

Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

New Well  Re-Entry  Workover

Oil  WSW  SWD

Gas  DH  EOR

OG  GSW

CM (Coal Bed Methane)

Cathodic  Other (Core, Expl., etc.): \_\_\_\_\_

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

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

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

Plug Back  Liner  Conv. to GSW  Conv. to Producer

Commingled Permit #: \_\_\_\_\_

Dual Completion Permit #: \_\_\_\_\_

SWD Permit #: \_\_\_\_\_

EOR Permit #: \_\_\_\_\_

GSW Permit #: \_\_\_\_\_

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE  NW  SE  SW

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

Datum:  NAD27  NAD83  WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

AFFIDAVIT

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

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: \_\_\_\_\_

Confidential Release Date: \_\_\_\_\_

Wireline Log Received  Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

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

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

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

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

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

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

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

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	MEARS 'C' 1-10
Doc ID	1371310

All Electric Logs Run

DIL
DUCP
MEL
BHCS





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300  
Wichita KS 67202

ATTN: Rocky Milford

**Mears "C" # 1-10**

**10-2S-37W Cheyenne,KS**

Start Date: 2017.09.05 @ 06:02:00

End Date: 2017.09.05 @ 13:01:50

Job Ticket #: 63389                      DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2017.09.11 @ 09:51:24



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co

250 N Water STE 300  
Wichita KS 67202

ATTN: Rocky Milford

**10-2S-37W Cheyenne,KS**

**Mears "C" # 1-10**

Job Ticket: 63389

**DST#: 1**

Test Start: 2017.09.05 @ 06:02:00

## GENERAL INFORMATION:

Formation: **LKC "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:09:40

Time Test Ended: 13:01:50

Test Type: Conventional Bottom Hole (Initial)

Tester: Martine Salinas

Unit No: 82

**Interval: 4308.00 ft (KB) To 4380.00 ft (KB) (TVD)**

Reference Elevations: 3405.00 ft (KB)

Total Depth: 4380.00 ft (KB) (TVD)

3400.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8959**

**Inside**

Press@RunDepth: 20.57 psig @ 4309.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.09.05

End Date:

2017.09.05

Last Calib.: 2017.09.05

Start Time: 06:02:01

End Time:

13:01:50

Time On Btm: 2017.09.05 @ 08:09:30

Time Off Btm: 2017.09.05 @ 11:12:30

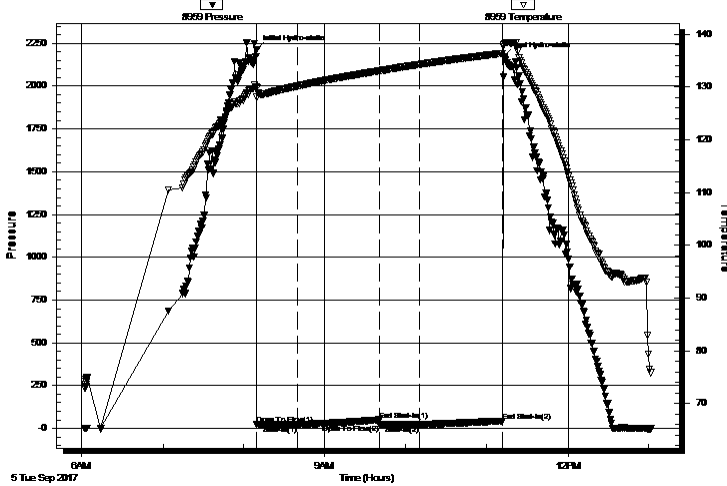
**TEST COMMENT:** 30-IF-Weak.blow built to 1/2" & died back to 1/4"

60-ISI-No blow

30-FF-No blow

60-FSI-No blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2212.86	129.83	Initial Hydro-static
1	23.68	128.08	Open To Flow (1)
31	19.67	130.18	Shut-In(1)
91	50.34	133.05	End Shut-In(1)
91	21.31	133.04	Open To Flow (2)
121	20.57	134.26	Shut-In(2)
182	43.30	136.36	End Shut-In(2)
183	2174.12	138.02	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	100% Mud	0.02

Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co

**10-2S-37W Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Mears "C" # 1-10**

Job Ticket: 63389

**DST#: 1**

ATTN: Rocky Milford

Test Start: 2017.09.05 @ 06:02:00

## Tool Information

Drill Pipe:	Length: 4089.00 ft	Diameter: 3.80 inches	Volume: 57.36 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: 205.00 ft	Diameter: 2.25 inches	Volume: 1.01 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 58.37 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4308.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	72.00 ft			
Tool Length:	100.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			4285.00	
Hydraulic tool	5.00			4290.00	
Jars	5.00			4295.00	
Safety Joint	3.00			4298.00	
Packer	5.00			4303.00	28.00 Bottom Of Top Packer
Packer	5.00			4308.00	
Stubb	1.00			4309.00	
Recorder	0.00	8959	Inside	4309.00	
Recorder	0.00	8734	Outside	4309.00	
Perforations	33.00			4342.00	
Change Over Sub	1.00			4343.00	
Drill Pipe	31.00			4374.00	
Change Over Sub	1.00			4375.00	
Bullnose	5.00			4380.00	72.00 Bottom Packers & Anchor

**Total Tool Length: 100.00**





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co

**10-2S-37W Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Mears "C" # 1-10**

Job Ticket: 63389

**DST#: 1**

ATTN: Rocky Milford

Test Start: 2017.09.05 @ 06:02:00

### 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: 7.55 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	100% Mud	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

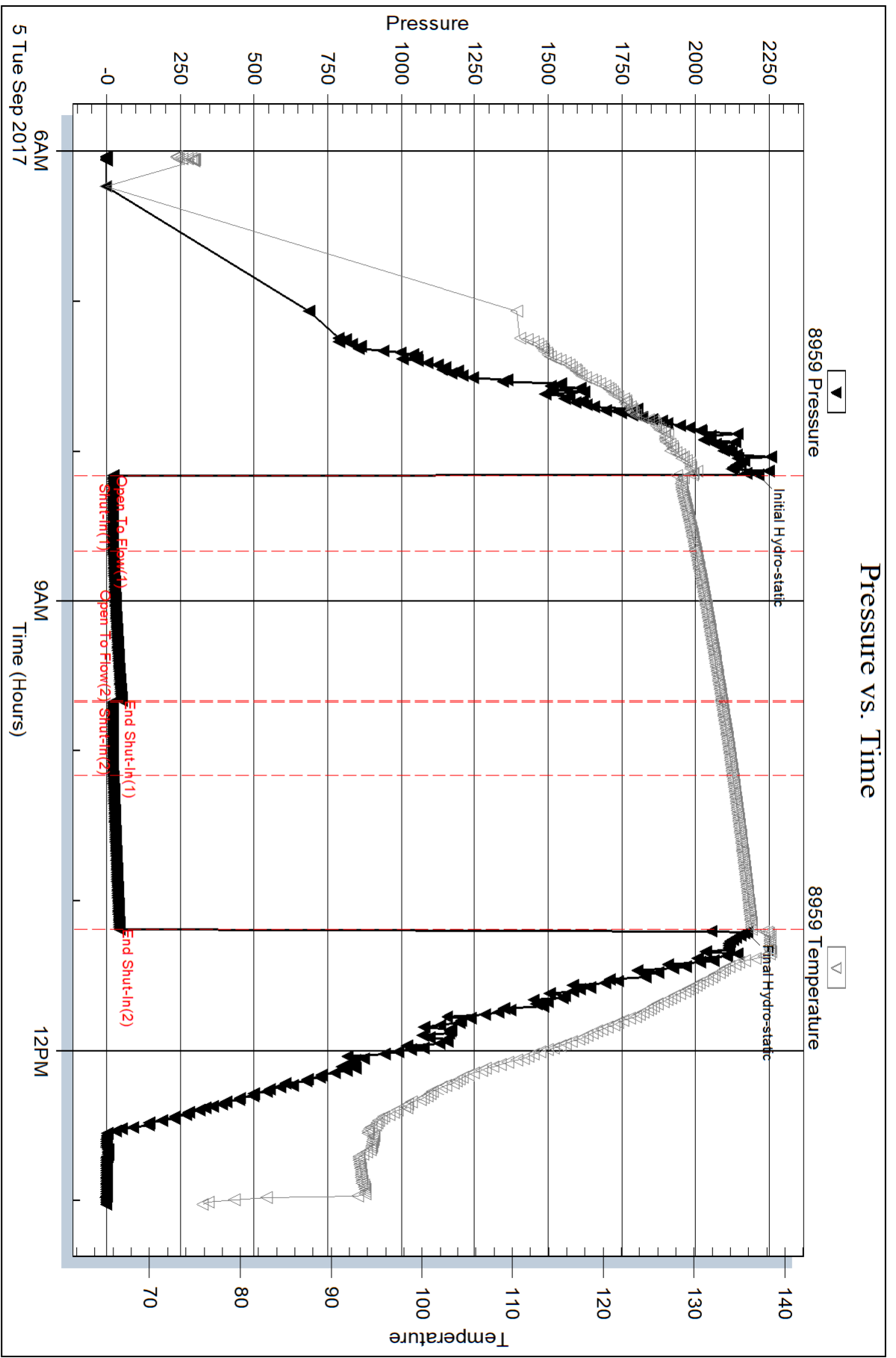
Serial #: 8959

Inside

Murfin Drilling Co

Mears 'C' # 1-10

DST Test Number: 1

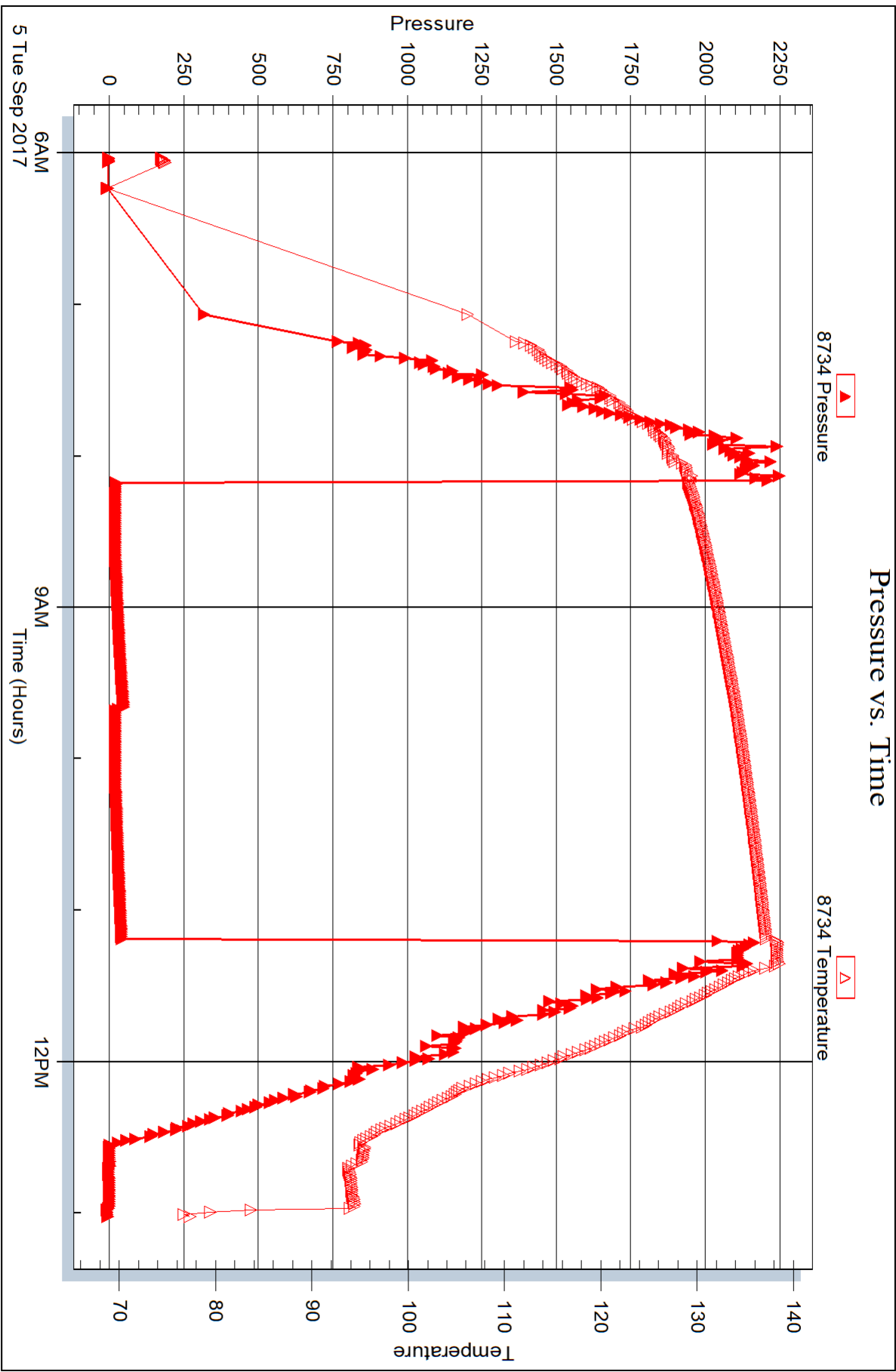


Serial #: 8734

Outside Murfin Drilling Co

Mears "C" # 1-10

DST Test Number: 1





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300  
Wichita KS 67202

ATTN: Rocky Milford

### **Mears "C" # 1-10**

#### **10-2S-37W Cheyenne,KS**

Start Date: 2017.09.05 @ 22:20:00

End Date: 2017.09.06 @ 05:22:50

Job Ticket #: 63390                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2017.09.11 @ 09:51:00

Murfin Drilling Co  
10-2S-37W Cheyenne,KS  
Mears "C" # 1-10  
DST # 2  
LKC "D"  
2017.09.05



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co

250 N Water STE 300  
Wichita KS 67202

ATTN: Rocky Milford

**10-2S-37W Cheyenne,KS**

**Mears "C" # 1-10**

Job Ticket: 63390

**DST#: 2**

Test Start: 2017.09.05 @ 22:20:00

## GENERAL INFORMATION:

Formation: **LKC "D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:26:10

Time Test Ended: 05:22:50

Test Type: Conventional Bottom Hole (Reset)

Tester: Martine Salinas

Unit No: 82

**Interval: 4378.00 ft (KB) To 4439.00 ft (KB) (TVD)**

Reference Elevations: 3405.00 ft (KB)

Total Depth: 4439.00 ft (KB) (TVD)

3400.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8959**

**Inside**

Press@RunDepth: 29.63 psig @ 4379.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.09.05

End Date:

2017.09.06

Last Calib.:

2017.09.06

Start Time: 22:20:01

End Time:

05:22:50

Time On Btm:

2017.09.06 @ 00:26:00

Time Off Btm:

2017.09.06 @ 03:28:00

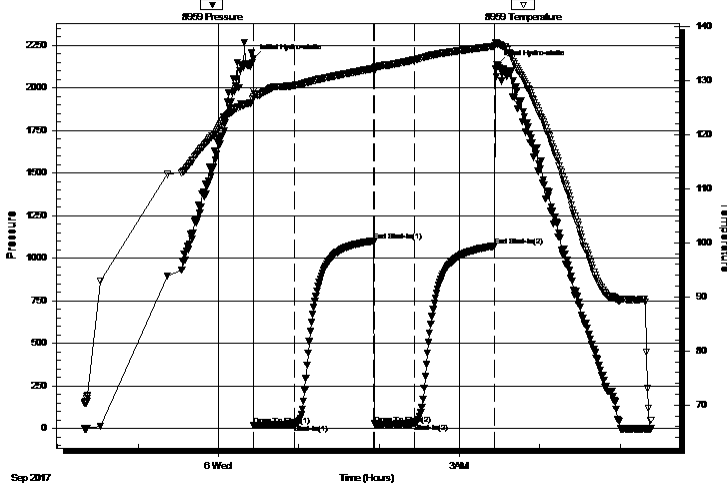
**TEST COMMENT:** 30-IF-Surface.blow built to 1 1/4"

60-ISI-No blow

30-FF-No blow

60-FSI-No blow

Pressure vs. Time



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2170.90	128.01	Initial Hydro-static
1	20.10	126.92	Open To Flow (1)
31	23.20	129.10	Shut-In(1)
90	1101.97	132.22	End Shut-In(1)
91	27.75	131.71	Open To Flow (2)
121	29.63	133.83	Shut-In(2)
180	1071.72	136.35	End Shut-In(2)
182	2138.72	136.81	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	OCM 15%O, 85%M	0.05

\* 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

**10-2S-37W Cheyenne, KS**

250 N Water STE 300  
Wichita KS 67202

**Mears "C" # 1-10**

Job Ticket: 63390

**DST#: 2**

ATTN: Rocky Milford

Test Start: 2017.09.05 @ 22:20:00

## Tool Information

Drill Pipe:	Length: 4152.00 ft	Diameter: 3.80 inches	Volume: 58.24 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: 205.00 ft	Diameter: 2.25 inches	Volume: 1.01 bbl	Weight to Pull Loose: 74000.00 lb
			<u>Total Volume: 59.25 bbl</u>	Tool Chased 5.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4378.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	61.00 ft			
Tool Length:	89.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: Pushed through 5' fill

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			4355.00	
Hydraulic tool	5.00			4360.00	
Jars	5.00			4365.00	
Safety Joint	3.00			4368.00	
Packer	5.00			4373.00	28.00 Bottom Of Top Packer
Packer	5.00			4378.00	
Stubb	1.00			4379.00	
Recorder	0.00	8959	Inside	4379.00	
Recorder	0.00	8734	Outside	4379.00	
Perforations	22.00			4401.00	
Change Over Sub	1.00			4402.00	
Drill Pipe	31.00			4433.00	
Change Over Sub	1.00			4434.00	
Bullnose	5.00			4439.00	61.00 Bottom Packers & Anchor

**Total Tool Length: 89.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co

**10-2S-37W Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Mears "C" # 1-10**

Job Ticket: 63390

**DST#: 2**

ATTN: Rocky Milford

Test Start: 2017.09.05 @ 22:20:00

## 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: 7.17 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	OCM 15%O, 85%M	0.049

Total Length: 10.00 ft      Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Not enough oil to catch gravity



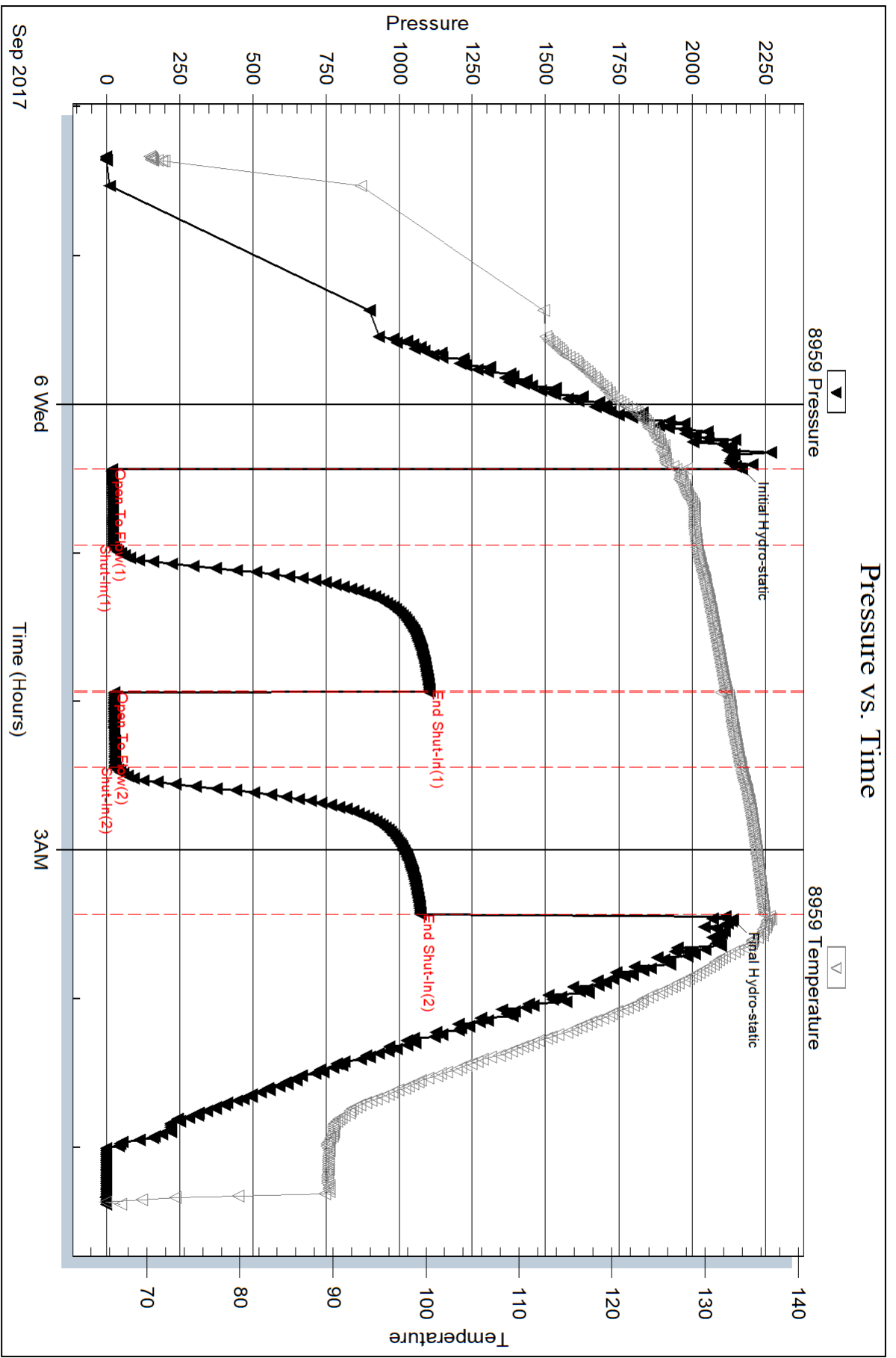
Serial #: 8959

Inside

Murfin Drilling Co

Mears 'C' # 1-10

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 63390

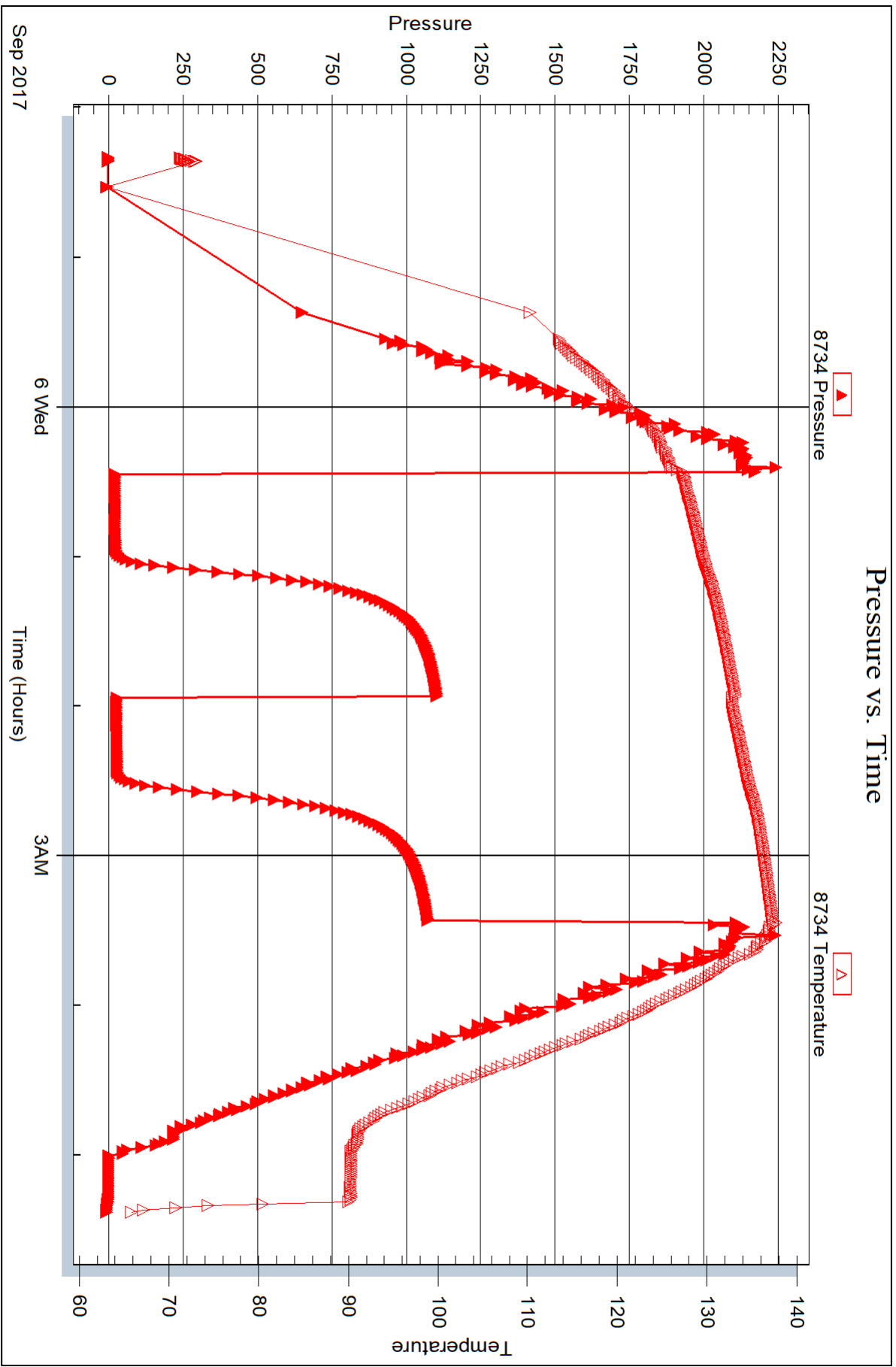
Printed: 2017.09.11 @ 09:51:01

Serial #: 8734

Outside Murfin Drilling Co

Mears 'C' # 1-10

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 63390

Printed: 2017.09.11 @ 09:51:01



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300  
Wichita KS 67202

ATTN: Rocky Milford

### **Mears "C" # 1-10**

#### **10-2S-37W Cheyenne,KS**

Start Date: 2017.09.06 @ 15:17:00

End Date: 2017.09.06 @ 21:52:50

Job Ticket #: 63391                      DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2017.09.11 @ 09:50:29

Murfin Drilling Co  
10-2S-37W Cheyenne,KS  
Mears "C" # 1-10  
DST # 3  
LKC "G"  
2017.09.06



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co

**10-2S-37W Cheyenne, KS**

250 N Water STE 300  
Wichita KS 67202

**Mears "C" # 1-10**

Job Ticket: 63391

**DST#: 3**

ATTN: Rocky Milford

Test Start: 2017.09.06 @ 15:17:00

## GENERAL INFORMATION:

Formation: **LKC "G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:57:30

Time Test Ended: 21:52:50

Test Type: Conventional Bottom Hole (Reset)

Tester: Martine Salinas

Unit No: 82

**Interval: 4448.00 ft (KB) To 4500.00 ft (KB) (TVD)**

Reference Elevations: 3405.00 ft (KB)

Total Depth: 4500.00 ft (KB) (TVD)

3400.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8959**

**Inside**

Press@RunDepth: 27.88 psig @ 4449.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.09.06

End Date:

2017.09.06

Last Calib.: 2017.09.06

Start Time: 15:17:01

End Time:

21:52:50

Time On Btm: 2017.09.06 @ 16:57:20

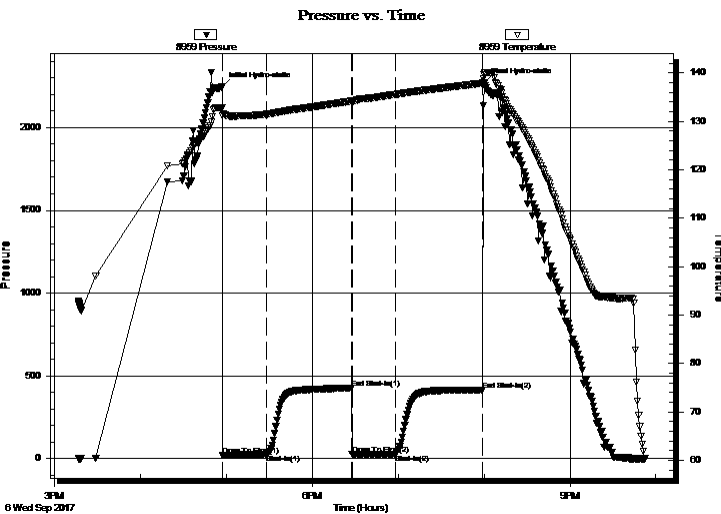
Time Off Btm: 2017.09.06 @ 20:00:00

**TEST COMMENT:** 30-IF-Surface.blow died @ 16 1/2 mins

60-ISI-No blow

30-FF-No blow

60-FSI-No blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2249.58	132.70	Initial Hydro-static
1	20.89	131.23	Open To Flow (1)
31	23.99	131.48	Shut-In(1)
90	426.92	134.16	End Shut-In(1)
91	25.33	133.90	Open To Flow (2)
121	27.88	135.54	Shut-In(2)
182	413.92	137.87	End Shut-In(2)
183	2268.17	139.69	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	100% Mud	0.02

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co

**10-2S-37W Cheyenne, KS**

250 N Water STE 300  
Wichita KS 67202

**Mears "C" # 1-10**

Job Ticket: 63391

**DST#: 3**

ATTN: Rocky Milford

Test Start: 2017.09.06 @ 15:17:00

### Tool Information

Drill Pipe:	Length: 4245.00 ft	Diameter: 3.80 inches	Volume: 59.55 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: 205.00 ft	Diameter: 2.25 inches	Volume: 1.01 bbl	Weight to Pull Loose: 68000.00 lb
			<u>Total Volume: 60.56 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4448.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	52.00 ft			
Tool Length:	80.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Shut In Tool	5.00			4425.00	
Hydraulic tool	5.00			4430.00	
Jars	5.00			4435.00	
Safety Joint	3.00			4438.00	
Packer	5.00			4443.00	28.00 Bottom Of Top Packer
Packer	5.00			4448.00	
Stubb	1.00			4449.00	
Recorder	0.00	8959	Inside	4449.00	
Recorder	0.00	8734	Outside	4449.00	
Perforations	13.00			4462.00	
Change Over Sub	1.00			4463.00	
Drill Pipe	31.00			4494.00	
Change Over Sub	1.00			4495.00	
Bullnose	5.00			4500.00	52.00 Bottom Packers & Anchor

**Total Tool Length: 80.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co

**10-2S-37W Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Mears "C" # 1-10**

Job Ticket: 63391

**DST#: 3**

ATTN: Rocky Milford

Test Start: 2017.09.06 @ 15:17:00

## 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: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	100% Mud	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

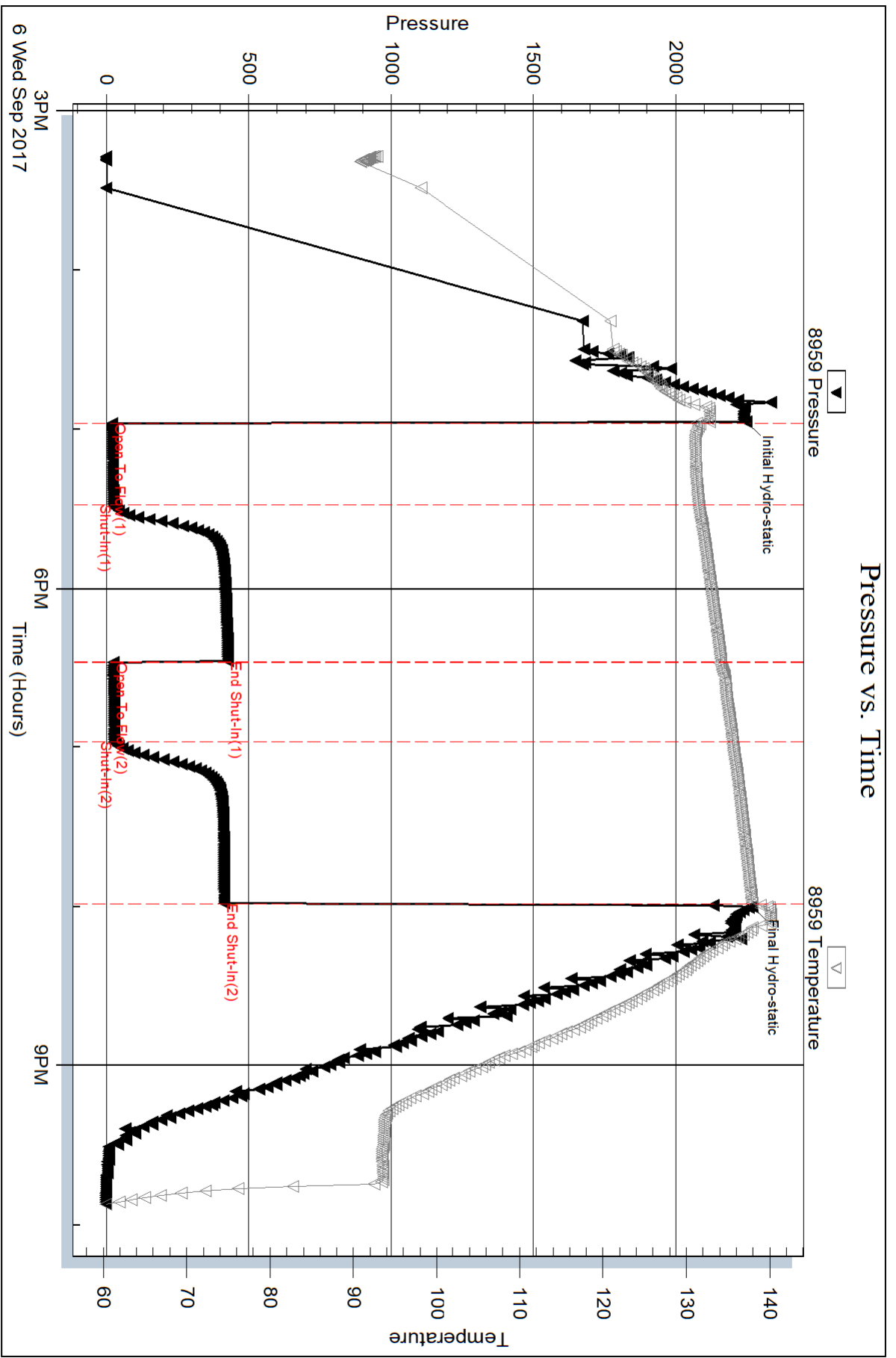
Serial #: 8959

Inside

Murfin Drilling Co

Mears 'C' # 1-10

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 63391

Printed: 2017.09.11 @ 09:50:29

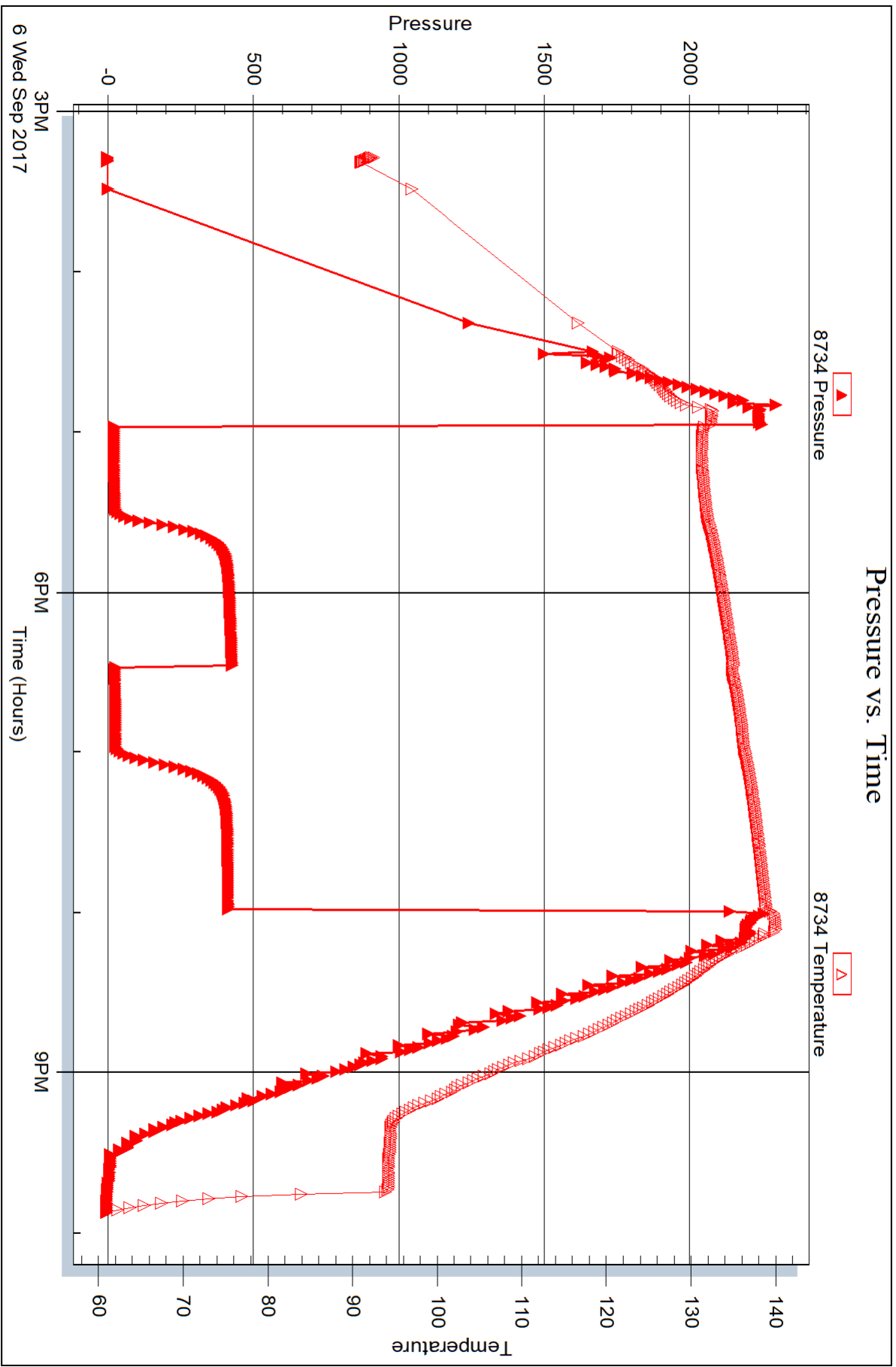


Serial #: 8734

Outside Murfin Drilling Co

Mears "C" # 1-10

DST Test Number: 3





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300  
Wichita KS 67202

ATTN: Rocky Milford

### **Mears "C" # 1-10**

#### **10-2S-37W Cheyenne,KS**

Start Date: 2017.09.07 @ 10:15:00

End Date: 2017.09.07 @ 16:50:39

Job Ticket #: 63392                      DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2017.09.11 @ 09:50:08

Murfin Drilling Co  
10-2S-37W Cheyenne,KS  
Mears "C" # 1-10  
DST # 4  
LKC "H-J"  
2017.09.07



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co  
 250 N Water STE 300  
 Wichita KS 67202  
 ATTN: Rocky Milford

**10-2S-37W Cheyenne,KS**  
**Mears "C" # 1-10**  
 Job Ticket: 63392      **DST#: 4**  
 Test Start: 2017.09.07 @ 10:15:00

## GENERAL INFORMATION:

Formation: **LKC "H-J"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 11:57:40  
 Time Test Ended: 16:50:39  
 Interval: **4498.00 ft (KB) To 4588.00 ft (KB) (TVD)**  
 Total Depth: 4588.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Martine Salinas  
 Unit No: 82  
 Reference Elevations: 3405.00 ft (KB)  
 3400.00 ft (CF)  
 KB to GR/CF: 5.00 ft

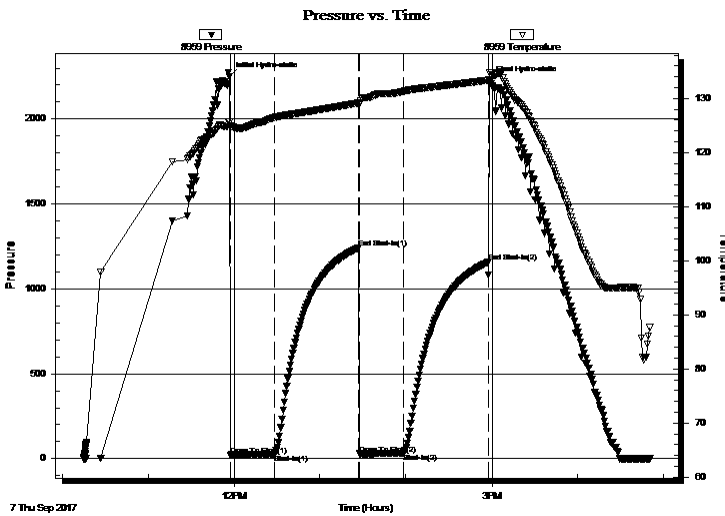
## Serial #: 8959

Inside

Press@RunDepth: 31.44 psig @ 4499.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2017.09.07      End Date: 2017.09.07      Last Calib.: 2017.09.07  
 Start Time: 10:15:01      End Time: 16:50:40      Time On Btm: 2017.09.07 @ 11:57:00  
 Time Off Btm: 2017.09.07 @ 14:58:30

TEST COMMENT: 30-IF-1/4" blow built to 3/4" @ 25 mins  
 60-ISI-No blow  
 30-FF-No blow  
 60-FSI-No blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2249.07	125.57	Initial Hydro-static
1	21.93	124.90	Open To Flow (1)
31	25.56	126.40	Shut-In(1)
90	1241.52	129.17	End Shut-In(1)
91	28.30	128.85	Open To Flow (2)
122	31.44	131.31	Shut-In(2)
181	1157.81	133.36	End Shut-In(2)
182	2224.79	134.79	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	100% Mud	0.05

\* 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

**10-2S-37W Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Mears "C" # 1-10**

Job Ticket: 63392

**DST#: 4**

ATTN: Rocky Milford

Test Start: 2017.09.07 @ 10:15:00

## Tool Information

Drill Pipe:	Length: 4275.00 ft	Diameter: 3.80 inches	Volume: 59.97 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: 205.00 ft	Diameter: 2.25 inches	Volume: 1.01 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 60.98 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4498.00 ft			Final 65000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	90.00 ft			
Tool Length:	118.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Shut In Tool	5.00			4475.00	
Hydraulic tool	5.00			4480.00	
Jars	5.00			4485.00	
Safety Joint	3.00			4488.00	
Packer	5.00			4493.00	28.00 Bottom Of Top Packer
Packer	5.00			4498.00	
Stubb	1.00			4499.00	
Recorder	0.00	8959	Inside	4499.00	
Recorder	0.00	8734	Outside	4499.00	
Perforations	20.00			4519.00	
Change Over Sub	1.00			4520.00	
Drill Pipe	62.00			4582.00	
Change Over Sub	1.00			4583.00	
Bullnose	5.00			4588.00	90.00 Bottom Packers & Anchor

**Total Tool Length: 118.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co

**10-2S-37W Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Mears "C" # 1-10**

Job Ticket: 63392

**DST#: 4**

ATTN: Rocky Milford

Test Start: 2017.09.07 @ 10:15:00

## 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: 73.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	100% Mud	0.049

Total Length: 10.00 ft      Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

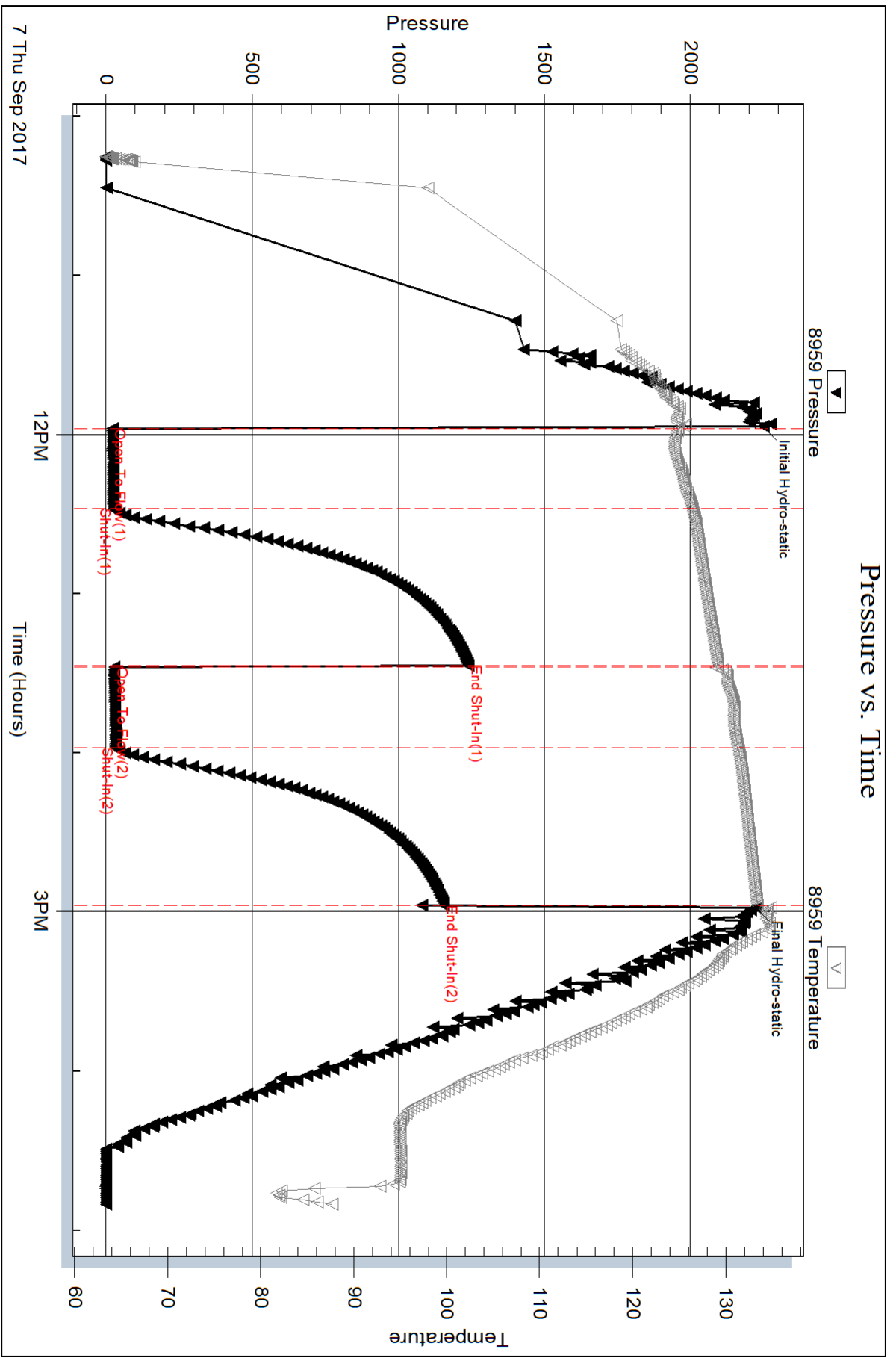
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Inside

Murfin Drilling Co

Mears "C" # 1-10

DST Test Number: 4

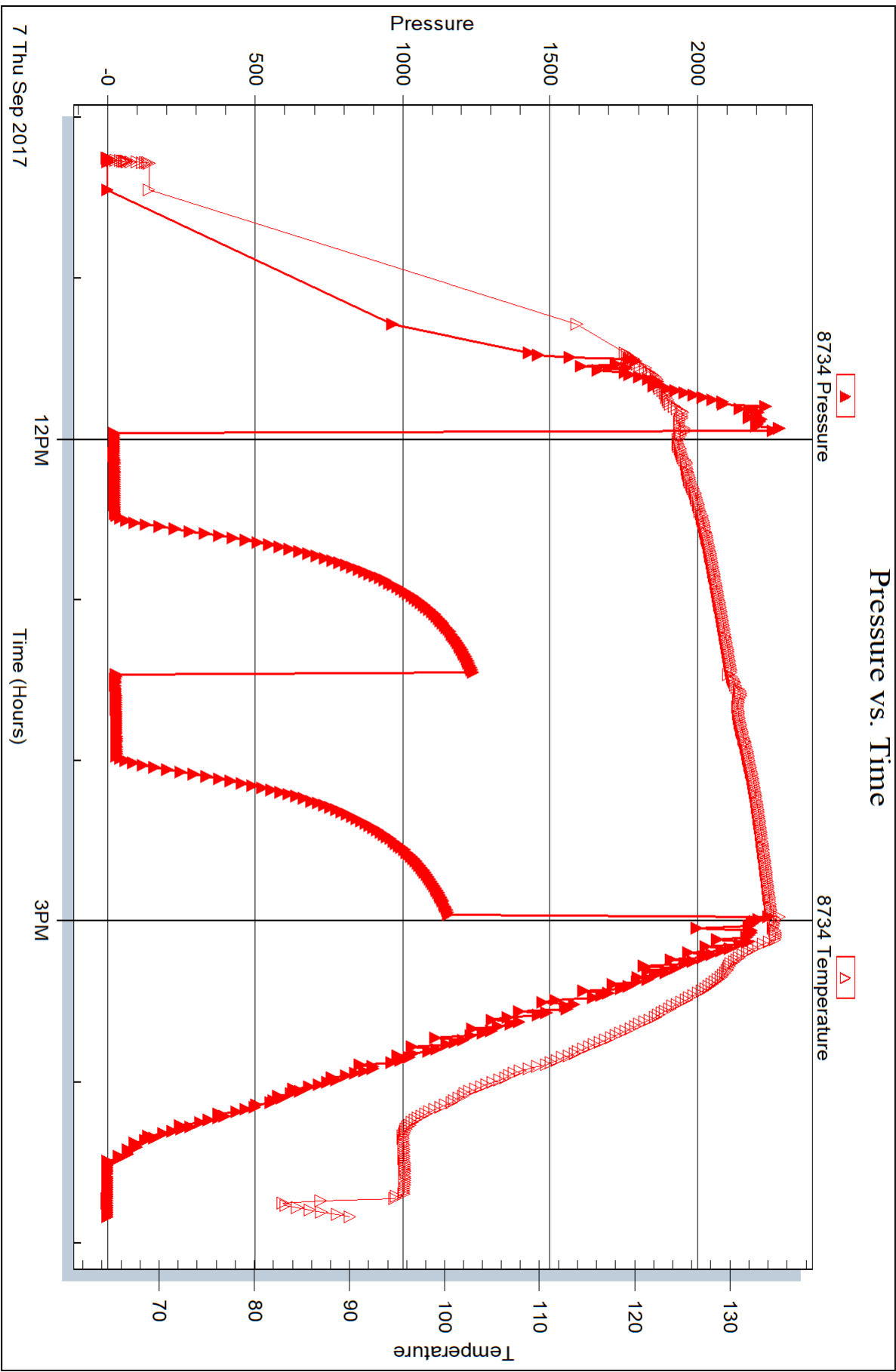


Serial #: 8734

Outside Murfin Drilling Co

Mears "C" # 1-10

DST Test Number: 4







## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300  
Wichita KS 67202

ATTN: Rocky Milford

**Mears "C" # 1-10**

**10-2S-37W Cheyenne,KS**

Start Date: 2017.09.08 @ 19:59:01

End Date: 2017.09.09 @ 03:05:09

Job Ticket #: 63393                      DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2017.09.11 @ 09:36:46

Murfin Drilling Co

10-2S-37W Cheyenne,KS

Mears "C" # 1-10

DST # 5

Fl.Scott - Celia

2017.09.08



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co

**10-2S-37W Cheyenne, KS**

250 N Water STE 300  
Wichita KS 67202

**Mears "C" # 1-10**

ATTN: Rocky Milford

Job Ticket: 63393

**DST#: 5**

Test Start: 2017.09.08 @ 19:59:01

## GENERAL INFORMATION:

Formation: **Ft.Scott - Celia**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:01:40

Time Test Ended: 03:05:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Martine Salinas

Unit No: 82

**Interval: 4743.00 ft (KB) To 4880.00 ft (KB) (TVD)**

Reference Elevations: 3405.00 ft (KB)

Total Depth: 4880.00 ft (KB) (TVD)

3400.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8959**

**Inside**

Press@RunDepth: 86.32 psig @ 4744.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.09.08

End Date:

2017.09.09

Last Calib.:

2017.09.09

Start Time: 19:59:01

End Time:

03:05:10

Time On Btm:

2017.09.08 @ 22:01:30

Time Off Btm:

2017.09.09 @ 01:02:09

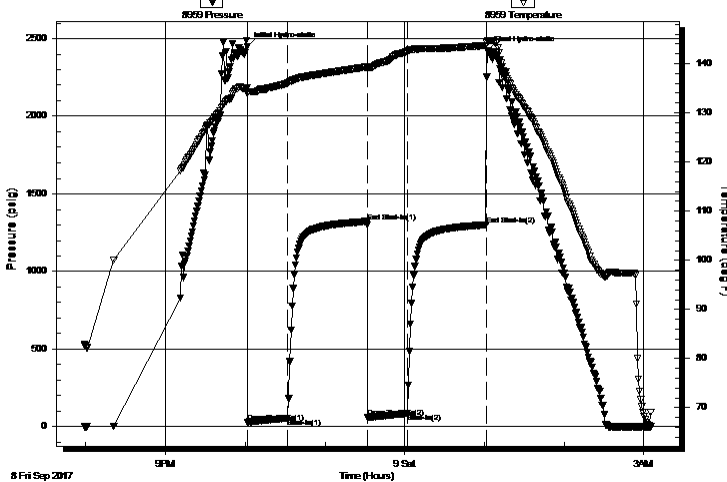
**TEST COMMENT:** 30-IF-Weak.blow built to 2 1/4"

60-ISI-No blow

30-FF-No blow

60-FSI-No blow

Pressure vs. Time



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2449.05	135.05	Initial Hydro-static
1	28.74	133.90	Open To Flow (1)
31	56.04	136.00	Shut-In(1)
91	1322.49	139.34	End Shut-In(1)
91	60.47	138.92	Open To Flow (2)
121	86.32	142.52	Shut-In(2)
180	1300.22	143.69	End Shut-In(2)
181	2421.77	144.66	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
133.00	100%Mud	0.65

\* 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

**10-2S-37W Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Mears "C" # 1-10**

Job Ticket: 63393

**DST#: 5**

ATTN: Rocky Milford

Test Start: 2017.09.08 @ 19:59:01

## Tool Information

Drill Pipe:	Length: 4527.00 ft	Diameter: 3.80 inches	Volume: 63.50 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: 205.00 ft	Diameter: 2.25 inches	Volume: 1.01 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 64.51 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4743.00 ft			Final 66000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	137.00 ft			
Tool Length:	165.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Shut In Tool	5.00			4720.00	
Hydraulic tool	5.00			4725.00	
Jars	5.00			4730.00	
Safety Joint	3.00			4733.00	
Packer	5.00			4738.00	28.00 Bottom Of Top Packer
Packer	5.00			4743.00	
Packer - Shale	0.00			4743.00	
Stubb	1.00			4744.00	
Recorder	0.00	8959	Inside	4744.00	
Recorder	0.00	8734	Outside	4744.00	
Perforations	36.00			4780.00	
Change Over Sub	1.00			4781.00	
Drill Pipe	93.00			4874.00	
Change Over Sub	1.00			4875.00	
Bullnose	5.00			4880.00	137.00 Bottom Packers & Anchor

**Total Tool Length: 165.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co

**10-2S-37W Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**Mears "C" # 1-10**

Job Ticket: 63393

**DST#: 5**

ATTN: Rocky Milford

Test Start: 2017.09.08 @ 19:59:01

### 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: 69.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.98 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
133.00	100%Mud	0.654

Total Length: 133.00 ft      Total Volume: 0.654 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8959

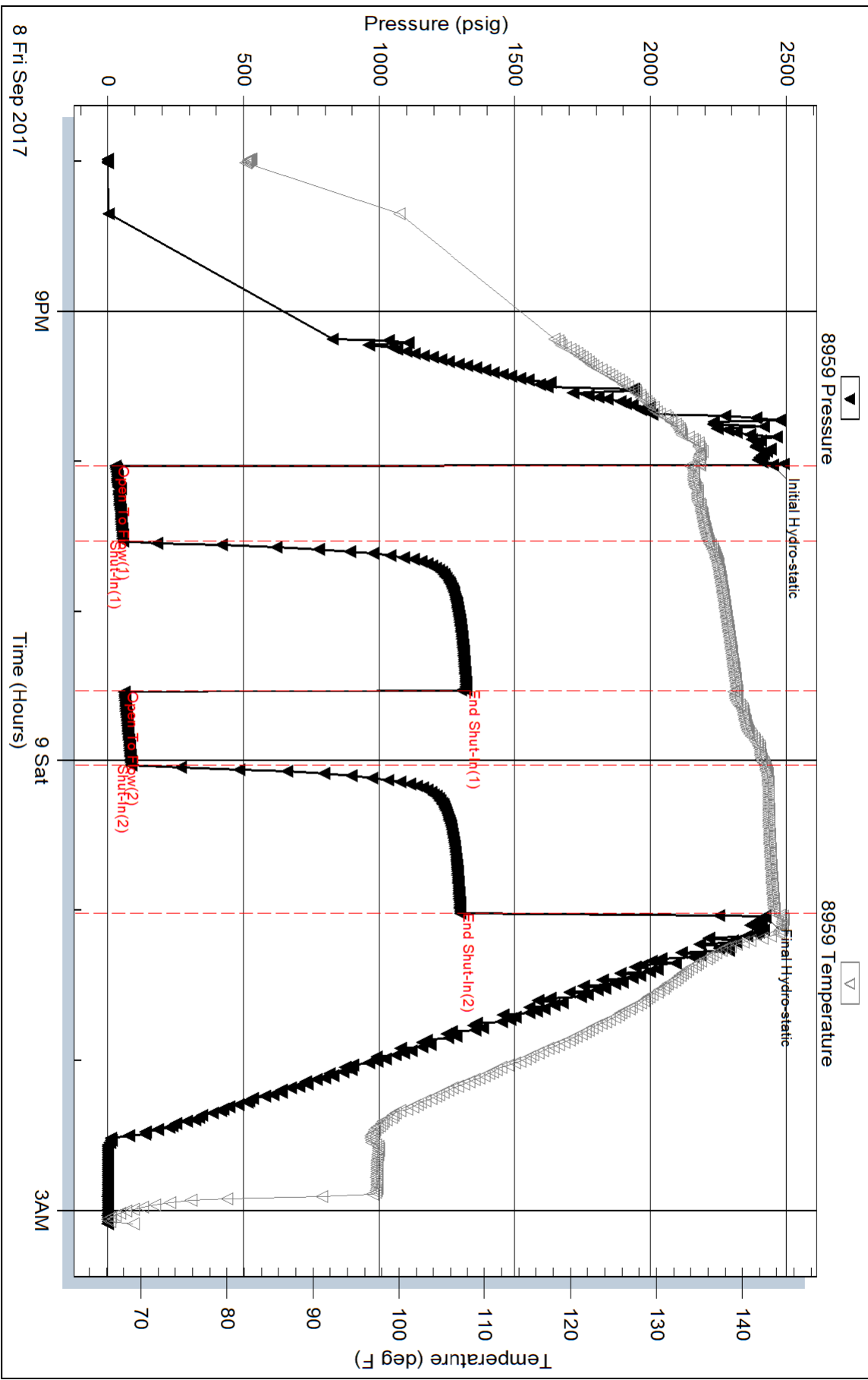
Inside

Murfin Drilling Co

Mears "C" # 1-10

DST Test Number: 5

# Pressure vs. Time



Triobite Testing, Inc

Ref. No: 63393

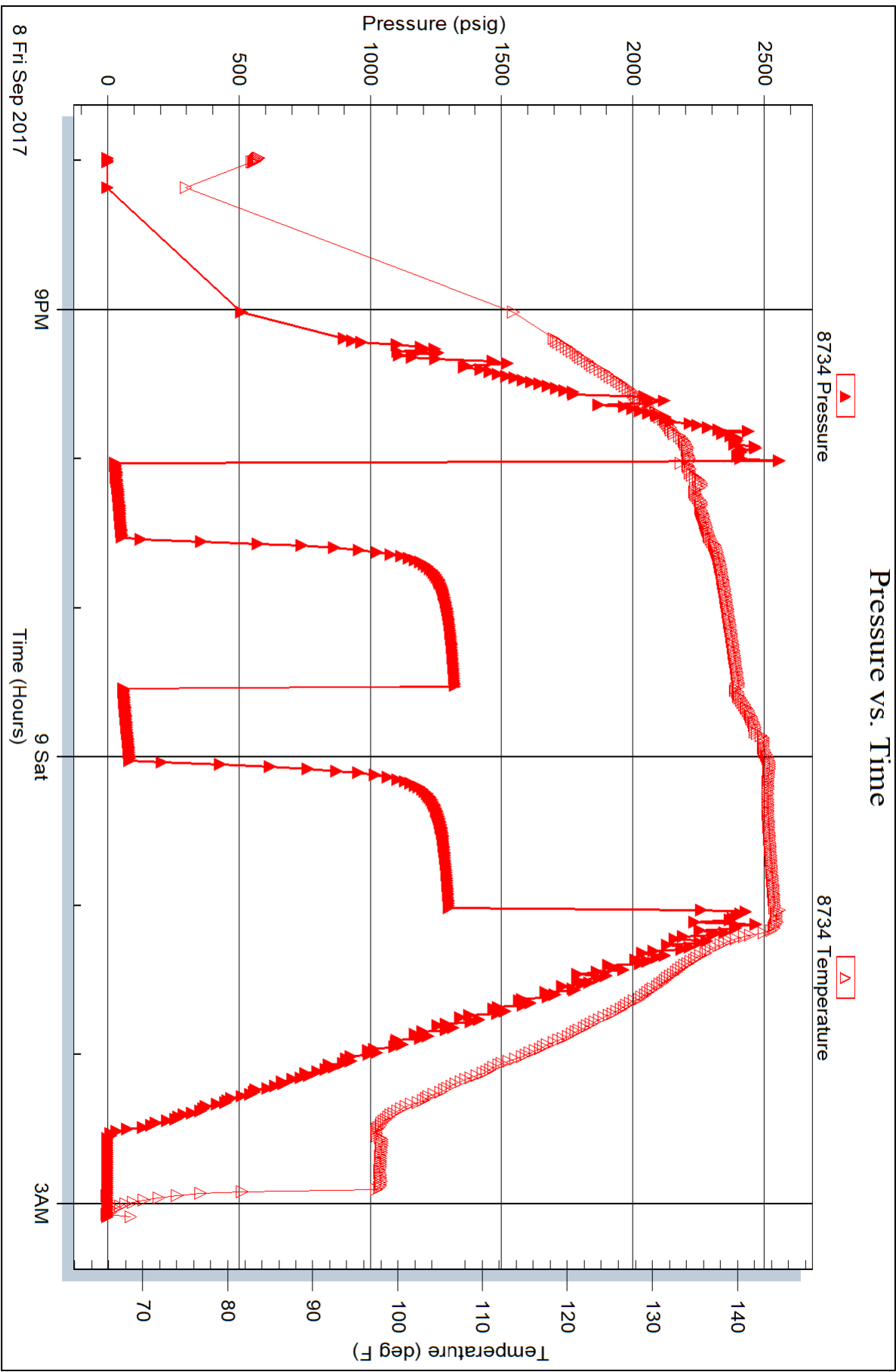
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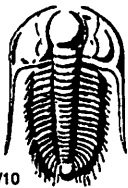
Serial #: 8734

Outside Murfin Drilling Co

Mears "C" # 1-10

DST Test Number: 5





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 63389

Well Name & No. Mears "C" #1-10 Test No. 1 Date 9-5-17  
 Company Murfin Drilling Co. Inc Elevation 3405 KB 3400 GL  
 Address 250 N. Water, STE 300, Wichita, KS 67202  
 Co. Rep / Geo. Rocky Milford Rig Murfin #24  
 Location: Sec. 10 Twp. 2S. Rge. 37W. Co. Cheyenne State KS

Interval Tested 4308-4380 Zone Tested LKCC "A"  
 Anchor Length 72 Drill Pipe Run 4089 Mud Wt. 9.1  
 Top Packer Depth 4303 Drill Collars Run 205 Vis 60  
 Bottom Packer Depth 4308 Wt. Pipe Run - WL 7.6  
 Total Depth 4380 Chlorides 700 ppm System LCM 4#  
 Blow Description IF. S. blow built to 1/2" & died back to 1/4"  
ISI. No blow  
FF. No blow  
FSI. No blow

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

Rec Total 5' BHT 138 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

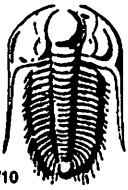
(A) Initial Hydrostatic 2213  Test \_\_\_\_\_ T-On Location 04:45  
 (B) First Initial Flow 24  Jars \_\_\_\_\_ T-Started 06:02  
 (C) First Final Flow 20  Safety Joint \_\_\_\_\_ T-Open 08:10  
 (D) Initial Shut-In 50  Circ Sub \_\_\_\_\_ T-Pulled 11:10  
 (E) Second Initial Flow 21  Hourly Standby \_\_\_\_\_ T-Out 13:02  
 (F) Second Final Flow 22  Mileage 118 RT. Comments \_\_\_\_\_  
 (G) Final Shut-In 43  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2174  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

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

Sub Total \_\_\_\_\_  
 Total \_\_\_\_\_  
 MP/DST Disc't \_\_\_\_\_

Approved By Rocky Milford Our Representative John Palmer  
 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. 63390

Well Name & No. Mears "C" # 1-10 Test No. 2 Date 9-5-17  
 Company Murfin Drilling Co Inc Elevation 3405 KB 3400 GL  
 Address 250 N. Water, STE 300, Wichita, KS 67262  
 Co. Rep / Geo. Rocky Milford Rig Murfin #24  
 Location: Sec. 10 Twp. 2.S. Rge. 37W. Co. Cheyenne State KJ

Interval Tested 4378-4439 Zone Tested LKC "D"  
 Anchor Length 61 Drill Pipe Run 4152 Mud Wt. 9.1  
 Top Packer Depth 4373 Drill Collars Run 205 Vis 60  
 Bottom Packer Depth 4378 Wt. Pipe Run — WL 7.2  
 Total Depth 4439 Chlorides 700 ppm System LCM 4#

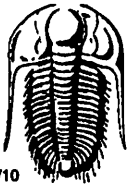
Blow Description IF. S. blow built to 1 1/4"  
ISI. No blow  
FF. No blow  
FSI. No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>OCM</u>	<u>15</u>		<u>85</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10 BHT 137 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2171  Test \_\_\_\_\_ T-On Location 21:25  
 (B) First Initial Flow 20  Jars \_\_\_\_\_ T-Started 22:20  
 (C) First Final Flow 23  Safety Joint \_\_\_\_\_ T-Open 00:26  
 (D) Initial Shut-In 1102  Circ Sub \_\_\_\_\_ T-Pulled 63:26  
 (E) Second Initial Flow 28  Hourly Standby \_\_\_\_\_ T-Out 65:23  
 (F) Second Final Flow 30  Mileage 118 RT Comments \_\_\_\_\_  
 (G) Final Shut-In 1072  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2139  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total \_\_\_\_\_  
 Day Standby \_\_\_\_\_ Total \_\_\_\_\_  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total \_\_\_\_\_

Approved By Rocky Milford Our Representative [Signature]  
 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. 63391

Well Name & No. Mears "C" # 1-10 Test No. 3 Date 9-6-17  
 Company Murfin Drilling Co Inc. Elevation 3405 KB 3400 GL  
 Address 250 N. Water, STE 300, Wichita, KS 67202  
 Co. Rep / Geo. Rocky Milford Rig Murfin # 24  
 Location: Sec. 10 Twp. 2.S. Rge. 37W. Co. Cheyenne State KS

Interval Tested 4448 - 4500 Zone Tested LKC "G"  
 Anchor Length 52' Drill Pipe Run 4245 Mud Wt. 58  
 Top Packer Depth 4443 Drill Collars Run 205 Vis 9.0  
 Bottom Packer Depth 4448 Wt. Pipe Run — WL 6.8  
 Total Depth 4500 Chlorides 600 ppm System LCM 4H

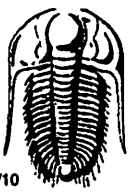
Blow Description IF. S. blow dead @ 16 1/2 mins.  
ISI. No blow  
FF. No blow  
FSI. No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5 BHT 140 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ ° F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2250  Test \_\_\_\_\_ T-On Location 14:45  
 (B) First Initial Flow 21  Jars \_\_\_\_\_ T-Started 15:17  
 (C) First Final Flow 24  Safety Joint \_\_\_\_\_ T-Open 16:58  
 (D) Initial Shut-In 427  Circ Sub \_\_\_\_\_ T-Pulled 19:58  
 (E) Second Initial Flow 25  Hourly Standby \_\_\_\_\_ T-Out 21:53  
 (F) Second Final Flow 28  Mileage 118 RT Comments \_\_\_\_\_  
 (G) Final Shut-In 414  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2268  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total \_\_\_\_\_  
 Day Standby \_\_\_\_\_ Total \_\_\_\_\_  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total \_\_\_\_\_

Approved By Rocky Milford Our Representative [Signature]  
 Trilobite Testing Inc. shall not be liable for damages 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. 63392

Well Name & No. Mears "C" #1-10 Test No. 4 Date 9-7-17  
 Company Murfin Drilling Co. Inc. Elevation 3465 KB 3400 GL  
 Address 250 N. Water, STE 300, Wichita, KS 67202  
 Co. Rep / Geo. Rocky Milford Rig Murfin #24  
 Location: Sec. 10 Twp. 2.S. Rge. 37W. Co. Cheyenne State KS

Interval Tested 4498-4588 Zone Tested LKC "H-J"  
 Anchor Length 90' Drill Pipe Run 4275 Mud Wt. 9.0  
 Top Packer Depth 4493 Drill Collars Run 205 Vis 73  
 Bottom Packer Depth 4498 Wt. Pipe Run — WL 5.6  
 Total Depth 4588 Chlorides 600 ppm System LCM 4#

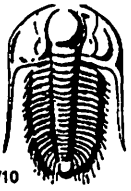
Blow Description IF: 1/4" S. blow built to 3/4" @ 25 mins  
ISI: No blow  
FF: No blow  
FJI: No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10 BHT 135 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2249  Test \_\_\_\_\_ T-On Location 09:50  
 (B) First Initial Flow 22  Jars \_\_\_\_\_ T-Started 10:15  
 (C) First Final Flow 26  Safety Joint \_\_\_\_\_ T-Open 11:58  
 (D) Initial Shut-In 1242  Circ Sub \_\_\_\_\_ T-Pulled 14:58  
 (E) Second Initial Flow 28  Hourly Standby \_\_\_\_\_ T-Out 16:51  
 (F) Second Final Flow 31  Mileage 118RT Comments \_\_\_\_\_  
 (G) Final Shut-In 1158  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2225  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total \_\_\_\_\_  
 Day Standby \_\_\_\_\_ Total \_\_\_\_\_  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total \_\_\_\_\_

Approved By Rocky Milford Our Representative [Signature]  
 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. 63393

Well Name & No. Mears "C" # 1-10 Test No. 5 Date 9-8-17  
 Company Murfin Drilling Co Inc Elevation 3405 KB 3400 GL  
 Address 250 N. Water, STE 300, Wichita, KS 67202  
 Co. Rep / Geo. Rocky Milford Rig Murfin #24  
 Location: Sec. 10 Twp. 2S. Rge. 37W. Co. Cheyenne State KS.

Interval Tested 4743-4880 Zone Tested Ft Scott - Celia  
 Anchor Length 137' Drill Pipe Run 4527 Mud Wt. 9.3  
 Top Packer Depth 4738 Drill Collars Run 205 Vis 69  
 Bottom Packer Depth 4743 Wt. Pipe Run — WL 6.0  
 Total Depth 4880 Chlorides 600 ppm System LCM 4#

Blow Description IF. S. blow built to 2 1/4"  
ISI - No blow  
FF - No blow  
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>133</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 133 BHT 145 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2449  Test \_\_\_\_\_ T-On Location 19:30 9-8-17  
 (B) First Initial Flow 29  Jars \_\_\_\_\_ T-Started 19:59  
 (C) First Final Flow 56  Safety Joint \_\_\_\_\_ T-Open 22:02  
 (D) Initial Shut-In 1322  Circ Sub \_\_\_\_\_ T-Pulled 01:02  
 (E) Second Initial Flow 60  Hourly Standby \_\_\_\_\_ T-Out 03:05 9-9-17  
 (F) Second Final Flow 86  Mileage 118RT x 2 Comments Loaded tools 9-9-17 @ 15:50  
 (G) Final Shut-In 1300  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2422  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total \_\_\_\_\_  
 Day Standby \_\_\_\_\_ Total \_\_\_\_\_  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total \_\_\_\_\_

Approved By Rocky Milford Our Representative [Signature]  
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# Robert L. Milford

PETROLEUM GEOLOGIST  
Wichita, Kansas

## GEOLOGISTS' REPORT

DRILLING TIME AND SAMPLE LOG

OPERATOR: **Murfin Drilling Company, Inc.**  
LEASE: **Means 'C' #1-10**  
LOC SPOT: **E2 E2 SW**

LOC FOOTAGE: **1,320' FSL 2,310' FWL**  
SEC: **10** TWP: **25** RANG: **37W**  
COUNTY: **Cheyenne** STATE: **KANSAS**

CONTRACTOR: **Murfin Drilling Co., Inc.** REG NO.: **24**  
DRILLING STARTED: **9-1-2017** COMPLETED: **9-9-2017**  
MUD DISPLACED: **3,501** MUD TYPE: **Chemical**  
DRILLING TIME KEPT FROM: **3,939'** TO: **RTD**  
SAMPLES SAVED FROM: **4,010'** TO: **RTD**  
SAMPLES EXAMINED FROM: **4,010'** TO: **RTD**  
GEOLOGICAL SUPERVISION FROM: **4,010'** TO: **RTD**

MEASUREMENTS FROM: **KB 3,405'**  
GL: **3,400'**

CASING RECORD  
CONDUIT:  
Surface: **R-5/8" @ 345'**  
w/ 285' section cement  
Production: none

ELECTRICAL SURVES:  
Pioneer Wireline:  
Dual Induction Log  
Dual Compensated

FORMATION NAME: **Stone Corral**  
TOP LOG DATUM: **TOP** SAMPLE DATUM: **TOP**

Stone Corral: **3,316' -89** **3,320' +89**  
Base Stone Corral: **4,134' -729** **4,138' -723**  
Topeka: **4,274' -869** **4,278' -873**  
Oread: **4,354' -949** **4,358' -953**  
Stark: **4,580' -1175** **4,584' -1179**  
Fort Scott: **4,765' -1360** **4,769' -1364**  
Excello: **4,813' -1408** **4,817' -1412**  
Celia: **4,845' -1440** **4,849' -1444**  
Total Depth: **4,919' -1514** **4,920' -1515**

FORMATION NAME: **Stone Corral**  
TOP LOG DATUM: **TOP** SAMPLE DATUM: **TOP**

Stone Corral: **3,316' -89** **3,320' +89**  
Base Stone Corral: **4,134' -729** **4,138' -723**  
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Oread: **4,354' -949** **4,358' -953**  
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Total Depth: **4,919' -1514** **4,920' -1515**

FORMATION NAME: **Stone Corral**  
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Total Depth: **4,919' -1514** **4,920' -1515**

FORMATION NAME: **Stone Corral**  
TOP LOG DATUM: **TOP** SAMPLE DATUM: **TOP**

DATE	7:00 AM DEPTH	REMARKS
9-1-17	0'	Spud @ 2:00 pm. Plug down @ 8:30 pm. Drilled out plug @ 4:30 am on 9/2/17 w/ PDC bit
9-2-17	506'	Cut 506' in last 24 hrs.
9-3-17	3,190'	Cut 2,684' in last 24 hrs; 22.5 hrs drlg. Bit trip @ 3939' (ran button bit)
9-4-17	4,070'	Cut 880' in last 24 hrs; 18.25 hrs drlg. DST #1 @ 4380'
9-5-17	4,380'	Cut 310' in last 24 hrs; 15 hrs drlg. DST #2 @ 4439'
9-6-17	4,439'	Cut 59' in last 24 hrs; 3 hrs drlg. DST #3 @ 4500'
9-7-17	4,580'	Cut 141' in last 24 hrs; 9 hrs drlg. DST #4 @ 4588'
9-8-17	4,755'	Cut 175' in last 24 hrs; 10.75 hrs drlg. DST #5 @ 4880'
9-9-17	4,897'	Cut 142' in last 24 hrs; 8 hrs drlg. RTD 4920' @ 7:57 am
9-10-17	4,920'	Cut 23' in last 24 hrs; 1 hr drlg. Plugged and abandoned

Remarks

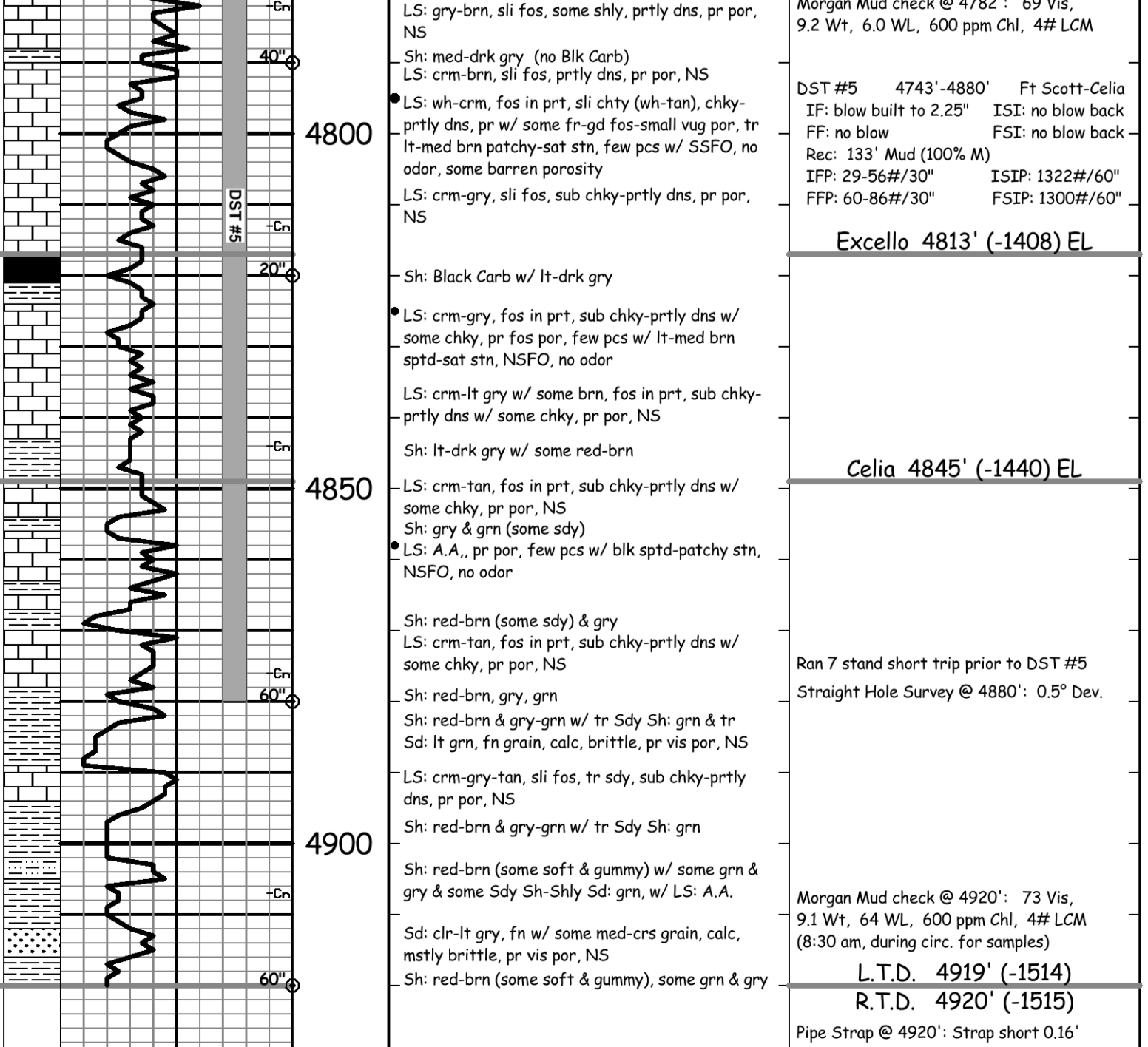
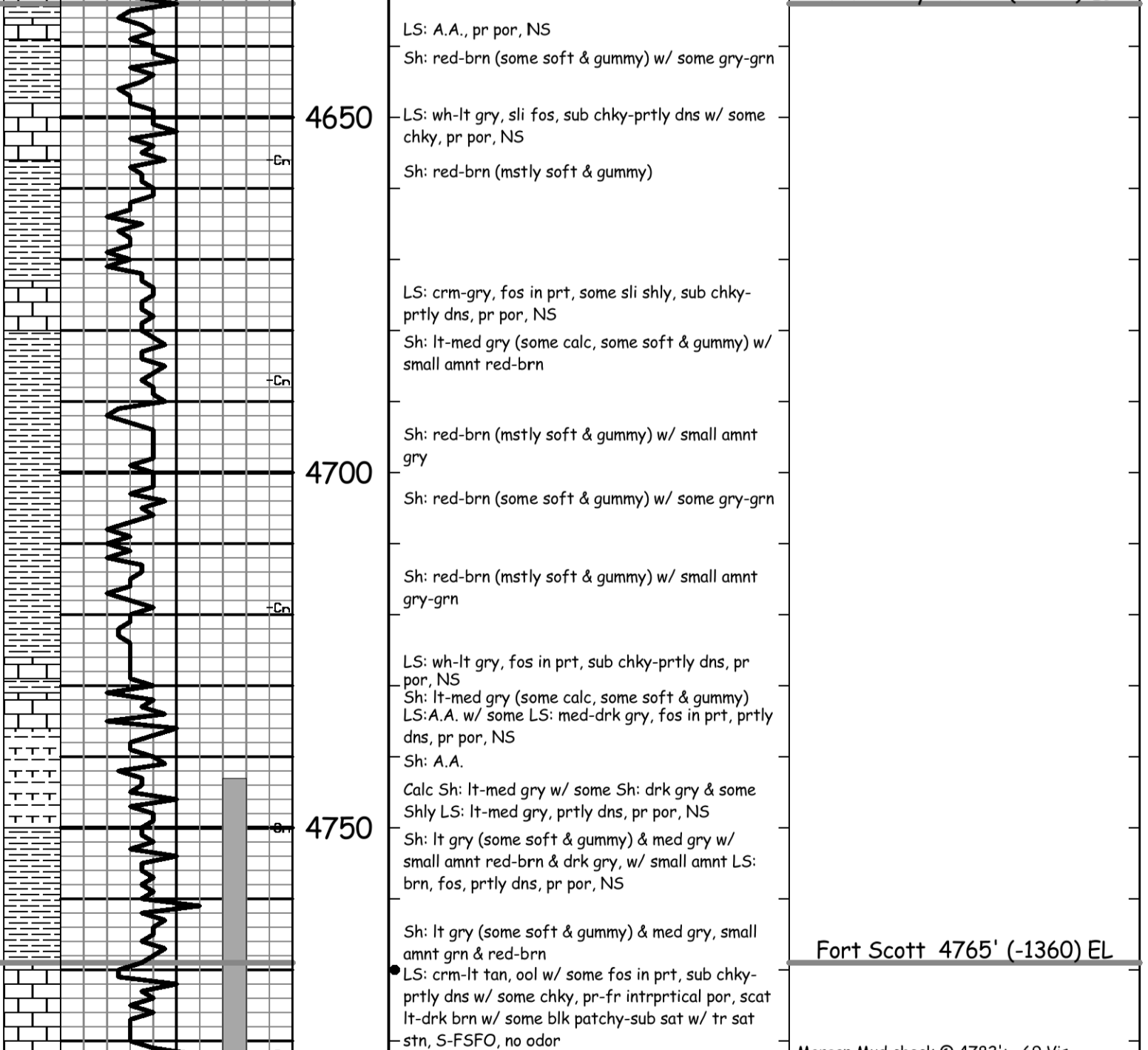
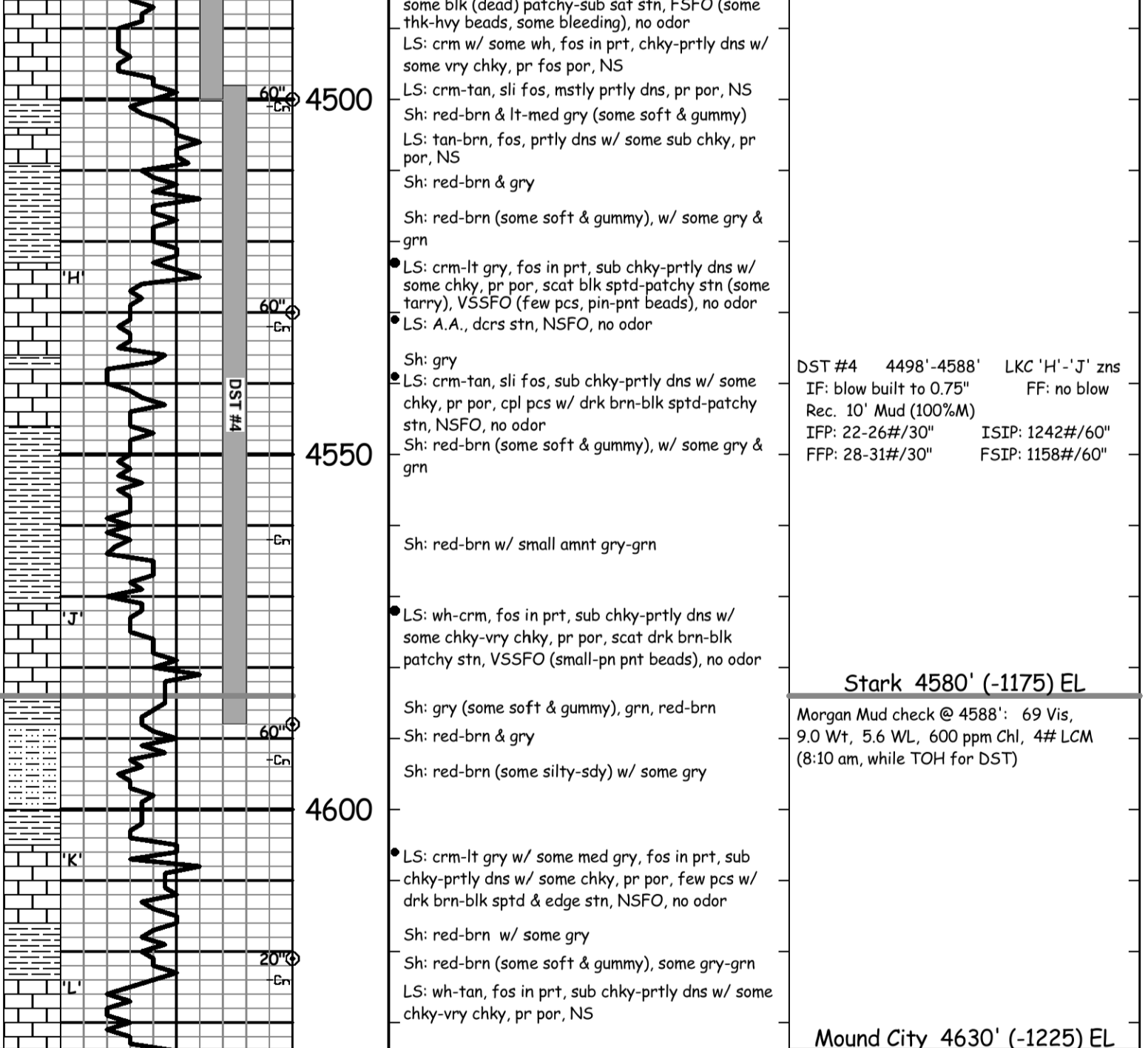
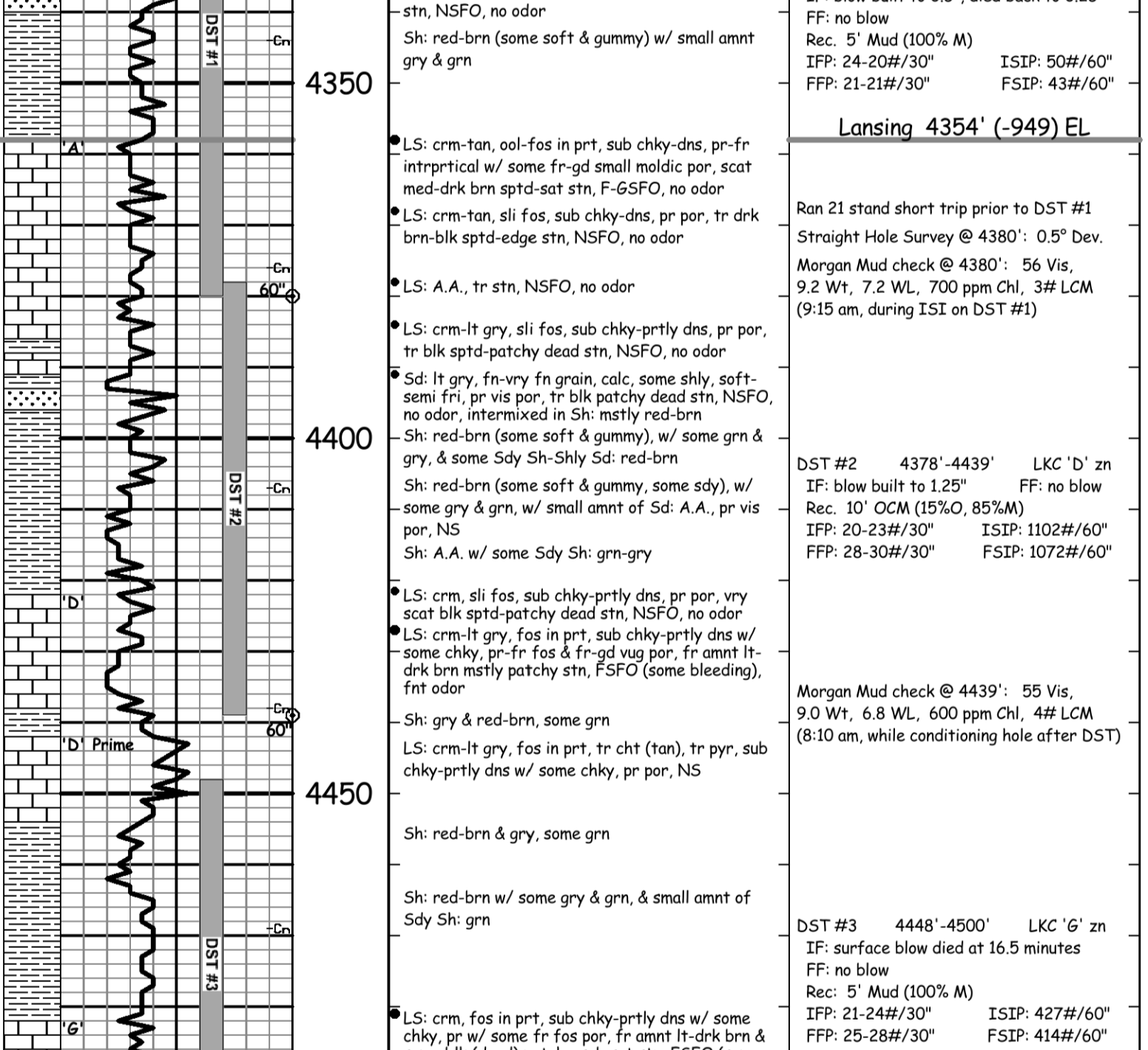
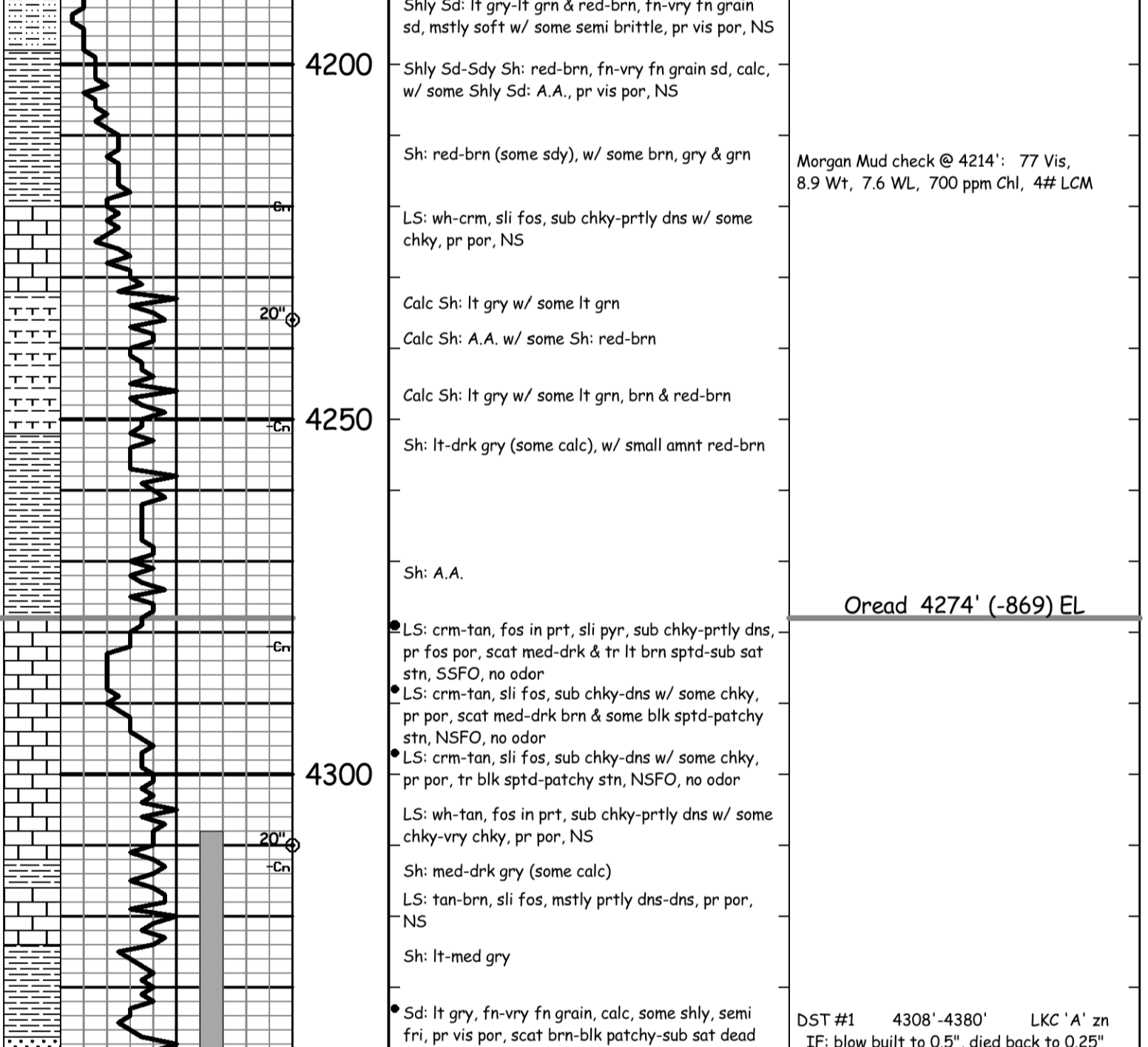
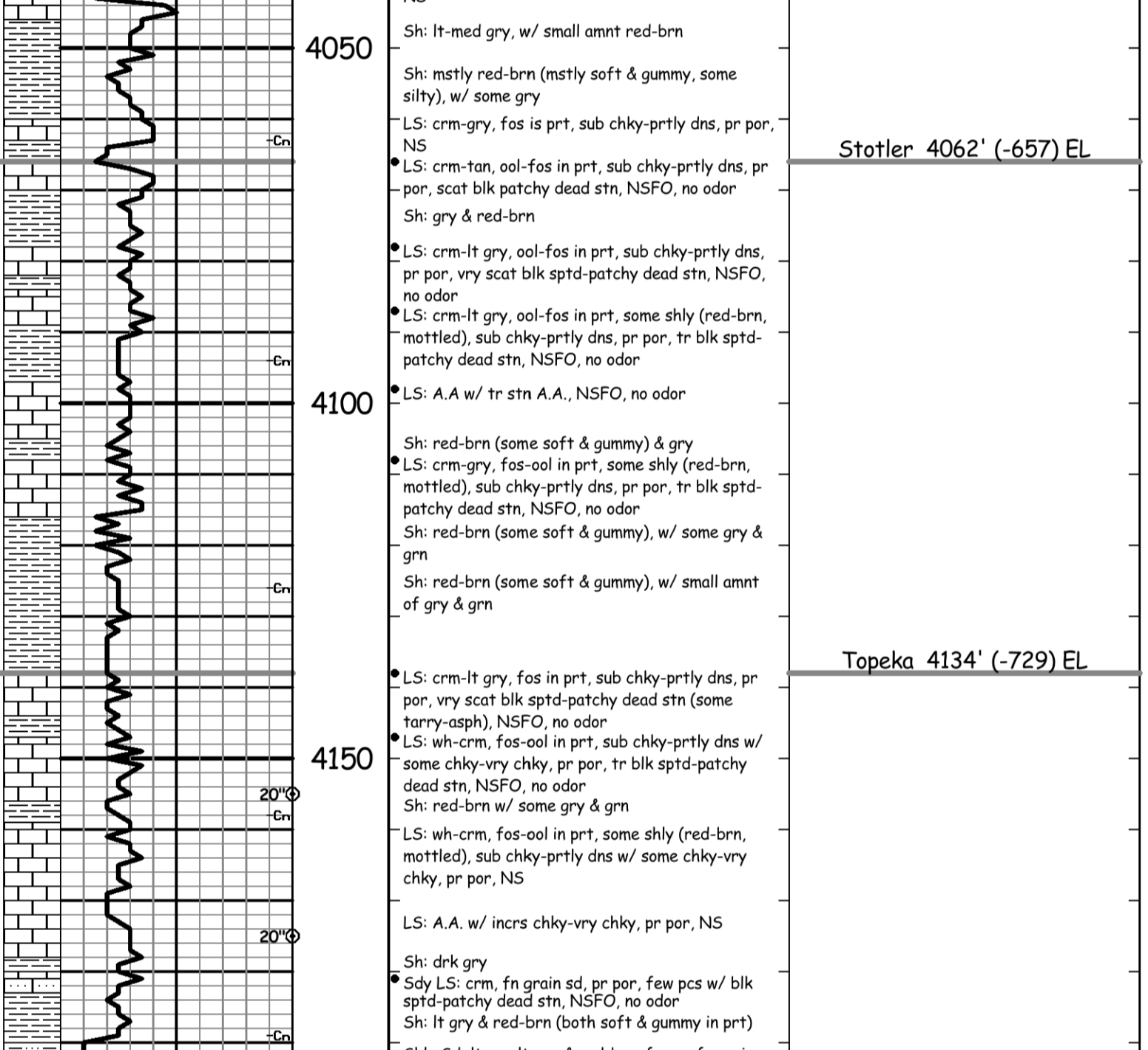
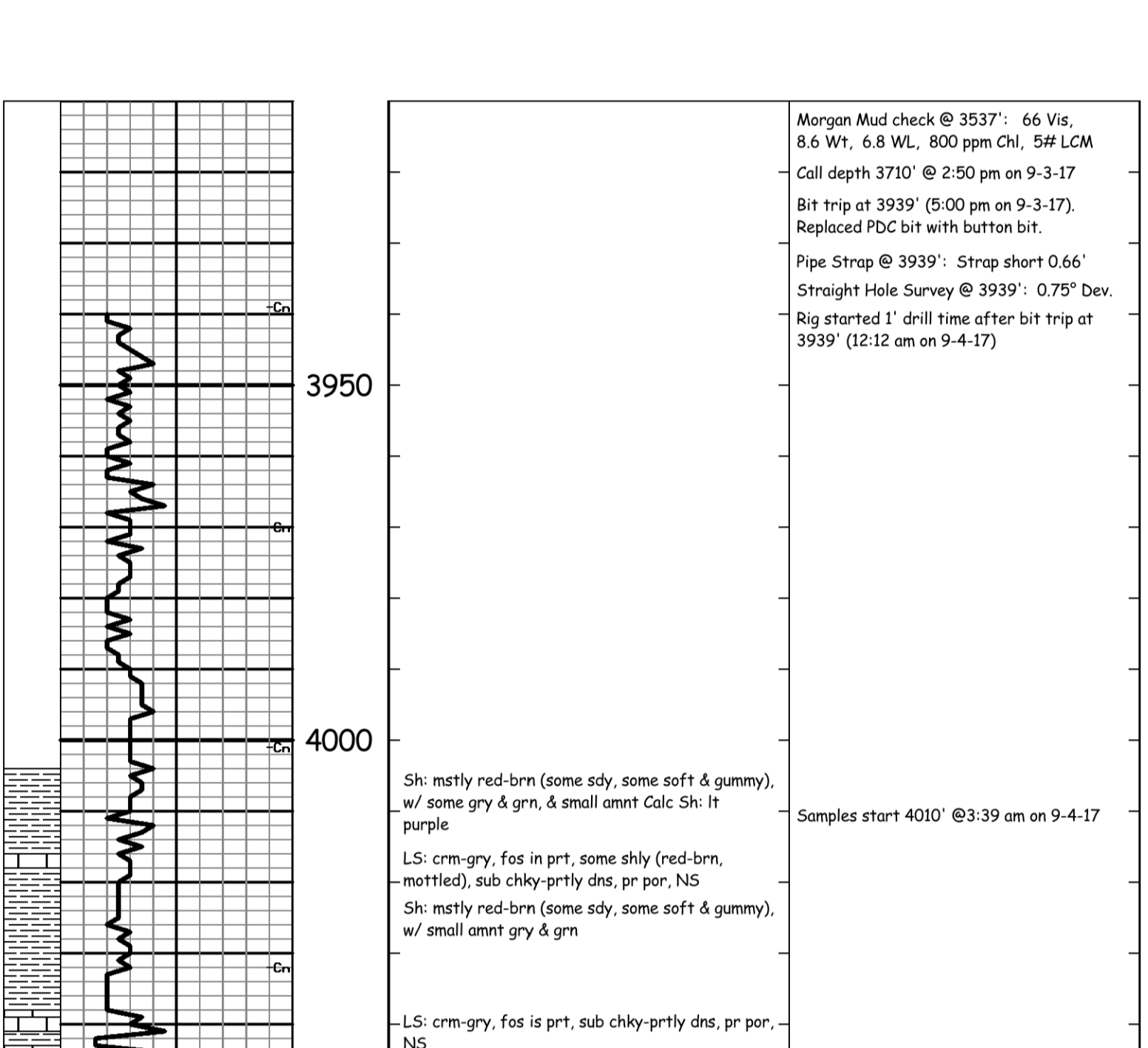
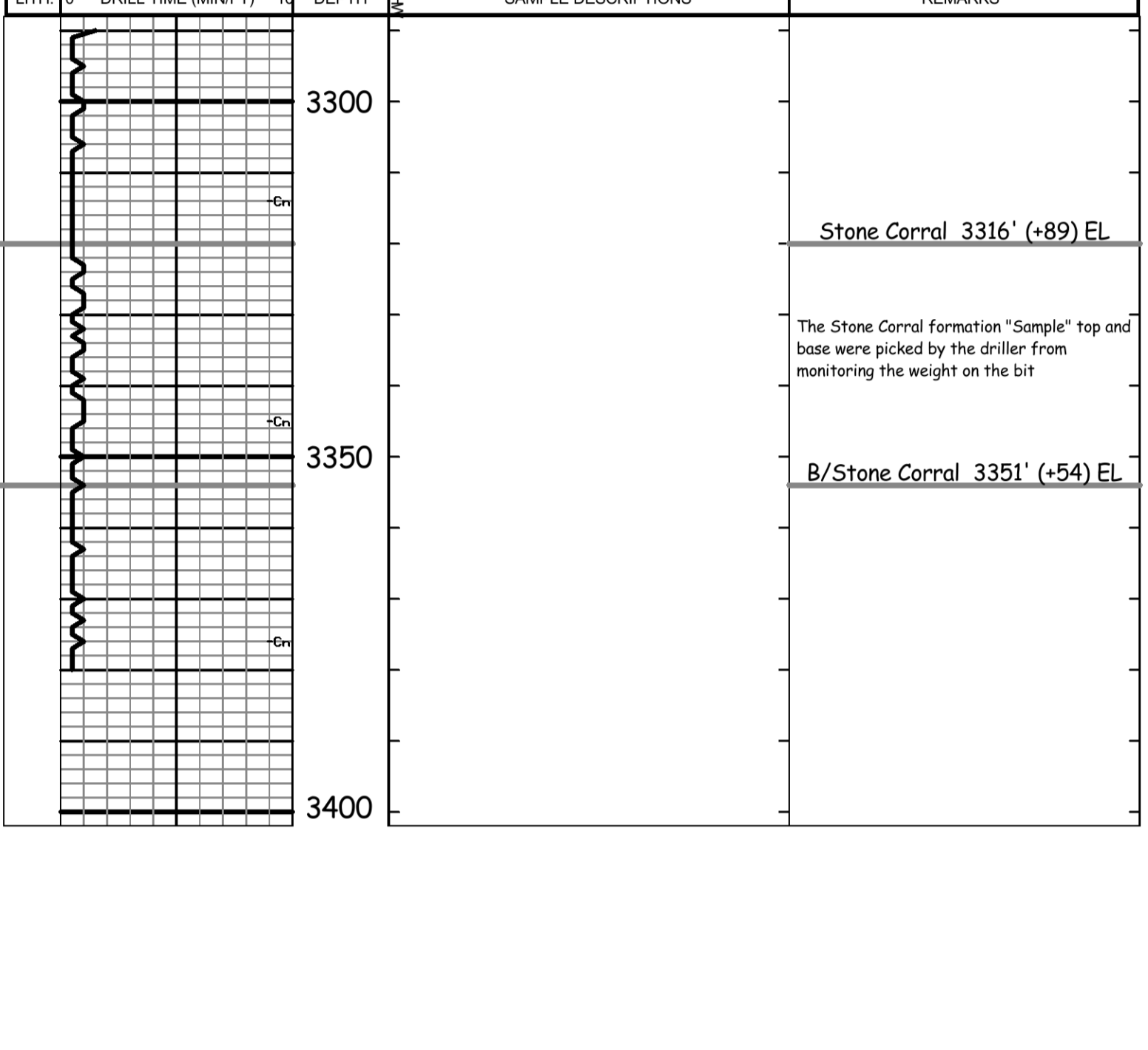
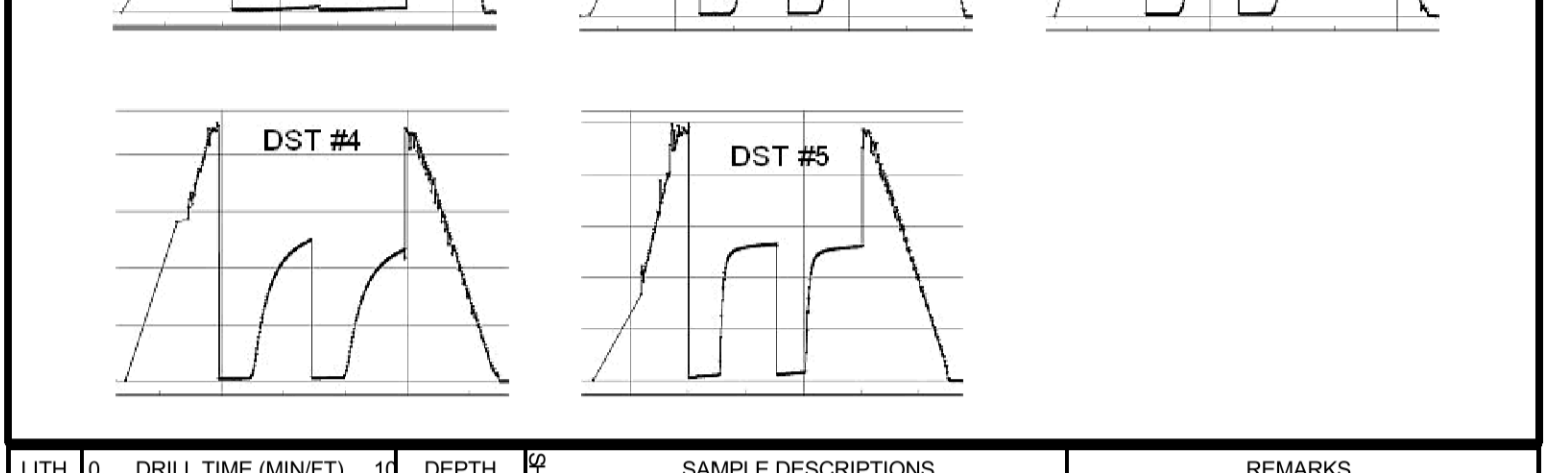
The electric log measurements correlate about 4' higher to the drilling measurements.

Formation tops and lithology on this report have been corrected to the electric log.

The drilling samples were deposited at the Kansas Geological Survey office in Wichita.

Respectfully submitted,

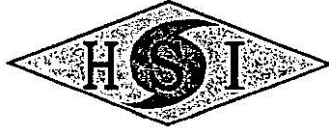
Robert L. Milford



MDCI  
Mears 'C' #1-10  
1320' FSL 2310'FWL  
Sec. 10-2S-37W  
3405' KB

Formation	Sample top	Datum	Ref	Log tops	Datum	Ref
Anhydrite	3320	+85	-2	3316	+89	+2
B/Anhydrite	3354	+51	Flat	3350	+55	+4
Topeka	4135	-730	-20	4134	-729	-19
Oread	4279	-874	-15	4275	-870	-11
Lansing	4358	-953	-16	4354	-949	-12
Stark	4586	-1181	-24	4580	-1175	-18
Mound City	4638	-1233	-25	4630	-1225	-17
Ft Scott	4769	-1364	-19	4765	-1360	-15
Excello	4819	-1414	-19	4814	-1410	-15
Celia	4846	-1446	-21	4844	-1444	-19
RTD	4920					
LTD				4919		

**TREATMENT REPORT**



**HURRICANE SERVICES INC**

<b>Customer:</b> Murfin Drilling Company Inc.	<b>Date:</b> 9/1/2017	<b>Ticket No.:</b> 100797
<b>Field Rep:</b> Arturo		
<b>Address:</b>		
<b>City, State:</b>		
<b>County, Zip:</b>		

<b>Field Order No.:</b> 100797	<b>Open Hole:</b>	<b>Perf Depths (ft)</b>	<b>Perfs</b>
<b>Well Name:</b> Mears C 1-10	<b>Casing Depth:</b> 345'		
<b>Location:</b> McDonald	<b>Casing Size:</b> 8.625 23 Lb		
<b>Formation:</b>	<b>Tubing Depth:</b>		
<b>Type of Service:</b> 8 5/8 Surface	<b>Tubing Size:</b>		
<b>Well Type:</b> Oil	<b>Liner Depth:</b>		
<b>Age of Well:</b> New	<b>Liner Size:</b>		
<b>Packer Type:</b>	<b>Liner Top:</b>		
<b>Packer Depth:</b>	<b>Liner Bottom:</b>		
<b>Treatment Via:</b> Casing	<b>Total Depth:</b> 345'		
		<b>Total Perfs</b>	<b>0</b>

TIME	INJECTION RATE		PRESSURE		REMARKS	PROP (lbs)	HCL (gls)	FLUID (bbls)
	FLUID	N2/CO2	STP	ANNULUS				
2:30 PM					Called Out			
6:45 PM					On location with Trucks Hold Safety Meeting			
					Spot & Set Up Trucks			
					TD= 345' TP= 344.77 SJ=20'			
					Run 8 Jt's 23 Lb Csg Set @ 344' Centralizers Jt 1/2 1 Jt 4			
6:50 PM					Start Casing			
					Casing On Bottom			
8:05 PM					Hook Up To Casing & Break Circulation W/Rig			
8:10 PM	4.0		190.0		Start Pumping H2O			5.00
	4.0		190.0		Start Mix 285 Sacks Common 2% Gel 3% C.C. @ 15 Lb/Gal			69.03
	4.0		145.0		Start Displacement H2O			20.78
8:30 PM			200.0		Shut Down			
					Good Circulation Thru Job			
					Circulate 10 Bbl's Cement To Pit			
9:00 PM					Off Location			
					Thank You			
					Please Call Again			
					Tony Cody Sheldon			
<b>TOTAL:</b>								<b>94.81</b>

**SUMMARY**

Max Fl. Rate	Avg Fl. Rate	Max PSI	Avg PSI
4.0	4.0	200.0	151.3

**PRODUCTS USED**

285 Sacks Common 2%Gel 3% Calcium Chloride

Treater: Tony P

Customer: Arturo Cabezas

3613A Y Road  
 Madison, KS 66860  
 Ph: 620-437-2661  
 Fax: 620-437-2881



HURRICANE SERVICES INC

104 Prairie Plaza Parkway  
 Garnett, KS 66032  
 Ph: 785-448-3100  
 Fax: 785-448-3102

FED ID# 48-1214033  
 MC ID# 165290

Remit to: Hurricane Services, Inc.  
 250 N. Water, Suite 200  
 Wichita, KS 67202

Customer:

MURFIN DRILLING CO  
 C/O JOHN TURNER  
 PO BOX 661  
 COLBY, KS 67701

OPERATOR PAY MDC  
 LEASE: Mears C 1-10/0n

Invoice Date: 9/9/2017  
 Invoice #: 0034540  
 Lease Name: MEARS C  
 Well #: 1-10  
 County: CHEYENNE

Date/Description	HRS/QTY	Rate	Total
Ticket 100800 PTA	0.000	0.000	0.00
Heavy Eq mileage one way	330.000	2.210	729.30
Light Eq mileage one way	165.000	1.020	168.30
Ton Mileage one way #242	1,887.000	0.884	1,668.11
Cementer #231	1.000	646.000	646.00
60/40 Pozmix cement	255.000	8.738	2,228.19
Bentonite Gel	877.000	0.204	178.91
Pheno-Seal	64.000	0.680	43.52
Wooden 8 5/8 plug	1.000	73.440	73.44

PTA \* 1-10  
 I0203 3 5094.0001 5950.31

Net Invoice 5,735.77  
 Sales Tax: (8.50%) 214.54  
**Total 5,950.31**

All invoices are due upon receipt. Interest at the rate of 1 1/2% per month may be charged on all invoices not paid within 30 days from date of invoice.

**WE APPRECIATE YOUR BUSINESS!**





**TREATMENT REPORT**



**HURRICANE SERVICES INC**

<b>Customer:</b> Murfin Drilling Company Inc.	<b>Date:</b> 9/9/2017	<b>Ticket No.:</b> 100800
<b>Field Rep:</b> Arturo		
<b>Address:</b>		
<b>City, State:</b>		
<b>County, Zip:</b>		

<b>Field Order No.:</b> 100800	<b>Open Hole:</b>	<b>Perf Depths (ft)</b>	<b>Perfs</b>
<b>Well Name:</b> Mears C 1-10	<b>Casing Depth:</b>		
<b>Location:</b> McDonald	<b>Casing Size:</b>		
<b>Formation:</b>	<b>Tubing Depth:</b> 4354'		
<b>Type of Service:</b> PTA	<b>Tubing Size:</b> 4 1/2 16.6 Lb		
<b>Well Type:</b> Oil	<b>Liner Depth:</b>		
<b>Age of Well:</b> New	<b>Liner Size:</b>		
<b>Packer Type:</b>	<b>Liner Top:</b>		
<b>Packer Depth:</b>	<b>Liner Bottom:</b>		
<b>Treatment Via:</b> Drill Pipe	<b>Total Depth:</b>		
		<b>Total Perfs</b>	<b>0</b>

TIME	INJECTION RATE		PRESSURE		REMARKS	PROP (lbs)	HCL (gls)	FLUID (bbls)
	FLUID	N2/CO2	STP	ANNULUS				
1:30 PM					Called Out			
6:30 PM					On location with Trucks Hold Safety Meeting			
					Spot & Set Up Trucks			
					TD=			
					1 St Plug @4354' 50sk 60/40 4%Gel 1/4 Ps			
8:50 PM	4.0		180.0		Start Pumping H2O			15.00
	3.9		375.0		Start Mix & Pump 50 Sk 60/40 4%Gel 1/4 PS @ 13.8 Lb/Gal			12.65
	3.9		375.0		Start Displacement H2O			5.00
	7.0		250.0		Start Displacement Rig Mud			54.00
					Shut Down PDPOOH			
					2 nd Plug @ 2252' 100 Sk 60/40 4% Gel 1/4 PS			
8:05 PM	4.0		450.0		Start Pumping H2O			10.00
	4.5		400.0		Start Mix & Pump 100 Sk 60/40 4%Gel 1/4 PS @ 13.8 Lb/Gal			25.29
	3.9		175.0		Start Displacement H2O			3.00
	7.0		175.0		Start Displacement Rig Mud			20.50
					Shut Down PDPOOH			
					3 Rd Plug @ 400' 50 Sk 60/40 4% Gel 1/4 PS			
9:30 PM	4.0		150.0		Start Pumping H2O			5.00
<b>TOTAL:</b>						-	-	179.00

**SUMMARY**

Max Fl. Rate	Avg Fl. Rate	Max PSI	Avg PSI
7.0	4.0	450.0	214.6

**PRODUCTS USED**

255 Sacks 60/40 4% Gel 1/4 Lb/Sk Phenoseal

Treater: Tony P

Customer: Arturo



## Tonya Urban

---

**From:** Bernie Meyer  
**Sent:** Monday, September 11, 2017 6:53 AM  
**To:** Todd Seba  
**Cc:** Tonya Urban  
**Subject:** RE: Mears C 1-10 PTA Ticket

ok

Bernie Meyer  
Murfin Drilling Company, Inc.  
[bmeyer@murfininc.com](mailto:bmeyer@murfininc.com)

**From:** Todd Seba  
**Sent:** Sunday, September 10, 2017 8:34 PM  
**To:** Bernie Meyer <[BMeyer@murfininc.com](mailto:BMeyer@murfininc.com)>  
**Cc:** Tonya Urban <[TUrban@hurricanesi.com](mailto:TUrban@hurricanesi.com)>  
**Subject:** Mears C 1-10 PTA Ticket

Bernie

Here is your copy from Saturday.  
If ok let Tonya know to invoice.

Thanks

Todd Seba  
Operations Foreman



HURRICANE SERVICES INC  
OIL FIELD SERVICES  
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