

Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1257275  
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

Form must be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

- New Well       Re-Entry       Workover
- Oil       WSW       SWD       SIOW
- 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
- Plug Back       Conv. to GSW       Conv. to Producer
- Commingled      Permit #: \_\_\_\_\_
- Dual Completion      Permit #: \_\_\_\_\_
- SWD      Permit #: \_\_\_\_\_
- ENHR      Permit #: \_\_\_\_\_
- GSW      Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE       NW       SE       SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx)      (e.g. -xxx.xxxxx)

Datum:  NAD27       NAD83       WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ 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.

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 #: \_\_\_\_\_

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.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested  
Date: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

1257275



Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops 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.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No  Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No  List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  Name Top Datum
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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

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				

Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

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:  Yes  No

Date of First, Resumed Production, SWD or ENHR. \_\_\_\_\_ Producing Method:  
 Flowing  Pumping  Gas Lift  Other *(Explain)* \_\_\_\_\_

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

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

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

PO Box 86  
Plainville KS 67663-0086

ATTN: Jason T Alm

**18-9s-24w Graham,KS**

**Keith-Henry Unit #18-1**

Start Date: 2015.07.04 @ 23:05:00

End Date: 2015.07.05 @ 05:10:00

Job Ticket #: 62391                      DST #: 1

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

Printed: 2015.07.06 @ 14:42:21

H & C Oil Operating Inc

Keith-Henry Unit #18-1

18-9s-24w Graham,KS

DST # 1

LKC " C & D "

2015.07.04



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

H & C Oil Operating Inc  
PO Box 86  
Plainville KS 67663-0086  
ATTN: Jason T Alm

**Keith-Henry Unit #18-1**  
**18-9s-24w Graham,KS**  
Job Ticket: 62391 **DST#: 1**  
Test Start: 2015.07.04 @ 23:05:00

## GENERAL INFORMATION:

Formation: **LKC " C & D "**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 01:22:00  
Time Test Ended: 05:10:00  
Interval: **3858.00 ft (KB) To 3905.00 ft (KB) (TVD)**  
Total Depth: 3905.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Jim Svaty  
Unit No: 76  
Reference Elevations: 2493.00 ft (KB)  
2486.00 ft (CF)  
KB to GR/CF: 7.00 ft

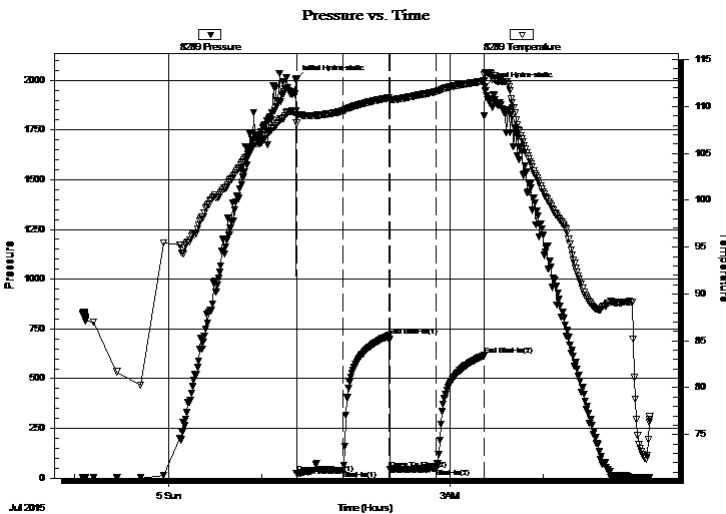
## Serial #: 8289

Inside

Press@RunDepth: 48.69 psig @ 3870.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2015.07.04 End Date: 2015.07.05 Last Calib.: 2015.07.05  
Start Time: 23:05:02 End Time: 05:08:07 Time On Btm: 2015.07.05 @ 01:21:45  
Time Off Btm: 2015.07.05 @ 03:22:45

TEST COMMENT: 30-IS- Surface Blow Building to 2 1/2" 1" in 7 min. -- 2" in 21 min.  
30-IS- No Blow  
30-FF- Surface Blow in 6 min. No Build  
30-FS- No Blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2002.00	109.51	Initial Hydro-static
1	25.43	108.23	Open To Flow (1)
30	40.16	109.51	Shut-In(1)
60	716.17	110.95	End Shut-In(1)
60	44.32	110.70	Open To Flow (2)
90	48.69	111.58	Shut-In(2)
121	616.39	112.70	End Shut-In(2)
121	1968.87	113.64	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
64.00	WCM 50%w 50%m Oil Specks	0.62

## Gas Rates

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



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

H & C Oil Operating Inc

**Keith-Henry Unit #18-1**

PO Box 86  
Plainville KS 67663-0086

**18-9s-24w Graham,KS**

Job Ticket: 62391      **DST#: 1**

ATTN: Jason T Alm

Test Start: 2015.07.04 @ 23:05:00

## GENERAL INFORMATION:

Formation: **LKC " C & D "**

Deviated: No      Whipstock:      ft (KB)      Test Type: Conventional Bottom Hole (Initial)

Time Tool Opened: 01:22:00      Tester: Jim Svaty

Time Test Ended: 05:10:00      Unit No: 76

**Interval: 3858.00 ft (KB) To 3905.00 ft (KB) (TVD)**      Reference Elevations: 2493.00 ft (KB)

Total Depth: 3905.00 ft (KB) (TVD)      2486.00 ft (CF)

Hole Diameter: 7.88 inches      Hole Condition: Fair      KB to GR/CF: 7.00 ft

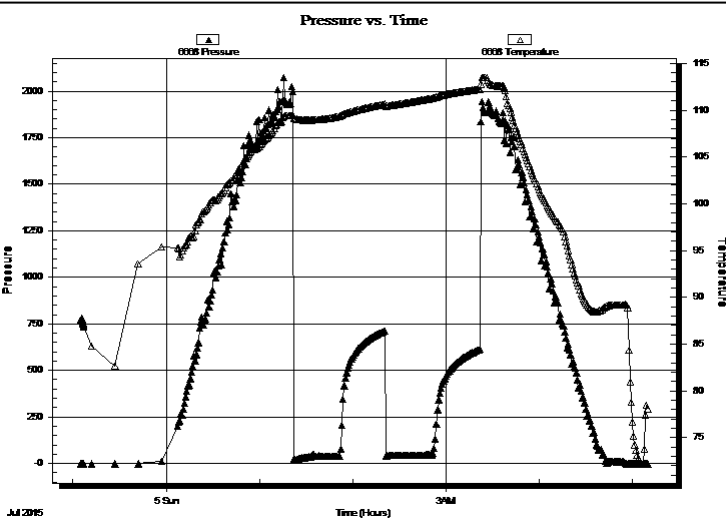
**Serial #: 6668      Outside**

Press@RunDepth:      psig @      3870.00 ft (KB)      Capacity: 8000.00 psig

Start Date: 2015.07.04      End Date: 2015.07.05      Last Calib.: 2015.07.05

Start Time: 23:05:02      End Time: 05:09:45      Time On Btm:      Time Off Btm:     

**TEST COMMENT:** 30-IF- Surface Blow Building to 2 1/2" 1" in 7 min. -- 2" in 21 min.  
30-ISI- No Blow  
30-FF- Surface Blow in 6 min. No Build  
30-FSI- No Blow



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
64.00	WCM 50%w 50%m Oil Specks	0.62

## 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: Jason T Alm

**Keith-Henry Unit #18-1**  
**18-9s-24w Graham,KS**  
Job Ticket: 62391 **DST#: 1**  
Test Start: 2015.07.04 @ 23:05:00

**Tool Information**

Drill Pipe:	Length: 3830.00 ft	Diameter: 3.80 inches	Volume: 53.72 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 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: 56000.00 lb
			<u>Total Volume: 53.87 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3858.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	47.00 ft			
Tool Length:	68.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
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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	
Change Over Sub	1.00			3870.00	
Recorder	0.00	8289	Inside	3870.00	
Recorder	0.00	6668	Outside	3870.00	
Blank Spacing	31.00			3901.00	
Change Over Sub	1.00			3902.00	
Bullnose	3.00			3905.00	47.00 Bottom Packers & Anchor

**Total Tool Length: 68.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

H & C Oil Operating Inc  
PO Box 86  
Plainville KS 67663-0086  
ATTN: Jason T Alm

**Keith-Henry Unit #18-1**  
**18-9s-24w Graham,KS**  
Job Ticket: 62391      **DST#: 1**  
Test Start: 2015.07.04 @ 23:05:00

## 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:	25000 ppm
Viscosity: 56.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.96 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 1200.00 ppm			
Filter Cake: 4.00 inches			

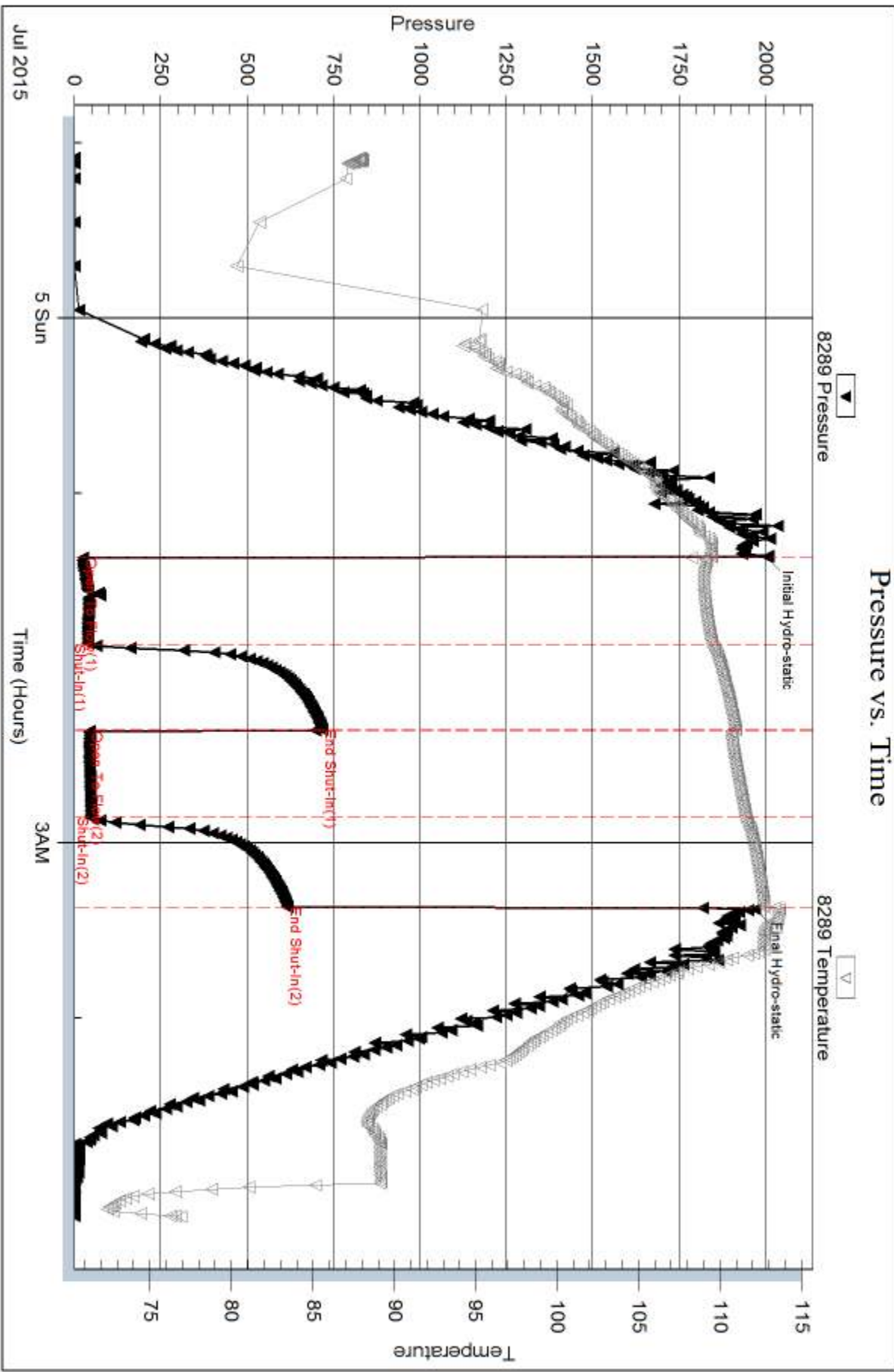
## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
64.00	WCM 50%w 50%m Oil Specks	0.624

Total Length: 64.00 ft      Total Volume: 0.624 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments: .264 @ 74



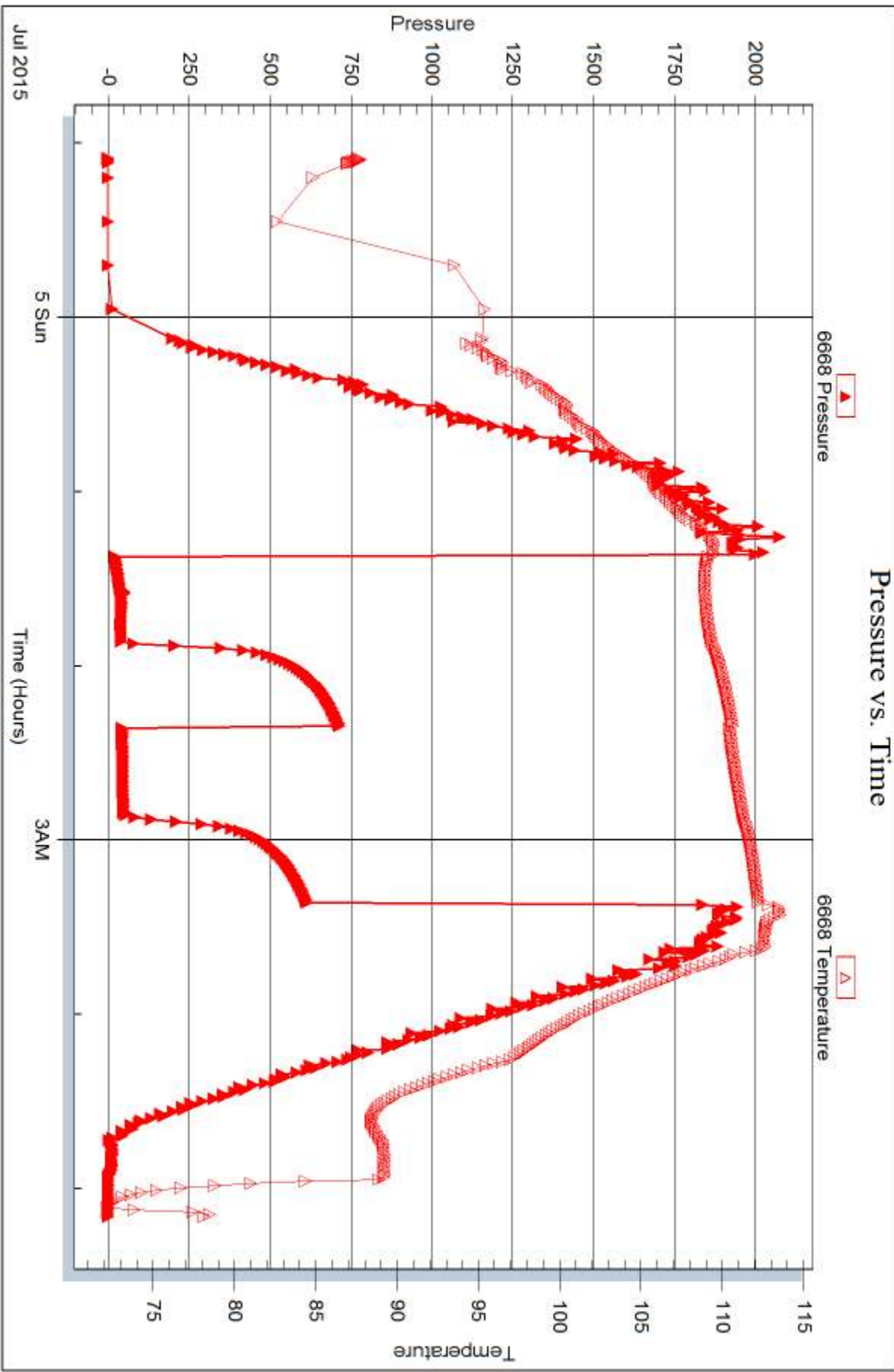


Serial #: 6668

Outside H & C Oil Operating Inc

18-95-24w Graham,KS

DST Test Number: 1





## DRILL STEM TEST REPORT

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

PO Box 86  
Plainville KS 67663-0086

ATTN: Jason T Alm

**18-9s-24w Graham,KS**

**Keith-Henry Unit #18-1**

Start Date: 2015.07.05 @ 18:43:00

End Date: 2015.07.06 @ 00:43:00

Job Ticket #: 62392                      DST #: 2

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

Printed: 2015.07.06 @ 14:40:41



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

H & C Oil Operating Inc  
PO Box 86  
Plainville KS 67663-0086  
ATTN: Jason T Alm

**Keith-Henry Unit #18-1**  
**18-9s-24w Graham,KS**  
Job Ticket: 62392 **DST#: 2**  
Test Start: 2015.07.05 @ 18:43:00

## GENERAL INFORMATION:

Formation: **LKC " J & K "**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 20:53:00  
Time Test Ended: 00:43:00  
Interval: **4004.00 ft (KB) To 4050.00 ft (KB) (TVD)**  
Total Depth: 4050.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Reference Elevations: 2493.00 ft (KB)  
2486.00 ft (CF)  
KB to GR/CF: 7.00 ft  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Jim Svaty  
Unit No: 76

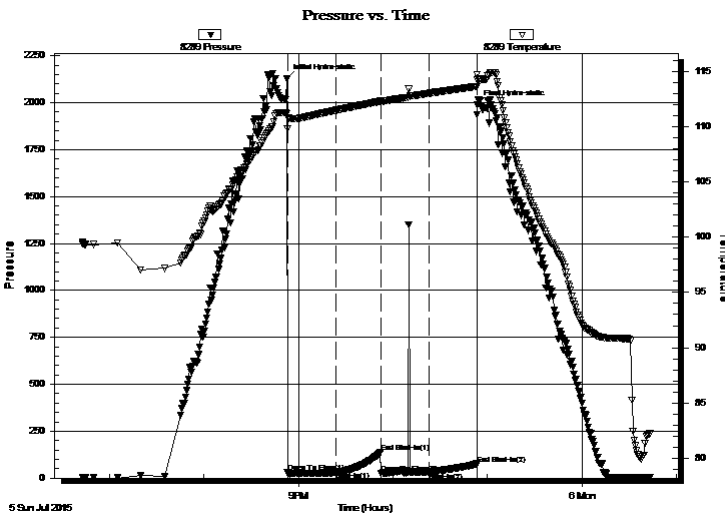
## Serial #: 8289

Inside

Press@RunDepth: 33.46 psig @ 4015.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2015.07.05 End Date: 2015.07.06 Last Calib.: 2015.07.06  
Start Time: 18:43:02 End Time: 00:43:15 Time On Btm: 2015.07.05 @ 20:52:45  
Time Off Btm: 2015.07.05 @ 22:53:45

TEST COMMENT: 30-IF- Weak Surface Blow Died in 15 min.  
30-ISI- No Blow  
30-FF- No Blow - Flushed Good Surge - No Blow  
30-FSI- No Blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2126.58	111.15	Initial Hydro-static
1	31.90	109.78	Open To Flow (1)
31	33.93	111.46	Shut-In(1)
60	137.96	112.28	End Shut-In(1)
60	27.18	112.23	Open To Flow (2)
90	33.46	112.99	Shut-In(2)
121	75.92	113.62	End Shut-In(2)
121	1990.78	114.19	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
4.00	Mud 100%	0.02

\* Recovery from multiple tests

## Gas Rates

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



# DRILL STEM TEST REPORT

H & C Oil Operating Inc

**Keith-Henry Unit #18-1**

PO Box 86  
Plainville KS 67663-0086

**18-9s-24w Graham,KS**

ATTN: Jason T Alm

Job Ticket: 62392

**DST#: 2**

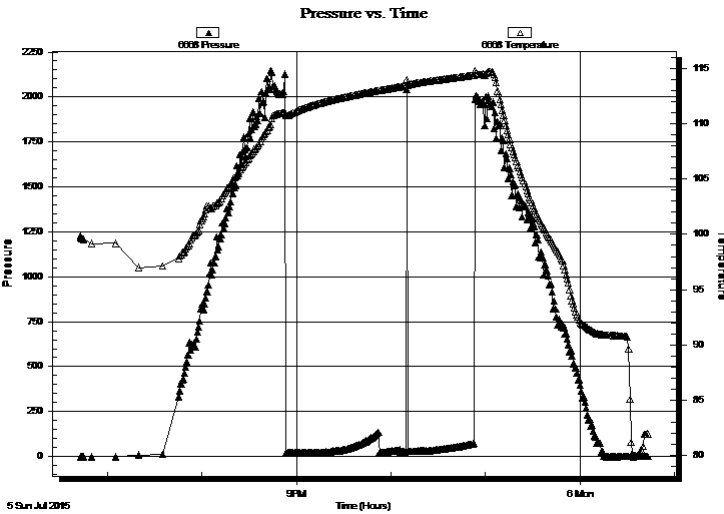
Test Start: 2015.07.05 @ 18:43:00

## GENERAL INFORMATION:

Formation: **LKC " J & K "**  
Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)  
Time Tool Opened: 20:53:00 Tester: Jim Svaty  
Time Test Ended: 00:43:00 Unit No: 76  
Interval: **4004.00 ft (KB) To 4050.00 ft (KB) (TVD)** Reference Elevations: 2493.00 ft (KB)  
Total Depth: 4050.00 ft (KB) (TVD) 2486.00 ft (CF)  
Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 7.00 ft

**Serial #: 6668 Outside**  
Press@RunDepth: psig @ 4015.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2015.07.05 End Date: 2015.07.06 Last Calib.: 2015.07.06  
Start Time: 18:43:02 End Time: 00:43:00 Time On Btm:  
Time Off Btm:

TEST COMMENT: 30-IF- Weak Surface Blow Died in 15 min.  
30-ISI- No Blow  
30-FF- No Blow - Flushed Good Surge - No Blow  
30-FSI- No Blow



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
4.00	Mud 100%	0.02

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

H & C Oil Operating Inc  
 PO Box 86  
 Plainville KS 67663-0086  
 ATTN: Jason T Alm

**Keith-Henry Unit #18-1**  
**18-9s-24w Graham,KS**  
 Job Ticket: 62392 **DST#: 2**  
 Test Start: 2015.07.05 @ 18:43:00

**Tool Information**

Drill Pipe:	Length: 3985.00 ft	Diameter: 3.80 inches	Volume: 55.90 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 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: 55000.00 lb
			<u>Total Volume: 56.05 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 53000.00 lb
Depth to Top Packer:	4004.00 ft			Final 53000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	46.00 ft			
Tool Length:	67.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
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Change Over Sub	1.00			3984.00	
Shut In Tool	5.00			3989.00	
Hydraulic tool	5.00			3994.00	
Packer	5.00			3999.00	21.00 Bottom Of Top Packer
Packer	5.00			4004.00	
Stubb	1.00			4005.00	
Perforations	9.00			4014.00	
Change Over Sub	1.00			4015.00	
Recorder	0.00	8289	Inside	4015.00	
Recorder	0.00	6668	Outside	4015.00	
Blank Spacing	31.00			4046.00	
Change Over Sub	1.00			4047.00	
Bullnose	3.00			4050.00	46.00 Bottom Packers & Anchor

**Total Tool Length: 67.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

H & C Oil Operating Inc  
PO Box 86  
Plainville KS 67663-0086  
ATTN: Jason T Alm

**Keith-Henry Unit #18-1**  
**18-9s-24w Graham,KS**  
Job Ticket: 62392      **DST#: 2**  
Test Start: 2015.07.05 @ 18:43:00

## 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: 60.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.96 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 2200.00 ppm			
Filter Cake: 4.00 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
4.00	Mud 100%	0.020

Total Length: 4.00 ft      Total Volume: 0.020 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments:

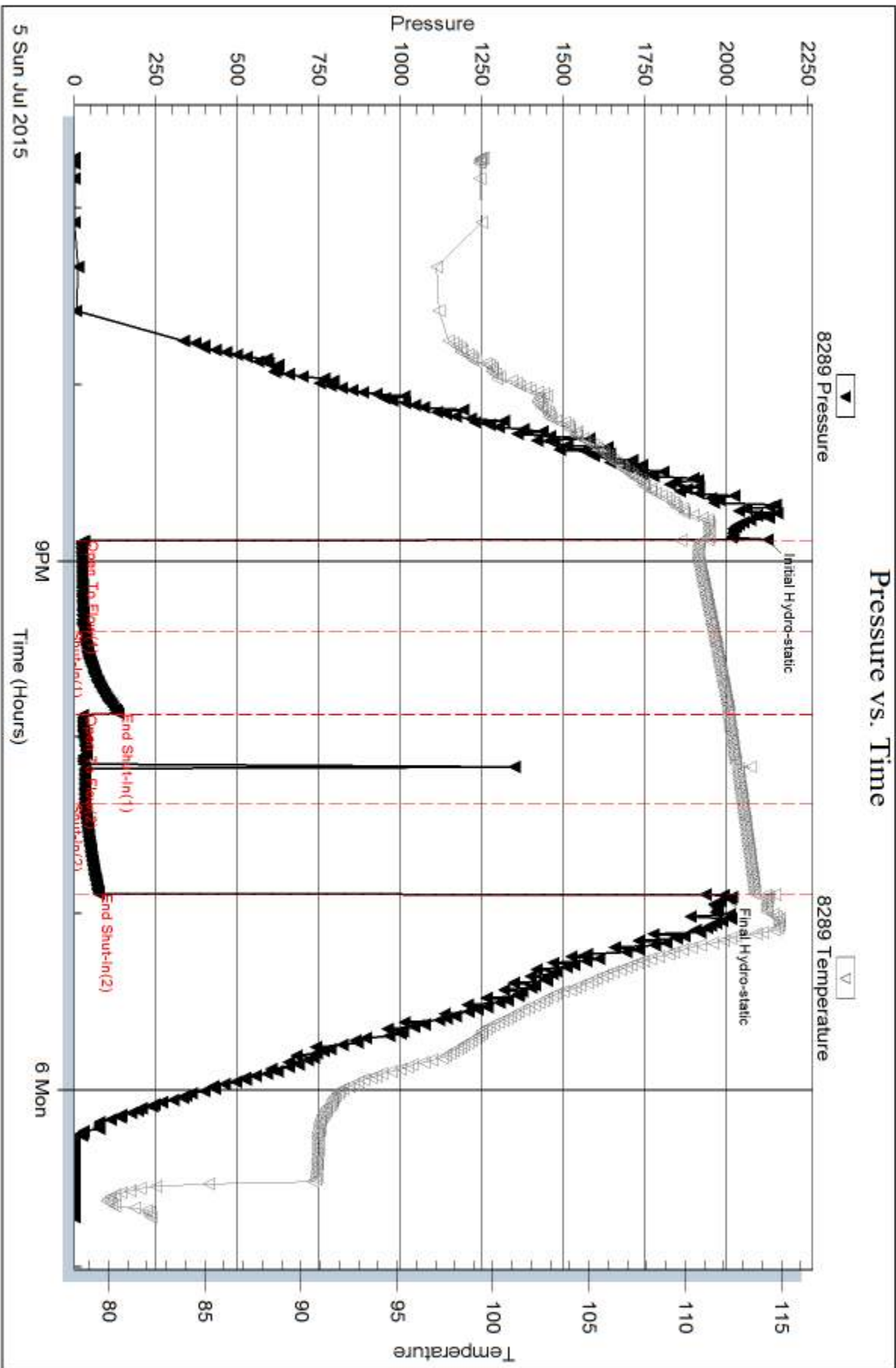
Serial #: 8289

Inside

H & C Oil Operating Inc

18-95-24w Graham,KS

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 62392

Printed: 2015.07.06 @ 14:40:44

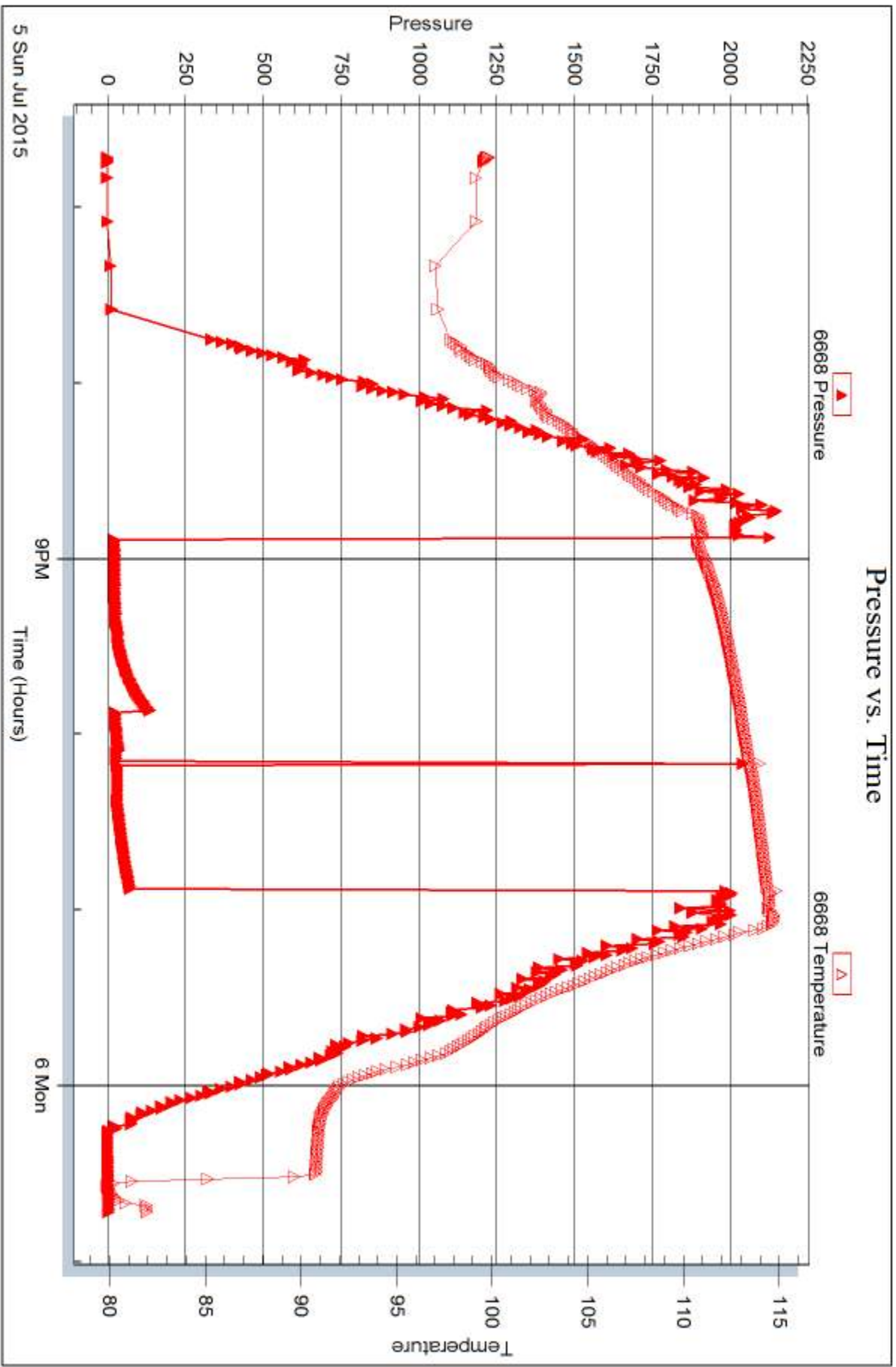


Serial #: 6668

Outside H & C Oil Operating Inc

18-95-24w Graham,KS

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 62392

Printed: 2015.07.06 @ 14:40:44



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 62391

Well Name & No. Keith-Henry Unit 18-1 Test No. 1 Date 7-4-15  
 Company H+C Oil Operating INC. Elevation 2493 KB 2486 GL  
 Address P.O. Box 86 Plainville KS 67663-0086  
 Co. Rep / Geo. JASON J. Alm Rig American Eagle #2  
 Location: Sec. 18 Twp. 9 S Rge. 24 W Co. Graham State KS

Interval Tested 3858-3905 Zone Tested LKC "C & D"  
 Anchor Length 47 Drill Pipe Run 3830 Mud Wt. 9.4  
 Top Packer Depth 3853 Drill Collars Run 30 Vis 56  
 Bottom Packer Depth 3858 Wt. Pipe Run 0 WL 8.0  
 Total Depth 3905 Chlorides 1200 ppm System LCM 4

Blow Description IF - Surface Blow Building to 2 1/2" (1" - 7 min) (2" - 2 min)  
ISI - No Blow  
FF - Surface Blow in 6 min. No Build  
FSI - No Blow

Rec	Feet of	Oil Specks	%gas	%oil	%water	%mud
<u>64</u>	<u>WCM</u>	<u>Oil Specks</u>				
Rec	Feet of		%gas	%oil	%water	%mud
Rec	Feet of		%gas	%oil	%water	%mud
Rec	Feet of		%gas	%oil	%water	%mud

Rec Total 64 BHT 113 Gravity \_\_\_\_\_ API RW 264 @ 74 ° F Chlorides 25000 ppm  
 (A) Initial Hydrostatic 2002  Test 1050 T-On Location 20:05  
 (B) First Initial Flow 25  Jars \_\_\_\_\_ T-Started 23:05  
 (C) First Final Flow 40  Safety Joint \_\_\_\_\_ T-Open 01:22  
 (D) Initial Shut-In 716  Circ Sub \_\_\_\_\_ T-Pulled 03:22  
 (E) Second Initial Flow 44  Hourly Standby \_\_\_\_\_ T-Out 05:10  
 (F) Second Final Flow 48  Mileage 125 RT Comments \_\_\_\_\_  
 (G) Final Shut-In 616  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1968  Straddle \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_

Initial Open 30  Extra Packer \_\_\_\_\_  
 Initial Shut-In 30  Extra Recorder \_\_\_\_\_  
 Final Flow 30  Day Standby \_\_\_\_\_  
 Final Shut-In 30  Accessibility \_\_\_\_\_  
 Sub Total 1175

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. 62392

Well Name & No. Keith-Henry Unit 18-1 Test No. 2 Date 7-5-15  
 Company H+C Oil Operating Inc. Elevation 2493 KB 2486 GL  
 Address P.O. Box 86 Plainville KS 67663-0086  
 Co. Rep / Geo. JASON T. Alm Rig American Eagle #2  
 Location: Sec. 18 Twp. 9S Rge. 24W Co. Graham State KS

Interval Tested 4004 - 4050 Zone Tested LKC "J+K"  
 Anchor Length 46 Drill Pipe Run 3985 Mud Wt. 9.4  
 Top Packer Depth 3999 Drill Collars Run 30 Vis 60  
 Bottom Packer Depth 4004 Wt. Pipe Run 0 WL 8  
 Total Depth 4050 Chlorides 2200 ppm System LCM 4

Blow Description IF- WEAK SURFACE BLOW DIED IN 15min.  
ISI- NO BLOW  
FF- NO BLOW FLUSHED GOOD SURGE - NO BLOW  
FSI- NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>4</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 4 BHT 114 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm  
 (A) Initial Hydrostatic 2126  Test 1150 T-On Location 17:53  
 (B) First Initial Flow 31  Jars \_\_\_\_\_ T-Started 18:43  
 (C) First Final Flow 33  Safety Joint \_\_\_\_\_ T-Open 20:53  
 (D) Initial Shut-In 137  Circ Sub \_\_\_\_\_ T-Pulled 22:53  
 (E) Second Initial Flow 27  Hourly Standby \_\_\_\_\_ T-Out 00:43  
 (F) Second Final Flow 33  Mileage 125 Comments \_\_\_\_\_  
 (G) Final Shut-In 75  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1990  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Initial Open 30  Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Initial Shut-In 30  Extra Packer \_\_\_\_\_  Extra Copies 0  
 Final Flow 30  Extra Recorder \_\_\_\_\_ Sub Total \_\_\_\_\_  
 Final Shut-In 30  Day Standby \_\_\_\_\_ Total 1275  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1275

Approved By \_\_\_\_\_ Our Representative [Signature]  
 Trilobite Testing Inc. shall not be liable for damaged or 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 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.

# **Geological Report**

**Keith-Henry Unit #18-1**

425' FNL & 500' FEL

Sec. 18 T9s R24w

Graham County, Kansas



**H & C Oil Operating, Inc.**

## General Data

Well Data: H & C Oil Operating, Inc.  
Keith-Henry Unit #18-1  
425' FNL & 500' FEL  
Sec. 18 T9s R24w  
Graham County, Kansas  
API # 15-065-24103-0000

Drilling Contractor: American Eagle Drilling Co. Rig #2

Geologist: Jason T Alm

Spud Date: June 26, 2015

Completion Date: July 6, 2015

Elevation: 2486' Ground Level  
2493' Kelly Bushing

Directions: Wakeeney KS, North 16 mi. on Hwy 283 to H Rd,  
West 8 mi. to 180 Ave, North 3 mi. to K Rd, West 1  
1¼ mi. South into location.

Casing: 220' 8 5/8" surface casing

Samples: 10' wet and dry, 3750 to RTD

Drilling Time: 3450' to RTD

Electric Logs: Pioneer Energy Services "Daylan Kerr"  
CNL/CDL, DIL, MEL

Drillstem Tests: Two, Trilobite Testing, Inc. "Jim Svaty"

Problems: Rig's Torque Converter went out, while the rig was  
shut down with repairs the drill string got stuck in  
the hole. Rig, spotted oil and jarred the drill string  
free.

Remarks: None

## Formation Tops

	<b>H &amp; C Oil Operating, Inc.</b> <b>Keith-Henry Unit #18-1</b> Sec. 18 T9s R24w 425' FNL & 500' FEL
<b>Formation</b>	
Anhydrite	<b>2161', +332</b>
Base	<b>2196', +297</b>
Topeka	<b>3579', -1086</b>
Heebner	<b>3798', -1305</b>
Toronto	<b>3823', -1330</b>
Lansing	<b>3838', -1345</b>
BKC	<b>4064', -1571</b>
LTD	<b>4120', -1627</b>
RTD	<b>4120', -1627</b>

## Sample Zone Descriptions

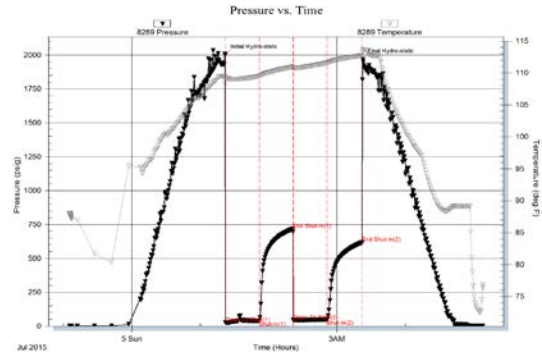
- LKC “D” Zone (3882’, -1389):      Covered in DST #1**  
 Ls – Fine to sub-crystalline, oolitic with scattered poor oolitic porosity, spotted light brown oil stain, slight show of free oil, no odor.
- LKC “J” Zone (4016’, -1523):      Covered in DST #2**  
 Ls – Fine to sub-crystalline, oolitic with scattered poor pinpoint oomoldic and slightly oolitic porosity, light spotted oil stain in porosity, slight show of free oil when broken, no odor.
- LKC “K” Zone (4034’, -1541):      Covered in DST #2**  
 Ls – Fine to sub-crystalline, oolitic with scattered pinpoint oolitic porosity, light to fair oil stain in porosity, slight show of free oil when broken, very light odor.

**Drill Stem Tests**  
 Trilobite Testing, Inc.  
 "Jim Svaty"

**DST #1 LKC "C-D" zones**

Interval (3858' – 3905') Anchor Length 47'

IHP	- 2002 #	
IFP	- 30" – Built to 2 ½ in.	25-40 #
ISI	- 30" – Dead	716 #
FFP	- 30" – W.S.B.	44-49 #
FSI	- 30" – Dead	616 #
FHP	- 1969 #	
BHT	- 113°F	

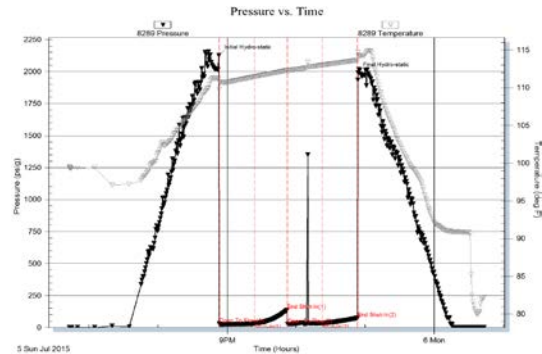


Recovery: 64' WCM w/ oil spots 50% Water

**DST #2 LKC "J-K" zones**

Interval (4004' – 4050') Anchor Length 46'

IHP	- 2127 #	
IFP	- 30" – W.S.B.	31-34 #
ISI	- 30" – Dead	138 #
FFP	- 30" – Dead, Flush, Dead	27-33 #
FSI	- 30" – Dead	76 #
FHP	- 1991 #	
BHT	- 114°F	



Recovery: 4' Mud

## Structural Comparison

Formation	H & C Oil Operating, Inc. Keith-Henry Unit #18-1 Sec. 18 T9s R24w 425' FNL & 500' FEL	H & C Oil Operating, Inc. Rosalie #17-2 Sec. 17 T9s R24w 1200' FNL & 330' FWL	Black Petroleum Co. Keith-Henry #1 Sec. 18 T9s R24w 3960' FSL & 1320' FEL
Anhydrite	<b>2161', +332</b>	2140', +331	2185', +333
Base	<b>2196', +297</b>	2174', +297	2220', +298
Topeka	<b>3579', -1086</b>	3552', -1081	3600', -1082
Heebner	<b>3798', -1305</b>	3765', -1294	3815', -1297
Toronto	<b>3823', -1330</b>	3797', -1326	3840', -1322
Lansing	<b>3838', -1345</b>	3809', -1338	3858', -1340
BKC	<b>4064', -1571</b>	4031', -1560	4080', -1562

### Summary

The location for the Keith-Henry Unit #18-1 was found via 3-D seismic survey. The new well ran structurally lower than expected via the survey. Two Drill Stem Tests were conducted, both of which were negative. After all gathered data had been examined the decision was made to plug and abandon the Keith-Henry Unit #18-1 well.

Respectfully Submitted,

Jason T Alm  
Hard Rock Consulting, Inc.





# Geologic Report

Drilling Time and Sample Log

Operator **H&C Oil Operating, Inc.**

Elevation  
KB 2493'

Lease **Keith-Henry Unit** No. **18-1**

DF 2486'  
GL

API # **15-065-24103-0000**

Casing Record  
Surface 8 5/8" @ 220'

Field **Wildcat**

Production  
None

Location **425' FNL & 500' FEL**

Electrical Surveys  
CNL/CDL, DIL, MEL

Sec. **18** Twp. **9s** Rge. **24w**

County **Graham** State **Kansas**

Formation	Log Tops	Sample Tops	Struct Comp
Anhydrite	2161'+332	2160'+333	+1
Base	2196'+297	2198'+295	FL
Topeka	3579'-1086	3582'-1089	-5
Heebner	3798'-1305	3800'-1307	-9
Toronto	3823'-1330	3826'-1333	-4
Lansing	3838'-1345	3842'-1349	-7
BKc	4064'-1571	4065'-1572	-11
Total Depth	4120'-1627	4120'-1627	

Reference Well For Structural Comparison **H & C Oil Operating, Inc. Rosalie #17-2**  
1200' FNL & 330' FWL Sec. 17 T9s R24w Graham Co. Kansas

Drilling Contractor **American Eagle Drilling Co. Rig #2**  
 Commenced **6-26-2015** Completed **7-6-2015**  
 Samples Saved From **3750'** To **RTD**  
 Drilling Time Kept From **3450'** To **RTD**  
 Samples Examined From **3750'** To **RTD**  
 Geological Supervision From **3750'** To **RTD**

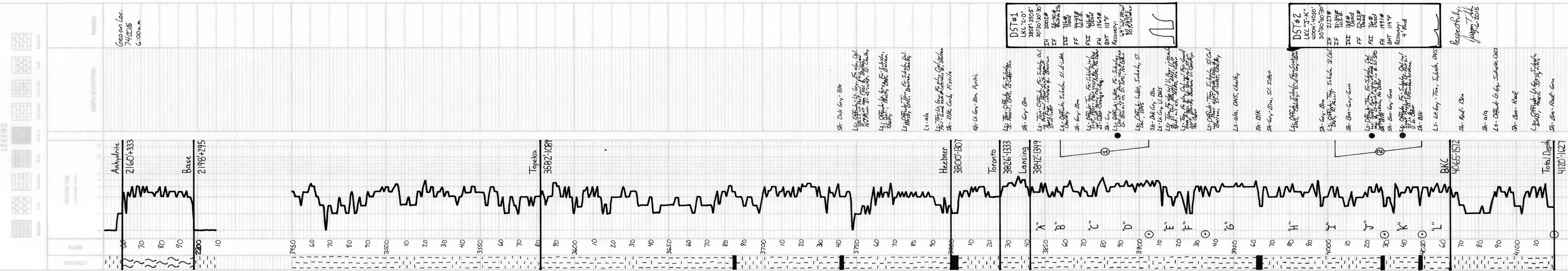
Displacement **2800'** Mud Type **Chemical**

## Summary and Recommendations

The location for the Keith-Henry Unit #18-1 was found via 3-D seismic survey. The new well ran structurally lower than expected via the survey. Two Drill Stem Tests were conducted, both of which were negative. After all gathered data had been examined the decision was made to plug and abandon the Keith-Henry Unit #18-1 well.

Respectfully Submitted,

Jason T Alm  
Hard Rock Consulting, Inc.



Drilling Contractor **American Eagle Drilling Co. Rig #2**  
 Commenced **6-26-2015** Completed **7-6-2015**  
 Samples Saved From **3750'** To **RTD**  
 Drilling Time Kept From **3450'** To **RTD**  
 Samples Examined From **3750'** To **RTD**  
 Geological Supervision From **3750'** To **RTD**

Respectfully Submitted,

Jason T Alm  
Hard Rock Consulting, Inc.

# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

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

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

No. 1413

Date	7-6-15	Sec.	18	Twp.	9	Range	24	County	Carahana	State	KS	On Location	9:00 P.M.	Finish	9:00 P.M.
Lease	Keith Henry Unit Well No. 18-1														
Contractor	American Eagle														
Type Job	Rotary plug														
Hole Size	7 7/8														
Csg.	I.D. 4120														
Tbg. Size	Depth														
Tool	Depth														
Cement Left in Csg.	Shoe Joint														
Meas Line	Displace														
<b>EQUIPMENT</b>															
Pumptrk	No.	Cementite													
	18	Helper	Gais												
Bulktrk	No.	Driver	Trans												
Bulktrk	No.	Driver	David												
<b>JOB SERVICES &amp; REMARKS</b>															
Remarks:															
Rat Hole	30SK														
Mouse Hole															
Centralizers															
Baskets															
D/V or Port Collar															
	1st	2170	50SK												
	2nd	1010	100SK												
	3rd	270	50SK												
	4th	40	10SK												
	HANDLING														
	Mileage														
	Guide Shoe														
	Centralizer														
	Baskets														
	AFU Inserts														
	Float Shoe														
	Latch Down														
	Pumptrk Charge														
	Mileage														
	Tax														
	Discount														
	Total Charge														

X Signature *Keith Henry*

Pumptrk Charge 42 plug

Centralizer 8 7/8 Dry Hole plug

Handling 249

FLOAT EQUIPMENT

Mud CLR 48

Flowseal 60#

Common 144

Poz. Mix 96

Gel. 9

Calcium

Hulls

Salt

Kol-Seal

CFL-117 or CD110 CAF 38

Sand

Guide Shoe

Baskets

AFU Inserts

Float Shoe

Latch Down

Mileage

Tax

Discount

Total Charge

The above was done to satisfaction and supervision of owner agent or contractor.  
Cement Amount Ordered 240 60/40 41.662 1/4 #96

Location We Henry Routine Sw 180 3011/4 W Sinto

Owner

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.

Charge To HRC

Street

City

State

# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

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

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

No. 1409

Date	6-27-15	18	9	2A	County	Conaway	State	KS	On Location	Finish
Lease	Keith Henry Unit		Well No. 18-1		Location / Oklahoma / Oklahoma State 1802 31KR2					
Contractor	American Energy									
Type Job	Surface									
Hole Size	12 1/4	T.D. <del>221</del> 221								
Csg.	8 5/8	Depth <del>220</del> 220								
Tbg. Size		Depth								
Tool		Depth								
Cement Left in Csg.	15	Shoe Joint								
Meas Line		Displace 1336L								
<b>EQUIPMENT</b>										
Pumptrk	17	No.	Cement	Common 120						
			Helper	Poz. Mix 30						
Bulktrk		No.	Driver	Gel. 3						
			Driver	Calcium 6						
Bulktrk		No.	Driver	Hulls						
			Driver	Salt						
<b>JOB SERVICES &amp; REMARKS</b>										
Remarks:										
Rat Hole										
Mouse Hole										
Centralizers										
Baskets	Mud CLR 48									
DV or Port Collar	CFL-117 or CD110 CAF 38									
	Sand									
	Handling <del>100</del> 159									
	Mileage									
	FLOAT EQUIPMENT									
	Guide Shoe									
	Centralizer 10 lbs Sugar									
	Baskets									
	AFU Inserts									
	Float Shoe									
	Latch Down									
	8 5/8 Surge									
	Pumptrk Charge Surface									
	Mileage 42									
	Tax									
	Discount									
	Total Charge									
X Signature	