

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 Recompletion Date \_\_\_\_\_ 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)</i> <i>(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:	
----------------	-------	---------	------------	--

Form	ACO1 - Well Completion
Operator	BEREXCO LLC
Well Name	BROWN 3-1
Doc ID	1477054

All Electric Logs Run

Porosity
Resisitivity
Microlog
Sonic





*mf*

PAGE	CUST NO	YARD #	INVOICE DATE
1 of 1	1000335	1718	07/04/2019
INVOICE NUMBER <span style="font-size: 2em;">93003746</span>			

Pratt (620) 672-1201  
 B BEREEXCO LLC  
 I 2020 N BRAMBLEWOOD  
 L WICHITA  
 L KS US 67206  
 T  
 O ATTN: VICKEY LOVETTE

J LEASE NAME Brown #3-1  
 O LOCATION  
 B COUNTY Stevens  
 S STATE KS  
 I JOB DESCRIPTION Cement-New Well Casing/Pi  
 T JOB CONTACT  
 E

JOB #	EQUIPMENT #	PURCHASE ORDER NO.	TERMS	DUE DATE
41181958			Net - 30 days	08/03/2019

	QTY	U of M	UNIT PRICE	INVOICE AMOUNT
<i>For Service Dates: 07/02/2019 to 07/02/2019</i>				
0041181958				
171819525L Cement-New Well Casing/Pi 07/02/2019 SURFACE CASING				
685 SK - A-Serv Lite	685.00	SK	7.41	5,075.85 T
150 SK - Premium Plus Cement	1.00	SK	1,393.50	1,393.50 T
2070 LB - Calcium Chloride	1.00	LB	1,242.00	1,242.00 T
209 LB - Celloflake	1.00	LB	440.99	440.99 T
Depth Charge, 1001'-2000'	3.00	HR	855.00	2,565.00
40 MILES - Light Vehicle Mileage	1.00	MI	102.80	102.80
160 MILES - Heavy Equipment Mileage	1.00	MI	684.80	684.80
1474 TN/MI-Proppant & Bulk Del. Chgs.	1.00	EA	2,107.82	2,107.82
835 SK-Blending & Mixing Service Charge	1.00	SK	668.00	668.00
Cement Data Acquisition Monitor	1.00	EA	313.50	313.50
Plug Container Utilization Charge	1.00	EA	142.50	142.50
Guide Shoe - Regular, 8 5/8" (Blue)	1.00	EA	380.00	380.00
Flapper Type Insert Float Valves. 8 5/8"	1.00	EA	280.00	280.00
Top Rubber Cement Plug, 8 5/8"	1.00	EA	225.00	225.00
Centraizer, 8 5/8" (Blue)	4.00	EA	90.00	360.00
Service Supervisor Charge	1.00	EA	75.00	75.00
Driver Charge	3.00	EA	35.00	105.00

*[Handwritten signature]*

PLEASE REMIT TO:	SEND OTHER CORRESPONDENCE TO:	SUB TOTAL	16,161.76
BASIC ENERGY SERVICES, LP	BASIC ENERGY SERVICES, LP	TAX	611.43
PO BOX 841903	801 CHERRY ST, STE 2100	INVOICE TOTAL	16,773.19
DALLAS, TX 75284-1903	FORT WORTH, TX 76102		



1700 S. Country Estates Road  
 Liberal, KS 67901  
 PH (620)-624-2277 FAX (620) 624-2280

SERVICE ORDER - 1718 19525 L

Date: 7/2/2019

*TTMH 53 HRS*

Well Name: Brown #3-1 Location: 1-31S-35W  
 County - State: Stevens, Kansas RRC #: 19572-12  
 Type Of Service: Surface Casing 242 Customer's Order #: 1000335  
 Customer: Berexco LLC

Address: 2020 N. Bramblewood  
 Wichita Kansas 67206-1094

As a consideration, the above named Customer agrees to pay Basic Energy Services in accord with the rates and terms stated in Basic Energy Services current price lists. Invoices are payable NET 30 (SEE 10.2) after date of invoice. Upon Customer's default in payment of Customers account by such date, Customer agrees to pay interest thereon after default at 18% per annum. In the event it becomes necessary to employ an attorney to enforce collection of said account, Customer agrees to pay all the collection costs and attorney fees. These terms and conditions shall be governed by the laws of the state where services are performed or equipment or materials are furnished.

Basic Energy Services warrants only title to the products, supplies and materials and that the same are free from defects in workmanship. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Basic Energy Services, liability and Customer's exclusive remedy in any cause of action (whether in contract, tort, product liability, breach of warranty or otherwise) arising out of the sale or use of any products, supplies, or materials upon their return to Basic Energy Services, is expressly limited to the replacement of such products, supplies or materials or, at Basic Energy Services' option, to the allowance to the Customer of credit for the cost of such items. In no event shall Basic Energy Services be liable for special, indirect, punitive or consequential damages.

CODE	QTY	UOM	DESCRIPTION	PRICE	TOTAL
CL106	685	Sk	A-Serv Lite	13.00	8905.00
CL110	150	Sk	Premium Plus Cement	16.30	2445.00
CC109	2070	Lb	Calcium Chloride	1.05	2173.50
CC102	209	Lb	Celloflake	3.70	773.30
CE202	3	4 Hrs	Depth Charge; 100'-2000'	1500.00	4500.00
E100	40	Mi	Unit Mileage Charge-Pickups, Small Vans & Cars (one way)	4.50	180.00
E101	160	Mi	Heavy Equipment Mileage	7.50	1200.00
E113	1474	Tn/Mi	Proppant and Bulk Delivery Charges, per ton mile	2.50	3685.00
CE240	835	Sk	Blending & Mixing Service Charge	1.40	1169.00
T105	1	Ea	Cement Data Acquisition Monitor / Strip Chart Recorder	550.00	550.00
CE504	1	Job	Plug Container Utilization Charge	250.00	250.00
CF253	1	Ea	Guide Shoe - Regular, 8 5/8" (Blue)	380.00	380.00
CF1453	1	Ea	Flapper Type Insert Float Valves, 8 5/8" (Blue)	280.00	280.00
CF105	1	Ea	Top Rubber Cement Plug, 8 5/8"	225.00	225.00
CF1753	4	Ea	Centralizer, 8 5/8" (Blue)	90.00	360.00
BE143	1	ea	Supervisor	75.00	75.00
BE144	3	ea	Driver	35.00	105.00
				Book Total:	\$27,290.80
				Taxes:	16161.76
				Disc. Price:	616,196.76

PUMP TRUCK NUMBER: 37223 19572  
 DRIVER: *Jim Edder*  
*Vitor A. Corne*  
 BASIC ENERGY SERVICES

THIS JOB WAS SATISFACTORILY COMPLETED  YES  NO  
 OPERATION OF EQUIPMENT WAS SATISFACTORY    
 PERFORMANCE OF PERSONEL WAS SATISFACTORY    
*X Gale Thompson*  
 CUSTOMER OR HIS AGENT

Customer Comments or Concerns:  
*Jose Martinez Oscar Chavez*  
*Corey Blackshear*

*T-10*



Liberal Yard #1717 - Phone 620-624-2277 - 1700 S. Country Estates Road, Liberal KS 67901

**PRESSURE PUMPING Job Log**

Customer:	Berexco LLC	Cement Pump No.:	37223 19572 12HRS	Operator TRK No.:	78868
Address:	2020 N. Bramblewood	Ticket #:	1718 19525 L	Bulk TRK No.:	30463 19578 Corey 19827 37725 Oscar
City, State, Zip:	Wichita Kansas 67206-1094	Job Type:	Surface Casing		
Service District:	1718-Liberal KS	Well Type:	NEW		
Well Name and No.:	Brown #3-1	Well Location:	1-31S-35W	County:	Stevens State: Kansas

Type of Cmt	Sacks	Additives	Truck Loaded On		
A-Serv Lite	685	3% Calcium Chloride, 1/4ppa Cello Flake	30463 19578 Corey	Front	Back
Premium Plus Cement	150	3% Calcium Chloride, 1/4ppa Cello Flake	19827 37725 Oscar	Front	Back
				Front	Back

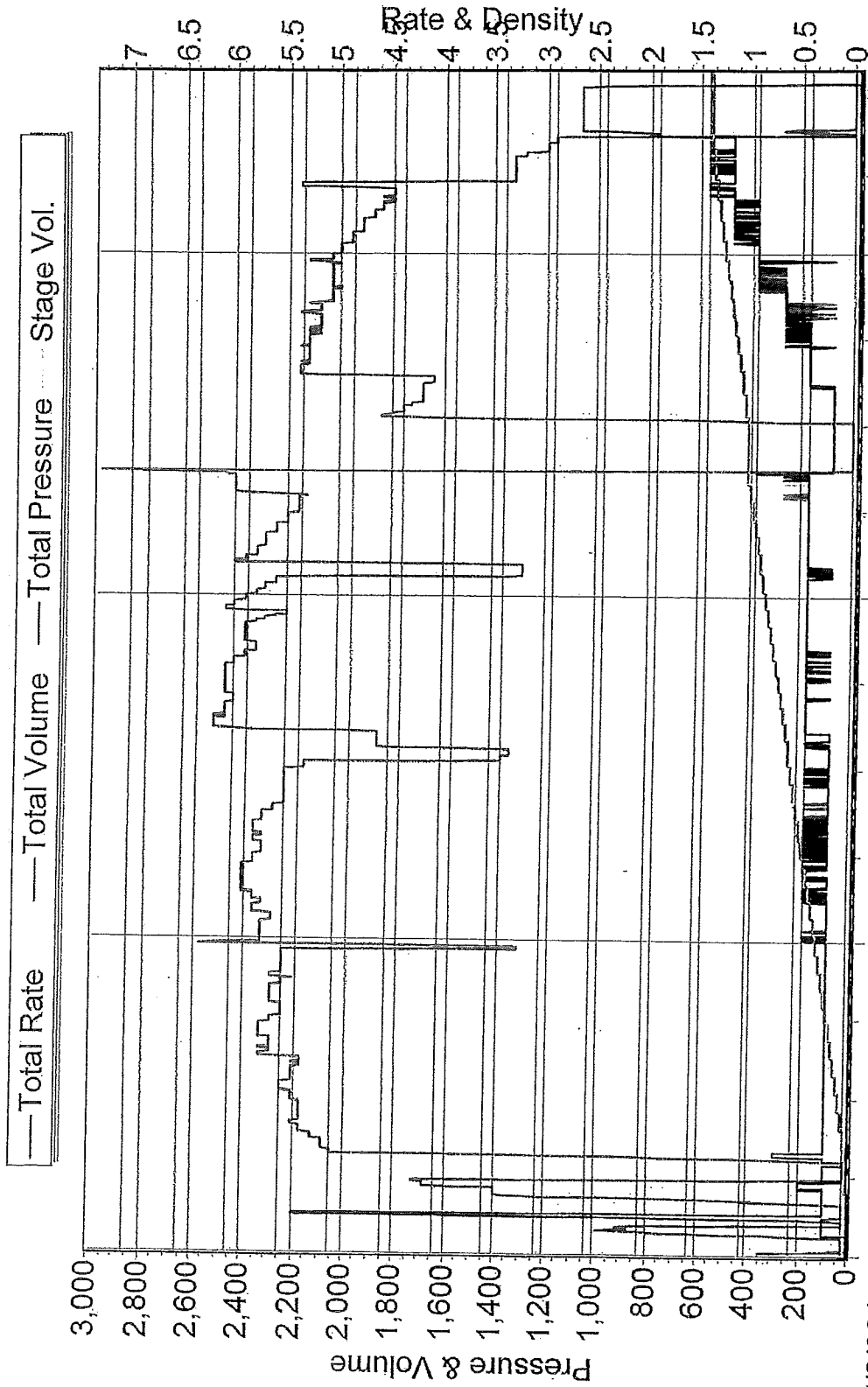
Lead/Tail:	Weight #1 Gal.	Cu/Ft/sk	Water Requirements	CU. FT.	Man Hours / Personnel	
<b>Lead:</b>	12.4	2.03	11.14	1390.55	TT Man Hours:	53
<b>Tail:</b>	14.8	1.34	0.33	201	# of Men on Job:	5

Time (am/pm)	(BPM)	Volume (BBLS)	Pumps		Pressure (PSI)		Description of Operation and Materials
			T	C	Tubing	Casing	
11:30am							Arrived at location
16:00pm							Spot trucks / Rig up
16:45pm							Safety Meeting
17:09pm						2000	Pressure test lines to 2000psi
17:11pm	4	10				70	Pump 10bbbs of fresh water spacer
17:14pm	5	247				50	Pump bbbs of lead from 685sks at 12.4lbs
18:21pm	5	35				100	Pump 35bbbs of tail from 150sks at 14.8lbs
18:30pm							Shut down/Drop plug/Wash pump and lines
18:38pm							Start displacement of 108bbbs with fresh water
18:45pm	5	20				100	20bbbs gone
18:50pm	5	40				200	40bbbs gone
18:55pm	5	60				400	60bbbs gone
19:00pm	5	80				600	80bbbs gone
19:05pm	5	98				650	98bbbs gone/Slow down rate
19:11pm	3	108				1100	Bump plug/Hold for 5 minutes
							Check if float holds
							Got 100bbbs of cement to Surface
							Rig down
							Job completed
							Thanked company man and rig crew

Size Hole	12 1/4	Depth	1750		TYPE	
Size & Wt. Csg.	8 5/8 24#	Depth	1747.94	New / Used	Flapper Float	1705.8
Landing Psi	500+	Depth			Retainer	Depth
Shoe Joint	42.14	Type			Centralizers	4
						CIBP

Customer Signature: <i>K. A. Thompson</i>	Basic Representative:	Victor A. Corona
	Basic Signature:	<i>Victor A. Corona</i>
	Date of Service:	7/2/2019

**Berexco LLC  
8 5/8 Surface  
Brown 3-1  
7/2/2019**



7/2/2019 4:55:44 PM 7/2/2019 5:40:07 PM 7/2/2019 6:18:51 PM 7/2/2019 6:57:36 PM





MF

PAGE	CUST NO	YARD #	INVOICE DATE
1 of 2	1000335	1718	08/05/2019
INVOICE NUMBER			
93023435			

Pratt (620) 672-1201  
 B BEREEXO LLC  
 I 2020 N BRAMBLEWOOD  
 L WICHITA  
 L KS US 67206  
 T  
 O ATTN: VICKEY LOVETTE

J LEASE NAME BROWN #3-1  
 O LOCATION  
 B COUNTY STEVENS  
 S STATE KS  
 I JOB DESCRIPTION Cement-New Well Casing/Pi  
 T JOB CONTACT  
 E

JOB #	EQUIPMENT #	PURCHASE ORDER NO.	TERMS	DUE DATE	
41185976			Net - 30 days	09/04/2019	
		QTY	U of M	UNIT PRICE	INVOICE AMOUNT
<i>For Service Dates: 08/02/2019 to 08/02/2019</i>					
0041185976					
171819545L Cement-New Well Casing/Pi 08/02/2019					
CEMENT 2- STAGE					
A-Serv Lite 125.00 SK 9.62 1,202.50 T					
AA2 Premium Cement 290.00 SK 7.03 2,038.70 T					
A-Serv Lite 425.00 SK 9.62 4,088.50 T					
AA2 Premium Cement 50.00 SK 7.03 351.50 T					
C-41P 80.00 LB 1.48 118.40 T					
Celloflake 138.00 LB 1.48 204.24 T					
C-17 160.00 LB 8.88 1,420.80 T					
Gypsum 1,600.00 LB 0.37 592.00 T					
Gilsonite 1,701.00 LB 0.37 629.37 T					
1886 LB - Salt 1.00 LB 358.34 358.34 T					
Light Vehicle Mileage 60.00 MI 1.85 111.00					
Heavy Equipment Mileage 240.00 MI 2.96 710.40					
Ton Mileage 2,397.00 MI 1.14 2,732.58					
890 SK-Blending & Mixing Service Charge 1.00 SK 471.70 471.70					
Depth Charge, 5001-6000' 1.00 HR 1,102.00 1,102.00					
Additional Stage Charge 1.00 HR 820.80 820.80					
Plug Container Utilization Charge 1.00 EA 92.50 92.50					
Data Acquisition / Strip Chart 1.00 EA 129.50 129.50					
5 1/2" Float Shoe(Blue) 1.00 EA 425.00 425.00					
5 1/2" Latch Down Plug & Assembly (Red) 1.00 EA 850.00 850.00					
Two Stage Cement Collar, 5 1/2" (Red) 1.00 EA 6,100.00 6,100.00					
5 1/2" Basket (Blue) 4.00 EA 290.00 1,160.00					
Turbolizer, 5 1/2" (Blue) 22.00 EA 110.00 2,420.00					
Service Supervisor Charge 1.00 EA 75.00 75.00					



PAGE	CUST NO	YARD #	INVOICE DATE
2 of 2	1000335	1718	08/05/2019
INVOICE NUMBER			
93023435			

Pratt (620) 672-1201  
 B BEREXCO LLC  
 I 2020 N BRAMBLEWOOD  
 L WICHITA  
 L KS US 67206  
 T  
 O ATTN: VICKEY LOVETTE

J LEASE NAME BROWN #3-1  
 O LOCATION  
 B COUNTY STEVENS  
 S STATE KS  
 I JOB DESCRIPTION Cement-New Well Casing/Pi  
 T  
 E JOB CONTACT

JOB #	EQUIPMENT #	PURCHASE ORDER NO.	TERMS	DUE DATE
41185976			Net - 30 days	09/04/2019

	QTY	U of M	UNIT PRICE	INVOICE AMOUNT
Driver Charge	3.00	EA	35.00	105.00
<i>AGP per bid</i>				

PLEASE REMIT TO:	SEND OTHER CORRESPONDENCE TO:	SUB TOTAL	28,309.83
BASIC ENERGY SERVICES, LP	BASIC ENERGY SERVICES, LP	TAX	825.33
PO BOX 841903	801 CHERRY ST, STE 2100	INVOICE TOTAL	29,135.16
DALLAS, TX 75284-1903	FORT WORTH, TX 76102		



1700 S. Country Estates Road  
 Liberal, KS 67901  
 PH (620)-624-2277 FAX (620) 624-2280

SERVICE ORDER - 1718 19545 L

Date: 8/2/2019

*TTMH 80 hours*

Well Name: Brown # 3-1 Location: 1 - 31S - 35W  
 County - State: Stevens, Kansas RRC #: 19573-24  
 Type Of Service: Z-42 Cement 2- Stage Customer's Order #: 1060335-  
 Customer: Berexco LLC

Address: 2020 N. Bramblewoos  
Wichita, Kansas 67206-1094

As a consideration, the above named Customer agrees to pay Basic Energy Services in accord with the rates and terms stated in Basic Energy Services current price lists. Invoices are payable NET 30 (SEE 10.2) after date of invoice. Upon Customer's default in payment of Customer's account by such date, Customer agrees to pay interest thereon after default at 18% per annum. In the event it becomes necessary to employ an attorney to enforce collection of said account, Customer agrees to pay all the collection costs and attorney fees. These terms and conditions shall be governed by the laws of the state where services are performed or equipment or materials are furnished.

Basic Energy Services, warrants only W to the products, supplies and materials and that the same are free from defects in workmanship. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Basic Energy Services, liability and Customer's exclusive remedy in any cause of action (whether in contract, tort, product liability, breach of warranty or otherwise) arising out of the sale or use of any products, supplies, or materials upon their return to Basic Energy Services, is expressly limited to the replacement of such products, supplies or materials, or, at Basic Energy Services, option, to the allowance to the Customer of credit for the cost of such items. In no event shall Basic Energy Services be liable for special, indirect, punitive or consequential damages.

CODE	QTY	UOM	DESCRIPTION	PRICE	TOTAL
BC119	125	SK	A-Serv Lite	26.00	3250.00
BC145	290	SK	AA2 Premium Cement	19.00	5510.00
BC119	425	SK	A-Serv Lite	26.00	11050.00
BC145	50	SK	AA2 Premium Cement	19.00	950.00
CC105	80	LB	C-41P	4.00	320.00
CC102	138	LB	Celloflake	4.00	552.00
CC187	160	LB	C-17	24.00	3840.00
CC113	1600	LB	Gypsum	1.00	1600.00
CC201	1701	LB	Gilsonite	1.00	1701.00
CC111	1886	LB	Salt	0.50	943.00
ME101	60	MI	Light Vehicle Mileage	5.00	300.00
ME102	240	MI	Heavy Equipment Mileage	8.00	1920.00
TM	2397	MI	Ton Mileage	3.00	7191.00
CE240	890	SK	Blending & Mixing Service Charge	1.40	1246.00
CC6	1	HR	Depth Charge, 5001-6000'	2900.00	2900.00
CE409	1	HR	Additional Stage Charge	2160.00	2160.00
CE504	1	EA	Plug Container Utilization Charge	250.00	250.00
CC505	1	EA	Data Acquisition / Strip Chart	350.00	350.00
CF851	1	Ea	5 1/2" Float Shoe(Blue)	425.00	425.00
CF601	1	Ea	5 1/2" Latch Down Plug & Assembly (Red)	850.00	850.00
CF401	1	Ea	Two Stage Cement Collar, 5 1/2" (Red)	6100.00	6100.00
CF1901	4	Ea	5 1/2" Basket (Blue)	290.00	1160.00
CF1651	22	Ea	Turboizer, 5 1/2" (Blue)	110.00	2420.00
BE143	1	Ea	Supervisor	75.00	75.00
BE144	3	EA	Driver	35.00	105.00
				Book Total:	\$57,168.00
				Taxes:	
				Disc. Price:	\$28,309.83

PUMP TRUCK NUMBER: 37223 19572

DRIVER: Jayne Torres

Victoria Corra  
 BASIC ENERGY SERVICES

THIS JOB WAS SATISFACTORILY COMPLETED  YES  NO  
 OPERATION OF EQUIPMENT WAS SATISFACTORY    
 PERFORMANCE OF PERSONEL WAS SATISFACTORY

X Bob Thompson  
 CUSTOMER OR HIS AGENT

*VB*

Customer Comments or Concerns:  
Samuel Eaker  
Jose Martinez



Liberal Yard #1717 - Phone 620-624-2277 - 1700 S. Country Estates Road, Liberal KS 67901

**PRESSURE PUMPING**

**Job Log**

Customer:	Berexco LLC	Cement Pump No.:	37223 19572 24HRS	Operator TRK No.:	78868	
Address:	2020 N. Bramblewoos	Ticket #:	1718 19545 L	Bulk TRK No.:	33021 14284 Samuel	37712 19883 Jaime
City, State, Zip:	Wichita, Kansas 67206-1094	Job Type:	Z-42 Cement 2- Stage			
Service District:	1718-Liberal Ks	Well Type:	NEW			
Well Name and No.:	Brown # 3-1	Well Location:	1 - 31S - 35W	County:	Stevens	State: Kansas

Type of Cmt	Sacks	Additives	Truck Loaded On		
A Serv Lite	125	1/4 pps Celloflake	33021 14284 Samuel	Front	Back
AA-2 Premium Cement	290	10% Gyp Seal, 10% Salt, 5pps Gilsonite, .5 Fluid Loss, .25pps Defoamer	37712 19883 Jaime	Front	Back
				Front	Back

Lead/Tail:	Weight #1 Gal.	Cu/Ft/sk	Water Requirements	CU. FT.	Man Hours / Personnel	
<b>Lead:</b>	12.6	1.89	10.29	236.25	TT Man Hours:	80
<b>Tail:</b>	14.8	1.51	6.65	437.9	# of Men on Job:	4

Time (am/pm)	(BPM)	Volume (BBLS)	Pumps		Pressure (PSI)		Description of Operation and Materials	
			T	C	Tubing	Casing		
10:00am							Arrived at location	
17:00pm							Spot trucks/Rig up	
21:00pm							Safety meeting	
21:32pm							Pressue test lines to 2500psi	
21:34pm	2	10				80	Pump 10bbbs of fresh water spacer	
21:51pm	5	42				120	Pump 42bbbs of lead from 125sks at 12.6lbs	
22:03pm	5	78				100	Pump 78bbbs of tail from 290sks at 14.8lbs	
22:37pm							Shut down/Drop Plug/Wash pump and lines to pit	
22:40pm							Start Displacement of 135bbbs-60 with water and the last 75 with mud	
22:46pm	6	20				zero	20bbbs gone with fresh water	
22:52pm	6	40				zero	40bbbs gone with fresh water	
23:00pm	2	60				zero	60bbbs gone with fresh water	
23:06pm	5	80				300	80bbbs gone with mud	
23:10pm	5	100				600	100bbbs gone with mud	
23:14pm	5	120				900	120bbbs gone with mud	
23:15pm	5	125				800	125bbbs gone with mud/Slow down rate	
23:19pm	3	135				1600	Bump plug/Hold for 3 minutes	
23:22pm							Release pressure to check if float holds	
22:26pm	23:26pm						Drop opening tool for dv tool	
22:46pm	23:43pm					800	Open DV Tool	
							Changed lines to rig crew so they can circulate	
Size Hole	7 7/8	Depth	5751			TYPE	Baffle/DV Tool	
Size & Wt. Csg.	5 1/2 15.5#	Depth	5751	New / Used		Baffle	5708	Depth
Landig Psi	500+	Depth				DV Tool	3189	Depth
Shoe joint	43	Type				Perfs		CIBP

Customer Signature: <i>[Signature]</i>	Basic Representative:	Victor A. Corona
	Basic Signature:	<i>[Signature]</i>
	Date of Service:	8/2/2019



Liberal Yard #1717 - Phone 620-624-2277 - 1700 S. Country Estates Road, Liberal KS 67901

**PRESSURE PUMPING Job Log**

Customer:	Berexco LLC	Cement Pump No.:	37223 19572 24HRS	Operator TRK No.:	78868	
Address:		Ticket #:	1718 19545 L	Bulk TRK No.:	33021 14284 Samuel	37712 19883 Jaime
City, State, Zip:		Job Type:	Z-42 Cement 2- Stage			
Service District:	1718-Liberal Ks	Well Type:	NEW			
Well Name and No.:	Brown # 3-1	Well Location:	1 - 31S - 35W	County:	Stevens	State: Kansas

Type of Cmt	Sacks	Additives	Truck Loaded On		
A Serv Lite	425	1/4 pps Celloflake	33021 14284 Samuel	Front	Back
AA-2 Premium Cement	50	10% Gyp seal, 10% Salt, 5pps Gilsonite, .5 Fluid-loss, .25pps Defoamer	37712 19883 Jaime	Front	Back
				Front	Back

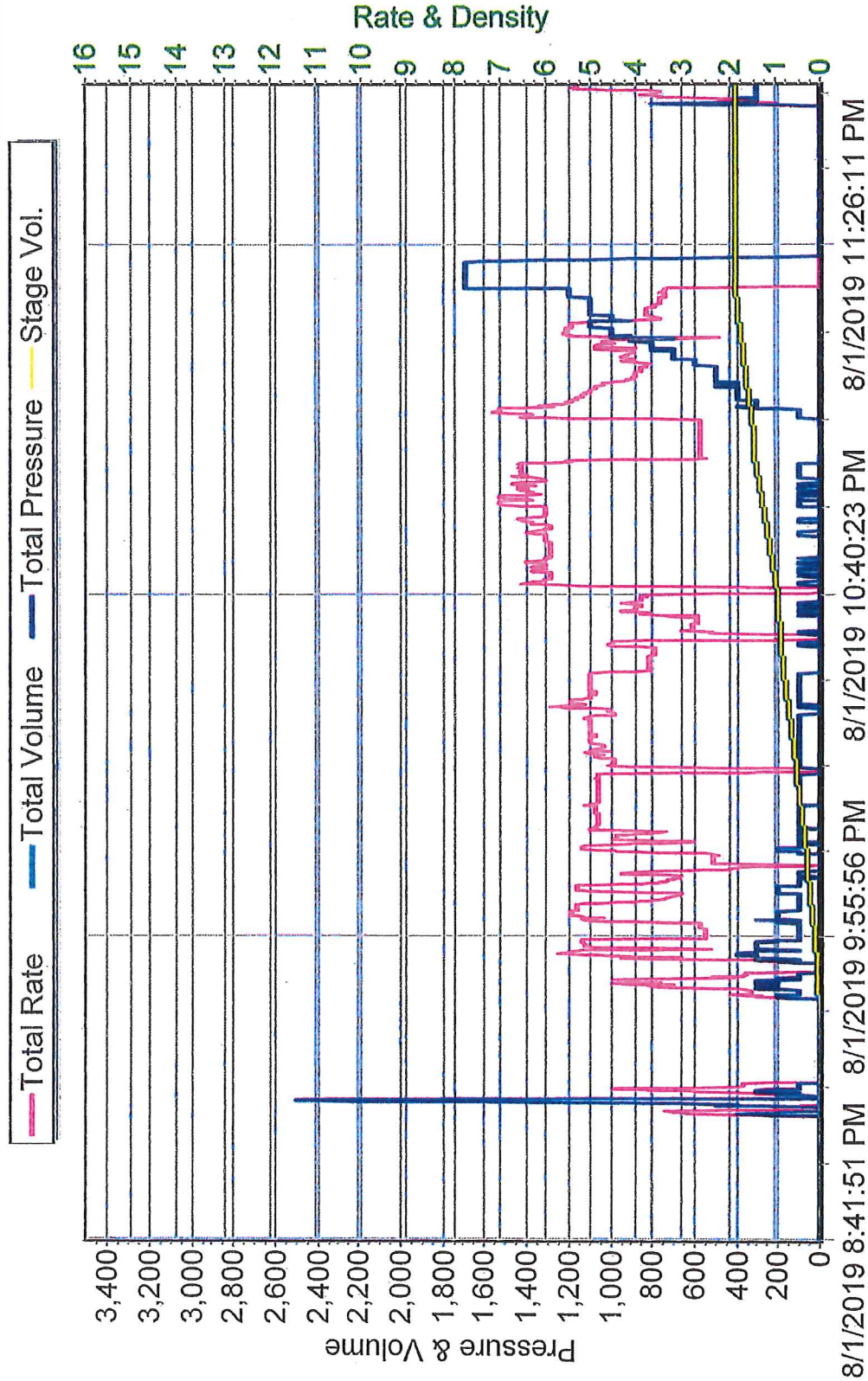
Lead/Tail:	Weight #1 Gal.	Yield	Water Requirements	CU. FT.	Man Hours / Personnel	
<b>Lead:</b>	12.6	1.89	10.29	803.25	TT Man Hours:	80
<b>Tail:</b>	14.8	1.51	6.65	75.5	# of Men on Job:	4

Time (am/pm)	(BPM)	Volume (BBLs)	Pumps		Pressure(PSI)		Description of Operation and Materials
			T	C	Tubing	Casing	
							Start Second Stage
							Change to our Lines
4:08am	3	16				zero	Pump 16bbbs of cement to fill
							Rat and Mouse hole from 50sks
4:24am	5	126				100	Pump 126bbbs of lead from 375sks at 12.6lbs
4:46am	5	13				120	Pump 13bbbs from 50sks at 14.8lbs
4:52am							Shut Down/Drop Plug/Wash pump and lines to pit
4:57am							Start displacement of 75bbbs with fresh water
5:02am	5	20				250	20bbbs gone
5:07am	5	40				400	40bbbs gone
5:12am	4	60				700	60bbbs gone
5:14am	4	65				800	65bbbs gone/Slow down rate
5:18am	2.5	75				1450	Bump plug/Hold for 5 minutes
							Release pressure to check if float holds
							Got 15bbbs of cement to surface
							Rig down
							Job Completed
							Thanked company man and rig crew

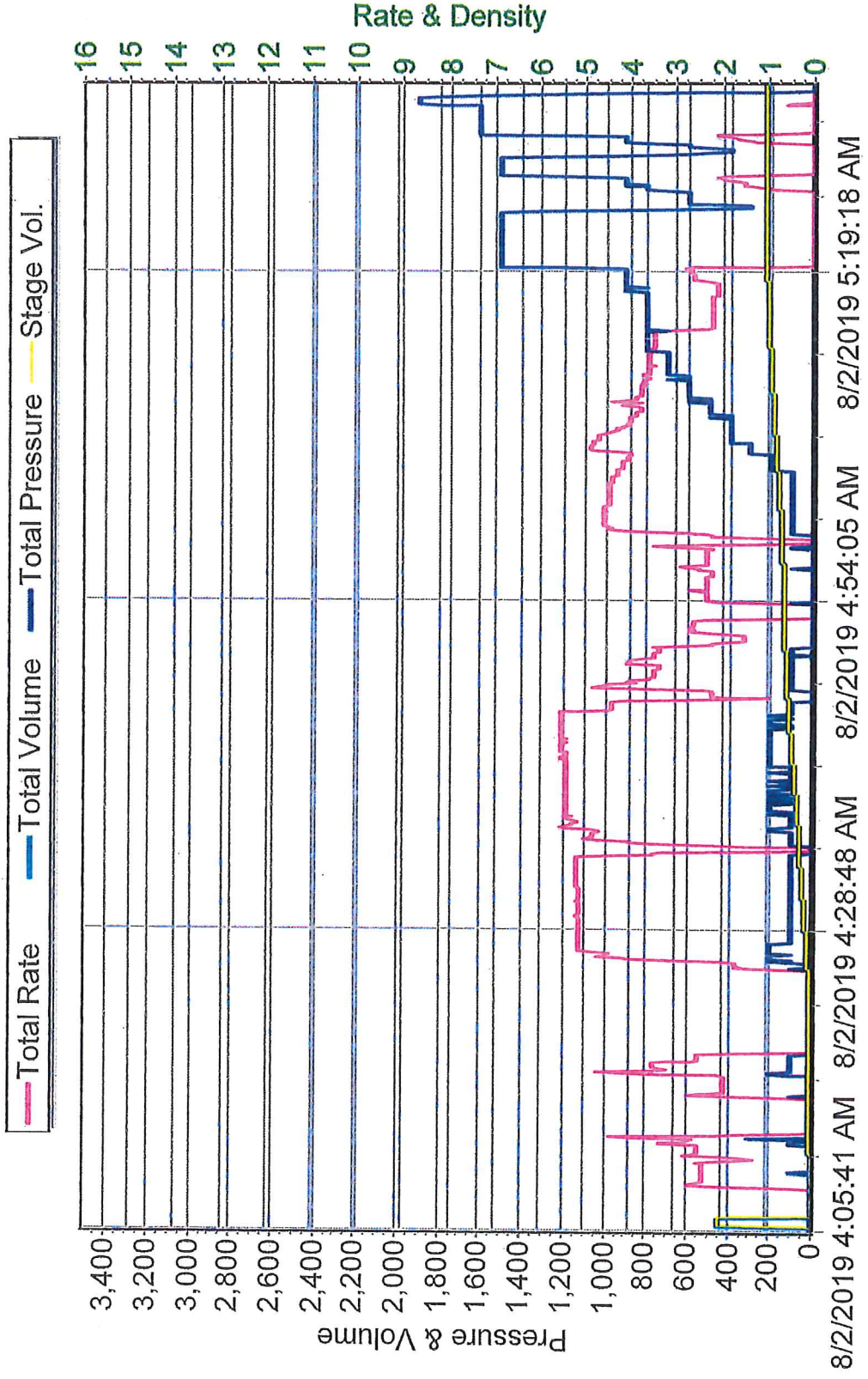
Size Hole	7 7/8	Depth	5751		TYPE	Baffle/DV Tool	
Size & Wt. Csg.	5 1/2 15.5#	Depth	5751	New / Used	Baffle	5708	Depth
Landing PSI	500+	Depth	0		DV Tool	3189	Depth
Shoe Joint	43	Type			Perfs		CIBP

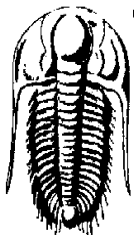
Customer Signature:	<i>[Signature]</i>	Basic Representative:	Victor A. Corona
		Basic Signature:	<i>[Signature]</i>
		Date of Service:	8/2/2019

**Berexco LLC**  
**1st Stage-5 1/2 Production**  
**Brown 3-1**  
**8/1/2019**



**Berexco LLC**  
**5 1/2 Production/2nd Stage**  
**Brown 3-1**  
**8/2/2019**





# TRILOBITE TESTING, INC.

## DRILL STEM TEST REPORT

Berexco

1-31-35

2020 N Bramblewood  
Wichita, KS 67206

Brown 3-1

ATTN: Evan Mayhew

Job Ticket: 47657

DST#: 1

Test Start: 2019.07.19 @ 12:38:00

### GENERAL INFORMATION:

Formation: **Lansing H**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:49:35

Time Test Ended: 23:46:10

Test Type: Conventional Bottom Hole (Initial)

Tester: Chris Hagman

Unit No: 75

Interval: **4442.00 ft (KB) To 4480.00 ft (KB) (TVD)**

Total Depth: 4480.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: ft (KB)

ft (CF)

KB to GR/CF: ft

**Serial #: 8289** Inside

Press@RunDepth: 72.61 psig @ 4444.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.07.19

End Date:

2019.07.19

Last Calib.: 1899.12.30

Start Time: 12:38:02

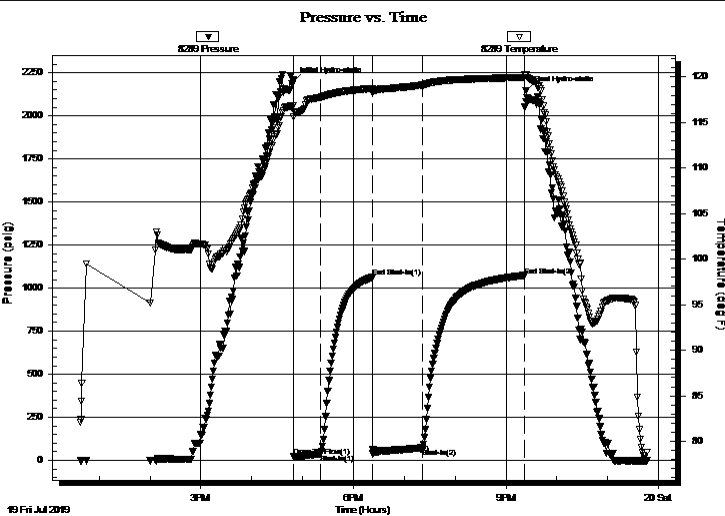
End Time:

23:46:10

Time On Btm: 2019.07.19 @ 16:49:20

Time Off Btm: 2019.07.19 @ 21:23:49

**TEST COMMENT:** IF: BOB 25 min., 14 inches  
IS: No blow back  
FF: BOB 15 min., 36 inches  
FS: No blow back



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2197.90	116.87	Initial Hydro-static
1	22.38	115.61	Open To Flow (1)
33	37.76	117.77	Shut-In(1)
93	1061.79	118.74	End Shut-In(1)
94	42.76	118.39	Open To Flow (2)
152	72.61	119.09	Shut-In(2)
273	1073.14	119.97	End Shut-In(2)
275	2145.48	120.16	Final Hydro-static

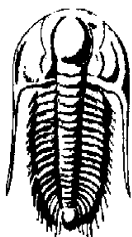
### Recovery

Length (ft)	Description	Volume (bbl)
120.00	gassy oily mud 15%G,10%O,75%M	1.68

### Gas Rates

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





**TRILOBITE**  
TESTING, INC.

# DRILL STEM TEST REPORT

Berexco  
2020 N Bramble wood  
Wichita, KS 67206  
  
ATTN: Evan Mayhew

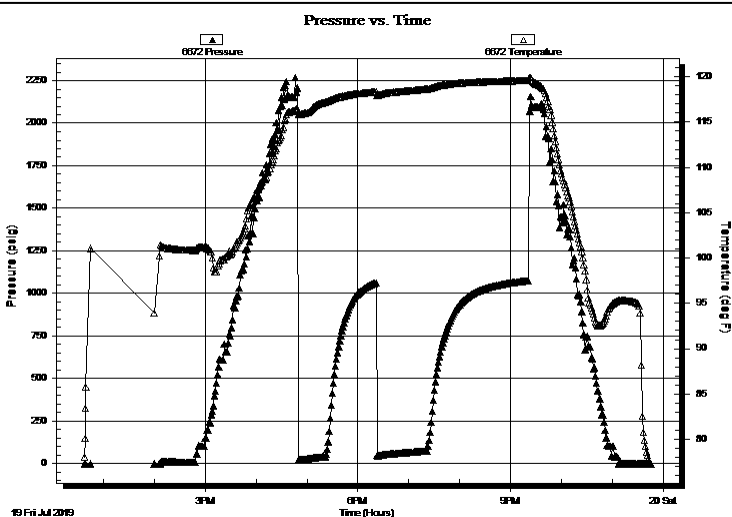
**1-31-35**  
**Brown 3-1**  
Job Ticket: 47657      **DST#: 1**  
Test Start: 2019.07.19 @ 12:38:00

## GENERAL INFORMATION:

Formation: <b>Lansing H</b>			
Deviated: No Whipstock:      ft (KB)	Test Type: Conventional Bottom Hole (Initial)		
Time Tool Opened: 16:49:35	Tester: Chris Hagman		
Time Test Ended: 23:46:10	Unit No: 75		
<b>Interval: 4442.00 ft (KB) To 4480.00 ft (KB) (TVD)</b>	Reference Elevations:	ft (KB)	
Total Depth: 4480.00 ft (KB) (TVD)		ft (CF)	
Hole Diameter: 7.88 inches	Hole Condition: Good	KB to GR/CF:	ft

<b>Serial #: 6672</b>	<b>Outside</b>		
Press@RunDepth:      psig @      4444.00 ft (KB)	Capacity:	8000.00	psig
Start Date:      2019.07.19      End Date:      2019.07.19	Last Calib.:	1899.12.30	
Start Time:      12:38:02      End Time:      23:46:00	Time On Btm:		
	Time Off Btm:		

TEST COMMENT: IF: BOB 25 min., 14 inches  
IS: No blow back  
FF: BOB 15 min., 36 inches  
FS: No blow back



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
120.00	gassy oily mud 15%G,10%O,75%M	1.68

## Gas Rates

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



**TRILOBITE**  
TESTING, INC.

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Berexco

**1-31-35**

2020 N Bramblewood  
Wichita, KS 67206

**Brown 3-1**

Job Ticket: 47657

**DST#: 1**

ATTN: Evan Mayhew

Test Start: 2019.07.19 @ 12:38:00

### 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: 64.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.60 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1650.00 ppm

Filter Cake: inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	gassy oily mud 15%G,10%O,75%M	1.683

Total Length: 120.00 ft

Total Volume: 1.683 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

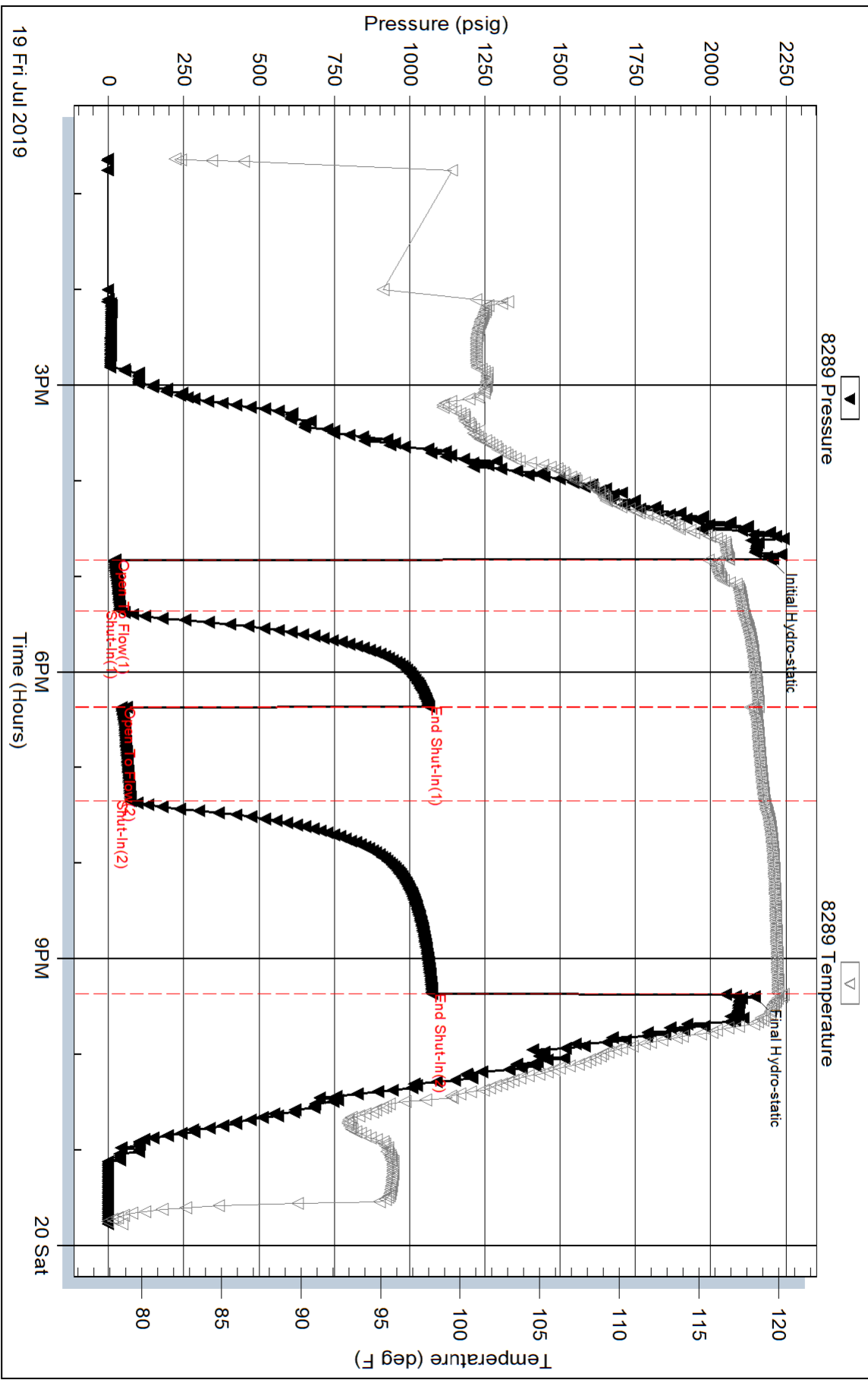
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 180' GIP

### Pressure vs. Time

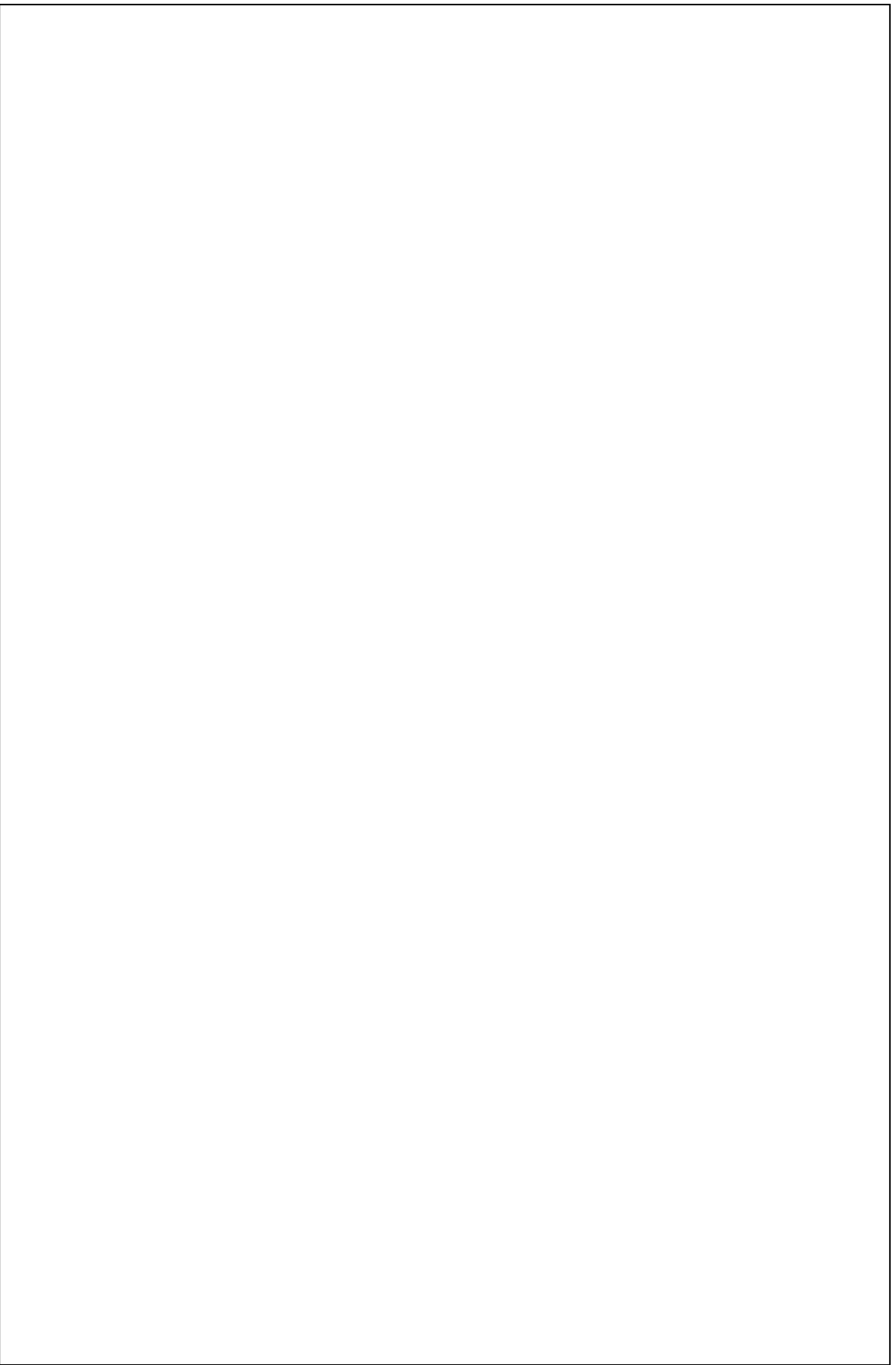


Serial #: 6672

Outside Berexco

Blow n 3-1

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 47657

Printed: 2019.07.20 @ 08:06:51



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Berexco LLC

**1-31-35 Stevens,KS**

2020 N Bramblewood  
Wichita, KS 67206

**Brown 3-1**

Job Ticket: 47658

**DST#: 2**

ATTN: Evan Mahew

Test Start: 2019.07.20 @ 19:17:00

## GENERAL INFORMATION:

Formation: **KC A**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:44:30

Time Test Ended: 05:55:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Chris Hagman

Unit No: 75

**Interval: 4599.00 ft (KB) To 4620.00 ft (KB) (TVD)**

Reference Elevations: ft (KB)

Total Depth: 4620.00 ft (KB) (TVD)

ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: ft

**Serial #: 8289 Inside**

Press@RunDepth: 51.17 psig @ 4602.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.07.20

End Date:

2019.07.21

Last Calib.: 1899.12.30

Start Time: 19:17:02

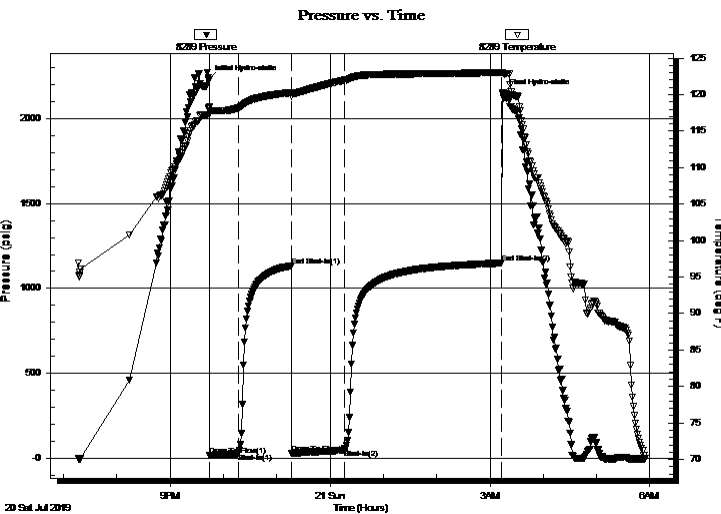
End Time:

05:55:15

Time On Btm: 2019.07.20 @ 21:43:30

Time Off Btm: 2019.07.21 @ 03:14:24

**TEST COMMENT:** IF: Weak surface blow , 2.7 inches  
IS: No blow back  
FF: Weak surface blow , 1.5 inches  
FS: No blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2229.96	118.22	Initial Hydro-static
1	15.98	117.25	Open To Flow (1)
34	31.91	118.17	Shut-In(1)
93	1133.73	120.27	End Shut-In(1)
94	30.22	119.80	Open To Flow (2)
153	51.17	121.96	Shut-In(2)
330	1148.97	123.02	End Shut-In(2)
331	2146.44	123.00	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
30.00	gassy muddy w ater 5%G,35%M,60%W	0.42

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

Berexco LLC

1-31-35 Stevens, KS

2020 N Bramblewood  
Wichita, KS 67206

Brown 3-1

ATTN: Evan Mahew

Job Ticket: 47658

DST#: 2

Test Start: 2019.07.20 @ 19:17:00

**GENERAL INFORMATION:**

Formation: **KC A**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:44:30

Time Test Ended: 05:55:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Chris Hagman

Unit No: 75

Interval: 4599.00 ft (KB) To 4620.00 ft (KB) (TVD)

Reference Elevations: ft (KB)

Total Depth: 4620.00 ft (KB) (TVD)

ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: ft

**Serial #: 6672 Outside**

Press@RunDepth: psig @ 4602.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.07.20 End Date: 2019.07.21

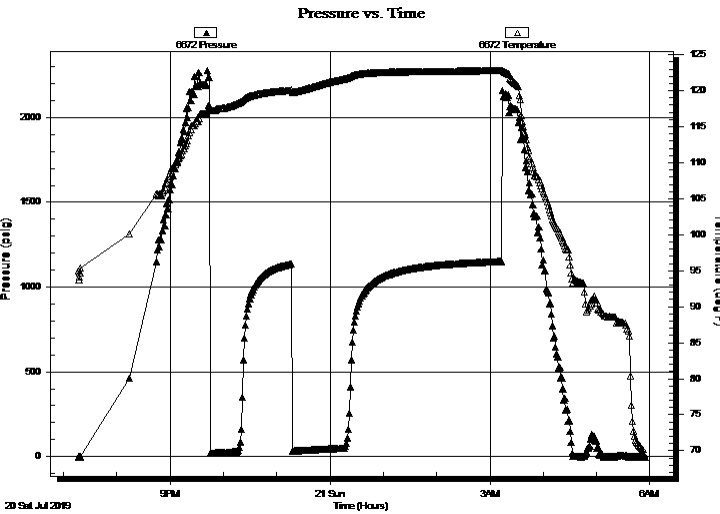
Last Calib.: 1899.12.30

Start Time: 19:17:02 End Time: 05:55:04

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Weak surface blow, 2.7 inches  
 IS: No blow back  
 FF: Weak surface blow, 1.5 inches  
 FS: No blow back



**PRESSURE SUMMARY**

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

**Recovery**

Length (ft)	Description	Volume (bbl)
30.00	gassy muddy water 5%G,35%M,60%W	0.42

**Gas Rates**

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Berexco LLC

**1-31-35 Stevens,KS**

2020 N Bramblewood  
Wichita, KS 67206

**Brown 3-1**

Job Ticket: 47658

**DST#: 2**

ATTN: Evan Mahew

Test Start: 2019.07.20 @ 19:17:00

### 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:

62000 ppm

Viscosity: 47.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.39 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2900.00 ppm

Filter Cake: inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	gassy muddy water 5%G,35%M,60%W	0.421

Total Length: 30.00 ft      Total Volume: 0.421 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

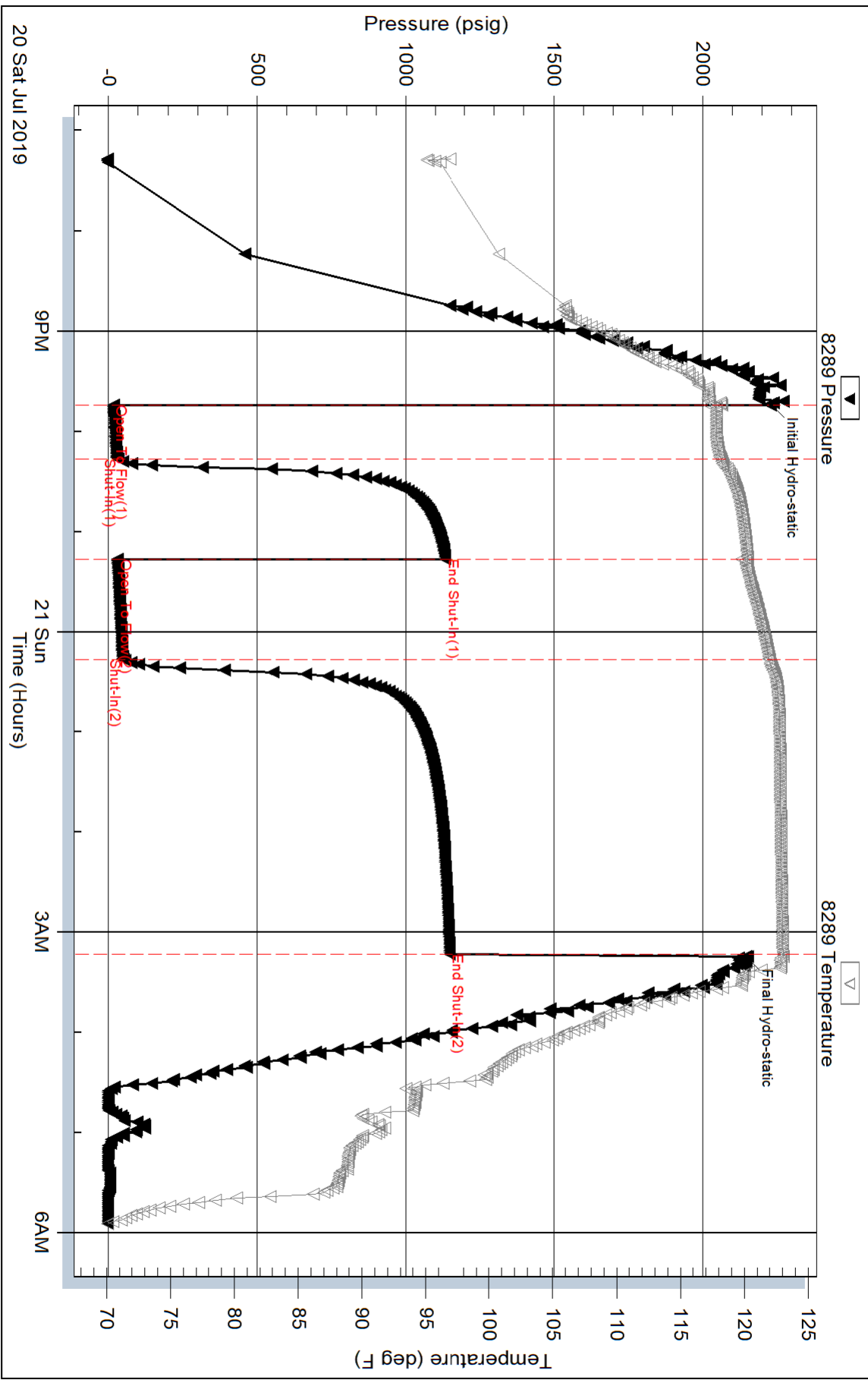
Serial #:

Laboratory Name:

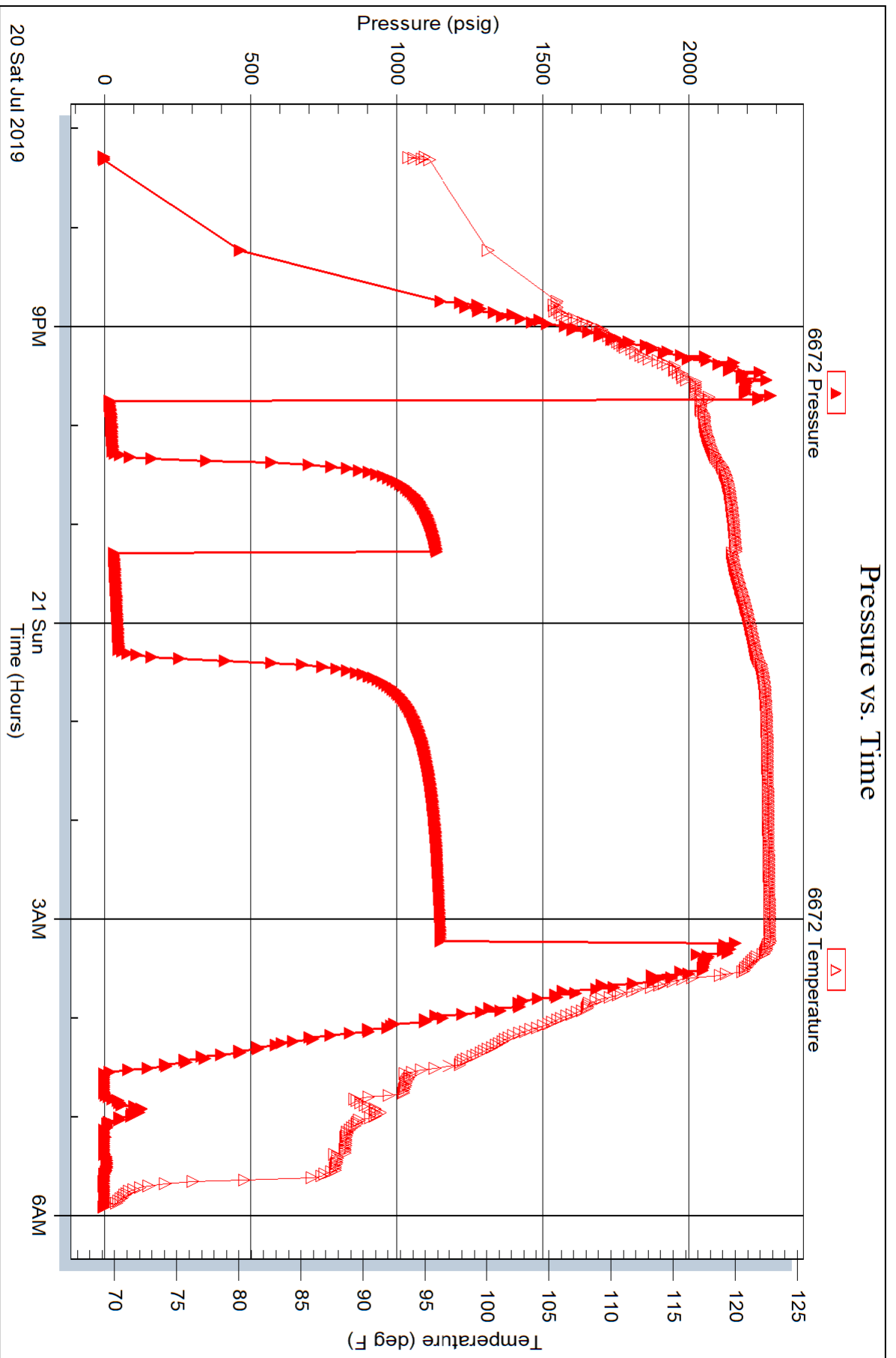
Laboratory Location:

Recovery Comments: RW=.130@68F=62,000 ppm

# Pressure vs. Time









**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Berexco, LLC

**1/31S/35W Stevens,KS**

Wichita, KS

**Brown 3-1**

ATTN: Ed Grieves

Job Ticket: 47659

**DST#: 3**

Test Start: 2019.07.22 @ 07:18:00

## GENERAL INFORMATION:

Formation: **Marmaton A**

Deviated: No Whipstock: 2981.00 ft (KB)

Time Tool Opened: 10:22:55

Time Test Ended: 16:31:40

Test Type: Conventional Bottom Hole (Initial)

Tester: Chris Hagman

Unit No: 75

Interval: **4709.00 ft (KB) To 4767.00 ft (KB) (TVD)**

Reference Elevations: 2981.00 ft (KB)

Total Depth: 4767.00 ft (KB) (TVD)

2969.00 ft (CF)

Hole Diameter: 7.80 inches Hole Condition: Good

KB to GR/CF: 12.00 ft

**Serial #: 8289**

**Inside**

Press@RunDepth: 140.74 psig @ 4711.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.07.22

End Date:

2019.07.22

Last Calib.: 1899.12.30

Start Time: 07:18:02

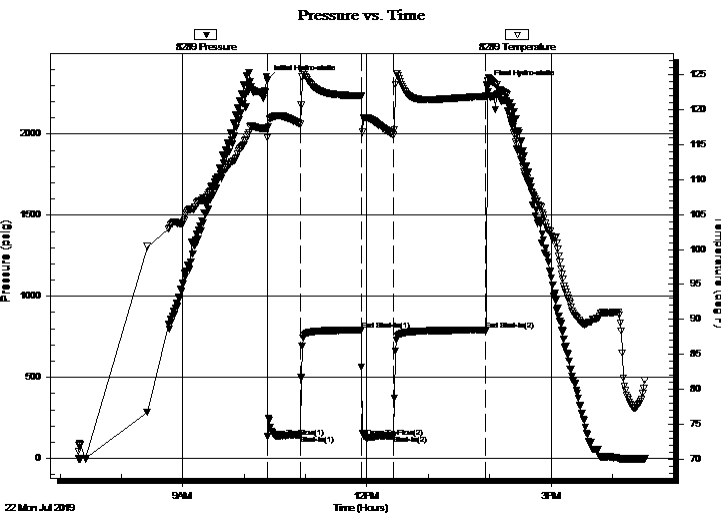
End Time:

16:31:40

Time On Btm: 2019.07.22 @ 10:22:25

Time Off Btm: 2019.07.22 @ 13:57:24

TEST COMMENT: IF: BOB 30 sec., GTS 5 min., 453 MCF  
 IS: Blow back 5 min., weak surface blow  
 FF: BOB GTS ASAO, 522 MCF  
 FS: No blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2332.79	117.37	Initial Hydro-static
1	133.49	116.01	Open To Flow (1)
33	143.48	117.88	Shut-In(1)
92	791.34	121.98	End Shut-In(1)
97	128.22	118.87	Open To Flow (2)
124	140.74	116.31	Shut-In(2)
214	791.04	121.92	End Shut-In(2)
215	2306.56	123.39	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
120.00	gassy mud 5%G,95%M	1.68

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.63	22.00	389.51
Last Gas Rate	0.63	37.60	556.44
Max. Gas Rate	0.63	37.60	556.44



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Berexco, LLC

**1/31S/35W Stevens,KS**

Wichita, KS

**Brown 3-1**

ATTN: Ed Grieves

Job Ticket: 47659

**DST#: 3**

Test Start: 2019.07.22 @ 07:18:00

## GENERAL INFORMATION:

Formation: **Marmaton A**

Deviated: No Whipstock: 2981.00 ft (KB)

Time Tool Opened: 10:22:55

Time Test Ended: 16:31:40

Test Type: Conventional Bottom Hole (Initial)

Tester: Chris Hagman

Unit No: 75

**Interval: 4709.00 ft (KB) To 4767.00 ft (KB) (TVD)**

Reference Elevations: 2981.00 ft (KB)

Total Depth: 4767.00 ft (KB) (TVD)

2969.00 ft (CF)

Hole Diameter: 7.80 inches Hole Condition: Good

KB to GR/CF: 12.00 ft

**Serial #: 6672 Outside**

Press@RunDepth: psig @ 4711.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.07.22

End Date: 2019.07.22

Last Calib.: 1899.12.30

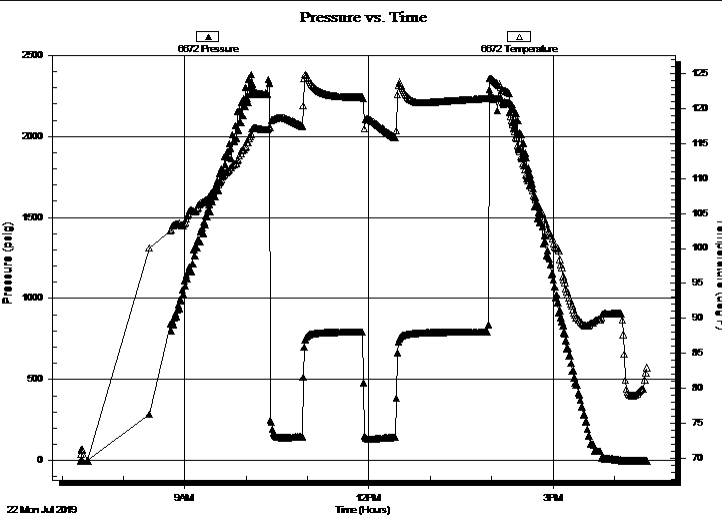
Start Time: 07:18:02

End Time: 16:31:40

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IF: BOB 30 sec., GTS 5 min., 453 MCF  
 IS: Blow back 5 min., weak surface blow  
 FF: BOB GTS ASAO, 522 MCF  
 FS: No blow back



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
120.00	gassy mud 5%G,95%M	1.68

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.63	22.00	389.51
Last Gas Rate	0.63	37.60	556.44
Max. Gas Rate	0.63	37.60	556.44



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Berexco, LLC

**1/31S/35W Stevens,KS**

Wichita, KS

**Brown 3-1**

Job Ticket: 47659

**DST#: 3**

ATTN: Ed Grieves

Test Start: 2019.07.22 @ 07:18:00

## 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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3300.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	gassy mud 5%G,95%M	1.683

Total Length: 120.00 ft      Total Volume: 1.683 bbl

Num Fluid Samples: 0

Num Gas Bombs: 1

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**GAS RATES**

Berexco, LLC

**1/31S/35W Stevens,KS**

Wichita, KS

**Brown 3-1**

Job Ticket: 47659

**DST#: 3**

ATTN: Ed Grieves

Test Start: 2019.07.22 @ 07:18:00

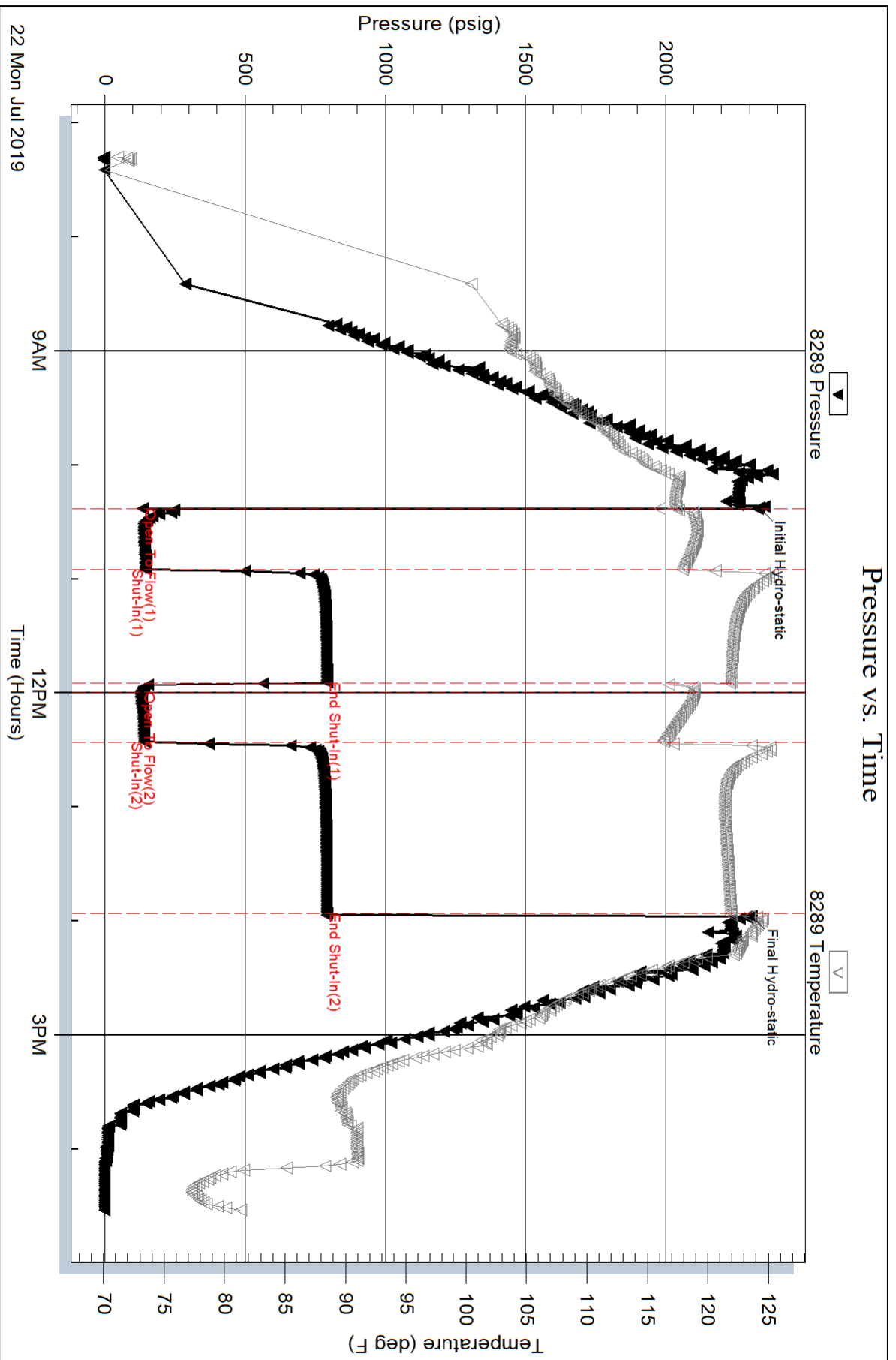
### Gas Rates Information

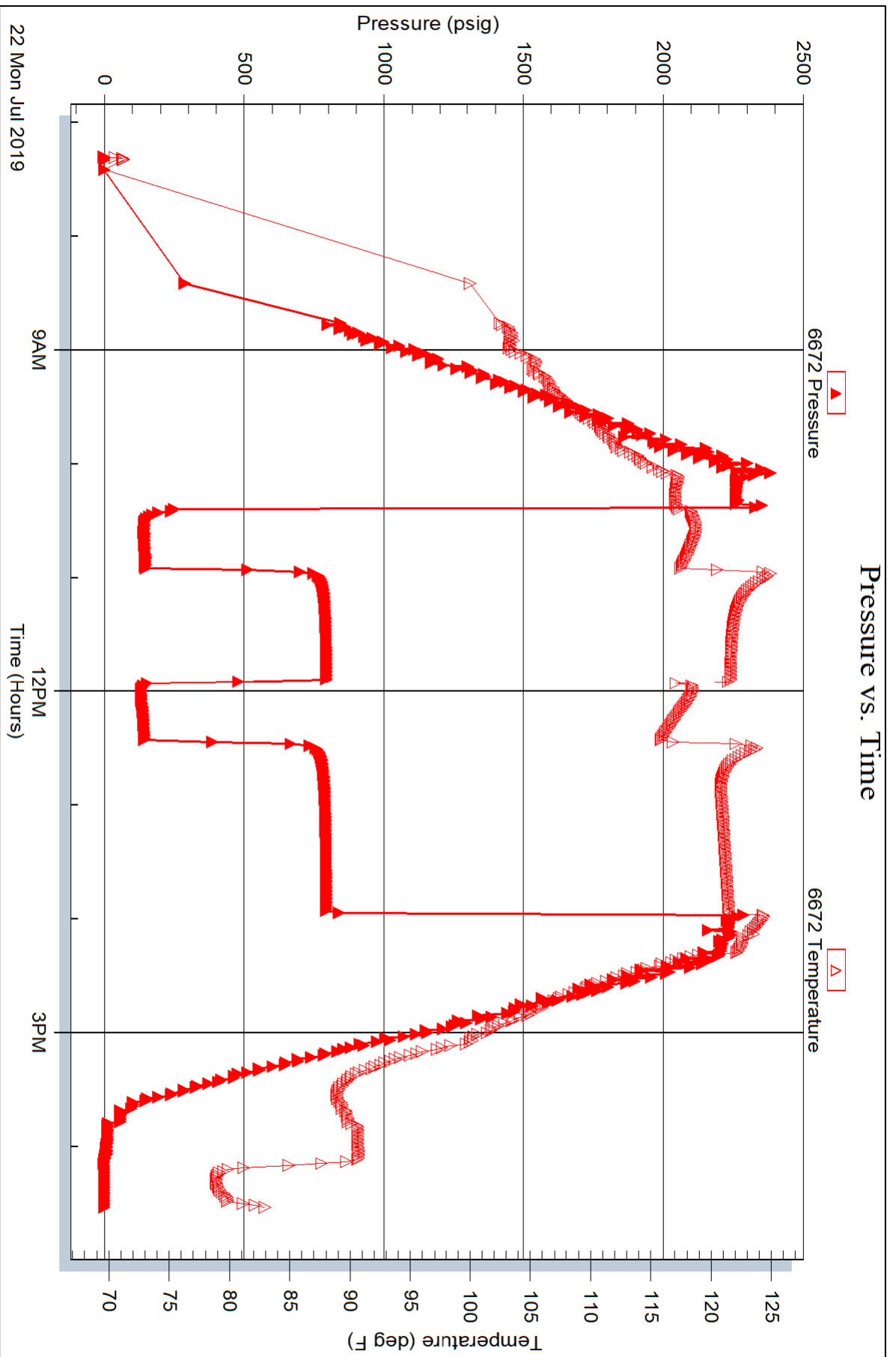
Temperature: 59 (deg F)  
Relative Density: 0.65  
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
1	10	0.63	22.00	389.51
1	20	0.63	26.60	438.73
1	30	0.63	30.60	481.53
2	10	0.63	31.90	495.44
2	20	0.63	36.70	546.81
2	30	0.63	37.60	556.44

### Pressure vs. Time







**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Berexco, LLC

**1/31S/35W Stevens,KS**

Wichita, KS

**Brown 3-1**

ATTN: Ed Grieves

Job Ticket: 47660

**DST#: 4**

Test Start: 2019.07.23 @ 07:16:00

## GENERAL INFORMATION:

Formation: **Marmaton B**

Deviated: No Whipstock: 2981.00 ft (KB)

Time Tool Opened: 10:47:35

Time Test Ended: 17:58:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Chris Hagman

Unit No: 75

**Interval: 4770.00 ft (KB) To 4787.00 ft (KB) (TVD)**

Reference Elevations: 2981.00 ft (KB)

Total Depth: 4787.00 ft (KB) (TVD)

2969.00 ft (CF)

Hole Diameter: 7.80 inches Hole Condition: Good

KB to GR/CF: 12.00 ft

**Serial #: 8289**

**Inside**

Press@RunDepth: 164.22 psig @ 4772.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.07.23

End Date:

2019.07.23

Last Calib.: 1899.12.30

Start Time: 07:16:02

End Time:

17:58:15

Time On Btm: 2019.07.23 @ 10:45:35

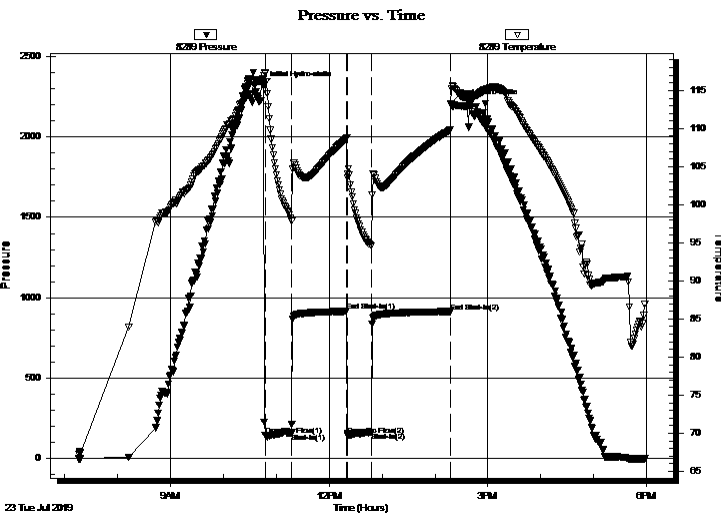
Time Off Btm: 2019.07.23 @ 14:18:05

TEST COMMENT: IF: BOB 15 sec., GTS 4 min., 780 MCF

IS: No blow back

FF: BOB GTS ASAO, 810 MCF

FS: No blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2316.54	116.49	Initial Hydro-static
2	147.38	117.18	Open To Flow (1)
32	158.80	97.91	Shut-In(1)
95	914.55	108.79	End Shut-In(1)
96	144.69	104.06	Open To Flow (2)
123	164.22	94.62	Shut-In(2)
212	914.12	109.87	End Shut-In(2)
213	2204.76	113.19	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
2.00	gassy mud 10%G, 90%M	0.03

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.75	31.30	713.83
Last Gas Rate	0.75	41.20	868.46
Max. Gas Rate	0.75	41.20	868.46





**TRILOBITE**  
TESTING, INC.

# DRILL STEM TEST REPORT

Berexco, LLC

**1/31S/35W Stevens,KS**

Wichita, KS

**Brown 3-1**

Job Ticket: 47660

**DST#: 4**

ATTN: Ed Grieves

Test Start: 2019.07.23 @ 07:16:00

## GENERAL INFORMATION:

Formation: **Marmaton B**

Deviated: No Whipstock: 2981.00 ft (KB)

Time Tool Opened: 10:47:35

Time Test Ended: 17:58:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Chris Hagman

Unit No: 75

**Interval: 4770.00 ft (KB) To 4787.00 ft (KB) (TVD)**

Reference Elevations: 2981.00 ft (KB)

Total Depth: 4787.00 ft (KB) (TVD)

2969.00 ft (CF)

Hole Diameter: 7.80 inches Hole Condition: Good

KB to GR/CF: 12.00 ft

**Serial #: 6672**      **Outside**

Press@RunDepth:                      psig @      4772.00 ft (KB)

Start Date:                              2019.07.23      End Date:                              2019.07.23

Start Time:                                07:16:02      End Time:                              17:58:04

Capacity:                                 8000.00 psig

Last Calib.:                              1899.12.30

Time On Btm:

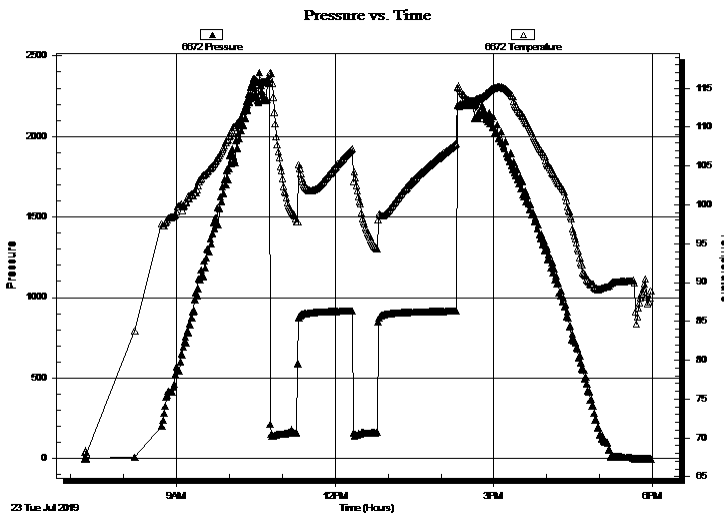
Time Off Btm:

TEST COMMENT: IF: BOB 15 sec., GTS 4 min., 780 MCF

IS: No blow back

FF: BOB GTS ASAO, 810 MCF

FS: No blow back



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
2.00	gassy mud 10%G, 90%M	0.03

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.75	31.30	713.83
Last Gas Rate	0.75	41.20	868.46
Max. Gas Rate	0.75	41.20	868.46



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Berexco, LLC

**1/31S/35W Stevens,KS**

Wichita, KS

**Brown 3-1**

Job Ticket: 47660

**DST#: 4**

ATTN: Ed Grieves

Test Start: 2019.07.23 @ 07:16:00

**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: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3700.00 ppm

Filter Cake: inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
2.00	gassy mud 10%G, 90%M	0.028

Total Length: 2.00 ft      Total Volume: 0.028 bbl

Num Fluid Samples: 1

Num Gas Bombs: 1

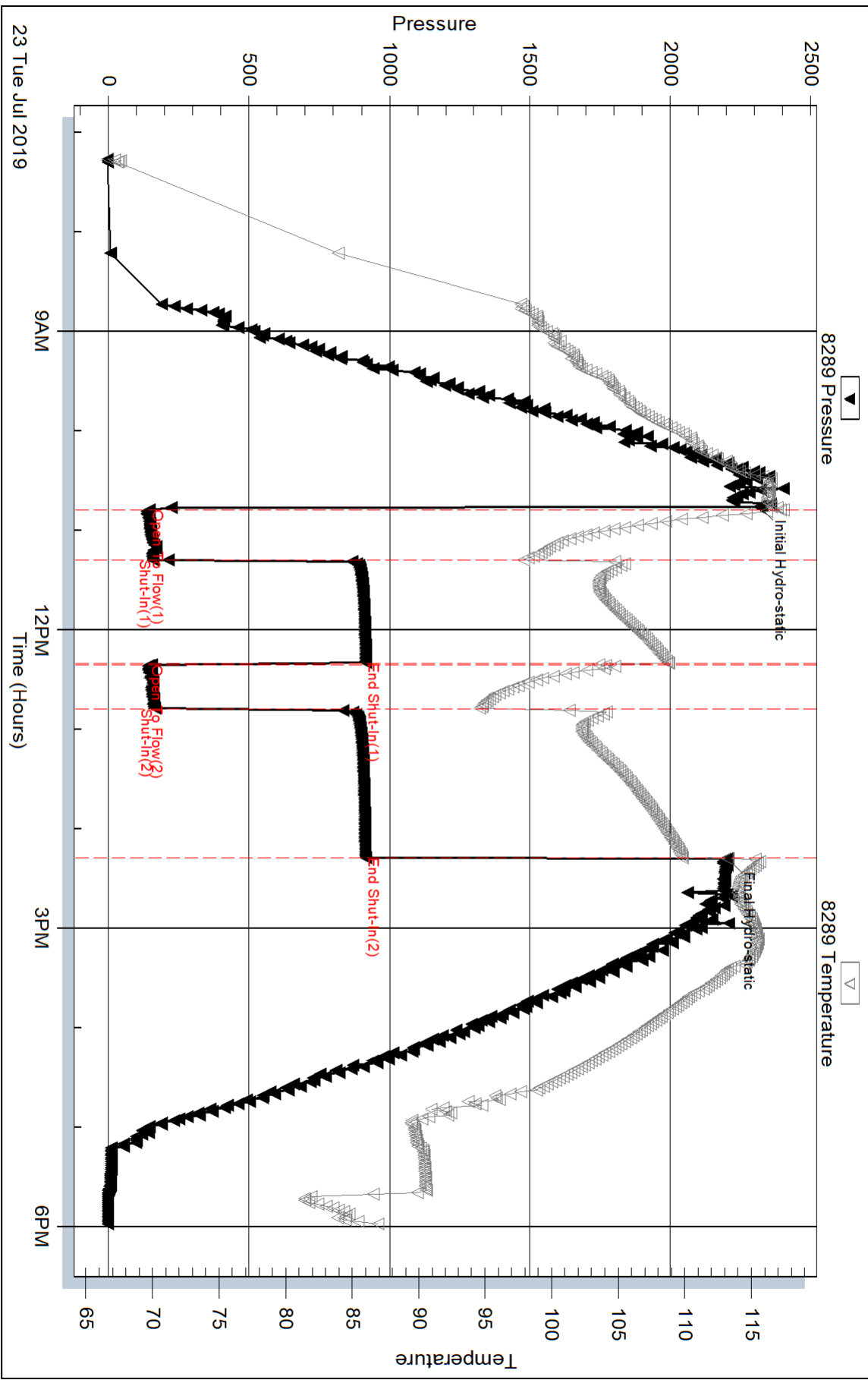
Serial #:

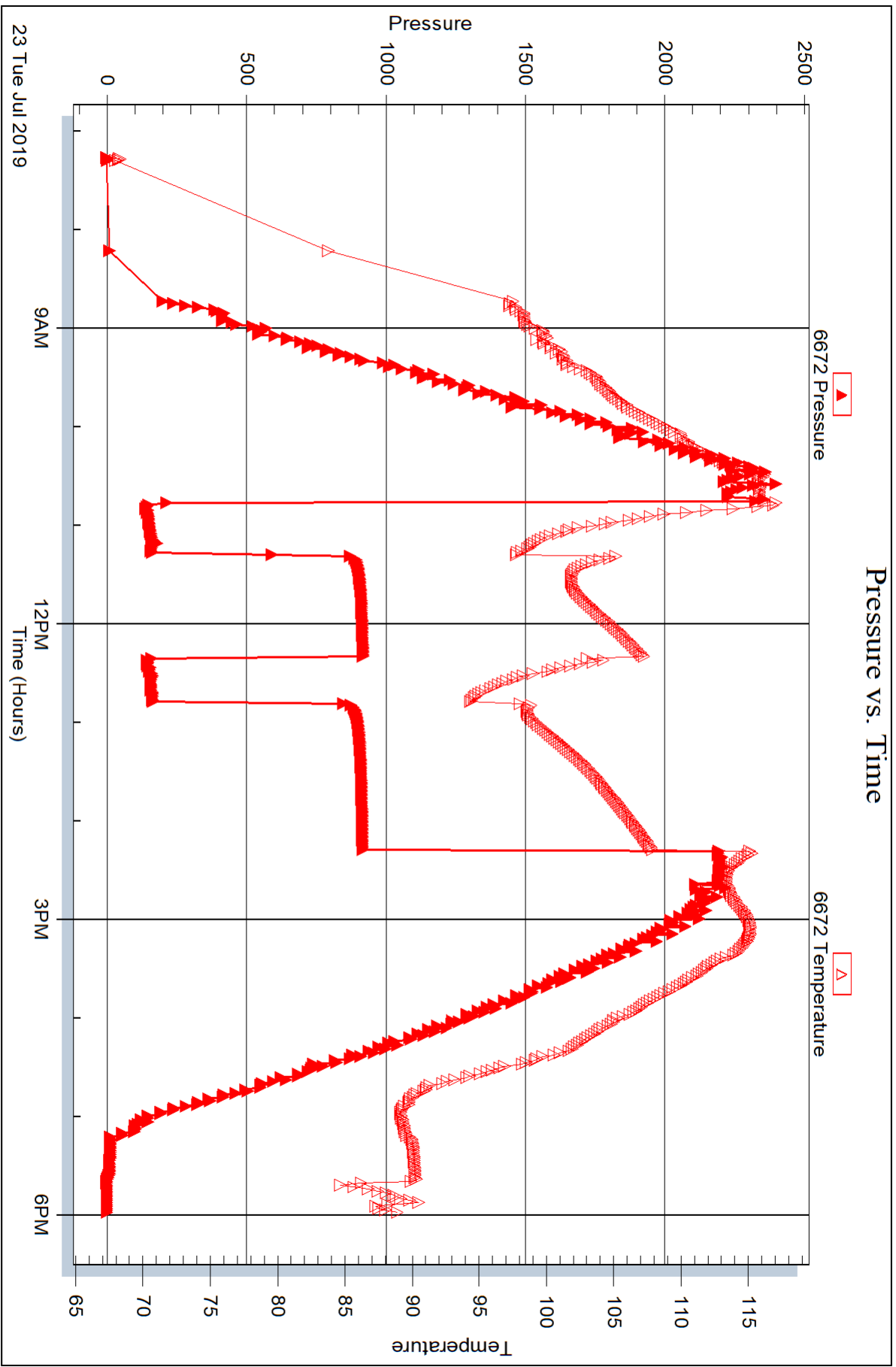
Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time







**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Berexco, LLC

**1-31S-35W Stevens,KS**

2020 Bramblewood  
Wichita, KS 67206

**Brown #3-1**

Job Ticket: 64364

**DST#: 5**

ATTN: Ed Grieves

Test Start: 2019.07.25 @ 21:05:00

## GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:17:50

Time Test Ended: 08:06:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Martine Salinas

Unit No: 82

**Interval: 5175.00 ft (KB) To 5220.00 ft (KB) (TVD)**

Reference Elevations: 2981.00 ft (KB)

Total Depth: 5220.00 ft (KB) (TVD)

2969.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 12.00 ft

**Serial #: 8734 Outside**

Press@RunDepth: 23.09 psig @ 5176.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.07.25

End Date: 2019.07.26

Last Calib.: 2019.07.26

Start Time: 21:05:01

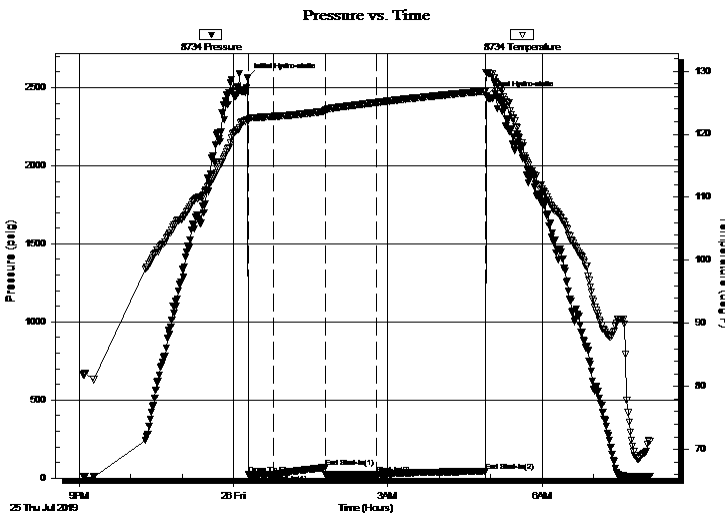
End Time: 08:06:00

Time On Btm: 2019.07.26 @ 00:16:10

Time Off Btm: 2019.07.26 @ 04:54:30

**TEST COMMENT:** 30-IF-1/4" blow built to 4 1/2" @ 10 mins & decreased to 3 1/2"  
60-ISI-No blow back  
60-FF- S.blow built to 1" @ 2 mins & decreased to surface blow  
120-FSI-No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2560.55	122.24	Initial Hydro-static
2	21.78	122.17	Open To Flow (1)
31	23.37	122.81	Shut-In(1)
91	68.15	123.66	End Shut-In(1)
92	21.63	123.82	Open To Flow (2)
151	23.09	125.04	Shut-In(2)
278	43.21	126.84	End Shut-In(2)
279	2448.98	129.73	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	GM With oil scum	0.21
0.00	105' GIP	0.00
0.00	Oil spots in tool	0.00

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Berexco, LLC

**1-31S-35W Stevens,KS**

2020 Bramblewood  
Wichita, KS 67206

**Brown #3-1**

Job Ticket: 64364

**DST#: 5**

ATTN: Ed Grieves

Test Start: 2019.07.25 @ 21:05:00

## GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:17:50

Time Test Ended: 08:06:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Martine Salinas

Unit No: 82

**Interval: 5175.00 ft (KB) To 5220.00 ft (KB) (TVD)**

Reference Elevations: 2981.00 ft (KB)

Total Depth: 5220.00 ft (KB) (TVD)

2969.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 12.00 ft

**Serial #: 8959 Inside**

Press@RunDepth: psig @ 5176.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.07.25 End Date: 2019.07.26

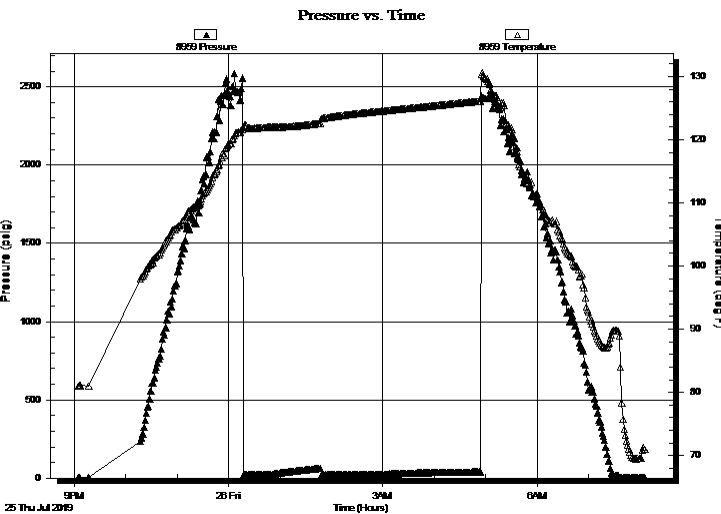
Last Calib.: 2019.07.26

Start Time: 21:05:01 End Time: 08:05:49

Time On Btm:

Time Off Btm:

**TEST COMMENT:** 30-IF-1/4" blow built to 4 1/2" @ 10 mins & decreased to 3 1/2"  
60-ISI-No blow back  
60-FF- S.blow built to 1" @ 2 mins & decreased to surface blow  
120-FSI-No blow back



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	GM With oil scum	0.21
0.00	105' GIP	0.00
0.00	Oil spots in tool	0.00

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Berexco, LLC

**1-31S-35W Stevens,KS**

2020 Bramblewood  
Wichita, KS 67206

**Brown #3-1**

Job Ticket: 64364

**DST#: 5**

ATTN: Ed Grieves

Test Start: 2019.07.25 @ 21:05:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 61.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1500.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	GM With oil scum	0.210
0.00	105' GIP	0.000
0.00	Oil spots in tool	0.000

Total Length: 15.00 ft      Total Volume: 0.210 bbl

Num Fluid Samples: 0

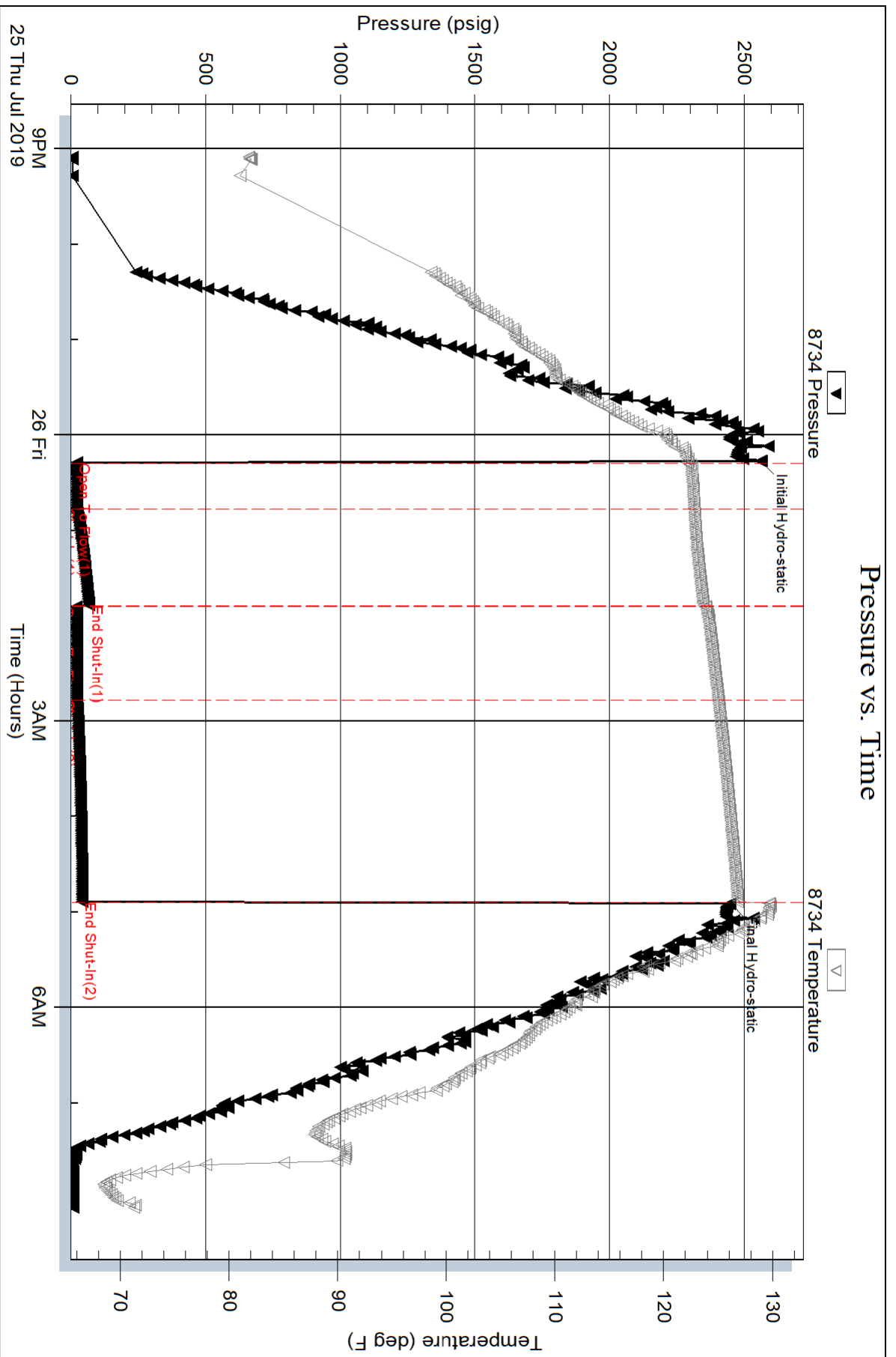
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





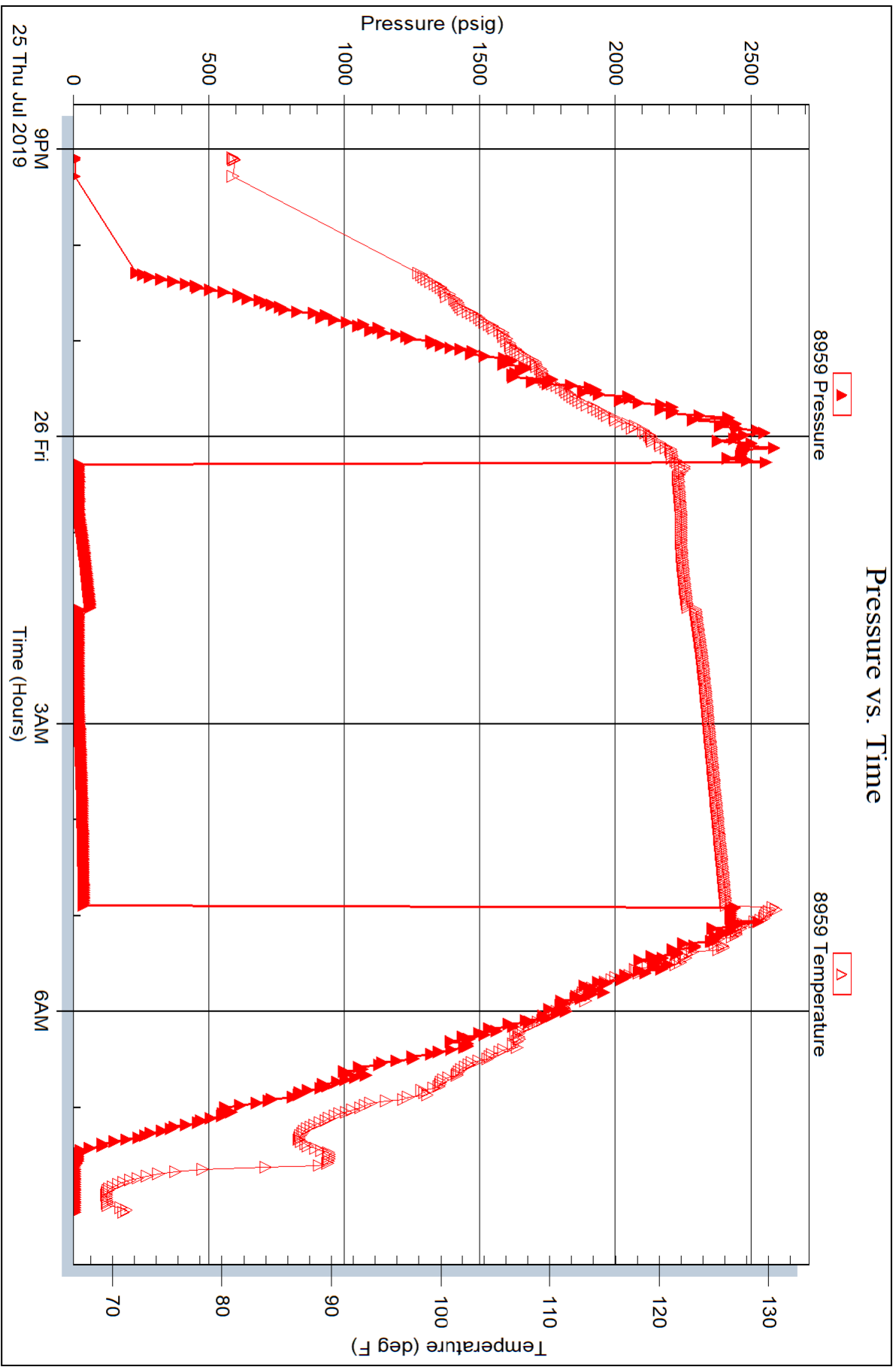
Serial #: 8959

Inside

Berexco, LLC

Brown n#3-1

DST Test Number: 5





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Berexco, LLC

**1-31S-35W Stevens,KS**

2020 Bramblewood  
Wichita, KS 67206

**Brown #3-1**

Job Ticket: 64365

**DST#: 6**

ATTN: Ed Grieves

Test Start: 2019.07.27 @ 03:21:00

## GENERAL INFORMATION:

Formation: **Upper Marrow**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:13:00

Time Test Ended: 13:55:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Martine Salinas

Unit No: 82

**Interval: 5245.00 ft (KB) To 5310.00 ft (KB) (TVD)**

Reference Elevations: 2981.00 ft (KB)

Total Depth: 5310.00 ft (KB) (TVD)

2969.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 12.00 ft

**Serial #: 8734 Outside**

Press@RunDepth: 68.11 psig @ 5246.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.07.27 End Date: 2019.07.27

Last Calib.: 2019.07.27

Start Time: 03:21:01 End Time: 13:55:30

Time On Btm: 2019.07.27 @ 06:12:00

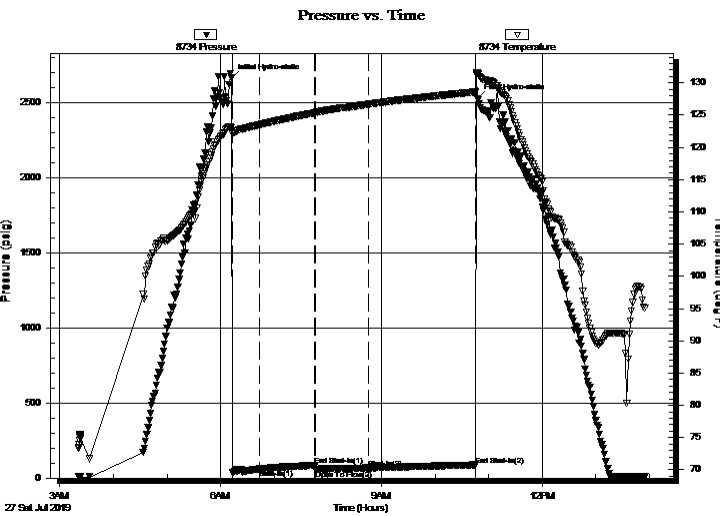
Time Off Btm: 2019.07.27 @ 10:47:30

**TEST COMMENT:** 30-IF-S.blow built to 1/2" @ 12 mins & decreased to 1/4"

60-ISI-No blow back

60-FF-No blow

120-FSI-No blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2665.46	123.07	Initial Hydro-static
1	34.32	122.15	Open To Flow (1)
31	60.67	123.50	Shut-In(1)
94	86.56	125.34	End Shut-In(1)
94	54.59	125.35	Open To Flow (2)
154	68.11	126.70	Shut-In(2)
274	88.12	128.59	End Shut-In(2)
276	2530.21	131.62	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	100% Mud	0.21

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Berexco, LLC

**1-31S-35W Stevens,KS**

2020 Bramblewood  
Wichita, KS 67206

**Brown #3-1**

Job Ticket: 64365

**DST#: 6**

ATTN: Ed Grieves

Test Start: 2019.07.27 @ 03:21:00

## 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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1025.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	100% Mud	0.210

Total Length: 15.00 ft      Total Volume: 0.210 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

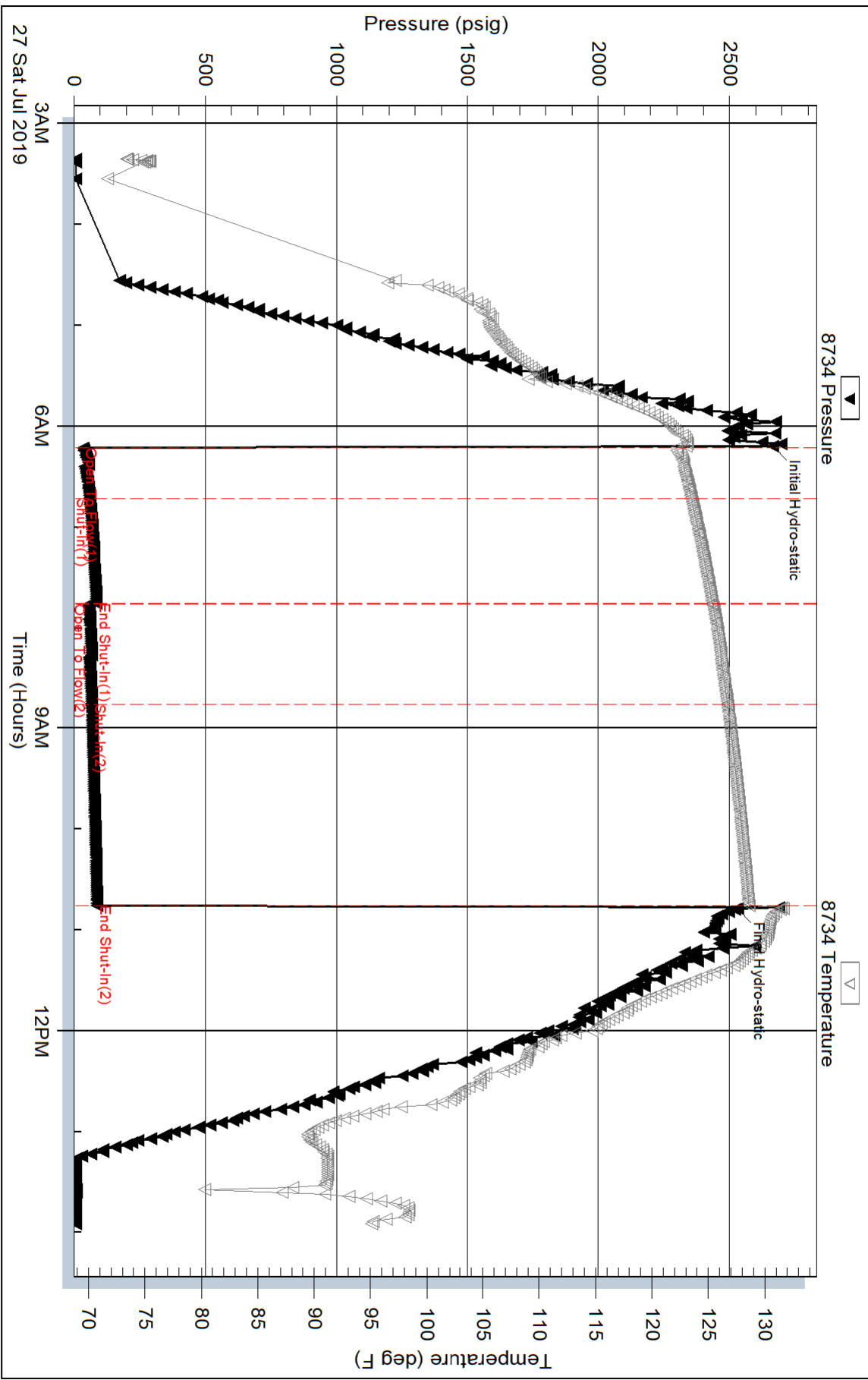
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time



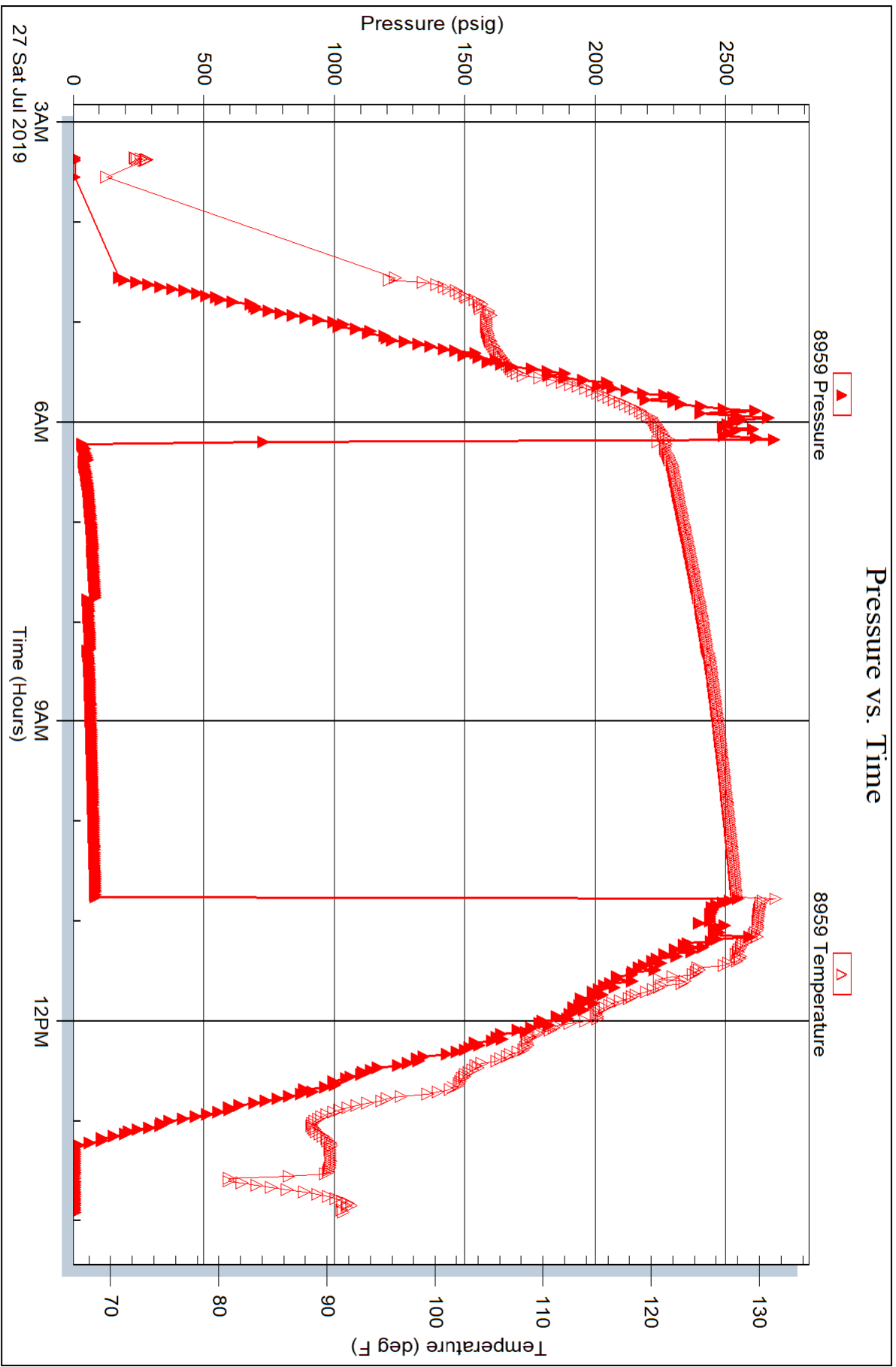
Serial #: 8959

Inside

Berexco, LLC

Brown #3-1

DST Test Number: 6



Trilobite Testing, Inc

Ref. No: 64365

Printed: 2019.07.27 @ 19:02:03



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Berexco, LLC  
 2020 Bramblewood  
 Wichita, KS 67206  
 ATTN: Ed Grieves

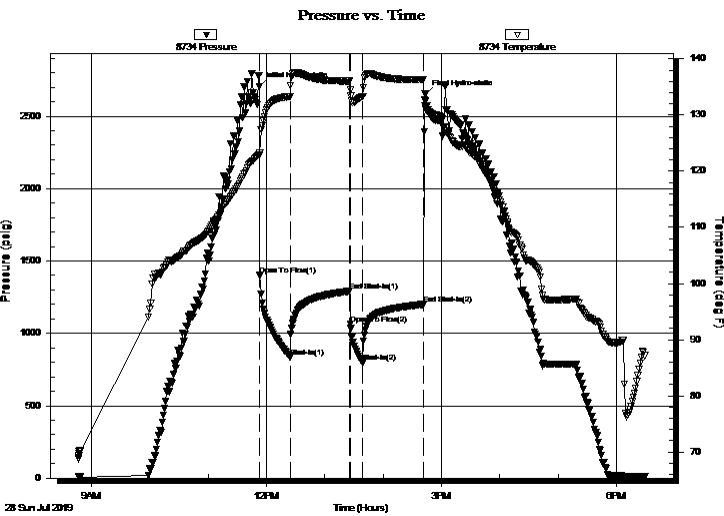
**1-31S-35W Stevens,KS**  
**Brown #3-1**  
 Job Ticket: 64366 **DST#: 7**  
 Test Start: 2019.07.28 @ 08:47:00

## GENERAL INFORMATION:

Formation: **Lower Marrow**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 11:53:20 Tester: Martine Salinas  
 Time Test Ended: 18:29:40 Unit No: 82  
 Interval: **5345.00 ft (KB) To 5385.00 ft (KB) (TVD)** Reference Elevations: 2981.00 ft (KB)  
 Total Depth: 5385.00 ft (KB) (TVD) 2969.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 12.00 ft

**Serial #: 8734 Outside**  
 Press@RunDepth: 798.87 psig @ 5346.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2019.07.28 End Date: 2019.07.28 Last Calib.: 2019.07.28  
 Start Time: 08:47:01 End Time: 18:29:40 Time On Btm: 2019.07.28 @ 11:53:00  
 Time Off Btm: 2019.07.28 @ 14:43:09

**TEST COMMENT:** 30-IF-B.O.B ASAO, GTS @ 1 1/2 mins 365 PSI @ 22 mins decreased to 340 PSI @ 30 mins  
 60-ISI-Bled off 30 mins, blow built to 1 1/2"  
 15-FF-B.O.B ASAO built to 330 PSI @ 15 mins  
 60-FSI-Bled off 30 mins blow built to 1 1/2"



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2704.56	122.87	Initial Hydro-static
1	1400.87	123.32	Open To Flow (1)
32	835.31	133.31	Shut-In(1)
93	1292.90	136.07	End Shut-In(1)
94	1065.95	134.48	Open To Flow (2)
106	798.87	133.29	Shut-In(2)
169	1200.74	136.35	End Shut-In(2)
171	2652.17	131.66	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	5333' GIP	0.00

\* Recovery from multiple tests

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.75	300.00	4910.88
Last Gas Rate	0.75	330.00	5379.48
Max. Gas Rate	0.75	365.00	5926.17



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Berexco, LLC

**1-31S-35W Stevens,KS**

2020 Bramblewood  
Wichita, KS 67206

**Brown #3-1**

Job Ticket: 64366

**DST#: 7**

ATTN: Ed Grieves

Test Start: 2019.07.28 @ 08:47:00

## GENERAL INFORMATION:

Formation: **Lower Marrow**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:53:20

Time Test Ended: 18:29:40

Test Type: Conventional Bottom Hole (Reset)

Tester: Martine Salinas

Unit No: 82

**Interval: 5345.00 ft (KB) To 5385.00 ft (KB) (TVD)**

Reference Elevations: 2981.00 ft (KB)

Total Depth: 5385.00 ft (KB) (TVD)

2969.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 12.00 ft

**Serial #: 8959**

**Inside**

Press@RunDepth: psig @ 5346.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.07.28

End Date:

2019.07.28

Last Calib.:

2019.07.28

Start Time: 08:47:01

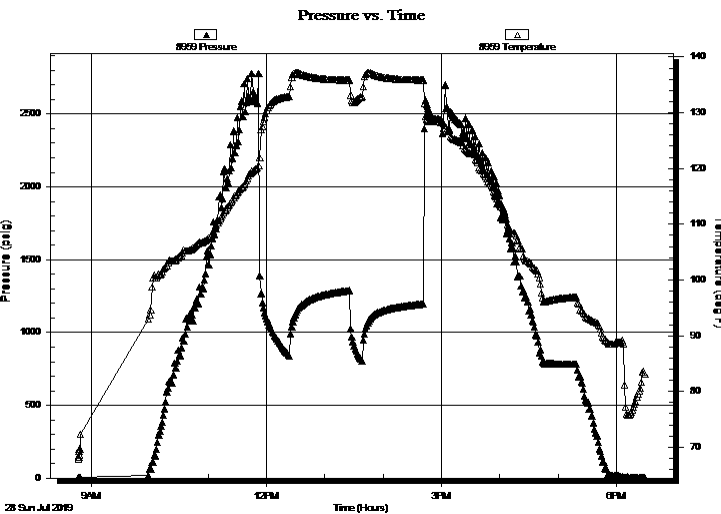
End Time:

18:29:40

Time On Btm:

Time Off Btm:

**TEST COMMENT:** 30-IF-B.O.B ASAO, GTS @ 1 1/2 mins 365 PSI @ 22 mins decreased to 340 PSI @ 30 mins  
60-ISI-Bled off 30 mins, blow built to 1 1/2"  
15-FF-B.O.B ASAO built to 330 PSI @ 15 mins  
60-FSI-Bled off 30 mins blow built to 1 1/2"



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	5333' GIP	0.00

\* Recovery from multiple tests

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.75	300.00	4910.88
Last Gas Rate	0.75	330.00	5379.48
Max. Gas Rate	0.75	365.00	5926.17





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Berexco, LLC

**1-31S-35W Stevens,KS**

2020 Bramblewood  
Wichita, KS 67206

**Brown #3-1**

Job Ticket: 64366

**DST#: 7**

ATTN: Ed Grieves

Test Start: 2019.07.28 @ 08:47:00

## 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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1600.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
0.00	5333' GIP	0.000

Total Length: ft Total Volume: bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**GAS RATES**

Berexco, LLC

**1-31S-35W Stevens,KS**

2020 Bramblewood  
Wichita, KS 67206

**Brown #3-1**

Job Ticket: 64366

**DST#: 7**

ATTN: Ed Grieves

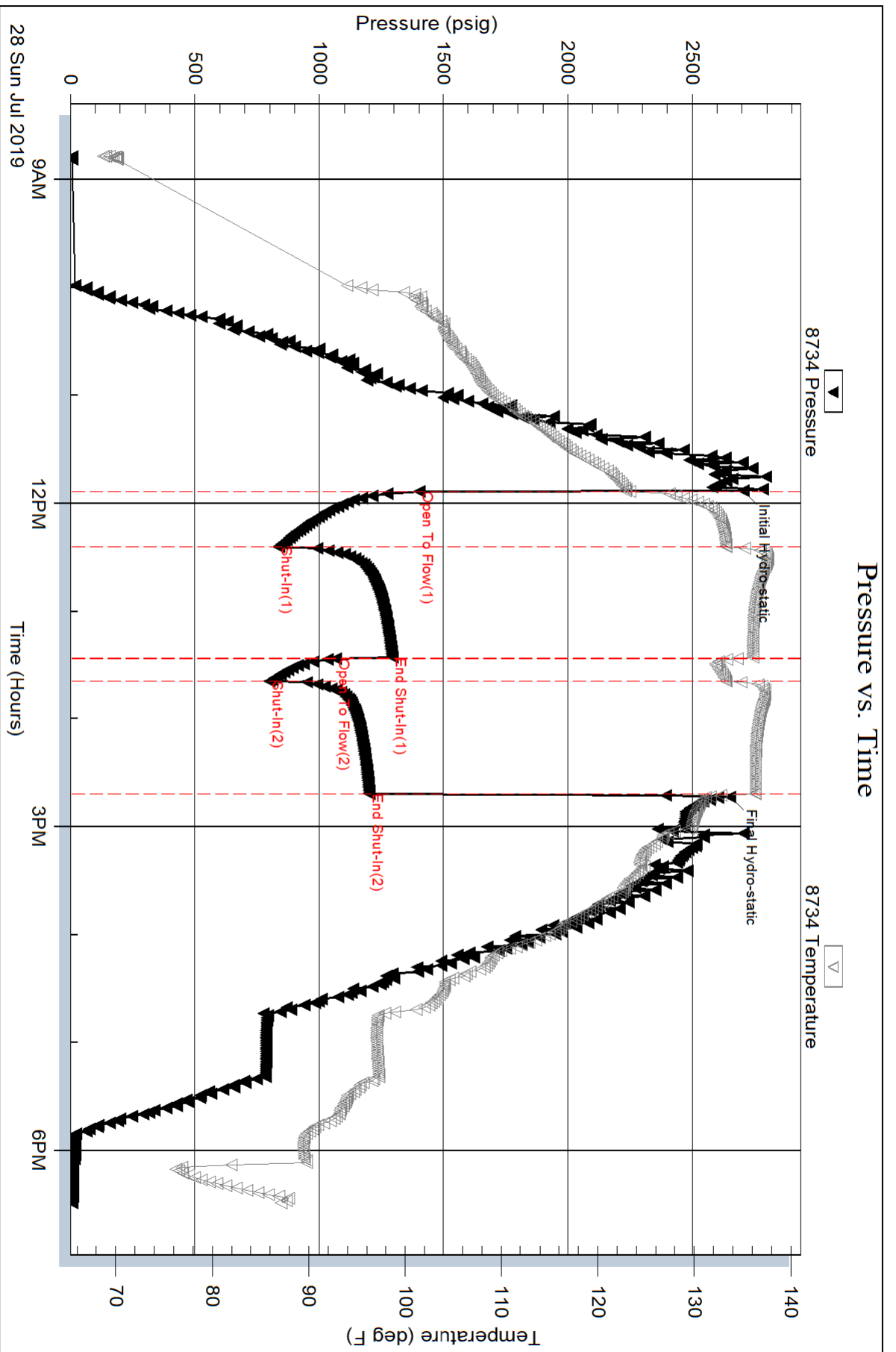
Test Start: 2019.07.28 @ 08:47:00

### Gas Rates Information

Temperature: 59 (deg F)  
Relative Density: 0.65  
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
1	8	0.75	300.00	4910.88
1	22	0.75	365.00	5926.17
1	24	0.75	360.00	5848.07
1	26	0.75	355.00	5769.98
1	28	0.75	350.00	5691.88
1	30	0.75	340.00	5535.68
2	5	0.75	163.00	2770.96
2	10	0.75	272.00	4473.53
2	15	0.75	330.00	5379.48



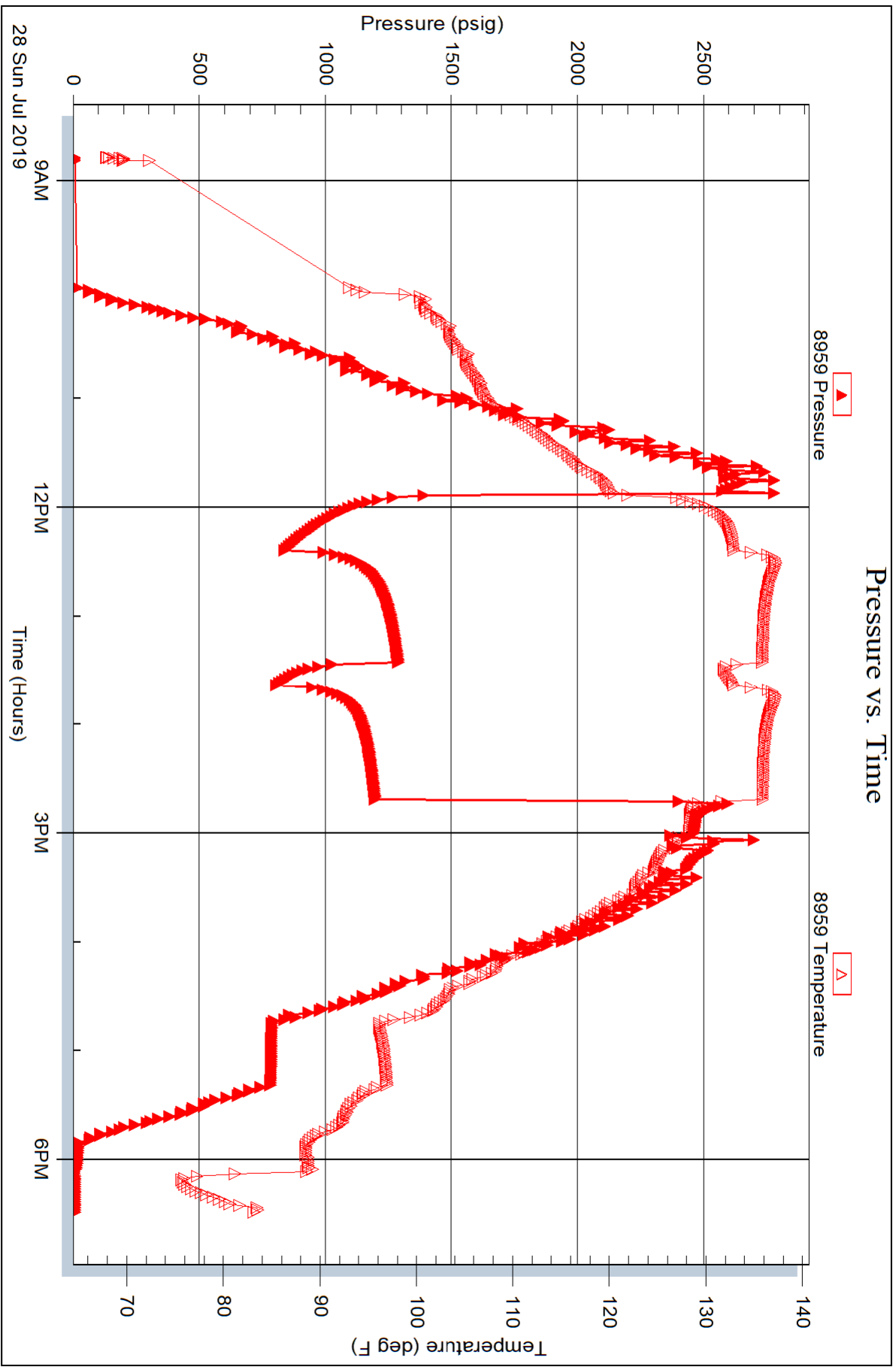
Serial #: 8959

Inside

Berexco, LLC

Brown #3-1

DST Test Number: 7





Scale 1:240 (5"=100') Imperial  
Measured Depth Log

Well Name: Brown 3-1  
Well Id:  
Location: Sec 1 T31S R35, Stevens County, Kansas  
License Number: 15-189-22860-00  
Spud Date: June 29, 2019  
Surface Coordinates: 990' Fnl & 2305' Fel  
Region: CUTTER  
Drilling Completed: July 31, 2019

Bottom Hole  
Coordinates:  
Ground Elevation (ft): 2969' K.B. Elevation (ft): 2981'  
Logged Interval (ft): 3700' To: 5750' Total Depth (ft): 5750'  
Formation: Morrow Chester  
Type of Drilling Fluid: Natural Chemical

Printed by WellSight LogViewer from WellSight Systems 1-800-447-1534 www.WellSight.com

**OPERATOR**

Company: BEREXCO LLC  
Address: 2020 N. BRAMBLEWOOD  
WICHITA, KANSAS 67206  
CO.GEO: PETE WILSON

**GEOLOGIST**

Name: Edwin W. Grieves  
Company: Grieves and Company  
Address: PO Box 3125  
Edmond, Oklahoma 73083-3125

**CIRC POINTS**

**CIRC POINTS**

1. 4130'	2. 4164'	3. 4372'	4. 4480'	5. 4620'
6. 4660'	7. 4766'	8. 4787'	9. 4890'	10. 4940'
11. 5220'	12. 5275'	13. 5300'	14. 5310'	15. 5331'
16. 5365'	17. 5385'	18. 5470'	19. 5520'	20. 5550'
21. 5585'	22. 5622'	23. 5660'	24. 5670'	



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

ATTN:

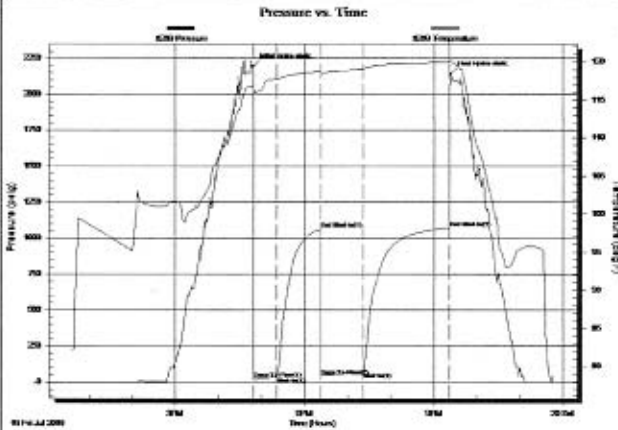
Job Ticket: 47657      **DST#: 1**  
Test Start: 2019.07.19 @ 12:38:00

**GENERAL INFORMATION:**

Formation: **Lansing H**  
Deviated: No Whipstock:                      ft (KB)  
Time Tool Opened: 16:49:35  
Time Test Ended: 23:46:10  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Chris Hagman  
Unit No: 75  
Interval: **4442.00 ft (KB) To 4480.00 ft (KB) (TVD)**  
Total Depth: 4480.00 ft (KB) (TVD)  
Reference Elevations:                              ft (KB)  
Hole Diameter:                      inches Hole Condition: Good                      KB to GR/CF:                      ft

**Serial #: 8289      Inside**  
Press@RunDepth: 72.61 psig @ 4444.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2019.07.19      End Date: 2019.07.19      Last Calib.: 1899.12.30  
Start Time: 12:38:00      End Time: 23:46:10      Time On Btm: 2019.07.19 @ 16:49:20  
Time Off Btm: 2019.07.19 @ 21:23:49

**TEST COMMENT:** IF: BOB 25 min., 14 inches  
IS: No blow back  
FF: BOB 15 min., 36 inches  
FS: No blow back



**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2197.90	116.87	Initial Hydro-static
1	22.38	115.61	Open To Flow (1)
33	37.76	117.77	Shut-In(1)
93	1061.79	118.74	End Shut-In(1)
94	42.76	118.39	Open To Flow (2)
152	72.61	119.09	Shut-In(2)
273	1073.14	119.97	End Shut-In(2)
275	2145.48	120.16	Final Hydro-static

**Recovery**

Length (ft)	Description	Volume (bbl)
120.00	gassy oily mud 15%G,10%O,75%M	1.68

**Gas Rates**

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



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

Job Ticket: 47658      **DST#: 2**  
 Test Start: 2019.07.20 @ 19:17:00

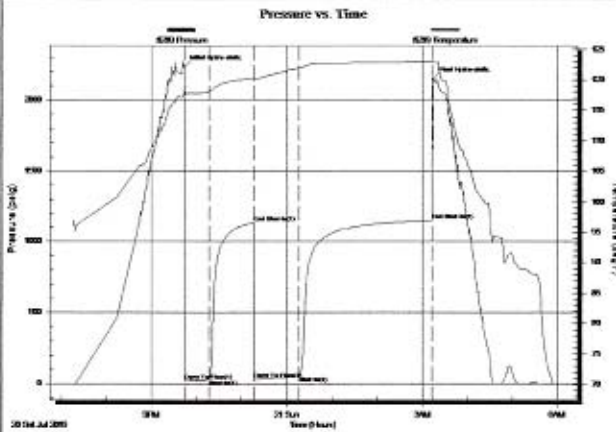
ATTN:

**GENERAL INFORMATION:**

Formation: **KC A**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 21:44:30  
 Time Test Ended: 05:55:15  
 Interval: **4599.00 ft (KB) To 4620.00 ft (KB) (TVD)**  
 Total Depth: 4620.00 ft (KB) (TVD)  
 Hole Diameter: inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Chris Hagman  
 Unit No: 75  
 Reference Elevations: ft (KB)  
 ft (CF)  
 KB to GR/CF: ft

**Serial #: 8289**      Inside  
 Press@RunDepth: 51.17 psig @ 4602.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2019.07.20      End Date: 2019.07.21      Last Calib.: 1899.12.30  
 Start Time: 19:17:00      End Time: 05:55:15      Time On Btm: 2019.07.20 @ 21:43:30  
 Time Off Btm: 2019.07.21 @ 03:14:24

**TEST COMMENT:** IF: Weak surface blow , 2.7 inches  
 IS: No blow back  
 FF: Weak surface blow , 1.5 inches  
 FS: No blow back



**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2229.96	118.22	Initial Hydro-static
1	15.98	117.25	Open To Flow (1)
34	31.91	118.17	Shut-in(1)
93	1133.73	120.27	End Shut-in(1)
94	30.22	119.80	Open To Flow (2)
153	51.17	121.96	Shut-in(2)
330	1148.97	123.02	End Shut-in(2)
331	2146.44	123.00	Final Hydro-static

**Recovery**

Length (ft)	Description	Volume (bbl)
30.00	gassy muddy water 5%G,35%M,60%W	0.42

**Gas Rates**

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



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Berexco, LLC

1/31S/35W Stevens, KS

Wichita, KS

**Brown 3-1**

Job Ticket: 47659

DST#: 3

ATTN: Ed Grieves

Test Start: 2019.07.22 @ 07:18:00

### GENERAL INFORMATION:

Formation: **Marmaton A**

Deviated: No Whipstock: 2981.00 ft (KB)

Time Tool Opened: 10:22:55

Time Test Ended: 16:31:40

Test Type: Conventional Bottom Hole (Initial)

Tester: Chris Hagman

Unit No: 75

Interval: **4709.00 ft (KB) To 4767.00 ft (KB) (TVD)**

Total Depth: 4767.00 ft (KB) (TVD)

Hole Diameter: 7.80 inches Hole Condition: Good

Reference Elevations: 2981.00 ft (KB)

2969.00 ft (CF)

KB to GR/CF: 12.00 ft

**Serial #: 8289**

Inside

Press@RunDepth: 140.74 psig @ 4711.00 ft (KB)

Start Date: 2019.07.22

End Date:

2019.07.22

Capacity: 8000.00 psig

Last Calib.: 1899.12.30

Start Time: 07:18:00

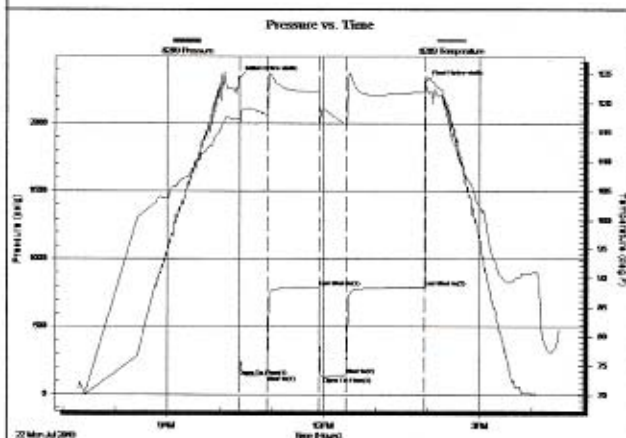
End Time:

16:31:40

Time On Btm: 2019.07.22 @ 10:22:25

Time Off Btm: 2019.07.22 @ 13:57:24

TEST COMMENT: F: BOB 30 sec., GTS 5 min., 453 MCF  
IS: Blow back 5 min., weak surface blow  
FF: BOB GTS ASAO, 522 MCF  
FSI: No blow back



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2332.79	117.37	Initial Hydro-static
1	133.49	116.01	Open To Flow (1)
33	143.48	117.88	Shut-In(1)
92	791.34	121.98	End Shut-in(1)
97	128.22	118.87	Open To Flow (2)
124	140.74	116.31	Shut-In(2)
214	791.04	121.92	End Shut-in(2)
215	2306.56	123.39	Final Hydro-static

### Recovery

Length (ft)	Description	Volume (bbl)
120.00	gassy mud 5%G,95%M	1.68

### Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.63	22.00	389.51
Last Gas Rate	0.63	37.60	556.44
Max. Gas Rate	0.63	37.60	556.44

Tribolite Testing, Inc

Ref. No: 47659

Printed: 2019.07.22 @ 17:14:03





**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

Berexco, LLC

1/31S/35W Stevens, KS

Wichita, KS

Brown 3-1

Job Ticket: 47660

DST#: 4

ATTN: Ed Grieves

Test Start: 2019.07.23 @ 07:18:00

**GENERAL INFORMATION:**

Formation: **Marmaton B**  
 Deviated: No Whipstock: 2981.00 ft (KB)  
 Time Tool Opened: 10:47:35  
 Time Test Ended: 17:58:15

Test Type: Conventional Bottom Hole (Initial)  
 Tester: Chris Hagman  
 Unit No: 75

Interval: **4770.00 ft (KB) To 4787.00 ft (KB) (TVD)**  
 Total Depth: 4787.00 ft (KB) (TVD)  
 Hole Diameter: 7.80 inches Hole Condition: Good

Reference Elevations: 2981.00 ft (KB)  
 2969.00 ft (CF)  
 KB to GR/CF: 12.00 ft

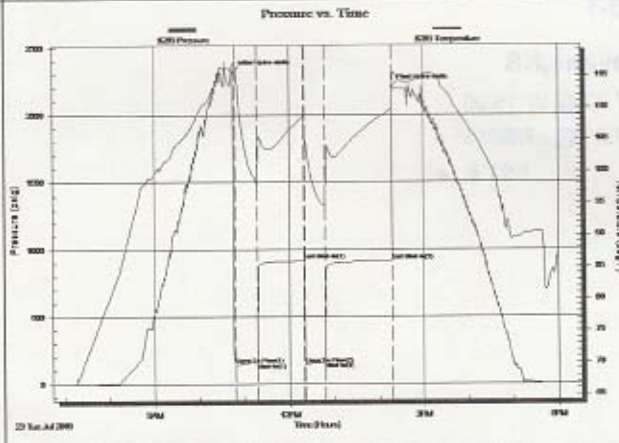
**Serial #: 8289**

Inside

Press@RunDepth: 164.22 psig @ 4772.00 ft (KB)  
 Start Date: 2019.07.23 End Date: 2019.07.23  
 Start Time: 07:16:00 End Time: 17:58:15

Capacity: 8000.00 psig  
 Last Calib.: 1899.12.30  
 Time On Btm: 2019.07.23 @ 10:45:35  
 Time Off Btm: 2019.07.23 @ 14:18:05

TEST COMMENT: IF: BOB 15 sec., GTS 4 min., 780 MCF  
 IS: No blow back  
 FF: BOB GTS ASAO, 810 MCF  
 FSI: No blow back



**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2316.54	116.49	Initial Hydro-static
2	147.38	117.18	Open To Flow (1)
32	158.80	97.91	Shut-In(1)
95	914.55	108.79	End Shut-In(1)
96	144.69	104.06	Open To Flow (2)
123	164.22	94.62	Shut-In(2)
212	914.12	109.87	End Shut-In(2)
213	2204.76	113.19	Final Hydro-static

**Recovery**

Length (ft)	Description	Volume (bbl)
2.00	gassy mud 10%G, 90%M	0.03

**Gas Rates**

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.75	31.30	713.83
Last Gas Rate	0.75	41.20	868.46
Max. Gas Rate	0.75	41.20	868.46



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

Berexco, LLC  
2020 Bramblewood  
Wichita, KS 67206  
ATTN: Ed Grieves

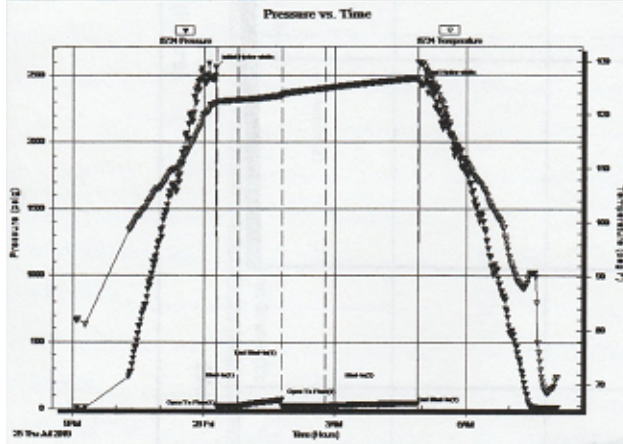
**1-31S-35W Stevens,KS**  
**Brown #3-1**  
Job Ticket: 64364      **DST#: 5**  
Test Start: 2019.07.25 @ 21:05:00

**GENERAL INFORMATION:**

Formation: **Cherokee**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 00:17:50  
Time Test Ended: 08:06:00  
Interval: **5175.00 ft (KB) To 5220.00 ft (KB) (TVD)**  
Total Depth: 5220.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches  
Hole Condition: Good  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Martine Salinas  
Unit No: 82  
Reference Elevations: 2981.00 ft (KB)  
2969.00 ft (CF)  
KB to GR/CF: 12.00 ft

**Serial #: 8734      Outside**  
Press@RunDepth: 23.09 psig @ 5176.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2019.07.25      End Date: 2019.07.26      Last Calib.: 2019.07.26  
Start Time: 21:05:00      End Time: 08:06:00      Time On Btm: 2019.07.26 @ 00:16:10  
Time Off Btm: 2019.07.26 @ 04:54:30

**TEST COMMENT:** 30-IF-1/4" blow built to 4 1/2" @ 10 mins & decreased to 3 1/2"  
60-ISI-No blow back  
60-FF- S.blow built to 1" @ 2 mins & decreased to surface blow  
120-FSI-No blow back



**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2560.55	122.24	Initial Hydro-static
2	21.78	122.17	Open To Flow (1)
31	23.37	122.81	Shut-In(1)
91	68.15	123.66	End Shut-In(1)
92	21.63	123.82	Open To Flow (2)
151	23.09	125.04	Shut-In(2)
278	43.21	126.84	End Shut-In(2)
279	2448.98	129.73	Final Hydro-static

**Recovery**

Length (ft)	Description	Volume (bbl)
15.00	GM With oil scum	0.21
0.00	105' GIP	0.00
0.00	Oil spots in tool	0.00

\* Recovery from multiple tests

**Gas Rates**

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



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Berexco, LLC  
2020 Bramblewood  
Wichita, KS 67206  
ATTN: Ed Grieves

**1-31S-35W Stevens,KS**  
**Brown #3-1**  
Job Ticket: 64365      **DST#: 6**  
Test Start: 2019.07.27 @ 03:21:00

### GENERAL INFORMATION:

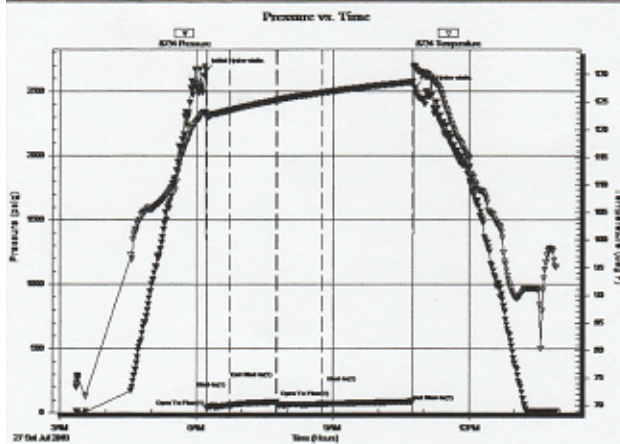
Formation: **Upper Marrow**  
Deviated: No Whipstock:                      ft (KB)  
Test Type: Conventional Bottom Hole (Reset)  
Time Tool Opened: 06:13:00                      Tester: Martine Salinas  
Time Test Ended: 13:55:30                      Unit No: 82  
Interval: **5245.00 ft (KB) To 5310.00 ft (KB) (TVD)**                      Reference Elevations: 2981.00 ft (KB)  
Total Depth: 5310.00 ft (KB) (TVD)                      2969.00 ft (CF)  
Hole Diameter: 7.88 inchesHole Condition: Good                      KB to GR/CF: 12.00 ft

### Serial #: 8734

**Outside**

Press@RunDepth: 68.11 psig @ 5246.00 ft (KB)                      Capacity: 8000.00 psig  
Start Date: 2019.07.27                      End Date: 2019.07.27                      Last Calib.: 2019.07.27  
Start Time: 03:21:00                      End Time: 13:55:30                      Time On Btm: 2019.07.27 @ 06:12:00  
Time Off Btm: 2019.07.27 @ 10:47:30

**TEST COMMENT:** 30-IF-S.blow built to 1/2" @ 12 mins & decreased to 1/4"  
60-ISI-No blow back  
60-FF-No blow  
120-FSI-No blow back



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2665.46	123.07	Initial Hydro-static
1	34.32	122.15	Open To Flow (1)
31	60.67	123.50	Shut-In(1)
94	86.56	125.34	End Shut-In(1)
94	54.59	125.35	Open To Flow (2)
154	68.11	126.70	Shut-In(2)
274	88.12	128.59	End Shut-In(2)
276	2530.21	131.62	Final Hydro-static

### Recovery

Length (ft)	Description	Volume (bbl)
15.00	100% Mud	0.21

\* Recovery from multiple tests

### Gas Rates

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



**TRILOBITE TESTING, INC.**

**DRILL STEM TEST REPORT**

Berexco, LLC  
 2020 Bramblewood  
 Wichita, KS 67206  
 ATTN: Ed Grieves

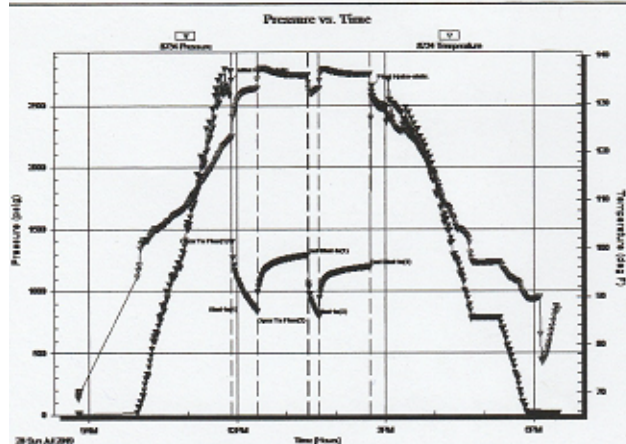
**1-31S-35W Stevens,KS**  
**Brown #3-1**  
 Job Ticket: 64366      **DST# 7**  
 Test Start: 2019.07.28 @ 08:47:00

**GENERAL INFORMATION:**

Formation: **Lower Marrow**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 11:53:20  
 Tester: Martine Salinas  
 Time Test Ended: 18:29:40  
 Unit No: 82  
 Interval: **5345.00 ft (KB) To 5385.00 ft (KB) (TVD)**  
 Reference Elevations: 2981.00 ft (KB)  
 Total Depth: 5385.00 ft (KB) (TVD)  
 2969.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 KB to GR/CF: 12.00 ft

**Serial #: 8734 Outside**  
 Press@RunDepth: 798.87 psig @ 5346.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2019.07.28 End Date: 2019.07.28 Last Calib.: 2019.07.28  
 Start Time: 08:47:00 End Time: 18:29:40 Time On Btm: 2019.07.28 @ 11:53:00  
 Time Off Btm: 2019.07.28 @ 14:43:09

**TEST COMMENT:** 30-IF-B.O.B ASAO, GTS @ 1 1/2 mins 365 PSI @ 22 mins decreased to 340 PSI @ 30 mins  
 60-ISI-Bled off 30 mins, blow built to 1 1/2"  
 15-FF-B.O.B ASAO built to 330 PSI @ 15 mins  
 60-FSI-Bled off 30 mins blow built to 1 1/2"



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2704.56	122.87	Initial Hydro-static
1	1400.87	123.32	Open To Flow (1)
32	835.31	133.31	Shut-In(1)
93	1292.90	136.07	End Shut-In(1)
94	1065.95	134.48	Open To Flow (2)
106	798.87	133.29	Shut-In(2)
169	1200.74	136.35	End Shut-In(2)
171	2652.17	131.66	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
0.00	5333' GIP	0.00

Gas Rates			
	Choke (inches)	Pressure (psig)	Gas Rate (Mcfd)
First Gas Rate	0.75	300.00	4910.88
Last Gas Rate	0.75	330.00	5379.48
Max. Gas Rate	0.75	365.00	5926.17

\* Recovery from multiple tests

**Daily Drilling Progress**

**Daily 7 AM Depths Reports**

1. 7-15-2019 3389' DRILLING
2. 7-16-2019 3699' DRILLING
3. 7-17-2019 4077' BIT TRIP
4. 7-18-2019 4130' CFS
5. 7-19-2029 4480' DST #1
6. 7-20-2019 4505' DRILLING
7. 7-21-2019 4620' DST#2
8. 7-22-2019 4766' DST#3
9. 7-23-2019 4787' DST#4
10. 7-24-2019 4890' CFS
11. 7-25-2019 5163' DRILLING
12. 7-26-2019 5220' DST#5
13. 7-27-2019 5310' DST#6
14. 7-28-2019 5385' DST#7
15. 7-29-2019 5450' CFS
16. 7-30-2019 5542' DRILLING
17. 7-31-2019 5750' RTD @ 6:15 AM CTCH

DATE	DEPTH	WT	VIS	PV	YP	GS	PH	CAKE	CHL	CAL	LCM
7/15/19	3282'	9.1	31	3	3	3/4	7.0		4.6K	HVY	1
7/16/19	3785'	8.9	49	13	14	13/35	11.0	1	900	20	3
7/17/19	4077'	8.9	51	16	17	16/47	9.5	1	2.2K	20	2
7/18/19	4130'	9.0	46	13	13	13/38	9.0	1	1.3K	20	2
7/19/19	4480'	9.3	64	20	22	18/53	9.5	1	1.6K	20	2
7/20/19	4574'	9.1	47	13	14	13/46	10.5	1	2.9K	10	2
7/21/19	4620'	9.2	56	17	18	16/47	9.5	1	3.3K	30	3
7/22/19	4767'	9.2	58	19	18	15/47	10.5	1	3.7K	20	1 1/2
7/23/19	4787'	9.1	66	22	22	9/28	10.0	1	1.8K	20	2
7/24/19	4924'	9.0	67	23	20	19/51	10.0	1	1K	20	2
7/25/19	5220'	9.1	51	15	16	15/47	9.5	1	1.5K	20	4
7/26/19	5220'	8.9	47	13	14	1/3	9.5	1	1K	20	4
7/27/19	5310'	9.2	55	16	18	16/47	9.0	1	1.6K	20	4 1/2
7/28/19	5385'	9.2	64	20	20	19/64	10.5	1	1.9K	20	5
7/29/19	5470'	9.2	71	21	22	18/61	11.0	1	1.6K	20	5
7/30/19	5585'	9.2	50	15	16	16/45	11.0	1	1.5K	20	5
7/31/19	5750'	9.3	56	17	18	14/45	11.0	1	1.6k	20	6

### Formation Tops

	SAMPLE	LOG TOPS
HEEBNER	4009	4007 - 1026'
BS. HEEBNER	4014	4014 - 1033'
TORONTO	4024	4027 - 1046'
LANSING	4083	4090 - 1109'
KANSAS CITY	4572	4572 - 1591'
MARMATON	4737	4736 - 1755
PAWNEE	4863	4862 - 1881'
FT. SCOTT	4911	4909 - 1928'
CHEROKEE	4940	4938 - 1957'
13 FINGER LIME	5136	5135 - 2154
MORROW FM.	5263	5265 - 2284'
CHESTER FM.	5440	5440 - 2459'
ST. GEN.	5622	5603 - 2622'
ST. LOUIS	5650	5653 - 2672'
RTD	5750	5752

### ROCK TYPES

	Anhy		Gyp		Shgy		Sandylms
	Bent		Igne		Siltst		Shale
	Brec		Lmst		Ss		Siltstn
	Cht		Meta		Till		Shlyslts
	Clyst		Mrlst		Carb sh		Sltysht
	Coal		Salt		Dol		Lms
	Congl		Shale		Dtd		
	Dol		Shcol		Gry sh		

### ACCESSORIES

	MINERAL Anhy		Salt		Fossil		Clystn
	Arggrn		Sandy		Gastro		Dol
	Arg		Silt		Oolite		Grysh
	Bent		Sil		Ostra		Gryslt
	Bit		Sulphur		Pelec		Lms
	Brecfrag		Tuff		Pellet		Sandylms
	Calc		Chlorite		Pisolite		Sh
	Carb		Dol		Plant		Siltstn
	Chtdk		Sand		Strom		
	Chtlt		Sity		Fuss		
	Dol				Oomold		
	Feldspar	<b>FOSSIL</b>				<b>TEXTURE</b>	
	Ferrpel		Algae	<b>STRINGER</b>			Boundst
	Ferr		Amph		Anhy		Chalky
	Glau		Belm		Arg		Cryxln
	Gyp		Bioclst		Bent		Earthy
	Hvymin		Brach		Coal		Finexln
	Kaol		Bryozoa		Dol		Grainst
	Marl		Cephal		Gyp		Lithogr
	Minxl		Coral		Ls		Microxln
	Nodule		Crin		Mrst		Mudst
	Phos		Echin		Siltstrg		Packst
	Pyr		Fish		Ssstrg		Wackest
			Foram		Carbsh		

OTHER SYMBOLS

POROSITY TYPE

- Earthy
- Fenest
- Fracture
- Inter
- Moldic
- Organic
- Pinpoint
- Vuggy

SORTING

- Well
- Moderate
- Poor

ROUNDING

- Rounded
- Subrnd
- Subang

Angular

OIL SHOWS

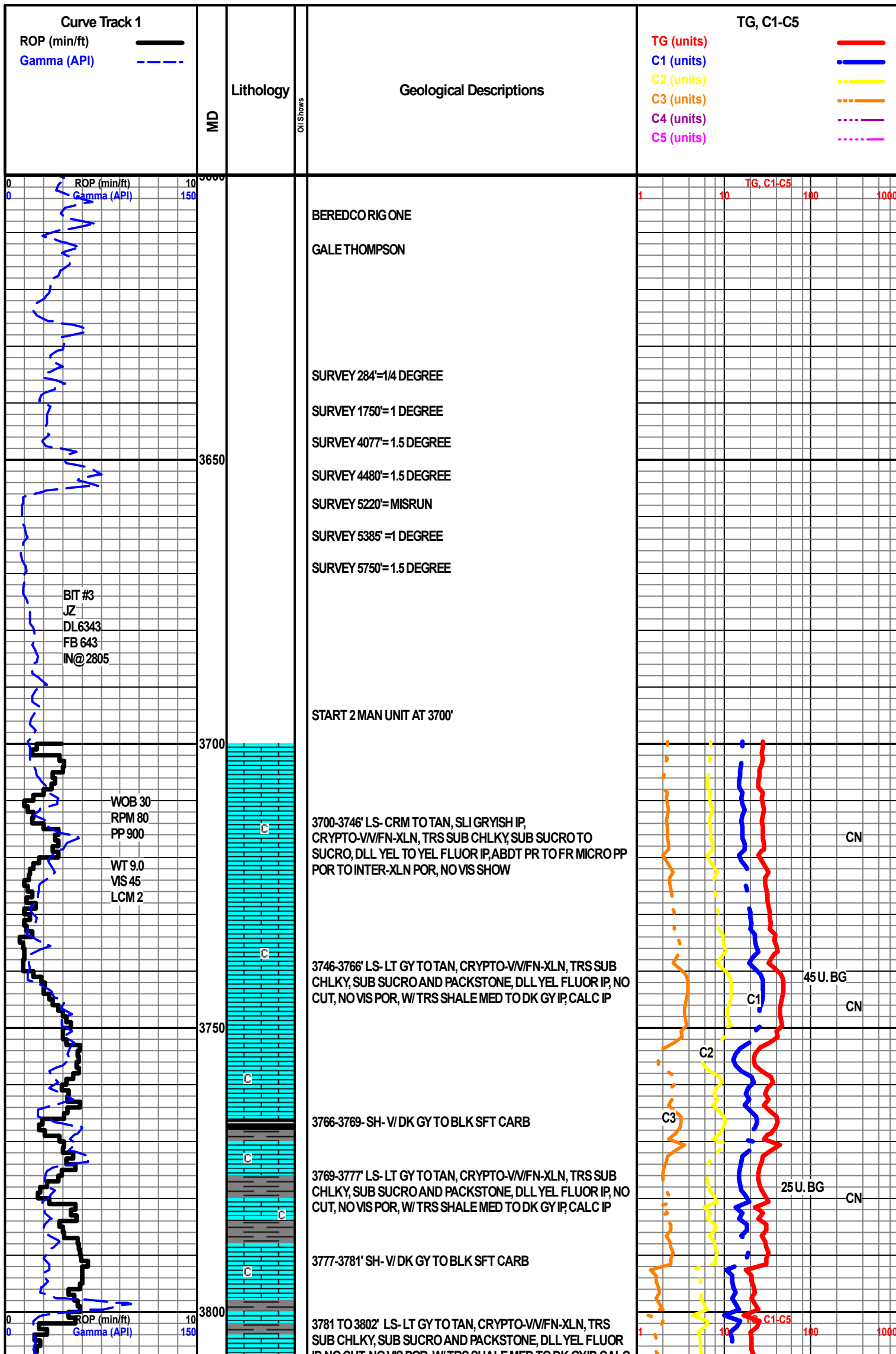
- Even
- Spotted
- Ques
- Dead
- Gas show

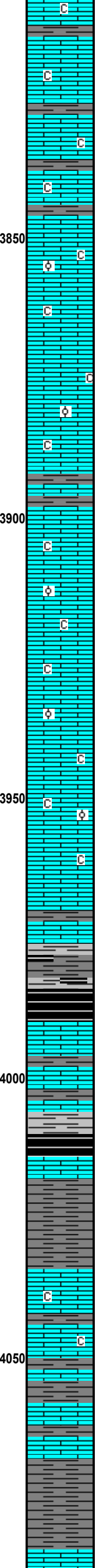
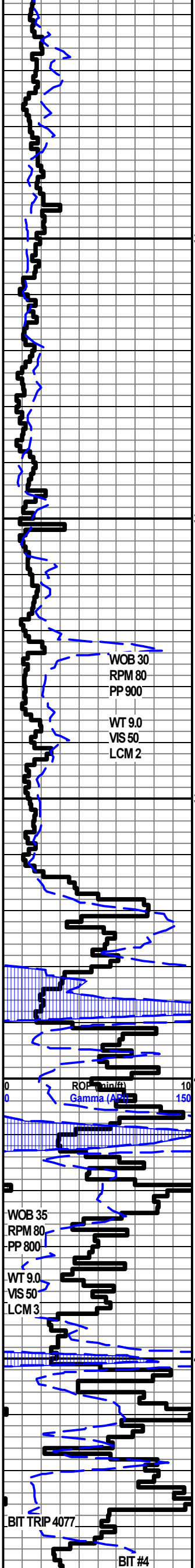
INTERVALS

- Core
- Dst
- Dst

EVENTS

- Rft
- Sidewall





IP, NO CUT, NO VIS POR, W TRS SHALE MED TO DK GYIF, CALC IP

3802 TO 3864' EXTRMLY ABTD SFT MUSHY TO CRM WHT CHLK AND CRM TO LT TN, ABTD GRAYISH CRYPTO- TO VV/FN-XLN, SUB CHLKY, SUB SUCRO AND PACKSTONE, DLL YEL TO YEL FLUOR, NO VIS CUT, TRS PHNTM OOLITES, IP, ABTD PR TO FR AND TRS GD TO EXCEL, PP TO MICRO PP AND INTER-XLN POR

3864 TO 3964' PRED EXTRMLY ABTD SFT MUSHY TO CRM WHT CHLK AND CRM TO LT TN, ABTD GRAYISH CRYPTO- TO VV/FN-XLN, SUB CHLKY, SUB SUCRO AND PACKSTONE, DLL YEL TO YEL FLUOR, NO VIS CUT, TRS PHNTM OOLITES, IP, ABTD PR TO FR AND TRS GD TO EXCEL, PP TO MICRO PP AND INTER-XLN POR

3964-3981' LS- LT TO MED GY-SLI TO FRLY GRDING TO SH, MED GY- CALC AND TAN, CRYPTO TO VV/FN-XLN, SUB CHLKY, SUB SUCRO AND PACKSTONE, TRS DUL LT YEL FLUOR, NO CUT, NO VIS POR

3981-3991' SH- V/DK GY TO BLK SFT CARB

3991-4009' LS- LT GY TO TAN CRYPTO-VV/FN-XLN, V/S LI TRS DLL YEL FLUOR, NO CUT, NO VIS POR

**HEEBNER 4014' -1023'**

4009-4014' SH-V/DK GY TO BROWNISH BLACK TO BLK CARB

4014-4016' LS- LT GY TO TAN CRYPTO-VV/FN-XLN, V/S LI TRS DLL YEL FLUOR, NO CUT, NO VIS POR

4016-4024' SH- LT GY TO LT GREEN, SILTY FS, MUSHY & WET

4024-4052' LS- TRS WHT TO CRM CHLK, CRM TO LT TN, GRAYISH IP, CRYPTO-VV/FN-XLN, SUB CHLKY, SUB SUCRO & PACKSTONE, DLL YEL FLUOR IPS, NO CUT, NO VIS POR

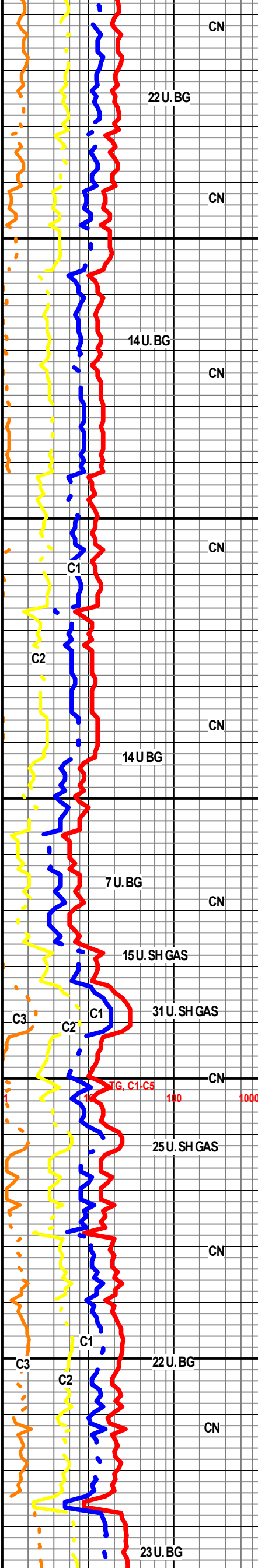
4052-4068' LS- TRS WHT TO CRM CHLK, CRM TO LT TN, GRAYISH IP, CRYPTO-VV/FN-XLN, SUB CHLKY, SUB SUCRO & PACKSTONE, DLL YEL FLUOR IPS, NO CUT, NO VIS POR

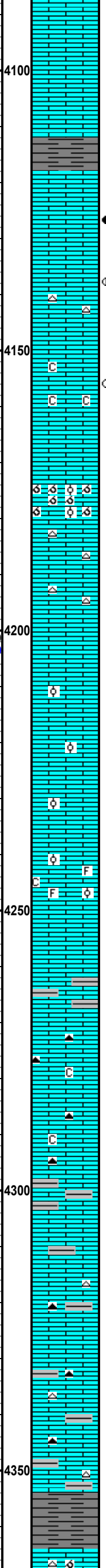
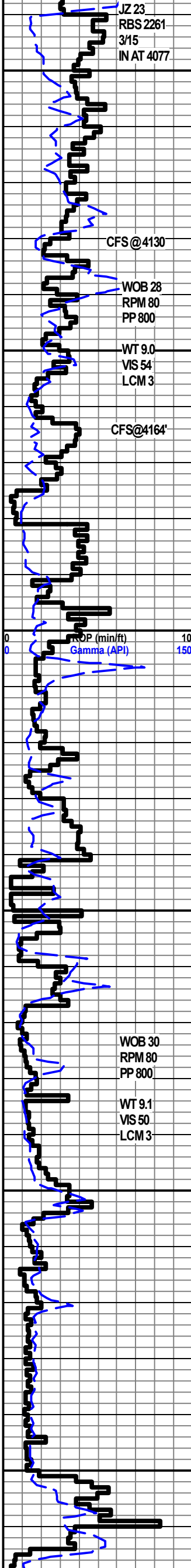
4052-4068' SH- MED TO DK GY- TRS BLK SH

4068' - SH - MED TO GRYV/SLI CALC

RIG REPAIR @ 4077

**LANSING 4083' -1102'**





4083-4113' LS- LT GY TANISH IP'S, CRYPTO- VV/FN-XLN, TRS SUB-SUCRO & PACKSTONE, DLL YEL FLUOR IP'S, NO FLUOR, NO CUT , NO VIS POR

4113-4117' - SH- MED TO DK GY, CALC IP

**LANSING "B" 4117' -1136'**

4117 TO 4130' LS- TRS WHT TO CRM -CHLK AND LT TAN, VV/FN-XLN, SUB SUCRO TO V/ SUCRO, DLL LT YEL TO YEL FLUOR, MILKY TO GOOD RING CUTS, ABDT PR FR TO GOOD MICRO PP & INTER-XLN POR. NO GAS INCREASE, NO ODOR, NO STAIN

4130-4140' TRS WHT TO CRM -CHLK AND LT TAN, VV/FN-XLN, SUB SUCRO TO V/ SUCRO, DLL LT YEL TO YEL FLUOR, MILKY TO GOOD RING CUTS, ABDT PR FR TO GOOD MICRO PP & INTER-XLN POR. W/ FAINT OIL ODOR, FAINT STRMING TO GD RING CUTS,

4140-4146' LS-LT GY TO LT TAN, CRYPTO-VV/FN-XLN, SUB-SUCRO & PACKSTONE, DLL YEL FLUOR IP, NO CUT , NO VIS POR, TR CHERT CRM OPQUE

4146-4150- SIMILAR TO 4117-4130

4150-4154' SIMILAR TO 4140-4146 NO CHERT

4154-4163' LS- HVY TRS WHT TO CRM CHLK, LT TO LT TAN CRYPTO-VV/FN-XLN, SUB SUCRO SUB CHLKY & PACKSTONE, STRNG SULPHR ODOR, DLL YEL FLUOR, TRS FAINT RING CUT, TRS PR TO SLI TR FR MICRO PP TO INTER-XLN POR, NO GAS INCREASE

4163- 4173' LS- TAN GRY IP, CRYPTO TO TRS VV/FN-XLN, TRS SUB CHLKY, TRS PCKSTN, TRS SUB LITHO, DLL YEL FLUOR, NO CUT, NO VIS POR

4173-4181- LS-HVY TRS CRM TO WHT CHLK & TAN, V/ TO EXTREMELY OOLICASTIC TO FRLY OOLITIC, MTRX SUB SUCRO TO EXTREMELY SUCRO & PCKSTN, GLDN YEL FLUOR, NO CUT. ABDT PR FR GD TO EXCEL OOLICASTIC TO PP MICRO PP POR & INTER-XLN POR

4181- 4191 LS-SIMILAR TO 4163 TO 4173 W/ SLI TRS LT GY TO OPQUE CHERT

4191-4196' LS- ABDT CHLK WHT & TAN, CRYPTO-VV/FN-XLN, SUB CHLKY TO SUB SUCRO & PCKSTN, DLL YEL FLUOR, POSS TRS PR INTER-XLN POR, TRS CHERT LT GY TO OPQUE

4196 TO 4202 LS- SIMILAR TO 4163 TO 4173'

4202-4230' LS ABDT WHT TO CRM-CHLK & TAN, CRYPTO-VV/FN-XLN, ABDT SLI OOLITIC TO V/ ABDT PHNTM OOLITES, SUB SUCRO TO SUCRO & TRS PCKSTN, DLL YEL FLUOR, NO CUT, ABDT PT TO FR 7 TRS GOOD PP, MICRO PP & PROB INT-XLN POR

4230-4241' LS SIMILAR TO 4163'- 4173'

4241'-4260' LS- HVY TRS WHT TO CRM-CHLK & LT TAN TO TAN, CRYPTO-VV/FN-XLN ,HVY TRS TO ABDT OOLITES( TAN & GRAY), TRS FOSS FRGS, SUB CHLKY, SUB SUCRO TO V/ SUCRO, DLL LT YEL FLUOR , NO CUT, ABDT PR , FR & TRS GOOD MICRO PP POR & INTER-GRN POR

4260-4267' LS-LT TO MED GY-SHLY GRDNG MED GY, CALC SHALES, CRYPTO-VV/FN-XLN, SUB CHLKY, SHLY AND PACKSTN, NO FLUOR, NO CUT , NO VIS POR

4267-4298' LS- EXTRM ABDT WHT TO CRM -CHLK AND CRM TO TAN CRYPTO-VV/FN-XLN, SUB CHLKY, SUB SUCRO & SUCRO, W/ TRS PCKSTN, TRS SUB LITHO, DLL YEL FLUOR, NO CUT, HVY TRS PR MICRO PP POR & PRON INTER-XLN POR, W/ HVY TRS TO ABDT LT TO MED GY OPQUE CHERT

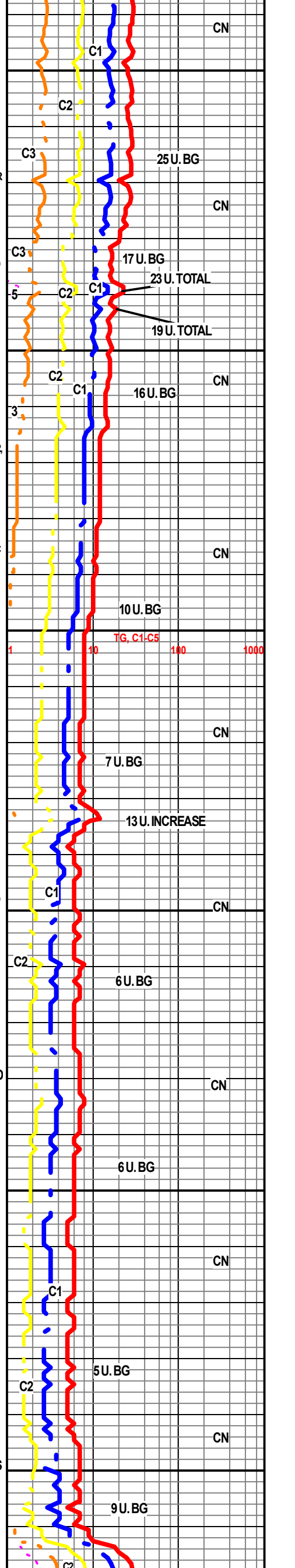
4298-4304' LS- GRDNG TO SHALES SIMILAR TO 4260-4267'

4304-4351' LS- LT TO MED GY- SLI TO FRLY SHLY IP, CRYPTO-VV/FN-XLN, SUB CHLKY , SUB SUCRO & SUCRO & TRS PCKSTN, V/ DLL YEL FLUOR, NO CUT, ABDT PR TO FR, HVY TRS GOOD, TRS EXCEL MICRO PP & INTER-XLN POR, ABDT CHERT, LT TO GY OPQUE

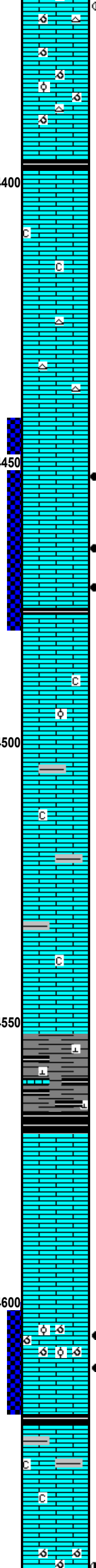
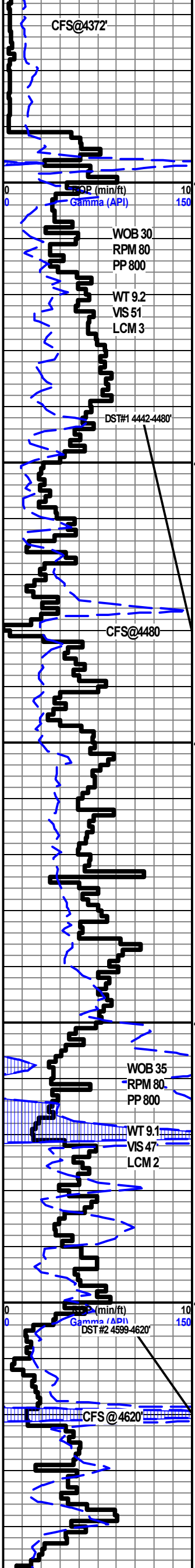
4351-4364' LS- LT TO MED GY-SLI TO FRLY SHLY IP'S, CRYPTO-VV/FN-XLN, SUB CHLKY & OR SHLY, TR SUB SUCRO & PCKSTN, TRS S-LITHO, TRS DLL YEL FLUOR, NO CUT, NO VIS POR, HVY TRS SH MED TO DK GY- CALC IP, TRS CHERT MED TO GY

**LANSING "G" 4364' - 1383'**

4364'- 4391' LS-TAN GYISH IP, CRYPTO-VV/FN-XLN, V/ TO EXTREMELY







OOLICASTIC, & OR SLI OOLITIC, MATRIX SUB SUCRO TO EXTREMELY SUCRO & PCKSTN, DLL YEL GLD FLUOR W/ NO CUT & HVY TRS SPTTD BRN OIL STN W/ GLDN YEL FLUOR, W/ FLSH TO GD STRMING CUTS, EXTRMLY ABDT PR FR TO GD TO EXCEL OOLICASTIC, PP, MICRO PP & INTER-XLN POR, QUEST PERM IP'S, V/ SLI TR WHT TO GRY CRT OPQUE

4391-4396' LS- CRM TO TAN GRYISH IP'S, CRYPTO-V/V/FN-XLN, SUB SUCRO, PCKSTN, TO TRS S-LITHO, DLL YEL FLUOR NO CUT, NO VIS POR

4396-4397' SH - BLK SFT CARB

**LANSING "H" 4397' -1416'**

4397-4416' LS-HVY TRS WHT TO CRM CHLK, CRM TOTN, CRYPTO-V/V/FN-XLN, SUB CHLK, SUB SUCRO TO SUCRO & PCKSTN, DLL YEL FLUOR, NO CUT, TRS PR FR MICRO PP & INTER-XLN POR

4416-4450' LS- TRS WHT TO CRM -CHLK & TAN GYISH IP, CRYPTO-TO TRS V/V/FN-XLN, TRS SUB SUCRO, PCKSTN, SUB LITHO, DLL YEL FLUOR IP'S, NO CUT, NO VIS POR, W/ TRS CHERT LT GY TO TAN OPQUE

**LANSING "H" POR 4450' - 1469'**

4450-4480' .1. FASTER DRILLING LS- LT BRN TO BRN FROM EVEN BRN OIL STN, V/V/FN-XLN W/HVY TRS WHT MED TO CRS CALC XLS FRGMNTS, SUB SUCRO TO EXTREMELY SUCRO, GOOD OIL ODOR, GLDN YEL FLUOR, EXCEL FLSH TO EXCEL STRMING CUTS, PHNTM OOLICASTIC IP, EXCEL PP, MICRO PP & INTER-XLN POR, POSS VUG POR

2. SLOWER DRILLING - LS-LS-TAN TO BRN FROM OIL STN, CRYPTO-V/V/FN-XLN, SUB-SUCRO, SUCRO & PCKSTN, DLL YEL FLUOR, NO CUT TO HVY TRS BRN OIL STN, W/ GLDN YEL FLUOR, W/ FLSH TO STRMIN CUTS, HVY TR PR TO TR MICRO PP & POSS ITER-XLN POR

4475-4476' SH - V/DK GY TO BLK SFT CARB

4476-4498' LS-TRS WHT TO CRM -CHLK & TAN GYISH IP, CRYPTO-TO TRS V/V/FN-XLN, TRS SUB SUCRO TO PCKSTN, TRS PHNTM OOLITES, DLL YEL FLUOR IP, NO CUT, NO VIS POR

4498-4551' -LS- LT TO MED GY TO V/ SHLY & TAN TO DK TAN CRYPTO-XLN, SUB CHLKY & OR SHLY PCKSTN & SUB LITHO, TRS V/ DLL YEL FLUOR, NO CUT, NO VIS POR

4551'-4572' SH- MED TO V/ DK GY- SLI TO V/ CALC IP'S, V/ DK GY TO BLK SFT CARB

**KANSAS CITY "A" 4572' -1591'**

4572'- 4604' LS- LT GY TO TAN, CRYPTO-V/V/FN-XLN, SUB SUCRO & PCKSTN, SLI YEL FLUOR IP, NO CUT, NO VIS POR

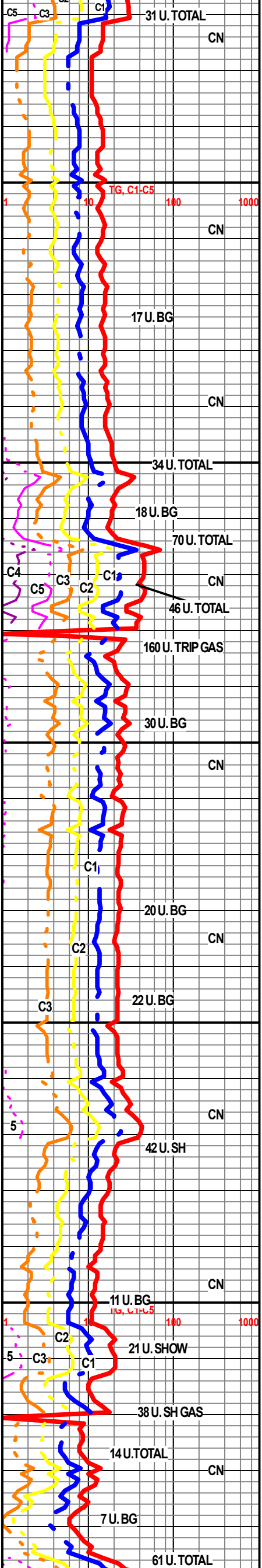
4604-4619' LS - HVY TRS WHT TO CRM CHLK & TAN, CRYPTO-V/V/FN-XLN, EXTREMELY OOLICASTIC & OR SLI TR FRLY OOLITIC, MTRX SUB SUCRO TO SUCRO AND PCKSTN, GOOD OIL ODOR, HVY TRS SPTTD OIL STN, W/ GLDN YEL FLUOR, FR STRMING TO GOOD RING CUTS, PR FR GD TO EXCEL OOLICASTIC POR & HVY TR PR TO FR TO TR GD MICRO PP POR, POSS INTER-XLN POR IP, ABDT W/ QUEST PERM

4619-4622' SH VDK GY TO BLK SFT CARB

**KANSAS CITY "B" 4622' - 1641'**

4622'-4629' LS-LT TO MED GY- SLI TO EXTREM SHLY & GY TO GY TAN TO TAN, CRYPTO TO V/V/FN-XLN, SUB CHLKY & OR SHLY, TRS SUB SUCRO & PCKSTN, SLI TR V/ DLL YEL FLUOR, NO CUT, NO VI POR

4629-4643- LS-SLI TRS WHT TO CRM CHLK, & TAN GY IP, CRYPTO TO V/V/FN-XLN, TRS SUB CHLK, TRS SUB SUCRO, PCKSTN TO TR S-LITHO, DLL LT YEL FLUOR IP, NO CUT, NO VIS POR



31 U. TOTAL  
CN

TG, C1-C5

17 U. BG

34 U. TOTAL

18 U. BG

70 U. TOTAL

46 U. TOTAL

160 U. TRIP GAS

30 U. BG

20 U. BG

22 U. BG

42 U. SH

11 U. BG

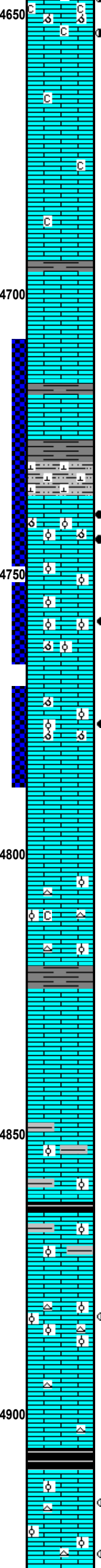
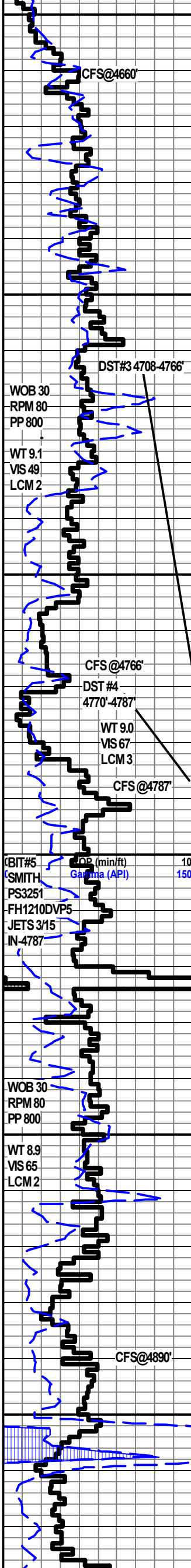
21 U. SHOW

38 U. SH GAS

14 U. TOTAL

7 U. BG

61 U. TOTAL



4643-4656-LS- TRS CRM TO TAN-CHLK & TAN, CRYPTO-TO VV/FN-XLN, V/TO EXTREMELY OOLICASTIC & OR SLI OOLITIC, MTRX CHLK SUB CHLK, SUB SUCRO & PCKSTN, FR TO GD OIL ODOR, SCTTRD DK TN SPTTD STN W. GLDN YEL FLUOR & FAINT TO FR STRMNG CUTS, ABDT PR TO FR HVY TR GD TO TRS EXCEL OOLICASTIC POR, V/QUEST. PERM

4656-4695' LS-SLI TRS WHT TO CRM -CHLK, TAN GYISH TAN, CRYPTO-VV/FN-XLN, TRS SUB CHLK, TRS SUB SUCRO, PCKSTN TO TR S-LITHO, DLL LT YEL FLUOR IP, NO CUT, NO VIS POR

4695-4730 -LS SIMILAR TO 4656 TO 4695' W/ MED TO DK GYLS TO 75% & LT GY GYISH TAN TO TAN DECREASE TO 25% BY BOTTOM OF ZONE

4730-4737- LMY SILTST- TO SILTYLS, LT GY SILT, VV/FN, DLL GLDN TO GLDN YEL FLUOR, NO CUT, NO VIS POR

**MARMATON 4737' -1756'**

4737-4744' LS- TAN GYISH IP, W/ HVY TRS DK TAN OIL STN, GD OIL ODOR, V/ TO EXTREMELY OOLICASTIC & OR FRLY SLI OOLITIC, MTRX SUB SUCRO TO EXTREMELY SUCRO & PCKSTN, DLL GLD TO GLDN YEL FLUOR, FAINT STRMNG TO GD RING CUTS, ABDT PR FR GD TO EXCEL OOLICAST POR & IN MTRX PR FR GD TO TRS EXCEL POR

4744-4755' LS- TRS WHT TO CRM-CHLK & CRM TO LT TAN, CRYPTO TO VV/FN-XLN, HVY TRS OOLITIC TO ABDT PNTM OOLITES, DLL YEL FLUOR, NO CUT, NO VIS POR

4755-4768' LS-TRS WHT TO CRM CHLK & CRM TO TAN W. HVY TRS SPTTD SLI DK TN OIL STN, FR TO GD OIL ODOR, CRYPTO - VV/FN-XLN, HVY TR PR FR TO GD OOLICASTIC & OR OOLITIC, TRS LOOSE OOLITES, TRS ABDT V/FN TO MED CALC XLS FRGS, CLEAR TO WHT, GLDN YEL TO YEL FLUOR, RING CUTS, POR APPEARS TO HAVE BROKEN TO PP PIECES W/ PR FR GD TO EXCL MICRO PP TO INTER-XLN POR W/ TRS PR FR GD OOLICSTIC POR, PROB VUG POR

4768-4771' LS- LT GRY TO TAN, CRYPTO TO VV/FN XLN, SUB SUCRO & PCKSTN, TRS DUL YEL FLUOR, NO CUT, NO VIS POR

4771-4780' LS - TAN, GRY IP, W/ ABD SPTD SLI DRKER TAN OIL STN, GD OIL ODOR IN SAMPLES, CRYPTO TO VV/FN XLN, V/ TO EXTRLY OOLCAST & OR SLI TO V/ OOLITIC, S-SUCRO TO V/ SUCRO W/ TRS PCKSTN, DUL GLD TO GLD YEL FLUOR W/ MILKY TO GD RING CUTS, ABD PR, FR, GD TO EXCEL OOLICAST POR & IN MTRX POR, ABD PR TO FR & HVY TRS GD TO TRS EXCL PP, MICRO PP & INTR XLN POR IP

4783-LS- LT GRY TO TAN, CRYPTO TO VV/FN XLN, SUB SUCRO & PCKSTN, TRS DUL YEL FLUOR, NO CUT, NO VIS POR

4787-4805' LS SIMILAR TO 4768-4771 W/ TRS S-LITHO

4805 -4820' LS - GRYISH TAN TO TAN, CRYPTO TO VV/FN-XLN, V/ ABDT SLI TO EXTREMELY OOLITIC, MTRX & OR ROCK, TR SUB-CHLK, TRS SUB SUCRO & PCKSTN, TRS SUB LITHO, DLL YEL FLUOR IP, NO CUT, NO VIS POR, W/ TRS CHERT WHT TO OPQUE

4820-4824 PROB SH- MED TO DK GY TO TRS V/ DK GY, CALC IP

4824-4847' LS- TAN TO GRYISH TAN, CRYPTO-VV/FN-XLN, SLI TRS SUB SUCRO & PCKSTN TO SUB LITHO, S/SLI TRS DLL YEL.FLUOR, NO CUT, NO VIS POR

4847-4862-LS-MED TO DK GY TO V/ EXTREMELY SHLY TO CRYPTO-XLN, SUB CHLK & OR SHLY & PCKSTN, NO FLUOR, NO CUT, NO VIS POR, W/ ABDT LS- LT GY GRYISH TAN TO TRS TAN, CRYPTO-VV/FN-XLN SUB SUCRO & PCKSTN, SLI TO V/ OOLITIC IP, NO FLUOR, NO CUT, NO VIS POR

4862-4863' SH- V/ DK GY TO BLK SFT CARB

**PAWNEE 4863' - 1882'**

4863-4872' LS- SIMILAR TO 4847-4862'

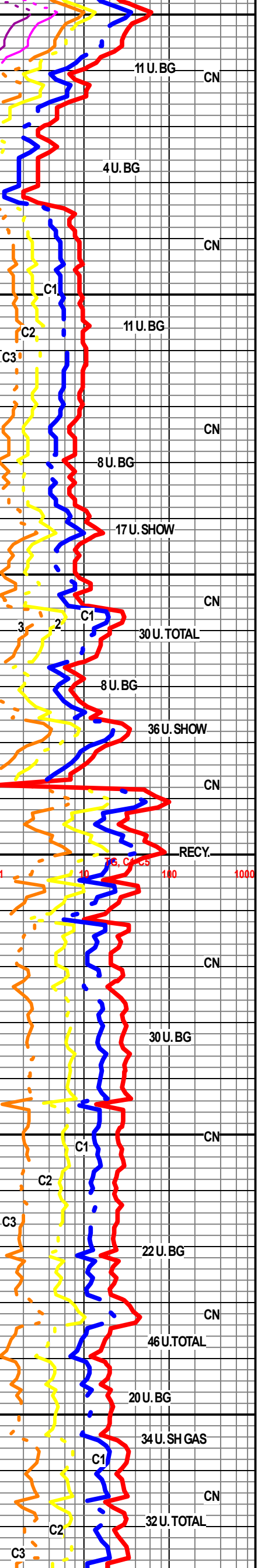
4872-4889' LS TRS WHT TO CRM CHLK & CRM LT TN, W/ SCATTERD SPTTD TAN OIL STN, CRYPTO TO VV/FN-XLN, TR SUB CHLK, SUB SUCRO TO V/ SUCRO & PCKSTN, ABDT SLI TO V/ OOLITIC, HVY TRS YEL TO TRS GLDN YEL FLUOR, MILKY TO FR RING CUTS, ABDT PR FR HVY TRS GD TO EXCEL PP, MICRO PP & PROB INTER-XLN POR W/ TRS CHERT

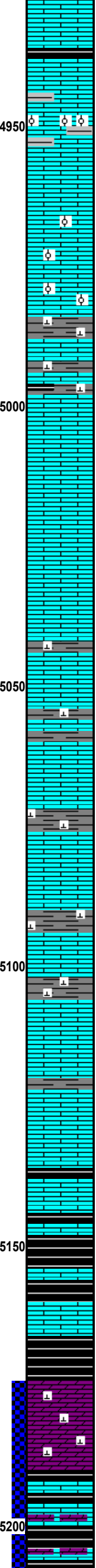
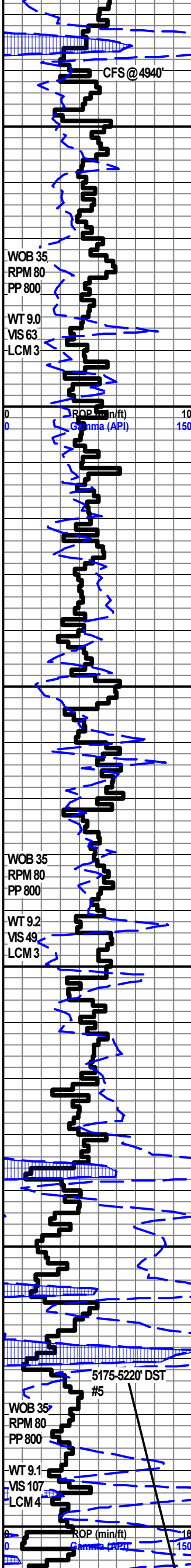
4889-4905' LS- LT TO MED GY- SLI T FRLY SHLY & GYISH TAN TO TAN CRYPTO-XLN, PCKSTN TO SUB LITHO, V/ DLL YEL FLUOR IP, NO CUT, NO VIS POR

**FT. SCOTT 4911' - 1930'**

4905-4911 SHALE-V/ DK GRY TO BLK SFT CARB

4911-4926 LS W/ HVY TRS WHT TO CRM CHLK & TAN, GRYISH IP, CRYPTO-VV/FN-XLN, SUB CHLK TO SUB SUCRO TO V/ SUCRO & PCKSTN, EXTREME ABDT OOLITIC, TRS DLL YEL FLUOR, V/ SLI TR MILKY CUTS, HVY TR PR FR TO GD TO TRS EXCL PP TO MICRO PP POR PROB INTER-XLN POR, SLI TRS CHERT WHT TAN OPQUE





4926-4936' LS LT GY TO TAN , CRYPTO-V/FN-XLN, SUB SUCRO & PCKSTN, EXTRMLY ABDT OOLITIC (TAN TO LT GY), TRS DLL YEL FLUOR, NO CUT , NO VIS POR

**CHEROKEE 4940' - 1959'**

4936-4940- SH- V/ DK GRV TO BLK SFT CARB

4940-4956 LS- TRS WHT TO CRM - CHLK & LT GRY TO TAN, CRYPO O VM/FN XLN, SUB-CHLK, SUB-SUCRO & PACKSTN, SLI O EXTRLY OOLITIC IMP, VDUL YEL FLUOR IP, NO CUT, NO VIS POR, W/ WIDELY SCAT THIN SH MED TO V/DK GRV- SLI TO V/ CALC

4956-4993 INTRBD LS & SH  
1 LS LT TO MED GRV - SLI TO EXTRLY SHLY GRDNG TO EXTRLY CALC SH, SUB-CHLK &/OR SHLY, PACKSTN & SUB-LITHOGR, NO FLUOR, NO CUT, NO VIS POR

2 HVY TRS TO ABN LS LT GRY TO TAN, CRYPTO TO VM/FN XLN TRS SUB-CHLK, SUB-SUCRO PACKSTN, TRS SLI TO V/ OOLITIC, DUL YEL FLUOR IP, NO CUT, NO VIS POR

3 SH MED TO V/DK GRV SLI TO V/CALC

4993-4999 INTRBD LS & SH SIMILAR TO 4956-4993' W/ TRS V/DRK GRV TO BLACK - CARB LOOKIN SH

4999-5136' INTRBD LS & SH  
1 LS LT TO MED GRV - SLI TO EXTRLY SHLY GRDNG TO EXTRLY CALC SH, SUB-CHLK &/OR SHLY, PACKSTN & SUB-LITHOGR, NO FLUOR, NO CUT, NO VIS POR

2 HVY TRS TO ABN LS LT GRY TO TAN, CRYPTO TO VM/FN XLN TRS SUB-CHLK, SUB-SUCRO PACKSTN, DUL YEL FLUOR IP, NO CUT, NO VIS POR

3 SH MED TO V/DK GRV SLI TO V/CALC

**13 FINGERS 5136' -2155'**

1 LS LT TO MED GRV - SLI TO EXTRLY SHLY GRDNG TO EXTRLY CALC SH, SUB-CHLK &/OR SHLY, PACKSTN & SUB-LITHOGR, NO FLUOR, NO CUT, NO VIS POR

5136-5163' INTERBED LS & SH

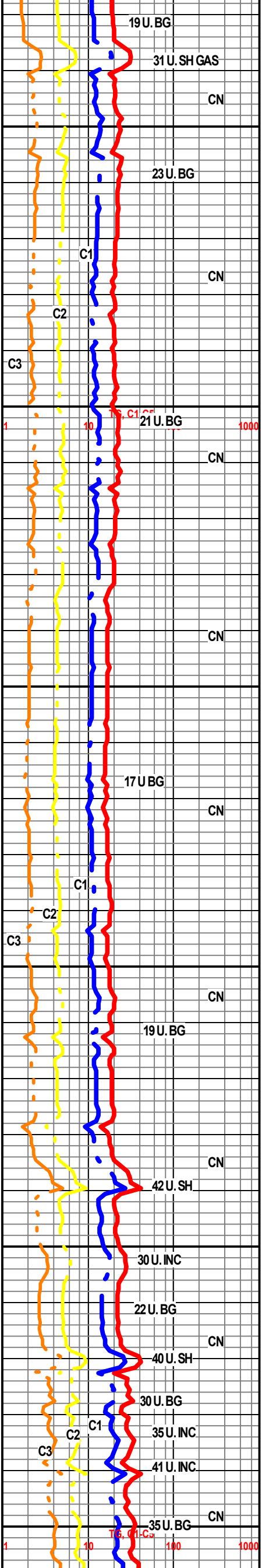
2 HVY TRS TO ABN LS LT GRY TO TAN, CRYPTO TO VM/FN XLN TRS SUB-CHLK, SUB-SUCRO PACKSTN, DUL YEL FLUOR IP, NO CUT, NO VIS POR

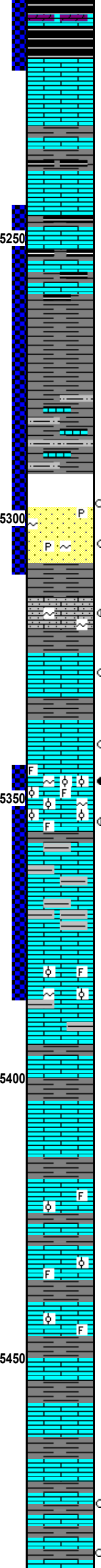
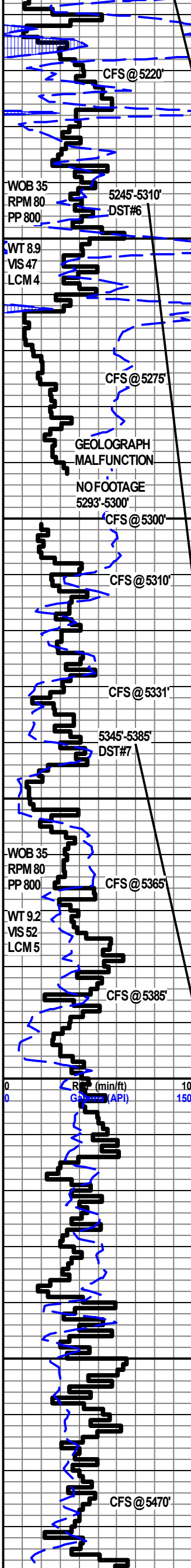
3 ABNT SH V/DK GRV TO BLACK, CARB

5163-5189' DOLO- TAN W/ SLI DRK TAN OIL STN, FR OIL ODOR, V/FN XLN TO ULTRA FN XLN, SUCRO TO V/ SUCRO, TRS CLR TO GRV CALC XLS & FRAG, DUL GLD TO GLD YEL FLUOR W/ FNT STRMNG TO MILKY TO GD RING CUT, ABN PR TO FR & HVY TRS GD TO TRS EXCEL PP, MICRO PP, INTER XLN & PROB VUG POR

5189-5220' INTRBD LS & SH  
1 LS LT TO MED GRV - SLI TO EXTRLY SHLY GRDNG TO EXTRLY CALC SH, SUB-CHLK &/OR SHLY, PACKSTN & SUB-LITHOGR, NO FLUOR, NO CUT, NO VIS POR

2 HVY TRS TO ABN LS LT GRY TO TAN, CRYPTO TO VM/FN XLN TRS SUB-CHLK, SUB-SUCRO PACKSTN, DUL YEL FLUOR IP, NO CUT, NO VIS POR





3 EXTRAABN SH V/DK GRY TO BLCK, CARB & THIN INTRBD DOLO-TAN, V/V/FN XLN TO ULTRA FN XLN, SUCRO TO V/ SUCRO, TRS CLR TO GRY CALC XLS & FRAG, TRS DUL YEL FLUOR IP, NO CUT, ABN PR TO FR & HVY TRS GD TO TRS EXCEL PP, MICRO PP, INTER XLN & PROB VUG POR

5220-5263' INTRBD LS & SH  
1 LS- MED TO DK GRY, V/ TO EXTRLY SHLY GRDNG TO ABN CALC SH, CRYPTO XLN, SUB-CHLK &/OR SHLY PACKSTN TO TRS SUB-LITHGR, NO FLUOR, NO CUT, NO VIS POR

2. HVY TRS LS- LT GRY TO TAN, CRYPTO TO V/V/FN XLN, TRS SUB-SUCRO, PACKSN & TRS SUB-LITHOGR, NO FLUOR, NO CUT, NO VIS POR

3.SH- MED TO DK GRY, CALC TO V/DK GRY TO BLCK, CARB

**MORROW 5263' -2282'**

5263-5276' SH- MED GRY, SFT, SILKY LUSTER IP & V/DK GRY

5276-5292' SH- MED GRY, SFT, SILKY LUSTER IP & V/DK GRY W/ HVY TRS SILTSTN MED GRY, TRS V/FN TO FN QTZ GRS, V/ TO EXTRLY SHLY TO MED GRY SILTY SH & TRS LS, CRYPTO XLN, DNS, TT HD, SLI TO EXTRLY SILTY & OR SLI TO EXRLY SHLY IP

5292-5307' QTZ SDST- LT GRY, WHT TO LT TN, POSS FROM OIL STN, V/V/FN TO V/ FN GR W/ TRS MED TO CRS GR, ANG TO TRS SUB-RND, SLI TRS GLAUC IP, SLI TRS TO TRS PRY, PR TO FR SR, V/SLI TRS YEL FLUOR, V/FNT RING CUT, V/ FEW CLSTRS, EXTRAABN PINSPECS & LOOSE GRS, V/ FRI, POSS INTER GR POR

5307-5313' SH MED GRY TO DK GRY, SILTY IP GRDNG TO SHLY SILTSTN

5313-5320' SDST- 100% LS GRS O 20% SLI TO 100% QTZ GRS LT GRY TO TAN, V/V/FN TO MED GR, QTZ GRS ANG, PR SRT, TRS GLAUC, FR OILODOR, SPTD GLD YEL FLUOR W/ GD STRM CUT, TRS PR MICRO PP POR

5320-5324' SH MED GRY, SFT, SLKY LSTR TO DRK GRY

5324-5331' SDS 100% LS GR, TAN, GRYISH P TO TRS GRY, V/V/FN TO FN & RS MED GR, PR SRT, FR OIL ODOR, DUL GLD TO GLDYEL FLUOR, W/ FR STRM TO V/ MLKY CUTS, NO VIS POR

5331-5335' SH MED GRY TO DK GRY, SILTY IP GRDNG TO SHLY SILTSTN

5335-5344' LS- 100% LS GR, TAN, GRYISH P TO TRS GRY, V/V/FN TO FN & RS MED GR, PR SRT, FR OIL ODOR, DUL GLD TO GLDYEL FLUOR, W/ WK STRM TO MLKY CUTS, NO VIS POR

5344-5356' LS SDST- TAN TO LT GRY W/ V/ABN SPTD TO EVEN BRWN TO BLCK, OIL STN, V/FN TO MED GR COMPOSED OF LS GR, FOSS FRG TO 100% OOL, MTRX SUB-SUCRO TO EXTRLY SUCRO & PACKSTN TO NO MTRX, GD OIL ODER, DUL GLD TO GLD YEL FLUOR W/ FLSH TO EXCEL STRM CUT, SLI TRS GLAUC IP, ABN PR TO FR & HVY TRS GD O EXCEL VUG, PP & MICRO PP, INTER OOL, INTER XLN POR IN MTRX

5356-5375' LS & SH  
1. LS- LT GRY TO TAN, CRYPTO XLN, PACKSTN, DUL YEL TO YEL FLUOR, NO CUT, NO VIS POR  
2. SH- MED GRY, SFT, SILKY LSTR, & DK GRY W/ EXTRLY ABN MED GRY SH, V/ TO EXRLY CALC GRDNG TO SHLY LS

5375-5389' LS MED GRY LT GRY TO TAN, V/ TO EXTREMELY SHLY, & LT GY TO TAN, CRYPTO TO V/V/FN XLN, SUB-SUCRO & PACKSTN, ABN FRAGM, LS COMPOSED LS GRS, FOSS FRG & TRS OOL, SLI TRS W/ SLI TRS GLAUC, DUL YEL TO TRS YEL FLUOR, NO CUT, NO VIS POR

5389- 5450' INTERBEDDED SHALES & LMST. 1. SHALES- TRS MED GRY SFT SILTY LUSTER & DK GRY TO V/ DK GRY  
2. 5389-5450' LS- MED TO V/ DK GRY, V/ TO EXTREMELY SHLY GRADING TO CALC SHALES, LT GRY TO TRS TAN, SUB CHLKY & OR SHLY, TRS SUB SUCRO & PCK STN, W/ HVY TRS W/ LM FRGMNTS, FOSS FRGS & TRS OOLITES, TRS DLL YEL FLUOR, NO CUT, NO VIS POR

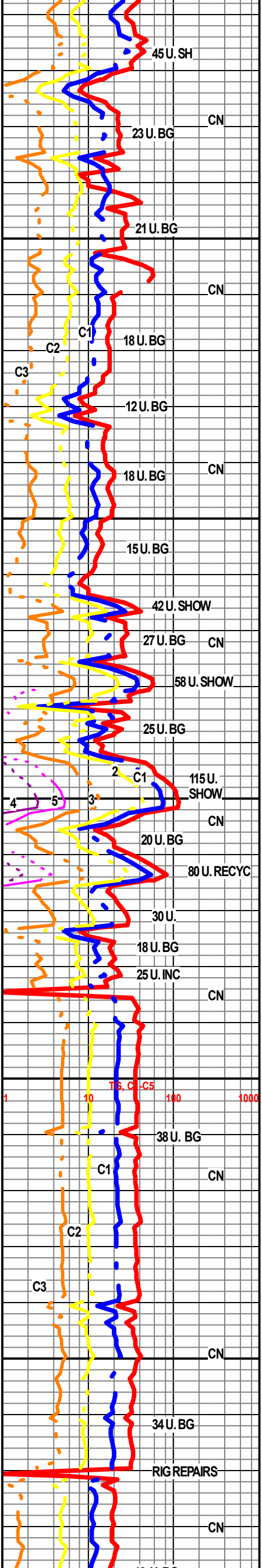
**CHESTER 5450' -2469'**

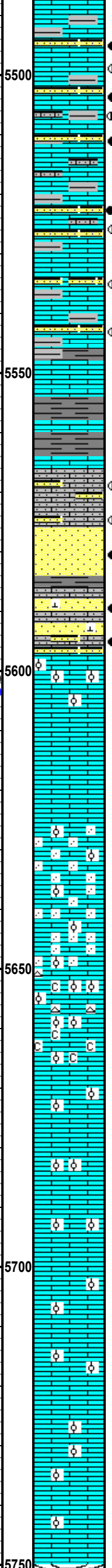
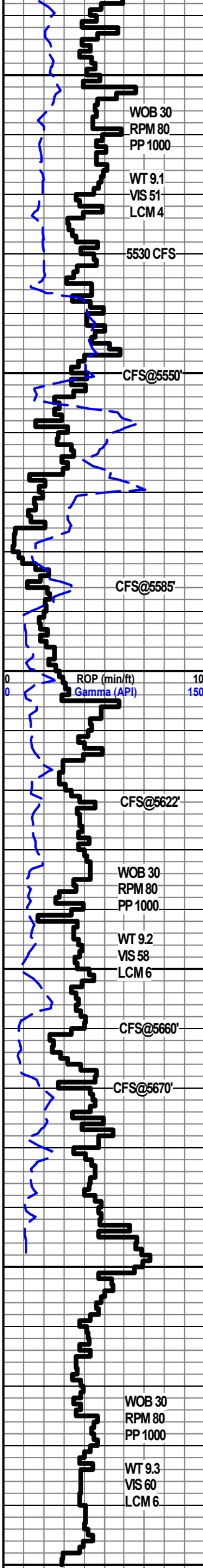
5450-5464' 1. LS- LT GRY, CRYPTO TO TRS V/V/FN-XLN, TRS SUB SUCRO & PCKSTN TO SUB LITHO, V/SLI TRS V/DLL YEL FLUOR, NO CUT, NO VIS POR

2. SH- LT TO MED GRY, MATT TEXT, CALC IP'S

5464' 5494 1. SH W/ INTERBEDDED LS 1. SH- MED GRY V/ MATTE TXT TO V/ DK GRY SLI TO V/ CALC

5464-5494' 2.LS- LT GRY SHALY TO LT GRY TO TAN, CRYPTO TO TRS V/V/FN-XLN, TRS SUB SUCRO & PCKSTN, TRS SUB LITHO, TRS DLL YEL FLUOR, NO CUT, SLI TRS BRN OIL STN W/ GLDN YEL FLUOR & FR STRMING TO RING CUTS, V/ SLI RS PR MICRO PP POR





5494-5520' LS- W/ SCATTERED THIN QURTZ SDST 1.LS-MED TO V/DK GRY V/ TO EXTRMLY SHLY GRDNG TO CALC SH & HVY TRS TAN TO TAN W/ TRS SPTTD DK TN OIL STN, CRYPTO-VV/FN-XLN, SUB CHLKY & OR SHLY & PCKSTN, W/ TRS SUB SUCRO TO V/ SLI TRS SUCRO TO SLI QURTZ SNDY IP'S DLL GLDN TO GLDN FLUOR, FR STRMING CUTS, SLI TR FR MICRO PP & POSS INTER-XLN POR

5494-5520' 2. SCATTERED THIN QURTZ SDST, TRS LT GRY TO DK TAN TO BRN FROM OIL STN, SLI ODOR, VV/FN TO V/FN GRY ANG, PR TO FR SORT, GLDN YEL FLUOR W/ GD STRMING CUTS W/ TRS PR TO FR PP TO INTERGRAIN POR

5520-5547 LS-W/ THIN QURTZ SDST- 1. LS- SIMILAR TO 5495-5520 BUT NOT AS SHALY & TRS OOLITES 2. THIN QURTZ SDST INTERBEDS SIMILAR 5494-5520

5547-5567' SH- MED TO DK GY- SLI TO V/ CALC IP. W/ TRS LS LT GY TO TAN, CRYPTO TO VV/FN-XLN, SUB SUCRO & PCKSTN, OOLITIC IP'S, NO FLUOR, NO VIS POR

5567-5576- LS GRDNG TO CALC QURTZ SDST LMS-LT GRY CRM TO TAN TO QURTZ SDST-LT GRY TO TAN FROM OIL STN, VV/FN TO FN GRN, ANG PRLY SORTED, CALC & OR CLAY FILLED, DLL YEL TO YEL FLUOR, FR STRMING CUTS, TRS PR TO SLI TR FR MICRO PP & POSS INTER-GRN LS-CRYPTO-VV/FN-XLN, SUB CHLKY SUB SUCRO & PCKSTN, SNDY IP, DLL YEL FLUOR, RING CUTS IP, NO VIS POR

5576-5583, SDST-QURTZ VV/FN TO V/ FN- GRN ANG, PR TO FR SRT, TAN FROM OIL STN, CLAY FILLED IP'S, DLL YEL TO YEL FLUOR, W/ FR STRMING CUTS, ABDT PR TO FR TRS GOOD MICRO PP TO INTER-GRN POR

5586-5696' INTERBEDDED & OR GRADATIONAL LS & QURTZ SDST, LS-TAN W/ ABDT SPTTD TO TR EVEN BRN OIL STN, CRYPTO-VV/FN-XLN, MICRO OOLITIC QURTZ SNDY IP'S GRDNG TO 100% QURTZ SDST, MTRX CHLK SUB CHLK & SUB SUCRO SUCRO PCKSTN DLL GLDN TO GLDN YEL FLUOR, FR TO GD STRMING CUTS, TR PR MICRO PP POR, ABDT GRDNG TO 100% QURTZ SDST, LT GY TO EVEN TAN OIL STN, VV/FN TR FN GRN, ANG, PR TO FR SRT CALC TO TR OOLITES & LS FRGMNTS, DLL GLD TO GLDN YEL FLUOR, FR TO GD STRMING CUTS, HVY TRS PR TO FR & TRS GOOD TO EXCEL

MICRO PP TO INTER-GRN POR

5596-5605- LS TRS WHT TO CRM-CHLK, GRYISH TAN TO TAN, CRYPT TO VV/FN-XLN MICRO OOLITIC, MTRX CHLK SUB CHLK & PCKSTN, DL YEL FLUOR, NO CUT, NO VIS POR

5605-5615 LS- LT GY TO TANISH LT GY-CRYPTO-XLN TO PCKSTN TO SUB LITHO, NO FLUOR, NO CUT, NO VIS POR

**ST.GEN 5622' -2641'**

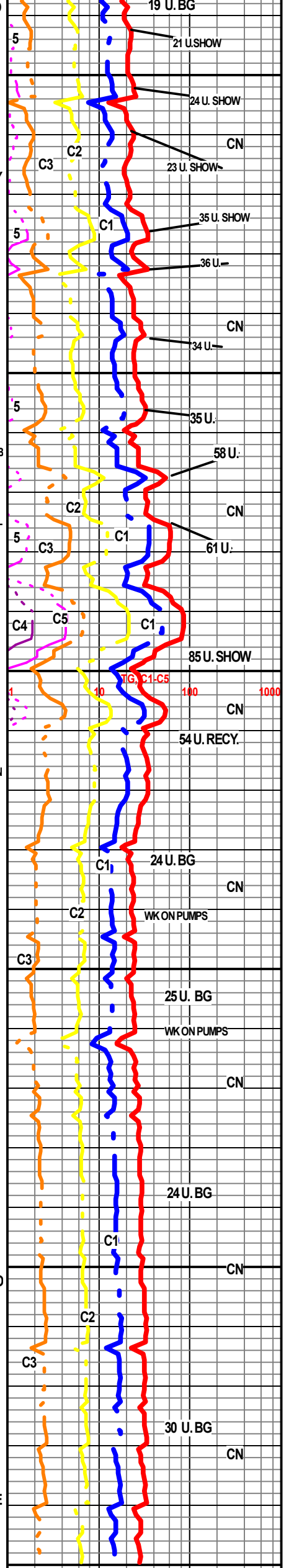
5615 - 5650'- LS- TRS WHT & TAN, GRYISH IP'S, CRYPTO TO VV/FN-XLN, EXTREMELY MICRO OOLITIC AND SLI TO V/ QURTZ SNDY, VV/FN-GRN, ANG, MTRX CHLK CHLK, SUB CHLK, SUB CHLK, SUB SUCRO TO TRS SUCRO, SLI TRS V/DLL LT YEL FLUOR, NO CUT, NO VIS POR

**ST. LOUIS 5650' - 2669'**

5650'-5660' LS-TRS WHT TO CRM CHLK W/ CHLKY OOLITES IP, AND GRYISH TAN TO TAN CRYPTO-VV/FN-XLN, V/ TO EXTRMELY OOLITIC (MICRO, SMLL, MED TRS LRG), MTRX SUB SUCRO & PCKSTN, DLL YEL FLUOR, NO CUT, NO VIS POR, W/TRS CHRT AMBER, OPQUE TO TRANSLCNT

5660-5666' LS-EXTREM ABDT WHT TO CRM-CHLK W/ CHLKY OOLITES IP, AND CRM LT TAN TO TAN, V/ TO EXTREMELY OOLITIC (MED TO LRG TRS SMLL), MTRX CHLK, SUB CHLK, TRS SUB SUCRO & TRS PCKSTN, DLL YEL FLUOR, NO CUT, NO VIS POR, SLI TRS CHERT, LT GRY TO AMBER, OPQUE TO TRANSLCNT

5666-5750' LS-TAN TO TRS LT GRY, CRYPTO TO VV/FN-XLN, V/ TO EXTRMELY OOLITIC (MICRO, SMLL & TRS MED TO LRG), MTRX TRS SUB SUCRO & PCKSTN, DLL LT YEL FLUOR, NO CUT, NO VIS POR



RIG TD 5750'  
L.T.D. 5752'

NOTE: FROM 5700 TO 5750' SAMPLES 99.44% MORROW SHALE CAVINGS

R.T.D. AT 5750 @ 6:10 AM JULY 31 2019

CFS @ RTD/ SHORT TRIP 15 STANDS

CTCH-2 HRS/ TOFL

