



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company**

250 N Water STE 300
Wichita KS 67202

ATTN: Charles Schmaltz

Hobbs #2-2

2-11s-23w Trego,KS

Start Date: 2014.04.05 @ 15:01:27

End Date: 2014.04.05 @ 23:37:27

Job Ticket #: 57557 DST #: 1

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

Printed: 2014.04.10 @ 08:52:35

Murfin Drilling Company
2-11s-23w Trego,KS
Hobbs #2-2
DST # 1
LKC B-F
2014.04.05



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Company

2-11s-23w Trego,KS

250 N Water STE 300
Wichita KS 67202

Hobbs #2-2

Job Ticket: 57557

DST#: 1

ATTN: Charles Schmaltz

Test Start: 2014.04.05 @ 15:01:27

GENERAL INFORMATION:

Formation: **LKC B-F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:30:37

Time Test Ended: 23:37:27

Test Type: Conventional Bottom Hole (Initial)

Tester: Tate Lang

Unit No: 49

Interval: 6718.00 ft (KB) To 3785.00 ft (KB) (TVD)

Reference Elevations: 2335.00 ft (KB)

Total Depth: 3785.00 ft (KB) (TVD)

2330.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8898 Outside

Press@RunDepth: 133.87 psig @ 3720.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.05

End Date:

2014.04.05

Last Calib.:

2014.04.05

Start Time: 15:01:28

End Time:

23:37:27

Time On Btm:

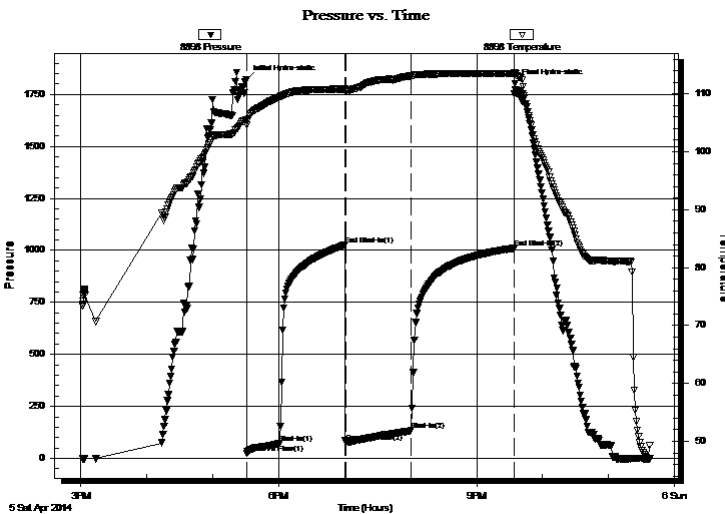
2014.04.05 @ 17:30:27

Time Off Btm:

2014.04.05 @ 21:34:57

TEST COMMENT: B.O.B. In 8 mins
Weak surface blow back built to 3 1/4" died back to 3"
B.O.B. In 7 mins
Fari surface blow built to 6" died back to 3"

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1822.34	105.50	Initial Hydro-static
1	25.40	104.60	Open To Flow (1)
30	71.12	109.39	Shut-In(1)
90	1026.60	110.85	End Shut-In(1)
91	79.53	110.62	Open To Flow (2)
150	133.87	113.07	Shut-In(2)
244	1010.49	113.53	End Shut-In(2)
245	1802.06	113.69	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
115.00	10%G 20%O 70%M	0.57
60.00	30%G 20%O 50%M	0.84
110.00	50%G 50%O	1.54
0.00	1150 GIP	0.00

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Company

2-11s-23w Trego,KS

250 N Water STE 300
Wichita KS 67202

Hobbs #2-2

Job Ticket: 57557

DST#: 1

ATTN: Charles Schmaltz

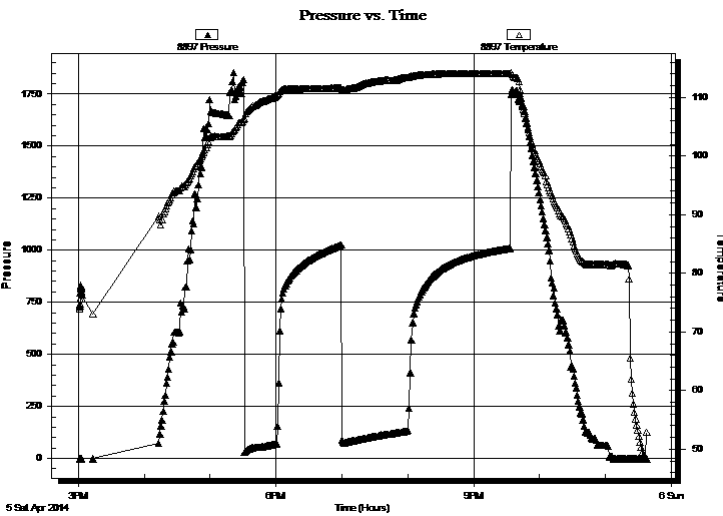
Test Start: 2014.04.05 @ 15:01:27

GENERAL INFORMATION:

Formation: LKC B-F			
Deviated: No Whipstock: ft (KB)		Test Type: Conventional Bottom Hole (Initial)	
Time Tool Opened: 17:30:37		Tester: Tate Lang	
Time Test Ended: 23:37:27		Unit No: 49	
Interval: 6718.00 ft (KB) To 3785.00 ft (KB) (TVD)		Reference Elevations: 2335.00 ft (KB)	
Total Depth: 3785.00 ft (KB) (TVD)		2330.00 ft (CF)	
Hole Diameter: 7.88 inches	Hole Condition: Good	KB to GR/CF: 5.00 ft	

Serial #: 8897	Inside		
Press@RunDepth: psig @ 3720.00 ft (KB)		Capacity:	8000.00 psig
Start Date: 2014.04.05	End Date: 2014.04.05	Last Calib.:	2014.04.05
Start Time: 15:01:21	End Time: 23:37:20	Time On Btm:	
		Time Off Btm:	

TEST COMMENT: B.O.B. In 8 mins
Weak surface blow back built to 3 1/4" died back to 3"
B.O.B. In 7 mins
Fari surface blow built to 6" died back to 3"



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
115.00	10%G 20%O 70%M	0.57
60.00	30%G 20%O 50%M	0.84
110.00	50%G 50%O	1.54
0.00	1150 GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company

2-11s-23w Trego,KS

250 N Water STE 300
Wichita KS 67202

Hobbs #2-2

Job Ticket: 57557

DST#: 1

ATTN: Charles Schmaltz

Test Start: 2014.04.05 @ 15:01:27

Tool Information

Drill Pipe:	Length: 3589.00 ft	Diameter: 3.80 inches	Volume: 50.34 bbl	Tool Weight: 2200.00 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: 115.00 ft	Diameter: 2.25 inches	Volume: 0.57 bbl	Weight to Pull Loose: 64000.00 lb
			<u>Total Volume: 50.91 bbl</u>	Tool Chased 5.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer:	3718.00 ft			Final 56000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	67.00 ft			
Tool Length:	94.00 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			3696.00	
Hydraulic tool	5.00			3701.00	
Jars	5.00			3706.00	
Safety Joint	2.00			3708.00	
Packer	5.00			3713.00	27.00 Bottom Of Top Packer
Packer	5.00			3718.00	
Stubb	1.00			3719.00	
Perforations	1.00			3720.00	
Recorder	0.00	8897	Inside	3720.00	
Recorder	0.00	8898	Outside	3720.00	
Perforations	29.00			3749.00	
Change Over Sub	1.00			3750.00	
Drill Pipe	31.00			3781.00	
Change Over Sub	1.00			3782.00	
Bullnose	3.00			3785.00	67.00 Bottom Packers & Anchor

Total Tool Length: 94.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company

2-11s-23w Trego,KS

250 N Water STE 300
Wichita KS 67202

Hobbs #2-2

Job Ticket: 57557

DST#: 1

ATTN: Charles Schmaltz

Test Start: 2014.04.05 @ 15:01:27

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

40 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
115.00	10%G 20%O 70%M	0.566
60.00	30%G 20%O 50%M	0.842
110.00	50%G 50%O	1.543
0.00	1150 GIP	0.000

Total Length: 285.00 ft

Total Volume: 2.951 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

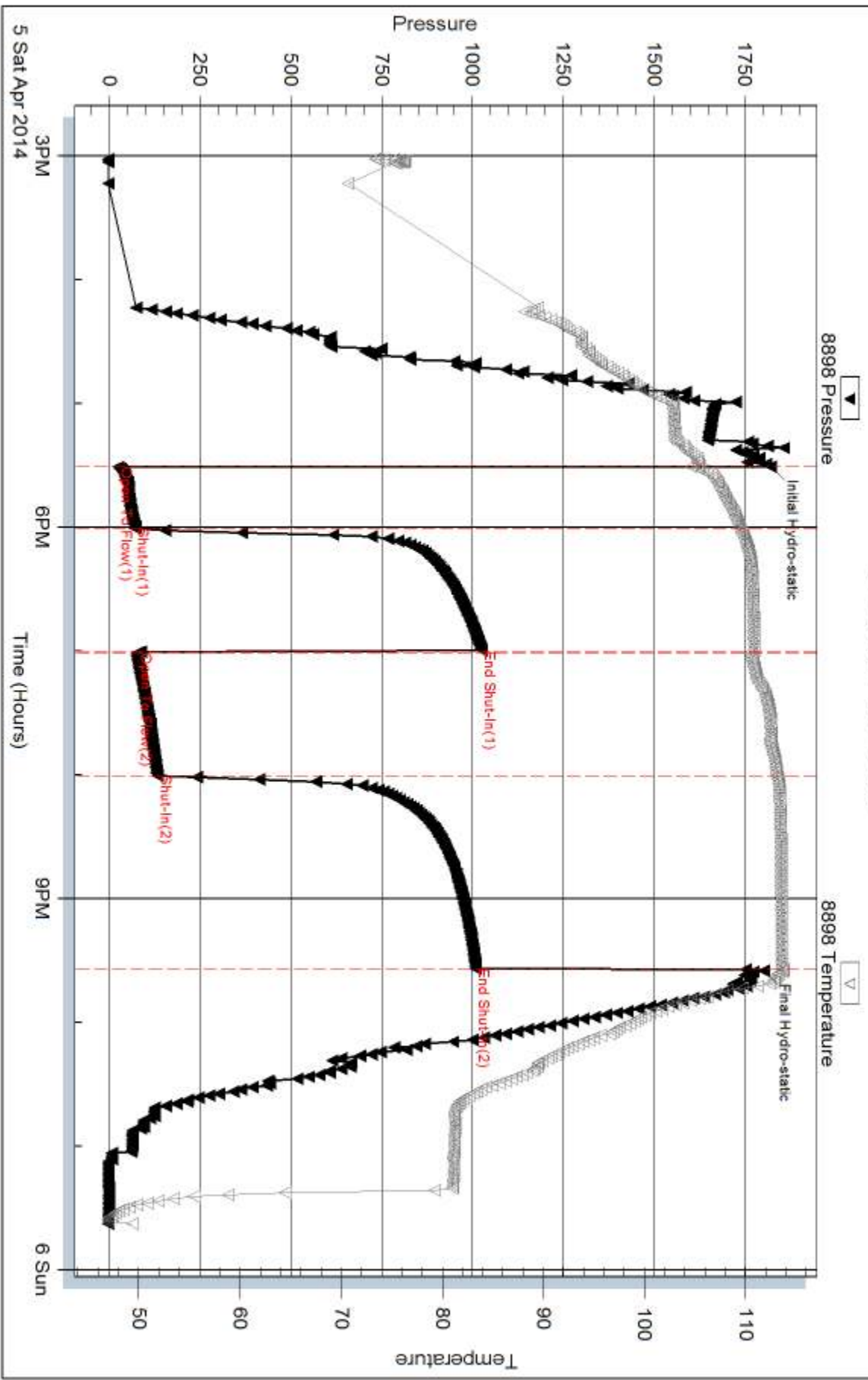
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



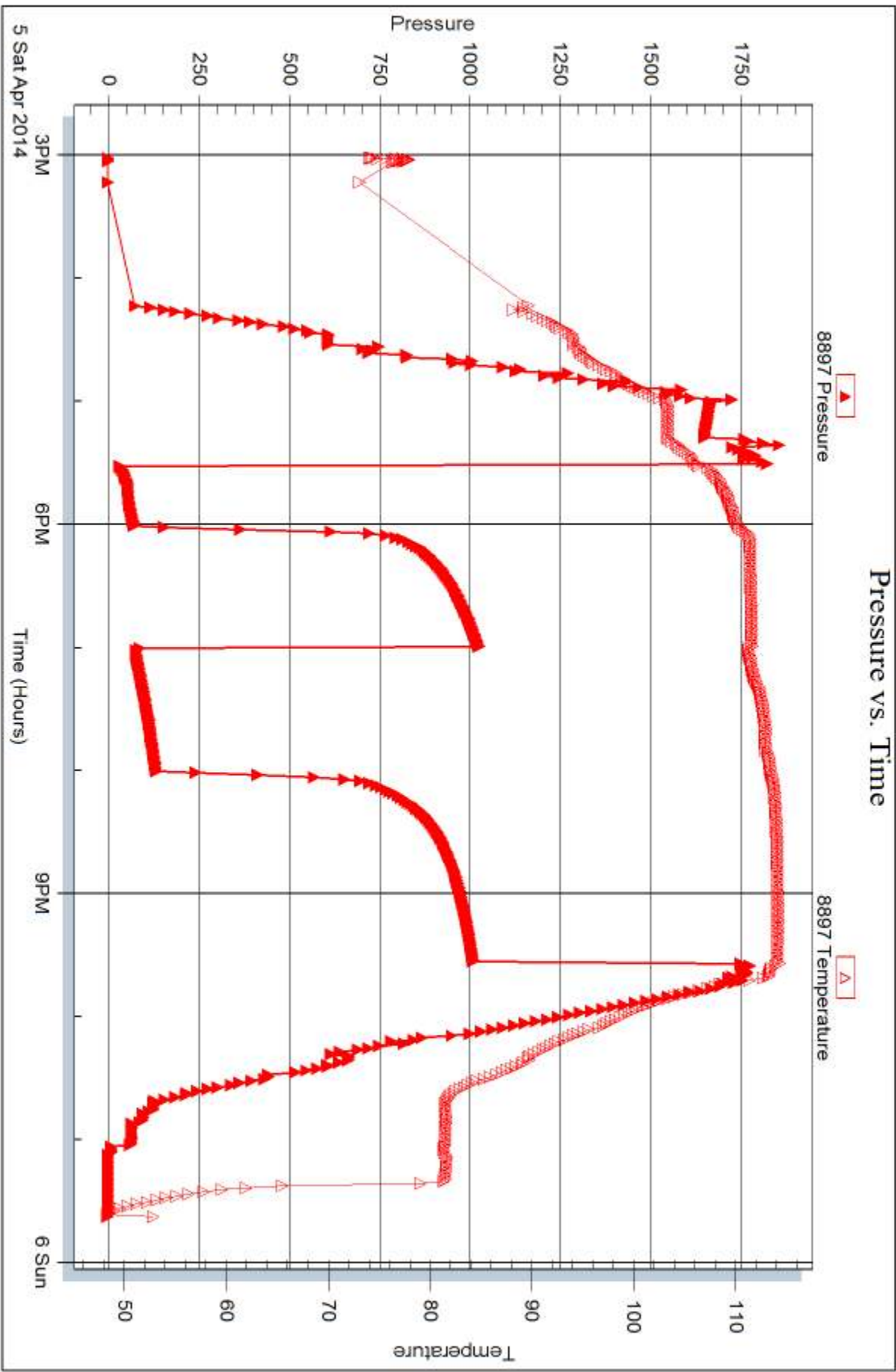
Serial #: 8897

Inside

Murfin Drilling Company

Hobbs #2-2

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company**

250 N Water STE 300
Wichita KS 67202

ATTN: Charles Schmaltz

Hobbs #2-2

2-11s-23w Trego,KS

Start Date: 2014.04.06 @ 16:40:03

End Date: 2014.04.07 @ 01:14:13

Job Ticket #: 57558 DST #: 2

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

Printed: 2014.04.10 @ 08:52:02



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Company

2-11s-23w Trego,KS

250 N Water STE 300
Wichita KS 67202

Hobbs #2-2

Job Ticket: 57558

DST#: 2

ATTN: Charles Schmaltz

Test Start: 2014.04.06 @ 16:40:03

GENERAL INFORMATION:

Formation: **LKC H-L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:50:53

Time Test Ended: 01:14:13

Test Type: Conventional Bottom Hole (Reset)

Tester: Tate Lang

Unit No: 49

Interval: 3817.00 ft (KB) To 3925.00 ft (KB) (TVD)

Reference Elevations: 2335.00 ft (KB)

Total Depth: 3928.00 ft (KB) (TVD)

2330.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8898 Outside

Press@RunDepth: 105.83 psig @ 3827.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.06

End Date:

2014.04.07

Last Calib.:

2014.04.07

Start Time: 16:40:04

End Time:

01:14:13

Time On Btm:

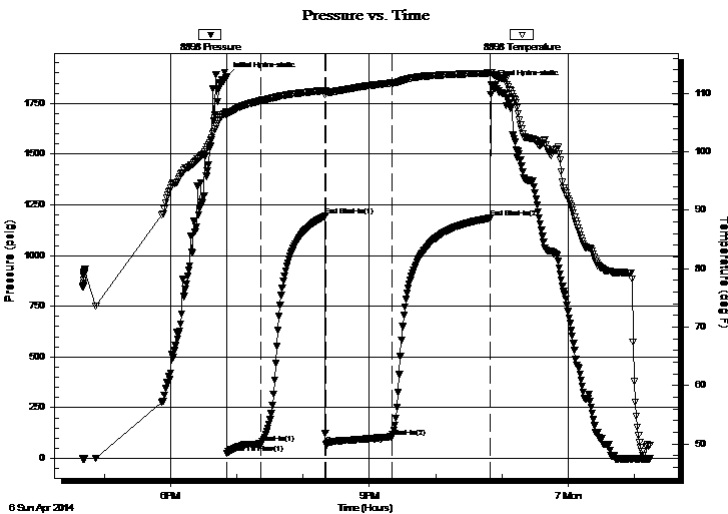
2014.04.06 @ 18:50:43

Time Off Btm:

2014.04.06 @ 22:50:42

TEST COMMENT: B.O.B. In 25 mins
Weak surface blow back built to 1/2" died back to a surface blow
B.O.B. In 4 mins
Fair surface blow back built to 5"

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1880.35	106.87	Initial Hydro-static
1	24.52	106.12	Open To Flow (1)
32	73.24	108.75	Shut-In(1)
90	1194.70	110.45	End Shut-In(1)
90	68.25	110.21	Open To Flow (2)
150	105.83	111.76	Shut-In(2)
239	1184.60	113.46	End Shut-In(2)
240	1842.66	113.57	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
115.00	25%G 25%O 50%M	0.57
60.00	20%G 50%O 30%M	0.84
45.00	30%G 70%O	0.63
0.00	675 GIP	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 Drilling Company

2-11s-23w Trego,KS

250 N Water STE 300
Wichita KS 67202

Hobbs #2-2

Job Ticket: 57558

DST#: 2

ATTN: Charles Schmaltz

Test Start: 2014.04.06 @ 16:40:03

Tool Information

Drill Pipe:	Length: 3683.00 ft	Diameter: 3.80 inches	Volume: 51.66 bbl	Tool Weight: 2200.00 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: 115.00 ft	Diameter: 2.25 inches	Volume: 0.57 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 52.23 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer:	3817.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	108.00 ft			
Tool Length:	135.00 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
Shut In Tool	5.00			3795.00	
Hydraulic tool	5.00			3800.00	
Jars	5.00			3805.00	
Safety Joint	2.00			3807.00	
Packer	5.00			3812.00	27.00 Bottom Of Top Packer
Packer	5.00			3817.00	
Stubb	1.00			3818.00	
Perforations	8.00			3826.00	
Perforations	1.00			3827.00	
Recorder	0.00	8897	Inside	3827.00	
Recorder	0.00	8898	Outside	3827.00	
Change Over Sub	1.00			3828.00	
Drill Pipe	31.00			3859.00	
Drill Pipe	62.00			3921.00	
Change Over Sub	1.00			3922.00	
Bullnose	3.00			3925.00	108.00 Bottom Packers & Anchor
Total Tool Length:	135.00				



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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company

2-11s-23w Trego,KS

250 N Water STE 300
Wichita KS 67202

Hobbs #2-2

Job Ticket: 57558

DST#: 2

ATTN: Charles Schmaltz

Test Start: 2014.04.06 @ 16:40:03

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
115.00	25%G 25%O 50%M	0.566
60.00	20%G 50%O 30%M	0.842
45.00	30%G 70%O	0.631
0.00	675 GIP	0.000

Total Length: 220.00 ft

Total Volume: 2.039 bbl

Num Fluid Samples: 0

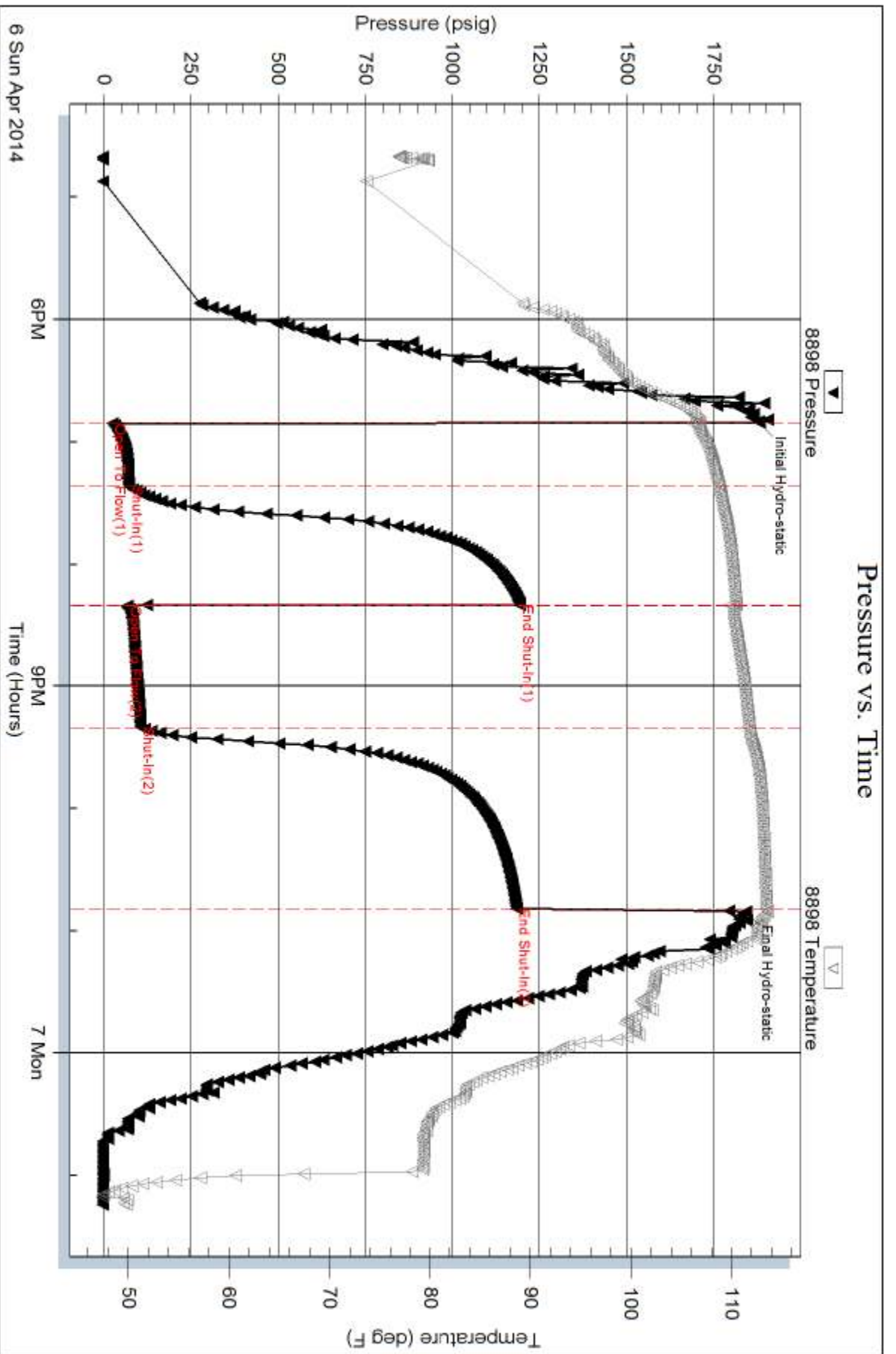
Num Gas Bombs: 0

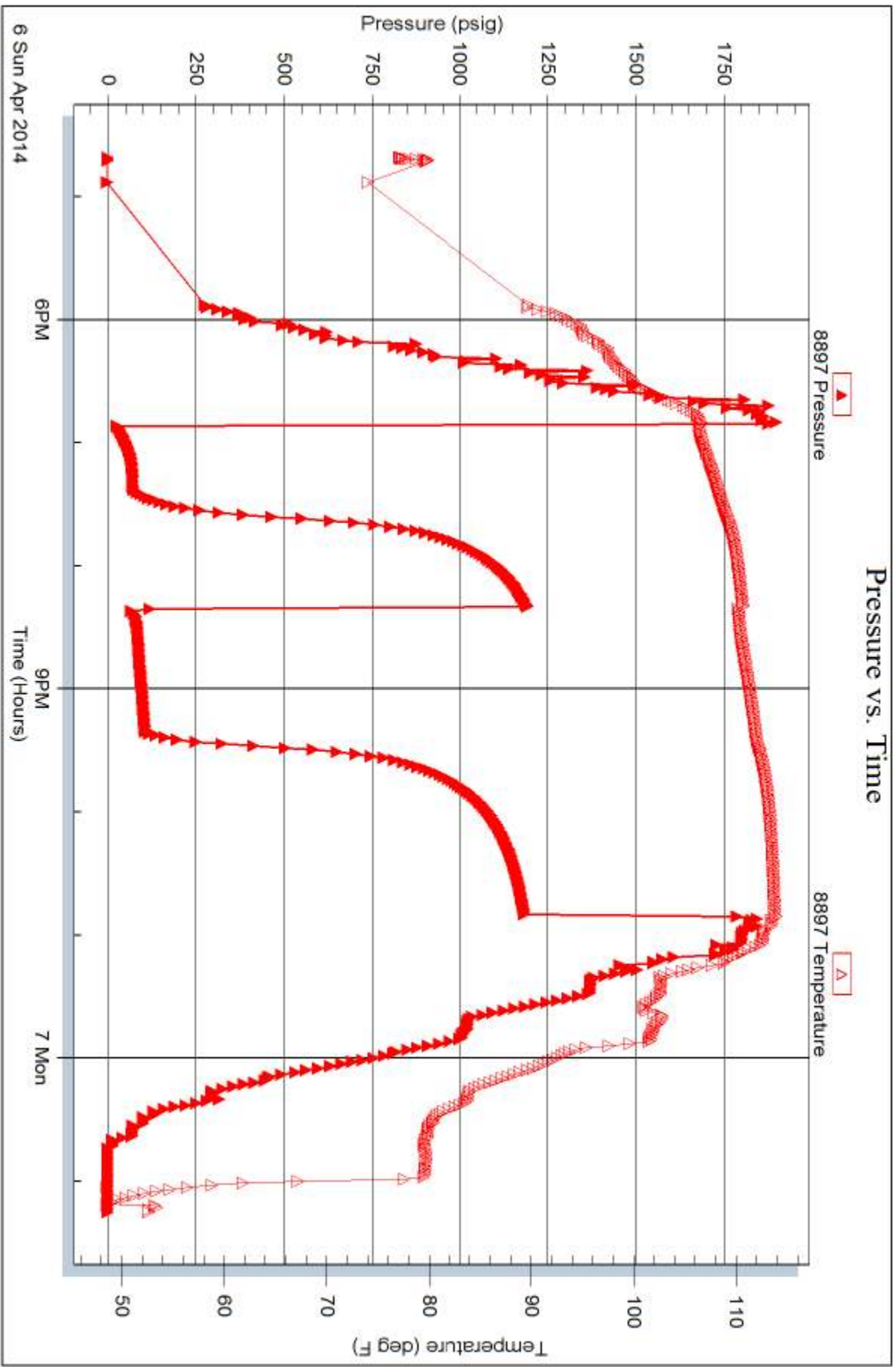
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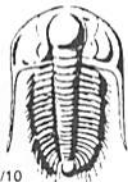
Laboratory Name:

Laboratory Location:

Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 57557

Well Name & No. Hobbs #2-2 Test No. 1 Date 4-5-14
 Company Murfin Drilling Company Elevation 2335 KB 2330 GL
 Address 250 N Water STE 300 Wichita KS 67202
 Co. Rep / Geo. Charles Schmalz Rig MurFin #24
 Location: Sec. 2 Twp. 11S Rge. 24W Co. Trego State KS

Interval Tested 3718 3785 Zone Tested Lvs B-F
 Anchor Length 67 Drill Pipe Run 3589 Mud Wt. 9.0
 Top Packer Depth 3718 Drill Collars Run 115 Vis 54
 Bottom Packer Depth 3718 Wt. Pipe Run 0 WL 3.6
 Total Depth 3785 Chlorides 1800 ppm System LCM 2nd

Blow Description B.O.B. IN 8mins
(weak surface blow back built to 3/4 in died back to 3 in)
B.O.B. IN 7mins
Fair surface blow back built to 6 in died back to 3 in

Rec	Feet of	%gas	%oil	%water	%mud
<u>115</u>	<u>960 CM</u>	<u>10</u>	<u>20</u>	<u>10</u>	<u>10</u>
<u>60</u>	<u>60 CM</u>	<u>30</u>	<u>20</u>	<u>50</u>	<u>50</u>
<u>110</u>	<u>60</u>	<u>50</u>	<u>50</u>		
<u>0</u>	<u>1150 GIR</u>	<u>100</u>			

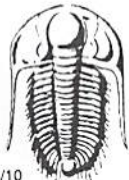
Rec Total 285 BHT 113 Gravity 40 API RW @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1822 Test 1150 T-On Location 18'20
 (B) First Initial Flow 25 Jars 250 T-Started 5:01
 (C) First Final Flow 71 Safety Joint 75 T-Open 17:31
 (D) Initial Shut-In 1027 Circ Sub _____ T-Pulled 21:31
 (E) Second Initial Flow 80 Hourly Standby _____ T-Out 23:37
 (F) Second Final Flow 134 Mileage 88 RT 136.40 Comments _____
 (G) Final Shut-In 1010 Sampler _____
 (H) Final Hydrostatic 1802 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1611.40
 Accessibility _____ MP/DST Disc't _____

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

Sub Total 1611.40

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. 57558

Well Name & No. Hobbs # 2-2 Test No. 2 Date 4-6-14
 Company Murfin Drilling Company Elevation 2335 KB 2330 GL
 Address 250 N Water STE 300 Wichita KS 67202
 Co. Rep / Geo Charles Schmalz Rig Murfin # 24
 Location: Sec. 2 Twp. 11S Rge. 23W Co. Trego State KS

Interval Tested 3817- 3928.5 Zone Tested Lens H-2
 Anchor Length 108 Drill Pipe Run 3683 Mud Wt. 90
 Top Packer Depth 3812 Drill Collars Run 115 Vis 56
 Bottom Packer Depth 3817 Wt. Pipe Run 0 WL 516
 Total Depth 3928.5 Chlorides 2500 ppm System LCM 1 1/2 #

Blow Description B.O.B. IN 25 mins
Weed surface blow back built to 1/2 indied back to
B.O.B. IN 4 mins (surface blow)
Full surface blow back built to 0.5 in

Rec	Feet of	%gas	%oil	%water	%mud
115	60 CM	25	25	50	
60	MCGO	20	50	30	
45	60	30	70		
0	675 GIP	100			

Rec Total 220 BHT 113 Gravity 39 API RW - °F Chlorides - ppm
 Test 1150 T-On Location 15:18
 Jars 250 T-Started 16:40
 Safety Joint 75 T-Open 19:01
 Circ Sub T-Pulled 23:01
 Hourly Standby T-Out 01:14 (47-14)
 Mileage 136.40 Comments _____
 Sampler _____
 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1611.40 MP/DST Disc't _____

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

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.