



## DRILL STEM TEST REPORT

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

PO Box 86  
Plainville KS 67663

ATTN: Marc Downing

### **Odle Olson #19-1**

### **19-6s-24w Graham,KS**

Start Date: 2014.05.11 @ 10:10:00

End Date: 2014.05.11 @ 15:50:45

Job Ticket #: 55224                      DST #: 1

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

Printed: 2014.05.14 @ 17:12:23



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

H & C Oil Operating Inc.

**19-6s-24w Graham,KS**

PO Box 86  
Plainville KS 67663

**Odle Olson #19-1**

Job Ticket: 55224

**DST#: 1**

ATTN: Marc Downing

Test Start: 2014.05.11 @ 10:10:00

## GENERAL INFORMATION:

Formation: **LKC - E & F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:56:30

Time Test Ended: 15:50:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: #54

**Interval: 3780.00 ft (KB) To 3801.00 ft (KB) (TVD)**

Reference Elevations: 2530.00 ft (KB)

Total Depth: 3801.00 ft (KB) (TVD)

2523.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

**Serial #: 6753**

**Inside**

Press@RunDepth: 49.57 psig @ 3781.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.05.11

End Date:

2014.05.11

Last Calib.:

2014.05.11

Start Time: 10:10:05

End Time:

15:50:44

Time On Btm:

2014.05.11 @ 11:55:45

Time Off Btm:

2014.05.11 @ 13:58:00

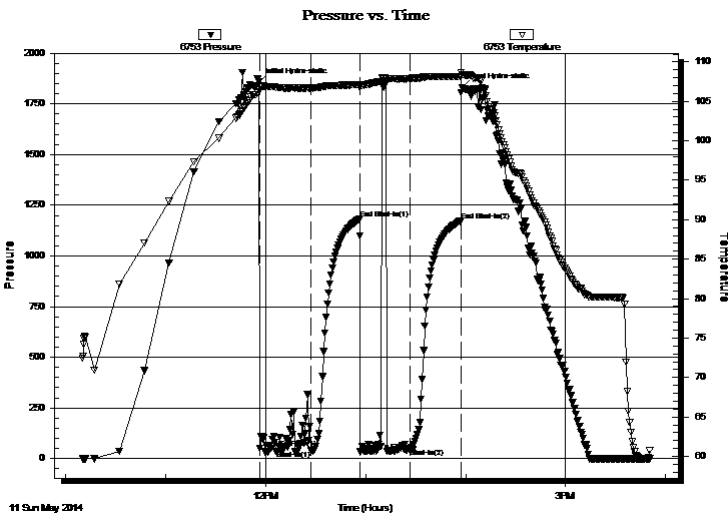
TEST COMMENT: 30 - IF - Surface blow built to 1"

30 - ISI - No Return

30 - FF - No Surface blow

30 - FSI - No Return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1857.25	106.45	Initial Hydro-static
1	49.88	106.42	Open To Flow (1)
32	38.98	106.67	Shut-In(1)
61	1181.46	107.13	End Shut-In(1)
61	35.55	106.76	Open To Flow (2)
91	49.57	107.92	Shut-In(2)
122	1172.30	108.17	End Shut-In(2)
123	1832.29	108.42	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
45.00	Mud - 100M	0.35

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

H & C Oil Operating Inc.

**19-6s-24w Graham,KS**

PO Box 86  
Plainville KS 67663

**Odle Olson #19-1**

Job Ticket: 55224

**DST#: 1**

ATTN: Marc Downing

Test Start: 2014.05.11 @ 10:10:00

## Tool Information

Drill Pipe:	Length: 3753.73 ft	Diameter: 3.80 inches	Volume: 52.65 bbl	Tool Weight:	2500.00 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: 30.39 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 52.80 bbl</u>	Tool Chased	10.00 ft
Drill Pipe Above KB:	23.12 ft			String Weight: Initial	48000.00 lb
Depth to Top Packer:	3780.00 ft			Final	49000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	21.00 ft				
Tool Length:	40.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments: Flushed tool 10 mins. into 2nd open

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3766.00	
Hydraulic tool	5.00			3771.00	
Packer	4.00			3775.00	19.00 Bottom Of Top Packer
Packer	5.00			3780.00	
Stubb	1.00			3781.00	
Recorder	0.00	8368	Inside	3781.00	
Recorder	0.00	6753	Inside	3781.00	
Perforations	16.00			3797.00	
Bullnose	4.00			3801.00	21.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>40.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

H & C Oil Operating Inc.

**19-6s-24w Graham,KS**

PO Box 86  
Plainville KS 67663

**Odle Olson #19-1**

Job Ticket: 55224

**DST#: 1**

ATTN: Marc Downing

Test Start: 2014.05.11 @ 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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1100.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
45.00	Mud - 100M	0.354

Total Length: 45.00 ft      Total Volume: 0.354 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

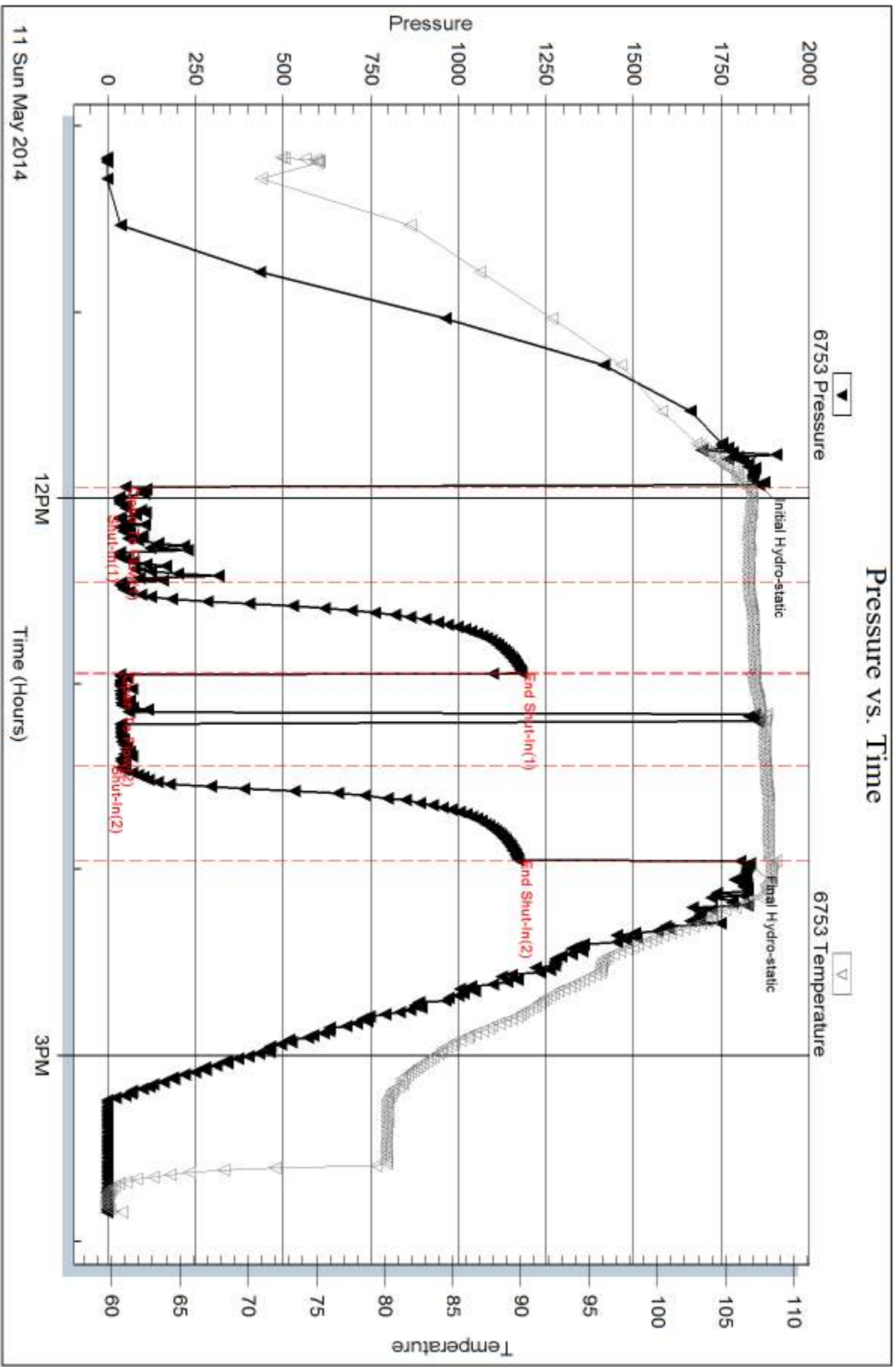
Serial #: 6753

Inside

H & C Oil Operating Inc.

Odle Olson #19-1

DST Test Number: 1



Tribble Testing, Inc

Ref. No: 55224

Printed: 2014.05.14 @ 17:12:24

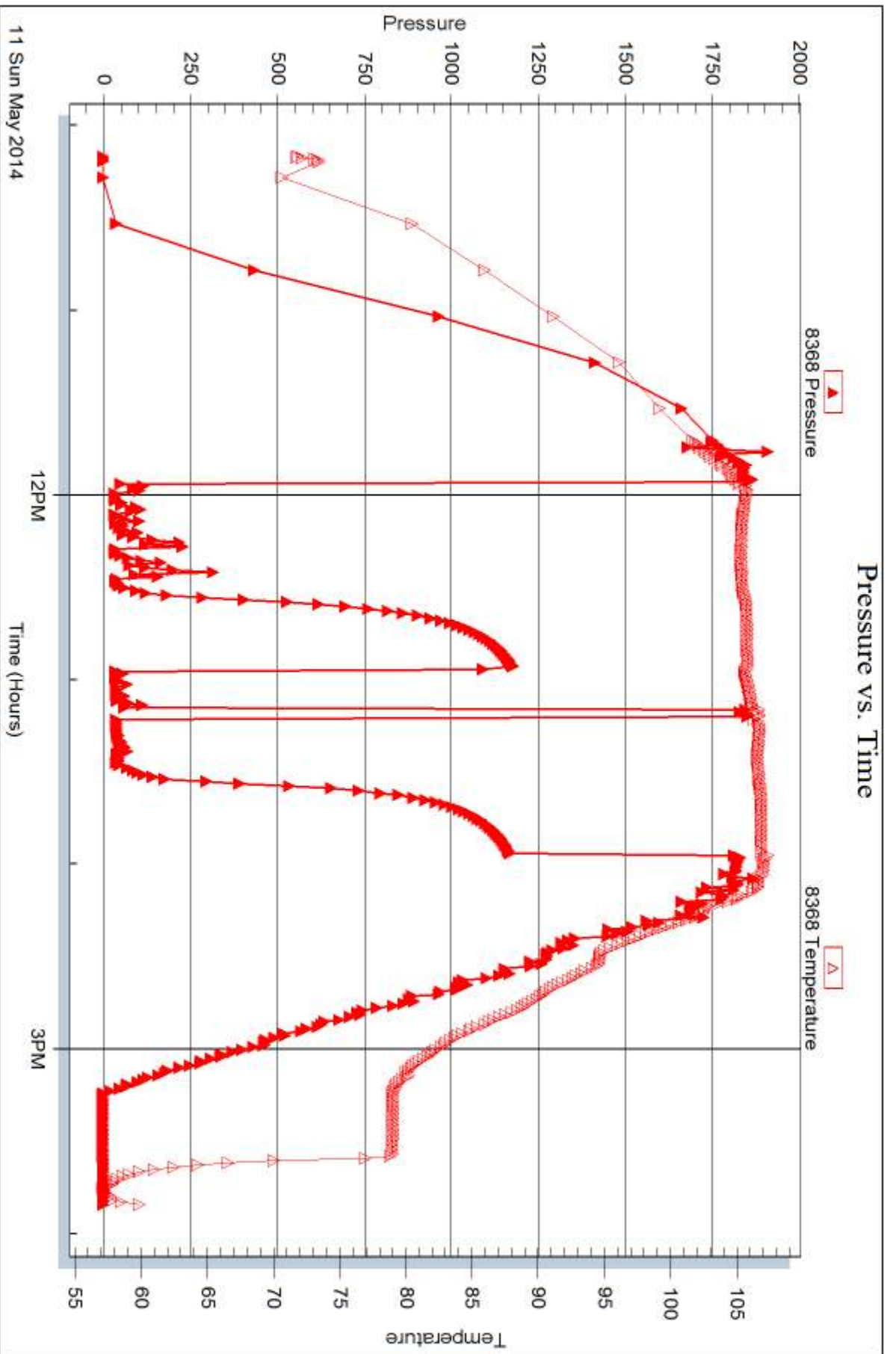
Serial #: 8368

Inside

H & C Oil Operating Inc.

Odle Olson #19-1

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 55224

Printed: 2014.05.14 @ 17:12:24



## DRILL STEM TEST REPORT

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

PO Box 86  
Plainville KS 67663

ATTN: Marc Downing

### **Odle Olson #19-1**

### **19-6s-24w Graham,KS**

Start Date: 2014.05.12 @ 01:46:00

End Date: 2014.05.12 @ 08:33:15

Job Ticket #: 55225                      DST #: 2

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

Printed: 2014.05.14 @ 17:11:28





**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

H & C Oil Operating Inc.

**19-6s-24w Graham,KS**

PO Box 86  
Plainville KS 67663

**Odle Olson #19-1**

Job Ticket: 55225

**DST#: 2**

ATTN: Marc Downing

Test Start: 2014.05.12 @ 01:46:00

## GENERAL INFORMATION:

Formation: **LKC H-J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:32:45

Time Test Ended: 08:33:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: #54

**Interval: 3820.00 ft (KB) To 3880.00 ft (KB) (TVD)**

Reference Elevations: 2530.00 ft (KB)

Total Depth: 3880.00 ft (KB) (TVD)

2523.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

**Serial #: 6753**

**Inside**

Press@RunDepth: 279.87 psig @ 3821.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.05.12

End Date: 2014.05.12

Last Calib.: 2014.05.12

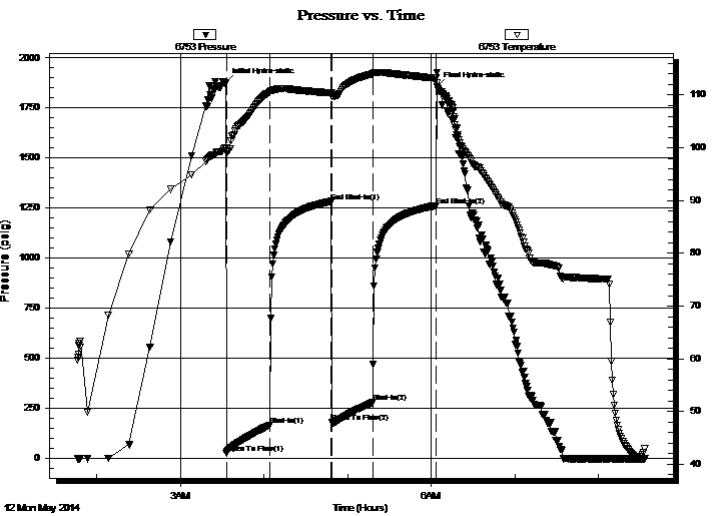
Start Time: 01:46:05

End Time: 08:33:14

Time On Btm: 2014.05.12 @ 03:32:30

Time Off Btm: 2014.05.12 @ 06:04:15

**TEST COMMENT:** 30 - IF - Surface blow built to bottom of bucket in 10 mins.  
45 - ISI - No Return  
30 - FF - Surface blow built to bottom of bucket in 13 mins.  
45 - FSI - No Return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1874.84	99.96	Initial Hydro-static
1	26.76	99.13	Open To Flow (1)
32	167.86	110.58	Shut-In(1)
76	1283.99	110.42	End Shut-In(1)
76	182.47	109.67	Open To Flow (2)
106	279.87	114.01	Shut-In(2)
151	1262.75	113.19	End Shut-In(2)
152	1855.19	111.65	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
124.00	OSMW - 30M - 70W - oil spots	1.46
372.00	OSWM - 50M - 50W - oil spots	5.22
72.00	OCWM - 50M - 40W - 10o	1.01
10.00	Free Oil	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.

**19-6s-24w Graham,KS**

PO Box 86  
Plainville KS 67663

**Odle Olson #19-1**

Job Ticket: 55225

**DST#: 2**

ATTN: Marc Downing

Test Start: 2014.05.12 @ 01:46:00

## Tool Information

Drill Pipe:	Length: 3786.32 ft	Diameter: 3.80 inches	Volume: 53.11 bbl	Tool Weight: 2500.00 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: 30.39 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 64000.00 lb
			<u>Total Volume: 53.26 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.71 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3820.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	60.00 ft			
Tool Length:	79.00 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			3806.00	
Hydraulic tool	5.00			3811.00	
Packer	4.00			3815.00	19.00 Bottom Of Top Packer
Packer	5.00			3820.00	
Stubb	1.00			3821.00	
Recorder	0.00	8368	Inside	3821.00	
Recorder	0.00	6753	Inside	3821.00	
Perforations	22.00			3843.00	
Change Over Sub	1.00			3844.00	
Drill Pipe	31.00			3875.00	
Change Over Sub	1.00			3876.00	
Bullnose	4.00			3880.00	60.00 Bottom Packers & Anchor

**Total Tool Length: 79.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

H & C Oil Operating Inc.

**19-6s-24w Graham,KS**

PO Box 86  
Plainville KS 67663

**Odle Olson #19-1**

Job Ticket: 55225

**DST#: 2**

ATTN: Marc Downing

Test Start: 2014.05.12 @ 01:46:00

## 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: 6.79 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1100.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
124.00	OSMW - 30M - 70W - oil spots	1.463
372.00	OSWM - 50M - 50W - oil spots	5.218
72.00	OCWM - 50M - 40W - 10o	1.010
10.00	Free Oil	0.140

Total Length: 578.00 ft

Total Volume: 7.831 bbl

Num Fluid Samples: 0

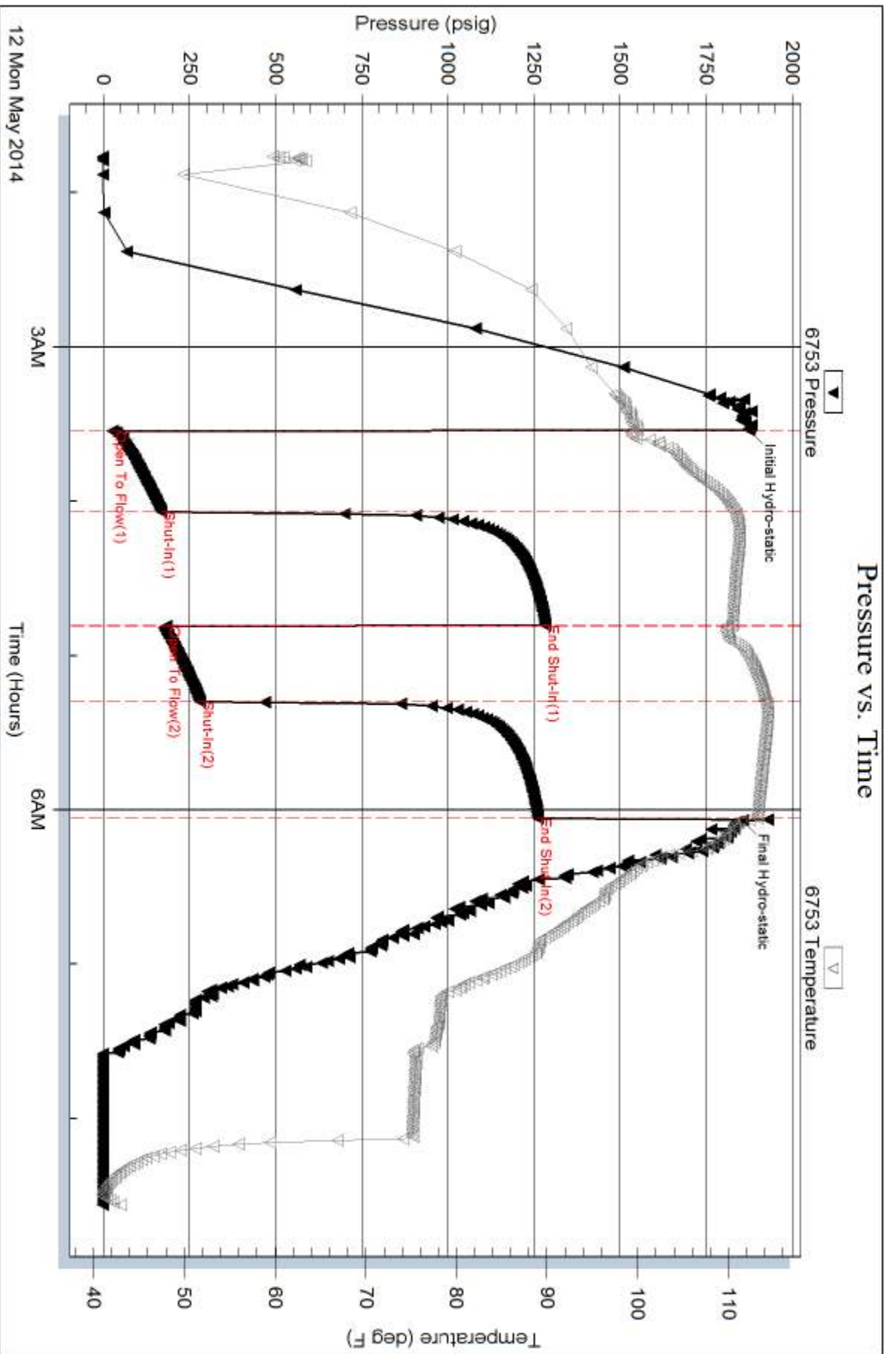
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



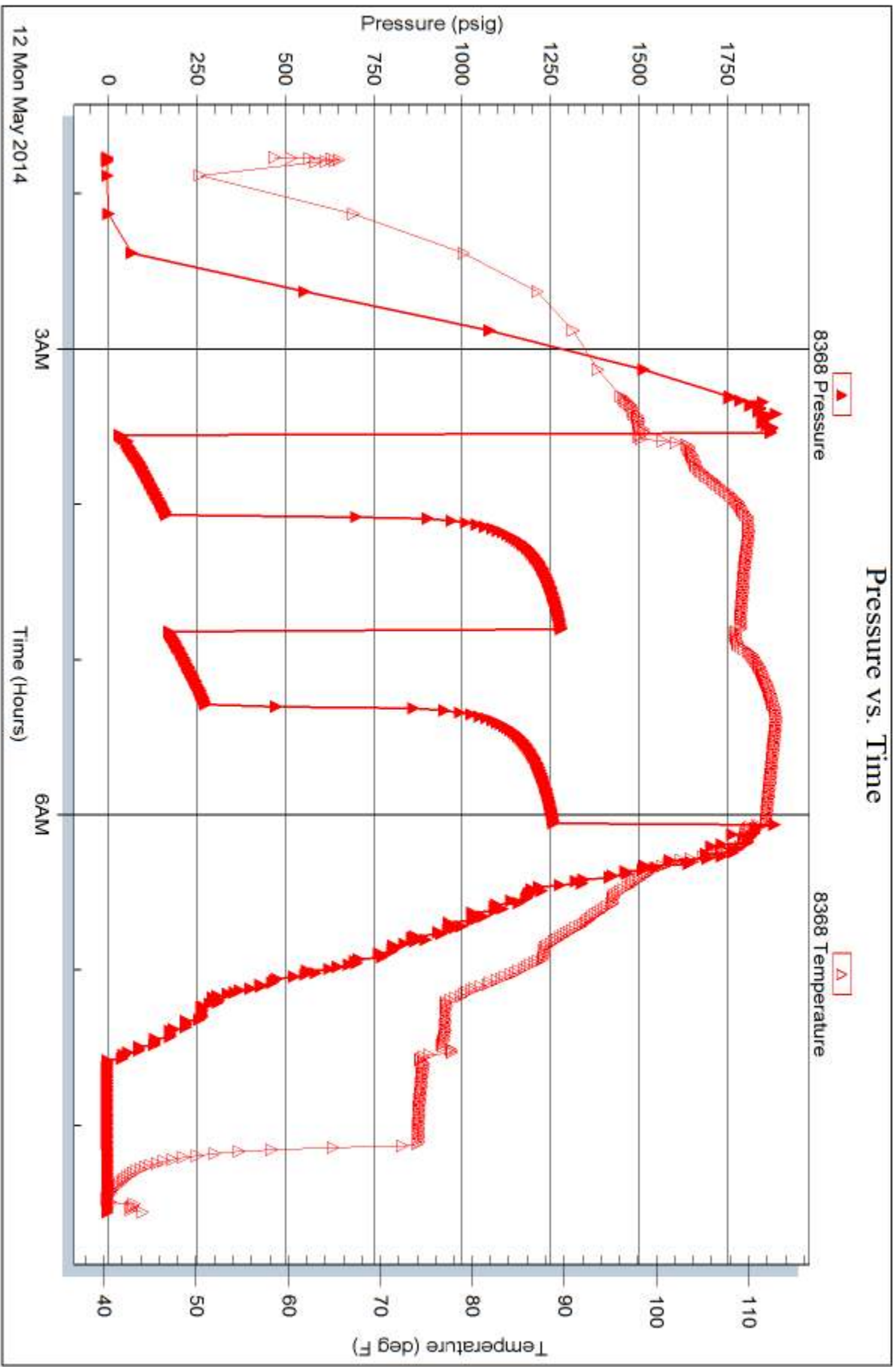
Serial #: 8368

Inside

H & C Oil Operating Inc.

Odle Olson #19-1

DST Test Number: 2



Tribble Testing, Inc

Ref. No: 55225

Printed: 2014.05.14 @ 17:11:29



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 55224

Well Name & No. Odle Olson #19-1 Test No. 1 Date 5-11-14  
 Company H+C Oil Operating Inc. Elevation 2530 KB 2523 GL  
 Address PO Box 86 Plainville KS 67663  
 Co. Rep / Geo. Marc Downing Rig American Eagle #2  
 Location: Sec. 19 Twp. 6S Rge. 24W Co. Graham State KS

Interval Tested 3780 - 3801 Zone Tested LKC-E4F  
 Anchor Length 21' Drill Pipe Run 3753.73' Mud Wt. 9.2  
 Top Packer Depth 3775 Drill Collars Run 30.39' Vis 53  
 Bottom Packer Depth 3780 Wt. Pipe Run 0 WL 6.8  
 Total Depth 3801 Chlorides 1100 ppm System LCM 3#

Blow Description IF - Surface blow built to 1"  
ISI - No Return  
FF - No Surface blow  
FST - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>45'</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	Feet of	%gas	%oil	%water	%mud

Rec Total 45' BHT 108°F Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1857  Test 1150 T-On Location 9:30am  
 (B) First Initial Flow 49  Jars \_\_\_\_\_ T-Started 10:10am  
 (C) First Final Flow 38  Safety Joint \_\_\_\_\_ T-Open 11:56am  
 (D) Initial Shut-In 1181  Circ Sub N/C T-Pulled 1:56pm  
 (E) Second Initial Flow 35  Hourly Standby \_\_\_\_\_ T-Out 3:51pm  
 (F) Second Final Flow 49  Mileage 124 R/T 192.20 Comments Flushed tool 10mins  
 (G) Final Shut-In 1172  Sampler \_\_\_\_\_ into 2nd Open, and  
 (H) Final Hydrostatic 1832  Straddle \_\_\_\_\_ chased tool 10ft to bottom.  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_  
 Initial Open 30  Extra Packer \_\_\_\_\_ Sub Total 0  
 Initial Shut-In 30  Extra Recorder \_\_\_\_\_ Total 1342.20  
 Final Flow 30  Day Standby \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 30  Accessibility \_\_\_\_\_  
 Sub Total 1342.20

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. 55225

Well Name & No. Odle Olson #19-1 Test No. 2 Date 5-12-14  
 Company H+C Oil Operating Inc. Elevation 2530 KB 2523 GL  
 Address PO Box 86 Plainville KS 67663  
 Co. Rep / Geo. Marc Downing Rig American Eagle #2  
 Location: Sec. 19 Twp. 6S Rge. 24 W Co. Graham State KS

Interval Tested 3820-3880 Zone Tested LKC-H, I, J  
 Anchor Length 60' Drill Pipe Run 3786.32' Mud Wt. 9.2  
 Top Packer Depth 3815 Drill Collars Run 30.39' Vis 53  
 Bottom Packer Depth 3820 Wt. Pipe Run 0 WL 6.8  
 Total Depth 3880 Chlorides 1100 ppm System LCM 3#

Blow Description IF - Surface blow built to bottom of bucket in 10 mins.  
ISI - No return  
FF - Surface blow built to bottom of bucket in 13 mins.  
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<del>72'</del>	OCWM	10	40	50	
372'	OSWM	Spots	50	50	
124'	OSMW	Spots	70	30	
10'	Free Oil	100			

Rec Total 578' BHT 113°F Gravity \_\_\_\_\_ API RW 174 @ 42 °F Chlorides 75,000 ppm

(A) Initial Hydrostatic 1874  Test 1150 T-On Location 11:5am  
 (B) First Initial Flow 26  Jars \_\_\_\_\_ T-Started 1:46am  
 (C) First Final Flow 167  Safety Joint \_\_\_\_\_ T-Open 3:33am  
 (D) Initial Shut-In 1283  Circ Sub N/C T-Pulled 6:03am  
 (E) Second Initial Flow 182  Hourly Standby \_\_\_\_\_ T-Out 8:33am  
 (F) Second Final Flow 279  Mileage 124 R/T 384.40 Comments picked up tool 5-12-14  
 (G) Final Shut-In 1262  Sampler \_\_\_\_\_ on location 10:15pm waited on  
 (H) Final Hydrostatic 1855  Straddle \_\_\_\_\_ loggers for 30mins left at 11:3  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_  
 Initial Open 30  Extra Packer \_\_\_\_\_ Sub Total 0  
 Initial Shut-In 45  Extra Recorder \_\_\_\_\_ Total 1534.40  
 Final Flow 30  Day Standby \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 45  Accessibility \_\_\_\_\_  
 Sub Total 1534.40

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.