



DRILL STEM TEST REPORT

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

PO Box 86
Plainville KS 67663-0086

ATTN: Charles Ramsay

Keith-Ficken #17-2

17-9s-24w Graham,KS

Start Date: 2013.05.01 @ 12:55:19

End Date: 2013.05.01 @ 20:27:28

Job Ticket #: 52573 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.05.10 @ 09:42:56



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

H&C Oil Operating Inc
PO Box 86
Plainville KS 67663-0086
ATTN: Charles Ramsay

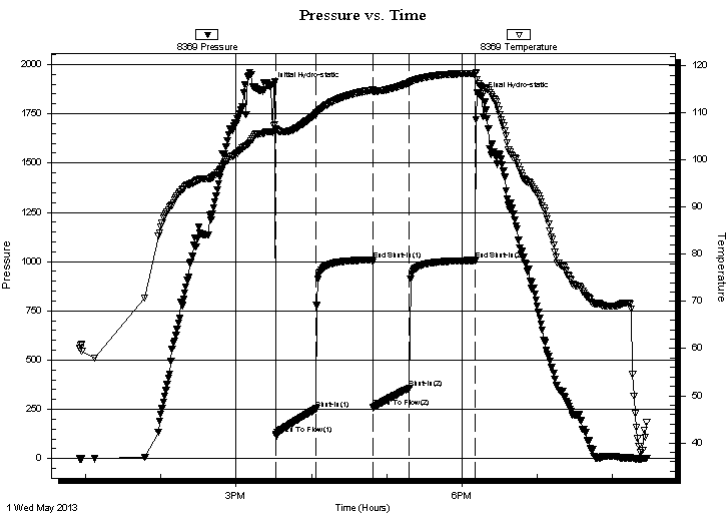
17-9s-24w Graham,KS
Keith-Ficken #17-2
Job Ticket: 52573 **DST#: 1**
Test Start: 2013.05.01 @ 12:55:19

GENERAL INFORMATION:

Formation: **LKC C-D**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 15:31:29
Time Test Ended: 20:27:28
Interval: **3858.00 ft (KB) To 3896.00 ft (KB) (TVD)**
Total Depth: 3896.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Reference Elevations: 2507.00 ft (KB)
2502.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8369 Inside
Press @ Run Depth: 357.52 psig @ 3869.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.05.01 End Date: 2013.05.01 Last Calib.: 2013.05.01
Start Time: 12:55:19 End Time: 20:27:28 Time On Btm: 2013.05.01 @ 15:27:44
Time Off Btm: 2013.05.01 @ 18:14:58

TEST COMMENT: 30-IFP-strg bl in 10 min slid tool approx 10' to bottom
45-ISIP-no bl bk
30-FFP-w k to a fr bl 1/4" to 3 1/2" bl
45FSIP-no bl bk



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1888.41	106.04	Initial Hydro-static
4	122.46	106.63	Open To Flow (1)
36	252.95	109.77	Shut-In(1)
81	1009.17	114.83	End Shut-In(1)
82	259.33	114.60	Open To Flow (2)
111	357.52	116.33	Shut-In(2)
163	1006.38	118.29	End Shut-In(2)
168	1837.80	115.51	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
150.00	Mud	2.10
180.00	MW 25%M75%W w/show of oil	2.52
300.00	Water	4.21

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

H&C Oil Operating Inc
 PO Box 86
 Plainville KS 67663-0086
 ATTN: Charles Ramsay

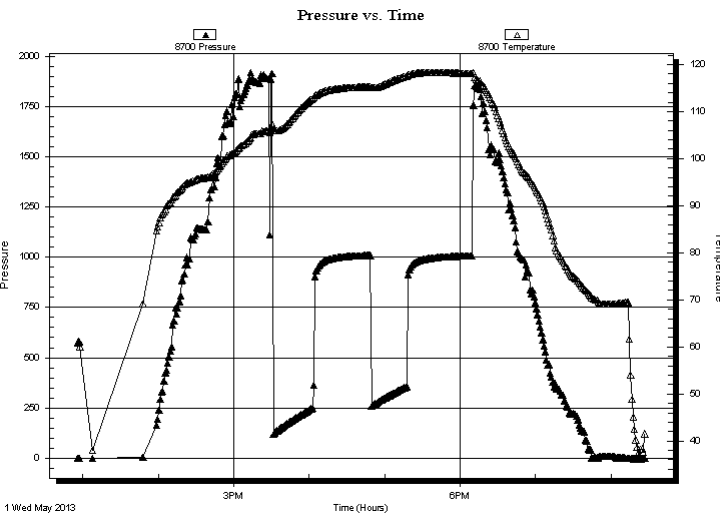
17-9s-24w Graham,KS
Keith-Ficken #17-2
 Job Ticket: 52573 **DST#: 1**
 Test Start: 2013.05.01 @ 12:55:19

GENERAL INFORMATION:

Formation: **LKC C-D**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 15:31:29 Tester: Ray Schwager
 Time Test Ended: 20:27:28 Unit No: 42
 Interval: **3858.00 ft (KB) To 3896.00 ft (KB) (TVD)** Reference Elevations: 2507.00 ft (KB)
 Total Depth: 3896.00 ft (KB) (TVD) 2502.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

Serial #: 8700 Outside
 Press @ Run Depth: psig @ 3869.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.05.01 End Date: 2013.05.01 Last Calib.: 2013.05.01
 Start Time: 12:56:02 End Time: 20:26:41 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30-IFP-strg bl in 10 min slid tool approx 10' to bottom
 45-ISIP-no bl bk
 30-FFP-w k to a fr bl 1/4" to 3 1/2" bl
 45FSIP-no bl bk



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
150.00	Mud	2.10
180.00	MW 25%M75%W w/show of oil	2.52
300.00	Water	4.21

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc
PO Box 86
Plainville KS 67663-0086
ATTN: Charles Ramsay

17-9s-24w Graham,KS
Keith-Ficken #17-2
Job Ticket: 52573 **DST#: 1**
Test Start: 2013.05.01 @ 12:55:19

Tool Information

Drill Pipe:	Length: 3867.00 ft	Diameter: 3.80 inches	Volume: 54.24 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	65000.00 lb
			<u>Total Volume: 54.24 bbl</u>	Tool Chased	10.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	43000.00 lb
Depth to Top Packer:	3858.00 ft			Final	51000.00 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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Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3838.00	
Shut In Tool	5.00			3843.00	
Hydraulic tool	5.00			3848.00	
Packer	5.00			3853.00	21.00 Bottom Of Top Packer
Packer	5.00			3858.00	
Stubb	1.00			3859.00	
Perforations	10.00			3869.00	
Recorder	0.00	8369	Inside	3869.00	
Recorder	0.00	8700	Outside	3869.00	
Perforations	24.00			3893.00	
Bullnose	3.00			3896.00	38.00 Bottom Packers & Anchor

Total Tool Length: 59.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc
PO Box 86
Plainville KS 67663-0086
ATTN: Charles Ramsay

17-9s-24w Graham,KS
Keith-Ficken #17-2
Job Ticket: 52573 **DST#: 1**
Test Start: 2013.05.01 @ 12:55:19

Mud and Cushion Information

Mud Type: Water	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	63000 ppm
Viscosity: 60.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.17 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 1300.00 ppm			
Filter Cake: 1.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
150.00	Mud	2.104
180.00	MW 25%M75%W w/show of oil	2.525
300.00	Water	4.208

Total Length: 630.00 ft Total Volume: 8.837 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: RW .15@55F

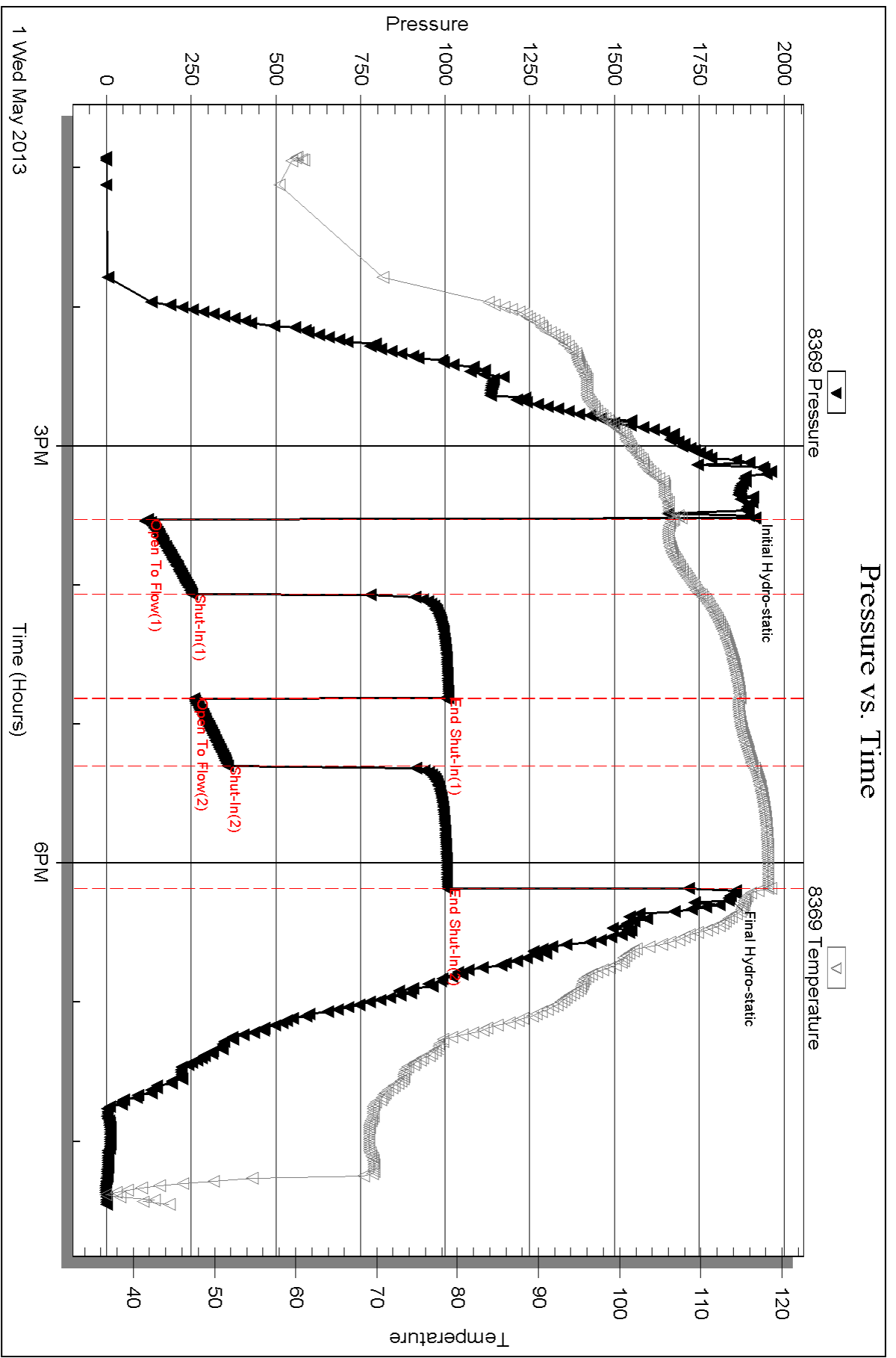
Serial #: 8369

Inside

H&C Oil Operating Inc

Keilh-Ecken #17-2

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 52573

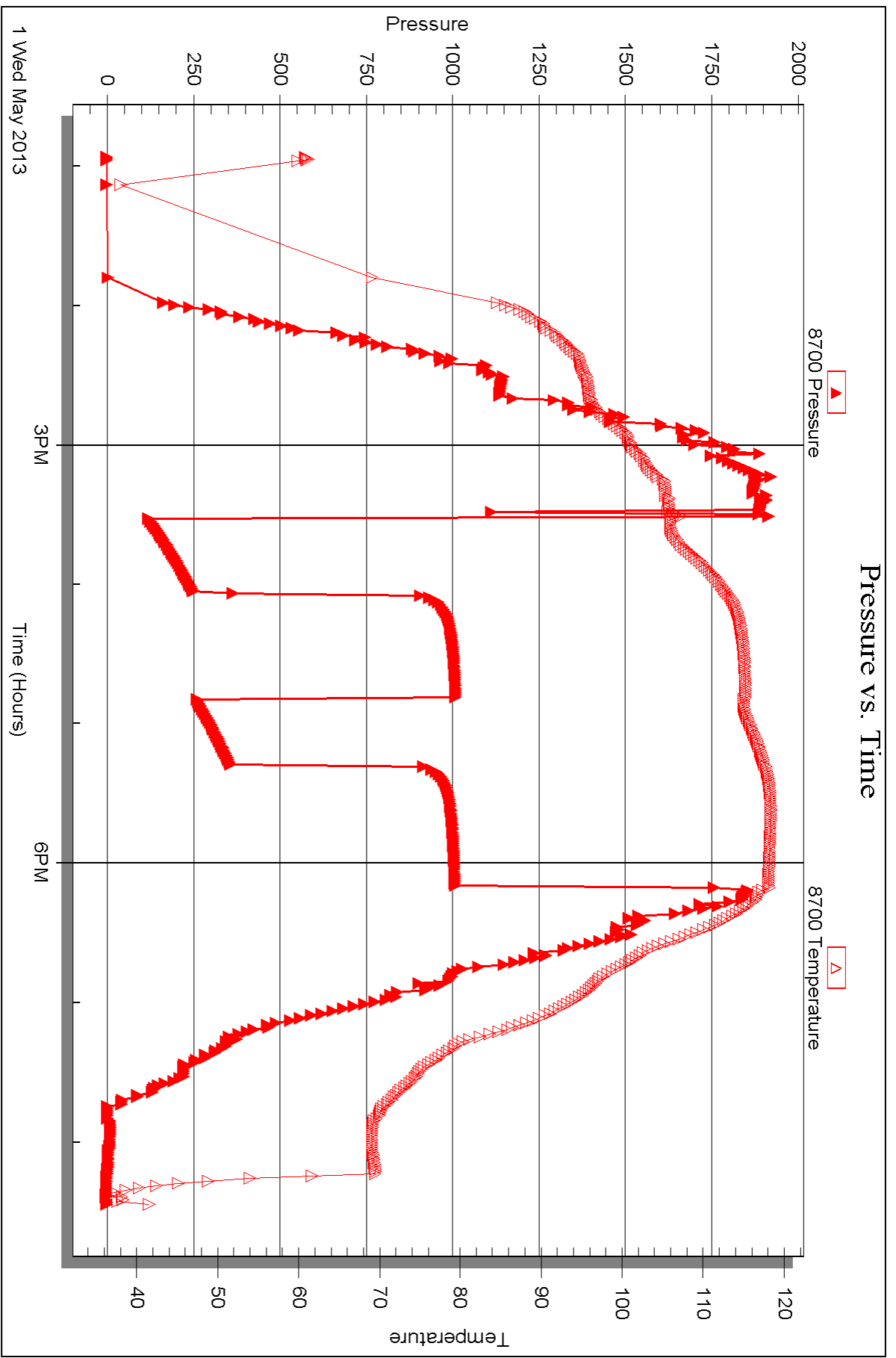
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Serial #: 8700

Outside H&C Oil Operating Inc

Keith-Eicken #17-2

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 52573

Printed: 2013.05.10 @ 09:42:59



DRILL STEM TEST REPORT

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

PO Box 86
Plainville KS 67663-0086

ATTN: Charles Ramsay

Keith-Ficken #17-2

17-9s-24w Graham,KS

Start Date: 2013.05.02 @ 23:15:27

End Date: 2013.05.03 @ 06:48:06

Job Ticket #: 52574 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.05.10 @ 09:42:19



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TESTING, INC.**

DRILL STEM TEST REPORT

H&C Oil Operating Inc
PO Box 86
Plainville KS 67663-0086
ATTN: Charles Ramsay

17-9s-24w Graham, KS
Keith-Ficken #17-2
Job Ticket: 52574 **DST#: 2**
Test Start: 2013.05.02 @ 23:15:27

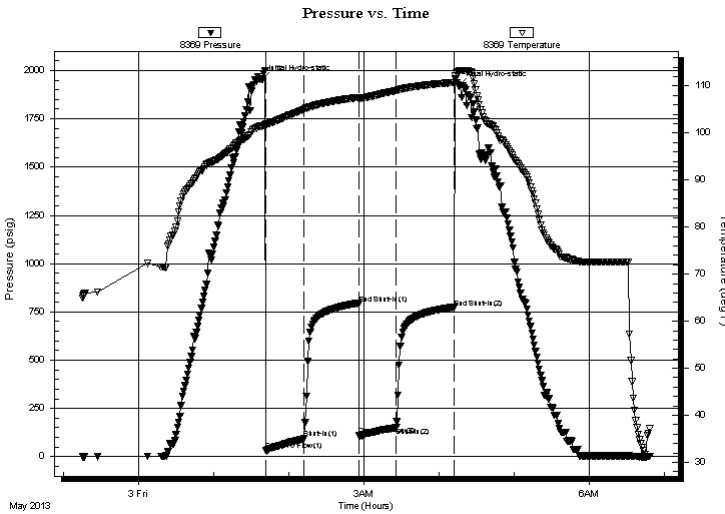
GENERAL INFORMATION:

Formation: **LKC H-J**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 01:41:52
Time Test Ended: 06:48:06
Interval: **3959.00 ft (KB) To 4028.00 ft (KB) (TVD)**
Total Depth: 4028.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Reference Elevations: 2507.00 ft (KB)
2502.00 ft (CF)
KB to GR/CF: 5.00 ft
Test Type: Conventional Bottom Hole (Reset)
Tester: Ray Schwager
Unit No: 42

Serial #: 8369 Inside
Press @ Run Depth: 153.91 psig @ 3963.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.05.02 End Date: 2013.05.03 Last Calib.: 2013.05.03
Start Time: 23:15:27 End Time: 06:48:06 Time On Btm: 2013.05.03 @ 01:38:07
Time Off Btm: 2013.05.03 @ 04:15:36

TEST COMMENT: 30-IFP-w k to strg in 7 min
45-ISIP-surface bl bk
30-FFP-w k to strg in 4 min
45-FSIP-surface bl bk

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1954.03	101.50	Initial Hydro-static
4	33.86	101.74	Open To Flow (1)
34	93.45	105.03	Shut-In(1)
78	790.11	107.60	End Shut-In(1)
79	112.08	107.41	Open To Flow (2)
108	153.91	109.03	Shut-In(2)
154	772.13	110.76	End Shut-In(2)
158	1920.98	113.10	Final Hydro-static

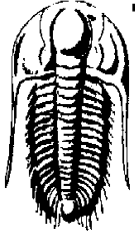
Recovery

Length (ft)	Description	Volume (bbl)
0.00	1280'GIP	0.00
145.00	CO	2.03
280.00	MGO 30%G20%M50%O	3.93

* Recovery from multiple tests

Gas Rates

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



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H&C Oil Operating Inc
 PO Box 86
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 ATTN: Charles Ramsay

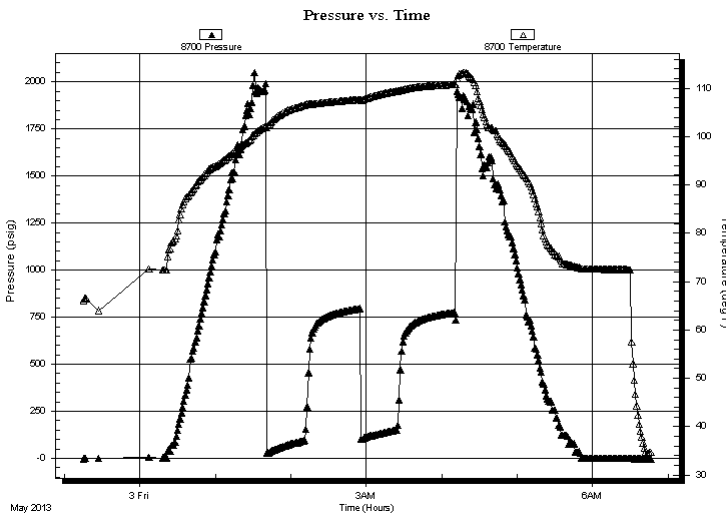
17-9s-24w Graham,KS
Keith-Ficken #17-2
 Job Ticket: 52574 **DST#: 2**
 Test Start: 2013.05.02 @ 23:15:27

GENERAL INFORMATION:

Formation:	LKC H-J		
Deviated:	No Whipstock:	ft (KB)	Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened:	01:41:52		Tester: Ray Schwager
Time Test Ended:	06:48:06		Unit No: 42
Interval:	3959.00 ft (KB) To 4028.00 ft (KB) (TVD)		Reference Elevations: 2507.00 ft (KB)
Total Depth:	4028.00 ft (KB) (TVD)		2502.00 ft (CF)
Hole Diameter:	7.88 inches	Hole Condition: Fair	KB to GR/CF: 5.00 ft

Serial #: 8700	Outside				
Press @ RunDepth:	psig @	3963.00 ft (KB)	Capacity:	8000.00 psig	
Start Date:	2013.05.02	End Date:	2013.05.03	Last Calib.:	2013.05.03
Start Time:	23:15:20	End Time:	06:46:29	Time On Btm:	
				Time Off Btm:	

TEST COMMENT: 30-IFP-w k to strg in 7 min
 45-ISIP-surface bl bk
 30-FFP-w k to strg in 4 min
 45-FSIP-surface bl bk



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
0.00	1280'GIP	0.00
145.00	CO	2.03
280.00	MGO 30%G20%M50%O	3.93

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
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DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc
PO Box 86
Plainville KS 67663-0086
ATTN: Charles Ramsay

17-9s-24w Graham,KS
Keith-Ficken #17-2
Job Ticket: 52574 **DST#: 2**
Test Start: 2013.05.02 @ 23:15:27

Tool Information

Drill Pipe:	Length: 3961.00 ft	Diameter: 3.80 inches	Volume: 55.56 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	65000.00 lb
			<u>Total Volume: 55.56 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial	43000.00 lb
Depth to Top Packer:	3959.00 ft			Final	46000.00 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	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3939.00	
Shut In Tool	5.00			3944.00	
Hydraulic tool	5.00			3949.00	
Packer	5.00			3954.00	21.00 Bottom Of Top Packer
Packer	5.00			3959.00	
Stubb	1.00			3960.00	
Perforations	3.00			3963.00	
Recorder	0.00	8369	Inside	3963.00	
Recorder	0.00	8700	Outside	3963.00	
Perforations	62.00			4025.00	
Bullnose	3.00			4028.00	69.00 Bottom Packers & Anchor

Total Tool Length: 90.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc
PO Box 86
Plainville KS 67663-0086
ATTN: Charles Ramsay

17-9s-24w Graham,KS
Keith-Ficken #17-2
Job Ticket: 52574 **DST#: 2**
Test Start: 2013.05.02 @ 23:15:27

Mud and Cushion Information

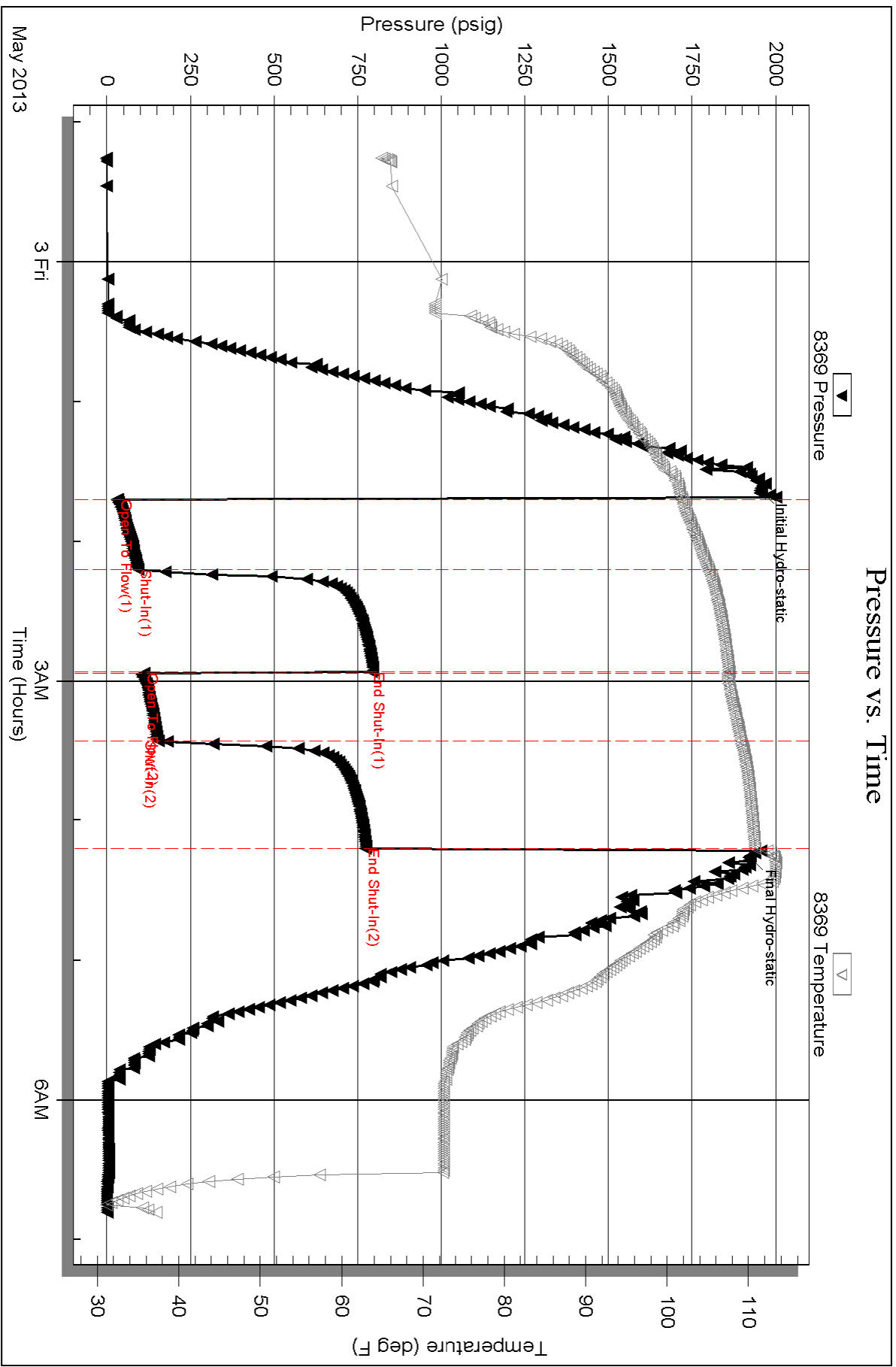
Mud Type: Gel Chem	Cushion Type:	Oil API: 38 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 57.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.17 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 1600.00 ppm		
Filter Cake: 1.00 inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	1280'GIP	0.000
145.00	CO	2.034
280.00	MGO 30%G20%M50%O	3.928

Total Length: 425.00 ft Total Volume: 5.962 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

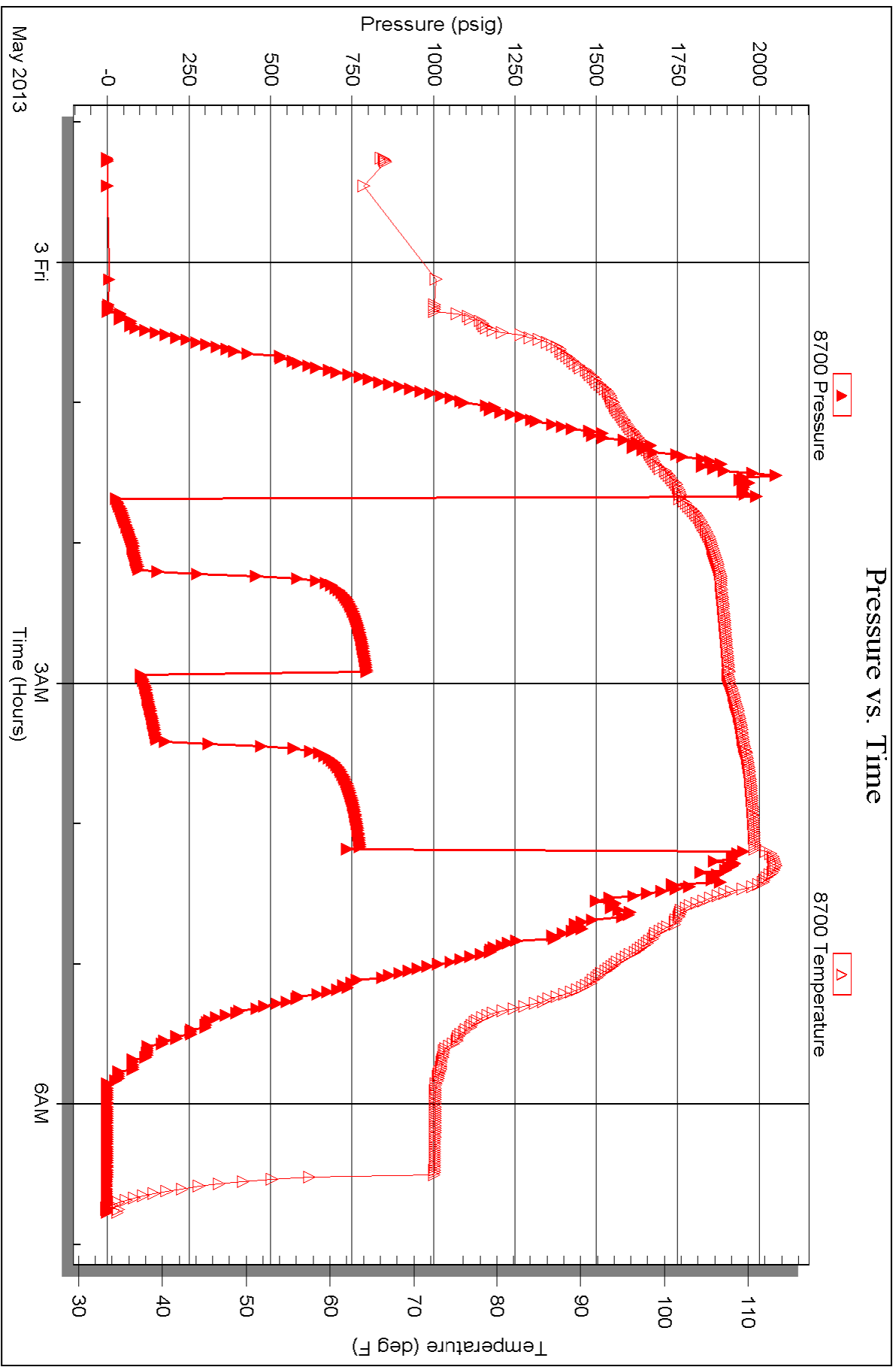


Serial #: 8700

Outside H&C Oil Operating Inc

Keith-Ecken #17-2

DST Test Number: 2





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52573

Well Name & No. Keith-Ficken #17-2 Test No. 1 Date 5-1-13
 Company H+C Oil Operating Inc Elevation 2507 KB 2502 GL
 Address PO Box 86 Plainville, Mo 67663-0086
 Co. Rep / Geo. MARC Downing Rig Am Eagle rig 3
 Location: Sec. 17 Twp. 9^s Rge. 24^w Co. GRAHAM State K

Interval Tested 3858-3896 Zone Tested LKC C-0
 Anchor Length 38 Drill Pipe Run 3867 Mud Wt. 9.2
 Top Packer Depth 3853 Drill Collars Run - Vis 60
 Bottom Packer Depth 3858 Wt. Pipe Run - WL 7.2
 Total Depth 3896 Chlorides 1300 ppm System LCM 2#

Blow Description IFP - STRONG BLOW IN 10 MIN
ISTP - NO BLOW
FFP - WEAK TO A FAIR BLOW 1/4 TO 3 1/2" BLOW
FSTP - NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>150</u>	<u>Mud</u>				
<u>180</u>	<u>MUD w/show of oil</u>			<u>75</u>	<u>25</u>
<u>300</u>	<u>WATER</u>				

Rec Total 630 BHT 118 Gravity - API RW .15 @ 55 °F Chlorides 63000 ppm
 (A) Initial Hydrostatic 1888 Test 1150 T-On Location 1030
 (B) First Initial Flow 122 Jars T-Started 1255
 (C) First Final Flow 252 Safety Joint T-Open 1530
 (D) Initial Shut-In 1009 Circ Sub T-Pulled 1800
 (E) Second Initial Flow 259 Hourly Standby T-Out 2027
 (F) Second Final Flow 357 Mileage 125RT 193.75 Comments Slid Tool Approx 10' To Bottom
 (G) Final Shut-In 1006 Sampler Ruined Shale Packer
 (H) Final Hydrostatic 1837 Straddle Ruined Packer
 Shale Packer Extra Copies
 Extra Packer Extra Recorder
 Extra Recorder
 Day Standby
 Accessibility

Initial Open 30
 Initial Shut-In 45
 Final Flow 30
 Final Shut-In 45
 Sub Total 1343.75
 Total 1343.75
 MP/DST Disc't

Approved By _____ Our Representative Ray Schwager *Thank you*
 Triobite 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. 52574

Well Name & No. Keith-Ticken #17-2 Test No. 2 Date 5-2-13
 Company H + C OIL OPERATING INC Elevation 2507 KB 2502 GL
 Address PO Box 86 PLAINVILLE, KS 67663-0086
 Co. Rep / Geo. MARC Downing Rig AM EAGLE RIG 3
 Location: Sec. 17 Twp. 9^s Rge. 24^w Co. GRAHAM State K

Interval Tested 3959-4028 Zone Tested LKC H-J
 Anchor Length 69 Drill Pipe Run 3961 Mud Wt. 9
 Top Packer Depth 3954 Drill Collars Run - Vis 57
 Bottom Packer Depth 3959 Wt. Pipe Run - WL 7.2
 Total Depth 4028 Chlorides 1600 ppm System LCM 2#

Blow Description IFP - WEAK TO STRONG IN 7 MIN
ISIP - SURFACE BLOW BACK
FFP - WEAK TO STRONG IN 4 MIN
FSIP - SURFACE BLOW BACK

Rec	Feet of	%gas	%oil	%water	%mud
<u>1280</u>	<u>GIP</u>				
<u>145</u>	<u>CO</u>				
<u>280</u>	<u>MGO</u>	<u>30</u>	<u>50</u>		<u>20</u>

Rec Total 425 BHT 110 Gravity 38 API RW - @ -° F Chlorides - ppm

(A) Initial Hydrostatic 1954 Test 1150 T-On Location ~~2215~~ 2215
 (B) First Initial Flow 33 Jars _____ T-Started 2315
 (C) First Final Flow 93 Safety Joint _____ T-Open 0140
 (D) Initial Shut-In 790 Circ Sub _____ T-Pulled 0410
 (E) Second Initial Flow 112 Hourly Standby _____ T-Out 0648
 (F) Second Final Flow 153 Mileage 387.50 Comments _____
 (G) Final Shut-In 772 Sampler _____ loaded tools 5/3 15:00
 (H) Final Hydrostatic 1920 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____

Initial Open 30 Extra Packer _____ Extra Copies _____
 Initial Shut-In 45 Extra Recorder _____ Sub Total 0
 Final Flow 30 Day Standby _____ Total 1537.50
 Final Shut-In 45 Accessibility _____ MP/DST Disc't _____
 Sub Total 1537.50

Approved By _____ Our Representative Ray Schwager hart
509

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.