

CONFIDENTIAL

KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION

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

11/03/12

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 Ramsay  
Phone: (785) 434-7434  
CONTRACTOR: License # 33493  
Name: American Eagle Drilling, LLC  
Wellsite Geologist: Clayton Erickson  
Purchaser: Coffeyville Resources

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 #:

09/27/2011	10/05/2011	10/28/2011
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 065-23775-00-00  
Spot Description:  
W2\_E2\_NW Sec. 12 Twp. 10 S. R. 23  East  West  
1,320 Feet from  North /  South Line of Section  
1,650 Feet from  East /  West Line of Section  
Footages Calculated from Nearest Outside Section Corner:  
 NE  NW  SE  SW  
County: Graham  
Lease Name: Bollig Well #: 12-1  
Field Name: Law Southeast  
Producing Formation: Lansing Kansas City  
Elevation: Ground: 2420 Kelly Bushing: 2425  
Total Depth: 4272 Plug Back Total Depth: 4233  
Amount of Surface Pipe Set and Cemented at: 270 Feet  
Multiple Stage Cementing Collar Used?  Yes  No  
If yes, show depth set: 2374 Feet  
If Alternate II completion, cement circulated from: 2374  
feet depth to: surface w/ 240 sx cmt.

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: CONFIDENTIAL License #:  
Quarter Sec. Twp. S. R.  RECEIVED  
County: NOV 03 2011 Permit #:

KCC

NOV 03 2011  
KCC WICHITA

**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: 11/4/11

KCC Office Use ONLY  
 Letter of Confidentiality Received  
Date: 11.03.11 - 11.03.12  
 Confidential Release Date:  
 Wireline Log Received  
 Geologist Report Received  
 UIC Distribution  
ALT  I  II  III Approved by: [Signature] Date: 11-7-11

Operator Name: H&C Oil Operating, Inc. Lease Name: Bollig Well #: 12-1  
 Sec. 12 Twp. 10 S. R. 23  East  West County: Graham

**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 <i>(Attach Additional Sheets)</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
Cores Taken	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Anhydrite	1962	+463
Electric Log Run	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Heebner	3666	-1241
Electric Log Submitted Electronically <i>(If no, Submit Copy)</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Lansing	3702	-1277
List All E. Logs Run: Microresistivity, Dual Compensated Porosity, Sonic Cement Bond log, Borehole compensated sonic log, dual induction log,		Base Kansas City	3932	-1507
		Marmaton Chert	4028	-1603
		Marmaton Sand	4110	-1685
		Arbuckle	4220	-1795

CASING RECORD <input 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"	23#	270	common	160	3%cc, 2% gel
production	7 7/8"	5 1/2"	14#	4264	common	230	10% salt, 5% gilsonite

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input checked="" type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone	surface-2374	QMDC	240	1/4# floseal

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
	CIBP 5 1/2"		3950
4	3874-3879	3500 Gal MCA and 20 % NE	3879
<b>CONFIDENTIAL</b>			
<b>NOV 03 2012</b>			
<b>KCC</b>			

TUBING RECORD:	Size: <u>2 3/8</u>	Set At: <u>3946</u>	Packer At: <u>none</u>	Liner Run: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Date of First, Resumed Production, SWD or ENHR. <u>11/4/2011</u>	Producing Method: <input type="checkbox"/> Flowing <input checked="" type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (Explain) _____			
Estimated Production Per 24 Hours	Oil Bbls. <u>72</u>	Gas Mcf <u>25</u>	Water Bbls. <u>25</u>	Gas-Oil Ratio <u>37</u>

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 checked="" type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5) (Submit ACO-4)</i>	PRODUCTION INTERVAL: <u>3874-3879'</u>
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Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202

**RECEIVED**  
**NOV 03 2011**  
**KCC WICHITA**

# QUALITY OILWELL CEMENTING, INC.

Phone 785-483-2025  
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 5002

Date	9-27-11	Sec.	12	Twp.	10	Range	23	County	Geary	State	Kansas	On Location	Finish	L.S.M.	
Lease	Belle		Well No.		12-1		Location								Walceney N to Redline 1E
Contractor	American Eagle Rig 3							Owner							?
Type Job	Surface							To Quality Oilwell Cementing, Inc.							You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.
Hole Size	1 7/8		T.D.		270		Charge To							H/C Oil	
Csg.	8 5/8		Depth		270		Street								
Tbg. Size			Depth				City							State	
Tool			Depth				City							State	
Cement Left in Csg.	10-15'		Shoe Joint		The above was done to satisfaction and supervision of owner agent or contractor.										
Meas Line			Displace		16.732		Cement Amount Ordered							160 Cement	

**EQUIPMENT**

Pumptrk	5	No.	Cementer	Steve	Common	160
			Helper			
Bulktrk	12	No.	Driver	Chris	Poz. Mix	
			Driver			
Bulktrk		No.	Driver	Chris	Gel.	3
			Driver			

**JOB SERVICES & REMARKS**

Remarks:	Hulls
Rat Hole	Salt
Mouse Hole	Flowseal
Centralizers	Kol-Seal
Baskets	Mud CLR 48
D/V or Port Collar	CFL-117 or CD110 CAF 38
	Sand
	Handling 168
	Mileage

**FLOAT EQUIPMENT**

Guide Shoe	
Centralizer	
Baskets	CONFIDENTIAL
AFU Inserts	NOV 03 2012
Float Shoe	KCC
Latch Down	

*[Handwritten Signature]*

*[Handwritten Signature]*

X Signature: *[Handwritten Signature]*

Pumptrk Charge	Surface
Mileage	42
Tax	
Discount	
Total Charge	

RECEIVED  
NOV 03 2011  
KCC WICHITA

# QUALITY OILWELL CEMENTING, INC.

Phone 785-483-2025  
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 5217

Date	10/6/11	Sec.	12	Twp.	10	Range	23	County	Graham	State	KS	On Location		Finish	8:45 AM	
Lease	Bollig		Well No.		12-1		Location Wakeeney, N to CL, N to E, 1/2 E, 1/2 E, S 1/4									
Contractor	American Eagle Drilling Rig #3							Owner								
Type Job	Production String							To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.								
Hole Size	7 7/8"		T.D.		4272'		Charge To H+C Oil Operating, Inc.									
Csg.	5 1/2" 14#		Depth		4269'		Street									
Tbg. Size			Depth				City									
Tool	Port Collar #45		Depth		2393'		State									
Cement Left in Csg.	21'		Shoe Joint		21'		The above was done to satisfaction and supervision of owner agent or contractor.									
Meas Line			Displace		103 1/2 Bbls.		Cement Amount Ordered 230 ex Com 10% Salt 5% Gilsont									

### EQUIPMENT

Pumptrk	9	No.	Cement Helper	Paul	Common	230
Bulktrk	14	No.	Driver	Matt	Poz. Mix	
Bulktrk	PV	No.	Driver	Michael	Gel.	

### JOB SERVICES & REMARKS

Remarks:	Calcium
Rat Hole 30 ex	Hulls
Mouse Hole	Salt 20
Centralizers 1, 5, 7, 10, 12, 14, 16, 46, 62, 77	Flowseal
Baskets 2, 44, 61, 76	Kol-Seal 1150#
D/V or Port Collar #45 - 2393'	Mud CLR 48 500 gal.
Est Circ - 1 hour	CFL-117 or CD110 CAF 38
Pump 500 gal Mud Clear - 48	Sand
Plug Rat Hole	Handling 261
Mix 200 ex down 5 1/2"	Mileage 5 1/2"
Displace	5 1/2" FLOAT EQUIPMENT
Land Plug	Guide Shoe
Float Held	Centralizer 10
	Baskets 4
	AFU Inserts
	Float Shoe 1
	Latch Down 1
	Port Collar
	Pumptrk Charge Prod Long String
	Mileage 42

Thank You!!

X Signature *Charles Ramsey*

**CONFIDENTIAL**  
NOV 03 2012  
**KCC**

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NOV 03 2011

KCC WICHITA

# QUALITY OILWELL CEMENTING, INC.

Phone 785-483-2025  
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 5199

Date	10-19-11	Sec.	12	Twp.	10	Range	23	County	Graham	State	Ks	On Location		Finish	1:00 pm
Lease	Bolling		Well No.		12-1		Location								
Wakeeny, Ks - N to E Rd, 1/2 W, 1/4 E															
Contractor							Owner								
Chito's well service							S/S								
Type Job							To Quality Oilwell Cementing, Inc.								
Port Collar							You are hereby requested to rent cementing equipment and furnish center and helper to assist owner or contractor to do work as listed.								
Hole Size							T.D.								
Csg.							Depth								
5 1/2"							—								
Tbg. Size							Charge To								
2"							H + C oil								
Tool							Street								
Port Collar							Depth								
2374'							City								
Cement Left in Csg.							State								
Shoe Joint							The above was done to satisfaction and supervision of owner agent or contractor.								
Meas Line							Displace								
8 BLS							Cement Amount Ordered								
							330 SX QMDC 1/4# Flo-seal								

**EQUIPMENT**

Pumptrk	1	No.	Cementer Helper	Cisto	Common	240
Bulktrk	13	No.	Driver	Brian S.	Poz. Mix	
Bulktrk	p.u.	No.	Driver	Rick	Gel.	

**JOB SERVICES & REMARKS**

Remarks:	Calcium
Rat Hole	Hulls
Mouse Hole	Salt
Centralizers	Flowseal 80#
Baskets	Kol-Seal
D/V or Port Collar	Mud CLR 48
2374'	CFL-117 or CD110 CAF 38
Cement did Circulate.	Sand
open tool	Handling 330
	Mileage

**FLOAT EQUIPMENT**

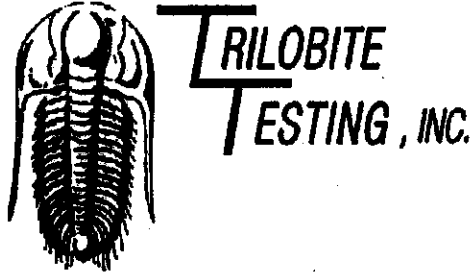
Guide Shoe	
Centralizer	<b>CONFIDENTIAL</b>
Baskets	NOV 03 2012
AFU Inserts	<b>KCC</b>
Float Shoe	
Latch Down	

pump 80 BLS Mud, open pump 240 SX QMDC 1/4# F.S. + Displaced with 8 BLS. Closed tool, Run 5 Jts tubing, Reversed out wash up + Rigg'd down.

used 240 SX QMDC 1/4# Flo-seal

Pumptrk Charge	port Collar
Mileage	42
Signature	
	Tax
	Discount
	Total Charge

**RECEIVED**  
NOV 03 2011  
KCC WICHITA



**DRILL STEM TEST REPORT**

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

PO Box 86  
Plainville, KS 67663

ATTN: Clayton Erickson

**Bollig #12-1**

**12-10s-23w Graham,KS**

Start Date: 2011.10.02 @ 13:41:30

End Date: 2011.10.02 @ 20:07:30

Job Ticket #: 45254 DST #: 1

**CONFIDENTIAL**

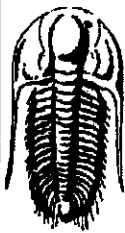
NOV 03 2011

**KCC**

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

**RECEIVED**  
**NOV 03 2011**  
**KCC WICHITA**

H&C Oil Operating Inc. 12-10s-23w Graham,KS Bollig #12-1 DST # 1 LKC "F" 2011.10.02



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

H&C Oil Operating Inc.

12-10s-23w Graham,KS

PO Box 86  
Plainville, KS 67663

**Bollig #12-1**

Job Ticket: 45254

**DST#: 1**

ATTN: Clayton Erickson

Test Start: 2011.10.02 @ 13:41:30

## GENERAL INFORMATION:

Formation: **LKC "F"**

Deviated: **No** Whipstock: **ft (KB)**

Time Tool Opened: 15:16:20

Time Test Ended: 20:07:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 38

**Interval: 3764.00 ft (KB) To 3796.00 ft (KB) (TVD)**

Reference Elevations: 2425.00 ft (KB)

Total Depth: 3796.00 ft (KB) (TVD)

2419.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 6.00 ft

**Serial #: 8354**

**Inside**

Press@RunDepth: 37.84 psig @ 3766.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.10.02

End Date: 2011.10.02

Last Calib.: 2011.10.02

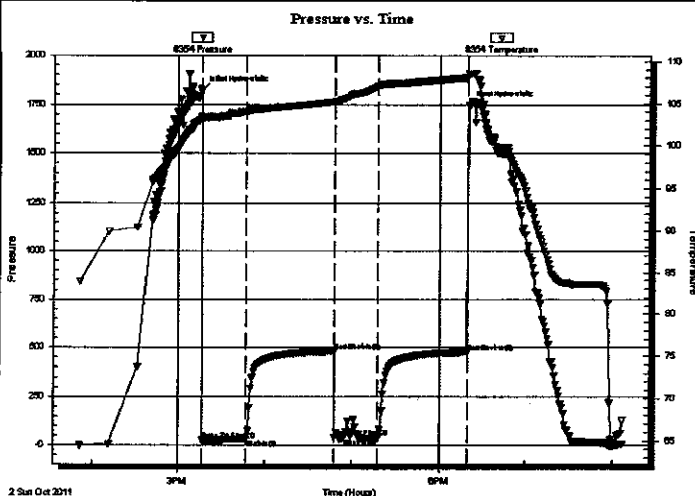
Start Time: 13:51:30

End Time: 20:07:30

Time On Btm: 2011.10.02 @ 15:16:00

Time Off Btm: 2011.10.02 @ 18:20:00

**TEST COMMENT:** IF-Weak building blow. Built to 1 & 3/4 inches.  
IS-No Return.  
FF-Weak building blow after 16 minutes. Built to 1/2 inch.  
FSI-No Return.



## PRESSURE SUMMARY

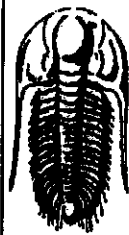
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1822.90	103.46	Initial Hydro-static
1	26.38	103.11	Open To Flow (1)
31	32.53	104.05	Shut-In(1)
92	481.10	105.21	End Shut-In(1)
92	39.63	105.10	Open To Flow (2)
122	37.84	107.06	Shut-In(2)
183	476.31	108.00	End Shut-In(2)
184	1748.56	108.49	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
35.00	100%Mud	0.49

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

H&C Oil Operating Inc.

**12-10s-23w Graham,KS**

PO Box 86  
Plainville, KS 67663

**Bollig #12-1**

Job Ticket: 45254

**DST#: 1**

ATTN: Clayton Erickson

Test Start: 2011.10.02 @ 13:41:30

**Tool Information**

Drill Pipe:	Length: 3758.00 ft	Diameter: 3.80 inches	Volume: 52.71 bbl	Tool Weight: 3000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 15000.00 lb
			<u>Total Volume: 52.71 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3764.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval betw een Packers:	32.00 ft			
Tool Length:	60.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

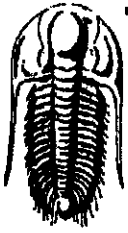
Tool Comments:

**Tool Description**

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3737.00	
Shut In Tool	5.00			3742.00	
Hydraulic tool	5.00			3747.00	
Jars	5.00			3752.00	
Safety Joint	3.00			3755.00	
Packer	5.00			3760.00	28.00 Bottom Of Top Packer
Packer	4.00			3764.00	
Stubb	1.00			3765.00	
Perforations	1.00			3766.00	
Recorder	0.00	8354	Inside	3766.00	
Recorder	0.00	8520	Outside	3766.00	
Perforations	27.00			3793.00	
Bullnose	3.00			3796.00	32.00 Bottom Packers & Anchor

**Total Tool Length: 60.00**





**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

H&C Oil Operating Inc.

**12-10s-23w Graham,KS**

PO Box 86  
Plainville, KS 67663

**Bollig #12-1**

Job Ticket: 45254

**DST#: 1**

ATTN: Clayton Erickson

Test Start: 2011.10.02 @ 13:41:30

**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: 75.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.96 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
35.00	100%Mud	0.491

Total Length: 35.00 ft      Total Volume: 0.491 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

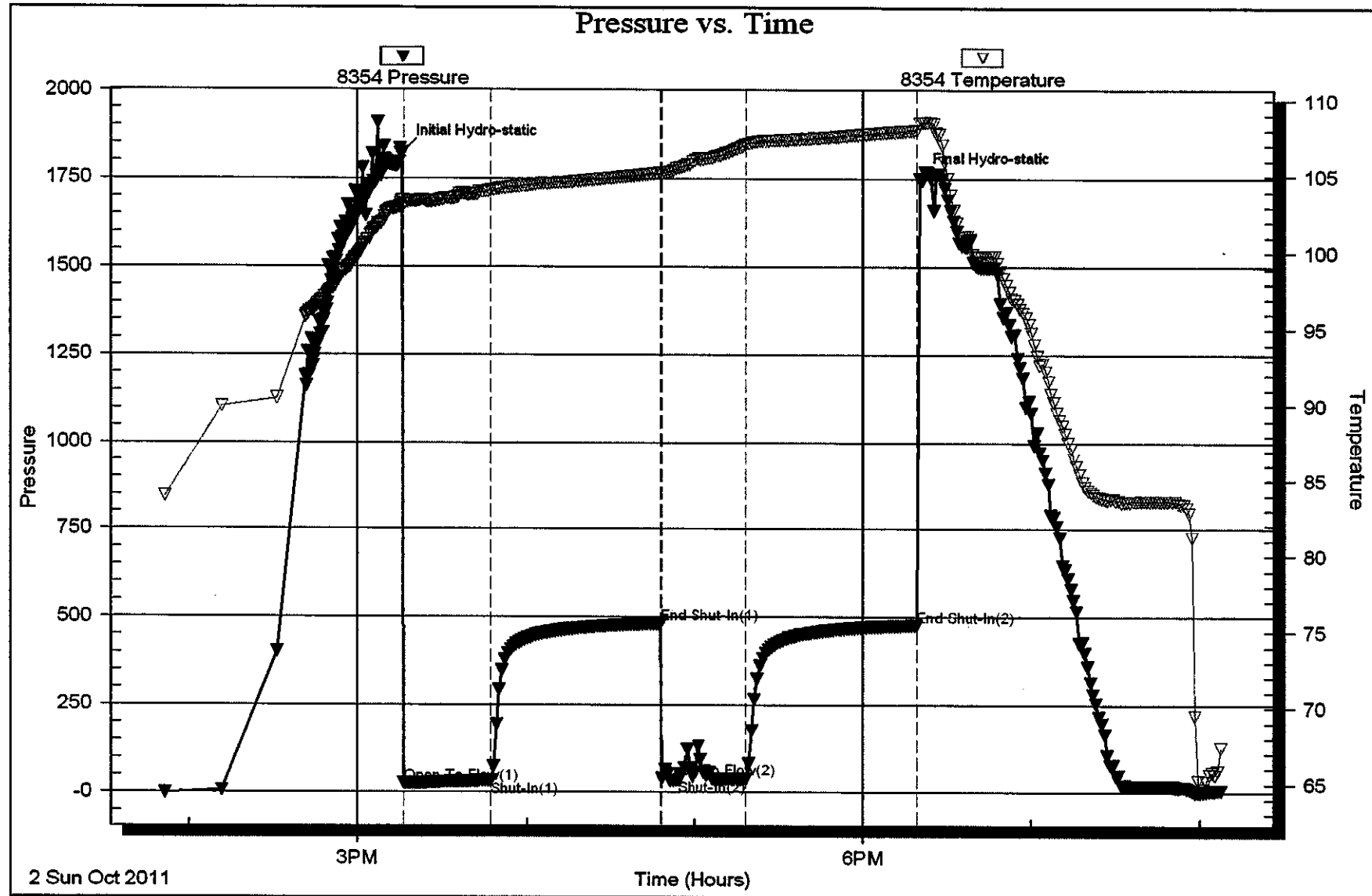
Recovery Comments:

Serial #: 8354

Inside H&C Oil Operating Inc.

Boilig #12-1

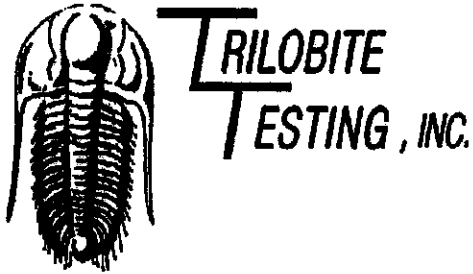
DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 45254

Printed: 2011.10.10 @ 15:18:42



## DRILL STEM TEST REPORT

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

PO Box 86  
Plainville, KS 67663

ATTN: Clayton Erickson

**Bollig #12-1**

**12-10s-23w Graham,KS**

Start Date: 2011.10.03 @ 05:27:15

End Date: 2011.10.03 @ 11:37:15

Job Ticket #: 45255                      DST #: 2

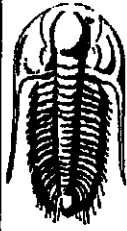
Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2011.10.10 @ 15:18:58

H&C Oil Operating Inc. 12-10s-23w Graham,KS Bollig #12-1 DST # 2 LKC "H" 2011.10.03



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

H&C Oil Operating Inc.

**12-10s-23w Graham,KS**

PO Box 86  
Plainville, KS 67663

**Bollig #12-1**

Job Ticket: 45255

**DST#:2**

ATTN: Clayton Erickson

Test Start: 2011.10.03 @ 05:27:15

**GENERAL INFORMATION:**

Formation: **LKC "H"**

Deviated: **No** Whipstock: **ft (KB)**

Time Tool Opened: 07:05:55

Time Test Ended: 11:37:15

Test Type: **Conventional Bottom Hole (Initial)**

Tester: **Dustin Rash**

Unit No: **38**

Interval: **3824.00 ft (KB) To 3805.00 ft (KB) (TVD)**

Reference Elevations: **2425.00 ft (KB)**

Total Depth: **3850.00 ft (KB) (TVD)**

**2419.00 ft (CF)**

Hole Diameter: **7.88 inches** Hole Condition: **Fair**

KB to GR/CF: **6.00 ft**

**Serial #: 8354 Inside**

Press@RunDepth: **123.34 psig @ 3826.00 ft (KB)**

Capacity: **8000.00 psig**

Start Date: **2011.10.03**

End Date: **2011.10.03**

Last Calib.: **2011.10.03**

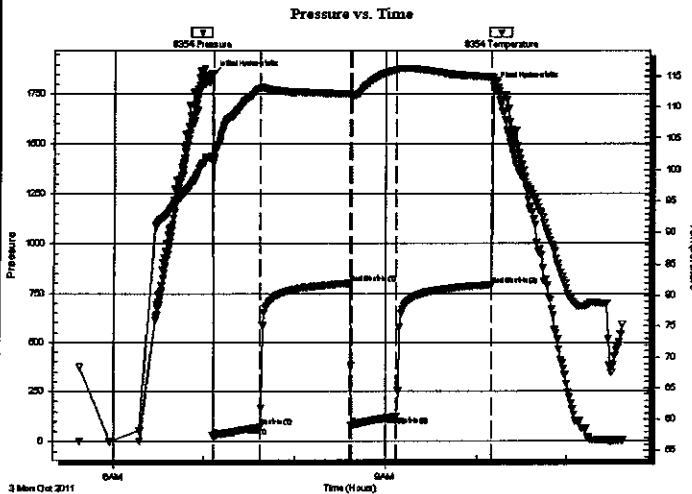
Start Time: **05:37:15**

End Time: **11:37:15**

Time On Btm: **2011.10.03 @ 07:05:35**

Time Off Btm: **2011.10.03 @ 10:10:45**

**TEST COMMENT:** IF-Fair building blow . BOB in 27 minutes.  
 IS-No Return.  
 FF-Weak building blow . Built to 12 inches.  
 FSI-No Return.



**PRESSURE SUMMARY**

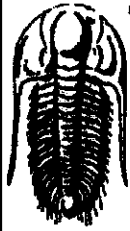
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1850.42	102.34	Initial Hydro-static
1	27.29	101.80	Open To Flow (1)
32	75.10	113.17	Shut-In(1)
91	799.87	112.25	End Shut-In(1)
92	79.99	112.04	Open To Flow (2)
122	123.34	116.00	Shut-In(2)
185	791.50	114.90	End Shut-In(2)
186	1792.90	114.85	Final Hydro-static

**Recovery**

Length (ft)	Description	Volume (bbl)
120.00	80%Water/20%Mud	1.68
75.00	50%Water/50%Mud	1.05

**Gas Rates**

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



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

H&C Oil Operating Inc.

**12-10s-23w Graham,KS**

PO Box 86  
Plainville, KS 67663

**Bollig #12-1**

Job Ticket: 45255

**DST#: 2**

ATTN: Clayton Erickson

Test Start: 2011.10.03 @ 05:27:15

### Tool Information

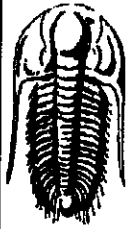
Drill Pipe:	Length: 3819.00 ft	Diameter: 3.80 inches	Volume: 53.57 bbl	Tool Weight: 3000.00 lb
Heavy Wt. Fpe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 24000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 4000.00 lb
			<u>Total Volume: 53.57 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3824.00 ft			Final 53000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	26.00 ft			
Tool Length:	54.00 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			3797.00	
Shut In Tool	5.00			3802.00	
Hydraulic tool	5.00			3807.00	
Jars	5.00			3812.00	
Safety Joint	3.00			3815.00	
Packer	5.00			3820.00	28.00 Bottom Of Top Packer
Packer	4.00			3824.00	
Stubb	1.00			3825.00	
Perforations	1.00			3826.00	
Recorder	0.00	8354	Inside	3826.00	
Recorder	0.00	8520	Outside	3826.00	
Perforations	21.00			3847.00	
Bullnose	3.00			3850.00	26.00 Bottom Packers & Anchor

**Total Tool Length: 54.00**



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

H&C Oil Operating Inc.

**12-10s-23w Graham,KS**

PO Box 86  
Plainville, KS 67663

**Bollig #12-1**

Job Ticket: 45255      **DST#: 2**

ATTN: Clayton Erickson

Test Start: 2011.10.03 @ 05:27:15

**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: 15000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume: bbl

Water Loss: 8.77 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.36 ohm.m

Gas Cushion Pressure: psig

Salinity: 2000.00 ppm

Filter Cake: inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
120.00	80%Water/20%Mud	1.683
75.00	50%Water/50%Mud	1.052

Total Length: 195.00 ft

Total Volume: 2.735 bbl

Num Fluid Samples: 0

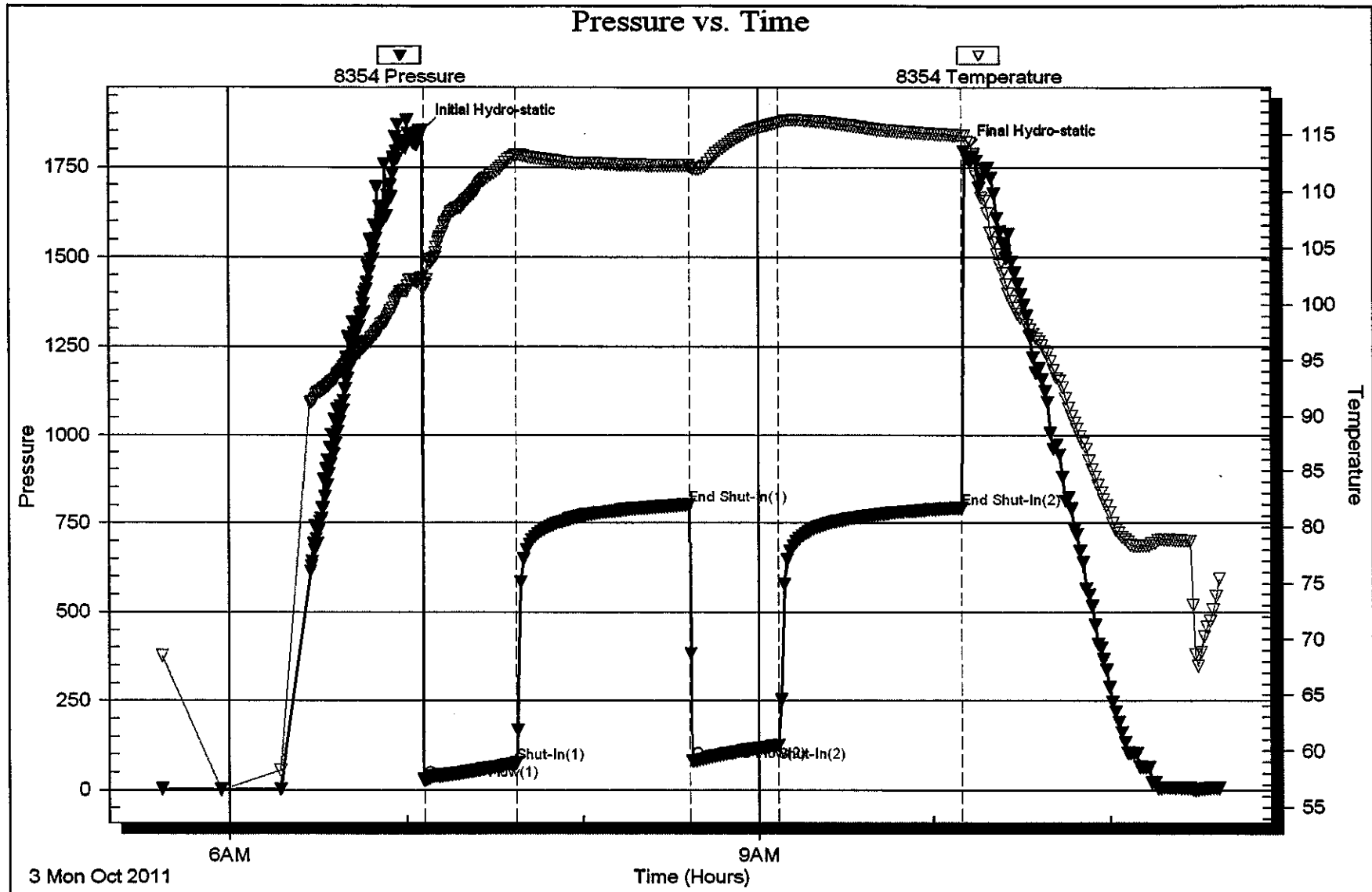
Num Gas Bombs: 0

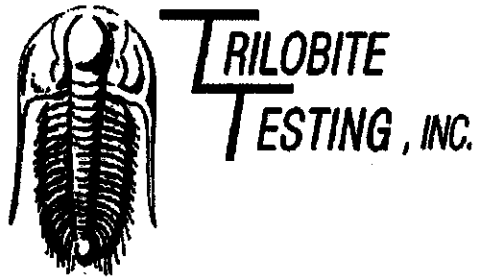
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





## DRILL STEM TEST REPORT

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

PO Box 86  
Plainville, KS 67663

ATTN: Clayton Erickson

**Bollig #12-1**

**12-10s-23w Graham,KS**

Start Date: 2011.10.03 @ 20:30:15

End Date: 2011.10.04 @ 03:09:15

Job Ticket #: 45256                      DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2011.10.10 @ 15:19:16

H&C Oil Operating Inc.

12-10s-23w Graham,KS

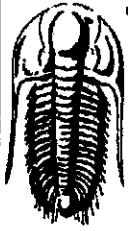
Bollig #12-1

DST # 3

LKC "R.J."

2011.10.03





**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

H&C Oil Operating Inc.

**12-10s-23w Graham,KS**

PO Box 86  
Plainville, KS 67663

**Bollig #12-1**

Job Ticket: 45256

**DST#: 3**

ATTN: Clayton Erickson

Test Start: 2011.10.03 @ 20:30:15

### GENERAL INFORMATION:

Formation: **LKC "I&J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:02:45

Time Test Ended: 03:09:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 38

Interval: **3856.00 ft (KB) To 3893.00 ft (KB) (TVD)**

Reference Elevations: 2425.00 ft (KB)

Total Depth: 3893.00 ft (KB) (TVD)

2419.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 6.00 ft

**Serial #: 8354** Inside

Press@RunDepth: 111.29 psig @ 3858.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.10.03 End Date: 2011.10.04

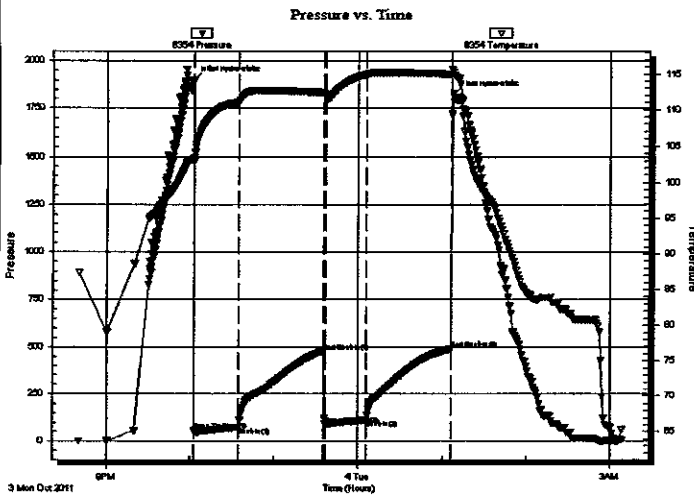
Last Calib.: 2011.10.04

Start Time: 20:40:15 End Time: 03:09:15

Time On Btm: 2011.10.03 @ 22:02:25

Time Off Btm: 2011.10.04 @ 01:07:45

**TEST COMMENT:** IF-Strong building blow. BOB in 1 minute 30 seconds.  
 IS-Return @ 30 seconds. Built to 3/4 inch. Died @ 27 minutes.  
 FF-Strong building blow. BOB in 3 minutes 30 seconds.  
 FSI-Return @ 15 seconds. Built to 5 inches.



### PRESSURE SUMMARY

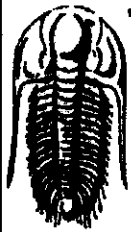
Time (Mn.)	Pressure (psig)	Temp (deg F)	Annotation
0	1900.58	103.29	Initial Hydro-static
1	58.68	102.90	Open To Flow (1)
33	74.52	111.01	Shut-In(1)
93	475.80	112.39	End Shut-In(1)
94	89.60	111.99	Open To Flow (2)
124	111.29	114.93	Shut-In(2)
184	488.05	114.94	End Shut-In(2)
186	1824.66	115.23	Final Hydro-static

### Recovery

Length (ft)	Description	Volume (bbl)
120.00	60%Gas/20%Oil/20%Mud	1.68
135.00	40%Gas/60%Oil	1.89
0.00	1560' G.I.P.	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.

**12-10s-23w Graham,KS**

PO Box 86  
Plainville, KS 67663

**Bollig #12-1**

Job Ticket: 45256

**DST#: 3**

ATTN: Clayton Erickson

Test Start: 2011.10.03 @ 20:30:15

**Tool Information**

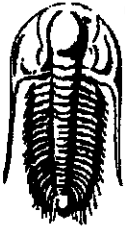
Drill Pipe:	Length: 3850.00 ft	Diameter: 3.80 inches	Volume: 54.01 bbl	Tool Weight: 3000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 4000.00 lb
		<u>Total Volume:</u>	<u>54.01 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3856.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	37.00 ft			
Tool Length:	65.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Change Over Sub	1.00			3829.00	
Shut In Tool	5.00			3834.00	
Hydraulic tool	5.00			3839.00	
Jars	5.00			3844.00	
Safety Joint	3.00			3847.00	
Packer	5.00			3852.00	28.00 Bottom Of Top Packer
Packer	4.00			3856.00	
Stubb	1.00			3857.00	
Perforations	1.00			3858.00	
Recorder	0.00	8354	Inside	3858.00	
Recorder	0.00	8520	Outside	3858.00	
Perforations	32.00			3890.00	
Bullnose	3.00			3893.00	37.00 Bottom Packers & Anchor

**Total Tool Length: 65.00**



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**FLUID SUMMARY**

H&C Oil Operating Inc.

**12-10s-23w Graham,KS**

PO Box 86  
Plainville, KS 67663

**Bollig #12-1**

Job Ticket: 45256

**DST#: 3**

ATTN: Clayton Erickson

Test Start: 2011.10.03 @ 20:30:15

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

44 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.58 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
120.00	60%Gas/20%Oil/20%Mud	1.683
135.00	40%Gas/60%Oil	1.894
0.00	1560' G.I.P.	0.000

Total Length: 255.00 ft

Total Volume: 3.577 bbl

Num Fluid Samples: 0

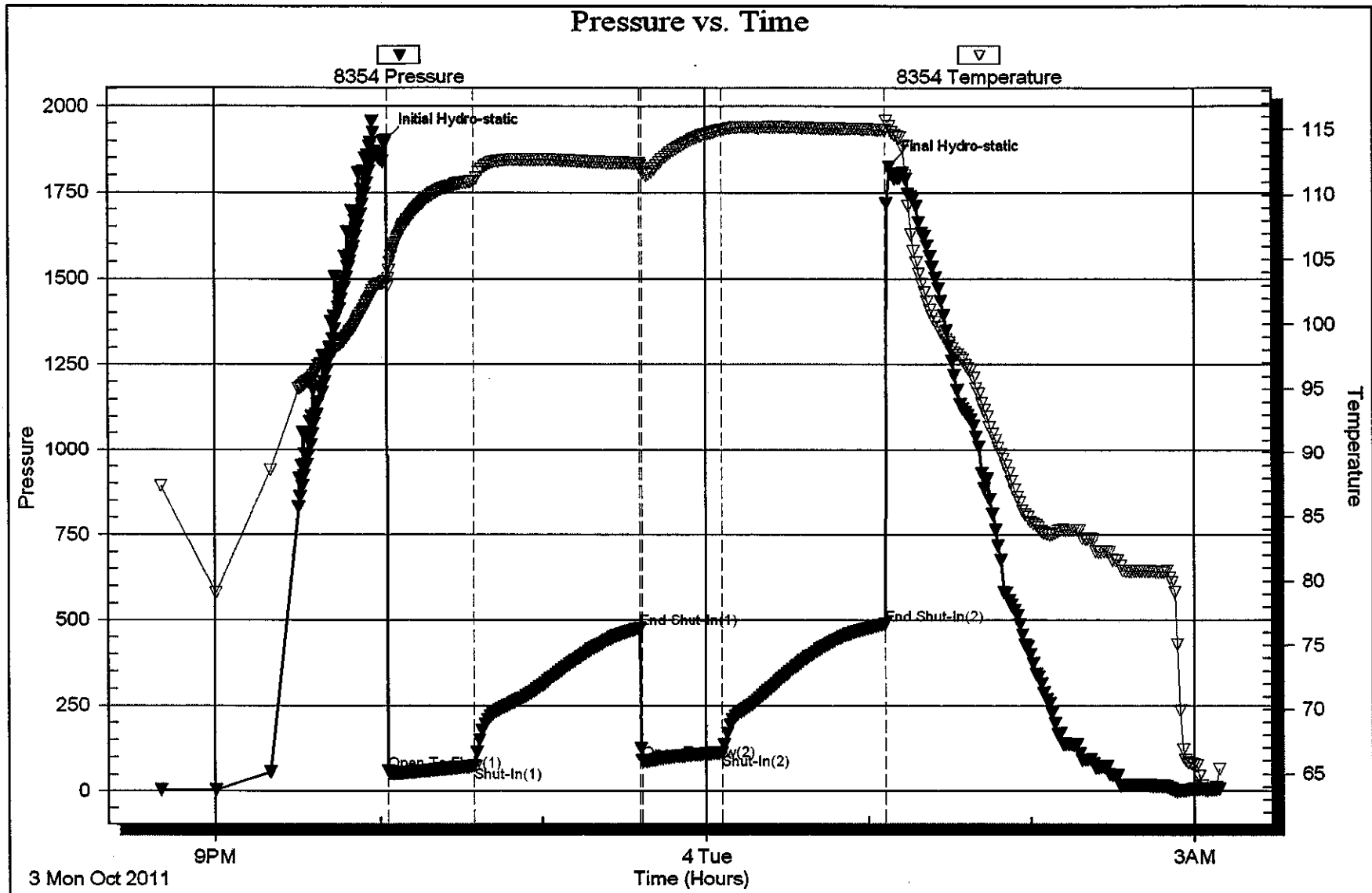
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





## DRILL STEM TEST REPORT

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

PO Box 86  
Plainville, KS 67663

ATTN: Clayton Erickson

**Bollig #12-1**

**12-10s-23w Graham,KS**

Start Date: 2011.10.04 @ 09:43:30

End Date: 2011.10.04 @ 15:46:00

Job Ticket #: 45257                      DST #: 4

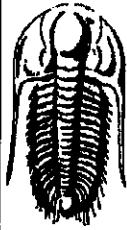
Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2011.10.10 @ 15:19:37

H&C Oil Operating Inc. 12-10s-23w Graham,KS Bollig #12-1 DST # 4 LKC "K" 2011.10.04



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

H&C Oil Operating Inc.

**12-10s-23w Graham,KS**

PO Box 86  
Plainville, KS 67663

**Bollig #12-1**

Job Ticket: 45257

DST#: 4

ATTN: Clayton Erickson

Test Start: 2011.10.04 @ 09:43:30

### GENERAL INFORMATION:

Formation: **LKC "K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:15:20

Time Test Ended: 15:46:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 38

Interval: **3884.00 ft (KB) To 3913.00 ft (KB) (TVD)**

Reference Elevations: 2425.00 ft (KB)

Total Depth: 3913.00 ft (KB) (TVD)

2419.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 6.00 ft

**Serial #: 8354**

**Inside**

Press@RunDepth: 21.34 psig @ 3896.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.10.04

End Date:

2011.10.04

Last Calib.: 2011.10.04

Start Time: 09:53:30

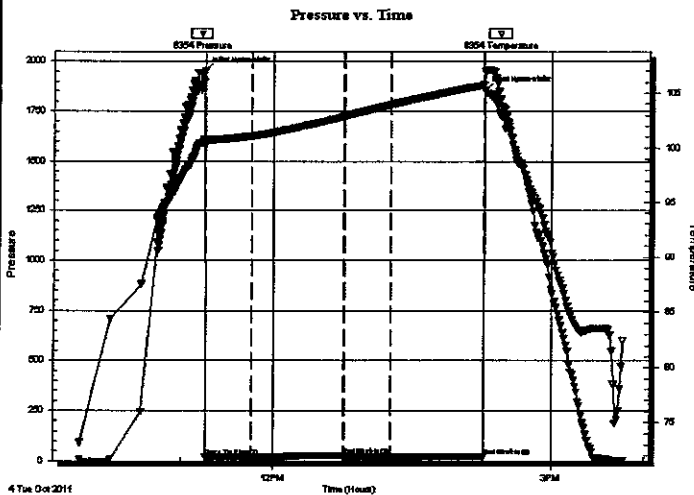
End Time:

15:46:00

Time On Btm: 2011.10.04 @ 11:15:10

Time Off Btm: 2011.10.04 @ 14:17:00

TEST COMMENT: IF-Weak surface blow. Died @ 9 minutes.  
IS-No Return.  
FF-Few surface bubbles. Died @ 30 seconds.  
FSI-No Return.



### PRESSURE SUMMARY

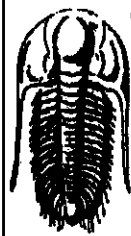
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1955.15	100.81	Initial Hydro-static
1	22.85	100.19	Open To Flow (1)
31	21.71	101.06	Shut-In(1)
91	29.52	102.87	End Shut-In(1)
91	22.76	102.88	Open To Flow (2)
121	21.34	103.91	Shut-In(2)
181	24.56	105.74	End Shut-In(2)
182	1856.41	106.97	Final Hydro-static

### Recovery

Length (ft)	Description	Volume (bbl)
1.00	10%Oil/90%Mud	0.01

### Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

H&C Oil Operating Inc.

**12-10s-23w Graham,KS**

PO Box 86  
Plainville, KS 67663

**Bollig #12-1**

Job Ticket: 45257

**DST#: 4**

ATTN: Clayton Erickson

Test Start: 2011.10.04 @ 09:43:30

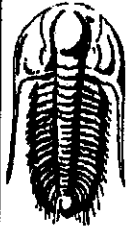
## Tool Information

Drill Pipe:	Length: 3879.00 ft	Diameter: 3.80 inches	Volume: 54.41 bbl	Tool Weight: 3000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 24000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 5000.00 lb
			<u>Total Volume: 54.41 bbl</u>	Tool Chased: 0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3894.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	19.00 ft			
Tool Length:	47.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3867.00	
Shut In Tool	5.00			3872.00	
Hydraulic tool	5.00			3877.00	
Jars	5.00			3882.00	
Safety Joint	3.00			3885.00	
Packer	5.00			3890.00	28.00 Bottom Of Top Packer
Packer	4.00			3894.00	
Stubb	1.00			3895.00	
Perforations	1.00			3896.00	
Recorder	0.00	8354	Inside	3896.00	
Recorder	0.00	8520	Outside	3896.00	
Perforations	14.00			3910.00	
Bullnose	3.00			3913.00	19.00 Bottom Packers & Anchor

**Total Tool Length: 47.00**



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

H&C Oil Operating Inc.

**12-10s-23w Graham,KS**

PO Box 86  
Hainville, KS 67663

**Bollig #12-1**

Job Ticket: 45257

**DST#: 4**

ATTN: Clayton Erickson

Test Start: 2011.10.04 @ 09:43:30

**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: 57.00 sec/qt

Cushion Volume: bbl

Water Loss: 9.58 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 3000.00 ppm

Filter Cake: inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
1.00	10%Oil/90%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:



Serial #: 8354

Inside H&COil Operating Inc.

Bollig #12-1

DST Test Number: 4

