



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drlg. Co. inc.**

250 N Water STE 300  
Wichita KS 67202

ATTN: Paul Gunzelman

**Kraus "JW" #1-28**

**28-14s-18w Ellis,KS**

Start Date: 2013.01.28 @ 10:20:05

End Date: 2013.01.28 @ 17:29:20

Job Ticket #: 51462                      DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.02.05 @ 11:12:02



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drlg. Co. inc.

**28-14s-18w Ellis,KS**

250 N Water STE 300  
Wichita KS 67202

**Kraus "JW" #1-28**

Job Ticket: 51462

**DST#: 1**

ATTN: Paul Gunzelman

Test Start: 2013.01.28 @ 10:20:05

## GENERAL INFORMATION:

Formation: **Topeka**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:04:50

Time Test Ended: 17:29:20

Test Type: Conventional Bottom Hole (Initial)

Tester: Andy Carreira

Unit No: 39

**Interval: 3070.00 ft (KB) To 3083.00 ft (KB) (TVD)**

Reference Elevations: 2068.00 ft (KB)

Total Depth: 3083.00 ft (KB) (TVD)

2063.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8372 Outside**

Press @ Run Depth: 80.97 psig @ 3071.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.01.28

End Date: 2013.01.28

Last Calib.: 2013.01.28

Start Time: 10:20:05

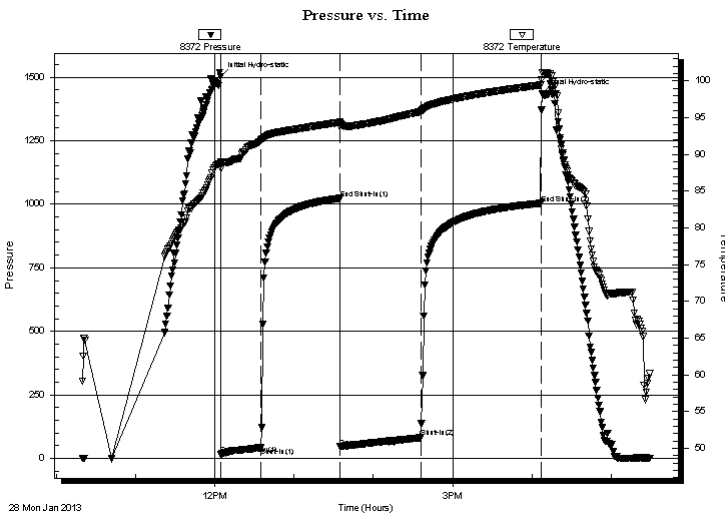
End Time: 17:29:20

Time On Btm: 2013.01.28 @ 12:04:30

Time Off Btm: 2013.01.28 @ 16:07:50

**TEST COMMENT:** IF:(30min) 1" blow in 3 min. 4" in 16 min. built to 6.25" in 30 min.  
ISl:(60min) Intermittent return surface blow 5 min. after bleed off.  
FF:(60min) 1" blow in 4 min. 4" in 20 min. 6" in 34 min. built to 9.25" in 60 min.  
FSl:(90min) Very weak intermittent surface blow.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1502.68	88.95	Initial Hydro-static
1	15.17	88.13	Open To Flow (1)
31	42.42	91.98	Shut-In(1)
90	1023.52	94.38	End Shut-In(1)
91	45.52	93.80	Open To Flow (2)
152	80.97	95.82	Shut-In(2)
242	1003.78	99.44	End Shut-In(2)
244	1436.43	101.17	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
125.00	Water w/ skim of oil on top	1.75

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drlg. Co. inc.

**28-14s-18w Ellis,KS**

250 N Water STE 300  
Wichita KS 67202

**Kraus "JW" #1-28**

Job Ticket: 51462

**DST#: 1**

ATTN: Paul Gunzelman

Test Start: 2013.01.28 @ 10:20:05

## Tool Information

Drill Pipe:	Length: 3067.00 ft	Diameter: 3.80 inches	Volume: 43.02 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 24000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 54000.00 lb
			<u>Total Volume: 43.02 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 47000.00 lb
Depth to Top Packer:	3070.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	13.00 ft			
Tool Length:	36.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3048.00	
Shut In Tool	5.00			3053.00	
Hydraulic tool	5.00			3058.00	
Safety Joint	3.00			3061.00	
Packer	5.00			3066.00	23.00 Bottom Of Top Packer
Packer	4.00			3070.00	
Stubb	1.00			3071.00	
Recorder	0.00	8844	Inside	3071.00	
Recorder	0.00	8372	Outside	3071.00	
Perforations	9.00			3080.00	
Bullnose	3.00			3083.00	13.00 Bottom Packers & Anchor

**Total Tool Length: 36.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drlg. Co. inc.

**28-14s-18w Ellis,KS**

250 N Water STE 300  
Wichita KS 67202

**Kraus "JW" #1-28**

Job Ticket: 51462

**DST#: 1**

ATTN: Paul Gunzelman

Test Start: 2013.01.28 @ 10:20:05

## 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:

70000 ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.15 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
125.00	Water w / skim of oil on top	1.753

Total Length: 125.00 ft

Total Volume: 1.753 bbl

Num Fluid Samples: 0

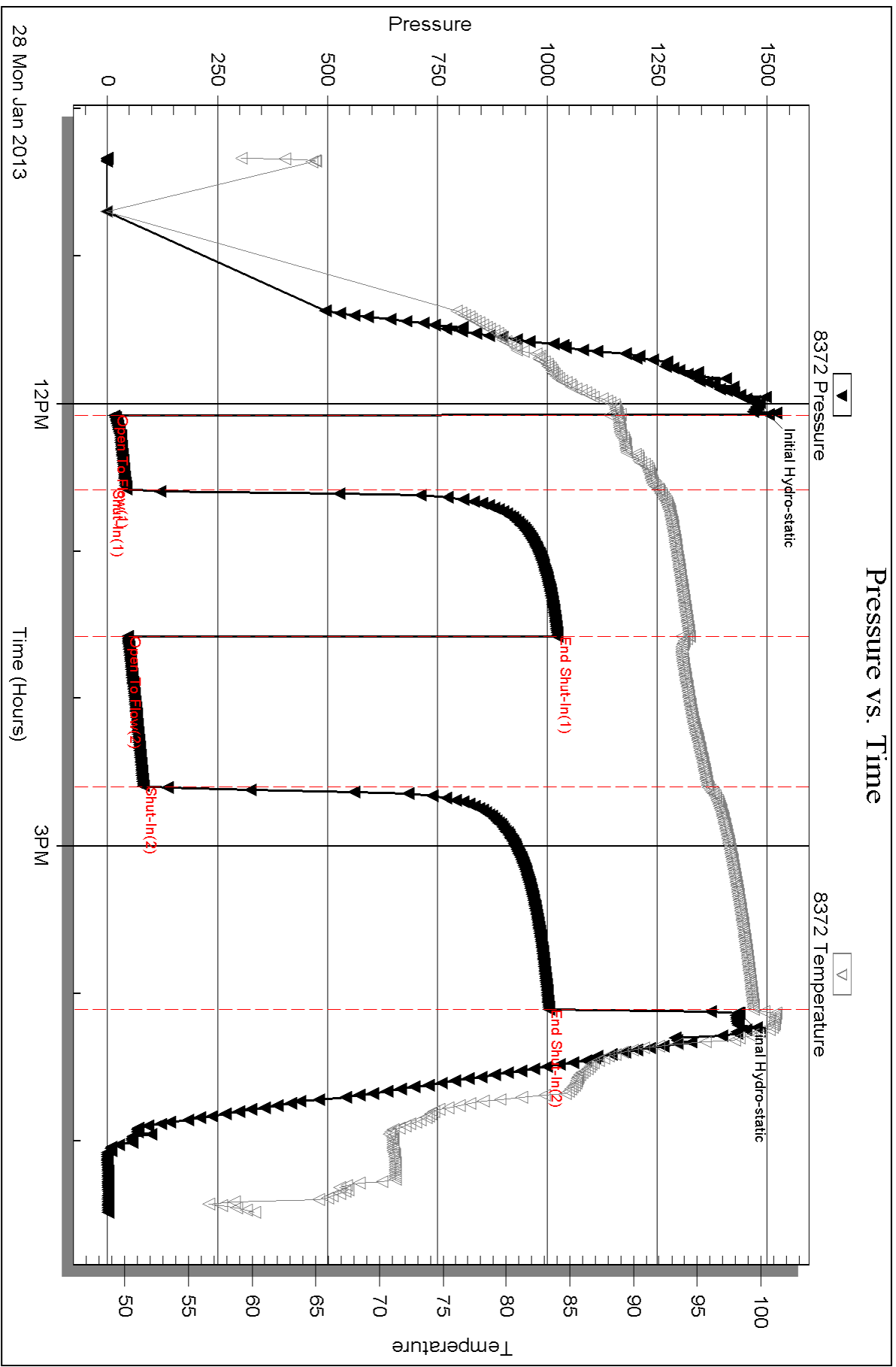
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



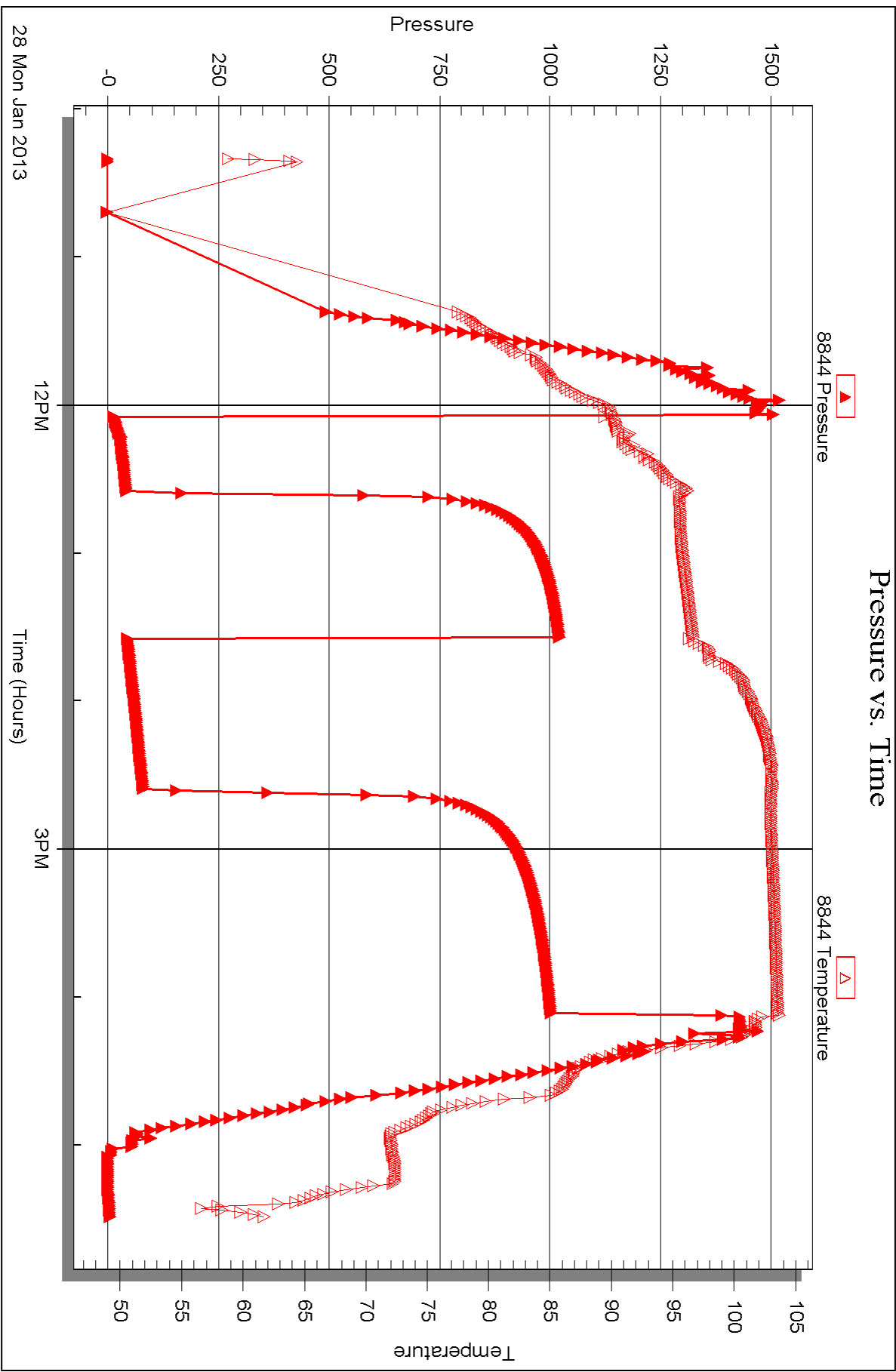
Serial #: 8844

Inside

Murfin Dtg. Co. Inc.

Kraus "JW" #1-28

DST Test Number: 1





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drlg. Co. inc.**

250 N Water STE 300  
Wichita KS 67202

ATTN: Paul Gunzelman

**Kraus "JW" #1-28**

**28-14s-18w Ellis,KS**

Start Date: 2013.01.29 @ 18:26:05

End Date: 2013.01.30 @ 00:59:59

Job Ticket #: 51463                      DST #: 2

Trilobite Testing, Inc  
PO Box 362 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.02.05 @ 11:11:27

Murfin Drlg. Co. inc. 28-14s-18w Ellis,KS Kraus "JW" #1-28 DST # 2 Tor & "A-B" 2013.01.29





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drlg. Co. inc.

**28-14s-18w Ellis,KS**

250 N Water STE 400  
Wichita KS 67202

**Kraus "JW" #1-28**

Job Ticket: 51463

**DST#: 2**

ATTN: Paul Gunzelman

Test Start: 2013.01.29 @ 18:26:05

## GENERAL INFORMATION:

Formation: **Tor & "A-B"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:02:50

Time Test Ended: 00:59:59

Test Type: Conventional Bottom Hole (Reset)

Tester: Andy Carreira

Unit No: 39

**Interval: 3299.00 ft (KB) To 3383.00 ft (KB) (TVD)**

Reference Elevations: 2068.00 ft (KB)

Total Depth: 3383.00 ft (KB) (TVD)

2063.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8372 Outside**

Press @ Run Depth: 31.07 psig @ 3306.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.01.29

End Date:

2013.01.30

Last Calib.:

2013.01.30

Start Time:

18:26:05

End Time:

00:59:59

Time On Btm:

2013.01.29 @ 20:01:40

Time Off Btm:

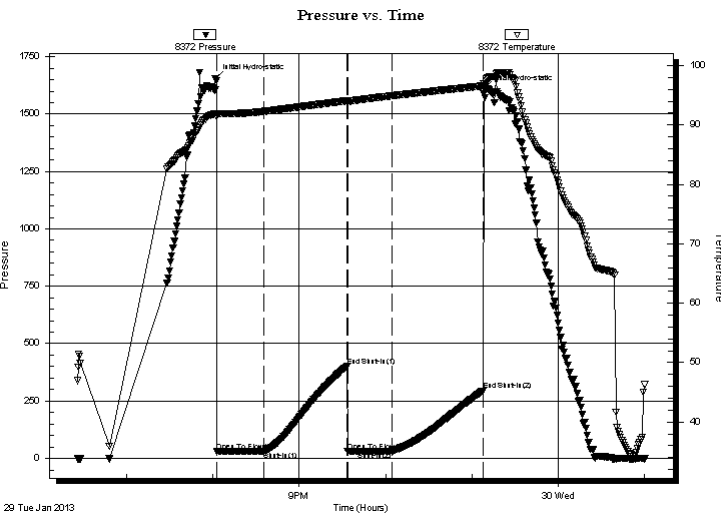
2013.01.29 @ 23:08:39

**TEST COMMENT:** IF:(30min) Blow died in 15 min.

ISl:(60min) No Return

FF:(30min) No Blow

FSl:(60min) No Return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1654.03	91.89	Initial Hydro-static
2	29.84	91.36	Open To Flow (1)
34	30.94	92.27	Shut-In(1)
92	400.64	94.06	End Shut-In(1)
92	31.51	93.92	Open To Flow (2)
123	31.07	94.89	Shut-In(2)
186	295.28	96.57	End Shut-In(2)
187	1608.63	96.91	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
30.00	Mud	0.42

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drlg. Co. inc.

**28-14s-18w Ellis,KS**

250 N Water STE 300  
Wichita KS 67202

**Kraus "JW" #1-28**

Job Ticket: 51463

**DST#: 2**

ATTN: Paul Gunzelman

Test Start: 2013.01.29 @ 18:26:05

## Tool Information

Drill Pipe:	Length: 3296.00 ft	Diameter: 3.80 inches	Volume: 46.23 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer:	24000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	60000.00 lb
			<u>Total Volume: 46.23 bbl</u>	Tool Chased	6.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial	48000.00 lb
Depth to Top Packer:	3299.00 ft			Final	48000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	84.00 ft				
Tool Length:	107.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

## Tool Description

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

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3277.00	
Shut In Tool	5.00			3282.00	
Hydraulic tool	5.00			3287.00	
Safety Joint	3.00			3290.00	
Packer	5.00			3295.00	23.00 Bottom Of Top Packer
Packer	4.00			3299.00	
Stubb	1.00			3300.00	
Perforations	5.00			3305.00	
Change Over Sub	1.00			3306.00	
Recorder	0.00	8844	Inside	3306.00	
Recorder	0.00	8372	Outside	3306.00	
Drill Pipe	63.00			3369.00	
Change Over Sub	1.00			3370.00	
Perforations	10.00			3380.00	
Bullnose	3.00			3383.00	84.00 Bottom Packers & Anchor

**Total Tool Length: 107.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drlg. Co. inc.

**28-14s-18w Ellis,KS**

250 N Water STE 300  
Wichita KS 67202

**Kraus "JW" #1-28**

Job Ticket: 51463

**DST#: 2**

ATTN: Paul Gunzelman

Test Start: 2013.01.29 @ 18:26:05

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 14000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	Mud	0.421

Total Length: 30.00 ft      Total Volume: 0.421 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



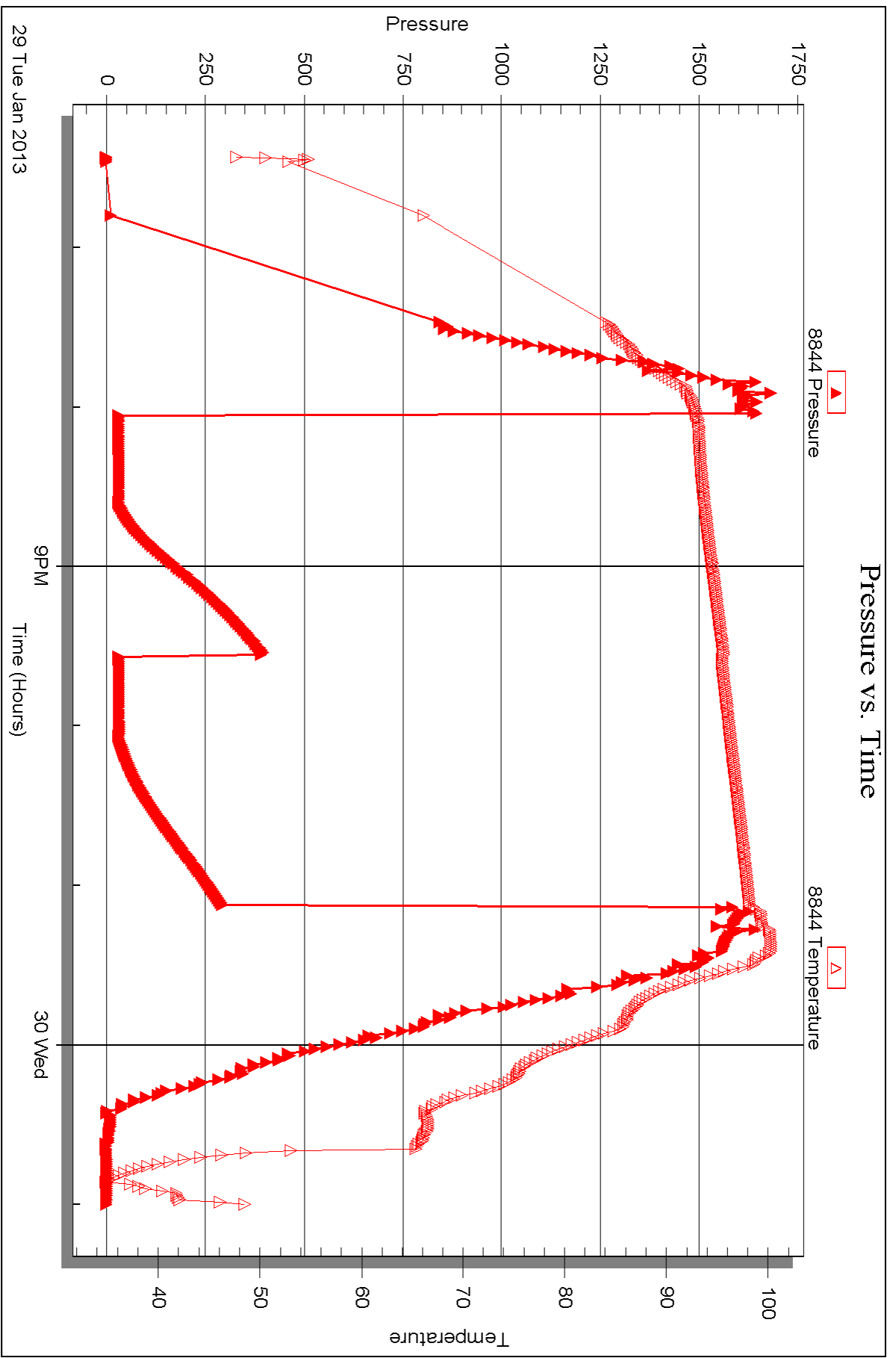
Serial #: 8844

Inside

Murfin Dtg. Co. Inc.

Kraus "JW" #1-28

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 51463

Printed: 2013.02.05 @ 11:11:30



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drlg. Co. inc.**

250 N Water STE 300  
Wichita KS 67202

ATTN: Paul Gunzelman

**Kraus "JW" #1-28**

**28-14s-18w Ellis,KS**

Start Date: 2013.01.30 @ 10:17:05

End Date: 2013.01.30 @ 17:15:59

Job Ticket #: 51464                      DST #: 3

Trilobite Testing, Inc  
PO Box 362 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.02.05 @ 11:10:48

Murfin Drlg. Co. inc. 28-14s-18w Ellis,KS Kraus "JW" #1-28 DST # 3 LKC "D-F" 2013.01.30



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drlg. Co. inc.

**28-14s-18w Ellis,KS**

250 N Water STE 300  
Wichita KS 67202

**Kraus "JW" #1-28**

Job Ticket: 51464

**DST#: 3**

ATTN: Paul Gunzelman

Test Start: 2013.01.30 @ 10:17:05

## GENERAL INFORMATION:

Formation: **LKC"D-F"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:41:30

Time Test Ended: 17:15:59

Test Type: Conventional Bottom Hole (Reset)

Tester: Andy Carreira

Unit No: 39

**Interval: 3383.00 ft (KB) To 3433.00 ft (KB) (TVD)**

Reference Elevations: 2068.00 ft (KB)

Total Depth: 3433.00 ft (KB) (TVD)

2063.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8372 Outside**

Press @ RunDepth: 158.30 psig @ 3390.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.01.30

End Date: 2013.01.30

Last Calib.: 2013.01.30

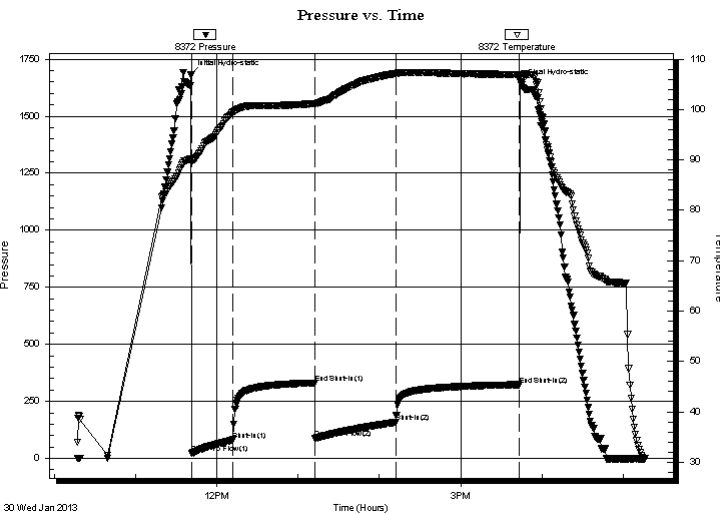
Start Time: 10:17:05

End Time: 17:15:59

Time On Btm: 2013.01.30 @ 11:40:30

Time Off Btm: 2013.01.30 @ 15:44:29

**TEST COMMENT:** IF:(30min) 2" blow in 1 min. 4" in 3 min. 8" in 9 min. BOB in 15 min.  
IS:(60min) Weak surface return blow died in 45 min.  
FF:(60min) 2" blow in 3 min. 4" in 7 min. 8" in 16 min. BOB in 25 min.  
FS:(90min) No Return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1682.75	90.19	Initial Hydro-static
1	21.51	89.70	Open To Flow (1)
32	80.92	99.43	Shut-In(1)
92	330.96	101.17	End Shut-In(1)
92	86.21	101.07	Open To Flow (2)
152	158.30	107.11	Shut-In(2)
243	322.32	106.92	End Shut-In(2)
244	1644.62	106.83	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
300.00	MW w / oil spks in tool	4.21

\* Recovery from multiple tests

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drlg. Co. inc.

**28-14s-18w Ellis,KS**

250 N Water STE 300  
Wichita KS 67202

**Kraus "JW" #1-28**

Job Ticket: 51464

**DST#: 3**

ATTN: Paul Gunzelman

Test Start: 2013.01.30 @ 10:17:05

## Tool Information

Drill Pipe:	Length: 3390.00 ft	Diameter: 3.80 inches	Volume: 47.55 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 24000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 54000.00 lb
			<u>Total Volume: 47.55 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3383.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	50.00 ft			
Tool Length:	73.00 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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Change Over Sub	1.00			3361.00	
Shut In Tool	5.00			3366.00	
Hydraulic tool	5.00			3371.00	
Safety Joint	3.00			3374.00	
Packer	5.00			3379.00	23.00 Bottom Of Top Packer
Packer	4.00			3383.00	
Stubb	1.00			3384.00	
Perforations	5.00			3389.00	
Change Over Sub	1.00			3390.00	
Recorder	0.00	8844	Inside	3390.00	
Recorder	0.00	8372	Outside	3390.00	
Drill Pipe	32.00			3422.00	
Change Over Sub	1.00			3423.00	
Perforations	7.00			3430.00	
Bullnose	3.00			3433.00	50.00 Bottom Packers & Anchor

**Total Tool Length: 73.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drlg. Co. inc.

**28-14s-18w Ellis,KS**

250 N Water STE 300  
Wichita KS 67202

**Kraus "JW" #1-28**

Job Ticket: 51464

**DST#: 3**

ATTN: Paul Gunzelman

Test Start: 2013.01.30 @ 10:17:05

## 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:

98000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.56 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 14000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
300.00	MW w / oil spks in tool	4.208

Total Length: 300.00 ft      Total Volume: 4.208 bbl

Num Fluid Samples: 0

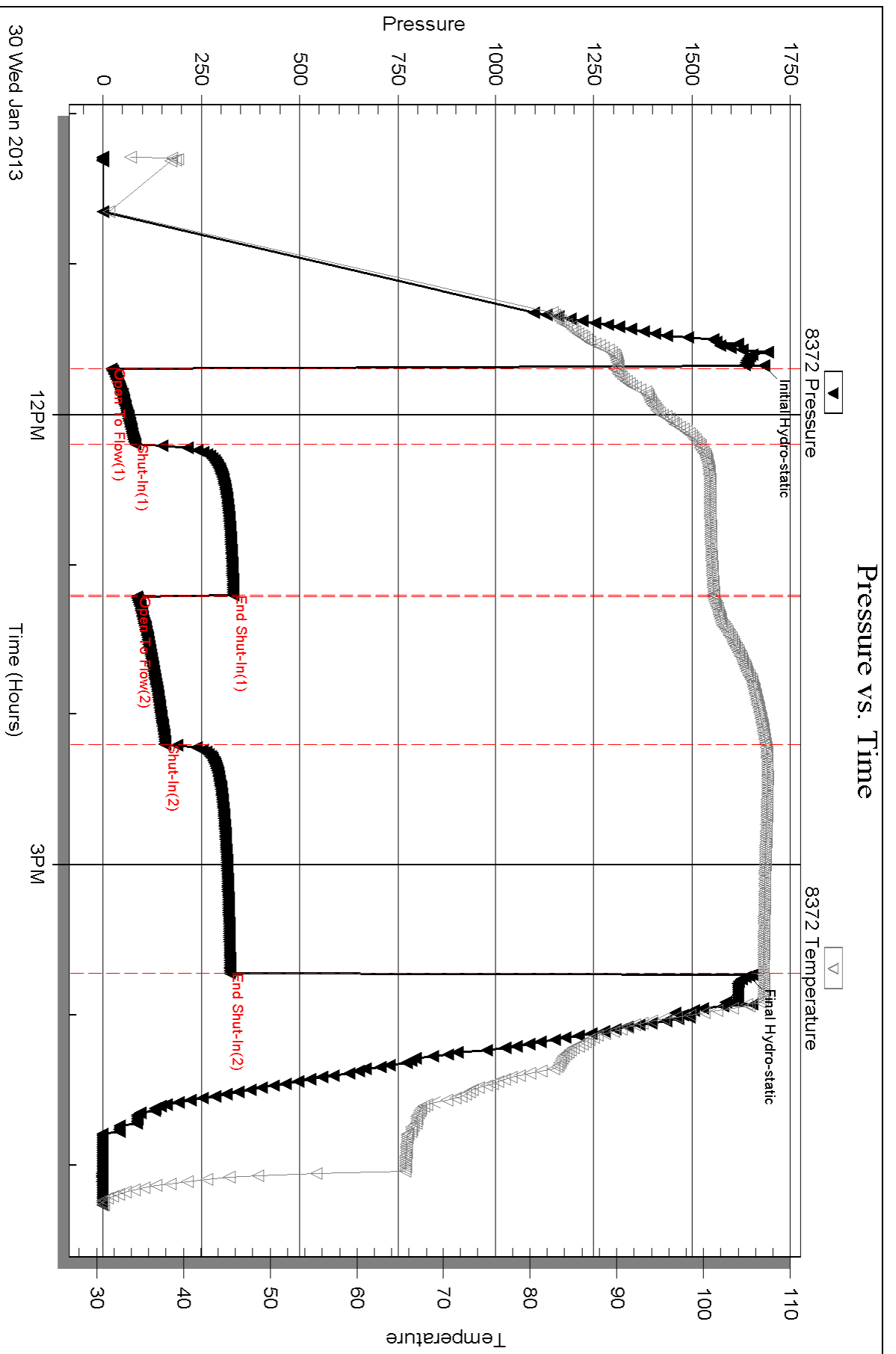
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



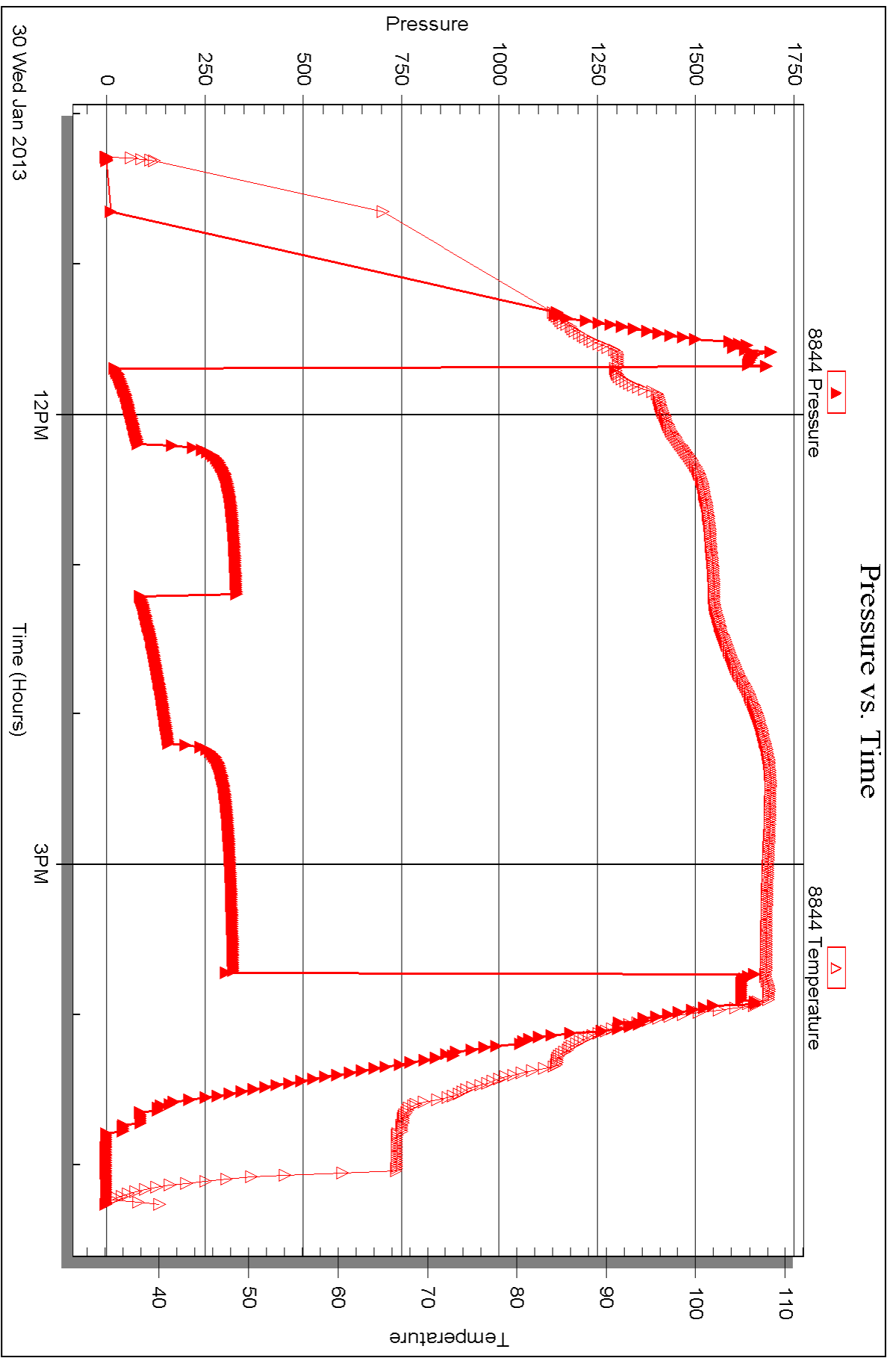
Serial #: 8844

Inside

Murfin Dtg. Co. Inc.

Kraus "JW" #1-28

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 51464

Printed: 2013.02.05 @ 11:10:51



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drlg. Co. inc.**

250 N Water STE 300  
Wichita KS 67202

ATTN: Paul Gunzelman

**Kraus "JW" #1-28**

**28-14s-18w Ellis,KS**

Start Date: 2013.01.31 @ 08:21:05

End Date: 2013.01.31 @ 14:42:50

Job Ticket #: 51465                      DST #: 4

Trilobite Testing, Inc  
PO Box 362 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.02.05 @ 11:10:09

Murfin Drlg. Co. inc. 28-14s-18w Ellis,KS Kraus "JW" #1-28 DST # 4 LKC-"K" 2013.01.31



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drlg. Co. inc.

**28-14s-18w Ellis,KS**

250 N Water STE 300  
Wichita KS 67202

**Kraus "JW" #1-28**

Job Ticket: 51465

**DST#: 4**

ATTN: Paul Gunzelman

Test Start: 2013.01.31 @ 08:21:05

## GENERAL INFORMATION:

Formation: **LKC "I-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:14:30

Time Test Ended: 14:42:50

Test Type: Conventional Bottom Hole (Reset)

Tester: Andy Carreira

Unit No: 39

**Interval: 3489.00 ft (KB) To 3558.00 ft (KB) (TVD)**

Reference Elevations: 2068.00 ft (KB)

Total Depth: 3558.00 ft (KB) (TVD)

2063.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8372 Outside**

Press @ Run Depth: 30.80 psig @ 3496.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.01.31

End Date:

2013.01.31

Last Calib.: 2013.01.31

Start Time: 08:21:05

End Time:

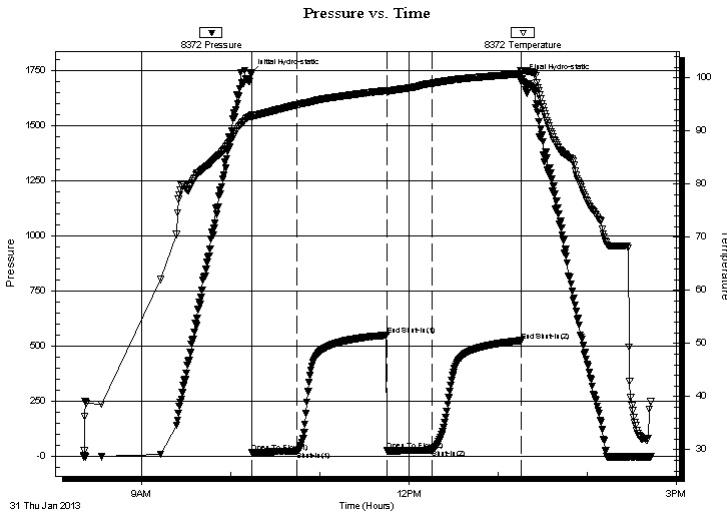
14:42:50

Time On Btm: 2013.01.31 @ 10:13:40

Time Off Btm: 2013.01.31 @ 13:16:09

**TEST COMMENT:** IF:(30min) 1" Blow  
IS:(60min) No Return  
FF:(30min) Weak surface blow  
FS:(60min) No Return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1738.06	92.96	Initial Hydro-static
1	17.10	92.52	Open To Flow (1)
32	23.75	94.95	Shut-In(1)
92	550.27	97.62	End Shut-In(1)
92	26.52	97.32	Open To Flow (2)
122	30.80	98.99	Shut-In(2)
182	525.93	100.79	End Shut-In(2)
183	1712.66	101.33	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
32.00	WM w =30% m=70%	0.45

## Gas Rates

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

\* Recovery from multiple tests







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drlg. Co. inc.

**28-14s-18w Ellis,KS**

250 N Water STE 300  
Wichita KS 67202

**Kraus "JW" #1-28**

Job Ticket: 51465

**DST#: 4**

ATTN: Paul Gunzelman

Test Start: 2013.01.31 @ 08:21:05

## Tool Information

Drill Pipe:	Length: 3488.00 ft	Diameter: 3.80 inches	Volume: 48.93 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer:	24000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	56000.00 lb
			<u>Total Volume: 48.93 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial	48000.00 lb
Depth to Top Packer:	3489.00 ft			Final	48000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	69.00 ft				
Tool Length:	92.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

## Tool Description

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

Change Over Sub	1.00			3467.00	
Shut In Tool	5.00			3472.00	
Hydraulic tool	5.00			3477.00	
Safety Joint	3.00			3480.00	
Packer	5.00			3485.00	23.00 Bottom Of Top Packer
Packer	4.00			3489.00	
Stubb	1.00			3490.00	
Perforations	5.00			3495.00	
Change Over Sub	1.00			3496.00	
Recorder	0.00	8844	Inside	3496.00	
Recorder	0.00	8372	Outside	3496.00	
Drill Pipe	32.00			3528.00	
Change Over Sub	1.00			3529.00	
Perforations	26.00			3555.00	
Bullnose	3.00			3558.00	69.00 Bottom Packers & Anchor

**Total Tool Length: 92.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drlg. Co. inc.

**28-14s-18w Ellis,KS**

250 N Water STE 300  
Wichita KS 67202

**Kraus "JW" #1-28**

Job Ticket: 51465

**DST#: 4**

ATTN: Paul Gunzelman

Test Start: 2013.01.31 @ 08:21:05

## 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:

52000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.96 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 13400.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
32.00	WMw =30% m=70%	0.449

Total Length: 32.00 ft      Total Volume: 0.449 bbl

Num Fluid Samples: 0

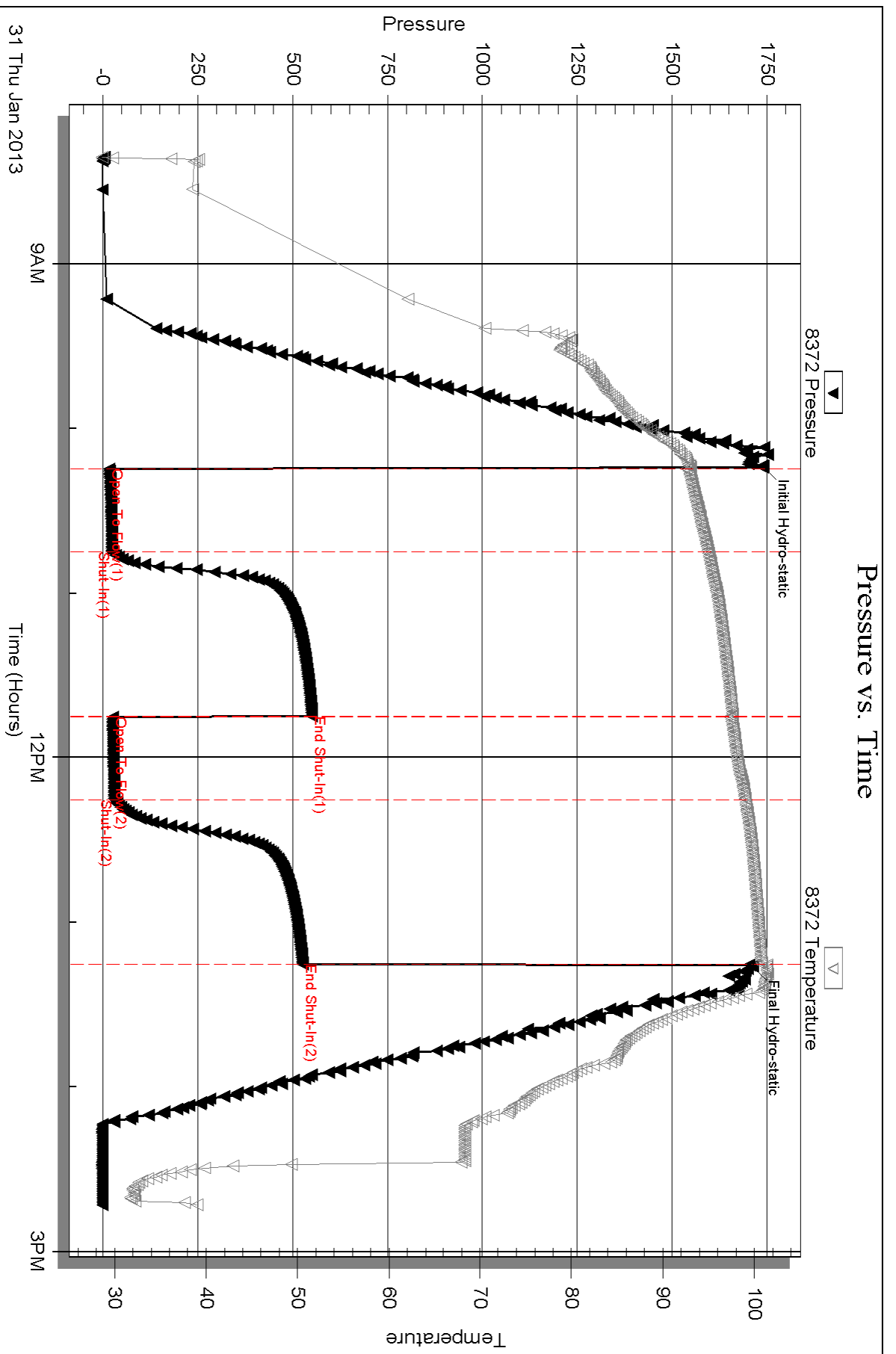
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



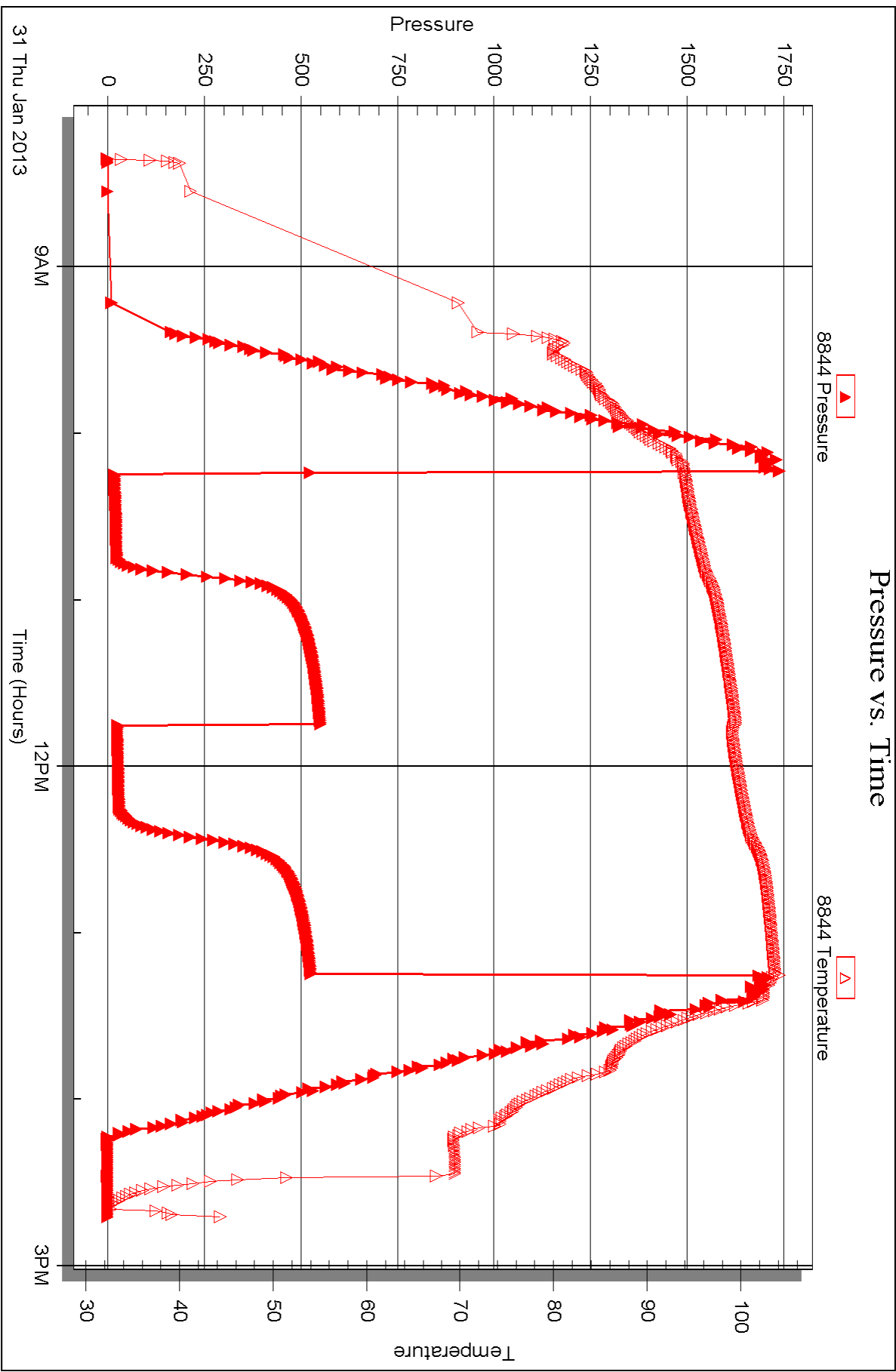
Serial #: 8844

Inside

Murfin Dtg. Co. Inc.

Kraus "JW" #1-28

DST Test Number: 4





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drlg. Co. inc.**

250 N Water STE 300  
Wichita KS 67202

ATTN: Paul Gunzelman

**Kraus "JW" #1-28**

**28-14s-18w Ellis,KS**

Start Date: 2013.02.01 @ 02:56:05

End Date: 2013.02.01 @ 11:05:29

Job Ticket #: 51467                      DST #: 5

Trilobite Testing, Inc  
PO Box 362 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.02.05 @ 11:09:22



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drlg. Co. inc.

**28-14s-18w Ellis,KS**

250 N Water STE 300  
Wichita KS 67202

**Kraus "JW" #1-28**

ATTN: Paul Gunzelman

Job Ticket: 51467

**DST#: 5**

Test Start: 2013.02.01 @ 02:56:05

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:45:00

Time Test Ended: 11:05:29

Test Type: Conventional Bottom Hole (Reset)

Tester: Andy Carreira

Unit No: 39

**Interval: 3616.00 ft (KB) To 3678.00 ft (KB) (TVD)**

Reference Elevations: 2068.00 ft (KB)

Total Depth: 3678.00 ft (KB) (TVD)

2063.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8372 Outside**

Press @ Run Depth: 175.73 psig @ 3622.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.02.01

End Date: 2013.02.01

Last Calib.: 2013.02.01

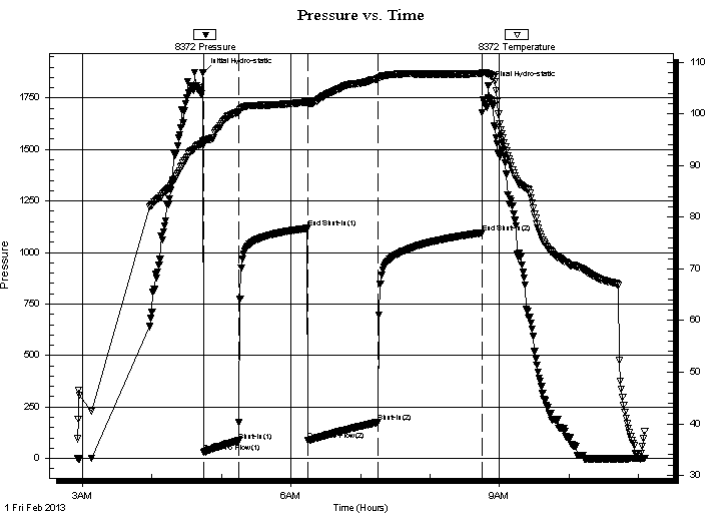
Start Time: 02:56:05

End Time: 11:05:29

Time On Btm: 2013.02.01 @ 04:44:30

Time Off Btm: 2013.02.01 @ 08:50:29

**TEST COMMENT:** IF:(30min) 2" blow in 2 min. 6" in 7 min. 10" in 14 min. BOB in 15 min.  
IS:(60min) Bled off 5 min. Return surface blow 7 min after bleed off. Died in 46 min.  
FF:(60min) 2" blow in 2 min. 6" in 7 min. 10" in 14 min. BOB in 16 min.  
FS:(90min) Bled off 10 min. Return surface blow 6 min after bleed off. Weak surface blow through out.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1871.82	94.74	Initial Hydro-static
1	29.22	94.04	Open To Flow (1)
31	85.26	100.35	Shut-In(1)
90	1117.26	102.31	End Shut-In(1)
91	87.83	101.94	Open To Flow (2)
151	175.73	106.80	Shut-In(2)
241	1095.56	107.81	End Shut-In(2)
246	1809.36	107.73	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	SOCGM g=5% o=10% m=85%	0.84
60.00	OCCGM g=5% o=15% m=80%	0.84
315.00	GO g=15% o=85%	4.42
0.00	GIP=90ft	0.00

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drlg. Co. inc.

**28-14s-18w Ellis,KS**

250 N Water STE 300  
Wichita KS 67202

**Kraus "JW" #1-28**

Job Ticket: 51467

**DST#: 5**

ATTN: Paul Gunzelman

Test Start: 2013.02.01 @ 02:56:05

## Tool Information

Drill Pipe:	Length: 3613.00 ft	Diameter: 3.80 inches	Volume: 50.68 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer:	24000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	54000.00 lb
			<u>Total Volume: 50.68 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial	50000.00 lb
Depth to Top Packer:	3616.00 ft			Final	52000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	62.00 ft				
Tool Length:	85.00 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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Change Over Sub	1.00			3594.00	
Shut In Tool	5.00			3599.00	
Hydraulic tool	5.00			3604.00	
Safety Joint	3.00			3607.00	
Packer	5.00			3612.00	23.00 Bottom Of Top Packer
Packer	4.00			3616.00	
Stubb	1.00			3617.00	
Perforations	4.00			3621.00	
Change Over Sub	1.00			3622.00	
Recorder	0.00	8844	Inside	3622.00	
Recorder	0.00	8372	Outside	3622.00	
Drill Pipe	32.00			3654.00	
Change Over Sub	1.00			3655.00	
Perforations	20.00			3675.00	
Bullnose	3.00			3678.00	62.00 Bottom Packers & Anchor

**Total Tool Length: 85.00**





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drlg. Co. inc.

**28-14s-18w Ellis,KS**

250 N Water STE 300  
Wichita KS 67202

**Kraus "JW" #1-28**

Job Ticket: 51467

**DST#: 5**

ATTN: Paul Gunzelman

Test Start: 2013.02.01 @ 02:56:05

## 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: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.96 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 13400.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
60.00	SOCGM g=5% o=10% m=85%	0.842
60.00	OCCGM g=5% o=15% m=80%	0.842
315.00	GO g=15% o=85%	4.419
0.00	GIP=90ft	0.000

Total Length: 435.00 ft

Total Volume: 6.103 bbl

Num Fluid Samples: 0

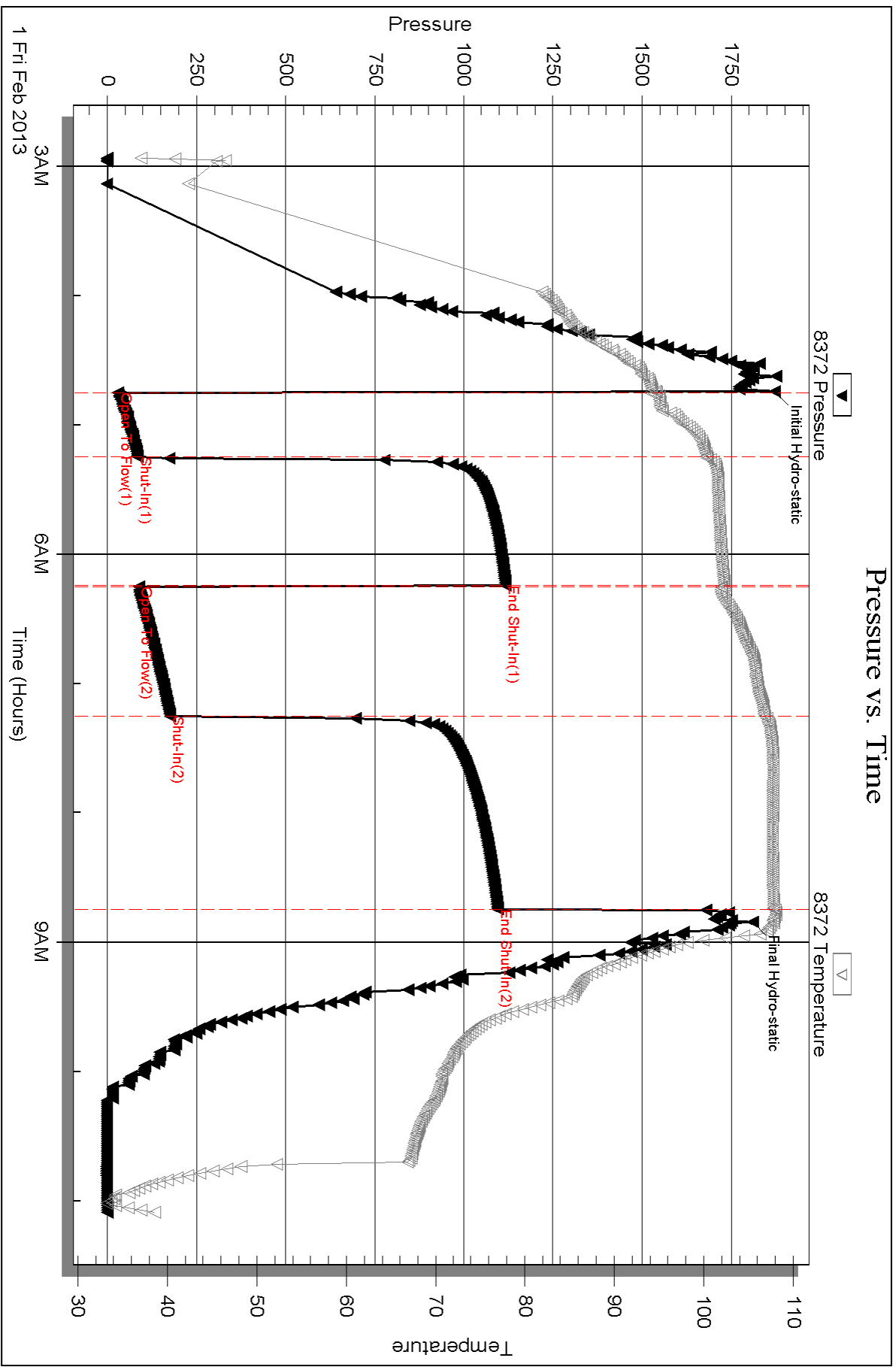
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



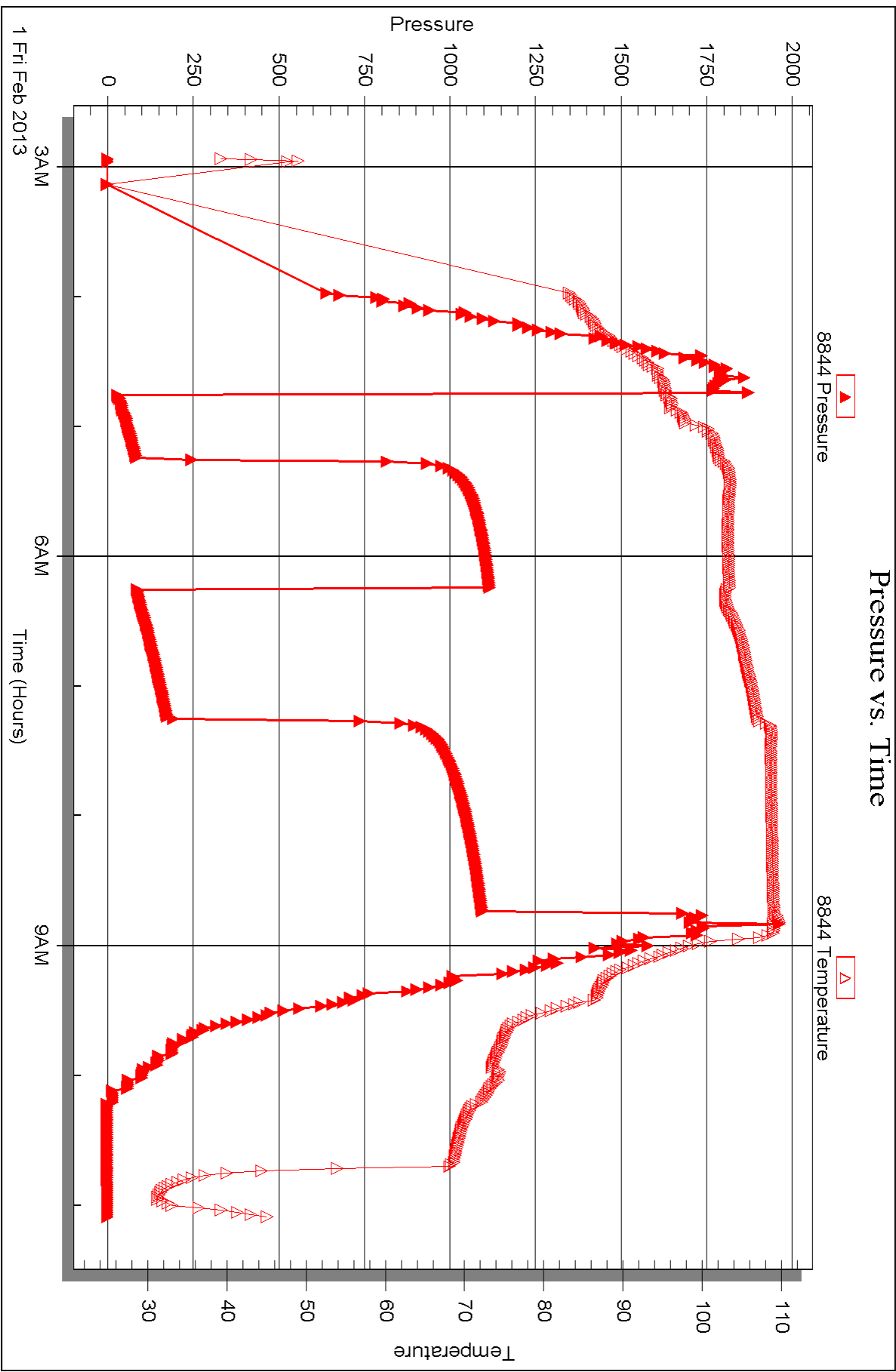
Serial #: 8844

Inside

Murfin Dtg. Co. Inc.

Kraus "JW" #1-28

DST Test Number: 5





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drlg. Co. inc.**

250 N Water STE 300  
Wichita KS 67202

ATTN: Paul Gunzelman

**Kraus "JW" #1-28**

**28-14s-18w Ellis,KS**

Start Date: 2013.02.01 @ 18:23:05

End Date: 2013.02.02 @ 01:59:29

Job Ticket #: 51468                      DST #: 6

Trilobite Testing, Inc  
PO Box 362 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.02.05 @ 11:08:42



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drlg. Co. inc.

**28-14s-18w Ellis,KS**

250 N Water STE 300  
Wichita KS 67202

**Kraus "JW" #1-28**

Job Ticket: 51468

**DST#: 6**

ATTN: Paul Gunzelman

Test Start: 2013.02.01 @ 18:23:05

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:17:00

Time Test Ended: 01:59:29

Test Type: Conventional Bottom Hole (Reset)

Tester: Andy Carreira

Unit No: 39

**Interval: 3678.00 ft (KB) To 3688.00 ft (KB) (TVD)**

Reference Elevations: 2068.00 ft (KB)

Total Depth: 3688.00 ft (KB) (TVD)

2063.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8372 Outside**

Press @RunDepth: 846.90 psig @ 3679.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.02.01

End Date:

2013.02.02

Last Calib.:

2013.02.02

Start Time: 18:23:05

End Time:

01:59:29

Time On Btm:

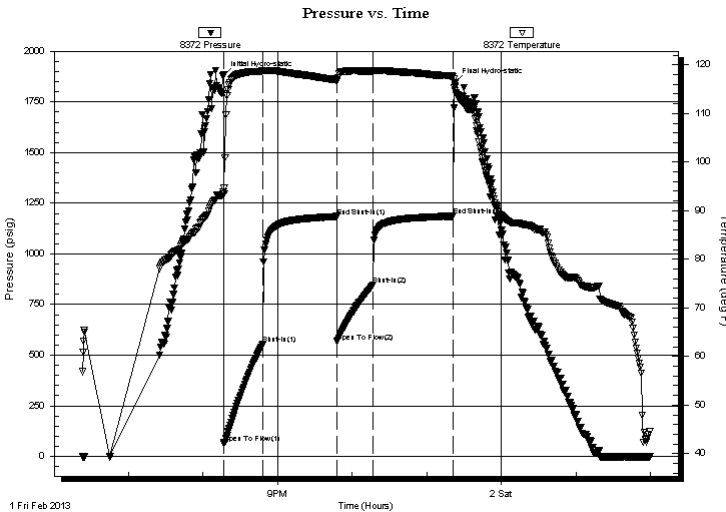
2013.02.01 @ 20:16:20

Time Off Btm:

2013.02.01 @ 23:22:20

**TEST COMMENT:** IF:(30min) BOB 1 min.  
IS:(60min) No Return  
FF:(30min) BOB 2 min.  
FS:(60min) No Return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1882.47	93.89	Initial Hydro-static
1	63.27	94.74	Open To Flow (1)
32	553.40	118.72	Shut-In(1)
92	1184.63	116.99	End Shut-In(1)
92	566.91	116.77	Open To Flow (2)
121	846.90	118.73	Shut-In(2)
185	1186.45	117.68	End Shut-In(2)
186	1844.34	115.31	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	OSWM o=tr w=45% m=55%	0.84
1765.00	OSMW o=tr m=5% w=95%	24.76
5.00	OSWM o=tr w=40% m=60%	0.07

## Gas Rates

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

\* Recovery from multiple tests





**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drlg. Co. inc.

**28-14s-18w Ellis,KS**

250 N Water STE 300  
Wichita KS 67202

**Kraus "JW" #1-28**

Job Ticket: 51468

**DST#: 6**

ATTN: Paul Gunzelman

Test Start: 2013.02.01 @ 18:23:05

### Tool Information

Drill Pipe:	Length: 3675.00 ft	Diameter: 3.80 inches	Volume: 51.55 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 24000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 58000.00 lb
			<u>Total Volume: 51.55 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 47000.00 lb
Depth to Top Packer:	3678.00 ft			Final 56000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	10.00 ft			
Tool Length:	33.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

### Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3656.00	
Shut In Tool	5.00			3661.00	
Hydraulic tool	5.00			3666.00	
Safety Joint	3.00			3669.00	
Packer	5.00			3674.00	23.00 Bottom Of Top Packer
Packer	4.00			3678.00	
Stubb	1.00			3679.00	
Recorder	0.00	8844	Inside	3679.00	
Recorder	0.00	8372	Outside	3679.00	
Perforations	6.00			3685.00	
Bullnose	3.00			3688.00	10.00 Bottom Packers & Anchor

**Total Tool Length: 33.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drlg. Co. inc.

**28-14s-18w Ellis,KS**

250 N Water STE 300  
Wichita KS 67202

**Kraus "JW" #1-28**

Job Ticket: 51468

**DST#: 6**

ATTN: Paul Gunzelman

Test Start: 2013.02.01 @ 18:23:05

## 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:

35000 ppm

Viscosity: 69.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 12400.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	OSWM o=tr w =45% m=55%	0.842
1765.00	OSMW o=tr m=5% w =95%	24.758
5.00	OSWM o=tr w =40% m=60%	0.070

Total Length: 1830.00 ft

Total Volume: 25.670 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

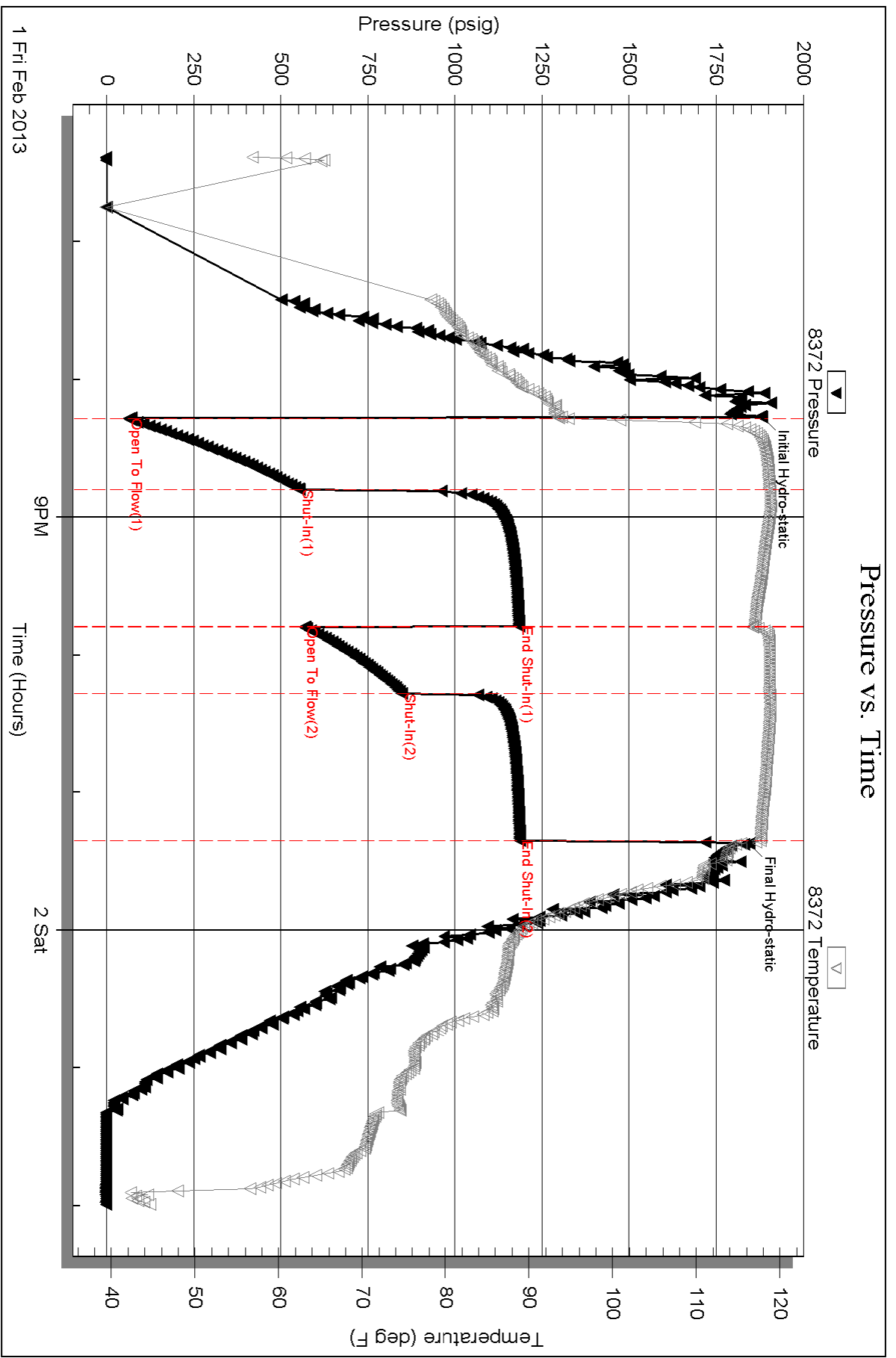
Serial #:

Laboratory Name:

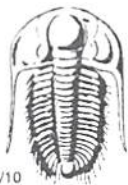
Laboratory Location:

Recovery Comments:









# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 51462

Well Name & No. KRAUS "JW" 1-28 Test No. 1 Date 1-28-13  
 Company MURFIN DRUG CO. INC. Elevation 2068 KB 2063 GL  
 Address 250 N WATER STE 300 WICHITA KS. 67202  
 Co. Rep / Geo. PAUL GUNZELMAN Rig MURFIN 16  
 Location: Sec. 28 Twp. 14S Rge. 18W Co. ELLIS State Ks

Interval Tested 3070 - 3083 Zone Tested TOPEKA  
 Anchor Length 13 Drill Pipe Run \_\_\_\_\_ Mud Wt. 8.9  
 Top Packer Depth 3065 Drill Collars Run 29.05 Vis 57  
 Bottom Packer Depth 3070 Wt. Pipe Run 0 WL 7.2  
 Total Depth 3083 Chlorides 6000 ppm System LCM 0

Blow Description IF: 1" blow in 3min, 4" in 16min, Built to 6 1/4" in 30min.  
ISI: Intermittent Return surface blow, 5min. after bleed off  
FF: 1" blow in 4min, 4" in 20min, 6" in 34min, Built to 9 1/4" in 60min.  
FSI: Very weak intermittent surface blow.

Rec	Feet of	%gas	%oil	%water	%mud
<u>125</u>	<u>Water w/ skin of oil on top</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 125' BHT 99° Gravity \_\_\_\_\_ API RW -128 @ 64 °F Chlorides 70,000 ppm

(A) Initial Hydrostatic <u>1502</u>	<input checked="" type="checkbox"/> Test @ 1150	T-On Location <u>08:01</u>
(B) First Initial Flow <u>15</u>	<input type="checkbox"/> Jars _____	T-Started <u>10:20</u>
(C) First Final Flow <u>42</u>	<input checked="" type="checkbox"/> Safety Joint @ 75	T-Open <u>12:05</u>
(D) Initial Shut-In <u>1023</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>16:05</u>
(E) Second Initial Flow <u>45</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>17:29</u>
(F) Second Final Flow <u>80</u>	<input checked="" type="checkbox"/> Mileage <u>15 RTE</u> 23.25	Comments _____
(G) Final Shut-In <u>1003</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>1436</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____

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

Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

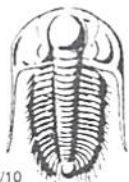
Sub Total 1248.25

Total 1248.25

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

Approved By \_\_\_\_\_ Our Representative Andy Car

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. 51463

4/10

Well Name & No. Kraus JW" 1-28 Test No. 2 Date 1-29-13  
 Company Muefin Dele Co. inc Elevation 2068 KB 2063 GL  
 Address 250 N Water STE 300 Wichita Ks. 67202  
 Co. Rep / Geo. Paul Gunzelman Rig Muefin 16  
 Location: Sec. 28 Twp. 14s Rge. 18w Co. Ellis State Ks

Interval Tested 3299 - 3383 Zone Tested Top & LKC "A&B"  
 Anchor Length 84 Drill Pipe Run 3296 Mud Wt. 8.9  
 Top Packer Depth 3294 Drill Collars Run 0 Vis 60  
 Bottom Packer Depth 3299 Wt. Pipe Run 0 WL 7.2  
 Total Depth 3383 Chlorides 14000 ppm System LCM 0

Blow Description IF: Blow died in 15 min  
IST: No Return  
FP: No Blow  
FSL: No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>mud</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 30 BHT 95° Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

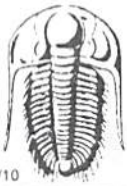
(A) Initial Hydrostatic 1654  Test ← 1150 T-On Location 17:48  
 (B) First Initial Flow 29  Jars \_\_\_\_\_ T-Started 18:26  
 (C) First Final Flow 30  Safety Joint ← 75 T-Open 20:04  
 (D) Initial Shut-In 400  Circ Sub \_\_\_\_\_ T-Pulled 23:04  
 (E) Second Initial Flow 31  Hourly Standby \_\_\_\_\_ T-Out 01:00  
 (F) Second Final Flow 31  Mileage 15 RTE 23.25 Comments \_\_\_\_\_  
 (G) Final Shut-In 295  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1608  Straddle \_\_\_\_\_

Initial Open 30  Ruined Shale Packer \_\_\_\_\_  
 Initial Shut-In 60  Ruined Packer \_\_\_\_\_  
 Final Flow 30  Extra Packer \_\_\_\_\_  
 Final Shut-In 60  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1248.25  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1248.25

Approved By \_\_\_\_\_ 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. 51464

Well Name & No. Kraus JW 1-28 Test No. 3 Date 1-30-13  
 Company Murfin Delc Co in Elevation 2068 KB 2063 GL  
 Address 250 N Water STE 300 Wichita Ks 67202  
 Co. Rep / Geo. Paul Bunzelman Rig Murfin 16  
 Location: Sec. 28 Twp. 14s Rge. 18W Co. Ellis State Ks

Interval Tested 3383 - 3433 Zone Tested LKC "D-F"  
 Anchor Length 50 Drill Pipe Run 3390 Mud Wt. 9.2  
 Top Packer Depth 3378 Drill Collars Run 0 Vis 54  
 Bottom Packer Depth 3383 Wt. Pipe Run 0 WL 7.6  
 Total Depth 3433 Chlorides 14000 ppm System LCM 0

Blow Description IF: 2" blow in 1min, 4" in 3min, 8" in 9min, BOB in 15min  
ISF: Weak surface return blow, died in 45min  
FF: 2" blow in 3min, 4" in 7min, 8" in 16min, BOB in 25min  
FSL: No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>300</u>	<u>MW w/oil spk in Tool</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

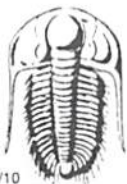
Rec Total 300 BHT 107 Gravity \_\_\_\_\_ API RW .216 @ 25° F Chlorides 98000 ppm

(A) Initial Hydrostatic 1682  Test 1150 T-On Location 10:08  
 (B) First Initial Flow 21  Jars T-Started 10:17  
 (C) First Final Flow 80  Safety Joint 75 T-Open 11:42  
 (D) Initial Shut-In 330  Circ Sub T-Pulled 15:42  
 (E) Second Initial Flow 86  Hourly Standby T-Out 17:17  
 (F) Second Final Flow 158  Mileage 15 RT 23.25 Comments \_\_\_\_\_  
 (G) Final Shut-In 322  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1644  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_

Initial Open 30  Extra Packer \_\_\_\_\_  
 Initial Shut-In 60  Extra Recorder \_\_\_\_\_  
 Final Flow 60  Day Standby \_\_\_\_\_  
 Final Shut-In 90  Accessibility \_\_\_\_\_  
 Sub Total 1248.25 Sub Total 1248.25  
 Total 1248.25  
 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ 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. 51465

4/10

Well Name & No. KRAUS "JW" 1-28 Test No. 4 Date 1-31-13  
 Company MURFIN Delg. Co. inc Elevation 2068 KB 2063 GL  
 Address 250 N WATER STE 300 WICHITA KS. 67202  
 Co. Rep / Geo. PAUL GUNZELMAN Rig MURFIN 16  
 Location: Sec. 28 Twp. 14S Rge. 18W Co. ELLIS State Ks.

Interval Tested 3489-3558 Zone Tested LKC "IK"  
 Anchor Length 69' Drill Pipe Run 3488 Mud Wt. 9.2  
 Top Packer Depth 3484 Drill Collars Run 0 Vis 50  
 Bottom Packer Depth 3489 Wt. Pipe Run 0 WL 8.0  
 Total Depth 3538 Chlorides 13400 ppm System LCM 2

Blow Description IF: 1" blow  
ISI: NO RETURN  
FF: WEAK surface blow  
FSL: NO RETURN

Rec	Feet of	%gas	%oil	%water	%mud
<u>32</u>	<u>WM</u>			<u>30%</u>	<u>70%</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 32 BHT 100° Gravity \_\_\_\_\_ API RW .421 @ 23° F Chlorides 52000 ppm

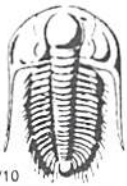
(A) Initial Hydrostatic 1738  Test 1150 T-On Location 07:47  
 (B) First Initial Flow 17  Jars \_\_\_\_\_ T-Started 08:21  
 (C) First Final Flow 23  Safety Joint 75 T-Open 10:15  
 (D) Initial Shut-In 550  Circ Sub \_\_\_\_\_ T-Pulled 13:15  
 (E) Second Initial Flow 26  Hourly Standby \_\_\_\_\_ T-Out 14:45  
 (F) Second Final Flow 30  Mileage 15RT 23.25 Comments \_\_\_\_\_  
 (G) Final Shut-In 525  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1712  Straddle \_\_\_\_\_

Initial Open 30  Ruined Shale Packer \_\_\_\_\_  
 Initial Shut-In 60  Ruined Packer \_\_\_\_\_  
 Final Flow 30  Extra Packer \_\_\_\_\_  
 Final Shut-In 60  Extra Recorder \_\_\_\_\_  
 Sub Total 0  
 Total 1248.25  
 Sub Total 1248.25 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 51467

Well Name & No. KRAUS "JW" 1-28 Test No. 5 Date 2-1-13  
 Company MURFIN DOLA CO. INC Elevation 2068 KB 2063 GL  
 Address 250 N WATER STE 300 WICHITA KS. 67202  
 Co. Rep / Geo. PAUL GUNZELMAN Rig MURFIN 16  
 Location: Sec. 28 Twp. 14s Rge. 18W Co. ELLIS State Ks.

Interval Tested 3616-3678 Zone Tested ARBuckle  
 Anchor Length 62' Drill Pipe Run 3613 Mud Wt. 9.2  
 Top Packer Depth 3611 Drill Collars Run 0 Vis 50  
 Bottom Packer Depth 3616 Wt. Pipe Run 0 WL 8.0  
 Total Depth 3678 Chlorides 13400 ppm System LCM 2

Blow Description IF: 2" blow in 2min, 6" in 7min, 10" in 14min, BOB in 15min  
ISI: Bled off 5min. Return surface blow 7min after bleed off, Sied in 46min  
FF: 2" blow in 2min, 6" in 7min, 10" in 14min, BOB in 16min  
FSL: Bled off 10min. Return surface blow 6min after bleed off. WEAK SURFACE blow throughout

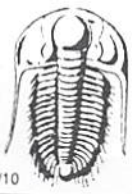
Rec	Feet of	%gas	%oil	%water	%mud
<u>315</u>	<u>SOBM 60</u>	<u>15</u>	<u>85</u>		
<u>60</u>	<u>OCBM</u>	<u>5</u>	<u>15</u>		<u>80</u>
<u>60</u>	<u>OCBM</u>	<u>5</u>	<u>10</u>		<u>85</u>
<u>90</u>	<u>BIP</u>	<u>100</u>			

Rec Total 435' BHT 107' Gravity 27 API RW @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1871  Test 1150 T-On Location 02:10  
 (B) First Initial Flow 29  Jars T-Started 02:56  
 (C) First Final Flow 85  Safety Joint 75 T-Open 04:45  
 (D) Initial Shut-In 1117  Circ Sub T-Pulled 08:45  
 (E) Second Initial Flow 87  Hourly Standby T-Out 11:06  
 (F) Second Final Flow 175  Mileage 15RT 23.25 Comments \_\_\_\_\_  
 (G) Final Shut-In 1095  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1809  Straddle \_\_\_\_\_

Initial Open 30  Ruined Shale Packer \_\_\_\_\_  
 Initial Shut-In 60  Ruined Packer \_\_\_\_\_  
 Final Flow 60  Extra Packer \_\_\_\_\_  
 Final Shut-In 90  Extra Copies \_\_\_\_\_  
 Sub Total 0  
 Total 1248.25  
 Sub Total 1248.25 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative [Signature]  
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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 51468

Well Name & No. KRAUS JW 1-28 Test No. 6 Date 2-1-13  
 Company Murfin Delg. Co Inc Elevation 2068 KB 2063 GL  
 Address 250N WATER STE 300 WICHITA KS 67202  
 Co. Rep / Geo. PAUL GUNZELMAN Rig MURFIN 1P  
 Location: Sec. 28 Twp. 14S Rge. 18W Co. ELLIS State KS

Interval Tested 3678-3688 Zone Tested ARBUCKLE  
 Anchor Length 10' Drill Pipe Run 3675 Mud Wt. 9.2  
 Top Packer Depth 3673 Drill Collars Run 0 Vis 50 69  
 Bottom Packer Depth 3678 Wt. Pipe Run 0 WL 50 7.6  
 Total Depth 3688 Chlorides 12400 ppm System LCM 2 7

Blow Description FF: BOB 1min.  
IST: NO RETURN  
FF: BOB 2min.  
FSL: NO RETURN

Rec	Feet of	%gas	TR	%oil	%water	%mud
<u>5</u>	<u>OSWM</u>				<u>40</u>	<u>60</u>
<u>1765</u>	<u>OSMW</u>				<u>95</u>	<u>5</u>
<u>60</u>	<u>OSWM</u>				<u>45</u>	<u>55</u>
		%gas		%oil	%water	%mud
		%gas		%oil	%water	%mud

Rec Total 1830 BHT 117° Gravity API RW 321 @ 42° F Chlorides 35000 ppm  
 Test 1150 T-On Location 16:51  
 Jars T-Started 18:23  
 Safety Joint 75 T-Open 20:18  
 Circ Sub T-Pulled 23:18  
 Hourly Standby T-Out 02:00  
 Mileage 15RT 23.25 Comments \_\_\_\_\_  
 Sampler \_\_\_\_\_  
 Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1248.25  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1248.25

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

Our Representative