

Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	WATERS 'A' 1-3
Doc ID	1713035

All Electric Logs Run

DIL
DUCP
MEL
BHCS

Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	WATERS 'A' 1-3
Doc ID	1713035

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	12.25	8.625	23	348	H325	250	
Production	7.875	5.500	15.5	4843	Hcon, H-LD	580	

DRILLING REPORT - LOG TOPS - WATERS A 1-3

	MDCI Waters 'A' #1-3 1725' FNL 750' FWL Sec. 3-T2S-R38W 3269' KB					
Formation	Sample top	Datum	Ref	Log Top	Datum	Ref
Anhydrite				3192	+77	+19
B/Anhydrite				3223	+46	+21
Topeka	3999	-730	+16	3996	-727	+19
Oread	4125	-859	+25	4133	-864	+20
Lansing	4206	-937	+20	4206	-937	+20
Stark	4440	-1171	+14	4440	-1171	+14
Mound City	4449	-1225	+19	4494	-1225	+19
Ft. Scott	4630	-1361	+13	4628	-1359	+14
Oakley	4705	-1436	+24	4704	-1435	+25
RTD	4850					
LTD				4851		

CEMENT TREATMENT REPORT

CEMENT TREATMENT REPORT

Customer:	Murfin Drilling	Well:	Waters A #1-3	Ticket:	WP 3896
City, State:	Bird City	County:	Cheyenne KS	Date:	2/1/2023
Field Rep:	Ben Simminger	S-T-R:	3-2S-38W	Service:	Longstring

Downhole Information		Calculated Slurry - Lead		Calculated Slurry - Tail	
Hole Size:	7 7/8 in	Blend:	H-Con	Blend:	H-LD
Hole Depth:	4850 ft	Weight:	12.0 ppg	Weight:	14.8 ppg
Casing Size:	5 1/2 in	Water / Sx:	15.5 gal / sx	Water / Sx:	6.5 gal / sx
Casing Depth:	4843 ft	Yield:	2.56 ft ³ / sx	Yield:	1.51 ft ³ / sx
Tubing / Liner:	in	Annular Bbls / Ft.:	0.0309 bbs / ft.	Annular Bbls / Ft.:	0.0309 bbs / ft.
Depth:	ft	Depth:	4843 ft	Depth:	4843 ft
Tool / Packer:		Annular Volume:	149.6 bbls	Annular Volume:	149.6487 bbls
Tool Depth:	ft	Excess:		Excess:	
Displacement:	114.6 bbls	Total Slurry:	173.2 bbls	Total Slurry:	53.7 bbls
STAGE	TOTAL	Total Sacks:	380 sx	Total Sacks:	200 sx

[illegible]

CREW			UNIT	SUMMARY		
Cementer:	John	73		Average Rate	Average Pressure	Total Fluid
Pump Operator:	Spencer	528-520		4.6 bpm	496 psi	396 bbls
Bulk #1:	Kale	180-530				
Bulk #2:	Kale	242				

Robert D. Hendrix
Petroleum Geologist

GEOLOGIST'S REPORT
DRILLING TIME AND SAMPLE LOG

COMPANY **Murfin Drilling Company Inc.**

LEASE **Waters A #1-3**

FIELD **Wilcat**

LOCATION **1725fml & 750fml**

SEC **3** TWP **2s** RGE **38w**

COUNTY **Cheyenne** STATE **Kansas**

CONTRACTOR **Murfin Drilling Company Inc. Rig #7**

SPUD **1/22/2023** COMP **1/31/2023**

RTD **4850** TYPE MUD **Chemical**

MUD UP **3648**

SAMPLES SAVED FROM **3920** TO **4850**

DRILLING TIME KEPT FROM **3920** TO **4850**

SAMPLES EXAMINED FROM **3920** TO **4850**

GEOLOGICAL SUPERVISION FROM **3870**

GEOLOGIST ON WELL **Robert D. Hendrix**

ELEVATIONS

KB **3269**

DF **GL 3264**

Measurements Are All From **Kelly Bushing**

CASING

CONDUCTOR

SURFACE **8-5/8" @ 348**

PRODUCTION **5 1/2" @ 4843'**

ELECTRICAL

Dual Comp porosity, Microlog

Dual Induction, Midwest Wireline

FORMATION TOPS

Electric Log

Sample

Anhydrite

Topoketa

Oread

Lansing

Stark

Mound City

Ft. Scott

Oakley

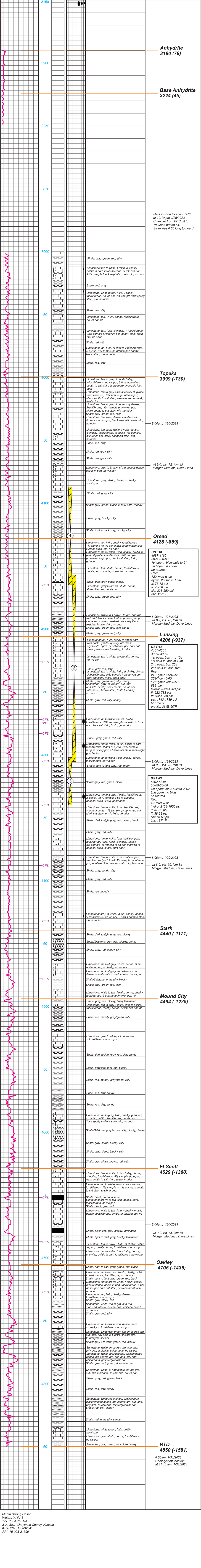
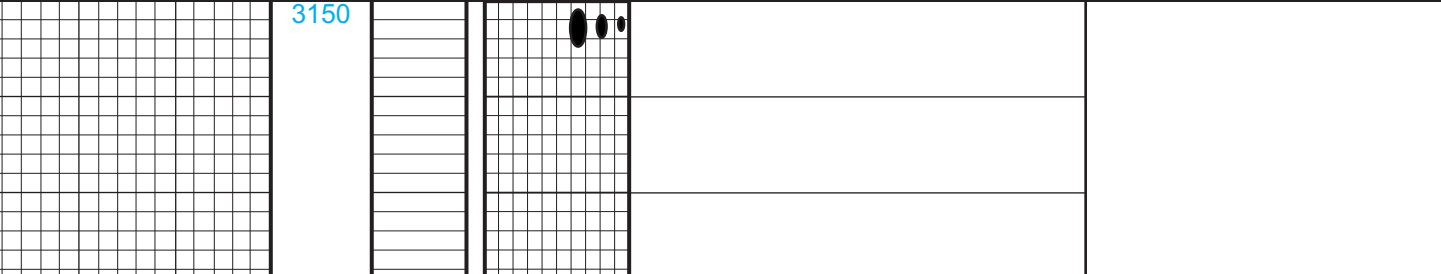
API# 15-023-21599

REMARKS:

Due to positive results on DST #2 spanning the Lansing A through Lansing D', with favorable E-Log responses over the same zones it was determined that production casing should be run to further test the well.

Ran 115 jts of 5 5/8" prod csg set @ 4843'. HSI cmt w/380sxs Hcon & 200sxs H-LD. PD @6:30AM 2/1/23. Did not circ cmt to surf. 30sxs RH, 20sxs MH.

LEGEND





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc**

250 N Water Ste 300
Wichita, KS 67202

ATTN: Robert Hendrix

Waters 'A' #1-3

3-2s-39w Cheyenne, KS

Start Date: 2023.01.26 @ 20:25:00

End Date: 2023.01.27 @ 03:16:00

Job Ticket #: 69744 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2023.02.01 @ 16:12:16



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company Inc

250 N Water Ste 300
Wichita, KS 67202

ATTN: Robert Hendrix

3-2s-39w Cheyenne, KS

Waters 'A' #1-3

Job Ticket: 69744

DST#: 1

Test Start: 2023.01.26 @ 20:25:00

GENERAL INFORMATION:

Formation: **Oread**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:27:30

Time Test Ended: 03:16:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Nathan Aneas

Unit No: 71

Interval: 4087.00 ft (KB) To 4165.00 ft (KB) (TVD)

Total Depth: 4165.00 ft (KB) (TVD)

Hole Diameter: 7.87 inches Hole Condition: Fair

Reference Elevations: 3269.00 ft (KB)

3264.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8353 Outside

Press@RunDepth: 78.34 psig @ 4088.00 ft (KB)

Start Date: 2023.01.26

End Date:

2023.01.27

Start Time: 20:25:01

End Time:

03:16:00

Capacity: 8000.00 psig

Last Calib.: 2023.01.27

Time On Btm: 2023.01.26 @ 22:26:30

Time Off Btm: 2023.01.27 @ 01:30:30

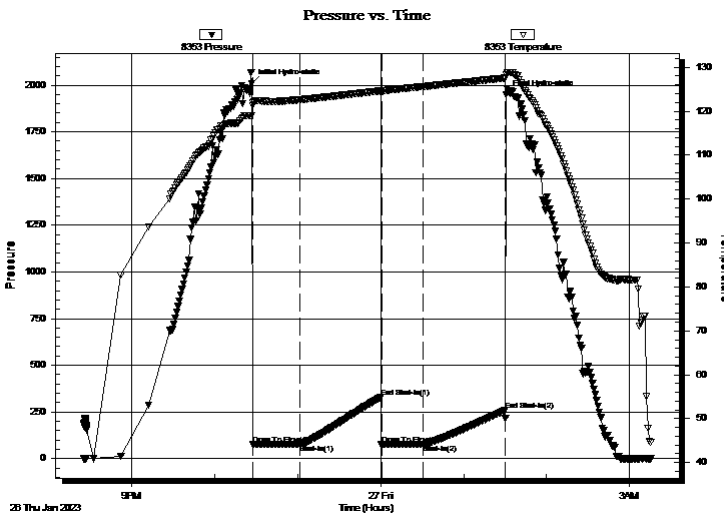
TEST COMMENT: 30:IF- Fair surface blow , built to 1 1/2" in 10 min, final is 2"

60:IS- No blow back

30:FF- No blow

60:FS- No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2007.92	119.01	Initial Hydro-static
1	76.35	121.91	Open To Flow (1)
35	78.13	122.61	Shut-In(1)
94	328.16	124.61	End Shut-In(1)
94	76.22	124.57	Open To Flow (2)
125	78.34	125.60	Shut-In(2)
184	258.60	127.55	End Shut-In(2)
184	1950.79	128.23	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	Mud 100%M (Some spots of oil)	0.59

Gas Rates

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

DRILL STEM TEST REPORT

Murfin Drilling Company Inc

250 N Water Ste 300
Wichita, KS 67202

ATTN: Robert Hendrix

3-2s-39w Cheyenne, KS

Waters 'A' #1-3

Job Ticket: 69744

DST#: 1

Test Start: 2023.01.26 @ 20:25:00

GENERAL INFORMATION:

Formation: **Oread**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:27:30

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Test Type: Conventional Bottom Hole (Initial)

Tester: Nathan Aneas

Unit No: 71

Interval: 4087.00 ft (KB) To 4165.00 ft (KB) (TVD)

Total Depth: 4165.00 ft (KB) (TVD)

Hole Diameter: 7.87 inches Hole Condition: Fair

Reference Elevations: 3269.00 ft (KB)

3264.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8676 Inside

Press@RunDepth: psig @ 4088.00 ft (KB)

Start Date: 2023.01.26

End Date:

2023.01.27

Start Time: 20:25:01

End Time:

03:16:15

Capacity: 8000.00 psig

Last Calib.: 2023.01.27

Time On Btm:

Time Off Btm:

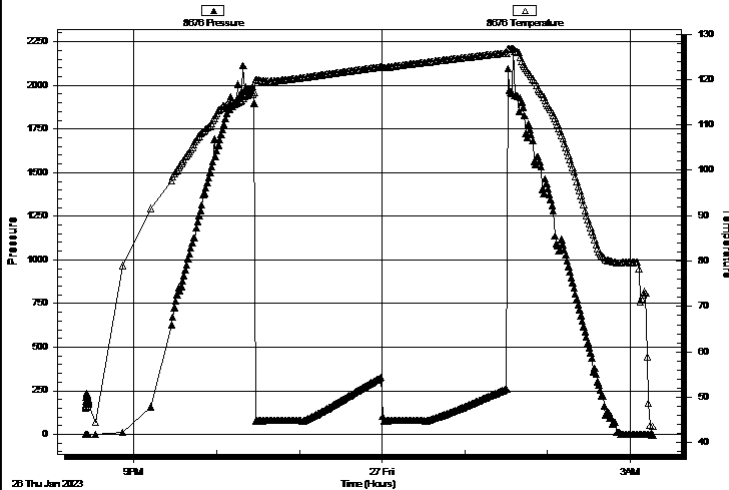
TEST COMMENT: 30:IF- Fair surface blow , built to 1 1/2" in 10 min, final is 2"

60:IS- No blow back

30:FF- No blow

60:FS- No 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)
120.00	Mud 100%M (Some spots of oil)	0.59

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 Company Inc

3-2s-39w Cheyenne, KS

250 N Water Ste 300
Wichita, KS 67202

Waters 'A' #1-3

Job Ticket: 69744

DST#: 1

ATTN: Robert Hendrix

Test Start: 2023.01.26 @ 20:25:00

Tool Information

Drill Pipe:	Length: 3835.00 ft	Diameter: 3.80 inches	Volume: 53.79 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 240.00 ft	Diameter: 2.25 inches	Volume: 1.18 bbl	Weight to Pull Loose: 70000.00 lb
		Total Volume:	54.97 bbl	Tool Chased 10.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 66000.00 lb
Depth to Top Packer:	4087.00 ft			Final 66000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	78.00 ft			
Tool Length:	110.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: Have no service for ipro or cell at all, down deep in a canyon

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			4060.00	
Hydraulic tool	5.00			4065.00	
Jars	5.00			4070.00	
EM Tool	4.00			4074.00	
Safety Joint	3.00			4077.00	
Packer	5.00			4082.00	32.00 Bottom Of Top Packer
Packer	5.00			4087.00	
Stubb	1.00			4088.00	
Recorder	0.00	8353	Outside	4088.00	
Recorder	0.00	8676	Inside	4088.00	
Perforations	9.00			4097.00	
Change Over Sub	1.00			4098.00	
Blank Spacing	63.00			4161.00	
Change Over Sub	1.00			4162.00	
Bullnose	3.00			4165.00	78.00 Bottom Packers & Anchor

Total Tool Length: 110.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company Inc

3-2s-39w Cheyenne, KS

250 N Water Ste 300
Wichita, KS 67202

Waters 'A' #1-3

Job Ticket: 69744

DST#: 1

ATTN: Robert Hendrix

Test Start: 2023.01.26 @ 20:25:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 72.00 sec/qt

Water Loss: 5.99 in³

Resistivity: ohm.m

Salinity: 600.00 ppm

Filter Cake: 2.00 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
120.00	Mud 100%M (Some spots of oil)	0.590

Total Length: 120.00 ft

Total Volume: 0.590 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

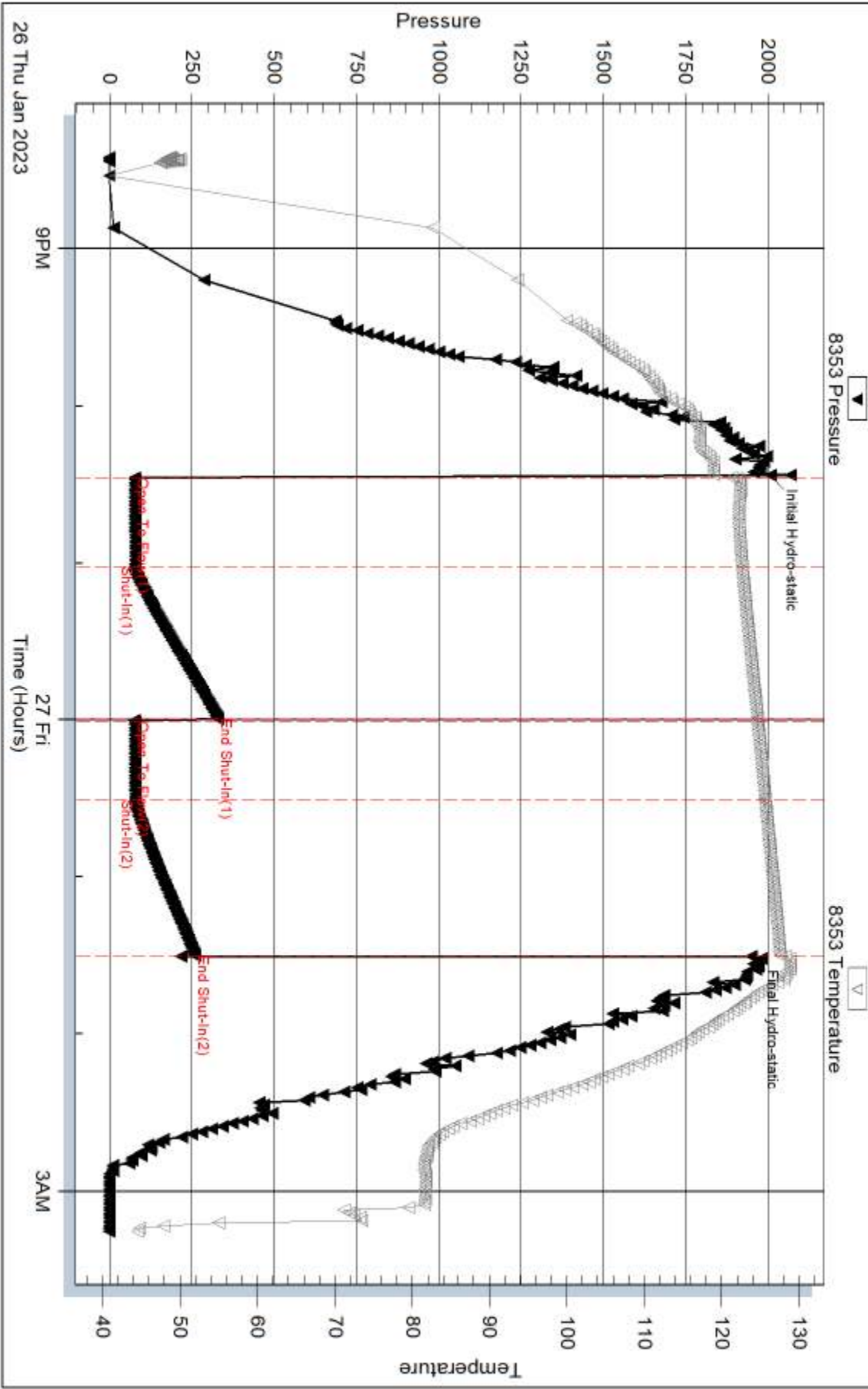
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Outside Murfin Drilling Company Inc

Waters 'A' #1-3

DST Test Number: 1

Pressure vs. Time



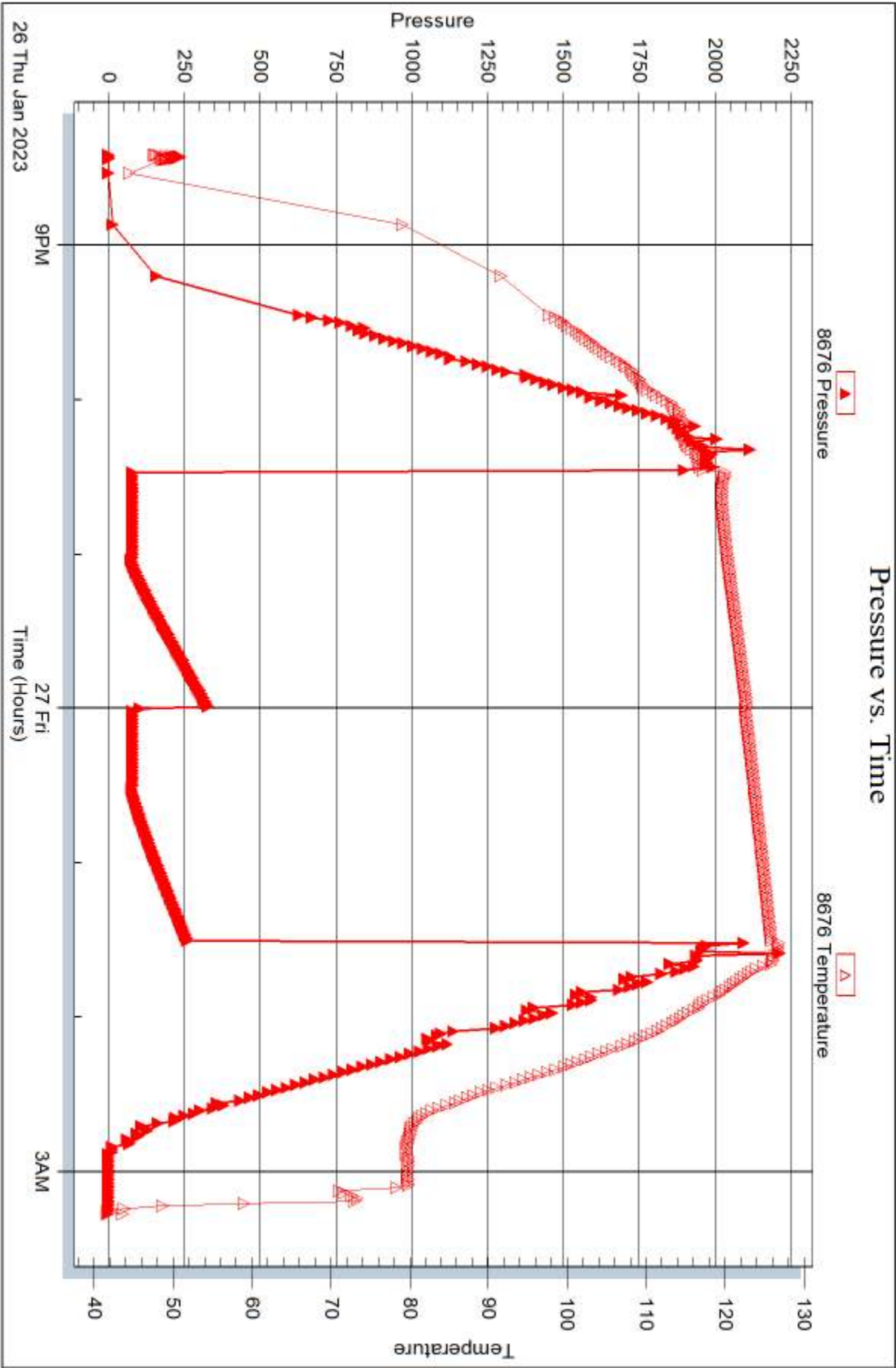
Serial #: 8676

Inside

Murfin Drilling Company Inc

Waters 'A' #1-3

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc**

250 N Water Ste 300
Wichita, KS 67202

ATTN: Robert Hendrix

Waters 'A' #1-3

3-2s-39w Cheyenne, KS

Start Date: 2023.01.27 @ 21:40:00

End Date: 2023.01.28 @ 08:07:00

Job Ticket #: 69745 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2023.02.01 @ 16:09:07



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company Inc

250 N Water Ste 300
Wichita, KS 67202

ATTN: Robert Hendrix

3-2s-39w Cheyenne, KS

Waters 'A' #1-3

Job Ticket: 69745

DST#: 2

Test Start: 2023.01.27 @ 21:40:00

GENERAL INFORMATION:

Formation: **LKC A - D'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:27:15

Time Test Ended: 08:07:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Nathan Aneas

Unit No: 71

Interval: 4157.00 ft (KB) To 4305.00 ft (KB) (TVD)

Total Depth: 4305.00 ft (KB) (TVD)

Hole Diameter: 7.87 inches Hole Condition: Fair

Reference Elevations: 3269.00 ft (KB)

3264.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8353 Outside

Press@RunDepth: 1057.51 psig @ 4158.00 ft (KB)

Start Date: 2023.01.27

End Date:

2023.01.28

Start Time: 21:40:01

End Time:

08:07:00

Capacity: 8000.00 psig

Last Calib.: 2023.01.28

Time On Btm: 2023.01.27 @ 23:26:30

Time Off Btm: 2023.01.28 @ 02:36:00

TEST COMMENT: 30:IF- Strong surface blow , BOB in 1 min 10 seconds, final is 278"

60:IS- Weak surface blow , built to BOB in 10 min, final is 72"

30:FF- Strong surface blow , BOB in 20 seconds, final is 235"

60:FS- Weak surface blow , BOB in 10 min, final is 20"

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2026.24	119.23	Initial Hydro-static
1	222.21	119.40	Open To Flow (1)
33	733.03	145.28	Shut-In(1)
96	1743.33	139.63	End Shut-In(1)
96	762.00	138.14	Open To Flow (2)
123	1057.51	146.54	Shut-In(2)
189	1739.31	142.99	End Shut-In(2)
190	1963.03	143.02	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
240.00	GMCO 65%O 25%G 10%M	1.18
2520.00	GO 60%O 40%G	35.35
126.00	GMCO 50%O 30%G 20%M	1.77
0.00	GIP 882'	0.00

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 Company Inc

250 N Water Ste 300
Wichita, KS 67202

ATTN: Robert Hendrix

3-2s-39w Cheyenne, KS

Waters 'A' #1-3

Job Ticket: 69745

DST#: 2

Test Start: 2023.01.27 @ 21:40:00

GENERAL INFORMATION:

Formation: **LKC A - D'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:27:15

Time Test Ended: 08:07:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Nathan Aneas

Unit No: 71

Interval: 4157.00 ft (KB) To 4305.00 ft (KB) (TVD)

Total Depth: 4305.00 ft (KB) (TVD)

Hole Diameter: 7.87 inches Hole Condition: Fair

Reference Elevations: 3269.00 ft (KB)

3264.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8676 Inside

Press@RunDepth: psig @ 4158.00 ft (KB)

Start Date: 2023.01.27

End Date:

2023.01.28

Start Time: 21:40:01

End Time:

08:07:30

Capacity: 8000.00 psig

Last Calib.: 2023.01.28

Time On Btm:

Time Off Btm:

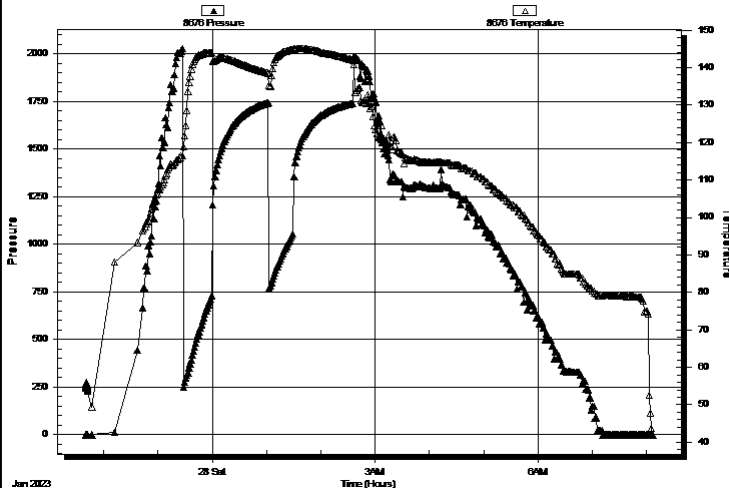
TEST COMMENT: 30:IF- Strong surface blow , BOB in 1 min 10 seconds, final is 278"

60:IS- Weak surface blow , built to BOB in 10 min, final is 72"

30:FF- Strong surface blow , BOB in 20 seconds, final is 235"

60:FS- Weak surface blow , BOB in 10 min, final is 20"

Pressure vs. Time



PRESSURE SUMMARY

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

Length (ft)	Description	Volume (bbl)
240.00	GMCO 65%O 25%G 10%M	1.18
2520.00	GO 60%O 40%G	35.35
126.00	GMCO 50%O 30%G 20%M	1.77
0.00	GIP 882'	0.00

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 Company Inc

3-2s-39w Cheyenne, KS

250 N Water Ste 300
Wichita, KS 67202

Waters 'A' #1-3

Job Ticket: 69745

DST#: 2

ATTN: Robert Hendrix

Test Start: 2023.01.27 @ 21:40:00

Tool Information

Drill Pipe:	Length:	3900.00 ft	Diameter:	3.80 inches	Volume:	54.71 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length:	240.00 ft	Diameter:	2.25 inches	Volume:	1.18 bbl	Weight to Pull Loose:	80000.00 lb
					Total Volume:	55.89 bbl	Tool Chased	ft
Drill Pipe Above KB:		15.00 ft					String Weight: Initial	70000.00 lb
Depth to Top Packer:		4157.00 ft					Final	78000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		148.00 ft						
Tool Length:		180.00 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		4130.00	
Hydraulic tool	5.00		4135.00	
Jars	5.00		4140.00	
EM Tool	4.00		4144.00	
Safety Joint	3.00		4147.00	
Packer	5.00		4152.00	32.00 Bottom Of Top Packer
Packer	5.00		4157.00	
Stubb	1.00		4158.00	
Recorder	0.00	8353 Outside	4158.00	
Recorder	0.00	8676 Inside	4158.00	
Perforations	16.00		4174.00	
Change Over Sub	1.00		4175.00	
Blank Spacing	126.00		4301.00	
Change Over Sub	1.00		4302.00	
Bullnose	3.00		4305.00	148.00 Bottom Packers & Anchor

Total Tool Length: 180.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company Inc

3-2s-39w Cheyenne, KS

250 N Water Ste 300
Wichita, KS 67202

Waters 'A' #1-3

Job Ticket: 69745

DST#: 2

ATTN: Robert Hendrix

Test Start: 2023.01.27 @ 21:40:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 70.00 sec/qt

Water Loss: 5.99 in³

Resistivity: ohm.m

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

36.6 deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
240.00	GMCO 65%O 25%G 10%M	1.180
2520.00	GO 60%O 40%G	35.349
126.00	GMCO 50%O 30%G 20%M	1.767
0.00	GIP 882'	0.000

Total Length: 2886.00 ft

Total Volume: 38.296 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

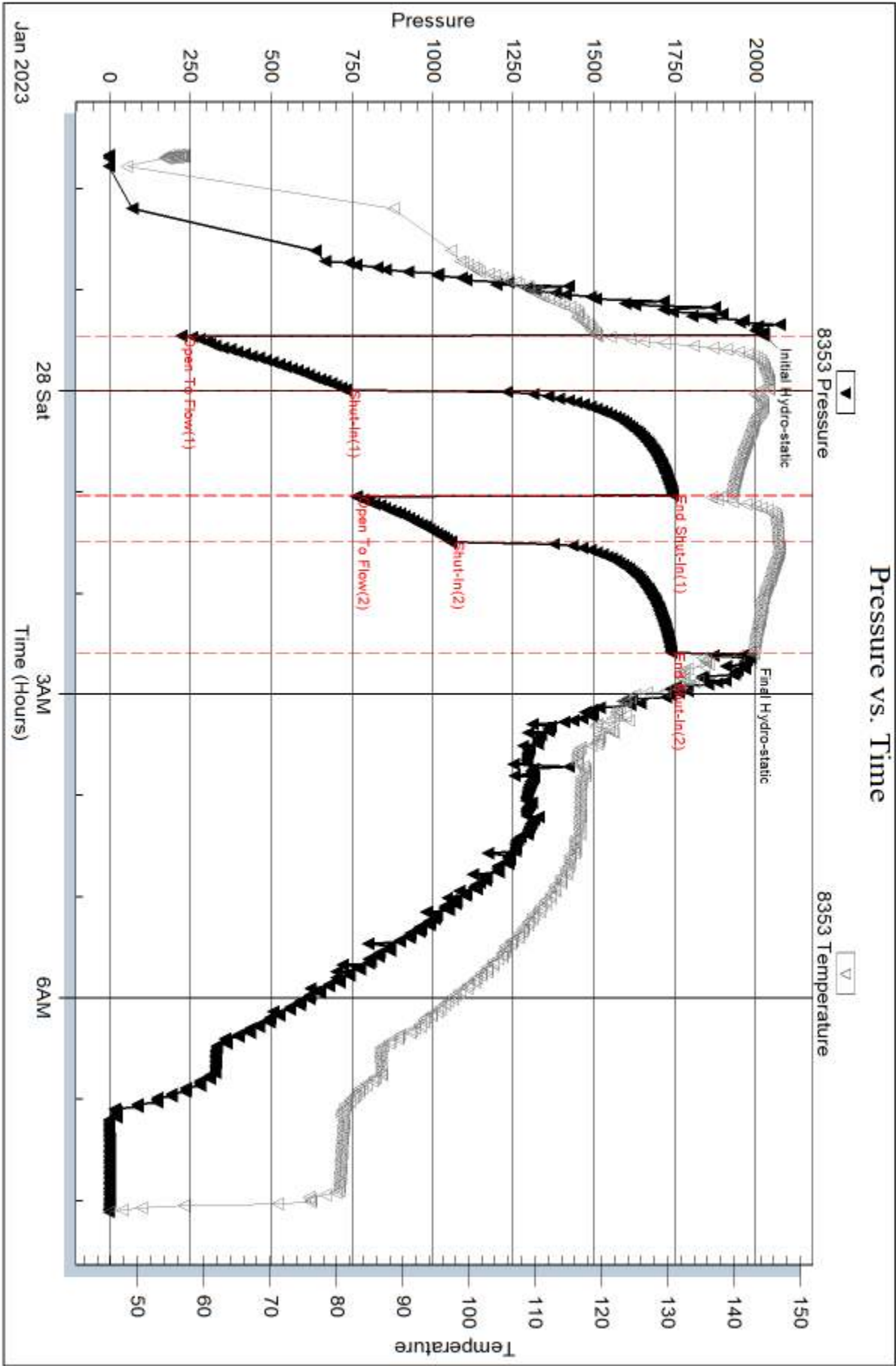
Recovery Comments: 36 Oil API @ 60 deg API

Serial #: 8353

Outside Murfin Drilling Company Inc

Waters 'A' #1-3

DST Test Number: 2



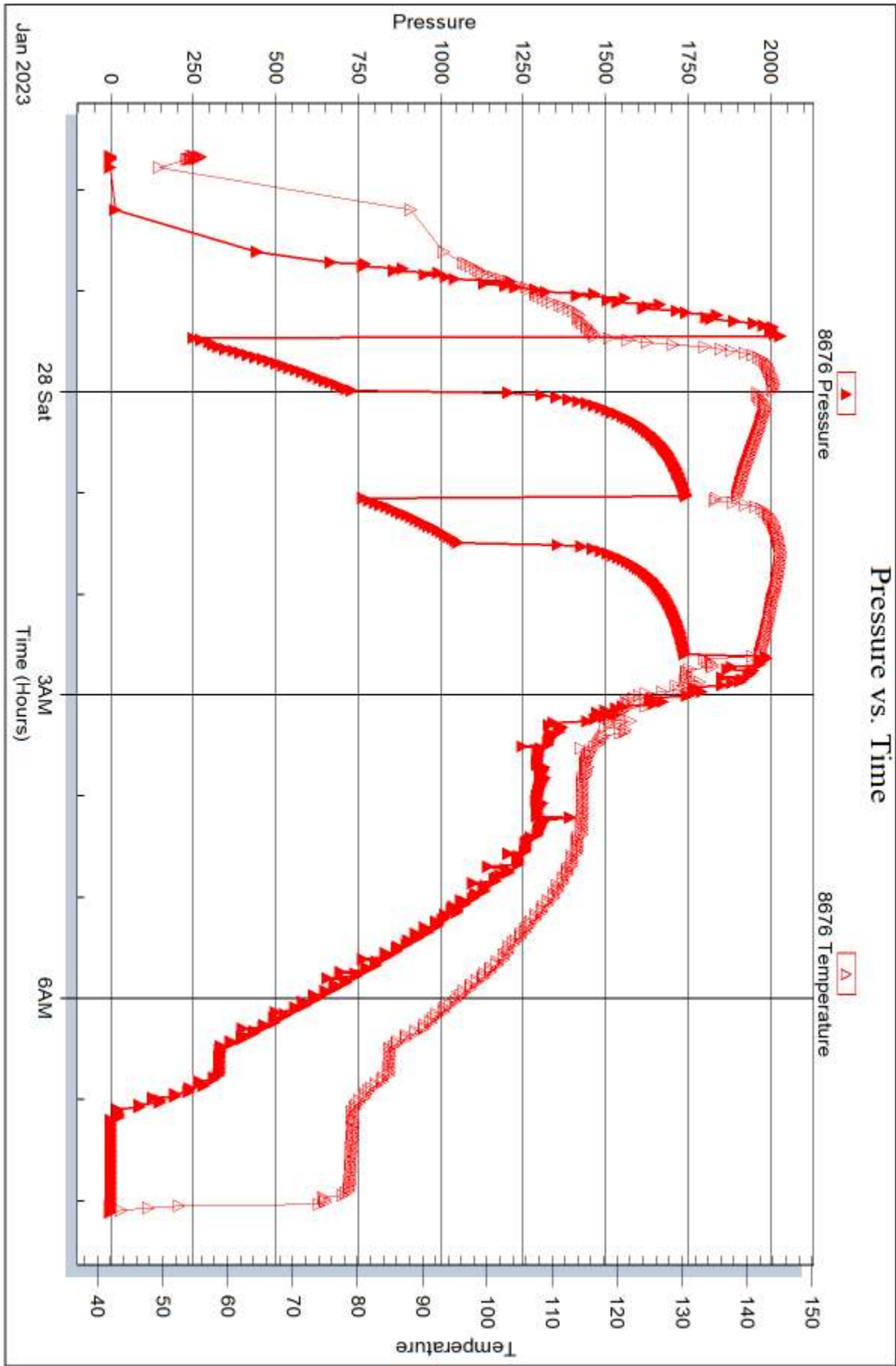
Serial #: 8676

Inside

Murfin Drilling Company Inc

Waters 'A' #1-3

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc**

250 N Water Ste 300
Wichita, KS 67202

ATTN: Robert Hendrix

Waters 'A' #1-3

3-2s-39w Cheyenne, KS

Start Date: 2023.01.28 @ 17:53:00

End Date: 2023.01.29 @ 01:12:00

Job Ticket #: 69746 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2023.02.01 @ 15:55:12



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company Inc

250 N Water Ste 300
Wichita, KS 67202

ATTN: Robert Hendrix

3-2s-39w Cheyenne, KS

Waters 'A' #1-3

Job Ticket: 69746

DST#: 3

Test Start: 2023.01.28 @ 17:53:00

GENERAL INFORMATION:

Formation: **LKC G**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:59:00

Time Test Ended: 01:12:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Nathan Aneas

Unit No: 71

Interval: 4302.00 ft (KB) To 4340.00 ft (KB) (TVD)

Total Depth: 4340.00 ft (KB) (TVD)

Hole Diameter: 7.87 inches Hole Condition: Fair

Reference Elevations: 3269.00 ft (KB)

3264.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8353 Outside

Press@RunDepth: 37.96 psig @ 4303.00 ft (KB)

Start Date: 2023.01.28

End Date:

2023.01.29

Start Time: 17:53:01

End Time:

01:12:00

Capacity: 8000.00 psig

Last Calib.: 2023.01.29

Time On Btm: 2023.01.28 @ 19:58:15

Time Off Btm: 2023.01.28 @ 23:08:30

TEST COMMENT: 30:IF- Weak surface blow , buit to 2 1/2" in 10 min, final 2 1/2"

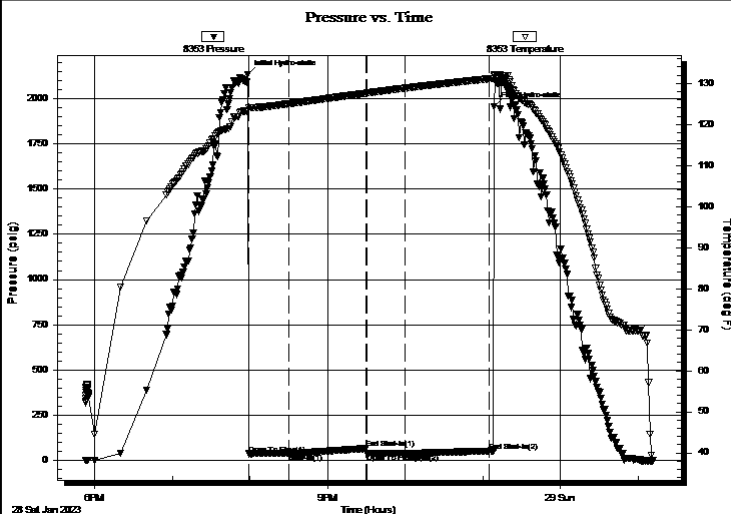
60:IS- No blow back

30:FF- No blow

60:FS- No blow back

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2132.89	123.33	Initial Hydro-static
1	36.82	124.08	Open To Flow (1)
32	38.17	125.05	Shut-In(1)
92	66.20	127.62	End Shut-In(1)
92	38.13	127.65	Open To Flow (2)
122	37.96	128.86	Shut-In(2)
187	52.59	131.13	End Shut-In(2)
191	1956.25	131.89	Final Hydro-static



Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud 100%M (Trace oil in tool)	0.05

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 Company Inc

250 N Water Ste 300
Wichita, KS 67202

ATTN: Robert Hendrix

3-2s-39w Cheyenne, KS

Waters 'A' #1-3

Job Ticket: 69746

DST#: 3

Test Start: 2023.01.28 @ 17:53:00

GENERAL INFORMATION:

Formation: **LKC G**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:59:00

Time Test Ended: 01:12:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Nathan Aneas

Unit No: 71

Interval: 4302.00 ft (KB) To 4340.00 ft (KB) (TVD)

Total Depth: 4340.00 ft (KB) (TVD)

Hole Diameter: 7.87 inches Hole Condition: Fair

Reference Elevations: 3269.00 ft (KB)

3264.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8676 Inside

Press@RunDepth: psig @ 4303.00 ft (KB)

Start Date: 2023.01.28

End Date:

2023.01.29

Start Time: 17:53:01

End Time:

01:12:15

Capacity: 8000.00 psig

Last Calib.: 2023.01.29

Time On Btm:

Time Off Btm:

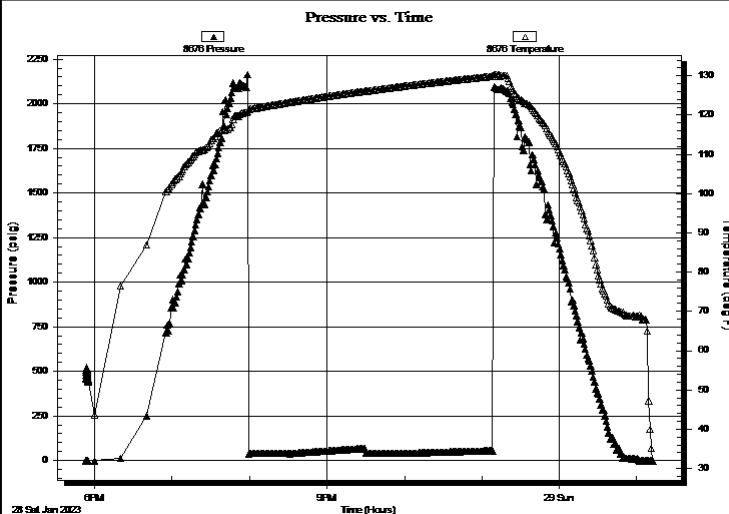
TEST COMMENT: 30:IF- Weak surface blow , buit to 2 1/2" in 10 min, final 2 1/2"

60:IS- No blow back

30:FF- No blow

60:FS- No blow back

PRESSURE SUMMARY



Time
(Min.)

Pressure
(psig)

Temp
(deg F)

Annotation

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud 100%M (Trace oil in tool)	0.05

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 Company Inc

3-2s-39w Cheyenne, KS

250 N Water Ste 300
Wichita, KS 67202

Waters 'A' #1-3

Job Ticket: 69746

DST#: 3

ATTN: Robert Hendrix

Test Start: 2023.01.28 @ 17:53:00

Tool Information

Drill Pipe:	Length:	4057.00 ft	Diameter:	3.80 inches	Volume:	56.91 bbl	Tool Weight:	2000.00 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:	240.00 ft	Diameter:	2.25 inches	Volume:	1.18 bbl	Weight to Pull Loose:	70000.00 lb
					Total Volume:	58.09 bbl	Tool Chased	ft
Drill Pipe Above KB:		27.00 ft					String Weight: Initial	68000.00 lb
Depth to Top Packer:		4302.00 ft					Final	68000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		38.00 ft						
Tool Length:		70.00 ft						
Number of Packers:		2	Diameter:	6.75 inches				
Tool Comments:								

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			4275.00	
Hydraulic tool	5.00			4280.00	
Jars	5.00			4285.00	
EM Tool	4.00			4289.00	
Safety Joint	3.00			4292.00	
Packer	5.00			4297.00	32.00 Bottom Of Top Packer
Packer	5.00			4302.00	
Stubb	1.00			4303.00	
Recorder	0.00	8353	Outside	4303.00	
Recorder	0.00	8676	Inside	4303.00	
Perforations	34.00			4337.00	
Bullnose	3.00			4340.00	38.00 Bottom Packers & Anchor

Total Tool Length: 70.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company Inc

3-2s-39w Cheyenne, KS

250 N Water Ste 300
Wichita, KS 67202

Waters 'A' #1-3

Job Ticket: 69746

DST#: 3

ATTN: Robert Hendrix

Test Start: 2023.01.28 @ 17:53:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 72.00 sec/qt

Water Loss: 5.98 in³

Resistivity: ohm.m

Salinity: 600.00 ppm

Filter Cake: 2.00 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	Mud 100%M (Trace oil in tool)	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:

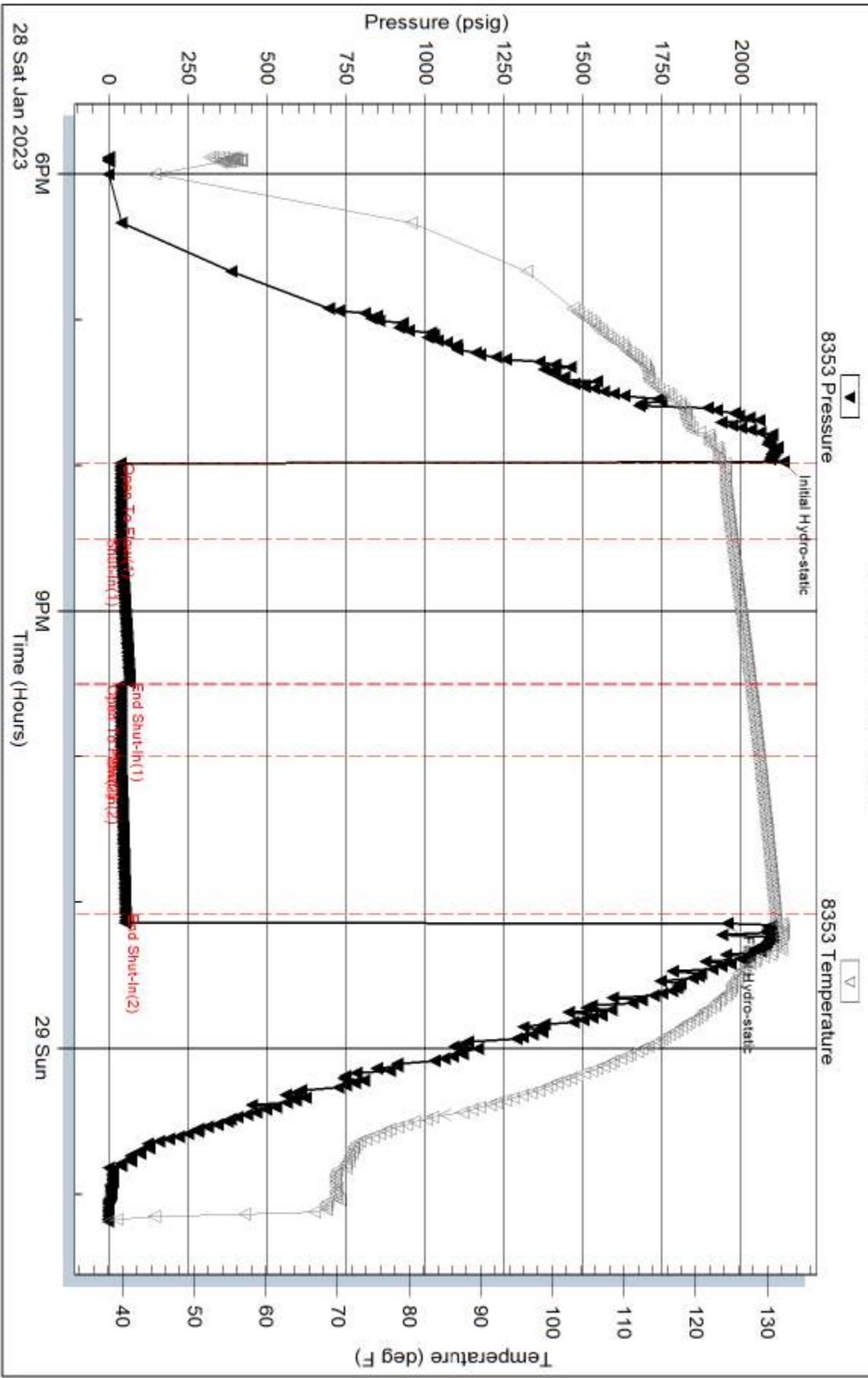
Serial #: 8353

Outside Murfin Drilling Company Inc

Waters 'A' #1-3

DST Test Number: 3

Pressure vs. Time



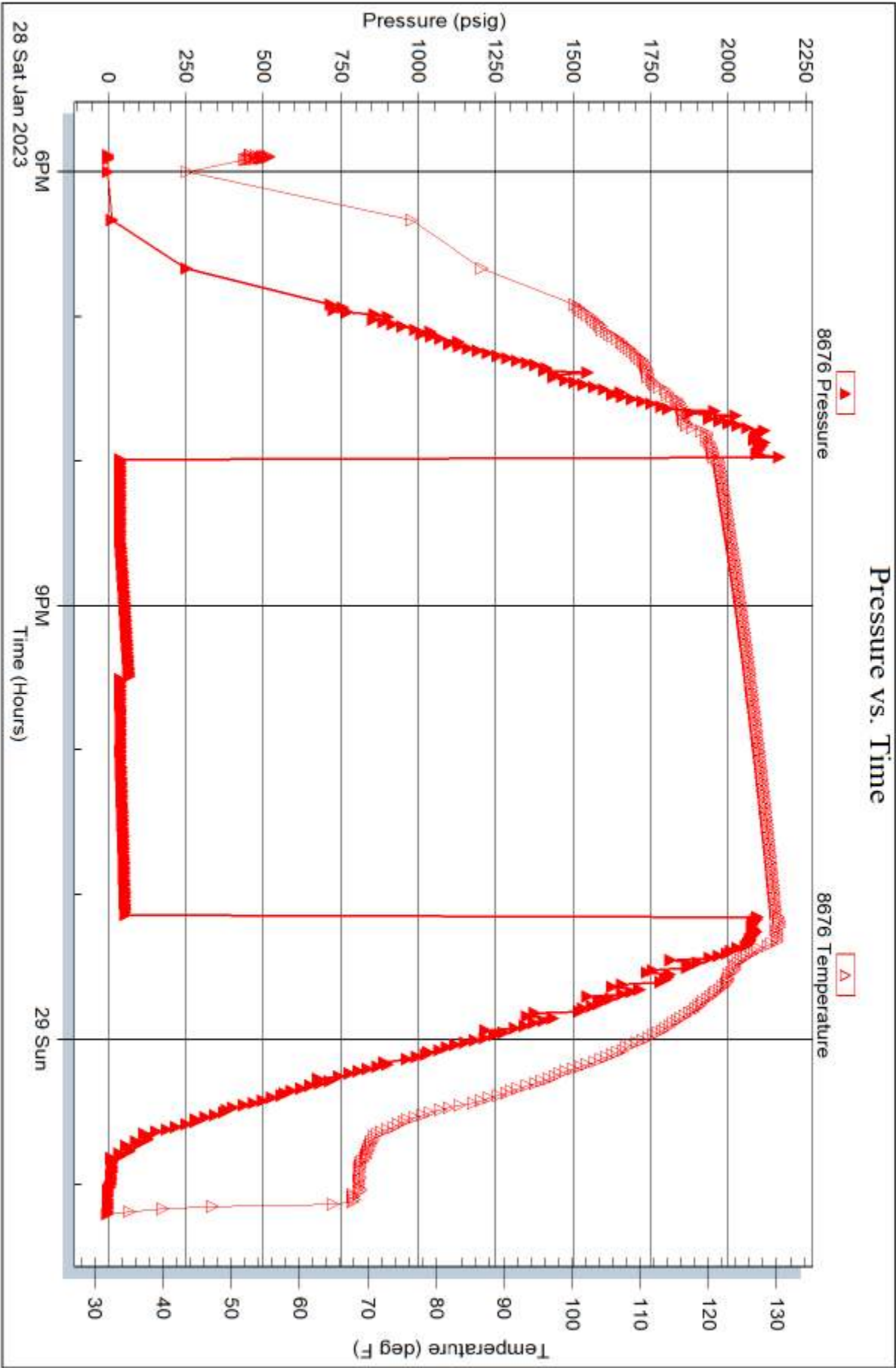
Serial #: 8676

Inside

Murfin Drilling Company Inc

Waters 'A' #1-3

DST Test Number: 3





**TRILOBITE
TESTING INC.**

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **69744**

Well Name & No. Waters 'A' #1-3 Test No. 1 Date 01/26/23
 Company Murfin Drilling Company Inc Elevation 3269 KB 3264 GL
 Address 250 N Water Ste 300 Wichita, KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #4
 Location: Sec. 3 Twp 2s Rge. 38w Co. Cheyenne State KS

Interval Tested 4087-4165 Zone Tested Oreoch
 Anchor Length 78' Drill Pipe Run 3835 Mud Wt. 9.0
 Top Packer Depth 4082 Drill Collars Run 240 Vis 72
 Bottom Packer Depth 4087 Wt. Pipe Run WL 60
 Total Depth 4165 Chlorides 600 ppm System LCM 4#

Blow Description IF-Fair surface blow, built to 1 1/2" in 10 min, Final is 2"

ISI-No blow back

FF-No blow

BF-No blow back

Rec <u>120</u>	Feet of <u>Mud (some spots of oil)</u>	%gas	%oil	%water	<u>100</u> %mud
Rec <u> </u>	Feet of <u> </u>	%gas	%oil	%water	%mud
Rec <u> </u>	Feet of <u> </u>	%gas	%oil	%water	%mud
Rec <u> </u>	Feet of <u> </u>	%gas	%oil	%water	%mud
Rec <u> </u>	Feet of <u> </u>	%gas	%oil	%water	%mud

Rec Total 120 BHT 127 Gravity API RW @ °F Chlorides ppm

(A) Initial Hydrostatic 2008 ☒ Test 1950 T-On Location 18.15
 (B) First Initial Flow 76 ☒ Jars 300 T-Started 20:25
 (C) First Final Flow 78 ☒ Safety Joint T-Open 22:27
 (D) Initial Shut-In 328 ☐ Circ Sub T-Pulled 01:35
 (E) Second Initial Flow 76 ☐ Hourly Standby T-Out 03:20
 (F) Second Final Flow 78 ☒ Mileage 134 RT 234.50 Comments Using diesel
 (G) Final Shut-In 259 ☐ Sampler for blow bucket
 (H) Final Hydrostatic 1951 ☐ Straddle

Initial Open 30 ☐ EM Tool
 Initial Shut-In 120 ☐ Ruined Shale Packer
 Final Flow 30 ☐ Ruined Packer
 Final Shut-In 60 ☐ Extra Copies
 Sub Total 0
 Total 2484.50
 Sub Total 2484.50 MP/DST Disc't

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 69745

Well Name & No. Waters 'A' #1-3 Test No. 2 Date 01/27/23
 Company Murfin Drilling Company Inc Elevation 3269 KB 3264 GL
 Address 250 N Water Ste 300 Wichita, KS 67202
 Co. Rep / Gen. Robert Hendrix Rig Murfin #7
 Location: Sec. 3 Twp 2S Rge. 38W Co. Cheyenne State KS

Interval Tested 4157-4305 Zone Tested Lansing A-B'
 Anchor Length 148' Drill Pipe Run 3900 Mud Wt. 8.9
 Top Packer Depth 4152 Drill Collars Run 240 Vis 70
 Bottom Packer Depth 4157 Wt. Pipe Run _____ WL 6.0
 Total Depth 4305 Chlorides 600 ppm System LCM 6#

Blow Description IF-Strong surface blow, BOB in 1 min 10 seconds, Final is 278"
ISI-Weak surface blow, built to BOB in 10 min, Final is 72"
FF-Strong surface blow, BOB in 20 seconds, Final is 235"
FSI-Weak surface blow, BOB in 10 min, Final is 20"

Rec <u>240</u>	Feet of <u>GMCO</u>	<u>25</u> %gas	<u>65</u> %oil	%water	<u>10</u> %mud
Rec <u>2520</u>	Feet of <u>GO</u>	<u>40</u> %gas	<u>60</u> %oil	%water	%mud
Rec <u>126</u>	Feet of <u>GMCO</u>	<u>30</u> %gas	<u>50</u> %oil	%water	<u>20</u> %mud
Rec _____	Feet of <u>GTP 882'</u>	%gas	%oil	%water	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud

Rec Total 2836 BHT 143' Gravity 36060 API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2026
 (B) First Initial Flow 222
 (C) First Final Flow 733
 (D) Initial Shut-In 1743
 (E) Second Initial Flow 762
 (F) Second Final Flow 1058
 (G) Final Shut-In 1739
 (H) Final Hydrostatic 1963

☒ Test 1950
☒ Jars 300
☐ Safety Joint
☐ Circ Sub
☐ Hourly Standby
☒ Mileage 134 RT 234.50
☐ Sampler
☐ Straddle
☐ Shale Packer
☐ Extra Packer
☐ Extra Recorder
☐ Day Standby
☐ Accessibility
 Sub Total 2484.50

T-On Location 19:10
 T-Started 21:40
 T-Open 23:27
 T-Pulled 02:35
 T-Out 08:00
 Comments Using Diesel for bbw bucket
☒ EM Tool -175
☐ Ruined Shale Packer
☐ Ruined Packer
☐ Extra Copies
 Sub Total -175
 Total 2309.50

Initial Open 30
 Initial Shut-In 60
 Final Flow 30
 Final Shut-In 60

Approved By _____ Our Representative [Signature]
 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. **69746**

Well Name & No. Waters 'A' #1-3 Test No. 3 Date 01/28/23
 Company Murfin Drilling Company Inc Elevation 3269 KB 3264 GL
 Address 250 N Water Ste 300 Wichita, KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #7
 Location: Sec. 3 Twp 2s Rge. 38w Co. Cheyenne State Ks

Interval Tested 4302-4340 Zone Tested Lansing G
 Anchor Length 38' Drill Pipe Run 4057 Mud Wt. 9.0
 Top Packer Depth 4307 Drill Collars Run 240 Vis 78
 Bottom Packer Depth 4302 Wt. Pipe Run WL 6.0
 Total Depth 4340 Chlorides 700 ppm System LCM 8#

Blow Description IF - Weak surface blow, built to 2 1/2" in 10 min. Final 2 1/2"

ISI - No blow back

FF - No blow

FSI - No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>10'</u>	<u>Mud (Trace oil in top)</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 10' BHT 131° Gravity API RW @ °F Chlorides ppm

(A) Initial Hydrostatic <u>2133</u>	☒ Test <u>1950</u>	T-On Location <u>17:30</u>
(B) First Initial Flow <u>37</u>	☒ Jars <u>300</u>	T-Started <u>17:53</u>
(C) First Final Flow <u>38</u>	☒ Safety Joint <u> </u>	T-Open <u>19:59</u>
(D) Initial Shut-In <u>66</u>	☐ Circ Sub <u> </u>	T-Pulled <u>23:00</u>
(E) Second Initial Flow <u>38</u>	☐ Hourly Standby <u> </u>	T-Out <u>01:12</u>
(F) Second Final Flow <u>38</u>	☒ Mileage <u>134 RT</u> 234.50	Comments <u>Using diesel</u>
(G) Final Shut-In <u>53</u>	☐ Sampler <u> </u>	<u>for blow bucket</u>
(H) Final Hydrostatic <u>1956</u>	☐ Straddle <u> </u>	<u>Picked up tools 1/30/23 @ 16:30</u>
	☐ Shale Packer <u> </u>	☒ EM Tool <u>-175</u>
	☐ Extra Packer <u> </u>	☐ Ruined Shale Packer <u> </u>
	☐ Extra Recorder <u> </u>	☐ Ruined Packer <u> </u>
	☒ Day Standby <u> </u>	Sub Total <u>-175</u>
	☐ Accessibility <u> </u>	Total <u>2309.50</u>

Initial Open 30
 Initial Shut-In 60
 Final Flow 30
 Final Shut-In 60

Sub Total 2484.50

Our Representative

Approved By
 Triobite 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
 Triobite 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