



DRILL STEM TEST REPORT

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

PO Box 86
Plainville, KS 67663

ATTN: Marc Downing

Minium #23-1

23-8s-25w Graham, KS

Start Date: 2013.03.30 @ 23:33:00

End Date: 2013.03.31 @ 08:50:00

Job Ticket #: 51220 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.04.04 @ 10:50:08



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

H & C Oil Operating, Inc.

23-8s-25w Graham, KS

PO Box 86
Plainville, KS 67663

Minium #23-1

Job Ticket: 51220

DST#: 1

ATTN: Marc Downing

Test Start: 2013.03.30 @ 23:33:00

GENERAL INFORMATION:

Formation: **LKC "C,D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:27:45

Time Test Ended: 08:50:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 43

Interval: 3681.00 ft (KB) To 3720.00 ft (KB) (TVD)

Reference Elevations: 2342.00 ft (KB)

Total Depth: 3720.00 ft (KB) (TVD)

2337.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 6799

Inside

Press @ Run Depth: 203.18 psig @ 3682.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.03.30

End Date:

2013.03.31

Last Calib.:

2013.03.31

Start Time:

23:33:05

End Time:

08:50:00

Time On Btm:

2013.03.31 @ 03:25:15

Time Off Btm:

2013.03.31 @ 06:41:45

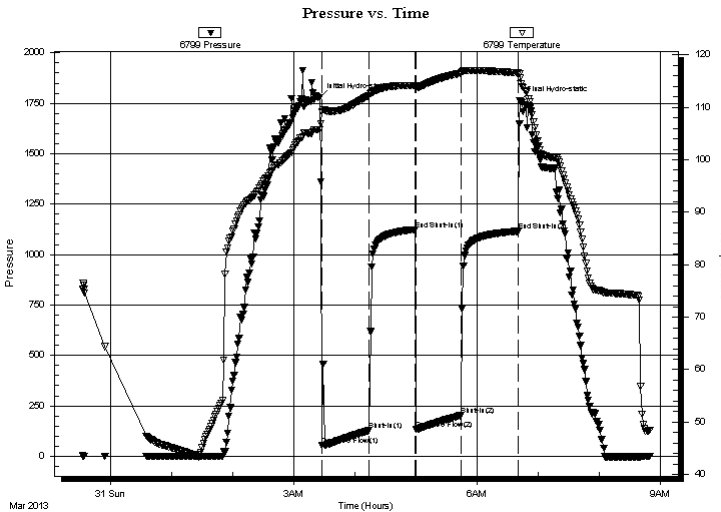
TEST COMMENT: 45 - IF- Bled off initial Surge. Surface Blow built to BoB in 35 min.

45 - IS- No Return

45 - FF- BoB in 32 min.

45 - FS- No Return

PRESSURE SUMMARY



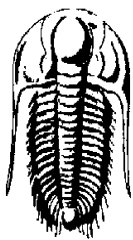
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1776.86	105.73	Initial Hydro-static
3	53.28	109.23	Open To Flow (1)
49	129.03	112.26	Shut-In(1)
94	1123.94	114.17	End Shut-In(1)
95	132.72	113.83	Open To Flow (2)
139	203.18	116.51	Shut-In(2)
195	1115.73	116.52	End Shut-In(2)
197	1763.89	115.58	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Heavy Mud 100M	0.07
243.00	WM 5M 95W	3.41
164.00	WM 35M 65W	2.30
0.00	Show of oil spots in tool	0.00

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

H & C Oil Operating, Inc.

23-8s-25w Graham, KS

PO Box 86
Plainville, KS 67663

Minium #23-1

ATTN: Marc Downing

Job Ticket: 51220 **DST#: 1**
Test Start: 2013.03.30 @ 23:33:00

GENERAL INFORMATION:

Formation: LKC "C,D"
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 03:27:45
Time Test Ended: 08:50:00

Interval: **3681.00 ft (KB) To 3720.00 ft (KB) (TVD)**
Total Depth: 3720.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches **Hole Condition:** Good

Test Type: Conventional Bottom Hole (Initial)
Tester: Kevin Mack
Unit No: 43

Reference Elevations: 2342.00 ft (KB)
2337.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8648

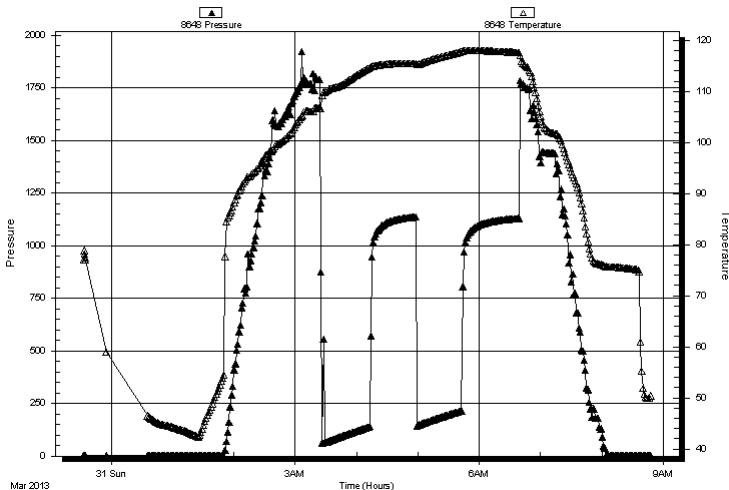
Inside

Press @ Run Depth: psig @ 3682.00 ft (KB) **Capacity:** 8000.00 psig
Start Date: 2013.03.30 **End Date:** 2013.03.31 **Last Calib.:** 2013.03.31
Start Time: 23:33:05 **End Time:** 08:48:00 **Time On Btm:**
Time Off Btm:

TEST COMMENT: 45 - IF- Bled off initial Surge. Surface Blow built to BoB in 35 min.

- 45 - IS- No Return
- 45 - FF- BoB in 32 min.
- 45 - FS- No Return

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Heavy Mud 100M	0.07
243.00	WM 5M 95W	3.41
164.00	WM 35M 65W	2.30
0.00	Show of oil spots in tool	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H & C Oil Operating, Inc.

23-8s-25w Graham, KS

PO Box 86
Plainville, KS 67663

Minium #23-1

Job Ticket: 51220

DST#: 1

ATTN: Marc Downing

Test Start: 2013.03.30 @ 23:33:00

Tool Information

Drill Pipe:	Length: 3680.00 ft	Diameter: 3.80 inches	Volume: 51.62 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:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	62000.00 lb
			<u>Total Volume: 51.62 bbl</u>	Tool Chased	20.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial	40000.00 lb
Depth to Top Packer:	3681.00 ft			Final	48000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	39.00 ft				
Tool Length:	60.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments: Tool opened early and had to be chased approx 20' to bottom.

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3661.00	
Shut In Tool	5.00			3666.00	
Hydraulic tool	5.00			3671.00	
Packer	5.00			3676.00	21.00 Bottom Of Top Packer
Packer	5.00			3681.00	
Stubb	1.00			3682.00	
Recorder	0.00	6799	Inside	3682.00	
Recorder	0.00	8648	Inside	3682.00	
Perforations	2.00			3684.00	
Change Over Sub	1.00			3685.00	
Drill Pipe	31.00			3716.00	
Change Over Sub	1.00			3717.00	
Bullnose	3.00			3720.00	39.00 Bottom Packers & Anchor

Total Tool Length: 60.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

H & C Oil Operating, Inc.

23-8s-25w Graham, KS

PO Box 86
Plainville, KS 67663

Minium #23-1

Job Ticket: 51220

DST#: 1

ATTN: Marc Downing

Test Start: 2013.03.30 @ 23:33:00

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: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
5.00	Heavy Mud 100M	0.070
243.00	WM 5M 95W	3.409
164.00	WM 35M 65W	2.300
0.00	Show of oil spots in tool	0.000

Total Length: 412.00 ft Total Volume: 5.779 bbl

Num Fluid Samples: 0

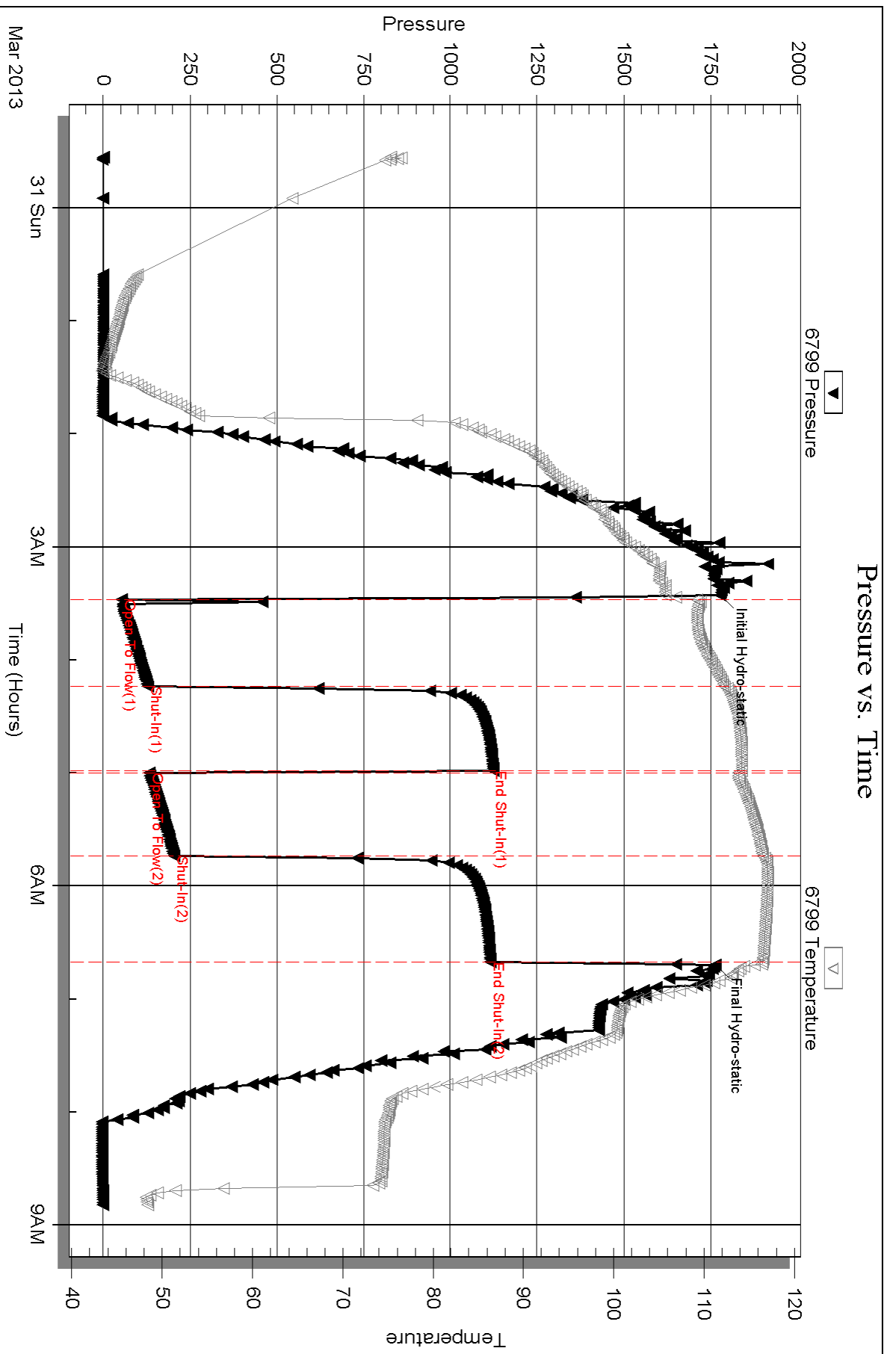
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW = .184 @ 67 deg = 40,000ppm



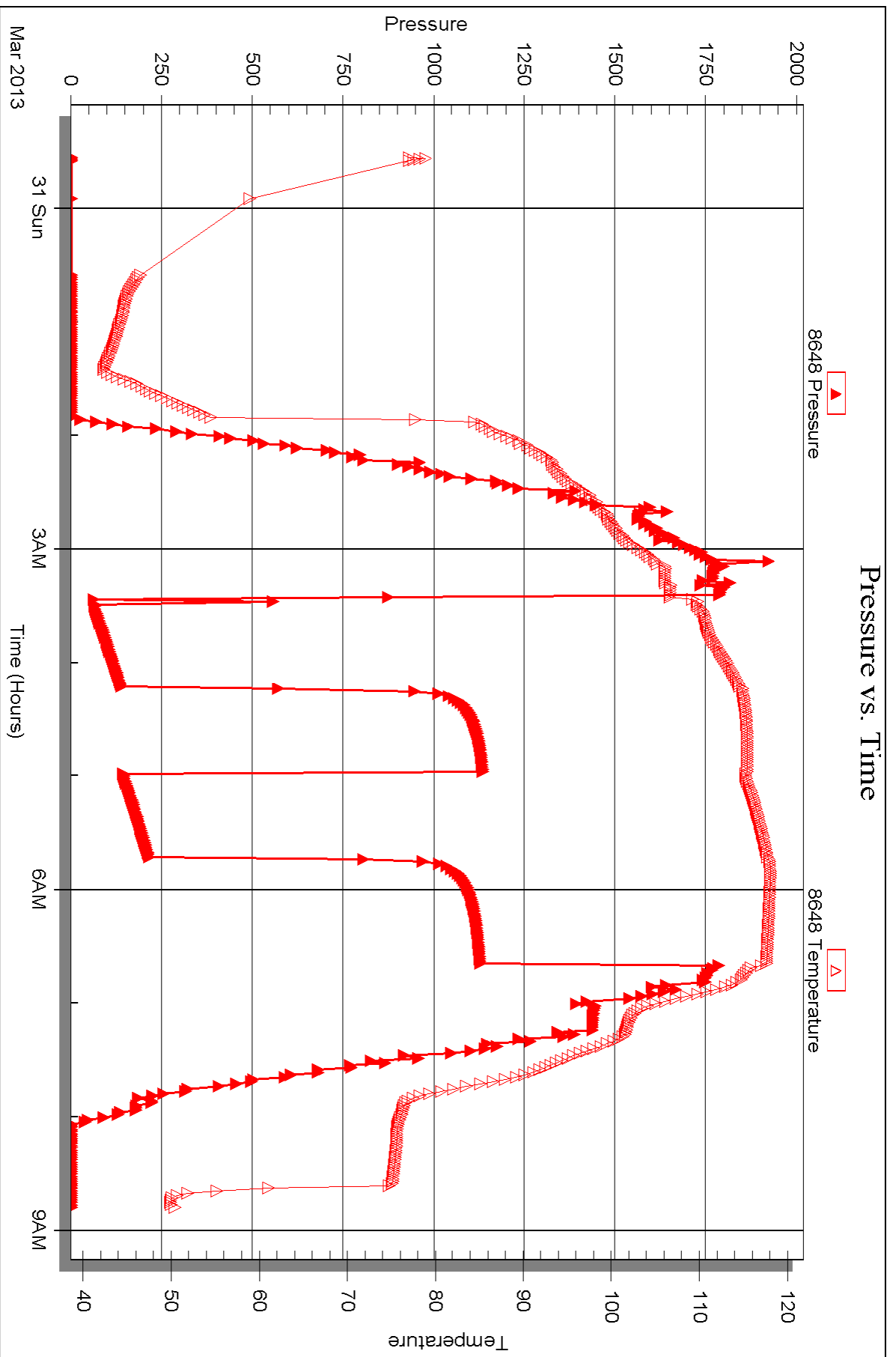
Serial #: 8648

Inside

H & C Oil Operating, Inc.

Minium#23-1

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 51220

Printed: 2013.04.04 @ 10:50:11



DRILL STEM TEST REPORT

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

PO Box 86
Plainville, KS 67663

ATTN: Marc Downing

Minium #23-1

23-8s-25w Graham, KS

Start Date: 2013.03.31 @ 15:25:00

End Date: 2013.03.31 @ 21:54:15

Job Ticket #: 51221 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.04.04 @ 10:49:27



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

H & C Oil Operating, Inc.

23-8s-25w Graham, KS

PO Box 86
Plainville, KS 67663

Minium #23-1

Job Ticket: 51221

DST#: 2

ATTN: Marc Downing

Test Start: 2013.03.31 @ 15:25:00

GENERAL INFORMATION:

Formation: **LKC "E"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 17:18:15
 Tester: Kevin Mack
 Time Test Ended: 21:54:15
 Unit No: 43
 Interval: **3720.00 ft (KB) To 3740.00 ft (KB) (TVD)**
 Reference Elevations: 2342.00 ft (KB)
 Total Depth: 3740.00 ft (KB) (TVD)
 2337.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Good
 KB to GR/CF: 5.00 ft

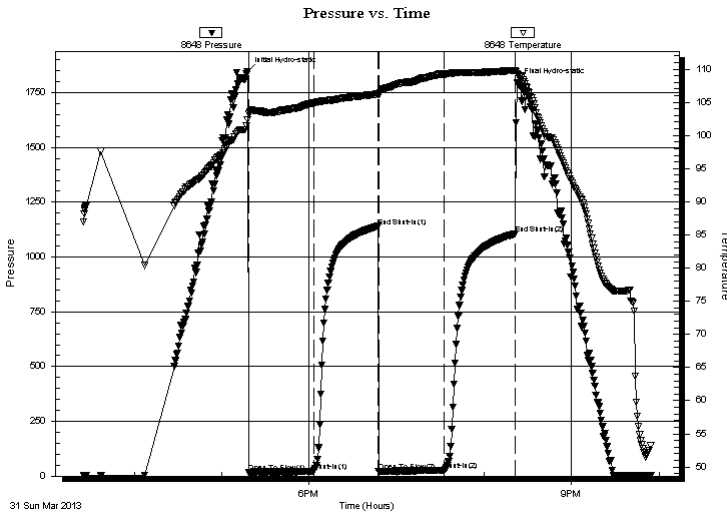
Serial #: 8648

Inside

Press @ Run Depth: 25.95 psig @ 3721.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.03.31 End Date: 2013.03.31 Last Calib.: 2013.03.31
 Start Time: 15:25:05 End Time: 21:54:14 Time On Btm: 2013.03.31 @ 17:17:30
 Time Off Btm: 2013.03.31 @ 20:22:45

TEST COMMENT: 45 - IF- Surface Blow built to 2"
 45 - IS- No Return
 45 - FF- Surface Blow started at 10 min. Built to 1"
 45 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1847.57	102.37	Initial Hydro-static
1	15.88	103.22	Open To Flow (1)
46	20.90	104.90	Shut-In(1)
90	1139.52	106.24	End Shut-In(1)
90	21.91	106.13	Open To Flow (2)
135	25.95	109.27	Shut-In(2)
184	1106.49	109.81	End Shut-In(2)
186	1793.93	109.26	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	Free Oil 100o	0.01
30.00	OCWM	0.42

Gas Rates

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



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DRILL STEM TEST REPORT

H & C Oil Operating, Inc.

23-8s-25w Graham, KS

PO Box 86
Plainville, KS 67663

Minium #23-1

Job Ticket: 51221

DST#: 2

ATTN: Marc Downing

Test Start: 2013.03.31 @ 15:25:00

GENERAL INFORMATION:

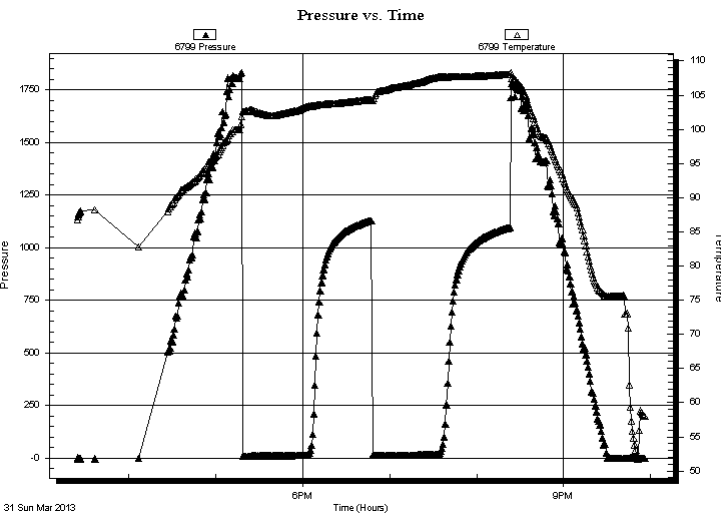
Formation: **LKC "E"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 17:18:15
 Tester: Kevin Mack
 Time Test Ended: 21:54:15
 Unit No: 43
Interval: 3720.00 ft (KB) To 3740.00 ft (KB) (TVD)
 Reference Elevations: 2342.00 ft (KB)
 Total Depth: 3740.00 ft (KB) (TVD)
 2337.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Good
 KB to GR/CF: 5.00 ft

Serial #: 6799

Inside

Press @ Run Depth: psig @ 3721.00 ft (KB)
 Capacity: 8000.00 psig
 Start Date: 2013.03.31
 End Date: 2013.03.31
 Last Calib.: 2013.03.31
 Start Time: 15:25:05
 End Time: 21:55:44
 Time On Btm:
 Time Off Btm:

TEST COMMENT: 45 - IF- Surface Blow built to 2"
 45 - IS- No Return
 45 - FF- Surface Blow started at 10 min. Built to 1"
 45 - FS- No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
1.00	Free Oil 100o	0.01
30.00	OCWM	0.42

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H & C Oil Operating, Inc.

23-8s-25w Graham, KS

PO Box 86
Plainville, KS 67663

Minium #23-1

Job Ticket: 51221

DST#: 2

ATTN: Marc Downing

Test Start: 2013.03.31 @ 15:25:00

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: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 45000.00 lb
			<u>Total Volume: 52.10 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 40000.00 lb
Depth to Top Packer:	3720.00 ft			Final 40000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	20.00 ft			
Tool Length:	41.00 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			3700.00	
Shut In Tool	5.00			3705.00	
Hydraulic tool	5.00			3710.00	
Packer	5.00			3715.00	21.00 Bottom Of Top Packer
Packer	5.00			3720.00	
Stubb	1.00			3721.00	
Recorder	0.00	6799	Inside	3721.00	
Recorder	0.00	8648	Inside	3721.00	
Perforations	16.00			3737.00	
Bullnose	3.00			3740.00	20.00 Bottom Packers & Anchor
Total Tool Length:	41.00				



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

H & C Oil Operating, Inc.

23-8s-25w Graham, KS

PO Box 86
Plainville, KS 67663

Minium #23-1

Job Ticket: 51221

DST#: 2

ATTN: Marc Downing

Test Start: 2013.03.31 @ 15:25:00

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:

13000 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.39 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
1.00	Free Oil 100o	0.014
30.00	OCWM	0.421

Total Length: 31.00 ft Total Volume: 0.435 bbl

Num Fluid Samples: 0

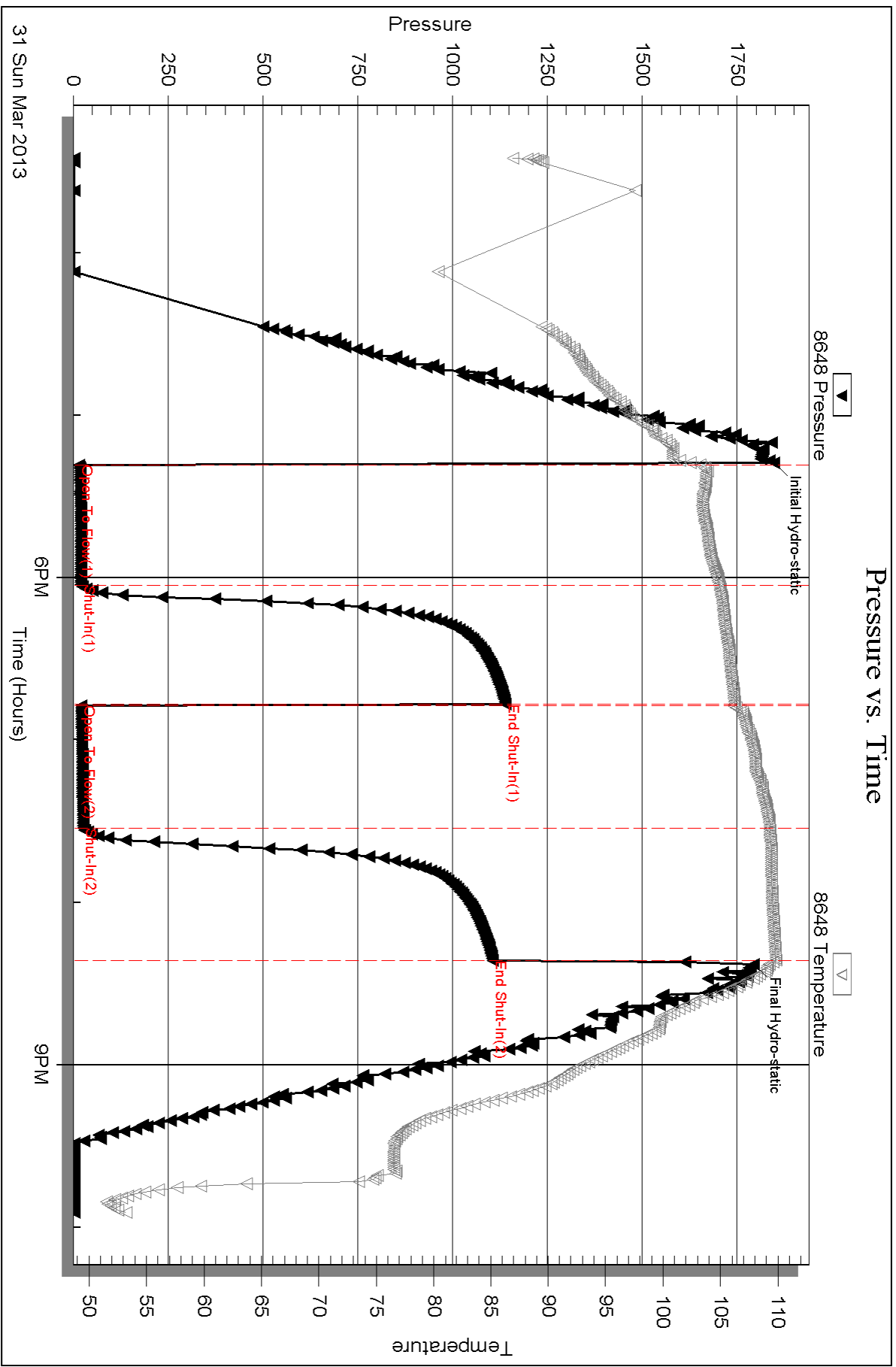
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .65 @ 65 deg = 13000ppm



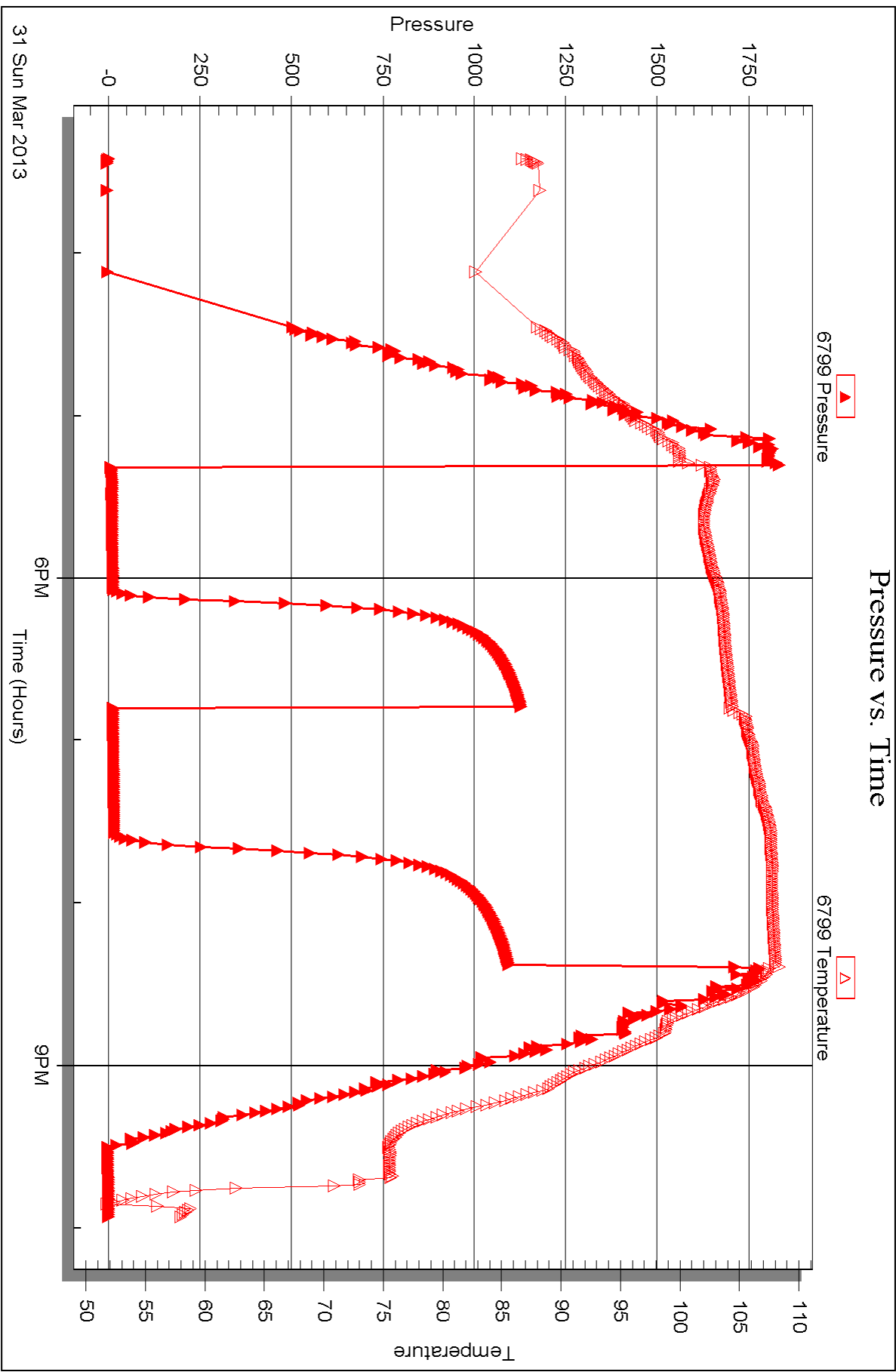
Serial #: 6799

Inside

H & C Oil Operating, Inc.

Minium#23-1

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 51221

Printed: 2013.04.04 @ 10:49:31



DRILL STEM TEST REPORT

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

PO Box 86
Plainville, KS 67663

ATTN: Marc Downing

Minium #23-1

23-8s-25w Graham, KS

Start Date: 2013.04.01 @ 11:23:00

End Date: 2013.04.01 @ 17:22:00

Job Ticket #: 51222 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.04.04 @ 10:48:46



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

H & C Oil Operating, Inc.

23-8s-25w Graham, KS

PO Box 86
Plainville, KS 67663

Minium #23-1

Job Ticket: 51222

DST#: 3

ATTN: Marc Downing

Test Start: 2013.04.01 @ 11:23:00

GENERAL INFORMATION:

Formation: **LKC "H-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:17:45

Time Test Ended: 17:22:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 43

Interval: 3770.00 ft (KB) To 3862.00 ft (KB) (TVD)

Reference Elevations: 2342.00 ft (KB)

Total Depth: 3862.00 ft (KB) (TVD)

2337.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 6799

Inside

Press @ Run Depth: 22.51 psig @ 3771.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.04.01

End Date:

2013.04.01

Last Calib.: 2013.04.01

Start Time: 11:23:05

End Time:

17:21:59

Time On Btm: 2013.04.01 @ 13:17:00

Time Off Btm: 2013.04.01 @ 15:26:45

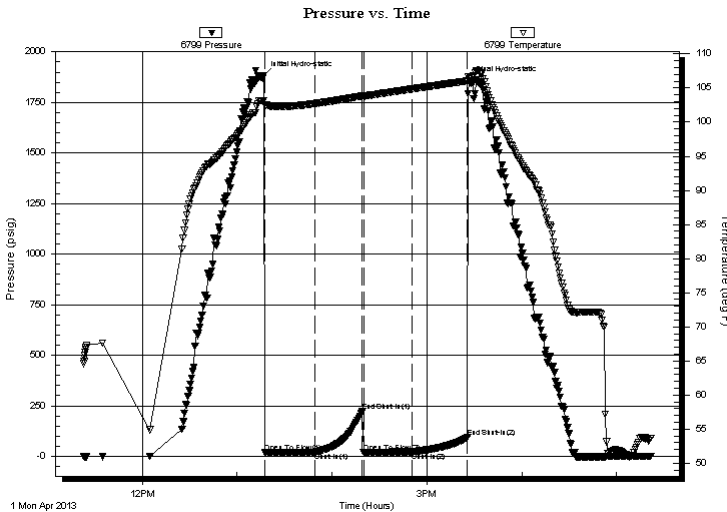
TEST COMMENT: 30 - IF- 1/2" Blow Built to 1"

30 - IS- No Return

30 - FF- No Blow

30 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1882.62	103.13	Initial Hydro-static
1	19.79	102.59	Open To Flow (1)
33	21.76	102.71	Shut-In(1)
63	222.86	103.85	End Shut-In(1)
63	21.50	103.81	Open To Flow (2)
94	22.51	104.87	Shut-In(2)
129	93.41	106.03	End Shut-In(2)
130	1855.39	106.42	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud 100M	0.14

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H & C Oil Operating, Inc.

23-8s-25w Graham, KS

PO Box 86
Plainville, KS 67663

Minium #23-1

Job Ticket: 51222

DST#: 3

ATTN: Marc Downing

Test Start: 2013.04.01 @ 11:23:00

Tool Information

Drill Pipe:	Length: 3772.00 ft	Diameter: 3.80 inches	Volume: 52.91 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: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 45000.00 lb
			<u>Total Volume: 52.91 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial 42000.00 lb
Depth to Top Packer:	3770.00 ft			Final 42000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	92.00 ft			
Tool Length:	113.00 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			3750.00	
Shut In Tool	5.00			3755.00	
Hydraulic tool	5.00			3760.00	
Packer	5.00			3765.00	21.00 Bottom Of Top Packer
Packer	5.00			3770.00	
Stubb	1.00			3771.00	
Recorder	0.00	6799	Inside	3771.00	
Recorder	0.00	8648	Inside	3771.00	
Perforations	22.00			3793.00	
Change Over Sub	1.00			3794.00	
Drill Pipe	62.00			3856.00	
Change Over Sub	1.00			3857.00	
Bullnose	5.00			3862.00	92.00 Bottom Packers & Anchor

Total Tool Length: 113.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

H & C Oil Operating, Inc.

23-8s-25w Graham, KS

PO Box 86
Plainville, KS 67663

Minium #23-1

Job Ticket: 51222

DST#: 3

ATTN: Marc Downing

Test Start: 2013.04.01 @ 11:23:00

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.39 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Mud 100M	0.140

Total Length: 10.00 ft Total Volume: 0.140 bbl

Num Fluid Samples: 0

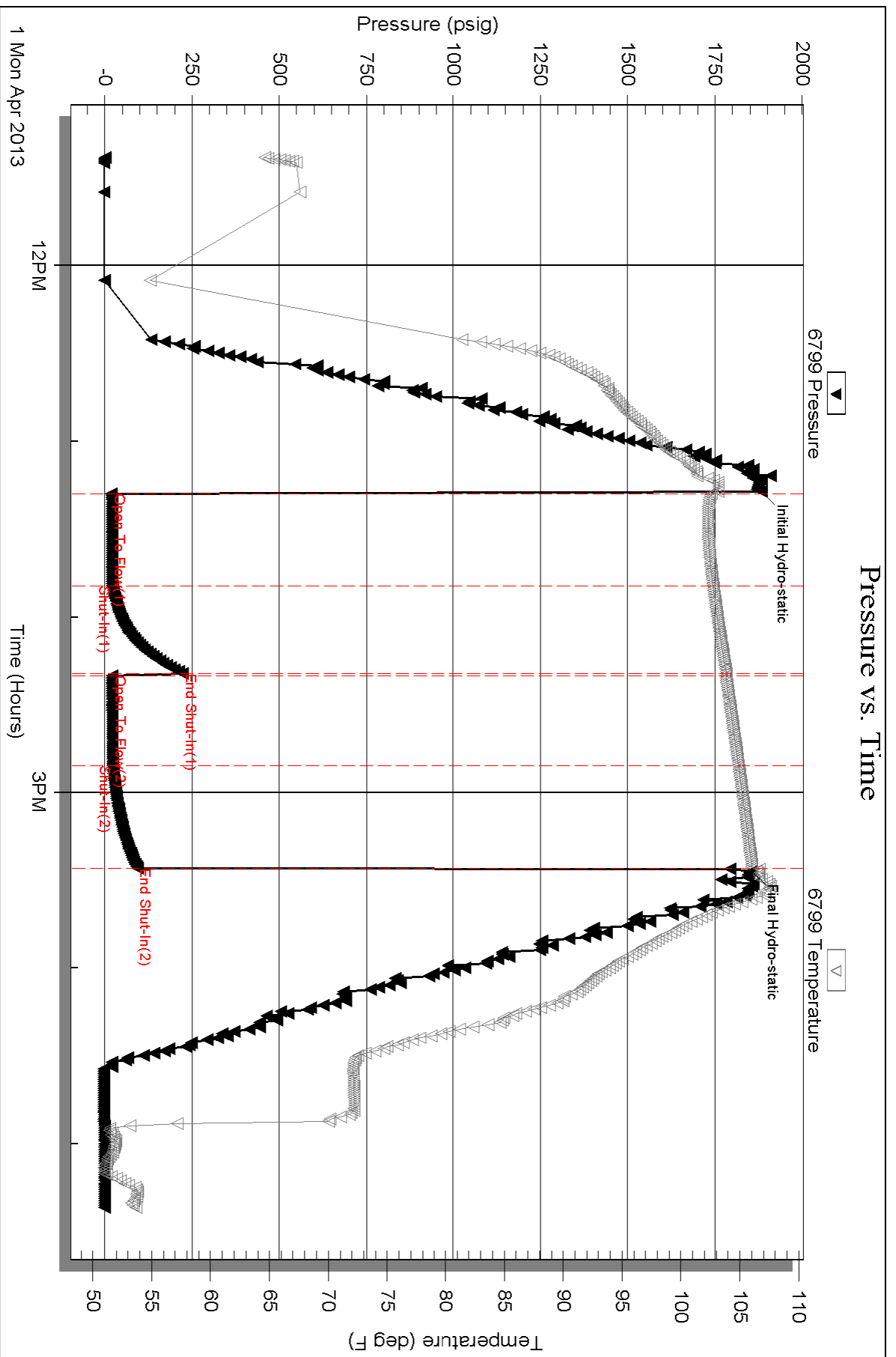
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



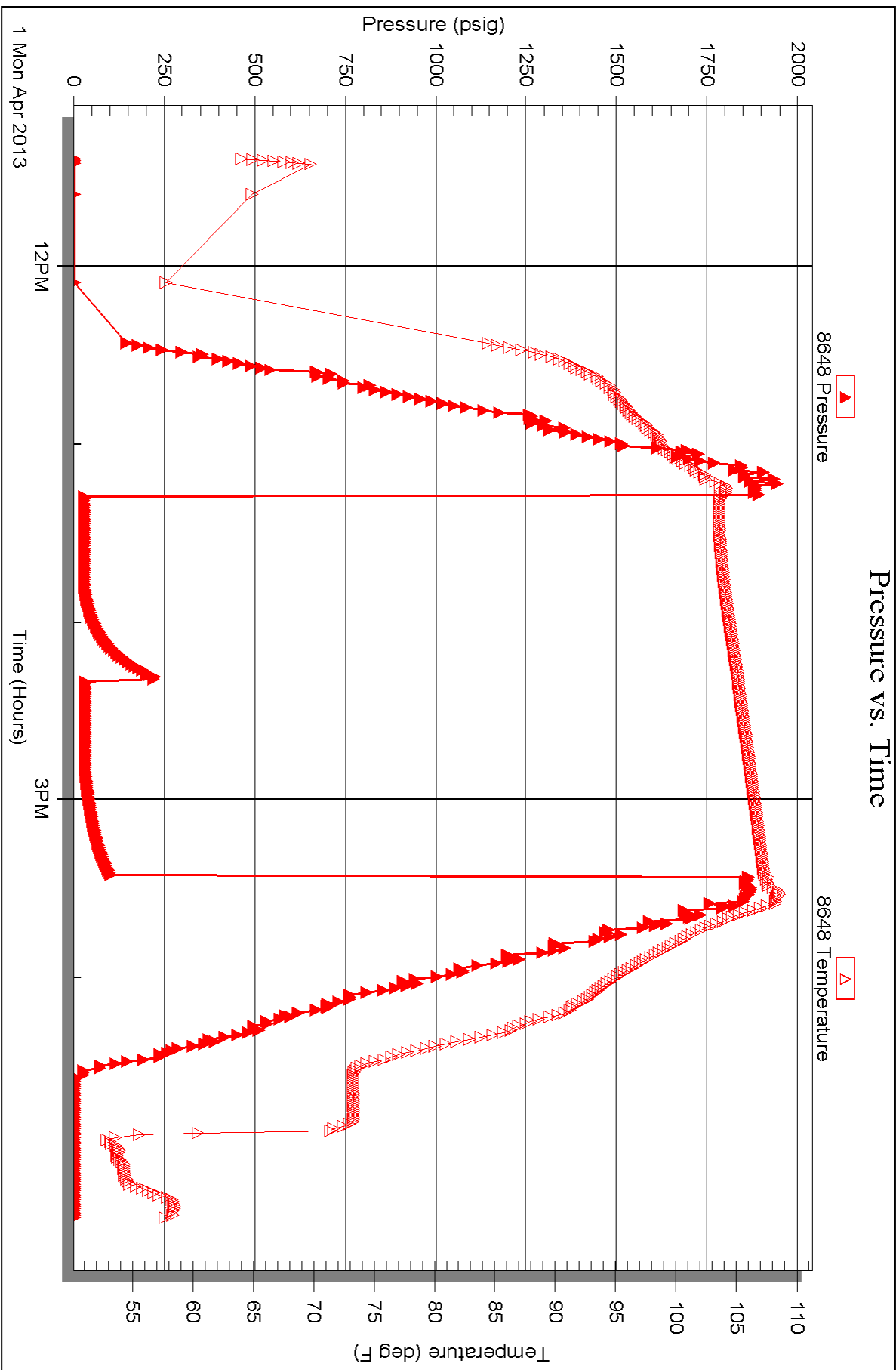
Serial #: 8648

Inside

H & C Oil Operating, Inc.

Minium#23-1

DST Test Number: 3





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 51220

Well Name & No. Minium # 23-1 Test No. 1 Date 3-30-13
 Company H&L Oil Operating, Inc Elevation 2342 KB 2337 GL
 Address PO Box 86 Plainville, KS 67663
 Co. Rep / Geo. Marc Downing Rig American Eagle #3
 Location: Sec. 23 Twp. 8S Rge. 25W Co. Graham State KS

Interval Tested 3681-3720 Zone Tested LKC "C-D"
 Anchor Length 39' Drill Pipe Run 3680' Mud Wt. 9.1
 Top Packer Depth 3677 Drill Collars Run 0 Vis 51
 Bottom Packer Depth 3681 Wt. Pipe Run 0 WL 6.8
 Total Depth 3720 Chlorides 900 ppm System LCM Nil

Blow Description IF - Bled off initial Surge. Surface Blow built to BoB in 35 min.
ISI - NO Return
FF - BoB in 32 min.
FSI - NO Return

Rec	Feet of	%gas	%oil	%water	%mud
164	MW		65	35	
243 243	MW		95	5	
5	Heavy mud			100	
0	Show of oil spots interval		SPOTS		

Rec Total 412 BHT 116 Gravity — API RW 0.184 @ 67 °F Chlorides 40,000 ppm
 (A) Initial Hydrostatic 1776 Test 1150 T-On Location 10:00 PM
 (B) First Initial Flow 53 Jars T-Started 11:33 PM
 (C) First Final Flow 129 Safety Joint T-Open 3:30 AM
 (D) Initial Shut-In 1123 Circ Sub N/L T-Pulled 6:30 AM
 (E) Second Initial Flow 132 Hourly Standby T-Out 8:50 AM
 (F) Second Final Flow 203 Mileage 120 RT 186 Comments Running
 (G) Final Shut-In 1115 Sampler monster pump on
 (H) Final Hydrostatic 1763 Straddle well too. Chased for
 Ruined Slat Packer approx 20' to bottom
 Ruined Packer
 Extra Copies

Initial Open 45
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 45
 Sub Total 0
 Total 1336
 MP/DST Disc't _____
 Sub Total 1336

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. 51221

Well Name & No. Minium # 23-1 Test No. 2 Date 3-31-13
 Company H&C Oil Operating, Inc Elevation 2342 KB 2337 GL
 Address PO Box 86 Plainville, KS 67663
 Co. Rep / Geo. Marc Downing Rig American Eagle #3
 Location: Sec. 23 Twp. 8S Rge. 25W Co. Graham State KS

Interval Tested 3720-3740 Zone Tested LKC "E"
 Anchor Length 20 Drill Pipe Run 3714 Mud Wt. 9.2
 Top Packer Depth 3716 Drill Collars Run 0 Vis 58
 Bottom Packer Depth 3720 Wt. Pipe Run 0 WL 7.4
 Total Depth 3740 Chlorides 1,800 ppm System LCM Nil

Blow Description IF - Surface Blow built to 2"
ISI - NO Return
FF - Surface Blow started cut 10 min. Built to 1"
FSI - NO Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>OCWM</u>	<u>1</u>	<u>39</u>	<u>60</u>	
<u>1</u>	<u>Free Oil</u>	<u>100</u>			

Rec Total 31' BHT 110 Gravity --- API RW .65 @ 65° F Chlorides 13,000 ppm
 (A) Initial Hydrostatic 1847 Test 1150 T-On Location 3:20 PM
 (B) First Initial Flow 15 Jars _____ T-Started 3:25 PM
 (C) First Final Flow 20 Safety Joint _____ T-Open 5:20 PM
 (D) Initial Shut-In 1139 Circ Sub NIC T-Pulled 8:20 PM
 (E) Second Initial Flow 21 Hourly Standby _____ T-Out 9:55 PM
 (F) Second Final Flow 25 Mileage 120 RT 186 Comments Monster Pump
 (G) Final Shut-In 1106 Sampler _____ On location
 (H) Final Hydrostatic 1793 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1336
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1336

Initial Open 45
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 45

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 51222

Well Name & No. Minium # 23-1 Test No. 3 Date 4-1-13
 Company HOC Oil Operating, Inc. Elevation 2342 KB 2337 GL
 Address PO Box 86 Plainville, KS 67663
 Co. Rep / Geo. Marc Downing Rig American Eagle #3
 Location: Sec. 23 Twp. 8S Rge. 25W Co. Graham State KS

Interval Tested 3770-3862 Zone Tested LKC "H-K"
 Anchor Length 92' Drill Pipe Run 3772 Mud Wt. 9.4
 Top Packer Depth 3766 Drill Collars Run Ø Vis 56
 Bottom Packer Depth 3770 Wt. Pipe Run Ø WL 7.4
 Total Depth 3862 Chlorides 1,500 ppm System LCM Nil

Blow Description DF - 1/2" Blow built to 1"
ISI - No Return
FF - No Blow
FSL - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>OSM</u>	<u>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 Total 10 BHT 1066 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>1882</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>10:40 AM</u>
(B) First Initial Flow <u>19</u>	<input type="checkbox"/> Jars	T-Started <u>11:23 AM</u>
(C) First Final Flow <u>21</u>	<input type="checkbox"/> Safety Joint	T-Open <u>1:20 PM</u>
(D) Initial Shut-In <u>222</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIC</u>	T-Pulled <u>3:20 PM</u>
(E) Second Initial Flow <u>21</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>5:25 PM</u>
(F) Second Final Flow <u>22</u>	<input checked="" type="checkbox"/> Mileage <u>120 RT</u> 186	Comments <u>Monster Pump</u>
(G) Final Shut-In <u>9.3</u>	<input type="checkbox"/> Sampler	<u>On location.</u>
(H) Final Hydrostatic <u>1855</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer

Initial Open 30 Shale Packer
 Initial Shut-In 30 Ruined Packer
 Final Flow 30 Extra Packer
 Final Shut-In 30 Extra Recorder
 Extra Recorder
 Day Standby
 Accessibility

Sub Total 1336 MP/DST Disc't

Approved By _____ Our Representative [Signature]

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