KOLAR Document ID: 1481788

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 # 30606
Name: Murfin Drilling Co., Inc.
Address 1: 250 N WATER STE 300
Address 2:
City: WICHITA State: KS Zip: 67202 + 1216
Contact Person: Rich Pancake
Phone: (316) 267-3241
CONTRACTOR: License # 30606
Name: Murfin Drilling Co., Inc.
Wellsite Geologist: Robert Hendrix
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 #:

09/19/2019 Spud Date or Recompletion Date
09/24/2019 Date Reached TD
11/19/2019 Completion Date or Recompletion Date

API No.: 15-051-26971-00-00
Spot Description:
S2 - NE - SW - NW Sec. 27 Twp. 11 S. R. 18 ☐ East ☑ West
1905 Feet from ☑ North / ☐ South Line of Section
990 Feet from ☐ East / ☑ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☐ NE ☑ NW ☐ SE ☐ SW
GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Ellis
Lease Name: HENDERSON 'G' Well #: 7
Field Name:
Producing Formation: Arbuckle
Elevation: Ground: 2087 Kelly Bushing: 2092
Total Vertical Depth: 3711 Plug Back Total Depth: 3684
Amount of Surface Pipe Set and Cemented at: 302 Feet
Multiple Stage Cementing Collar Used? ☑ Yes ☐ No
If yes, show depth set: 1400 Feet
If Alternate II completion, cement circulated from: 1400
feet depth to: 0 w/ 245 sx cmt.

Drilling Fluid Management Plan
(Data must be collected from the Reserve Pit)
Chloride content: 33000 ppm Fluid volume: 600 bbls
Dewatering method used: Evaporated
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: 01/14/2020
☐ **Confidential Release Date:** 01/13/2022
☑ **Wireline Log Received** ☑ **Drill Stem Tests Received**
☑ **Geologist Report / Mud Logs Received**
☐ **UIC Distribution**
ALT ☐ I ☑ II ☐ III **Approved by:** Karen Ritter **Date:** 01/14/2020

Operator Name: Murfin Drilling Co., Inc. Lease Name: HENDERSON 'G' Well #: 7

Sec. 27 Twp. 11 S. R. 18 ☐ East ☑ West County: Ellis

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 *(Attach Additional Sheets)*	☑ Yes	☐ No
Samples Sent to Geological Survey	☑ Yes	☐ No
Cores Taken	☐ Yes	☑ No
Electric Log Run	☑ Yes	☐ No
Geologist Report / Mud Logs	☑ Yes	☐ No

List All E. Logs Run: Attached

☑ Log Formation (Top), Depth and Datum ☐ Sample

Name	Top	Datum
see attached	see attached	see attached

CASING RECORD ☑ New ☐ 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
Surface	12.250	8.625	23	302	Class A	250	3% CC, 2% Gel
Production	7.875	5.5	15.5	3707	H Con, H Long	200	3% Calcium, 2% Gypsum

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:
☐ Perforate
☑ Protect Casing
☐ Plug Back TD
☐ Plug Off Zone

Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
3293-3294	H-Con	10	3% cc 2% gel
3642-3643	H-Con	75	3% cc 2% gel

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: 12/03/2019

Producing Method: ☐ Flowing ☑ Pumping ☐ Gas Lift ☐ Other *(Explain)*

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
	4		212		

DISPOSITION OF GAS: ☐ Vented ☐ Sold ☐ Used on Lease *(If vented, Submit ACO-18.)*

METHOD OF COMPLETION: ☐ Open Hole ☑ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*

PRODUCTION INTERVAL:

Top	Bottom
3608	3633

Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record *(Amount and Kind of Material Used)*
4	3608	3616			
4	3630	3633			

TUBING RECORD: Size: 2.8750 Set At: 3624 Packer At:

Mail to: KCC - Conservation Division, 266 N. Main, Suite 220, Wichita, Kansas 67202

Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	HENDERSON 'G' 7
Doc ID	1481788

All Electric Logs Run

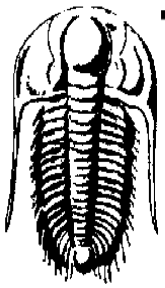
DIL
DUCP
MEL
BHCS

Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	HENDERSON 'G' 7
Doc ID	1481788

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Surface	12.250	8.625	23	302	Class A	250	3% CC, 2% Gel
Production	7.875	5.5	15.5	3707	H Con, H Long	200	3% Calcium, 2% Gypsum

	Henderson 'G' #7 1905' FNL 990' FWL Sec. 27-T11S-R18W 2092' KB					
Formation	Sample tops	Datum	Ref	Log Tops	Datum	Ref
Anhydrite	1375	+717	----	1373	+719	----
B/Anhydrite	1406	+686	----	1404	-688	----
Topeka	3047	-955	+13	3043	-951	+17
Heebner	3277	-1185	+10	3274	-1182	+13
Lansing	3321	-1229	+9	3318	-1226	+12
BKC				3552	-1460	+16
Arbuckle	3611	-1519	+13	3608	-1516	+16
RTD	3711					
LTD				3710		



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

250 N. Water
Ste. 300
Wichita, KS 67202

ATTN: Robert Hendrix

Henderson 'G' #7

27-11S-18W Ellis,KS

Start Date: 2019.09.23 @ 19:19:21

End Date: 2019.09.24 @ 03:49:12

Job Ticket #: 64498 DST #: 1

Trilobite Testing, Inc

1515 Commerce Parkway Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.09.25 @ 16:44:56

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

250 N. Water
Ste. 300
Wichita, KS 67202
ATTN: Robert Hendrix

27-11S-18W Ellis,KS

Henderson 'G' #7

Job Ticket: 64498 **DST#: 1**

Test Start: 2019.09.23 @ 19:19:21

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 22:39:42
Time Test Ended: 03:49:12

Test Type: Conventional Bottom Hole (Initial)
Tester: Brannan Lonsdale
Unit No: 73

Interval: 3611.00 ft (KB) To 3621.00 ft (KB) (TVD)
Total Depth: 3621.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

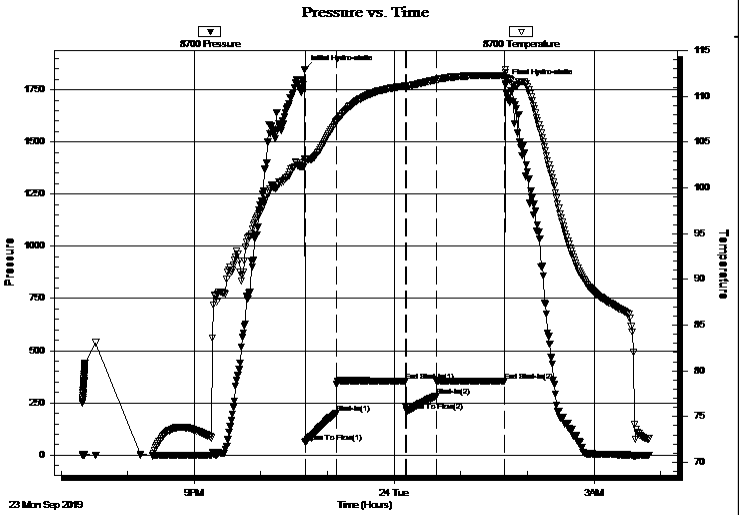
Reference Elevations: 2092.00 ft (KB)
2087.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8700 **Outside**

Press@RunDepth: 282.56 psig @ 3612.00 ft (KB)
Start Date: 2019.09.23 End Date: 2019.09.24
Start Time: 19:19:22 End Time: 03:49:12

Capacity: 8000.00 psig
Last Calib.: 2019.09.24
Time On Btm: 2019.09.23 @ 22:39:27
Time Off Btm: 2019.09.24 @ 01:39:57

TEST COMMENT: 30- IF- BOB 5mins. Built to 46.07"
60- ISI- No blow
30- FF- BOB 12mins. Built to 22.51"
60- FSI- No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1846.93	103.19	Initial Hydro-static
1	62.18	102.69	Open To Flow (1)
29	200.89	107.16	Shut-In(1)
91	355.20	111.12	End Shut-In(1)
92	211.85	111.13	Open To Flow (2)
119	282.56	111.82	Shut-In(2)
180	355.09	112.30	End Shut-In(2)
181	1777.87	112.94	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
250.00	SMW, 5%M 95%W	3.28
315.00	OCMW, 10%O 10%M 80%W	4.47
30.00	CO	0.43

Gas Rates

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

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

250 N. Water
Ste. 300
Wichita, KS 67202
ATTN: Robert Hendrix

27-11S-18W Ellis,KS

Henderson 'G' #7

Job Ticket: 64498 **DST#: 1**

Test Start: 2019.09.23 @ 19:19:21

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 22:39:42
Time Test Ended: 03:49:12

Test Type: Conventional Bottom Hole (Initial)
Tester: Brannan Lonsdale
Unit No: 73

Interval: 3611.00 ft (KB) To 3621.00 ft (KB) (TVD)
Total Depth: 3621.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

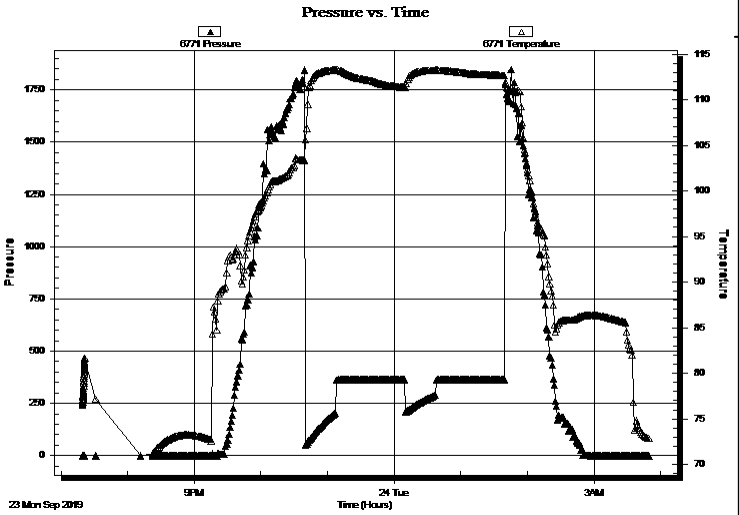
Reference Elevations: 2092.00 ft (KB)
2087.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 6771 **Inside**

Press@RunDepth: psig @ 3612.00 ft (KB)
Start Date: 2019.09.23 End Date: 2019.09.24
Start Time: 19:19:23 End Time: 03:49:13

Capacity: 8000.00 psig
Last Calib.: 2019.09.24
Time On Btm:
Time Off Btm:

TEST COMMENT: 30- IF- BOB 5mins. Built to 46.07"
60- ISI- No blow
30- FF- BOB 12mins. Built to 22.51"
60- FSI- No blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
250.00	SMW, 5%M 95%W	3.28
315.00	OCMW, 10%O 10%M 80%W	4.47
30.00	CO	0.43

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

250 N. Water
Ste. 300
Wichita, KS 67202
ATTN: Robert Hendrix

27-11S-18W Ellis,KS

Henderson 'G' #7

Job Ticket: 64498 **DST#: 1**

Test Start: 2019.09.23 @ 19:19:21

Tool Information

Drill Pipe:	Length:	3580.00 ft	Diameter:	3.82	inches	Volume:	50.75	bbl	
Heavy Wt. Pipe:	Length:	ft	Diameter:		inches	Volume:	-	bbl	
Drill Collar:	Length:	29.00 ft	Diameter:	2.25	inches	Volume:	0.14	bbl	
						Total Volume:	-	bbl	

Drill Pipe Above KB:	26.00 ft
Depth to Top Packer:	3611.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	10.00 ft
Tool Length:	38.00 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:		2500.00 lb
Weight set on Packer:		25000.00 lb
Weight to Pull Loose:		60000.00 lb
Tool Chased		0.00 ft
String Weight:	Initial	49000.00 lb
	Final	51000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			3584.00		
Shut In Tool	5.00			3589.00		
Hydraulic tool	5.00			3594.00		
Jars	5.00			3599.00		
Safety Joint	3.00			3602.00		
Packer	5.00			3607.00	28.00	Bottom Of Top Packer
Packer	4.00			3611.00		
Stubb	1.00			3612.00		
Recorder	0.00	6771	Inside	3612.00		
Recorder	0.00	8700	Outside	3612.00		
Perforations	6.00			3618.00		
Bullnose	3.00			3621.00	10.00	Bottom Packers & Anchor
Total Tool Length:	**38.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

250 N. Water
Ste. 300
Wichita, KS 67202
ATTN: Robert Hendrix

27-11S-18W Ellis,KS

Henderson 'G' #7

Job Ticket: 64498 **DST#: 1**

Test Start: 2019.09.23 @ 19:19:21

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	24 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	40000 ppm
Viscosity:	54.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	6.79 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	2600.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
250.00	SMW, 5%M 95%W	3.275
315.00	OCMW, 10%O 10%M 80%W	4.465
30.00	CO	0.425

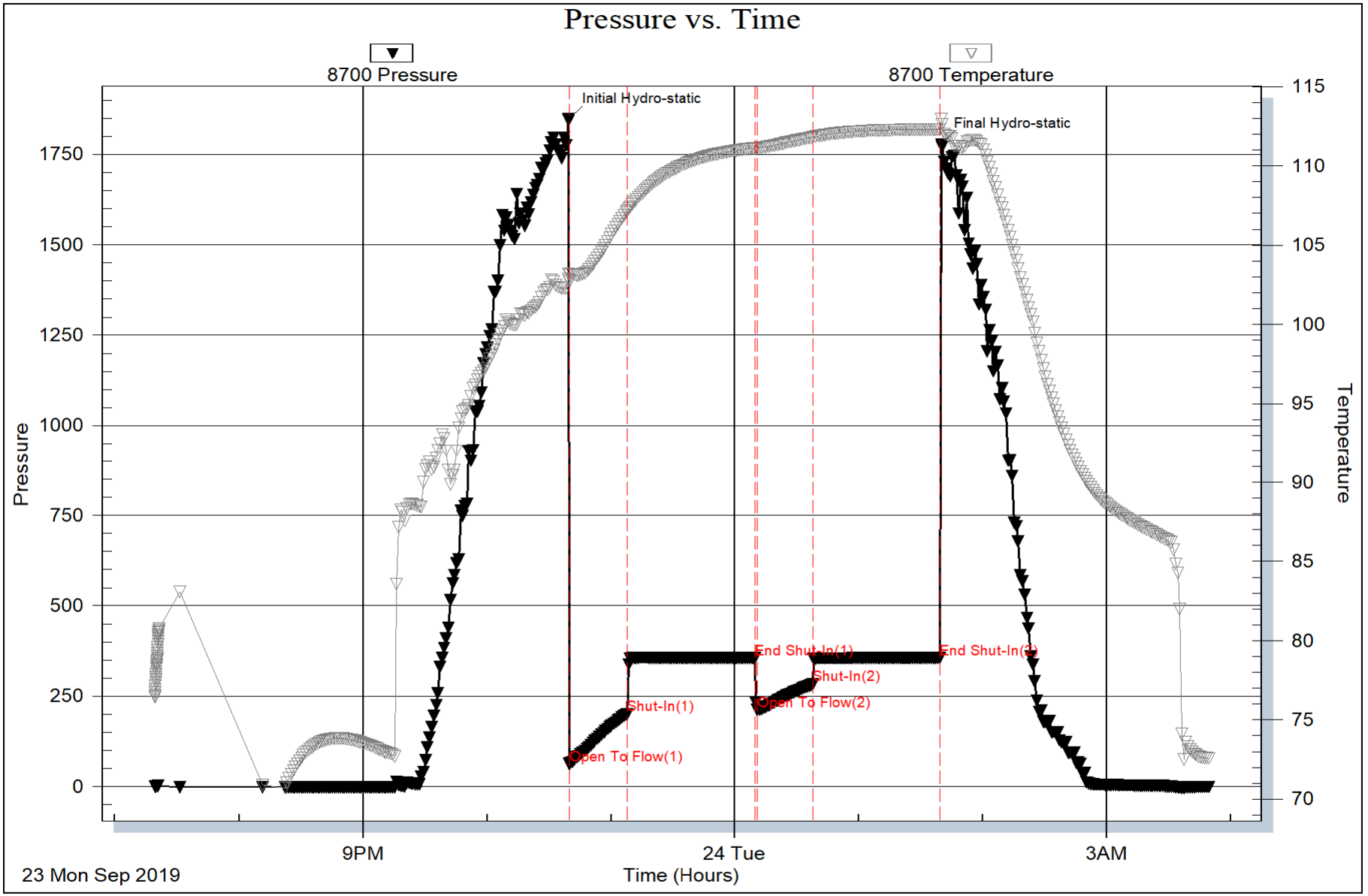
Total Length: 595.00 ft Total Volume: 8.165 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

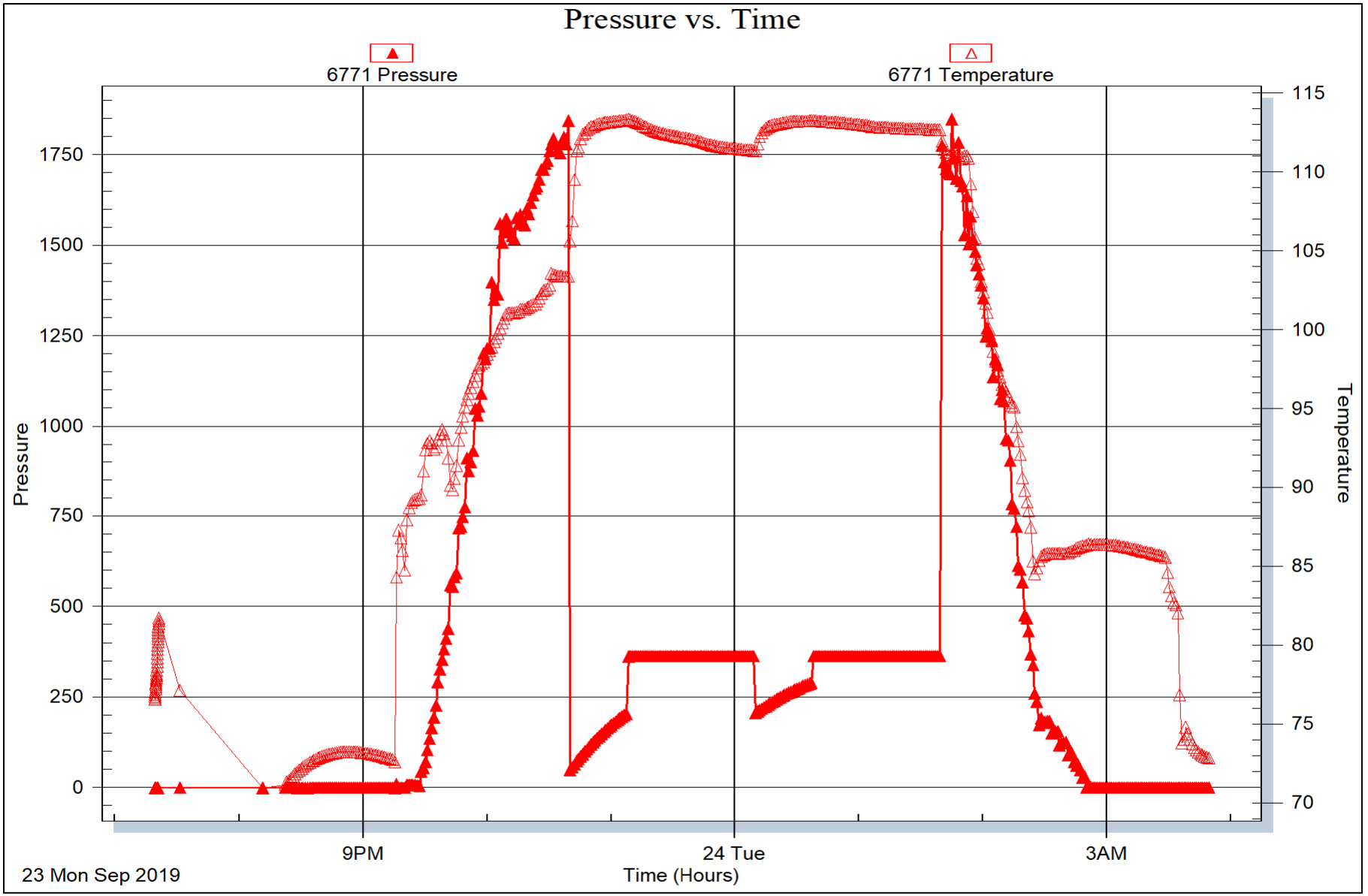
Recovery Comments: RW: .19@60deg

Serial #: 8700 **Outside** Murfin Drilling Co., Inc. Henderson 'G' #7 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 64498 Printed: 2019.09.25 @ 16:44:58

Serial #: 6771 **Inside** Murfin Drilling Co., Inc. Henderson 'G' #7 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 64498 Printed: 2019.09.25 @ 16:44:58

DRILL STEM TEST REPORT

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

250 N. Water
Ste. 300
Wichita, KS 67202

ATTN: Robert Hendrix

Henderson 'G' #7

27-11S-18W Ellis,KS

Start Date: 2019.09.24 @ 09:33:04
End Date: 2019.09.24 @ 17:26:25
Job Ticket #: 64499 DST #: 2

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

Printed: 2019.09.25 @ 16:42:45

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

250 N. Water
Ste. 300
Wichita, KS 67202
ATTN: Robert Hendrix

27-11S-18W Ellis,KS

Henderson 'G' #7

Job Ticket: 64499 **DST#: 2**

Test Start: 2019.09.24 @ 09:33:04

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 11:02:55
Time Test Ended: 17:26:25

Test Type: Conventional Bottom Hole (Reset)
Tester: Brannan Lonsdale
Unit No: 73

Interval: 3621.00 ft (KB) To 3631.00 ft (KB) (TVD)
Total Depth: 3631.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

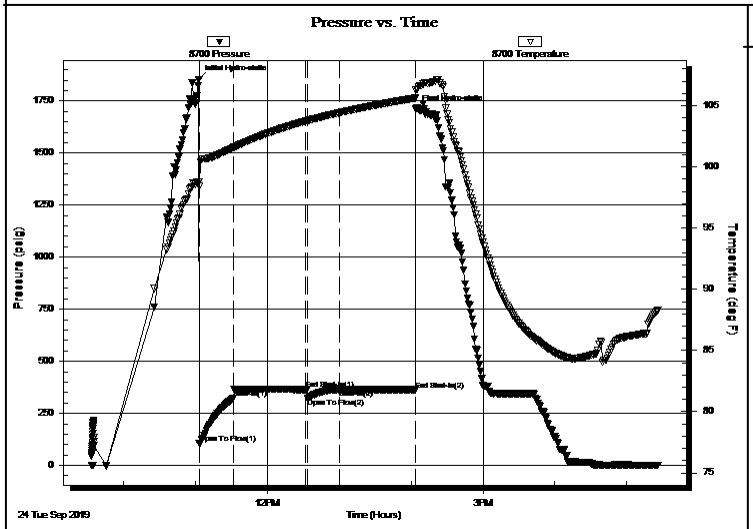
Reference Elevations: 2092.00 ft (KB)
2087.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8700 **Outside**

Press@RunDepth: 363.98 psig @ 3622.00 ft (KB)
Start Date: 2019.09.24 End Date: 2019.09.24
Start Time: 09:33:05 End Time: 17:26:25

Capacity: 8000.00 psig
Last Calib.: 2019.09.24
Time On Btm: 2019.09.24 @ 11:02:40
Time Off Btm: 2019.09.24 @ 14:03:55

TEST COMMENT: 30- IF- BOB 3 mins. Built to 76.32"
60- ISI- No blow
30- FF- BOB 14 mins. Built to 11.30"
60- FSI- No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1853.53	98.75	Initial Hydro-static
1	106.47	98.42	Open To Flow (1)
29	321.43	101.58	Shut-In(1)
90	364.33	103.74	End Shut-In(1)
91	322.61	103.78	Open To Flow (2)
118	363.98	104.45	Shut-In(2)
181	363.10	105.63	End Shut-In(2)
182	1710.62	106.28	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
380.00	SMW, 5%M 95%W	5.12
410.00	SOCMW, 5%O 5%M 90%W	5.81

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

250 N. Water
Ste. 300
Wichita, KS 67202
ATTN: Robert Hendrix

27-11S-18W Ellis,KS

Henderson 'G' #7

Job Ticket: 64499 **DST#: 2**

Test Start: 2019.09.24 @ 09:33:04

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 11:02:55
Time Test Ended: 17:26:25

Test Type: Conventional Bottom Hole (Reset)
Tester: Brannan Lonsdale
Unit No: 73

Interval: 3621.00 ft (KB) To 3631.00 ft (KB) (TVD)
Total Depth: 3631.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

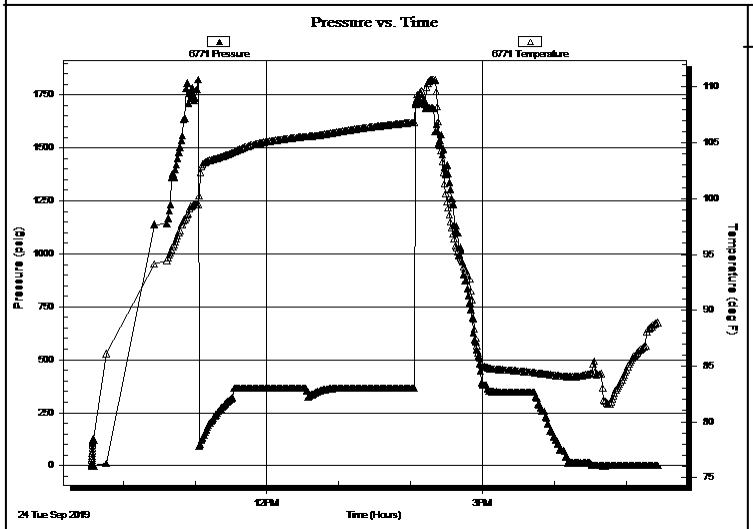
Reference Elevations: 2092.00 ft (KB)
2087.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 6771 **Inside**

Press@RunDepth: psig @ 3622.00 ft (KB)
Start Date: 2019.09.24 End Date: 2019.09.24
Start Time: 09:33:39 End Time: 17:26:44

Capacity: 8000.00 psig
Last Calib.: 2019.09.24
Time On Btm:
Time Off Btm:

TEST COMMENT: 30- IF- BOB 3 mins. Built to 76.32"
60- ISI- No blow
30- FF- BOB 14 mins. Built to 11.30"
60- FSI- No blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
380.00	SMW, 5%M 95%W	5.12
410.00	SOCMW, 5%O 5%M 90%W	5.81

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

250 N. Water
Ste. 300
Wichita, KS 67202
ATTN: Robert Hendrix

27-11S-18W Ellis,KS

Henderson 'G' #7

Job Ticket: 64499 **DST#: 2**

Test Start: 2019.09.24 @ 09:33:04

Tool Information

Drill Pipe:	Length:	3580.00 ft	Diameter:	3.82	inches	Volume:	50.75	bbl	
Heavy Wt. Pipe:	Length:	ft	Diameter:		inches	Volume:	-	bbl	
Drill Collar:	Length:	29.00 ft	Diameter:	2.25	inches	Volume:	0.14	bbl	
						Total Volume:	-	bbl	

Drill Pipe Above KB:	16.00 ft
Depth to Top Packer:	3621.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	10.00 ft
Tool Length:	38.00 ft
Number of Packers:	2
Diameter:	6.75 inches

Tool Weight:		2500.00 lb
Weight set on Packer:		25000.00 lb
Weight to Pull Loose:		56000.00 lb
Tool Chased		0.00 ft
String Weight:	Initial	50000.00 lb
	Final	53000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			3594.00		
Shut In Tool	5.00			3599.00		
Hydraulic tool	5.00			3604.00		
Jars	5.00			3609.00		
Safety Joint	3.00			3612.00		
Packer	5.00			3617.00	28.00	Bottom Of Top Packer
Packer	4.00			3621.00		
Stubb	1.00			3622.00		
Recorder	0.00	6771	Inside	3622.00		
Recorder	0.00	8700	Outside	3622.00		
Perforations	6.00			3628.00		
Bullnose	3.00			3631.00	10.00	Bottom Packers & Anchor
Total Tool Length:	**38.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

250 N. Water
Ste. 300
Wichita, KS 67202
ATTN: Robert Hendrix

27-11S-18W Ellis,KS

Henderson 'G' #7

Job Ticket: 64499 **DST#: 2**

Test Start: 2019.09.24 @ 09:33:04

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	24 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	26000 ppm
Viscosity:	60.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.20 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	3200.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
380.00	SMW, 5%M 95%W	5.118
410.00	SOCMW, 5%O 5%M 90%W	5.812

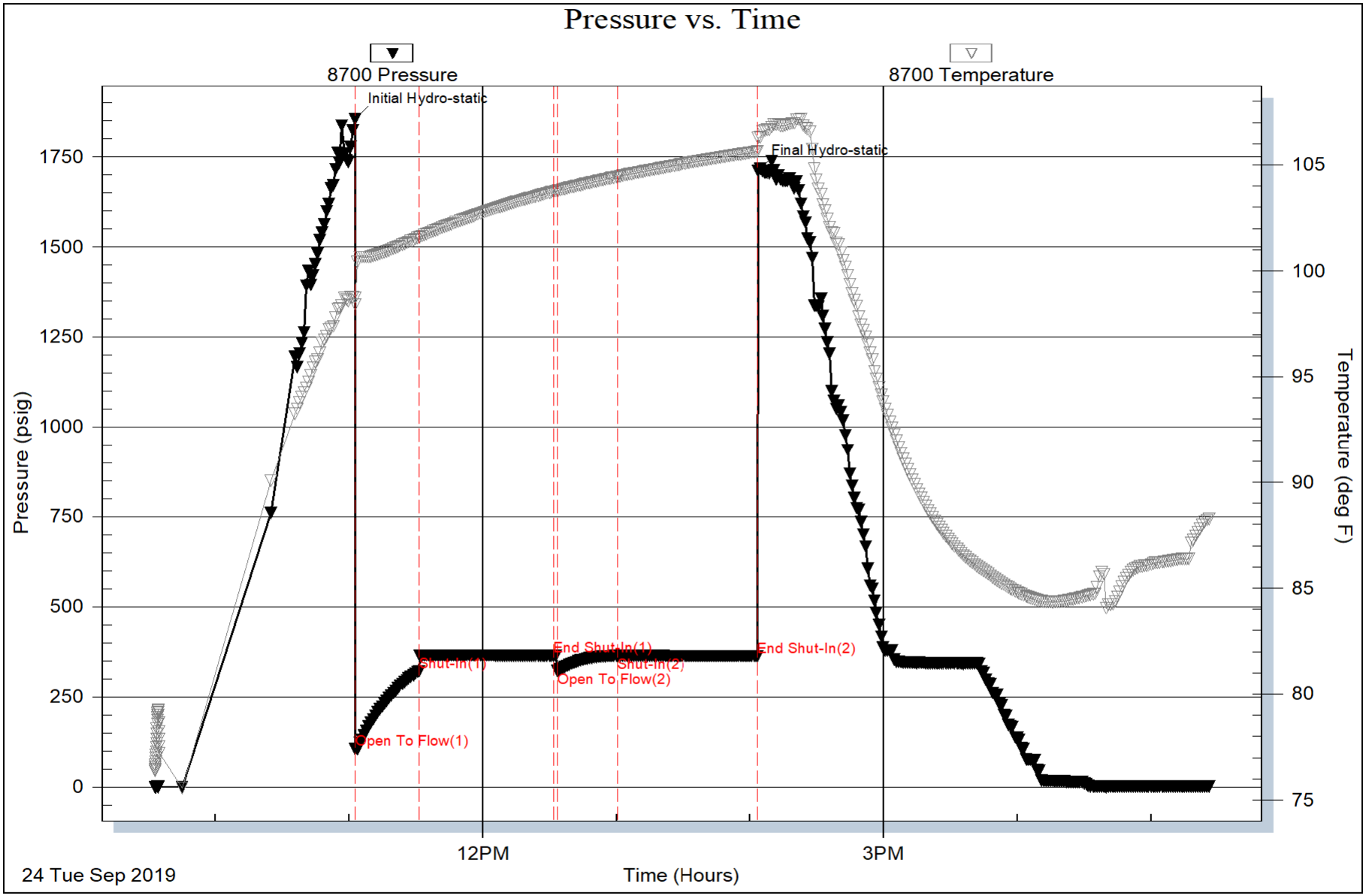
Total Length: 790.00 ft Total Volume: 10.930 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

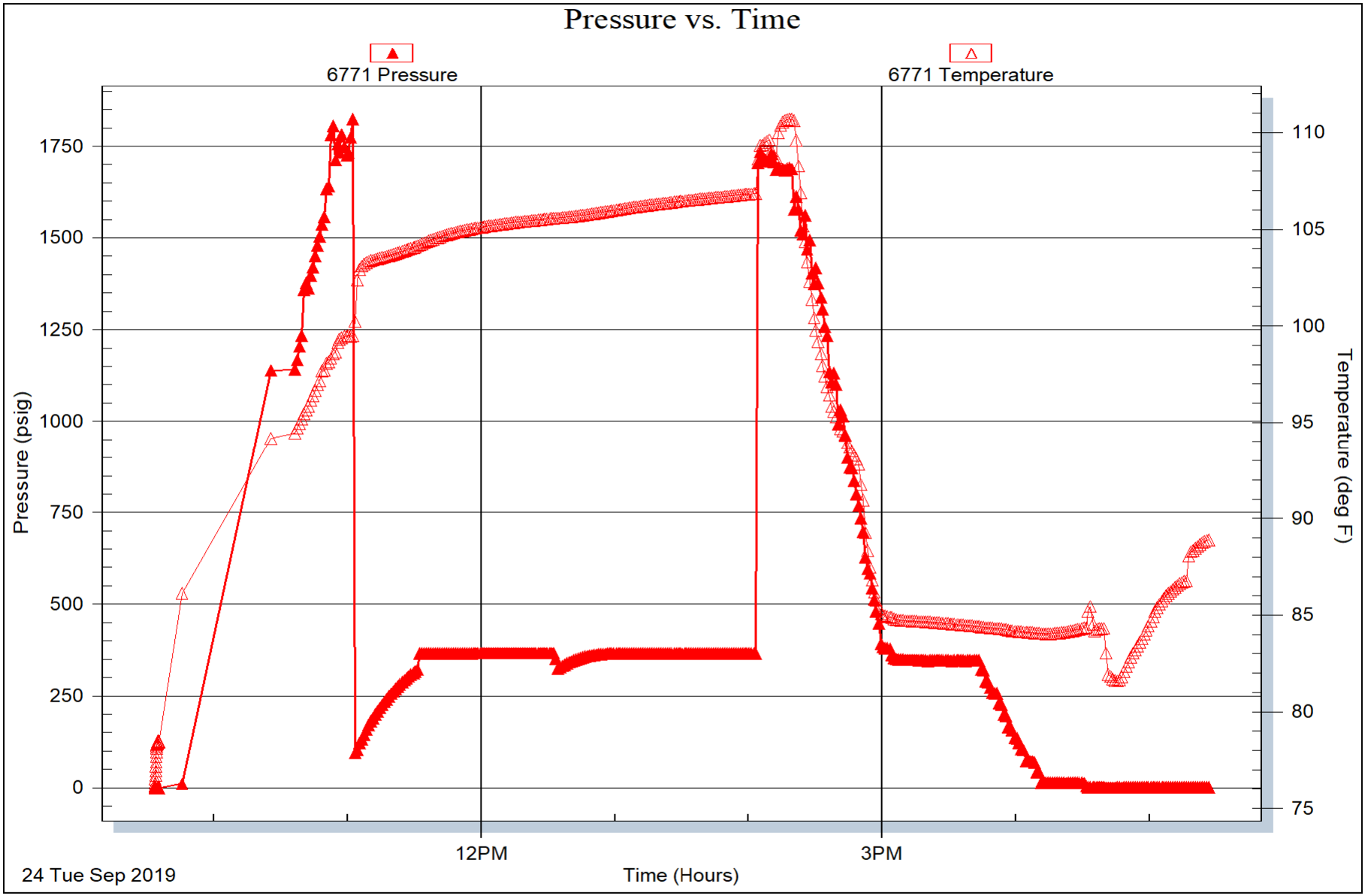
Recovery Comments: RW: .22@80deg
H2S 10-20ppm

Serial #: 8700 **Outside** Murfin Drilling Co., Inc. Henderson 'G' #7 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 64499 Printed: 2019.09.25 @ 16:42:46

Serial #: 6771 **Inside** Murfin Drilling Co., Inc. Henderson 'G' #7 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 64499 Printed: 2019.09.25 @ 16:42:46

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 64498

Well Name & No. Henderson "G" #1 Test No. 1 Date 9/23/19

Company Murfin Drilling Co, Inc. Elevation 2092 KB 2087 GL

Address 250 N. Water Ste. 300 Wichita, KS 67202

Co. Rep / Geo. Robert Hendrix Rig Murfin 16

Location: Sec. 27 Twp 11 S Rge. 18 W Co. Ellis State KS

Interval Tested 3611-3621 Zone Tested Arbuckle

Anchor Length 10' Drill Pipe Run 3580 Mud Wt. 9.0

Top Packer Depth 3606 Drill Collars Run 29 Vis 54

Bottom Packer Depth 3611 Wt. Pipe Run — WL 6.8

Total Depth 3621 Chlorides 3,600 ppm System LCM 2#

Blow Description IF- BOB 5 mins. Built to 46.07"

ISI- No Blow

FF- BOB 12 mins. Built to 22.51"

FSI- No Blow

Rec 250	Feet of SMW	%gas	%oil	95 %water	5 %mud
Rec 315	Feet of OGMW	%gas	10 %oil	80 %water	10 %mud
Rec 30	Feet of CO	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 595' BHT 112° Gravity 24 API RW .19 @ 60 °F Chlorides 40,000 ppm

(A) Initial Hydrostatic	1847	☒ Test	1200	T-On Location	1900
(B) First Initial Flow	62	☒ Jars	250	T-Started	1919
(C) First Final Flow	201	☒ Safety Joint	75	T-Open	2239
(D) Initial Shut-In	355	☐ Circ Sub		T-Pulled	0139
(E) Second Initial Flow	212	☐ Hourly Standby		T-Out	0351
(F) Second Final Flow	283	☒ Mileage	32 RT 32	Comments	
(G) Final Shut-In	355	☐ Sampler			
(H) Final Hydrostatic	1778	☐ Straddle			
		☐ Shale Packer		☐ Ruined Shale Packer	
Initial Open	30	☐ Extra Packer		☐ Ruined Packer	
Initial Shut-In	60	☐ Extra Recorder		☐ Extra Copies	
Final Flow	30	☐ Day Standby		Sub Total	0
Final Shut-In	60	☐ Accessibility		Total	1557
		Sub Total	1557	MP/DST Disc't	

Approved By _____ Our Representative Brannon Goodale

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 64499

Well Name & No. Henderson 'G' #7 Test No. 2 Date 9/24/19

Company Murfin Drilling Coy Inc. Elevation 2092 KB 2087 GL

Address 250 N. Water Ste. 300 Wichita, KS 67202

Co. Rep / Geo. Robert Hendrix Rig Murfin 16

Location: Sec. 27 Twp 11 S Rge. 18 W Co. Ellis State KS

Interval Tested 3621-3631 Zone Tested Arbuckle

Anchor Length 10' Drill Pipe Run 3580 Mud Wt. 9.2

Top Packer Depth 3616 Drill Collars Run 29 Vis 60+

Bottom Packer Depth 3621 Wt. Pipe Run WL 7.2

Total Depth 3631 Chlorides 3,200 ppm System LCM 8#

Blow Description IF- BOB 3mins. Built to 76.32"

ISI- No blow

FF- BOB 14 mins. Built to 11.30"

FSI- No blow

Rec 380	Feet of SMW	%gas	%oil 95	%water 5	%mud
Rec 410	Feet of SOCMW	%gas 5	%oil 90	%water 5	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 790' BHT 106° Gravity 24 API RW .22 @ 80 °F Chlorides 26,000 ppm

(A) Initial Hydrostatic	1854	☒ Test	T-On Location 0921
(B) First Initial Flow	106	☒ Jars	T-Started 0933
(C) First Final Flow	321	☒ Safety Joint	T-Open 1102
(D) Initial Shut-In	364	☐ Circ Sub	T-Pulled 1402
(E) Second Initial Flow	323	☐ Hourly Standby	T-Out 1728
(F) Second Final Flow	364	☒ Mileage 32RT	Comments
(G) Final Shut-In	364	☐ Sampler	
(H) Final Hydrostatic	1711	☐ Straddle	
		☐ Shale Packer	☐ Ruined Shale Packer
Initial Open	30	☐ Extra Packer	☐ Ruined Packer
Initial Shut-In	60	☐ Extra Recorder	☐ Extra Copies
Final Flow	30	☐ Day Standby	Sub Total
Final Shut-In	60	☐ Accessibility	Total
		Sub Total	MP/DST Disc't

Approved By Our Representative Brannan Lonsdale

Robert D. Hendrix

Petroleum Geologist

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY Murfin Drilling Co. Inc.
LEASE Henderson 'G' #7
FIELD Bemis-Schutts
LOCATION 1905' fnl & 990' fwl
SEC 27 TWSP 11s RGE 18w
COUNTY Ellis STATE Kansas
CONTRACTOR Murfin Drilling Co. Inc. Rig #16
SPUD 9/19/2019 COMP 9/26/2019
RTD 3710' LTD 3711'
MUD UP 2800' TYPE MUD Chemical

SAMPLES SAVED FROM 3000' TO TD
DRILLING TIME KEPT FROM 3000' TO TD
SAMPLES EXAMINED FROM 3000' TO TD
GEOLOGICAL SUPERVISION FROM 2919'
GEOLOGIST ON WELL Robert D. Hendrix

ELEVATIONS

KB 2092'
DF
GL 2087'
Measurements Are All From Kelly Bushing

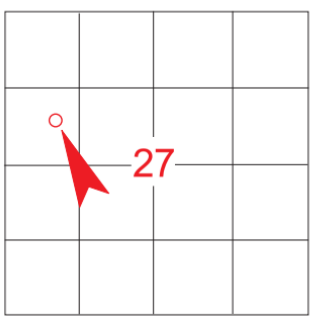
CASING

CONDUCTOR
SURFACE 8-5/8" at 302'
PRODUCTION

ELECTRICAL SURVEYS

Dual Comp Porosity / Dual Induction
Micro / Sonic Pioneer Wireline

FORMATION TOPS	ELECTRIC LOG	SAMPLE
Anhydrite	1366 (+726)	1377 (+726)
Topeka	3043 (-951)	3047 (-955)
Heebner	3273 (-1181)	3277 (-1185)
Lansing	3318 (-1226)	3321 (-1229)
BKC	3552 (-1460)	3560 (-1468)
Arbuckle	3607 (-1515)	3611 (-1519)



API# 15-051-26971

REMARKS:

LEGEND

Anhydrite Sandstone Limestone Shale Carb Sh Cherty LS Chert Dolomite

DRILLING TIME IN MINUTES PER FOOT

Rate of Penetration Decreases

5 10 15

DEPTH

LITHOLOGY

Drill Stem Tests

Hydrocarbon Shows

EX - SL

SAMPLE DESCRIPTION

REMARKS

1350

1400

1450

3000

Anhydrite 1377 (+715)

Base Anhydrite 1409 (+683)

Geologist on location 2919' at 2:45am 9/22/2019

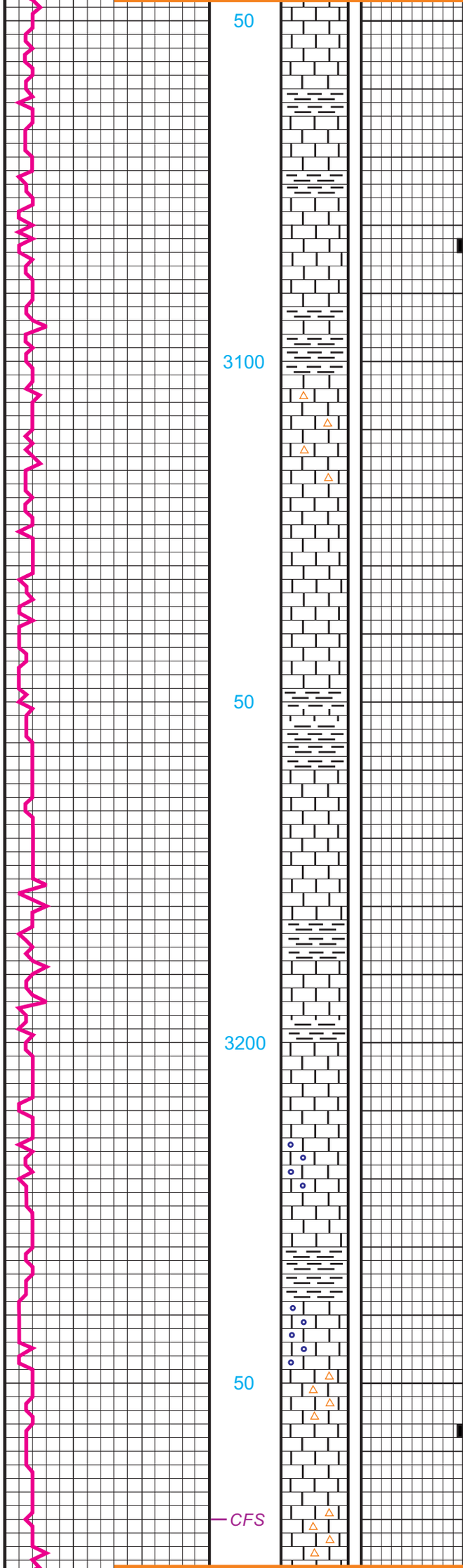
Shale: gray, green, micaceous, soft

Shale: gray, green, micaceous, soft

Limestone: tan, f-xln, chalky, fossiliferous, no vis por

Shale: gray, green, black, mineral rich, soft

Topeka



Limestone: tan, f-mxln, sl chalky, oolitic in part, fossiliferous, no vis por

wt 8.8, vis. 61, lcm 4#
Mud-Co, Gary Schmidtberger

Limestone: tan to gray, f-xln, sl chalky, mostly dense, fossiliferous, no vis por, sl surface stain, nfo, no odor

Shale: lt to dark gray, soft, silty

Limestone: tan, f-xln, chalky, granular, fossiliferous, 3 pieces pr interxln por, lt sat stain, slsfo, faint odor

Shale: dark gray, black

Limestone: tan, f-xln, chalky, granular, fossiliferous, no vis por

Shale: gray, green, silty

Limestone: tan to lt gray, f-xln, sl cherty, fossiliferous, no vis por

8:00am, 9/22/2019

Limestone: tan to lt gray, f-xln, sl cherty, fossiliferous, no vis por

Limestone: tan, f-xln, sl chalky, granular, v-fossiliferous, no vis por

Limestone: tan, f-xln, sl chalky, granular, v-fossiliferous, pr interxln por

Shale: gray, green, silty

Limestone: tan, f-mxln, chalky, fossiliferous, no vis por

Limestone: tan to gray, f-lxln, chalky, granular, v-fossiliferous, fr interxln por, ns

Shale: lt to dark gray, silty

Limestone: white to tan, f-mxln, sl chalky, fossiliferous, no vis por

Shale: gray, silty

Limestone: white to tan, f-mxln, sl chalky, dense, fossiliferous, no vis por

Limestone: tan to gray, f-lxln, chalky, granular, oolitic in part, fossiliferous, no vis por, ns

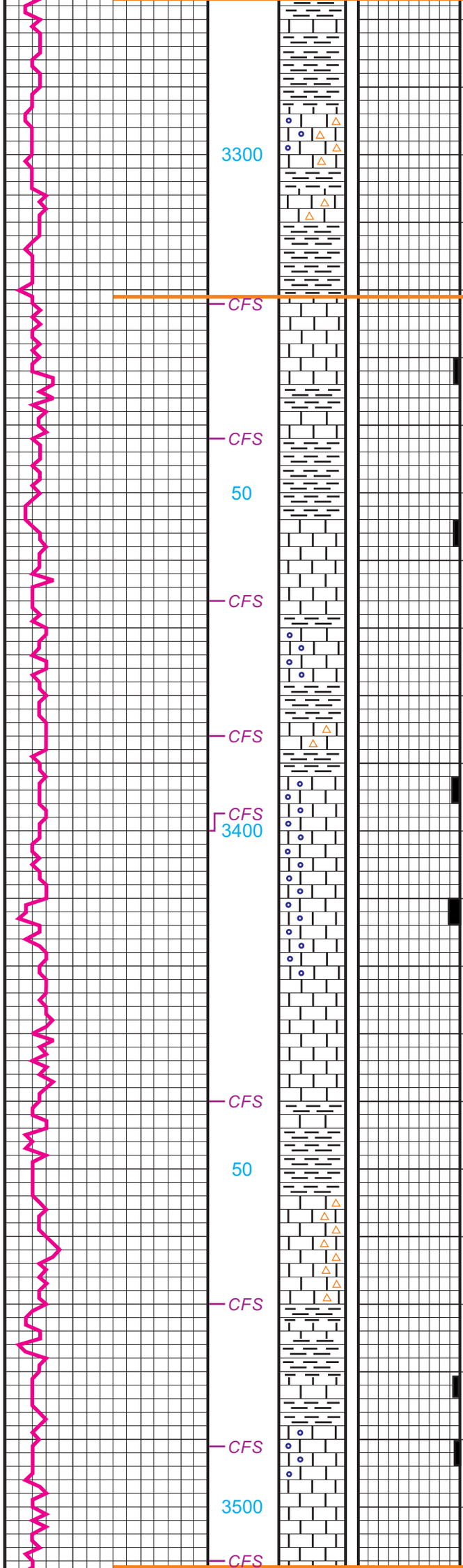
Shale: black, gray, sl red, blocky

Limestone: tan to lt gray, m-xln, oolitic in part, v-fossiliferous, pr interxln por, ns

Limestone: tan, f-xln, cherty, granular, fossiliferous, no vis por, ns

Limestone: tan, f-xln, chalky, dense, fossiliferous, no vis por, few pieces pr lt to dark stain, slsfo on break, no odor

Limestone: tan to white, f-xln, cherty, v-chalky, granular, fossiliferous, no vis por, ns



Shale: Black Carbonaceous

3277 (-1185)

Limestone: brown, f-xln, dense, fossiliferous, no vis por

Shale: gray, green, red, soft, muddy

Limestone: tan, f-xln, chalky, cherty, oolitic in part, dense, fossiliferous, sparry calcite, no vis por, few pieces dark surface stain, nfo, no odor

Shale: gray, green, red

Lansing
3321 (-1229)

Limestone: tan to lt gray, f-mxln, sl chalky, dense, fossiliferous, no vis por, black surface stain, nfo, no odor

Shale: gray, green,silty

Limestone: tan, f-mxln, dense in part, fossiliferous, pr vug por, dark sat stain, slsfo on break, no odor

Shale: gray, green,soft, silty

Limestone: tan, f-xln, granular, sl fossiliferous, pr pp por, a few pieces dark sat stain, v-slsfo on break, faint odor

Shale: gray, green, red

Limestone: white to tan, f-mxln, chalky, dense, oolitic, fossiliferous, no vis por

Shale: black, gray, blocky

Limestone: tan to white, f-xln, cherty, fossiliferous, no vis por

Shale: gray, green, red, blocky

Limestone: tan to white, mxln, sl chalky, oolitic, gd oolicastic por, lt sat stain, frsfo, strong odor

Limestone: tan to white, mxln, sl chalky, oolitic, fr oolicastic por, lt sat stain, prsfo, strong odor

Limestone: white to tan, f-xln, sl chalky, dense, sl fossiliferous, no vis por

Shale: black

Shale: gray, red, blocky

Limestone: tan to white, f-xln, cherty, dense, sl fossiliferous, no vis por

wt 9.0, vis. 54, lcm 2#
Mud-Co, Gary Schmidtberger

Shale: gray, green, red, brown, silty

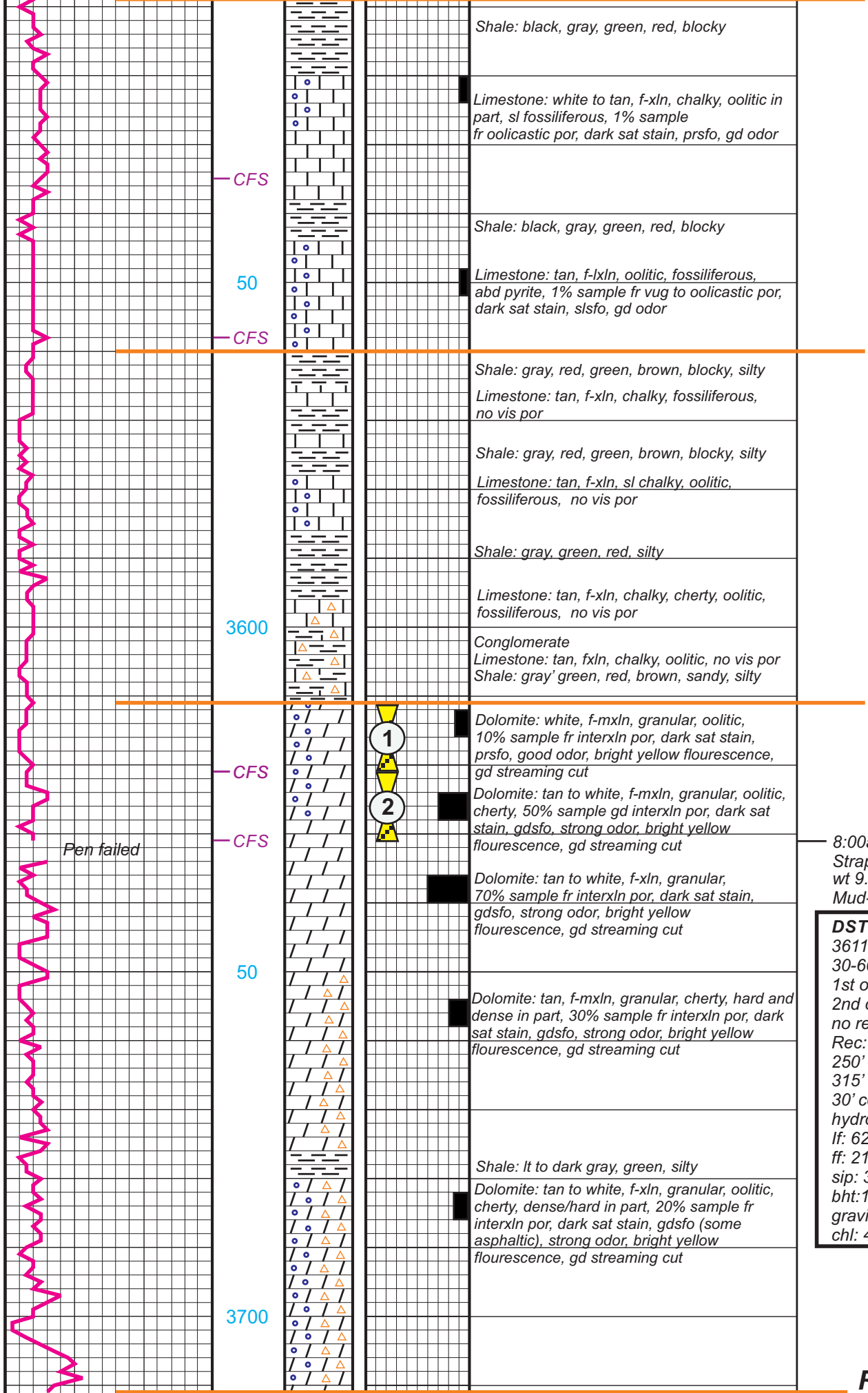
Limestone: tan to white, f-mxln, chalky, cherty, oolitic in part, 4 pieces pr oolicastic por, dark sat stain, slsfo on break, faint odor

Shale: gray, red, green, silty

Limestone: tan, f-xln, chalky, oolitic in part, 5-6 pieces pr interxln por, lt sat stain, nfo, no odor

8:00am, 9/23/2019

Stark Shale



3509 (-1417)

Shale: black, gray, green, red, blocky

Limestone: white to tan, f-xln, chalky, oolitic in part, sl fossiliferous, 1% sample fr oolicastic por, dark sat stain, prsfo, gd odor

Shale: black, gray, green, red, blocky

Limestone: tan, f-lxln, oolitic, fossiliferous, abd pyrite, 1% sample fr vug to oolicastic por, dark sat stain, slsfo, gd odor

BKC
3560 (-1468)

Shale: gray, red, green, brown, blocky, silty

Limestone: tan, f-xln, chalky, fossiliferous, no vis por

Shale: gray, red, green, brown, blocky, silty

Limestone: tan, f-xln, sl chalky, oolitic, fossiliferous, no vis por

Shale: gray, green, red, silty

Limestone: tan, f-xln, chalky, cherty, oolitic, fossiliferous, no vis por

Conglomerate
Limestone: tan, fxln, chalky, oolitic, no vis por
Shale: gray' green, red, brown, sandy, silty

Arbuckle
3611 (-1519)

Dolomite: white, f-mxln, granular, oolitic, 10% sample fr interxln por, dark sat stain, prsfo, good odor, bright yellow flourescence, gd streaming cut

Dolomite: tan to white, f-mxln, granular, oolitic, cherty, 50% sample gd interxln por, dark sat stain, gdsfo, strong odor, bright yellow flourescence, gd streaming cut

Dolomite: tan to white, f-xln, granular, 70% sample fr interxln por, dark sat stain, gdsfo, strong odor, bright yellow flourescence, gd streaming cut

Dolomite: tan, f-mxln, granular, cherty, hard and dense in part, 30% sample fr interxln por, dark sat stain, gdsfo, strong odor, bright yellow flourescence, gd streaming cut

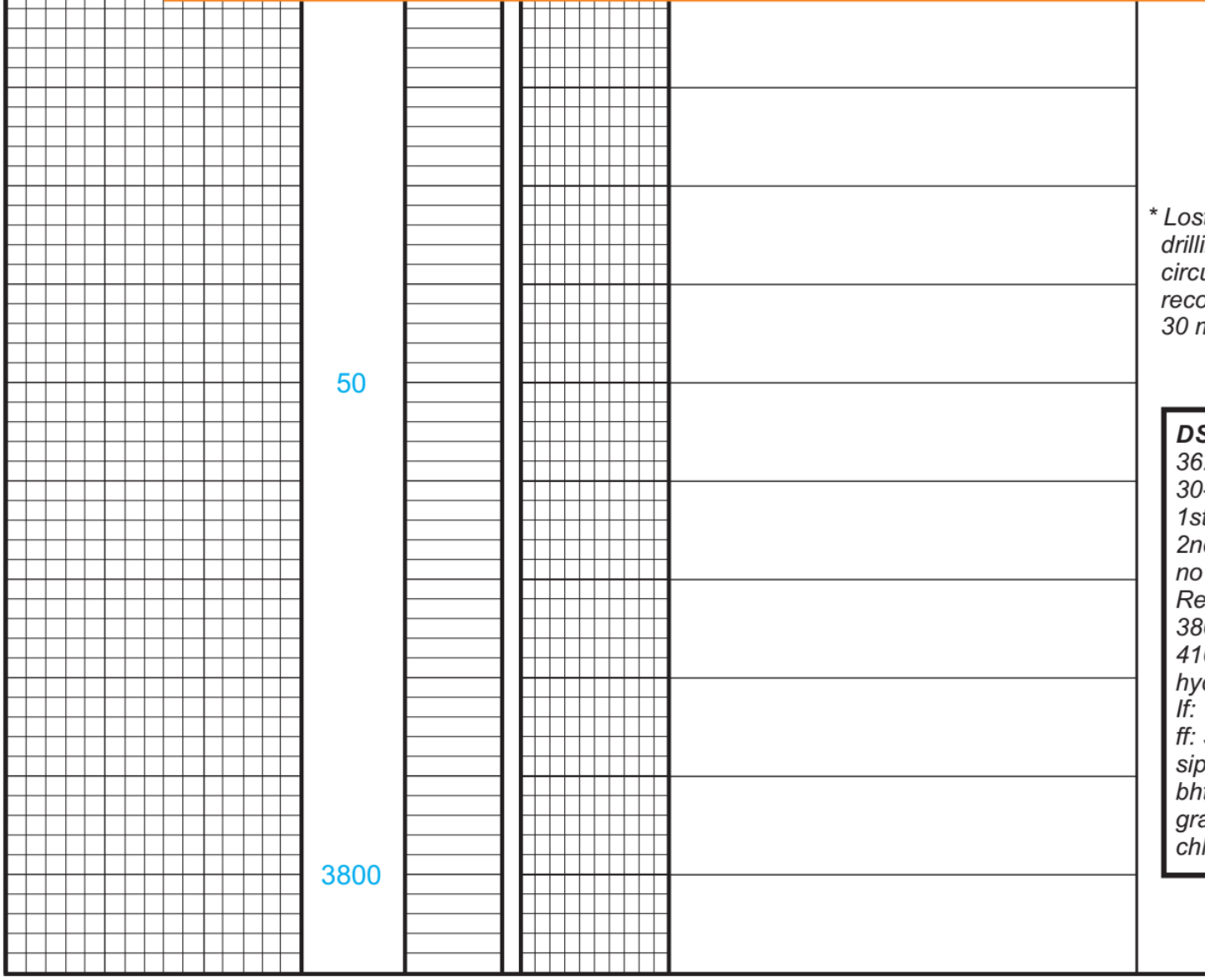
Shale: lt to dark gray, green, silty

Dolomite: tan to white, f-xln, granular, oolitic, cherty, dense/hard in part, 20% sample fr interxln por, dark sat stain, gdsfo (some asphaltic), strong odor, bright yellow flourescence, gd streaming cut

8:00am, 9/24/2019
Strap 1.06' short to board
wt 9.2, vis. 60+, lcm 8#
Mud-Co, Gary Schmidtberger

DST #1
3611-3621
30-60-30-60
1st open: bob 5 min
2nd open: bob 12 min
no returns
Rec:
250' smw 5/95
315' ocmw 10/10/80
30' co
hydro: 1847-1778 psi
If: 62-201 psi
ff: 212-283 psi
sip: 355-355 psi
bht:112° F
gravity: 24°
chl: 40,000 ppm

RTD



3711 (-1619)

8:00am, 9/25/2019
Geologist off location
at 9:30am, 9/25/2019
wt 9.2, vis. 57, lcm 10#
Mud-Co, Gary Schmidtberger

** Lost Circulation at TD right after the drilling stopped and we began circulation. Ran in a tank and recovered circulation approximately 30 min after the loss began.*

DST #2
3621-3631
30-60-30-60
1st open: bob 3 min
2nd open: bob 14 bob
no returns
Rec:
380' smw 5/95
410' socmw 5/5/90
hydro: 1854-1711 psi
lf: 106-321 psi
ff: 323-364 psi
sip: 364-364 psi
bht: 106 F
gravity: 24
chl: 26,000 ppm

Murfin Drilling Co. Inc.
Henderson 'G' #7
1905'fnl & 990'fwl
27-11s-18w, Ellis County, Kansas
KB=2092', GL=2087'
API: 15-051-26971

CEMENT TREATMENT REPORT

Customer:	Murfin Drilling CO	**Well:**	Henderson G #7	**Ticket:**	ICT2424 3434
City, State:		**County:**	Ellis KS	**Date:**	9/19/2019
Field Rep:	Andy Dinkel	**S-T-R:**	27/11S/18W	**Service:**	Surface

Downhole Information	
Hole Size:	12 1/4 in
Hole Depth:	304 ft
Casing Size:	8 5/8 in
Casing Depth:	302 ft
Tubing / Liner:	in
Depth:	ft
Tool / Packer:	
Depth:	ft
Displacement:	18.0 bbls

Calculated Slurry	
Weight:	14.8 # / sx
Water / Sx:	6.88 gal / sx
Yield:	1.41 ft^3 / sx
Bbls / Ft.:	0.0637
Depth:	302 ft
Annular Volume:	63 bbls
Excess:	120%
Total Slurry:	63.0 bbls
Total Sacks:	250 sx

Product	% / #	#
Class A	100%	23500
Poz		
Gel	2%	470
CaCl	3%	705
Gypsum		
Metso		
Kol Seal		
Flo Seal	.25 #	63
Salt (bww)		
	Total	

TIME	RATE	PSI	BBLs	REMARKS
8:45 PM				Arrive on location
8:55 PM				Safety meeting
9:00 PM				Rig up
9:15 PM				Waiting
11:15 PM				Run Casing
12:00 AM				Break Circulation
12:30 AM	3.5	190.0	63.0	Mix 250 sks
12:40 AM	3.5	180.0	18.0	Displace
12:45 AM		300.0		Shut in well
1:00 AM				Rig down equipment
1:15 AM				Depart

	CREW	UNIT
Cementer:	Walt	86
Pump Operator:	Jesse	230
Bulk #1:	Corey	294
Bulk #2:		

SUMMARY		
Average Rate	Average Pressure	Total Fluid
3.6 bpm	223 psi	81 bbls

Hurricane Services, Inc.
250 N. Water
Wichita, KS 67202

CEMENT TREATMENT REPORT

Customer:	Murfin Drilling Co	Well:	Henderson 'G' #7	Ticket:	ICT2463
City, State:	Wichita, KS	County:	Ellis, KS	Date:	9/26/2019
Field Rep:	Craig Hutchison	S-T-R:	Sec27 - T11S - R18W	Service:	DV Production

Downhole Information	
Hole Size:	7.875 in
Hole Depth:	3711 ft
Casing Size:	5.5 in
Casing Depth:	3710 ft
Tubing / Liner:	in
Depth:	ft
Tool / Packer:	DV Tool
Depth:	1400 ft
Displacement:	bbls

Calculated Slurry	
Weight:	12.00 # / sx
Water / Sx:	15.46 gal / sx
Yield:	2.56 ft^3 / sx
Bbls / Ft.:	0.0309
Depth:	ft
Annular Volume:	0 bbls
Excess:	
Total Slurry:	0.0 bbls
Total Sacks:	325 sx

Product	% / #	#
Class A	100.00	30550
Poz		
CaCl	3.00	917
Gypsum	2.00	611
Metso Beads	2.00	611
CAL-160		
Kol Seal		
PhenoSeal	0.25	81
Salt (bww)		
	Total	32,770

Calculated Slurry	
Weight:	14.8 # / sx
Water / Sx:	6.61 gal / sx
Yield:	1.50 ft^3 / sx
Bbls / Ft.:	0.0309
Depth:	ft
Annular Volume:	0 bbls
Excess:	
Total Slurry:	0.0 bbls
Total Sacks:	150 sx

Product	% / #	#
Class A	100.00	14100
Poz		
Gel	1.00	141
CAF-38	0.25	35
Gypsum	5.00	705
CAL-160	0.60	85
Kol Seal	5.00	750
Flo Seal		
Salt (bww)	10.00	825
	Total	16,641

TIME	RATE	PSI	BBLs	REMARKS
9:00				Call Out
13:30				Depart Oakley, KS
15:30				Arrive on locn. Rigging up casing crew
16:10				Start to RIH w/ 5 1/2" casing
16:30				Pump & bulk on locn
17:30				Make up DV tool
18:00				Casing @ setting depth
18:20		400.0		Circulate & condition hole
19:20	4.0	250.0	5.0	Pump water spacer
19:21		3,000.0		Pressure test
19:23	2.5	190.0	10.0	Pump mudflush spacer
19:26	2.5	180.0	5.0	Pump water spacer
19:28	5.0	300.0	23.0	Mix & pump 50sx lead cement @ 12.0ppg. Y - 2.56cuft/sk; MR - 15.46g/sk
19:33	4.0	180.0	40.0	Mix & pump 150sx tail cement @ 14.8ppg. Y - 1.5cuft/sk; MR - 6.61g/sk
19:45				Shutdown. Wash-up pumps & lines. Load first stage shut-off dart
19:51	6.0	170.0		Displace w/ water & mud
20:00	6.0	670.0	60.0	Start mud
20:05	2.5	600.0	80.0	Slow rate
20:08		960.0	87.0	Bump plug. Final circulating pressure - 350psi
20:10				Bleed off. 1/2bbl back
20:12				Drop shifting tool & preload shutoff plug

Hurricane Services, Inc.
250 N. Water
Wichita, KS 67202

20:32		710.0		Pressure up & open DV tool w/ 710psi
20:33	4.0	100.0	10.0	Confirm tool open
20:37				Rig continues to circulate condition hole
21:36			13.0	Plug rathole w/ 30sx @ 12.0ppg
21:42	6.0	270.0	111.0	Mix & pump 245sx cement @ 12.0ppg. Y - 2.56cuft/sk; MR - 15.46g/sk
22:00				Release shutoff plug
22:06	5.5	280.0		Displace w/ water
22:12	3.0	330.0	20.0	Slow rate
22:14		1,730.0	33.0	Bump plug. Final circulating pressure - 400psi
22:16				Bleed off. 1/4bbl back
22:20				Wash-up pumps & lines
22:35				Rig down & rack up equipment
23:00				Depart locn
				Note: Circulated 10bbls good cement to surface
				Thanks for calling Hurricane Services Inc.

CREW		UNIT
Cementer:	Scott Green	74
Pump Operator:	Michael Rebarchek	230
Bulk #1:	Neil White	194 / 254
Bulk #2:	John Polley	181 / 266

SUMMARY		
Average Rate	Average Pressure	Total Fluid
4.25 bpm	670 psi	444 bbls

Hurricane Services, Inc.
250 N. Water
Wichita, KS 67202

CEMENT TREATMENT REPORT

Customer:	MDC	Well:	Henderson G7	Ticket:	ICT 2696
City, State:		County:	Ellis, KS	Date:	11/1/2019
Field Rep:	Craig H.	S-T-R:		Service:	Squeeze

Downhole Information	
Hole Size:	in
Hole Depth:	ft
Casing Size:	5.5 in
Casing Depth:	ft
Tubing / Liner:	2.875 in
Depth:	ft
Tool / Packer:	3632
Depth:	ft
Displacement:	bbls

Calculated Slurry	
Weight:	12.6 # / sx
Water / Sx:	12.86 gal / sx
Yield:	2.24 ft^3 / sx
Bbls / Ft.:	0.0309
Depth:	350 ft
Annular Volume:	10.815 bbls
Excess:	
Total Slurry:	33.9 bbls
Total Sacks:	85 sx

Product	% / #	#
Class A	100.00	7990
Poz		
Gel	2.00	160
CaCl	3.00	240
Gypsum	2.00	160
Metso	2.00	160
Kol Seal		
Flo Seal	0.25	20
Salt (bww)		
	Total	8,729

TIME	RATE	PSI	BBLs	REMARKS
8:30 AM				On location safety meeting. Spot in and rig up. Wait on rig crew.
9:18 AM	2.3	750.0	20.0	Packer set at 3180'. Pump water and clear annular of casing and hole. Held 260 PSI. Release back 1 BBL water
9:33 AM				Pull tubing out of hole and remove packer. Run back in with stinger for retainer
12:36 PM	1.8	750.0	20.0	Sting into retainer. Get injection rate
1:05 PM	1.3	150.0	29.9	Mix and pump 75 sacks H-Con cement @ 12.6 PPG
1:24 PM				25 BBL into cement pressure increase to 750 PSI
1:30 PM	3.0	50.0	10.0	Stop cement and wash pump and lines.
1:37 PM	1.3	500.0		Start displacement. 4.6 BBL into displacement catch cement and pressure increase
	0.5	1,000.0	20.0	Pressure slowly increase throughout displacement. Rate slowed to .5 BPM @ 1000 PSI
				20 BBL out (1 BBL short of full displacement) stop. Get ready to unsting from retainer and reverse out.
2:03 PM	2.5	350.0	60.0	Reverse out 60 BBL water the short way. 2.5 BBL cement to surface.
				Pull tubing out of hole and run back in with packer
5:10 PM				Packer set at 3180'. Get an injection rate. Pressure up to 1000# and slowly bleed off
5:25 PM	2.5	50.0	4.0	Reset packer at 3319' and spot 10 sack H-Con plug = 185' plug
5:35 PM	3.0	275.0	32.0	Pull tubing 2890' and reverse out to clean up around packer
6:14 PM	0.5	1,000.0	0.5	Pull one joint and set packer. Start staging in cement. Wait 30 min. Pressure to 1000 slowly bleed off
6:44 PM	0.3	1,000.0	0.2	Start pumping. Pressures up and holds 1000 PSI
6:50 PM				Shut well in with 760 PSI
				Rig down and leave location. Thanks

	CREW	UNIT
Cementer:	Kevin	765
Pump Operator:	Garrett S	241
Bulk #1:	Jake H	77
Bulk #2:		

SUMMARY		
Average Rate	Average Pressure	Total Fluid
1.71818 bpm	534 psi	197 bbls

Hurricane Services, Inc.
250 N. Water
Wichita, KS 67202

CEMENT TREATMENT REPORT

Customer:	MDC	Well:	Henderson G7	Ticket:	ICT 2748
City, State:		County:	Ellis, KS	Date:	11/8/2019
Field Rep:	Craig H.	S-T-R:		Service:	Squeeze

Downhole Information	
Hole Size:	in
Hole Depth:	ft
Casing Size:	5.5 in
Casing Depth:	ft
Tubing / Liner:	2.875 in
Depth:	3539 ft
Tool / Packer:	3539
Depth:	3539 ft
Displacement:	20.5 bbls

Calculated Slurry	
Weight:	15 # / sx
Water / Sx:	6.16 gal / sx
Yield:	1.30 ft^3 / sx
Bbls / Ft.:	0.0158
Depth:	350 ft
Annular Volume:	5.53 bbls
Excess:	
Total Slurry:	16.3 bbls
Total Sacks:	50 sx

Product	% / #	#
Class A	100.00	7990
Poz		
Gel	1.00	80
CaCl	-	
Gypsum	-	
Metso	-	
Kol Seal		
Flo Seal	-	
Salt (bww)		
	Total	8,070

TIME	RATE	PSI	BBLs	REMARKS
8:45 AM				On location safety meeting. Spot in and rig up. Get packer set @ 3539' Perforation @ 3648-3653. 109' of casing
10:00 AM	2.0	500.0	23.3	Load backside 23.25 BBL pressure up to 500 PSI.
10:35 AM	1.2	1,200.0	10.0	Get injection rate of 1.2 BPM at 1200 PSI. Pump 10 BBL total
10:45 AM	-			Blend up 20 sacks microfine cement. Cement to weight in tub. Mix calcium water for Class A Cement
11:00 AM	1.5	900.0	16.3	Pump microfine cement and mix and pump 50 sacks class A with 1% CC
11:30 AM				Stop. Wash up truck and lines for displacement.
11:38 AM	1.0	1,140.0	12.0	Start displacement. Catch cement @ 8 BBL out 1140 PSI. Pressure continues to climb. 11.5 BBL 1700 PSI.
11:45 AM				Wait for 15 MIN
12:00 PM	0.3	1,700.0	0.1	Pressure up to 1700 and bleeds off slowly. Wait 10 Min
12:10 PM	0.3	1,700.0	0.1	Pressure up to 1700 and holds pressure.
12:20 PM				Get set to reverse out short way
12:45 PM	4.0	650.0	42.0	Pressure up to 1350 and continues to lower as we go. Pumped total of 42 BBL ending @ 450 PSI @ 4 BPM
1:00 PM				Rig down and leave location.
				Microfine cement 1.325 yield 12 PPG

CREW		UNIT
Cementer:	Jimmy	230
Pump Operator:	John P	294
Bulk #1:	Jake H	77
Bulk #2:		

SUMMARY		
Average Rate	Average Pressure	Total Fluid
1.275 bpm	1,113 psi	104 bbls

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