



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1149724
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: _____



1149724

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

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

Prepared For: **TDI Inc**

1310 Bison Rd
Hays KS 67601

ATTN: Herb Deines

Gross #1

24-15s-19w Ellis KS

Start Date: 2013.06.11 @ 23:13:00

End Date: 2013.06.12 @ 06:47:00

Job Ticket #: 53911 DST #: 1

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

Printed: 2013.06.14 @ 11:02:40

TDI Inc
24-15s-19w Ellis KS
Gross #1
DST # 1
LKC I-J
2013.06.11



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TDI Inc
 1310 Bison Rd
 Hays KS 67601
 ATTN: Herb Deines

24-15s-19w Ellis KS
Gross #1
 Job Ticket: 53911 **DST#: 1**
 Test Start: 2013.06.11 @ 23:13:00

GENERAL INFORMATION:

Formation: **LKC I-J**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 01:55:45
 Time Test Ended: 06:47:00
Interval: 3446.00 ft (KB) To 3495.00 ft (KB) (TVD)
 Total Depth: 3495.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Cody Bloedorn
 Unit No: 43
 Reference Elevations: 2003.00 ft (KB)
 1993.00 ft (CF)
 KB to GR/CF: 10.00 ft

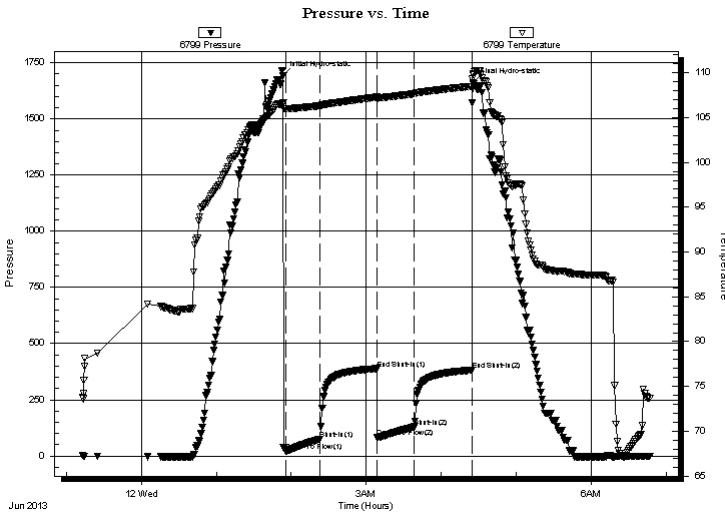
Serial #: 6799

Inside

Press @ Run Depth: 129.41 psig @ 3485.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.06.11 End Date: 2013.06.12 Last Calib.: 2013.06.12
 Start Time: 23:13:05 End Time: 06:46:59 Time On Btm: 2013.06.12 @ 01:53:30
 Time Off Btm: 2013.06.12 @ 04:25:30

TEST COMMENT: 30 - IF- B.O.B. in 30 seconds.
 45 - IS- B.O.B. in 9 minutes.
 30 - FF-B.O.B. from shut in
 45 - FS- G.T.S. at bleed off, B.O.B. in 11 minutes

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1694.74	106.60	Initial Hydro-static
3	22.12	105.99	Open To Flow (1)
30	74.57	106.32	Shut-In(1)
75	388.29	107.27	End Shut-In(1)
76	81.50	107.19	Open To Flow (2)
105	129.41	107.65	Shut-In(2)
151	381.54	108.49	End Shut-In(2)
152	1662.32	109.79	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	GHOCM, 10%M, 40%O, 50%G	1.81
62.00	GO, 50%G, 50%O	0.91
186.00	GO, 40%G, 60%O	2.72
0.00	GTS	0.00

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

24-15s-19w Ellis KS
Gross #1
Job Ticket: 53911 **DST#: 1**
Test Start: 2013.06.11 @ 23:13:00

Tool Information

Drill Pipe:	Length: 3440.00 ft	Diameter: 3.88 inches	Volume: 50.31 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	45000.00 lb
			<u>Total Volume: 50.31 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial	39000.00 lb
Depth to Top Packer:	3446.00 ft			Final	39000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	49.00 ft				
Tool Length:	70.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3426.00	
Shut In Tool	5.00			3431.00	
Hydraulic tool	5.00			3436.00	
Packer	5.00			3441.00	21.00 Bottom Of Top Packer
Packer	5.00			3446.00	
Stubb	1.00			3447.00	
Perforations	5.00			3452.00	
Change Over Sub	1.00			3453.00	
Drill Pipe	31.00			3484.00	
Change Over Sub	1.00			3485.00	
Recorder	0.00	6799	Inside	3485.00	
Recorder	0.00	8648	Outside	3485.00	
Perforations	7.00			3492.00	
Bullnose	3.00			3495.00	49.00 Bottom Packers & Anchor

Total Tool Length: 70.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

TDI Inc
1310 Bison Rd
Hays KS 67601
ATTN: Herb Deines

24-15s-19w Ellis KS
Gross #1
Job Ticket: 53911
Test Start: 2013.06.11 @ 23:13:00

DST#: 1

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: 48.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.18 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3600.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
124.00	GHOCM, 10%M, 40%O, 50%G	1.813
62.00	GO, 50%G, 50%O	0.907
186.00	GO, 40%G, 60%O	2.720
0.00	GTS	0.000

Total Length: 372.00 ft Total Volume: 5.440 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:

Serial #: 6799

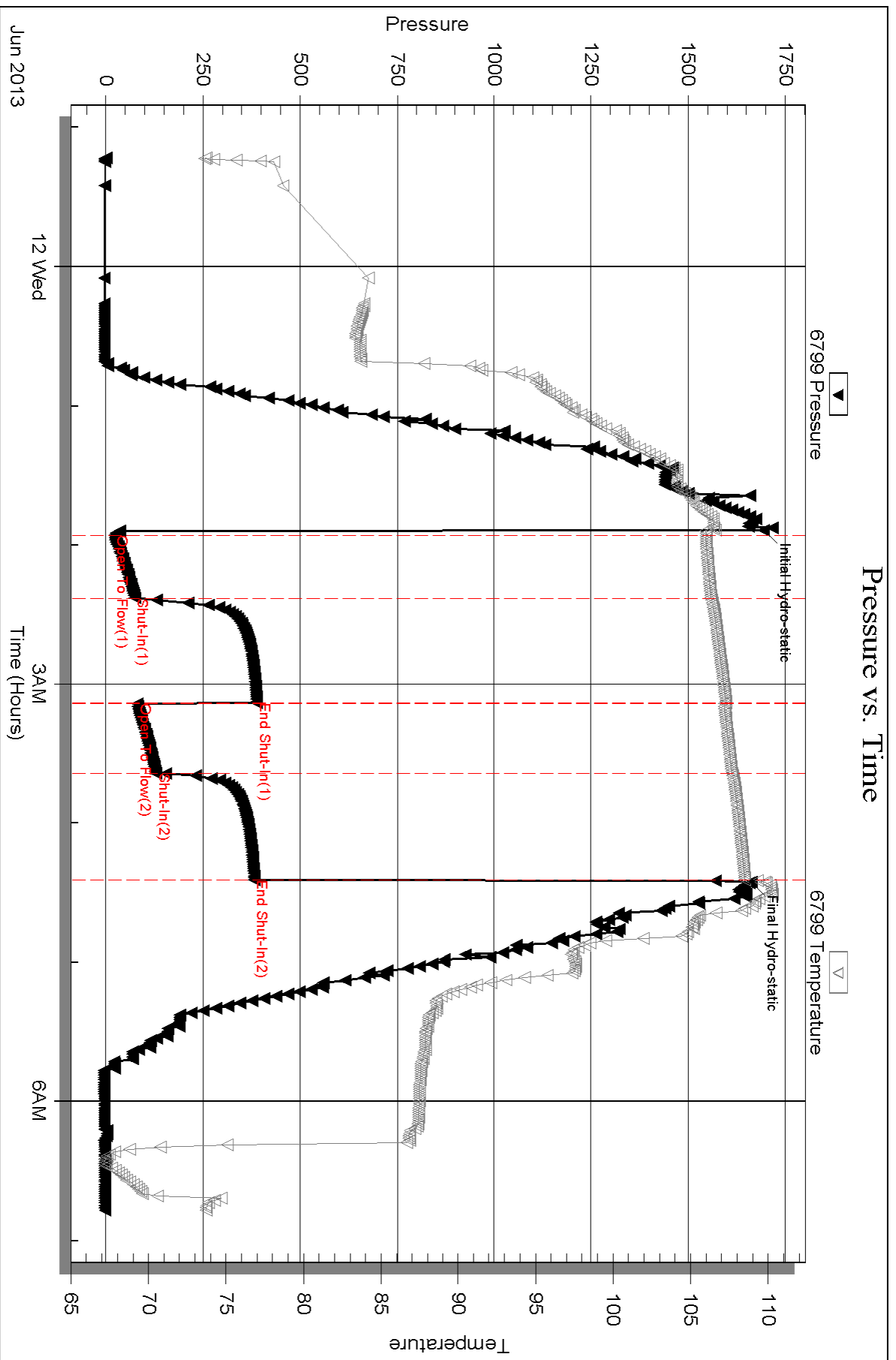
Inside

TDI Inc

Gross #1

DST Test Number: 1

Pressure vs. Time

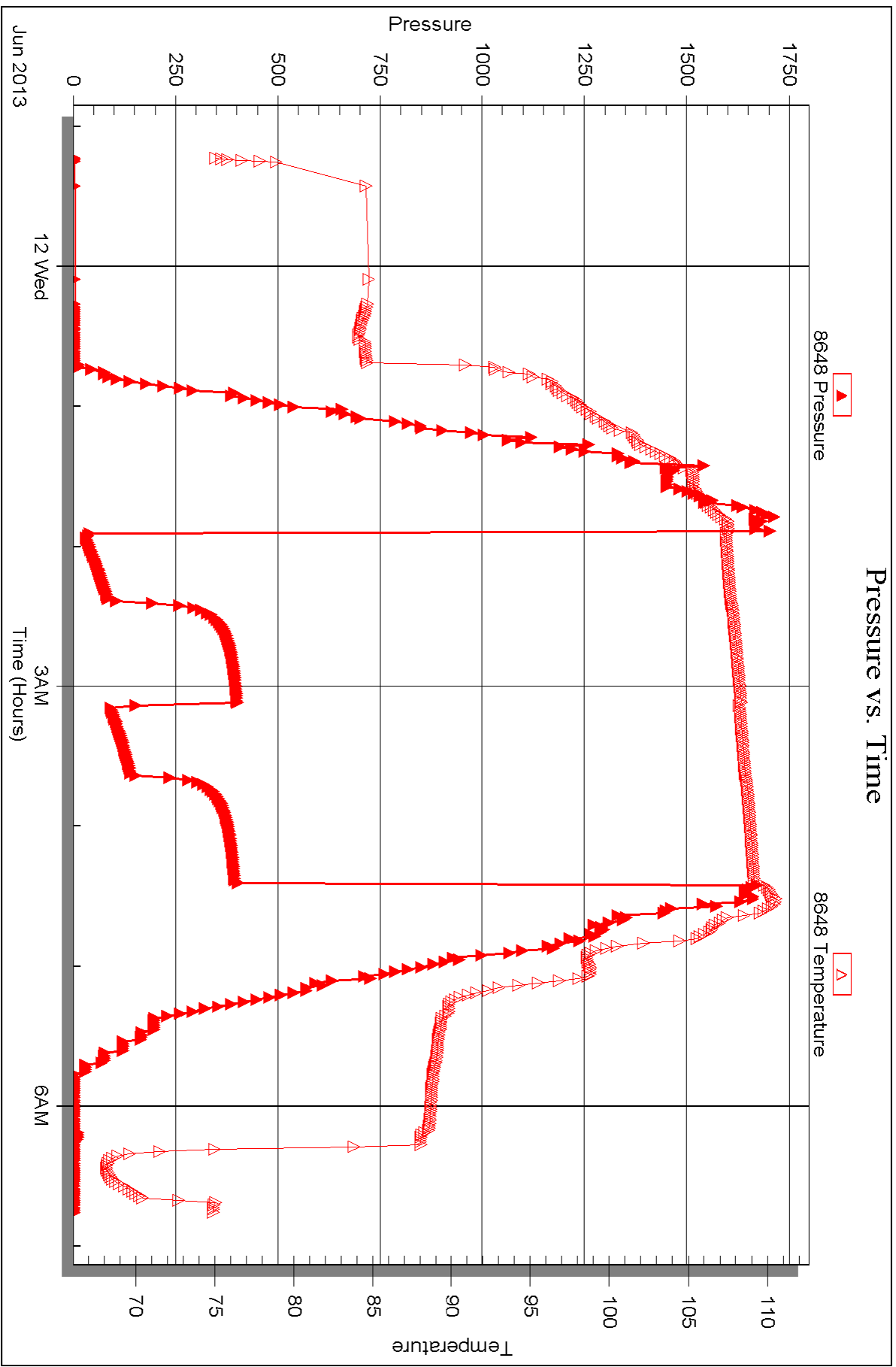


Serial #: 8648

Outside TDI Inc

Gross #1

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **TDI Inc**

1310 Bison Rd
Hays KS 67601

ATTN: Herb Deines

Gross #1

24-15s-19w Ellis KS

Start Date: 2013.06.13 @ 06:32:00

End Date: 2013.06.13 @ 13:44:00

Job Ticket #: 53912 DST #: 2

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

Printed: 2013.06.14 @ 11:01:51

TDI Inc
24-15s-19w Ellis KS
Gross #1
DST # 2
LKC D
2013.06.13



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TDI Inc
1310 Bison Rd
Hays KS 67601
ATTN: Herb Deines

24-15s-19w Ellis KS
Gross #1
Job Ticket: 53912 **DST#: 2**
Test Start: 2013.06.13 @ 06:32:00

GENERAL INFORMATION:

Formation: **LKC D**
Deviated: No Whipstock: ft (KB) Test Type: Conventional Straddle (Reset)
Time Tool Opened: 08:37:00 Tester: Cody Bloedorn
Time Test Ended: 13:44:00 Unit No: 43
Interval: 3328.00 ft (KB) To 3350.00 ft (KB) (TVD) Reference Elevations: 2003.00 ft (KB)
Total Depth: 3750.00 ft (KB) (TVD) 1993.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

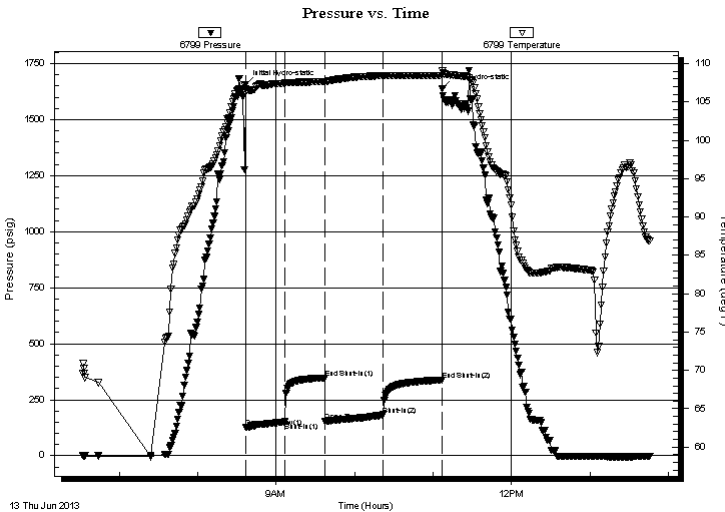
Serial #: 6799

Inside

Press @ Run Depth: 182.14 psig @ 3329.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.06.13 End Date: 2013.06.13 Last Calib.: 2013.06.13
Start Time: 06:32:05 End Time: 13:45:44 Time On Btm: 2013.06.13 @ 08:36:45
Time Off Btm: 2013.06.13 @ 11:07:15

TEST COMMENT: 30 - IF- B.O.B. in 25 minutes
30 - IS- No return
45 - FF- 2 1/2" blow
45 - FS- No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1655.09	107.31	Initial Hydro-static
1	126.89	106.66	Open To Flow (1)
30	151.29	107.46	Shut-In(1)
61	347.57	107.68	End Shut-In(1)
61	153.07	107.60	Open To Flow (2)
105	182.14	108.44	Shut-In(2)
151	337.86	108.41	End Shut-In(2)
151	1639.55	109.12	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
35.00	Mud, 100%M	
186.00	Mud with oil specs, 100%M	
62.00	MW, 30%M, 70%W	
62.00	GWM, 5%G, 5%W, 90%M	

* 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

24-15s-19w Ellis KS
Gross #1
Job Ticket: 53912 **DST#: 2**
Test Start: 2013.06.13 @ 06:32:00

Tool Information

Drill Pipe:	Length: 3324.00 ft	Diameter: 3.80 inches	Volume: 46.63 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 46.63 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 37000.00 lb
Depth to Top Packer:	3328.00 ft			Final 45000.00 lb
Depth to Bottom Packer:	3350.00 ft			
Interval between Packers:	22.00 ft			
Tool Length:	451.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: 2nd recorder on top did not read.

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3309.00	
Shut In Tool	5.00			3314.00	
Hydraulic tool	5.00			3319.00	
Packer	5.00			3324.00	20.00 Bottom Of Top Packer
Packer	4.00			3328.00	
Stubb	1.00			3329.00	
Recorder	0.00	6799	Inside	3329.00	
Recorder	0.00	8648	Outside	3329.00	
Perforations	20.00			3349.00	
Blank Off Sub	1.00			3350.00	22.00 Tool Interval
Packer	4.00			3354.00	
Change Over Sub	1.00			3355.00	
Drill Pipe	379.00			3734.00	
Perforations	5.00			3739.00	
Change Over Sub	1.00			3740.00	
Recorder	0.00	8655	Below	3740.00	
Perforations	16.00			3756.00	
Bullnose	3.00			3759.00	409.00 Bottom Packers & Anchor
Total Tool Length:	451.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

TDI Inc
1310 Bison Rd
Hays KS 67601
ATTN: Herb Deines

24-15s-19w Ellis KS
Gross #1
Job Ticket: 53912
Test Start: 2013.06.13 @ 06:32:00

DST#: 2

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 10.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 56.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.78 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3500.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

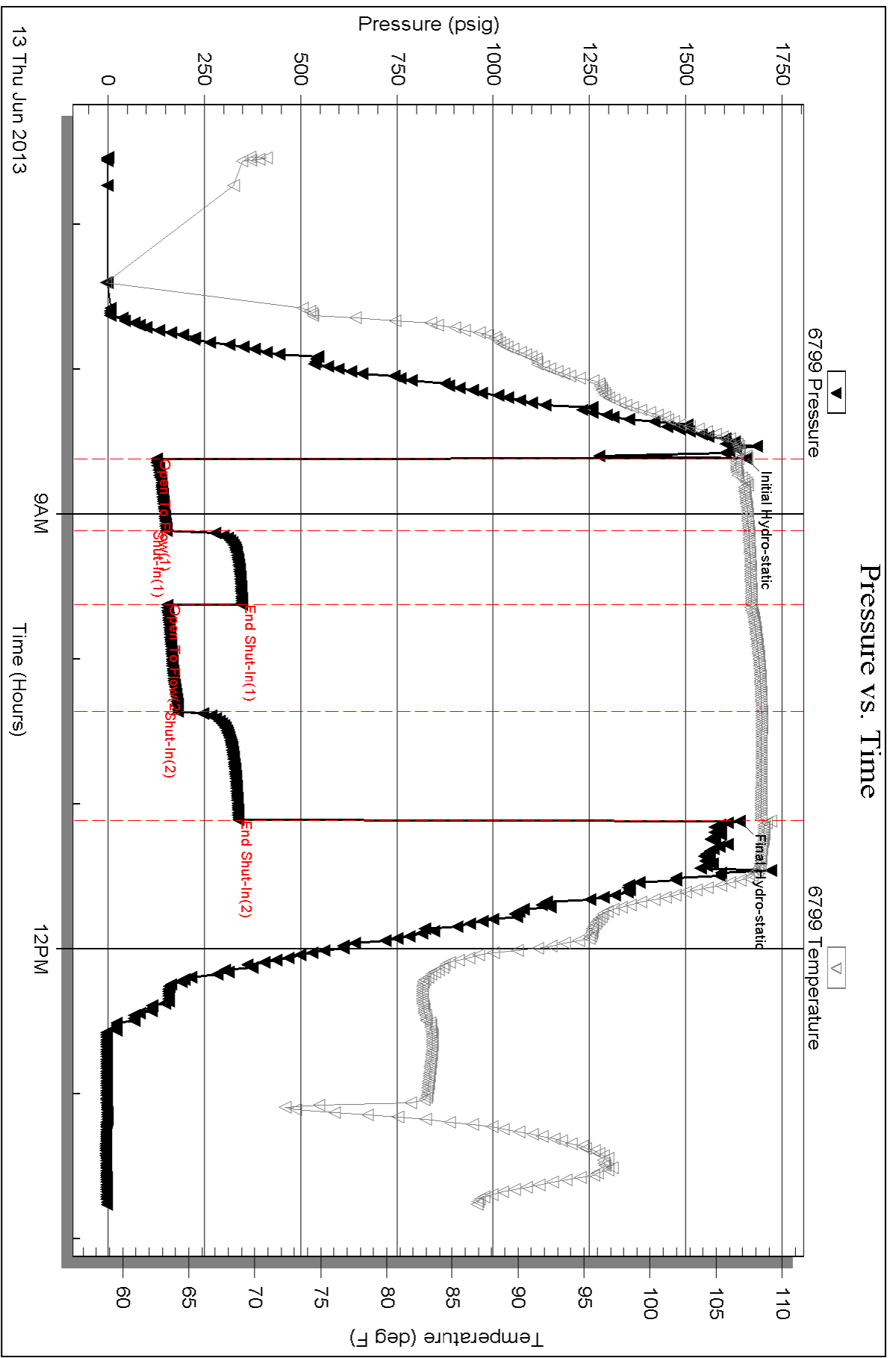
Length ft	Description	Volume bbl
35.00	Mud, 100%M	
186.00	Mud with oil specs, 100%M	
62.00	MW, 30%M, 70%W	
62.00	GWM, 5%G, 5%W, 90%M	

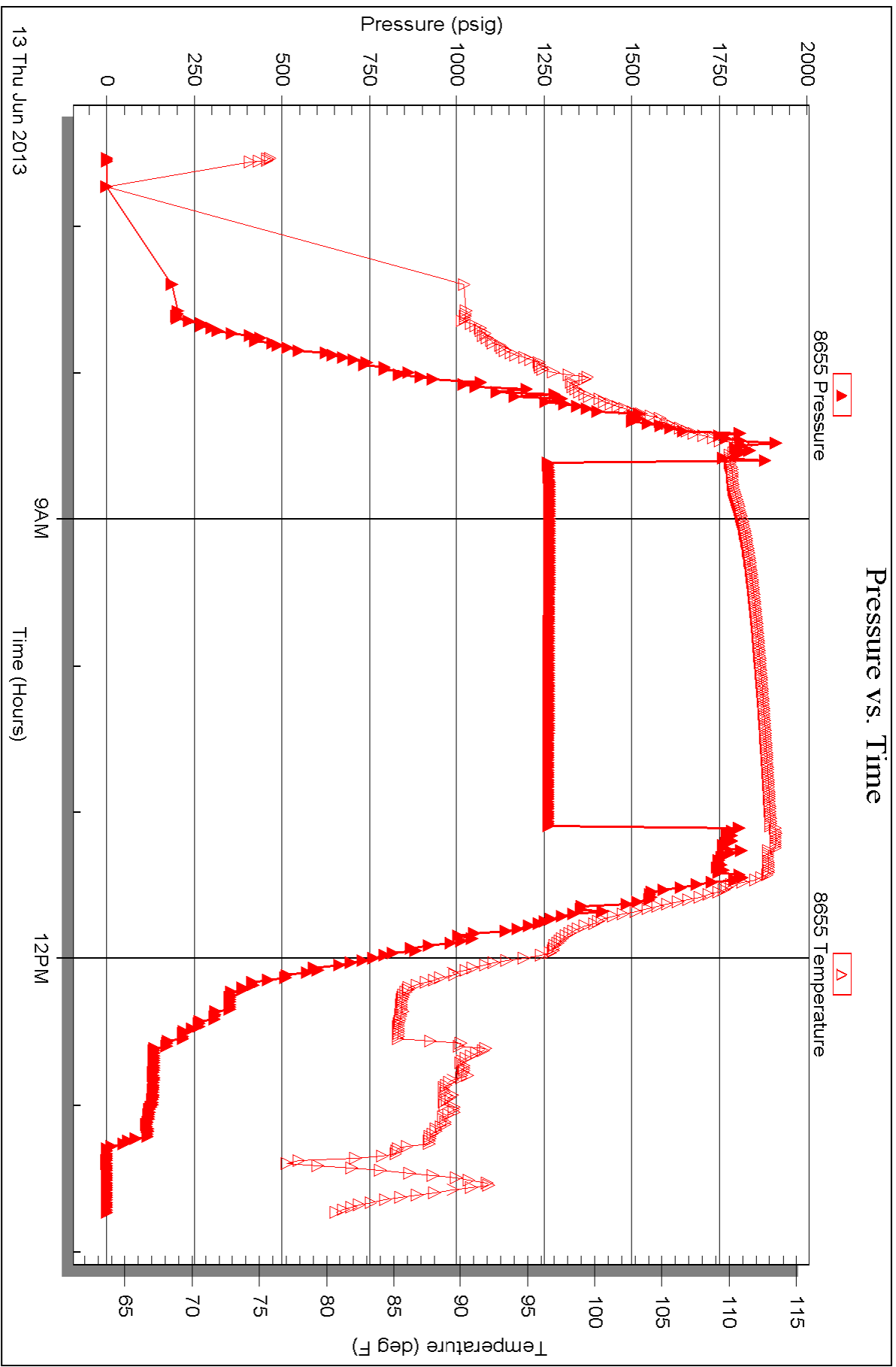
Total Length: 345.00 ft Total Volume: bbl

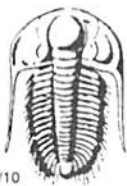
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53911

Well Name & No. Gross # 1 Test No. 1 Date 6-11-13
 Company TDF Inc Elevation ~~1992~~ 2003 KB ~~1992~~ 1993 GL
 Address 1310 Bison rd, Hays KS, 67601
 Co. Rep / Geo. Herb Rig Southwind #1
 Location: Sec. 24 Twp. 15s Rge. 19W Co. Ellis State KS

Interval Tested 3446 - 3495 Zone Tested I 25
 Anchor Length 49' Drill Pipe Run 3440' Mud Wt. 9.0
 Top Packer Depth 3441 Drill Collars Run - Vis 48
 Bottom Packer Depth 3446 Wt. Pipe Run - WL 7.2
 Total Depth 3495 Chlorides 3,600 ppm System LCM -

Blow Description ±F - B.O.B. in 30 seconds
ISI - B.O.B. in 9 minutes
FF B.O.B. from shut in
FSI - G.T.S. @ bleed off, B.O.B. in 11 minutes.

Rec	Feet of	%gas	%oil	%water	%mud
<u>124</u>	<u>6 HOCM</u>	<u>50</u>	<u>40</u>	<u>10</u>	
<u>62</u>	<u>60</u>	<u>50</u>	<u>50</u>		
<u>186</u>	<u>60</u>	<u>40</u>	<u>60</u>		
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

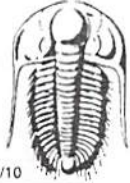
Rec Total 372' BHT 108° Gravity 37 API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 1694 Test 1150 T-On Location 10:44 pm
 (B) First Initial Flow 22 Jars _____ T-Started 11:13 pm
 (C) First Final Flow 74 Safety Joint _____ T-Open 1:55 am
 (D) Initial Shut-In 388 Circ Sub _____ T-Pulled 4:25 am
 (E) Second Initial Flow 81 Hourly Standby _____ T-Out 6:48 am
 (F) Second Final Flow 129 Mileage 32 RT 49.60
 (G) Final Shut-In 381 Sampler _____
 (H) Final Hydrostatic 1662 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 30
 Initial Shut-In 45
 Final Flow 30
 Final Shut-In 45
 Sub Total 1199.60

Approved By _____ Our Representative Cody B...

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. 53912

Well Name & No. Gross #1 Test No. 2 Date 6-13-13
 Company TDI INC Elevation 2003 KB 1993 GL
 Address 1310 Bison rd, Hays KS, 67601
 Co. Rep / Geo. Herb Rig Southwind #1
 Location: Sec. 24 Twp. 15s Rge. 19w Co. Ellis State KS

Interval Tested 3328 - 3350 TD 3750 Zone Tested "D"
 Anchor Length 22' Drill Pipe Run 3324' Mud Wt. 9.5
 Top Packer Depth 3323 Drill Collars Run — Vis 56
 Bottom Packer Depth 3328 Wt. Pipe Run — WL 7.8
 Total Depth 3350 Chlorides 3,500 ppm System LCM —

Blow Description IF - B.O.B. in 25 minutes
ISI - No return
FF - 2 1/2" blow
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>62</u>	<u>Feet of GWM</u>	<u>5</u>	<u>5</u>	<u>90</u>	<u>—</u>
<u>62</u>	<u>Feet of MW</u>	<u>—</u>	<u>70</u>	<u>30</u>	<u>—</u>
<u>186</u>	<u>Feet of Mud with oil specs</u>	<u>—</u>	<u>—</u>	<u>100</u>	<u>—</u>
<u>35</u>	<u>Feet of Mud</u>	<u>—</u>	<u>—</u>	<u>100</u>	<u>—</u>
<u>—</u>	<u>Feet of</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

Rec Total 445' BHT 108° Gravity — API RW .18 @ 91.5 F Chlorides 29,000 ppm

(A) Initial Hydrostatic 1655 Test 1150
 (B) First Initial Flow 126 Jars —
 (C) First Final Flow 151 Safety Joint —
 (D) Initial Shut-In 347 Circ Sub —
 (E) Second Initial Flow 153 Hourly Standby —
 (F) Second Final Flow 182 Mileage 49.60
 (G) Final Shut-In 337 Sampler —
 (H) Final Hydrostatic 1639 Straddle 600
 Shale Packer —
 Extra Packer —
 Extra Recorder —
 Day Standby —
 Accessibility —
 Sub Total 1799.60

T-On Location 5:58am
 T-Started 6:32am
 T-Open 8:38am
 T-Pulled 11:08am
 T-Out 1:46pm

Comments —
 Ruined Shale Packer —
 Ruined Packer —
 Extra Copies —
 Sub Total 0
 Total 1799.60
 MP/DST Disc't —

Approved By _____ Our Representative Cody Blalock

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: GROSS # 1
 Location: SE SW NW NW Sec 24-15s-19w
 Pool: SE SW NW NW Sec 24-15s-19w
 State: KANSAS
 API: 15-051-26,532-00-00
 Field: MARTINA EAST
 Country: USA



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

Scale 1:240 Imperial

Well Name: GROSS # 1
 Surface Location: SE SW NW NW Sec 24-15s-19w
 Bottom Location:
 API: 15-051-26,532-00-00
 License Number: 4787
 Spud Date: 6/7/2013
 Region: ELLIS COUNTY
 Drilling Completed: 6/12/2013
 Surface Coordinates: 1165' FNL & 460' FWL
 Bottom Hole Coordinates:
 Ground Elevation: 1993.00ft
 K.B. Elevation: 2003.00ft
 Logged Interval: 2850.00ft
 Total Depth: 3750.00ft
 Formation: LANSING-KANSAS CITY
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

Time: 2:45 PM
 Time: 10:42 PM
 To: 3750.00ft

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: Latitude:
 N/S Co-ord: 1165' FNL
 E/W Co-ord: 460' 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

- 6-11-13 3290', drilling, DST # 1 " I " & " J " LKC 3446'-3495'
- 6-12-13 3495', finish DST # 1, drilling, RTD 3750' @ 10:42PM
- 6-13-13 3750', mini short trip, CCH, TOWB, logs, Straddle DST # 2 3328' to 3350', "D " LKC, LDDP, run 5 1/2" production casing, cement casing

DST # 2 " I " AND " J " LKC TEST SUMMARY

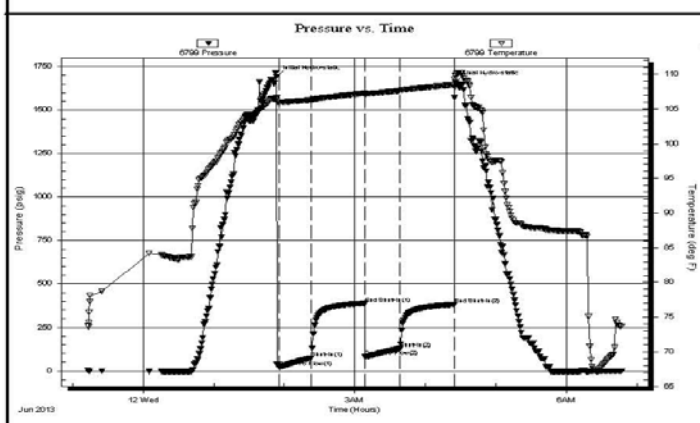
	DRILL STEM TEST REPORT		
	TDI Inc 1310 Bison rd, Hays KS, 67601 ATTN: Herb	24-15s-19w Ellis KS Gross #1 Job Ticket: 53911 DST#: 1 Test Start: 2013.06.11 @ 23:13:00	

GENERAL INFORMATION:

Formation: I & J	Test Type: Conventional Bottom Hole (Initial)
Deviated: No Whipstock ft (KB)	Tester: Cody Bloedorn
Time Tool Opened: 01:55:45	Unit No: 43
Time Test Ended: 06:47:00	Reference Elevations: 2003.00 ft (KB)
Interval: 3446.00 ft (KB) To 3495.00 ft (KB) (TVD)	1993.00 ft (CF)
Total Depth: 3495.00 ft (KB) (TVD)	KB to GR/CF: 10.00 ft
Hole Diameter: 7.88 inches	Hole Condition: Fair

Serial #: 6799 Inside	Capacity: 8000.00 psig
Press@RunDepth: 129.41 psig @ 3485.00 ft (KB)	Last Calib.: 2013.06.12
Start Date: 2013.06.11 End Date: 2013.06.12	Time On Btm: 2013.06.12 @ 01:53:30
Start Time: 23:13:05 End Time: 06:46:59	Time Off Btm: 2013.06.12 @ 04:25:30

TEST COMMENT: 30 - IF- B.O.B. in 30 seconds.
 45 - IS- B.O.B. in 9 minutes.
 30 - FF-B.O.B. from shut in
 45 - FSI- G.T.S. at bleed off, B.O.B. in 11 minutes




PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1694.74	106.60	Initial Hydro-static
3	22.12	105.99	Open To Flow (1)
30	74.57	106.32	Shut-In(1)
75	388.29	107.27	End Shut-In(1)
76	81.50	107.19	Open To Flow (2)
105	129.41	107.65	Shut-In(2)
151	381.54	108.49	End Shut-In(2)
152	1662.32	109.79	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
124.00	GHOCM, 10% M, 40% O, 50% G	
62.00	GO, 50% G, 50% O	
186.00	GO, 40% G, 60% O	

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

DST # 2 STRADDLE TEST "D" LKC TEST SUMMARY BOTTOM PACKER HELD

 TRILOBITE TESTING, INC.	DRILL STEM TEST REPORT	
	TDI Inc 1310 Bison rd, Hays KS, 67601 ATTN: Herb	24-15s-19w Ellis KS Gross #1 Job Ticket: 53912 DST#: 2 Test Start: 2013.12.13 @ 06:32:00

GENERAL INFORMATION:

Formation: **D**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 08:37:00
 Time Test Ended: 13:44:00

Interval: 3328.00 ft (KB) To 3350.00 ft (KB) (TVD)
 Total Depth: 3750.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair

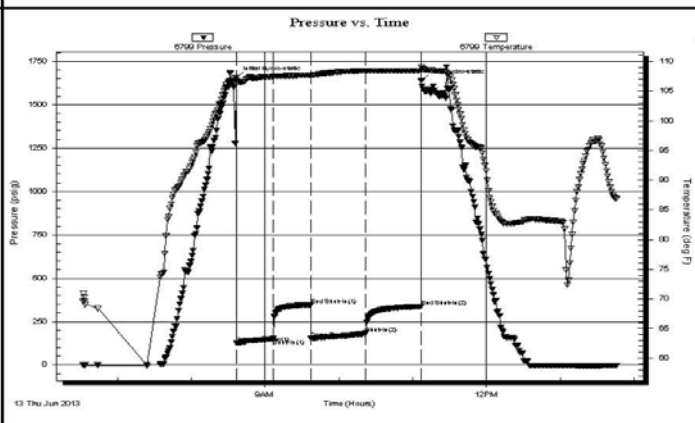
Test Type: Conventional Straddle (Reset)
 Tester: Cody Bloedorn
 Unit No: 43

Reference Elevations: 2003.00 ft (KB)
 1993.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 6799 Inside

Press@RunDepth: 182.14 psig @ 3329.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2013.06.13 End Date: 2013.06.13	Last Calib.: 2013.06.13
Start Time: 06:32:05 End Time: 13:45:44	Time On Btm: 2013.06.13 @ 08:36:45
	Time Off Btm: 2013.06.13 @ 11:07:15

TEST COMMENT: 30 - IF- B.O.B. in 25 minutes
 30 - IS- No return
 45 - FF- 2 1/2" blow
 45 - FSI- No return






PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1655.09	107.31	Initial Hydro-static
1	126.89	106.66	Open To Flow (1)
30	151.29	107.46	Shut-In(1)
61	347.57	107.68	End Shut-In(1)
61	153.07	107.60	Open To Flow (2)
105	182.14	108.44	Shut-In(2)
151	337.86	108.41	End Shut-In(2)
151	1639.55	109.12	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
35.00	Mud, 100% M	
186.00	Mud with oil specs, 100% M	
62.00	MW, 30% M, 70% W	
62.00	GWM, 5% G, 5% W, 90% M	

* Recovery from multiple tests

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

ROCK TYPES

 Clystgy	 Lmst fw7>	 Carbon Sh	 Lscongl
 Dolprim	 shale, grn	 shale, red	
 Lmst fw<7	 shale, gry	 Dol Lime	

ACCESSORIES

MINERAL

- ▲ Chert, dark
- Sandy
- ◊ Varicolored chert
- △ Chert White

FOSSIL

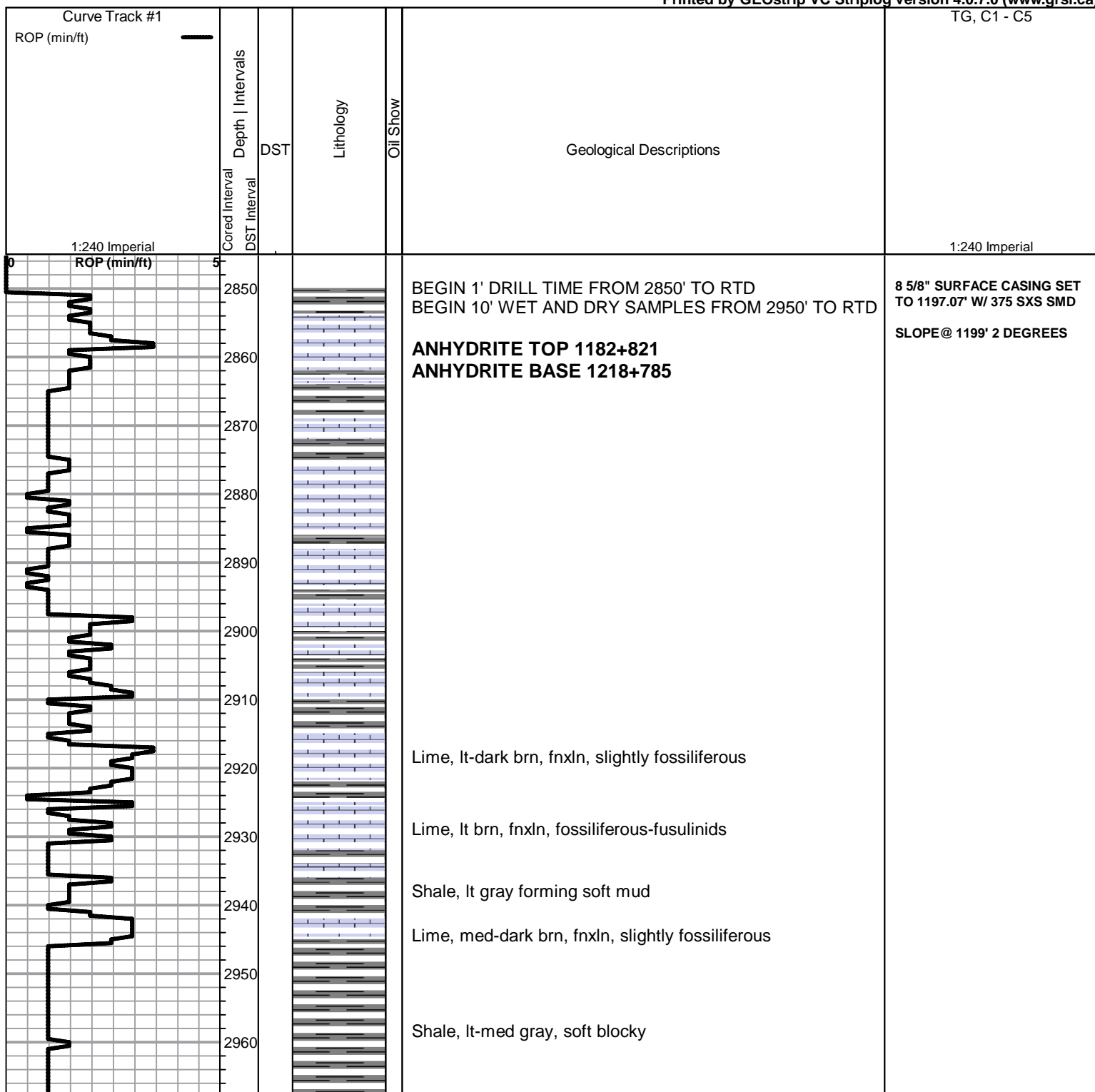
- F Fossils < 20%
- Oolite
- ⊕ Oomoldic

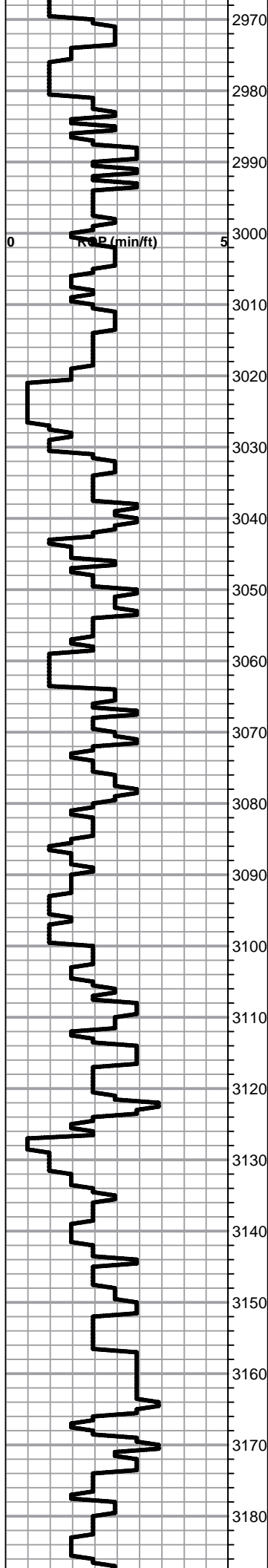
OTHER SYMBOLS

DST

- DST Int
- DST alt
- Core

Printed by GEOstrip VC Striplog version 4.0.7.0 (www.grsi.ca)





Lime, dark brn, fnxln,
Shale, lt-med gray, soft mud to soft blocky

TOPEKA ELOG 2985-982

Lime, crm-med brn, fnxln, fossiliferous in darker lime

Lime, lt brn-lt grayish brn, fnxln, slightly fossiliferous

Lime, lt-med brn-grayish brn, fnxln, fossiliferous in part

Lime, lt brn-lt grayish brn, fnxln-slightly granular in part

Lime, tan-lt brn, fnxln grading into granular, NS

Lime, crm-lt brn, fnxln

Lime, lt brn-lt grayish brn, fnxln, slight bedded chalk in part

Lime, lt-med brn-med grayish brn, fnxln-granular, NS

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

Lime, lt-med brn, increased soft bedded chalk

Lime, med brn, granular with chalk matrix with sticky clumps
of chalk in part

Shale, black carbonaceous, fissile, blocky

Lime, crm-lt brn, fn-vfxln
Shale, lt-med gray, calcareous in part

Lime, crm, fn-vfxln, lithographic in part

Lime, tan-lt brn, fnxln-granular, slight bedded chalk, NS

Lime, lt-med brn, mostly fnxln, slightly fossiliferous in part

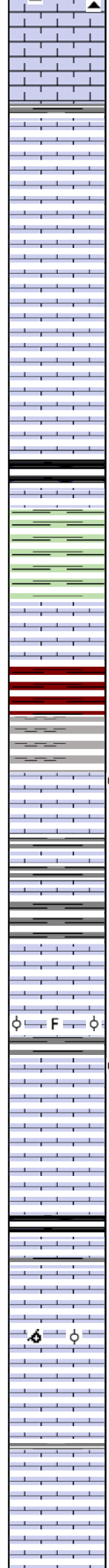
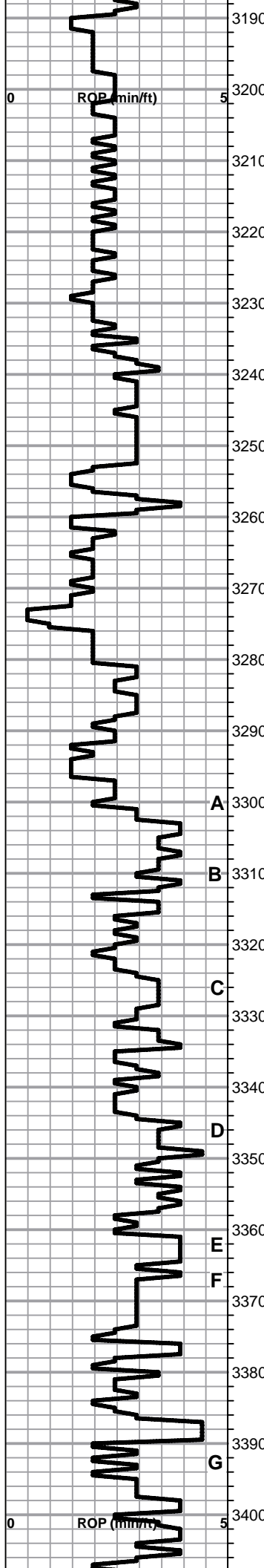
Lime, lt brn, fnxln, slightly fossiliferous

Lime, crm-lt brn, fnxln, slightly bedded chalk in part , hard

Shale, black carbonaceous, fissile, blocky
Lime, crm-lt brn, fnxln

Lime, tan-lt brn, fnxln-granular,

Lime, lt-med brn, fnxln with increasing granular content



Chert, lt gray, fossiliferous

Lime, lt-med brn-lt grayish brn, fnxln-granular, slight bed chalk

Lime, tan-lt brn, fnxln-granular, bed chalk in part

Lime, crm-tan, fnxln, slight bed chalk

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

Lime, tan-lt brn, fnxln-granular, slight bed chalk

Lime, tan-lt brn, fnxln

HEEBNER SHALE SPL 3252-1249
 Shale, black carbonaceous, fissile, blocky
 Lime, lt-med brn, fn-vfxln, hard on crush

Shale, dove gray-lime green, forming soft mud

TORONTO SPL 3272-1269
 Lime, white-crm, fnxln-granular, thin bed chalk, NS
 Lime, crm-tan, fn-vfxln, thin bed chalk, NS

Shale, reddish brn, soft-firm blocky

LKC SPL 3296-1293
 Lime, tan-lt brn, fnxln, thin fossiliferous bed with trace of spotty staining, sparry calcite backfill, NFO, No Odor

A 3300
 B 3310
 C 3320
 D 3330
 E 3340
 F 3350
 G 3360

Lime, lt gray, fnxln, scattered fossil fragments
 Shale, lt gray, forming soft mud

Lime, crm-tan, mostly fnxln

Lime, crm-tan, fnxln, thin oolitic-fossil fragment bed with spotty staining, V Lt Odor

Lime, crm-tan, mostly fnxln, bed chalk

Lime, crm-tan, fnxln, slight bed chalk

Shale, black carbonaceous, fissile, blocky
 Lime, med-dark grayish brn, fnxln

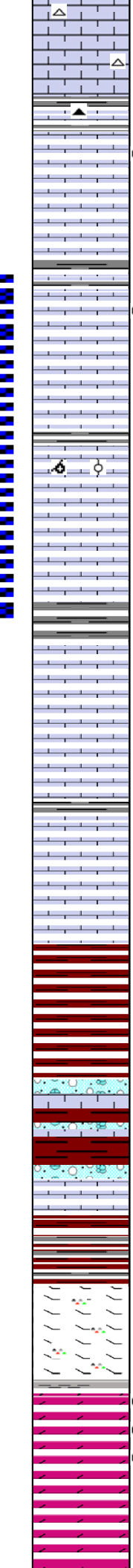
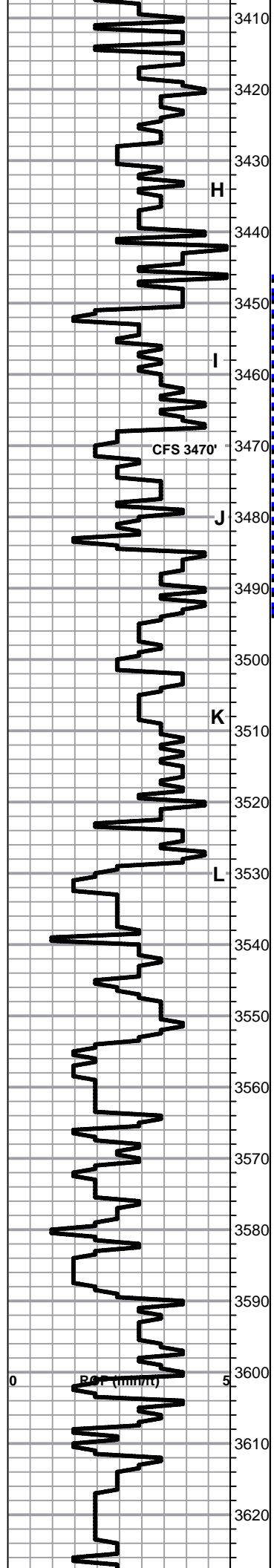
Lime, crm-tan, fnxln, bed chalk, few chips oolmoldic/oolitic lime, barren, NS, lt white wash

Lime, crm-tan, fnxln, chalk in part with lt white wash

Lime, crm-tan, fnxln, slight bed chalk

Lime, crm-tan, fnxln, slight bed chalk

**DST # 2 STRADDLE TEST
 3328'-3350' SEE HEADER
 FOR TEST SUMMARY**



3410 Lime, crm-tan, fn-micro xln, slight bed chalk
Chert, white, fresh, sharp

3420 Lime, lt-med brn, fnxln, hard on crush
Shale, gray-black, black chert in part

3430 Lime, crm-lt brn, fnxln, thin bed of fossil fragments/oolites,
scattered staining, NFO, V Lt Odor

3440 Lime, crm-tan, fn-vfxln, slight bed chalk

Shale, dove gray forming soft mud

3450 Lime, crm, lot of fnxln, slight chalk, few chips fossil
fragment/oolitic with spotty staining, few floating specks of
free oil, V Lt Odor

3460 Lime, crm, fnxln, bed chalk

3470 Lime, lt gray-crm-tan, fnxln, few chips oolitic/oolmoldic,
largely barren, no staining, NFO, No Odor

3480 Lime, crm-tan, fnxln, slight bed chalk

3490 Shale, lt gray, soft blocky, calcareous in part

3500 Lime, crm-tan, fn-micro xln, slight bed chalk

3510 Lime, crm-tan, fnxln, slight bed chalk

3520 Lime, tan-lt brn, fn-micro xln, white chalk wash

3530 Lime, tan-lt brn, fn-micro xln, slight bed chalk

3540 **BKC SPL 3540-1537**

3550 Shale, reddish brn, soft blocky with lt red wash

Shale, redds, brn, maroon, dark red, soft blocky

3560 Lime, clastic mix with red shale staining
Shale, redds and brns, soft blocky

3570 Lime and shale as above

3580 Shale, reddish brn, soft with red wash grading into darker
red and gray shales

3590 Lime, crm-tan, fnxln, hard, dolomitic, orange chert
fragments

Lime, as above grading into white, sticky clay at base

3600 **ARBUCKLE SPL 3603-1600**

3610 Dolomite, tan-lt brn, fn grained granular, saturated staining
with lt odor

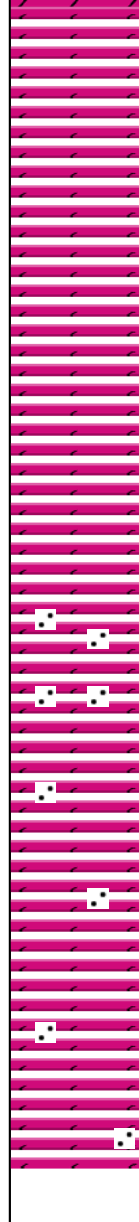
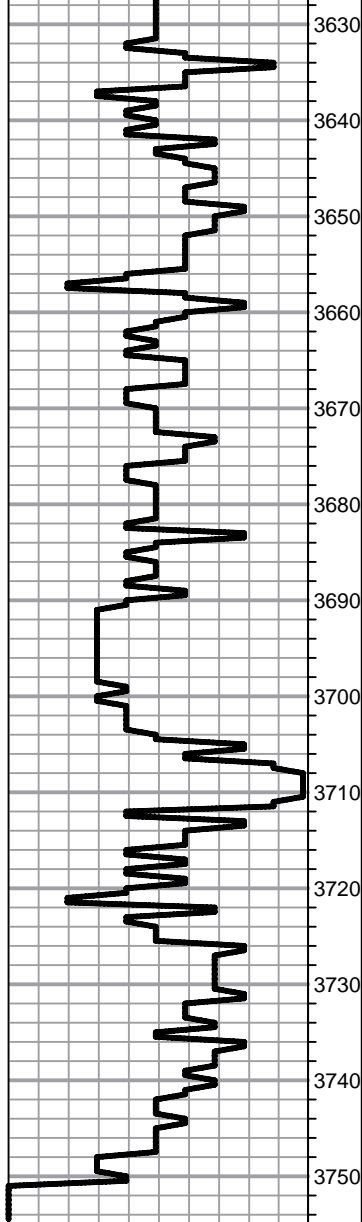
3620 Dolomite, tan-lt brn, fine grain with increasing grain size with
depth, saturated staining, lt odor

Dolomite, ivory-crm, fn-md xln, no staining or odor

Dolomite, ivory-crm, fn-md xln

DST # 1 3446'-3495' SEE
HEADER FOR TEST
SUMMARY

CFS 3495', SHORT TRIP
SLOPE @ 3495' 1 DEGR



Dolomite, ivory-crm, fn-med xln

Dolomite, ivory-frm, fn-med granular, scattered rhombic in larger xln dolomite

Dolomite, ivory, fn-med xln, fnxln-granular

Dolomite, ivory-lt salmon, fnxln, hard

Dolomite, ivory, fnxln-granular in part

Dolomite, ivory, fn-med xln, granular in part

Dolomite, ivory, fnxln, granular in part

Dolomite, lt salmon, hard on crush, quartz grain clusters and fused quartz

Dolomite, frm, fnxln, fused quartz, hard on crush

Dolomite, frm, fn-med xln, granular in part with quartz grain inclusions

Dolomite, as above

RTD 3750-1747 **LTD 3749-1746**

**SET 14# 5.5" CASING TO
3746' W/ 130 SXS**

JOB LOG

SWIFT Services, Inc.

DATE 6-8-73 PAGE NO.

CUSTOMER TDI WELL NO. 1 LEASE Gross JOB TYPE Deep Surface TICKET NO. 24432

CHART NO.	TIME	RATE (BPM)	VOLUME (BBLS/GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0730							on location
								TD 1199 SJ 35
								TP 1197 Insert 1162
								8 5/8 x 23"
	0850							Start Pipe
	1035							Break Circulation
	1100	5	20		✓			Start KLL Phosg
	1105	5	47		✓	200		Start Cement 100 sks @ 11.8
		5	36		✓	200		100 sks @ 12.8
		5	30		✓	200		100 sks @ 13.5
		5	20		✓	100		75 sks @ 14.5
		6			✓	150		Start Displacement
	1155		74.3			400 600		load plug
								Shot In
	1200							Release all wash up Rack up
								Circulate <u>40</u> sks to pit
	1230							Job Complete Thank You Josh, Brian, Aidan

JOB LOG

SWIFT Services, Inc.

DATE 6-13-13 PAGE NO. 1

CUSTOMER		WELL NO.		LEASE		JOB TYPE		TICKET NO.	
TDI operating		#1		Gross		Cement Longstring		24779	
CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		TD-3789	DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING		
	1815					14 #1	5 1/2		DN Loc - F.E Rig L.D.D.C
	1930								Start casing to 3746'
									Insert Float Valve w/ Auto Fill
									L.D. Baffle - SJ-44' @ 3702' = 90.3 BBL
									Cent 1-3-91-6-92-9-11
									Cent Baskets Bottoms of 3 #13
									Drop RL up ball - 5 fts out
	2045								Fin casing - Top & Log st. Down
	2100								Start circ / Rotate casing
									Fin circ
			84						Plug RH-30 SKS / LH-15 SKS
		5	12	32			200		Pump 500 gal Neutral Flush
		5 1/2	20				200		Pump 80 BBL PreFlush KCL
		4 1/2					200		Start 130 SKS EA-2 cent
			32						Van Fin cent - Wash Pump Lines
									Drop L.D. Plug.
		9					300		Start Displ
		7 1/2	70				400		Control left - Slow rate
		6	80				500		Slow rate
	2240		90 1/2				750		Plug down - Hold - Release & Hold
	2245								Job Complete
									Wash up & Break up
									<i>[Signature]</i>
									<i>[Signature]</i>

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

July 24, 2013

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

Re: ACO1
API 15-051-26532-00-00
Gross 1
NW/4 Sec.24-15S-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