



DRILL STEM TEST REPORT

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

PO Box 86
Plainville, KS 67663-0086

ATTN: Marc Downing

Kerns #3

28-9s-20w Rooks,KS

Start Date: 2014.09.30 @ 17:25:50

End Date: 2014.10.01 @ 00:16:44

Job Ticket #: 60883 DST #: 1

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

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TRILOBITE TESTING, INC

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 PO Box 86
 Plainville, KS 67663-0086
 ATTN: Marc Downing

28-9s-20w Rooks,KS
Kerns #3
 Job Ticket: 60883 **DST#: 1**
 Test Start: 2014.09.30 @ 17:25:50

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 19:36:45
 Time Test Ended: 00:16:44
 Interval: **3880.00 ft (KB) To 3895.00 ft (KB) (TVD)**
 Total Depth: 3895.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ray Schwager
 Unit No: 70
 Reference Elevations: 2305.00 ft (KB)
 2298.00 ft (CF)
 KB to GR/CF: 7.00 ft

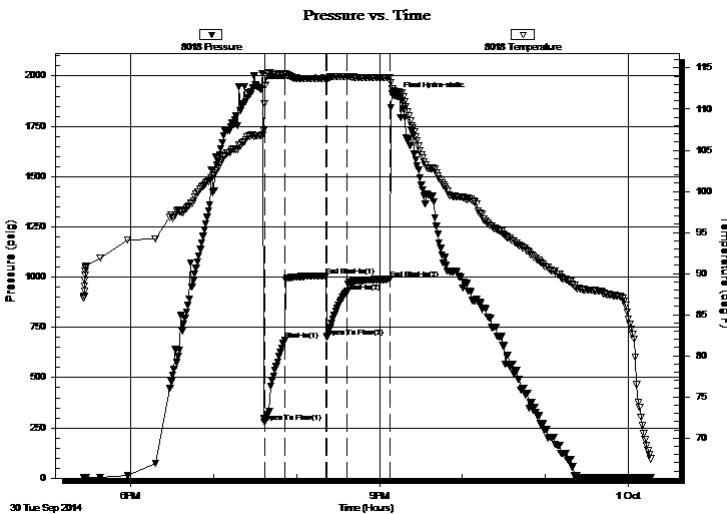
Serial #: 8018

Inside

Press@RunDepth: 927.83 psig @ 3887.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.09.30 End Date: 2014.10.01 Last Calib.: 2014.10.01
 Start Time: 17:25:50 End Time: 00:16:44 Time On Btm: 2014.09.30 @ 19:33:45
 Time Off Btm: 2014.09.30 @ 21:12:45

TEST COMMENT: 15-IFP-strg bl in 30 sec.
 30-ISIP-no bl bk
 15-FFP-strg bl in 1min
 30-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1936.05	106.76	Initial Hydro-static
3	278.92	110.72	Open To Flow (1)
18	684.38	114.21	Shut-In(1)
48	1006.67	113.70	End Shut-In(1)
48	700.66	113.55	Open To Flow (2)
63	927.83	113.93	Shut-In(2)
94	990.17	113.84	End Shut-In(2)
99	1898.48	112.07	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
248.00	OCMW 20%O20%M60%W	3.21
745.00	OCW 20%O80%W	10.45
620.00	OCW 15%O85%W	8.70
310.00	OCW 8%O92%W	4.35
186.00	Water	2.61

Gas Rates

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

H&C Oil Operating Inc
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 ATTN: Marc Downing

28-9s-20w Rooks,KS
Kerns #3
 Job Ticket: 60883 **DST#: 1**
 Test Start: 2014.09.30 @ 17:25:50

Tool Information

Drill Pipe:	Length: 3859.00 ft	Diameter: 3.80 inches	Volume: 54.13 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: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	45000.00 lb
			<u>Total Volume: 54.28 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	37000.00 lb
Depth to Top Packer:	3880.00 ft			Final	40000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	15.00 ft				
Tool Length:	36.00 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			3860.00	
Shut In Tool	5.00			3865.00	
Hydraulic tool	5.00			3870.00	
Packer	5.00			3875.00	21.00 Bottom Of Top Packer
Packer	5.00			3880.00	
Stubb	1.00			3881.00	
Perforations	6.00			3887.00	
Recorder	0.00	8018	Inside	3887.00	
Recorder	0.00	8700	Outside	3887.00	
Perforations	5.00			3892.00	
Bullnose	3.00			3895.00	15.00 Bottom Packers & Anchor

Total Tool Length: 36.00



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FLUID SUMMARY

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28-9s-20w Rooks,KS
Kerns #3
Job Ticket: 60883 **DST#: 1**
Test Start: 2014.09.30 @ 17:25:50

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 10.00 lb/gal	Cushion Length: ft	Water Salinity:	23000 ppm
Viscosity: 58.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.17 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 1200.00 ppm			
Filter Cake: 1.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
248.00	OCMW 20%O20%M60%W	3.206
745.00	OCW 20%O80%W	10.450
620.00	OCW 15%O85%W	8.697
310.00	OCW 8%O92%W	4.348
186.00	Water	2.609

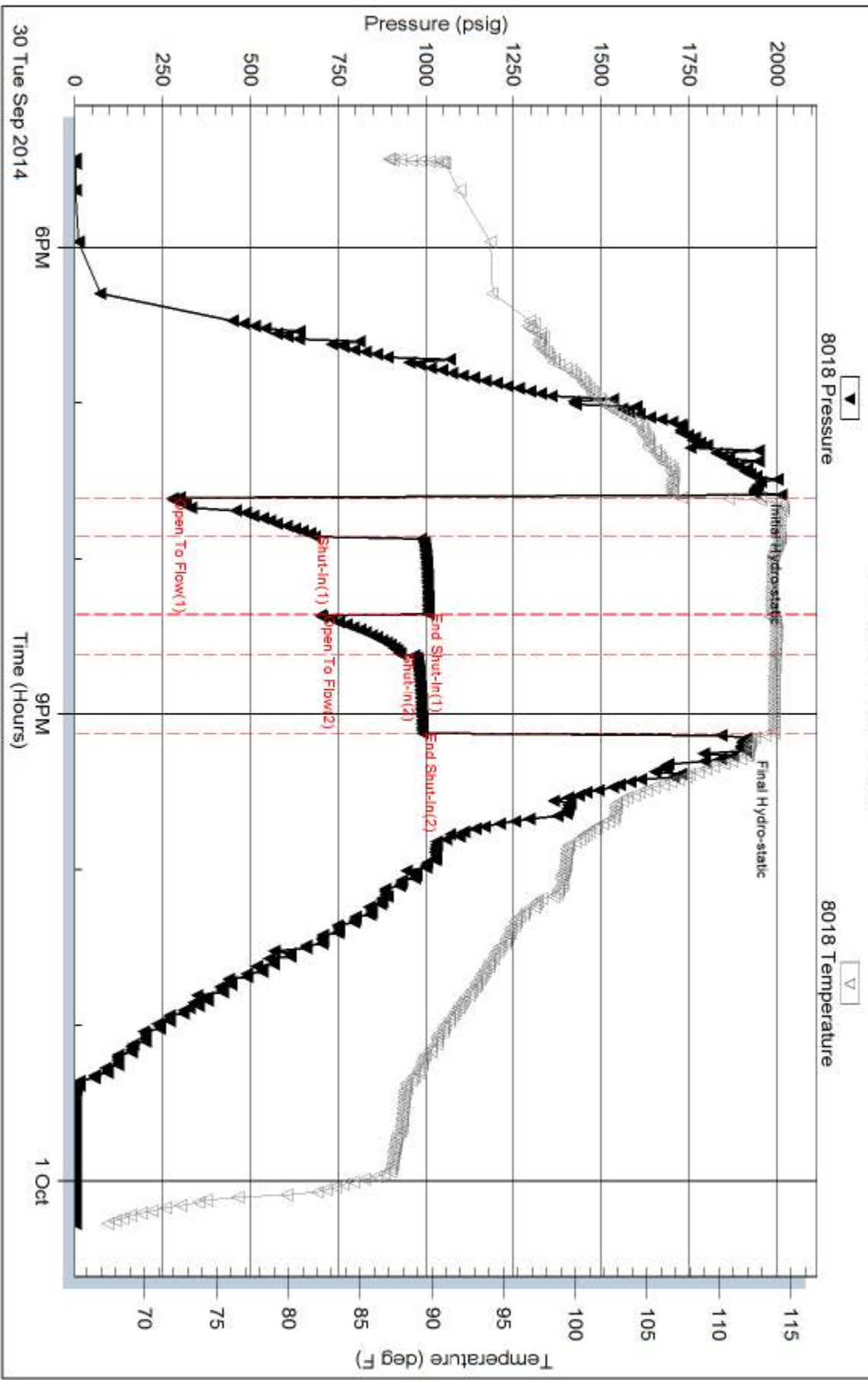
Total Length: 2109.00 ft Total Volume: 29.310 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments: RW .29@70F

Pressure vs. Time

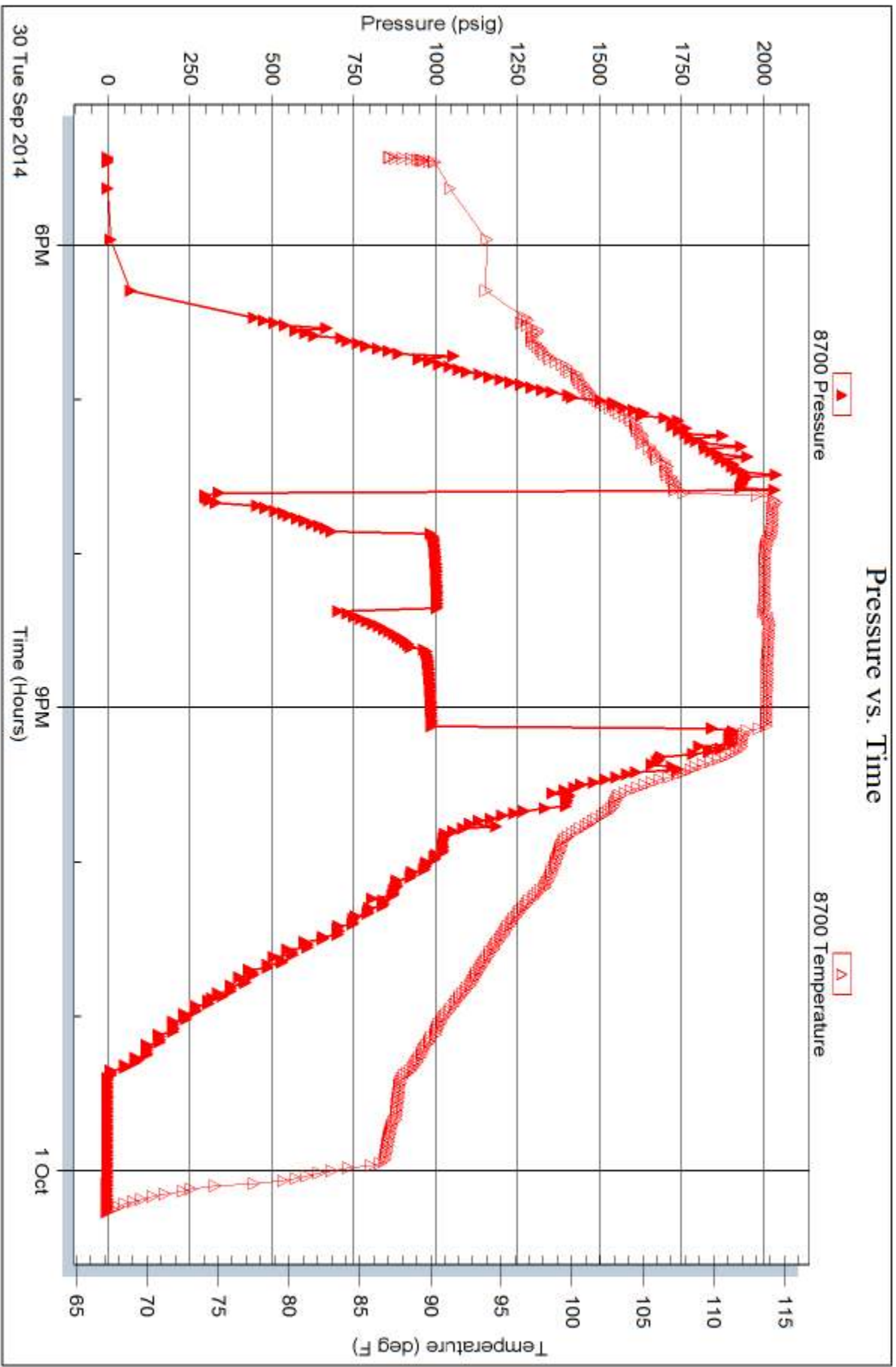


Serial #: 8700

Outside H&C Oil Operating Inc

Kerns #3

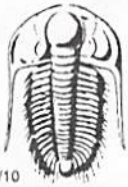
DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 60883

Printed: 2014, 10, 03 @ 10:15:35



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 60883

Well Name & No. Kern #3 Test No. 1 Date 9-30-14
 Company H+C OIL OPERATING INC Elevation 2305 KB 2298 GL
 Address PO BOX 86 PLAINVILLE, KS 67663-0086
 Co. Rep / Geo. MARC DOWNING Rig Am Eagle rig 3
 Location: Sec. 28 Twp. 19^s Rge. 20^w Co. Rooks State Ks

Interval Tested 3880-3895 Zone Tested Arbuckle
 Anchor Length 15 Drill Pipe Run 3859 Mud Wt. 9.6
 Top Packer Depth 3875 Drill Collars Run 30 Vis 58
 Bottom Packer Depth 3880 Wt. Pipe Run - WL 7.2
 Total Depth 3895 Chlorides 1200 ppm System LCM TR

Blow Description IFP - Strong Blow in 30 sec.
ISIP - NO Blow
FFP - Strong Blow in 1 min
FSTIP - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>248</u>	<u>OC MW</u>	<u>20</u>	<u>60</u>	<u>20</u>	
<u>745</u>	<u>OCW</u>	<u>20</u>	<u>80</u>		
<u>620</u>	<u>OCW</u>	<u>15</u>	<u>85</u>		
<u>310</u>	<u>OCW</u>	<u>8</u>	<u>92</u>		
<u>186</u>	<u>WATER</u>				

Rec Total 2109 BHT 113 Gravity - API RW .29 @ 70 °F Chlorides 23000 ppm

(A) Initial Hydrostatic 1936 Test 1150 T-On Location 1505
 (B) First Initial Flow 278 Jars _____ T-Started 1725
 (C) First Final Flow 684 Safety Joint _____ T-Open 1935
 (D) Initial Shut-In 1006 Circ Sub _____ T-Pulled 2105
 (E) Second Initial Flow 700 Hourly Standby _____ T-Out 0016
 (F) Second Final Flow 927 Mileage 80RT 124 Comments _____
 (G) Final Shut-In 990 Sampler _____
 (H) Final Hydrostatic 1898 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1274

Initial Open 15
 Initial Shut-In 30
 Final Flow 15
 Final Shut-In 30

Sub Total 1274 Total 1274 MP/DST Disc't _____

Approved By _____ Our Representative Ray Schwager *Thank you*

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