

Confidentiality Requested:

Yes No

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

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

**WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE**

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

Gas DH EOR

OG GSW

CM (Coal Bed Methane)

Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

Deepening Re-perf. Conv. to EOR Conv. to SWD
 Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

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

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite: _____

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

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

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

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
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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:	
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Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	KAUS 1-21
Doc ID	1660942

All Electric Logs Run

DIL
DUCP
MEL
BHCS



CEMENT TREATMENT REPORT

Customer: Murfin Drilling	Well: Kaus # 1-21	Ticket: WP-3231
City, State: Bird city KS	County: Cheyenne KS	Date: 8/16/2022
Field Rep: Ricky	S-T-R: 21-3S-37W	Service: PTA

Downhole Information	
Hole Size:	7 7/8 in
Hole Depth:	5180 ft
Casing Size:	in
Casing Depth:	ft
Tubing / Liner:	in
Depth:	ft
Tool / Packer:	
Tool Depth:	ft
Displacement:	30.4 bbls

Calculated Slurry - Lead	
Blend:	H-plug
Weight:	13.8 ppg
Water / Sx:	6.9 gal / sx
Yield:	1.42 ft ³ / sx
Annular Bbls / Ft.:	0.0406 bbs / ft.
Depth:	3300 ft
Annular Volume:	134.0 bbls
Excess:	
Total Slurry:	60.7 bbls
Total Sacks:	240 sx

Calculated Slurry - Tail	
Blend:	
Weight:	ppg
Water / Sx:	gal / sx
Yield:	ft ³ / sx
Annular Bbls / Ft.:	bbs / ft.
Depth:	ft
Annular Volume:	0 bbls
Excess:	
Total Slurry:	0.0 bbls
Total Sacks:	0 sx

TIME	RATE	PSI	STAGE BBLs	TOTAL BBLs	REMARKS
5:25a			-	-	Arrival
5:30a				-	Safety meeting
6:10a				-	Rlg up
6:20a	5.0	380.0	5.0	5.0	H2O ahead
6:24a	5.3	500.0	12.6	17.6	Mixed 50 sks of H-plug @ 13.8 ppg @ 3300'
6:27a	4.0	330.0	5.0	22.6	Displaced H2O
6:30a				22.6	Displaced mud with rig for 2 minutes
6:34a				22.6	Pull plpe to 2300'
7:06a	4.3	160.0	5.0	27.6	H2O ahead
7:09a	5.1	420.0	25.2	52.8	Mixed 100 sks of H-plug @ 13.8 ppg @ 2300'
7:15a	4.2	250.0	23.8	76.6	Displaced H2O
7:20a					Pull pipe to 425'
8:28a	5.0	200.0	5.0		H2O ahead
8:31a	4.2	240.0	12.6		Mixed 50 sks of H-plug @ 13.8 ppg @ 425'
8:34a	2.5	130.0	1.6		Displaced H2O
8:36a					Pull pipe to 40'
9:20a	3.0	120.0	2.5		Mixed 10 sks of H-plug @ 13.8 ppg @ 40'
9:25a	3.0	120.0	7.5		Mixed 30 sks of H-plug @ 13.8 ppg @ Rat hole
9:30a					Plug down
9:34a					Wash up
9:41a					Rig down
10:05a					Depart locatlon

CREW		UNIT	SUMMARY		
Cementer:	Jesse	78	Average Rate	Average Pressure	Total Fluid
Pump Operator:	Michael	230	4.1 bpm	259 psi	106 bbls
Bulk #1:	Tyler	159/250			
Bulk #2:					

DRILLING REPORT - LOG TOPS - KAUS 1-21

MDCI Kaus #1-21 2310' FSL 175' FEL Sec. 21-T3S-R37W 3428' KB
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Formation	Sample top	Datum	Ref	Log Top	Datum	Ref
Anhydrite	3271	+157	-17	3268	+160	-14
B/Anhydrite	3300	+128	-9	3297	+131	-6
Topeka	4135	-707	-18	4134	-706	-17
Oread	4275	-847	-13	4272	-844	-10
Lansing	4341	-913	-10	4344	-916	-13
Stark	4558	-1130	-5	4563	-1135	-10
Mound City	4613	-1185	-10	4611	-1183	-8
Ft Scott	4739	-1311	-6	4737	-1309	-4
Oakley	4810	-1382	-3	4814	-1386	-7
Miss	5038	-1610	---	5036	-1608	---
RTD	5180					
LTD						



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N. Water STE 300
Wichita, KS 67202

ATTN: Curtis Covey

Kaus #1-21

21-3s-37w Cheyenne,KS

Start Date: 2022.08.10 @ 23:31:00

End Date: 2022.08.11 @ 09:15:05

Job Ticket #: 68979 DST #: 1

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

Printed: 2022.08.17 @ 09:39:25

Murfin Drilling Co
21-3s-37w Cheyenne,KS
Kaus #1-21
DST # 1
LKC "A"
2022.08.10



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N. Water STE 300
Wichita, KS 67202
ATTN: Curtis Covey

21-3s-37w Cheyenne,KS

Kaus #1-21

Job Ticket: 68979

DST#: 1

Test Start: 2022.08.10 @ 23:31:00

GENERAL INFORMATION:

Formation: **LKC "A"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 02:49:36
 Time Test Ended: 09:15:05
 Interval: **4285.00 ft (KB) To 4362.00 ft (KB) (TVD)**
 Total Depth: 4362.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: James Winder
 Unit No: 73
 Reference Elevations: 3428.00 ft (KB)
 3423.00 ft (CF)
 KB to GR/CF: 5.00 ft

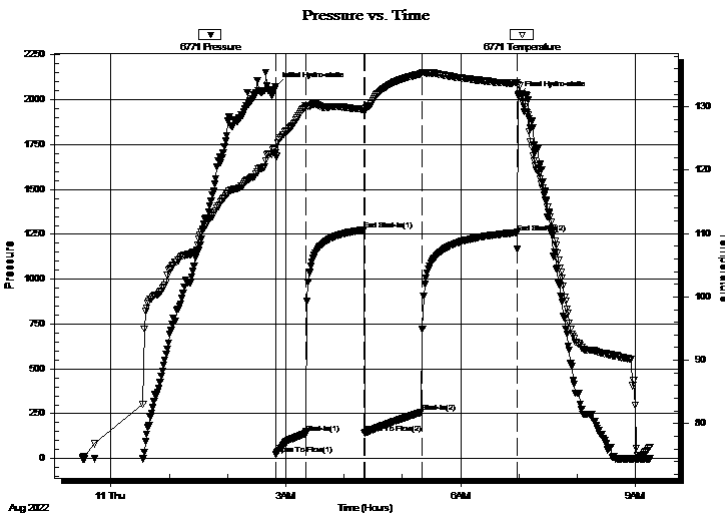
Serial #: 6771

Inside

Press@RunDepth: 258.89 psig @ 4286.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2022.08.10 End Date: 2022.08.11 Last Calib.: 2022.08.11
 Start Time: 23:31:01 End Time: 09:15:05 Time On Btm: 2022.08.11 @ 02:49:21
 Time Off Btm: 2022.08.11 @ 06:58:51

TEST COMMENT: 30 - IF: Blow built to 8 1/2"
 60 - IS: No blow
 60 - FF: Blow built to BOB (11") at 55 min.
 90 - FS: No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2074.01	122.75	Initial Hydro-static
1	24.18	122.20	Open To Flow (1)
31	138.89	130.15	Shut-In(1)
92	1275.28	129.63	End Shut-In(1)
92	142.31	129.33	Open To Flow (2)
151	258.89	135.22	Shut-In(2)
249	1260.16	133.80	End Shut-In(2)
250	2023.29	133.53	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
370.00	SMCW 93%w, 7%m	3.55
155.00	MW 58%w, 42%m	2.17

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

21-3s-37w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Kaus #1-21

Job Ticket: 68979

DST#: 1

ATTN: Curtis Covey

Test Start: 2022.08.10 @ 23:31:00

Tool Information

Drill Pipe:	Length: 4079.00 ft	Diameter: 3.80 inches	Volume: 57.22 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 58.11 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4285.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	77.00 ft			
Tool Length:	110.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			4253.00	
Shut In Tool	5.00			4258.00	
Hydraulic tool	5.00			4263.00	
Jars	5.00			4268.00	
EM Tool	4.00			4272.00	
Safety Joint	3.00			4275.00	
Packer	5.00			4280.00	33.00 Bottom Of Top Packer
Packer	5.00			4285.00	
Stubb	1.00			4286.00	
Recorder	0.00	6771	Inside	4286.00	
Recorder	0.00	8367	Outside	4286.00	
Perforations	8.00			4294.00	
Blank Spacing	65.00			4359.00	
Bullnose	3.00			4362.00	77.00 Bottom Packers & Anchor

Total Tool Length: 110.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

21-3s-37w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Kaus #1-21

Job Ticket: 68979

DST#: 1

ATTN: Curtis Covey

Test Start: 2022.08.10 @ 23:31:00

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:

32000 ppm

Viscosity: 47.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.97 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
370.00	SMCW 93%w , 7%m	3.550
155.00	MW 58%w , 42%m	2.174

Total Length: 525.00 ft Total Volume: 5.724 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

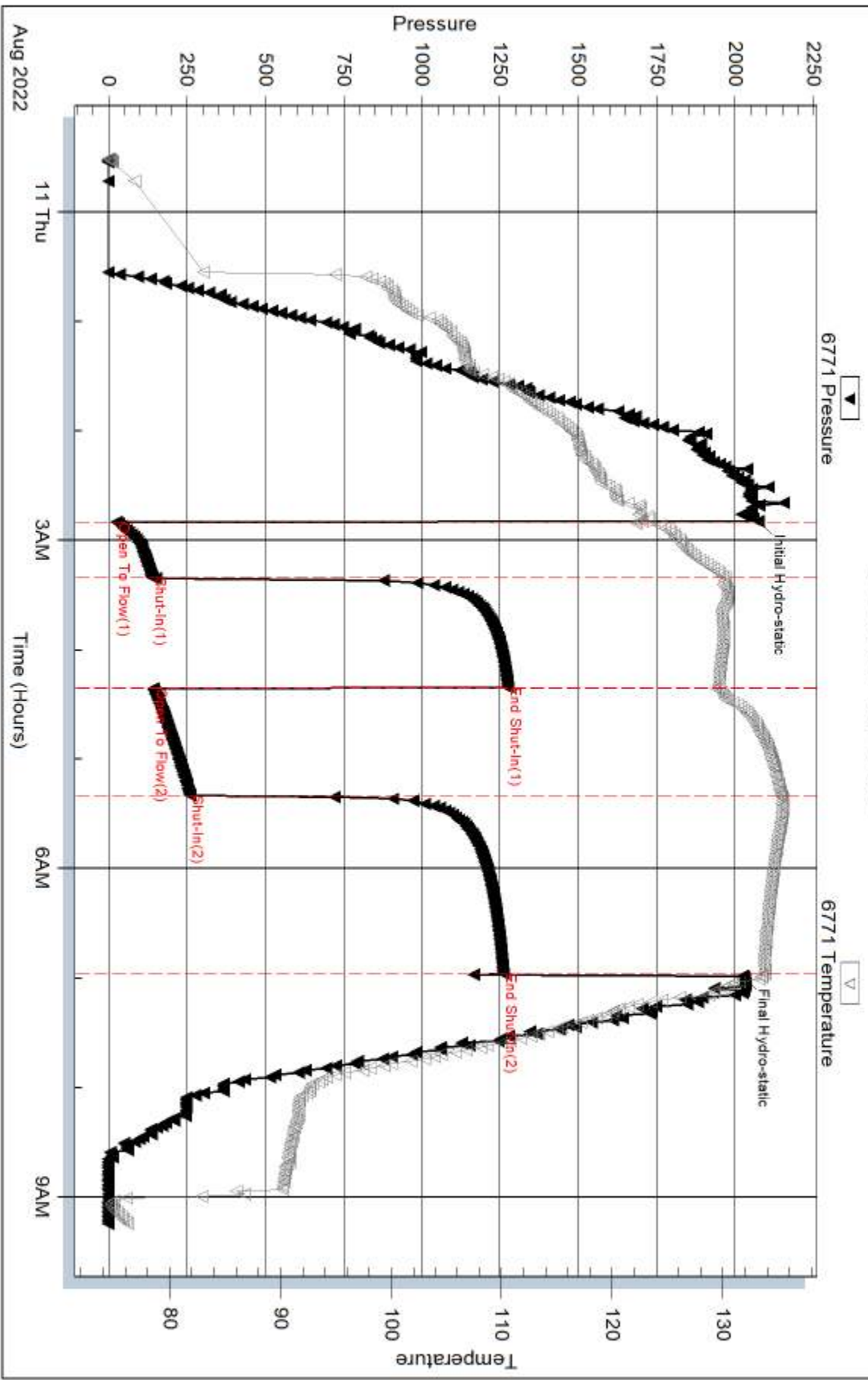
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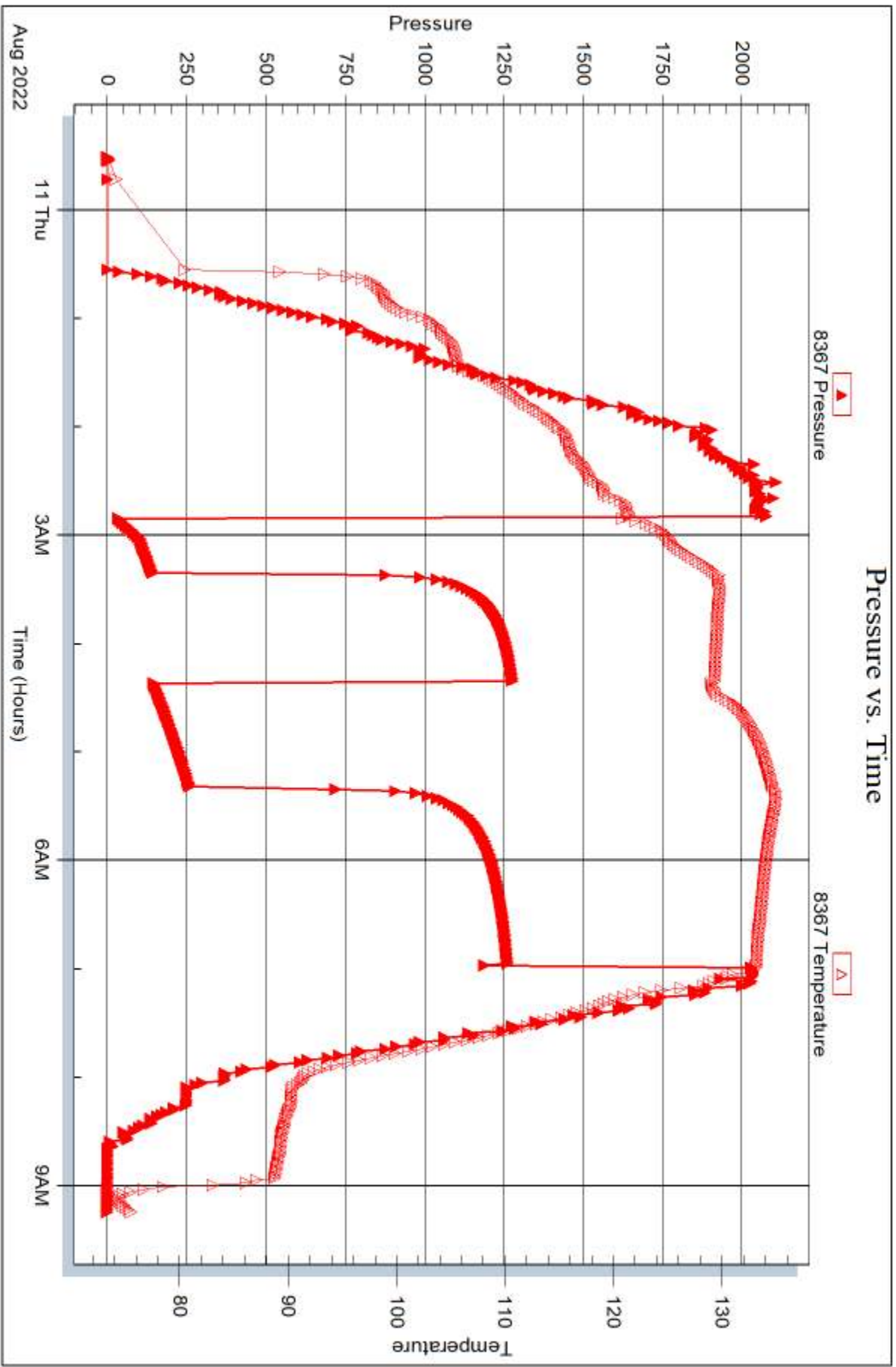
Laboratory Name:

Laboratory Location:

Recovery Comments: RW = .220 ohms @ 70.5 deg F Chlorides = 32,000 ppm

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N. Water STE 300
Wichita, KS 67202

ATTN: Curtis Covey

Kaus #1-21

21-3s-37w Cheyenne,KS

Start Date: 2022.08.15 @ 13:26:00

End Date: 2022.08.15 @ 22:22:00

Job Ticket #: 69215 DST #: 2

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

Printed: 2022.08.17 @ 09:38:44



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N. Water STE 300
Wichita, KS 67202
ATTN: Curtis Covey

21-3s-37w Cheyenne, KS

Kaus #1-21

Job Ticket: 69215

DST#: 2

Test Start: 2022.08.15 @ 13:26:00

GENERAL INFORMATION:

Formation: **Marmaton - Ft. Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:05:40

Time Test Ended: 22:22:00

Test Type: Conventional Straddle (Reset)

Tester: Martine Salinas

Unit No: 82

Interval: 4626.00 ft (KB) To 4811.00 ft (KB) (TVD)

Total Depth: 5180.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3428.00 ft (KB)

3423.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8734 Outside

Press@RunDepth: 229.27 psig @ 4786.00 ft (KB)

Start Date: 2022.08.15

End Date:

2022.08.15

Start Time: 13:26:01

End Time:

22:22:00

Capacity: 8000.00 psig

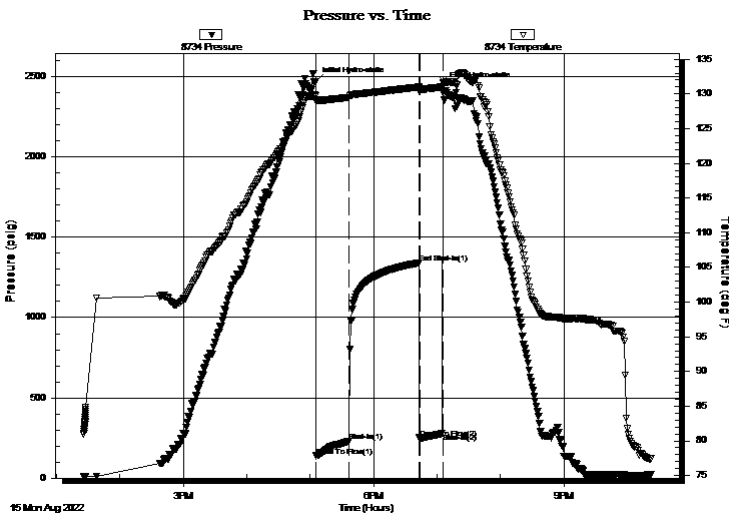
Last Calib.: 2022.08.15

Time On Btm: 2022.08.15 @ 17:05:20

Time Off Btm: 2022.08.15 @ 19:05:30

TEST COMMENT: 30-IF-Surface blow dead @ 10 mins
60-ISI-No retrurn
20-FF-No blow , Pull tools

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2468.56	129.78	Initial Hydro-static
1	138.37	128.99	Open To Flow (1)
32	229.27	129.50	Shut-In(1)
98	1338.61	130.98	End Shut-In(1)
99	250.80	130.65	Open To Flow (2)
121	277.95	131.02	Shut-In(2)
121	2437.86	131.98	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
370.00	100% Mud	3.55

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

21-3s-37w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Kaus #1-21

Job Ticket: 69215

DST#: 2

ATTN: Curtis Covey

Test Start: 2022.08.15 @ 13:26:00

Tool Information

Drill Pipe:	Length: 4427.00 ft	Diameter: 3.80 inches	Volume: 62.10 bbl	Tool Weight:	3000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose:	98000.00 lb
			<u>Total Volume: 62.99 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial	80000.00 lb
Depth to Top Packer:	4626.00 ft			Final	81000.00 lb
Depth to Bottom Packer:	4807.00 ft				
Interval between Packers:	181.00 ft				
Tool Length:	587.00 ft				
Number of Packers:	3	Diameter:	6.75 inches		
Tool Comments:					

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Change Over Sub	1.00			4594.00	
Shut In Tool	5.00			4599.00	
Hydraulic tool	5.00	1113		4604.00	
Jars	5.00	01-07		4609.00	
EM Tool	5.00			4614.00	
Safety Joint	3.00	-001		4617.00	
Packer	5.00			4622.00	33.00 Bottom Of Top Packer
Packer	4.00			4626.00	
Stubb	1.00			4627.00	
Perforations	1.00			4628.00	
Change Over Sub	1.00			4629.00	
Drill Pipe	156.00			4785.00	
Change Over Sub	1.00			4786.00	
Recorder	0.00	8959	Inside	4786.00	
Recorder	0.00	8734	Outside	4786.00	
Perforations	20.00			4806.00	
Blank Off Sub	1.00			4807.00	181.00 Tool Interval
Packer	5.00			4812.00	
Packer - Shale	0.00			4812.00	
Stubb	1.00			4813.00	
Recorder	0.00	8520	Below	4813.00	
Perforations	16.00			4829.00	
Change Over Sub	1.00			4830.00	
Drill Pipe	345.00			5175.00	
Change Over Sub	0.00			5175.00	
Bullnose	5.00			5180.00	373.00 Bottom Packers & Anchor

Total Tool Length: 587.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

21-3s-37w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Kaus #1-21

Job Ticket: 69215

DST#: 2

ATTN: Curtis Covey

Test Start: 2022.08.15 @ 13:26:00

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: 47.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.96 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
370.00	100% Mud	3.550

Total Length: 370.00 ft Total Volume: 3.550 bbl

Num Fluid Samples: 0

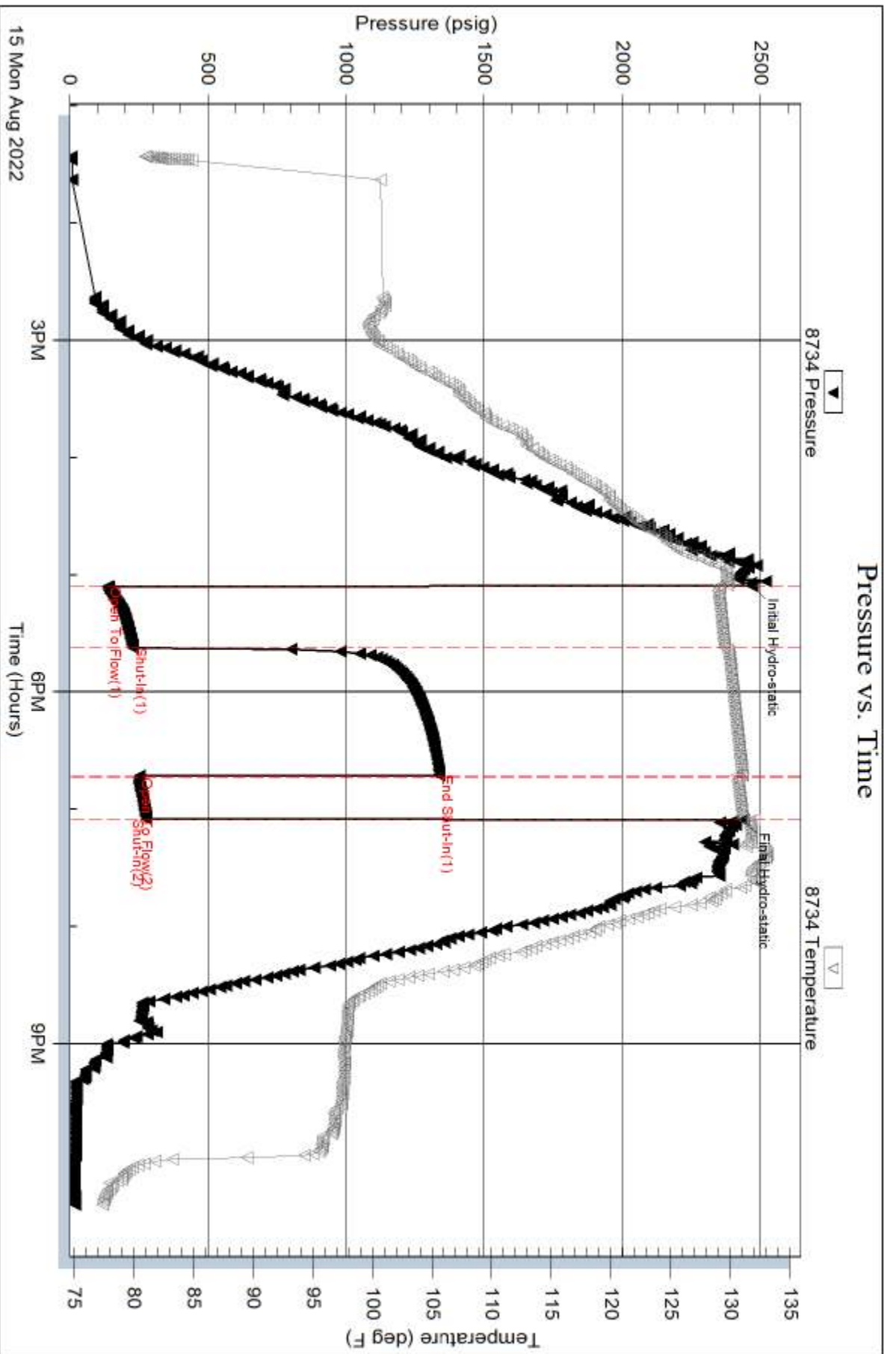
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



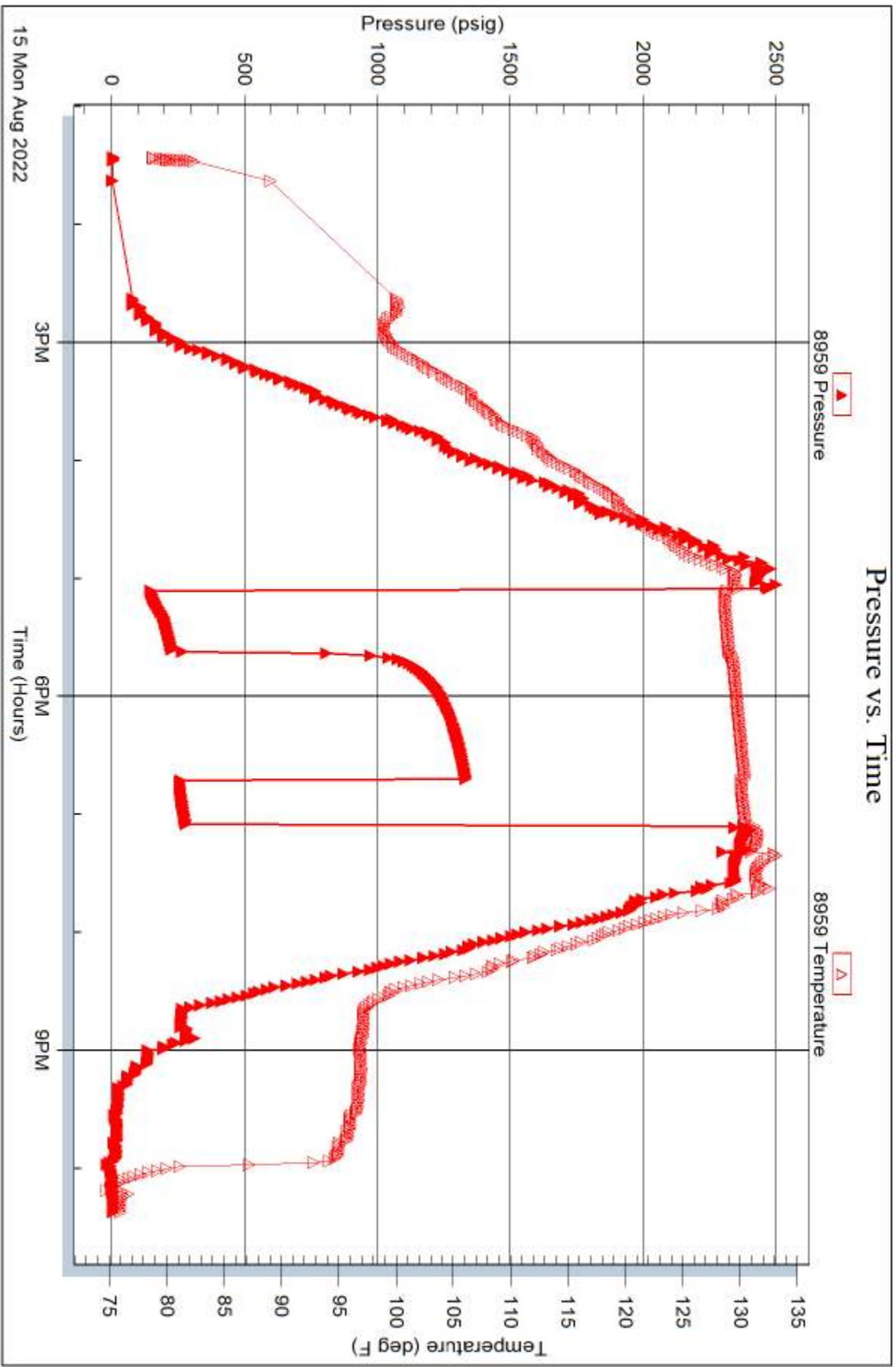
Serial #: 8959

Inside

Murfin Drilling Co

Kaus #1-21

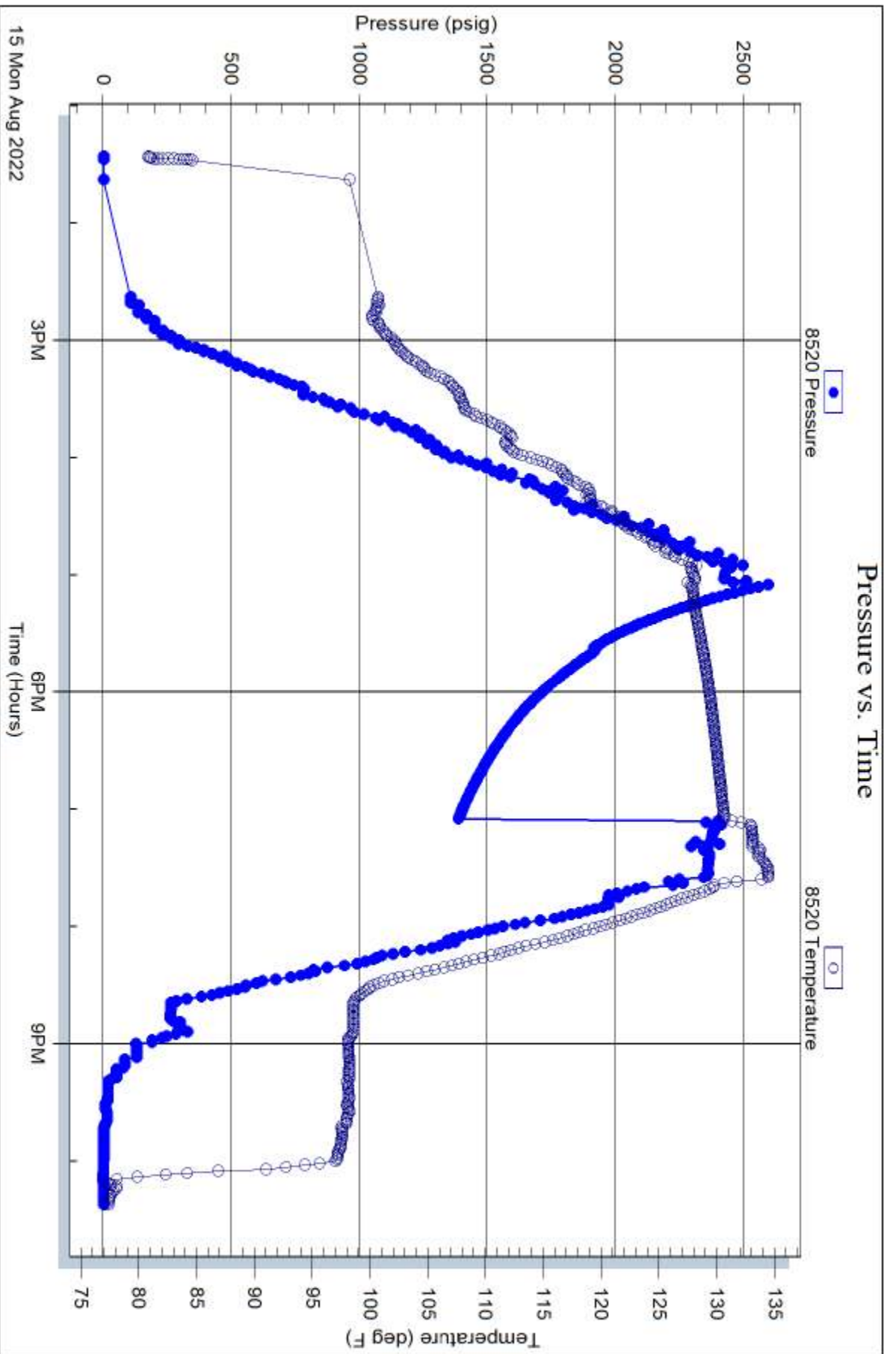
DST Test Number: 2

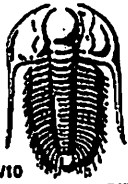


Trilobite Testing, Inc

Ref. No: 69215

Printed: 2022.08.17 @ 09:38:45





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 68979

Well Name & No. Kaus #1-21 Test No. 1 Date 8-10-22
 Company Murfin Drilling Co. Inc Elevation 3428 KB 3423 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Curtis Covey Rig Murfin #110
 Location: Sec. 21 Twp 3s Rge. 37w Co. Cheyenne State KS

Interval Tested 4285 - 4362 Zone Tested Lans. "A"
 Anchor Length 77 Drill Pipe Run 4079 Mud Wt. 9.0
 Top Packer Depth 4280 Drill Collars Run 180 Vls 47
 Bottom Packer Depth 4285 Wt. Pipe Run - WL 8.0
 Total Depth 4362 Chlorides 1200 ppm System LCM 4

Blow Description IF: Blow built to 8 1/2"
FSI: No blow
FF: Blow built to BOB(11") at 55 min.
FSI: No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>155</u>	<u>mw</u>		<u>58</u>	<u>42</u>	
<u>370</u>	<u>SMCW</u>		<u>93</u>	<u>7</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 525 BHT 134 Gravity API RW .220 @ 70.5° F Chlorides 32,000 ppm
 (A) Initial Hydrostatic 2074 Test 1950 T-On Location 21:45 8/10
 (B) First Initial Flow 24 Jars 300 T-Started 23:31
 (C) First Final Flow 139 Safety Joint T-Open 2:49
 (D) Initial Shut-In 1275 Circ Sub T-Pulled 6:57
 (E) Second Initial Flow 142 Hourly Standby T-Out 9:10 8/11
 (F) Second Final Flow 259 Mileage 104 RTX2 ¹⁵⁶⁺¹⁵⁶ Comments tool loaded 8/13
 (G) Final Shut-In 1260 Sampler @ 18:05
 (H) Final Hydrostatic 2023 Straddle EM Tool

Initial Open 30 Shale Packer Ruined Shale Packer
 Initial Shut-In 60 Extra Packer Ruined Packer
 Final Flow 60 Extra Recorder Extra Copies
 Final Shut-In 90 Day Standby 2d 9h Sub Total 1600
 Sub Total 2562 Total 4162 MP/DST Disc't

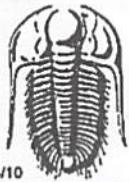
Approved By

Curtis Covey

Our Representative

James Winder

Trilobite Testing Inc. shall not be liable for damaged or any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 69215

Well Name & No. Kaws #1-21 Test No. 2 Date 8-15-22
 Company Murfin Drilling Co Inc Elevation 3428 KB 3423 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Curtis Coley Rig Murfin #110
 Location: Sec. 21 Twp 3S Rge. 37W Co. Cheyenne State KS

Interval Tested 4626-4811 Zone Tested "Marmaton - Ft. Scott"
 Anchor Length 185' 369 T. pipe Drill Pipe Run 4427 Mud Wt. 9.1
 Top Packer Depth 4621 - 4626 Drill Collars Run 179 Vis 56
 Bottom Packer Depth 4811 Wt. Pipe Run — WL 8.0
 Total Depth 5186 Chlorides 1200 ppm System LCM 44

Blow Description IF - Surface blow dead @ 10 mins
ISE - No return
FE - No blow, pull tools
ESI -

Rec	Feet of	%gas	%oil	%water	%mud
<u>370</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 370 BHT 132 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2469</u>	<input checked="" type="checkbox"/> Test 1950	T-On Location <u>12:00</u>
(B) First Initial Flow <u>138</u>	<input checked="" type="checkbox"/> Jars 300	T-Started <u>13:26</u>
(C) First Final Flow <u>229</u>	<input checked="" type="checkbox"/> Safety Joint	T-Open <u>17:05</u>
(D) Initial Shut-In <u>1339</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>18:55</u>
(E) Second Initial Flow <u>251</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>22:22</u>
(F) Second Final Flow <u>278</u>	<input checked="" type="checkbox"/> Mileage <u>F/Oserlin</u> 156	Comments <u>Loaded Tools @ 23:45</u>
(G) Final Shut-In <u>—</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2438</u>	<input checked="" type="checkbox"/> Straddle 600	<input checked="" type="checkbox"/> EM Tool -350
Initial Open <u>30</u>	<input checked="" type="checkbox"/> Shale Packer 250	<input type="checkbox"/> Ruined Shale Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
Final Flow <u>20</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Extra Copies
Final Shut-In <u>—</u>	<input type="checkbox"/> Day Standby	Sub Total <u>-350</u>
	<input type="checkbox"/> Accessibility	Total <u>2906</u>
	Sub Total <u>3256</u>	MP/DST Disc't <u>—</u>

Approved By [Signature] Our Representative [Signature]
 Tritobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.

Covey

The Well Watchers

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

Well Name: KAUS #1-21
Location: Section 21 - Township 3S - Range 37 West
Licence Number: 15-023-21576 -00-00 Region: Cheyenne County, KS.
Spud Date: 5 August 2022 Drilling Completed: 14 August 2022
Surface Coordinates: 2,310' FNL & 175' FEL
(Approximately E/2 NE NE SE)

Bottom Hole
Coordinates:
Ground Elevation (ft): 3,423' K.B. Elevation (ft): 3,428'
Logged Interval (ft): 4,120' To: 5,180' Total Depth (ft): 5,180'
Formation: Topeka -----> Mississippi
Type of Drilling Fluid: Displace @ 3,685' - Chemical, Low Solids/Non-Dispersed

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

OPERATOR

Company: MURFIND DRILLING COMPANY, INC.
Address: 250 North Water, Suite 300 POC: Bo Beins
Wichita, Kansas 67202
(316) 267-3241

GEOLOGIST

Name: Curtis E. Covey
Company: COVEY - The Well Watchers
Address: 6548 Bedford Circle
Derby, Kansas 67037
Office: (316) 776-0367 Cell: (316) 217-4679

KB: 3,428'

FORMATION TOPS

GL: 3,423'

Formation	Rotary Sample Depth (Datum)	E-log Depth (Datum)
AnHydrite	3,271' (+157')	3,268' (+160')
B / AnHydrite	3,300' (+128')	3,298' (+130')
Stotler	4,049' (- 621')	4,048' (-620')
Topeka	4,135' (- 707')	4,134' (-706')
Oread	4,275' (- 847')	4,272' (-844')
Lansing	4,341' (- 913')	4,344' (-916')
Stark Sh	4,558' (-1,130')	4,562' (-1,134')
Mound City	4,613' (-1,185')	4,611' (-1,183')
Marmaton	4,649' (-1,221')	4,640' (-1,212')
Ft. Scott	4,739' (-1,311')	4,738' (-1,310')
Mississippi	5,038' (-1,610')	5,038' (-1,610')

RTD: 5,180'

LTD: 5.162*
* 18' Fill due low
Pump Pressure

ATD: 5,180'

Float:
Rotary Sample Depth is 0' - 3' low to E-log Depth
for the interval: 3,814' - 5,180' (RTD).

E-Loggers:
Midwest Wireline ... Hays, KS.

DST #1 - LANSING "A"

Rotary Depth: 4,285' - 4,362'
Logger's Depth: 4,283' - 4,360'

IFP: 24# - 139# / 30"
ISIP: 1,275# / 60"
FFP: 142# - 259# / 60"
FSIP: 1,260# / 90"
134 deg F
MH: 2,074# - 2,023#

Recovery:
155' Muddy Water (42% M, 58% W)
370' Slightly Mud cut Water
(7% M, 93% W)

IF: Blow built to 8.5 inches.
ISI: No Blow.
FF: Bottom of Bucket in 11 minutes
FSI: No Blow.

Recovery Water: (32,000 ppm)
System Water: (1,200 ppm)

Reported Rw =
.22 @ 77.5 deg F

Recovery Water Mud Engineer:
NA

Trilobite Testing, Inc.
Hays, KS.

DST #2 - MARMATON (Straddle)

Rotary Depth: 4,626' - 4,811'
Logger's Depth: 4,625' - 4,810'

IFP: 138# - 229# / 30"
ISIP: 1,339# / 60"
FFP: 251# - 2278# / 20"
FSIP: NA
132 deg F
MH: 2,469# - 2,438#

Recovery: 370' Mud

IF: Weak Surface Blow, Died in 10 minutes.
ISI: No Blow.
FF: No Blow. Pulled Tool.
FSI: NA

Recovery Water: NA
System Water: (1,000 ppm)

Reported Rw = NA

Recovery Water Mud Engineer:
NA

Trilobite Testing, Inc.
Scott City, KS.

Terminated DST #2 on FF.

2022

DAILY DRILLING - AUGUST

2022

12/1/4" Hole (Surface)

5 August --- Spud @ 4:15pm.
Drill to 388' @ 9pm.
Ran 8-5/8" (23#) casing.
Set @ 388'. 375 sx H-325
(2%CC + 3% Gel).
Circ 5 Bbls.
[Hurricane Services]
Plug Down @ 11:15pm.
WOC.

7-7/8" Hole (Vertical)

6 August --- WOC.
U / S @ 10:30am.
7 --- 7am @ 2,050'.
8 --- 7am @ 3,370'. Displace Mud
@ 3,685'. Complete @ 3,700'.
9 --- Bit Trip @ 3,967'.
7am @ 3,980'.
10 --- 7am @ 4,235'. Drill to 4,362'.
Start &
11 --- Finish DST #1: Lansing "A"
(4,285' - 4,362').
7am @ 4,362'.
Resumed Drilling @ 11:36am.
12 --- 7am @ 4,562'.
13 --- 7am @ 4,760'.

7-7/8" Hole (Vertical)

14 August --- 7am @ 5,100'.
RTD (5,180') @ 11:34am.
CFS @ RTD.
S/T 14 stands.
CHC.
E-Logging
{Midwest Wireline}
15 --- Work on Mud Pump.
T/I hole. CHC.
S/T 10 Stands. CHC.
DST #2 (Straddle):
Marmaton / Ft Scott
(4,626' - 4,811').
Decision to Plug Well.

HOLE DEVIATION (388' - 5,180' MD)

12-1/4" Surface Hole

DEPTH / TVD	INCLINATION	AZIMUTH	NORTH	SOUTH	EAST	WEST	DOGLEG deg/100'
388' /	0.75 (Surface Casing)						

7-7/8" Vertical Hole

3,967' /	1.00 (Bit Trip)
4,362' /	0.75 (DST #1)
5,180' /	0.75 (RTD)

Strap @ Bit Trip:
 Strap: 3,962.89'
 Board: 3,967.26'
 Diff: 4.37'

Inclination Surveys provided by Murfin Drilling - Rig #112

CONTRACTOR

Murfin Drilling Co, Inc. --- Rig #112

250 North Water, Suite 300
 Wichita, Kansas 67202
 Office: (316) 267-3241

Murfin #110 - (785) 259-4570
 Toolpusher: Ricky Hilgers (785) 769-4733

Pump: EMSCO D-375
 6" x 14" @ 64 SPM.
 700 PSI @ Standpipe. *
 Drill Pipe: 4.5" XH. (16.4# / ft -used)

Drill Collars: 6.25" x 2.50" --- 535'. (88#/ft)
 Dry Collar Weight: 47,080#
 Bouyancy Collar Weight: 40,983#
 (@ 8.5 ppg / Buoyancy Factor 0.8705)
 Design Factor: 15% held back to keep
 drill string straight, therefore:
 available calculated WOB is 34,836#

* Note: 700 PSI at Standpipe written into the books but was actually 400-450 psi (sometimes slightly higher). This is the cause of hole fillup after DST #1 & CHC for logging. Mud was in great shape.

Check Weight Indicator @ 3,967' (Bit Trip).
 Calculated String Weight (103,422#) -vs- Observed WI (101,000#).
 WI is weighing LIGHT by 2.3%
 Therefore: Calculated WOB of 34,836# will show 34,035# on WI.

BIT RECORD

DATE	SIZE	TYPE	JET SIZE	DEPTH IN / OUT	CUM. FT.	HOURS	ROP
SURFACE ---							
5 August 2022	12-1/4"	SMITH TDS-CPS (IADC)	15's	0' / 388'	388'	4.25	91.3'
VERTICAL ---							
6 August 2022	7-7/8"	SMITH M616 (PDC)	3 - 15's	388' / 3,967'	3,579'	50.75	70.5
8 August 2022	7-7/8"	SMITH F27 (527)	3 - 15's	3,967' / 5,180'	1,213'	71.00	17.1

ROCK TYPES

POROSITY

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

LITHOLOGY

- Anhy
- Bent
- Brec
- Cht
- Clyst
- Coal
- Granite wash
- Congl
- Dol lmst
- Silty dol

- Calc dol
- Dol 2
- Dol
- Gyp
- Igne
- Lmst 2
- Lmst
- Silty ls
- Meta
- Mrlst
- Salt
- Shale 3
- Shale 3
- Shale
- Shcol
- Shgy
- Sltst
- Ss
- Till
- Ss 2

MINERAL

- Mica
- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Breccfrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl

- Mica
- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Breccfrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl

STRINGER

- Dol ls
- Silty dol
- Anhy

- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff
- Copper
- Ooliticastic
- Ooloid
- Oolite
- Sucrosic
- Dark specks

- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Calc dol
- Sltstrg
- Ssstrg
- Chalk
- New symbol

SHOW

- Oil
- Spotted
- Ques
- Dead
- Gas
- Oil/gas
- Bed contact

ACCESSORIES

FOSSIL

- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Spore
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro

- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom

MINERAL

- Mica
- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Breccfrag

- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos

- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff
- Copper
- Ooliticastic
- Ooloid
- Oolite
- Sucrosic
- Dark specks

STRINGER

- Dol ls

- Silty dol
- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Calc dol
- Sltstrg
- Ssstrg
- Chalk
- New symbol

OTHER SYMBOLS

ACTIVITY

- Lost circluation
- Circulate for same

- Circulate for same
- Rtd
- Trip

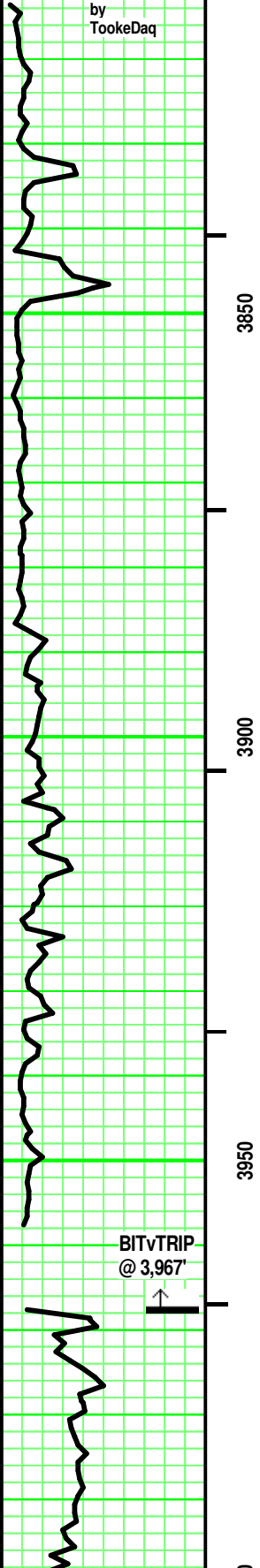
- Connection
- Rft

- Sidewall

Curve Track 1 ROP (min/ft) ——— Gamma (API) ———	Depth	Porosity 2.4% 1.8% 1.2% 0.6%	Shows	Lithology	Geological Descriptions	REMARKS
<p>ROP (min/ft) 10 Gamma (API) 150</p> <p>Geologist provided uphole ROP</p> <p>Geologist provided uphole ROP</p>	<p>3,250'</p> <p>3,300'</p> <p>3,350'</p> <p>3,400'</p> <p>XXXX XXXX XXXX</p>				<p>----- AnHydrite 3,271' (+157')</p> <p>----- B / AnHydrite 3,300' (+128')</p> <p>DISPLACED MUD @ 3,685'.</p>	<p>This geolog uses plotted drilling time & available rotary drilling samples to produce this work product.</p> <p>Non-representative drilling time and/or rotary rock samples does effect the accuracy of any geolog.</p> <p>Rotary Samples were collected from the rig's sample box.</p>
						<p>3,700' - Vis: 74 Wt: 8.5 Wtr Loss: 6.8</p>

ROP (min/ft) 10
Gamma (API) 150

ROP
is
provided
by
TookeDaq



BITvTRIP
@ 3,967'

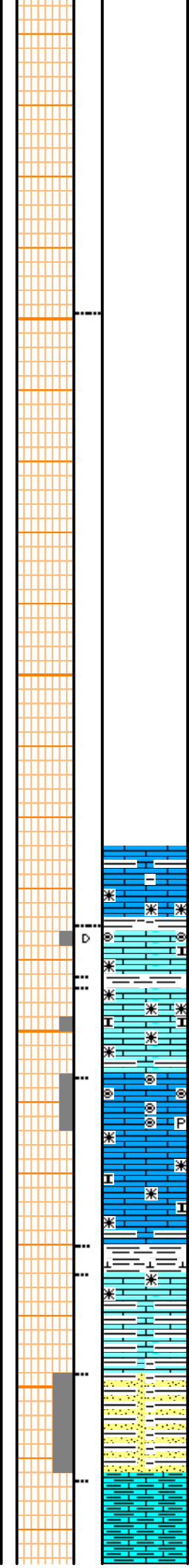
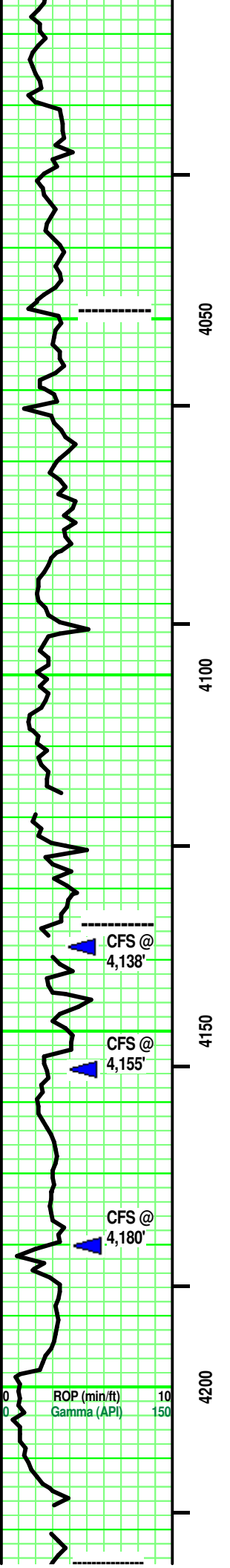


ROP (min/ft) 10
Gamma (API) 150

ROP is provided by TookeDaq.

-- BIT TRIP @ 3,967'.
^-- Strap at Bit Trip.
Strap: 3,962.89'
Board: 3,967.26'
Diff: 4.37'
^-- Hole Dev: deg @ 3,967'

ROP is provided by TookeDaq.



LS - Med Tan / Grayish Tan. Mixture of Intermixed and Sing. XF-/ Micro-xln. xln por. tr Re-xln. argil/ shaly intermixed/interbedded. Mostly Firm. No/ tr vis por.

SH - Med Grav. Sing. highlv Limv.

LS - Tan/ Tannish White. Sing/ tr Mixed. XF-/ Micro-xln. xln & part por. Tr Chalky in part. [few pcs: Micro-Oolites. in Opaque calc matrix.] No/ tr Re-xln. tr/ some fair vis por. No odor. No/? fluoresence. No free oil or gas. random, irregular Dark Brown/ mostly Black asphaltic infill. No/ v weak cut. No/ v weak acid/ res.

LS - White/ Off White/ some vPale Tannish White. Sing/Mot/Mixed. XF-/Micro-xln. xln & part por. No/ tr Re-xln. some Micro-Oolites in mix of Clear/ Opaque Calc matric. mostly No/ rare minute pyritic xtals. No/ tr chalky at top. partly Firm. argil at depth. No/ tr vis por.

SH - Med/Dark Gray. Sing. soft. Limy with depth.

LS - Off White/ 'druzy' Tan with depth. Sing/ Mot with depth. XF-/ Micro-xln. xln por. Highly argil (Med/Dark Gray) with depth. mostly No/ tr Re-xln. Firm. No/ tr vis por.

Add Orangish Red.

SH - mostly Orangish Red / Red. some Dark Gray. few pcs: pinkish Red, maroon, pale Blue. rare purple. Sing/ some Mixed. [Hi Sandy in part. Silt/XF grain size. SA/some SR. Mod sph. Vitreous luster. some pt grain contact / some grains supported by argil matrix.]

LS - Lt/ mostly Med or Dark Gray. Sing/ Mixed. XF-/Micro-xln. xln por. Hi argil. Firm. No/ tr vis por.

-- Stotler
4,049' (- 621')

4,062' -
Vis: 51 Wt: 8.7 Wtr Loss: 7.6
PV: 18 YP: 17 Yield: 9/32
pH: 11.5 Cl (1,200) Ca (10)
Solids: 2.9% LCM: 2.0#

Vis: 74 Wt: 8.5 LCM: 4#

Vis: 60 Wt: 8.7 LCM: 4#

ROP is provided by TookeDaq.

-- TOPEKA 4,135' (-707')

-- 4,138' - LOST POWER.
^--- Lost Generator ... No power.
^--- CFS @ 4,138': 60"
^--- Installed Replacement Generator. Resumed Drlg.

-- CFS @ 4,155': 40"

-- CFS @ 4,180': 60"

4,190' & 4,200' Samples have few pcs of Topeka LS asphaltic show.

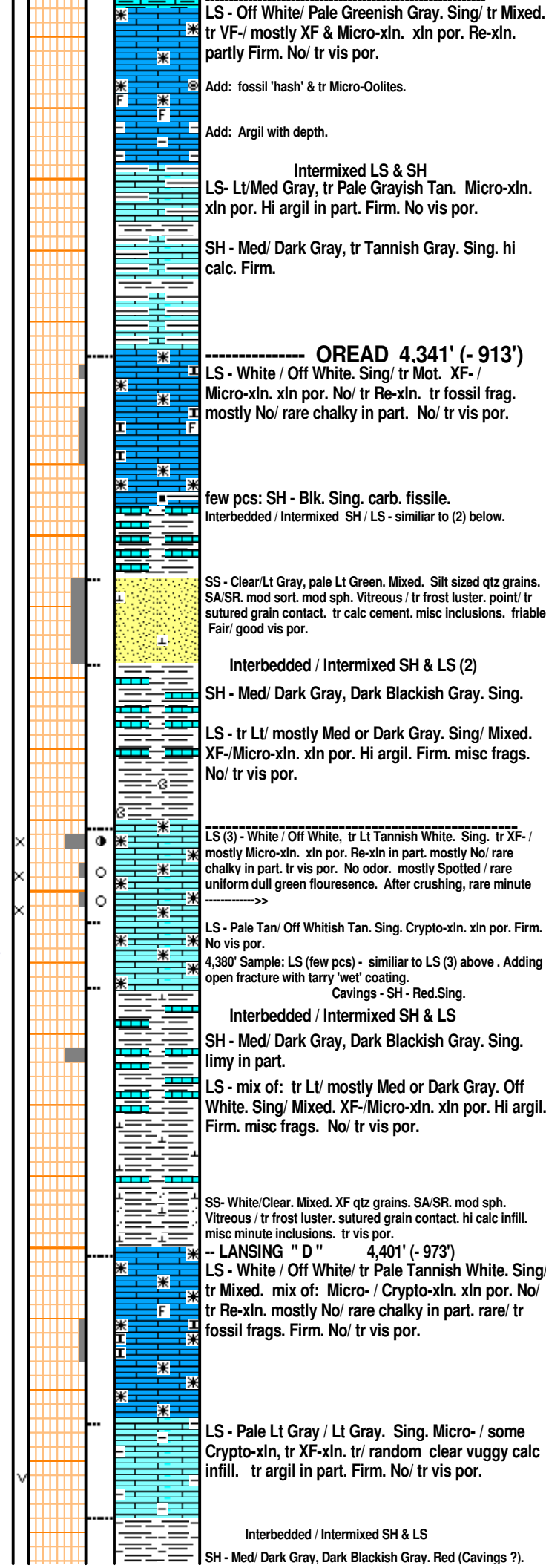
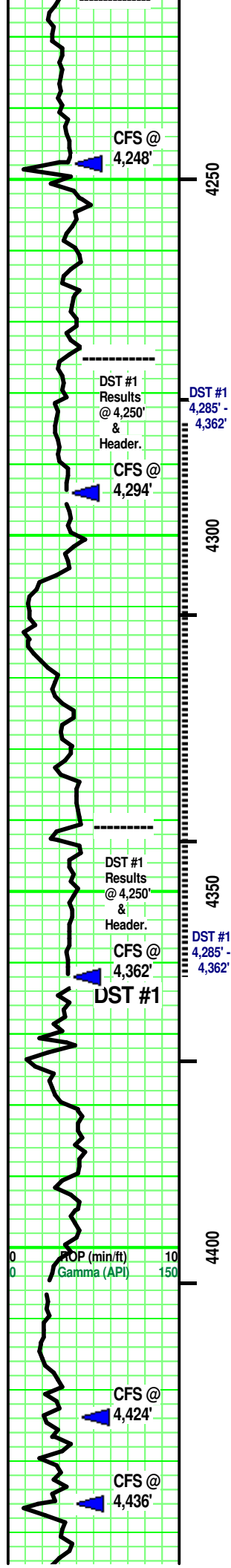
-- Work on generator.

Vis: 52
Wt: 8.9
LCM: 4#

-- Work on generator.
-- Work on generator.

Vis: 52
Wt: 8.9
LCM: 4#

-- LaCompton 4,225' (-707')



misc cavings variegated colored SH cavings. (Purple, Orangish Red, Lt Bluish Gray, Grays)

Vis: 51
Wt: 8.8
LCM: 4#

-- CFS @ 4,248': 60"

DST #1 - LANSING ' A' Cavings

Recovery: 4,285' - 4,362'

155' Muddy Water (42% M, 58% W)
370' Slightly Mud cut Water (7% M, 93% W)

IFP: 24# - 139# / 30"
ISIP: 1,275# / 60" 134 deg F
FFP: 142# - 259# / 60"
FSIP: 1,260# / 90" MH: 2,074# - 2,023#

IF: Blow built to 8.5 inches.
ISI: No Blow.
FF: Bottom of Bucket in 11 minutes
FSI: No Blow. Cavings

Recovery Water: (32,000 ppm) Rw = 0.22 @
System Water: (1,200 ppm) 77.5 deg F

-- CFS @ 4,294': 60"

4,301' -
Vis: 47 Wt: 9.0 Wtr Loss: 8.0
PV: 18 YP: 14 Gels: 9/29
pH: 10.5 Cl (1,200) Ca (10)
Solids: 5.0 LCM: 4#

Vis: 49
Wt: 9.0
LCM: 4#

Cavings - few pcs: Topeka LS with show.

Cavings: SH - Reds, Orangish Reds, Blueish Gray, Green Grays.

----- LANSING 4,341' (- 913') Jet #1

gas bubble clinging to rx chip. No/? v minute Black oil sphere clinging to rx chip. Black Tar in xln por and rare vug / fracture. Spotted (with uniform coverage) Dark Brown / Black stain. Weak Pos cut/residual. Weak Pos acid/residual.

Vis: 55 Wt: 8.9 LCM: 4#

-- CFS @ 4,362': 60"

^-- S/T 15 stands.
^-- CHC: 60". Work pipe (15").
Check Sample Box for volume & type of fill (15").
^-- Hole Dev: 0.75 deg @ 4,362'.
^-- DST #1: Lansing " A " (4,285' - 4,362')
^-- 4,362' (DST #1) -
Vis: 52 Wt: 9.2 Wtr Loss: 7.2
PV: 16 YP: 15 Gels: 12/32
pH: 10.5 Cl (1,200) Ca (10)
Solids: 6.4% LCM: 5#

Vis: 51
Wt: 9.0
LCM: 4#

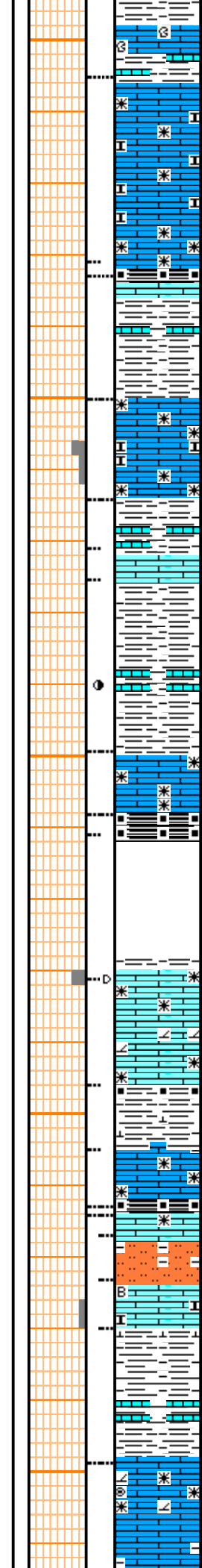
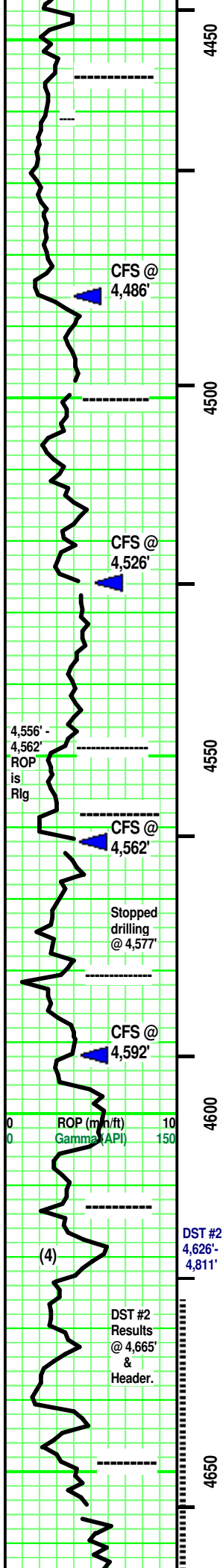
4,380' Sample (1 pc): -
SS - Clear / Lt Gray. M/F qtz grains. SA/SR. mod sph. mixture of frosted/ tr vitreous luster. sutured grain contact. highly pyritic xtal/infill. Firm. tr vis por.

Vis: 46
Wt: 9.1
LCM: 4#

-- B & R @ 4,420': 15".

-- CFS @ 4,424': 60"

Cavings - Red Bed



Sing. limy in part.
 LS - Off White. Sing/ Mixed. XF-/Micro-xln. xln por. Firm. misc frags. No/ tr vis por.

-- LANSING "G" 4,455' (-1,027')
 LS - White / Off White. Pale Lt Gray with depth (on circ). Sing / tr Mot. tr XF- / mostly Micro-xln. xln port. tr Re-xln. No/ some chalky in part. part Friable. No/ tr vis por.

SH - Black. Sing. carb. soft.
 Interbedded / Intermixed SH & LS
 SH - Med/ Dark Gray, Dark Blackish Gray. Red (Cavings ?). Sing. limy in part.
 LS - Off White / Lt Gray / Grayish White. Sing/ Mixed. XF-/Micro-xln. xln por. Firm. misc frags. No/ tr vis por.

-- LANSING "H" 4,500' (-1,072')
 LS - White / Off White / Pale Lt Grayish White. Sing / tr Mot. rare XF- / mostly Micro-xln / tr Crypto-xln. xln port. tr Re-xln. No/ some chalky in part. part Friable. No/ tr vis por.

Interbedded / Intermixed SH & LS
 SH - Med/ Dark Gray, Dark Blackish Gray. Red (Cavings). Sing. limy in part.
 LS - Off White / Lt Gray / Grayish White. Sing/ Mixed. XF-/Micro-xln. xln por. Firm. misc frags. No/ tr vis por.

4,560' Sample: LS - Tan. Sing. XF-xtals (Angular). sutured xtals contact. sealed sutured contact / some vuggy por. No odor. spotted dull green fluorescence. No free oil or gas. spotted Med Brown stain and vuggy infill. Weak Pos cut/ residual. Weak Pos acid/ residual.

-- LANSING "J" 4,549' (-1,121')
 LS - Off White / Pale Whitish Tan. Sing / tr Mot. rare XF- / mostly Micro-xln. xln port. tr Re-xln. Firm. No/ tr vis por.

SH - Black. Sing. carb. soft.
 ??
 4,590' Sample: 2pcs ... LS - Lt Tan. Sing. XF- / Micro-xln, M to F sized, SA frags mixed with fossil frags. rare clear Calc frag. Good vis vuggy por. No odor. spotted dull green fluorescence. Dark Brown asphaltic infill. No free oil or gas. v Weak pos cut/ residual. v Weak acid/residual.

-- LANSING "K" 4,601' (-1,173')
 LS (Dol in part) - White/Off White, v Pale Lt Gray. Sing. Micro-/ some Crypto-xln. xln por. No/ rare Re-xln. mostly No/ tr vis por.

SH - Black. Sing. carb. fissile at top. Med/Dark Gray. Silvery Gray. Limy in part.
 LS - Off White, Lt Tan. Sing/ rare Mot. XF- / some Micro-xln. xln por. mostly No/ tr Re-xln. Firm. No/ tr vis por.

SH - Black. Sing. carb. soft.
 Interbedded / Intermixed LS, SH & Siltstone
 SH - Med/ Dark Gray, Dark Blackish Gray. Sing. tr limy in part. tr massive.
 LS - Off White / Lt Gray / Grayish White or Tan. Sing/ Mixed. XF-/Micro-xln. xln por. Firm. mostly No/ tr chalky in part. rare/tr misc frags. No/ tr vis por.

Siltstone (4) - Lt Brown / Reddish Brown / Pinkish Brown and Off White Mottled. (GSA: 5 YR 4/4, .. 5/6 & .6/4). [Highly Sandy. Silt size, SA qtz grains. point contact, poor sph/oblate, vitreous luster.] Highly calcareous. Firm.

LS (rare Dol in part) - Off White / Pale Lt Gray / Pale Whitish Tan. Sing/ tr Mot/ tr Mixed. rare XF-/ mostly Micro- xln / tr Crypto-xln. xln por. No/ tr Re-xln. rare Micro-Oolites frag. Argil with depth. mostly Massive, Dense. mostly No/ tr vis por.

-- CFS @ 4,436': 60"

Add: SH - Very Dark Gray. Sing. Massive. Cavings?
 Add (two pcs): LS - similar to Lansing (2). Cavings

Cavings - Red Bed
 Vis: 46
 Wt: 9.1
 LCM: 4#

-- CFS @ 4,486': 60"

Low Volume

Cavings - Red Bed

-- Rig failed to stop at 4,520' Circ Point.

-- CFS @ 4,526': 60" Low Volume
 ^-- Rig reports: Vis: 50 Wt: 9.0 LCM: 4#.
 (Rig measured Pre-Mix coming around.) Rig reports (18minutes later):
 Vis: 46 Wt: 9.1 LCM: 4#

WOB: 38M PPI: 700# RPM: 85

Vis: 53
 Wt: 9.1
 LCM: 3#

-- STARK SH 4,558' (-1,130')
 -- CFS @ 4,562': 60"

WOB: 36M
 Cavings
 Pre-Mix resting in Suction Pit.

-- 4,574': Vis: 41 Wt: 9.1 LCM: 4#
 ^-- Stopped Drilling @ 4,577':
 ^-- Suck up & mixed fresh mud.
 ^-- Mix / Add Mud. Leveling out mud so what is 'in hole' and in 'working pits' is similar.
 ^-- Having more product delivered.
 4,577' (Mud Check after second Pre-Mix ran in) - Vis: 47 Wt: 9.0 Wtr Loss: 6.8 PV: 15 YP: 13 Gels: 6/17 pH: 11.0 Cl (1,000) Ca (10) Solids: 5% LCM: 4#

^-- Mud Checks (over 2 hours):
 Vis: 53 - 58 Wt: 9.0
 Wt: 9.0
 LCM: 4#

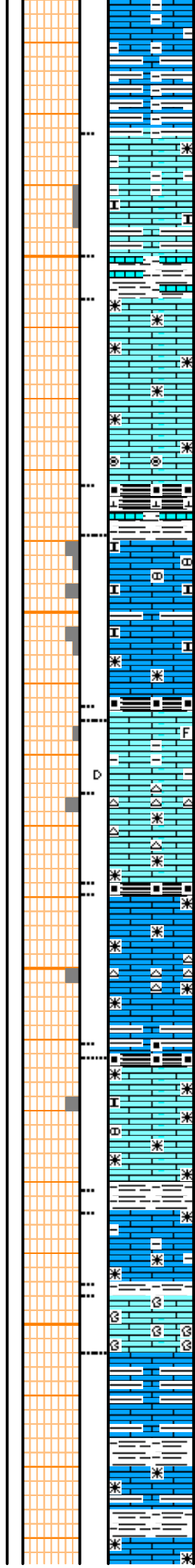
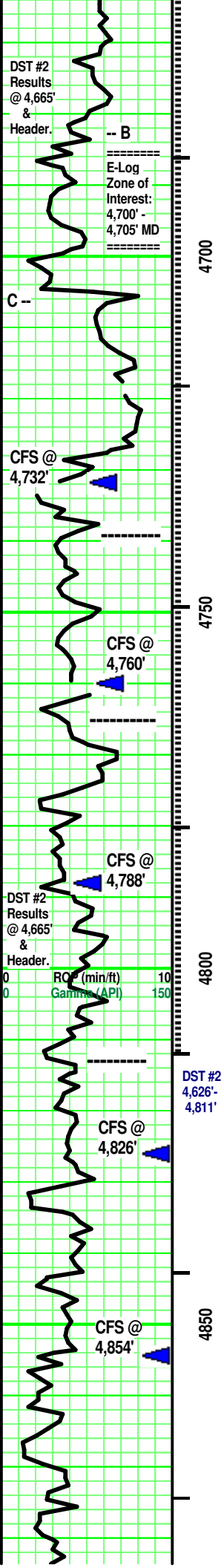
^-- Resumed Drilling.

-- MOUND CITY 4,613 (-1,185')
 Vis: 59
 Wt: 9.0
 LCM: 4#

Vis: 58
 Wt: 9.0
 LCM: 4#

-- MARMATON 4,649' (-1,221')

=====
 DST #2 - MARMATON / FT SCOTT 4,626' - 4,811'
 Recovery: 370' Mud
 Vis: 57
 Wt: 9.0



LS - Tan / Grays / tr Off White. tr Sing/ mostly Mot or Mixed. tr XF- / Micro-xln. xln por. mostly No/ tr Re-xln. Silvery Gray to Med Gray argill/shaly in part. tr chalky in part. No / tr vis por.

SH - Grays. Sing / Mot. Highly Limy stringers..

LS - Pale Lt Gray / mostly Lt Gray / tr Med Gray. mostly Sing / tr Mixed. Micro-xln/ tr Crypto-xln. xln por. No/ some Re-xln. Firm. Dense. No vis por.

Add few pcs: LS - Yellow / Med Gray. Mot. 'Ghost' XF-Micro-Oolites in clear/opaque calc matrix. Re-xln. Dense. No vis por.

SH - Black. Sing. carb. tr calc / limy. fissile. SH - Med Gray. Sing. Ls stringer.

LS - Off White/ Pale Tan. Sing/ tr mixed. tr XF- / Micro-xln. xln por. No/ tr Re-xln. No/ tr chalky. tr argil in part. mostly No/ rare fossil frag or nodule. No / tr vis por.

SH - Black. Sing. carb. soft.

----- LOWER FT SCOTT 4,765' (-1,337')

LS - Med Tan / Pale 'Druzy' Brown / some Off White / Brownish Tan. some Sing, mostly Mot or Mixed. XF- / Micro-xln. xln and Re-xln por. some Re-xln. tr chalky. mostly No/ tr fossil frags. tr argil in part. No/ tr vis por. No odor. No flouresence. After crushing, No free oil or gas. tr spotted Med Brown stain. rare / tr gilsonitic frags. No cut / residual. No acid / residual.

LS (5) - White / Off White. Sing. XF- / ----->

SH - Black. Sing. carb. tr pyritic, soft.

LS - Tan / Off White. Sing / tr Mixed. XF- / Micro-xln. xln por. No/ tr Re-xln. [CHERT - Clear/Tannish Gray. Sing/Mot. Opaque to Semi-transparent. mostly No/ tr misc minute inclusions. No Tripolitic.] Shaly at depth. mostly Firm. No/ tr vis por.

Oakley

LS - Off White / Tan / tr Brownish Tan increasing with depth. tr VF or XF- / mostly Micro-xln. xln and rare part por. mix of No or Re-xln. Chalky in part. mostly No/ tr 'ghost' fossil frags or XF nodules. Firm. No/ tr vis por.

SH - Med / Dark Gray, Grayish Black. Sing. soft.

LS - Off White / Lt Gray / Grayish White or Tan. Sing/ Mixed. XF-Micro-xln. xln por. Firm. mostly No/ tr chalky in part. rare/tr misc frags. No/ tr vis por.

SH - Med / Dark Gray, Grayish Black. Sing. soft.

LS - Off White. Sing. Micro-xln. xln & part por. [Argil frags, Lt Brownish / Brownish dull Gray frags 'floating' in LS matrix. F/XF sized, SA] No/ tr Re-xln. partly Firm. No/ tr vis por.

Interbedded / Intermixed SH & LS

SH - Med/ Dark Gray, Dark Blackish Gray. Sing. tr limy in part. tr massive.

LS - Grays / Grayish White or Tan. Sing/ Mixed. XF-Micro-xln. xln por. Firm. No/ some argil/shale in part. No / tr Re-xln. rare / tr misc frags. No/ tr vis por.

Recovery: 370 md
IFP: 138# - 229# / 30" LCM: 4#
ISIP: 1,339# / 60"
FFP: 251# - 2278# / 20" Vis: 58
FSIP: NA Wt: 9.0
MH: 2,469# - 2,438# LCM: 4#

132 deg F

Misc SH - Varigated (Maroon/ Purple/ Orangish Red/ Browns) in samples. Vis: 58
Wt: 9.0
LCM: 4#

WOB: 38M @ 85 RPM. 650psi.

Vis: 59
Wt: 9.0
LCM: 4#

WOB: 38M @ 80 RPM. 700psi

Vis: 59
Wt: 9.0
LCM: 4#

-- CFS @ 4,732': 60"

-- FT SCOTT 4,739' (- 1,311')

-- CFS @ 4,760': 60"

Vis: 56
Wt: 9.0
LCM: 4#

Micro-xln. xln por. No/ some Re-xln. tr chalky. [some CHERT - tr Clear, mostly Lt Gray or White. Opaque to semi - transparent. mostly No/ tr minute fossil. No tripolitic.] Firm. No/ tr vis por.

Vis: 59
Wt: 9.1
LCM: 4#

-- CFS @ 4,788': 60"

^ CFS @ 4,788' -
Vis: 60 Wt: 8.9 Wtr Loss: 6.8
PV: 15 YP:13 Gels: 12/25
pH: 11.5 Cl (1,000) Ca (10)
Solids: 4.3% LCM: 4#

Vis: 56
Wt: 9.1
LCM: 4#

-- CELIA 4,813" (-1,385')

Vis: 56
Wt: 9.0
LCM: 4#

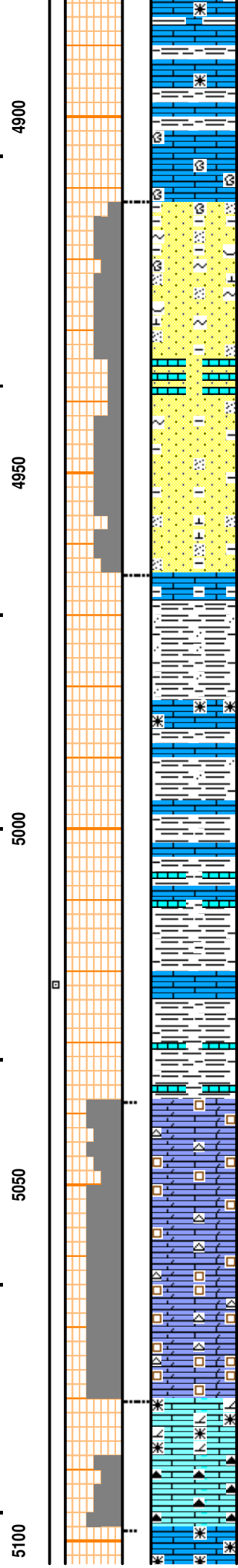
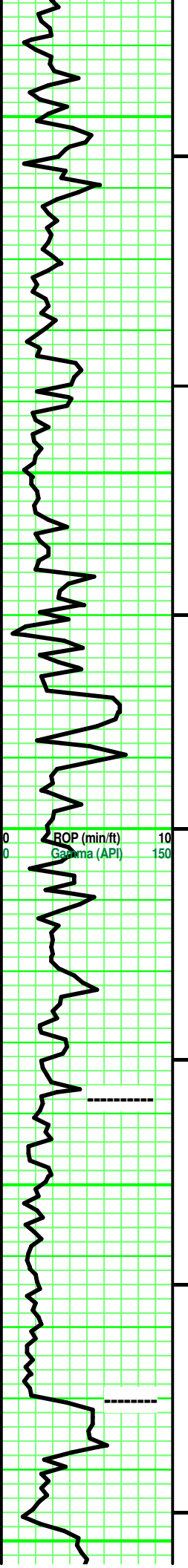
-- CFS @ 4,826': 60"

Vis: 50
Wt: 9.1
LCM: 4#

-- CFS @ 4,854': 60"

Vis: 52
Wt: 9.2
LCM: 4#

4,880' Sample adds SH - Purple, blue, rare greens. massive. soft.



Add: LS - Yellow, Purple, rare Green, Greenish Blue. Sing/ some Mixed. XF-/ Micro-xln. xln por. misc frags and inclusions. No/ tr vis por.

SS - mostly Clear / some Off White, tr Lt Gray. mixture of: tr M & F, mostly XF & some Silt qtz sized grains. SA/SR. Mod sort. poor / mod sph. mixture of: mostly Vitreous / some frosted luster. mixture of: sutured / some point grain contact. Misc inclusions: glauc, rare mica, dark specks. Highly limy in part. some No/ mostly tr to Fair vis por.

Interbedded / Intermixed SH & LS

SH - Med/ Dark Gray, Dark Blackish Gray. Sing. tr limy in part. tr massive.

LS - Grays / Grayish White or Tan. mixed with rare Yellow, Purple, Maroon, Blue Green (increasing varigated with depth). Sing/ Mixed. XF-/Micro-xln. xln por. No/ tr Re-xln. Firm. No/ some argil/shale or sandy in part. No / tr Re-xln. rare / tr misc frags. No/ tr vis por.

Add: LS - Purple, Yellow, Dark Gray. (varigated)/Mot. graptoloid texture. Micro-xln part. soft. No vis por.

LS (Dol) (6) - Tan. Sing. Micro-xln. Highly sucrosic. [tr CHERT - White / Grays / tr Tan / Silver Gray. Mot. Brecciated frags. Opaque. Misc Inclusions. No Tripolitic.] soft. Good vis por.

LS (tr Dol) - Tan. Sing. Micro-xln & Re-xln. tr glauc (XF, silt sized, SA). Firm. No vis por

Add: CHERT - White/Grays. Mot. Opaque. Inclusions. No tripolitic.

LS - Tans / some Pale Lt Gray. mostly Sing / tr Mot. tr XF- / Micro-xln. xln & tr Re-xln por. [rare

Vis: 52
Wt: 9.1
LCM: 4#

Vis: 54
Wt: 9.1
LCM: 4#

Vis: 54
Wt: 9.1
LCM: 4#

Vis: 54
Wt: 9.1
LCM: 4#

Vis: 56
Wt: 9.0+
LCM: 4#

WOB 36M @ 86 RPM

pcs: SS - Clear. Sing. Silt sized qtz grains. SA. Hi sort. mod sph. Vitreous luster. Hi sutured grain contact. tr inclusions. No / tr vis por.

SS trailing in samples

Vis: 56
Wt: 9.1
LCM: 4#

Vis: 56
Wt: 9.1
LCM: 4#

WOB 36 @ 80 RPM. 700 psi.

-- MISS 'Soft top'
5,038' (-1,610')

Vis: 56
Wt: 9.1
LCM: 4#

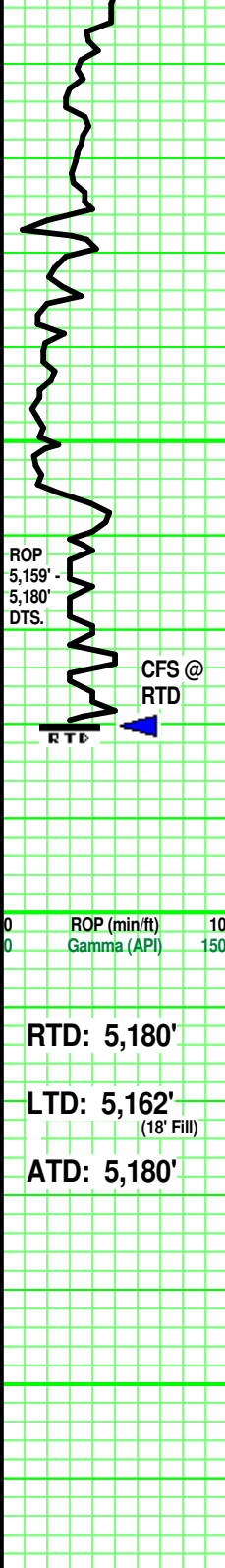
Vis: 58
Wt: 9.0
LCM: 4#

5,080' & 5,090' Sample had LS (6) examples.

-- MISS 'Hard top'
5,080' (-1,652')

Vis: 56
Wt: 9.0
LCM: 4#

Aired Up Mud



5150

ROP
5,159' -
5,180'
DTS.

CFS @
RTD

0	ROP (min/ft)	10
0	Gamma (API)	150

RTD: 5,180'

LTD: 5,162'
(18' Fill)

ATD: 5,180'

CHERT - tr Clear/ mostly Off White. Mot. Opaque to semi-transparent. No/ tr inclusions. no Tripolitic.] Massive. No/ tr vis por.

Add: Chalky.

LS - Tans / Pale Lt Gray. mostly Sing / tr Mot. tr XF- / Micro-xln. xln & Micro-sucrosic por. . [rare CHERT - tr Clear/ mostly Off White / tr Grays. Mot. Opaque to semi-transparent. Misc inclusions & spiculitic. no Tripolitic.] Massive. No/ tr vis por.

LS - Lt / tr Med Gray, Off Whitish Tan to Tan. Sing/ mostly Mot/ rare Mixed. rare XF- / Micro-xln. xln and tr part por. some No/ some Re-xln. tr carb nodules (XF), rare glauc, misc inclusions. Firm. No/ tr vis por.

Add: LS - Dark Brown. Sing. Crypto-xln. Re-xln. No vis por.

5,122' -
Vis: 76 Wt: 9.0 Wtr Loss: 7.2
PV: 22 YP: 23 Gels: 13/28
pH: 11.5 Cl (1,000) Ca (10)
Solids: 5.0% LCM: 4#

Vis: 72
Wt: 9.1
LCM: 4#

Vis: 56
Wt: 9.2
LCM: 4#

Vis: 57
Wt: 9.2
LCM: 4#

xxxxxxx RTD @ 5,180' xxxxxxxx

- ^--- CFS @ 5,150' (RTD): 60".
- ^--- S/T: 14 stands.
- ^--- CHC: 90+"
 - Work Kelly slowly (15").
 - Check Sample Box for volume & type of fill.
- ^--- Hole Dev: 0.75 deg @ RTD.
- ^--- T/O.
- ^--- E-Log [Midwest Wireline]
- ^--- Repair Mud Pump.
- ^--- CHC to remove fill on bottom.
- ^--- S/T 10 stands.
- ^--- CHC.
- ^--- DST #2 - Marmaton / Ft. Scott (4,626' - 4,811')

* ^--- 5,180' (CHC Before DST #2) -
Vis: 55 Wt: 9.2 Wtr Loss: 7.6
PV: 18 YP: 18 Gels: 12/25
pH: 10.5 Cl (1,000) Ca (10)
Solids: 6.4% LCM: 4#

KAUS #1 - 21

2,310' FNL & 175' FEL 21 - T3S - R37W
Cheyenne County, Kansas

MURFIN DRILLING CO., INC.
Wichita, Kansas

Geologist:
Curtis Covey
COVEY - The Well Watchers
Well Number: 1,195