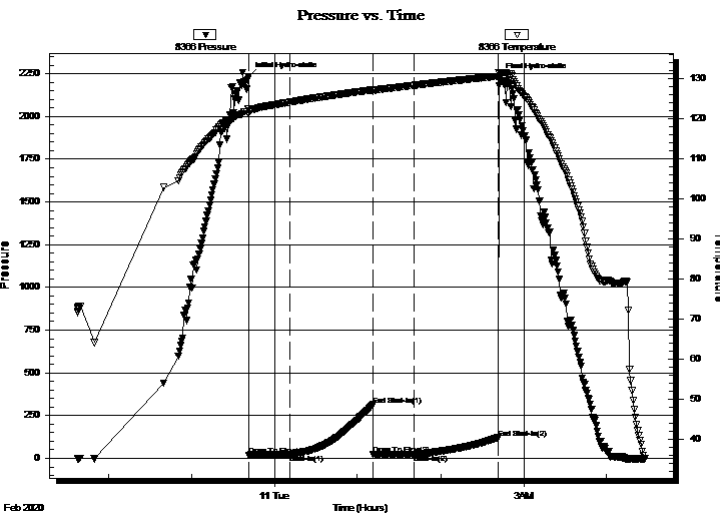
Time Off Btm: 2020.02.11 @ 02:42:00

**TEST COMMENT:** 30 IF - 1" blow built to 1 1/2" (in diesel)

60 ISI - No return

30 FF - No blow

60 FSI - No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2233.86	122.48	Initial Hydro-static
1	18.90	121.25	Open To Flow (1)
30	20.41	124.18	Shut-In(1)
90	312.98	127.26	End Shut-In(1)
91	21.62	127.11	Open To Flow (2)
120	23.32	128.38	Shut-In(2)
181	118.38	130.66	End Shut-In(2)
181	2224.83	131.41	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud w / oil spots in tool - 100%M	0.02

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

250 N Water STE 300  
Wichita KS 67202

ATTN: Robert Hendrix

**19-2s-37w Cheyenne,KS**

**Culwell J #2-19**

Job Ticket: 66475

**DST#: 4**

Test Start: 2020.02.10 @ 21:38:00

## GENERAL INFORMATION:

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

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:41:30

Time Test Ended: 04:27:30

**Interval: 4456.00 ft (KB) To 4540.00 ft (KB) (TVD)**

Total Depth: 4540.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 71

Reference Elevations: 3404.00 ft (KB)

3399.00 ft (CF)

KB to GR/CF: 5.00 ft

**Serial #: 8353**

**Inside**

Press@RunDepth: psig @ 4457.00 ft (KB)

Start Date: 2020.02.10

End Date:

2020.02.11

Start Time: 21:38:01

End Time:

04:27:20

Capacity: 8000.00 psig

Last Calib.: 2020.02.11

Time On Btm:

Time Off Btm:

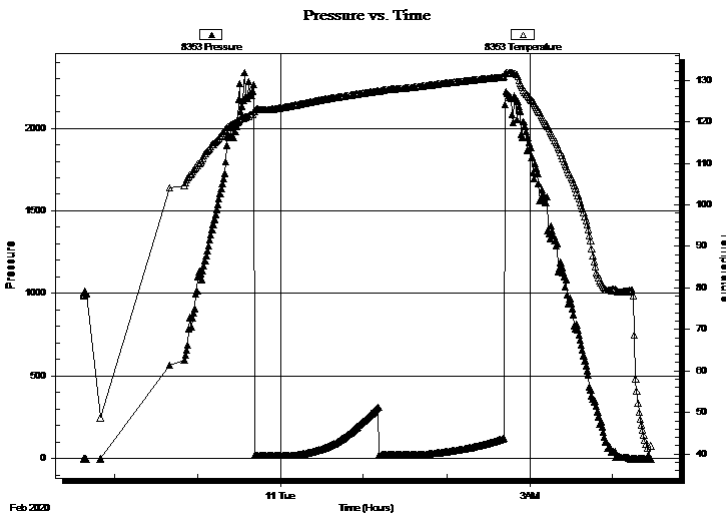
TEST COMMENT: 30 IF - 1" blow built to 1 1/2" (in diesel)

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)
5.00	Mud w / oil spots in tool - 100%M	0.02

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co. Inc.

**19-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Culwell J #2-19**

Job Ticket: 66475

**DST#: 4**

ATTN: Robert Hendrix

Test Start: 2020.02.10 @ 21:38:00

## Tool Information

Drill Pipe:	Length: 4294.00 ft	Diameter: 3.80 inches	Volume: 60.23 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 60.96 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial 67000.00 lb
Depth to Top Packer:	4456.00 ft			Final 67000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	84.00 ft			
Tool Length:	112.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Shut In Tool	5.00			4433.00	
Hydraulic tool	5.00			4438.00	
Jars	5.00			4443.00	
Safety Joint	3.00			4446.00	
Packer	5.00			4451.00	28.00 Bottom Of Top Packer
Packer	5.00			4456.00	
Stubb	1.00			4457.00	
Recorder	0.00	8353	Inside	4457.00	
Recorder	0.00	8366	Outside	4457.00	
Perforations	15.00			4472.00	
Blank Spacing	65.00			4537.00	
Bullnose	3.00			4540.00	84.00 Bottom Packers & Anchor

**Total Tool Length: 112.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co. Inc.

**19-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Culwell J #2-19**

Job Ticket: 66475

**DST#: 4**

ATTN: Robert Hendrix

Test Start: 2020.02.10 @ 21:38:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 64.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud w / oil spots in tool - 100%M	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

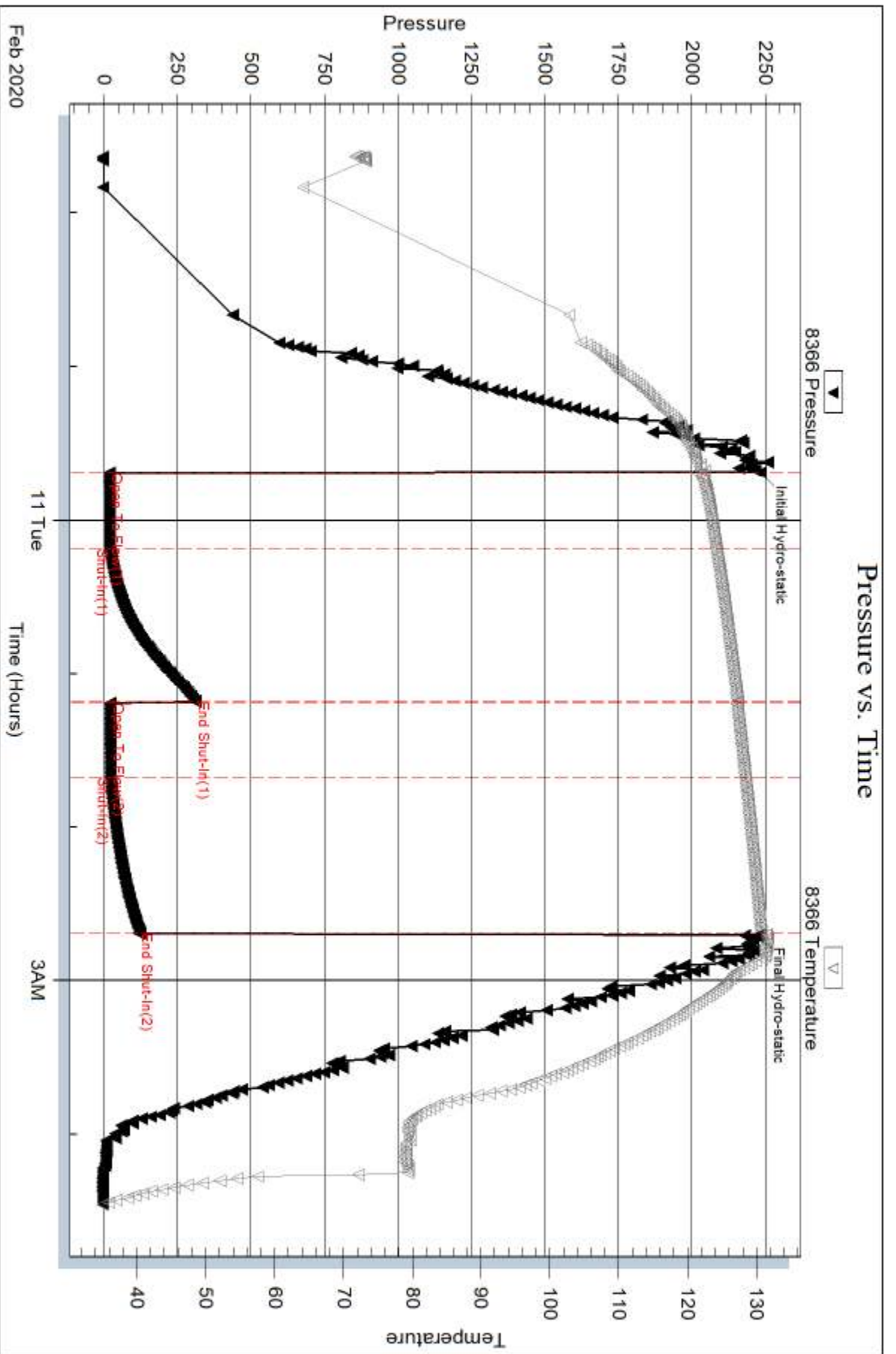
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



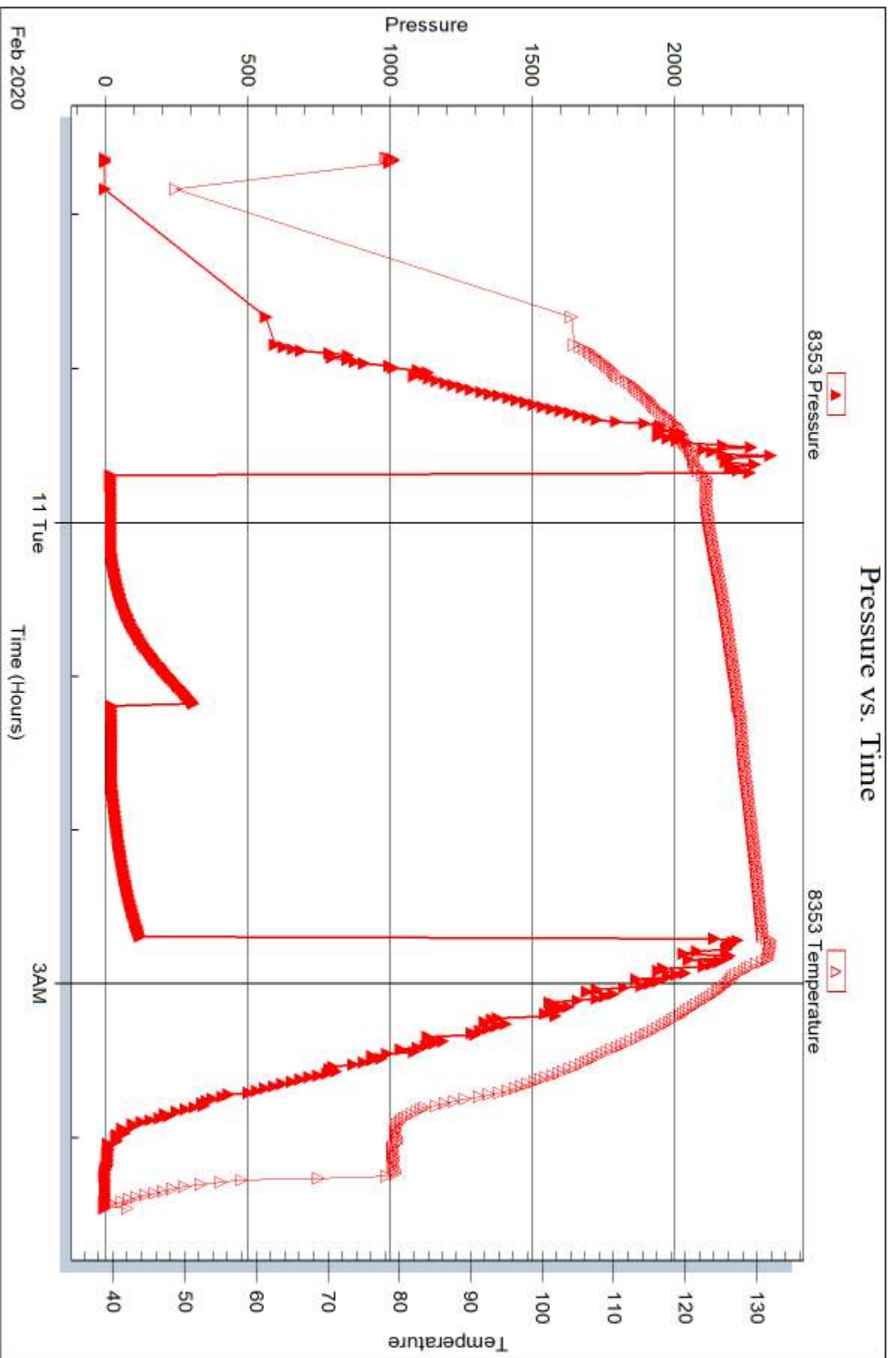
Serial #: 8353

Inside

Murfin Drilling Co. Inc.

Oilwell J #2-19

DST Test Number: 4





## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita KS 67202

ATTN: Robert Hendrix

### **Culwell J #2-19**

#### **19-2s-37w Cheyenne,KS**

Start Date: 2020.02.12 @ 14:54:00

End Date: 2020.02.13 @ 00:02:30

Job Ticket #: 66526                      DST #: 5

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

Printed: 2020.02.13 @ 14:27:42



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

**19-2s-37w Cheyenne, KS**

250 N Water STE 300  
Wichita KS 67202

**Culwell J #2-19**

Job Ticket: 66526

**DST#: 5**

ATTN: Robert Hendrix

Test Start: 2020.02.12 @ 14:54:00

## GENERAL INFORMATION:

Formation: **Ft. Scott - Celia**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 17:36:10  
 Time Test Ended: 00:02:30  
 Interval: **4694.00 ft (KB) To 4836.00 ft (KB) (TVD)**  
 Total Depth: 4836.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Ryan Nichols  
 Unit No: 71  
 Reference Elevations: 3404.00 ft (KB)  
 3399.00 ft (CF)  
 KB to GR/CF: 5.00 ft

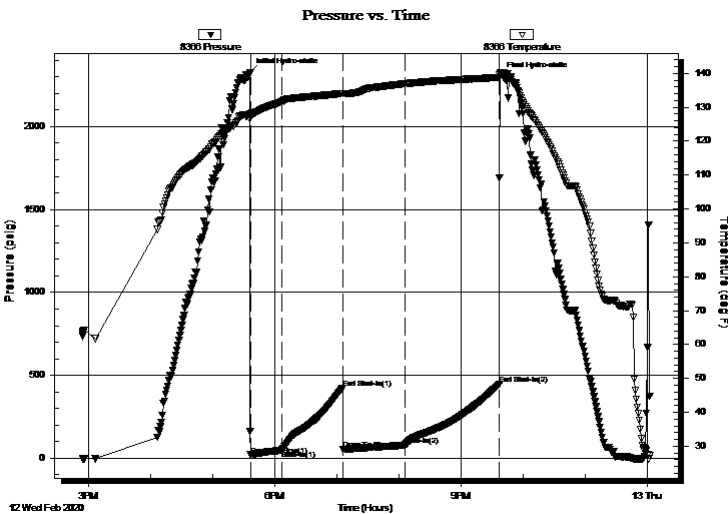
## Serial #: 8366

Outside

Press@RunDepth: 77.74 psig @ 4695.00 ft (KB)  
 Start Date: 2020.02.12 End Date: 2020.02.13  
 Start Time: 14:54:01 End Time: 00:02:30  
 Capacity: 8000.00 psig  
 Last Calib.: 2020.02.13  
 Time On Btm: 2020.02.12 @ 17:35:50  
 Time Off Btm: 2020.02.12 @ 21:37:20

TEST COMMENT: 30 IF - Blow built to 3" (in diesel)  
 60 ISI - No return  
 60 FF - Blow built to 2"  
 90 FSI - No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2326.70	128.00	Initial Hydro-static
1	20.75	127.28	Open To Flow (1)
31	47.34	131.62	Shut-In(1)
90	422.83	134.05	End Shut-In(1)
90	52.19	133.98	Open To Flow (2)
150	77.74	136.93	Shut-In(2)
242	445.53	138.83	End Shut-In(2)
242	2302.28	139.57	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
125.00	OCM - 25%o - 75%M	0.61

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

**19-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Culwell J #2-19**

Job Ticket: 66526

**DST#: 5**

ATTN: Robert Hendrix

Test Start: 2020.02.12 @ 14:54:00

## GENERAL INFORMATION:

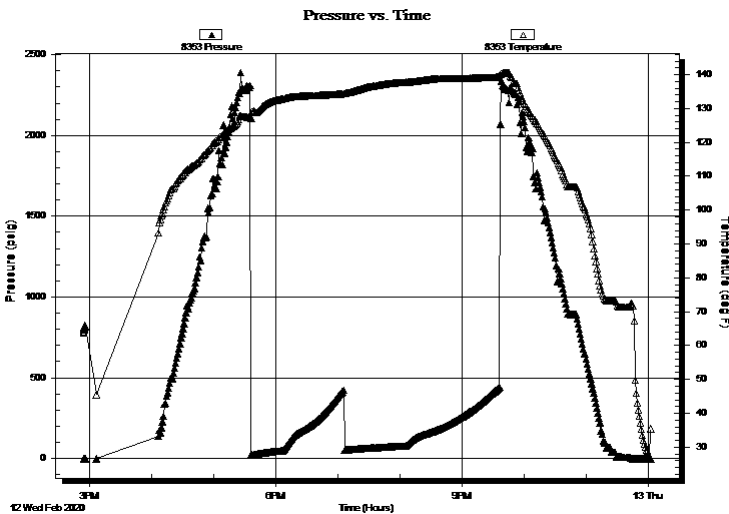
Formation: **Ft. Scott - Celia**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 17:36:10  
 Time Test Ended: 00:02:30  
 Interval: **4694.00 ft (KB) To 4836.00 ft (KB) (TVD)**  
 Total Depth: 4836.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Ryan Nichols  
 Unit No: 71  
 Reference Elevations: 3404.00 ft (KB)  
 3399.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 8353**      **Inside**

Press@RunDepth:	psig @	4695.00 ft (KB)	Capacity:	8000.00 psig
Start Date:	2020.02.12	End Date:	2020.02.13	Last Calib.:
Start Time:	14:54:01	End Time:	00:02:30	Time On Btm:
				Time Off Btm:

**TEST COMMENT:** 30 IF - Blow built to 3" (in diesel)  
 60 ISI - No return  
 60 FF - Blow built to 2"  
 90 FSI - No return

## PRESSURE SUMMARY



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

## Recovery

Length (ft)	Description	Volume (bbl)
125.00	OCM - 25%o - 75%M	0.61

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co. Inc.

**19-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Culwell J #2-19**

Job Ticket: 66526

**DST#: 5**

ATTN: Robert Hendrix

Test Start: 2020.02.12 @ 14:54:00

## Tool Information

Drill Pipe:	Length: 4545.00 ft	Diameter: 3.80 inches	Volume: 63.75 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose:	100000.0 lb
			<u>Total Volume: 64.48 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial	68000.00 lb
Depth to Top Packer:	4694.00 ft			Final	68000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	142.00 ft				
Tool Length:	170.00 ft				
Number of Packers:	2	Diameter:	6.75 inches		
Tool Comments:					

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

Shut In Tool	5.00			4671.00	
Hydraulic tool	5.00			4676.00	
Jars	5.00			4681.00	
Safety Joint	3.00			4684.00	
Packer	5.00			4689.00	28.00 Bottom Of Top Packer
Packer	5.00			4694.00	
Stubb	1.00			4695.00	
Recorder	0.00	8353	Inside	4695.00	
Recorder	0.00	8366	Outside	4695.00	
Perforations	11.00			4706.00	
Blank Spacing	127.00			4833.00	
Bullnose	3.00			4836.00	142.00 Bottom Packers & Anchor

**Total Tool Length: 170.00**





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co. Inc.

**19-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Culwell J #2-19**

Job Ticket: 66526

**DST#: 5**

ATTN: Robert Hendrix

Test Start: 2020.02.12 @ 14:54:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
125.00	OCM - 25%o - 75%M	0.615

Total Length: 125.00 ft      Total Volume: 0.615 bbl

Num Fluid Samples: 0

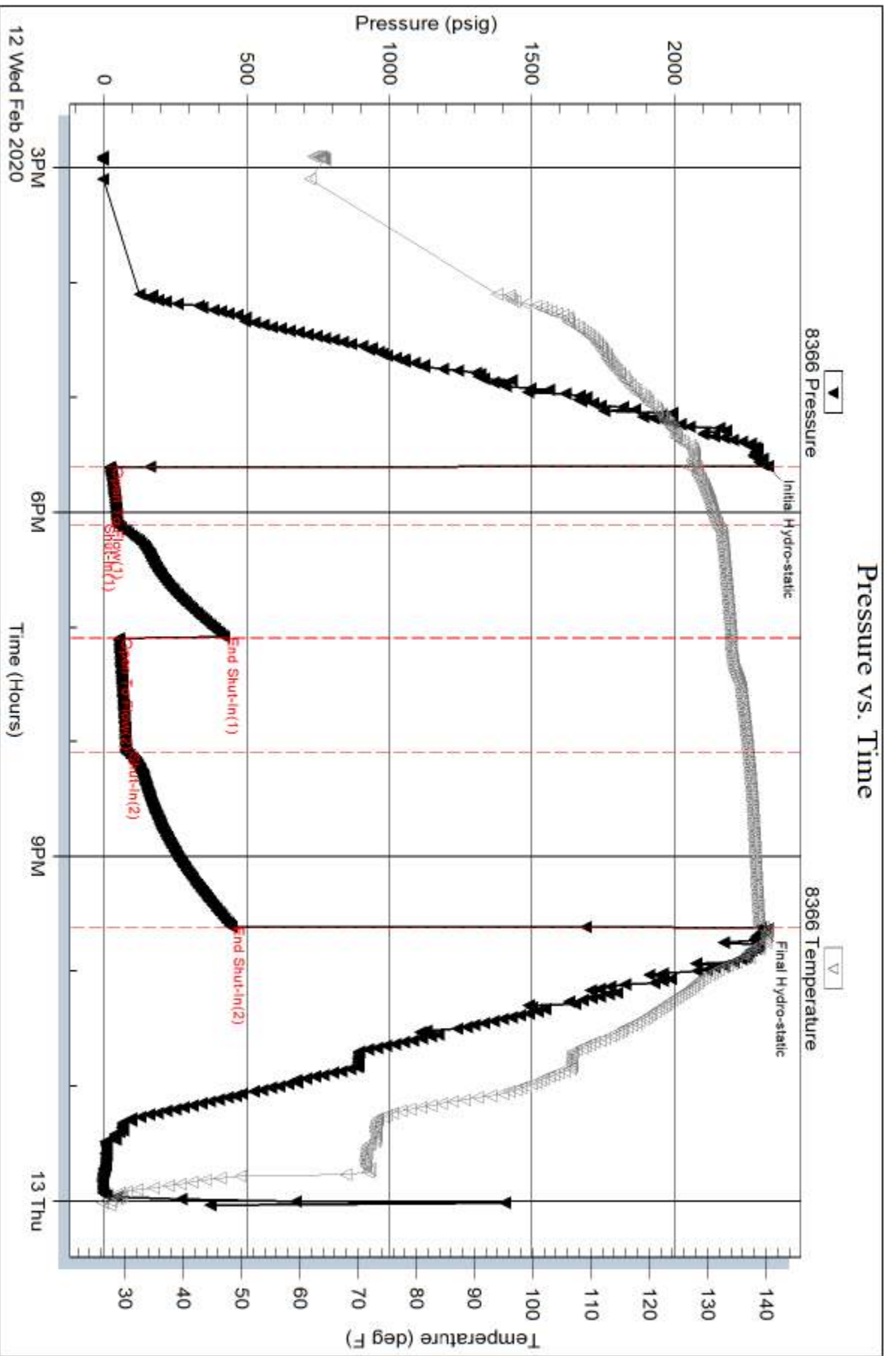
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



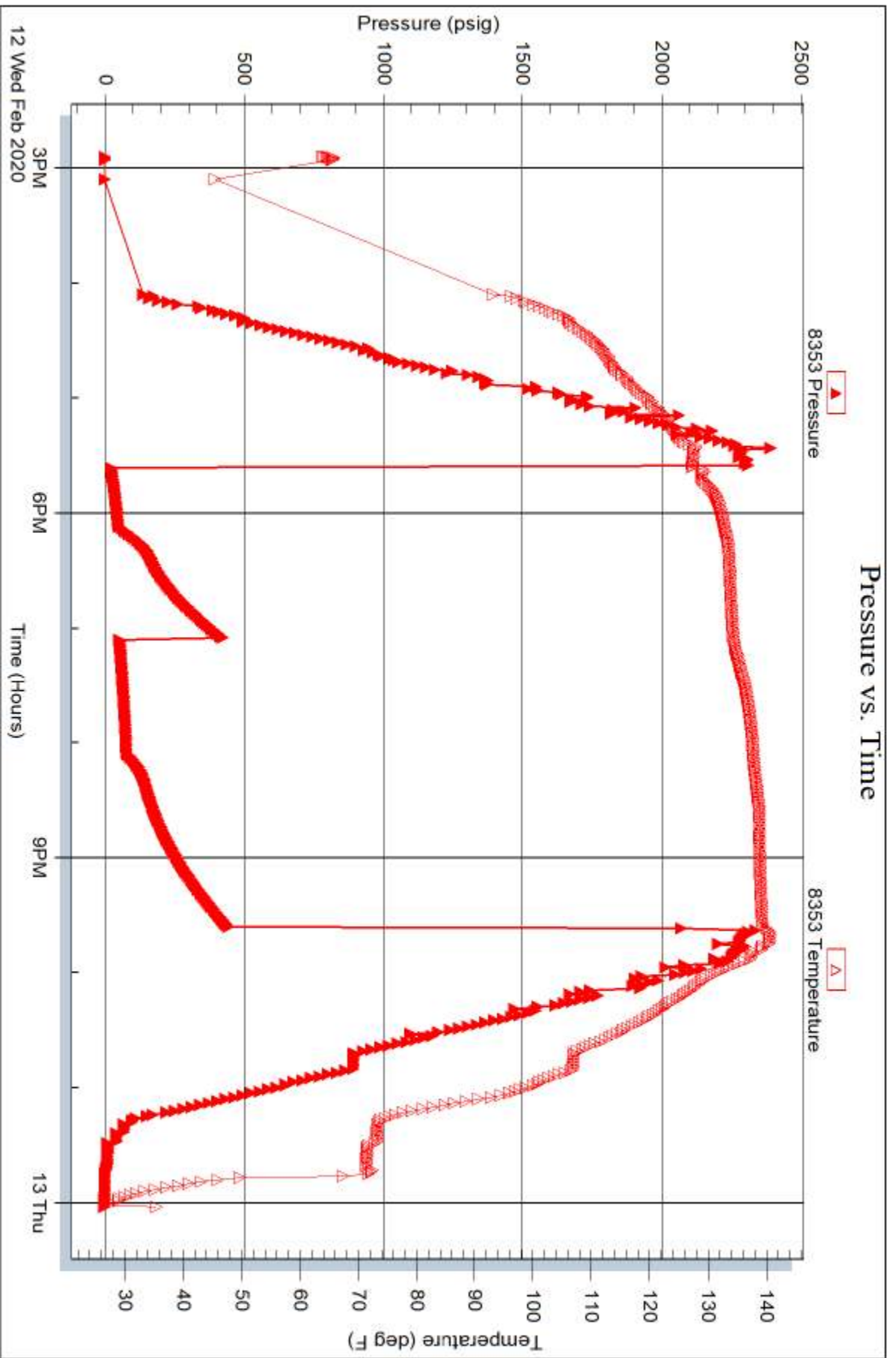
Serial #: 8353

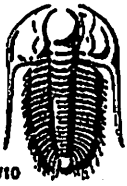
Inside

Murfin Drilling Co. Inc.

Oilwell J #2-19

DST Test Number: 5





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket 66472

NO.

Well Name & No. Lulwell J #2-19 Test No. 1 Date 2/8/20  
 Company ~~2500 N. Water STE 300~~ Marlin Drilling Elevation 3404 KB 3399 GL  
 Address 250 N. Water STE 300 Wichita KS 67202  
 Co. Rep / Geo. Robert Hendrix Rig Marlin #3  
 Location: Sec. 19 Twp 2S Rge. 37W Co. Cheyenne State KS

Interval Tested 4191 - 4266 Zone Tested Oread  
 Anchor Length 75' Drill Pipe Run 4042' Mud Wt. 8.7  
 Top Packer Depth 4186 Drill Collars Run 148' Vls 57  
 Bottom Packer Depth 4191 Wt. Pipe Run 0' WL 5.6  
 Total Depth 4266 Chlorides 700 ppm System LCM 2  
 Blow Description 30 IF - Surface blow built to 1/4" died @ 25 mins  
60 ISI - No return  
30 FF - No blow  
60 FSI - No return

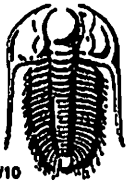
Rec	Feet of	%gas	%oil	%water	%mud
<u>10'</u>	<u>OCM</u>	<u>40</u>		<u>60</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10' BHT 131° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2058</u>	<input checked="" type="checkbox"/> Test <u>1300</u>	T-On Location <u>03:00</u>
(B) First Initial Flow <u>13</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>03:26</u>
(C) First Final Flow <u>17</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>06:05</u>
(D) Initial Shut-In <u>1191</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>09:05</u>
(E) Second Initial Flow <u>21</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>10:40</u>
(F) Second Final Flow <u>22</u>	<input checked="" type="checkbox"/> Mileage <u>131 RT</u> 131	Comments
(G) Final Shut-In <u>1146</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1904</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>30</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Ruined Packer
Final Shut-In <u>68</u>	<input type="checkbox"/> Day Standby	<input type="checkbox"/> Extra Copies
	<input type="checkbox"/> Accessibility	Sub Total <u>0</u>
	Sub Total <u>1756</u>	Total <u>1756</u>
		MP/DST Disc't

Approved By \_\_\_\_\_ Our Representative Robert Hendrix

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



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket 66473

NO.

Well Name & No. Culwell J # 2-19 Test No. 2 Date 2/8/20  
 Company Martin Drilling Co. Inc. Elevation 3404 KB 3399 GL  
 Address 250 N. Water STE 300 Wichita KS 67202  
 Co. Rep / Geo. Robert Hendrix Rig Martin #3  
 Location: Sec. 19 Twp 25 Rge. 37W Co. Cheyenne State KS

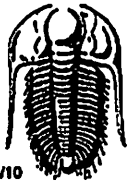
Interval Tested 4269 - 4350 Zone Tested 2KC "A"  
 Anchor Length 81' Drill Pipe Run 4104' Mud Wt. 8.9  
 Top Packer Depth 4264 Drill Collars Run 148' Vis 62  
 Bottom Packer Depth 4269 Wt. Pipe Run 0' WL 5.6  
 Total Depth 4350 Chlorides 700 ppm System LCM 5  
 Blow Description 30 IF - Blow built to 4"  
60 FSI - No return  
60 FF - Blow built to 4"  
90 FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>20'</u>	<u>OCM</u>	<u>45</u>		<u>55</u>	
<u>180'</u>	<u>OCM</u>	<u>15</u>		<u>85</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 200' BHT 138° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2113</u>	<input checked="" type="checkbox"/> Test <u>1300</u>	T-On Location <u>20:30</u>
(B) First Initial Flow <u>38</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>21:05</u>
(C) First Final Flow <u>72</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>23:16</u>
(D) Initial Shut-In <u>1284</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>03:16</u>
(E) Second Initial Flow <u>76</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>09:15</u>
(F) Second Final Flow <u>106</u>	<input checked="" type="checkbox"/> Mileage <u>131 RT</u> 131	Comments
(G) Final Shut-In <u>1264</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2091</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>1756</u>
	Sub Total <u>1756</u>	MP/DST Disc't

Approved By \_\_\_\_\_ Our Representative Ry 2 Nicks  
 Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket 66474

NO.

Well Name & No. Cylwell J #2-19 Test No. 3 Date 2/9/20  
 Company Murfin Drilling Co. Inc. Elevation 3404 KB 3399 GL  
 Address 250 N. Water STE 300 Wichita KS 67202  
 Co. Rep / Geo. Robert Hendrix Rig Murfin # 3  
 Location: Sec. 19 Twp 25 Rge. 37 W Co. Cheyenne State KS

Interval Tested 4342 - 4460 Zone Tested LKC "D-G"  
 Anchor Length 118' Drill Pipe Run 4199 Mud Wt. 9.0  
 Top Packer Depth 4337 Drill Collars Run 148' Vis 65  
 Bottom Packer Depth 4342 Wt. Pipe Run 0' WL 5.6  
 Total Depth 4460 Chlorides 700 ppm System LCM 4

Blow Description 30 IF - Blow built to 2' (in diesel)  
60 ISI - No return  
60 FF - Surface blow  
90 FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>70'</u>	<u>Mud + Oil spots in tool</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 70' BHT 134° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2192  Test 1300 T-On Location 23:30  
 (B) First Initial Flow 21  Jars 250 T-Started 23:58  
 (C) First Final Flow 34  Safety Joint 75 T-Open 02:49  
 (D) Initial Shut-In 1192  Circ Sub \_\_\_\_\_ T-Pulled 06:49  
 (E) Second Initial Flow 38  Hourly Standby \_\_\_\_\_ T-Out 09:00  
 (F) Second Final Flow 59  Mileage 131 131 RT Comments \_\_\_\_\_  
 (G) Final Shut-In 1185  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2172  Straddle \_\_\_\_\_

Initial Open 30  Shale Packer \_\_\_\_\_  
 Initial Shut-In 60  Extra Packer \_\_\_\_\_  
 Final Flow 60  Extra Recorder \_\_\_\_\_  
 Final Shut-In 90  Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_  
 Sub Total 1756  EM Tool \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer 320  
 Extra Copies \_\_\_\_\_  
 Sub Total 0  
 Total 1756 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Rp 2 Murb

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



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket 66475

NO.

Well Name & No. Culwell # 2-19 Test No. 4 Date 2/10/20  
 Company Martin Drilling Co. Inc. Elevation 3404 KB 3399 GL  
 Address 250 N. Water STE 300 Wichita KS 67202  
 Co. Rep/Geo. Robert Hendrix Rig Martin # 3  
 Location: Sec. 19 Twp 2S Rge. 37W Co. Cheyenne State KS

Interval Tested 4456 - 4540 Zone Tested LKC "H-J"  
 Anchor Length 84' Drill Pipe Run 4294' Mud Wt. 9.1  
 Top Packer Depth 4451 Drill Collars Run 148' Vis 64  
 Bottom Packer Depth 4456 Wt. Pipe Run 0' WL 6.0  
 Total Depth 4540 Chlorides 700 ppm System LCM 4

Blow Description 30 IF - 1" blow built to 1 1/2" (in diesel)  
60 IST - No return  
30 FF - No blow  
60 FSI - No return

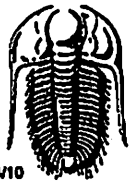
Rec	Feet of	%gas	%oil	%water	%mud
<u>5'</u>	<u>Mud w/ spots in tool</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5' BHT 131° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2233</u>	<input checked="" type="checkbox"/> Test <u>1300</u>	T-On Location <u>21:00</u>
(B) First Initial Flow <u>19</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>21:38</u>
(C) First Final Flow <u>20</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>23:41</u>
(D) Initial Shut-In <u>313</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>02:41</u>
(E) Second Initial Flow <u>22</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>04:30</u>
(F) Second Final Flow <u>23</u>	<input checked="" type="checkbox"/> Mileage <u>131 131 RT</u>	Comments
(G) Final Shut-In <u>118</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2225</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>1756</u>
	Sub Total <u>1756</u>	MP/DST Disc't

Approved By \_\_\_\_\_ Our Representative Robert Hendrix

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



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket 66526

NO.

Well Name & No. Calwell J # 2-19 Test No. 5 Date 2/12/20  
 Company Murfin Drilling Co. Inc. Elevation 3404 KB 3399 GL  
 Address 250 N. Water STE 300 Wichita KS 67202  
 Co. Rep / Geo. Robert Hendrix Rig Murfin # 3  
 Location: Sec. 19 Twp 25 Rge. 37 W Co. Cheyenne State KS

Interval Tested 4694 - 4836 Zone Tested Ft. Scott - Celis  
 Anchor Length 142' Drill Pipe Run 4545' Mud Wt. 9.0  
 Top Packer Depth 4689 Drill Collars Run 148' Vls 60  
 Bottom Packer Depth 4694 Wt. Pipe Run 0' WL 5.6  
 Total Depth 4836 Chlorides 700 ppm System LCM 3  
 Blow Description 30 IF - Blow built to 3" (in diesel)  
60 ISI - No return  
80 FF - Blow built to 2"  
90 FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>125'</u>	<u>OCM</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	Feet of	%gas	%oil	%water	%mud

Rec Total 125' BHT 139° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2327</u>	<input checked="" type="checkbox"/> Test <u>1300</u>	T-On Location <u>14:15</u>
(B) First Initial Flow <u>21</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>14:54</u>
(C) First Final Flow <u>47</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>17:36</u>
(D) Initial Shut-In <u>423</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>21:36</u>
(E) Second Initial Flow <u>52</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>00:15</u>
(F) Second Final Flow <u>78</u>	<input checked="" type="checkbox"/> Mileage <u>131</u> <u>131 RT</u>	Comments
(G) Final Shut-In <u>446</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2302</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	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Ruined Packer
Final Shut-In	<input type="checkbox"/> Day Standby	<input type="checkbox"/> Extra Copies
	<input type="checkbox"/> Accessibility	Sub Total <u>0</u>
	Sub Total <u>1756</u>	Total <u>1756</u>

Approved By \_\_\_\_\_ Our Representative Ryan J. Fisher  
 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.