

ALT ☐ I ☐ II ☐ III Approved by: _____ Date: _____

Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	MERIEM SE 2-20
Doc ID	1727106

All Electric Logs Run

DIL
DUCP
MEL
BHCS

Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	MERIEM SE 2-20
Doc ID	1727106

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Surface	12.250	8.625	23	57	H-325	55	
Production	7.875	5.500	15.5	2940	H-Con, H-854	360	

DRILLING REPORT - LOG TOPS - MERIEM SE 2-20

MDCI Meriem SE #2-20 300'FSL 2500'FEL Sec. 20-T28S-R9E KB: 1375						
Formation	Sample top	Datum	Ref	Log Top	Datum	Ref
Heebner	+1042	+333	+4	+1045	+330	+1
Lansing	+1426	-51	-9	+1430	-55	-13
Kansas City	+1765	-390	+3	+1769	-394	-1
Stark	+1879	-504	-1	+1881	-506	-3
Mound City	+1934	-559	+4	+1942	-567	-4
Altamont	+2095	-720	-1	+2097	-722	-3
Pawnee	+2182	-807	+1	+2188	-813	-5
Ft. Scott.	+2219	-844	-1	+2222	-847	-4
Excello	+2255	-880	-2	+2255	-880	-2
Oakley	+2326	-951	-1	+2327	-952	-2
Mississippi	+2535	-1160	+9	+2542	-1167	+2
Kinderhook	+2737	-1362	+6	+2739	-1364	+4
Arbuckle	+2865	-1490	+7	+2868	-1493	+4
RTD	+2950					
LTD				+2953		



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water Ste 300
Wichita, KS 67202

ATTN: Curtis Covey

Meriem #2-20

20-28S-09E Elk,KS

Start Date: 2023.06.25 @ 07:55:00

End Date: 2023.06.25 @ 19:30:47

Job Ticket #: 70525 DST #: 1

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

Printed: 2023.06.29 @ 16:31:26



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co

250 N Water Ste 300
Wichita, KS 67202

ATTN: Curtis Covey

20-28S-09E Elk, KS

Meriem #2-20

Job Ticket: 70525

DST#: 1

Test Start: 2023.06.25 @ 07:55:00

GENERAL INFORMATION:

Formation: **Kinderhook**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:27:47

Time Test Ended: 19:30:47

Test Type: Conventional Bottom Hole (Initial)

Tester: Leal Cason

Unit No: 72

Interval: 2737.00 ft (KB) To 2752.00 ft (KB) (TVD)

Reference Elevations: 1375.00 ft (KB)

Total Depth: 2752.00 ft (KB) (TVD)

1363.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 12.00 ft

Serial #: 8372 Inside

Press@RunDepth: 31.75 psig @ 2743.00 ft (KB)

Capacity: psig

Start Date: 2023.06.25

End Date:

2023.06.25

Last Calib.:

2023.06.25

Start Time: 07:55:01

End Time:

19:30:47

Time On Btm: 2023.06.25 @ 12:25:32

Time Off Btm: 2023.06.25 @ 15:47:47

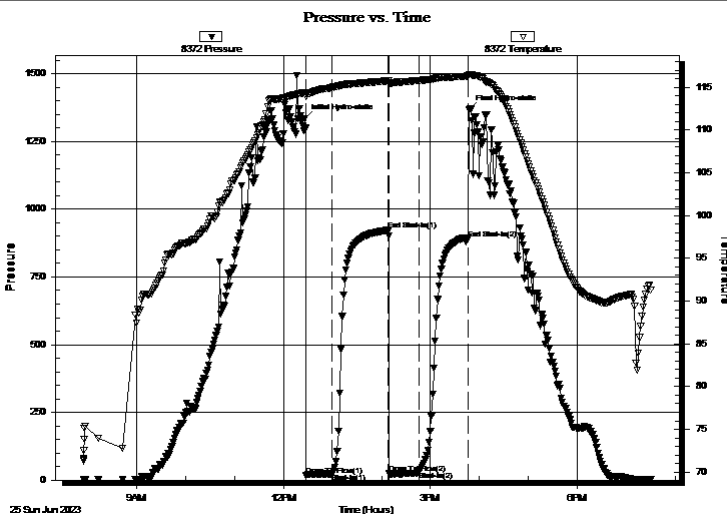
TEST COMMENT: IF: Weak 1" Blow, Died Off to .57"

IS: No Blow Back

FF: Weak Surface Blow

FS: No Blow Back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1334.02	114.37	Initial Hydro-static
3	18.34	113.97	Open To Flow (1)
34	24.11	114.97	Shut-In(1)
103	922.25	115.71	End Shut-In(1)
104	24.56	115.53	Open To Flow (2)
140	31.75	115.77	Shut-In(2)
201	892.05	116.31	End Shut-In(2)
203	1366.23	116.49	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	SOCM 5%O 95%M	0.05

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co

250 N Water Ste 300
Wichita, KS 67202

ATTN: Curtis Covey

20-28S-09E Elk, KS

Meriem #2-20

Job Ticket: 70525

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Reference Elevations: 1375.00 ft (KB)

Total Depth: 2752.00 ft (KB) (TVD)

1363.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 12.00 ft

Serial #: 8365 Outside

Press@RunDepth: psig @ 2743.00 ft (KB)

Capacity: psig

Start Date: 2023.06.25

End Date:

2023.06.25

Last Calib.:

2023.06.25

Start Time: 07:55:01

End Time:

19:30:47

Time On Btm:

Time Off Btm:

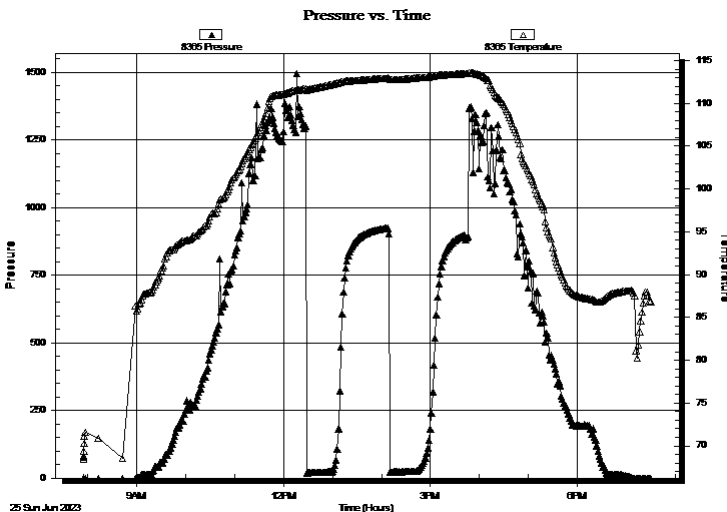
TEST COMMENT: IF: Weak 1" Blow, Died Off to .57"

IS: No Blow Back

FF: Weak Surface Blow

FS: No Blow Back

PRESSURE SUMMARY



Time
(Min.)

Pressure
(psig)

Temp
(deg F)

Annotation

Recovery

Length (ft)	Description	Volume (bbl)
10.00	SOCM 5%O 95%M	0.05

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

20-28S-09E Elk, KS

250 N Water Ste 300
Wichita, KS 67202

Meriem #2-20

Job Ticket: 70525

DST#: 1

ATTN: Curtis Covey

Test Start: 2023.06.25 @ 07:55:00

Tool Information

Drill Pipe:	Length: 2218.00 ft	Diameter: 3.80 inches	Volume: 31.11 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 520.00 ft	Diameter: 2.25 inches	Volume: 2.56 bbl	Weight to Pull Loose: 75000.00 lb
		Total Volume:	33.67 bbl	Tool Chased ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	2737.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	15.00 ft			
Tool Length:	44.00 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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Shut In Tool	5.00			2713.00	
Hydraulic tool	5.00			2718.00	
Jars	5.00			2723.00	
EM Tool	3.00			2726.00	
Safety Joint	2.00			2728.00	
Packer	5.00			2733.00	29.00 Bottom Of Top Packer
Packer	4.00			2737.00	
Stubb	1.00			2738.00	
Handling Sub	5.00			2743.00	
Recorder	0.00	8372	Inside	2743.00	
Recorder	0.00	8365	Outside	2743.00	
Perforations	6.00			2749.00	
Bullnose	3.00			2752.00	15.00 Bottom Packers & Anchor

Total Tool Length: 44.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

20-28S-09E Elk, KS

250 N Water Ste 300
Wichita, KS 67202

Meriem #2-20

Job Ticket: 70525

DST#: 1

ATTN: Curtis Covey

Test Start: 2023.06.25 @ 07:55:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 52.00 sec/qt

Water Loss: 7.99 in³

Resistivity: ohm.m

Salinity: 800.00 ppm

Filter Cake: 0.02 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

Oil API:

Water Salinity:

deg API

ppm

ft

bbl

psig

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	SOCM 5%O 95%M	0.049

Total Length: 10.00 ft

Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

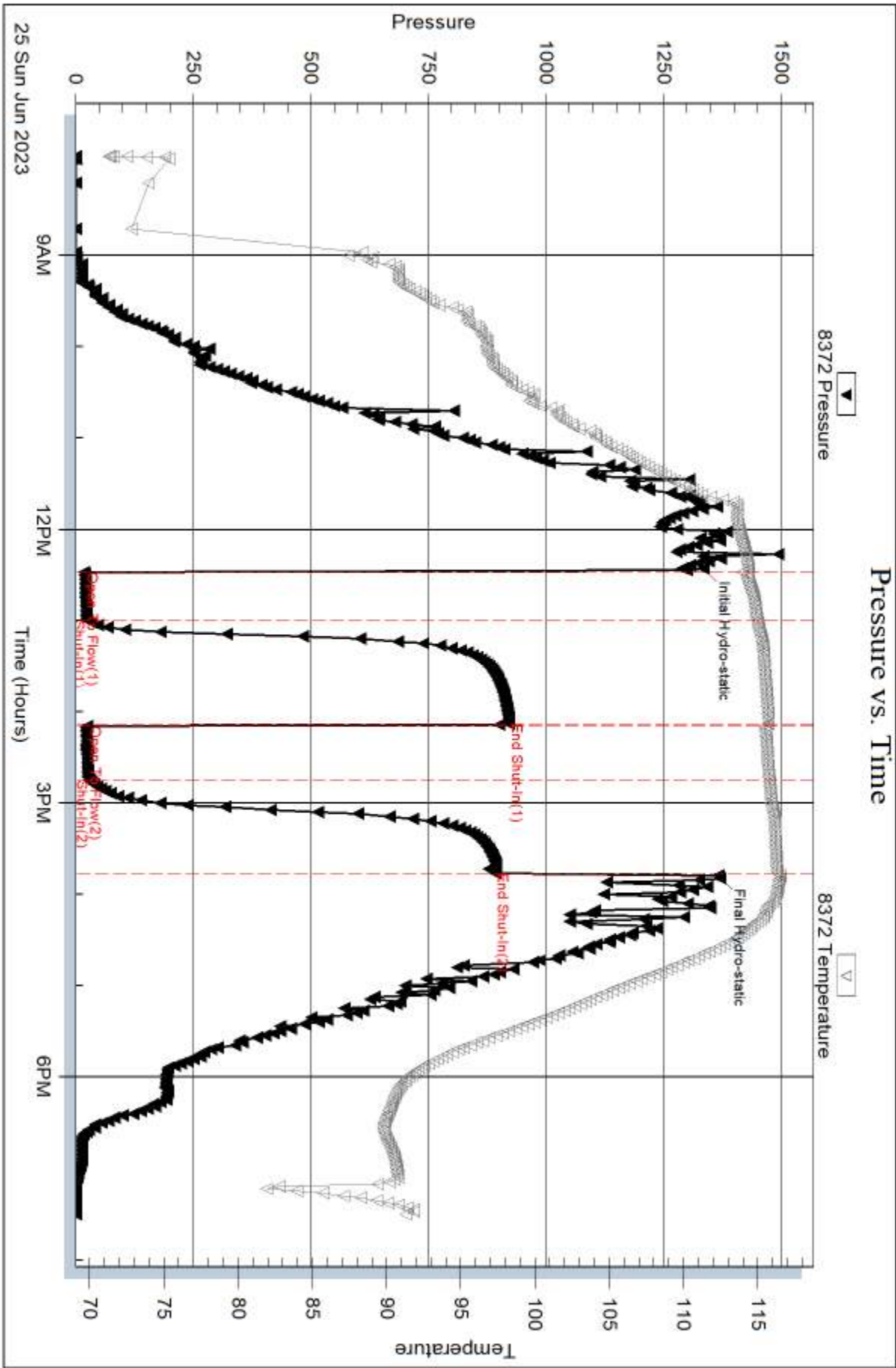
Serial #: 8372

Inside

Murfin Drilling Co

Meriem #2-20

DST Test Number: 1

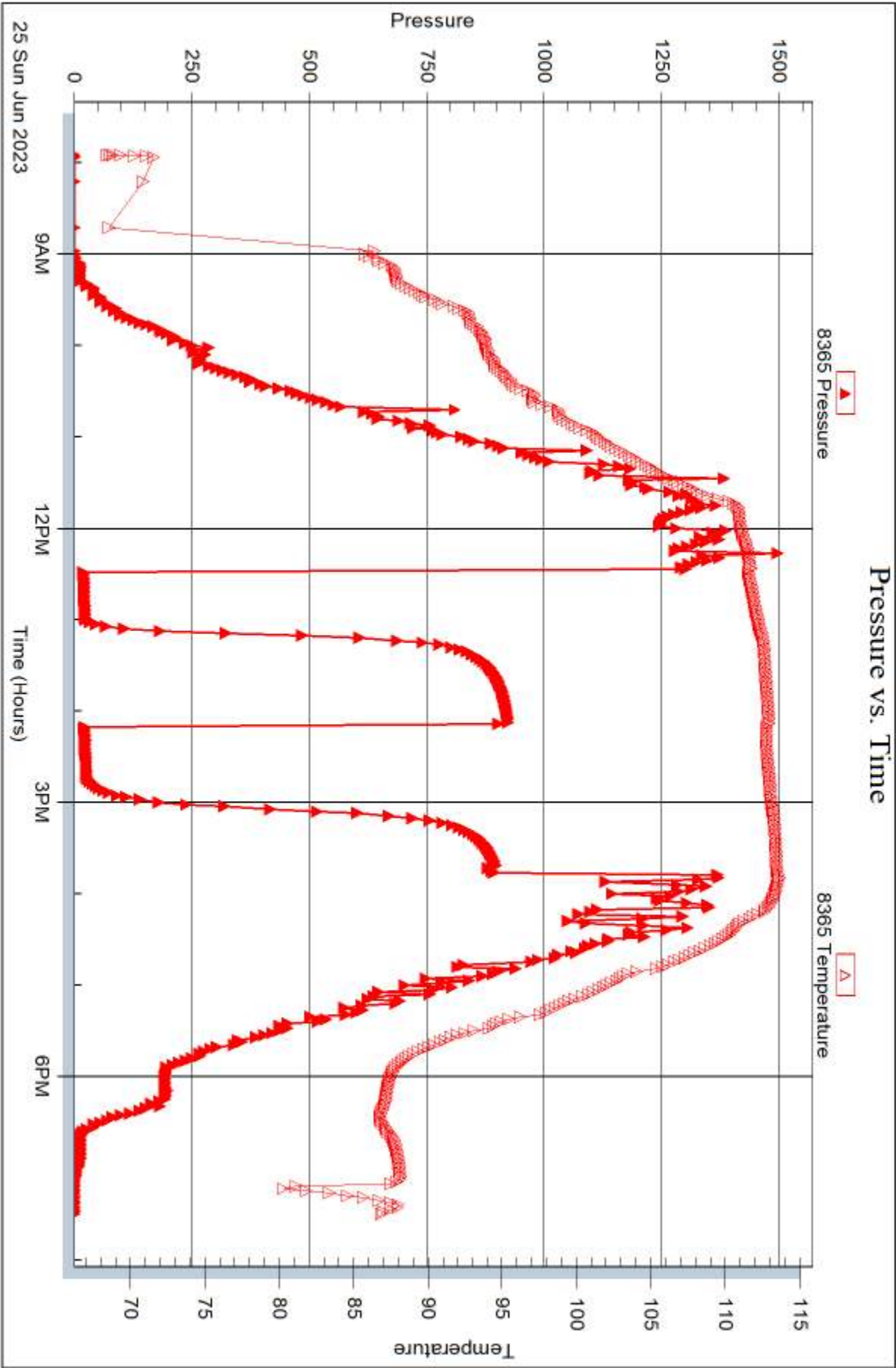


Serial #: 8365

Outside Murfin Drilling Co

Meriem #2-20

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water Ste 300
Wichita, KS 67202

ATTN: Curtis Covey

Meriem #2-20

20-28S-09E Elk,KS

Start Date: 2023.06.26 @ 08:05:00

End Date: 2023.06.26 @ 22:58:32

Job Ticket #: 70676 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2023.06.29 @ 16:27:46



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co

250 N Water Ste 300
Wichita, KS 67202

ATTN: Curtis Covey

20-28S-09E Elk, KS

Meriem #2-20

Job Ticket: 70676

DST#: 2

Test Start: 2023.06.26 @ 08:05:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:33:32

Time Test Ended: 22:58:32

Interval: 2866.00 ft (KB) To 2885.00 ft (KB) (TVD)

Total Depth: 2885.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole (Reset)

Tester: Leal Cason

Unit No: 72

Reference Elevations: 1375.00 ft (KB)

1363.00 ft (CF)

KB to GR/CF: 12.00 ft

Serial #: 8372 Inside

Press@RunDepth: 718.30 psig @ 2872.00 ft (KB)

Start Date: 2023.06.26

End Date:

2023.06.26

Start Time: 08:05:01

End Time:

22:58:32

Capacity: psig

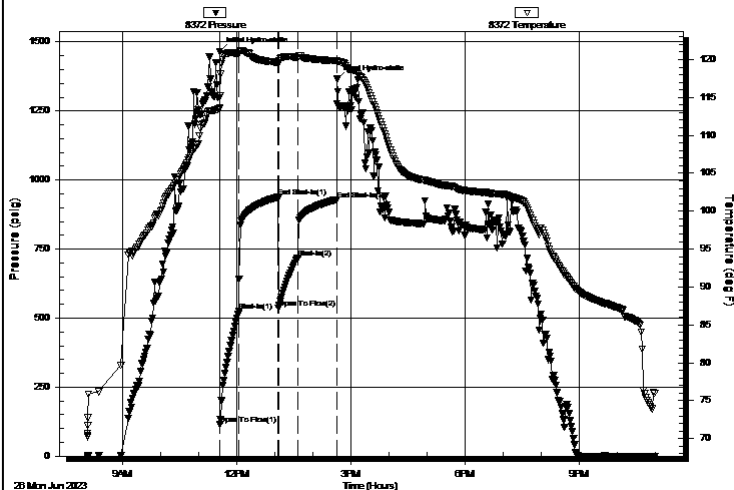
Last Calib.: 2023.06.26

Time On Btm: 2023.06.26 @ 11:32:47

Time Off Btm: 2023.06.26 @ 14:38:17

TEST COMMENT: IF: Strong Blow , BOB in 1 minute, Built to 119.08"
IS: 1.75" Blow Back
FF: Strong Blow , BOB in 2 minutes, Built to 177.97
FS: .75" Blow Back

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1465.82	113.58	Initial Hydro-static
1	116.51	115.18	Open To Flow (1)
31	524.03	120.78	Shut-In(1)
92	937.50	119.61	End Shut-In(1)
93	536.85	119.53	Open To Flow (2)
124	718.30	120.30	Shut-In(2)
184	928.73	119.86	End Shut-In(2)
186	1365.12	119.82	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1991.00	Clean Oil	23.19

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co

250 N Water Ste 300
Wichita, KS 67202

ATTN: Curtis Covey

20-28S-09E EIk, KS

Meriem #2-20

Job Ticket: 70676

DST#: 2

Test Start: 2023.06.26 @ 08:05:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:33:32

Time Test Ended: 22:58:32

Test Type: Conventional Bottom Hole (Reset)

Tester: Leal Cason

Unit No: 72

Interval: 2866.00 ft (KB) To 2885.00 ft (KB) (TVD)

Total Depth: 2885.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 1375.00 ft (KB)

1363.00 ft (CF)

KB to GR/CF: 12.00 ft

Serial #: 8365 Outside

Press@RunDepth: psig @ 2872.00 ft (KB)

Start Date: 2023.06.26

End Date:

2023.06.26

Start Time: 08:05:01

End Time:

22:58:32

Capacity: psig

Last Calib.:

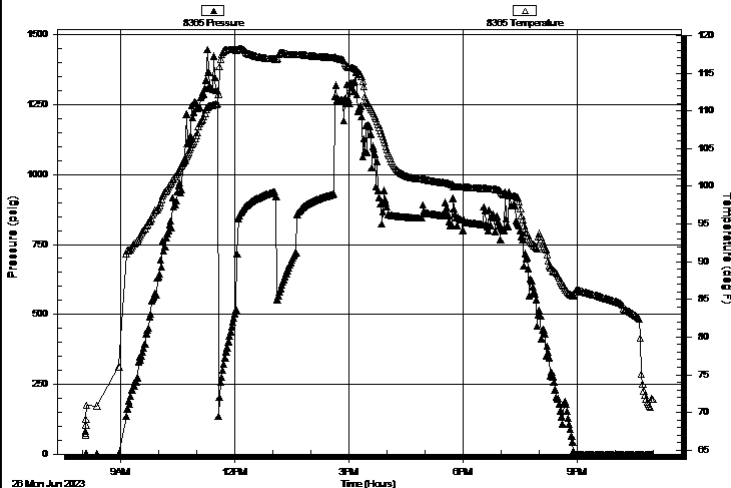
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Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Strong Blow , BOB in 1 minute, Built to 119.08"
IS: 1.75" Blow Back
FF: Strong Blow , BOB in 2 minutes, Built to 177.97
FS: .75" Blow Back

Pressure vs. Time



PRESSURE SUMMARY

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

Length (ft)	Description	Volume (bbl)
1991.00	Clean Oil	23.19

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

20-28S-09E Elk, KS

250 N Water Ste 300
Wichita, KS 67202

Meriem #2-20

Job Ticket: 70676

DST#: 2

ATTN: Curtis Covey

Test Start: 2023.06.26 @ 08:05:00

Tool Information

Drill Pipe:	Length: 2349.00 ft	Diameter: 3.80 inches	Volume: 32.95 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 520.00 ft	Diameter: 2.25 inches	Volume: 2.56 bbl	Weight to Pull Loose: 90000.00 lb
		Total Volume:	35.51 bbl	Tool Chased ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 74000.00 lb
Depth to Top Packer:	2866.00 ft			Final 84000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	19.00 ft			
Tool Length:	48.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: Dropped Bar

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			2842.00	
Hydraulic tool	5.00			2847.00	
Jars	5.00			2852.00	
EM Tool	3.00			2855.00	
Safety Joint	2.00			2857.00	
Packer	5.00			2862.00	29.00 Bottom Of Top Packer
Packer	4.00			2866.00	
Stubb	1.00			2867.00	
Handling Sub	5.00			2872.00	
Recorder	0.00	8372	Inside	2872.00	
Recorder	0.00	8365	Outside	2872.00	
Perforations	10.00			2882.00	
Bullnose	3.00			2885.00	19.00 Bottom Packers & Anchor

Total Tool Length: 48.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

20-28S-09E EIk, KS

250 N Water Ste 300
Wichita, KS 67202

Meriem #2-20

Job Ticket: 70676

DST#: 2

ATTN: Curtis Covey

Test Start: 2023.06.26 @ 08:05:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 62.00 sec/qt

Water Loss: 7.20 in³

Resistivity: ohm.m

Salinity: 800.00 ppm

Filter Cake: 0.02 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

28.3 deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1991.00	Clean Oil	23.192

Total Length: 1991.00 ft Total Volume: 23.192 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity was 31.9 @ 96 degrees

Serial #: 8372

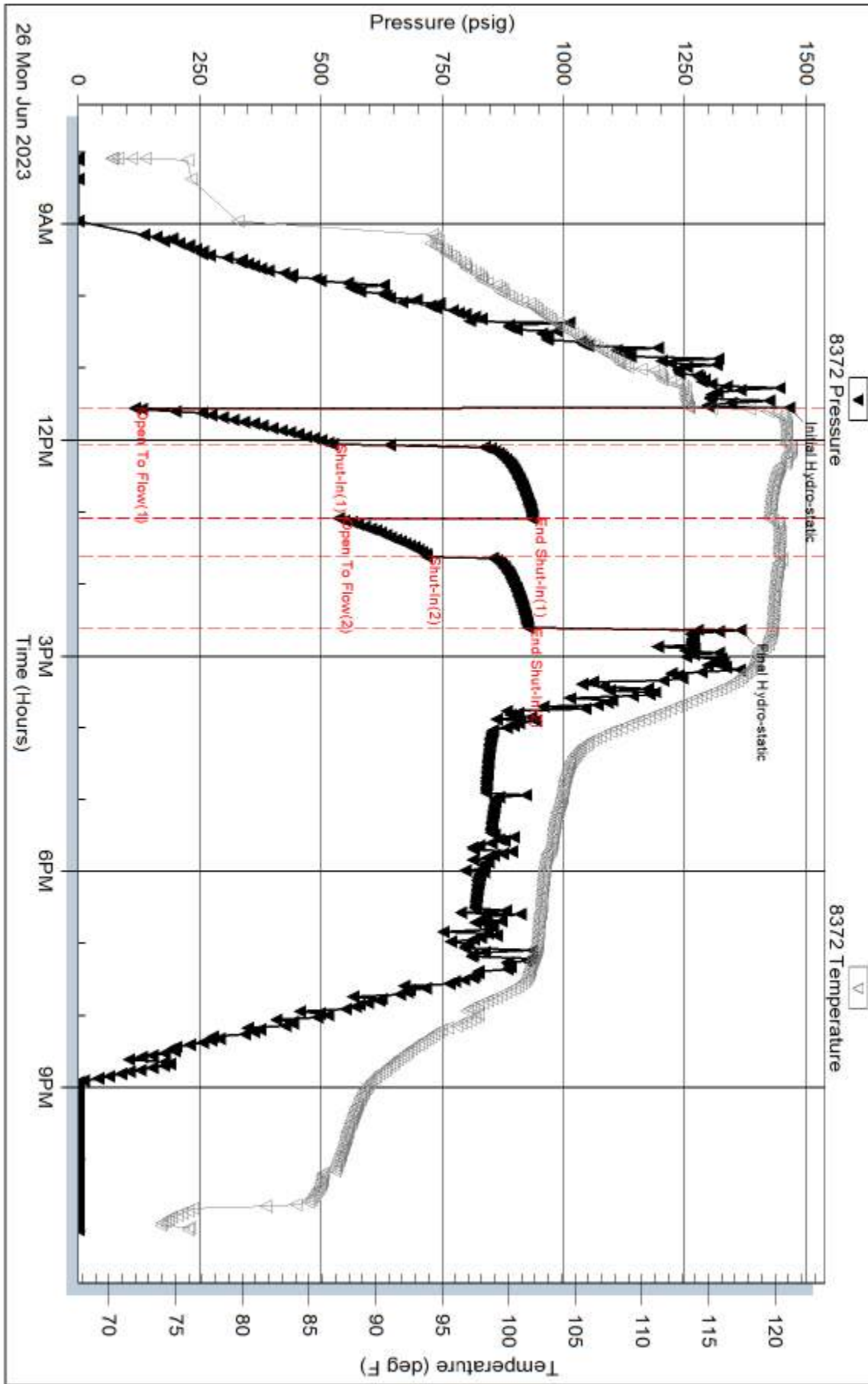
Inside

Murfin Drilling Co

Meriem #2-20

DST Test Number: 2

Pressure vs. Time

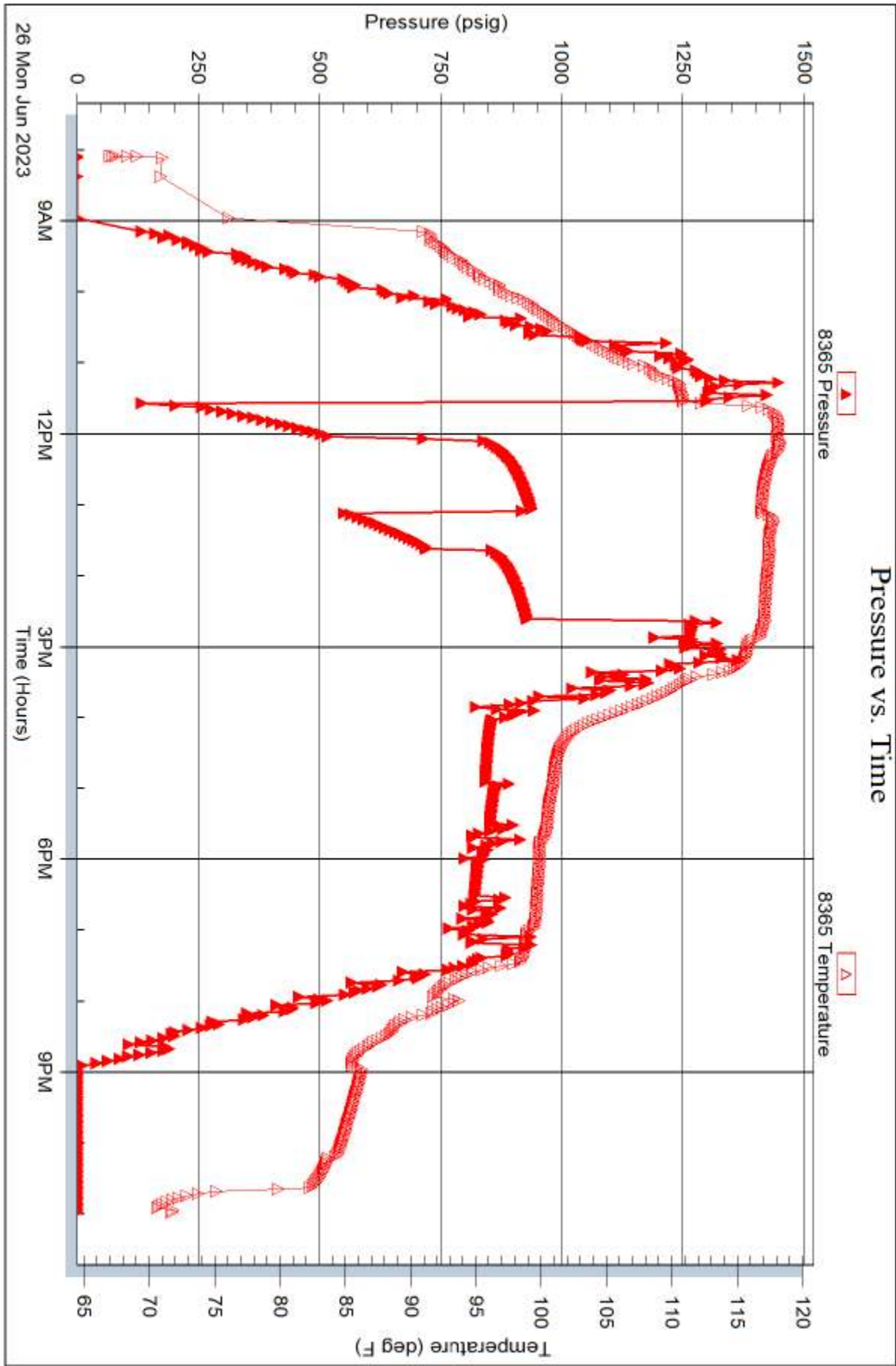


Serial #: 8365

Outside Murfin Drilling Co

Meriem #2-20

DST Test Number: 2





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 70525

Well Name & No. Meriem 2-20 Test No. 1 Date 06/25/23
 Company Martin Drilling CO Elevation 1375 KB 1363 GL
 Address 250 N Water Ste 300 Wichita, KS 67202
 Co. Rep / Geo Curtis Covey Rig Martin 116
 Location: Sec. 20 Twp 28S Rge. 09E Co. E1K State KS

Interval Tested 2737 - 2752 Zone Tested Kinderhook
 Anchor Length 15 Drill Pipe Run 2218 Mud Wt. 9.2
 Top Packer Depth 2732 Drill Collars Run 520 Vis 52
 Bottom Packer Depth 2737 Wt. Pipe Run 0 WL 8.0
 Total Depth 2752 Chlorides 800 ppm System LCM 3

Blow Description IF: Weak 1" Blow, Died off to .57"
IST: NO Blow Back
FF: Weak Surface Blow
FST: NO Blow Back

Rec <u>10</u>	Feet of <u>50CM</u>	%gas <u>5</u>	%oil	%water <u>95</u>	%mud
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	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10 BHT 116 Gravity NIL API RW NIL @ NIL °F Chlorides NIL ppm

Initial Hydrostatic 1334 ☒ Test 2800 ☐ Ruined Shale Packer
 Initial Flow 18 to 24 ☒ Jars 300 ☐ Ruined Packer
 Initial Shut-In 922 ☐ Circ Sub ☒ Hotel
 Final Flow 24 to 32 ☒ Hourly Standby 1.5h 150 ☐ EM Tool Successful
 Final Shut-In 892 ☒ Mileage (240) 145mi 253.75 ☐ Accessibility 150
 Final Hydrostatic 1366 ☐ Sampler 53mi 92.75 ☐ Gas Sample

T- On Location 05:45 ☐ Straddle ☐ Oversized Hole
 Initial Flow 30 T-Started 07:55 ☐ Shale Packer ☐ Sub Total 150
 Initial Shut-In 60 T-Open 12:27 ☐ Extra Packer ☐ Total 3746.50
 Final Flow 30 T-Pulled 15:46 ☐ Extra Recorder ☐ Tool Loaded @
 Final Shut-In 60 T-Out 19:30 ☐ Day Standby ☐ MP/DST Disc't

Comments

Approved By [Signature] Our Representative [Signature]

TriLOBITE Testing Inc. shall not be liable for damage of any kind of 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. 70676

Well Name & No.	Merion 2-20	Test No.	2	Date	06/26/23				
Company	Murfin Drilling CO	Elevation	1375	KB	1363	GL			
Address	250 N. Water Ste 300 Wichita, KS 67202								
Co. Rep / Geo	Curtis Covey	Rig	Murfin 116						
Location: Sec.	20	Twp	28S	Rge.	09E	Co.	Elk	State	KS

Interval Tested	2866 - 2885	Zone Tested	Arbuckle			
Anchor Length	19	Drill Pipe Run	2349	Mud Wt.	9.35	
Top Packer Depth	2861	Drill Collars Run	520	Vis	62	
Bottom Packer Depth	2866	Wt. Pipe Run	0	WL	7.2	
Total Depth	2885	Chlorides	800	ppm System	LCM	2

Blow Description IF: Strong Blow, BOB in 1 minute, Built to 119.08"

ISI: 1.75' Blow Back

FF: Strong Blow, BOB in 2 minutes, Built to 177.97

FSI: .75" Blow Back

Rec	1991	Feet of	Clean Oil	%gas	100	%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		Feet of		%gas		%oil	%water	%mud
Rec		Feet of		%gas		%oil	%water	%mud
Rec		Feet of		%gas		%oil	%water	%mud

Rec Total 1991 BHT 121 Gravity 28.3 API RW N/C @ N/C F Chlorides N/C ppm

Initial Hydrostatic 1466 ☒ Test 2800 ☐ Ruined Shale Packer

Initial Flow 116 to 524 ☒ Jars 300 ☐ Ruined Packer

Initial Shut-In 937 ☒ Circ Sub Dropped Bar 50 ☒ Hotel

Final Flow 537 to 718 ☒ Hourly Standby 3h 300 ☐ EM Tool Successful

Final Shut-In 928 ☒ Mileage 100 From Motel 253.75 + 92.75 ☒ Accessibility 150

Final Hydrostatic 1365 ☐ Sampler ☐ Gas Sample

T-On Location 07:45 ☐ Straddle ☐ Oversized Hole

Initial Flow 30 T-Started 08:06 ☐ Shale Packer ☐ Sub Total 150

Initial Shut-In 60 T-Open 11:33 ☐ Extra Packer ☐ Total 3946.50

Final Flow 30 T-Pulled 14:36 ☐ Extra Recorder ☐ Tool Loaded @

Final Shut-In 60 T-Out 22:58 ☐ Day Standby ☐ MP/DST Disc't

Comments

Approved By _____ Our Representative _____

TriLOBITE Testing Inc. shall not be liable for damage of any kind of 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.



The Well Watchers

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

Well Name: MERIEM #2-20
Location: Section 20 - Township 28S - Range 9 East
Licence Number: 15-049-22633 -00-00 Region: Elk County, KS.
Spud Date: 22 June 2023 Drilling Completed: 27 June 2023
Surface Coordinates: 300' FEL & 2,500' FSL

Bottom Hole
Coordinates:
Ground Elevation (ft): 1,363' K.B. Elevation (ft): 1,375'
Logged Interval (ft): 1,500' To: 2,950' Total Depth (ft): 2,950'
Formation: Lansing -----> Arbuckle
Type of Drilling Fluid: Displace @ 1,428' - Chemical, Low Solids/Non-Dispersed
Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: MURFIN 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: 1,375'

FORMATION TOPS

GL: 1,363'

Formation	Rotary Sample Depth (Datum)	E-log Depth (Datum)
Heebner SH	1,042' (+333')	1,046' (+329')
Lansing	1,426' (- 51')	1,430' (- 55')
Kansas City	1,726' (- 351')	1,732' (- 357')
Mound City	1,934' (- 559')	1,942' (- 567')
Altamont	2,095' (- 720')	2,097' (- 722')
Pawnee	2,182' (- 807')	2,184' (- 809')
Ft. Scott	2,219' (- 844')	2,222' (- 847')
Excello SH	2,255' (- 880')	2,256' (-881')
Oakley	2,326' (- 951')	2,328' (- 953')
Mississippi	2,535' (- 1,160')	2,538' (- 1,163')
Arbuckle	2,865' (- 1,490')	2,868' (- 1,493')

RTD: 2,950' LTD: 2,953' ATD: 2,953'

Float:
Rotary Sample Depth is 1' - 4' high to E-log Depth
for the logged interval: 1,500' - 2,950' (RTD).

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

DST #1 - KINDERHOOK LIME

Rotary Depth: 2,737' - 2,752'
Logger's Depth: 2,739' - 2,754'

Recovery: 10' Slightly OIL cut Mud
(5% OIL, 95% M)

Recovery Water: NA
System Water: (800 ppm)

iFP: 18# - 24# / 30"
ISIP: 922# / 60"
FFP: 24# - 32# / 30"
FSIP: 892# / 60"

IF: Built to 1 inch & died off to 1/2 inch.
ISI: No Blow.
FF: Weak Surface Blow.
FSI: No Blow.

Reported Rw = NA

Recovery Water Mud Engineer:
NA

116 deg F
MH: 1,334# - 1,366#

Trilobite Testing, Inc.
Pratt, KS.

DST #2 - ARBUCKLE

Rotary Depth: 2,866' - 2,885'
Logger's Depth: 2,868' - 2,887'

Recovery: 1,991' OIL (100%O)
28.3 deg API (corrected)

Recovery Water: NA
System Water: (800 ppm)

Reported Rw = NA

iFP: 116# - 524# / 30"
ISIP: 937# / 60"
FFP: 537# - 718# / 30"
FSIP: 928# / 60"

IF: BOB in 1 minute.
ISI: Blow built to 1.75 inches.
FF: BOB 2 minutes
FSI: Blow built to 0.75 inches

Recovery Water Mud Engineer:
NA

116 deg F
MH: 1,466# - 1,365#

Trilobite Testing, Inc.
Pratt, KS.

2023

DAILY DRILLING - JUNE

2023

12 1/4" Hole (Surface)

22 June --- Spud @ 7am.
Drill to 67'.
Ran 8-5/8" (23#) casing.
Set @ 57'. 55 sx H-325
(2%CC + 3% Gel).
[Hurricane Services]
Plug Down @ 9:30am.
Cement did circ (5 Bbls).
WOC.

7-7/8" Hole (Vertical)

22 June --- WOC.
U / S @ 5:30pm.
23 --- Bit Trip @ 1,804'
7am @ 1,804'.
Resumed Drilling @ 11:05am.
24 --- 7am @ 2,305'.
25 --- Start and
7am @ 2,752'. Finish DST #1
(2,737' - 2,752') Kinderhook Lime.
Resumed Drilling @ 11:15pm.

7-7/8" Hole (Vertical)

26 June --- Start and
7am @ 2,885'.
Finish DST #2 (2,866'-
2,885'). Arbuckle.
27 --- Resumed drilling @ 2:30am.
RTD (2,950') @ 5am.
E-log.
[Midwest Wireline]

HOLE DEVIATION (67' - 2,950' MD)

12-1/4" Surface Hole

DEPTH	/	TVD	---	INCLINATION		AZIMUTH		NORTH		SOUTH		EAST		WEST		DOGLEG deg/100'
67'	/		---	0.25	(Surface Casing)											

Strap @ NA. Murfin 116 is a top drive, 'single' drilling rig.

7-7/8" Vertical Hole

1,804'	/	---	1.00	(Bit Trip)	
2,752'	/	---	1.00	(DST#1)	
2,950'	/	---	NA	(RTD)	(No crow's foot).

Strap:
Board:
Diff:

Inclination Surveys provided by Murfin Drilling - Rig #116

CONTRACTOR

Murfin Drilling Co, Inc. --- Rig #116

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

Toolpusher: Paco Gonzalez - (620) 309-1818

Pump: IDECO 550
6" x 15" @ 60 SPM.
700 PSI @ Standpipe. *
Drill Pipe: 4.5" XH. (16.4# / ft -used)

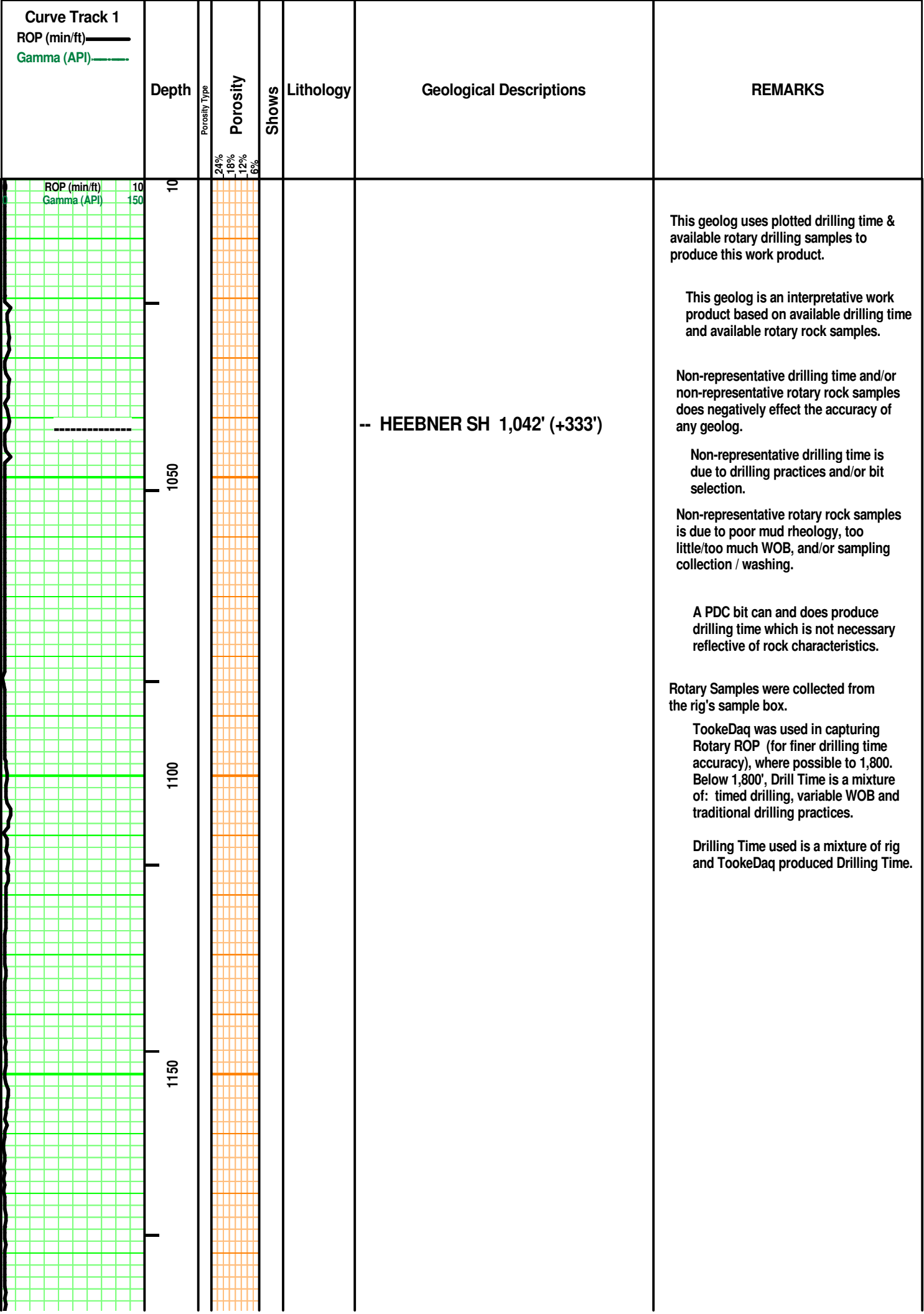
Drill Collars: 6" x 2.25" --- 521'. (83#/ft)
Dry Collar Weight: 43,243#
Bouyancy Collar Weight: 37,016#
(@ 9.4 ppg / Buoyancy Factor 0.8645)
Design Factor: 15% held back to keep
drill string straight, therefore:
available calculated WOB is 31,464#

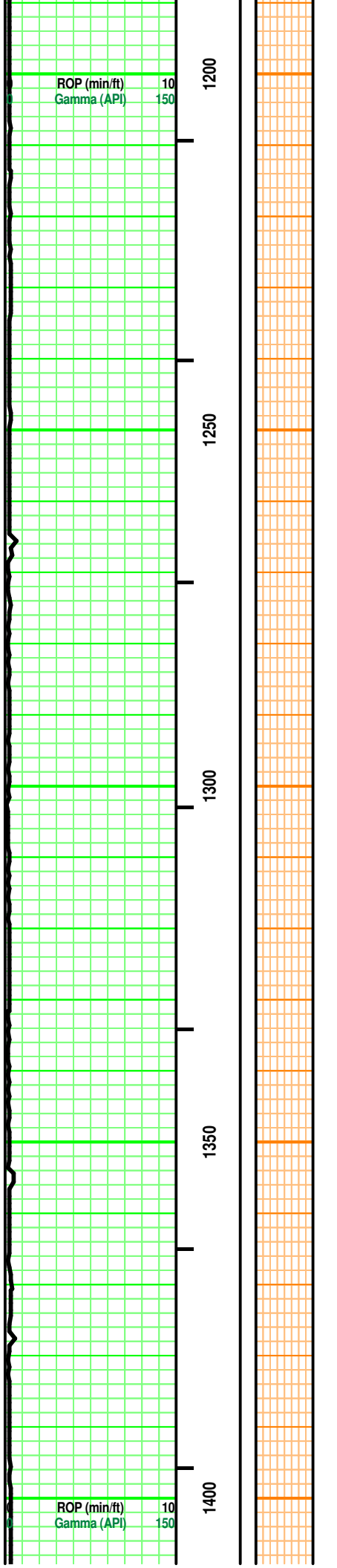
Check Weight Indicator @ 2,744'.
Calculated String Weight (92,449#) -vs- Observed WI (90,000#).
WI is weighing LIGHT by 2.8%
Therefore: Calculated WOB of 31,464# will show 32,282# on WI.

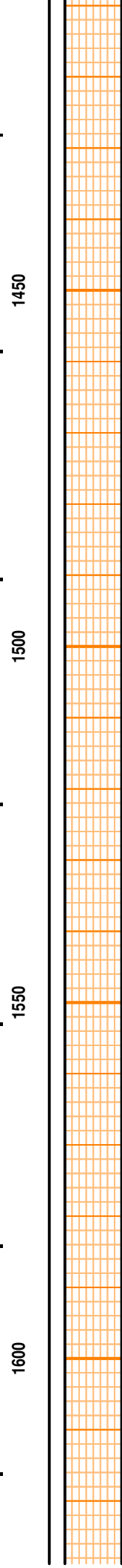
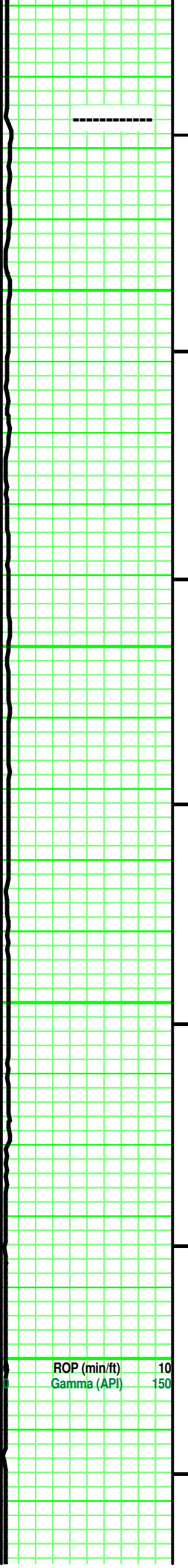
BIT RECORD

DATE	SIZE	TYPE	JET SIZE	DEPTH IN / OUT	CUM. FT.	HOURS	ROP
SURFACE ---		(IADC)					(ft/hr)
22 June 2023	12-1/4"	SMITH	15 - 15 -15	0' / 67'	67'	0.50	132.0
VERTICAL ---							
22 June 2023	7-7/8"	SMITH M-616 (PDC)	15 - 15 -15	67' / 1,804'	1,737'	9.50	182.8
23 June 2023	7-7/8"	SMITH F-271Y	15 - 15 -15	1,904' / 2,950'	1,046'	42.00	24.9

mEVENT
 Connection
 Rft







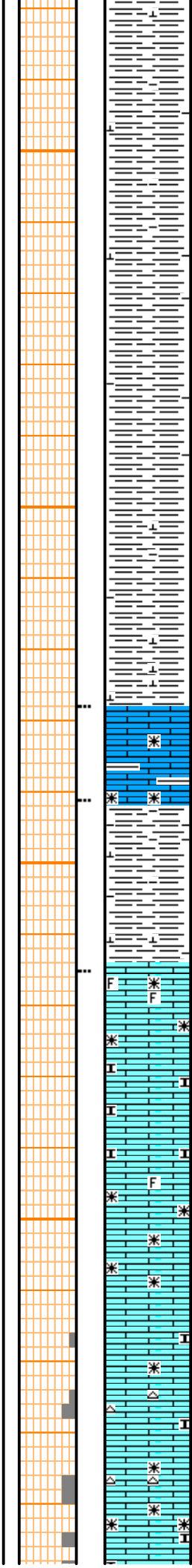
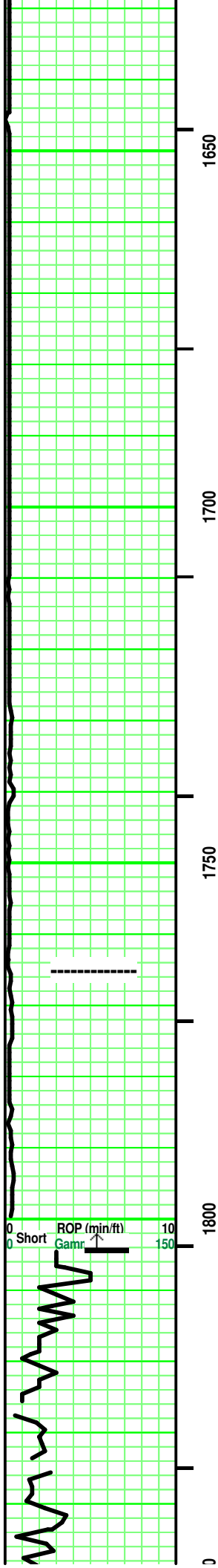
LS - Lt/ Med Tan. some Pale Grayish Tan. VF/XF, tr Micro-xln. xln & tr part por. No/ some Re-xln. No/ mixed with tr to some Fossil frags (coral, echin). tr Chalky in part. partly Firm. No/ tr vis por.

LS - Lt/ Med Tan. some Pale Grayish Tan. VF/XF, tr Micro-xln. xln & tr part por. No/ some Re-xln. No/ mixed with tr to some Fossil frags (coral, echin). tr Chalky in part. partly Firm. No/ tr vis por.

SH - Med/ Dark Gray. tr Dark Silvery Gray. Silty in part. mixture of: No/ tr Calc, misc frags.

-- LANSING
1,426' (- 51')

Rotary Samples start
@ 1,500' 30' Samples



SH - Med/ Dark Gray. tr Dark Silvery Gray. Silty in part. mixture of: No/ tr Calc, misc frags.

SH - Med/ Dark Gray. tr Dark Silvery Gray. Silty in part. mixture of: No/ tr Calc, misc frags.

LS - Lt Grayish Tan. Sing. XF-xln. xln por. mostly No/ tr argil. tr Re-xln. partly Firm. No/ tr vis por.

SH - Med/ Dark Gray. Sing. Massive. tr Calc.

-- KANSAS CITY
1,765' (- 390')

LS - Lt/Med Tan. some Lt Brownish Tan or Lt Grayish Tan. Sing/ Mot/ Mixed. tr XF-/ mostly Xf or Micro-xln. xln por. mixture of No/ some Re-xln. mixture of fossil frags, chaly in part. mixture of mostly Friable, some Firm/ Dense. mixture of: tr or some vis por.

xxxx BIT TRIP @ 1,804' xxxx

^-- Hole Dev: 1 deg @ 1,804'

^-- 1,804' (Bit Trip) -

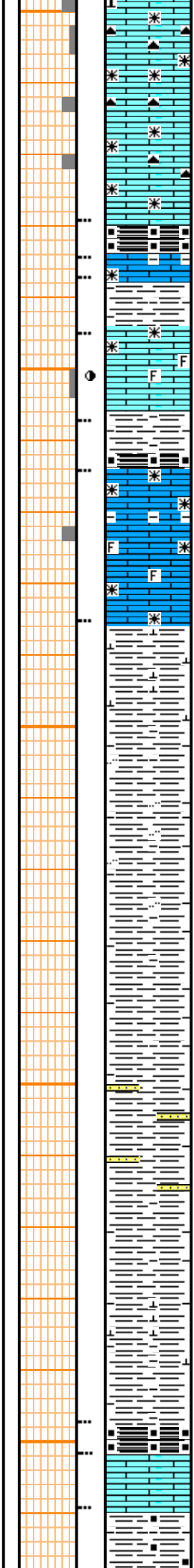
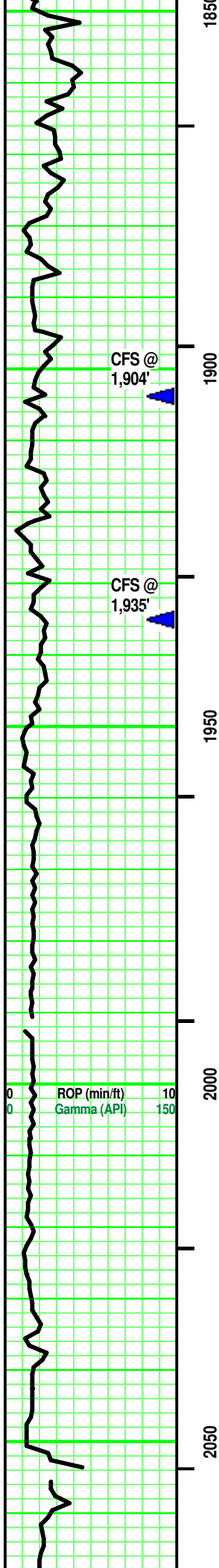
Vis: 50 Wt: 9.3 Wtr Loss: 8.8

PV: 15 YP: 13 Gels: 6/23

pH: 10.5 Cl (1,500) Ca (40)

Solids: 7.1% LCM: 3#

Add: few pcs of CHERT - Clear/ Silvery Gray/ Pale Lt Gray. Mot/Mixed. Semi- transparent. misc inclusions. No trip.



Add: LS - Dark Tannish Brown. Sing. Micro-xln. xln por. [some CHERT - Drusy Garyish Brown/ Off White/ Clear. Mot. lots misc inclusions. no trip.] some Re-xln. partly Firm. No/ tr vis por.

SH - Black. Sing. Carb. soft.

LS - Grayish Tan. Mixed. XF-/ Micro-xln. xln por. partly Firm. tr argil. No/ tr vis por.

SH - Med Gray. Sing. Hi limy in part.

LS - Med Tannish Brown/ some Lt Tan. Sing. XF-/Micro-xln. xln por. tr Re-xln. hi minute fossil frags. partly Firm. No/ tr vis por. Faint odor. No free oil or gas. No/ rare Brown spotted stain. No cut/residual. No/? acid & residual.

SH - Med Gray. Sing. soft.

SH - Black. Sing. Carb. soft.

LS - Dk Tannish Brown / Dark Tan / Lt Pale Gray. Sing/ tr Mot. Xt-/ Micro-xln. xln por. No/ tr Re-xln. tr fossil frags. mostly No/ tr argil in part. partly Firm. No/ tr vis por.

SH - Med/ Dark Gray, trSilvery Gray. Sing. Mod/ hi silty. Siltsone intermixed (mostly near top). Calc/ Hi Limy at and with depth.

SH - some Med/ Dark Gray. Blackish Gray. Sing/ tr Mixed. Hi limy. Blocky.

SH - similar to above. Hi Sandy. [Clear. XF qtz grains. SA/SR. mod sort & sph. 'floating' grain contact. Friable. No/ tr vis por.]

SH - some Med/ Dark Gray. Blackish Gray. Black & carb with depth. Sing/ tr Mixed. tr limy. Blocky.

SH - Black. Sing. carb. soft.

LS - Grays. Mot/Mixed. Micro-xln. xln por. argil. Dense. No/ tr vis por.

SH - Med/ Dark Gray. Black intermixed. No/ tr limy streaks (intermixed).

-- STARK SH
1,879' (-504')

1,900' Sample had Faint odor.

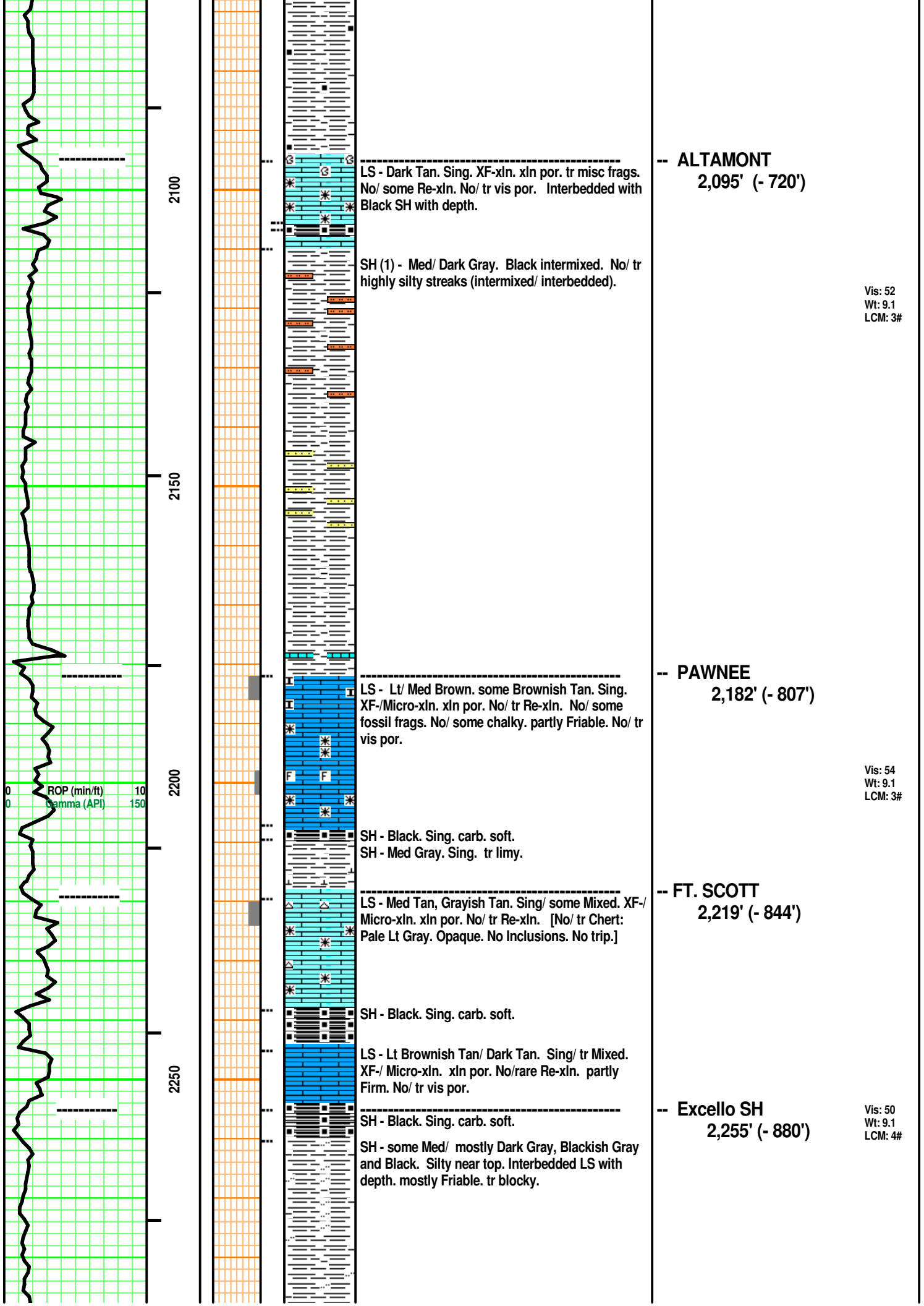
xxxx CFS @ 1,904': 30" xxxx

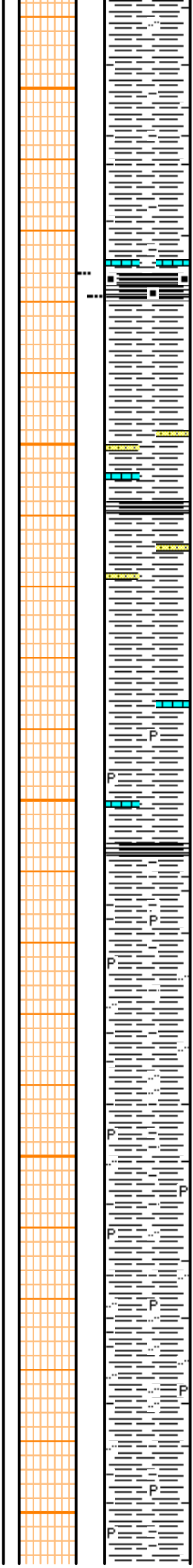
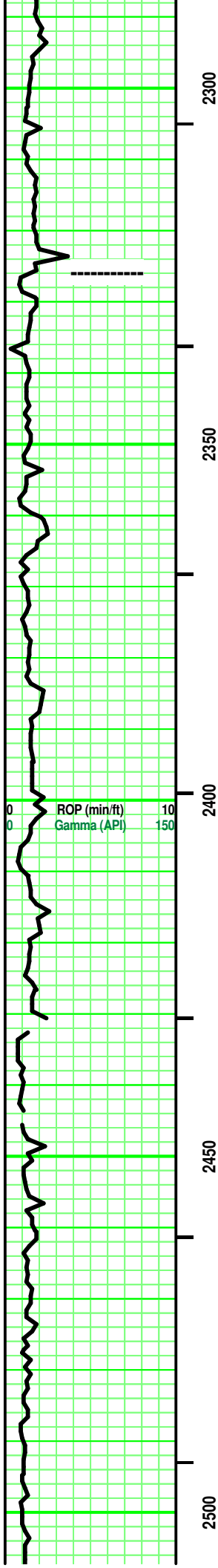
Vis: 50
Wt: 9.1
LCM: 3#

----- MOUND CITY 1,934' (-559')
xxxx CFS @ 1,935': 30" xxxx

Vis: 52
Wt: 9.1
LCM: 3#

Work on Rig.





Interbedded SH, SS & LS

SH - Black. Sing. carb. soft.

SH - tr Med/ mostly Dark Gray, Blackish Gray. Sing. Mot, Mixed. No/ some Silty or sandy in part. misc inclusions (mica, minute fossil frags, plant frags).

SS - Lt/ Med, tr Dark Gray, Clear. tr XF-/ silt sized qtz grains. SA/SR. highly sorted, mod sph. Vitreous, some frosted luster, mixture of Point/sutured grain contact. Sil / tr calc cement. misc inclusions. argil/shaly. No/ tr/ some fair vis por.

LS - Lt/Med Gray. Sing. Micro-xln. xln por. argil in part. partly Firm. No/ tr vis por.

Interbedded SH & tr LS

SH - Black. Sing. carb. soft. minute pyritic xtals in part.

SH - tr Med/ mostly Dark Gray, Blackish Gray. Sing. Mot, Mixed. No/ some Silty or sandy in part. misc inclusions (mica, minute fossil frags, plant frags).

LS - Lt/Med Gray. Sing. Micro-xln. xln por. argil in part. partly Firm. No/ tr vis por.

Interbedded SH & Siltstone

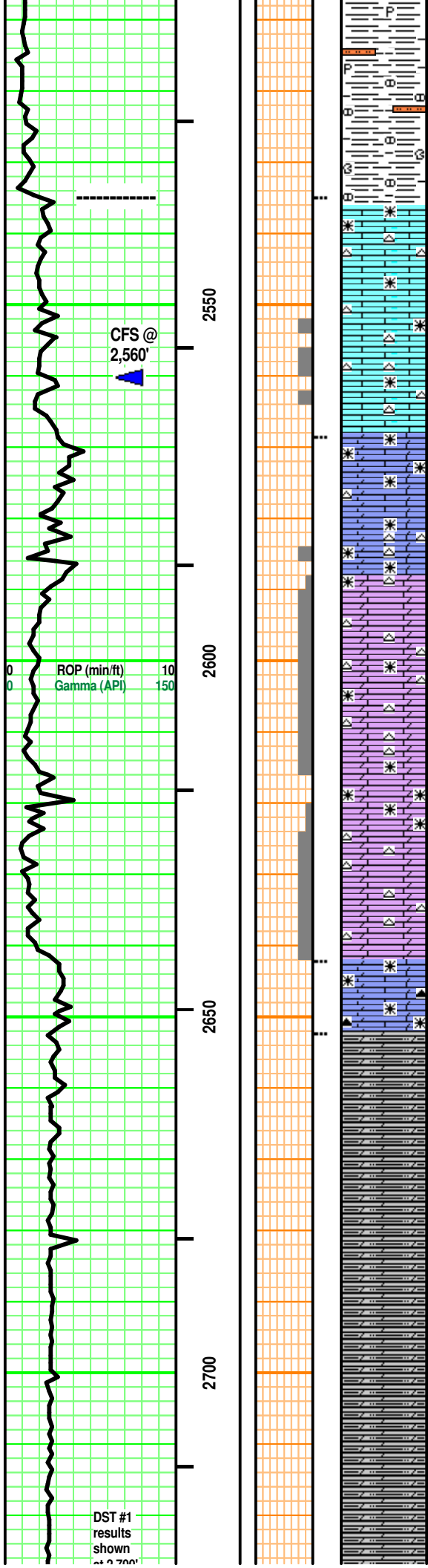
SH - Dark Gray, Blackish Gray, Black. Pyritic in part. mixture of carb and silty. Med/ mottled Lt Gray at depth. misc Dark Gray argil & Off Grayish Tan calc frags/ siliceous (minute) Dark

-- OAKLEY SH
2,326' (- 951')

2,362' -
Vis: 52 Wt: 9.2 Wtr Loss: 8
PV: 19 YP: 15 Gels: 6/12
pH: 10.0 Cl (800) Ca (40)
Solids: 6.4% LCM: 3#

Vis: 52
Wt: 9.1
LCM: 3#

Vis: 55
Wt: 9.1
LCM: 3#



Brownish nodules at depth.

Siltstone - Silvery Lt Gray. Mot. Platty. misc inclusions. Calc in part.

LS - Tans, some Off White / Lt Gray / tr Med Brown. mixture of: Sing/ Mixed/ Mot. tr F-/XF-xln. xln & part por. some Re-xln. [few/some CHERT - Clear/ Lt Gray/ Off White/ Lt Tan. Mot/ Mixed. Opaque. partly weathered mottled with fresh. minute Oolitic & fossil frag.] Brown LS has misc inclusions. tr glauc. Firm. No/ tr vis por.

LS (Dol) - Med Tan / Grayish Tan. Sing. XF-/ Micro-xln. xln por. some Re-xln. rare fossil frag.

DOL (Hi Calc) - Lt/ Med Brown, Brownish Gray. Tans. Sing/ some Mot or Mixed. XF-/ Micro-xln. mostly xln por/ tr sucrosic. some Re-xln. Hl cherty. (similar to 2 above. Add: Lt Gray. No show.) mostly Friable. tr vis por.

LS (Dol) - Lt Brownish Gray, Grayish Tan. Sing. XF-/ some F- & Micro-xln. xln por. No/ tr chalky in part. [some CHERT - Lt Gray, Tan, some Off White. Opaque, No/ some misc inclusions. No trip.] partly Friable. some No/ mostly tr to Fair vis por.

DOL - Brownish Gray, Blackish Brown. Sing. Micro-xln. xln por. Silty. No/ some minute dark inclusions. mostly soft.

DOL - Brownish Gray, Blackish Brown. Sing. Micro-xln. xln por. Silty. No/ some minute dark inclusions. mostly soft.

-- MISS
2,535' (- 1,160')

Vis: 50
Wt: 9.1
LCM: 3#

Vis: 50
Wt: 9.1
LCM: 3#

xxxx CFS @ 2,560': 30" xxxx

Vis: 55
Wt: 9.1
LCM: 3#

Vis: 57
Wt: 9.2
LCM: 3#

Cowley samples have
a petroliferous odor.

=====

DST #1
Kinderhook Lime 2,737' - 2,757'

Recovery: 10' Slightly OIL cut Mud
(5% OIL, 95% M)

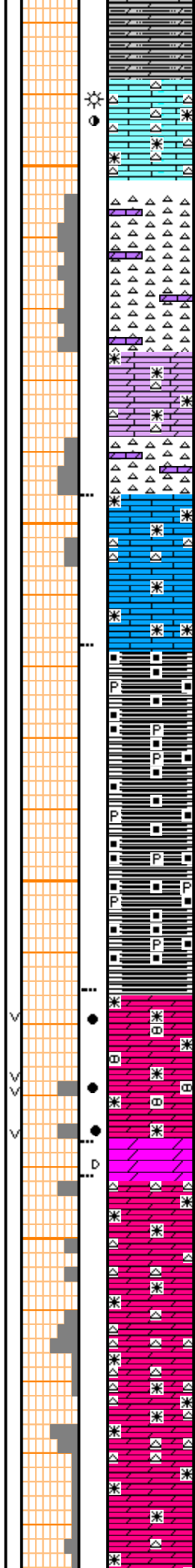
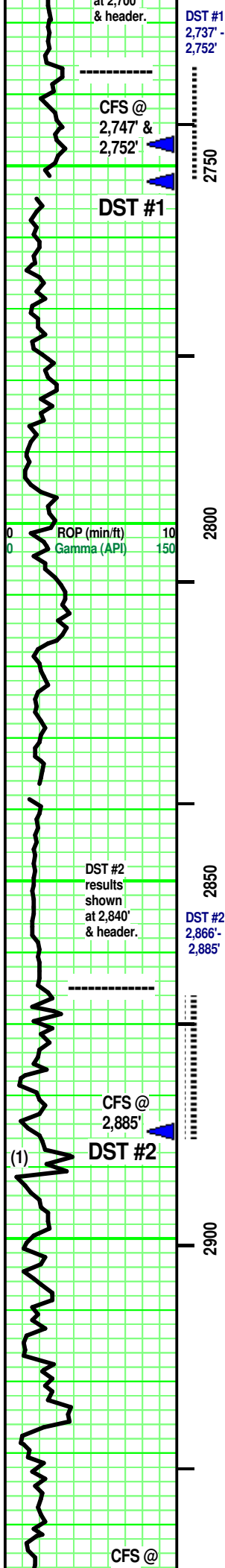
Vis: 56
Wt: 9.2
LCM: 3#

IFP: 18# - 24# / 30"	IF: Built to 1 inch
ISIP: 922# / 60"	& died off to 1/2.
FFP: 24# - 32# / 30"	ISI: No Blow.
FSIP: 892# / 60"	FF: Weak Surface Blow.
116 deg F	FSI: No Blow.

=====

LS (1) - sucrosic por in part. highly Cherty (as below). Firm. No/ tr vis por. Fair odor. rare minute free Black oil / No free gas. tr spotted, tr uniform Med Brown stain. Weak Pos cut/residual. Weak Pos acid/ residual.

CHERT - Mot/Mixed. Opaque. No/ tr inclusions. tr trip. Fair odor. rare minute free Black oil / rare free gas. some spotted. some uniform Med Brown stain. Weak



LS (1) - tr Lt/ mostly Med Tan, tr Drusy Grayish Tan. tr Sing, mostly Mixed, rare Mot. tr XF-/ Micro-xln. xln por. No/ tr ---->

Interbedded / Intermixed --
DOL / DOL (Calc) & CHERT

DOL / Dol (Calc) - some Lt/ mostly Med Tan. few pcs: Pale Grayish Tan. Sing/ some Mixed. Micro-Re-xln (micro-subehedral xtals). mixture of: xln and some sucrosic por. partly Firm. No/ tr vis por.

CHERT - Off White, Lt Gray, Silvery Gray, Drusy Gray, and trTans. Mot in part -or- Mixed. Opaque. Misc minute Inclusions. mostly No trip, tr part por.

LS - mostly Tans, tr Blue Green. Sing. tr XF-/ mostly Micro-xln. xln por. No/ tr Re-xln. tr chert as above. Firm/ Dense in part.

SH - Blackish Gray, Black. Sing. Massive. No/ tr v minute pyrite.

DOL - Med Tan, some Pale Lt Tannish Gray. Sing/ tr Mixed. mixture of: Mirco-Re-xln and mixture of: M/ F/XF subehedral xtals. xln & some vuggy por. Good odor. Rare gas bubble. No/? free oil. Spotted/ tr uniform Med Brown stain. few pcs: Black, asphaltic infill. Pos cut & residual. Pos acid & residual.

DOL (1) - Tan. Sing. tr M/ mostly F & XF subehedral xtals. Friable. Fair to Good vis por. [tr CHERT - White. Sing. Opaque. couple pcs with black asphaltic infill in trip. mostly fresh. Dark inclusions.] Faint odor. No free oil or gas. Asphaltic infill. Weak Pos cut & residual. Weak Pos acid & residual

DOL - Med Tan. some Pale Lt Gray & Lt Grayish Off White with depth. Sing. mixture of: Micro-Re-xln and F/XF subehedral xtalx. xln & tr vuggy por. [tr CHERT - mostly Off White / White, tr Lt/Med Gray. Sing / tr Mixed. Opaque. No/ rare minute inclusions. No trip.] Highly Friable. mixture of: Fair/ Good vis por.

Pos cut/ residual. Weak Pos acid/ residual.

-- B / COWLEY
2,737' (- 1,362')

Vis: 55
Wt: 9.2
LCM: 3#

xxxxx CFS @ 2,747': 30" xxxxx
xxxxx CFS @ 2,752': 30" xxxxx

^--- S/T above 1,800'.

^--- CHC: 60"

Work Kelly (15').

Check sample box for

Volume & Type of Fill.

^--- Hole Dev:

1 deg @ 2,741'

^--- DST #1.

2,752' (DST #1) -

Vis: 62 Wt: 9.3+ Wtr Loss: 7.2

PV: 21 YP: 21 Gels: 4/17

pH: 9.0 Cl (800) Ca (40)

Solids: 7.5% LCM: 2#

Vis: 58
Wt: 9.2
LCM: 3#

DST #2

Arbuckle 2,866' - 2,885'

Recovery: 1,991' OIL

28.3 API cor

iFP: 116# - 524# / 30"

ISIP: 937# / 60"

FFP: 537# - 718# / 30"

FSIP: 928# / 60"

IF: BOB in 1 minute.

ISI: Blow built

to 1.75 inches.

121 deg F

FF: BOB 2 minutes

FSI: Blow built

to .75 inches.

-- ARBUCKLE
2,865' (-1,490')

Vis: 59
Wt: 9.2
LCM: 3#

xxxxx CFS @ 2,885': 30" xxxxx
^--- DST #2

2,885' (DST #2) -

Vis: 76 Wt: 9.2 Wtr Loss: 9.2

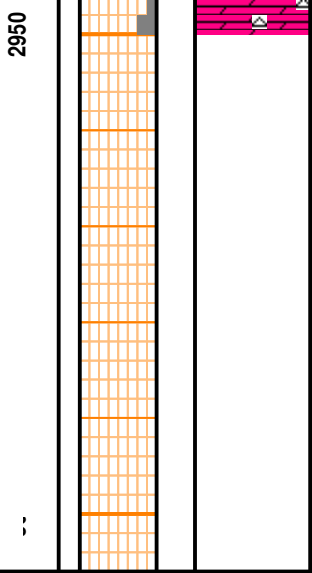
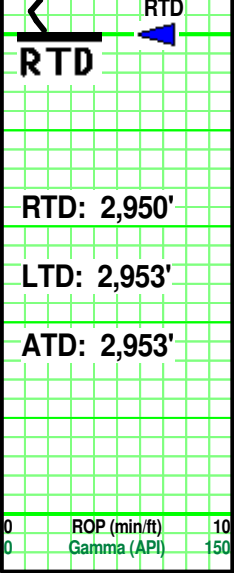
PV: 20 YP: 25 Gels: 12/57

pH: 8.5 Cl (800) Ca (80)

Solids: 6.4% LCM: 2#

Vis: 56
Wt: 9.3
LCM: 3#

Vis: 54
Wt: 9.3
LCM: 3#



MERIE M #2-20
300' FSL & 2,500' FEL 20-T28S-R9E
Elk County, Kansas

MURFIN DRILLING CO., INC.
Wichita, Kansas

LCM:3#

XXXXXXXXXX RTD XXXXXXXXXXXX

^-- CFS @ RTD: 30"

^-- CHC: 45"

Work Kelly (15")

^-- Hole Dev:
NA deg @ RTD
(no crow'f foot).

^-- E-Log.
[Midwest Wireline]

2,950' (E-log) -
Vis: 59 Wt: 9.1 Wtr Loss: 8,8
PV: 15 YP: 14 Gels: 7/19
pH: 10.0 Cl (850) Ca (40)
Solids: 5.7% LCM: 2#

Geologist:
Curtis Covey
COVEY - The Well Watchers
Well Number: 1,217



CEMENT TREATMENT REPORT

Customer: Murfin Drilling Company

Well: Meriem #2-20

Ticket: EP9450

City, State:

Field Rep: Mark Robben

Downhole Information

Hole Size: 7 7/8 in

Hole Depth:	2950 ft
--------------------	----------------

Casing Size: 5 1/2 in

Casing Depth: 2940 ft

Tubing / Liner: _____ in

Depth: _____ ft

Tool / Packer: LD Baffle**Tool Depth:** 2919 ft**Displacement:** 69.4 bbl

Calculated Slurry - Lead

Blend: H-Con 1/2 #FS

Weight:	12.0 ppg
----------------	-----------------

Water / Sx:	9.5 gal / sx
--------------------	---------------------

Yield:	2.56 ft³ / sx
---------------	---------------------------------

Annular Bbls / Ft.: bbs / ft.

Depth: _____ ft

Annular Volume: 0.0 bbls

Excess:

Total Slurry:	109.5 bbls
----------------------	-------------------

Total Sacks: 240 sacks

Calculated Slurry - Tail

Blend:	H854 Thixo 1#PS
---------------	------------------------

Weight: 13.8 ppg

Water / Sx:	8.9 gal / sx
--------------------	---------------------

Yield: 1.82 ft³ / sx

Annular Bbls / Ft.: bbs / ft.

Depth: ft

Annular Volume: 0 bb

Excess:

Total Slurry: 38.8 bb

Total Sacks: 120 sacks

[illegible]

	CREW	UNIT		SUMMARY		
Cementer:	Garrett S.	97		Average Rate	Average Pressure	Total Fluid
Pump Operator:	Devin K	239		4.0 bpm	883 psi	- bbls
Bulk #1:	Nick B	215				
Bulk #2:	Wes C	248				