



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1158755  
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: \_\_\_\_\_



1158755

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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Form	ACO1 - Well Completion
Operator	TDI, Inc.
Well Name	Befort 2
Doc ID	1158755

Tops

Name	Top	Datum
Anhydrite	1232'	+806'
Topeka	3017'	-979'
Heebner	3276'	-1238'
Lansing/Kansas City	3322'	-1284'
Base Kansas City	3562'	-1524'
Marmaton	3601'	-1563'
Conglomerate Sand	3634'	-1596'
Arbuckle	3651'	-1613'



## DRILL STEM TEST REPORT

Prepared For: **TDI Inc.**

1310 Bison RD  
Hays KS 67601

ATTN: Herb Deines

### **Befort #2**

### **11-15s-19w Ellis,KS**

Start Date: 2013.08.05 @ 22:30:00

End Date: 2013.08.06 @ 04:09:00

Job Ticket #: 54752                      DST #: 1

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

Printed: 2013.08.08 @ 16:07:04







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

TDI Inc.  
1310 Bison RD  
Hays KS 67601  
ATTN: Herb Deines

**11-15s-19w Ellis,KS**  
**Before #2**  
Job Ticket: 54752      **DST#: 1**  
Test Start: 2013.08.05 @ 22:30:00

**Tool Information**

Drill Pipe:	Length: 3310.00 ft	Diameter: 3.80 inches	Volume: 46.43 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer:	2500.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	60000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased	2.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial	38000.00 lb
Depth to Top Packer:	3334.00 ft			Final	38000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	76.00 ft				
Tool Length:	97.00 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			3314.00	
Shut In Tool	5.00			3319.00	
Hydraulic tool	5.00			3324.00	
Packer	5.00			3329.00	21.00      Bottom Of Top Packer
Packer	5.00			3334.00	
Stubb	1.00			3335.00	
Recorder	0.00	6753	Inside	3335.00	
Recorder	0.00	8166	Outside	3335.00	
Perforations	5.00			3340.00	
Change Over Sub	1.00			3341.00	
Blank Spacing	64.00			3405.00	
Change Over Sub	1.00			3406.00	
Perforations	1.00			3407.00	
Bullnose	3.00			3410.00	76.00      Bottom Packers & Anchor

**Total Tool Length: 97.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

TDI Inc. **11-15s-19w Ellis,KS**  
 1310 Bison RD **Befort #2**  
 Hays KS 67601 Job Ticket: 54752 **DST#: 1**  
 ATTN: Herb Deines Test Start: 2013.08.05 @ 22:30:00

## 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: 51.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.97 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4600.00 ppm			
Filter Cake: inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	Mud	0.148

Total Length: 30.00 ft Total Volume: 0.148 bbl  
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:  
 Laboratory Name: Laboratory Location:  
 Recovery Comments:



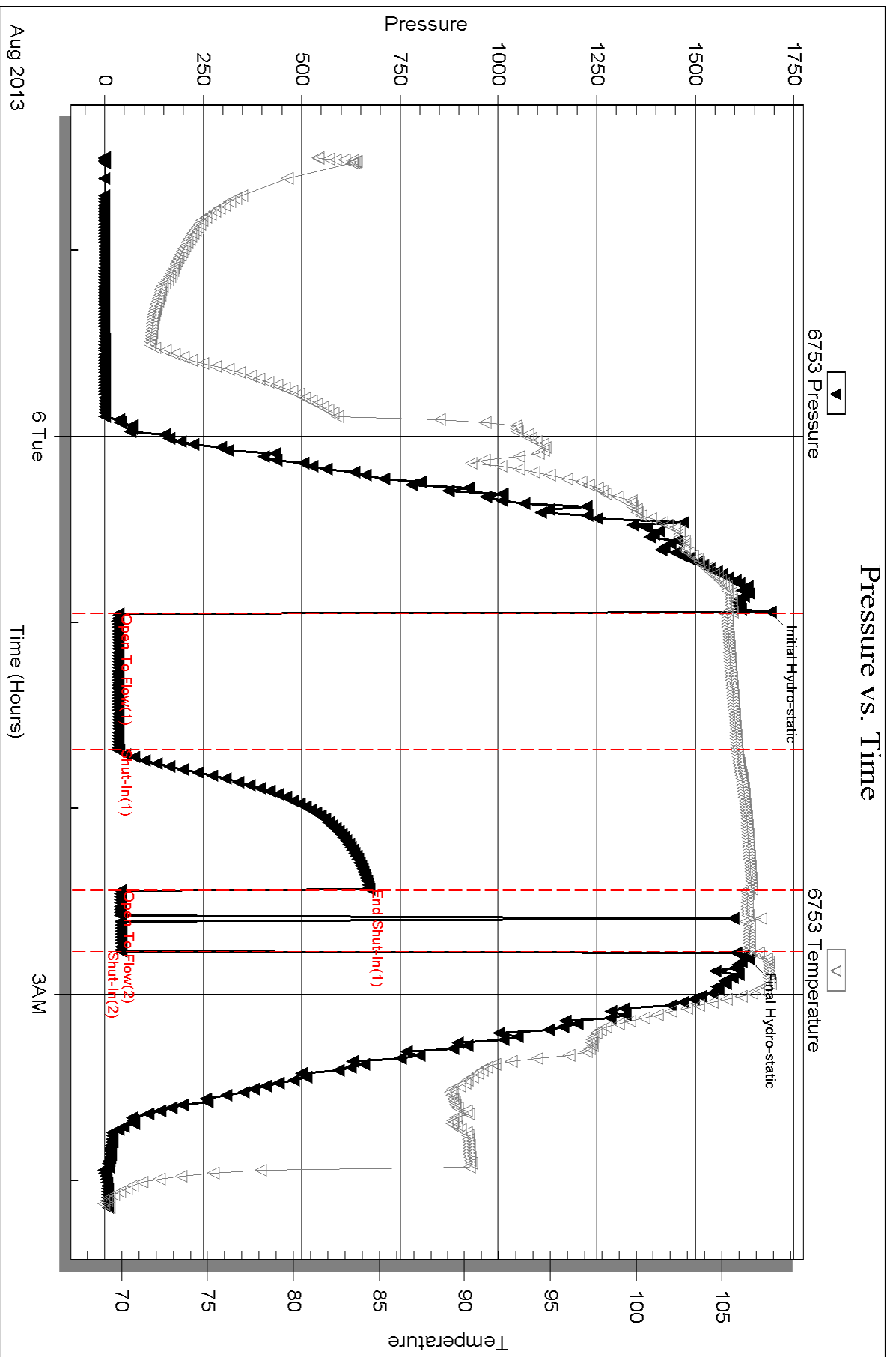
Serial #: 6753

Inside

TDI Inc.

Before #2

DST Test Number: 1

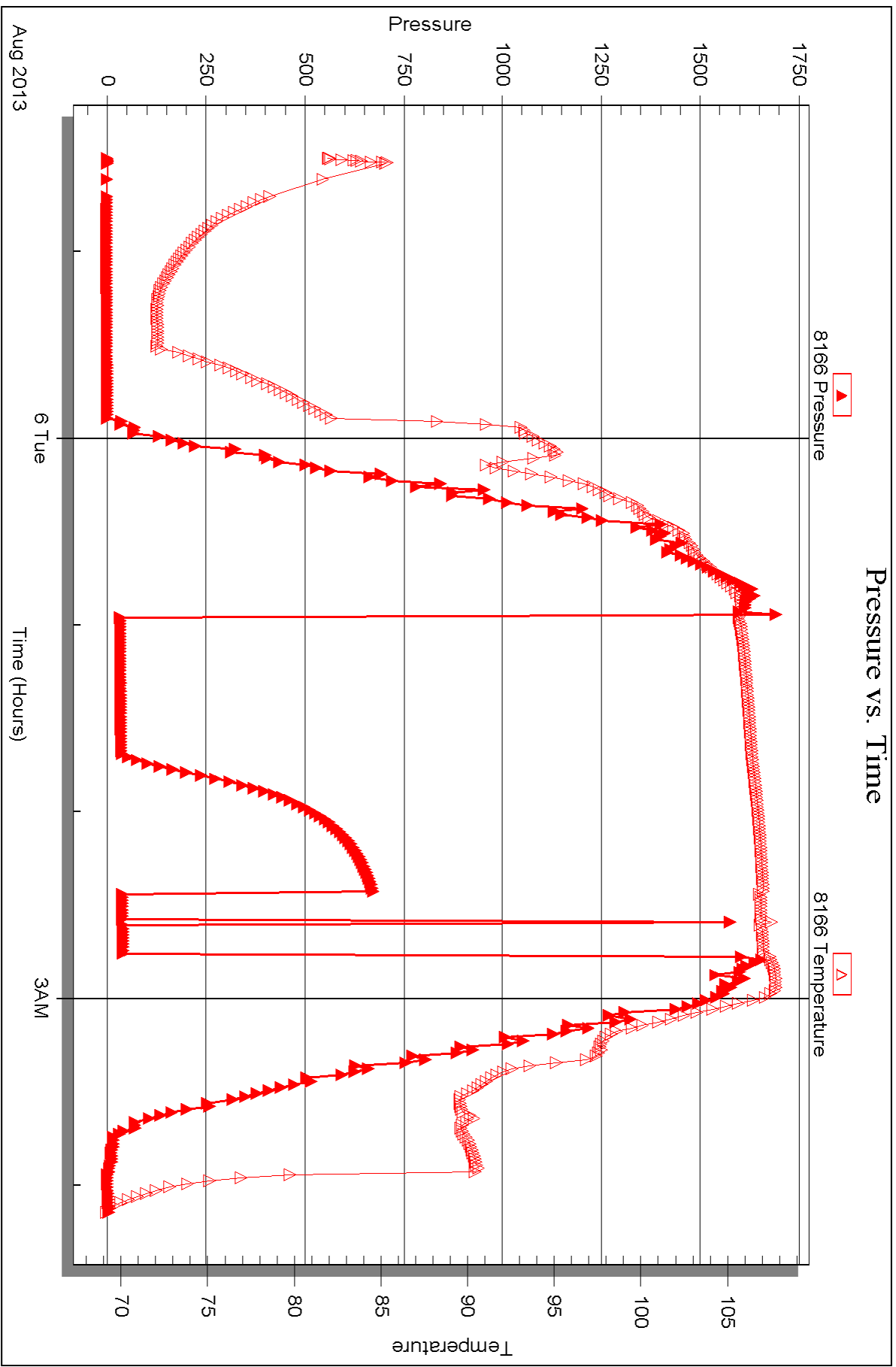


Serial #: 8166

Outside TDI Inc.

Before#2

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 54752

Printed: 2013.08.08 @ 16:07:07



## DRILL STEM TEST REPORT

Prepared For: **TDI Inc.**

1310 Bison RD  
Hays KS 67601

ATTN: Herb Deines

### **Befort #2**

### **11-15s-19w Ellis,KS**

Start Date: 2013.08.06 @ 15:45:00

End Date: 2013.08.06 @ 23:39:00

Job Ticket #: 54753                      DST #: 2

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

Printed: 2013.08.08 @ 16:06:06

TDI Inc. 11-15s-19w Ellis,KS Befort #2 DST # 2 KC "i,j" 2013.08.06



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

TDI Inc.  
1310 Bison RD  
Hays KS 67601  
ATTN: Herb Deines

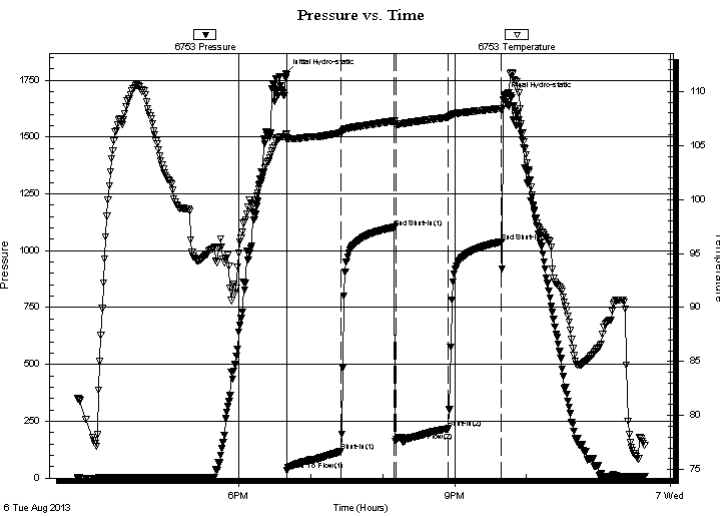
**11-15s-19w Ellis,KS**  
**Before #2**  
Job Ticket: 54753      **DST#: 2**  
Test Start: 2013.08.06 @ 15:45:00

### GENERAL INFORMATION:

Formation: **KC "I,J"**  
Deviated: No Whipstock:      ft (KB)  
Time Tool Opened: 18:40:00  
Time Test Ended: 23:39:00  
Interval: **3478.00 ft (KB) To 3525.00 ft (KB) (TVD)**  
Total Depth: 3525.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Reference Elevations: 2038.00 ft (KB)  
2030.00 ft (CF)  
KB to GR/CF: 8.00 ft  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Brett Dickinson  
Unit No: 59

**Serial #: 6753      Inside**  
Press @ Run Depth: 217.10 psig @ 3479.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2013.08.06      End Date: 2013.08.06      Last Calib.: 2013.08.06  
Start Time: 15:45:05      End Time: 23:38:59      Time On Btm: 2013.08.06 @ 18:39:00  
Time Off Btm: 2013.08.06 @ 21:41:30

**TEST COMMENT:** IF-BOB in 19 1/2 min  
ISI-Very weak surface blow  
FF-BOB in 31 min  
FSI-Very weak surface blow



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1779.73	105.95	Initial Hydro-static
1	34.97	105.52	Open To Flow (1)
46	117.26	106.17	Shut-In(1)
91	1102.22	107.28	End Shut-In(1)
92	161.17	107.00	Open To Flow (2)
136	217.10	107.62	Shut-In(2)
180	1039.06	108.42	End Shut-In(2)
183	1678.29	109.60	Final Hydro-static

### Recovery

Length (ft)	Description	Volume (bbl)
247.00	SMCW 95%W 5%M	3.19
180.00	GSOWCM 10%G 2%O 25%W 63%M	2.52
3.00	Free Oil	0.04

\* Recovery from multiple tests

### Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

TDI Inc.  
1310 Bison RD  
Hays KS 67601  
ATTN: Herb Deines

**11-15s-19w Ellis,KS**  
**Befort #2**  
Job Ticket: 54753      **DST#: 2**  
Test Start: 2013.08.06 @ 15:45:00

**Tool Information**

Drill Pipe:	Length: 3435.00 ft	Diameter: 3.80 inches	Volume: 48.18 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - 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:	50000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial	39000.00 lb
Depth to Top Packer:	3478.00 ft			Final	40000.00 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			3458.00	
Shut In Tool	5.00			3463.00	
Hydraulic tool	5.00			3468.00	
Packer	5.00			3473.00	21.00      Bottom Of Top Packer
Packer	5.00			3478.00	
Stubb	1.00			3479.00	
Recorder	0.00	6753	Inside	3479.00	
Recorder	0.00	8166	Outside	3479.00	
Perforations	9.00			3488.00	
Change Over Sub	1.00			3489.00	
Blank Spacing	31.00			3520.00	
Change Over Sub	1.00			3521.00	
Perforations	1.00			3522.00	
Bullnose	3.00			3525.00	47.00      Bottom Packers & Anchor

**Total Tool Length: 68.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

TDI Inc. **11-15s-19w Ellis,KS**  
 1310 Bison RD **Before #2**  
 Hays KS 67601 Job Ticket: 54753 **DST#: 2**  
 ATTN: Herb Deines Test Start: 2013.08.06 @ 15:45:00

## 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:	55000 ppm
Viscosity: 51.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.97 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4600.00 ppm			
Filter Cake: inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
247.00	SMCW 95%W 5%M	3.191
180.00	GOWCM 10%G 2%O 25%W 63%M	2.525
3.00	Free Oil	0.042

Total Length: 430.00 ft      Total Volume: 5.758 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

Serial #: 6753

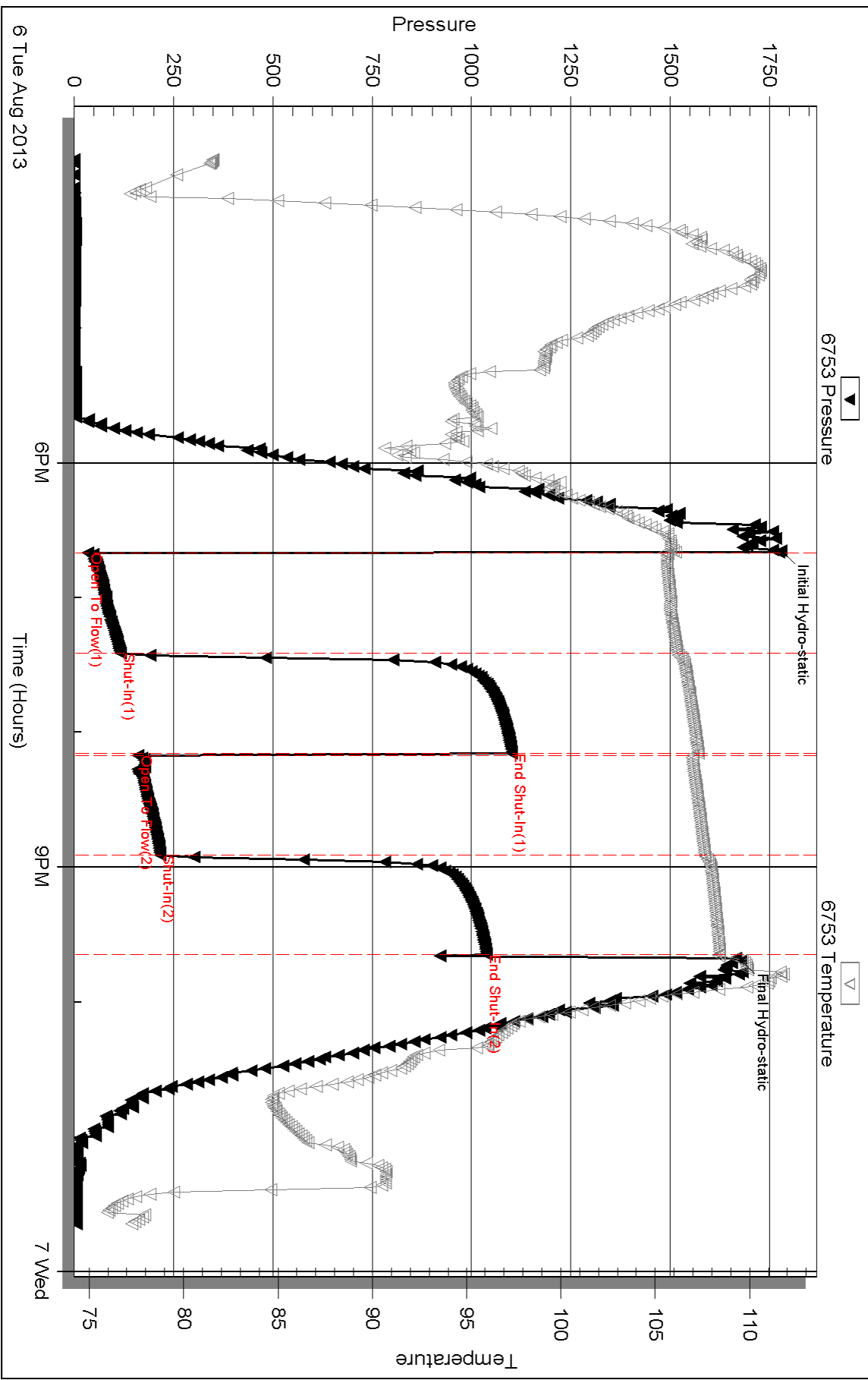
Inside

TDI Inc.

Report#2

DST Test Number: 2

### Pressure vs. Time



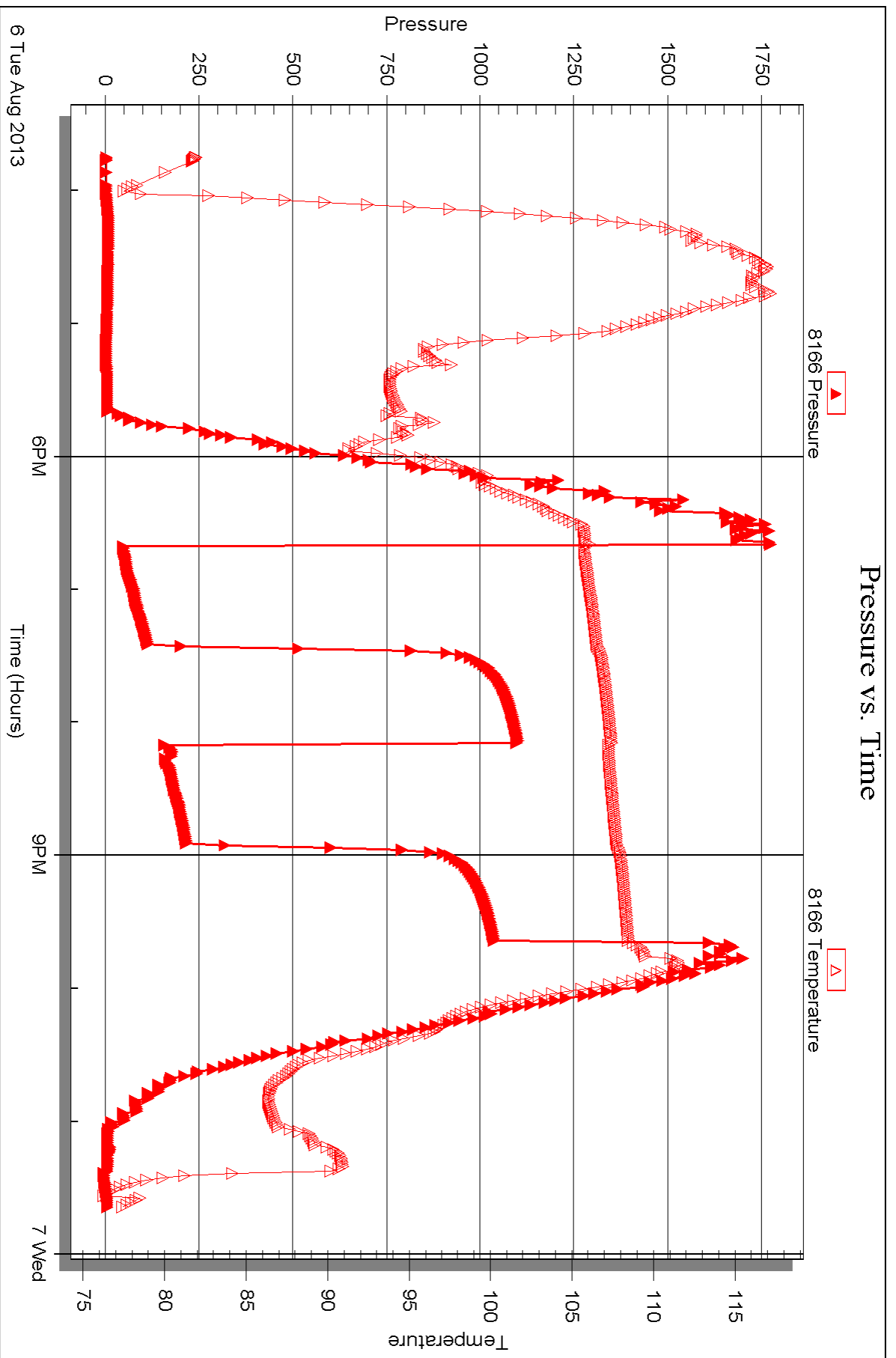


Serial #: 8166

Outside TDI Inc.

Before#2

DST Test Number: 2





## DRILL STEM TEST REPORT

Prepared For: **TDI Inc.**

1310 Bison RD  
Hays KS 67601

ATTN: Herb Deines

### **Befort #2**

### **11-15s-19w Ellis,KS**

Start Date: 2013.08.07 @ 20:10:00

End Date: 2013.08.08 @ 02:08:30

Job Ticket #: 54754                      DST #: 3

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

Printed: 2013.08.08 @ 15:59:40

TDI Inc. 11-15s-19w Ellis,KS Befort #2 DST # 3 Cong. sd. 2013.08.07



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

TDI Inc.  
1310 Bison RD  
Hays KS 67601  
ATTN: Herb Deines

**11-15s-19w Ellis,KS**  
**Before #2**  
Job Ticket: 54754      **DST#: 3**  
Test Start: 2013.08.07 @ 20:10:00

## GENERAL INFORMATION:

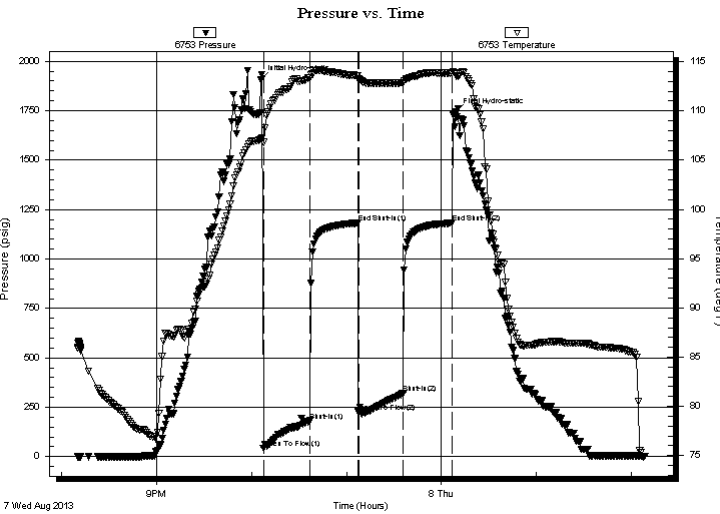
Formation: **Cong. sd.**  
Deviated: No Whipstock:                      ft (KB)  
Time Tool Opened: 22:07:30  
Time Test Ended: 02:08:30  
Interval: **3610.00 ft (KB) To 3656.00 ft (KB) (TVD)**  
Total Depth: 3730.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Reference Elevations: 2038.00 ft (KB)  
2030.00 ft (CF)  
KB to GR/CF: 8.00 ft  
Test Type: Conventional Straddle (Reset)  
Tester: Brett Dickinson  
Unit No: 59

## Serial #: 6753

## Outside

Press @ Run Depth: 320.65 psig @ 3645.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2013.08.07      End Date: 2013.08.08      Last Calib.: 2013.08.08  
Start Time: 20:10:05      End Time: 02:08:29      Time On Btm: 2013.08.07 @ 22:06:00  
Time Off Btm: 2013.08.08 @ 00:09:00

TEST COMMENT: IF-BOB in 6 min  
ISI-No blow  
FF-BOB in 8 min  
FSI-Very weak surface blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1909.73	107.17	Initial Hydro-static
2	44.25	106.81	Open To Flow (1)
31	181.23	113.34	Shut-In(1)
61	1182.08	113.61	End Shut-In(1)
62	225.20	113.23	Open To Flow (2)
90	320.65	112.84	Shut-In(2)
121	1181.85	113.84	End Shut-In(2)
123	1742.77	113.74	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	SGWOCM 5%G 10%W 45%O 40%M	0.07
520.00	GMCO 5%G 25%M 70%O	7.16
180.00	GMCO 10%G 15%M 75%O	2.52

\* Recovery from multiple tests

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

TDI Inc.  
1310 Bison RD  
Hays KS 67601  
ATTN: Herb Deines

**11-15s-19w Ellis,KS**  
**Befort #2**  
Job Ticket: 54754      **DST#: 3**  
Test Start: 2013.08.07 @ 20:10:00

**Tool Information**

Drill Pipe:	Length: 3566.00 ft	Diameter: 3.80 inches	Volume: 50.02 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length:            ft	Diameter: 2.70 inches	Volume: - 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:</u>	Tool Chased	0.00 ft
				String Weight: Initial	40000.00 lb
Drill Pipe Above KB:	6.00 ft			Final	42000.00 lb
Depth to Top Packer:	3610.00 ft				
Depth to Bottom Packer:	3656.00 ft				
Interval between Packers:	46.00 ft				
Tool Length:	143.00 ft				
Number of Packers:	3	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			3591.00	
Shut In Tool	5.00			3596.00	
Hydraulic tool	5.00			3601.00	
Packer	4.00			3605.00	20.00      Bottom Of Top Packer
Packer	5.00			3610.00	
Stubb	1.00			3611.00	
Perforations	1.00			3612.00	
change Over Sub	1.00			3613.00	
Blank Spacing	31.00			3644.00	
change Over Sub	1.00			3645.00	
Recorder	0.00	8319	Inside	3645.00	
Recorder	0.00	6753	Outside	3645.00	
Perforations	7.00			3652.00	
Blank Off Sub	4.00			3656.00	46.00      Tool Interval
Packer	4.00			3660.00	
Stubb	1.00			3661.00	
Recorder	0.00	8166	Below	3661.00	
perforations	4.00			3665.00	
Change Over Sub	1.00			3666.00	
Blank Spacing	63.00			3729.00	
Change Over Sub	1.00			3730.00	
Bullnose	3.00			3733.00	77.00      Bottom Packers & Anchor

**Total Tool Length: 143.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

TDI Inc. **11-15s-19w Ellis,KS**  
 1310 Bison RD **Before #2**  
 Hays KS 67601 Job Ticket: 54754 **DST#: 3**  
 ATTN: Herb Deines Test Start: 2013.08.07 @ 20:10:00

## 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: 51.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.97 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4600.00 ppm			
Filter Cake: inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	SGWOCM 5%G 10%W 45%O 40%M	0.074
520.00	GMCO 5%G 25%M 70%O	7.158
180.00	GMCO 10%G 15%M 75%O	2.525

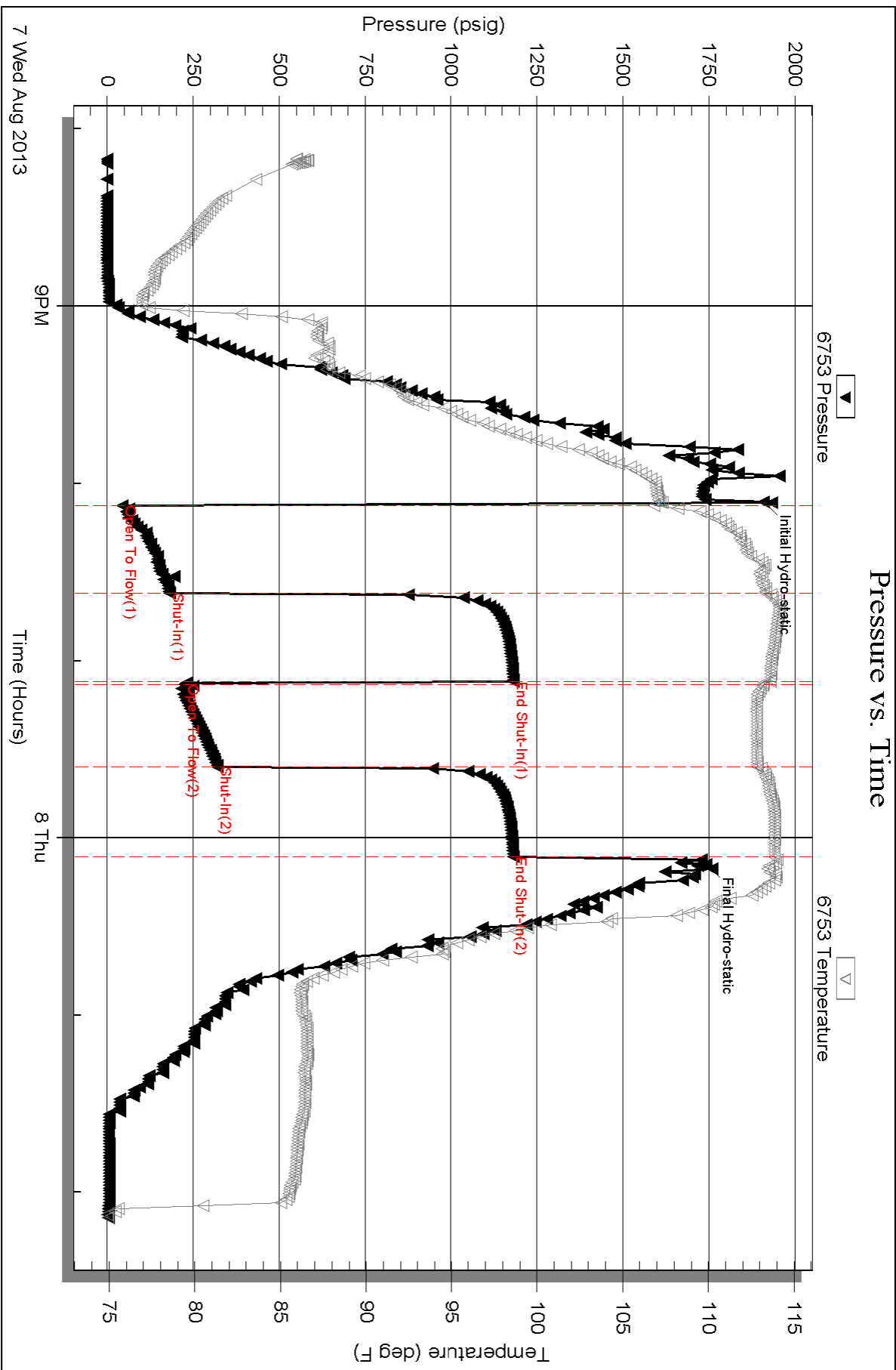
Total Length: 715.00 ft Total Volume: 9.757 bbl  
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:  
 Laboratory Name: Laboratory Location:  
 Recovery Comments:

Serial #: 6753

Outside TDI Inc.

Before#2

DST Test Number: 3





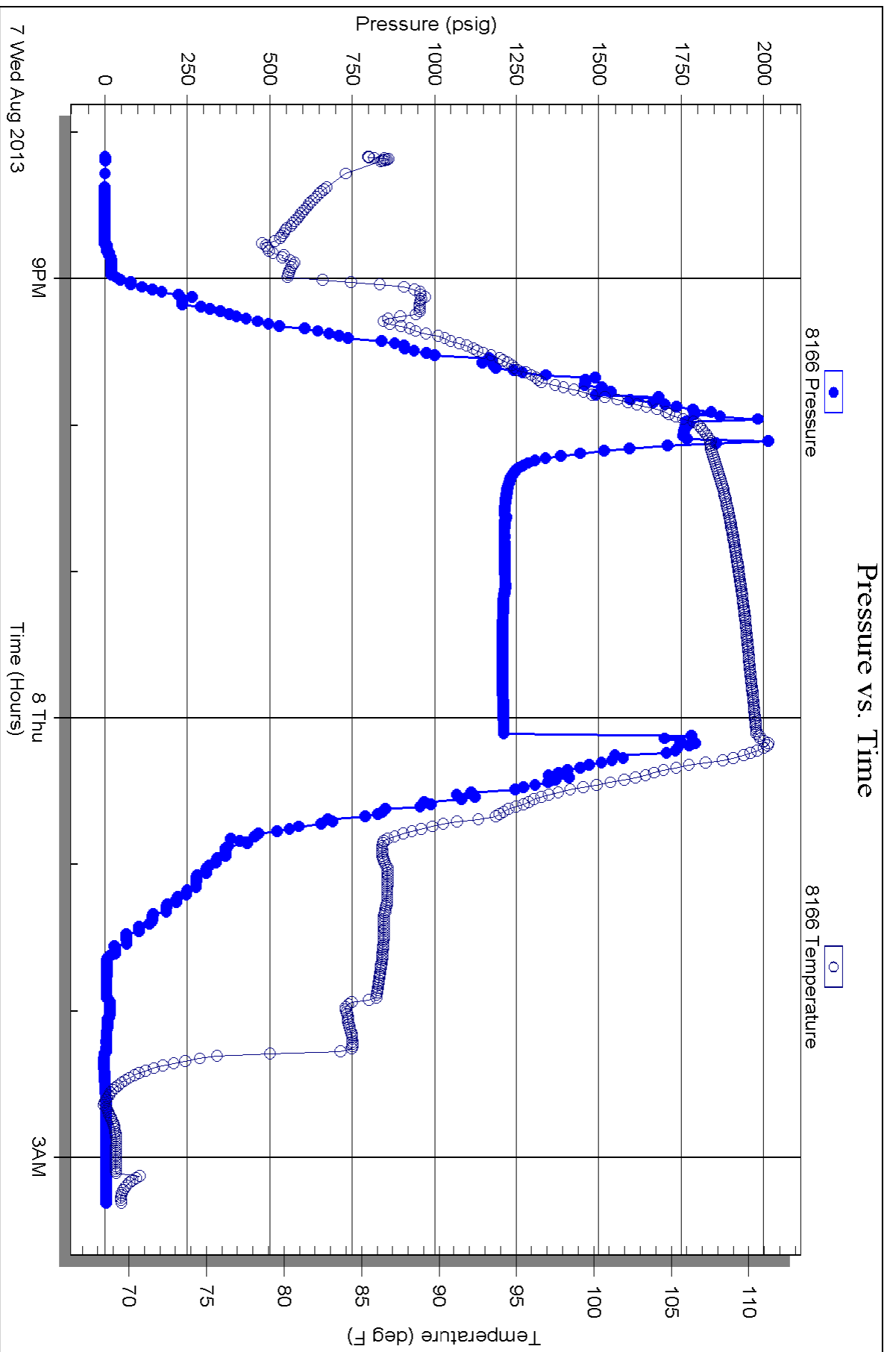


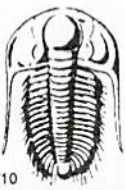
Serial #: 8166

Below (Straddle)

Before#2

DST Test Number: 3





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **54752**

4/10

Well Name & No. Befent #2 Test No. 1 Date 8/15/13  
 Company TDI Inc. Elevation 2038 KB 2030 GL  
 Address 1310 Bison Rd Hays KS 67601  
 Co. Rep / Geo. Herb D Rig Southwind #1  
 Location: Sec. 11 Twp. 15 Rge. 19 Co. Ellis State KS

Interval Tested 3334-3410 Zone Tested KC "D-F"  
 Anchor Length 26 Drill Pipe Run \_\_\_\_\_ Mud Wt. 9.2  
 Top Packer Depth 3329 Drill Collars Run 30 Vis 51  
 Bottom Packer Depth 3334 Wt. Pipe Run — WL 8.0  
 Total Depth 3410 Chlorides 4,600 ppm System LCM #1  
 Blow Description 2F - 1/2 in blow died to 3/4 in  
7SA - No blow  
FF - No blow flush tool No blow

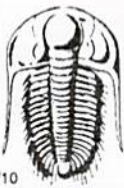
Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>Mud</u>				
_____	_____				
_____	_____				
_____	_____				
_____	_____				

Rec Total 30 BHT 108 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1,690  Test 1150 T-On Location 22:05  
 (B) First Initial Flow 35  Jars \_\_\_\_\_ T-Started 22:30  
 (C) First Final Flow 35  Safety Joint \_\_\_\_\_ T-Open 00:55  
 (D) Initial Shut-In 671  Circ Sub \_\_\_\_\_ T-Pulled 2:45  
 (E) Second Initial Flow 40  Hourly Standby \_\_\_\_\_ T-Out 4:06  
 (F) Second Final Flow \_\_\_\_\_  Mileage 30 rt x 2 93 Comments wanted tools  
 (G) Final Shut-In \_\_\_\_\_  Sampler \_\_\_\_\_ unloaded early  
 (H) Final Hydrostatic 1,636  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open 45  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Initial Shut-In 45  Day Standby \_\_\_\_\_ Total 1243  
 Final Flow 20  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In \_\_\_\_\_  Sub Total 1243

Approved By \_\_\_\_\_ Our Representative Butch D...

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. **54753**

4/10

Well Name & No. Becont #2 Test No. 2 Date 8/6/13  
 Company TRI Inc. Elevation 2038 KB 2030 GL  
 Address 1310 Bison Rd Hays KS 67601  
 Co. Rep / Geo. Herb D Rig Southwind #1  
 Location: Sec. 11 Twp. 15 Rge. 19 Co. Ellis State KS

Interval Tested 3478 - 3525 Zone Tested KC "I, O"  
 Anchor Length 47 Drill Pipe Run 3435 Mud Wt. 9.2  
 Top Packer Depth 3473 Drill Collars Run 30 Vis 5.1  
 Bottom Packer Depth 3478 Wt. Pipe Run — WL 8.0  
 Total Depth 3525 Chlorides 4,600 ppm System LCM 1  
 Blow Description IF - BOB in 19 1/2 min  
FSF - very weak surface blow  
EF - BOB in 31 min  
FSF - very weak surface blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>3</u>	<u>Free Oil</u>				
<u>180</u>	<u>GSOWCM</u>	<u>10</u>	<u>2</u>	<u>25</u>	<u>83</u>
<u>247</u>	<u>SMCW</u>			<u>95</u>	<u>5</u>

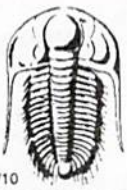
Rec Total 430 BHT 108 Gravity — API RW .14 @ 70 °F Chlorides 53,000 ppm

(A) Initial Hydrostatic 1,780  Test 1150 T-On Location 14:05  
 (B) First Initial Flow 35  Jars T-Started 15:45  
 (C) First Final Flow 117  Safety Joint T-Open 18:40  
 (D) Initial Shut-In 1,102  Circ Sub T-Pulled 21:40  
 (E) Second Initial Flow 161  Hourly Standby T-Out 23:38  
 (F) Second Final Flow 217  Mileage 30 RT 46.50 Comments \_\_\_\_\_  
 (G) Final Shut-In 1,039  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1,678  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open 45  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Initial Shut-In 45  Day Standby \_\_\_\_\_ Total 1196.50  
 Final Flow 45  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 45 Sub Total 1196.50

Approved By \_\_\_\_\_ Our Representative Beth D...

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **54754**

Well Name & No. Befant #2 Test No. 3 Date 8/2/13  
 Company TPI Inc. Elevation 2038 KB 2030 GL  
 Address 1310 Bison Rd Hays KS 67601  
 Co. Rep / Geo. Herb D. Rig Southwind #1  
 Location: Sec. 11 Twp. 15 Rge. 19 Co. Ellis State KS

Interval Tested 3610-3656 Zone Tested Cong sd.  
 Anchor Length 46 Drill Pipe Run \_\_\_\_\_ Mud Wt. \_\_\_\_\_  
 Top Packer Depth 3605, 3610 Drill Collars Run 30 Vis \_\_\_\_\_  
 Bottom Packer Depth 3656 Wt. Pipe Run \_\_\_\_\_ WL \_\_\_\_\_  
 Total Depth 3730 Chlorides \_\_\_\_\_ ppm System LCM \_\_\_\_\_

Blow Description ~~FF~~ IF - BOB in 6min  
ISI - No blow  
FF - BOB in 8min  
ESI - very weak surface blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>SGWOCM</u>	<u>5</u>	<u>45</u>	<u>10</u>	<u>40</u>
<u>520</u>	<u>GMC0</u>	<u>5</u>	<u>70</u>		<u>25</u>
<u>180</u>	<u>GMC0</u>	<u>10</u>	<u>75</u>		<u>15</u>
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____

Rec Total 715 BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1,910  Test 1150 T-On Location 19:35  
 (B) First Initial Flow 44  Jars T-Started 20:10  
 (C) First Final Flow 181  Safety Joint T-Open 22:05  
 (D) Initial Shut-In 1,182  Circ Sub T-Pulled 00:05  
 (E) Second Initial Flow 225  Hourly Standby T-Out 2:07  
 (F) Second Final Flow 321  Mileage 30 RT 46.50  
 (G) Final Shut-In 1,182  Sampler  
 (H) Final Hydrostatic 1,743  Straddle 600  Ruined Shale Packer

Initial Open 30  Shale Packer  Ruined Packer  
 Initial Shut-In 30  Extra Packer  Extra Copies  
 Final Flow 30  Extra Recorder Sub Total 0  
 Final Shut-In 30  Day Standby Total 1796.50  
 Accessibility MP/DST Disc't \_\_\_\_\_  
 Sub Total 1796.50

Approved By \_\_\_\_\_ Our Representative Burstein

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.

**OPERATOR**

Company: TDI, INC  
 Address: 1310 BISON ROAD  
 HAYS, KANSAS 67601

Contact Geologist: TOM DENNING  
 Contact Phone Nbr: 785-628-2593  
 Well Name: BEFORT # 2  
 Location: NW NE SE SW Sec.11-15s-19w  
 Pool:  
 State: KANSAS

API: 15-051-26,555-00-00  
 Field: UNNAMED  
 Country: USA



**TDI, Inc.**  
 1310 BISON ROAD  
 HAYS, KANSAS 67601  
 (785) 628-2593

Scale 1:240 Imperial

Well Name: BEFORT # 2  
 Surface Location: NW NE SE SW Sec.11-15s-19w  
 Bottom Location:  
 API: 15-051-26,555-00-00  
 License Number: 4787  
 Spud Date: 8/1/2013 Time: 4:30 PM  
 Region: ELLIS COUNTY  
 Drilling Completed: 8/7/2013 Time: 11:34 AM  
 Surface Coordinates: 1220' FSL & 2020' FWL  
 Bottom Hole Coordinates:  
 Ground Elevation: 2028.00ft  
 K.B. Elevation: 2038.00ft  
 Logged Interval: 2900.00ft To: 3730.00ft  
 Total Depth: 3730.00ft  
 Formation: LANSING-KANSAS CITY  
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude: -99.404443 Latitude: 38.7581565  
 N/S Co-ord: 1220' FSL  
 E/W Co-ord: 2020' FWL

**LOGGED BY**

Company: SOLUTIONS CONSULTING, INC.  
 Address: 108 W 35TH  
 HAYS, KS 67601

Phone Nbr: (785) 639-1337  
 Logged By: Geologist Name: HERB DEINES

**CONTRACTOR**

Contractor: SOUTHWIND DRILLING INC.  
 Rig #: 1  
 Rig Type: MUD ROTARY

Rig Type: MUD ROTARY  
 Spud Date: 8/1/2013  
 TD Date: 8/7/2013  
 Rig Release: 8/8/2013

Time: 4:30 PM  
 Time: 11:34 AM  
 Time: 1:00 PM

**ELEVATIONS**

K.B. Elevation: 2038.00ft                      Ground Elevation: 2028.00ft  
 K.B. to Ground: 10.00ft

**NOTES**

RECOMMENDATION TO RUN PRODUCTION CASING BASED ON RESULTS OF DST # 3 OVER THE CONGLOMERATE SAND.

OPEN HOLE LOGGING BY PIONEER ENERGY SERVICES: DUAL INDUCTION LOG, DUAL COMPENSATED POROSITY LOG, MICRORESISTIVITY LOG

DRILL STEM TESTING BY TRILOBITE TESTING INC: TWO (2) CONVENTIONAL TESTS AND ONE (1) STRADDLE TEST

**FORMATION TOPS SUMMARY AND CHRONOLOGY OF DAILY ACTIVITY**

**BEFORT # 2**

**1220' FSL & 2020' FWL, SW/4  
 Sec. 11-15s-19w  
 2028' GL 2038' KB**

**URBAN UNIT # 1**

**1220' FSL & 2025' FEL  
 Sec 11-15s-19w  
 Reference Well**


<u>FORMATION</u>	<u>SAMPLE TOPS</u>	<u>LOG TOPS</u>	<u>LOG TOPS</u>
Anhydrite	1235+ 803	1232+ 806	+ 799
B-Anhydrite	1270+ 768	1267+ 771	+ 765
Topeka	3018- 980	3017- 979	- 981
Heebner Shale	3279-1241	3276-1238	-1239
Toronto	3297-1259	3298-1260	-1258
LKC	3326-1288	3322-1284	-1285
BKC	3570-1532	3562-1524	-1533
Marmaton	3603-1565	3601-1563	-1568
Congl. Sand	3640-1602	3634-1596	-1601
Arbuckle	3652-1614	3651-1613	-1639
RTD	3730-1692		
LTD		3727-1689	

**SUMMARY OF DAILY ACTIVITY**

**8-01-13      RU, spud 4:30 PM, set 8 5/8" surface pipe to 213' w/ 150 sxs common 2% gel, 3% CC, plug down 8:30 PM, slope 1 degree**

- 8-02-13 256', drilling
- 8-03-13 1740', drilling
- 8-04-13 2586', drilling, displace 2631' to 2644'
- 8-05-13 3248', CFS@3410', DST # 1 3334'-3410', A-F of LKC, slope 1 degr.
- 8-06-13 3420', CFS 3525', DST # 2 3478'-3525', I & J of LKC,
- 8-07-13 3626', drilling, RTD 3730' @11:34AM, CCH, TOWB, logs, straddle test Conglomerate sand 3610'-3656'
- 8-08-13 3730', rain delay, TIWB, LDDP, run production casing and cement

**DST # 1 3334' TO 3410' "A" TO "F" LKC**

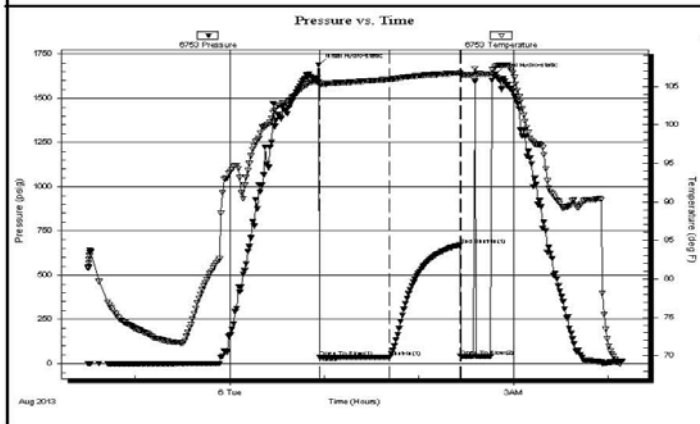
 <p><b>TRILOBITE TESTING, INC.</b></p>	<b>DRILL STEM TEST REPORT</b>		
	TDI Inc. 1310 Bison RD Hays KS 67601  ATTN: Herb D	<b>11-15-19, Ellis, KS</b>  <b>Befont #2</b> Job Ticket: 54752 <b>DST#: 1</b>  Test Start: 2013.08.05 @ 22:30:00	

**GENERAL INFORMATION:**

Formation: <b>KC"D-F"</b>	Test Type: Conventional Bottom Hole (Initial)
Deviated: No Whipstock      ft (KB)	Tester: Brett Dickinson
Time Tool Opened: 00:57:00	Unit No: 59
Time Test Ended: 04:09:00	Reference Elevations: 2038.00 ft (KB)
<b>Interval: 3334.00 ft (KB) To 3410.00 ft (KB) (TVD)</b>	2030.00 ft (CF)
Total Depth: 3410.00 ft (KB) (TVD)	KB to GR/CF: 8.00 ft
Hole Diameter: 7.88 inches	Hole Condition: Poor

<b>Serial #: 6753</b>	<b>Inside</b>		
Press@RunDepth: 34.84 psig @ 3335.00 ft (KB)	Capacity: 8000.00 psig		
Start Date: 2013.08.05	End Date: 2013.08.06	Last Calib.: 2013.08.06	
Start Time: 22:30:05	End Time: 04:08:59	Time On Btm: 2013.08.06 @ 00:56:30	
		Time Off Btm: 2013.08.06 @ 02:48:30	

**TEST COMMENT:** IF-1in blow died to 3/4in blow  
 ISI-No blow  
 FF-No blow flush tool No blow




PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1690.12	105.60	Initial Hydro-static
1	35.45	105.15	Open To Flow (1)
45	34.84	105.87	Shut-In(1)
90	670.80	106.72	End Shut-In(1)
90	39.66	106.40	Open To Flow (2)
112	1636.40	107.59	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
30.00	Mud	0.15

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




**DST # 2 3478' TO 3525' "I" "J" LKC**

 <p><b>TRILOBITE TESTING, INC.</b></p>	<b>DRILL STEM TEST REPORT</b>	
	TDI Inc. 1310 Bison RD Hays KS 67601 ATTN: Herb D	<b>11-15-19, Ellis, KS</b> <b>Befont #2</b> Job Ticket: 54753 <b>DST#: 2</b> Test Start: 2013.08.06 @ 15:45:00

**GENERAL INFORMATION:**

Formation: **KC I,J**  
 Deviated: No Whipstock:                      ft (KB)  
 Time Tool Opened: 18:40:00  
 Time Test Ended: 23:39:00

**Interval: 3478.00 ft (KB) To 3525.00 ft (KB) (TVD)**  
 Total Depth: 3525.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair

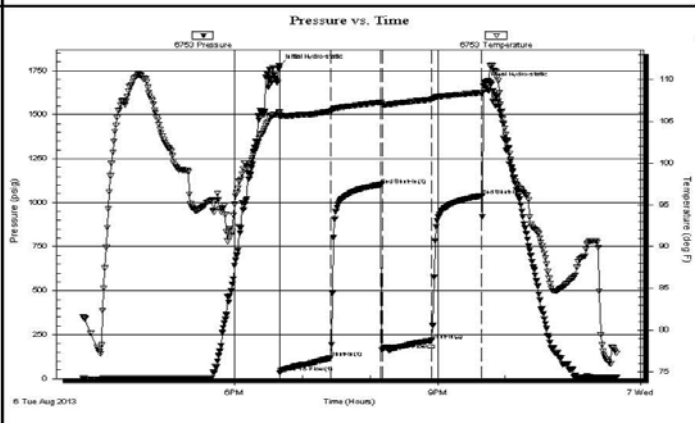
Test Type: Conventional Bottom Hole (Reset)  
 Tester: Brett Dickinson  
 Unit No: 59

Reference Elevations: 2038.00 ft (KB)  
 2030.00 ft (CF)  
 KB to GR/CF: 8.00 ft

**Serial #: 6753      Inside**

Press@RunDepth: 217.10 psig @ 3479.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2013.08.06      End Date: 2013.08.06	Last Calib.: 2013.08.06
Start Time: 15:45:05      End Time: 23:38:59	Time On Btm: 2013.08.06 @ 18:39:00
	Time Off Btm: 2013.08.06 @ 21:41:30

**TEST COMMENT:** IF-BOB in 19 1/2min  
 ISI-Very weak surface blow  
 FF-BOB in 31min  
 FSI-Very weak surface blow



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1779.73	105.95	Initial Hydro-static
1	34.97	105.52	Open To Flow (1)
46	117.26	106.17	Shut-In(1)
91	1102.22	107.28	End Shut-In(1)
92	161.17	107.00	Open To Flow (2)
136	217.10	107.62	Shut-In(2)
180	1039.06	108.42	End Shut-In(2)
183	1678.29	109.60	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
247.00	SMCW 95%W 5%M	3.19
180.00	GSCWCM 10%G 2%O 25%W 63%M	2.52
3.00	Free Oil	0.04

\* Recovery from multiple tests

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

**DST # 3 3610' TO 3656' CONGLOMERATE SAND BOTTOM PACKER HELD**



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

TDI Inc.  
1310 Bison RD  
Hays KS 67601  
ATTN: Herb D

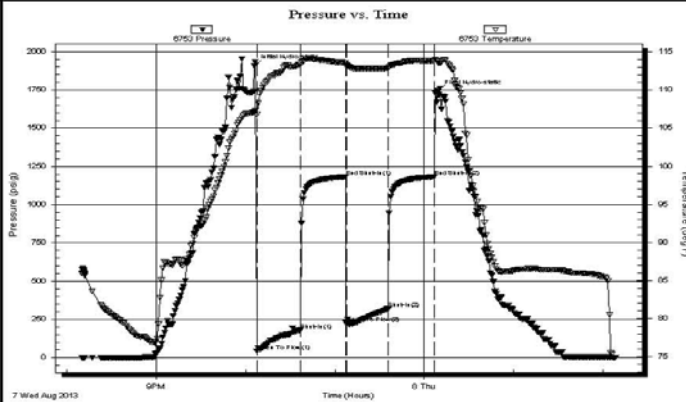
11-15-19, Ellis, KS  
**Befont #2**  
Job Ticket: 54754      **DST#: 3**  
Test Start: 2013.08.07 @ 20:10:00

## GENERAL INFORMATION:

Formation: **Cong. sd.**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 22:07:30  
 Time Test Ended: 02:08:30  
 Test Type: Conventional Straddle (Reset)  
 Tester: Brett Dickinson  
 Unit No: 59  
 Interval: **3610.00 ft (KB) To 3656.00 ft (KB) (TVD)**  
 Total Depth: 3730.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Reference Elevations: 2038.00 ft (KB)  
 2030.00 ft (CF)  
 KB to GR/CF: 8.00 ft

**Serial #: 6753      Outside**  
 Press@RunDepth: 320.65 psig @ 3645.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2013.08.07      End Date: 2013.08.08      Last Calib.: 2013.08.08  
 Start Time: 20:10:05      End Time: 02:08:29      Time On Btm: 2013.08.07 @ 22:06:00  
 Time Off Btm: 2013.08.08 @ 00:09:00

**TEST COMMENT:** IF-BOB in 6min  
 ISI-No blow  
 FF-BOB in 8min  
 FSI-Very weak surface blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1909.73	107.17	Initial Hydro-static
2	44.25	106.81	Open To Flow (1)
31	181.23	113.34	Shut-In(1)
61	1182.08	113.61	End Shut-In(1)
62	225.20	113.23	Open To Flow (2)
90	320.65	112.84	Shut-In(2)
121	1181.85	113.84	End Shut-In(2)
123	1742.77	113.74	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	SGWOCM 5%G 10%W 45%O 40%M	0.07
520.00	GMCO 5%G 25%M 70%O	7.16
180.00	GMCO 10%G 15%M 75%O	2.52

\* Recovery from multiple tests

## Gas Rates

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

Trilobite Testing, Inc

Ref. No: 54754

Printed: 2013.08.08 @ 08:07:21

## ROCK TYPES

Clystgy	Lmst fw>7	Carbon Sh	Ss	CglSandy
Dolprim	shale, grn	shale, red	Dol Lime	
Lmst fw<7	shale, gry	Shcol	Lscong1	

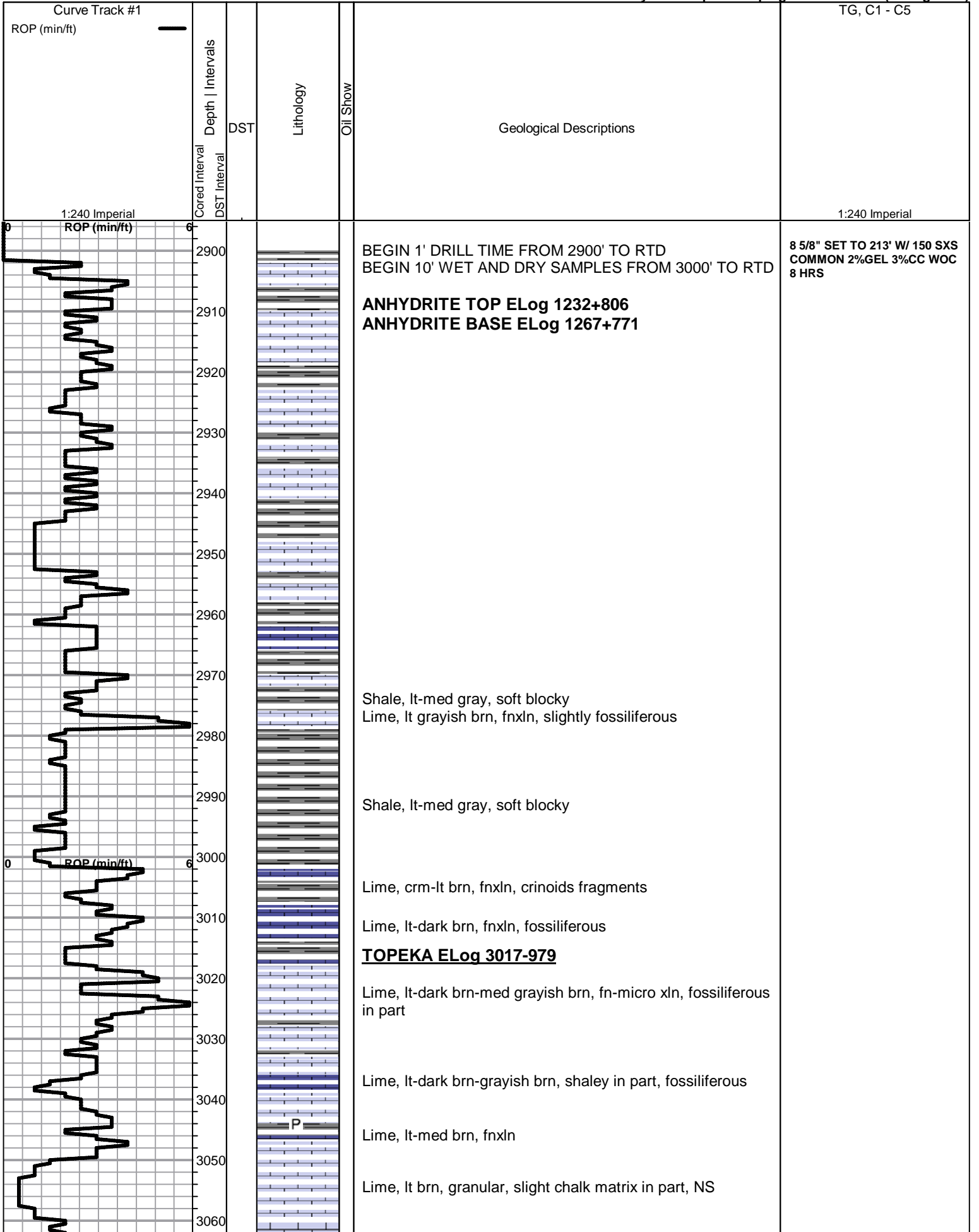
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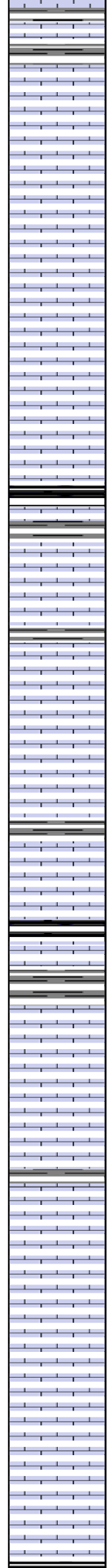
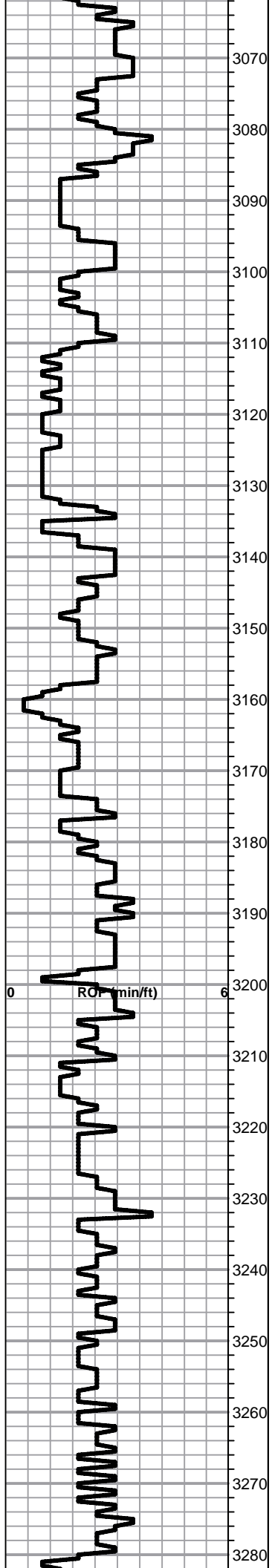
### MINERAL

- P Pyrite
- ◆ Varicolored chert
- △ Chert White

## OTHER SYMBOLS

DST  
 ■ DST Int  
 ■ DST alt  
 ■ Core





Lime, lt-med brn, fn-micro xln

3070

Lime, lt brn, fnxln-granular, soft on crush

3080

Lime, lt-med brn, granular, sticky chalk clumps in part

3090

Lime, lt-med brn, fnxln-granular, crinoids segments

3100

Lime, lt-med brn, fnxln-granular, bed chalk with sticky chalk clumps in part

3110

Lime, lt-med brn, fnxln with increasing granular

3120

Lime, med brn, granular, slight bedded chalk with sticky clumps in part

3130

Shale, black carbonaceous, fissile, blocky

Lime, med brn, fnxln, fusulinids

3140

Lime, crm, fn-vfxln, lithographic

3150

Lime, lt-med brn, fnxln grading into granular, slight bed chalk

3160

Lime, lt brn-lt gray, fnxln-granular

3170

Lime, lt brn-lt gray, fnxln, gray mottling in part

3180

Lime, lt brn-lt grayish brn, fnxln-granular, some gray spotty mottling in part

3190

Shale, black carbonaceous

3200

Shale, med-dark gray

Lime, lt-med brn, fnxln

3210

Lime, crm-lt brn, fnxln, slight bedded chalk

3220

Lime, lt-med brn, fnxln-granular, lt chalky matrix in part

3230

Lime, crm-lt brn, fnxln-granular, slight bedded chalk

3240

Lime, lt-med brn, fnxln, soft on crush, slight chalky matrix

3250

Lime, crm-lt brn, fnxln-granular, bedded chalk

3260

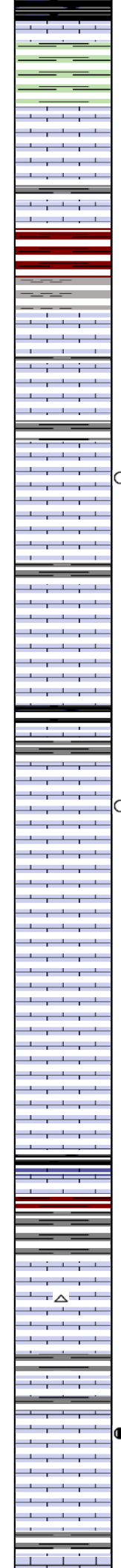
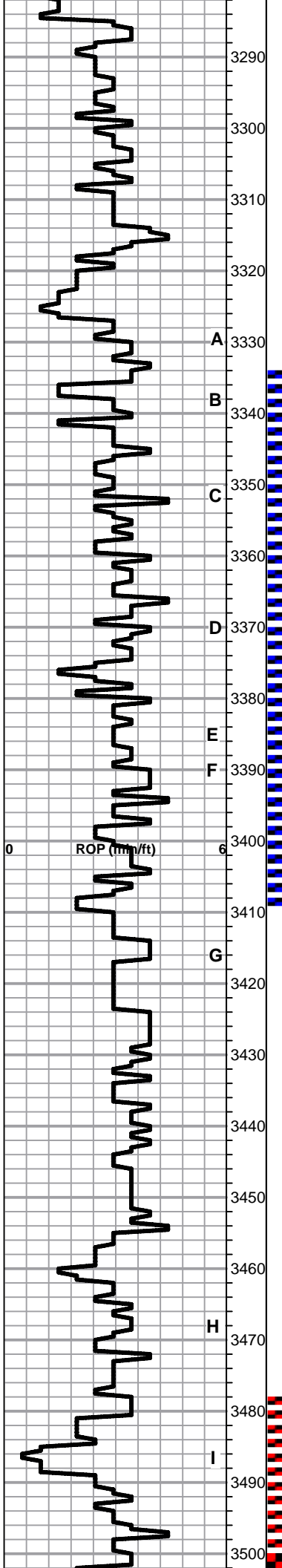
Lime, lt-med brn, fnxln, slight bedded chalk

3270

Lime, crm-lt brn, fnxln, slight bed chalk

3280

**HEEBNER SHALE SPL 3279-1241**



Shale, black carbonaceous, fissile, blocky  
 Lime, lt brn, fn-vfxln, hard on crush

Shale, lime green, soft mud

**TORONTO SPL 3297-1259**

Lime, crm, fn-vfxln, bedded chalk, NS

Lime, crm-lt brn, fn-vfxln, bedded chalk, NS

Shale, red, forming soft mud with lt red wash

**LKC SPL 3326-1288**

Lime, lt brn, fnxln

Lime, lt brn, fnxln  
 Shale, lt-med gray, soft blocky

Lime, tan-lt brn, fnxln with few oomoldic chips, trace of spotty stain, grading into crm-tan lime, fnxln with bedded chalk.

Lime, crm-tan, fn-vfxln  
 Shale, lt gray, soft, blocky

Lime, crm, fn-vfxln, bedded chalk, NS

Shale, black carbonaceous  
 Lime, pale gray, fnxln

Lime, crm-tan, fn-vfxln, bedded chalk, 1 chip with spotty stain

Lime, crm-tan-lt brn, fn-vfxln, NS

Lime, crm-tan, fnxln, bedded chalk

Lime, crm-tan, fnxln, soft on crush, some lt brn lime microxln

Lime, crm-tan, fn-micro xln

Shale, gray-black carbonaceous  
 Lime, med grayish brn, micro xln

Shale, med-drk gray with lt brn sticky clumps in part

Lime, crm-lt brn, fn-micro xln, NS  
 White chert in part

Lime, crm-lt brn-lt gray, fn-micro xln, slight bed chalk

Lime, crm-tan, oolitic/oomoldic, spotty to saturated stain, very lt odor, few free floating globules of oil.

Lime, crm-tan, fn-vfxln, slight bed chalk

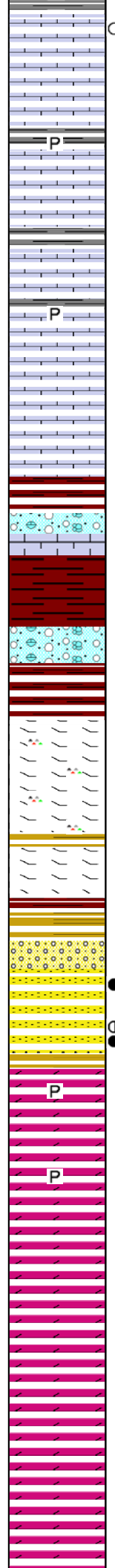
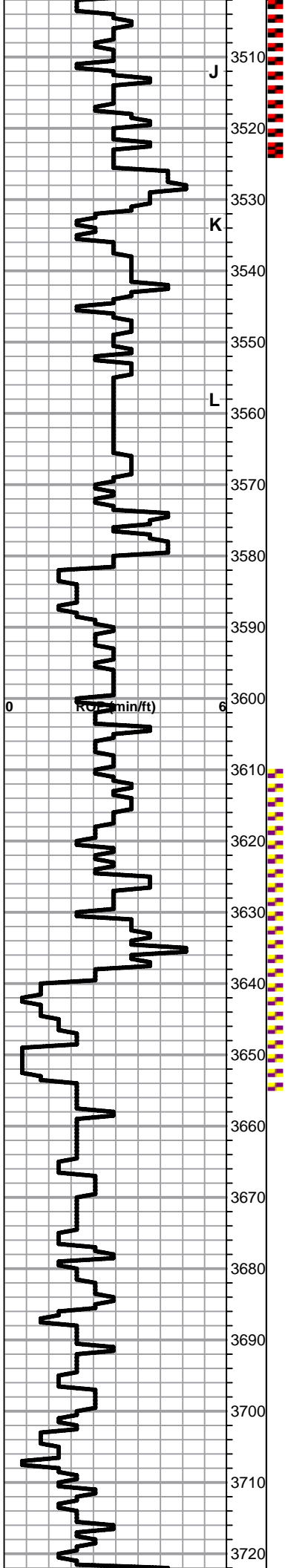
Shale, lt brn soft sticky clumps to lt - med gray, soft blocky

SHORT TRIP @ 3311'

DST # 1 3334' TO 3410' SEE HEADER FOR TEST SUMMARY

SLOPE 1 DEGREE @3410'

DST # 2 3478' TO 3525' SEE HEADER FOR TEST SUMMARY



Lime, crm-tan, fn-vfxln, bedded chalk, few chips with spotty staining, not well developed

Lime, crm-tan, fn-vfxln,

Lime, crm-tan, fn-micro xln, bedded chalk, NS

Lime, crm-lt brn, fnxln, firm bedded chalk

Shale, med gray, pyritic

Lime, crm-lt brn, fn-micro xln, NS

Lime, lt brn, microxln

**BKC SPL 3570-1532**

Shale, red, sandy, firm on crush

Lime, clastic mix with red shale staining in part grading into crm, fn-vfxln lime

Shale, red, gritty, firm-hard on crush

Clastic lime mix with micritic, hard lime chips in part

Shale, reddish brn, soft with lt red wash

**MARMATON SPL 3603-1565**

Lime, crm-lt brn, fnxln, dolomitic in part, hard on crush, chips of orange and tan chert, fresh, sharp

Lime, As Above

Shale, vari color-deep red

**CONGLOMERATE SAND ELog 3634-1596**

Sandstone, cemented clusters, firm grading into F-G sorted, quartz, subrounded, forming hard clusters, pure quartz in upper part of section with dolomitic cementing in lower part, very lt odor with free floating specks of oil in tray

**ARBUCKLE SPL 3652-1614**

Dolomite, crm, fnxln, hard on crush, NS

Dolomite, crm-cxln in part, interxln porosity, NS, fn-cxln pyrite inclusions in part

Dolomite, ivory-crm, fn-cxln

Dolomite, ivory-crm, fn-cxln, granular in part

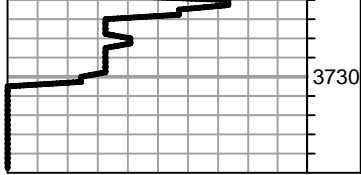
Dolomite, ivory-crm, fn-cxln, granular

Dolomite, ivory, fn-cxln, granular

Dolomite, ivory, fn-cxln, granular in part

DST # 3 STRADDLE TEST  
3610' TO 3656' SEE HEADER  
FOR TEST SUMMARY

OIL RECOVERED ON DST  
HAD A VERY LIGHT, BARELY  
DETECTABLE ODOR



Dolomite, ivory, m-cxiii, granular in part  
**RTD 3730-1692    LTD 3727-1689**

# 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. 7997

Date	8-1-13	Sec.	11	Twp.	15	Range	19	County	Ellis	State	KS	On Location		Finish	8:30 p.m.
Lease								Well No.		Owner					
Contractor								Well No. 2		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.					
Type Job										Charge To					
Hole Size								T.D.		To					
Csg.								Depth		Street					
Tbg. Size								Depth		City State					
Tool								Depth		The above was done to satisfaction and supervision of owner agent or contractor.					
Cement Left in Csg.								Shoe Joint		Cement Amount Ordered					
Meas Line								Displace							
<b>EQUIPMENT</b>								Common							
Pumptrk	17	No.	Cementer	Craig				Poz. Mix							
Bulktrk		No.	Helper	Craig				Gel.							
Bulktrk		No.	Driver	Cody				Calcium							
Bulktrk	19	No.	Driver	David				Hulls							
<b>JOB SERVICES &amp; REMARKS</b>								Salt							
Remarks:								Flowseal							
Rat Hole								Kol-Seal							
Mouse Hole								Mud CLR 48							
Centralizers								CFL-117 or CD110 CAF 38							
Baskets								Sand							
D/V or Port Collar								Handling							
8 5/8 on bottom Est. Circulation								Mileage							
M.x 1.5000 Displace.								<b>FLOAT EQUIPMENT</b>							
Cement (Cresatec)								Guide Shoe							
								Centralizer							
								Baskets							
								AFU Inserts							
								Float Shoe							
								Latch Down							
								Pumptrk Charge							
								Mileage							
								Tax							
								Discount							
								Total Charge							
X Signature															



JOB LOG

SWIFT Services, Inc.

DATE 8-8-13 PAGE NO. 1

CUSTOMER T.D.I. WELL NO. #2 LEASE Beford JOB TYPE Cement Longstring TICKET NO. 24987

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		TO 3730' DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	12:45					147#	5 1/2"	On loc - F.E. 12:45 - Rig L.D. D.C.
	15:10							Start 5 1/2" casing to 3725'
								Insert Flood Shoe w/ Auto-Fill #898
								L.D.-D.V. Baffle - 5 1/2" x 12 1/2' @ 3682.5
								Cent #2 55-4-6-8-9-11-13-59
								Marker It. between #8 + 9
								Cent Baskets 3-14-60-76 - (Pin ends)
								D.V. #60 collar @ 1223' = 29.8 BBL
								Drop fill-up ball 5 JKS out
	16:30							Fin run casing - Tag bottom - Log J. Down
	16:35							Fill Pipe
	16:45							Start air Desco Mud of Rotate
								Fin air - 1st stage
			12					500 gal Mud Flush / 20 BBL KCL Flush
			20					Start 150 SKS EA-2 cut.
			36					Fin cut - Washout Pfl
								Drop D.V. Label Down Plug
	18:20	9	8 1/2			200		Start Displ - Last 20 BBL KCL Flush
		7 1/2	6 1/2	75		300		Caught left psi
	18:15			90		400		Plug Down - Release & Hold
						800		Drop D.V. Opening tool
			8 5			1500		Plug Ret Mtt 30/15 mud cut
	18:30	6				150		Open D.V. - good air
								Start 155 SKS mud @ 11.2 #/sq
		5						Fin cut - Drop D.V. Casing Plug
			15			150		Start Displ 30 BBL
	19:05			30		250		cut air @ 15 BBL - 2 SK/ BBL
	19:08					450		Plug Down - D.V. Closed
	19:30					700		Release - OK
								Job Complete
								Wash up & Packup
								Don, Jon, & John

Conservation Division  
Finney State Office Building  
130 S. Market, Rm. 2078  
Wichita, KS 67202-3802



Phone: 316-337-6200  
Fax: 316-337-6211  
<http://kcc.ks.gov/>

Mark Sievers, Chairman  
Thomas E. Wright, Commissioner  
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

September 17, 2013

Tom Denning  
TDI, Inc.  
1310 BISON RD  
HAYS, KS 67601-9696

Re: ACO1  
API 15-051-26555-00-00  
Befort 2  
SW/4 Sec.11-15S-19W  
Ellis County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,  
Tom Denning