



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N. Water STE 300  
Wichita, KS 67202

ATTN: Ken Wallace

### **Verna Poore #2-7**

### **7-1S.-35W Rawlins,KS**

Start Date: 2018.10.18 @ 18:10:00

End Date: 2018.10.19 @ 02:59:40

Job Ticket #: 64123                      DST #: 1

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

Printed: 2018.10.22 @ 17:00:16

Murfin Drilling Co Inc  
7-1S.-35W Rawlins,KS  
Verna Poore #2-7  
DST # 1  
LKC " A - D "  
2018.10.18



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
250 N. Water STE 300  
Wichita, KS 67202  
ATTN: Ken Wallace

**7-1S.-35W Rawlins,KS**  
**Verna Poore #2-7**  
Job Ticket: 64123      **DST#: 1**  
Test Start: 2018.10.18 @ 18:10:00

## GENERAL INFORMATION:

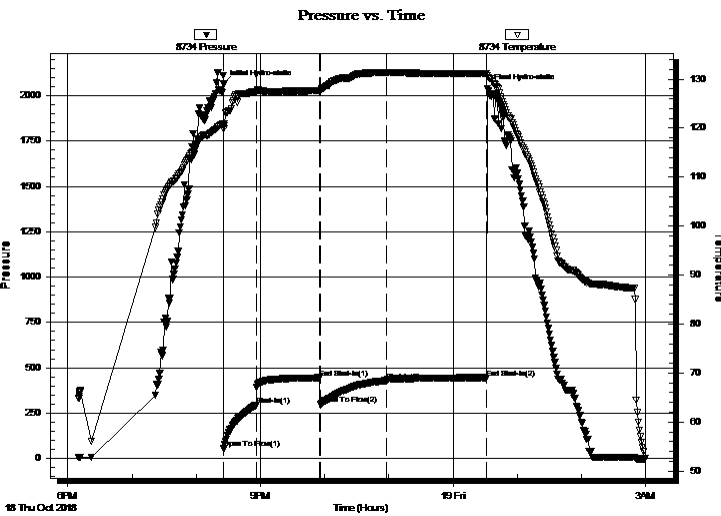
Formation: **LKC "A - D"**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 20:25:50  
Time Test Ended: 02:59:40  
Interval: **4104.00 ft (KB) To 4244.00 ft (KB) (TVD)**  
Total Depth: 4244.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Good  
Reference Elevations: 3236.00 ft (KB)  
3231.00 ft (CF)  
KB to GR/CF: 5.00 ft  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Martine Salinas  
Unit No: 82

## Serial #: 8734

Outside

Press@RunDepth: 428.95 psig @ 4105.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2018.10.18 End Date: 2018.10.19 Last Calib.: 2018.10.19  
Start Time: 18:10:01 End Time: 02:59:40 Time On Btm: 2018.10.18 @ 20:25:40  
Time Off Btm: 2018.10.19 @ 00:32:00

TEST COMMENT: 30-IF- B.O.B (12 inches) @ 6 mins (blow increased to 41 1/2"  
60-ISI-No blow  
60-FF- B.O.B (12 inches) @ 13 1/2 mins (blow increased to 29 3/4"  
90-FSI-No blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2062.82	120.78	Initial Hydro-static
1	53.86	119.92	Open To Flow (1)
31	293.79	127.49	Shut-In(1)
90	445.04	127.72	End Shut-In(1)
91	297.26	127.68	Open To Flow (2)
152	428.95	131.36	Shut-In(2)
246	443.75	131.18	End Shut-In(2)
247	2038.08	130.78	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
315.00	MSW 2%M, 98%W	2.81
275.00	GHMCW 5%G, 42%M, 53%W	3.86
350.00	SOSWCM 1%O, 15%W, 84%M	4.91

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co Inc

**7-1S.-35W Rawlins,KS**

250 N. Water STE 300  
Wichita, KS 67202

**Verna Poore #2-7**

Job Ticket: 64123

**DST#: 1**

ATTN: Ken Wallace

Test Start: 2018.10.18 @ 18:10:00

## Tool Information

Drill Pipe:	Length: 3917.00 ft	Diameter: 3.80 inches	Volume: 54.95 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 177.00 ft	Diameter: 2.25 inches	Volume: 0.87 bbl	Weight to Pull Loose: 78000.00 lb
			<u>Total Volume: 55.82 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4104.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	140.00 ft			
Tool Length:	168.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4081.00	
Hydraulic tool	5.00	1113		4086.00	
Jars	5.00	01-07		4091.00	
Safety Joint	3.00	-001		4094.00	
Packer	5.00			4099.00	28.00 Bottom Of Top Packer
Packer	5.00			4104.00	
Stubb	1.00			4105.00	
Recorder	0.00	8959	Inside	4105.00	
Recorder	0.00	8734	Outside	4105.00	
Perforations	7.00			4112.00	
Change Over Sub	1.00			4113.00	
Drill Pipe	125.00			4238.00	
Change Over Sub	1.00			4239.00	
Bullnose	5.00			4244.00	140.00 Bottom Packers & Anchor

**Total Tool Length: 168.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co Inc

**7-1S.-35W Rawlins,KS**

250 N. Water STE 300  
Wichita, KS 67202

**Verna Poore #2-7**

Job Ticket: 64123

**DST#: 1**

ATTN: Ken Wallace

Test Start: 2018.10.18 @ 18:10:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

65000 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
315.00	MSW 2%M, 98%W	2.806
275.00	GHMCW 5%G, 42%M, 53%W	3.858
350.00	SOSWCM 1%O, 15%W, 84%M	4.910

Total Length: 940.00 ft      Total Volume: 11.574 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

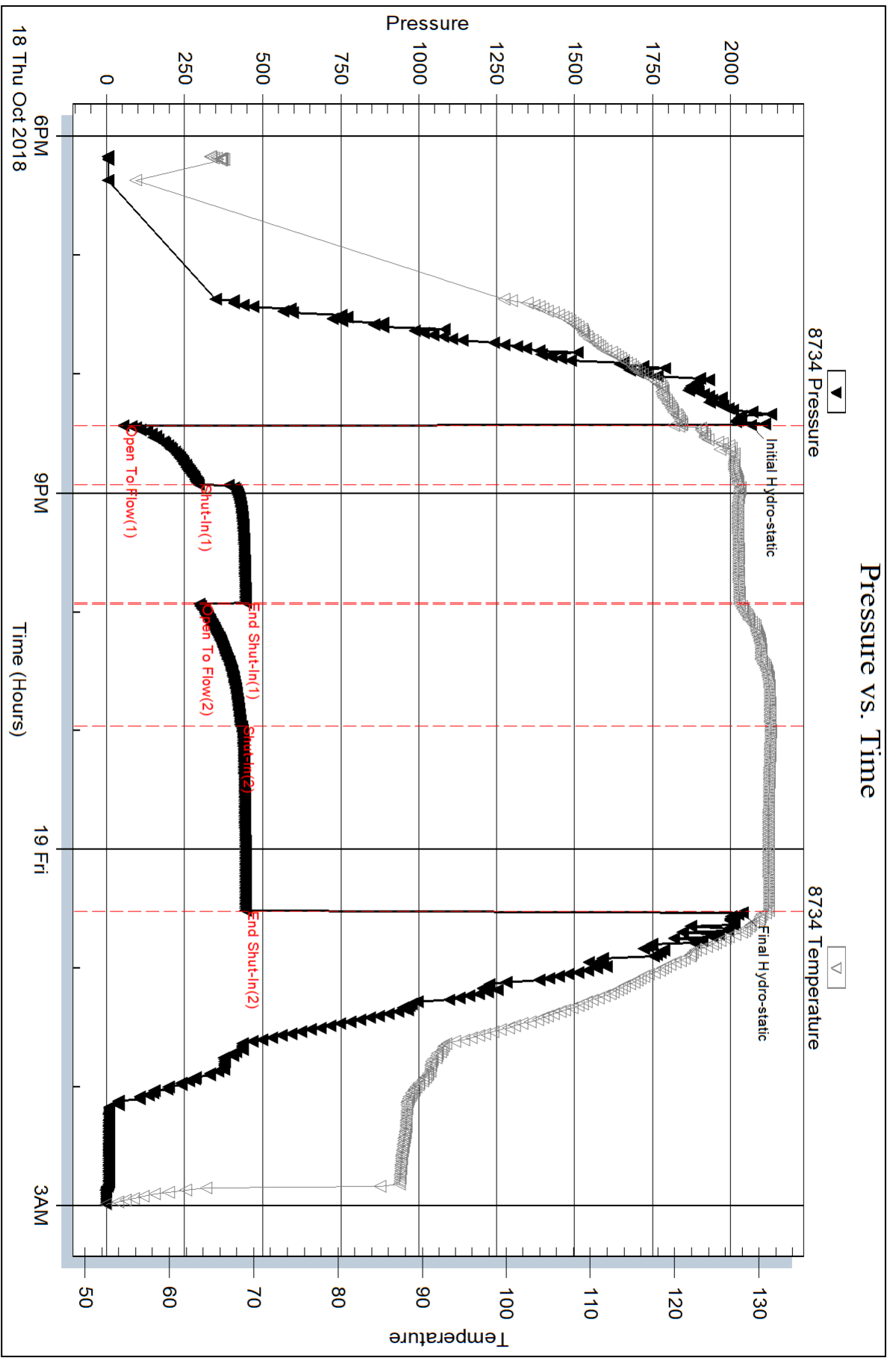
Recovery Comments: RW= .158 @ 48.5 degs= 65,000 PPM

Serial #: 8734

Outside Murfin Drilling Co Inc

Verna Poore #2-7

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 64123

Printed: 2018.10.22 @ 17:00:17

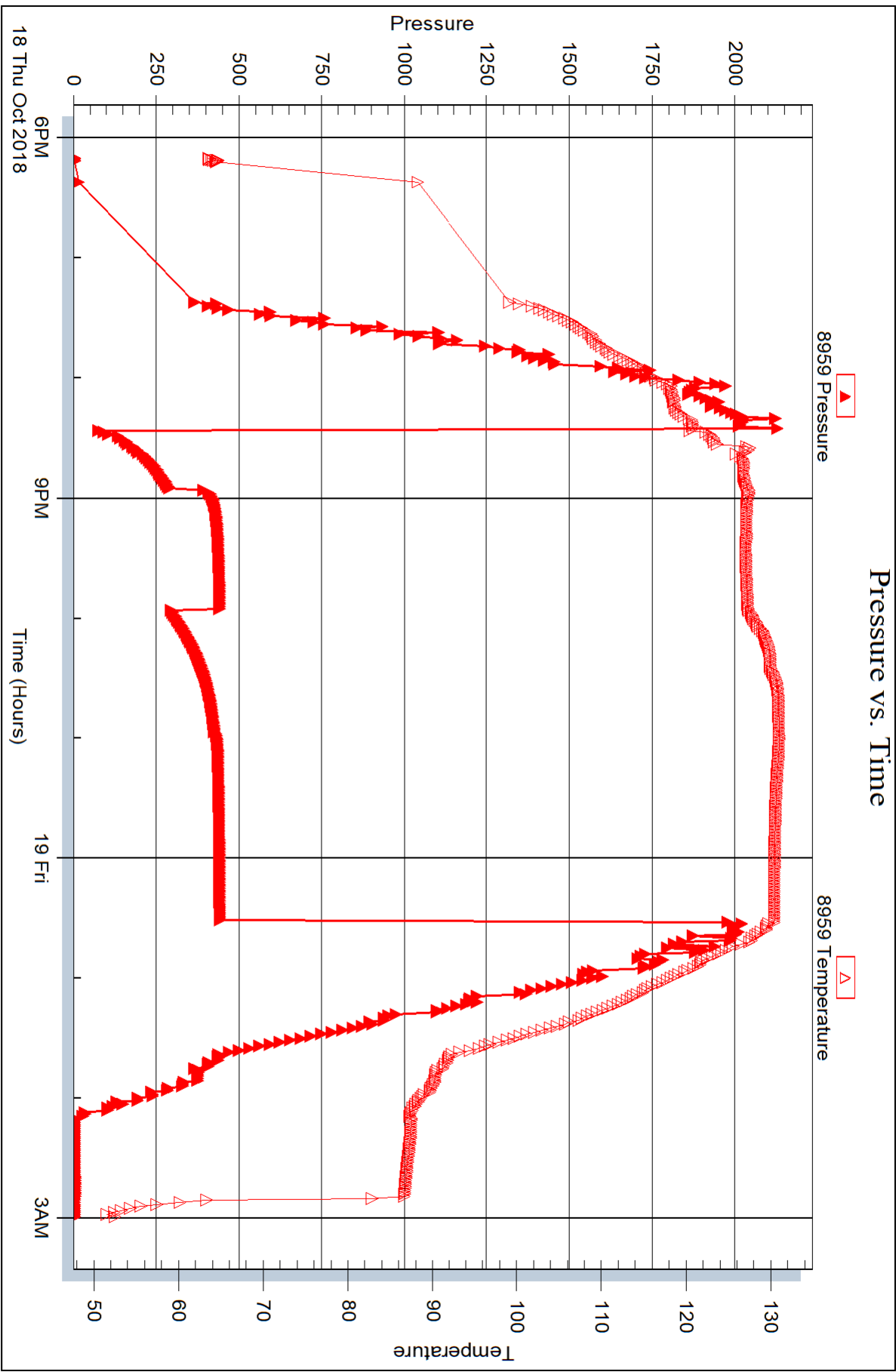
Serial #: 8959

Inside

Murfin Drilling Co Inc

Verna Poore #2-7

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 64123

Printed: 2018.10.22 @ 17:00:17



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N. Water STE 300  
Wichita, KS 67202

ATTN: Ken Wallace

### **Verna Poore #2-7**

### **7-1S.-35W Rawlins,KS**

Start Date: 2018.10.19 @ 14:08:00

End Date: 2018.10.19 @ 22:18:00

Job Ticket #: 64124                      DST #: 2

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

Printed: 2018.10.22 @ 16:59:35





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
 250 N. Water STE 300  
 Wichita, KS 67202  
 ATTN: Ken Wallace

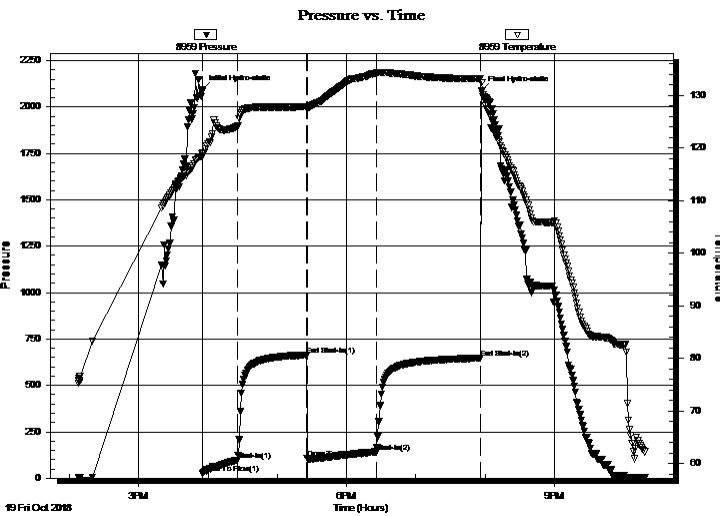
**7-1S.-35W Rawlins,KS**  
**Verna Poore #2-7**  
 Job Ticket: 64124      **DST#: 2**  
 Test Start: 2018.10.19 @ 14:08:00

## GENERAL INFORMATION:

Formation: **LKC "G"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 15:55:20  
 Time Test Ended: 22:18:00  
 Interval: **4254.00 ft (KB) To 4300.00 ft (KB) (TVD)**  
 Total Depth: 4300.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Martine Salinas  
 Unit No: 82  
 Reference Elevations: 3236.00 ft (KB)  
 3231.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 8959      Inside**  
 Press@RunDepth: 141.75 psig @ 4255.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2018.10.19      End Date: 2018.10.19      Last Calib.: 2018.10.19  
 Start Time: 14:08:01      End Time: 22:18:00      Time On Btm: 2018.10.19 @ 15:55:10  
 Time Off Btm: 2018.10.19 @ 19:57:00

**TEST COMMENT:** 30 - IFP - Surface blow built to 8"  
 60 - ISI - Surface blow back @ 2 mins died @ 30 mins  
 60 - FFP - Surface blow built to B.O.B (12 inches) @ 46 mins (blow increased to 14 1/4")  
 90 - FSI - Surface blow back built to 3/4" & died @ 42 mins



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2091.79	119.15	Initial Hydro-static
1	26.92	118.37	Open To Flow (1)
31	97.47	124.07	Shut-In(1)
91	661.93	127.84	End Shut-In(1)
91	105.74	127.67	Open To Flow (2)
151	141.75	134.22	Shut-In(2)
241	646.35	133.16	End Shut-In(2)
242	2087.72	132.41	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
120.00	SOMCW10%O, 20%M, 70%W	0.59
60.00	OCWM 20%O, 20%W, 60%M	0.32
62.00	OCM 40%O, 60%M	0.87
20.00	MCO 30%M, 70%O	0.28
10.00	CGO 30%G, 70%O	0.14
0.00	156' GIP	0.00

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co Inc

**7-1S.-35W Rawlins,KS**

250 N. Water STE 300  
Wichita, KS 67202

**Verna Poore #2-7**

Job Ticket: 64124

**DST#: 2**

ATTN: Ken Wallace

Test Start: 2018.10.19 @ 14:08:00

## Tool Information

Drill Pipe:	Length: 4069.00 ft	Diameter: 3.80 inches	Volume: 57.08 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 177.00 ft	Diameter: 2.25 inches	Volume: 0.87 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 57.95 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4254.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	48.00 ft			
Tool Length:	76.00 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			4231.00	
Hydraulic tool	5.00	1113		4236.00	
Jars	5.00	01-07		4241.00	
Safety Joint	3.00	-001		4244.00	
Packer	5.00			4249.00	28.00 Bottom Of Top Packer
Packer	5.00			4254.00	
Stubb	1.00			4255.00	
Recorder	0.00	8959	Inside	4255.00	
Recorder	0.00	8734	Outside	4255.00	
Perforations	9.00			4264.00	
Change Over Sub	1.00			4265.00	
Drill Pipe	31.00			4296.00	
Change Over Sub	1.00			4297.00	
Bullnose	5.00			4302.00	48.00 Bottom Packers & Anchor

**Total Tool Length: 76.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co Inc

**7-1S.-35W Rawlins,KS**

250 N. Water STE 300  
Wichita, KS 67202

**Verna Poore #2-7**

Job Ticket: 64124

**DST#: 2**

ATTN: Ken Wallace

Test Start: 2018.10.19 @ 14:08:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

38 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

66000 ppm

Viscosity: 63.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1500.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
120.00	SOMCW10%O, 20%M, 70%W	0.590
60.00	OCWM 20%O, 20%W, 60%M	0.322
62.00	OCM 40%O, 60%M	0.870
20.00	MCO 30%M, 70%O	0.281
10.00	CGO 30%G, 70%O	0.140
0.00	156' GIP	0.000

Total Length: 272.00 ft      Total Volume: 2.203 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity of oil = 39 @ 70 degs

Gravity corrected to 38 @ 60 degs

RW= .143 @ 61 degs= 66,000 PPM

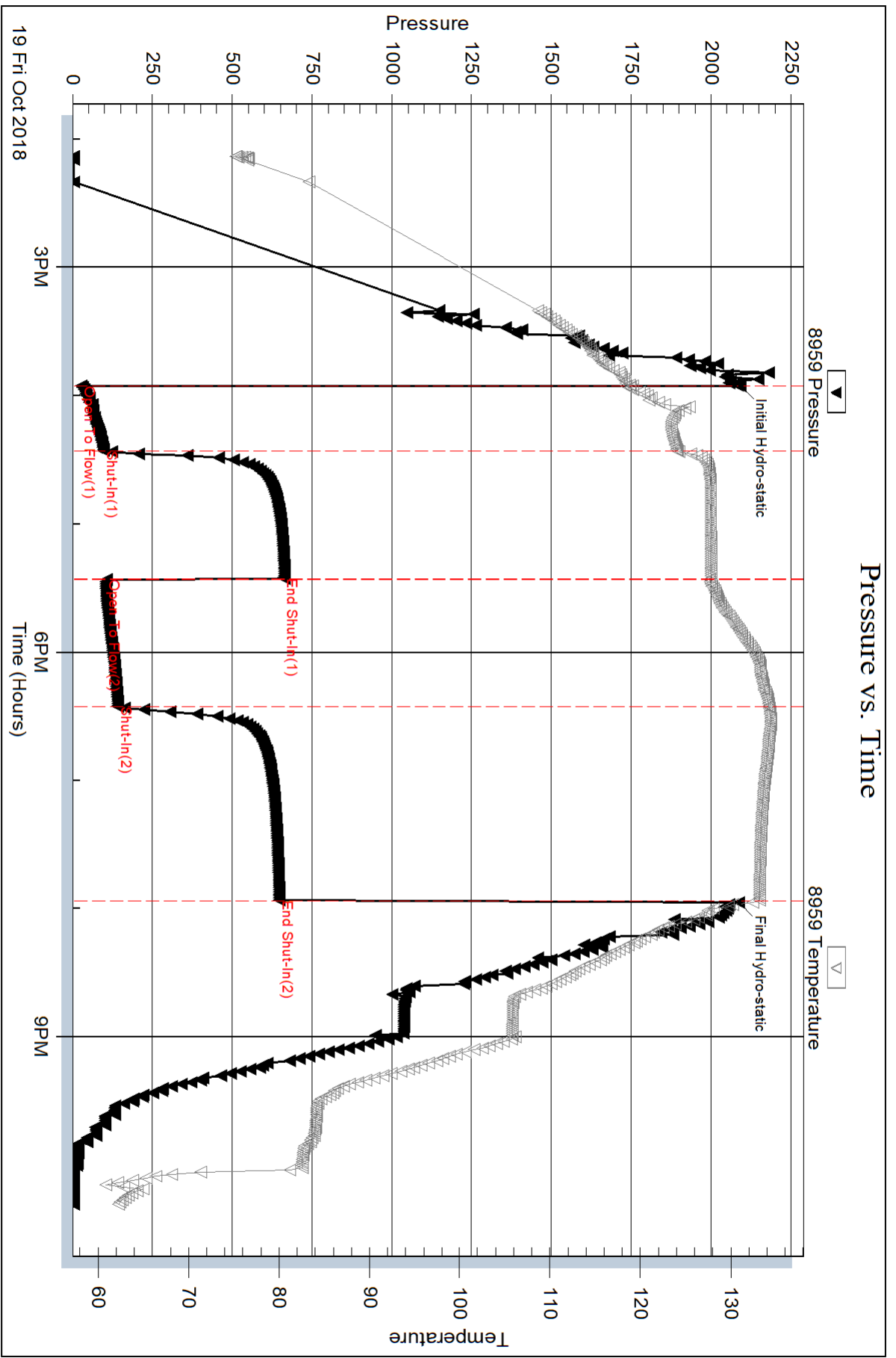
Serial #: 8959

Inside

Murfin Drilling Co Inc

Verna Poore #2-7

DST Test Number: 2

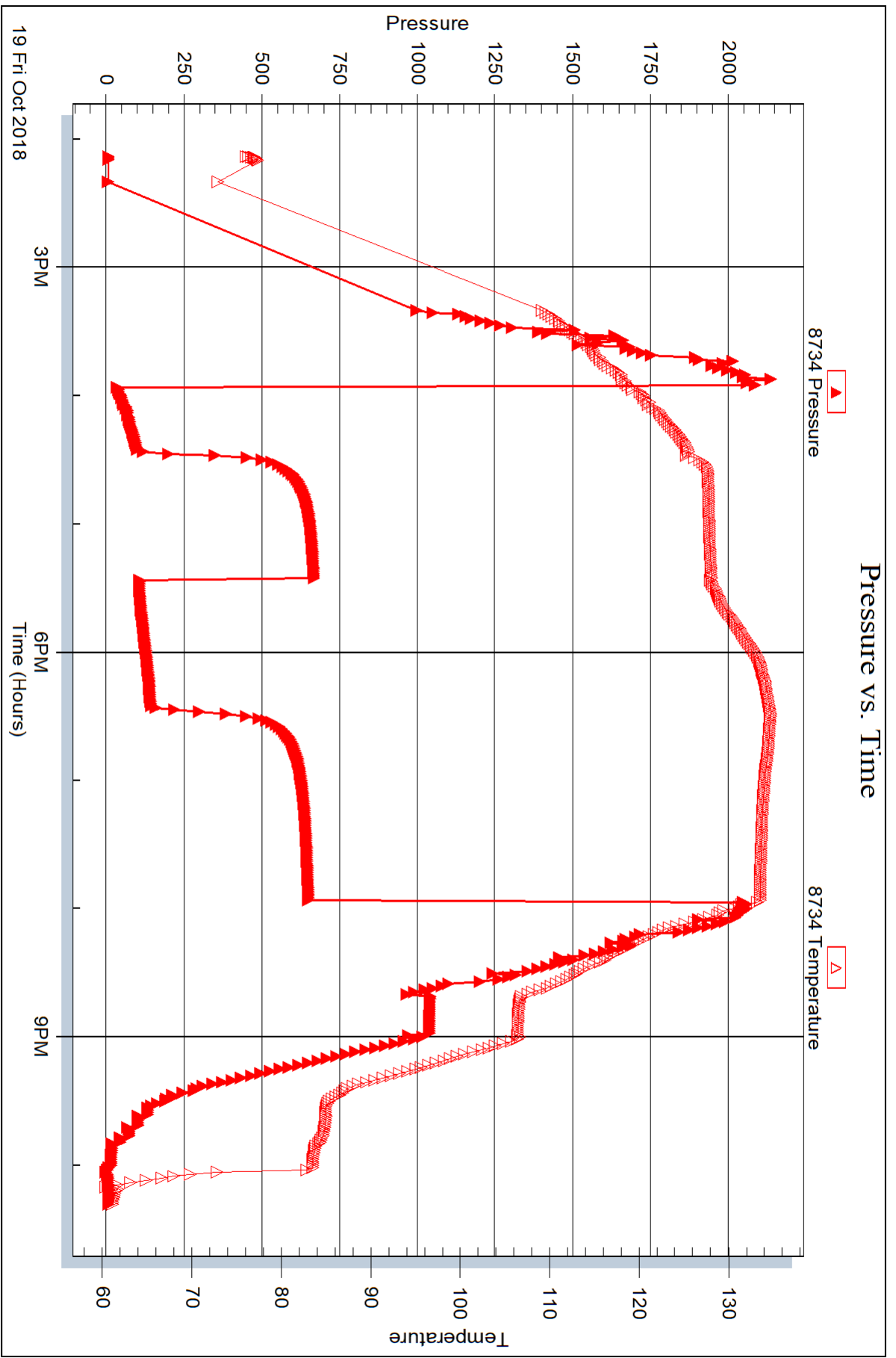


Serial #: 8734

Outside Murfin Drilling Co Inc

Verna Poore #2-7

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 64124

Printed: 2018.10.22 @ 16:59:36



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N. Water STE 300  
Wichita, KS 67202

ATTN: Ken Wallace

### **Verna Poore #2-7**

### **7-1S.-35W Rawlins,KS**

Start Date: 2018.10.20 @ 07:51:00

End Date: 2018.10.20 @ 15:25:00

Job Ticket #: 64125                      DST #: 3

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

Printed: 2018.10.22 @ 16:57:39



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
 250 N. Water STE 300  
 Wichita, KS 67202  
 ATTN: Ken Wallace

**7-1S.-35W Rawlins,KS**  
**Verna Poore #2-7**  
 Job Ticket: 64125 **DST#: 3**  
 Test Start: 2018.10.20 @ 07:51:00

## GENERAL INFORMATION:

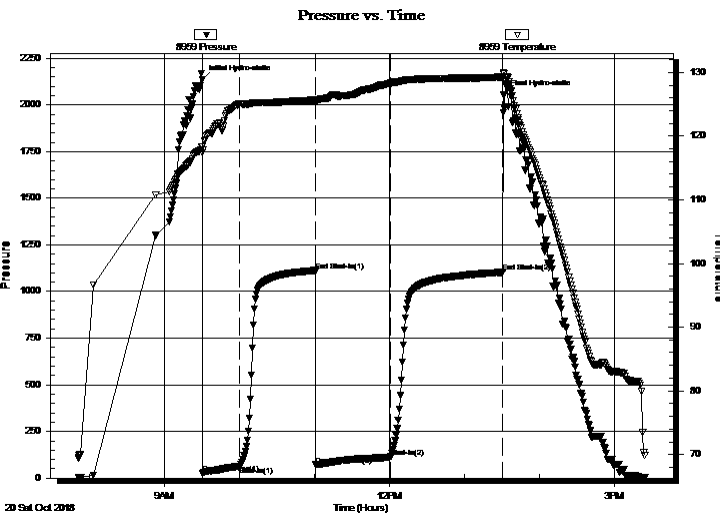
Formation: **LKC G' & H**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 09:30:20  
 Time Test Ended: 15:25:00  
 Interval: **4294.00 ft (KB) To 4333.00 ft (KB) (TVD)**  
 Total Depth: 4333.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Martine Salinas  
 Unit No: 82  
 Reference Elevations: 3236.00 ft (KB)  
 3231.00 ft (CF)  
 KB to GR/CF: 5.00 ft

## Serial #: 8959

Inside

Press@RunDepth: 111.67 psig @ 4295.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2018.10.20 End Date: 2018.10.20 Last Calib.: 2018.10.20  
 Start Time: 07:51:01 End Time: 15:25:00 Time On Btm: 2018.10.20 @ 09:30:10  
 Time Off Btm: 2018.10.20 @ 13:31:39

TEST COMMENT: 30-IFP-Surface blow built to 10 1/4"  
 60-ISI-No blow  
 60-FFP-Surface blow built to 10"  
 90FSI-Surface blow @ 4 mins died @ 20 mins



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2135.04	118.35	Initial Hydro-static
1	26.00	117.35	Open To Flow (1)
30	64.12	125.03	Shut-In(1)
91	1107.97	125.63	End Shut-In(1)
91	71.26	125.52	Open To Flow (2)
151	111.67	128.30	Shut-In(2)
241	1103.32	129.28	End Shut-In(2)
242	2054.81	129.72	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
73.00	SOHWCM 10%O, 40%W, 50%M	0.36
124.00	GOCM 2%G, 16%O, 82%M	0.79
0.00	124' GIP	0.00

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co Inc

**7-1S.-35W Rawlins,KS**

250 N. Water STE 300  
Wichita, KS 67202

**Verna Poore #2-7**

Job Ticket: 64125

**DST#: 3**

ATTN: Ken Wallace

Test Start: 2018.10.20 @ 07:51:00

## Tool Information

Drill Pipe:	Length: 4104.00 ft	Diameter: 3.80 inches	Volume: 57.57 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 177.00 ft	Diameter: 2.25 inches	Volume: 0.87 bbl	Weight to Pull Loose:	77000.00 lb
			<u>Total Volume: 58.44 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial	63000.00 lb
Depth to Top Packer:	4294.00 ft			Final	64000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	39.00 ft				
Tool Length:	67.00 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			4271.00	
Hydraulic tool	5.00	1113		4276.00	
Jars	5.00	01-07		4281.00	
Safety Joint	3.00	-001		4284.00	
Packer	5.00			4289.00	28.00 Bottom Of Top Packer
Packer	5.00			4294.00	
Stubb	1.00			4295.00	
Recorder	0.00	8959	Inside	4295.00	
Recorder	0.00	8734	Outside	4295.00	
Perforations	33.00			4328.00	
Bullnose	5.00			4333.00	39.00 Bottom Packers & Anchor

**Total Tool Length: 67.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co Inc

**7-1S.-35W Rawlins,KS**

250 N. Water STE 300  
Wichita, KS 67202

**Verna Poore #2-7**

Job Ticket: 64125

**DST#: 3**

ATTN: Ken Wallace

Test Start: 2018.10.20 @ 07:51:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

39000 ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1600.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
73.00	SOHWCM 10%O, 40%W, 50%M	0.359
124.00	GOCM 2%G, 16%O, 82%M	0.792
0.00	124' GIP	0.000

Total Length: 197.00 ft      Total Volume: 1.151 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW= .209 @ 68.6 degs = 39,000 PPM

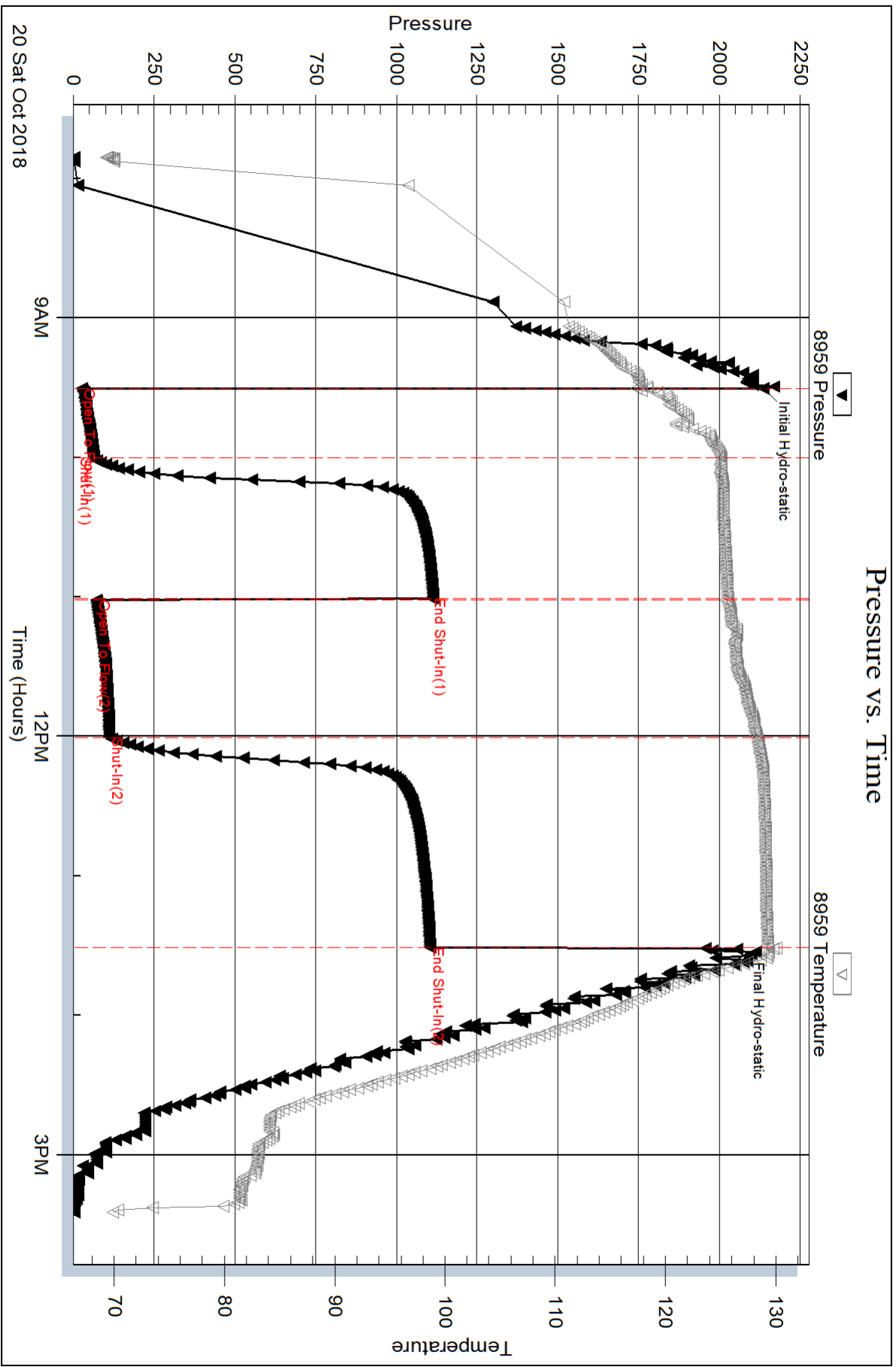
Serial #: 8959

Inside

Murfin Drilling Co Inc

Verna Poore #2-7

DST Test Number: 3

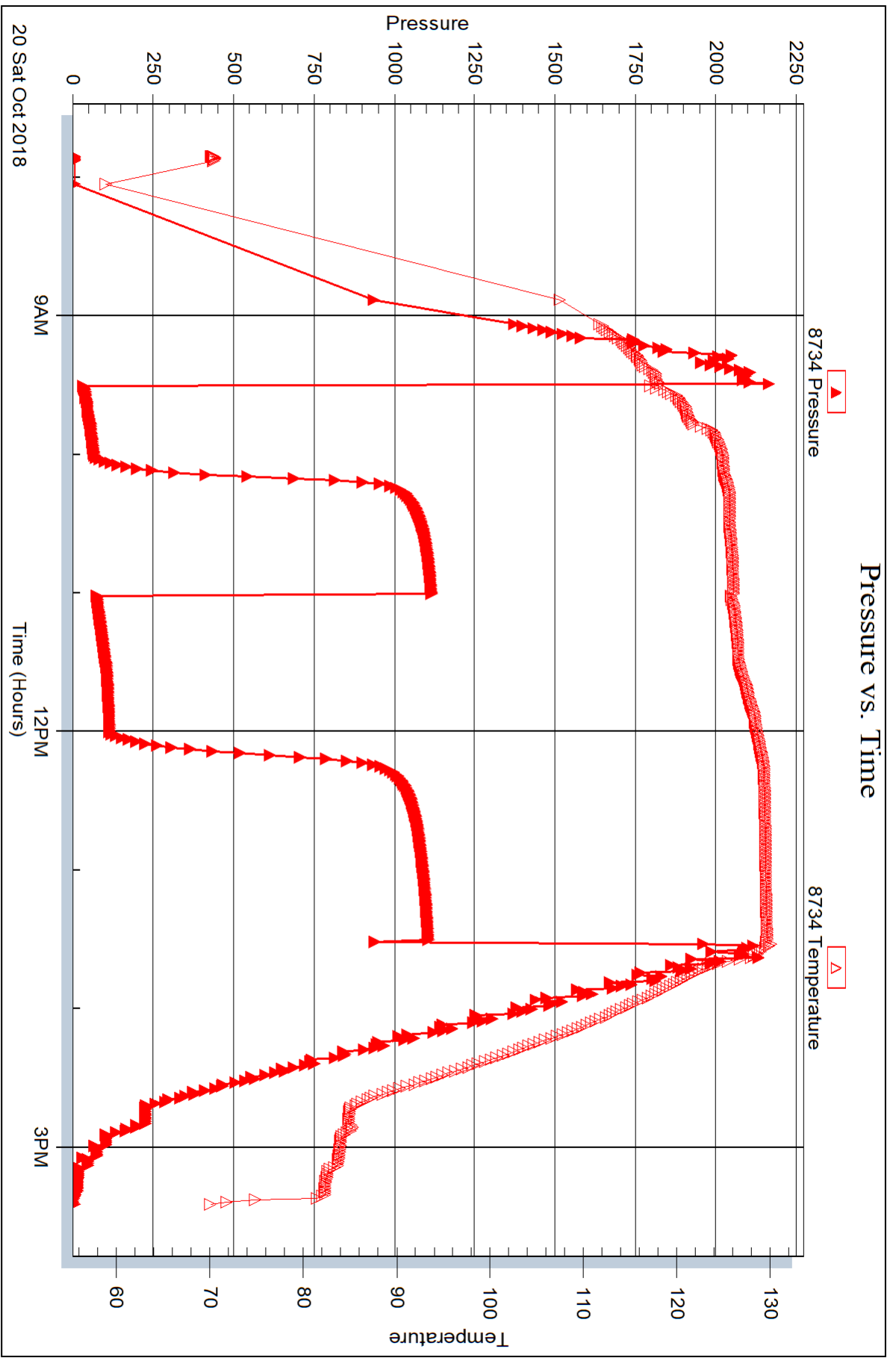


Serial #: 8734

Outside Murfin Drilling Co Inc

Verna Poore #2-7

DST Test Number: 3





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N. Water STE 300  
Wichita, KS 67202

ATTN: Ken Wallace

### **Verna Poore #2-7**

### **7-1S.-35W Rawlins,KS**

Start Date: 2018.10.21 @ 01:50:00

End Date: 2018.10.21 @ 09:12:30

Job Ticket #: 64726                      DST #: 4

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

Printed: 2018.10.22 @ 16:52:19

Murfin Drilling Co Inc  
7-1S.-35W Rawlins,KS  
Verna Poore #2-7  
DST # 4  
LKC " J "  
2018.10.21



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
250 N. Water STE 300  
Wichita, KS 67202  
ATTN: Ken Wallace

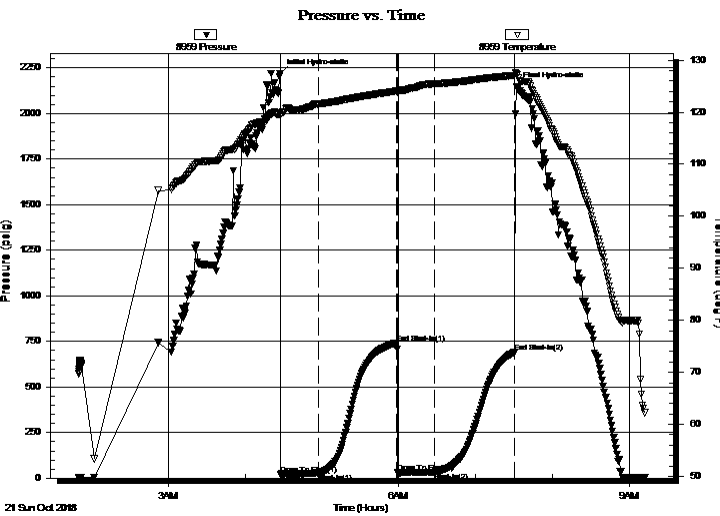
**7-1S.-35W Rawlins,KS**  
**Verna Poore #2-7**  
Job Ticket: 64726 **DST#: 4**  
Test Start: 2018.10.21 @ 01:50:00

## GENERAL INFORMATION:

Formation: **LKC " J "**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 04:27:40  
Time Test Ended: 09:12:30  
Interval: **4331.00 ft (KB) To 4386.00 ft (KB) (TVD)**  
Total Depth: 4386.00 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: 3236.00 ft (KB)  
3231.00 ft (CF)  
KB to GR/CF: 5.00 ft

**Serial #: 8959 Inside**  
Press@RunDepth: 32.34 psig @ 4332.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2018.10.21 End Date: 2018.10.21 Last Calib.: 2018.10.21  
Start Time: 01:50:01 End Time: 09:12:30 Time On Btm: 2018.10.21 @ 04:27:20  
Time Off Btm: 2018.10.21 @ 07:31:50

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



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2216.94	119.94	Initial Hydro-static
1	22.37	119.33	Open To Flow (1)
31	27.37	121.52	Shut-In(1)
91	742.54	124.06	End Shut-In(1)
92	29.70	123.85	Open To Flow (2)
121	32.34	125.45	Shut-In(2)
183	690.49	127.08	End Shut-In(2)
185	2144.86	127.36	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	OSM 3%O, 97%M	0.07

\* Recovery from multiple tests

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co Inc

**7-1S.-35W Rawlins,KS**

250 N. Water STE 300  
Wichita, KS 67202

**Verna Poore #2-7**

Job Ticket: 64726

**DST#: 4**

ATTN: Ken Wallace

Test Start: 2018.10.21 @ 01:50:00

## Tool Information

Drill Pipe:	Length: 4134.00 ft	Diameter: 3.80 inches	Volume: 57.99 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 177.00 ft	Diameter: 2.25 inches	Volume: 0.87 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 58.86 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4331.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	55.00 ft			
Tool Length:	83.00 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			4308.00	
Hydraulic tool	5.00	1113		4313.00	
Jars	5.00	01-07		4318.00	
Safety Joint	3.00	-001		4321.00	
Packer	5.00			4326.00	28.00 Bottom Of Top Packer
Packer	5.00			4331.00	
Stubb	1.00			4332.00	
Recorder	0.00	8959	Inside	4332.00	
Recorder	0.00	8734	Outside	4332.00	
Perforations	16.00			4348.00	
Change Over Sub	1.00			4349.00	
Drill Pipe	31.00			4380.00	
Change Over Sub	1.00			4381.00	
Bullnose	5.00			4386.00	55.00 Bottom Packers & Anchor

**Total Tool Length: 83.00**



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Murfin Drilling Co Inc

**7-1S.-35W Rawlins,KS**

250 N. Water STE 300  
Wichita, KS 67202

**Verna Poore #2-7**

Job Ticket: 64726

**DST#: 4**

ATTN: Ken Wallace

Test Start: 2018.10.21 @ 01:50:00

**Mud and Cushion Information**

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1600.00 ppm

Filter Cake: 2.00 inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
15.00	OSM 3%O, 97%M	0.074

Total Length: 15.00 ft      Total Volume: 0.074 bbl

Num Fluid Samples: 0

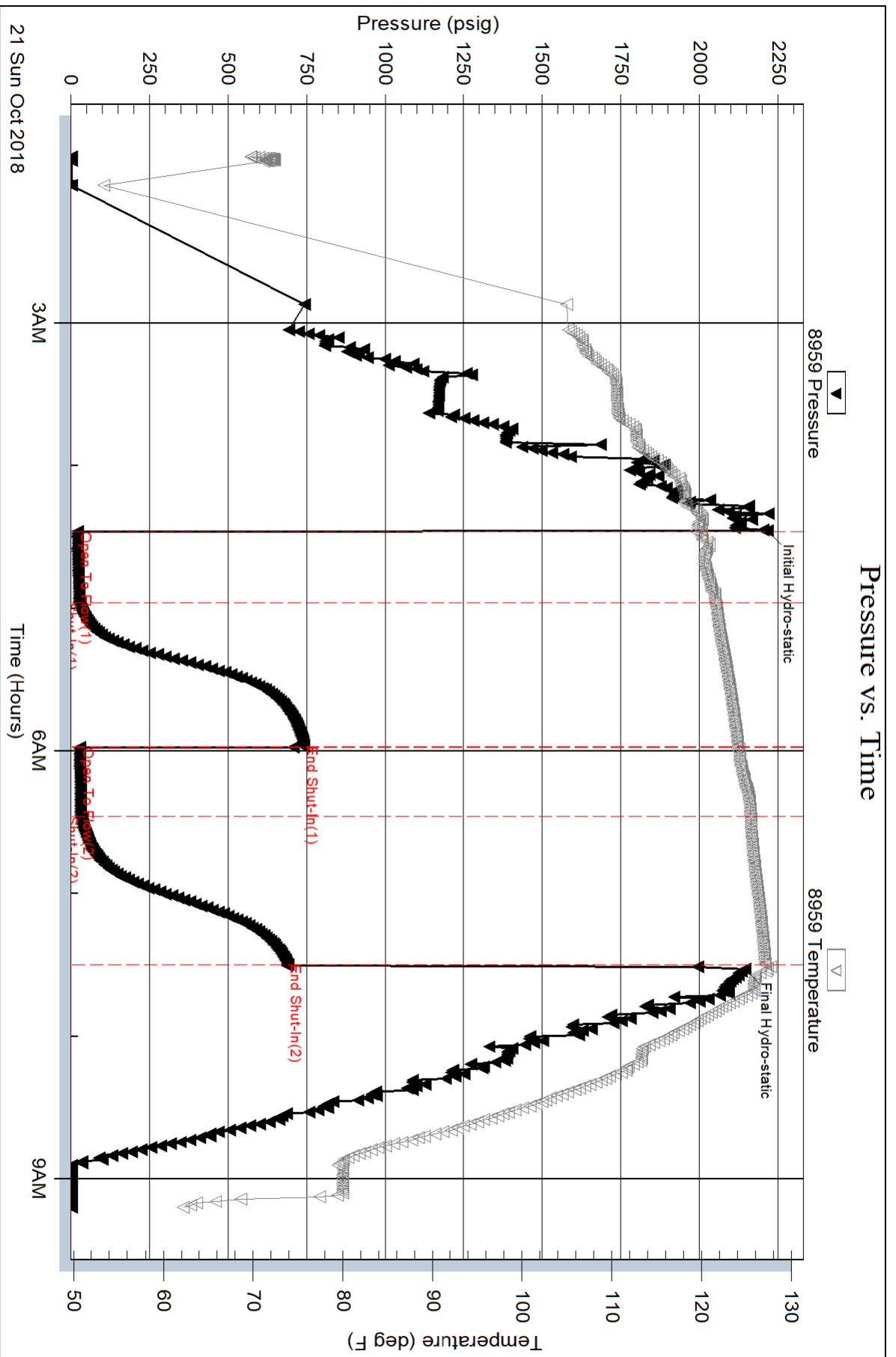
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

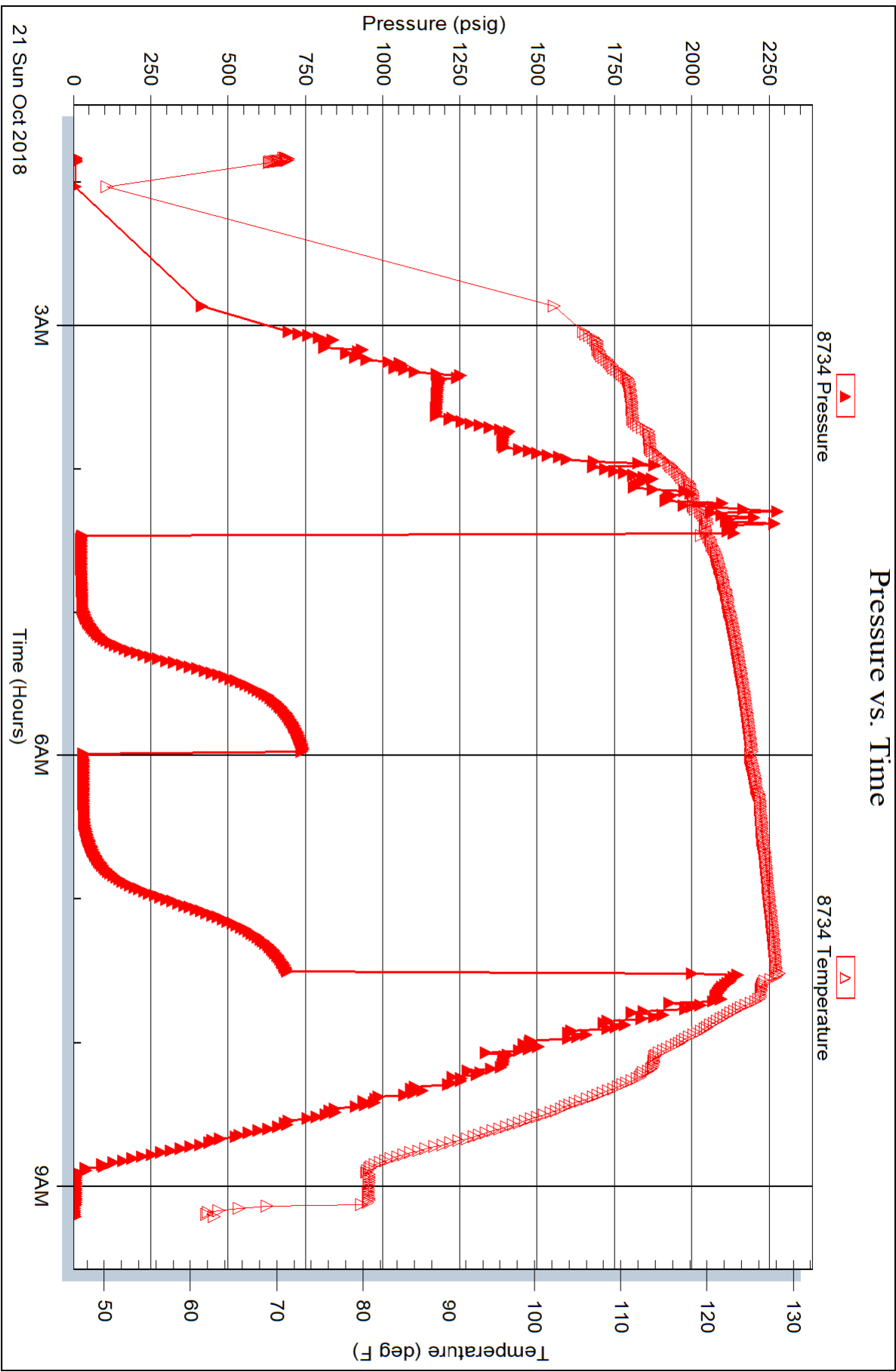


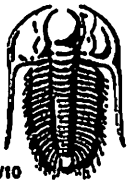
Serial #: 8734

Outside Murfin Drilling Co Inc

Verna Poore #2-7

DST Test Number: 4





# TRIOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 64123

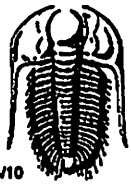
Well Name & No. Verna Poor # 2-7 Test No. 1 Date 10-18-18  
 Company Murfin Drilling Co Inc Elevation 3236 KB 3231 GL  
 Address 250 N. Water, STE 300, Wichita, KS 67202  
 Co. Rep / Geo. Ken Wallace Rig Murfin #3  
 Location: Sec. 7 Twp 1S. Rge. 35W. Co. Bawling State KS

Interval Tested 4104-4244 Zone Tested Lansing "A+D"  
 Anchor Length 146 Drill Pipe Run 3917 Mud Wt. 9.2  
 Top Packer Depth 4099 Drill Collars Run 177 Vis 55  
 Bottom Packer Depth 4104 Wt. Pipe Run — WL 5.6  
 Total Depth 4244 Chlorides 700 ppm System LCM 8#  
 Blow Description IF .5 blow built to B.O.B (12 inches) @ 6 mins (blow increased to 41 1/2")  
ISI - No blow  
FF .5 blow built to B.O.B (12 inches) @ 13 1/2 mins (blow increased to 29 3/4")  
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
315	MSW		98	2	
275	G HMCW	5	53	42	
350	SOSWCM	1	15	84	

Rec Total 940 BHT 131 Gravity — API RW 158 @ 48.5 °F Chlorides 65,000 ppm  
 (A) Initial Hydrostatic 2063  Test 1150 T-On Location 16:40  
 (B) First Initial Flow 54  Jars 250 T-Started 18:10  
 (C) First Final Flow 294  Safety Joint 75 T-Open 20:26  
 (D) Initial Shut-In 445  Circ Sub \_\_\_\_\_ T-Pulled 60:26  
 (E) Second Initial Flow 297  Hourly Standby \_\_\_\_\_ T-Out 03:20  
 (F) Second Final Flow 429  Mileage 108 RT 108  
 (G) Final Shut-In 444  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2038  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_  
 Sub Total 1583  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_  
 Sub Total 0  
 Total 1583  
 MP/DST Disc't \_\_\_\_\_

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 60  
 Final Shut-In 90  
 Approved By [Signature] Our Representative [Signature]  
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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 64124

Well Name & No. Verna Pore #2-7 Test No. 2 Date 10-19-18  
 Company Murfin Drilling Co Inc. Elevation 3236 KB 3231 GL  
 Address 250 N. Water, STE 300, Wichita, KS 67202  
 Co. Rep / Geo. Ken Wallace Rig Murfin #3  
 Location: Sec. 7 Twp 1S. Rge. 35W. Co. Rawlins State KS

Interval Tested 4252-4300 Zone Tested LKC "G"  
 Anchor Length 48 Drill Pipe Run 4073 Mud Wt. 8.8  
 Top Packer Depth 4247 Drill Collars Run 177 Vls 63  
 Bottom Packer Depth 4252 Wt. Pipe Run — WL 5.6  
 Total Depth 4300 Chlorides 1500 ppm System LCM 5#

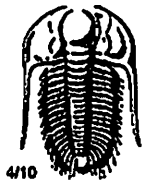
Blow Description IF - S. blow built to 8"  
ISI - S. blow back @ 2 mins died @ 30 mins  
FF - S. blow built to 8" O.D (12 inches) @ 46 mins (blow increased to 14 1/4")  
FSI - S. blow back built to 3/4" & died @ 42 mins

Rec	Feet of	%gas	%oil	%water	%mud
<u>120</u>	<u>SOMCW</u>	<u>10</u>	<u>70</u>	<u>20</u>	
<u>60</u>	<u>OCWM</u>	<u>20</u>	<u>20</u>	<u>60</u>	
<u>62</u>	<u>OCM</u>	<u>40</u>		<u>60</u>	
<u>20</u>	<u>MCD</u>	<u>70</u>		<u>30</u>	
<u>10</u>	<u>CGO</u> , <u>156' GIP</u>	<u>70</u>			
<u>Rec Total 272</u>	<u>BHT 132</u>	<u>Gravity 38</u>	<u>API RW 143 @ 61 °F</u>	<u>Chlorides 66,000</u>	<u>ppm</u>

(A) Initial Hydrostatic 2092  Test 1150 T-On Location 13:15  
 (B) First Initial Flow 27  Jars 250 T-Started 14:08  
 (C) First Final Flow 97  Safety Joint 75 T-Open 15:56  
 (D) Initial Shut-In 662  Circ Sub \_\_\_\_\_ T-Pulled 19:56  
 (E) Second Initial Flow 106  Hourly Standby \_\_\_\_\_ T-Out 22:18  
 (F) Second Final Flow 142  Mileage 108 RT 108 Comments \_\_\_\_\_  
 (G) Final Shut-In 646  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2088  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open 30  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Initial Shut-In 60  Day Standby \_\_\_\_\_ Total 1583  
 Final Flow 60  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 90 Sub Total 1583

Approved By Ken Wallace Our Representative Mark [Signature]

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# TRIOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 64125

Well Name & No. Verna Probe #2-7 Test No. 3 Date 10-20-18  
 Company Murfin Drilling Co Inc Elevation 3236 KB 3231 GL  
 Address 250 N. Water, STE 300, Wichita, KS 67202  
 Co. Rep / Geo. Ken Wallace Rig Murfin #3  
 Location: Sec. 7 Twp 1S. Rge. 35W. Co. Rawlins State KS

Interval Tested 4294-4333 Zone Tested LKC G' + H  
 Anchor Length 39' Drill Pipe Run 4104 Mud Wt. 9.0  
 Top Packer Depth 4289 Drill Collars Run 177 Vls 60  
 Bottom Packer Depth 4294 Wt. Pipe Run — WL 6.0  
 Total Depth 4333 Chlorides 1600 ppm System LCM 6#  
 Blow Description IF - S. blow built to 10 1/4"  
ISI - No blow  
FF - S. blow built to 10"  
FSI - S. blow back @ 4 mins dead @ 20 mins

Rec	Feet of	%gas	%oil	%water	%mud
<u>73</u>	<u>SCHWCM</u>	<u>10</u>	<u>40</u>	<u>50</u>	
<u>124</u>	<u>GOCM</u>	<u>2</u>	<u>16</u>	<u>82</u>	
<u>0</u>	<u>124' GIP</u>				

Rec Total 197 BHT 129 Gravity — API RW 209 @ 68.6 °F Chlorides 39,000 ppm

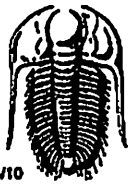
(A) Initial Hydrostatic 2135  Test 1150 T-On Location 07:15  
 (B) First Initial Flow 26  Jars 250 T-Started 07:51  
 (C) First Final Flow 64  Safety Joint 75 T-Open 09:31  
 (D) Initial Shut-In 1108  Circ Sub \_\_\_\_\_ T-Pulled 13:31  
 (E) Second Initial Flow 71  Hourly Standby \_\_\_\_\_ T-Out 15:25  
 (F) Second Final Flow 112  Mileage 108 RT 108  
 (G) Final Shut-In 1103  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2055  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_  
 Sub Total 1583

Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_  
 Sub Total 0  
 Total 1583  
 MP/DST Disc't \_\_\_\_\_

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

Approved By Ken Wallace Our Representative Mark [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 64726

Well Name & No. Verna Pouce #2-7 Test No. 4 Date 10-21-18  
 Company Murfin Drilling Co Inc Elevation 3236 KB 3231 GL  
 Address 250 N Water, STE 300, Wichita, KS 67202  
 Co. Rep / Geo. Ken Wallace Rig Murfin #3  
 Location: Sec. 7 Twp 1S Rge. 35W Co. Rawlins State KS

Interval Tested 4331-4386 Zone Tested LKC "5"  
 Anchor Length 55 Drill Pipe Run 4134 Mud Wt. 9.2  
 Top Packer Depth 4326 Drill Collars Run 177 Vls 59  
 Bottom Packer Depth 4331 Wt. Pipe Run — WL 6.0  
 Total Depth 4386 Chlorides 1600 ppm System LCM 6#

Blow Description IF - S. blow built to 2" & decreased to 1 1/2"

ISE - No blow

FF - No blow

FSE - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>OSM</u>	<u>3</u>	<u>—</u>	<u>97</u>	<u>—</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 15 BHT 127 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2216  
 (B) First Initial Flow 22  
 (C) First Final Flow 27  
 (D) Initial Shut-In 743  
 (E) Second Initial Flow 30  
 (F) Second Final Flow 32  
 (G) Final Shut-In 690  
 (H) Final Hydrostatic 2145

Test 1150  
 Jars 250  
 Safety Joint 75  
 Circ Sub  
 Hourly Standby  
 Mileage 108 RT 108  
 Sampler  
 Straddle  
 Shale Packer  
 Extra Packer  
 Extra Recorder  
 Day Standby  
 Accessibility  
 Sub Total 1583

T-On Location 01:15  
 T-Started 01:50  
 T-Open 04:26  
 T-Pulled 07:26  
 T-Out 09:12  
 Comments Tools loaded @ 10:00

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

Ruined Shale Packer  
 Ruined Packer  
 Extra Copies  
 Sub Total 0  
 Total 1583  
 MP/DST Disc't

Approved By Ken Wallace

Our Representative Matt Salas

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