



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company, Inc**

250 N Water STE 300  
Wichita KS 67202-1216

ATTN: Tom Funk

**Nancy #2-4**

**4-13s-32w Logan,KS**

Start Date: 2014.11.20 @ 01:30:00

End Date: 2014.11.20 @ 10:58:00

Job Ticket #: 57300                      DST #: 1

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

Printed: 2014.11.26 @ 15:17:13



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Company, Inc

**4-13s-32w Logan,KS**

250 N Water STE 300  
Wichita KS 67202-1216

**Nancy #2-4**

Job Ticket: 57300

**DST#: 1**

ATTN: Tom Funk

Test Start: 2014.11.20 @ 01:30:00

## GENERAL INFORMATION:

Formation: **LKC 'B'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:34:15

Time Test Ended: 10:58:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Jace McKinney

Unit No: 75

**Interval: 4060.00 ft (KB) To 4096.00 ft (KB) (TVD)**

Reference Elevations: 3049.00 ft (KB)

Total Depth: 4096.00 ft (KB) (TVD)

3038.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 11.00 ft

**Serial #: 8675**

**Inside**

Press@RunDepth: 703.95 psig @ 4061.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.20

End Date:

2014.11.20

Last Calib.:

2014.11.20

Start Time: 01:30:15

End Time:

10:58:00

Time On Btm:

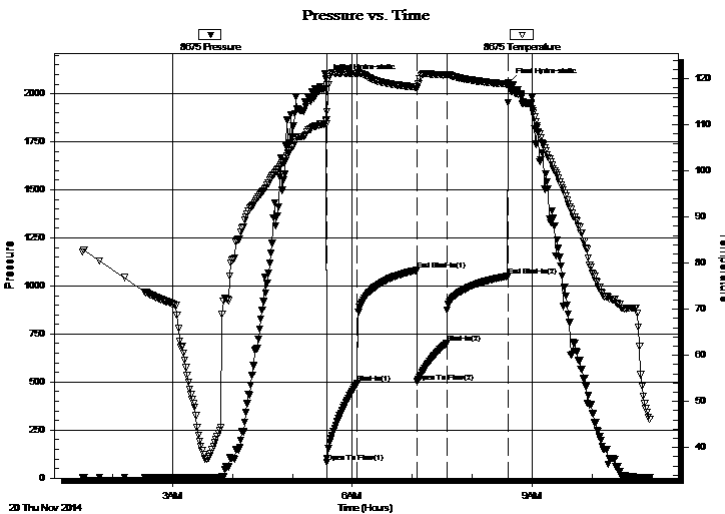
2014.11.20 @ 05:34:00

Time Off Btm:

2014.11.20 @ 08:36:45

**TEST COMMENT:** B.O.B. in 2 min.  
Bled off for 5 min, No return blow  
B.O.B. in 4 min.  
Bled off for 5 min, No return blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2078.14	111.09	Initial Hydro-static
1	83.23	110.20	Open To Flow (1)
31	494.05	121.14	Shut-In(1)
91	1082.45	118.16	End Shut-In(1)
91	502.04	117.84	Open To Flow (2)
121	703.95	120.80	Shut-In(2)
182	1051.46	118.84	End Shut-In(2)
183	2057.27	118.44	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
654.00	100% Water	6.67
475.00	mcw 25%M 75%W	6.66
235.00	mcw 50%M 50%W	3.30

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Company, Inc

**4-13s-32w Logan, KS**

250 N Water STE 300  
Wichita KS 67202-1216

**Nancy #2-4**

Job Ticket: 57300

**DST#: 1**

ATTN: Tom Funk

Test Start: 2014.11.20 @ 01:30:00

## Tool Information

Drill Pipe:	Length: 3774.43 ft	Diameter: 3.80 inches	Volume: 52.95 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 274.72 ft	Diameter: 2.25 inches	Volume: 1.35 bbl	Weight to Pull Loose: 104000.0 lb
			<u>Total Volume: 54.30 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	9.15 ft			String Weight: Initial 80000.00 lb
Depth to Top Packer:	4060.00 ft			Final 84000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	36.00 ft			
Tool Length:	56.00 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			4041.00	
Shut In Tool	5.00			4046.00	
Hydraulic tool	5.00			4051.00	
Packer	5.00			4056.00	20.00 Bottom Of Top Packer
Packer	4.00			4060.00	
Stubb	1.00			4061.00	
Recorder	0.00	8675	Inside	4061.00	
Recorder	0.00	8650	Outside	4061.00	
perforations	32.00			4093.00	
Change Over Sub	0.00			4093.00	
Drill Pipe	0.00			4093.00	
Change Over Sub	0.00			4093.00	
Bullnose	3.00			4096.00	36.00 Bottom Packers & Anchor

**Total Tool Length: 56.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Company, Inc

**4-13s-32w Logan,KS**

250 N Water STE 300  
Wichita KS 67202-1216

**Nancy #2-4**

Job Ticket: 57300

**DST#: 1**

ATTN: Tom Funk

Test Start: 2014.11.20 @ 01:30:00

### 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: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.18 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3500.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
654.00	100% Water	6.671
475.00	mcw 25%M 75%W	6.663
235.00	mcw 50%M 50%W	3.296

Total Length: 1364.00 ft      Total Volume: 16.630 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .22 @ 60 F = 39,000

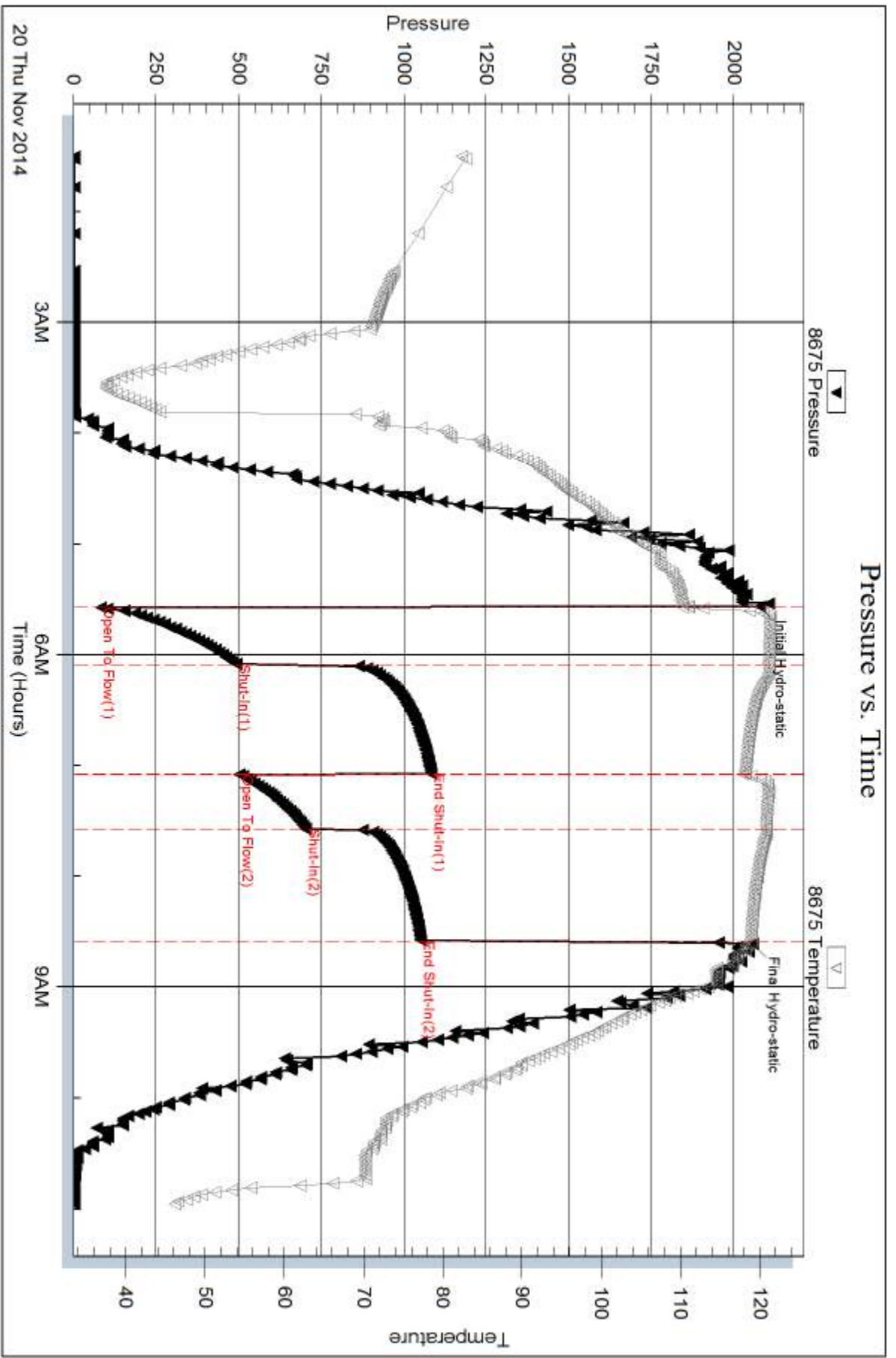
Serial #: 8675

Inside

Murfin Drilling Company, Inc

Nancy #2-4

DST Test Number: 1

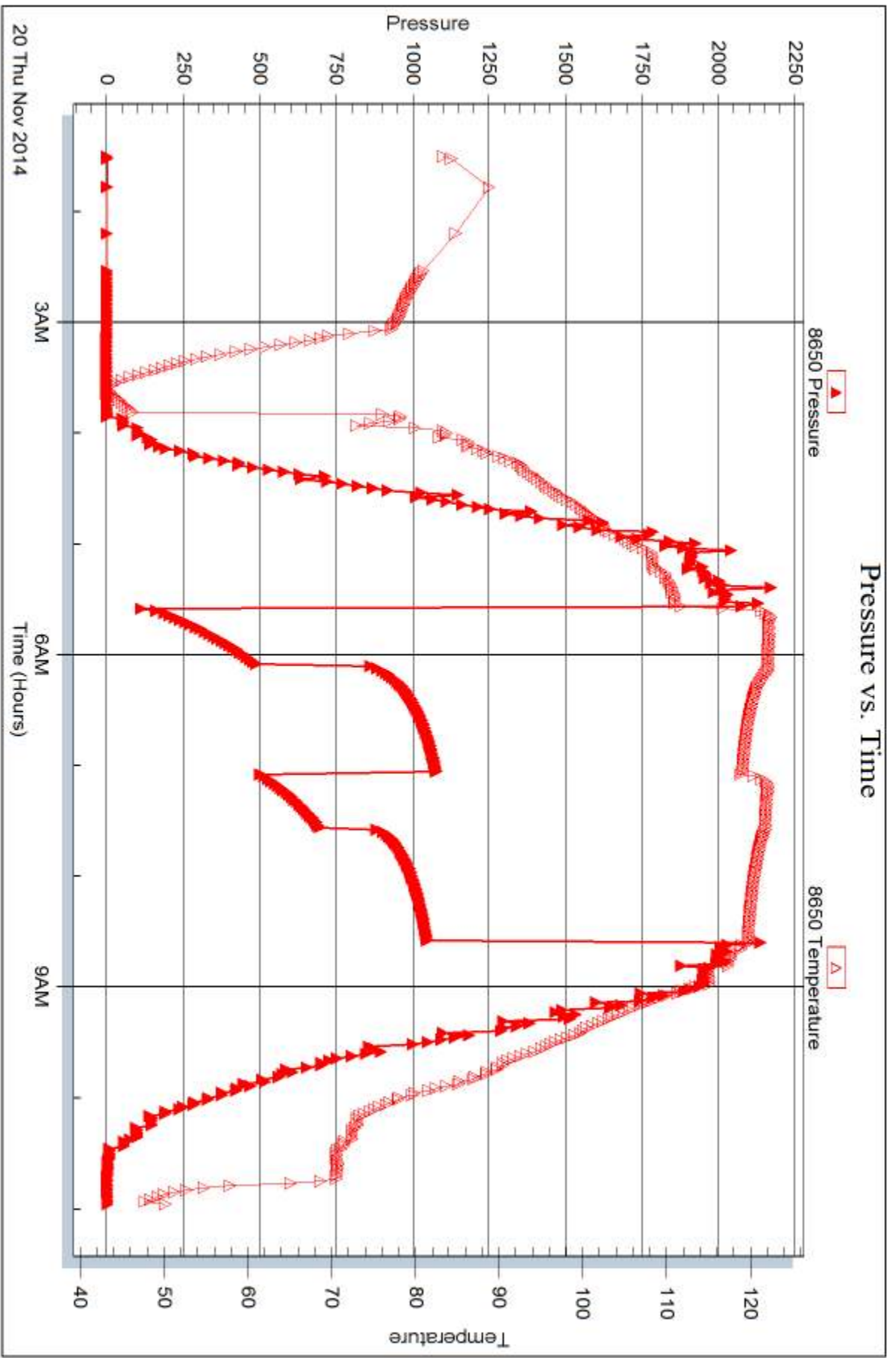


Serial #: 8650

Outside Murfin Drilling Company, Inc

Nancy #2-4

DST Test Number: 1





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company, Inc**

250 N Water STE 300  
Wichita KS 67202-1216

ATTN: Tom Funk

**Nancy #2-4**

**4-13s-32w Logan,KS**

Start Date: 2014.11.21 @ 07:05:00

End Date: 2014.11.21 @ 15:24:15

Job Ticket #: 58501                      DST #: 2

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

Printed: 2014.11.26 @ 15:16:49





**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Company, Inc

**4-13s-32w Logan, KS**

250 N Water STE 300  
Wichita KS 67202-1216

**Nancy #2-4**

Job Ticket: 58501

**DST#: 2**

ATTN: Tom Funk

Test Start: 2014.11.21 @ 07:05:00

## GENERAL INFORMATION:

Formation: **LKC I**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:17:45

Time Test Ended: 15:24:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Jace McKinney

Unit No: 75

**Interval: 4220.00 ft (KB) To 4250.00 ft (KB) (TVD)**

Reference Elevations: 3049.00 ft (KB)

Total Depth: 4250.00 ft (KB) (TVD)

3038.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 11.00 ft

**Serial #: 8675**

**Inside**

Press@RunDepth: 209.40 psig @ 4221.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.21

End Date:

2014.11.21

Last Calib.:

2014.11.21

Start Time: 07:05:15

End Time:

15:24:15

Time On Btm:

2014.11.21 @ 09:17:30

Time Off Btm:

2014.11.21 @ 13:19:45

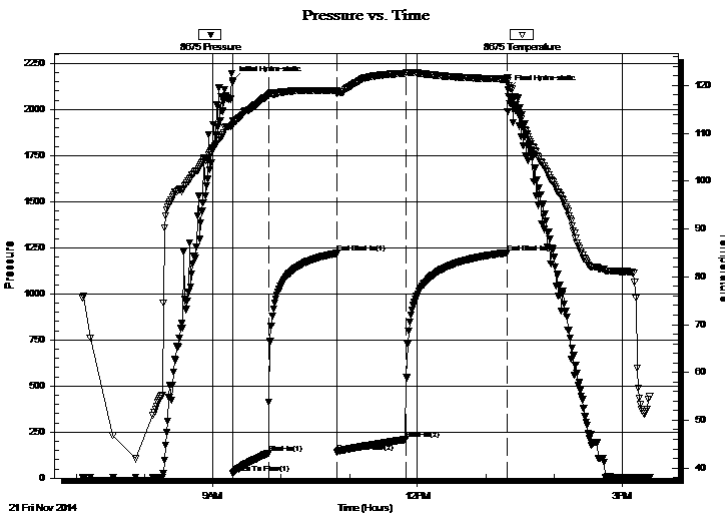
**TEST COMMENT:** B.O.B. in 28 min.

Bled off for 3 min, No return blow

B.O.B. in 57 min.

Bled off for 5 min, No return blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2154.22	112.58	Initial Hydro-static
1	26.65	111.82	Open To Flow (1)
32	135.00	117.93	Shut-In(1)
92	1219.24	118.96	End Shut-In(1)
92	141.21	118.27	Open To Flow (2)
152	209.40	122.55	Shut-In(2)
242	1222.59	121.32	End Shut-In(2)
243	2107.97	121.06	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
274.00	mcw 20%M 80%W	1.35
141.00	w cm 20%W 80%M	1.97

\* Recovery from multiple tests

## Gas Rates

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



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# DRILL STEM TEST REPORT

Murfin Drilling Company, Inc

**4-13s-32w Logan,KS**

250 N Water STE 300  
Wichita KS 67202-1216

**Nancy #2-4**

Job Ticket: 58501

**DST#: 2**

ATTN: Tom Funk

Test Start: 2014.11.21 @ 07:05:00

## GENERAL INFORMATION:

Formation: **LKC I**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:17:45

Time Test Ended: 15:24:15

**Interval: 4220.00 ft (KB) To 4250.00 ft (KB) (TVD)**

Total Depth: 4250.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Poor

Test Type: Conventional Bottom Hole (Reset)

Tester: Jace McKinney

Unit No: 75

Reference Elevations: 3049.00 ft (KB)

3038.00 ft (CF)

KB to GR/CF: 11.00 ft

**Serial #: 8650 Outside**

Press@RunDepth: psig @ 4221.00 ft (KB)

Start Date: 2014.11.21

End Date:

2014.11.21

Start Time: 07:05:15

End Time:

15:24:00

Capacity: 8000.00 psig

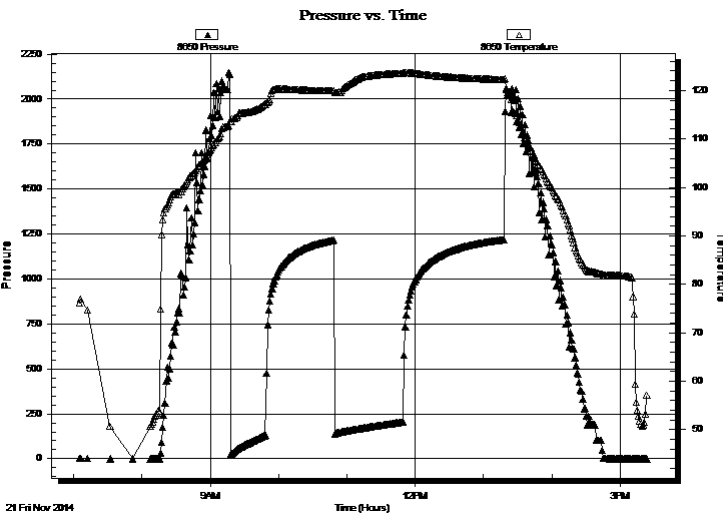
Last Calib.:

2014.11.21

Time On Btm:

Time Off Btm:

**TEST COMMENT:** B.O.B. in 28 min.  
Bled off for 3 min, No return blow  
B.O.B. in 57 min.  
Bled off for 5 min, No return blow



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
274.00	mcw 20%M 80%W	1.35
141.00	w cm 20%W 80%M	1.97

## Gas Rates

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

\* Recovery from multiple tests



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# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Company, Inc

**4-13s-32w Logan, KS**

250 N Water STE 300  
Wichita KS 67202-1216

**Nancy #2-4**

Job Ticket: 58501

**DST#: 2**

ATTN: Tom Funk

Test Start: 2014.11.21 @ 07:05:00

## Tool Information

Drill Pipe:	Length: 3931.01 ft	Diameter: 3.80 inches	Volume: 55.14 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 274.72 ft	Diameter: 2.25 inches	Volume: 1.35 bbl	Weight to Pull Loose: 102000.0 lb
			<u>Total Volume: 56.49 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.73 ft			String Weight: Initial 80000.00 lb
Depth to Top Packer:	4220.00 ft			Final 82000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	30.00 ft			
Tool Length:	50.00 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			4201.00	
Shut In Tool	5.00			4206.00	
Hydraulic tool	5.00			4211.00	
Packer	5.00			4216.00	20.00 Bottom Of Top Packer
Packer	4.00			4220.00	
Stubb	1.00			4221.00	
Recorder	0.00	8675	Inside	4221.00	
Recorder	0.00	8650	Outside	4221.00	
perforations	26.00			4247.00	
Change Over Sub	0.00			4247.00	
Drill Pipe	0.00			4247.00	
Change Over Sub	0.00			4247.00	
Bullnose	3.00			4250.00	30.00 Bottom Packers & Anchor

**Total Tool Length: 50.00**



**TRILOBITE  
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# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Company, Inc

**4-13s-32w Logan,KS**

250 N Water STE 300  
Wichita KS 67202-1216

**Nancy #2-4**

Job Ticket: 58501

**DST#: 2**

ATTN: Tom Funk

Test Start: 2014.11.21 @ 07:05:00

### 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:

36000 ppm

Viscosity: 44.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.38 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3500.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
274.00	mcw 20%M 80%W	1.347
141.00	w cm 20%W 80%M	1.971

Total Length: 415.00 ft      Total Volume: 3.318 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .22 @ 65 F = 36,000

Serial #: 8675

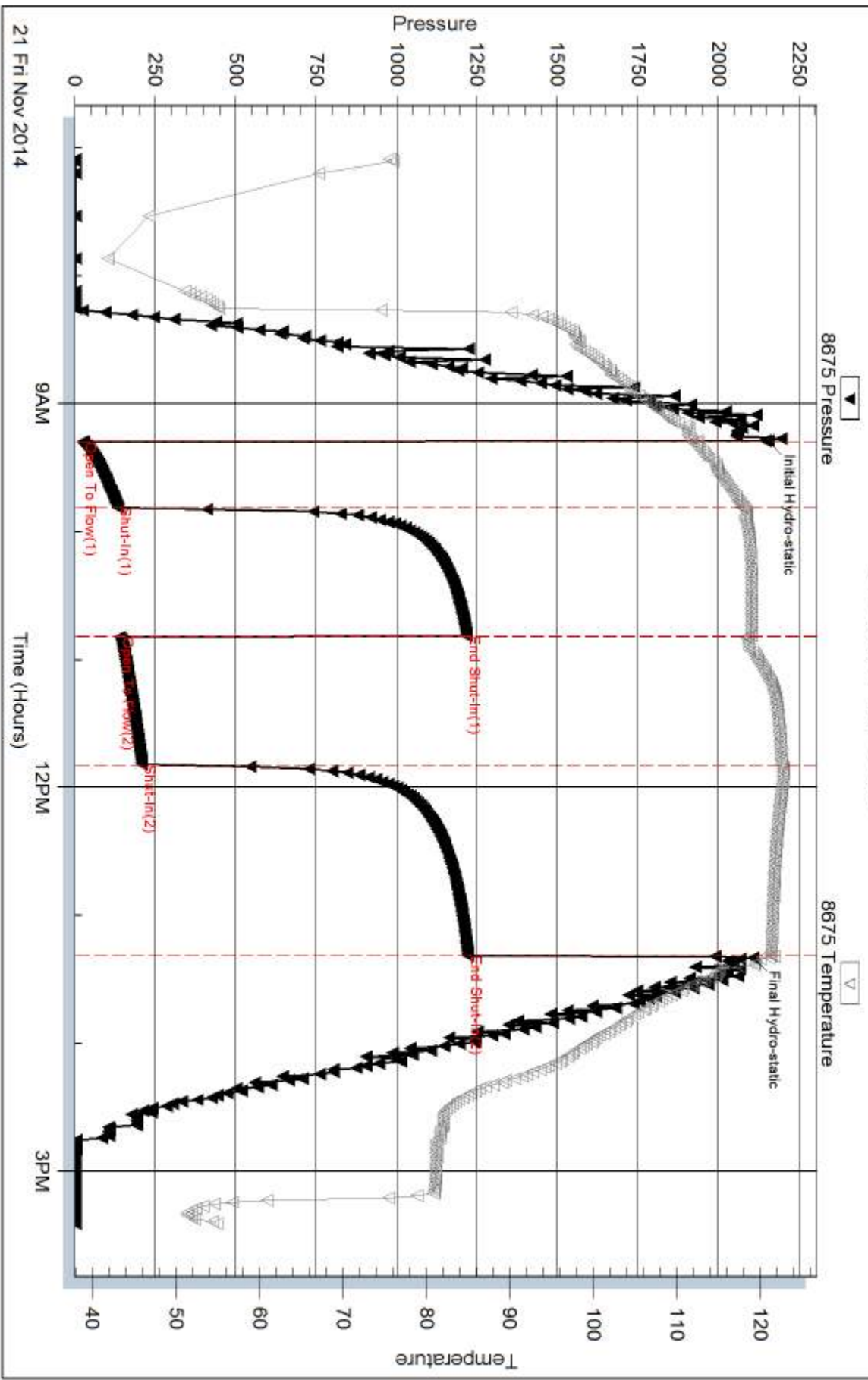
Inside

Murfin Drilling Company, Inc

Nancy #2-4

DST Test Number: 2

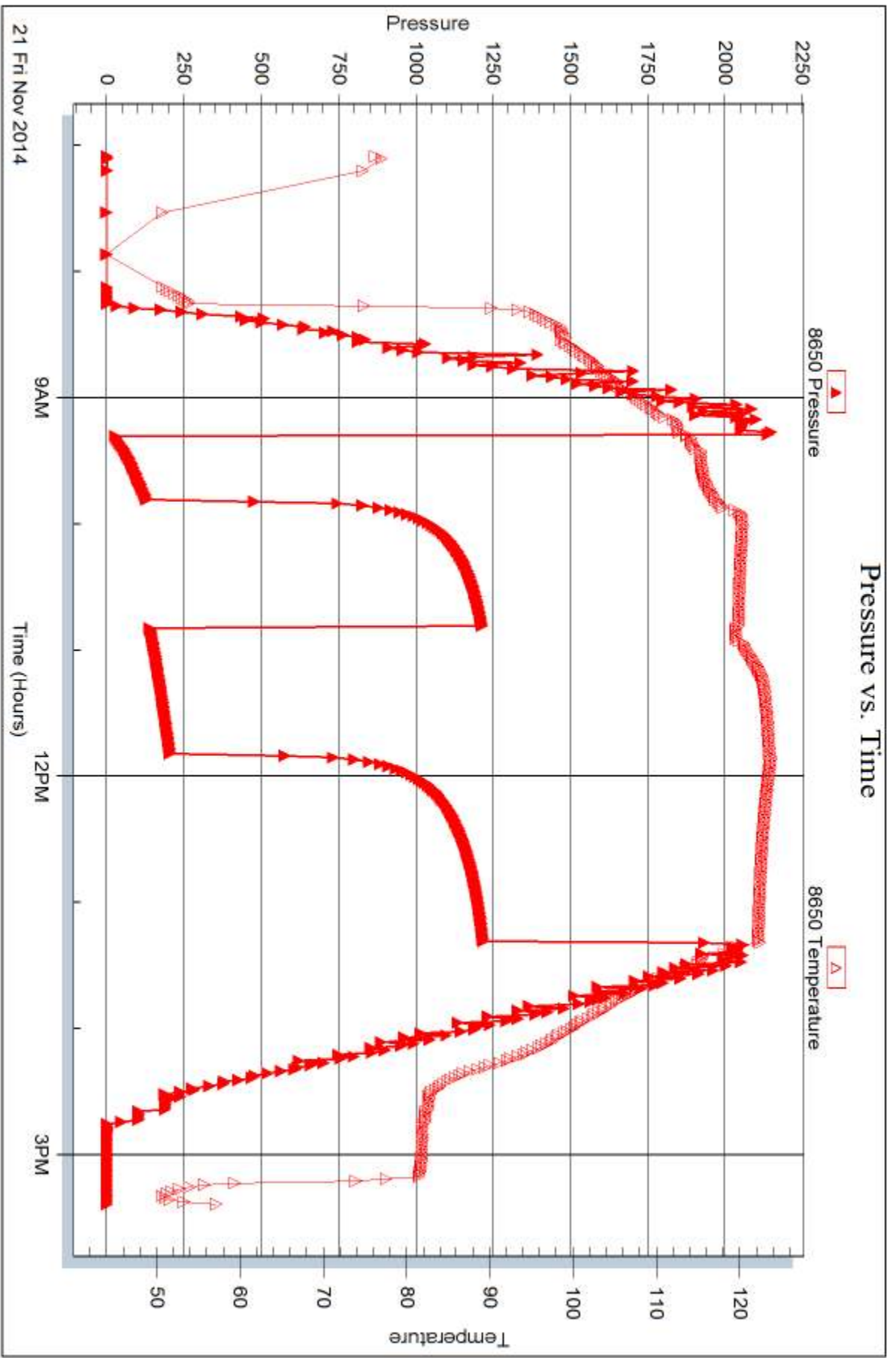
### Pressure vs. Time



Triobite Testing, Inc

Ref. No: 58501

Printed: 2014.11.26 @ 15:16:50





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company, Inc**

250 N Water STE 300  
Wichita KS 67202-1216

ATTN: Tom Funk

**Nancy #2-4**

**4-13s-32w Logan,KS**

Start Date: 2014.11.23 @ 06:45:00

End Date: 2014.11.23 @ 16:38:15

Job Ticket #: 58502                      DST #: 3

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

Printed: 2014.11.26 @ 15:16:26



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Company, Inc

**4-13s-32w Logan, KS**

250 N Water STE 300  
Wichita KS 67202-1216

**Nancy #2-4**

Job Ticket: 58502

**DST#: 3**

ATTN: Tom Funk

Test Start: 2014.11.23 @ 06:45:00

## GENERAL INFORMATION:

Formation: **Marmaton - Altamont**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:42:45

Time Test Ended: 16:38:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Jace McKinney

Unit No: 75

**Interval: 4340.00 ft (KB) To 4465.00 ft (KB) (TVD)**

Reference Elevations: 3049.00 ft (KB)

Total Depth: 4465.00 ft (KB) (TVD)

3038.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 11.00 ft

**Serial #: 8675**

**Inside**

Press@RunDepth: 110.46 psig @ 4341.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.23

End Date:

2014.11.23

Last Calib.: 2014.11.23

Start Time: 06:45:15

End Time:

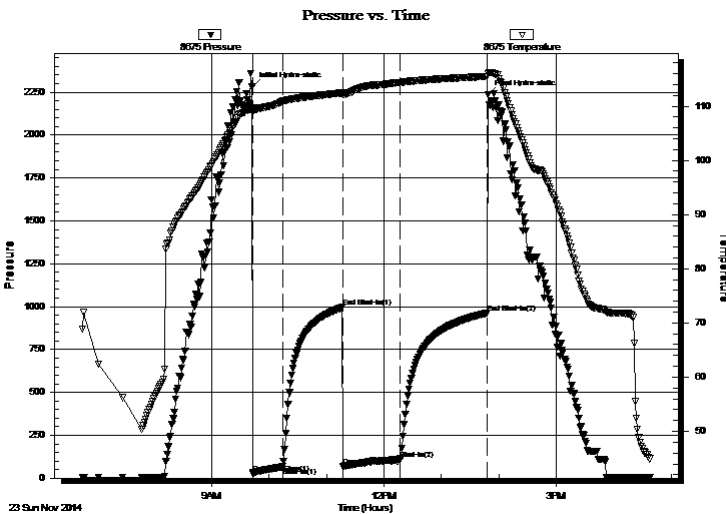
16:38:15

Time On Btm: 2014.11.23 @ 09:42:30

Time Off Btm: 2014.11.23 @ 13:48:30

**TEST COMMENT:** Built to 3 1/2" blow  
Bled off for 3 min, No return blow  
Built to 3" blow  
Bled off for 5 min, No return blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2284.82	109.73	Initial Hydro-static
1	27.07	108.78	Open To Flow (1)
32	65.65	110.89	Shut-In(1)
94	995.00	112.45	End Shut-In(1)
95	69.85	112.07	Open To Flow (2)
155	110.46	114.38	Shut-In(2)
245	961.61	115.50	End Shut-In(2)
246	2235.12	115.98	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
120.00	100% Mud with oil scum	0.59

\* 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 Company, Inc

**4-13s-32w Logan, KS**

250 N Water STE 300  
Wichita KS 67202-1216

**Nancy #2-4**

Job Ticket: 58502

**DST#: 3**

ATTN: Tom Funk

Test Start: 2014.11.23 @ 06:45:00

## Tool Information

Drill Pipe:	Length: 4058.73 ft	Diameter: 3.80 inches	Volume: 56.93 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 274.72 ft	Diameter: 2.25 inches	Volume: 1.35 bbl	Weight to Pull Loose: 102000.0 lb
			<u>Total Volume: 58.28 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	13.45 ft			String Weight: Initial 82000.00 lb
Depth to Top Packer:	4340.00 ft			Final 82000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	125.00 ft			
Tool Length:	145.00 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			4321.00	
Shut In Tool	5.00			4326.00	
Hydraulic tool	5.00			4331.00	
Packer	5.00			4336.00	20.00 Bottom Of Top Packer
Packer	4.00			4340.00	
Stubb	1.00			4341.00	
Recorder	0.00	8675	Inside	4341.00	
Recorder	0.00	8650	Outside	4341.00	
perforations	4.00			4345.00	
Change Over Sub	1.00			4346.00	
Drill Pipe	95.00			4441.00	
Change Over Sub	1.00			4442.00	
Bullnose	23.00			4465.00	125.00 Bottom Packers & Anchor

**Total Tool Length: 145.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Company, Inc

**4-13s-32w Logan,KS**

250 N Water STE 300  
Wichita KS 67202-1216

**Nancy #2-4**

Job Ticket: 58502

**DST#: 3**

ATTN: Tom Funk

Test Start: 2014.11.23 @ 06:45:00

### 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: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 0.00 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3400.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	100% Mud w ith oil scum	0.590

Total Length: 120.00 ft      Total Volume: 0.590 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

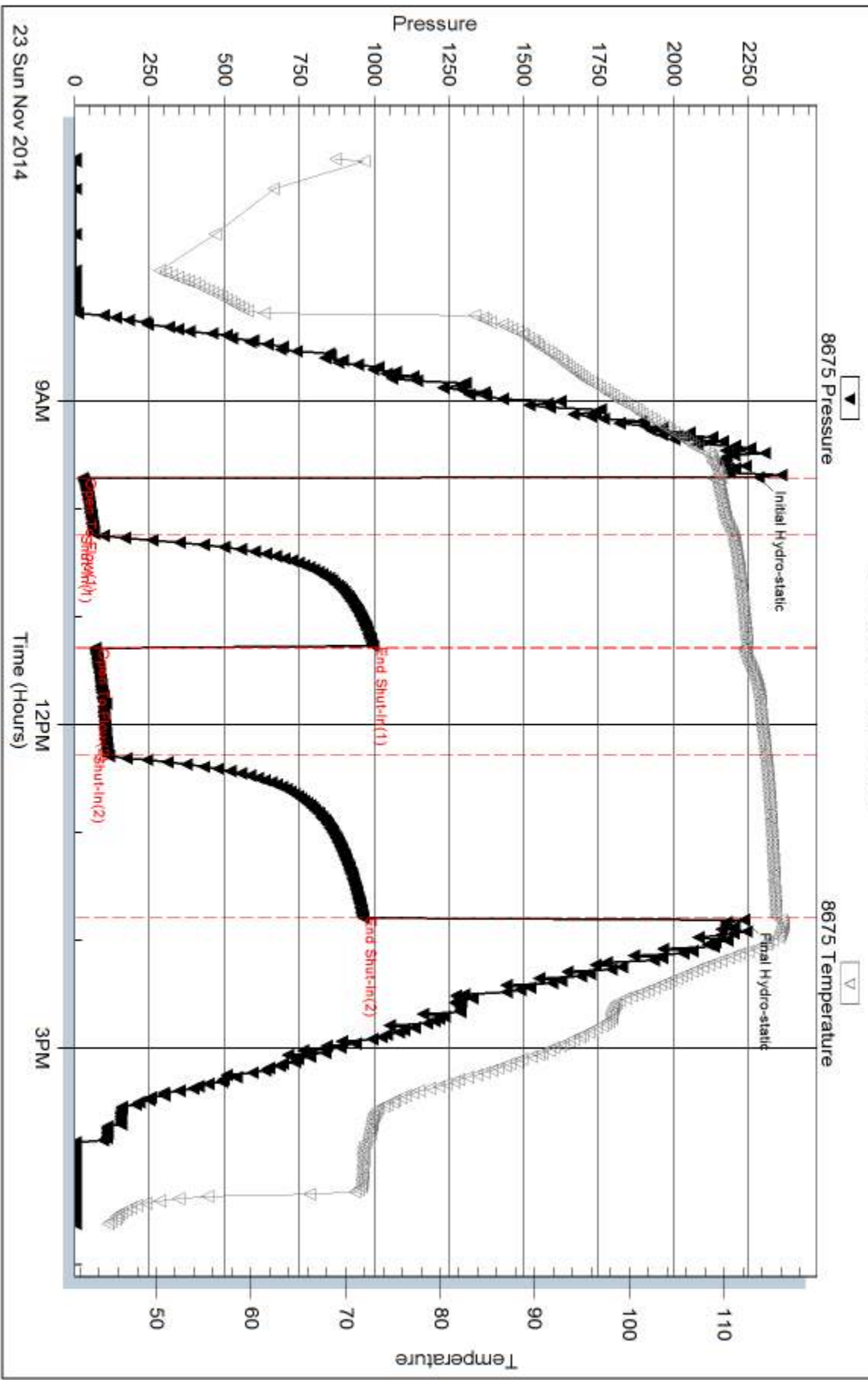
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time

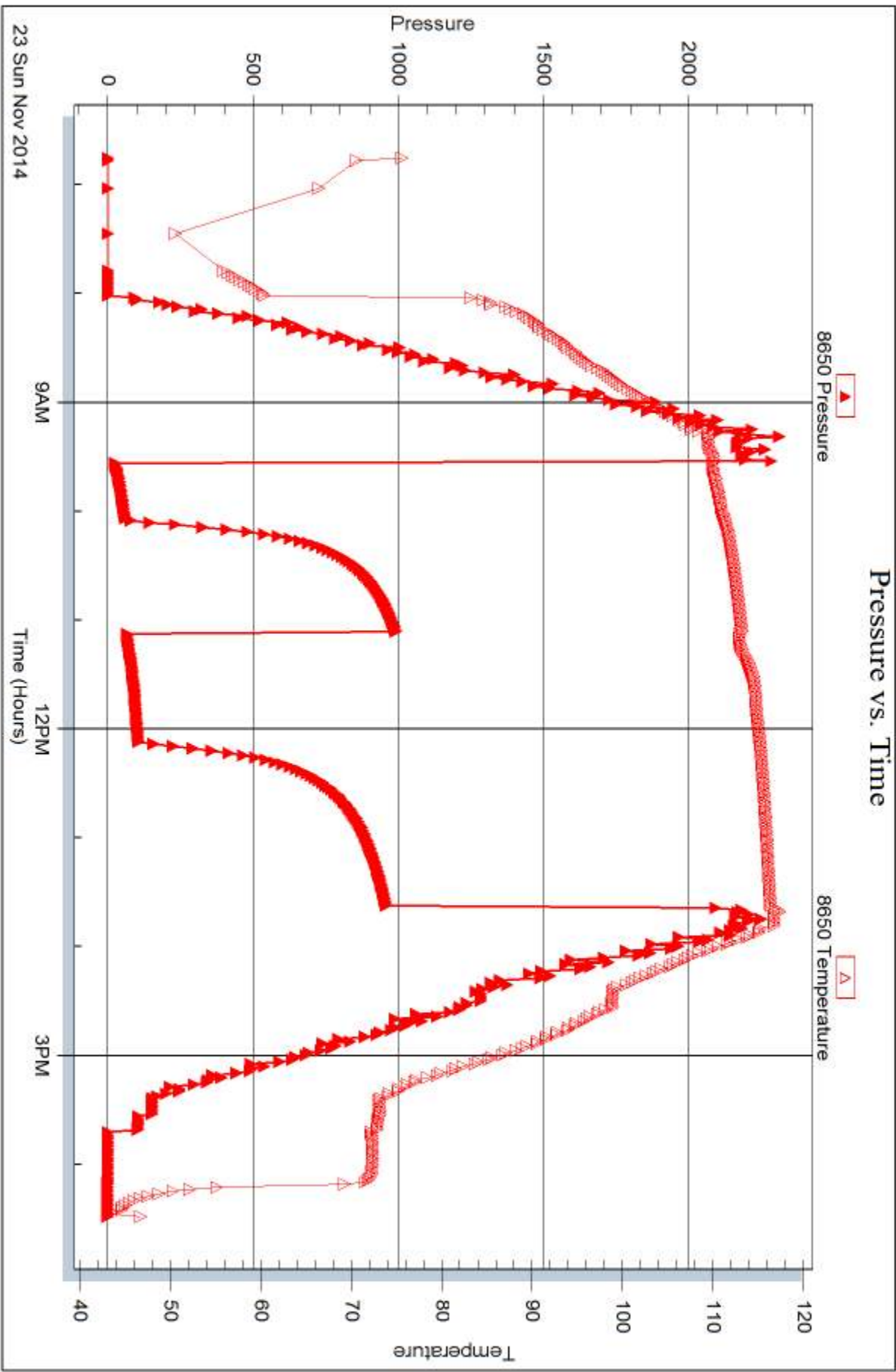


Serial #: 8650

Outside Murfin Drilling Company, Inc

Nancy #2-4

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 58502

Printed: 2014, 11, 26 @ 15:16:27



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company, Inc**

250 N Water STE 300  
Wichita KS 67202-1216

ATTN: Tom Funk

**Nancy #2-4**

**4-13s-32w Logan,KS**

Start Date: 2014.11.24 @ 08:50:00

End Date: 2014.11.24 @ 17:25:00

Job Ticket #: 58503                      DST #: 4

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

Printed: 2014.11.26 @ 15:16:02



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Company, Inc

**4-13s-32w Logan, KS**

250 N Water STE 300  
Wichita KS 67202-1216

**Nancy #2-4**

Job Ticket: 58503

**DST#: 4**

ATTN: Tom Funk

Test Start: 2014.11.24 @ 08:50:00

## GENERAL INFORMATION:

Formation: **Pawnee - Fort Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:12:30

Time Test Ended: 17:25:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Jace McKinney

Unit No: 75

**Interval: 4470.00 ft (KB) To 4560.00 ft (KB) (TVD)**

Reference Elevations: 3049.00 ft (KB)

Total Depth: 4560.00 ft (KB) (TVD)

3038.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 11.00 ft

**Serial #: 8675**

**Inside**

Press@RunDepth: 61.91 psig @ 4471.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.24

End Date:

2014.11.24

Last Calib.: 2014.11.24

Start Time: 08:50:15

End Time:

17:25:00

Time On Btm: 2014.11.24 @ 11:12:15

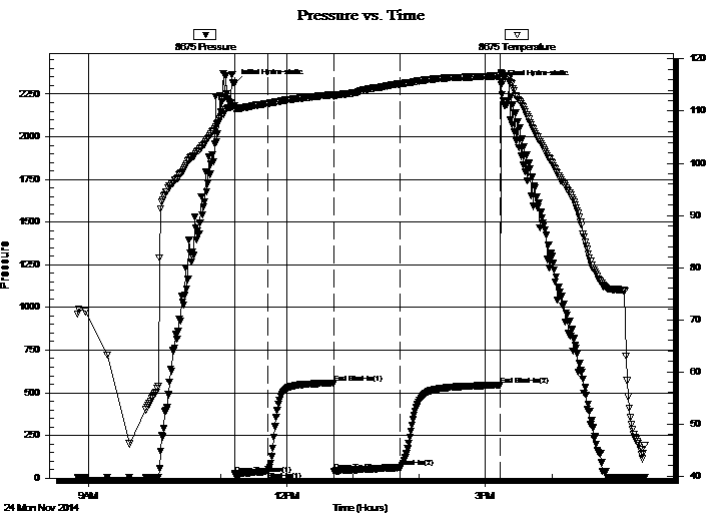
Time Off Btm: 2014.11.24 @ 15:14:30

TEST COMMENT: Built to 1 3/4" blow

No return blow

No blow

No return blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2310.21	111.00	Initial Hydro-static
1	23.47	110.18	Open To Flow (1)
31	39.32	111.46	Shut-In(1)
91	557.17	113.16	End Shut-In(1)
91	41.00	112.77	Open To Flow (2)
151	61.91	115.23	Shut-In(2)
242	544.76	116.77	End Shut-In(2)
243	2305.89	117.26	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
30.00	100% Mud w ith oil spots	0.15

\* 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 Company, Inc

**4-13s-32w Logan, KS**

250 N Water STE 300  
Wichita KS 67202-1216

**Nancy #2-4**

Job Ticket: 58503

**DST#: 4**

ATTN: Tom Funk

Test Start: 2014.11.24 @ 08:50:00

## Tool Information

Drill Pipe:	Length: 4185.34 ft	Diameter: 3.80 inches	Volume: 58.71 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 274.72 ft	Diameter: 2.25 inches	Volume: 1.35 bbl	Weight to Pull Loose: 104000.0 lb
			<u>Total Volume: 60.06 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.06 ft			String Weight: Initial 84000.00 lb
Depth to Top Packer:	4470.00 ft			Final 84000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	90.00 ft			
Tool Length:	110.00 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			4451.00	
Shut In Tool	5.00			4456.00	
Hydraulic tool	5.00			4461.00	
Packer	5.00			4466.00	20.00 Bottom Of Top Packer
Packer	4.00			4470.00	
Stubb	1.00			4471.00	
Recorder	0.00	8675	Inside	4471.00	
Recorder	0.00	8650	Outside	4471.00	
perforations	9.00			4480.00	
Change Over Sub	1.00			4481.00	
Drill Pipe	63.00			4544.00	
Change Over Sub	1.00			4545.00	
Bullnose	15.00			4560.00	90.00 Bottom Packers & Anchor

**Total Tool Length: 110.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Company, Inc

**4-13s-32w Logan,KS**

250 N Water STE 300  
Wichita KS 67202-1216

**Nancy #2-4**

Job Ticket: 58503

**DST#: 4**

ATTN: Tom Funk

Test Start: 2014.11.24 @ 08:50:00

## 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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3400.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	100% Mud w ith oil spots	0.148

Total Length: 30.00 ft      Total Volume: 0.148 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8675

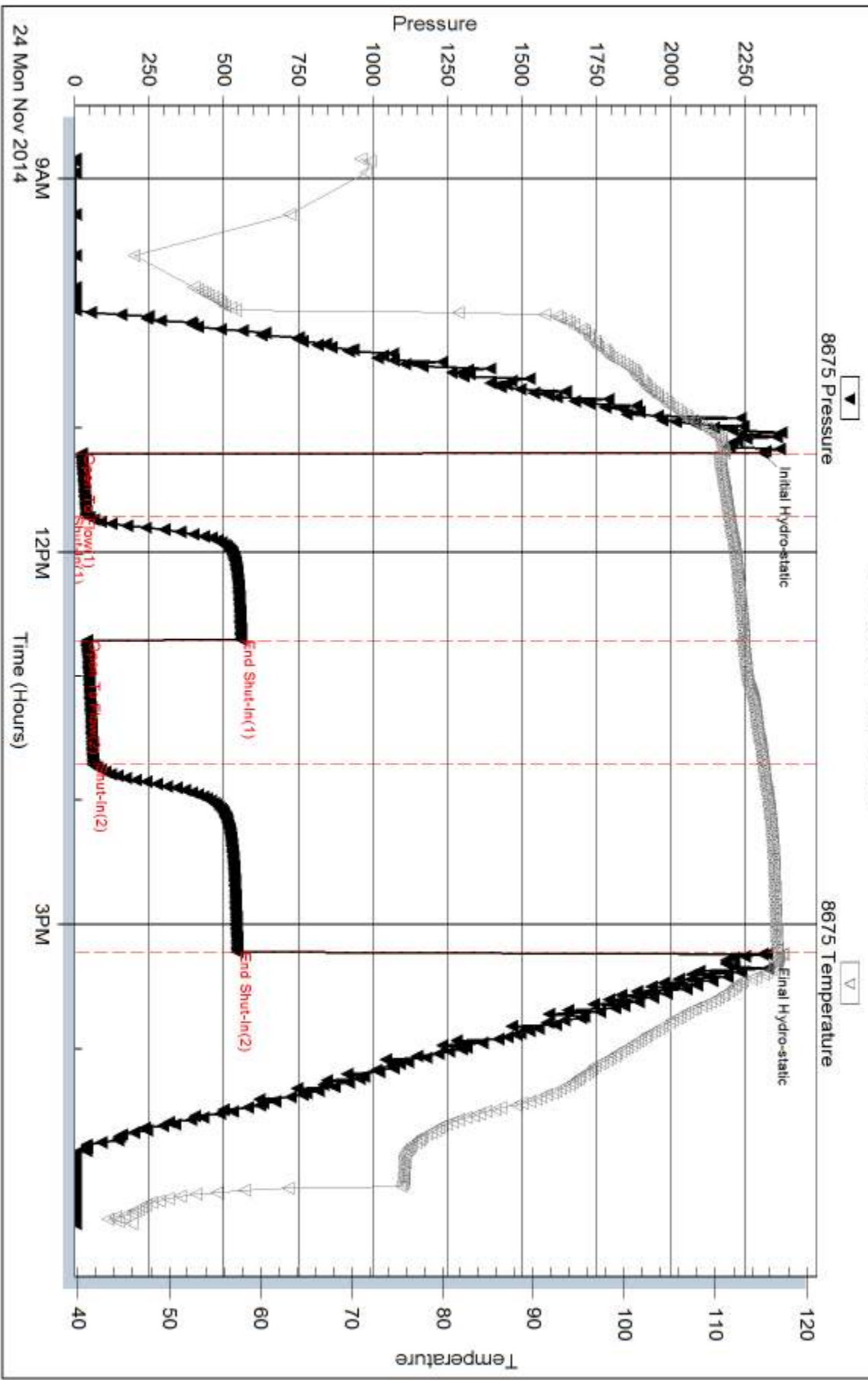
Inside

Murfin Drilling Company, Inc

Nancy #2-4

DST Test Number: 4

### Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 58503

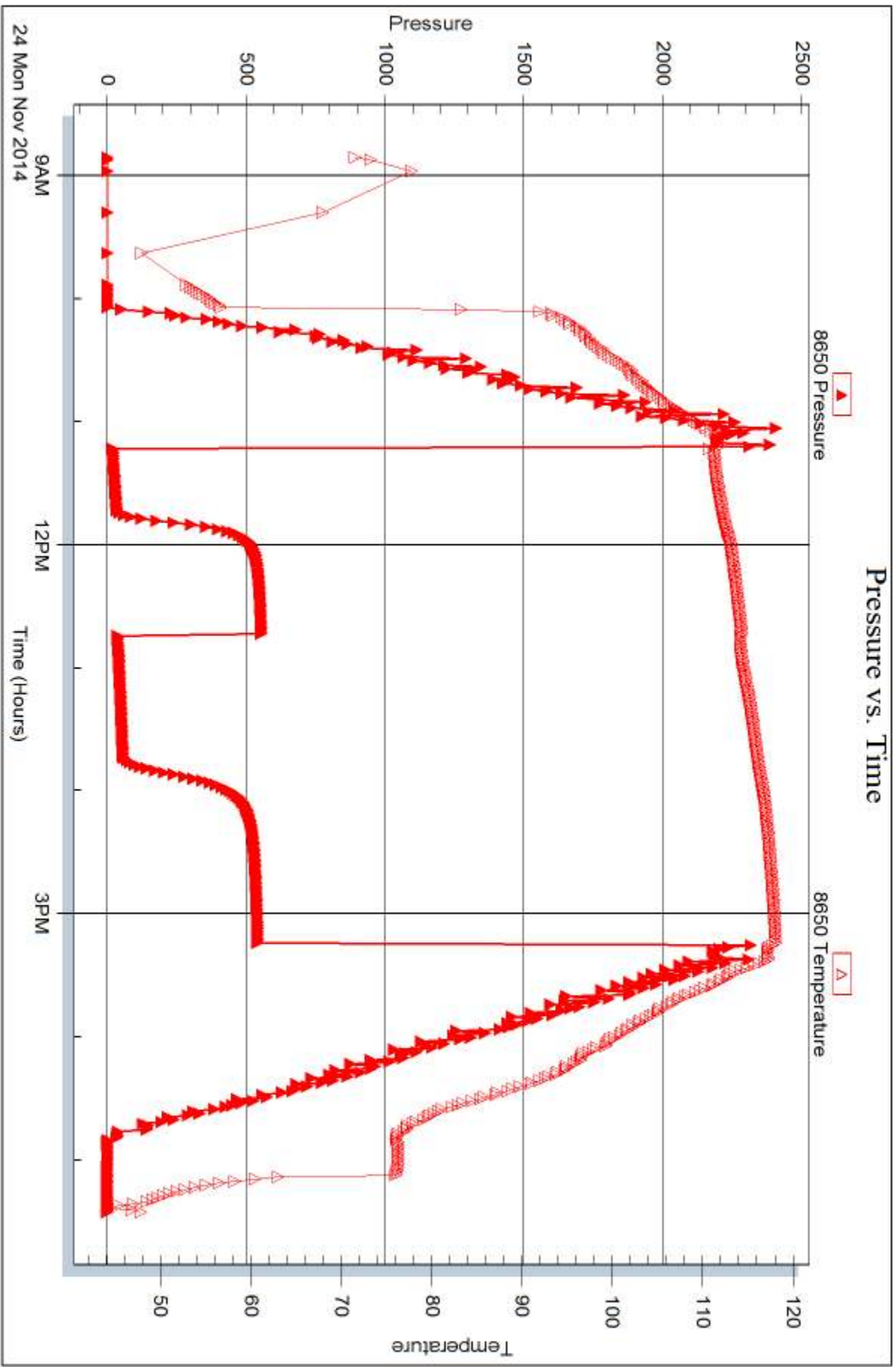
Printed: 2014, 11, 26 @ 15:16:03

Serial #: 8650

Outside Murfin Drilling Company, Inc

Nancy #2-4

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 58503

Printed: 2014, 11, 26 @ 15:16:03



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company, Inc**

250 N Water STE 300  
Wichita KS 67202-1216

ATTN: Tom Funk

**Nancy #2-4**

**4-13s-32w Logan,KS**

Start Date: 2014.11.25 @ 07:45:00

End Date: 2014.11.25 @ 17:03:45

Job Ticket #: 58504                      DST #: 5

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

Printed: 2014.11.26 @ 15:15:24



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Company, Inc

**4-13s-32w Logan,KS**

250 N Water STE 300  
Wichita KS 67202-1216

**Nancy #2-4**

Job Ticket: 58504

**DST#: 5**

ATTN: Tom Funk

Test Start: 2014.11.25 @ 07:45:00

## GENERAL INFORMATION:

Formation: **Johnson Zone**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:10:00

Time Test Ended: 17:03:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Jace McKinney

Unit No: 75

**Interval: 4581.00 ft (KB) To 4635.00 ft (KB) (TVD)**

Reference Elevations: 3049.00 ft (KB)

Total Depth: 4635.00 ft (KB) (TVD)

3038.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 11.00 ft

**Serial #: 8675**

**Inside**

Press@RunDepth: 24.51 psig @ 4582.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.25

End Date:

2014.11.25

Last Calib.:

2014.11.25

Start Time: 07:45:15

End Time:

17:03:45

Time On Btm:

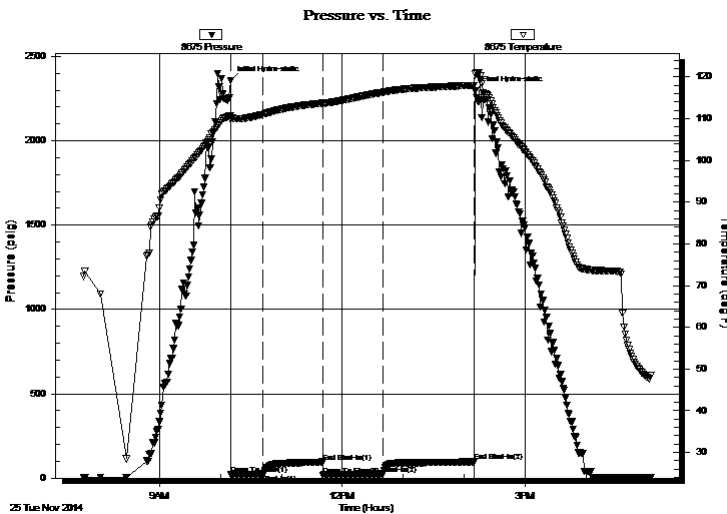
2014.11.25 @ 10:09:45

Time Off Btm:

2014.11.25 @ 14:11:00

**TEST COMMENT:** Built to 10" blow  
Bled off for 3 min, Very weak surface return blow  
B.O.B. in 13 min.  
Bled off for 5 min, Weak surface return blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2355.23	110.72	Initial Hydro-static
1	20.28	109.82	Open To Flow (1)
32	22.28	111.01	Shut-In(1)
91	95.93	113.72	End Shut-In(1)
92	15.28	113.66	Open To Flow (2)
151	24.51	116.29	Shut-In(2)
241	97.04	117.97	End Shut-In(2)
242	2296.00	120.70	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	720 Feet Weak Gas In Pipe	0.00
30.00	100% Mud	0.15

## 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 Company, Inc

**4-13s-32w Logan, KS**

250 N Water STE 300  
Wichita KS 67202-1216

**Nancy #2-4**

Job Ticket: 58504

**DST#: 5**

ATTN: Tom Funk

Test Start: 2014.11.25 @ 07:45:00

## Tool Information

Drill Pipe:	Length: 4312.22 ft	Diameter: 3.80 inches	Volume: 60.49 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 274.72 ft	Diameter: 2.25 inches	Volume: 1.35 bbl	Weight to Pull Loose: 105000.0 lb
			<u>Total Volume: 61.84 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.94 ft			String Weight: Initial 84000.00 lb
Depth to Top Packer:	4581.00 ft			Final 85000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	54.00 ft			
Tool Length:	74.00 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			4562.00	
Shut In Tool	5.00			4567.00	
Hydraulic tool	5.00			4572.00	
Packer	5.00			4577.00	20.00 Bottom Of Top Packer
Packer	4.00			4581.00	
Stubb	1.00			4582.00	
Recorder	0.00	8675	Inside	4582.00	
Recorder	0.00	8650	Outside	4582.00	
perforations	9.00			4591.00	
Change Over Sub	1.00			4592.00	
Drill Pipe	32.00			4624.00	
Change Over Sub	1.00			4625.00	
Bullnose	10.00			4635.00	54.00 Bottom Packers & Anchor

**Total Tool Length: 74.00**





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Company, Inc

**4-13s-32w Logan,KS**

250 N Water STE 300  
Wichita KS 67202-1216

**Nancy #2-4**

Job Ticket: 58504

**DST#: 5**

ATTN: Tom Funk

Test Start: 2014.11.25 @ 07:45:00

## 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: 47.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3900.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	720 Feet Weak Gas In Pipe	0.000
30.00	100% Mud	0.148

Total Length: 30.00 ft      Total Volume: 0.148 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

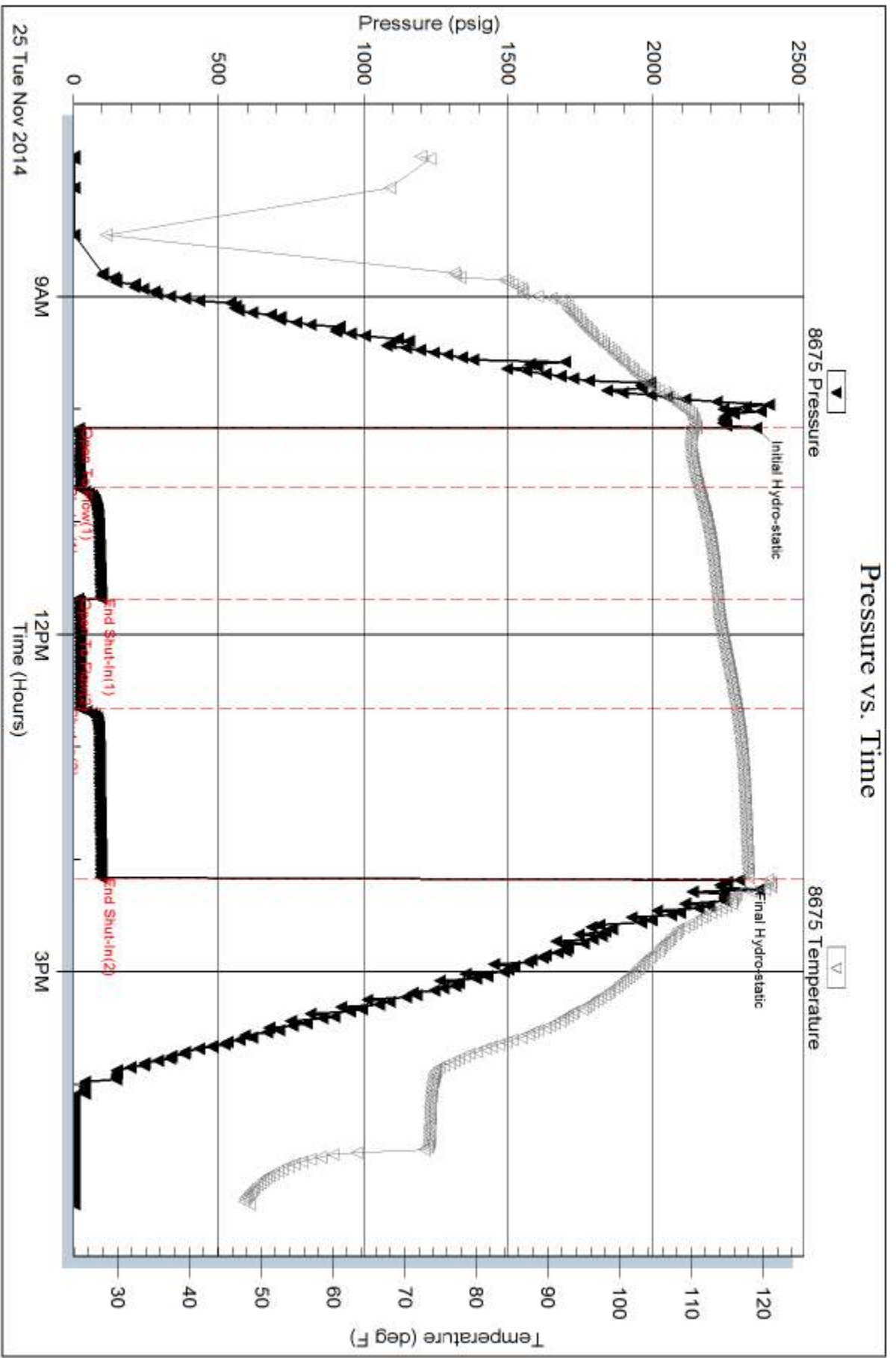
Serial #: 8675

Inside

Murfin Drilling Company, Inc

Nancy #2-4

DST Test Number: 5



Triobite Testing, Inc

Ref. No: 58504

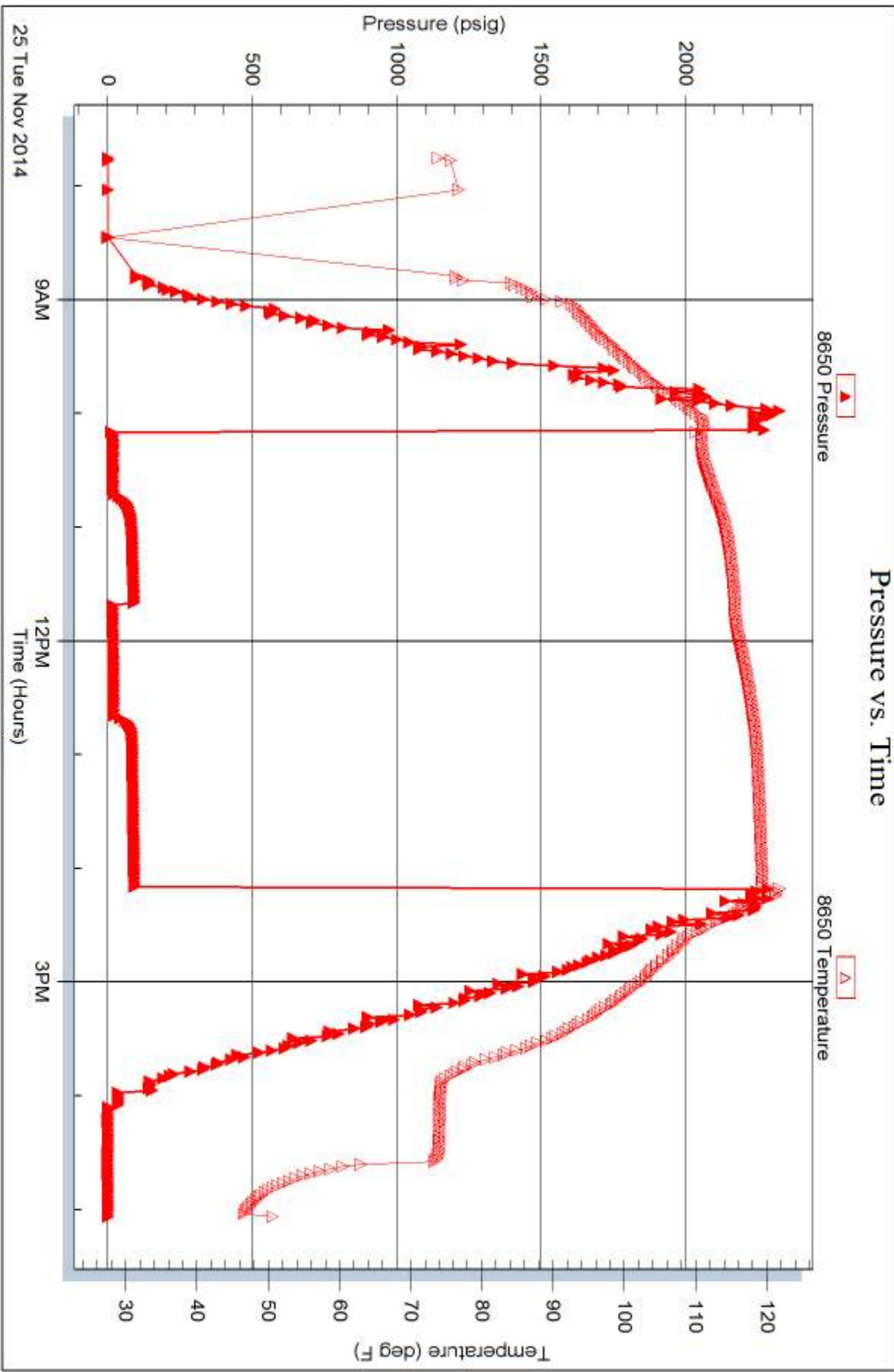
Printed: 2014.11.26 @ 15:15:25

Serial #: 8650

Outside Murfin Drilling Company, Inc

Nancy #2-4

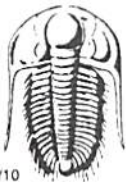
DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 58504

Printed: 2014.11.26 @ 15:15:25



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 57300

4/10

Well Name & No. Nancy 2-4 Test No. 1 Date 11/20/14  
 Company Murkin Drilling Company, Inc. Elevation 3049 KB 3038 GL  
 Address 250 N Water STE 300 Wichita KS 67202-1216  
 Co. Rep / Geo. Tom Funk Rig Murkin Rig 4  
 Location: Sec. 4 Twp. 13s Rge. 32w Co. Logan County State KS

Interval Tested 4060-4096 Zone Tested Lansing 'B' Zone  
 Anchor Length 36 Drill Pipe Run 3774.43 Mud Wt. 9.1  
 Top Packer Depth 4066 Drill Collars Run 274.72 Vis 52  
 Bottom Packer Depth 4060 Wt. Pipe Run \_\_\_\_\_ WL 7.2  
 Total Depth 4096 Chlorides 3,500 ppm System LCM 7#

Blow Description B.O.B. in 2 min.  
Bled off for 5 min. No return blow  
B.O.B. in 4 min.

Bled off for 6 min. No return blow

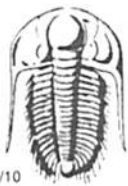
Rec	Feet of	%gas	%oil	%water	%mud
<u>235</u>	<u>mcw</u>		<u>50</u>	<u>50</u>	
<u>475</u>	<u>mcw</u>		<u>75</u>	<u>25</u>	
<u>654</u>	<u>water</u>		<u>100</u>		
_____	_____				
_____	_____				

Rec Total 1364 BHT 119 Gravity \_\_\_\_\_ API RW 22 @ 60 °F Chlorides 39,000 ppm  
 (A) Initial Hydrostatic 2,078  Test 1250 T-On Location 00:30  
 (B) First Initial Flow 83  Jars \_\_\_\_\_ T-Started 01:30  
 (C) First Final Flow 494  Safety Joint \_\_\_\_\_ T-Open 05:34  
 (D) Initial Shut-In 1,082  Circ Sub n/c T-Pulled 08:34  
 (E) Second Initial Flow 502  Hourly Standby \_\_\_\_\_ T-Out 10:58  
 (F) Second Final Flow 704  Mileage 80 RT 124 Comments access same as  
 (G) Final Shut-In 1,051  Sampler \_\_\_\_\_ H2 Rigs  
 (H) Final Hydrostatic 2,059  Straddle \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 30  
 Final Shut-In 60  
 Sub Total 1374  
 Total 1374  
 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. 58501

Well Name & No. Nancy 2-4 Test No. 2 Date 11/21/14  
 Company Martin Drilling Company, Inc Elevation 3049 KB 3038 GL  
 Address 260 N Water STE 300, Wichita KS 67202-1216  
 Co. Rep / Geo. Tom Funk Rig Martin Rig 4  
 Location: Sec. 4 Twp. 13S Rge. 32W Co. Logan County State KS

Interval Tested 4220-4250 Zone Tested Kansas City 'I' Zone  
 Anchor Length 30 Drill Pipe Run 3931.01 Mud Wt. 9.0  
 Top Packer Depth 4216 Drill Collars Run 274.72 Vis 44  
 Bottom Packer Depth 4220 Wt. Pipe Run \_\_\_\_\_ WL 6.4  
 Total Depth 4250 Chlorides 3,500 ppm System LCM 8 #

Blow Description B.O.B. in 28 min.  
Bled off for 3 min. No return below  
B.O.B. in 57 min.

Bled off for 5 min. No return below

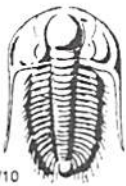
Rec	Feet of	%gas	%oil	%water	%mud
<u>141</u>	<u>wcm</u>		<u>20</u>	<u>80</u>	
<u>274</u>	<u>mcw</u>		<u>80</u>	<u>20</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 415 BHT 121 Gravity \_\_\_\_\_ API RW 0.22 @ 65 °F Chlorides 36,000 ppm  
 (A) Initial Hydrostatic 2,154  Test 1250 T-On Location 06:05  
 (B) First Initial Flow 27  Jars \_\_\_\_\_ T-Started 07:05  
 (C) First Final Flow 135  Safety Joint \_\_\_\_\_ T-Open 09:17  
 (D) Initial Shut-In 1,219  Circ Sub N/C T-Pulled 13:17  
 (E) Second Initial Flow 141  Hourly Standby \_\_\_\_\_ T-Out 15:24  
 (F) Second Final Flow 209  Mileage 80 RT 124 Comments \_\_\_\_\_  
 (G) Final Shut-In 1,223  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2,108  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1374  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 60  
 Final Shut-In 90  
 Sub Total 1374

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. 58502

Well Name & No. Nancy 2-4 Test No. 3 Date 11/22/14 11/23/14  
 Company Martin Drilling Company, Inc Elevation 3049 KB 3039 GL  
 Address 250 N Water STE 300, Wichita K.S, 67202-1216  
 Co. Rep / Geo. Tom Funk Rig Martin Rig 4  
 Location: Sec. 4 Twp. 13s Rge. 32w Co. Logan County State KS

Interval Tested 4340-4465 Zone Tested Marmaton - Altamont  
 Anchor Length 125 Drill Pipe Run 4058.73 Mud Wt. 9.02  
 Top Packer Depth 4336 Drill Collars Run 274.72 Vis 55  
 Bottom Packer Depth 4340 Wt. Pipe Run \_\_\_\_\_ WL 0.0  
 Total Depth 4465 Chlorides 3,400 ppm System LCM 8#

Blow Description Built to 3 1/2" below  
Bled off for 3 min. No return below  
Built to 3" below

Bled off for 5 min. No return below

Rec	Feet of	%gas	%oil	%water	%mud
<u>120</u>	<u>Mud with oil seum</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 120 BHT 115 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ ° F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2,285  Test 1250 T-On Location 13:05<sup>st</sup> fine 06:25  
 (B) First Initial Flow 27  Jars \_\_\_\_\_ T-Started 14:00 06:45  
 (C) First Final Flow 66  Safety Joint \_\_\_\_\_ T-Open 09:43  
 (D) Initial Shut-In 995  Circ Sub N/C T-Pulled 13:43  
 (E) Second Initial Flow 70  Hourly Standby Bover 24hour T-Out 16:30  
 (F) Second Final Flow 110  Mileage 80 RT X 2 248 Comments 3 hours standley  
 (G) Final Shut-In 962  Sampler \_\_\_\_\_ waiting on rig then said  
 (H) Final Hydrostatic 2,235  Straddle \_\_\_\_\_ they were going to change cokes  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_

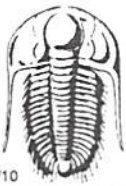
Initial Open 30  
 Initial Shut-In 60  
 Final Flow 60  
 Final Shut-In 90

Shale Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby 1d 15h  
 Accessibility \_\_\_\_\_  
 Sub Total 1498

Sub Total 500  
 Total 1998  
 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

58503

NO.

4/10

Well Name & No. Nancy 2-4 Test No. 4 Date 11/24/14  
 Company Martin Drilling Company Inc Elevation 3049 KB 3038 GL  
 Address 250 N Water STE 300, Wichita KS, 67202-1216  
 Co. Rep / Geo. Tom Funk Rig Martin Rig 4  
 Location: Sec. 4 Twp. 13s Rge. 32w Co. Logan County State KS

Interval Tested 4470 - 4560 Zone Tested Pawnee - Fort Scott  
 Anchor Length 90 Drill Pipe Run 4185.34 Mud Wt. 9.4  
 Top Packer Depth 4466 Drill Collars Run 274.72 Vis 53  
 Bottom Packer Depth 4470 Wt. Pipe Run \_\_\_\_\_ WL 7.2  
 Total Depth 4560 Chlorides 3,400 ppm System LCM B#

Blow Description Built to 1 3/4" below  
Bled off for 3 min. no return below  
No below

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>Mud with oil spots</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

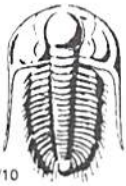
Rec Total 30 BHT 117 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ ° F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2,310  Test 1250 T-On Location 08:05  
 (B) First Initial Flow 23  Jars \_\_\_\_\_ T-Started 08:50  
 (C) First Final Flow 39  Safety Joint \_\_\_\_\_ T-Open 11:13  
 (D) Initial Shut-In 557  Circ Sub w/c T-Pulled 15:13  
 (E) Second Initial Flow 41  Hourly Standby \_\_\_\_\_ T-Out 17:25  
 (F) Second Final Flow 62  Mileage 80RT 124  
 (G) Final Shut-In 545  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2,306  Straddle \_\_\_\_\_

Initial Open 30  Ruined Shale Packer \_\_\_\_\_  
 Initial Shut-In 60  Ruined Packer \_\_\_\_\_  
 Final Flow 60  Extra Copies \_\_\_\_\_  
 Final Shut-In 90  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1374  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1374

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

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 58504

4/10

Well Name & No. Nancy 2-4 Test No. 5 Date 11/25/14  
 Company Murfin Drilling Company, Inc Elevation 3049 KB 3038 GL  
 Address 250 N Water STE 300, Wichita KS, 67202-1216  
 Co. Rep / Geo. Tom Funk Rig Murfin Rig 4  
 Location: Sec. 4 Twp. 13s Rge. 32w Co. Logan County State KS

Interval Tested 4581-4635 Zone Tested Johnson Zone  
 Anchor Length 54 Drill Pipe Run 4312.22 Mud Wt. 9.4  
 Top Packer Depth 4577 Drill Collars Run 274.72 Vis 47  
 Bottom Packer Depth 4581 Wt. Pipe Run \_\_\_\_\_ WL 8.00  
 Total Depth 4635 Chlorides 3,900 ppm System LCM 8#

Blow Description Built to 10" below  
Bled off for 3 min. Very weak surface return below  
B.O.B. in 13 min.

Bled off for 5 min. Weak surface return below

Rec	Feet of	%gas	%oil	%water	%mud
<u>0</u>	<u>720 feet weak gas in pipe</u>				
<u>30</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 30 BHT 118 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ ° F Chlorides \_\_\_\_\_ ppm  
 (A) Initial Hydrostatic 2,355  Test 1250 T-On Location 06:40  
 (B) First Initial Flow 20  Jars \_\_\_\_\_ T-Started 07:45  
 (C) First Final Flow 22  Safety Joint \_\_\_\_\_ T-Open 10:10  
 (D) Initial Shut-In 96  Circ Sub N/C T-Pulled 14:10  
 (E) Second Initial Flow 15  Hourly Standby \_\_\_\_\_ T-Out 17:03  
 (F) Second Final Flow 25  Mileage 80 RT x 2 248 Comments loaded tools  
 (G) Final Shut-In 97  Sampler \_\_\_\_\_ 12:00 11/26/14  
 (H) Final Hydrostatic 2,296  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1498  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1498

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

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

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