

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 Recompletion Date _____ 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
--	---

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	SMITH 'B' 1-21
Doc ID	1488400

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: Saman Sharifaie

Smith'B' #1-21

21-2s-37w Cheyenne,KS

Start Date: 2019.10.30 @ 20:51:00

End Date: 2019.10.31 @ 05:20:45

Job Ticket #: 65593 DST #: 1

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

Printed: 2019.11.05 @ 09:10:50



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

21-2s-37w Cheyenne, KS

250 N. Water STE 300
Wichita, KS 67202

Smith'B' #1-21

Job Ticket: 65593

DST#: 1

ATTN: Saman Sharifaie

Test Start: 2019.10.30 @ 20:51:00

GENERAL INFORMATION:

Formation: **LKC "A - D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:14:15

Time Test Ended: 05:20:45

Test Type: Conventional Bottom Hole (Initial)

Tester: James Winder

Unit No: 83

Interval: 4290.00 ft (KB) To 4430.00 ft (KB) (TVD)

Reference Elevations: 3416.00 ft (KB)

Total Depth: 4430.00 ft (KB) (TVD)

3411.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8652 Outside

Press@RunDepth: 33.00 psig @ 4291.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.10.30

End Date:

2019.10.31

Last Calib.:

2019.10.31

Start Time:

20:51:05

End Time:

05:20:44

Time On Btm:

2019.10.31 @ 00:13:45

Time Off Btm:

2019.10.31 @ 03:19:30

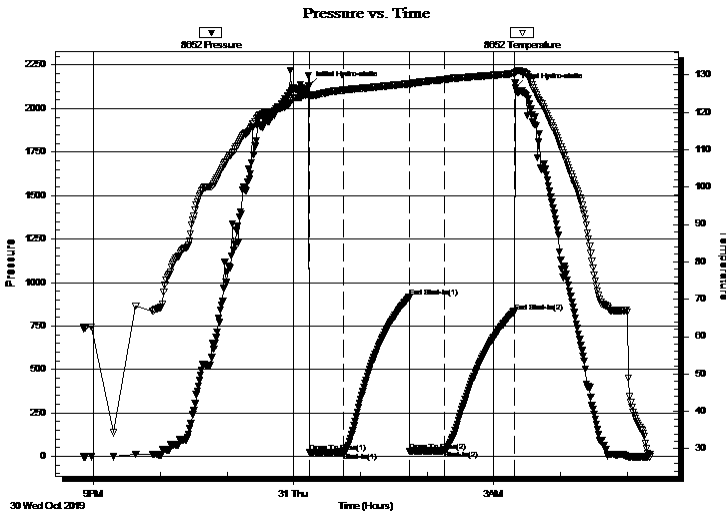
TEST COMMENT: 30 - IF: 1/2" Blow at open, built to 3/4", 3/4" till close (diesel in bucket)

60 - IS: No blow back

30 - FF: No blow

60 - FS: No blow

PRESSURE SUMMARY



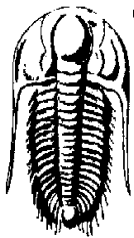
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2132.71	124.67	Initial Hydro-static
1	24.37	124.22	Open To Flow (1)
31	26.23	125.90	Shut-In(1)
90	914.36	127.60	End Shut-In(1)
91	30.90	127.30	Open To Flow (2)
122	33.00	128.73	Shut-In(2)
185	833.25	130.32	End Shut-In(2)
186	2118.40	130.65	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	Mud w /Oil spots 99% _m , 1% _o	0.10

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: Saman Sharifaie

21-2s-37w Cheyenne, KS

Smith'B' #1-21

Job Ticket: 65593

DST#: 1

Test Start: 2019.10.30 @ 20:51:00

GENERAL INFORMATION:

Formation: **LKC "A - D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:14:15

Time Test Ended: 05:20:45

Interval: 4290.00 ft (KB) To 4430.00 ft (KB) (TVD)

Total Depth: 4430.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole (Initial)

Tester: James Winder

Unit No: 83

Reference Elevations: 3416.00 ft (KB)

3411.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 6625 Inside

Press@RunDepth: psig @ 4291.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.10.30

End Date:

2019.10.31

Last Calib.:

2019.10.31

Start Time: 20:51:05

End Time:

05:20:59

Time On Btm:

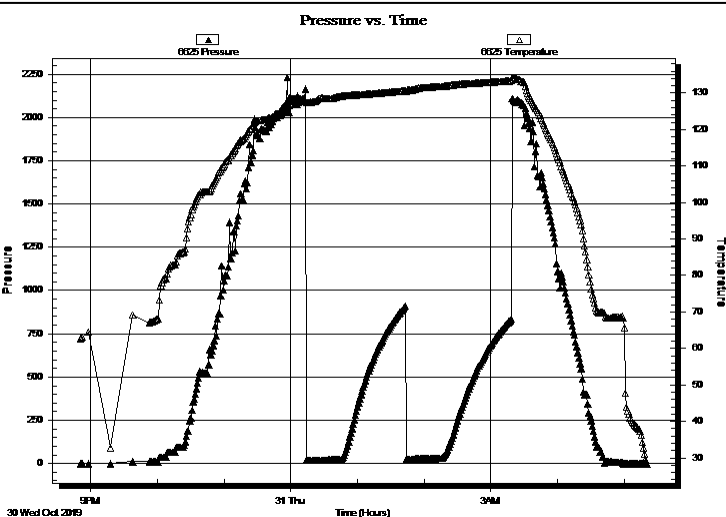
Time Off Btm:

TEST COMMENT: 30 - IF: 1/2" Blow at open, built to 3/4", 3/4" till close (diesel in bucket)

60 - IS: No blow back

30 - FF: No blow

60 - FS: No blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
20.00	Mud w /Oil spots 99%m, 1%o	0.10

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

21-2s-37w Cheyenne,KS

250 N.Water STE 300
Wichita, KS 67202

Smith'B' #1-21

Job Ticket: 65593

DST#: 1

ATTN: Saman Sharifaie

Test Start: 2019.10.30 @ 20:51:00

Tool Information

Drill Pipe:	Length: 4104.00 ft	Diameter: 3.80 inches	Volume: 57.57 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: 62000.00 lb
			<u>Total Volume: 58.44 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 56000.00 lb
Depth to Top Packer:	4290.00 ft			Final 56000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	140.00 ft			
Tool Length:	169.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4262.00	
Shut In Tool	5.00			4267.00	
Hydraulic tool	5.00			4272.00	
Jars	5.00			4277.00	
Safety Joint	3.00			4280.00	
Packer	5.00			4285.00	29.00 Bottom Of Top Packer
Packer	5.00			4290.00	
Stubb	1.00			4291.00	
Recorder	0.00	6625	Inside	4291.00	
Recorder	0.00	8652	Outside	4291.00	
Perforations	8.00			4299.00	
Blank Spacing	128.00			4427.00	
Bullnose	3.00			4430.00	140.00 Bottom Packers & Anchor

Total Tool Length: 169.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

21-2s-37w Cheyenne,KS

250 N.Water STE 300
Wichita, KS 67202

Smith'B' #1-21

Job Ticket: 65593

DST#: 1

ATTN: Saman Sharifaie

Test Start: 2019.10.30 @ 20:51:00

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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.97 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	Mud w /Oil spots 99% _m , 1% _o	0.098

Total Length: 20.00 ft Total Volume: 0.098 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

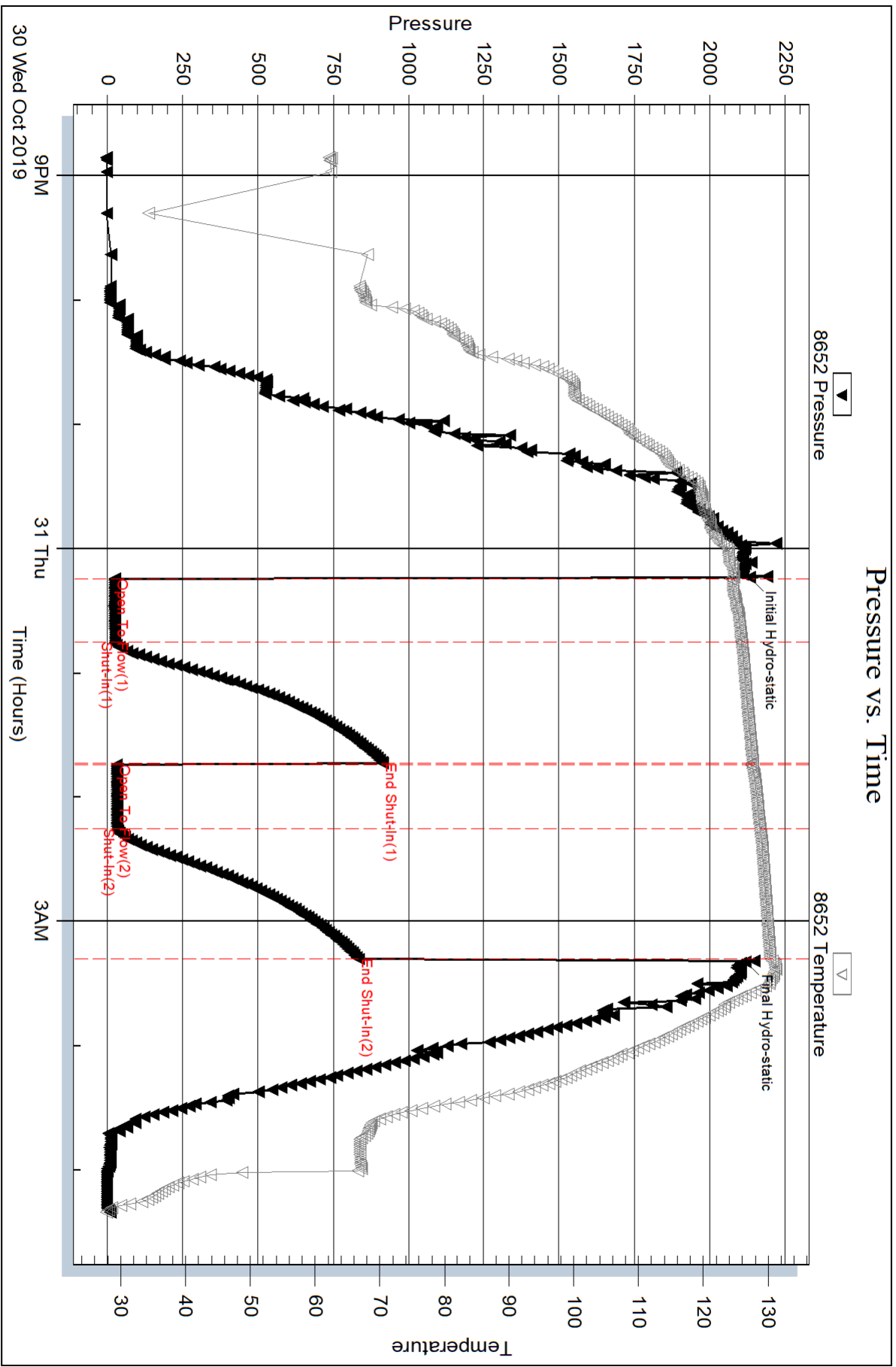
Recovery Comments:

Serial #: 8652

Outside Murfin Drilling Co., Inc.

Smith B #1-21

DST Test Number: 1



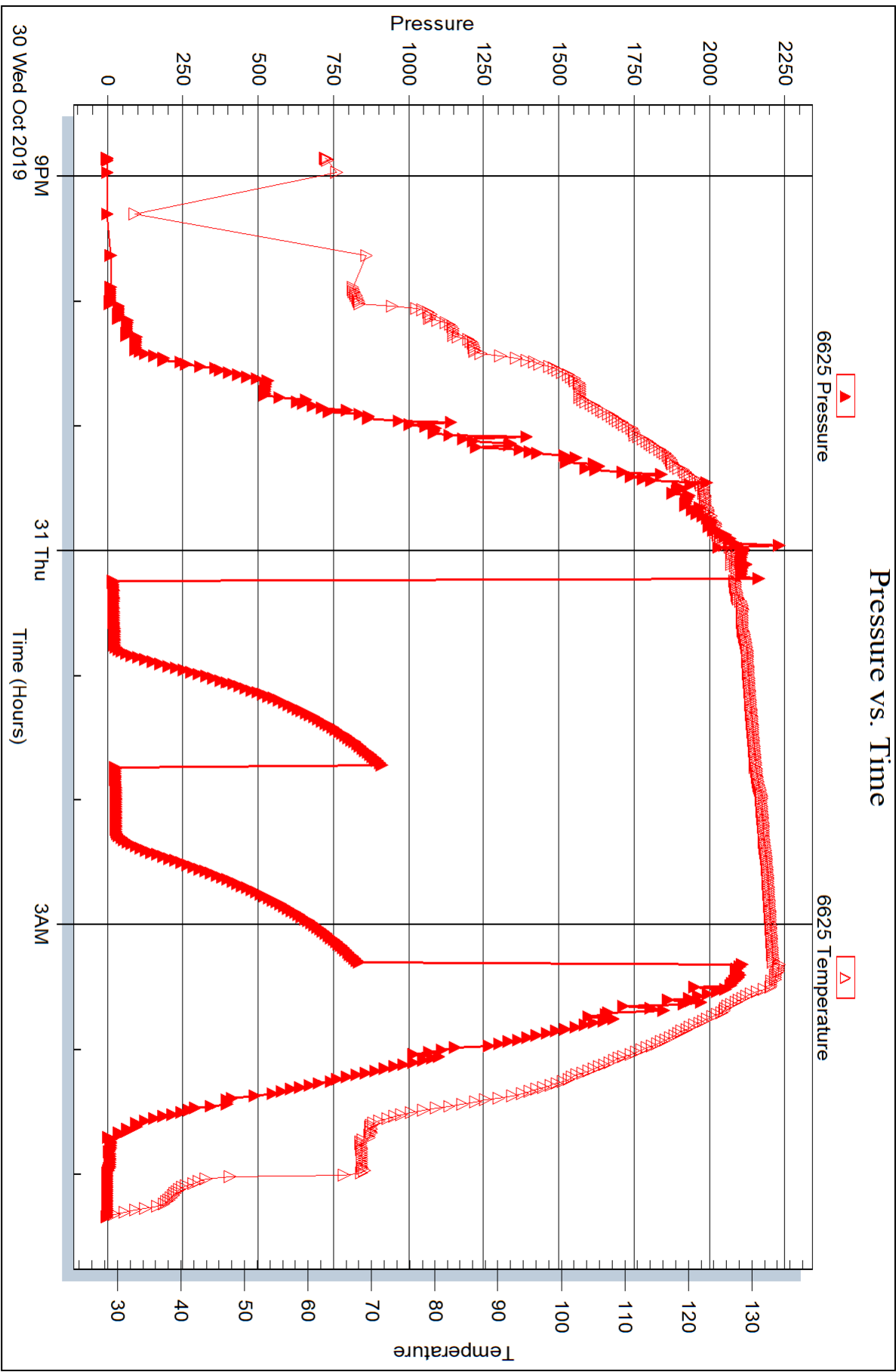
Serial #: 6625

Inside

Murfin Drilling Co., Inc.

Smith B #1-21

DST Test Number: 1





DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Saman Sharifaie

Smith'B' #1-21

21-2s-37w Cheyenne,KS

Start Date: 2019.10.31 @ 14:10:00

End Date: 2019.10.31 @ 21:34:30

Job Ticket #: 65594 DST #: 2

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

Printed: 2019.11.05 @ 09:08:41



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

21-2s-37w Cheyenne, KS

250 N. Water STE 300
Wichita, KS 67202

Smith'B' #1-21

Job Ticket: 65594

DST#: 2

ATTN: Saman Sharifaie

Test Start: 2019.10.31 @ 14:10:00

GENERAL INFORMATION:

Formation: **LKC "G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:22:15

Time Test Ended: 21:34:30

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 83

Interval: 4430.00 ft (KB) To 4480.00 ft (KB) (TVD)

Reference Elevations: 3416.00 ft (KB)

Total Depth: 4480.00 ft (KB) (TVD)

3411.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8652 Outside

Press@RunDepth: 19.37 psig @ 4431.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.10.31

End Date:

2019.10.31

Last Calib.: 2019.10.31

Start Time: 14:10:05

End Time:

21:34:29

Time On Btm: 2019.10.31 @ 16:21:45

Time Off Btm: 2019.10.31 @ 19:25:00

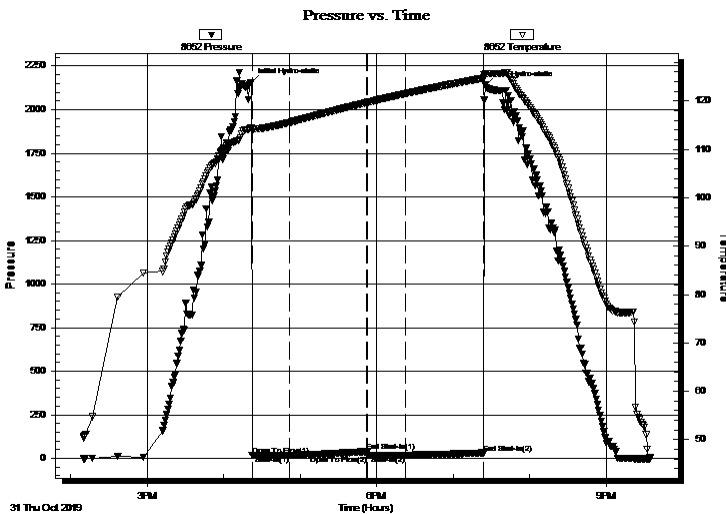
TEST COMMENT: 30 - IF: 1/2" Blow at open, built to 1" (diesel in bucket)

60 - IS: No blow back

30 - FF: No blow

60 - FS: No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2156.18	114.54	Initial Hydro-static
1	18.79	113.95	Open To Flow (1)
30	18.75	115.54	Shut-In(1)
91	39.28	119.65	End Shut-In(1)
91	18.86	119.69	Open To Flow (2)
121	19.37	121.48	Shut-In(2)
183	31.32	124.71	End Shut-In(2)
184	2140.33	125.49	Final Hydro-static

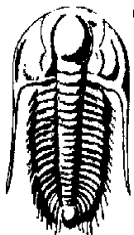
Recovery

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

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

250 N. Water STE 300
Wichita, KS 67202

ATTN: Saman Sharifaie

21-2s-37w Cheyenne, KS

Smith'B' #1-21

Job Ticket: 65594

DST#: 2

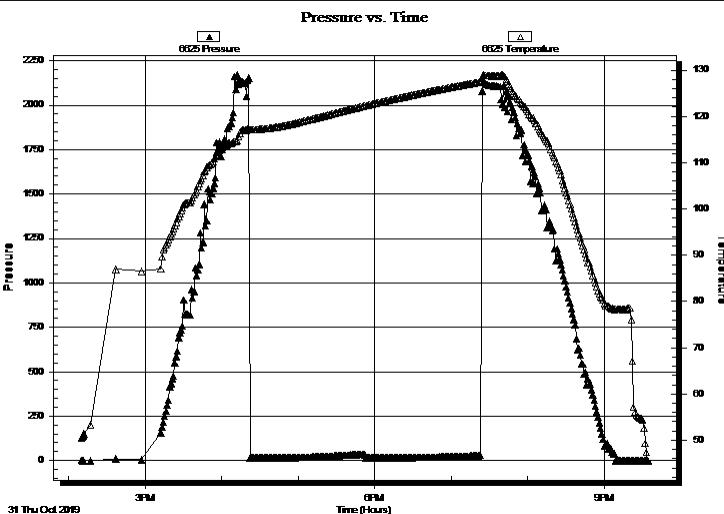
Test Start: 2019.10.31 @ 14:10:00

GENERAL INFORMATION:

Formation: LKC "G"		Test Type: Conventional Bottom Hole (Reset)
Deviated: No Whipstock: ft (KB)		Tester: James Winder
Time Tool Opened: 16:22:15		Unit No: 83
Time Test Ended: 21:34:30		Reference Elevations: 3416.00 ft (KB)
Interval: 4430.00 ft (KB) To 4480.00 ft (KB) (TVD)		3411.00 ft (CF)
Total Depth: 4480.00 ft (KB) (TVD)		KB to GR/CF: 5.00 ft
Hole Diameter: 7.88 inches	Hole Condition: Fair	

Serial #: 6625	Inside			Capacity: 8000.00 psig
Press@RunDepth: psig @ 4431.00 ft (KB)				Last Calib.: 2019.10.31
Start Date: 2019.10.31	End Date: 2019.10.31			Time On Btm:
Start Time: 14:10:05	End Time: 21:34:59			Time Off Btm:

TEST COMMENT: 30 - IF: 1/2" Blow at open, built to 1" (diesel in bucket)
60 - IS: No blow back
30 - FF: No blow
60 - FS: No blow



PRESSURE SUMMARY

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

Recovery

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

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.

21-2s-37w Cheyenne,KS

250 N.Water STE 300
Wichita, KS 67202

Smith'B' #1-21

Job Ticket: 65594

DST#: 2

ATTN: Saman Sharifaie

Test Start: 2019.10.31 @ 14:10:00

Tool Information

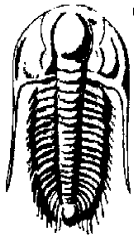
Drill Pipe:	Length: 4231.00 ft	Diameter: 3.80 inches	Volume: 59.35 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 177.00 ft	Diameter: 2.25 inches	Volume: 0.87 bbl	Weight to Pull Loose: 62000.00 lb
			<u>Total Volume: 60.22 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.00 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:	50.00 ft			
Tool Length:	79.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4402.00	
Shut In Tool	5.00			4407.00	
Hydraulic tool	5.00			4412.00	
Jars	5.00			4417.00	
Safety Joint	3.00			4420.00	
Packer	5.00			4425.00	29.00 Bottom Of Top Packer
Packer	5.00			4430.00	
Stubb	1.00			4431.00	
Recorder	0.00	6625	Inside	4431.00	
Recorder	0.00	8652	Outside	4431.00	
Perforations	13.00			4444.00	
Blank Spacing	33.00			4477.00	
Bullnose	3.00			4480.00	50.00 Bottom Packers & Anchor

Total Tool Length: 79.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

21-2s-37w Cheyenne,KS

250 N.Water STE 300
Wichita, KS 67202

Smith'B' #1-21

Job Ticket: 65594

DST#: 2

ATTN: Saman Sharifaie

Test Start: 2019.10.31 @ 14:10:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.38 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1300.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	Mud 100%	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

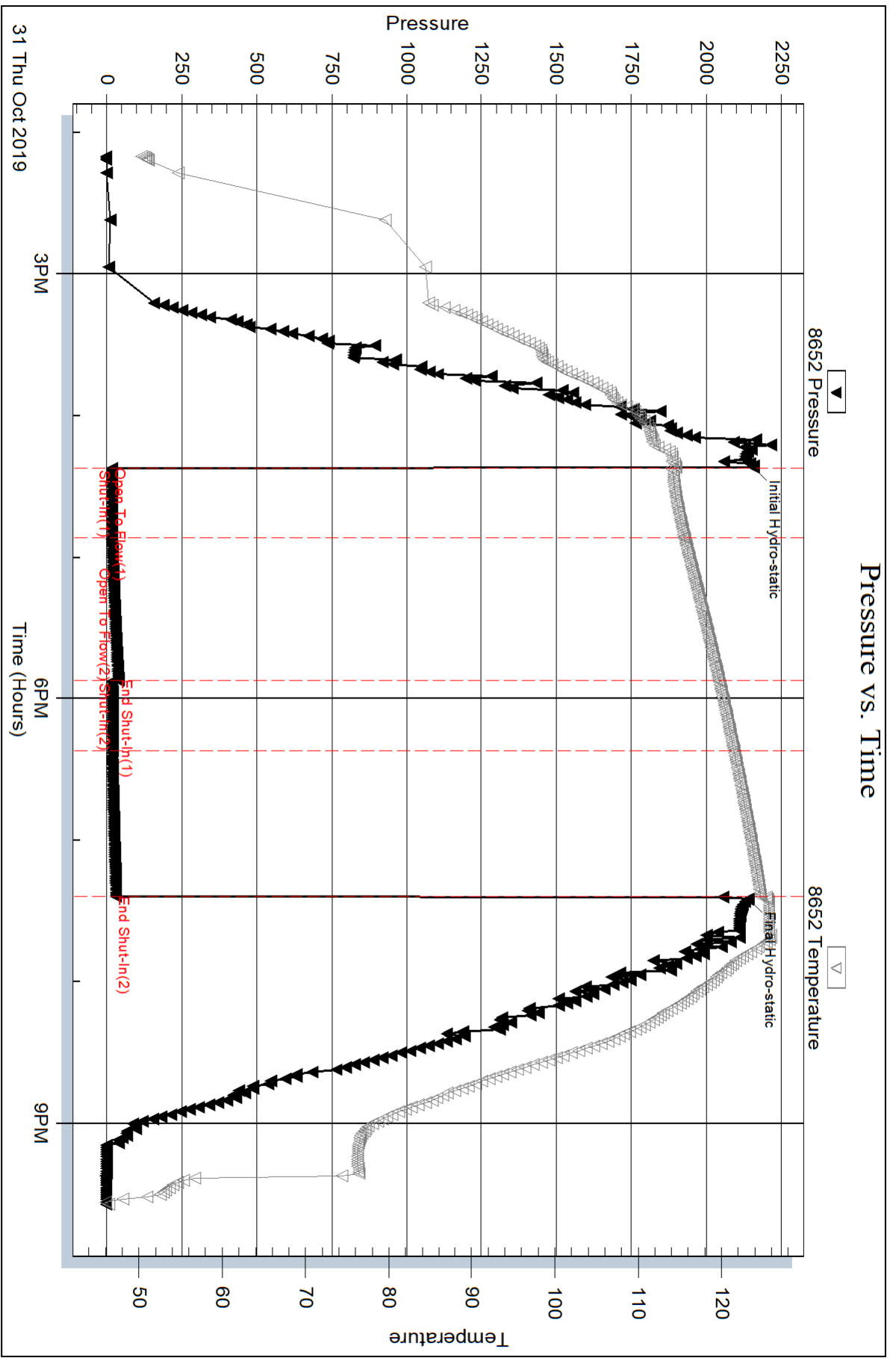
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



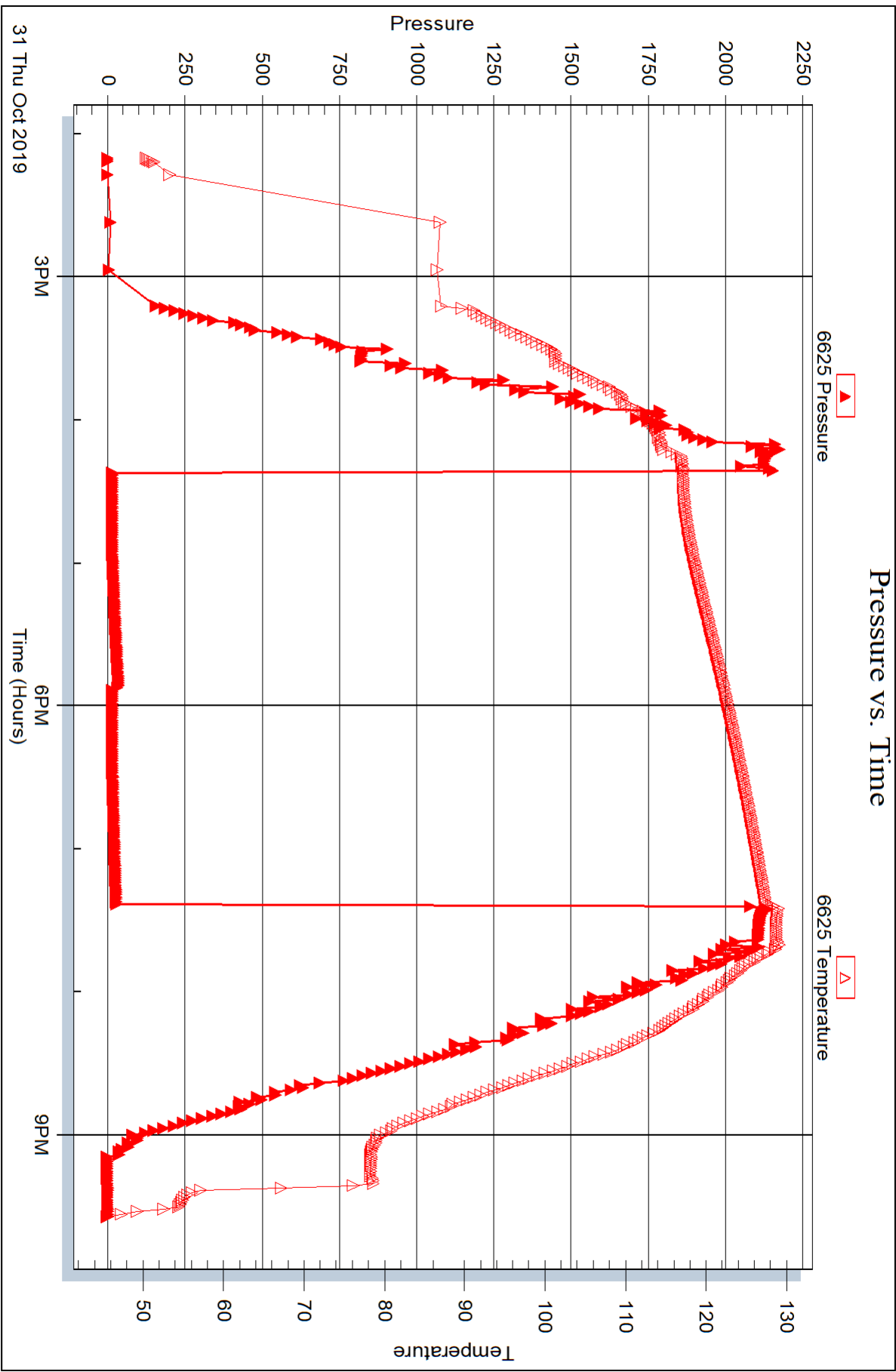
Serial #: 6625

Inside

Murfin Drilling Co., Inc.

Smith B #1-21

DST Test Number: 2





DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Saman Sharifaie

Smith'B' #1-21

21-2s-37w Cheyenne,KS

Start Date: 2019.11.01 @ 08:55:00

End Date: 2019.11.01 @ 17:14:15

Job Ticket #: 65595 DST #: 3

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

Printed: 2019.11.05 @ 09:07:20



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

21-2s-37w Cheyenne, KS

250 N. Water STE 300
Wichita, KS 67202

Smith'B' #1-21

Job Ticket: 65595

DST#: 3

ATTN: Saman Sharifaie

Test Start: 2019.11.01 @ 08:55:00

GENERAL INFORMATION:

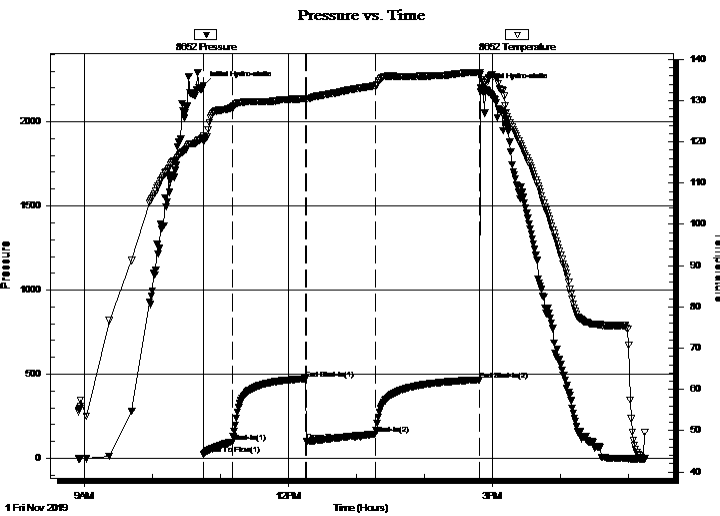
Formation: **LKC "H - J"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:45:30
 Time Test Ended: 17:14:15
 Interval: **4480.00 ft (KB) To 4560.00 ft (KB) (TVD)**
 Total Depth: 4560.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 3416.00 ft (KB)
 3411.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8652

Outside

Press@RunDepth: 143.77 psig @ 4481.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2019.11.01 End Date: 2019.11.01 Last Calib.: 2019.11.01
 Start Time: 08:55:05 End Time: 17:14:14 Time On Btm: 2019.11.01 @ 10:45:15
 Time Off Btm: 2019.11.01 @ 14:49:30

TEST COMMENT: 30 - IF: Blow built to BOB (11") at 15 1/2 min. (bucket)/ 21 min. (Guage/H2O) built to 12 3/4"
 60 - IS: Surface blow back, dead by 20 min. (diesel in bucket)
 60 - FF: Blow built to BOB at 11 1/2 min. (bucket)/ 15 min. (guage/H2O), built to 35 1/2"
 90 - FS: Blow back built to 1/2" then slowly died back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2215.24	121.35	Initial Hydro-static
1	24.89	120.21	Open To Flow (1)
25	97.61	128.31	Shut-In(1)
90	473.36	130.45	End Shut-In(1)
91	99.34	130.48	Open To Flow (2)
152	143.77	133.65	Shut-In(2)
243	466.17	136.84	End Shut-In(2)
245	2202.02	136.33	Final Hydro-static

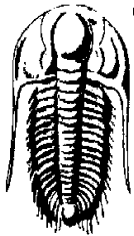
Recovery

Length (ft)	Description	Volume (bbl)
177.00	GMCO 41%o, 31%m, 28%g	0.87
123.00	GOCM 61%m, 29%o, 10%g	1.73
0.00	GIP = 375'	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.

21-2s-37w Cheyenne, KS

250 N. Water STE 300
Wichita, KS 67202

Smith'B' #1-21

Job Ticket: 65595

DST#: 3

ATTN: Saman Sharifaie

Test Start: 2019.11.01 @ 08:55:00

GENERAL INFORMATION:

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

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:45:30

Time Test Ended: 17:14:15

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 83

Interval: 4480.00 ft (KB) To 4560.00 ft (KB) (TVD)

Reference Elevations: 3416.00 ft (KB)

Total Depth: 4560.00 ft (KB) (TVD)

3411.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6625

Inside

Press@RunDepth: psig @ 4481.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.11.01

End Date: 2019.11.01

Last Calib.: 2019.11.01

Start Time: 08:55:05

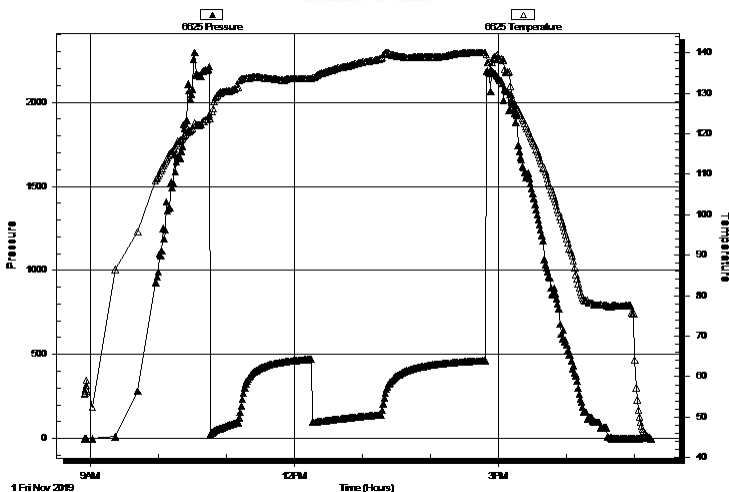
End Time: 17:14:29

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF: Blow built to BOB (11") at 15 1/2 min. (bucket)/ 21 min. (Guage/H2O) built to 12 3/4"
60 - IS: Surface blow back, dead by 20 min. (diesel in bucket)
60 - FF: Blow built to BOB at 11 1/2 min. (bucket)/ 15 min. (guage/H2O), built to 35 1/2"
90 - FS: Blow back built to 1/2" then slowly died back

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
177.00	GMCO 41%o, 31%m, 28%g	0.87
123.00	GOCM 61%m, 29%o, 10%g	1.73
0.00	GIP = 375'	0.00

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.

21-2s-37w Cheyenne,KS

250 N.Water STE 300
Wichita, KS 67202

Smith'B' #1-21

Job Ticket: 65595

DST#: 3

ATTN: Saman Sharifaie

Test Start: 2019.11.01 @ 08:55:00

Tool Information

Drill Pipe:	Length: 4292.00 ft	Diameter: 3.80 inches	Volume: 60.21 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: 20000.00 lb
Drill Collar:	Length: 177.00 ft	Diameter: 2.25 inches	Volume: 0.87 bbl	Weight to Pull Loose: 64000.00 lb
			<u>Total Volume: 61.08 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4480.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	80.00 ft			
Tool Length:	109.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		
Tool Comments:				

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4452.00	
Shut In Tool	5.00			4457.00	
Hydraulic tool	5.00			4462.00	
Jars	5.00			4467.00	
Safety Joint	3.00			4470.00	
Packer	5.00			4475.00	29.00 Bottom Of Top Packer
Packer	5.00			4480.00	
Stubb	1.00			4481.00	
Recorder	0.00	6625	Inside	4481.00	
Recorder	0.00	8652	Outside	4481.00	
Perforations	10.00			4491.00	
Blank Spacing	65.00			4556.00	
Perforations	1.00			4557.00	
Bullnose	3.00			4560.00	80.00 Bottom Packers & Anchor

Total Tool Length: 109.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

21-2s-37w Cheyenne,KS

250 N.Water STE 300
Wichita, KS 67202

Smith'B' #1-21

Job Ticket: 65595

DST#: 3

ATTN: Saman Sharifaie

Test Start: 2019.11.01 @ 08:55:00

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: 49.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
177.00	GMCO 41%o, 31%m, 28%g	0.870
123.00	GOCM 61%m, 29%o, 10%g	1.725
0.00	GIP = 375'	0.000

Total Length: 300.00 ft Total Volume: 2.595 bbl

Num Fluid Samples: 0

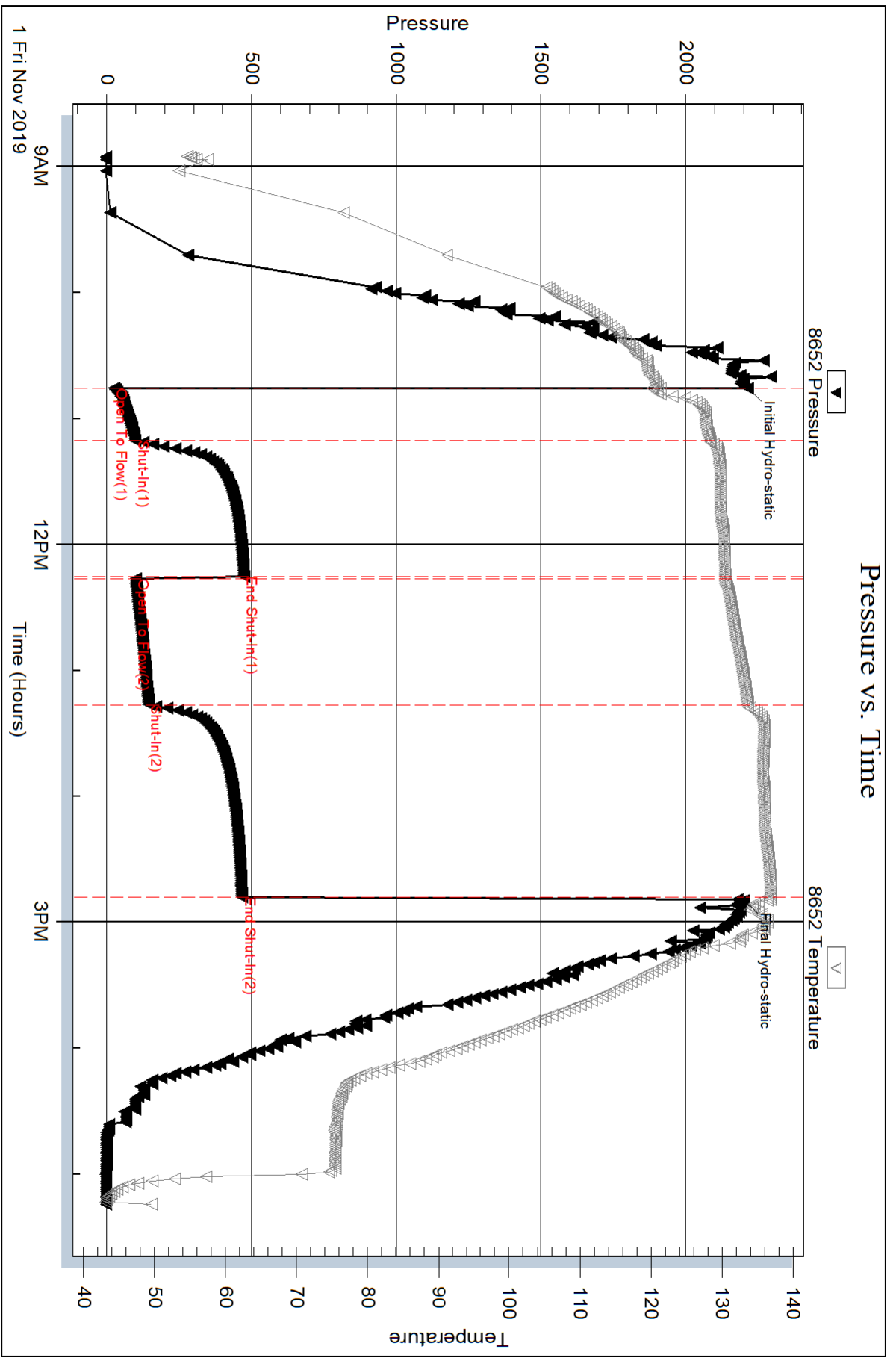
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



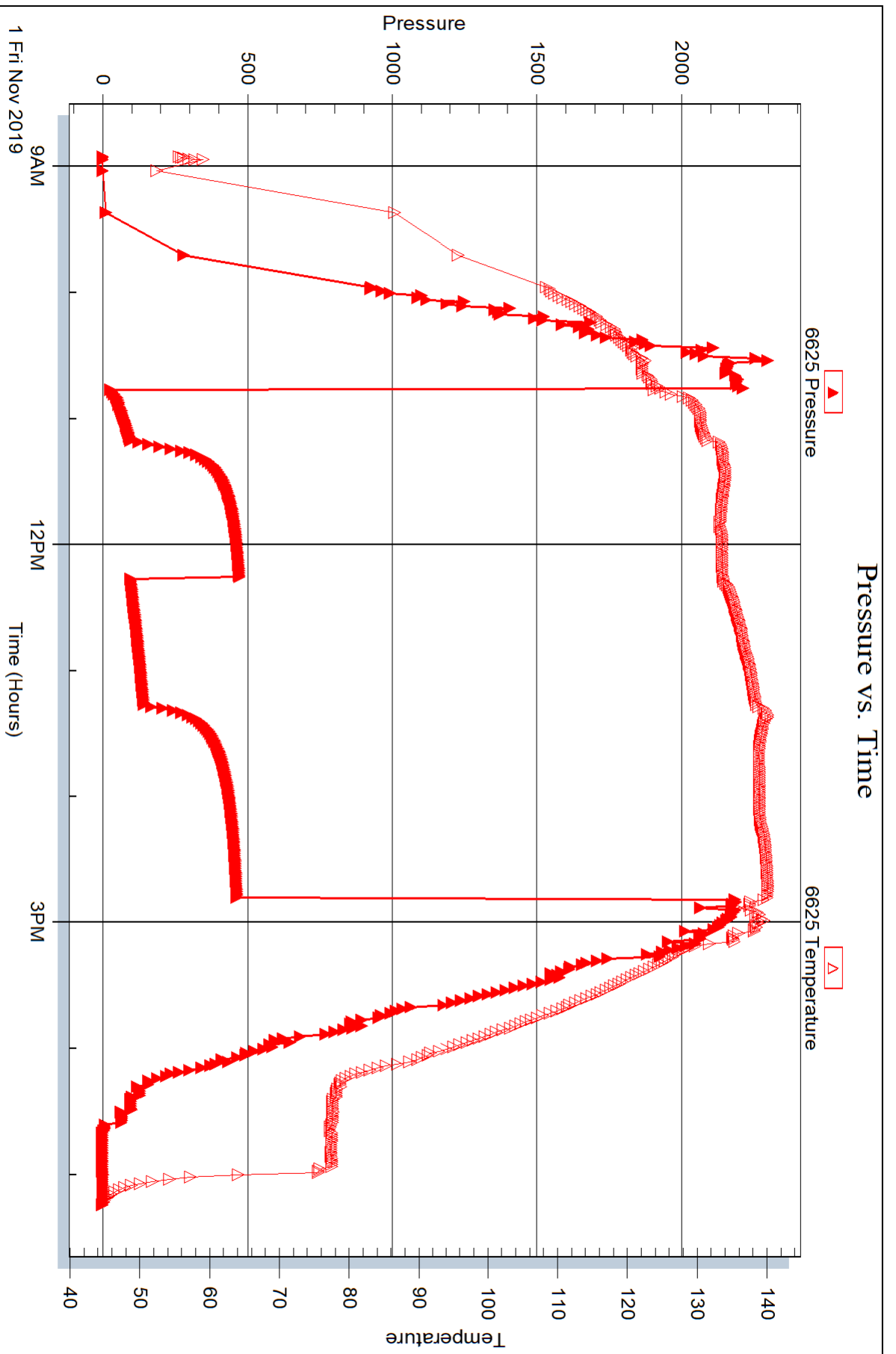
Serial #: 6625

Inside

Murfin Drilling Co., Inc.

Smith B #1-21

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 65595

Printed: 2019:11:05 @ 09:07:21



DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Saman Sharifaie

Smith'B' #1-21

21-2s-37w Cheyenne,KS

Start Date: 2019.11.02 @ 21:33:00

End Date: 2019.11.03 @ 06:02:00

Job Ticket #: 65596 DST #: 4

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

Printed: 2019.11.05 @ 09:05:24



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

21-2s-37w Cheyenne, KS

250 N. Water STE 300
Wichita, KS 67202

Smith'B' #1-21

Job Ticket: 65596

DST#: 4

ATTN: Saman Sharifaie

Test Start: 2019.11.02 @ 21:33:00

GENERAL INFORMATION:

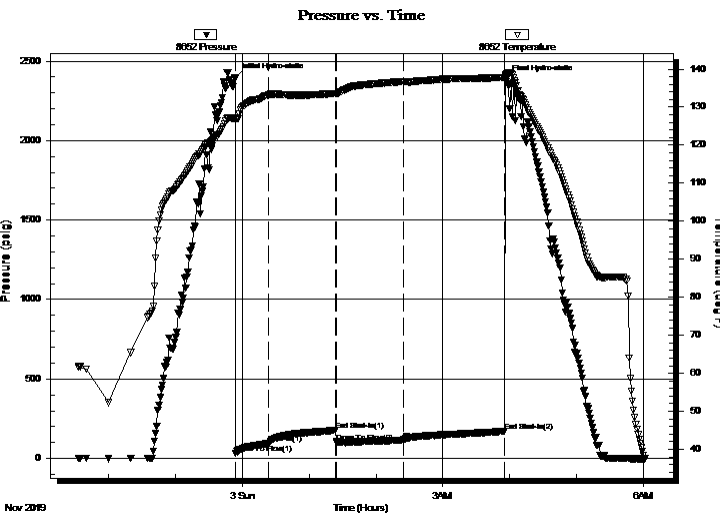
Formation: **Ft. Scott - Celia**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:54:00
 Time Test Ended: 06:02:00
 Interval: **4720.00 ft (KB) To 4850.00 ft (KB) (TVD)**
 Total Depth: 4850.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 3416.00 ft (KB)
 3411.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8652

Outside

Press@RunDepth: 113.79 psig @ 4721.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2019.11.02 End Date: 2019.11.03 Last Calib.: 2019.11.03
 Start Time: 21:33:05 End Time: 06:01:59 Time On Btm: 2019.11.02 @ 23:53:30
 Time Off Btm: 2019.11.03 @ 03:56:30

TEST COMMENT: 30 - IF: Blow built to BOB (11") at 29 min. (Bucket)/ 9" (H2O guage)
 60 - IS: No blow back (Diesel in bucket)
 60 - FF: Blow built to 10" (bucket)/ 7 3/4" (H2O guage)
 90 - FS: No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2394.22	127.14	Initial Hydro-static
1	32.19	126.60	Open To Flow (1)
31	92.57	133.17	Shut-In(1)
91	177.55	133.59	End Shut-In(1)
91	101.17	133.60	Open To Flow (2)
152	113.79	136.73	Shut-In(2)
242	170.04	137.79	End Shut-In(2)
243	2384.28	138.41	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
117.00	GOCM 65% _m , 20% _g , 15% _o	0.58
75.00	GMCO 67% _o , 25% _m , 8% _g	0.51
40.00	SMCO 90% _o , 6% _m , 4% _g	0.56
0.00	GIP = 65'+	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.

21-2s-37w Cheyenne, KS

250 N. Water STE 300
Wichita, KS 67202

Smith'B' #1-21

Job Ticket: 65596

DST#: 4

ATTN: Saman Sharifaie

Test Start: 2019.11.02 @ 21:33:00

GENERAL INFORMATION:

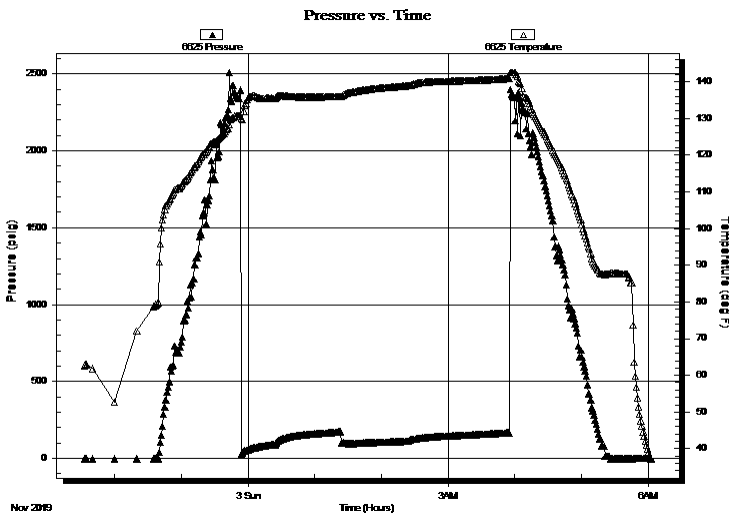
Formation: **Ft. Scott - Celia**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:54:00
 Time Test Ended: 06:02:00
 Interval: **4720.00 ft (KB) To 4850.00 ft (KB) (TVD)**
 Total Depth: 4850.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 3416.00 ft (KB)
 3411.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 6625

Inside

Press@RunDepth: psig @ 4721.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2019.11.02 End Date: 2019.11.03 Last Calib.: 2019.11.03
 Start Time: 21:33:05 End Time: 06:02:14 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30 - IF: Blow built to BOB (11") at 29 min. (Bucket)/ 9" (H2O guage)
 60 - IS: No blow back (Diesel in bucket)
 60 - FF: Blow built to 10" (bucket)/ 7 3/4" (H2O guage)
 90 - FS: No blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
117.00	GOCM 65% _m , 20% _g , 15% _o	0.58
75.00	GMCO 67% _o , 25% _m , 8% _g	0.51
40.00	SMCO 90% _o , 6% _m , 4% _g	0.56
0.00	GIP = 65'+	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.

21-2s-37w Cheyenne,KS

250 N.Water STE 300
Wichita, KS 67202

Smith'B' #1-21

Job Ticket: 65596

DST#: 4

ATTN: Saman Sharifaie

Test Start: 2019.11.02 @ 21:33:00

Tool Information

Drill Pipe:	Length: 4542.00 ft	Diameter: 3.80 inches	Volume: 63.71 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: 20000.00 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: 64.58 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4720.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	130.00 ft			
Tool Length:	159.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4692.00	
Shut In Tool	5.00			4697.00	
Hydraulic tool	5.00			4702.00	
Jars	5.00			4707.00	
Safety Joint	3.00			4710.00	
Packer	5.00			4715.00	29.00 Bottom Of Top Packer
Packer	5.00			4720.00	
Stubb	1.00			4721.00	
Recorder	0.00	6625	Inside	4721.00	
Recorder	0.00	8652	Outside	4721.00	
Perforations	29.00			4750.00	
Blank Spacing	96.00			4846.00	
Perforations	1.00			4847.00	
Bullnose	3.00			4850.00	130.00 Bottom Packers & Anchor

Total Tool Length: 159.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

21-2s-37w Cheyenne,KS

250 N.Water STE 300
Wichita, KS 67202

Smith'B' #1-21

Job Ticket: 65596

DST#: 4

ATTN: Saman Sharifaie

Test Start: 2019.11.02 @ 21:33:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

26.2 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 61.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
117.00	GOCM 65%m, 20%g, 15%o	0.575
75.00	GMCO 67%o, 25%m, 8%g	0.505
40.00	SMCO 90%o, 6%m, 4%g	0.561
0.00	GIP = 65'+	0.000

Total Length: 232.00 ft Total Volume: 1.641 bbl

Num Fluid Samples: 0

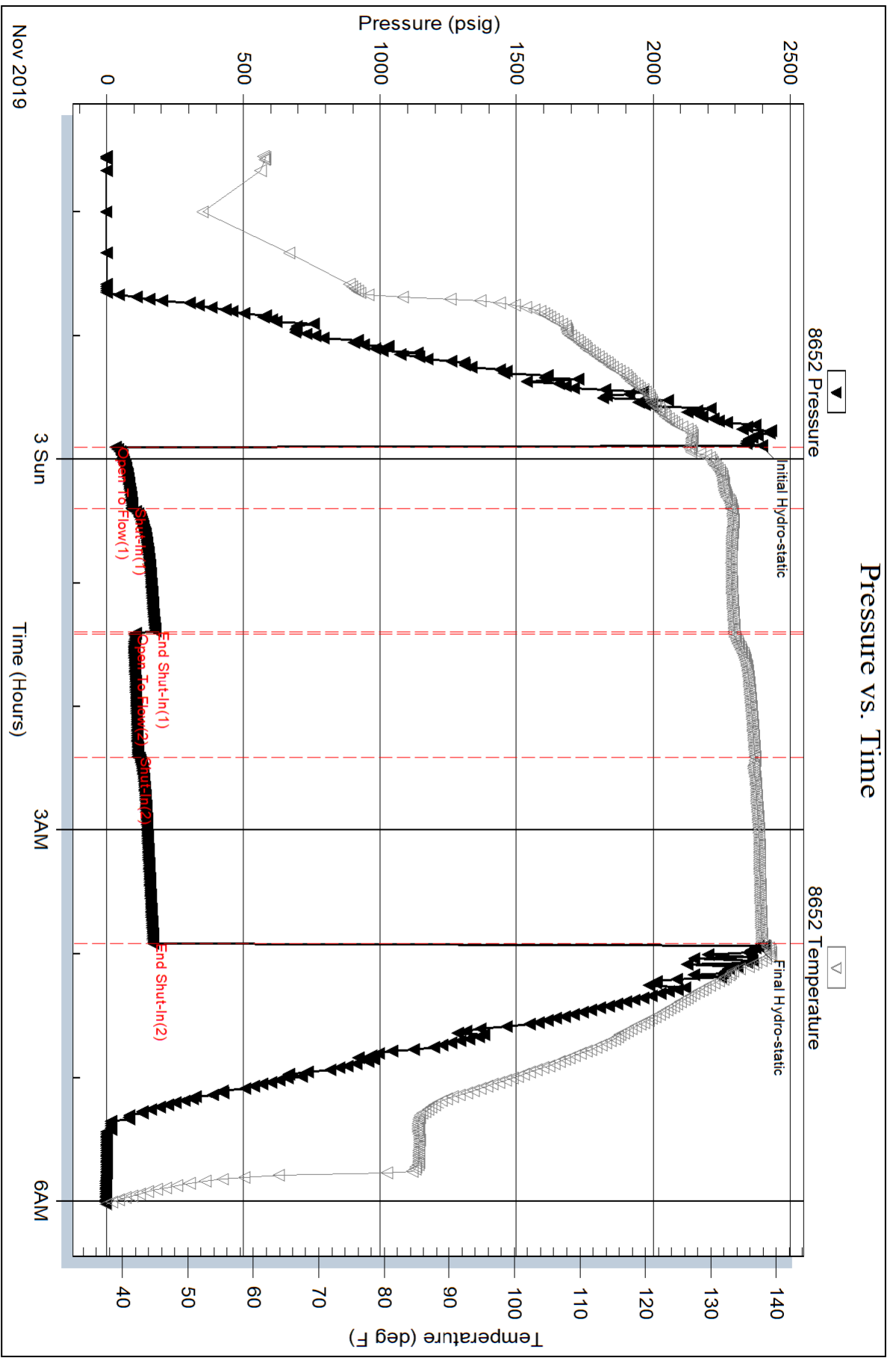
Num Gas Bombs: 0

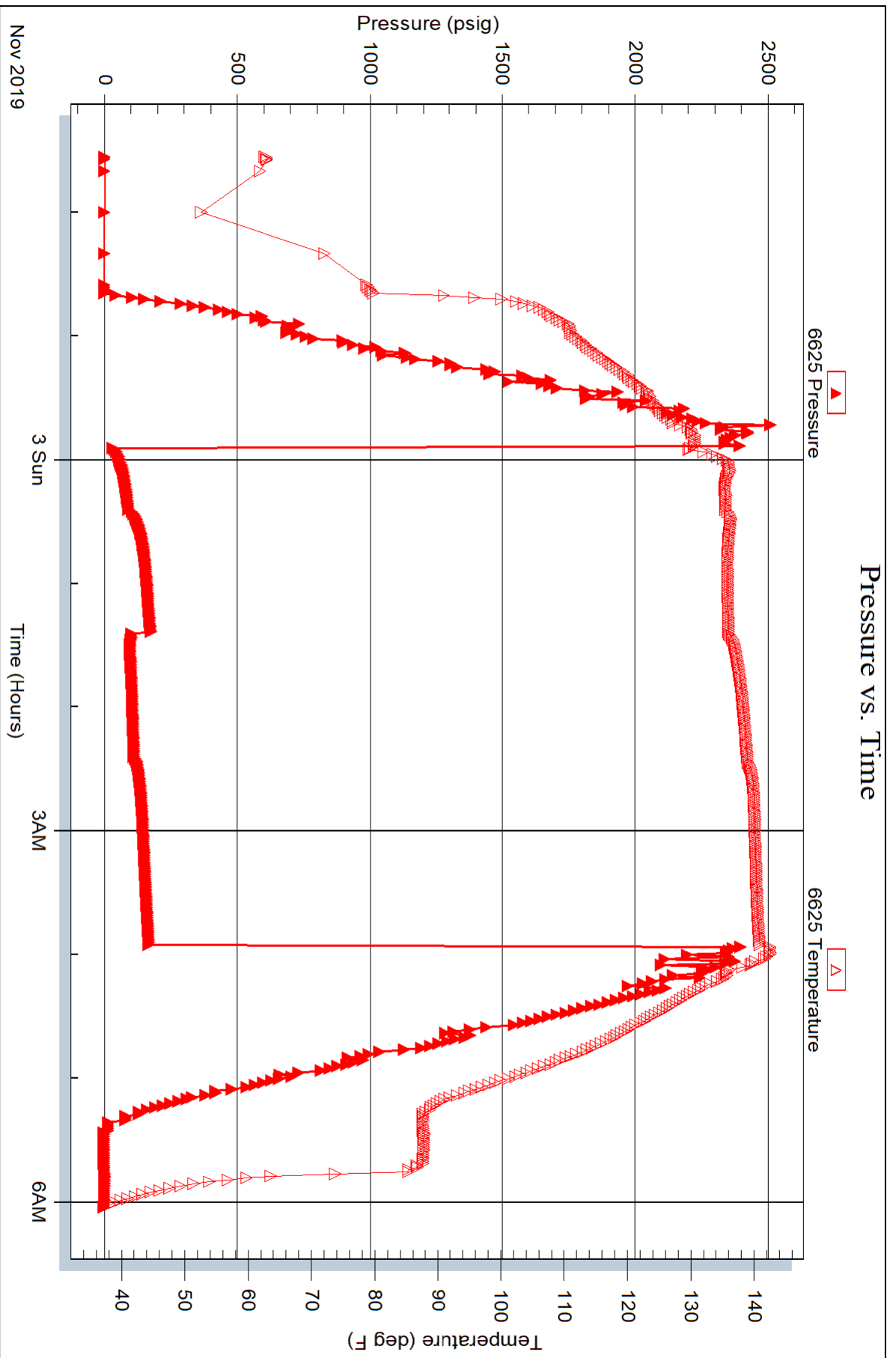
Serial #:

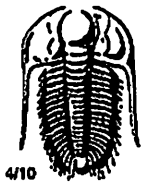
Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity = 23.6 api @ 34 deg F Corrected Gravity = 26.2 api







TRIBOLITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65593

Well Name & No. Smith 'B' #1-21 Test No. 1 Date 10-30-19
 Company Murfin Drilling Co. Inc. Elevation 3416 KB 3411 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Saman Sharifaie Rig Murfin #3
 Location: Sec. 21 Twp 2s Rge. 37w Co. Cheyenne State KS

Interval Tested 4290-4430 Zone Tested LKC "A-D"
 Anchor Length 140 Drill Pipe Run 4104 Mud Wt. 9.0
 Top Packer Depth 4285 Drill Collars Run 177 Vis 53
 Bottom Packer Depth 4290 Wt. Pipe Run - WL 6.0
 Total Depth 4430 Chlorides 800 ppm System LCM 3
 Blow Description IF: 1/2" Blow at open, built to 3/4", 3/4" till close (diesel in bucket)
ISI: No blowback
FF: No blow
FSI: No blow

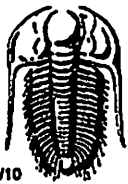
Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>Mud w/oil spots</u>	<u>1</u>		<u>99</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 20 BHT 130 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2133 Test 1300 T-On Location 18:50 ^{10/30}
 (B) First Initial Flow 24 Jars 250 T-Started 20:51
 (C) First Final Flow 26 Safety Joint 75 T-Open 00:14
 (D) Initial Shut-In 914 Circ Sub _____ T-Pulled 3:18
 (E) Second Initial Flow 31 Hourly Standby _____ T-Out 5:20 ^{10/31}
 (F) Second Final Flow 33 Mileage 116 RT 116 Comments _____
 (G) Final Shut-In 833 Sampler _____
 (H) Final Hydrostatic 2118 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1741 EM Tool _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1741 MP/DST Disc't _____

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

Approved By _____ Our Representative James Winder
 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. 65594

Well Name & No. Smith 'B' #1-21 Test No. 2 Date 10-31-19
 Company Murfin Drilling Co Inc Elevation 3416 KB 3411 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Saman Sharifaie Rig Murfin #3
 Location: Sec. 21 Twp 2s Rge. 37w Co. Cheyenne State KS

Interval Tested 4430-4480 Zone Tested LKC "6"
 Anchor Length 50 Drill Pipe Run 4231 Mud Wt. 9.0
 Top Packer Depth 4425 Drill Collars Run 177 Vis 60
 Bottom Packer Depth 4430 Wt. Pipe Run - WL 6.4
 Total Depth 4480 Chlorides 1300 ppm System LCM 4
 Blow Description IF: 1/2" Blow at open, built to 1" (diesel in bucket)
ISI: No blowback
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 Total 2 BHT 125 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2156 Test 1300 T-On Location 13:05
 (B) First Initial Flow 19 Jars 250 T-Started 14:10
 (C) First Final Flow 19 Safety Joint 75 T-Open 16:22
 (D) Initial Shut-In 39 Circ Sub _____ T-Pulled 19:24
 (E) Second Initial Flow 19 Hourly Standby _____ T-Out 21:35
 (F) Second Final Flow 19 Mileage 116 RT ¹¹⁶ Comments _____
 (G) Final Shut-In 31 Sampler _____
 (H) Final Hydrostatic 2140 Straddle _____
 Initial Open 30 Shale Packer _____
 Initial Shut-In 60 Extra Packer _____
 Final Flow 30 Extra Recorder _____
 Final Shut-In 60 Day Standby _____
 Sub Total 1741 Accessibility _____
 Total 1741 MP/DST Disc't _____

Approved By _____ Our Representative James Winkler
 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

NO. 65595

Well Name & No. Smith 'B' #1-21 Test No. 3 Date 11-1-19
 Company Murfin Drilling Co Inc. Elevation 3416 KB 3411 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Saman Sharifaire Rlg Murfin #3
 Location: Sec. 21 Twp 2S Rge. 37W Co. Cheyenne State KS

Interval Tested 4480 - 4560 Zone Tested LKC "H-J"
 Anchor Length 80 Drill Pipe Run 4292 Mud Wt. 8.9
 Top Packer Depth 44875 Drill Collars Run 177 Vis 49
 Bottom Packer Depth 4480 Wt. Pipe Run - WL 6.4
 Total Depth 4560 Chlorides 1200 ppm System LCM 4

Blow Description IF: Blow built to BOB (11") at 15 1/2 min (bucket) / 21 min. (Gauge), built to 12 3/4"
ISI: ~~22~~ surface blowback, dead by 20 min (diesel in bucket)
FF: Blow built to BOB at 11 1/2 min. (bucket) / 15 min (gauge), built to 35 1/2"
FST: Blowback built to 1/2" then slowly died back

Rec	Feet of	%gas	%oil	%water	%mud
<u>123</u>	<u>60CM</u>	<u>10</u>	<u>29</u>	<u>61</u>	
<u>177</u>	<u>6MCO</u>	<u>28</u>	<u>41</u>	<u>31</u>	
	<u>GIP=375'</u>				

Rec Total 300 BHT 137 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

- (A) Initial Hydrostatic 2215
- (B) First Initial Flow 25
- (C) First Final Flow 98
- (D) Initial Shut-In 473
- (E) Second Initial Flow 99
- (F) Second Final Flow 144
- (G) Final Shut-In 466
- (H) Final Hydrostatic 2202

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

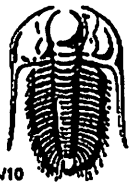
- Test 1300
- Jars 250
- Safety Joint 75
- Circ Sub _____
- Hourly Standby _____
- Mileage 116 RT 116
- Sampler _____
- Straddle _____
- Shale Packer _____
- Extra Packer _____
- Extra Recorder _____
- Day Standby _____
- Accessibility _____
- Sub Total 1741

T-On Location 7:40
 T-Started 8:55
 T-Open 10:45
 T-Pulled 14:48
 T-Out 17:10

Comments _____
 EM Tool _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1741
 MP/DST Disc't _____

Approved By _____ Our Representative James Winder

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65596

Well Name & No. Smith 'B' #1-21 Test No. 4 Date 11-2-19
 Company Murfin Drilling Co. Inc. Elevation 3416 KB 3411 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Saman Shari faie Rig Murfin #3
 Location: Sec. 21 Twp 2s Rge. 37w Co. Cheyenne State KS

Interval Tested 4720 - 4850 Zone Tested Ft. Scott - Celia
 Anchor Length 130 Drill Pipe Run 4542 Mud Wt. 9.0
 Top Packer Depth 4715 Drill Collars Run 177 Vis 61
 Bottom Packer Depth 4720 Wt. Pipe Run - WL 6.4
 Total Depth 4850 Chlorides 1600 ppm System LCM 4

Blow Description IF: Blow built to BOB (11") at 29 min. (bucket), 9" on guage^{H2O}
ISI: No blowback (diesel in bucket)
FF: Blow built to 10" (Bucket) / 7 3/4" (guage)^{H2O}
FSI: No blowback

Rec	Feet of	%gas	%oil	%water	%mud
<u>40</u>	<u>SMCO</u>	<u>4</u>	<u>90</u>	<u>-</u>	<u>6</u>
<u>75</u>	<u>GMCO</u>	<u>8</u>	<u>67</u>	<u>-</u>	<u>25</u>
<u>117</u>	<u>60CM</u>	<u>20</u>	<u>15</u>	<u>-</u>	<u>65</u>
<u> </u>	<u>GIP=65'</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

Rec Total 232 BHT 138 Gravity 26.2 API RW @ °F Chlorides ppm
 (A) Initial Hydrostatic 2394 Test 1300 T-On Location 20:30 1/2
 (B) First Initial Flow 32 Jars 250 T-Started 21:33
 (C) First Final Flow 93 Safety Joint 75 T-Open 23:54
 (D) Initial Shut-In 178 Circ Sub T-Pulled 3:55
 (E) Second Initial Flow 101 Hourly Standby T-Out 5:00 1/3
 (F) Second Final Flow 114 Mileage 116 RT 116 Comments time change during test
 (G) Final Shut-In 170 Sampler
 (H) Final Hydrostatic 2384 Straddle

Initial Open 30 EM Tool
 Initial Shut-In 60 Ruined Shale Packer
 Final Flow 60 Ruined Packer
 Final Shut-In 90 Extra Copies
 Sub Total 0
 Total 1741
 Sub Total 1741 MP/DST Disc't

Approved By Our Representative James Winder

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Saman Sharifaie

Petroleum Geologist

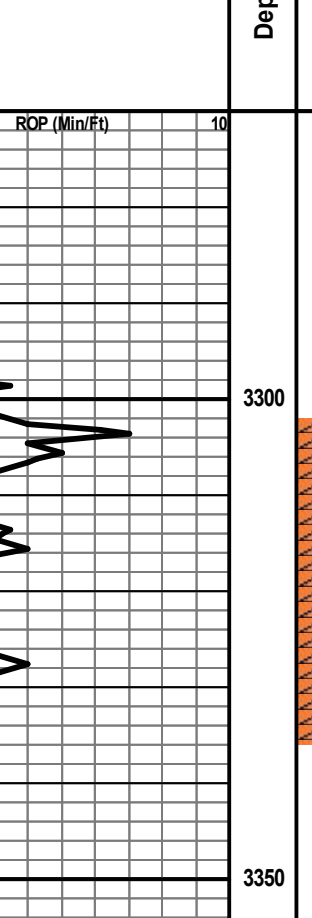
GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY: **Marfin Drilling Co., Inc.**
LEASE: **Smith "B" #1-21**
FIELD: **Wildcat**
LOCATION: **2100 F.N.L. & 500' FEL**
SEC: **21 TWP 2S R0E 37W**
COUNTY: **Cherokee STATE Kansas**
CONTRACTOR: **Marfin Drilling #3**
RTPD: **10/26/19 COMP 11/04/19**
SPUD: **4950' LT 4952'**
MUD UP: **3400' TYPE MUD Chemical**

SAMPLES SAVED FROM: **4020' TO RTD**
DRILLING TIME KEPT FROM: **4020' TO RTD**
SAMPLES EXAMINED FROM: **4020' TO RTD**
GEOLOGICAL SUPERVISION FROM: **3720'**
GEOLOGICAL WELL ID: **MDCT - Smith "A" #2-21**

Formation	Sample Tops	E-log Tops	Strat Pos.
Ambydrite	3302 (+114)	3302 (+114)	-1
Base Ambydrite	3340 (+76)	3335 (+81)	-2
Truska	4120 (-70)	4122 (-70)	-3
Orebed	4360 (-846)	4363 (-847)	-4
Stark	4340 (-924)	4342 (-920)	-5
Noland City	4362 (-1146)	4365 (-1147)	-6
FT Scott	4616 (-1200)	4618 (-1202)	-7
ORKEY	4744 (-1328)	4746 (-1330)	-8
	4820 (-1404)	4821 (-1405)	-9



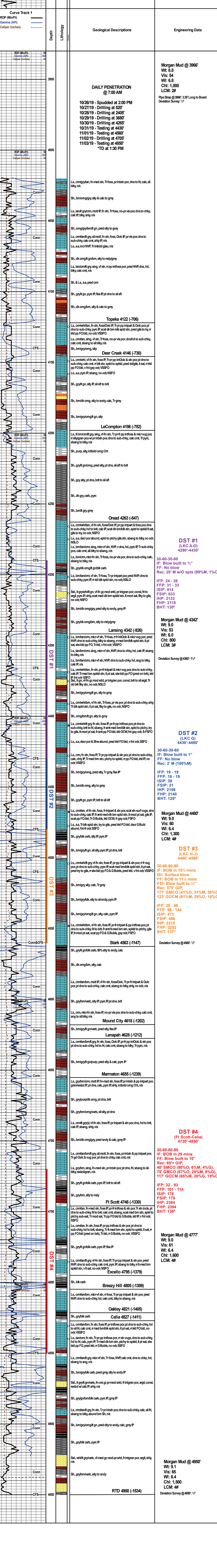
REMARKS: Due to poor to fair shows of oil in multiple potential pay zones and positive DST results, it is recommended and agreed upon by all parties that production casing be set to further evaluate this well.

Respectfully Submitted,

API #15-023-21525

Saman Sharifaie
Petroleum Geologist

*Tops have been adjusted to electric logs



MDCI
 Smith 'B' #1-21
 2310' FNL 500'FEL
 Sec. 21-2S-37W
 3416' KB

Formation	Sample top	Datum	Ref	Log tops	Datum	Ref
Anhydrite	3302	+114	-1	3302	+114	-1
B/Anhydrite	3340	+76	-8	3335	+81	-3
Topeka	4120	-704	-2	4122	-706	-4
Oread	4262	-846	+1	4263	-847	Flat
Lansing	4340	-924	Flat	4342	-926	-2
Stark	4562	-1146	+1	4563	-1147	Flat
Mound City	4616	-1200	-2	4618	-1202	-4
Ft Scott	4744	-1328	-2	4746	-1330	-4
Oakley	4820	-1404	-4	4821	-1405	-5
RTD	4950					
LTD				4952		



CEMENT TREATMENT REPORT

Customer:	Murfin Drilling Co	Well:	Smith B #1-21	Ticket:	ICT2663
City, State:		County:	Cheyenne KS	Date:	10/26/2019
Field Rep:	Jay	S-T-R:	21-2S-37W	Service:	Surface

Downhole Information	
Hole Size:	12.25 in
Hole Depth:	387 ft
Casing Size:	8 5/8 in
Casing Depth:	387 ft
Tubing / Liner:	in
Depth:	ft
Tool / Packer:	
Depth:	ft
Displacement:	23.5 bbls

Calculated Slurry	
Weight:	14.8 # / sx
Water / Sx:	6.88 gal / sx
Yield:	1.41 ft ³ / sx
Bbls / Ft.:	0.064
Depth:	387 ft
Annular Volume:	24.768 bbls
Excess:	
Total Slurry:	bbls
Total Sacks:	315 sx

Product	% / #	#
Class A	100.00	29610
Poz		
Gel	2.00	592
CaCl	3.00	888
Gypsum		
Metso		
Kol Seal		
Flo Seal	0.25	79
Salt (bww)		
Total		31,170

TIME	RATE	PSI	BBLs	REMARKS
6:00 PM				Arrived on location
				Rig up pump truck, safety meeting
7:00 PM				Start running casing
8:10 PM				Casing on bottom, break circulation, circ 10 minutes
8:20 PM	4.0	200.0	5.0	Break circulation with pump truck, run 5 bbl water ahead
	5.5	200.0	79.0	Mix & pump 316 sx H325 at 14.8 ppg, 1.41 yield
	5.5	250.0	23.5	Displace cement with water, circulate approx 10 bbl good slurry to pit
8:45 PM				Shut in valve & swage
9:00 PM				Wash up truck & lines, rig down, depart
				Thanks for calling HSI

	CREW		UNIT	SUMMARY		
				Average Rate	Average Pressure	Total Fluid
Cementer:	Jimmie		73	5 bpm	217 psi	108 bbls
Pump Operator:	Cory		85			
Bulk #1:	Kaleb		209			
Bulk #2:	Kale		294			



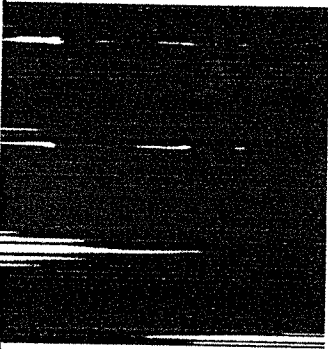
CEMENT TREATMENT REPORT

Customer: Murfin Drilling Co	Well: Smith B #1-21	Ticket: ICT2705
City, State: Wichita, KS	County: Cheyenne, KS	Date: 11/4/2019
Field Rep: Nathan	S-T-R: Sec 21 - T2S - R37W	Service: Cement - Production Csg

Downhole Information	
Hole Size:	7.875 in
Hole Depth:	4950 ft
Casing Size:	5.5 in
Casing Depth:	4943 ft
Drill Pipe	in
Depth:	ft
Tool / Packer:	
Depth:	ft
Displacement:	117.2 bbls

Calculated Slurry	
Weight:	12.00 # / sx
Water / Sx:	15.46 gal / sx
Yield:	2.56 ft ³ / sx
Bbls / Ft.:	0.0309
Depth:	4950 ft
Annular Volume:	152.955 bbls
Excess:	
Total Slurry:	148.2 bbls
Total Sacks:	325 sx

Product	% / #	#
Class A	100.00	35250
Poz		
Gel		
CaCl	3.00	1058
Gypsum	2.00	705
Metso	2.00	705
PhenoSeal	0.25	93
Flo Seal		
Salt (bww)		
Total		37,811



Calculated Slurry	
Weight:	14.8 # / sx
Water / Sx:	6.61 gal / sx
Yield:	1.50 ft ³ / sx
Bbls / Ft.:	0.0309
Depth:	4950 ft
Annular Volume:	152.955 bbls
Excess:	
Total Slurry:	53.4 bbls
Total Sacks:	200 sx

Product	% / #	#
Class A	100.00	18800
Poz		
Gel	1.00	188
CaCl		
Gypsum	5.00	940
CAF-38 Defoamer	0.25	47
CAL-160 Fluid Loss	0.60	113
KolSeal	5.00	1000
Salt (bww)	10.00	1100
Total		22,166

TIME	RATE	PSI	BBLs	REMARKS
12:30				Call out - 11/03/19
4:00				Depart yard
6:00				Arrive on locn.
6:05				JSA, discuss moving on, spotting & rig-up of equipment
6:10				Move on, spot & rig-up equipment
6:15				Rig start to RIH w/ 5.5" csg
6:30				Rig-up complete
8:05				Casing @ setting depth. M/U cement head
8:15	6.0	400.0		Circulate & condition hole
9:45	3.0	150.0	5.0	Pump H2O ahead
9:48		3,400.0		Pressure test
9:50	3.0	190.0	10.0	Pump mudflush spacer
9:55	3.0	190.0	5.0	Pump H2O spacer
9:58			13.0	Plug rathole w/ 30sx cement @ 12.0ppg
10:03			9.0	Plug mouseholehole w/ 20sx cement @ 12.0ppg
10:09	5.5	425.0	148.2	Mix & pump 325sx lead slurry @ 12.0ppg. Y - 2.56cuf/sk; MR - 15.46g/sk
10:37	3.3	300.0	45.0	Mix & pump 200sx tail slurry @ 14.8ppg. Y - 1.50cuf/sk; MR - 6.61g/sk. Note: BAD CEMENT DELIVERY FROM UNIT #256
10:55				Shutdown. Wash-up pumps & lines. Release latchdown plug
11:03	5.5	600.0		Pump displacement. Note: noticed wash-up T open @ 45bbls gone, discussed w/ co-rep & decision made to pump till latched



11:26	2.0	720.0	110.0	Slow rate
11:47		2,900.0	152.0	Bump plug. Final circulating pressure - 2450psi.
11:51				Bleed off. Plug latched, 1 1/4bbl back. Cement returns to cellar
11:55				Wash-up pumps & lines to pit
12:00				JSA, discuss rigging down & racking up equipment
12:05				Rig down & rack up equipment
12:25				JSA, discuss journey management
12:30				Depart locn
				Thanks for calling Hurricane Svcs Inc

CREW		UNIT	SUMMARY		
Cementer:	Scott Green	74	Average Rate	Average Pressure	Total Fluid
Pump Operator:	Josh Mosier	230	3.9125 bpm	928 psi	497 bbls
Bulk #1:	John Polley	194 / 254			
Bulk #2:	Kale Ochs	181 / 256			