

CONFIDENTIAL

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

ORIGINAL

Form ACO-1
June 2009
Form Must Be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

7/20/12

OPERATOR: License # 8914
Name: H & C Oil Operating, Inc.
Address 1: P.O. Box 86
Address 2:
City: Plainville State: KS Zip: 67663
Contact Person: Charles R. Ramsay
Phone: (785) 434-7434
CONTRACTOR: License # 3349
Name: American Eagle Drilling
Wellsite Geologist: Marc Downing
Purchaser:

API No. 15 - 065-23650-00-00
Spot Description:
W2_NW_SE_NW Sec. 4 Twp. 7 S. R. 23 East West
1,650 Feet from North / South Line of Section
1,500 Feet from East / West Line of Section
Footages Calculated from Nearest Outside Section Corner:
 NE NW SE SW
County: Graham
Lease Name: Worcester Well #: 4-2
Field Name: White East
Producing Formation: none
Elevation: Ground: 2459 Kelly Bushing: 2464
Total Depth: 3960 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 281 Feet
Multiple Stage Cementing Collar Used? Yes No
If yes, show depth set: Feet
If Alternate II completion, cement circulated from:
feet depth to: w/ sx cmt.

Designate Type of Completion:
 New Well Re-Entry Workover
 Oil WSW SWD SLOW
 Gas D&A ENHR SIGW
 OG GSW Temp. Abd.
 CM (Coal Bed Methane)
 Cathodic Other (Core, Expl., etc.):

If Workover/Re-entry: Old Well Info as follows:
Operator:
Well Name:
Original Comp. Date: Original Total Depth:
 Deepening Re-perf. Conv. to ENHR Conv. to SWD
 Conv. to GSW
 Plug Back: Plug Back Total Depth
 Commingled Permit #:
 Dual Completion Permit #:
 SWD Permit #:
 ENHR Permit #:
 GSW Permit #:
6/10/10 6/17/10 6/17/10
Spud Date or Date Reached TD Completion Date or Recompletion Date

Drilling Fluid Management Plan
(Data must be collected from the Reserve Pit)
Chloride content: ppm Fluid volume: bbls
Dewatering method used:
Location of fluid disposal if hauled offsite:
Operator Name:
Lease Name: License #:
Quarter Sec. Twp. S. R. East West
County: Permit #:

INSTRUCTIONS: An original and two copies of this form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information of side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form (see rule 82-3-107 for confidentiality in excess of 12 months). One copy of all wireline logs and geologist well report shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells.

AFFIDAVIT
I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.
Signature: Charles R. Ramsay
Title: President Date: 7-21-10

KCC Office Use ONLY
 Letter of Confidentiality Received Date: 7/20/10 - 7/20/12
 Confidential Release Date:
 Wireline Log Received
 Geologist Report Received
 UIC Distribution
ALT I II III Approved by: PA Date: 7/24/10
RECEIVED
JUL 26 2010

KCC WICHITA

Operator Name: H & C Oil Operating, Inc. Lease Name: Worcester Well #: 4-2 JUL 20 2010
 Sec. 4 Twp. 7 S. R. 23 East West County: Graham

CONFIDENTIAL

INSTRUCTIONS: Show important tops and base of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Electric Log Run <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Submitted Electronically <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(If no, Submit Copy)</i> List All E. Logs Run: Dual induction log, Microresistivity Log, Dual Compensated Porosity Log	<input checked="" type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:60%;">Name</td> <td style="width:20%;">Top</td> <td style="width:20%;">Datum</td> </tr> <tr> <td>Top Anhydrite</td> <td>2152</td> <td>+312</td> </tr> <tr> <td>Base Anhydrite</td> <td>2178</td> <td>+286</td> </tr> <tr> <td>Topeka</td> <td>3483</td> <td>-1019</td> </tr> <tr> <td>Heebner</td> <td>3684</td> <td>-1220</td> </tr> <tr> <td>Toronto</td> <td>3709</td> <td>-1245</td> </tr> <tr> <td>Lansing Kansas City</td> <td>3726</td> <td>-1262</td> </tr> <tr> <td>BKC</td> <td>3923</td> <td>-1459</td> </tr> </table>	Name	Top	Datum	Top Anhydrite	2152	+312	Base Anhydrite	2178	+286	Topeka	3483	-1019	Heebner	3684	-1220	Toronto	3709	-1245	Lansing Kansas City	3726	-1262	BKC	3923	-1459
Name	Top	Datum																							
Top Anhydrite	2152	+312																							
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Lansing Kansas City	3726	-1262																							
BKC	3923	-1459																							

CASING RECORD <input checked="" type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
surface	12 1/4"	8 5/8"	24#	281	60/40 posmix	180	3% gel, 2%cc

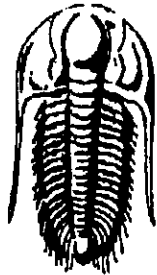
ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:		Size:	Set At:	Packer At:	Liner Run: <input type="checkbox"/> Yes <input type="checkbox"/> No
Date of First, Resumed Production, SWD or ENHR.			Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (Explain) _____		
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i> <input type="checkbox"/> Other (Specify) _____	PRODUCTION INTERVAL: _____ _____
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RECEIVED



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

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

PO Box 86
Plainville Ks 67663-0086

ATTN: Charles Ramsay

4-7s-23w Graham KS

Worcester #4-2

Start Date: 2010.06.15 @ 12:04:49

End Date: 2010.06.15 @ 18:45:13

Job Ticket #: 38711 DST #: 1

KCC
JUL 2 0 2010
CONFIDENTIAL

Trilobite Testing, Inc
PO Box 1733 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

RECEIVED
JUL 26 2010
KCC WICHITA

H&C Operating Inc

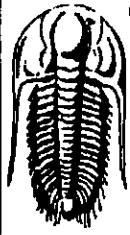
Worcester #4-2

4-7s-23w Graham KS

DST # 1

LKC C-D

2010.06.15



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

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

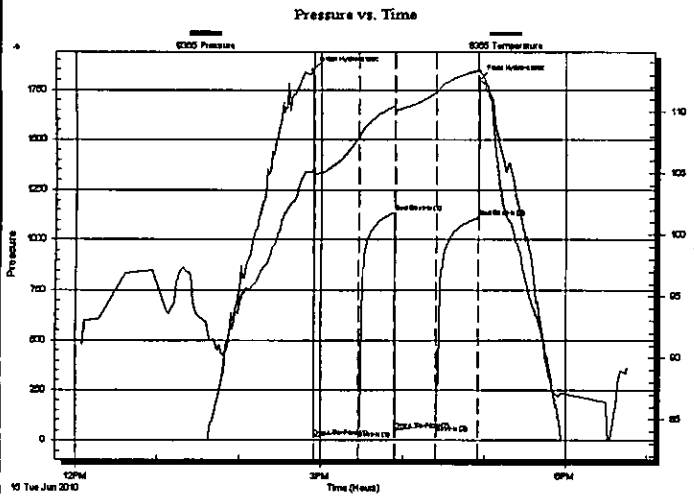
Worcester #4-2
4-7s-23w Graham KS
Job Ticket: 38711 DST#: 1
Test Start: 2010.06.15 @ 12:04:49

GENERAL INFORMATION:

Formation: **LKC C-D**
Deviated: **No Whipstock** ft (KB)
Time Tool Opened: 14:55:14
Time Test Ended: 18:45:13
Test Type: **Conventional Bottom Hole**
Tester: **Ray Schwager**
Unit No: **42**
Interval: **3740.00 ft (KB) To 3782.00 ft (KB) (TVD)**
Reference Elevations: **2464.00 ft (KB)**
Total Depth: **3782.00 ft (KB) (TVD)**
2459.00 ft (CF)
Hole Diameter: **7.85 inches** Hole Condition: **Fair**
KB to GR/CF: **5.00 ft**

Serial #: 8365 **Inside**
Press@RunDepth: **78.68 psig @ 3747.01 ft (KB)** Capacity: **8000.00 psig**
Start Date: **2010.06.15** End Date: **2010.06.15** Last Calib.: **2010.06.15**
Start Time: **12:04:49** End Time: **18:45:13** Time On Btm: **2010.06.15 @ 14:53:44**
Time Off Btm: **2010.06.15 @ 16:56:14**

TEST COMMENT: IFF-w k bl thru-out 1/4" to 1 1/2" bl
FFF-w k bl thru-out 1/4" to 1 1/2" bl
Times 30-30-30-30
no bl on shut-in



PRESSURE SUMMARY

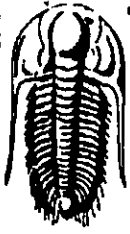
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1846.20	105.25	Initial Hydro-static
2	16.48	104.95	Open To Flow (1)
34	46.65	107.91	Shut-In (1)
60	1136.30	110.44	End Shut-In (1)
61	49.44	109.78	Open To Flow (2)
91	78.68	111.60	Shut-In (2)
122	1111.83	113.35	End Shut-In (2)
123	1804.38	113.37	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	HO&WOM 25%O25%W50%M	0.28
60.00	SOCMV 5%O20%M75%W	0.84
60.00	MV 10%r90%W	0.84

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

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

Worcester #4-2
4-7s-23w Graham KS
 Job Ticket: 38711 DST#: 1
 Test Start: 2010.06.15 @ 12:04:49

Tool Information

Drill Pipe:	Length: 3744.00 ft	Diameter: 3.80 inches	Volume: 52.52 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: 50000.00 lb
			<u>Total Volume: 52.52 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 36000.00 lb
Depth to Top Packer:	3740.00 ft			Final 38000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	42.02 ft			
Tool Length:	63.02 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			3720.00	
Shut In Tool	5.00			3725.00	
Hydraulic tool	5.00			3730.00	
Packer	5.00			3735.00	21.00 Bottom Of Top Packer
Packer	5.00			3740.00	
Stubb	1.00			3741.00	
Perforations	6.00			3747.00	
Recorder	0.01	8365	Inside	3747.01	
Recorder	0.01	6625	Outside	3747.02	
Blank Spacing	32.00			3779.02	
Bullnose	3.00			3782.02	42.02 Bottom Packers & Anchor

Total Tool Length: 63.02



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

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

Worcester #4-2
4-7s-23w Graham KS
Job Ticket: 38711 DST#: 1
Test Start: 2010.06.15 @ 12:04:49

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 54.00 sec/qt
Water Loss: 7.94 in³
Resistivity: ohm.m
Salinity: 1400.00 ppm
Filter Cake: 2.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: deg API
Water Salinity: 57000 ppm

Recovery Information

Recovery Table

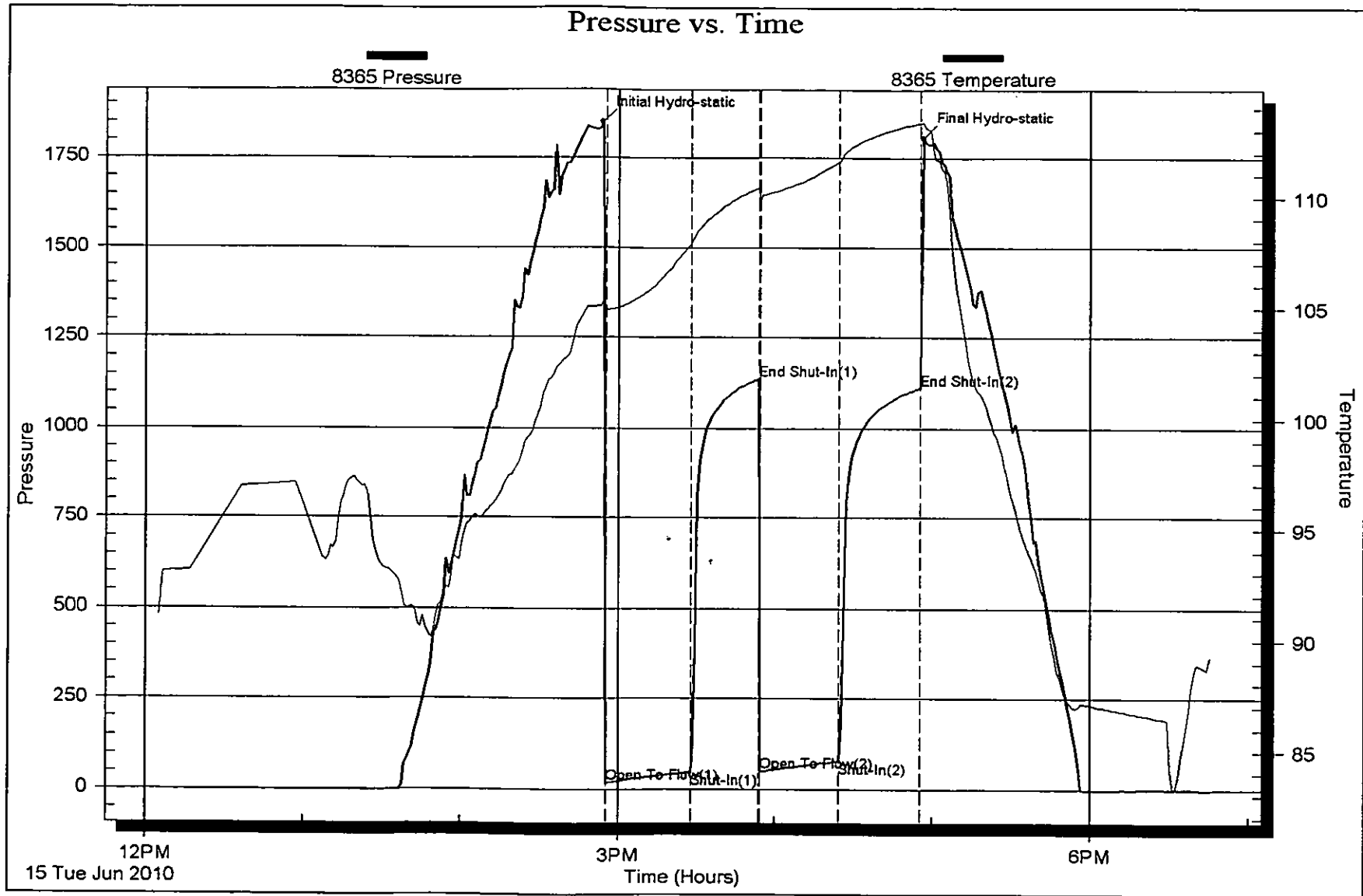
Length ft	Description	Volume bbl
20.00	HO&WOM 25%O25%W50%M	0.281
60.00	SOCMV 5%O20%M75%W	0.842
60.00	MW 10%rn90%W	0.842

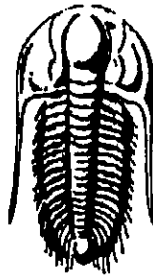
Total Length: 140.00 ft Total Volume: 1.965 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments: RW.13@70F





TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

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

PO Box 86
Plainville Ks 67663-0086

ATTN: Charles Ramsay

4-7s-23w Graham KS

Worcester #4-2

Start Date: 2010.06.16 @ 09:45:05

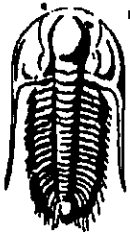
End Date: 2010.06.16 @ 15:59:29

Job Ticket #: 38712 DST #: 2

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Operating Inc
PO Box 86
Plainville Ks 67663-0086

ATTN: Charles Ramsay

Worcester #4-2
4-7s-23w Graham KS
Job Ticket: 38712 DST#: 2
Test Start: 2010.06.16 @ 09:45:05

Tool Information

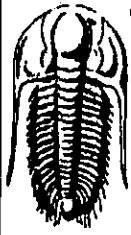
Drill Pipe:	Length: 3834.00 ft	Diameter: 3.80 inches	Volume: 53.78 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Full Loose: 50000.00 lb
		Total Volume: 53.78 bbl		Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3850.00 ft			Final 38000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	37.02 ft			
Tool Length:	58.02 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			3830.00	
Shut In Tool	5.00			3835.00	
Hydraulic tool	5.00			3840.00	
Packer	5.00			3845.00	21.00 Bottom Of Top Packer
Packer	5.00			3850.00	
Stubb	1.00			3851.00	
Perforations	3.00			3854.00	
Recorder	0.01	8365	Inside	3854.01	
Recorder	0.01	6625	Outside	3854.02	
Perforations	30.00			3884.02	
Bullnose	3.00			3887.02	37.02 Bottom Packers & Anchor

Total Tool Length: 58.02



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

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

Worcester #4-2
4-7s-23w Graham KS
Job Ticket: 38712 DST#: 2
Test Start: 2010.06.16 @ 09:45:05

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: 54.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.93 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 1400.00 ppm			
Filter Cake: 2.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1.00	Mud	0.014

Total Length: 1.00 ft Total Volume: 0.014 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

