

DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc**

PO Box 86
Plainville KS 67663

ATTN: Marc Downing

Griffith #11-1

11-10s-23w Graham,KS

Start Date: 2013.06.03 @ 01:04:00

End Date: 2013.06.03 @ 09:14:30

Job Ticket #: 53903 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.06.07 @ 10:17:24



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

H&C Oil Operating Inc

11-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #11-1

Job Ticket: 53903

DST#: 1

ATTN: Marc Downing

Test Start: 2013.06.03 @ 01:04:00

GENERAL INFORMATION:

Formation: **LKC "C-D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:05:30

Time Test Ended: 09:14:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Cody Bloedorn

Unit No: 43

Interval: 3712.00 ft (KB) To 3750.00 ft (KB) (TVD)

Reference Elevations: 2398.00 ft (KB)

Total Depth: 3750.00 ft (KB) (TVD)

2393.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6799

Inside

Press @ Run Depth: 94.02 psig @ 3747.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.06.03

End Date:

2013.06.03

Last Calib.:

2013.06.03

Start Time:

01:04:05

End Time:

09:14:29

Time On Btm:

2013.06.03 @ 04:05:00

Time Off Btm:

2013.06.03 @ 07:19:45

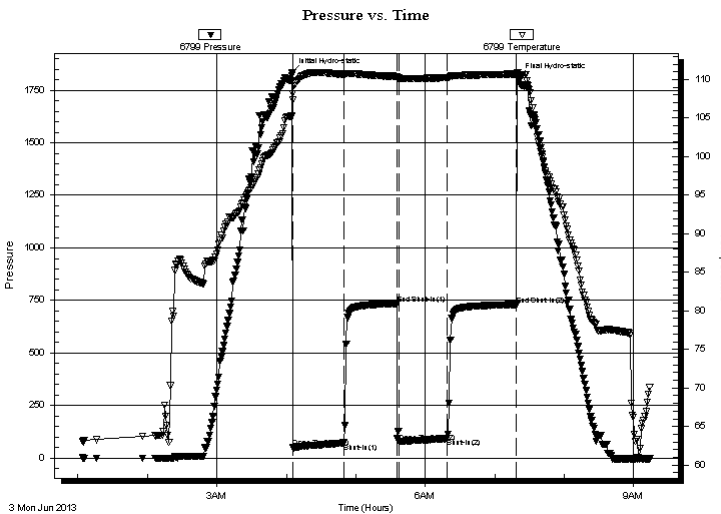
TEST COMMENT: 45 - IF- 4 1/2" blow

45 - IS- No return

45 - FF- weak surface blow, 1/4"

45 - FS- No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1834.52	105.24	Initial Hydro-static
1	52.44	107.35	Open To Flow (1)
45	72.82	110.63	Shut-In(1)
91	735.40	110.42	End Shut-In(1)
92	77.54	110.18	Open To Flow (2)
134	94.02	110.25	Shut-In(2)
194	730.58	110.74	End Shut-In(2)
195	1808.76	110.93	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	MW, 20%M, 80%W	0.87
87.00	Mud, 100%M	1.22

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc

11-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #11-1

Job Ticket: 53903

DST#: 1

ATTN: Marc Downing

Test Start: 2013.06.03 @ 01:04:00

Tool Information

Drill Pipe:	Length: 3714.00 ft	Diameter: 3.80 inches	Volume: 52.10 bbl	Tool Weight: 2000.00 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 39000.00 lb
			<u>Total Volume: 52.10 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial 35000.00 lb
Depth to Top Packer:	3712.00 ft			Final 35000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	38.00 ft			
Tool Length:	59.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3692.00	
Shut In Tool	5.00			3697.00	
Hydraulic tool	5.00			3702.00	
Packer	5.00			3707.00	21.00 Bottom Of Top Packer
Packer	5.00			3712.00	
Stubb	1.00			3713.00	
Perforations	1.00			3714.00	
Change Over Sub	1.00			3715.00	
Drill Pipe	31.00			3746.00	
Change Over Sub	1.00			3747.00	
Recorder	0.00	6799	Inside	3747.00	
Recorder	0.00	8648	Outside	3747.00	
Bullnose	3.00			3750.00	38.00 Bottom Packers & Anchor

Total Tool Length: 59.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc

11-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #11-1

Job Ticket: 53903

DST#: 1

ATTN: Marc Downing

Test Start: 2013.06.03 @ 01:04:00

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:

26000 ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1400.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
62.00	MW, 20%M, 80%W	0.870
87.00	Mud, 100%M	1.220

Total Length: 149.00 ft Total Volume: 2.090 bbl

Num Fluid Samples: 0

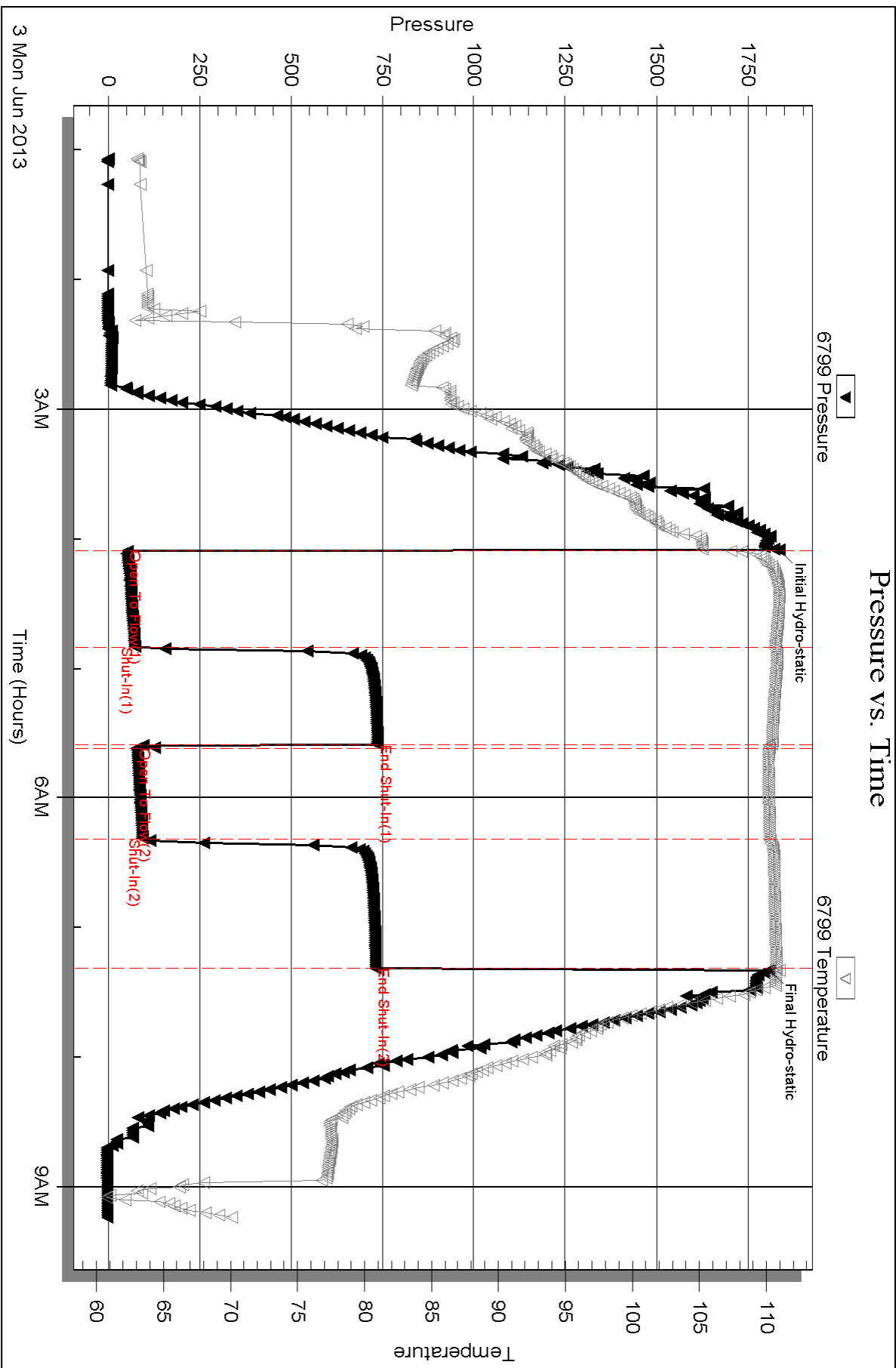
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .29@ 62 Degrees= 26,000

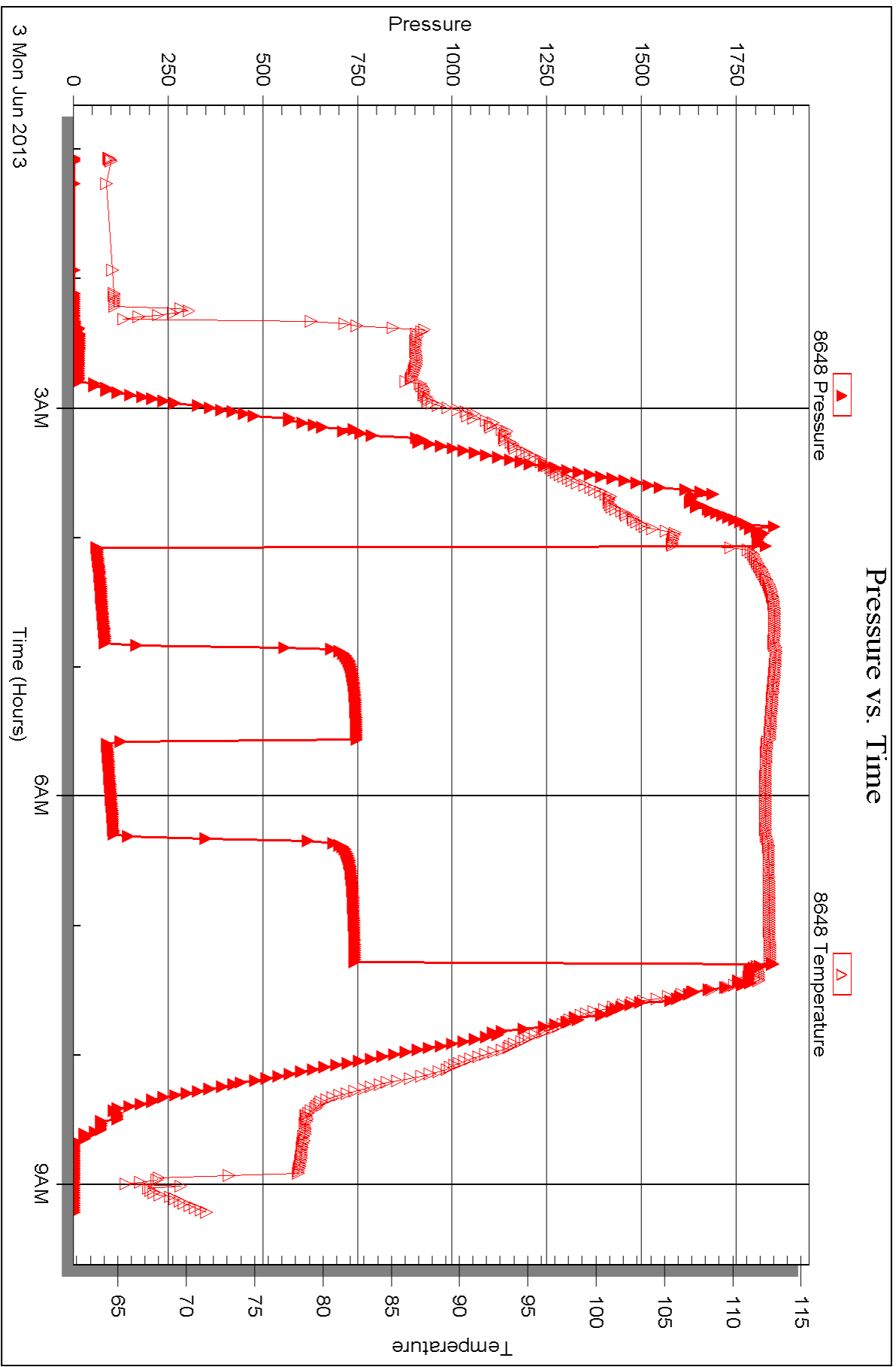


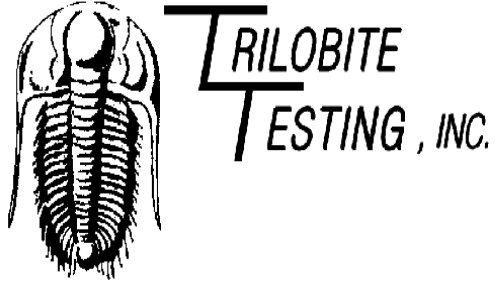
Serial #: 8648

Outside H&C Oil Operating Inc

Griffith #11-1

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc**

PO Box 86
Plainville KS 67663

ATTN: Marc Downing

Griffith #11-1

11-10s-23w Graham,KS

Start Date: 2013.06.03 @ 17:00:00

End Date: 2013.06.03 @ 23:22:45

Job Ticket #: 53904 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.06.07 @ 10:16:49



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

H&C Oil Operating Inc

11-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #11-1

Job Ticket: 53904

DST#: 2

ATTN: Marc Downing

Test Start: 2013.06.03 @ 17:00:00

GENERAL INFORMATION:

Formation: **LKC "E-F"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 19:40:45
 Time Test Ended: 23:22:45
 Interval: **3752.00 ft (KB) To 3783.00 ft (KB) (TVD)**
 Total Depth: 3783.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Cody Bloedorn
 Unit No: 43
 Reference Elevations: 2398.00 ft (KB)
 2393.00 ft (CF)
 KB to GR/CF: 5.00 ft

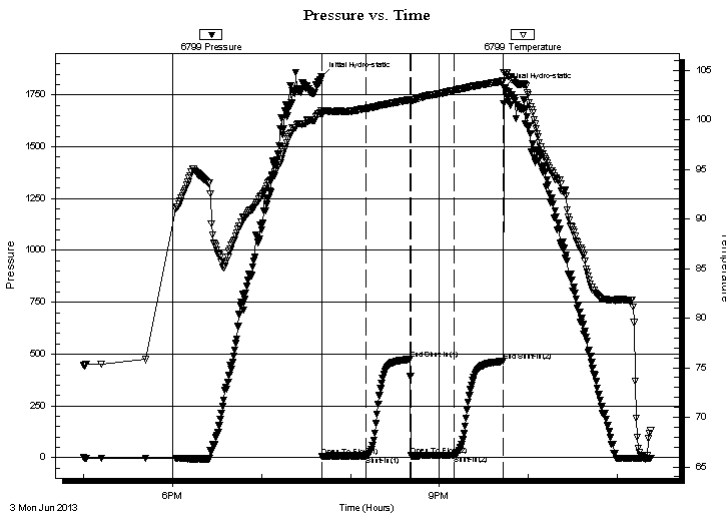
Serial #: 6799

Inside

Press @ Run Depth: 11.14 psig @ 3780.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.06.03 End Date: 2013.06.03 Last Calib.: 2013.06.03
 Start Time: 17:00:05 End Time: 23:22:44 Time On Btm: 2013.06.03 @ 19:40:30
 Time Off Btm: 2013.06.03 @ 21:43:45

TEST COMMENT: 30 - IF- Surface blow , died in 18 Minutes.
 IS- No return
 FF- No blow
 FS- No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1837.94	100.92	Initial Hydro-static
1	7.68	100.46	Open To Flow (1)
31	9.60	101.14	Shut-In(1)
60	474.47	102.04	End Shut-In(1)
61	9.80	101.97	Open To Flow (2)
90	11.14	102.97	Shut-In(2)
123	465.04	103.91	End Shut-In(2)
124	1786.81	104.78	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	Mud, 100%M	0.21

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc

11-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #11-1

Job Ticket: 53904

DST#: 2

ATTN: Marc Downing

Test Start: 2013.06.03 @ 17:00:00

Tool Information

Drill Pipe:	Length: 3743.00 ft	Diameter: 3.80 inches	Volume: 52.50 bbl	Tool Weight: 2000.00 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 39000.00 lb
			<u>Total Volume: 52.50 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 35000.00 lb
Depth to Top Packer:	3752.00 ft			Final 35000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	31.00 ft			
Tool Length:	52.00 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			3732.00	
Shut In Tool	5.00			3737.00	
Hydraulic tool	5.00			3742.00	
Packer	5.00			3747.00	21.00 Bottom Of Top Packer
Packer	5.00			3752.00	
Stubb	1.00			3753.00	
Perforations	27.00			3780.00	
Recorder	0.00	6799	Inside	3780.00	
Recorder	0.00	8648	Outside	3780.00	
Bullnose	3.00			3783.00	31.00 Bottom Packers & Anchor
Total Tool Length:	52.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc

11-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #11-1

Job Ticket: 53904

DST#: 2

ATTN: Marc Downing

Test Start: 2013.06.03 @ 17:00:00

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: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.18 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1400.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	Mud, 100%M	0.210

Total Length: 15.00 ft Total Volume: 0.210 bbl

Num Fluid Samples: 0

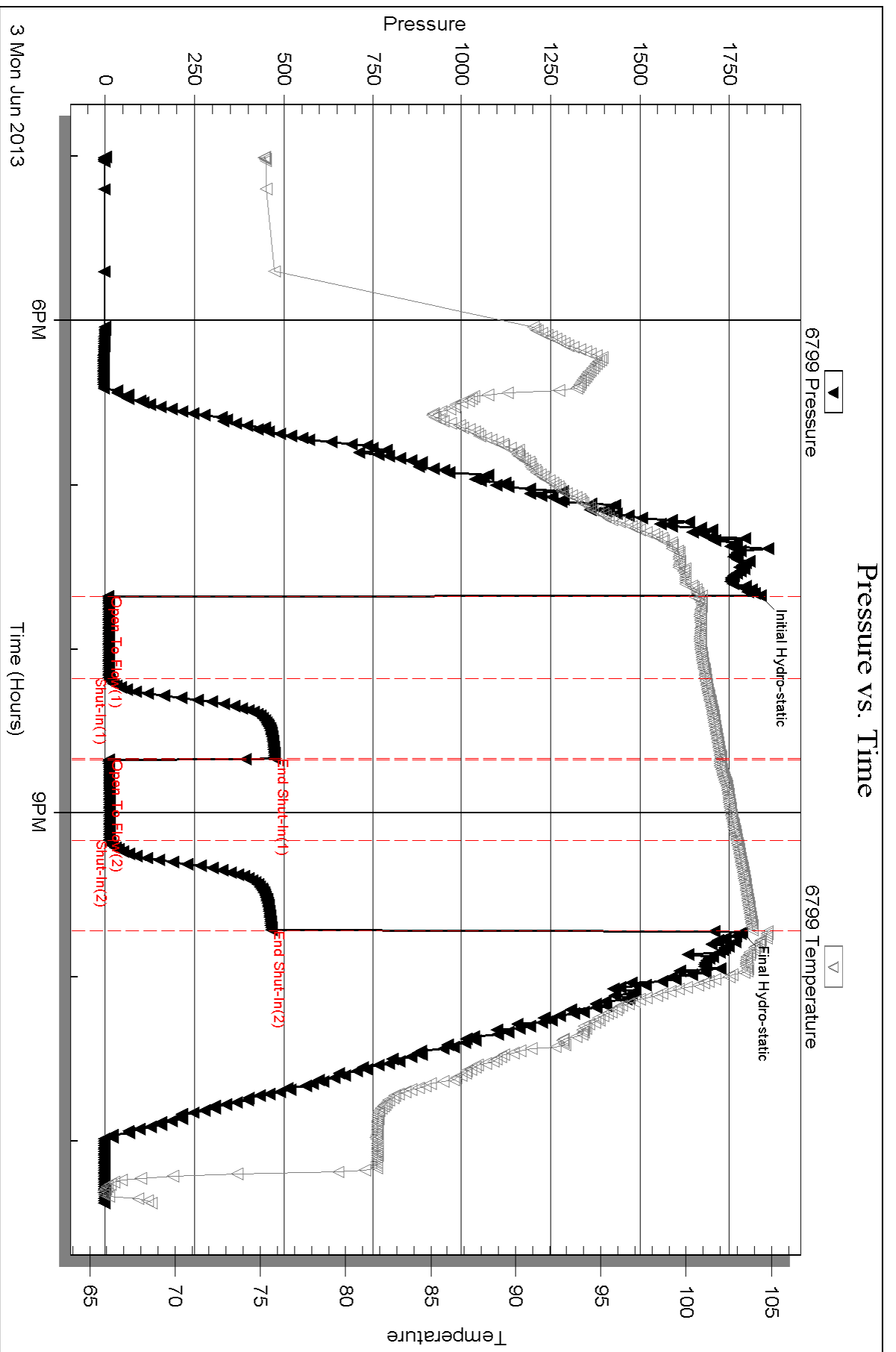
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

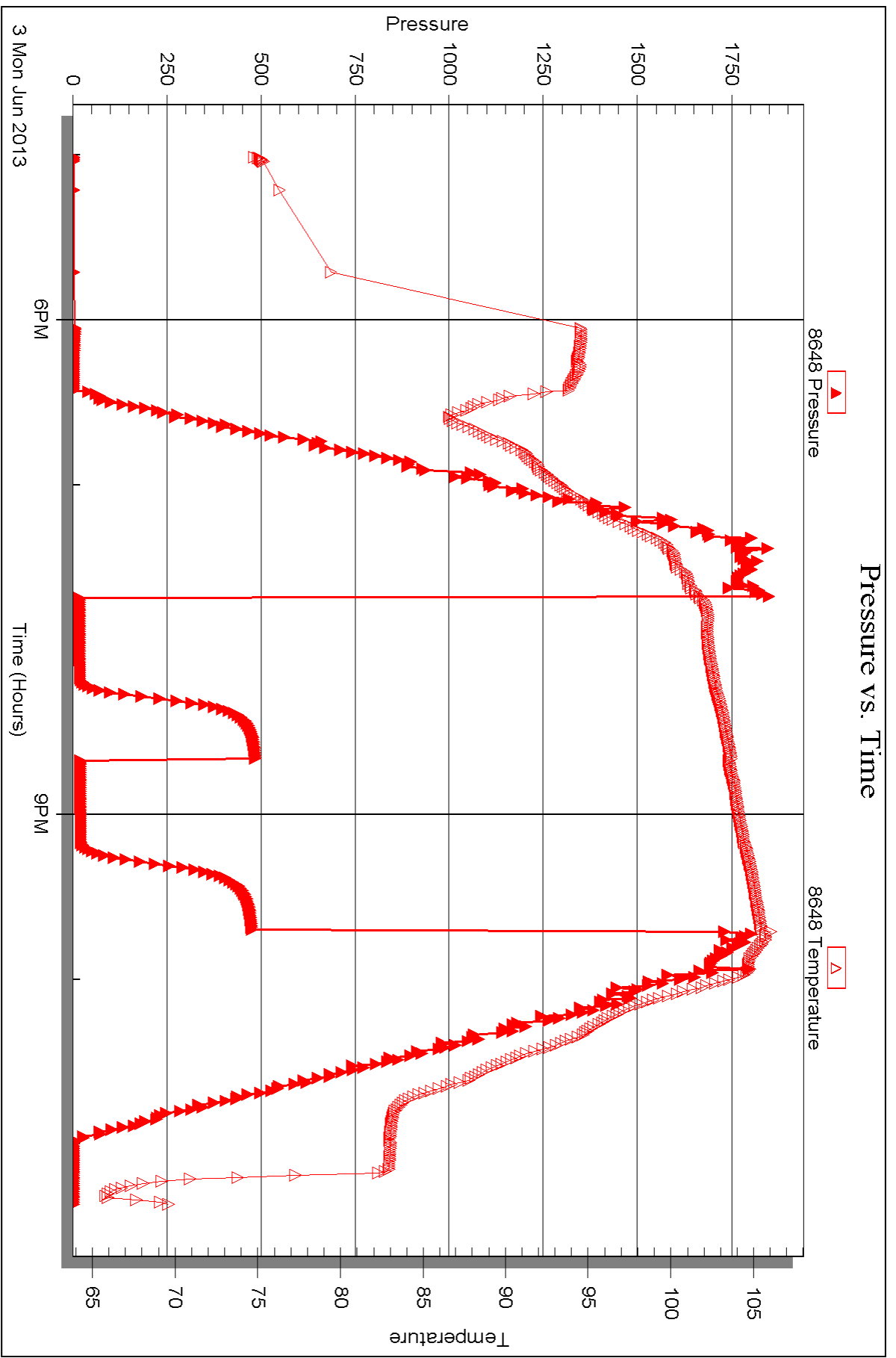


Serial #: 8648

Outside H&C Oil Operating Inc

Griffith #11-1

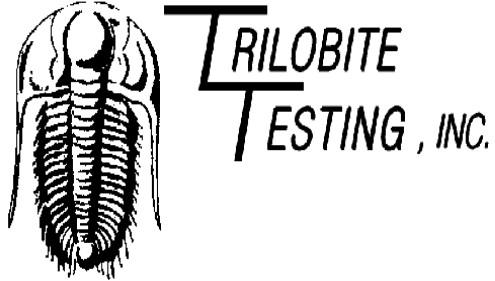
DST Test Number: 2



Triobite Testing, Inc

Ref. No: 53904

Printed: 2013.06.07 @ 10:16:52



DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc**

PO Box 86
Plainville KS 67663

ATTN: Marc Downing

Griffith #11-1

11-10s-23w Graham,KS

Start Date: 2013.06.04 @ 10:10:00

End Date: 2013.06.04 @ 17:52:30

Job Ticket #: 53905 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.06.07 @ 10:15:32



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

H&C Oil Operating Inc

11-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #11-1

Job Ticket: 53905

DST#: 3

ATTN: Marc Downing

Test Start: 2013.06.04 @ 10:10:00

GENERAL INFORMATION:

Formation: **LKC "H-J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:54:15

Time Test Ended: 17:52:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 43

Interval: 3802.00 ft (KB) To 3870.00 ft (KB) (TVD)

Reference Elevations: 2398.00 ft (KB)

Total Depth: 3870.00 ft (KB) (TVD)

2393.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6799

Inside

Press @ Run Depth: 50.83 psig @ 3837.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.06.04

End Date:

2013.06.04

Last Calib.: 2013.06.04

Start Time: 10:10:05

End Time:

17:52:29

Time On Btm: 2013.06.04 @ 12:54:00

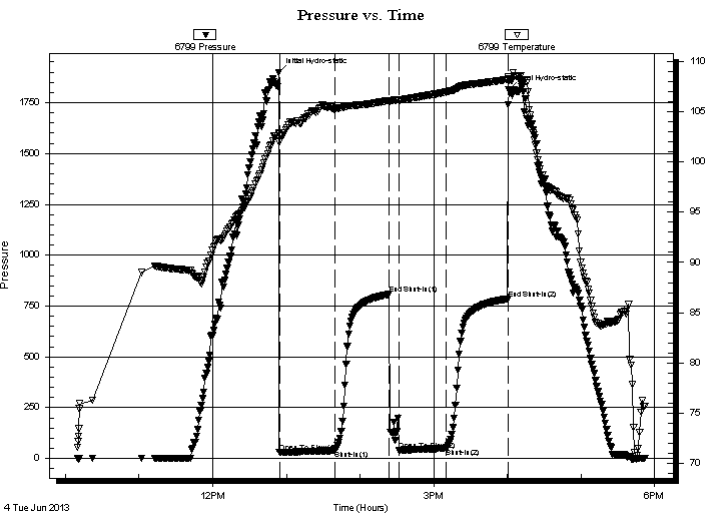
Time Off Btm: 2013.06.04 @ 16:01:00

TEST COMMENT: 45 - IF- 2 1/2" blow

45 - IS- No return

45 - FF- 1/2" blow

45 - FS- No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1899.03	102.89	Initial Hydro-static
1	29.88	101.96	Open To Flow (1)
46	39.24	105.26	Shut-In(1)
90	807.85	106.11	End Shut-In(1)
98	38.35	106.15	Open To Flow (2)
137	50.83	106.95	Shut-In(2)
187	785.50	108.20	End Shut-In(2)
187	1813.82	108.25	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
55.00	VSOCM, 5%G, 5%O, 90%M	0.77

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc

11-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #11-1

Job Ticket: 53905

DST#: 3

ATTN: Marc Downing

Test Start: 2013.06.04 @ 10:10:00

Tool Information

Drill Pipe:	Length: 3808.00 ft	Diameter: 3.80 inches	Volume: 53.42 bbl	Tool Weight:	2000.00 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	46000.00 lb
			<u>Total Volume: 53.42 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial	42000.00 lb
Depth to Top Packer:	3802.00 ft			Final	42000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	68.00 ft				
Tool Length:	89.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			
Tool Comments:					

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3782.00	
Shut In Tool	5.00			3787.00	
Hydraulic tool	5.00			3792.00	
Packer	5.00			3797.00	21.00 Bottom Of Top Packer
Packer	5.00			3802.00	
Stubb	1.00			3803.00	
Perforations	1.00			3804.00	
Change Over Sub	1.00			3805.00	
Drill Pipe	31.00			3836.00	
Change Over Sub	1.00			3837.00	
Recorder	0.00	6799	Inside	3837.00	
Recorder	0.00	8648	Outside	3837.00	
Perforations	30.00			3867.00	
Bullnose	3.00			3870.00	68.00 Bottom Packers & Anchor

Total Tool Length: 89.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc

11-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #11-1

Job Ticket: 53905

DST#: 3

ATTN: Marc Downing

Test Start: 2013.06.04 @ 10:10:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.18 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1400.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
55.00	VSOCM, 5%G, 5%O, 90%M	0.772

Total Length: 55.00 ft Total Volume: 0.772 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

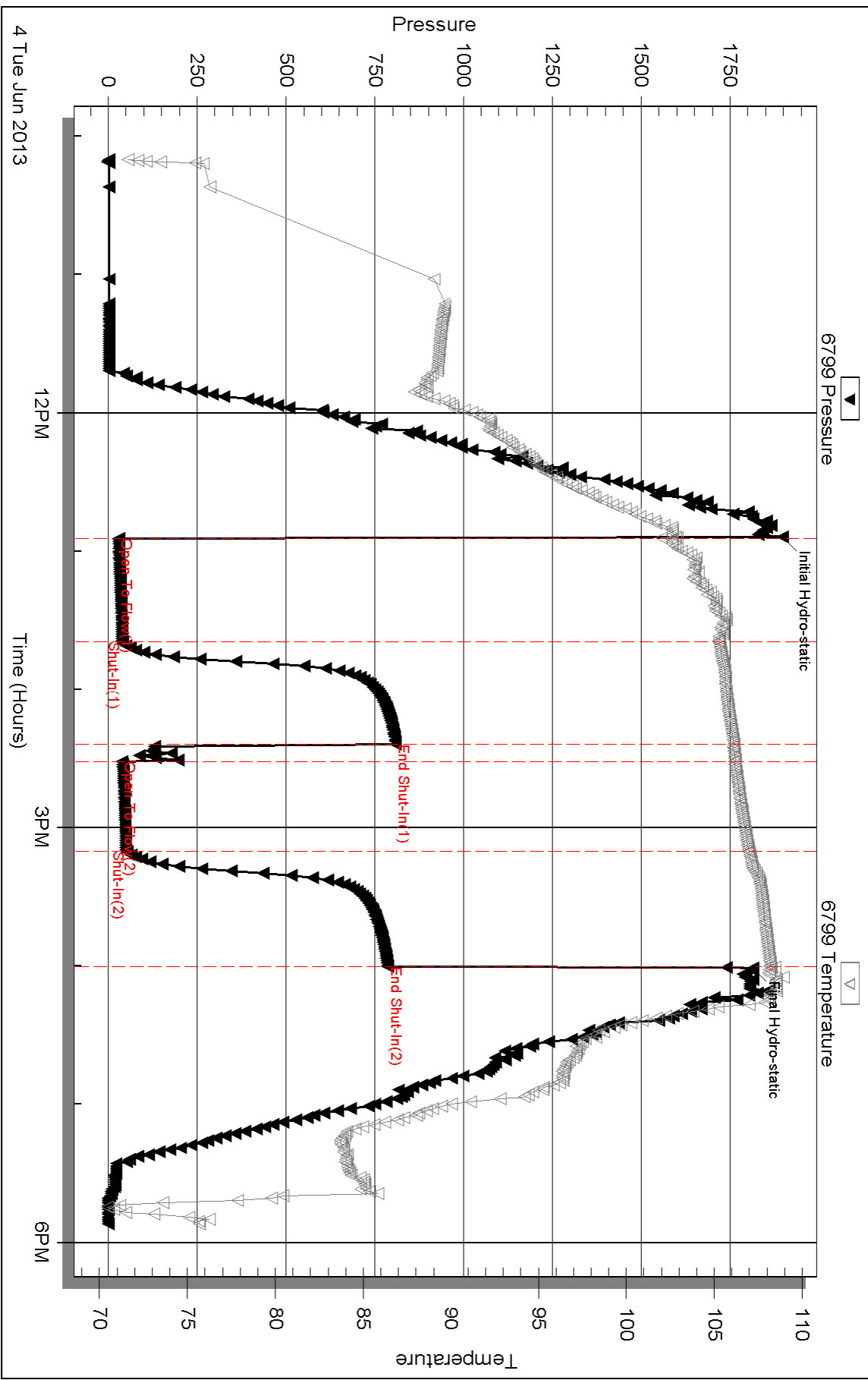
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

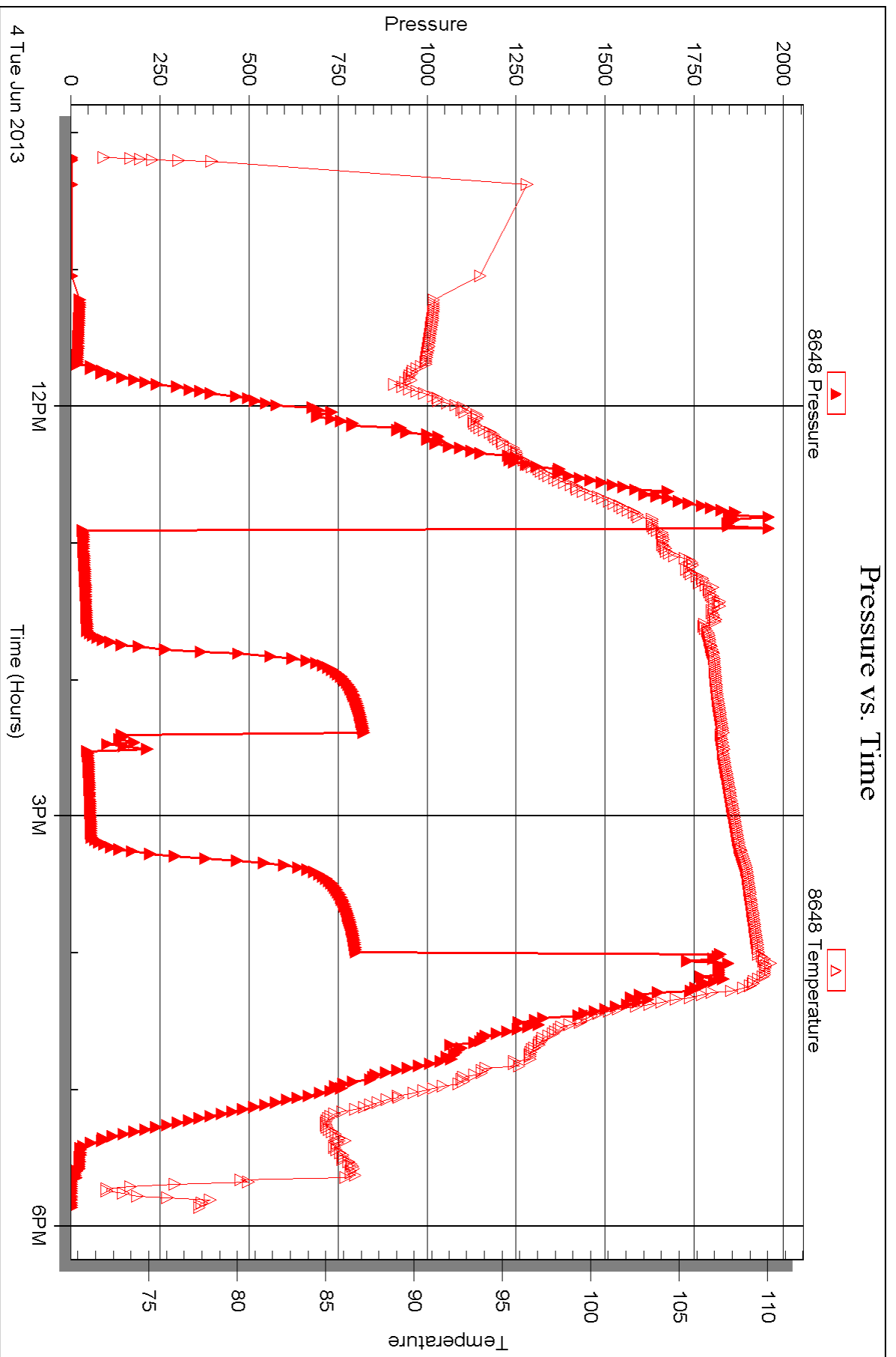


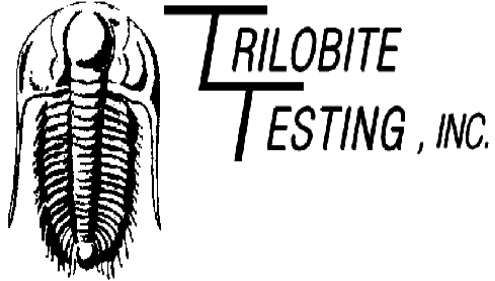
Serial #: 8648

Outside H&C Oil Operating Inc

Griffith #11-1

DST Test Number: 3





DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc**

PO Box 86
Plainville KS 67663

ATTN: Marc Downing

Griffith #11-1

11-10s-23w Graham,KS

Start Date: 2013.06.05 @ 02:19:00

End Date: 2013.06.05 @ 08:54:45

Job Ticket #: 53906 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.06.07 @ 10:14:56



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

H&C Oil Operating Inc

11-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #11-1

ATTN: Marc Downing

Job Ticket: 53906

DST#: 4

Test Start: 2013.06.05 @ 02:19:00

GENERAL INFORMATION:

Formation: **LKC "K-L"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 05:05:45
 Time Test Ended: 08:54:45
 Interval: **3869.00 ft (KB) To 3920.00 ft (KB) (TVD)**
 Total Depth: 3920.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Cody Bloedorn
 Unit No: 43
 Reference Elevations: 2398.00 ft (KB)
 2393.00 ft (CF)
 KB to GR/CF: 5.00 ft

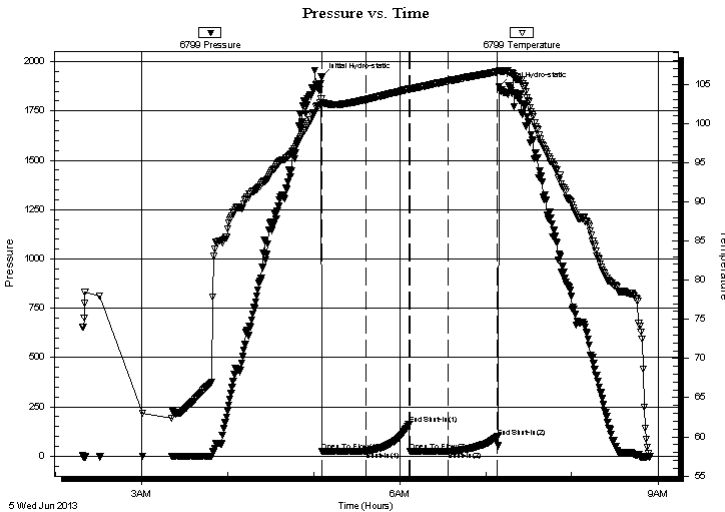
Serial #: 6799

Inside

Press @ Run Depth: 25.48 psig @ 3907.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.06.05 End Date: 2013.06.05 Last Calib.: 2013.06.05
 Start Time: 02:19:05 End Time: 08:54:44 Time On Btm: 2013.06.05 @ 05:05:30
 Time Off Btm: 2013.06.05 @ 07:09:15

TEST COMMENT: 30 - IF- 1/4" blow
 30 - IS- No return
 30 - FF- No blow
 30 - FS- No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1921.50	103.10	Initial Hydro-static
1	24.15	102.39	Open To Flow (1)
31	25.95	103.03	Shut-In(1)
61	162.83	104.39	End Shut-In(1)
62	25.34	104.38	Open To Flow (2)
89	25.48	105.40	Shut-In(2)
123	98.45	106.59	End Shut-In(2)
124	1872.55	106.76	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud, with scum of oil on top, 100%M	0.07

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc

11-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #11-1

Job Ticket: 53906

DST#: 4

ATTN: Marc Downing

Test Start: 2013.06.05 @ 02:19:00

Tool Information

Drill Pipe:	Length: 3870.00 ft	Diameter: 3.80 inches	Volume: 54.29 bbl	Tool Weight: 2000.00 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 46000.00 lb
			<u>Total Volume: 54.29 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 42000.00 lb
Depth to Top Packer:	3869.00 ft			Final 42000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	51.00 ft			
Tool Length:	72.00 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			3849.00	
Shut In Tool	5.00			3854.00	
Hydraulic tool	5.00			3859.00	
Packer	5.00			3864.00	21.00 Bottom Of Top Packer
Packer	5.00			3869.00	
Stubb	1.00			3870.00	
Perforations	4.00			3874.00	
Change Over Sub	1.00			3875.00	
Drill Pipe	31.00			3906.00	
Change Over Sub	1.00			3907.00	
Recorder	0.00	6799	Inside	3907.00	
Recorder	0.00	8648	Outside	3907.00	
Perforations	10.00			3917.00	
Bullnose	3.00			3920.00	51.00 Bottom Packers & Anchor

Total Tool Length: 72.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc

11-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #11-1

Job Ticket: 53906

DST#: 4

ATTN: Marc Downing

Test Start: 2013.06.05 @ 02:19:00

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: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1400.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud, with scum of oil on top, 100%M	0.070

Total Length: 5.00 ft Total Volume: 0.070 bbl

Num Fluid Samples: 0

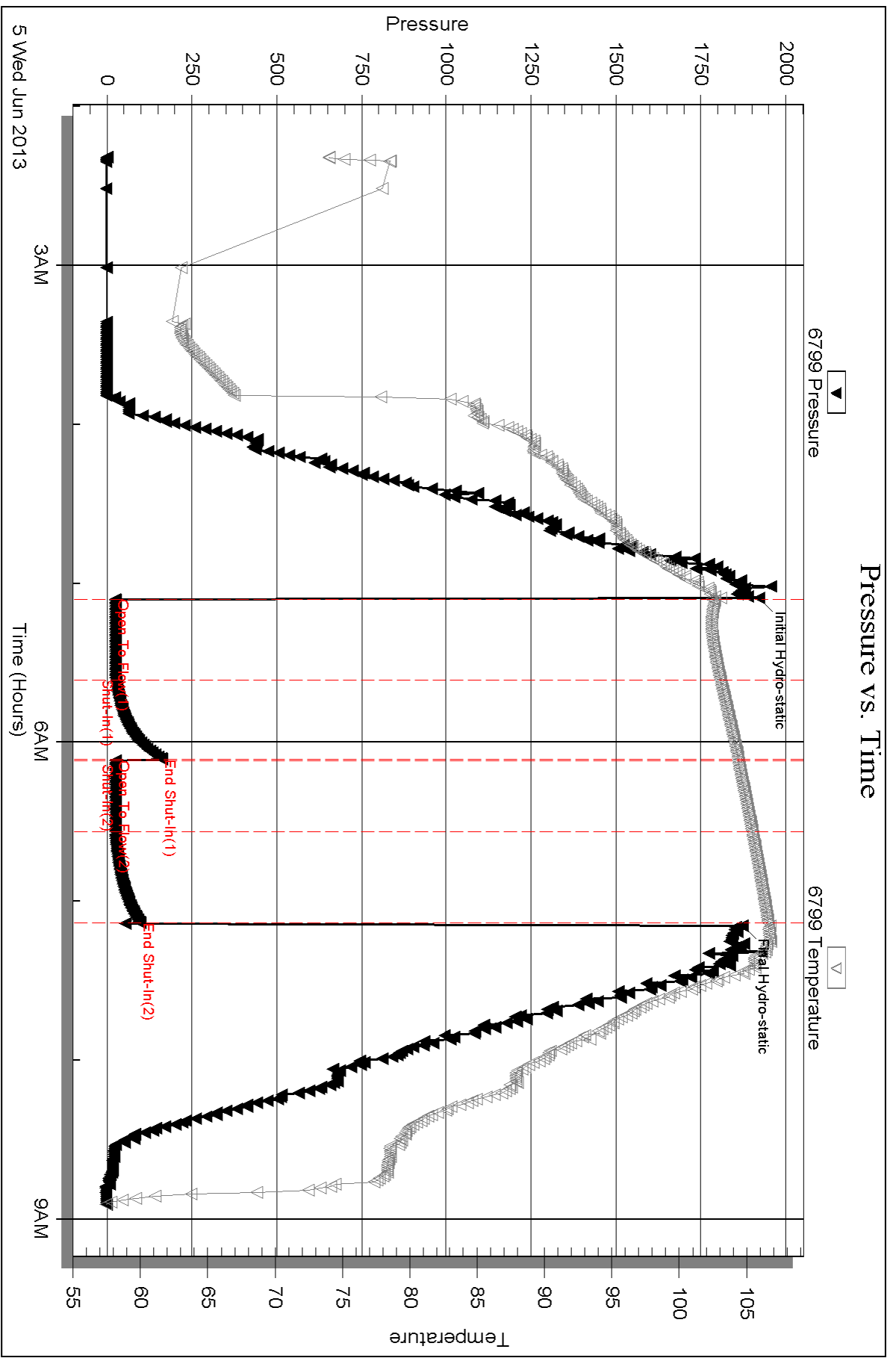
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

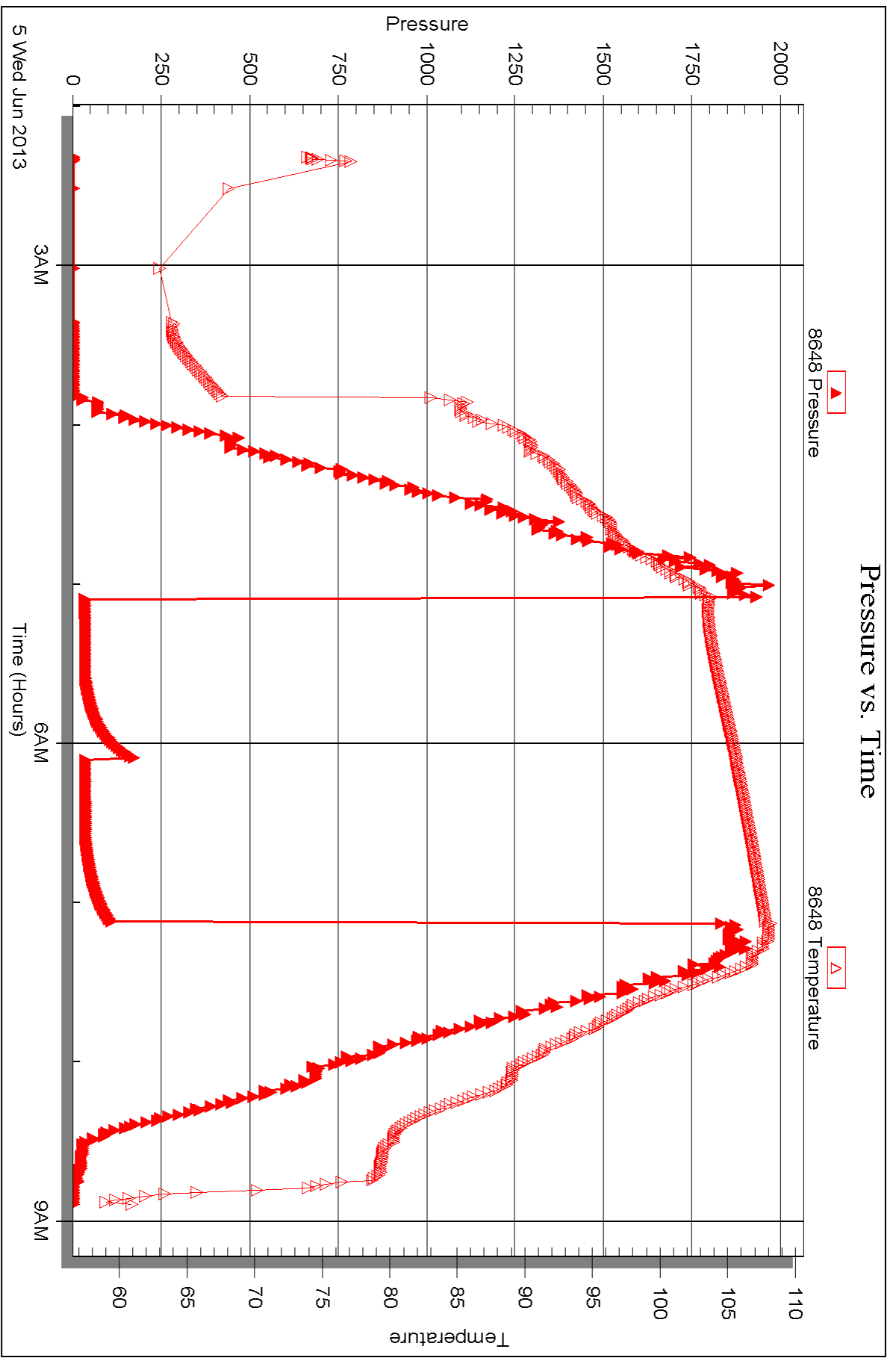


Serial #: 8648

Outside H&C Oil Operating Inc

Griffith #11-1

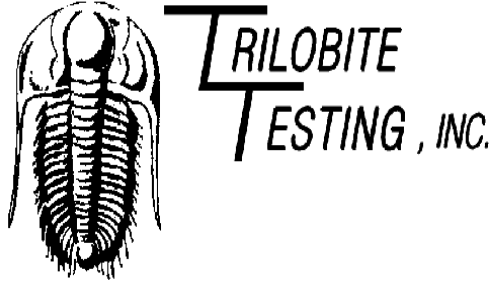
DST Test Number: 4



Triobite Testing, Inc

Ref. No: 53906

Printed: 2013.06.07 @ 10:14:59



DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc**

PO Box 86
Plainville KS 67663

ATTN: Marc Downing

Griffith #11-1

11-10s-23w Graham,KS

Start Date: 2013.06.06 @ 06:13:00

End Date: 2013.06.06 @ 13:09:00

Job Ticket #: 53907 DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.06.07 @ 10:13:59



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

H&C Oil Operating Inc

11-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #11-1

Job Ticket: 53907

DST#: 5

ATTN: Marc Downing

Test Start: 2013.06.06 @ 06:13:00

GENERAL INFORMATION:

Formation: **Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:03:45

Time Test Ended: 13:09:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 43

Interval: 4014.00 ft (KB) To 4083.00 ft (KB) (TVD)

Reference Elevations: 2398.00 ft (KB)

Total Depth: 4083.00 ft (KB) (TVD)

2393.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6799 Inside

Press @ Run Depth: 11.82 psig @ 4080.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.06.06

End Date:

2013.06.06

Last Calib.:

2013.06.06

Start Time: 06:13:05

End Time:

13:08:59

Time On Btm:

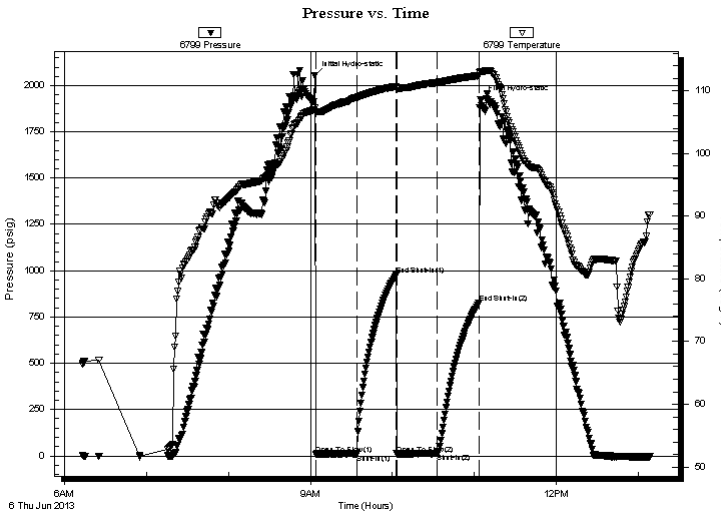
2013.06.06 @ 09:03:15

Time Off Btm:

2013.06.06 @ 11:04:45

TEST COMMENT: 30 - IF- 1/4" blow . dying off at 20 min
30 - IS- No return
30 - FF- Surface blow after 10 min
30 - FS- No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2053.90	107.25	Initial Hydro-static
1	8.12	106.69	Open To Flow (1)
31	11.06	108.94	Shut-In(1)
60	976.03	110.72	End Shut-In(1)
60	10.78	110.39	Open To Flow (2)
90	11.82	111.32	Shut-In(2)
121	826.73	112.42	End Shut-In(2)
122	1921.55	113.03	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	Mud, with spots of oil, 100%M	0.28

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc

11-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #11-1

Job Ticket: 53907

DST#: 5

ATTN: Marc Downing

Test Start: 2013.06.06 @ 06:13:00

Tool Information

Drill Pipe:	Length: 4024.00 ft	Diameter: 3.80 inches	Volume: 56.45 bbl	Tool Weight: 2000.00 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 48000.00 lb
			<u>Total Volume: 56.45 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial 44000.00 lb
Depth to Top Packer:	4014.00 ft			Final 44000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	69.00 ft			
Tool Length:	90.00 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			3994.00	
Shut In Tool	5.00			3999.00	
Hydraulic tool	5.00			4004.00	
Packer	5.00			4009.00	21.00 Bottom Of Top Packer
Packer	5.00			4014.00	
Stubb	1.00			4015.00	
Perforations	1.00			4016.00	
Change Over Sub	1.00			4017.00	
Drill Pipe	62.00			4079.00	
Change Over Sub	1.00			4080.00	
Recorder	0.00	6799	Inside	4080.00	
Recorder	0.00	8648	Outside	4080.00	
Bullnose	3.00			4083.00	69.00 Bottom Packers & Anchor

Total Tool Length: 90.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc

11-10s-23w Graham,KS

PO Box 86
Plainville KS 67663

Griffith #11-1

Job Ticket: 53907

DST#: 5

ATTN: Marc Downing

Test Start: 2013.06.06 @ 06:13:00

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: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1400.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	Mud, with spots of oil, 100%M	0.281

Total Length: 20.00 ft Total Volume: 0.281 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

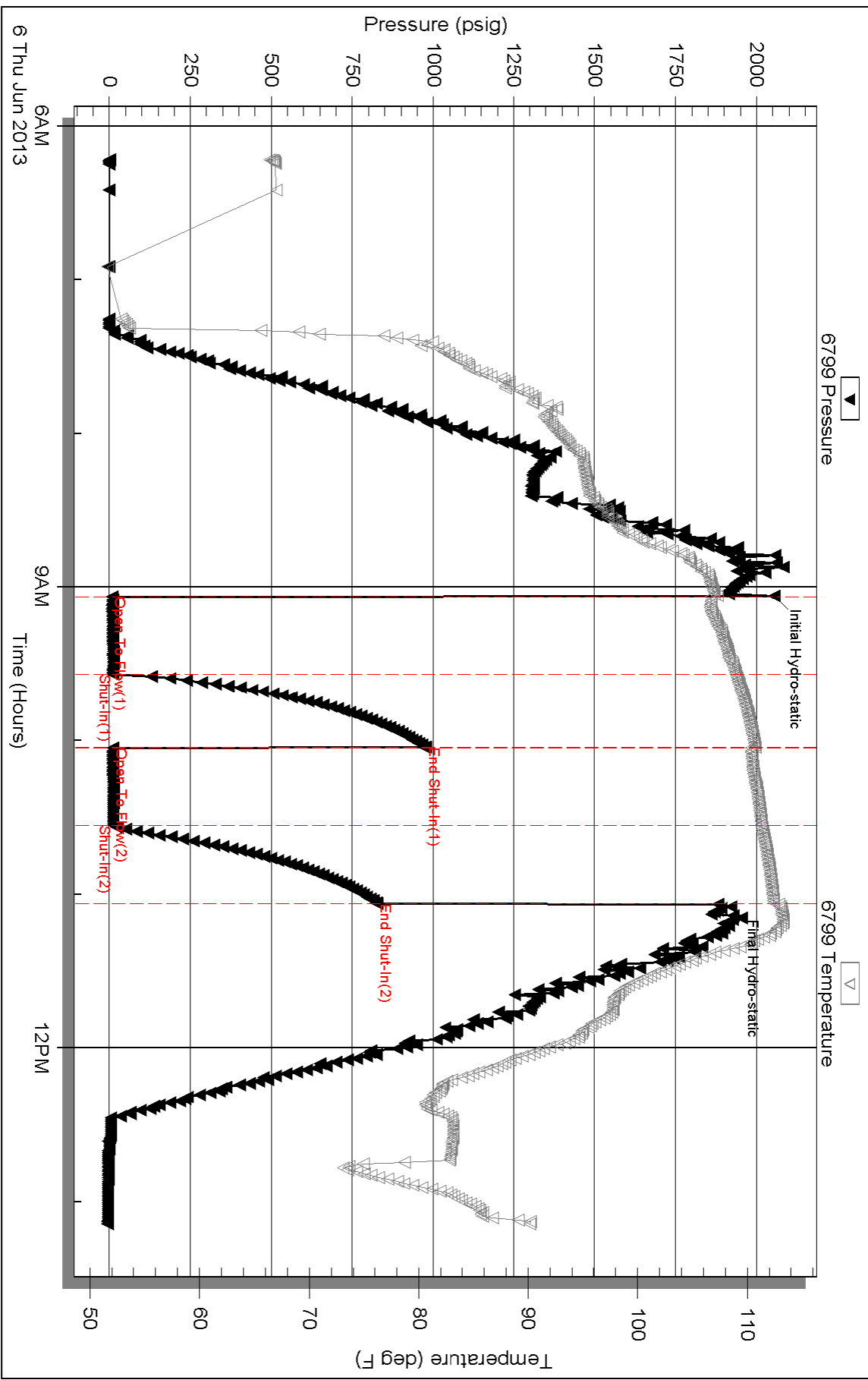
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

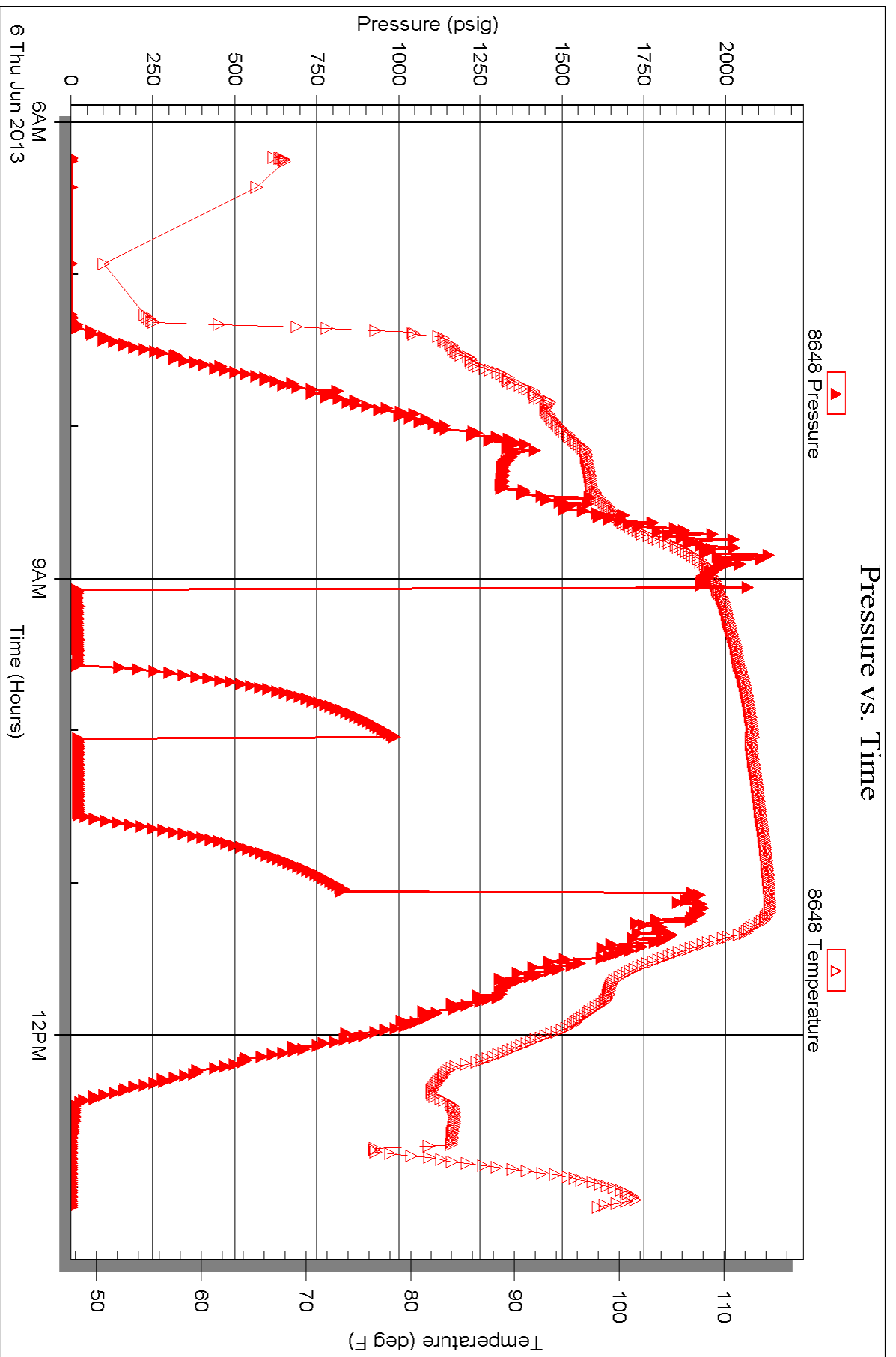


Serial #: 8648

Outside H&C Oil Operating Inc

Griffith #11-1

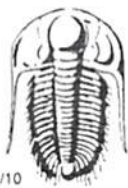
DST Test Number: 5



Triobite Testing, Inc

Ref. No: 53907

Printed: 2013.06.07 @ 10:14:03



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53903

Well Name & No. Griffith 11-1 Test No. 1 Date 6-2-13
 Company H&C Oil Operating Inc Elevation 2398 KB 2393 GL
 Address Po Box 86, Plainville KS, 67663
 Co. Rep / Geo. Marc Downing Rig American Eagle #3
 Location: Sec. 11 Twp. 10S Rge. 23W Co. Graham State KS

Interval Tested 3712 - 3750 Zone Tested LKC C&D
 Anchor Length 38' Drill Pipe Run 3714' Mud Wt. 9.1
 Top Packer Depth 3707 Drill Collars Run — Vis 51
 Bottom Packer Depth 3712 Wt. Pipe Run — WL 6.8
 Total Depth 3750 Chlorides 1400 ppm System LCM —

Blow Description IF - 4 1/2" blow
ISI - No return
FF - weak blow, 1/4"
FSI - No return

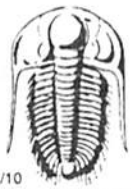
Rec	Feet of	%gas	%oil	%water	%mud
<u>62</u>	<u>MW</u>		<u>80</u>	<u>20</u>	
<u>87</u>	<u>Mud</u>			<u>100</u>	

Rec Total 149' BHT 110° Gravity — API RW .29 @ 62 °F Chlorides 26,000 ppm
 Test 1150 T-On Location 11:27pm
 Jars T-Started 1:04am
 Safety Joint T-Open 4:05am
 Circ Sub T-Pulled 7:05am
 Hourly Standby T-Out 9:14am
 Mileage 98 RT 151.90 Comments _____
 Sampler _____
 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 45
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 45
 Sub Total 0
 Total 1301.90
 MP/DST Disc't _____

Approved By _____ Our Representative Cody B...

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. 53904

Well Name & No. Griffith 11-1 Test No. 2 Date 6-3-13
 Company H & C oil operating Inc Elevation 2398 KB 2393 GL
 Address Po Box 86, Plainville KS, 67663
 Co. Rep / Geo. Marc Downing Rig American Eagle 3
 Location: Sec. 11 Twp. 10s Rge. 23w Co. Graham State KS

Interval Tested 3752 - 3783 Zone Tested LKC "E & F"
 Anchor Length 31' Drill Pipe Run 3743' Mud Wt. 9.0
 Top Packer Depth 3748 Drill Collars Run - Vis 50
 Bottom Packer Depth 3752 Wt. Pipe Run - WL 7.2
 Total Depth 3783 Chlorides 1,400 ppm System LCM -

Blow Description IF - Surface blow, died in 18 minutes
ISI - No return
FF - No blow
FSI - No return

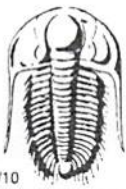
Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 15' BHT 103° Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic <u>1837</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>4:18 pm</u>
(B) First Initial Flow <u>7</u>	<input type="checkbox"/> Jars	T-Started <u>5:00 pm</u>
(C) First Final Flow <u>9</u>	<input type="checkbox"/> Safety Joint	T-Open <u>7:40 pm</u>
(D) Initial Shut-In <u>474</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>9:40 pm</u>
(E) Second Initial Flow <u>9</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>11:22 pm</u>
(F) Second Final Flow <u>11</u>	<input checked="" type="checkbox"/> Mileage <u>98 RT</u> 151.90	Comments
(G) Final Shut-In <u>465</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1786</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby	Total <u>1301.90</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1301.90</u>	

Approved By _____ Our Representative Cody Bell

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. **53905**

Well Name & No. Griffith 11-1 Test No. 3 Date 6-4-13
 Company H&C Oil Operating INC Elevation 2398 KB 2393 GL
 Address Po Box 86, Plainville KS, 67663
 Co. Rep / Geo. Marc Downing Rig American Eagle 3
 Location: Sec. 11 Twp. 10s Rge. 23w Co. Graham State KS

Interval Tested 3802 - 3870 Zone Tested H, I, J
 Anchor Length 68' Drill Pipe Run 3808' Mud Wt. 9.0
 Top Packer Depth 3797 Drill Collars Run — Vis 57
 Bottom Packer Depth 3802 Wt. Pipe Run — WL 7.2
 Total Depth 3870 Chlorides 1,400 ppm System LCM —

Blow Description IF - 2 1/2" blow
ISI - No return
FF - 1/2" blow
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>55</u>	<u>VSOCM</u>	<u>5</u>	<u>5</u>	<u>90</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

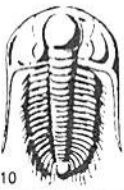
Rec Total 55' BHT 108° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 1899 Test 1150 T-On Location 9:40 am
 (B) First Initial Flow 29 Jars T-Started 10:10 am
 (C) First Final Flow 39 Safety Joint T-Open 12:55 pm
 (D) Initial Shut-In 807 Circ Sub T-Pulled 3:55 pm
 (E) Second Initial Flow 38 Hourly Standby T-Out 5:53 pm
 (F) Second Final Flow 50 Mileage 98 RT 151.90 Comments _____
 (G) Final Shut-In 785 Sampler _____
 (H) Final Hydrostatic 1813 Straddle _____

Initial Open 45 Ruined Shale Packer _____
 Initial Shut-In 45 Ruined Packer _____
 Final Flow 45 Extra Packer _____
 Final Shut-In 45 Extra Recorder _____
 Sub Total 0
 Total 1301.90
 MP/DST Disc't _____

Approved By _____ Our Representative Cody Ble

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. 53906

Well Name & No. Griffith 11-1 Test No. 4 Date 6-5-13
 Company H&C Oil Operating Inc Elevation 2398 KB 2393 GL
 Address Po Box 86, Plainville KS, 67663
 Co. Rep / Geo. Marc Downing Rig American Eagle 3
 Location: Sec. 11 Twp. 10S Rge. 23W Co. Graham State KS

Interval Tested 3869 - 3920 Zone Tested K&L
 Anchor Length 51' Drill Pipe Run 3870 Mud Wt. 9.0
 Top Packer Depth 3864 Drill Collars Run — Vis 57
 Bottom Packer Depth 3869 Wt. Pipe Run — WL 7.2
 Total Depth 3920 Chlorides 1400 ppm System LCM —
 Blow Description IF - 1/4" blow
ISI - No return
FF - No blow
FST - No return

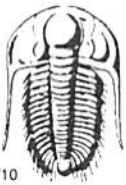
Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Mud with Scum of oil</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5' BHT 98° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>1921</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>2:02 am</u>
(B) First Initial Flow <u>24</u>	<input type="checkbox"/> Jars	T-Started <u>2:19 am</u>
(C) First Final Flow <u>25</u>	<input type="checkbox"/> Safety Joint	T-Open <u>5:06 am</u>
(D) Initial Shut-In <u>162</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>7:06 am</u>
(E) Second Initial Flow <u>25</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>8:54 am</u>
(F) Second Final Flow <u>25</u>	<input checked="" type="checkbox"/> Mileage <u>98 RT</u> 151.90	Comments
(G) Final Shut-In <u>98</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1872</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby	Total <u>1301.90</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1301.90</u>	

Approved By _____ Our Representative Cody Black

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53907

Well Name & No. Griffith 11-1 Test No. 5 Date 6-6-13
 Company H+C Oil Operating Inc Elevation 2398 KB 2393 GL
 Address Po Box 86, Plainville KS, 67663
 Co. Rep / Geo. Marc Downing Rig American Eagle 3
 Location: Sec. 11 Twp. 10s Rge. 23w Co. Graham State KS

Interval Tested 4014-4083 Zone Tested Sand
 Anchor Length 69' Drill Pipe Run 4024' Mud Wt. 9.0
 Top Packer Depth 4009 Drill Collars Run — Vis 57
 Bottom Packer Depth 4014 Wt. Pipe Run — WL 7.2
 Total Depth 4083 Chlorides 1400 ppm System LCM —

Blow Description IF - 1/4" blow dying @ 20 min. Mark.
ISI - No return
FF - surface blow after 10 minutes
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</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 20' BHT 112° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2053 Test 1250 T-On Location 5:30am
 (B) First Initial Flow 8 Jars — T-Started 6:13am
 (C) First Final Flow 11 Safety Joint — T-Open 9:03am
 (D) Initial Shut-In 976 Circ Sub — T-Pulled 11:03am
 (E) Second Initial Flow 10 Hourly Standby — T-Out 1:08pm
 (F) Second Final Flow 11 Mileage 98RT 151.90 Comments —
 (G) Final Shut-In 826 Sampler —
 (H) Final Hydrostatic 1921 Straddle —
 Ruined Shale Packer —
 Ruined Packer —
 Extra Copies —
 Initial Open 30 Shale Packer —
 Initial Shut-In 30 Extra Packer —
 Final Flow 30 Extra Recorder —
 Final Shut-In 30 Day Standby —
 Accessibility —
 Sub Total 1401.90 Sub Total 0
 Total 1401.900 MP/DST Disc't —

Approved By _____ Our Representative Cody Block

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 of 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.