



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water Ste 300  
Wichita, KS 67202

ATTN: Jeff Christian

### **Hilgers Trust #1-32**

### **32-30s-3w Sumner,KS**

Start Date: 2012.02.06 @ 05:38:20

End Date: 2012.02.06 @ 14:18:05

Job Ticket #: 44149                      DST #: 1

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

Printed: 2012.02.15 @ 09:48:57

Murfin Drilling Co  
32-30s-3w Sumner,KS  
Hilgers Trust #1-32  
DST # 1  
LKC "H"  
2012.02.06



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co  
 250 N Water Ste 300  
 Wichita, KS 67202  
 ATTN: Jeff Christian

**32-30s-3w Sumner, KS**  
**Hilgers Trust #1-32**  
 Job Ticket: 44149 **DST#: 1**  
 Test Start: 2012.02.06 @ 05:38:20

## GENERAL INFORMATION:

Formation: **LKC "H"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 08:28:20  
 Time Test Ended: 14:18:05  
 Interval: **3299.00 ft (KB) To 3320.00 ft (KB) (TVD)**  
 Total Depth: 3320.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Leal Cason  
 Unit No: 45  
 Reference Elevations: 1383.00 ft (KB)  
 1374.00 ft (CF)  
 KB to GR/CF: 9.00 ft

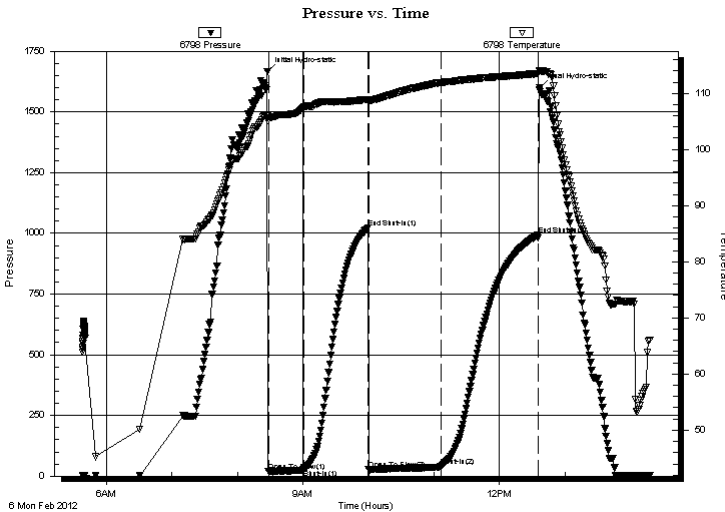
## Serial #: 6798

Inside

Press @ Run Depth: 41.37 psig @ 3300.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2012.02.06 End Date: 2012.02.06 Last Calib.: 2012.02.06  
 Start Time: 05:38:21 End Time: 14:18:05 Time On Btm: 2012.02.06 @ 08:27:20  
 Time Off Btm: 2012.02.06 @ 12:36:50

TEST COMMENT: IF: Weak Blow, 4 inches  
 IS: No Blow Back  
 FF: Weak Blow, 4 inches  
 FS: No Blow Back

## PRESSURE SUMMARY



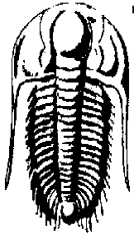
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1667.36	106.05	Initial Hydro-static
1	19.03	105.13	Open To Flow (1)
34	29.60	107.48	Shut-In (1)
93	1023.41	108.93	End Shut-In (1)
93	28.06	108.61	Open To Flow (2)
159	41.37	111.90	Shut-In (2)
248	993.07	113.51	End Shut-In (2)
250	1599.47	114.05	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
35.00	SOGCM 2%G 5%O 93%M	0.49

## Gas Rates

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



**TRILOBITE**  
TESTING, INC.

## DRILL STEM TEST REPORT

Murfin Drilling Co

250 N Water Ste 300  
Wichita, KS 67202

ATTN: Jeff Christian

32-30s-3w Sumner, KS

**Hilgers Trust #1-32**

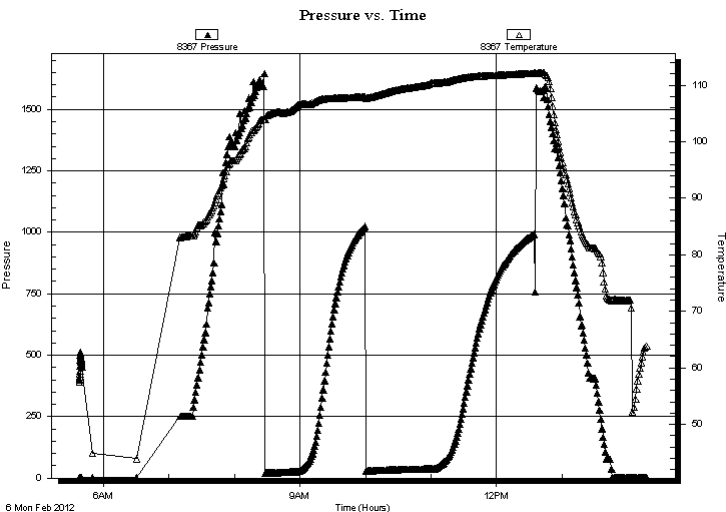
Job Ticket: 44149      **DST#: 1**  
Test Start: 2012.02.06 @ 05:38:20

### GENERAL INFORMATION:

Formation:	LKC "H"		
Deviated:	No Whipstock:	ft (KB)	Test Type: Conventional Bottom Hole (Initial)
Time Tool Opened:	08:28:20		Tester: Leal Cason
Time Test Ended:	14:18:05		Unit No: 45
<b>Interval:</b>	<b>3299.00 ft (KB) To 3320.00 ft (KB) (TVD)</b>		Reference Elevations: 1383.00 ft (KB)
Total Depth:	3320.00 ft (KB) (TVD)		1374.00 ft (CF)
Hole Diameter:	7.88 inches	Hole Condition: Good	KB to GR/CF: 9.00 ft

<b>Serial #: 8367</b>	<b>Outside</b>		
Press @RunDepth:	psig @ 3300.00 ft (KB)	Capacity:	8000.00 psig
Start Date:	2012.02.06	End Date:	2012.02.06
Start Time:	05:38:21	End Time:	14:18:05
		Last Calib.:	2012.02.06
		Time On Btm:	
		Time Off Btm:	

TEST COMMENT: IF: Weak Blow, 4 inches  
IS: No Blow Back  
FF: Weak Blow, 4 inches  
FS: No Blow Back



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
35.00	SOGCM 2%G 5%O 93%M	0.49

### Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co

**32-30s-3w Sumner, KS**

250 N Water Ste 300  
Wichita, KS 67202

**Hilgers Trust #1-32**

Job Ticket: 44149

**DST#: 1**

ATTN: Jeff Christian

Test Start: 2012.02.06 @ 05:38:20

## Tool Information

Drill Pipe:	Length: 3301.00 ft	Diameter: 3.80 inches	Volume: 46.30 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: 46.30 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial 51000.00 lb
Depth to Top Packer:	3299.00 ft			Final 51000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	21.00 ft			
Tool Length:	48.00 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			3277.00	
Hydraulic tool	5.00			3282.00	
Jars	5.00			3287.00	
Safety Joint	2.00			3289.00	
Packer	5.00			3294.00	27.00 Bottom Of Top Packer
Packer	5.00			3299.00	
Stubb	1.00			3300.00	
Recorder	0.00	6798	Inside	3300.00	
Recorder	0.00	8367	Outside	3300.00	
Perforations	17.00			3317.00	
Bullnose	3.00			3320.00	21.00 Bottom Packers & Anchor

**Total Tool Length: 48.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co

**32-30s-3w Sumner, KS**

250 N Water Ste 300  
Wichita, KS 67202

**Hilgers Trust #1-32**

Job Ticket: 44149

**DST#: 1**

ATTN: Jeff Christian

Test Start: 2012.02.06 @ 05:38:20

## 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: 48.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 0.20 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
35.00	SOGCM2%G 5%O 93%M	0.491

Total Length: 35.00 ft      Total Volume: 0.491 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

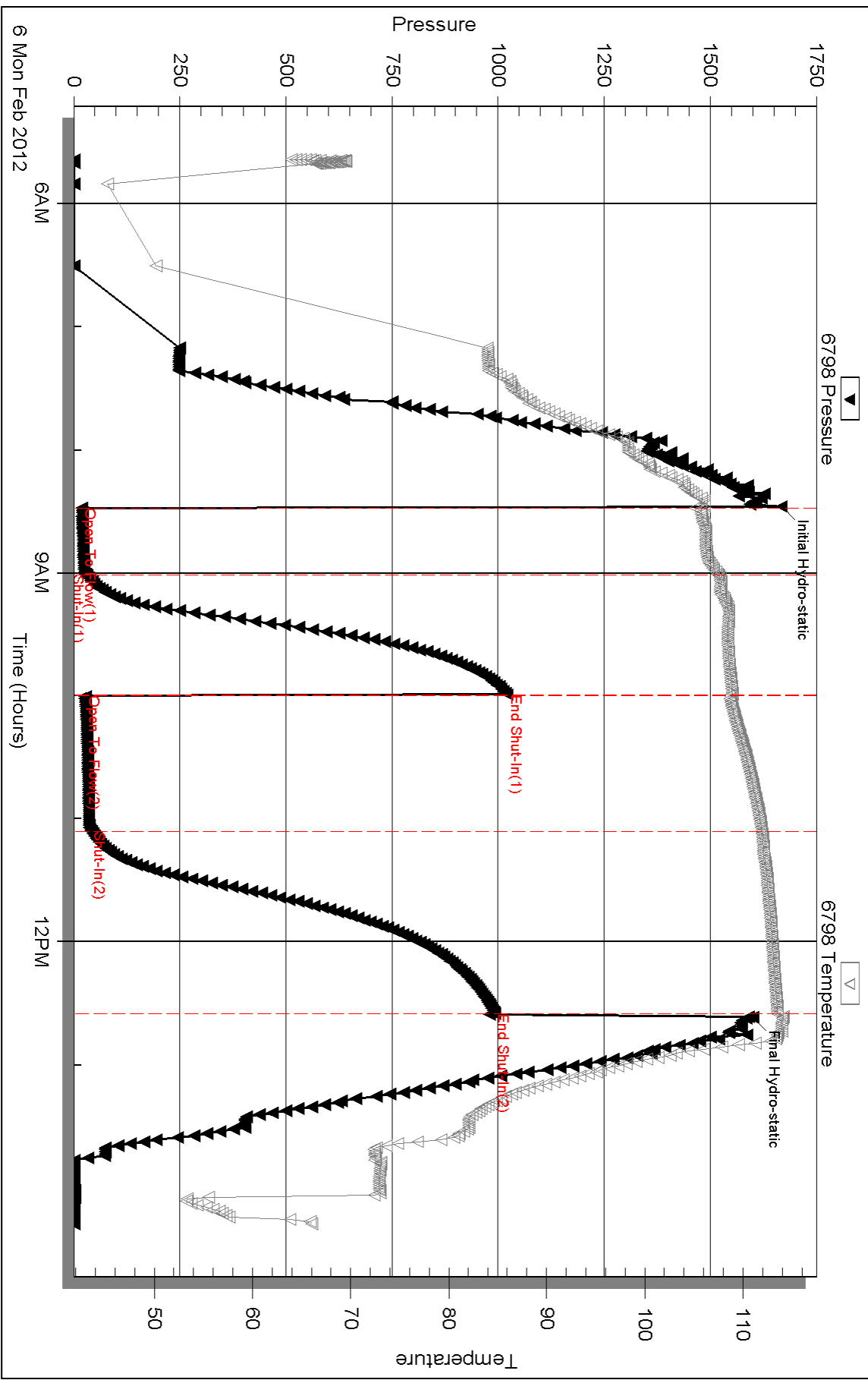
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time

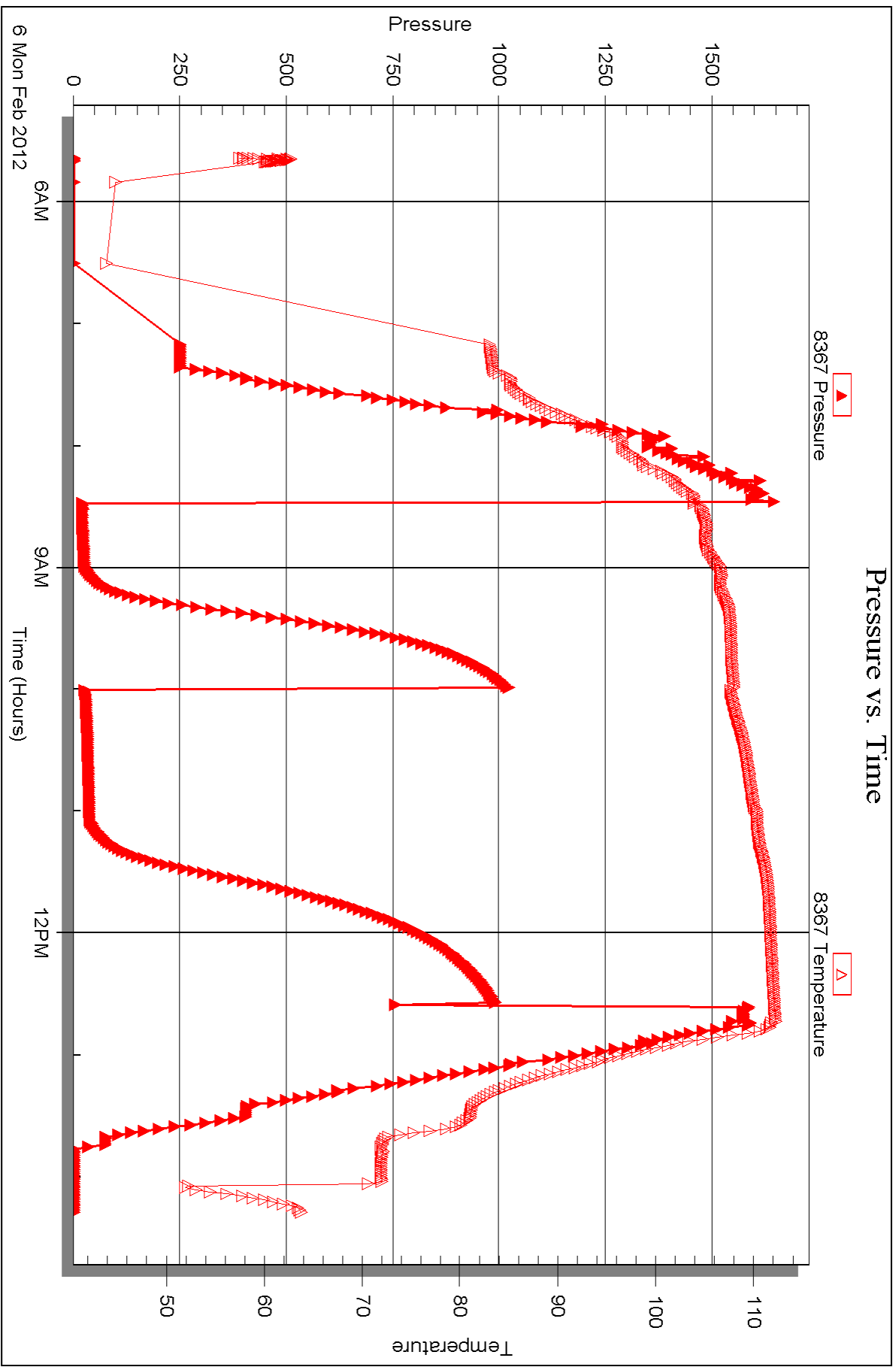


Serial #: 8367

Outside Murfin Drilling Co

Higers Trust #1-32

DST Test Number: 1





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water Ste 300  
Wichita, KS 67202

ATTN: Jeff Christian

### **Hilgers Trust #1-32**

### **32-30s-3w Sumner,KS**

Start Date: 2012.02.07 @ 02:05:09

End Date: 2012.02.07 @ 10:07:54

Job Ticket #: 44150                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.02.15 @ 09:48:19

Murfin Drilling Co  
32-30s-3w Sumner,KS  
Hilgers Trust #1-32  
DST # 2  
LKC "K"  
2012.02.07





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co

**32-30s-3w Sumner, KS**

250 N Water Ste 300  
Wichita, KS 67202

**Hilgers Trust #1-32**

ATTN: Jeff Christian

Job Ticket: 44150

**DST#: 2**

Test Start: 2012.02.07 @ 02:05:09

## GENERAL INFORMATION:

Formation: **LKC "K"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 04:25:09  
 Time Test Ended: 10:07:54  
 Interval: **3423.00 ft (KB) To 3446.00 ft (KB) (TVD)**  
 Total Depth: 3446.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Leal Cason  
 Unit No: 45  
 Reference Elevations: 1383.00 ft (KB)  
 1374.00 ft (CF)  
 KB to GR/CF: 9.00 ft

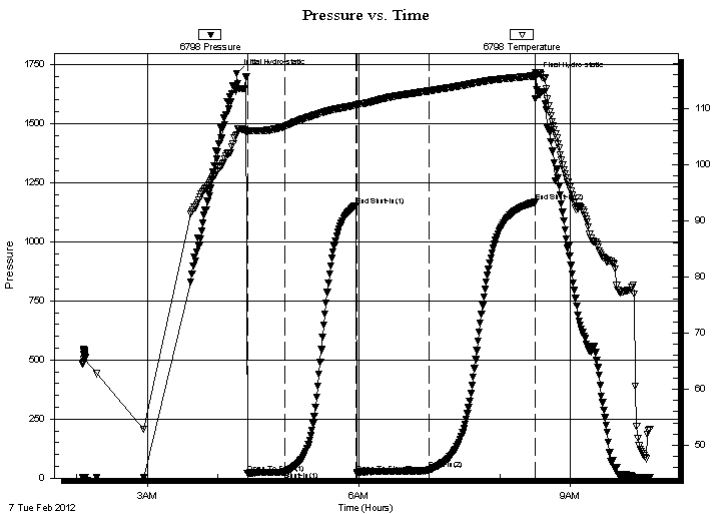
## Serial #: 6798

Inside

Press @ Run Depth: 35.57 psig @ 3424.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2012.02.07 End Date: 2012.02.07 Last Calib.: 2012.02.07  
 Start Time: 02:05:10 End Time: 10:07:54 Time On Btm: 2012.02.07 @ 04:16:09  
 Time Off Btm: 2012.02.07 @ 08:30:24

TEST COMMENT: IF: Weak Blow, 3/4 inch  
 IS: No Blow Back  
 FF: Weak Blow, 1 inch  
 FS: No Blow Back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1712.49	105.33	Initial Hydro-static
9	20.04	105.75	Open To Flow (1)
41	26.94	106.81	Shut-In(1)
101	1153.26	110.60	End Shut-In(1)
103	21.56	110.70	Open To Flow (2)
164	35.57	113.17	Shut-In(2)
254	1167.36	115.85	End Shut-In(2)
255	1699.03	116.46	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
30.00	SOCM 2%O 98%M	0.42

\* Recovery from multiple tests

## Gas Rates

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



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# DRILL STEM TEST REPORT

Murfin Drilling Co

**32-30s-3w Sumner, KS**

250 N Water Ste 300  
Wichita, KS 67202

**Hilgers Trust #1-32**

Job Ticket: 44150

**DST#: 2**

ATTN: Jeff Christian

Test Start: 2012.02.07 @ 02:05:09

## GENERAL INFORMATION:

Formation: **LKC "K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:25:09

Time Test Ended: 10:07:54

Test Type: Conventional Bottom Hole (Reset)

Tester: Leal Cason

Unit No: 45

**Interval: 3423.00 ft (KB) To 3446.00 ft (KB) (TVD)**

Reference Elevations: 1383.00 ft (KB)

Total Depth: 3446.00 ft (KB) (TVD)

1374.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 9.00 ft

**Serial #: 8367 Outside**

Press @ Run Depth: psig @ 3424.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.02.07 End Date: 2012.02.07

Last Calib.: 2012.02.07

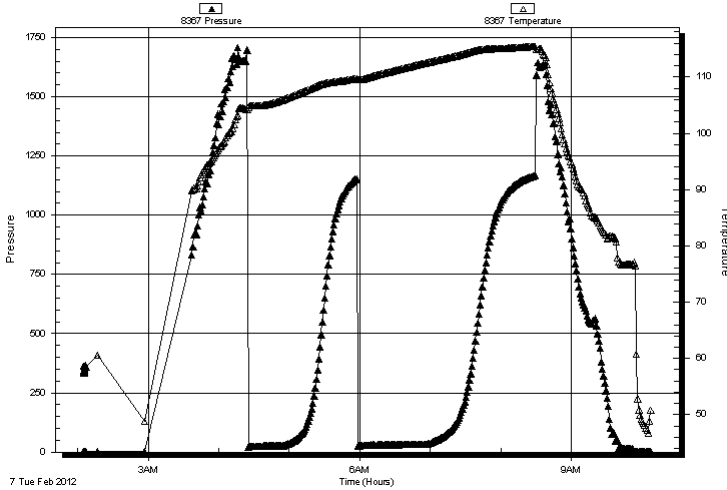
Start Time: 02:05:10 End Time: 10:07:54

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IF: Weak Blow, 3/4 inch  
IS: No Blow Back  
FF: Weak Blow, 1 inch  
FS: No Blow Back

Pressure vs. Time



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
30.00	SOCM 2%O 98%M	0.42

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co

**32-30s-3w Sumner, KS**

250 N Water Ste 300  
Wichita, KS 67202

**Hilgers Trust #1-32**

Job Ticket: 44150

**DST#: 2**

ATTN: Jeff Christian

Test Start: 2012.02.07 @ 02:05:09

## Tool Information

Drill Pipe:	Length: 3426.00 ft	Diameter: 3.80 inches	Volume: 48.06 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: 48.06 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3423.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	23.00 ft			
Tool Length:	50.00 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			3401.00	
Hydraulic tool	5.00			3406.00	
Jars	5.00			3411.00	
Safety Joint	2.00			3413.00	
Packer	5.00			3418.00	27.00 Bottom Of Top Packer
Packer	5.00			3423.00	
Stubb	1.00			3424.00	
Recorder	0.00	6798	Inside	3424.00	
Recorder	0.00	8367	Outside	3424.00	
Perforations	19.00			3443.00	
Bullnose	3.00			3446.00	23.00 Bottom Packers & Anchor

**Total Tool Length: 50.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co

**32-30s-3w Sumner, KS**

250 N Water Ste 300  
Wichita, KS 67202

**Hilgers Trust #1-32**

Job Ticket: 44150

**DST#: 2**

ATTN: Jeff Christian

Test Start: 2012.02.07 @ 02:05:09

## 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: 48.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.78 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4200.00 ppm

Filter Cake: 0.20 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	SOCM2%O 98%M	0.421

Total Length: 30.00 ft      Total Volume: 0.421 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

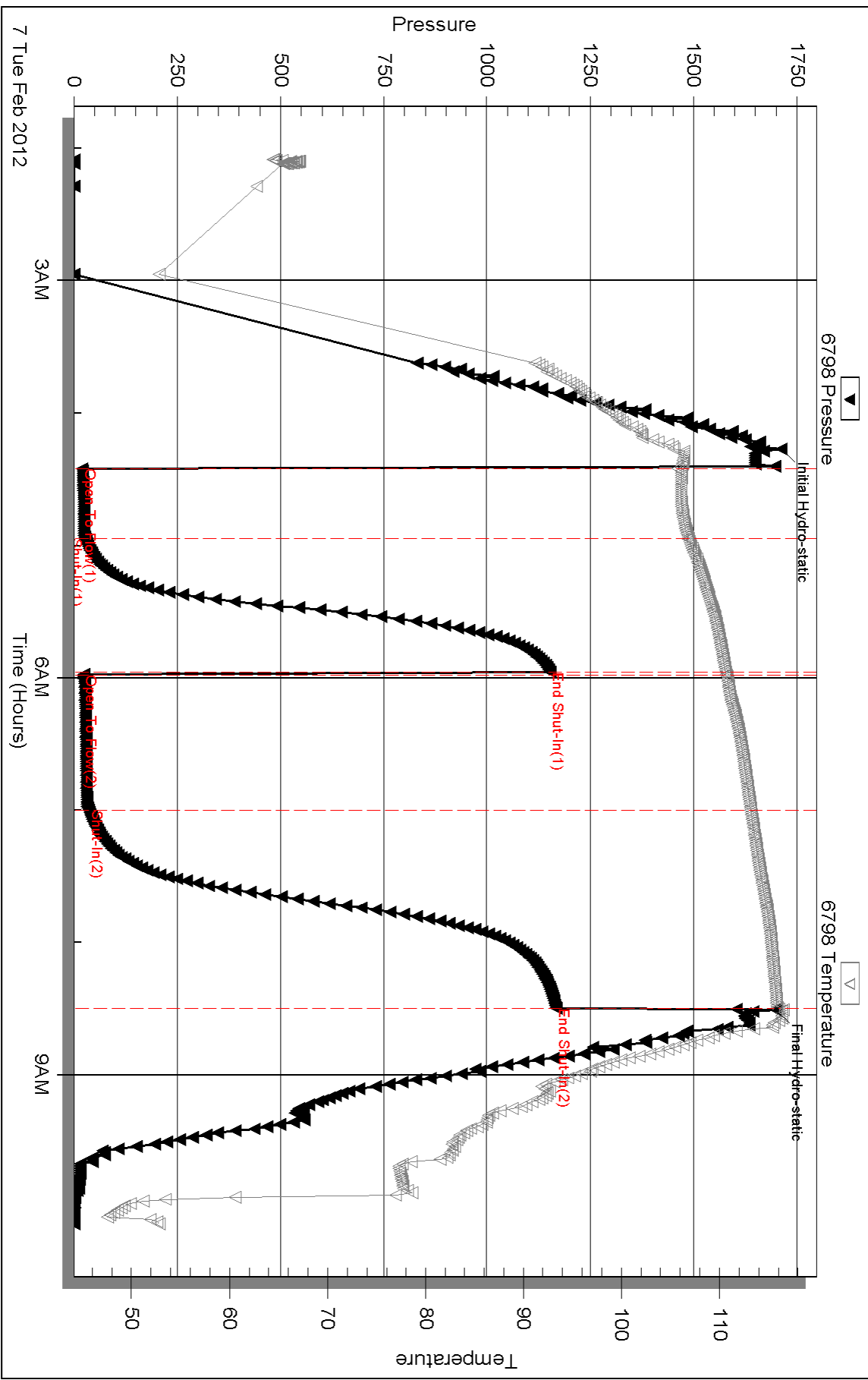
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time

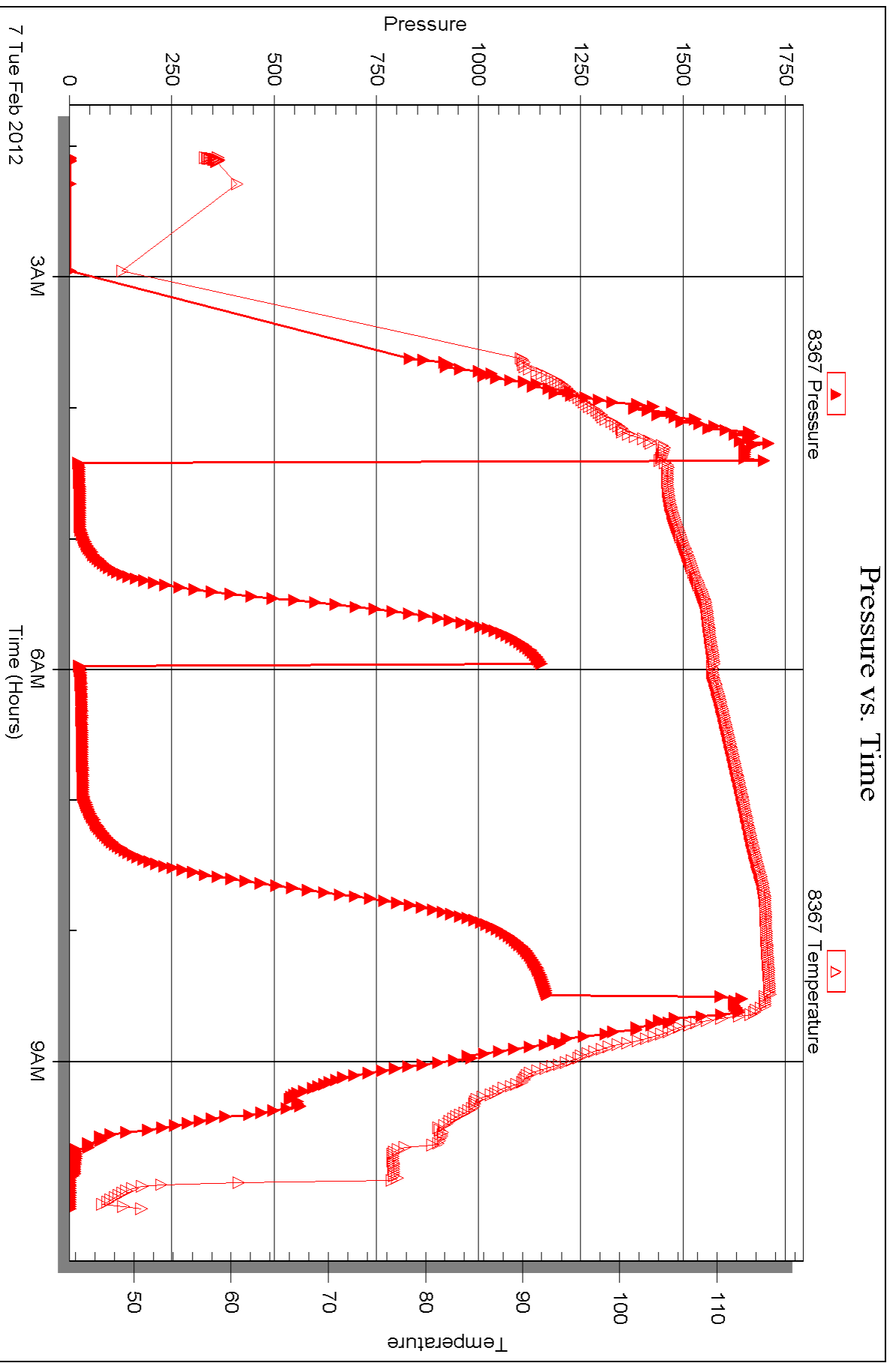


Serial #: 8367

Outside Murfin Drilling Co

Higers Trust #1-32

DST Test Number: 2





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water Ste 300  
Wichita, KS 67202

ATTN: Jeff Christian

### **Hilgers Trust #1-32**

### **32-30s-3w Sumner,KS**

Start Date: 2012.02.09 @ 01:43:20

End Date: 2012.02.09 @ 10:56:35

Job Ticket #: 44151                      DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.02.15 @ 09:47:38



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co

**32-30s-3w Sumner, KS**

250 N Water Ste 300  
Wichita, KS 67202

**Hilgers Trust #1-32**

ATTN: Jeff Christian

Job Ticket: 44151

**DST#: 3**

Test Start: 2012.02.09 @ 01:43:20

## GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:47:35

Time Test Ended: 10:56:35

Test Type: Conventional Bottom Hole (Reset)

Tester: Leal Cason

Unit No: 45

**Interval: 3953.00 ft (KB) To 3973.00 ft (KB) (TVD)**

Reference Elevations: 1383.00 ft (KB)

Total Depth: 3973.00 ft (KB) (TVD)

1374.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 9.00 ft

**Serial #: 6798**

**Inside**

Press @ Run Depth: 158.14 psig @ 3954.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.02.09

End Date: 2012.02.09

Last Calib.: 2012.02.09

Start Time: 01:43:21

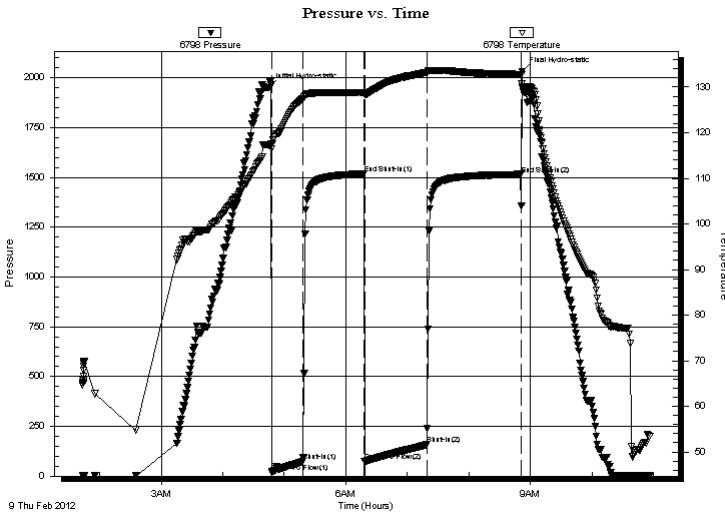
End Time: 10:56:35

Time On Btm: 2012.02.09 @ 04:45:20

Time Off Btm: 2012.02.09 @ 08:51:50

**TEST COMMENT:** IF: Fair Blow, 5 inches  
IS: No Blow Back  
FF: Fair Blow, 6 inches  
FS: No Blow Back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1950.85	117.26	Initial Hydro-static
3	18.41	116.49	Open To Flow (1)
33	73.53	127.47	Shut-In(1)
93	1516.65	128.82	End Shut-In(1)
94	73.72	128.41	Open To Flow (2)
154	158.14	133.24	Shut-In(2)
246	1514.88	132.77	End Shut-In(2)
247	2032.46	130.78	Final Hydro-static

## Recovery

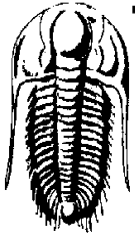
Length (ft)	Description	Volume (bbl)
120.00	Water	1.68
90.00	M CW 30% M 70% W	1.26

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE**  
**TESTING, INC.**

## DRILL STEM TEST REPORT

Murfin Drilling Co  
250 N Water Ste 300  
Wichita, KS 67202  
ATTN: Jeff Christian

**32-30s-3w Sumner, KS**

**Hilgers Trust #1-32**

Job Ticket: 44151      **DST#: 3**  
Test Start: 2012.02.09 @ 01:43:20

### GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:47:35

Time Test Ended: 10:56:35

Test Type: Conventional Bottom Hole (Reset)

Tester: Leal Cason

Unit No: 45

**Interval: 3953.00 ft (KB) To 3973.00 ft (KB) (TVD)**

Reference Elevations: 1383.00 ft (KB)

Total Depth: 3973.00 ft (KB) (TVD)

1374.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 9.00 ft

**Serial #: 8367      Outside**

Press @ Run Depth:      psig @      3954.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.02.09

End Date:

2012.02.09

Last Calib.:

2012.02.09

Start Time: 01:43:21

End Time:

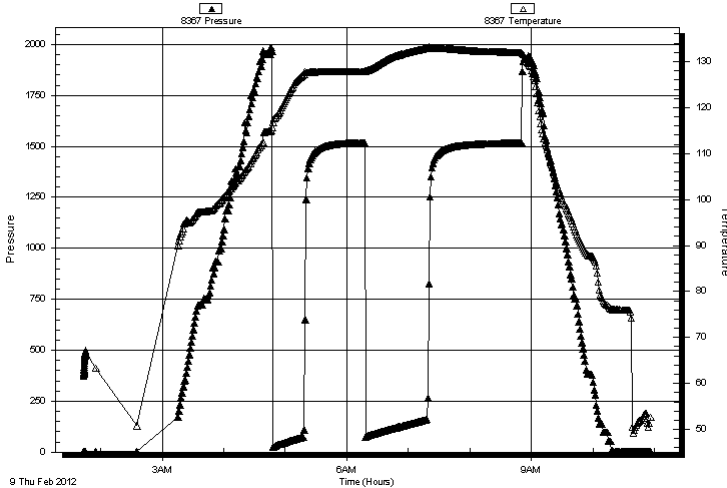
10:56:35

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Fair Blow , 5 inches  
IS: No Blow Back  
FF: Fair Blow , 6 inches  
FS: No Blow Back

Pressure vs. Time



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
120.00	Water	1.68
90.00	MCW 30%M 70%W	1.26

### Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co

**32-30s-3w Sumner, KS**

250 N Water Ste 300  
Wichita, KS 67202

**Hilgers Trust #1-32**

Job Ticket: 44151

**DST#: 3**

ATTN: Jeff Christian

Test Start: 2012.02.09 @ 01:43:20

## Tool Information

Drill Pipe:	Length: 3953.00 ft	Diameter: 3.80 inches	Volume: 55.45 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 76000.00 lb
			<u>Total Volume: 55.45 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	3953.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	20.00 ft			
Tool Length:	40.00 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			3938.00	
Hydraulic tool	5.00			3943.00	
Packer	5.00			3948.00	20.00 Bottom Of Top Packer
Packer	5.00			3953.00	
Stubb	1.00			3954.00	
Recorder	0.00	6798	Inside	3954.00	
Recorder	0.00	8367	Outside	3954.00	
Perforations	16.00			3970.00	
Bullnose	3.00			3973.00	20.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>40.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co

**32-30s-3w Sumner, KS**

250 N Water Ste 300  
Wichita, KS 67202

**Hilgers Trust #1-32**

Job Ticket: 44151

**DST#: 3**

ATTN: Jeff Christian

Test Start: 2012.02.09 @ 01:43:20

## 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: 110000 ppm

Viscosity: 49.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.39 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 0.20 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	Water	1.683
90.00	MCW 30%M 70%W	1.262

Total Length: 210.00 ft      Total Volume: 2.945 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

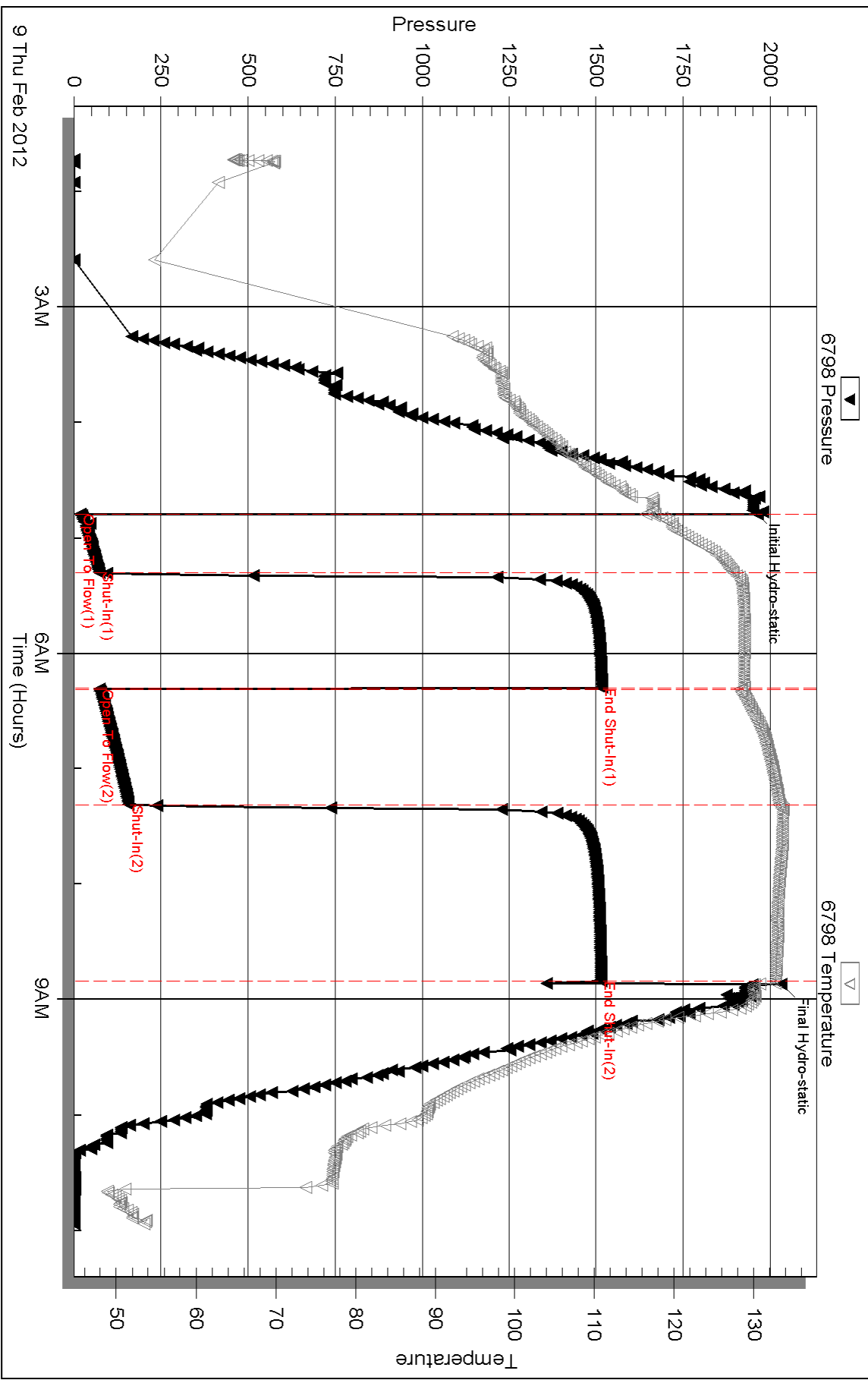
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW was .13 @ 43 degrees

### Pressure vs. Time

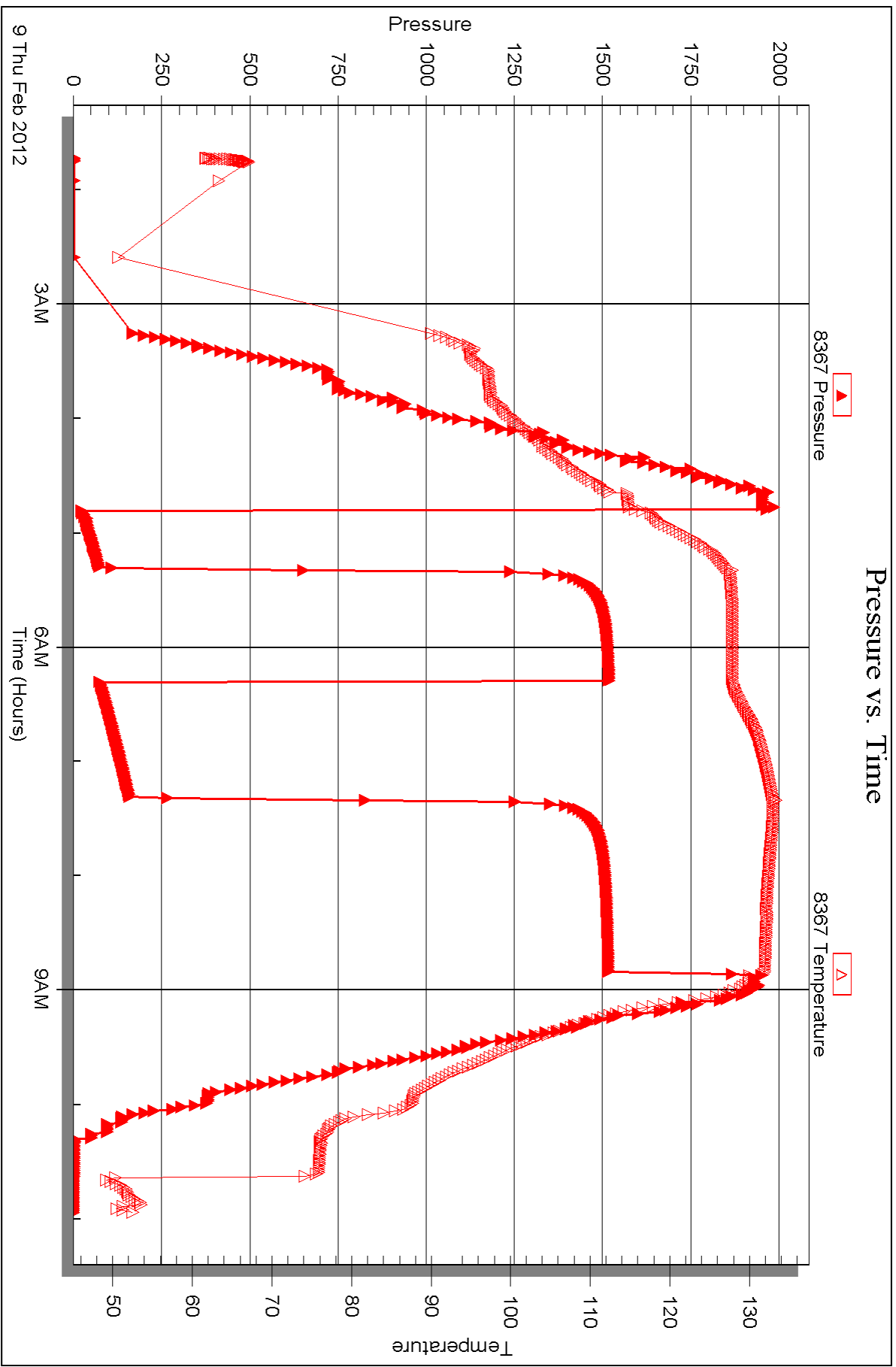


Serial #: 8367

Outside Murfin Drilling Co

Higers Trust #1-32

DST Test Number: 3





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water Ste 300  
Wichita, KS 67202

ATTN: Jeff Christian

### **Hilgers Trust #1-32**

### **32-30s-3w Sumner,KS**

Start Date: 2012.02.10 @ 08:36:51

End Date: 2012.02.10 @ 16:38:21

Job Ticket #: 45751                      DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.02.15 @ 09:47:01



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co

**32-30s-3w Sumner, KS**

250 N Water Ste 300  
Wichita, KS 67202

**Hilgers Trust #1-32**

ATTN: Jeff Christian

Job Ticket: 45751

**DST#: 4**

Test Start: 2012.02.10 @ 08:36:51

## GENERAL INFORMATION:

Formation: **Simpson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:22:51

Time Test Ended: 16:38:21

Test Type: Conventional Bottom Hole (Reset)

Tester: Leal Cason

Unit No: 45

**Interval: 4324.00 ft (KB) To 4334.00 ft (KB) (TVD)**

Reference Elevations: 1383.00 ft (KB)

Total Depth: 4334.00 ft (KB) (TVD)

1374.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 9.00 ft

**Serial #: 6798**

**Inside**

Press @ Run Depth: 50.82 psig @ 4325.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.02.10

End Date:

2012.02.10

Last Calib.:

2012.02.10

Start Time: 08:36:52

End Time:

16:38:21

Time On Btm:

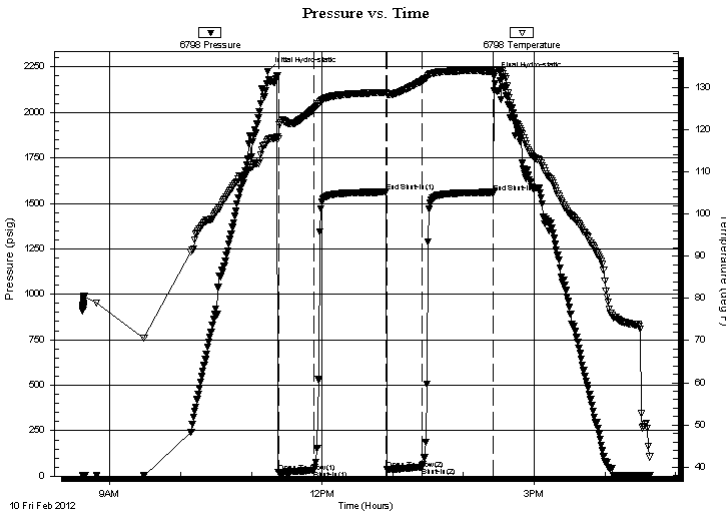
2012.02.10 @ 11:13:51

Time Off Btm:

2012.02.10 @ 14:26:06

**TEST COMMENT:** IF: Weak Blow, 2 inches  
IS: No Blow Back  
FF: Weak Blow, 3/4 Inch  
FS: No Blow Back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2226.24	117.42	Initial Hydro-static
9	19.26	117.73	Open To Flow (1)
39	33.45	124.88	Shut-In(1)
101	1562.44	128.82	End Shut-In(1)
101	36.01	128.35	Open To Flow (2)
131	50.82	131.56	Shut-In(2)
192	1561.03	133.86	End Shut-In(2)
193	2198.24	133.98	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	MCW 10%M 90%W	0.84
5.00	V SOMCW 2%O 30%M 68%W	0.07

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co

**32-30s-3w Sumner, KS**

250 N Water Ste 300  
Wichita, KS 67202

**Hilgers Trust #1-32**

ATTN: Jeff Christian

Job Ticket: 45751

**DST#: 4**

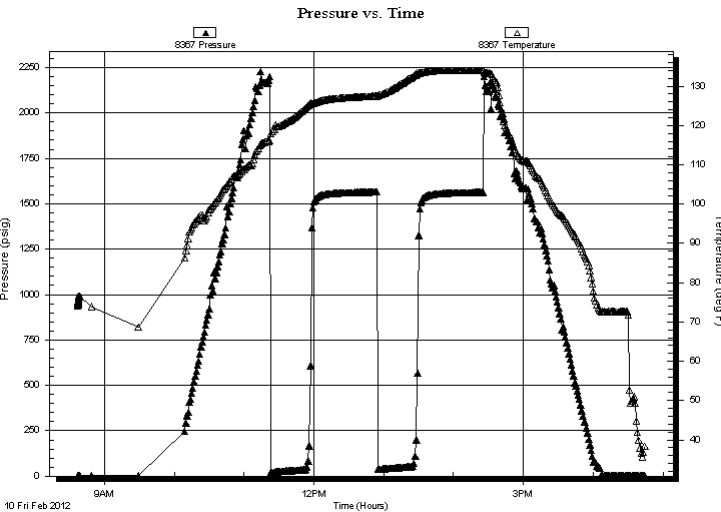
Test Start: 2012.02.10 @ 08:36:51

## GENERAL INFORMATION:

Formation: **Simpson**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 11:22:51  
 Time Test Ended: 16:38:21  
 Interval: **4324.00 ft (KB) To 4334.00 ft (KB) (TVD)**  
 Total Depth: 4334.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Leal Cason  
 Unit No: 45  
 Reference Elevations: 1383.00 ft (KB)  
 1374.00 ft (CF)  
 KB to GR/CF: 9.00 ft

**Serial #: 8367 Outside**  
 Press @ Run Depth: psig @ 4325.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2012.02.10 End Date: 2012.02.10 Last Calib.: 2012.02.10  
 Start Time: 08:37:07 End Time: 16:44:36 Time On Btm:  
 Time Off Btm:

**TEST COMMENT:** IF: Weak Blow, 2 inches  
 IS: No Blow Back  
 FF: Weak Blow, 3/4 Inch  
 FS: No Blow Back



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	MCW 10%M 90%W	0.84
5.00	V SOMCW 2%O 30%M 68%W	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

**32-30s-3w Sumner, KS**

250 N Water Ste 300  
Wichita, KS 67202

**Hilgers Trust #1-32**

Job Ticket: 45751

**DST#: 4**

ATTN: Jeff Christian

Test Start: 2012.02.10 @ 08:36:51

## Tool Information

Drill Pipe:	Length: 4334.00 ft	Diameter: 3.80 inches	Volume: 60.79 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 60.79 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 66000.00 lb
Depth to Top Packer:	4324.00 ft			Final 66000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	10.00 ft			
Tool Length:	30.00 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			4309.00	
Hydraulic tool	5.00			4314.00	
Packer	5.00			4319.00	20.00 Bottom Of Top Packer
Packer	5.00			4324.00	
Stubb	1.00			4325.00	
Recorder	0.00	6798	Inside	4325.00	
Recorder	0.00	8367	Outside	4325.00	
Perforations	6.00			4331.00	
Bullnose	3.00			4334.00	10.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>30.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co

**32-30s-3w Sumner, KS**

250 N Water Ste 300  
Wichita, KS 67202

**Hilgers Trust #1-32**

Job Ticket: 45751

**DST#: 4**

ATTN: Jeff Christian

Test Start: 2012.02.10 @ 08:36:51

## 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:

90000 ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 0.20 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
60.00	MCW 10%M 90%W	0.842
5.00	VSOMCW 2%O 30%M 68%W	0.070

Total Length: 65.00 ft      Total Volume: 0.912 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

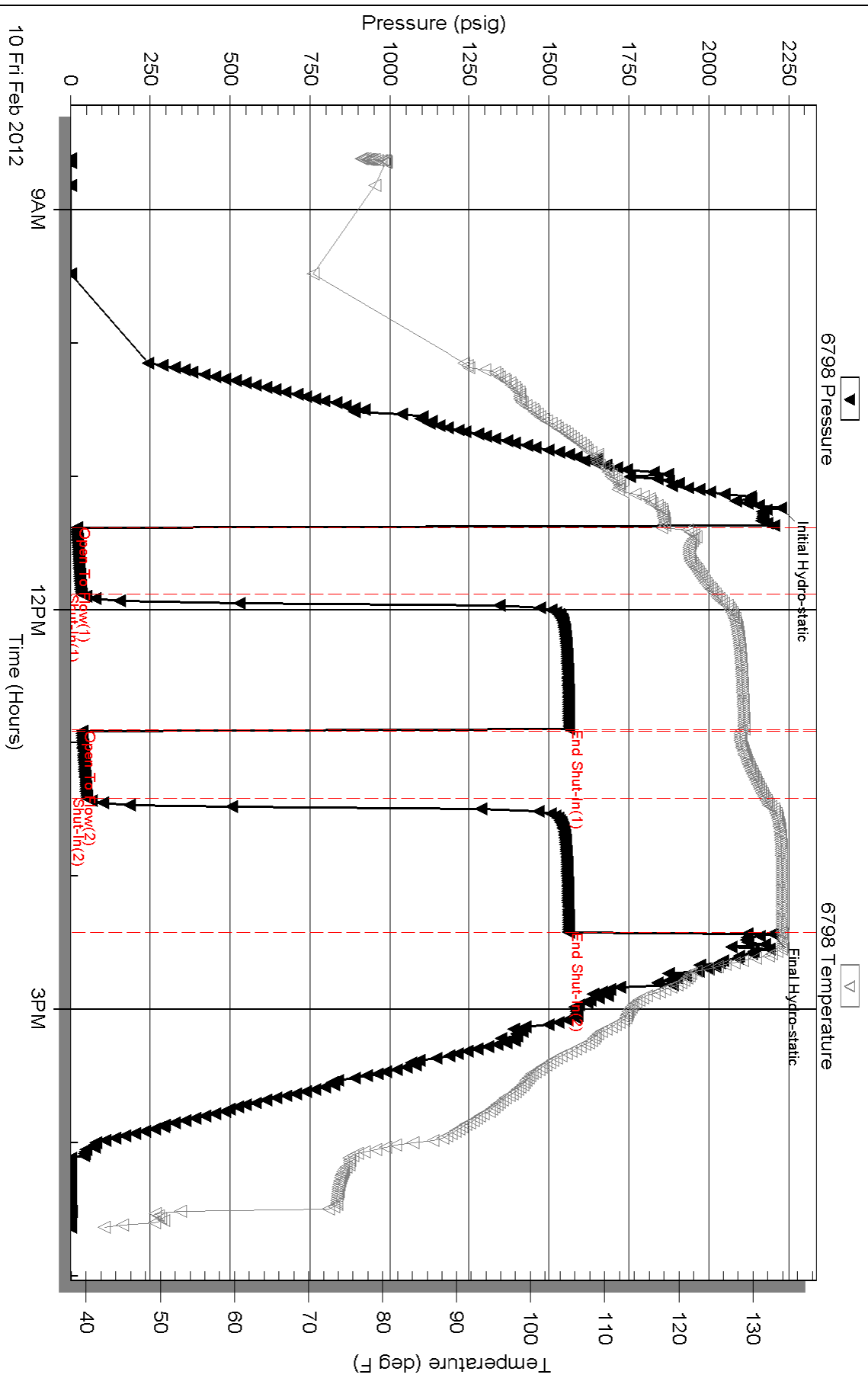
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW was .02 @ 31 degrees

### Pressure vs. Time

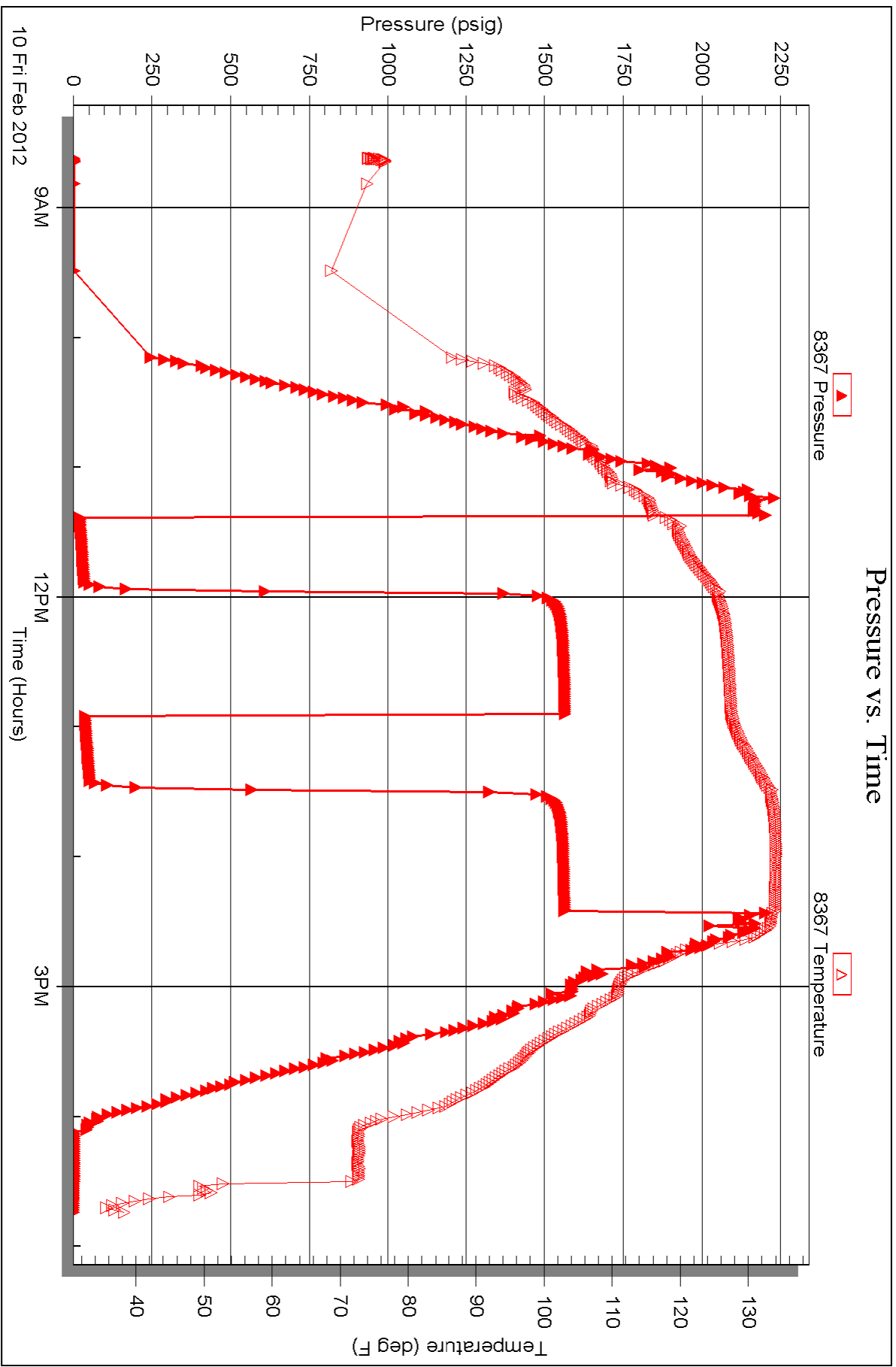


Serial #: 8367

Outside Murfin Drilling Co

Higers Trust #1-32

DST Test Number: 4





# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

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FEB 10 2012

## Test Ticket

NO. 44149

4/10

BY: \_\_\_\_\_

Well Name & No. Hilgers Trust 1-32 Test No. 1 Date 02/06/12  
 Company Murfin Drilling Co. Elevation 1383 KB 1374 GL  
 Address 250 N. Water Ste 300 Wichita, KS 67202  
 Co. Rep / Geo. Jeff Christian Rig Maverick 106  
 Location: Sec. 32 Twp. 30S Rge. 3W Co. Sumner State KS

Interval Tested 3299 - 3320 Zone Tested L KC "H"  
 Anchor Length 21 Drill Pipe Run 3301 Mud Wt. 9.0  
 Top Packer Depth 3294 Drill Collars Run 0 Vis 48  
 Bottom Packer Depth 3299 Wt. Pipe Run 0 WL 8.0  
 Total Depth 3320 Chlorides 4000 ppm System LCM \_\_\_\_\_

Blow Description IF: weak blow, 4 inches  
ISI: NO Blow Back  
FF: weak blow, 4 inches  
FST: NO Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>35</u>	<u>50 GCM</u>	<u>2</u>	<u>5</u>	<u>93</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 35 BHT 112° Gravity N/C API RW N/C @ N/C °F Chlorides N/C ppm

(A) Initial Hydrostatic 1667  Test 1125 T-On Location 04:30  
 (B) First Initial Flow 19  Jars 255 T-Started 05:38  
 (C) First Final Flow 30  Safety Joint 75 T-Open 08:28  
 (D) Initial Shut-In 1023  Circ Sub \_\_\_\_\_ T-Pulled 12:35  
 (E) Second Initial Flow 28  Hourly Standby 3/4 hr 75 T-Out 14:18  
 (F) Second Final Flow 41  Mileage (160) 224 Comments \_\_\_\_\_  
 (G) Final Shut-In 993  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1599  Straddle \_\_\_\_\_

Ruined Shale Packer  
 Ruined Packer  
 Extra Packer  
 Extra Copies  
 Extra Recorder  
 Day Standby  
 Accessibility  
 Initial Open 30  
 Initial Shut-In 60  
 Final Flow 60  
 Final Shut-In 90  
 Sub Total 1749  
 Total 1749  
 MP/DST Disc't \_\_\_\_\_

Approved By Jeff Christian Our Representative \_\_\_\_\_

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RECEIVED  
FEB 10 2012

## Test Ticket

NO. 44150

4/10

BY: \_\_\_\_\_

Well Name & No. Hilgers Trust 1-32 Test No. 2 Date 02/07/12  
 Company Murfin Drilling Co. Elevation 1783 KB 1774 GL  
 Address 250 N. Water Ste 300 Wichita, KS 67202  
 Co. Rep / Geo. Jeff Christian Rig Maverick 106  
 Location: Sec. 32 Twp. 30S Rge. 3W Co. Sumner State KS

Interval Tested 3423 - 3446 Zone Tested LKC "K"  
 Anchor Length 23 Drill Pipe Run 3426 Mud Wt. 9.2  
 Top Packer Depth 3418 Drill Collars Run 0 Vis 48  
 Bottom Packer Depth 3423 Wt. Pipe Run 0 WL 8.8  
 Total Depth 3446 Chlorides 4200 ppm System LCM \_\_\_\_\_

Blow Description IF: weak Blow 3/4 inch  
FS: NO Blow Back  
FF: weak Blow 1 inch  
FS: NO Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>500M</u>	<u>2</u>	<u>0</u>	<u>98</u>	<u>0</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 116° Gravity N/C API RW N/C @ N/C °F Chlorides N/C ppm

(A) Initial Hydrostatic 1712  Test 1125 T-On Location 01:45  
 (B) First Initial Flow 20  Jars 250 T-Started 02:05  
 (C) First Final Flow 27  Safety Joint 75 T-Open 04:25  
 (D) Initial Shut-In 1153  Circ Sub \_\_\_\_\_ T-Pulled 08:29  
 (E) Second Initial Flow 21  Hourly Standby \_\_\_\_\_ T-Out 10:07  
 (F) Second Final Flow 35  Mileage (160) 224 Comments \_\_\_\_\_  
 (G) Final Shut-In 1167  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1699  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_

Initial Open 30  Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Shut-In 60  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Final Flow 60  Day Standby \_\_\_\_\_ Total 1274  
 Final Shut-In 96  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1274

Approved By [Signature] Our Representative [Signature]

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# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

RECEIVED  
FEB 10 2012

## Test Ticket

NO. 44151

4/10

BY: \_\_\_\_\_

Well Name & No. Hilgers Trust 1-32 Test No. 3 Date 02/08/12  
 Company Murfin Drilling CO Elevation 1383 KB 1374 GL  
 Address 250 N. Water Ste 300 Wichita, KS 67202  
 Co. Rep / Geo. Jeff Christian Rig Maverick 106  
 Location: Sec. 32 Twp. 30S Rge. 3W Co. Sumner State KS

Interval Tested 3953 - 3973 Zone Tested Mississippi  
 Anchor Length 20 Drill Pipe Run 3953 Mud Wt. 9.3  
 Top Packer Depth 3948 Drill Collars Run 0 Vis 49  
 Bottom Packer Depth 3953 Wt. Pipe Run 0 WL 9.4  
 Total Depth 3973 Chlorides 4000 ppm System LCM 1H

Blow Description IF: Fair Blow, 5 inches  
ISI: NO Blow back  
FF: Fair Blow, 6 inches  
FST: NO Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>90</u>	<u>MCW</u>			<u>70</u>	<u>30</u>
<u>120</u>	<u>water</u>				

Rec Total 210 BHT 130° Gravity N/C API RW .13 @ 43 °F Chlorides 110,000 ppm

(A) Initial Hydrostatic 1951  Test 1125 T-On Location 23:15  
 (B) First Initial Flow 18  Jars \_\_\_\_\_ T-Started 01:43  
 (C) First Final Flow 73  Safety Joint \_\_\_\_\_ T-Open 04:47  
 (D) Initial Shut-In 1517  Circ Sub \_\_\_\_\_ T-Pulled 08:50  
 (E) Second Initial Flow 73  Hourly Standby 234hr 275 T-Out 10:56  
 (F) Second Final Flow 158  Mileage (160) 224 Comments \_\_\_\_\_  
 (G) Final Shut-In 1515  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2032  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_

Initial Open 30  Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Initial Shut-In 60  Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Final Flow 60  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Final Shut-In 90  Day Standby \_\_\_\_\_ Total 1624  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1624

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

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# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

RECEIVED  
FEB 13 2012

## Test Ticket

NO. 45751

Well Name & No. Hilgers Trust 1-32 Test No. 4 Date 02/10/12  
 Company Murfin Drilling Co. Elevation 1383 KB 1374 GL  
 Address 250 N. Water Ste 300 Wichita, KS 67202  
 Co. Rep / Geo. Jeff Christian Rig Maverick 106  
 Location: Sec. 32 Twp. 30S Rge. 3W Co. Sumner State KS

Interval Tested 4324 - 4334 Zone Tested Simpson  
 Anchor Length 10 Drill Pipe Run 4334 Mud Wt. 9.3  
 Top Packer Depth 4319 Drill Collars Run 0 Vis 56  
 Bottom Packer Depth 4324 Wt. Pipe Run 0 WL 3.8  
 Total Depth 4334 Chlorides 4000 ppm System LCM 3 #

Blow Description IF: weak Blow, 2 inches  
ISI: NO Blow Back  
FF: weak Blow 3/4 inch  
FSI: NO Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>V50MCW</u>	<u>2</u>	<u>68</u>	<u>30</u>	
<u>60</u>	<u>MCW</u>		<u>90</u>	<u>10</u>	

Rec Total 65 BHT 134° Gravity NIC API RW .02 @ 31 °F Chlorides 90000 ppm

(A) Initial Hydrostatic 2226  Test 1225 T-On Location 05:30  
 (B) First Initial Flow 19  Jars T-Started 08:36  
 (C) First Final Flow 33  Safety Joint T-Open 11:22  
 (D) Initial Shut-In 1562  Circ Sub T-Pulled 14:25  
 (E) Second Initial Flow 36  Hourly Standby 1 1/4 hrs 125 T-Out 16:38  
 (F) Second Final Flow 51  Mileage (160) 224 Comments \_\_\_\_\_  
 (G) Final Shut-In 1561  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2198  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Initial Open 30  Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Shut-In 60  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Final Flow 30  Day Standby \_\_\_\_\_ Total 1574  
 Final Shut-In 60  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1574

Approved By Jeff Christian Our Representative [Signature]

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