

Confidentiality Requested:

Yes  No

**KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION**

Form ACO-1

January 2018

**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

Gas  DH  EOR

OG  GSW

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 EOR  Conv. to SWD

Plug Back  Liner  Conv. to GSW  Conv. to Producer

Commingled Permit #: \_\_\_\_\_

Dual Completion Permit #: \_\_\_\_\_

SWD Permit #: \_\_\_\_\_

EOR Permit #: \_\_\_\_\_

GSW Permit #: \_\_\_\_\_

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: \_\_\_\_\_

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  Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

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 Geologist Report / Mud Logs <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
--	---

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				

1. Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*
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)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
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) (Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
---	--	------------------------------------

Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
----------------	-------	---------	------------	--



**OPERATOR**

Company: TDI INC.  
 Address: 1310 BISON ROAD  
 HAYS, KANSAS 67601-9696

Contact Geologist: TOM DENNING  
 Contact Phone Nbr: 785-628-2593  
 Well Name: MATLOCK # 3  
 Location: NW NE SE SW, SEC.26-T13S-R19W  
 API: 15-051-26,966-00-00  
 Pool:  
 State: KANSAS

Field: SACKS WEST  
 Country: USA



Scale 1:240 Imperial

Well Name: MATLOCK # 3  
 Surface Location: NW NE SE SW, SEC.26-T13S-R19W  
 Bottom Location:  
 API: 15-051-26,966-00-00  
 License Number: 4787  
 Spud Date: 9/26/2019 Time: 5:45 PM  
 Region: ELLIS COUNTY  
 Drilling Completed: 10/2/2019 Time: 2:47 PM  
 Surface Coordinates: 1010' FSL & 2155' FWL  
 Bottom Hole Coordinates:  
 Ground Elevation: 2179.00ft  
 K.B. Elevation: 2189.00ft  
 Logged Interval: 3000.00ft To: 3920.00ft  
 Total Depth: 3920.00ft  
 Formation: LANSING-KANSAS CITY  
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude: -99.4024134  
 Latitude: 38.888038  
 N/S Co-ord: 1010' FSL  
 E/W Co-ord: 2155' 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  
 Spud Date: 9/26/2019 Time: 5:45 PM  
 TD Date: 10/2/2019 Time: 2:47 PM

**ELEVATIONS**

K.B. Elevation: 2189.00ft  
K.B. to Ground: 10.00ft

Ground Elevation: 2179.00ft

**NOTES**

DECISION TO PLUG AND ABANDON WELL DUE TO NEGATIVE RESULTS OF TWO DSTS.

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) STRADDLE TESTS.

**MATLOCK # 3**  
**NW NE SE SW**  
**SEC.26-13S-19W**  
**KB 2189'**

**MATLOCK # 1**  
**NW SW NE SE**  
**SEC.26-13-19W**  
**KB 2172'**

**YOUNGER # 1**  
**SW NE SW NW**  
**SEC.35-13-19W**  
**KB 2174'**

**LOG TOPS**

<b>Anhydrite top</b>	<b>1485 +704</b>	<b>+ 704</b>	<b>+ 704</b>
<b>Anhydrite base</b>	<b>1525 +664</b>	<b>+ 667</b>	<b>+ 664</b>
<b>Topeka</b>	<b>3209-1020</b>	<b>-1010</b>	<b>-1015</b>
<b>Heebner Sh.</b>	<b>3459-1270</b>	<b>-1260</b>	<b>-1267</b>
<b>Toronto</b>	<b>3480-1291</b>	<b>-1280</b>	<b>-1285</b>
<b>LKC</b>	<b>3504-1315</b>	<b>-1305</b>	<b>-1311</b>
<b>BKC</b>	<b>3748-1559</b>	<b>-1542</b>	<b>-1552</b>
<b>Arbuckle</b>	<b>3843-1654</b>	<b>-1642</b>	<b>-1668</b>
<b>RTD</b>	<b>3920-1731</b>	<b>-1728</b>	<b>-1751</b>

**SUMMARY OF DAILY ACTIVITY**

**09-26-19** RU, Spud 5:45 pm, set 8 5/8" surface casing to 225.92' w/ 150 sxs  
60/40 pos 2%gel 3%CC, plug down 11:00PM, slope ¾ degree, WOC

**09-27-19** 226', drill plug 7:00 AM, drilling

**09-28-19** 1496' drilling

**09-29-19** 2450', drilling, displaced 2795'-2805'

**09-30-19** 3035' drilling, bit trip 3102'

**10-01-19** 3403', drilling, soaking rains, decision to drill down and log

**10-02-19** 3728', drilling, RTD 3920'@ 2:45PM, short trip-25 stands, TOWB,  
logs, DST # 1 straddle test 3520'-3563' "C" & "D", make up tool

**10-03-19** 3920', finish DST # 1, run DST # 2 straddle test 3675'-3690' "J",  
LDDP and P&A



**TRILOBITE TESTING, INC.**

**DRILL STEM TEST REPORT**

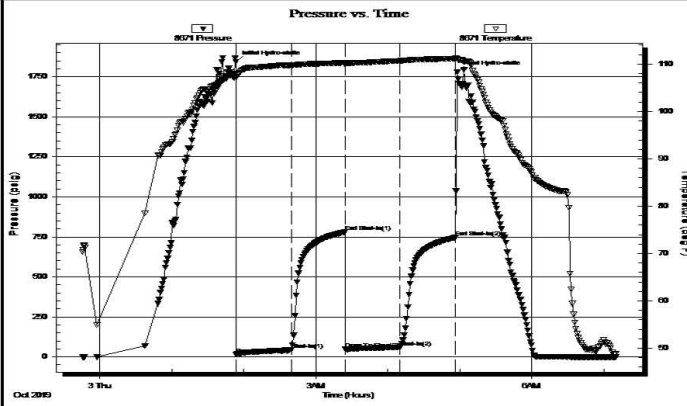
TDI **26 - 13S - 19W**  
 1310 Bison Rd **Matlock #3**  
 Hays Ks 67601 Job Ticket: 66319 **DST#: 1**  
 ATTN: Herb Deines Test Start: 2019.10.02 @ 23:46:00

**GENERAL INFORMATION:**

Formation: **C & D**  
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Straddle (Initial)  
 Time Tool Opened: 01:54:00 Tester: Royal Fisher  
 Time Test Ended: 07:10:00 Unit No: #77  
**Interval: 3520.00 ft (KB) To 3563.00 ft (KB) (TVD)** Reference Elevations: 2189.00 ft (KB)  
 Total Depth: 3920.00 ft (KB) (TVD) 2179.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

**Serial #: 8671 Outside**  
 Press@RunDepth: 60.53 psig @ 3521.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2019.10.02 End Date: 2019.10.03 Last Calib.: 2019.10.03  
 Start Time: 23:46:05 End Time: 07:09:59 Time On Btm: 2019.10.03 @ 01:53:45  
 Time Off Btm: 2019.10.03 @ 04:57:45

**TEST COMMENT:** 45 - IFP- Surface blow built up to 4 1/2"  
 45 - ISI - No Return  
 45 - FFP - Surface blow built up to 3"  
 45 - FSI - No Return



**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1845.04	108.01	Initial Hydro-static
1	16.96	107.24	Open To Flow (1)
46	43.69	109.74	Shut-In(1)
91	780.13	110.27	End Shut-In(1)
91	50.38	109.82	Open To Flow (2)
136	60.53	110.69	Shut-In(2)
183	745.68	111.11	End Shut-In(2)
184	1778.97	111.09	Final Hydro-static

**Recovery**

Length (ft)	Description	Volume (bbt)
2.00	Free Oil - 100%o	0.02
112.00	OCMVV - 5%o - 40%m - 55%w	1.15

**Gas Rates**

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



**TRILOBITE TESTING, INC.**

**DRILL STEM TEST REPORT**

TDI  
1310 Bison Rd  
Hays Ks 67601  
ATTN: Herb Deines

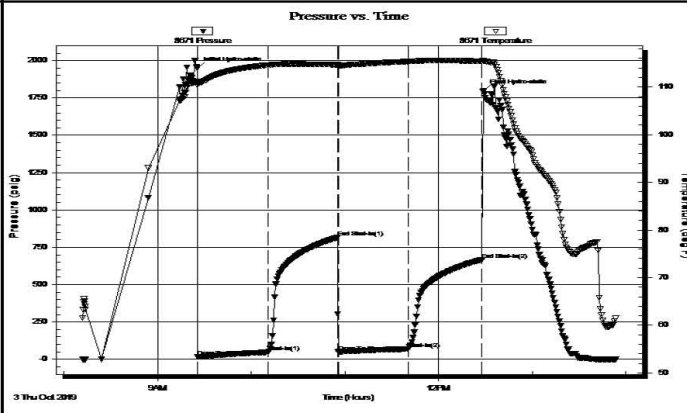
**26 - 13S - 19W**  
**Matlock #3**  
Job Ticket: 66320 **DST#: 2**  
Test Start: 2019.10.03 @ 08:12:00

**GENERAL INFORMATION:**

Formation: **J**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 09:25:30  
Time Test Ended: 13:53:15  
Test Type: Conventional Straddle (Initial)  
Tester: Royal Fisher  
Unit No: #77  
Interval: **3675.00 ft (KB) To 3690.00 ft (KB) (TVD)**  
Reference Elevations: 2189.00 ft (KB)  
Total Depth: 3920.00 ft (KB) (TVD) 2179.00 ft (CF)  
Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

**Serial #: 8671 Outside**  
Press@RunDepth: 68.75 psig @ 3676.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2019.10.03 End Date: 2019.10.03 Last Calib.: 2019.10.03  
Start Time: 08:12:05 End Time: 13:53:14 Time On Btm: 2019.10.03 @ 09:25:15  
Time Off Btm: 2019.10.03 @ 12:28:45

**TEST COMMENT:** 45 - IFP - Surface blow built up to 6"  
45 - ISI - No Return  
45 - FFP - Surface blow built up to 3"  
45 - FSI - No Return



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1949.80	111.07	Initial Hydro-static
1	17.14	110.40	Open To Flow (1)
46	47.54	114.59	Shut-In(1)
90	814.97	114.67	End Shut-In(1)
91	50.13	114.42	Open To Flow (2)
136	68.75	115.34	Shut-In(2)
183	667.55	115.42	End Shut-In(2)
184	1798.99	115.51	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
20.00	OCW - 10%o - 90%w	0.21
63.00	OSW - Oil Skim - 100%w	0.65

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

Trilobite Testing, Inc

Ref. No: 66320

Printed: 2019.10.03 @ 14:49:59

**ROCK TYPES**

Chtcong	Lmst fw<7	shale, grn	shale, red
Dolprim	Lmst fw>7	shale, gry	
Dol Lime	Lscong	Carbon Sh	

**ACCESSORIES**

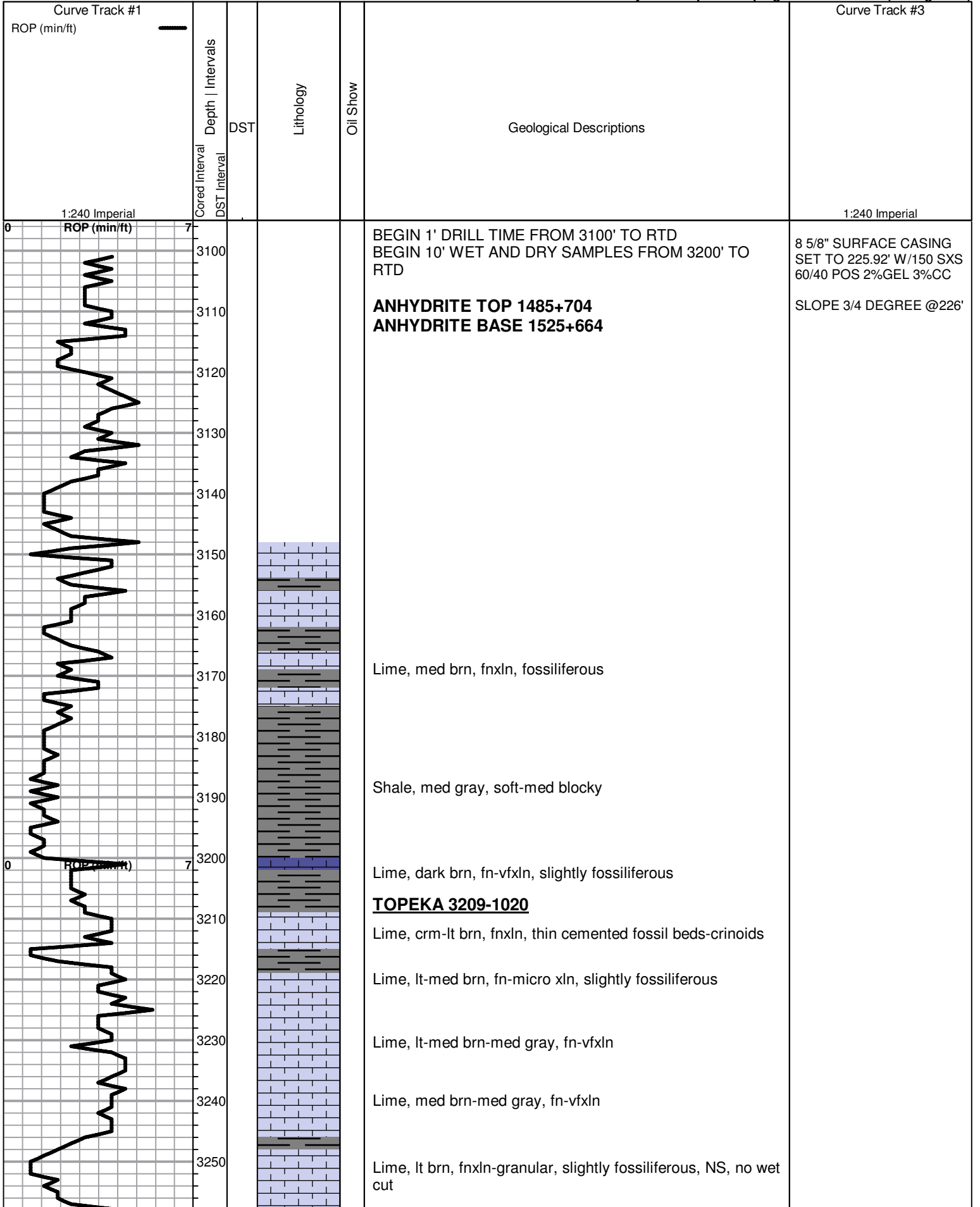
**MINERAL**

▲ Chert, dark

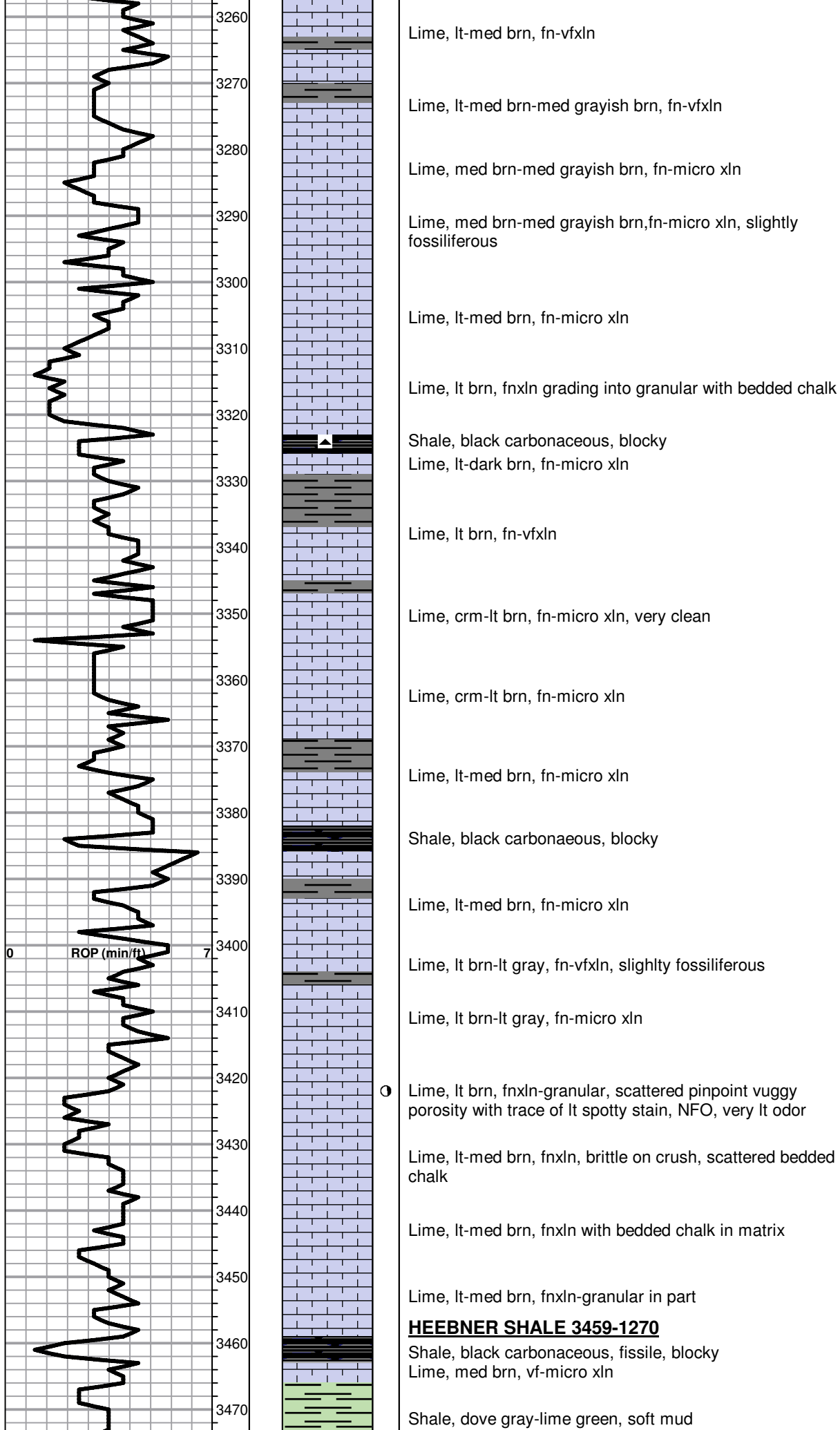
**FOSSIL**

○ Oolite

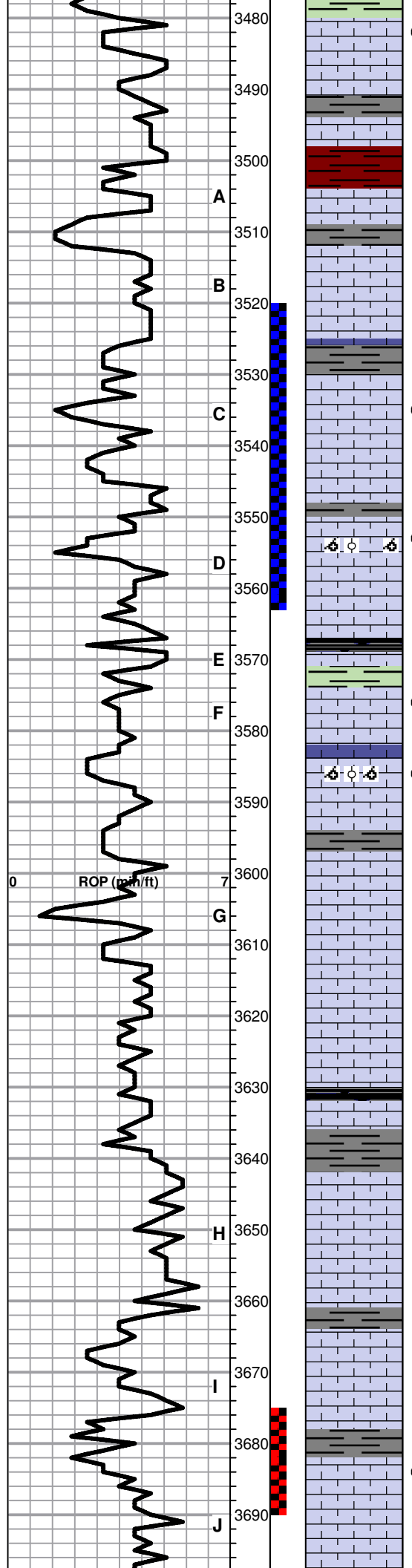
⊗ Oomoldic







**TORONTO 3480-1291**



○ Lime, white, fn-vfxln with bed chalk, few chips with spotty lt staining, NFO or odor

Lime, lt-med brn, fn-micro xln

Shale, red with lt red wash, soft mud-soft blocky  
**LKC 3504-1315**

Lime, crm-lt brn, fn-micro xln

Lime, crm-lt brn, fn-micro xln

Lime, lt-med brn, fn-micro xln

○ Lime, tan-lt brn, fnxln, few chips fossiliferous with trace of staining in casts with lt odor. NFO

Lime, crm, fn-micro xln, bedded chalk with white wash

○ Lime, lt brn, fnxln, oolitic/oomoldic in part, NFO, spotty stain, bounced rotary table with torquing.

Lime, lt brn, fn-micro xln

Shale, black carbonaceous, blocky

○ Lime, crm-lt brn, fnxln, fossiliferous, scattered vugs with spotty dark stain, NFO, very lt odor

○ Lime, crm, fnxln-granular-oolitic/oomoldic, spotty lt staining, NFO, very lt odor.

Lime, white-crm, fnxln, white chalk wash

Lime, crm-lt brn, fn-vfxln, bedded chalk with white wash

Lime, crm-lt brn, fn-vfxln

Lime, crm-lt brn, fn-micro xln, bedded chalk with white wash

Shale, black carbonaceous, blocky  
Lime, lt brn-lt gray, fn-micro xln

Lime, crm-lt brn, fn-micro xln

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

Lime, dark brn, micro xln

Lime, crm-lt brn, fn-micro xln, har on crush, NFO or odor

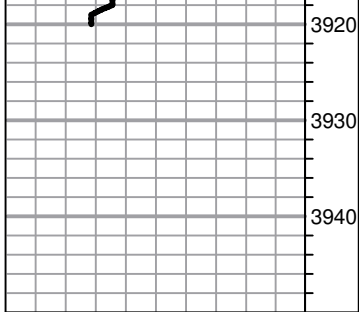
○ Lime, crm-lt brn, fn-micro xln, scattered vugs and fossil casts with trace of lt staining, NFO or odor.

Lime, lt brn, micro xln

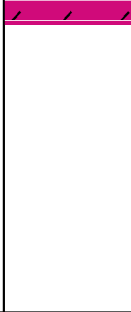
DST # 1 STRADDLE TEST  
3520'-3563' SEE HEADER  
FOR TEST SUMMARY

DST # 2 STRADDLE TEST  
3675'-3690' SEE HEADER  
FOR TEST SUMMARY





3920  
3930  
3940



Dolomite, ivory, fnxln-granular, scattered glauconite

**RTD 3920-1731 LTD 3922-1733**







## DRILL STEM TEST REPORT

Prepared For: **TDI**

1310 Bison Rd  
Hays KS 67601

ATTN: Herb Deines

### **Matlock #3**

### **26-13S-19W Ellis,KS**

Start Date: 2019.10.02 @ 23:46:00

End Date: 2019.10.03 @ 07:10:00

Job Ticket #: 66319                      DST #: 1

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

Printed: 2019.10.04 @ 14:14:24

TDI  
26-13S-19W Ellis,KS  
Matlock #3  
DST # 1  
LKC C - D  
2019.10.02



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

TDI  
1310 Bison Rd  
Hays KS 67601  
ATTN: Herb Deines

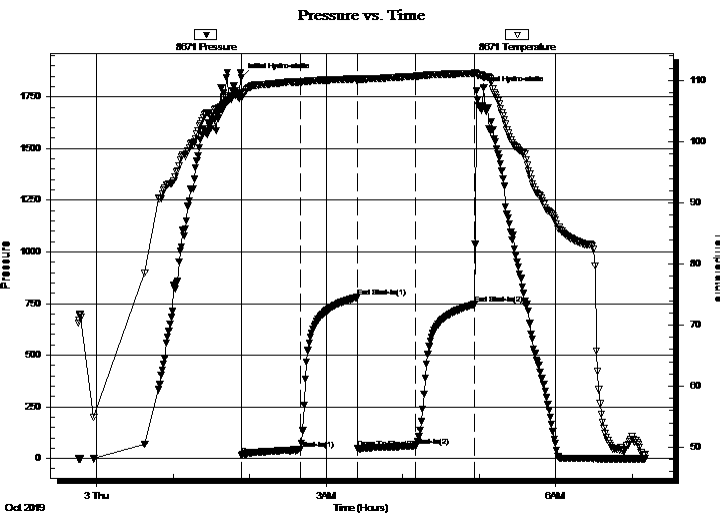
**26-13S-19W Ellis, KS**  
**Matlock #3**  
Job Ticket: 66319 **DST#: 1**  
Test Start: 2019.10.02 @ 23:46:00

## GENERAL INFORMATION:

Formation: **LKC C - D**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 01:54:00  
 Time Test Ended: 07:10:00  
 Interval: **3520.00 ft (KB) To 3563.00 ft (KB) (TVD)**  
 Total Depth: 3920.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Straddle (Initial)  
 Tester: Royal Fisher  
 Unit No: #77  
 Reference Elevations: 2189.00 ft (KB)  
 2179.00 ft (CF)  
 KB to GR/CF: 10.00 ft

**Serial #: 8671 Outside**  
 Press@RunDepth: 60.53 psig @ 3521.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2019.10.02 End Date: 2019.10.03 Last Calib.: 2019.10.03  
 Start Time: 23:46:05 End Time: 07:09:59 Time On Btm: 2019.10.03 @ 01:53:45  
 Time Off Btm: 2019.10.03 @ 04:57:45

TEST COMMENT: 45 - IFP - Surface blow built up to 4 1/2"  
 45 - ISI - No Return  
 45 - FFP - Surface blow built up to 3"  
 45 - FSI - No Return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1845.04	108.01	Initial Hydro-static
1	16.96	107.24	Open To Flow (1)
46	43.69	109.74	Shut-In(1)
91	780.13	110.27	End Shut-In(1)
91	50.38	109.82	Open To Flow (2)
136	60.53	110.69	Shut-In(2)
183	745.68	111.11	End Shut-In(2)
184	1778.97	111.09	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
2.00	Free Oil - 100%o	0.02
112.00	OCMW - 5%o - 40%m - 55%w	1.15

## Gas Rates

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







**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

TDI  
1310 Bison Rd  
Hays KS 67601  
ATTN: Herb Deines

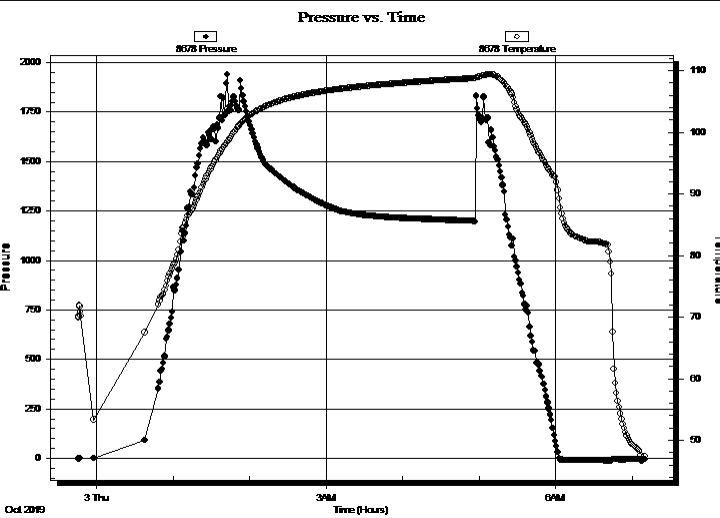
**26-13S-19W Ellis, KS**  
**Matlock #3**  
Job Ticket: 66319 **DST#: 1**  
Test Start: 2019.10.02 @ 23:46:00

## GENERAL INFORMATION:

Formation: **LKC C - D**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Straddle (Initial)  
 Time Tool Opened: 01:54:00 Tester: Royal Fisher  
 Time Test Ended: 07:10:00 Unit No: #77  
 Interval: **3520.00 ft (KB) To 3563.00 ft (KB) (TVD)** Reference Elevations: 2189.00 ft (KB)  
 Total Depth: 3920.00 ft (KB) (TVD) 2179.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

**Serial #: 8678 Outside**  
 Press@RunDepth: psig @ 3571.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2019.10.02 End Date: 2019.10.03 Last Calib.: 2019.10.03  
 Start Time: 23:46:05 End Time: 07:09:59 Time On Btm:  
 Time Off Btm:

TEST COMMENT: 45 - IFP - Surface blow built up to 4 1/2"  
 45 - ISI - No Return  
 45 - FFP - Surface blow built up to 3"  
 45 - FSI - No Return



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

Recovery		
Length (ft)	Description	Volume (bbl)
2.00	Free Oil - 100%o	0.02
112.00	OCMW - 5%o - 40%m - 55%w	1.15

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

TDI  
1310 Bison Rd  
Hays KS 67601  
ATTN: Herb Deines

**26-13S-19W Ellis,KS**  
**Matlock #3**  
Job Ticket: 66319      **DST#: 1**  
Test Start: 2019.10.02 @ 23:46:00

**Tool Information**

Drill Pipe:	Length: 3517.80 ft	Diameter: 3.25 inches	Volume: 36.09 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 45000.00 lb
			<u>Total Volume: 36.09 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	17.80 ft			String Weight: Initial 41000.00 lb
Depth to Top Packer:	3520.00 ft			Final 41000.00 lb
Depth to Bottom Packer:	3927.00 ft			
Interval between Packers:	407.00 ft			
Tool Length:	427.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3505.00	
Hydraulic tool	5.00			3510.00	
Packer	5.00		Inside	3515.00	20.00      Bottom Of Top Packer
Packer	5.00			3520.00	
Stubb	1.00			3521.00	
Recorder	0.00	8671	Outside	3521.00	
Recorder	0.00	8360	Inside	3521.00	
Perforations	5.00			3526.00	
Change Over Sub	1.00			3527.00	
Drill Pipe	31.00			3558.00	
Change Over Sub	1.00			3559.00	
Perforations	1.00			3560.00	
Stubb	3.00		Outside	3563.00	
Packer - Shale	5.00		Outside	3568.00	
Stubb	1.00			3569.00	
Blank Off Sub	1.00			3570.00	
Change Over Sub	1.00			3571.00	
Recorder	0.00	8678	Outside	3571.00	
Drill Pipe	349.00		Below	3920.00	
Change Over Sub	1.00			3921.00	
Perforations	3.00			3924.00	
Bullnose	3.00			3927.00	407.00      Bottom Packers & Anchor

**Total Tool Length: 427.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

TDI **26-13S-19W Ellis,KS**  
 1310 Bison Rd **Matlock #3**  
 Hays KS 67601 Job Ticket: 66319 **DST#: 1**  
 ATTN: Herb Deines Test Start: 2019.10.02 @ 23:46:00

## Mud and Cushion Information

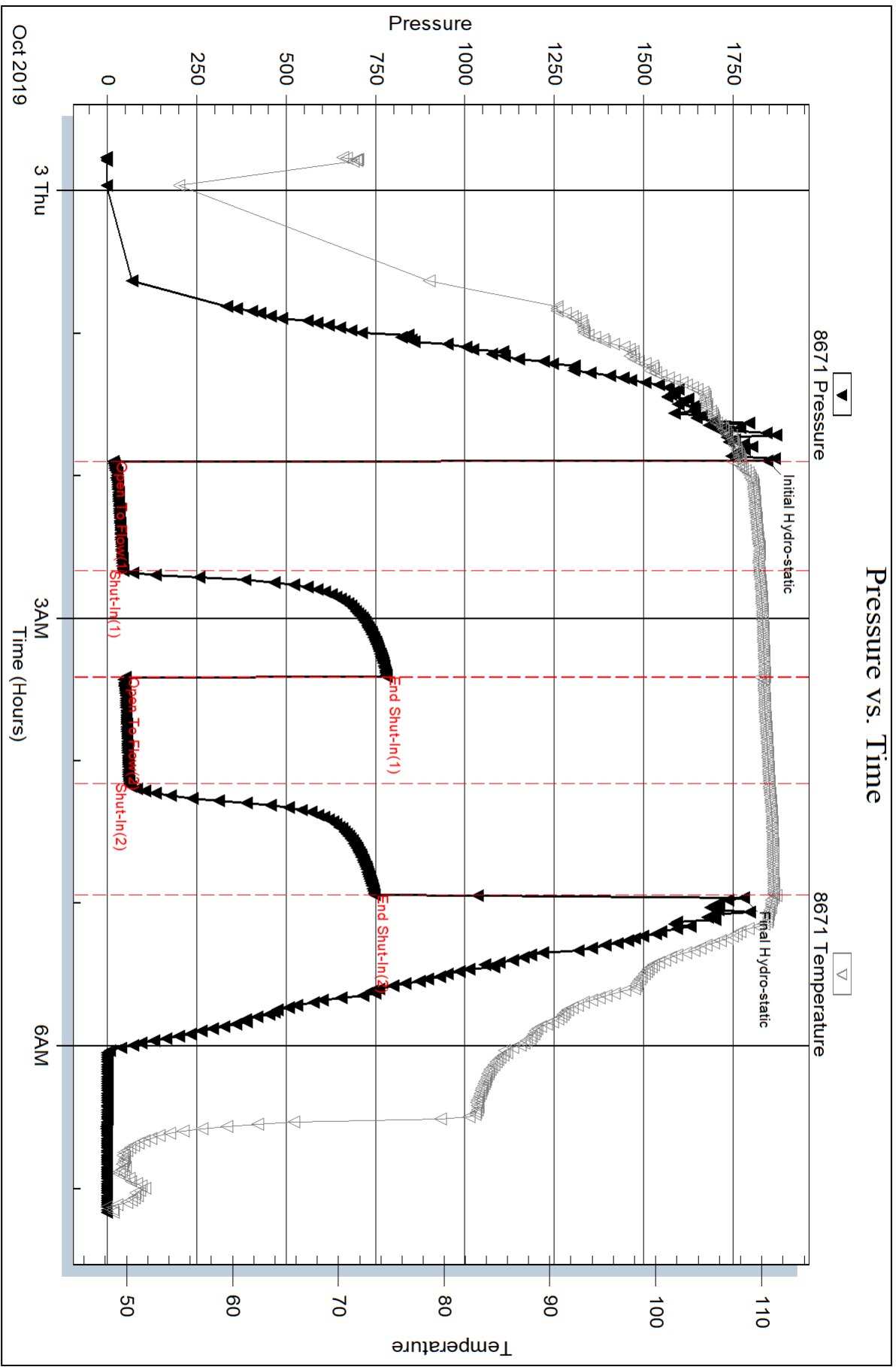
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	34000 ppm
Viscosity: 54.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.98 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3000.00 ppm			
Filter Cake: 1.00 inches			

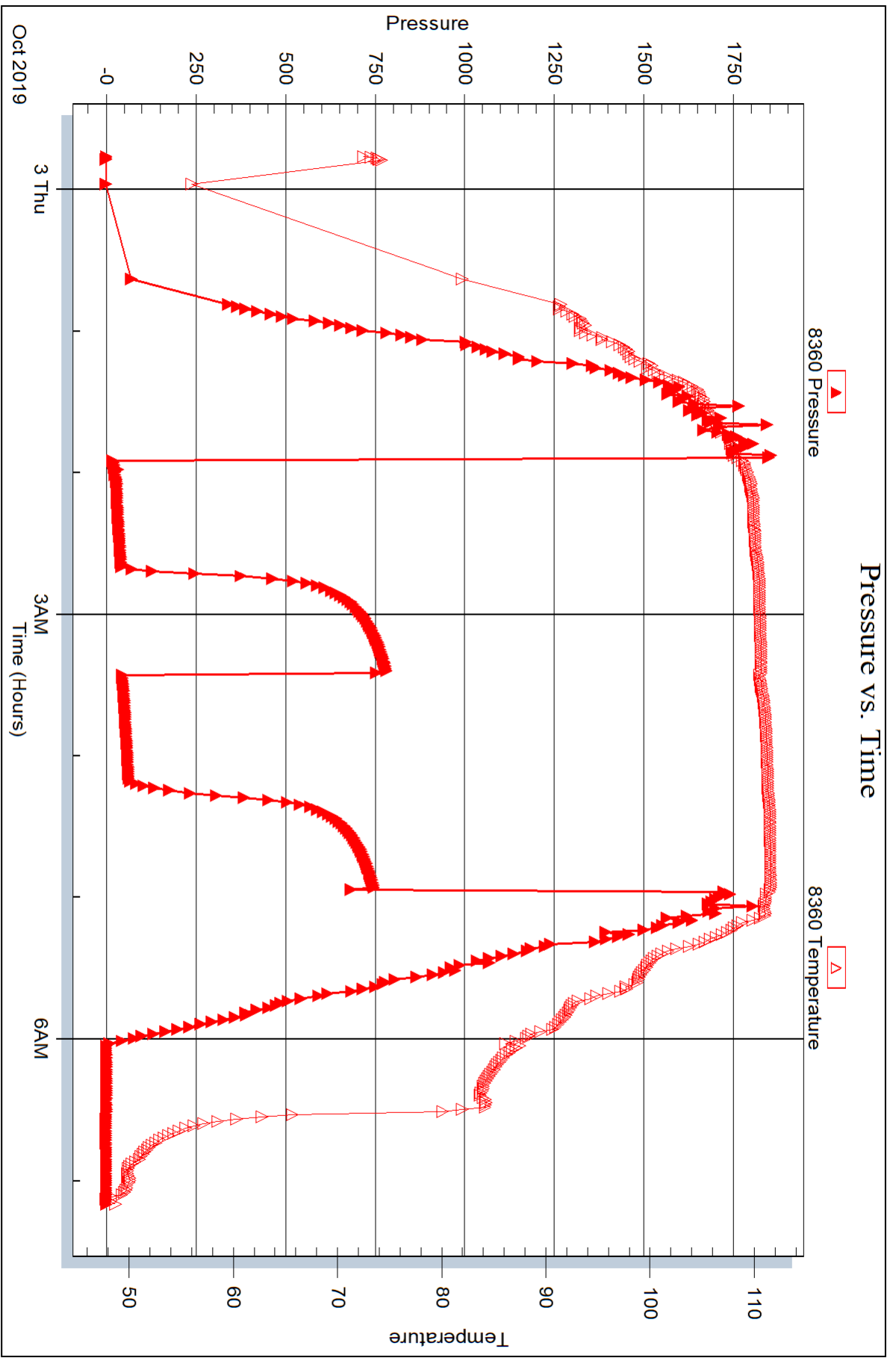
## Recovery Information

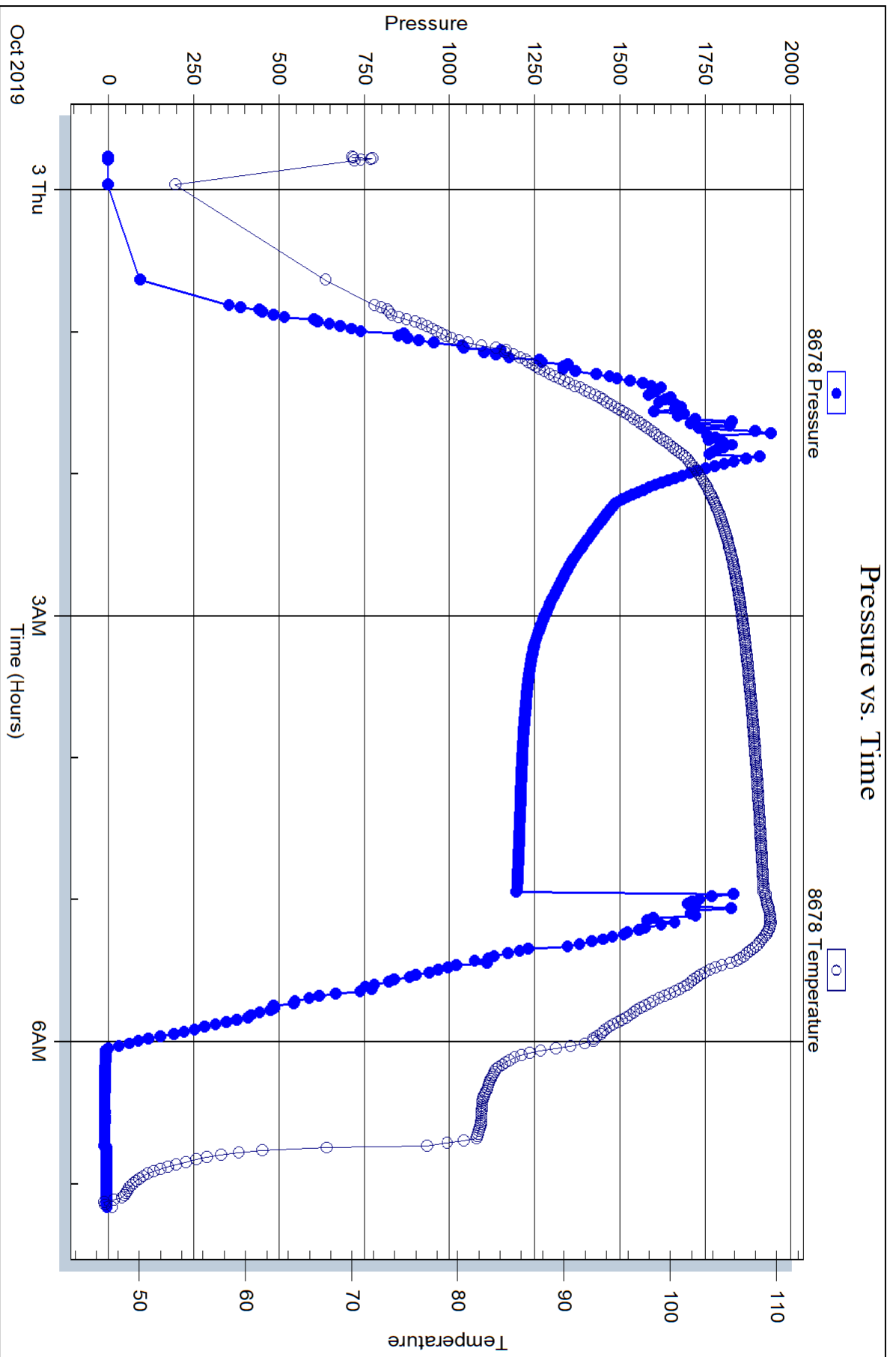
Recovery Table

Length ft	Description	Volume bbl
2.00	Free Oil - 100%o	0.021
112.00	OCMW - 5%o - 40%m - 55%w	1.149

Total Length: 114.00 ft      Total Volume: 1.170 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments: .340 @ 42deg.









## DRILL STEM TEST REPORT

Prepared For: **TDI**

1310 Bison Rd  
Hays KS 67601

ATTN: Herb Deines

### **Matlock #3**

### **26-13S-19W Ellis,KS**

Start Date: 2019.10.03 @ 08:12:00

End Date: 2019.10.03 @ 13:53:15

Job Ticket #: 66320                      DST #: 2

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

Printed: 2019.10.04 @ 14:07:47

TDI  
26-13S-19W Ellis,KS  
Matlock #3  
DST # 2  
LKC J  
2019.10.03





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

TDI  
1310 Bison Rd  
Hays KS 67601  
ATTN: Herb Deines

**26-13S-19W Ellis, KS**  
**Matlock #3**  
Job Ticket: 66320 **DST#: 2**  
Test Start: 2019.10.03 @ 08:12:00

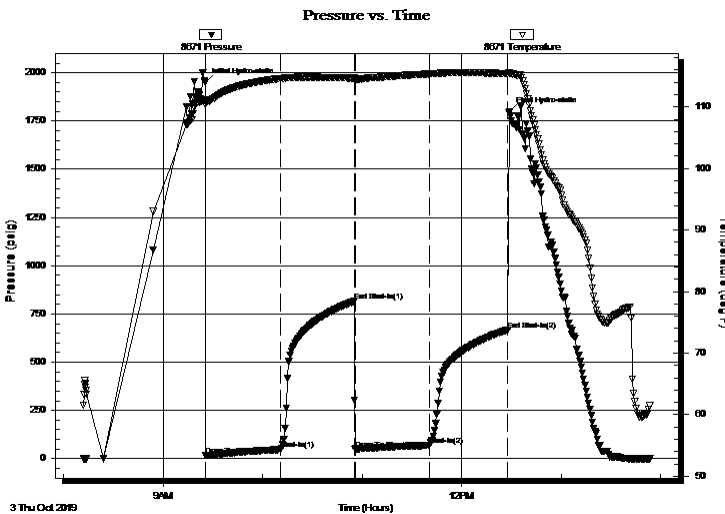
## GENERAL INFORMATION:

Formation: **LKC J**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 09:25:30  
Time Test Ended: 13:53:15  
Interval: **3675.00 ft (KB) To 3690.00 ft (KB) (TVD)**  
Total Depth: 3920.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Test Type: Conventional Straddle (Initial)  
Tester: Royal Fisher  
Unit No: #77  
Reference Elevations: 2189.00 ft (KB)  
2179.00 ft (CF)  
KB to GR/CF: 10.00 ft

**Serial #: 8671 Outside**  
Press@RunDepth: 68.75 psig @ 3676.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2019.10.03 End Date: 2019.10.03 Last Calib.: 2019.10.03  
Start Time: 08:12:05 End Time: 13:53:14 Time On Btm: 2019.10.03 @ 09:25:15  
Time Off Btm: 2019.10.03 @ 12:28:45

**TEST COMMENT:** 45 - IFP - Surface blow built up to 6"  
45 - ISI - No Return  
45 - FFP - Surface blow built up to 3"  
45 - FSI - No Return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1949.80	111.07	Initial Hydro-static
1	17.14	110.40	Open To Flow (1)
46	47.54	114.59	Shut-In(1)
90	814.97	114.67	End Shut-In(1)
91	50.13	114.42	Open To Flow (2)
136	68.75	115.34	Shut-In(2)
183	667.55	115.42	End Shut-In(2)
184	1798.99	115.51	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
20.00	OCW - 10%o - 90%w	0.21
63.00	OSW - Oil Skim - 100%w	0.65

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

TDI  
1310 Bison Rd  
Hays KS 67601  
ATTN: Herb Deines

**26-13S-19W Ellis,KS**  
**Matlock #3**  
Job Ticket: 66320 **DST#: 2**  
Test Start: 2019.10.03 @ 08:12:00

**Tool Information**

Drill Pipe:	Length: 3678.15 ft	Diameter: 3.25 inches	Volume: 37.74 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	45000.00 lb
			<u>Total Volume: 37.74 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	23.15 ft			String Weight: Initial	41000.00 lb
Depth to Top Packer:	3675.00 ft			Final	41000.00 lb
Depth to Bottom Packer:	3927.00 ft				
Interval between Packers:	252.00 ft				
Tool Length:	272.00 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>
-------------------------	--------------------	-------------------	-----------------	-------------------	-----------------------

Shut In Tool	5.00			3660.00	
Hydraulic tool	5.00			3665.00	
Packer	5.00		Inside	3670.00	20.00 Bottom Of Top Packer
Packer	5.00			3675.00	
Stubb	1.00			3676.00	
Recorder	0.00	8671	Outside	3676.00	
Recorder	0.00	8360	Inside	3676.00	
Perforations	10.00			3686.00	
Blank Off Sub	1.00			3687.00	
Stubb	3.00		Outside	3690.00	
Packer - Shale	5.00		Outside	3695.00	
Stubb	1.00			3696.00	
Change Over Sub	1.00			3697.00	
Recorder	0.00	8678	Outside	3697.00	
Drill Pipe	219.00		Below	3916.00	
Change Over Sub	1.00			3917.00	
Perforations	7.00			3924.00	
Bullnose	3.00			3927.00	252.00 Bottom Packers & Anchor

**Total Tool Length: 272.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

TDI **26-13S-19W Ellis,KS**  
 1310 Bison Rd **Matlock #3**  
 Hays KS 67601 Job Ticket: 66320 **DST#: 2**  
 ATTN: Herb Deines Test Start: 2019.10.03 @ 08:12:00

## Mud and Cushion Information

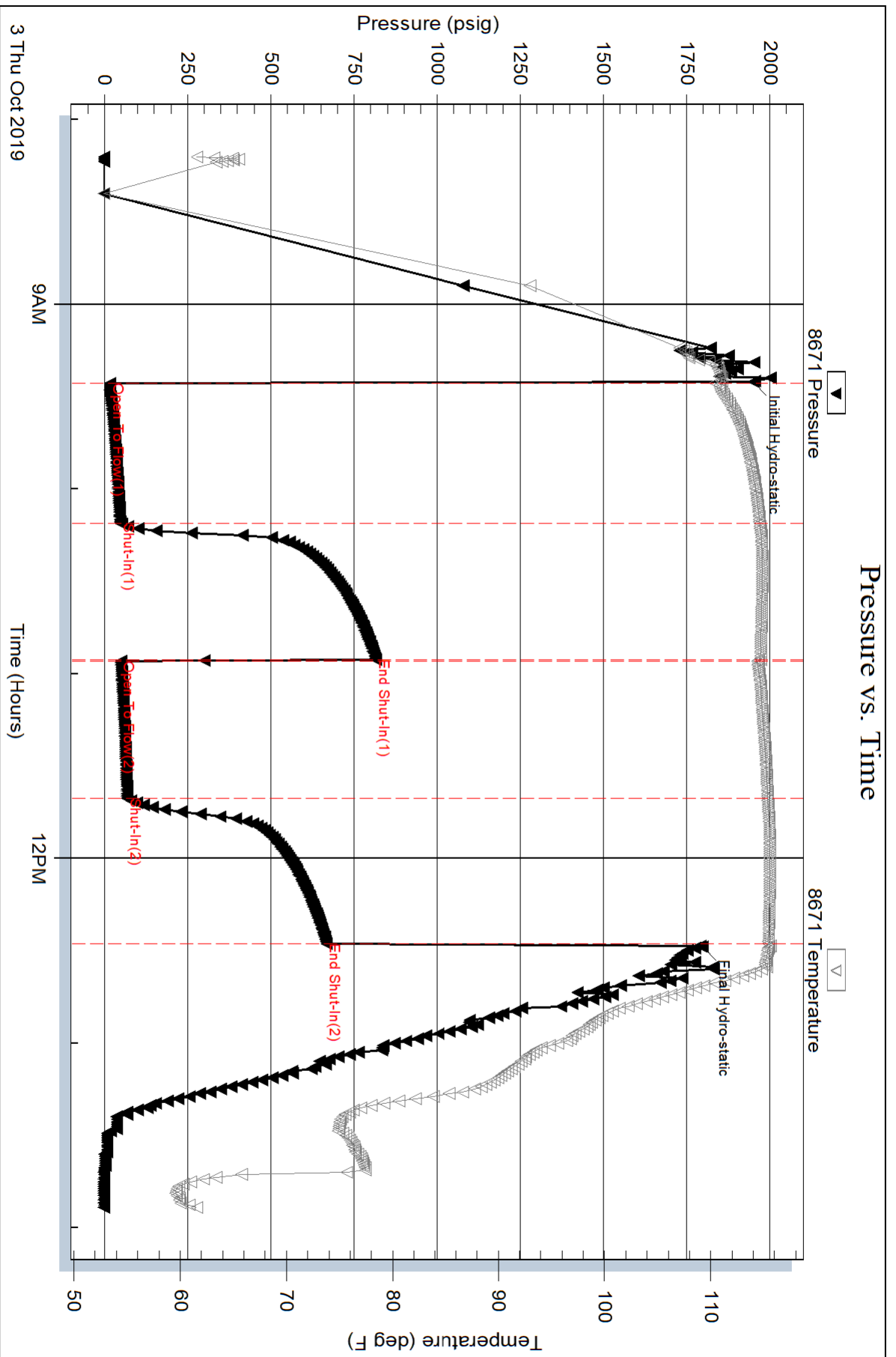
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	48000 ppm
Viscosity: 51.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.98 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3000.00 ppm			
Filter Cake: 1.00 inches			

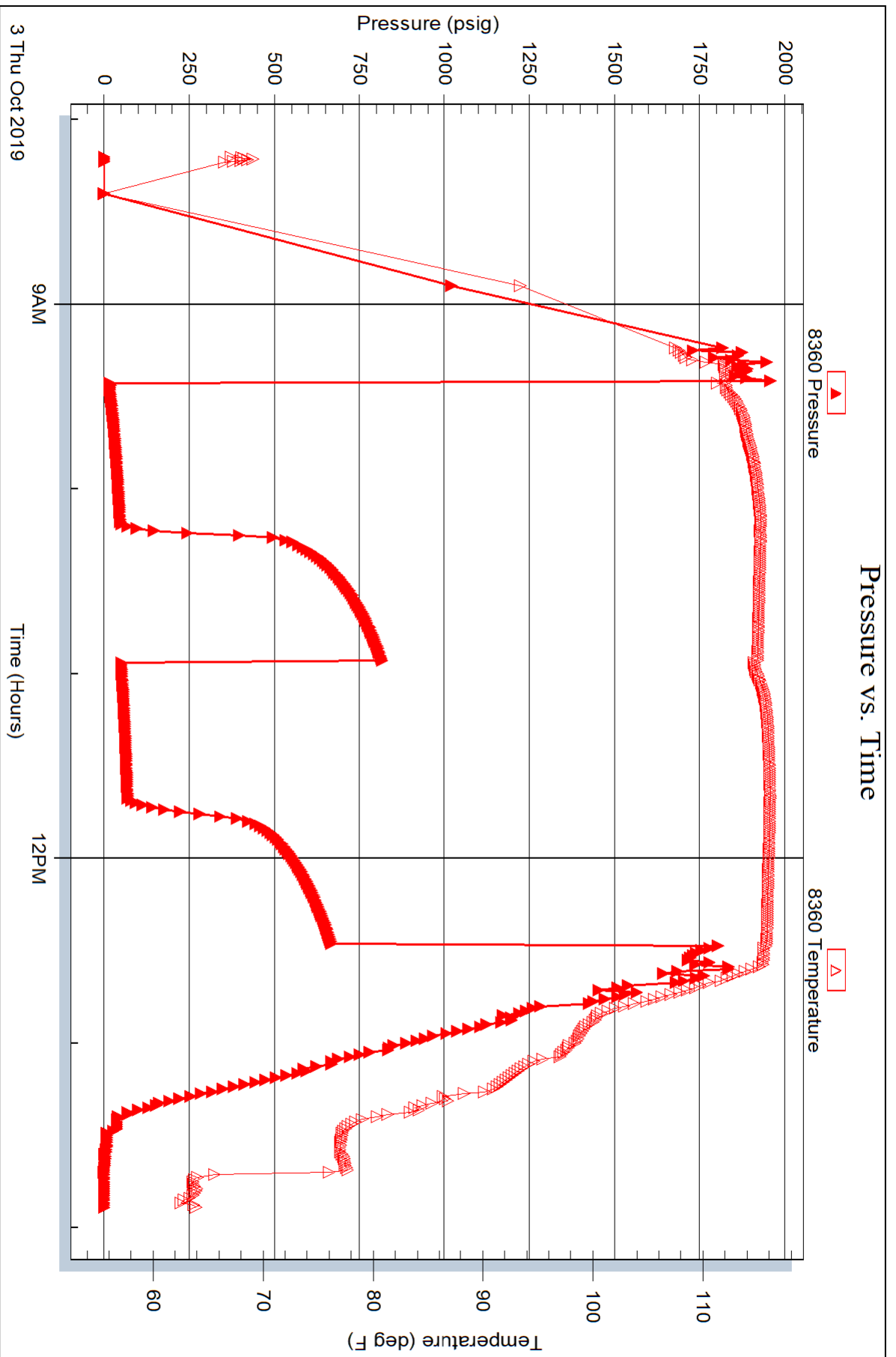
## Recovery Information

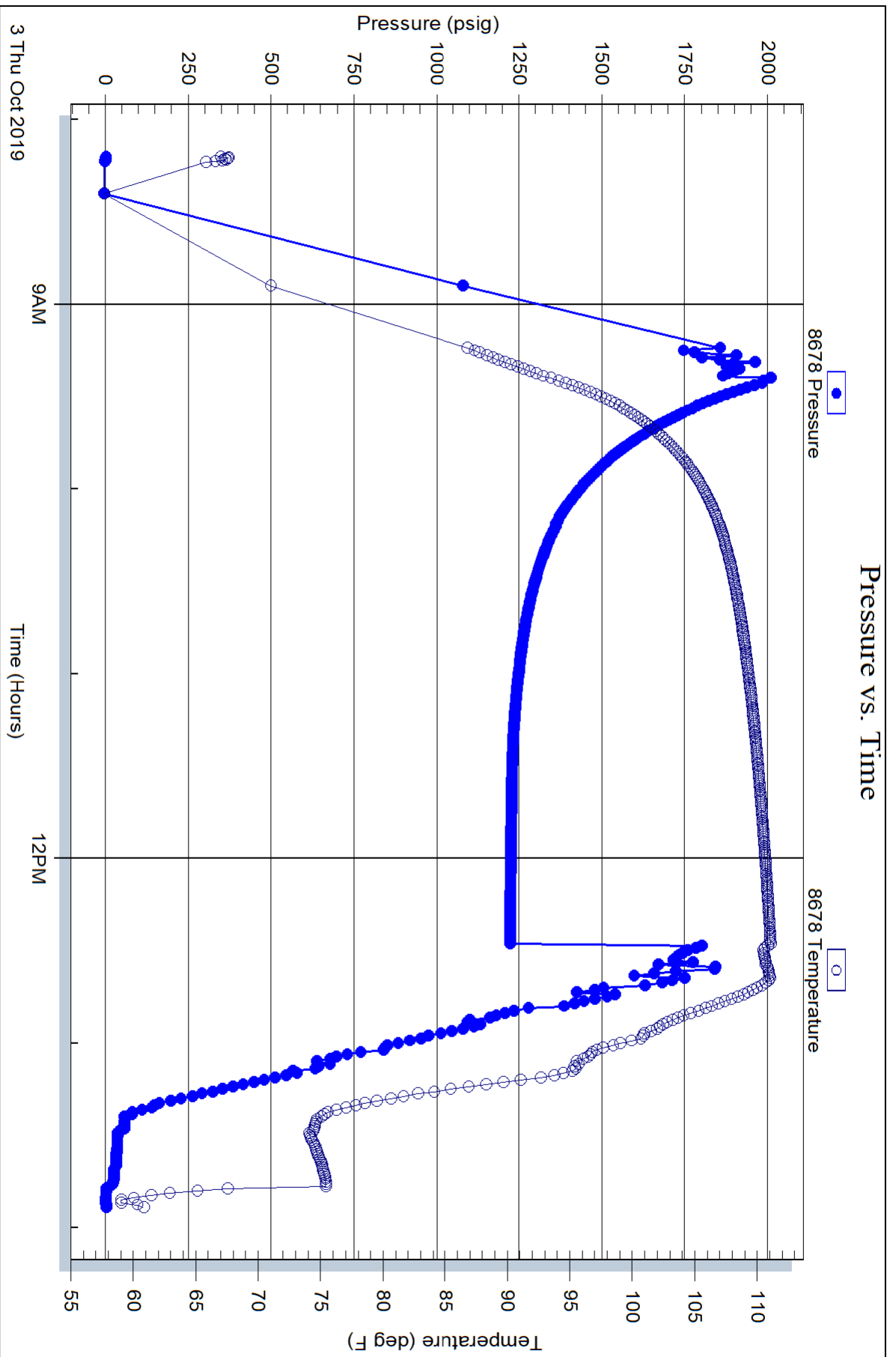
Recovery Table

Length ft	Description	Volume bbl
20.00	OCW - 10%o - 90%w	0.205
63.00	OSW - Oil Skim - 100%w	0.646

Total Length: 83.00 ft      Total Volume: 0.851 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments: .167 @ 67deg











# TRIBOLITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket 66319

NO.

Well Name & No. Matlock #3 Test No. 1 Date 10-3-19  
 Company TDT Elevation 2189 KB 2179 GL  
 Address 1310 Bison Rd Hays ks 67601  
 Co. Rep / Geo. Herb Deines Rig Southwind #1  
 Location: Sec. 24 Twp 13S Rge. 19W Co. Ellis State Ks

Interval Tested 3520'-3563' Zone Tested C & D  
 Anchor Length 43' Drill Pipe Run 3517.8' Mud Wt. \_\_\_\_\_  
 Top Packer Depth 3515' Drill Collars Run 0 Vis \_\_\_\_\_  
 Bottom Packer Depth 3520' Wt. Pipe Run 0 WL \_\_\_\_\_  
 Total Depth 3920' Chlorides \_\_\_\_\_ ppm System LCM \_\_\_\_\_

Blow Description IFP - Surface blow built up to 4 1/2"  
ISI - No Return  
FFP - Surface blow built up to 3"  
FST - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>2'</u>	<u>Free Oil</u>	<u>100</u>			
<u>112'</u>	<u>ocmw</u>	<u>5</u>	<u>55</u>	<u>40</u>	
____	____	____	____	____	____
____	____	____	____	____	____
____	____	____	____	____	____

Rec Total 114' BHT 111°F Gravity \_\_\_\_\_ API RW .340 @ 42 °F Chlorides 34,000 ppm

(A) Initial Hydrostatic 1845  Test 1200 T-On Location 10:15pm  
 (B) First Initial Flow 17  Jars \_\_\_\_\_ T-Started 11:46pm  
 (C) First Final Flow 44  Safety Joint \_\_\_\_\_ T-Open 1:54am  
 (D) Initial Shut-In 780  Circ Sub \_\_\_\_\_ T-Pulled 4:54am  
 (E) Second Initial Flow 50  Hourly Standby \_\_\_\_\_ T-Out 7:10am  
 (F) Second Final Flow 61  Mileage 24 R/T 24 Comments \_\_\_\_\_  
 (G) Final Shut-In 746  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1779  Straddle 600  EM Tool \_\_\_\_\_

Initial Open 45  Shale Packer 250  Ruined Shale Packer \_\_\_\_\_  
 Initial Shut-In 45  Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Final Flow 45  Extra Recorder \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Final Shut-In 45  Day Standby \_\_\_\_\_ Sub Total 0  
 Sub Total 2074  Accessibility \_\_\_\_\_ Total 2074 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Randy Gester

Tribolite 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 66320

NO.

Well Name & No. Matlock #3 Test No. 2 Date 10-3-19  
 Company TDI Elevation 2189 KB 2179 GL  
 Address 1310 Bison Rd Hays Ks 67601  
 Co. Rep / Geo. Herb Deines Rig Southwind #1  
 Location: Sec. 26 Twp 13.S Rge. 19W Co. Ellis State Ks

Interval Tested 3675'-3690' Zone Tested J  
 Anchor Length 15' Drill Pipe Run 3678, 15' Mud Wt. 9.3  
 Top Packer Depth 3670 Drill Collars Run 0 Vis 51  
 Bottom Packer Depth 3675 Wt. Pipe Run 0 WL 8.0  
 Total Depth 3920' Chlorides 3000 ppm System LCM 1#

Blow Description IFP-Surface blow built up to 6"  
IST-No Return  
FFP-Surface blow built up to 3"  
FST-No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>OCW</u>	<u>10</u>	<u>90</u>		
<u>63</u>	<u>OSW</u>	<u>Shim</u>	<u>100</u>		

Rec Total 83' BHT 115°F Gravity \_\_\_\_\_ API RW 167 @ 67 °F Chlorides 48,000 ppm  
 (A) Initial Hydrostatic 1949  Test 1200 T-On Location 10:15pm 10-2-19  
 (B) First Initial Flow 17  Jars \_\_\_\_\_ T-Started 8:12am  
 (C) First Final Flow 47  Safety Joint \_\_\_\_\_ T-Open 9:25am  
 (D) Initial Shut-In 814  Circ Sub \_\_\_\_\_ T-Pulled 12:25pm  
 (E) Second Initial Flow 50  Hourly Standby \_\_\_\_\_ T-Out 1:53pm  
 (F) Second Final Flow 168  Mileage 24 B/T 24 Comments \_\_\_\_\_  
 (G) Final Shut-In 1667  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1798  Straddle 600  EM Tool \_\_\_\_\_  
 Shale Packer 250  Ruined Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Day Standby \_\_\_\_\_ Sub Total 0  
 Accessibility \_\_\_\_\_ Total 2074  
 Sub Total 2074 MP/DST Disc't \_\_\_\_\_

Initial Open 45  
 Initial Shut-In 45  
 Final Flow 45  
 Final Shut-In 45

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

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.