

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

Gas DH EOR

OG GSW

CM (Coal Bed Methane)

Cathodic Other (Core, Expl., etc.): _____

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

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

Deepening Re-perf. Conv. to EOR Conv. to SWD

Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

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

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

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

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

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

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

1. Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

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

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

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	BANISTER 1-14
Doc ID	1427513

All Electric Logs Run

DIL
DUCP
MEL
BHCS



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N. Water STE 300
Wichita, KS 67202

ATTN: Paul Gunzelman

Banister #1- 14

14-2S-37W Cheyenne,KS

Start Date: 2018.10.30 @ 02:40:00

End Date: 2018.10.30 @ 10:02:39

Job Ticket #: 64727 DST #: 1

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

Printed: 2018.11.05 @ 13:11:06



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co Inc

14-2S-37W Cheyenne, KS

250 N. Water STE 300
Wichita, KS 67202

Banister #1- 14

Job Ticket: 64727

DST#: 1

ATTN: Paul Gunzelman

Test Start: 2018.10.30 @ 02:40:00

GENERAL INFORMATION:

Formation: **Oread**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:09:10

Time Test Ended: 10:02:39

Test Type: Conventional Bottom Hole (Initial)

Tester: Martine Salinas

Unit No: 82

Interval: 4217.00 ft (KB) To 4300.00 ft (KB) (TVD)

Reference Elevations: 3401.00 ft (KB)

Total Depth: 4300.00 ft (KB) (TVD)

3396.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8959

Inside

Press@RunDepth: 22.20 psig @ 4218.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.10.30

End Date: 2018.10.30

Last Calib.: 2018.10.30

Start Time: 02:40:01

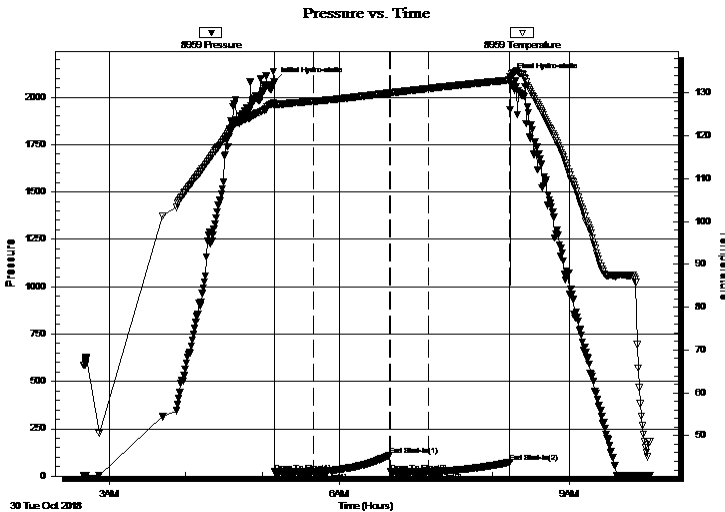
End Time: 10:02:40

Time On Btm: 2018.10.30 @ 05:08:50

Time Off Btm: 2018.10.30 @ 08:13:39

TEST COMMENT: 30-IF-Surface blow built to 1/4" & decreased to surface blow
60-ISI-No blow
30-FF-No blow
60-FSI-No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2079.74	127.72	Initial Hydro-static
1	21.59	127.11	Open To Flow (1)
31	21.05	128.06	Shut-In(1)
91	111.31	130.04	End Shut-In(1)
92	22.43	130.01	Open To Flow (2)
122	22.20	131.06	Shut-In(2)
185	72.58	133.03	End Shut-In(2)
185	2102.75	133.88	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	100% Mud	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co Inc

14-2S-37W Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Banister #1- 14

Job Ticket: 64727

DST#: 1

ATTN: Paul Gunzelman

Test Start: 2018.10.30 @ 02:40:00

Tool Information

Drill Pipe:	Length: 4041.00 ft	Diameter: 3.80 inches	Volume: 56.68 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 177.00 ft	Diameter: 2.25 inches	Volume: 0.87 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 57.55 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial	58000.00 lb
Depth to Top Packer:	4217.00 ft			Final	58000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	83.00 ft				
Tool Length:	111.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			4194.00	
Hydraulic tool	5.00	1113		4199.00	
Jars	5.00	01-07		4204.00	
Safety Joint	3.00	-001		4207.00	
Packer	5.00			4212.00	28.00 Bottom Of Top Packer
Packer	5.00			4217.00	
Stubb	1.00			4218.00	
Recorder	0.00	8959	Inside	4218.00	
Recorder	0.00	8734	Outside	4218.00	
Perforations	13.00			4231.00	
Change Over Sub	1.00			4232.00	
Drill Pipe	62.00			4294.00	
Change Over Sub	1.00			4295.00	
Bullnose	5.00			4300.00	83.00 Bottom Packers & Anchor

Total Tool Length: 111.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc

14-2S-37W Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Banister #1- 14

Job Ticket: 64727

DST#: 1

ATTN: Paul Gunzelman

Test Start: 2018.10.30 @ 02:40:00

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: 5.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	100% Mud	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8959

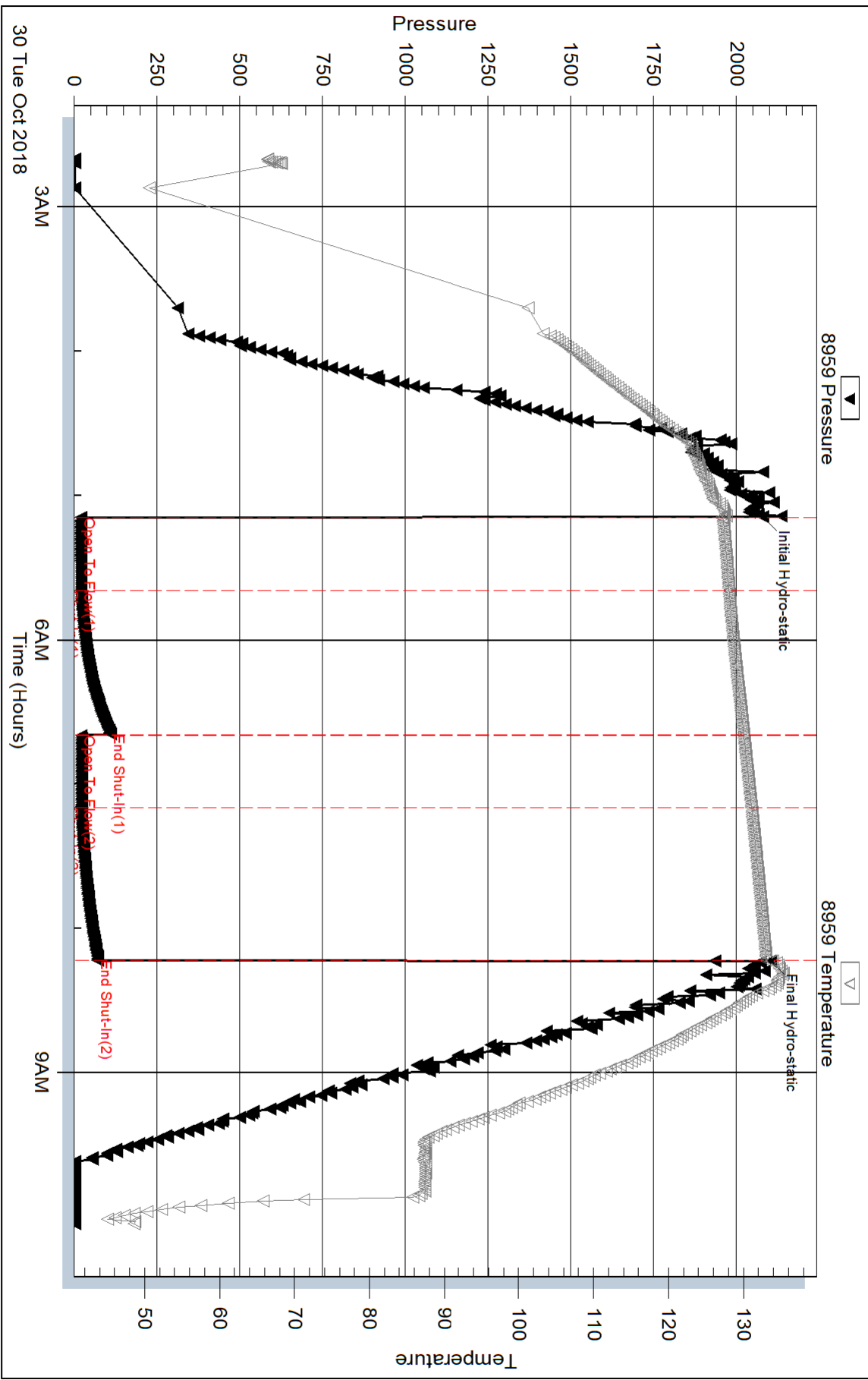
Inside

Murfin Drilling Co Inc

Banister #1 - 14

DST Test Number: 1

Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 64727

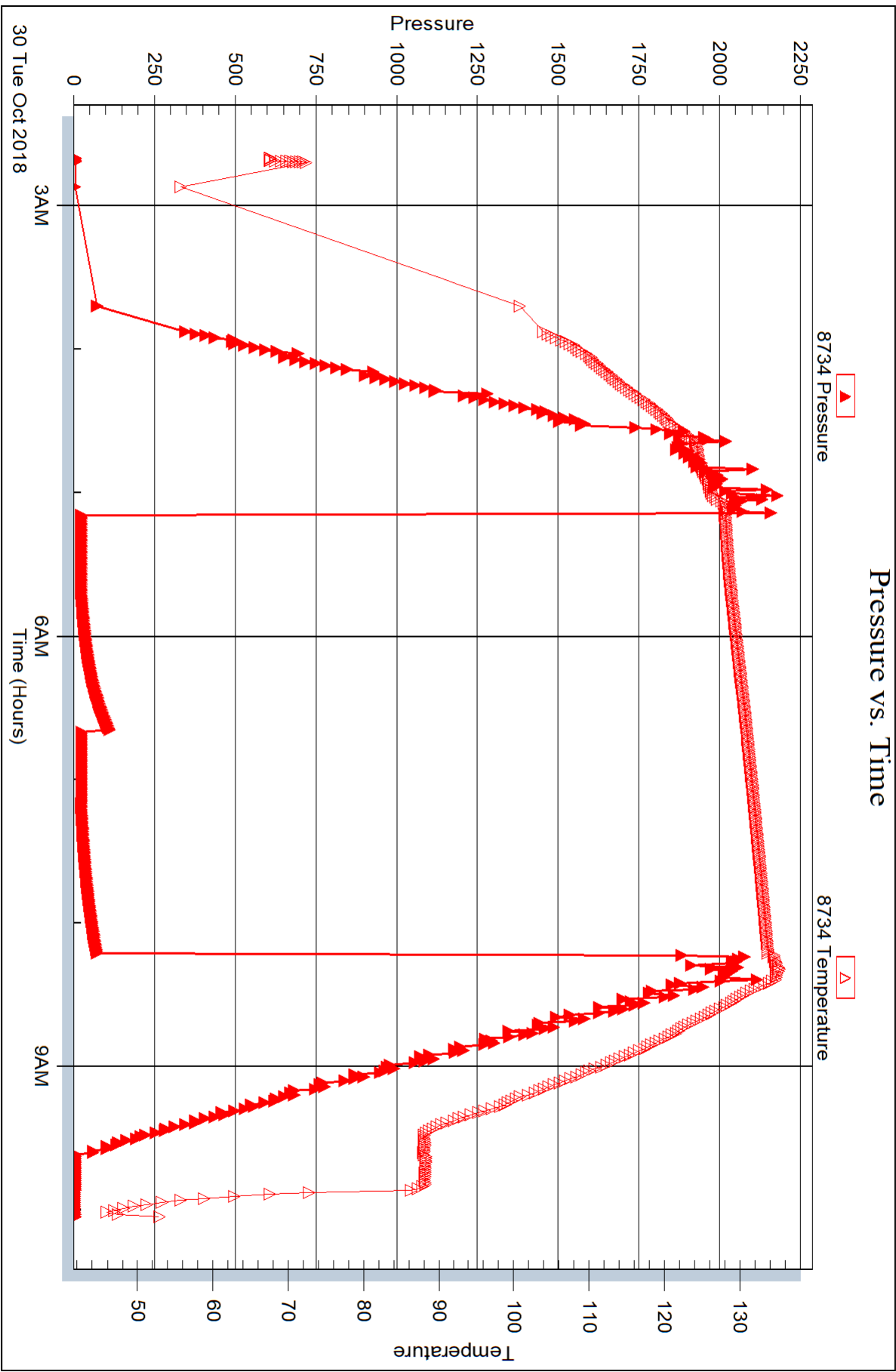
Printed: 2018.11.05 @ 13:11:07

Serial #: 8734

Outside Murfin Drilling Co Inc

Banister #1 - 14

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N. Water STE 300
Wichita, KS 67202

ATTN: Paul Gunzelman

Banister #1- 14

14-2S-37W Cheyenne,KS

Start Date: 2018.10.30 @ 23:38:00

End Date: 2018.10.31 @ 08:09:30

Job Ticket #: 64728 DST #: 2

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

Printed: 2018.11.05 @ 13:09:37

Murfin Drilling Co Inc
14-2S-37W Cheyenne,KS
Banister #1- 14
DST # 2
LKC " D "
2018.10.30



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co Inc

14-2S-37W Cheyenne, KS

250 N. Water STE 300
Wichita, KS 67202

Banister #1- 14

Job Ticket: 64728

DST#: 2

ATTN: Paul Gunzelman

Test Start: 2018.10.30 @ 23:38:00

GENERAL INFORMATION:

Formation: **LKC " D "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:02:30

Time Test Ended: 08:09:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Martine Salinas

Unit No: 82

Interval: 4366.00 ft (KB) To 4432.00 ft (KB) (TVD)

Reference Elevations: 3401.00 ft (KB)

Total Depth: 4432.00 ft (KB) (TVD)

3396.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8959

Inside

Press@RunDepth: 42.99 psig @ 4367.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.10.30

End Date:

2018.10.31

Last Calib.: 2018.10.31

Start Time: 23:38:01

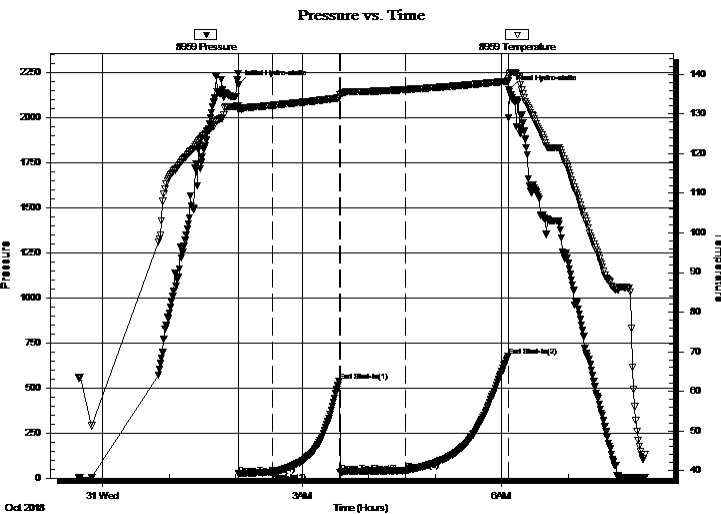
End Time:

08:09:30

Time On Btm: 2018.10.31 @ 02:02:20

Time Off Btm: 2018.10.31 @ 06:06:30

TEST COMMENT: 30-IF-Surface blow built to 1 1/2"
60-ISI-No blow
60-FF-Surface blow built to 1 1/2"
90-FSI-No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2181.43	132.27	Initial Hydro-static
1	23.51	131.15	Open To Flow (1)
31	31.91	132.20	Shut-In(1)
91	538.70	134.07	End Shut-In(1)
92	32.40	134.90	Open To Flow (2)
152	42.99	136.17	Shut-In(2)
244	676.72	138.29	End Shut-In(2)
245	2157.14	139.74	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	GHOCM 13%G, 29%O, 58%M	0.30

* 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

14-2S-37W Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Banister #1- 14

Job Ticket: 64728

DST#: 2

ATTN: Paul Gunzelman

Test Start: 2018.10.30 @ 23:38:00

Tool Information

Drill Pipe:	Length: 4166.00 ft	Diameter: 3.80 inches	Volume: 58.44 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 177.00 ft	Diameter: 2.25 inches	Volume: 0.87 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 59.31 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4366.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	66.00 ft			
Tool Length:	94.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			4343.00	
Hydraulic tool	5.00	1113		4348.00	
Jars	5.00	01-07		4353.00	
Safety Joint	3.00	-001		4356.00	
Packer	5.00			4361.00	28.00 Bottom Of Top Packer
Packer	5.00			4366.00	
Stubb	1.00			4367.00	
Recorder	0.00	8959	Inside	4367.00	
Recorder	0.00	8734	Outside	4367.00	
Perforations	27.00			4394.00	
Change Over Sub	1.00			4395.00	
Drill Pipe	31.00			4426.00	
Change Over Sub	1.00			4427.00	
Bullnose	5.00			4432.00	66.00 Bottom Packers & Anchor

Total Tool Length: 94.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc

14-2S-37W Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Banister #1- 14

Job Ticket: 64728

DST#: 2

ATTN: Paul Gunzelman

Test Start: 2018.10.30 @ 23:38:00

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: 57.00 sec/qt

Cushion Volume:

bbf

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
60.00	GHOCM 13%G, 29%O, 58%M	0.295

Total Length: 60.00 ft Total Volume: 0.295 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

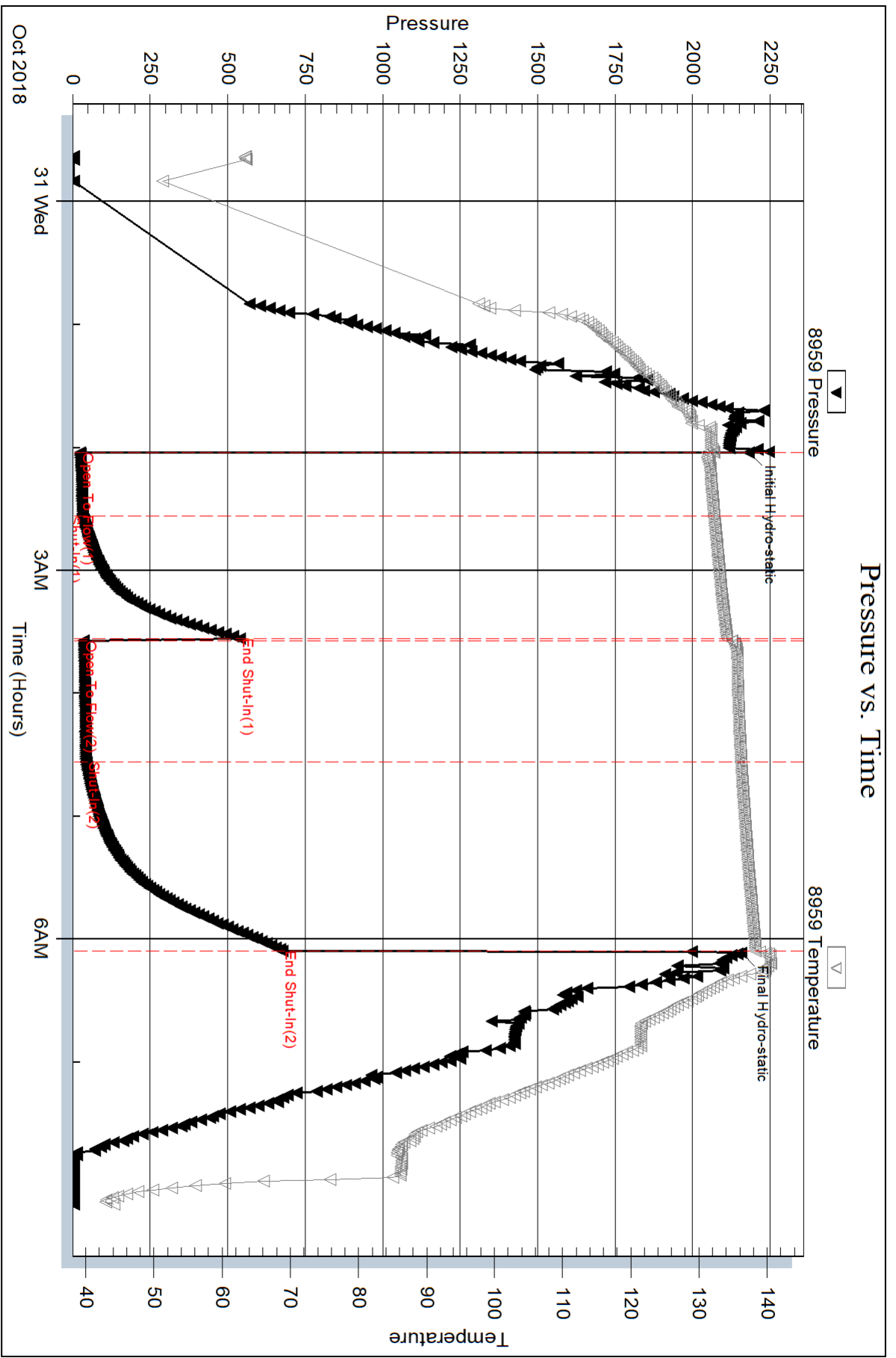
Serial #: 8959

Inside

Murfin Drilling Co Inc

Banister #1 - 14

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 64728

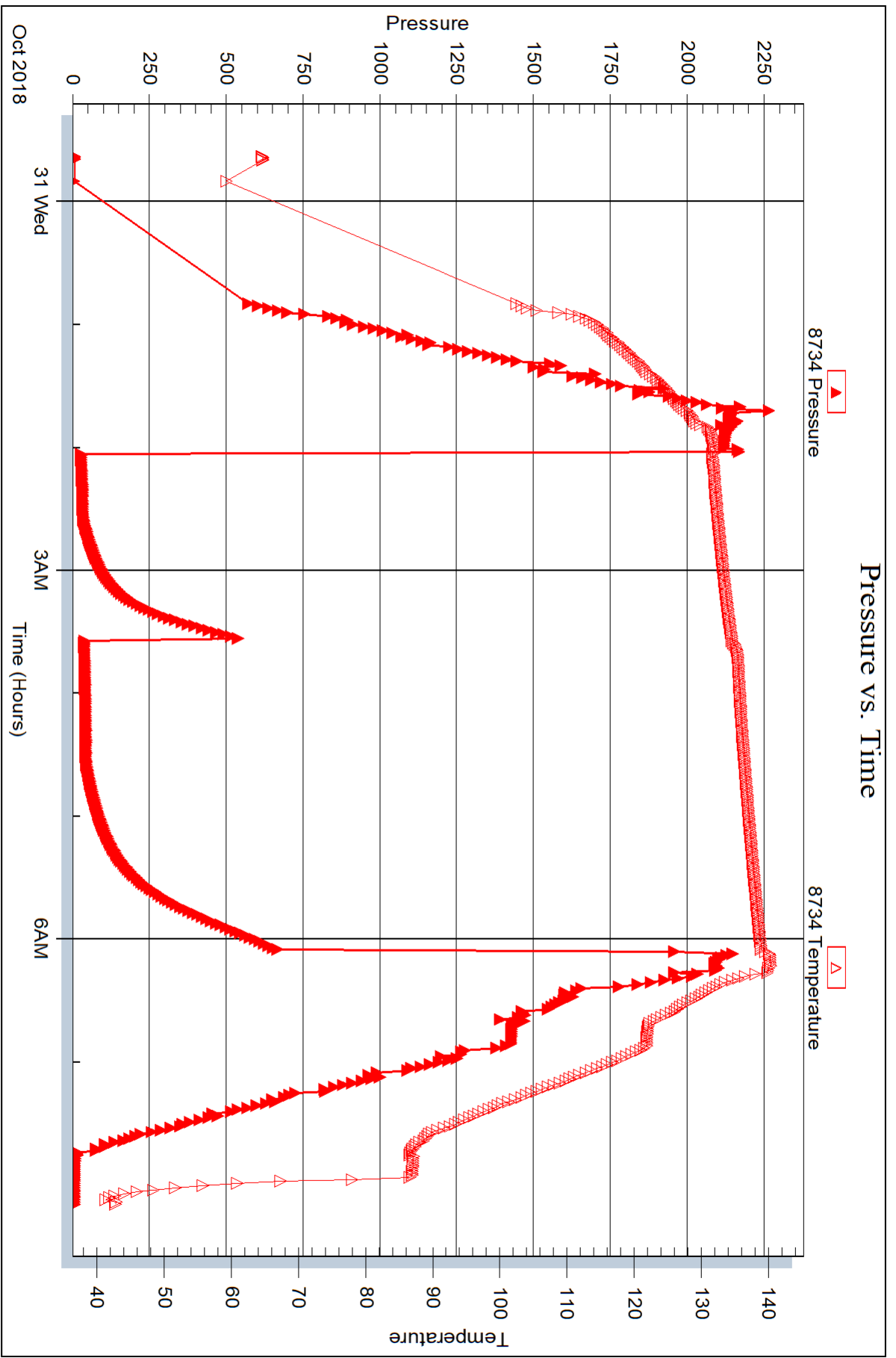
Printed: 2018.11.05 @ 13:09:38

Serial #: 8734

Outside Murfin Drilling Co Inc

Banister #1 - 14

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N. Water STE 300
Wichita, KS 67202

ATTN: Paul Gunzelman

Banister #1- 14

14-2S-37W Cheyenne,KS

Start Date: 2018.10.31 @ 16:48:00

End Date: 2018.11.01 @ 00:10:50

Job Ticket #: 64729 DST #: 3

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

Printed: 2018.11.05 @ 13:08:30



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co Inc

14-2S-37W Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Banister #1- 14

Job Ticket: 64729

DST#: 3

ATTN: Paul Gunzelman

Test Start: 2018.10.31 @ 16:48:00

GENERAL INFORMATION:

Formation: **LKC " G "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:56:00

Time Test Ended: 00:10:50

Test Type: Conventional Bottom Hole (Reset)

Tester: Martine Salinas

Unit No: 82

Interval: 4430.00 ft (KB) To 4474.00 ft (KB) (TVD)

Reference Elevations: 3401.00 ft (KB)

Total Depth: 4474.00 ft (KB) (TVD)

3396.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8959

Inside

Press@RunDepth: 22.19 psig @ 4431.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.10.31

End Date:

2018.11.01

Last Calib.: 2018.11.01

Start Time: 16:48:01

End Time:

00:10:50

Time On Btm: 2018.10.31 @ 18:55:50

Time Off Btm: 2018.10.31 @ 21:59:30

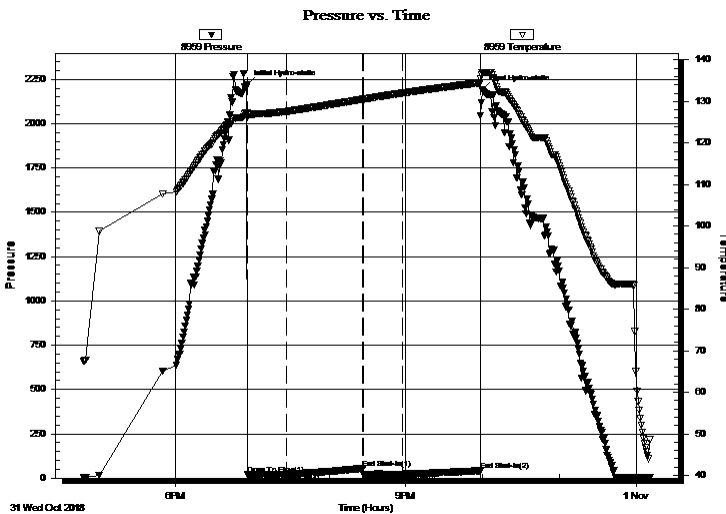
TEST COMMENT: 30-IF-Surface blow built to 3/4"

60-ISI-No blow

30-FF-No blow

60-FSI-No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2218.99	127.24	Initial Hydro-static
1	20.87	126.12	Open To Flow (1)
31	21.70	127.61	Shut-In(1)
91	55.83	130.52	End Shut-In(1)
91	22.43	130.52	Open To Flow (2)
122	22.19	132.02	Shut-In(2)
183	42.01	134.47	End Shut-In(2)
184	2192.72	136.87	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
3.00	SOSM 2%O, 98%M	0.01

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co Inc

14-2S-37W Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Banister #1- 14

Job Ticket: 64729

DST#: 3

ATTN: Paul Gunzelman

Test Start: 2018.10.31 @ 16:48:00

Tool Information

Drill Pipe:	Length: 4259.00 ft	Diameter: 3.80 inches	Volume: 59.74 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 177.00 ft	Diameter: 2.25 inches	Volume: 0.87 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 60.61 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	34.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4430.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	44.00 ft			
Tool Length:	72.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			4407.00	
Hydraulic tool	5.00	1113		4412.00	
Jars	5.00	01-07		4417.00	
Safety Joint	3.00	-001		4420.00	
Packer	5.00			4425.00	28.00 Bottom Of Top Packer
Packer	5.00			4430.00	
Stubb	1.00			4431.00	
Recorder	0.00	8959	Inside	4431.00	
Recorder	0.00	8734	Outside	4431.00	
Perforations	5.00			4436.00	
Change Over Sub	1.00			4437.00	
Drill Pipe	31.00			4468.00	
Change Over Sub	1.00			4469.00	
Bullnose	5.00			4474.00	44.00 Bottom Packers & Anchor

Total Tool Length: 72.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc

14-2S-37W Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Banister #1- 14

Job Ticket: 64729

DST#: 3

ATTN: Paul Gunzelman

Test Start: 2018.10.31 @ 16:48:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
3.00	SOSM 2%O, 98%M	0.015

Total Length: 3.00 ft Total Volume: 0.015 bbl

Num Fluid Samples: 0

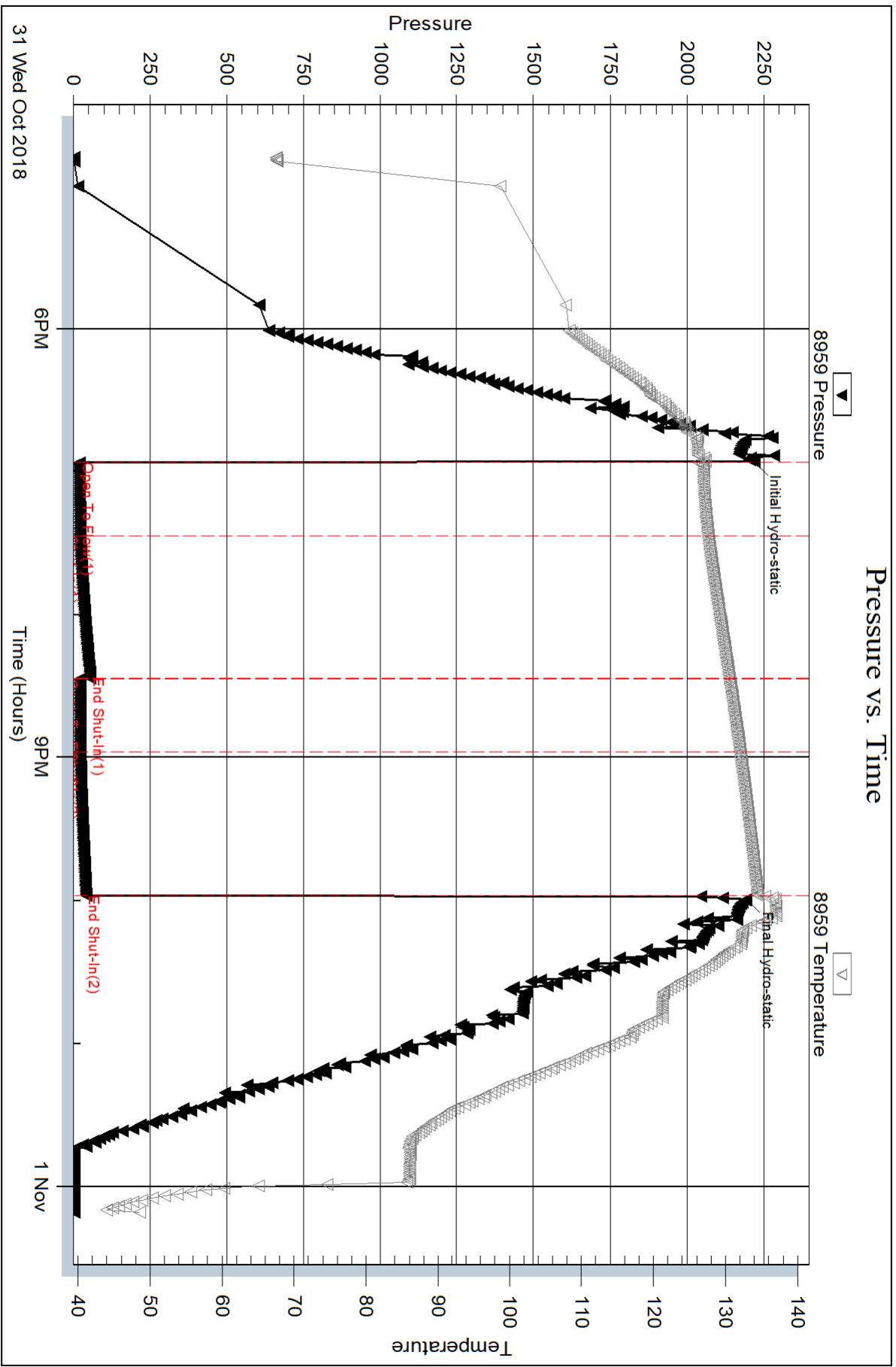
Num Gas Bombs: 0

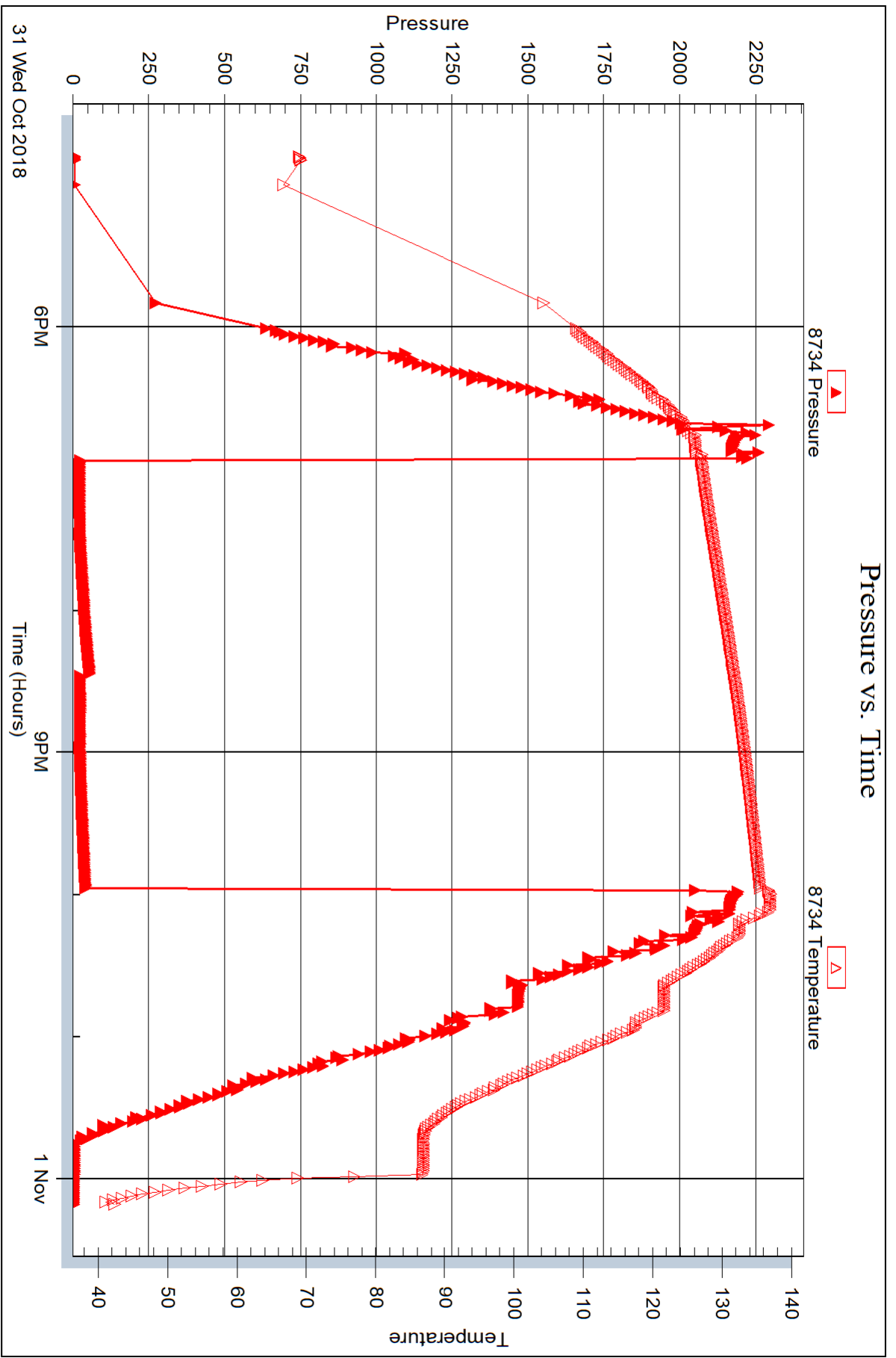
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N. Water STE 300
Wichita, KS 67202

ATTN: Paul Gunzelman

Banister #1- 14

14-2S-37W Cheyenne,KS

Start Date: 2018.11.01 @ 12:44:00

End Date: 2018.11.01 @ 19:28:20

Job Ticket #: 64730 DST #: 4

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

Printed: 2018.11.05 @ 13:07:58



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co Inc

14-2S-37W Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Banister #1- 14

Job Ticket: 64730

DST#: 4

ATTN: Paul Gunzelman

Test Start: 2018.11.01 @ 12:44:00

GENERAL INFORMATION:

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

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:14:40

Time Test Ended: 19:28:20

Test Type: Conventional Bottom Hole (Reset)

Tester: Martine Salinas

Unit No: 82

Interval: 4478.00 ft (KB) To 4560.00 ft (KB) (TVD)

Reference Elevations: 3401.00 ft (KB)

Total Depth: 4560.00 ft (KB) (TVD)

3396.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8959

Inside

Press@RunDepth: 25.48 psig @ 4479.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.11.01

End Date:

2018.11.01

Last Calib.: 2018.11.01

Start Time: 12:44:01

End Time:

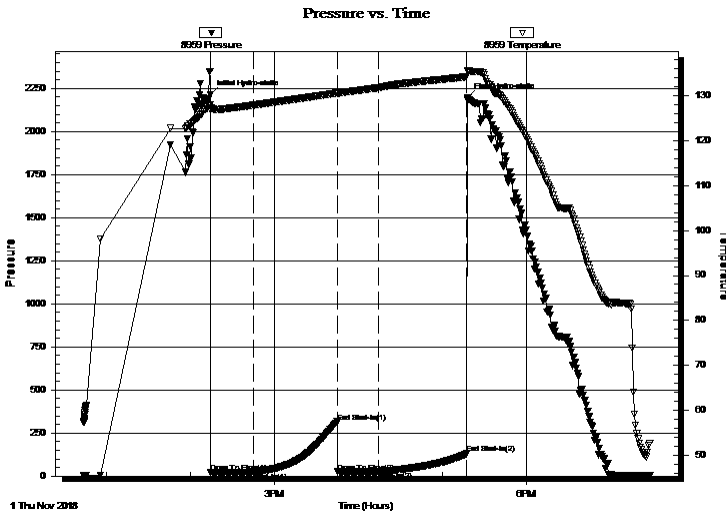
19:28:20

Time On Btm: 2018.11.01 @ 14:14:30

Time Off Btm: 2018.11.01 @ 17:18:30

TEST COMMENT: 30-IF-Surface blow built to 1" @ 11 mins, maintained 1"
60-ISI-Surface blow back dead @ 10 mins
30-FF-No blow
60-FSI-No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2214.53	127.93	Initial Hydro-static
1	21.03	127.02	Open To Flow (1)
31	23.33	127.93	Shut-In(1)
91	315.95	130.63	End Shut-In(1)
91	24.73	130.51	Open To Flow (2)
121	25.48	131.84	Shut-In(2)
184	130.59	134.26	End Shut-In(2)
184	2193.59	135.67	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	SOSM 2%O, 98%M	0.02

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

14-2S-37W Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Banister #1- 14

Job Ticket: 64730

DST#: 4

ATTN: Paul Gunzelman

Test Start: 2018.11.01 @ 12:44:00

Tool Information

Drill Pipe:	Length: 4291.00 ft	Diameter: 3.80 inches	Volume: 60.19 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 177.00 ft	Diameter: 2.25 inches	Volume: 0.87 bbl	Weight to Pull Loose: 72000.00 lb
			<u>Total Volume: 61.06 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4478.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	82.00 ft			
Tool Length:	110.00 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			4455.00	
Hydraulic tool	5.00	1113		4460.00	
Jars	5.00	01-07		4465.00	
Safety Joint	3.00	-001		4468.00	
Packer	5.00			4473.00	28.00 Bottom Of Top Packer
Packer	5.00			4478.00	
Stubb	1.00			4479.00	
Recorder	0.00	8959	Inside	4479.00	
Recorder	0.00	8734	Outside	4479.00	
Perforations	12.00			4491.00	
Change Over Sub	1.00			4492.00	
Drill Pipe	62.00			4554.00	
Change Over Sub	1.00			4555.00	
Bullnose	5.00			4560.00	82.00 Bottom Packers & Anchor

Total Tool Length: 110.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc

14-2S-37W Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Banister #1- 14

Job Ticket: 64730

DST#: 4

ATTN: Paul Gunzelman

Test Start: 2018.11.01 @ 12:44:00

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 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	SOSM 2%O, 98%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:

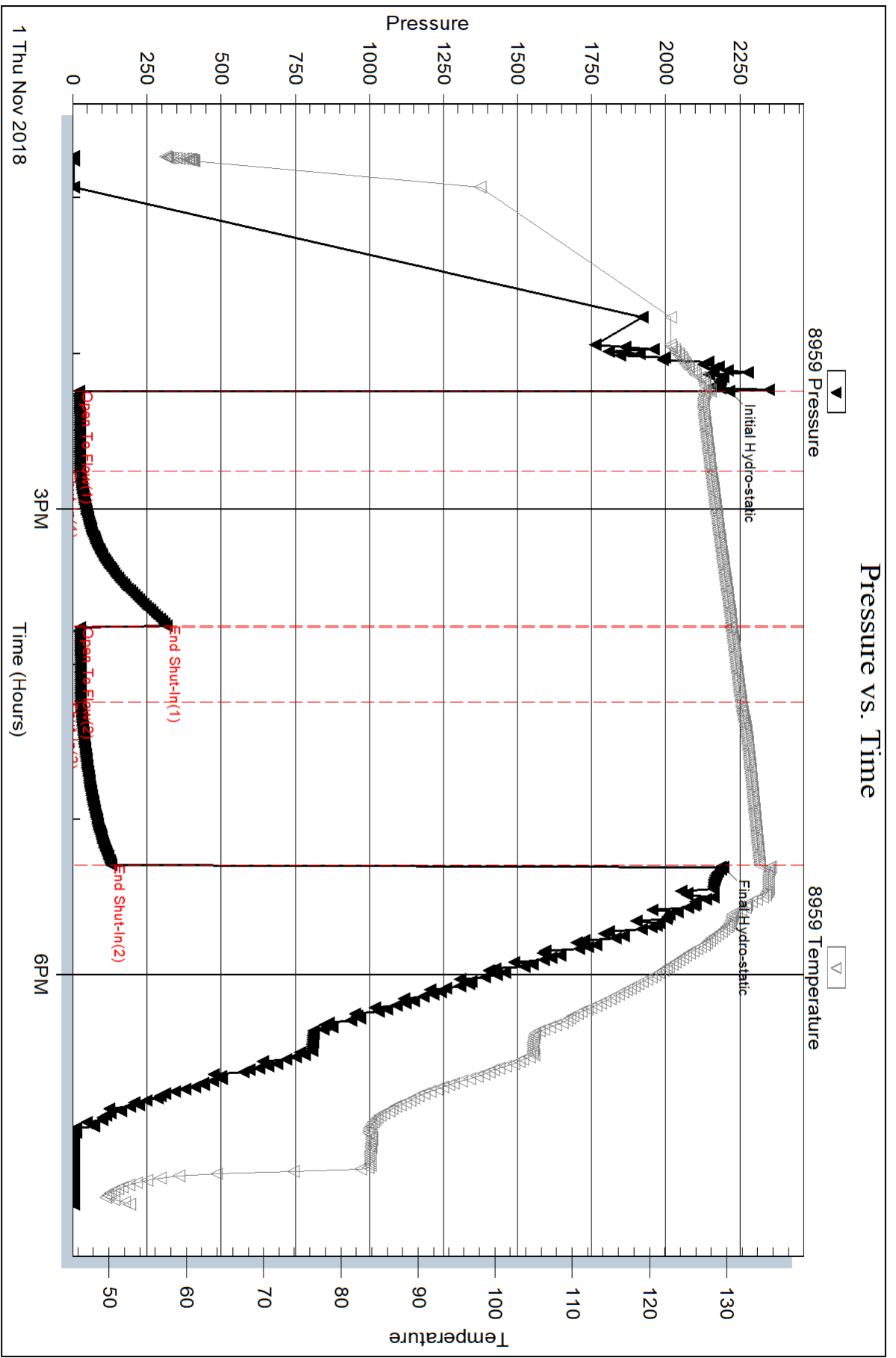
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Inside

Murfin Drilling Co Inc

Banister #1 - 14

DST Test Number: 4

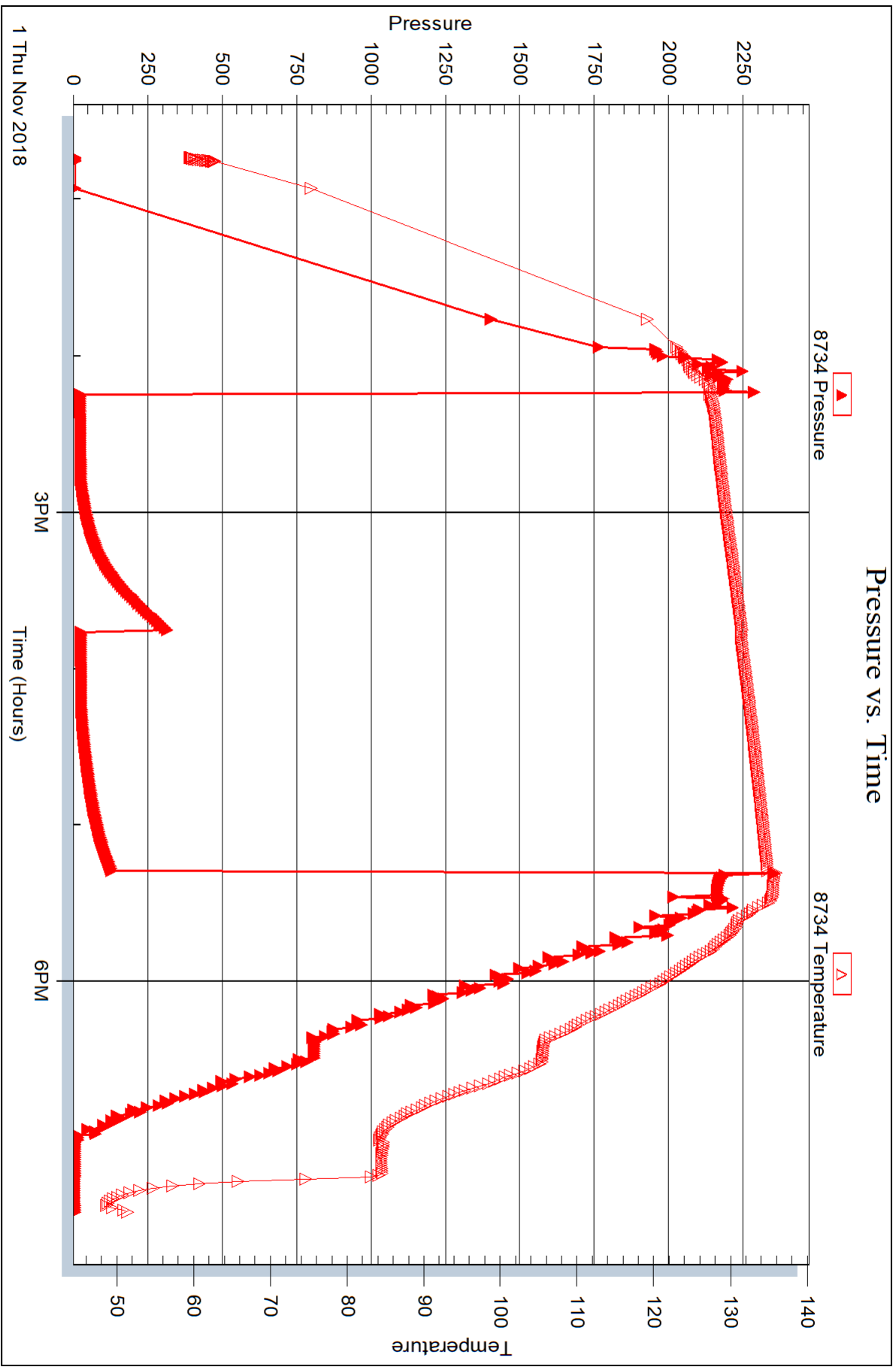


Serial #: 8734

Outside Murfin Drilling Co Inc

Banister #1 - 14

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 64730

Printed: 2018.11.05 @ 13:07:59



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N. Water STE 300
Wichita, KS 67202

ATTN: Paul Gunzelman

Banister #1- 14

14-2S-37W Cheyenne,KS

Start Date: 2018.11.03 @ 00:03:00

End Date: 2018.11.03 @ 08:35:00

Job Ticket #: 64731 DST #: 5

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

Printed: 2018.11.05 @ 11:55:44



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co Inc

14-2S-37W Cheyenne, KS

250 N. Water STE 300
Wichita, KS 67202

Banister #1- 14

Job Ticket: 64731

DST#: 5

ATTN: Paul Gunzelman

Test Start: 2018.11.03 @ 00:03:00

GENERAL INFORMATION:

Formation: **Ft. Scott - Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:04:50

Time Test Ended: 08:35:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Martine Salinas

Unit No: 82

Interval: **4722.00 ft (KB) To 4837.00 ft (KB) (TVD)**

Reference Elevations: 3401.00 ft (KB)

Total Depth: 4837.00 ft (KB) (TVD)

3396.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8959

Inside

Press@RunDepth: 187.33 psig @ 4723.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.11.03

End Date: 2018.11.03

Last Calib.: 2018.11.03

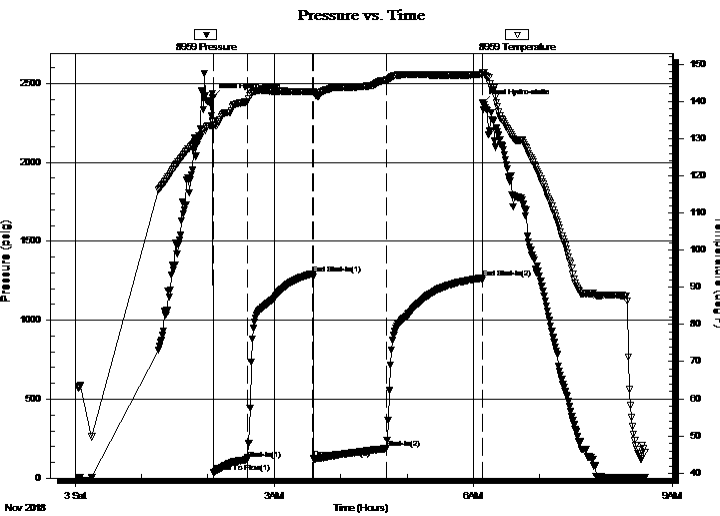
Start Time: 00:03:01

End Time: 08:35:00

Time On Btm: 2018.11.03 @ 02:04:30

Time Off Btm: 2018.11.03 @ 06:08:30

TEST COMMENT: 30-IF- BOB (12 inches) @ 27 mins (blow increased to 13")
60-ISI- 1" blow back built to 1 1/2" & decreased to 3/4"
60-FF- BOB @ 29 mins (blow increased to 23 1/2")
90-FSI-Surface blow back built to 5 1/2" & decreased to 4 3/4"



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2409.47	134.66	Initial Hydro-static
1	34.91	133.61	Open To Flow (1)
32	118.15	139.84	Shut-In(1)
91	1294.31	142.59	End Shut-In(1)
91	124.17	142.24	Open To Flow (2)
157	187.33	145.61	Shut-In(2)
244	1266.70	147.14	End Shut-In(2)
244	2374.02	147.76	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
387.00	GHMCO 22%G, 26%M, 52%O	3.82
0.00	220' GIP	0.00

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co Inc

14-2S-37W Cheyenne, KS

250 N. Water STE 300
Wichita, KS 67202

Banister #1- 14

Job Ticket: 64731

DST#: 5

ATTN: Paul Gunzelman

Test Start: 2018.11.03 @ 00:03:00

GENERAL INFORMATION:

Formation: **Ft. Scott - Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:04:50

Time Test Ended: 08:35:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Martine Salinas

Unit No: 82

Interval: **4722.00 ft (KB) To 4837.00 ft (KB) (TVD)**

Reference Elevations: 3401.00 ft (KB)

Total Depth: 4837.00 ft (KB) (TVD)

3396.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8734 Outside

Press@RunDepth: psig @ 4723.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.11.03

End Date: 2018.11.03

Last Calib.: 2018.11.03

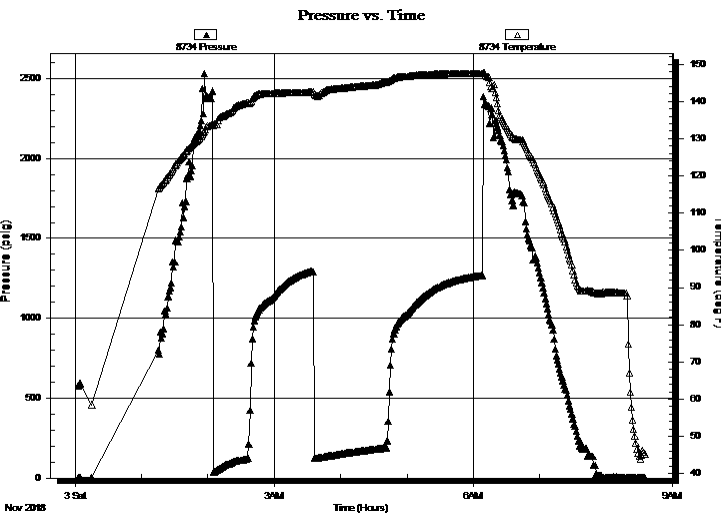
Start Time: 00:03:01

End Time: 08:35:00

Time On Btm:

Time Off Btm:

TEST COMMENT: 30-IF- BOB (12 inches) @ 27 mins (blow increased to 13")
60-ISI- 1" blow back built to 1 1/2" & decreased to 3/4"
60-FF- BOB @ 29 mins (blow increased to 23 1/2")
90-FSI- Surface blow back built to 5 1/2" & decreased to 4 3/4"



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
387.00	GHMCO 22%G, 26%M, 52%O	3.82
0.00	220' GIP	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co Inc

14-2S-37W Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Banister #1- 14

Job Ticket: 64731

DST#: 5

ATTN: Paul Gunzelman

Test Start: 2018.11.03 @ 00:03:00

Tool Information

Drill Pipe:	Length: 4541.00 ft	Diameter: 3.80 inches	Volume: 63.70 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 177.00 ft	Diameter: 2.25 inches	Volume: 0.87 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 64.57 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4722.00 ft			Final 63000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	115.00 ft			
Tool Length:	143.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			4699.00	
Hydraulic tool	5.00	1113		4704.00	
Jars	5.00	01-07		4709.00	
Safety Joint	3.00	-001		4712.00	
Packer	5.00			4717.00	28.00 Bottom Of Top Packer
Packer	5.00			4722.00	
Stubb	1.00			4723.00	
Recorder	0.00	8959	Inside	4723.00	
Recorder	0.00	8734	Outside	4723.00	
Perforations	14.00			4737.00	
Change Over Sub	1.00			4738.00	
Drill Pipe	93.00			4831.00	
Change Over Sub	1.00			4832.00	
Bullnose	5.00			4837.00	115.00 Bottom Packers & Anchor

Total Tool Length: 143.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc

14-2S-37W Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Banister #1- 14

Job Ticket: 64731

DST#: 5

ATTN: Paul Gunzelman

Test Start: 2018.11.03 @ 00:03:00

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: 5.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
387.00	GHMCO 22%G, 26%M, 52%O	3.816
0.00	220' GIP	0.000

Total Length: 387.00 ft Total Volume: 3.816 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

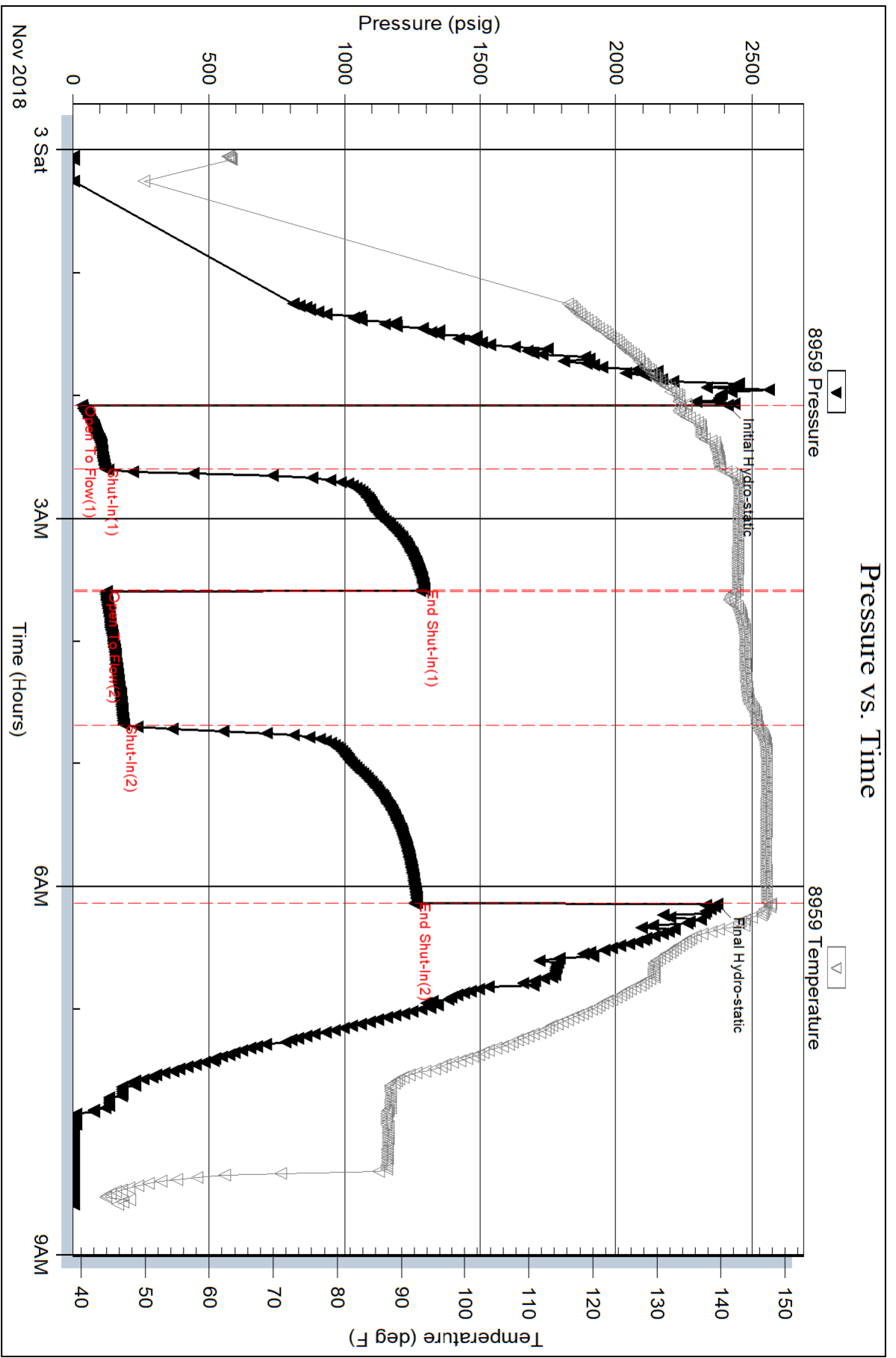
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Inside

Murfin Drilling Co Inc

Banister #1 - 14

DST Test Number: 5

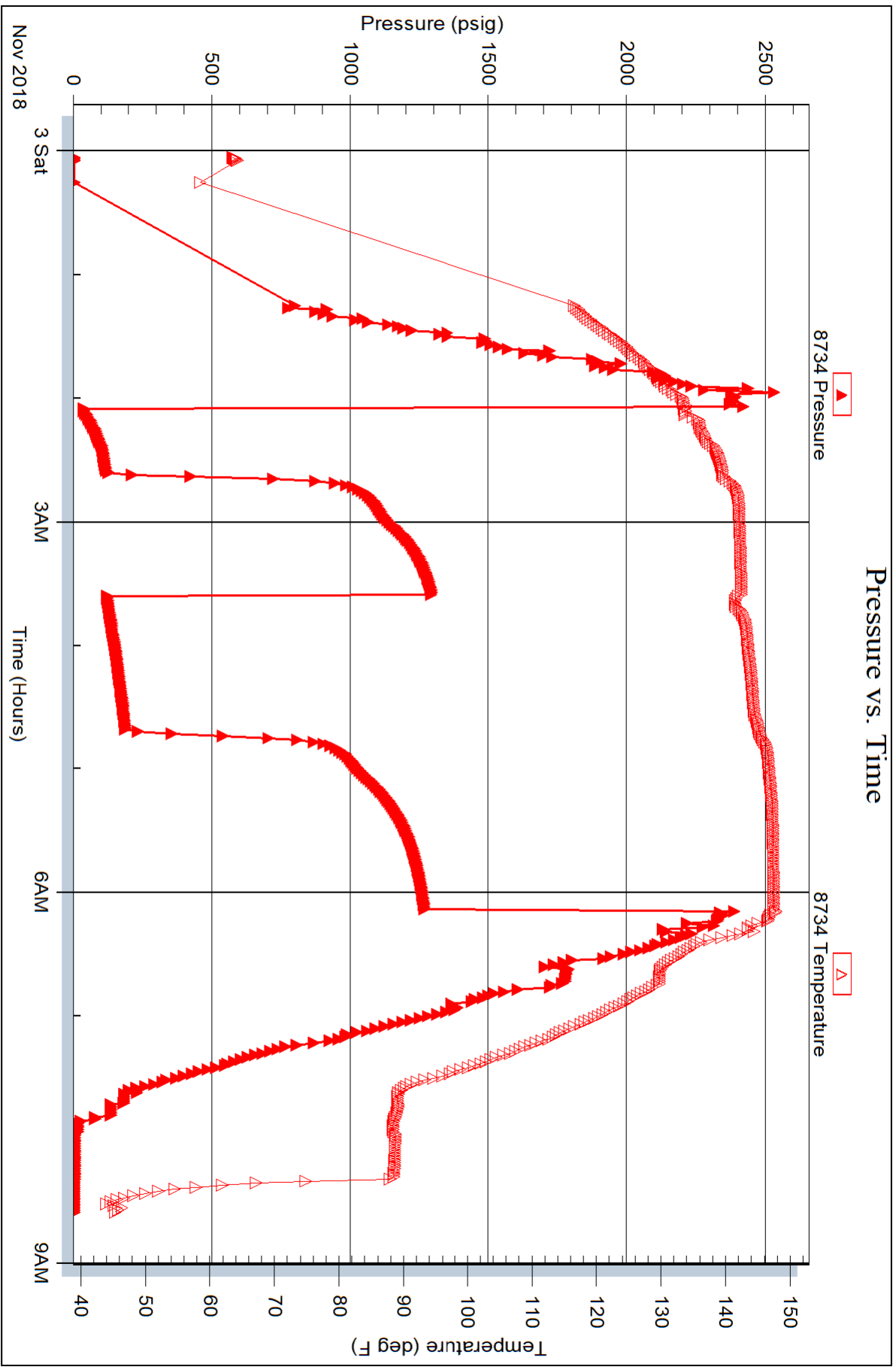


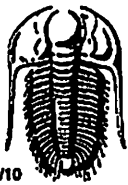
Serial #: 8734

Outside Murfin Drilling Co Inc

Barister #1- 14

DST Test Number: 5





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64727

Well Name & No. Banister # 1-14 Test No. 1 Date 10-30-18
 Company Murfin Drilling Co Inc. Elevation 3401 KB 3396 GL
 Address 250 N. Water, STE 300, Wichita, KS 67202
 Co. Rep / Geo. Paul Gunzelman Rig Murfin #3
 Location: Sec. 14 Twp 2S. Rge. 37W. Co. Cheyenne State KS.

Interval Tested 4217-4300 Zone Tested Orad
 Anchor Length 83' Drill Pipe Run 4041 Mud Wt. 9.1
 Top Packer Depth 4212 Drill Collars Run 177 Vls 57
 Bottom Packer Depth 4217 Wt. Pipe Run — WL 6.0
 Total Depth 4300 Chlorides 600 ppm System LCM 4#

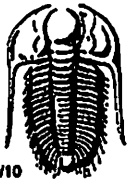
Blow Description IF-S. blow built to 1/4" + decreased back to S. blow
ISI - No blow
FF - No blow
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 2 BHT 134 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2080 Test 1150 T-On Location 01:20
 (B) First Initial Flow 22 Jars 250 T-Started 02:40
 (C) First Final Flow 21 Safety Joint 75 T-Open 05:09
 (D) Initial Shut-In 111 Circ Sub — T-Pulled 08:09
 (E) Second Initial Flow 22 Hourly Standby — T-Out 10:03
 (F) Second Final Flow 22 Mileage 134 RT. 134 Comments —
 (G) Final Shut-In 73 Sampler —
 (H) Final Hydrostatic 2103 Straddle —
 Ruined Shale Packer —
 Ruined Packer —
 Extra Copies —
 Initial Open 30 Shale Packer —
 Initial Shut-In 60 Extra Packer —
 Final Flow 30 Extra Recorder — Sub Total 0
 Final Shut-In 60 Day Standby — Total 1609
 Accessibility — MP/DST Disc't —
 Sub Total 1609

Approved By _____ Our Representative Myrtice Salinas
 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.



TRIBOLITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64728

Well Name & No. Banister # 1-14 Test No. 2 Date 10-30-18
 Company Murfin Drilling Co Inc Elevation 3401 KB 3396 GL
 Address 250 N. Water, STE 300, Wichita, KS 67202
 Co. Rep / Geo. Paul Gunzelman Rig Murfin#3
 Location: Sec. 14 Twp 2S Rge. 37W Co. Cheyenne State KS

Interval Tested 4366-4432 Zone Tested Lansing "D"
 Anchor Length 66 Drill Pipe Run 4166 Mud Wt. 9.2
 Top Packer Depth 4361 Drill Collars Run 177 Vis 57
 Bottom Packer Depth 4366 Wt. Pipe Run — WL 6.0
 Total Depth 4432 Chlorides 600 ppm System LCM 4H
 Blow Description IF • S. blow built to 1 1/2"
ESI • No blow
FF • S. blow built to 1 1/2"
FSS • No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>GHOCM</u>	<u>13</u>	<u>29</u>	<u>58</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

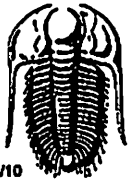
Rec Total 60 BHT 140 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2181 Test 1150 T-On Location 23:00
 (B) First Initial Flow 24 Jars 250 T-Started 23:38
 (C) First Final Flow 32 Safety Joint 75 T-Open 02:03
 (D) Initial Shut-In 539 Circ Sub _____ T-Pulled 06:03
 (E) Second Initial Flow 32 Hourly Standby _____ T-Out 02:10
 (F) Second Final Flow 43 Mileage 134 RT 134 Comments _____
 (G) Final Shut-In 677 Sampler _____
 (H) Final Hydrostatic 2157 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1609
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1609

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

Approved By Paul Gunzelman Our Representative Mark [Signature]

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64729

Well Name & No. Banister # 1-14 Test No. 3 Date 10-31-18
 Company Murfin Drilling Co Inc Elevation 3401 KB 3396 GL
 Address 250 N. Water, STE 300, Wichita, KS 67202
 Co. Rep / Geo. Paul Gunzelman Rig Murfin #3
 Location: Sec. 14 Twp 2S. Rge. 37W. Co. Cheyenne State KS.

Interval Tested 4430-4474 Zone Tested Lansing "G"
 Anchor Length 44' Drill Pipe Run 4259 Mud Wt. 9.3
 Top Packer Depth 4425 Drill Collars Run 177 Vls 59
 Bottom Packer Depth 4430 Wt. Pipe Run — WL 6.0
 Total Depth 4474 Chlorides 600 ppm System LCM 3H
 Blow Description IF.S. blow built to 3/4"

IST - No blow

FF - No blow

FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>3</u>	<u>805M</u>	<u>2</u>		<u>98</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 <u>3</u>	BHT <u>137</u>	Gravity <u>—</u>	API RW <u>—</u>	@ <u>—</u> °F	Chlorides <u>—</u> ppm

- (A) Initial Hydrostatic 2219
- (B) First Initial Flow 21
- (C) First Final Flow 22
- (D) Initial Shut-In 56
- (E) Second Initial Flow 22
- (F) Second Final Flow 22
- (G) Final Shut-In 42
- (H) Final Hydrostatic 2193

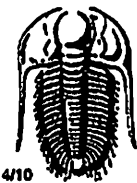
- Test 1150
- Jars 250
- Safety Joint 75
- Circ Sub
- Hourly Standby
- Mileage 134 RT 134
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility
- Sub Total 1609

- T-On Location 16:20
- T-Started 16:48
- T-Open 18:57
- T-Pulled 21:57
- T-Out 00:11
- Comments
- Ruined Shale Packer
- Ruined Packer
- Extra Copies
- Sub Total 0
- Total 1609
- MP/DST Disc't

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

Approved By _____ Our Representative Mark Salinas

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64730

Well Name & No. Banister #1-14 Test No. 4 Date 11-1-18
 Company Murfin Drilling Co INC. Elevation 3401 KB 3396 GL
 Address 250 N. Water, STE 300, Wichita, KS 67202
 Co. Rep / Geo. Paul Gunzelman Rig Murfin #3
 Location: Sec. 14 Twp dS. Rge. 37W. Co. Cheyenne State KS

Interval Tested 4478-4560 Zone Tested LKC "H+J"
 Anchor Length 82' Drill Pipe Run 4291 Mud Wt. 9.0
 Top Packer Depth 4473 Drill Collars Run 177 Vis 60
 Bottom Packer Depth 4478 Wt. Pipe Run — WL 5.6
 Total Depth 4560 Chlorides 600 ppm System LCM 4#

Blow Description IF - S. blow built to 1" @ 11 mins, maintained 1"

ISI - S. blow back dead @ 10 mins.

FF - No blow

FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>505M</u>	<u>2</u>	<u>—</u>	<u>98</u>	<u>—</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 136 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2215
 (B) First Initial Flow 21
 (C) First Final Flow 23
 (D) Initial Shut-In 316
 (E) Second Initial Flow 25
 (F) Second Final Flow 25
 (G) Final Shut-In 131
 (H) Final Hydrostatic 2194

Test 1150
 Jars 250
 Safety Joint 75
 Circ Sub —
 Hourly Standby —
 Mileage 184 RT 134
 Sampler —
 Straddle —
 Shale Packer —
 Extra Packer —
 Extra Recorder —
 Day Standby —
 Accessibility —
 Sub Total 1609

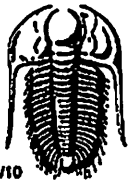
T-On Location 12:30
 T-Started 12:44
 T-Open 14:15
 T-Pulled 17:15
 T-Out 19:29
 Comments —
 Ruined Shale Packer —
 Ruined Packer —
 Extra Copies —
 Sub Total 0
 Total 1609
 MP/DST Disc't —

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

Approved By _____

Our Representative Robert Salinas

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64731

Well Name & No. Banister #1-14 Test No. 5 Date 11-2-18
 Company Murfin Drilling Co Inc Elevation 3401 KB 3396 GL
 Address 250 N. Water, STE 300, Wichita, KS 67202
 Co. Rep / Geo. Paul Gunzelman Rig Murfin #3
 Location: Sec. 14 Twp 2S. Rge. 37W. Co. Cheyenne State KS.

Interval Tested 4722-4837 Zone Tested Ft Scott & Cherokee
 Anchor Length 115 Drill Pipe Run 4541 Mud Wt. 9.1
 Top Packer Depth 4717 Drill Collars Run 177 Vls 55
 Bottom Packer Depth 4722 Wt. Pipe Run — WL 6.0
 Total Depth 4837 Chlorides 600 ppm System LCM 4#

Blow Description IF · 1/2" blow built to B.O.B (12 inches) @ 27 mins (blow increased to 13")
ISI · 1" blow back built to 1 1/2" & decreased to 3/4"
FF · S. blow built to B.O.B (12 inches) @ 29 mins (blow increased to 23 1/2")
FSI · S. blow back built to 5 1/2" & decreased to 4 3/4"

Rec	Feet of	%gas	%oil	%water	%mud
<u>387</u>	<u>GHMCO</u>	<u>22</u>	<u>52</u>	<u>—</u>	<u>26</u>
<u>0</u>	<u>220' GIP</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

Rec Total 387 BHT 148 Gravity — API RW — @ — ° F Chlorides — ppm

- (A) Initial Hydrostatic 2409
- (B) First Initial Flow 35
- (C) First Final Flow 118
- (D) Initial Shut-In 1294
- (E) Second Initial Flow 124
- (F) Second Final Flow 187
- (G) Final Shut-In 1267
- (H) Final Hydrostatic 2374

- Test 1150
- Jars 250
- Safety Joint 75
- Circ Sub —
- Hourly Standby —
- Mileage 134 RT 134
- Sampler —
- Straddle —
- Shale Packer —
- Extra Packer —
- Extra Recorder —
- Day Standby —
- Accessibility —
- Sub Total 1609

T-On Location 22:45
 T-Started 00:03
 T-Open 02:05
 T-Pulled 06:05
 T-Out 08:35
 Comments Bled off Flow manifold
3 mins, Tools loaded @ 09:30
 Ruined Shale Packer —
 Ruined Packer —
 Extra Copies —
 Sub Total 0
 Total 1609
 MP/DST Disc't —

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

Approved By Paul Gunzelman Our Representative Mark Johnson

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GEOLOGISTS' REPORT

OPERATOR **MURFIN DRILLING COMPANY, INC.**
LEASE **BANISTER # 1-14**

ELEVATIONS
KB **3401 Ft.**
BHT: **3396 Ft.**

LOCATION **1400 FNL & 1300 FWL**
SEC. **14** TWPSP **2S** RGE **37W**

COUNTY **CHEYENNE** STATE **KANSAS**

FIELD **WILDCAT**

CONTRACTOR **Murfin Drilling Company** RIG NO. **3**
COMMENCED **23 Oct 2018** COMPLETED **5 Nov 2018**

MUD DISCHARGED **3683** MUD TYPE **Chemical**
DRILLING TIME KEPT FROM **4000** TO **4950**
SAMPLES SAVED FROM **4000** TO **4950**
SAMPLES EXAMINED FROM **4000** TO **4950**

GEOLOGICAL SUPERVISION FROM **4072** TO **4950**
GEOLOGIST ON WELL **Paul Gunzelman**

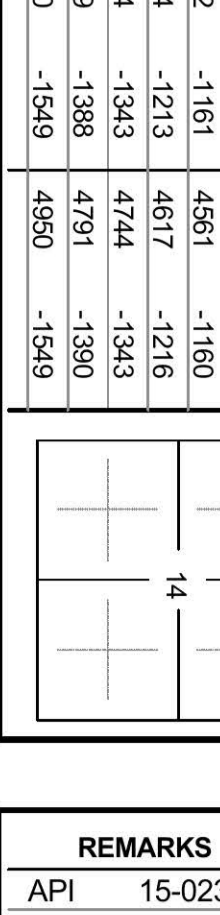
ELECTRICAL SURVEYS
Pioneer Oilfield Services
Comp. Neutron Density
Dual Induction
Micro Resistivity
Comp. Sonic

FORMATION NAME

LOG DATUM TOP DATUM

TOP DATUM TOP DATUM

Stone Corral 3309 +92 3312 +89
Base/Anhydrite 3337 +64 3339 +62
Topoka 4126 -725 4126 -725
Oread 4284 -882 4284 -882
Lansing 4341 -940 4344 -943
Stark Shale 4562 -1161 4561 -1160
Mound City 4614 -1213 4617 -1216
Ft. Scott 4744 -1343 4744 -1343
Excello 4789 -1398 4791 -1390
Total Depth 4950 -1549 4950 -1549



REMARKS
API 15-023-21496-00-00
Drilling Fluids: Morgan Mud, Inc. (David Lines, engineer)
Drill Stem Testing: Trilobite Testing, Inc. (Martine Salinas, tester)
Gas Trailer: No Gas Trailer
Reserve Pit Chlorides: 600 PPM

DRILL TIME (MIN/FT)	DEPTH	LITHOLOGY	SHOWS	SAMPLE DESCRIPTIONS	REMARKS
---------------------	-------	-----------	-------	---------------------	---------

STONE CORRAL 3312 (+89)
BASE/ANHYDRITE 3339 (+62)

4:23 AM, 29 October 2018
Morgan Mud check @ 4055'
Vis: 67, Wt: 8.8, WL: 6.0
Chlor: 600 ppm., LCM: 4#

STOTLER 4052 (-651)
Morgan Mud check @ 4055'
Vis: 67, Wt: 8.8, WL: 6.0
Chlor: 600 ppm., LCM: 4#

TOPEKA 4126 (-725)
DST #1 4217 - 4300 (Oread)
Vis: 62, Wt: 9.1, WL: 6.0
Chlor: 600 ppm., LCM: 3#

OREAD 4264 (-863)
Morgan Mud check @ 4300'
Vis: 62, Wt: 9.1, WL: 6.0
Chlor: 600 ppm., LCM: 3#

LANSING 4341 (-940)
DST #2 4366 - 4432 (LKC "D")
30"-60"-60"-90"
IF: Surface blow, incr to 1 1/2"
FF: Surface blow, incr to 1 1/2"
RECOVERY: 2 Ft. Mud
IHP: 2080 psi. FHP: 2103 psi.
IFP: 22-21 psi. ISIP: 111 psi.
FFP: 22-22 psi. FSIP: 773 psi.
BHT: 134 deg. F.

DST #3 4430 - 4474 (LKC '6')
30"-60"-30"-60"
IF: Surf. blow, incr to 3/4"
FF: No blow
RECOVERY: 3 Ft. Slightly Oil Spotted Mud
IHP: 2219 psi. FHP: 2193 psi.
IFP: 21-22 psi. ISIP: 56 psi.
FFP: 22-22 psi. FSIP: 42 psi.
BHT: 137 deg. F.

DST #4 4478 - 4560 (LKC H-J)
30"-60"-30"-60"
IF: Weak 1 inch blow
FF: No blow
RECOVERY: 5 Ft. Slightly Oil Spotted Mud
IHP: 2215 psi. FHP: 2194 psi.
IFP: 21-23 psi. ISIP: 316 psi.
FFP: 25-25 psi. FSIP: 131 psi.
BHT: 136 deg. F.

STARK SHALE 4562 (-1161)
Morgan Mud check @ 4526'
Vis: 60, Wt: 9.0, WL: 5.6
Chlor: 600 ppm, LCM: 4#

MOUND CITY 4614 (-1213)
Morgan Mud check @ 4687'
Vis: 60, Wt: 9.3, WL: 6.0
Chlor: 600 ppm, LCM: 4#

FT. SCOTT 4744 (-1343)
Morgan Mud check @ 4837'
Vis: 54, Wt: 9.3, WL: 6.4
Chlor: 600 ppm, LCM: 3#

EXCELLO 4789 (-1388)
DST #5 4722 - 4837
30"-60"-60"-90"
IF: Weak blow, incr to BOB in 27"
ISI: Bled off, 1 1/2 inch ret. blow
IFP: 35-118 psi. ISIP: 1294 psi.
FFI: Bled off, 5 1/2 inch ret. blow
RECOVERY: 220 Ft. Gas In Pipe
387 Ft. Gas & Heavy Mud Cut Oil
(22% Gas, 26% Mud, 52% Oil)
IHP: 2409 psi. FHP: 2374 psi.
IFP: 35-118 psi. ISIP: 1294 psi.
FFP: 124-187 psi. FSIP: 1267 psi.
BHT: 148 deg. F.

DST #5 4722 - 4837
30"-60"-60"-90"
IF: Weak blow, incr to BOB in 27"
ISI: Bled off, 1 1/2 inch ret. blow
IFP: 35-118 psi. ISIP: 1294 psi.
FFI: Bled off, 5 1/2 inch ret. blow
RECOVERY: 220 Ft. Gas In Pipe
387 Ft. Gas & Heavy Mud Cut Oil
(22% Gas, 26% Mud, 52% Oil)
IHP: 2409 psi. FHP: 2374 psi.
IFP: 35-118 psi. ISIP: 1294 psi.
FFP: 124-187 psi. FSIP: 1267 psi.
BHT: 148 deg. F.

DST #5 4722 - 4837
30"-60"-60"-90"
IF: Weak blow, incr to BOB in 27"
ISI: Bled off, 1 1/2 inch ret. blow
IFP: 35-118 psi. ISIP: 1294 psi.
FFI: Bled off, 5 1/2 inch ret. blow
RECOVERY: 220 Ft. Gas In Pipe
387 Ft. Gas & Heavy Mud Cut Oil
(22% Gas, 26% Mud, 52% Oil)
IHP: 2409 psi. FHP: 2374 psi.
IFP: 35-118 psi. ISIP: 1294 psi.
FFP: 124-187 psi. FSIP: 1267 psi.
BHT: 148 deg. F.

DST #5 4722 - 4837
30"-60"-60"-90"
IF: Weak blow, incr to BOB in 27"
ISI: Bled off, 1 1/2 inch ret. blow
IFP: 35-118 psi. ISIP: 1294 psi.
FFI: Bled off, 5 1/2 inch ret. blow
RECOVERY: 220 Ft. Gas In Pipe
387 Ft. Gas & Heavy Mud Cut Oil
(22% Gas, 26% Mud, 52% Oil)
IHP: 2409 psi. FHP: 2374 psi.
IFP: 35-118 psi. ISIP: 1294 psi.
FFP: 124-187 psi. FSIP: 1267 psi.
BHT: 148 deg. F.

DST #5 4722 - 4837
30"-60"-60"-90"
IF: Weak blow, incr to BOB in 27"
ISI: Bled off, 1 1/2 inch ret. blow
IFP: 35-118 psi. ISIP: 1294 psi.
FFI: Bled off, 5 1/2 inch ret. blow
RECOVERY: 220 Ft. Gas In Pipe
387 Ft. Gas & Heavy Mud Cut Oil
(22% Gas, 26% Mud, 52% Oil)
IHP: 2409 psi. FHP: 2374 psi.
IFP: 35-118 psi. ISIP: 1294 psi.
FFP: 124-187 psi. FSIP: 1267 psi.
BHT: 148 deg. F.

1:29 PM, 3 November 2018

Operator: **MURFIN DRILLING COMPANY, INC.**
Lease: **BANISTER # 1-14**
Location: **1400 FNL & 1300 FWL** SEC. **14** TWPSP **2S** RGE **37W**
County: **CHEYENNE** State: **KANSAS**

TREATMENT REPORT



HURRICANE SERVICES INC

Customer:	Murfin Drilling	Date:	10/24/2018	Ticket #:	ICT1499
Field Rep:	Greg Condren				
Address:	280 N Water Ste 300				
City, State:	Wichita Ks				
County, Zip:	67202				

Field Order No.:		Open Hole:	12 1/4	Perf Depths (ft)	Perfs
Well Name:	Banister 1-14	Casing Depth:	386.91		
Location:		Casing Size:	8 5/8		
Formation:		Tubing Depth:			
Type of Service:	Cement	Tubing Size:			
Well Type:	Oil	Liner Depth:			
Age of Well:	New	Liner Size:			
Packer Type:		Liner Top:			
Packer Depth:		Liner Bottom:			
Treatment Vol:		Total Depth:	387		
				Total Perfs	0

TIME	INJECTION RATE		PRESSURE		REMARKS	PROP (lbs)	HCL (gals)	FLUID (bbls)
	FLUID	N2CO2	STP	ANNULUS				
9:30 PM					Arrive on location			
5:35 PM					Safety meeting			
5:40 PM					Rig up			
11:46 PM					Rig runs casing			
1:35 AM					Casing on bottom, circulate			
1:45 AM	4.6		300.0		Mix 300 sbs Class A 3% cc, 2% gel, .25 Flo @ 1.41 Yield			75.33
2:10 AM	4.0		300.0		Displace			23.48
2:30 AM			300.0		End Displacement/ Shut In well			
2:35 AM					Wash up			
2:45 AM					Rig down			
3:00 AM					Depart location			
					Approx. 10 bbls to pH			
TOTAL:								

SUMMARY			
Max FL Rate	Avg FL Rate	Max PSI	Avg PSI
4.6	4.3	300.0	300.0

PRODUCTS USED
300 sbs Class A 3% cc, 2% gel, .25 Flo

Treater: Travis Williams

Customer: Greg Condren



CEMENT TREATMENT REPORT

Customer: Murfin Drilling Co	Well: Banister 1-14	Ticket: ICT1634
City, State: Wichita Ks	County: Cheyenne	Date: 11/4/2018
Field Rep: Greg	S-T-R: 14-2S-37W	Service:

Hole Size:	In
Hole Depth:	ft
Casing Size:	in
Casing Depth:	ft
Tubing / Liner:	in
Depth:	ft
Tool / Packer:	
Depth:	ft
Displacement:	bbbls

Weight:	13.8 # / sk
Water Sk:	7 gal / sk
Yield:	1.317 ft ³ / sk
Bbls / Ft.:	
Depth:	ft
Volume:	bbbls
Excess:	%
Total Slurry:	bbbls
Total Sacks:	255 sk

Product	%	#
Class A		
Gel		
CaCl		
Metso		
KoiSeal		
PhenoSeal		
Salt		
Total		

TIME	RATE	PSI	BBLs	REMARKS	TIME	RATE	PSI	BBLs	REMARKS
2:00 AM				Arrive on location					
2:05 AM				Safety meeting					
2:10 AM				Rig up					
2:30 AM	3.0	270.0	6.0	Pump water ahead					
2:33 AM	3.0	220.0	60.0	Mix 60 sks @ 3350 and displace					
3:00 AM	3.0	230.0	61.0	Mix 100 sks @ 2650 and displace					
4:42 AM	3.0	240.0	19.0	Mix 60 sks @ 425 and displace					
6:00 AM	3.0	90.0	14.0	Plug top 40 RH and MH with 66 sks					
6:36 AM				Wash pump and lines					
6:45 AM				Rig down					
7:00 AM				Depart location					

CREW	UNIT
Cementor: Dane Retzlaff	78.0
Pump Operator: Ryan	231.0
Bulk #1: Alan	162.0
Bulk #2: Josh	

Average Rate	Average Pressure	Total Fluid
3 bpm	210.00 psi	159.00 bbls

MDCI
 Banister #1-14
 1400' FNL 1300'FWL
 Sec. 14-2S-37W
 3401' KB

Formation	Sample top	Datum	Ref	Log tops	Datum	Ref
Anhydrite	3312	+89	-11	3309	+92	-8
B/Anhydrite	3339	+62	-8	3336	+65	-5
Topeka	4126	-725	-19	4126	-725	-19
Oread	4264	-863	-15	4263	-862	-14
Lansing	4344	-943	-13	4341	-940	-10
Stark	4561	-1160	-14	4561	-1160	-14
Mound City	4617	-1216	-16	4613	-1212	-12
Ft Scott	4744	-1343	-15	4741	-1340	-12
Excello	4791	-1390	-12	4789	-1388	-10
Celia	4818	-1390	-11	4817	-1416	-10
Mississippian	NR			NR		
RTD	4950					
LTD				4950		