

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	MUNN 2-12
Doc ID	1356143

All Electric Logs Run

DIL
DUCP
MEL
BHCS

Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	MUNN 2-12
Doc ID	1356143

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
4	4205-4210	300g 20% MCA, 500g 20% MCA	
3	4274-4284	300g 20% MCA, 1200g 20% MCA	
4	4420-4428	300g 20% MCA, 900g 20% MCA	
3	4616-4629	300g 20% MCA, 1000g 20% MCA	

TREATMENT REPORT



COPY

HURRICANE SERVICES INC

Customer: Murfin Drilling Company Inc.	Date: 4/23/2017	Ticket No.: 100731
Field Rep:		
Address:		
City, State:		
County, Zip:		

Field Order No.: 100731	Open Hole:	Perf Depths (ft)	Perfs
Well Name: Munn # 2-12	Casing Depth: 4891'		
Location: Bird City, Ks.	Casing Size: 5.5 15.5 #		
Formation:	Tubing Depth:		
Type of Service: Longstring	Tubing Size:		
Well Type: Oil	Liner Depth:		
Age of Well: New	Liner Size:		
Packer Type:	Liner Top:		
Packer Depth:	Liner Bottom:		
Treatment Via: Casing	Total Depth: 4900'		
		Total Perfs	0

TIME	INJECTION RATE		PRESSURE		REMARKS	PROP (lbs)	HCL (gls)	FLUID (bbbls)
	FLUID	N2/CO2	STP	ANNULUS				
4:15 AM					Called Out			
11:00 AM					On Location W/FloAT Equipment			
					Run 118 jt's 5.5 15.5 # Casing			
					TD=4900'TP=4891 SJ=22.26' AFU Float Shoe & LD Baffle			
					Turbolizers on Jt's 1-2-3-4-5-6-8-10-11-14-16-18-21-41-65			
					Cement Baskets Jt's 22-42-66			
11:15 AM					Start Casing			
12:10 PM					65 Jt's in Break Circulation			
1:15 PM					Casing on Bottom Drop Ball			
1:24 PM					Break Circulaion W/Rig & Rotate			
					Start Pumping Preflushes			
2:27 PM	4.5		300.0		5 BBI's H2O			5.00
					12 BBI's Mud Flush			12.00
					5 BBL's H2O			5.00
2:35 PM	2.0		100.0		Plug Rat & Mouse Holes 50 sacks			9.00
2:42 PM	5.0		400.0		Start Mix Lead @ 12 Lb/gal yield 2.61 250 Sacks			140.00
					Start Mix Tail @ 14.8 Lb/gal yield 1.50 200 Sacks			54.00
3:30 PM					Shut Down Clear pump & Lines Drop LD Plug			15.00
TOTAL:						-	-	599.00

SUMMARY

Max FI. Rate	Avg FI. Rate	Max PSI	Avg PSI
7.0	4.6	1,900.0	700.0

PRODUCTS USED

300 Sacks H-Con 200 Sacks H-Long

Treater: Todd Seba

Customer: Glen Wahman

MDCI
Munn #2-12
1000' FSL 1110' FEL
Sec. 12-T2S-R38W
3278' KB

Formation	Sample top	Datum	Ref	Log Top	Datum	Ref
Anhydrite	3187	+91	-2	3186	+92	-1
B/Anhydrite	3221	+57	-3	3221	+57	-3
Neva	3650	-372	Flat	3651	-373	-1
Red Eagle	3716	-438	Flat	3716	-438	Flat
Foraker	3769	-491	-1	3768	-490	Flat
Topeka	3989	-711	-1	3993	-715	-5
Oread	4135	-857	Flat	4136	-858	-1
Lansing	4204	-926	-1	4205	-927	-2
Stark				4436	-1158	-3
Mound City	4485	-1207	-3	4488	-1210	-6
Ft Scott	4612	-1334	-3	4616	-1338	-7
Oakley	4692	-1414	-2	4692	-1414	-2
RTD	4900	-1622				
LTD				4903	-1625	



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

250 N. Water STE 300
Wichita, KS 67202

ATTN: Rocky Milford

Munn #2-12

12-2s-38w Cheyenne KS

Start Date: 2017.04.17 @ 06:00:00

End Date: 2017.04.17 @ 13:20:15

Job Ticket #: 65439 DST #: 1

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

Printed: 2017.04.24 @ 09:20:59



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

12-2s-38w Cheyenne KS

250 N. Water STE 300
Wichita, KS 67202

Munn #2-12

Job Ticket: 65439

DST#: 1

ATTN: Rocky Milford

Test Start: 2017.04.17 @ 06:00:00

Tool Information

Drill Pipe:	Length: 3746.00 ft	Diameter: 3.80 inches	Volume: 52.55 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: 205.00 ft	Diameter: 2.25 inches	Volume: 1.01 bbl	Weight to Pull Loose: 66000.00 lb
			<u>Total Volume: 53.56 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	3967.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	47.00 ft			
Tool Length:	76.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

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

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3939.00	
Shut In Tool	5.00			3944.00	
Hydraulic tool	5.00			3949.00	
Jars	5.00			3954.00	
Safety Joint	3.00			3957.00	
Packer	5.00			3962.00	29.00 Bottom Of Top Packer
Packer	5.00			3967.00	
Packer - Shale	0.00			3967.00	
Stubb	1.00			3968.00	
Recorder	0.00	6625	Inside	3968.00	
Recorder	0.00	8017	Outside	3968.00	
Perforations	10.00			3978.00	
Blank Spacing	33.00			4011.00	
Bullnose	3.00			4014.00	47.00 Bottom Packers & Anchor

Total Tool Length: 76.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

12-2s-38w Cheyenne KS

250 N. Water STE 300
Wichita, KS 67202

Munn #2-12

Job Ticket: 65439

DST#: 1

ATTN: Rocky Milford

Test Start: 2017.04.17 @ 06:00:00

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: 69.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	Mud w /Oil spots 96%m, 4%o	0.074

Total Length: 15.00 ft Total Volume: 0.074 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

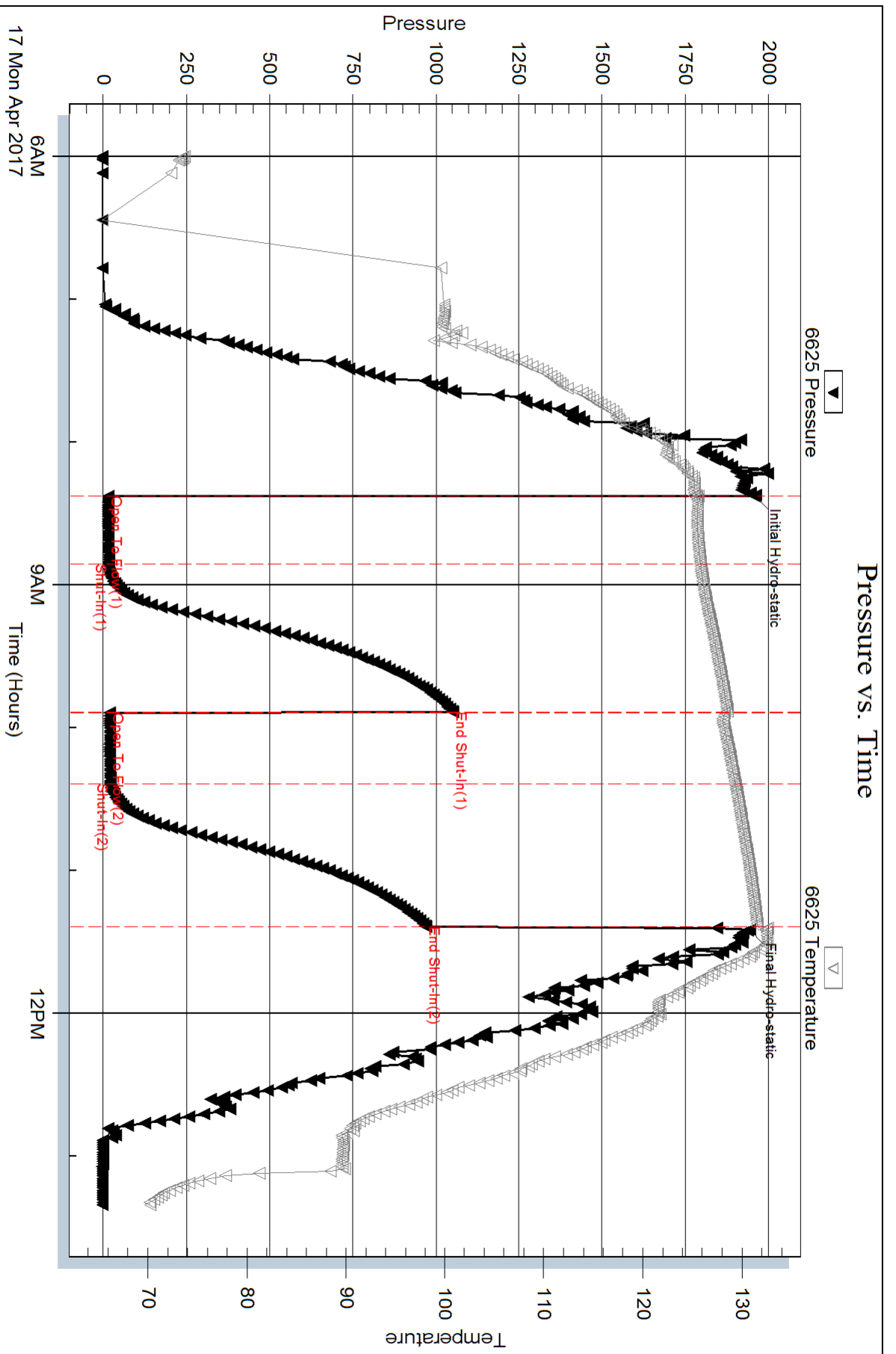
Serial #: 6625

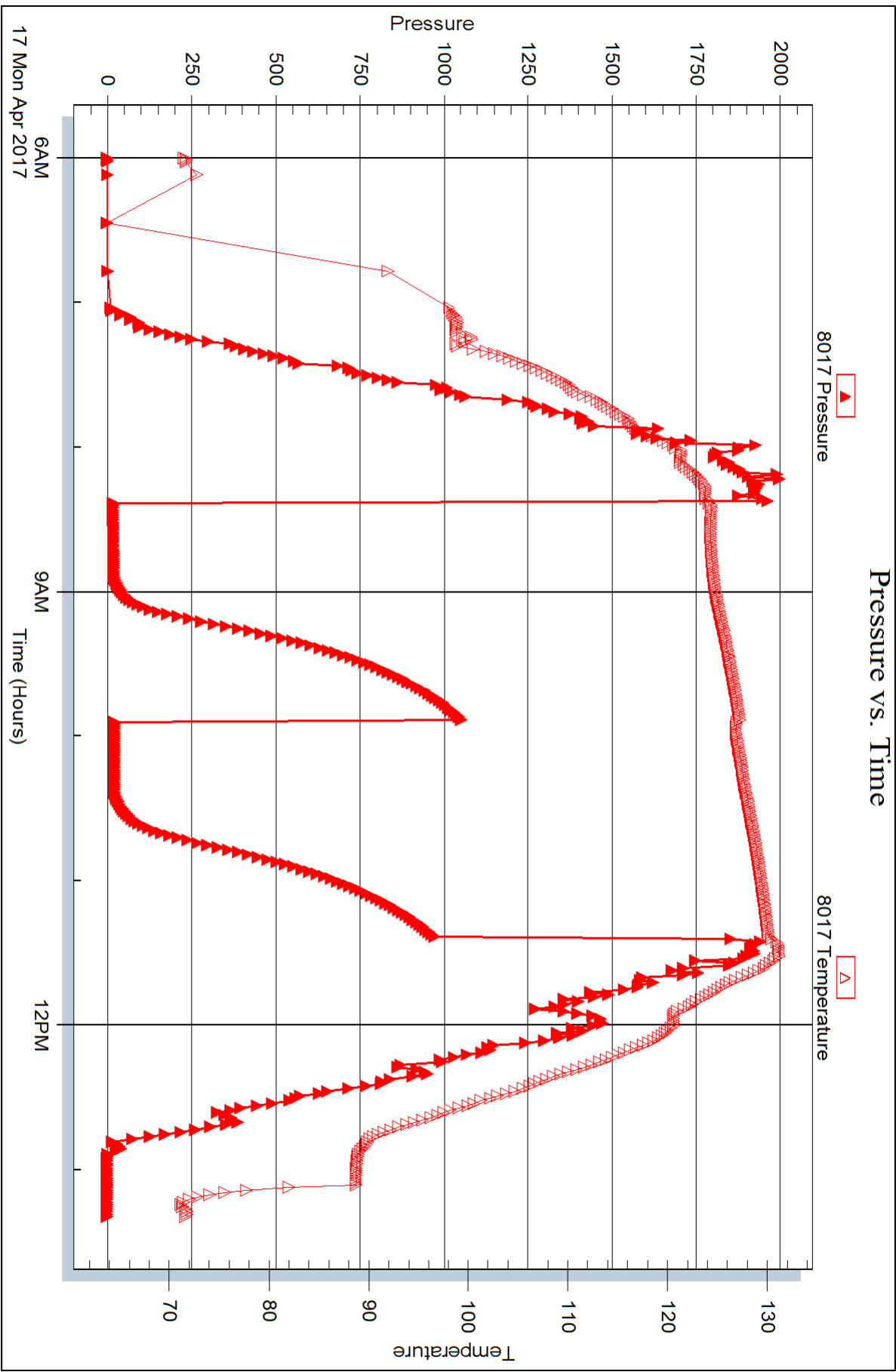
Inside

Murfin Drilling Co., Inc.

Munn #2-12

DST Test Number: 1







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

250 N. Water STE 300
Wichita, KS 67202

ATTN: Rocky Milford

Munn #2-12

12-2s-38w Cheyenne KS

Start Date: 2017.04.18 @ 19:30:00

End Date: 2017.04.19 @ 04:01:30

Job Ticket #: 65440 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2017.04.24 @ 09:20:30



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
 250 N. Water STE 300
 Wichita, KS 67202
 ATTN: Rocky Milford

12-2s-38w Cheyenne KS

Munn #2-12

Job Ticket: 65440

DST#: 2

Test Start: 2017.04.18 @ 19:30:00

GENERAL INFORMATION:

Formation: **Douglas Sd - LKC "D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:34:00

Time Test Ended: 04:01:30

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 83

Interval: **4165.00 ft (KB) To 4305.00 ft (KB) (TVD)**

Reference Elevations: 3278.00 ft (KB)

Total Depth: 4305.00 ft (KB) (TVD)

3273.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6625

Inside

Press@RunDepth: 148.38 psig @ 4166.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.04.18

End Date:

2017.04.19

Last Calib.: 2017.04.19

Start Time: 19:30:05

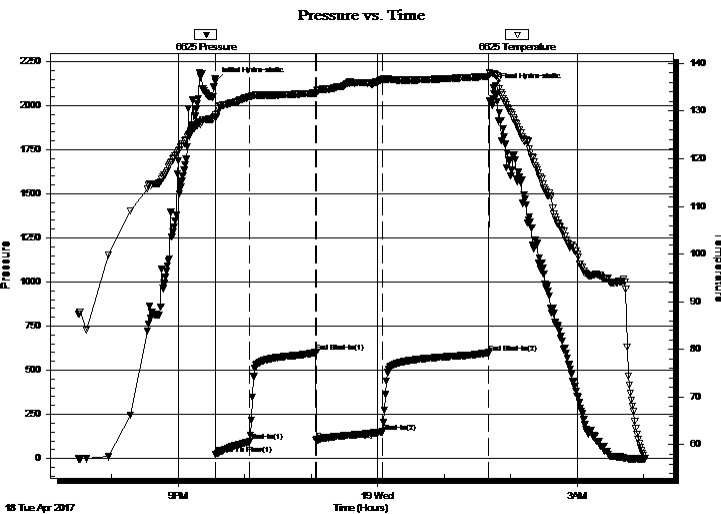
End Time:

04:01:29

Time On Btm: 2017.04.18 @ 21:33:45

Time Off Btm: 2017.04.19 @ 01:44:30

TEST COMMENT: 30 - IF: Blow built to 7"
 60 - IS: No blow back
 60 - FF: Blow built to 7"
 90 - FS: No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2134.47	129.09	Initial Hydro-static
1	23.27	128.59	Open To Flow (1)
31	94.59	133.04	Shut-In(1)
91	600.51	133.76	End Shut-In(1)
91	103.82	133.77	Open To Flow (2)
151	148.38	136.64	Shut-In(2)
247	599.46	137.25	End Shut-In(2)
251	2099.50	137.80	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
116.00	GOWCM 71% _m , 15% _g , 9% _w , 5% _o	0.57
160.00	GOCM 83% _m , 10% _g , 7% _o	1.43
0.00	GIP = 20'	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
250 N. Water STE 300
Wichita, KS 67202
ATTN: Rocky Milford

12-2s-38w Cheyenne KS

Munn #2-12

Job Ticket: 65440

DST#: 2

Test Start: 2017.04.18 @ 19:30:00

GENERAL INFORMATION:

Formation: **Douglas Sd - LKC "D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:34:00

Time Test Ended: 04:01:30

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 83

Interval: 4165.00 ft (KB) To 4305.00 ft (KB) (TVD)

Reference Elevations: 3278.00 ft (KB)

Total Depth: 4305.00 ft (KB) (TVD)

3273.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8017 Outside

Press@RunDepth: psig @ 4166.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.04.18

End Date:

2017.04.19

Last Calib.:

2017.04.19

Start Time: 19:30:05

End Time:

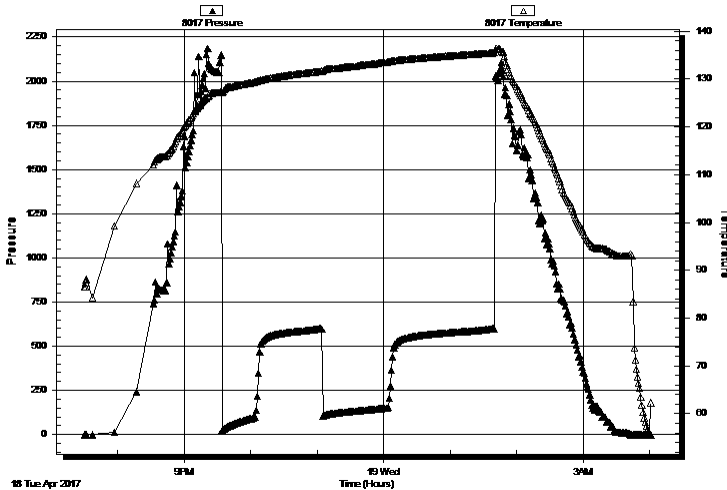
04:01:14

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF: Blow built to 7"
60 - IS: No blow back
60 - FF: Blow built to 7"
90 - FS: No blow back

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
116.00	GOWCM 71% <i>m</i> , 15% <i>g</i> , 9% <i>w</i> , 5% <i>o</i>	0.57
160.00	GOCM 83% <i>m</i> , 10% <i>g</i> , 7% <i>o</i>	1.43
0.00	GIP = 20'	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 Co., Inc.

12-2s-38w Cheyenne KS

250 N. Water STE 300
Wichita, KS 67202

Munn #2-12

Job Ticket: 65440

DST#: 2

ATTN: Rocky Milford

Test Start: 2017.04.18 @ 19:30:00

Tool Information

Drill Pipe:	Length: 3964.00 ft	Diameter: 3.80 inches	Volume: 55.60 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: 205.00 ft	Diameter: 2.25 inches	Volume: 1.01 bbl	Weight to Pull Loose: 72000.00 lb
			<u>Total Volume: 56.61 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4165.00 ft			Final 66000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	140.00 ft			
Tool Length:	169.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4137.00	
Shut In Tool	5.00			4142.00	
Hydraulic tool	5.00			4147.00	
Jars	5.00			4152.00	
Safety Joint	3.00			4155.00	
Packer	5.00			4160.00	29.00 Bottom Of Top Packer
Packer	5.00			4165.00	
Packer - Shale	0.00			4165.00	
Stubb	1.00			4166.00	
Recorder	0.00	6625	Inside	4166.00	
Recorder	0.00	8017	Outside	4166.00	
Perforations	10.00			4176.00	
Blank Spacing	126.00			4302.00	
Bullnose	3.00			4305.00	140.00 Bottom Packers & Anchor

Total Tool Length: 169.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

12-2s-38w Cheyenne KS

250 N. Water STE 300
Wichita, KS 67202

Munn #2-12

Job Ticket: 65440

DST#: 2

ATTN: Rocky Milford

Test Start: 2017.04.18 @ 19:30:00

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: 69.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.38 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
116.00	GOWCM 71% <i>m</i> , 15% <i>g</i> , 9% <i>w</i> , 5% <i>o</i>	0.570
160.00	GOCM 83% <i>m</i> , 10% <i>g</i> , 7% <i>o</i>	1.434
0.00	GIP = 20'	0.000

Total Length: 276.00 ft

Total Volume: 2.004 bbl

Num Fluid Samples: 0

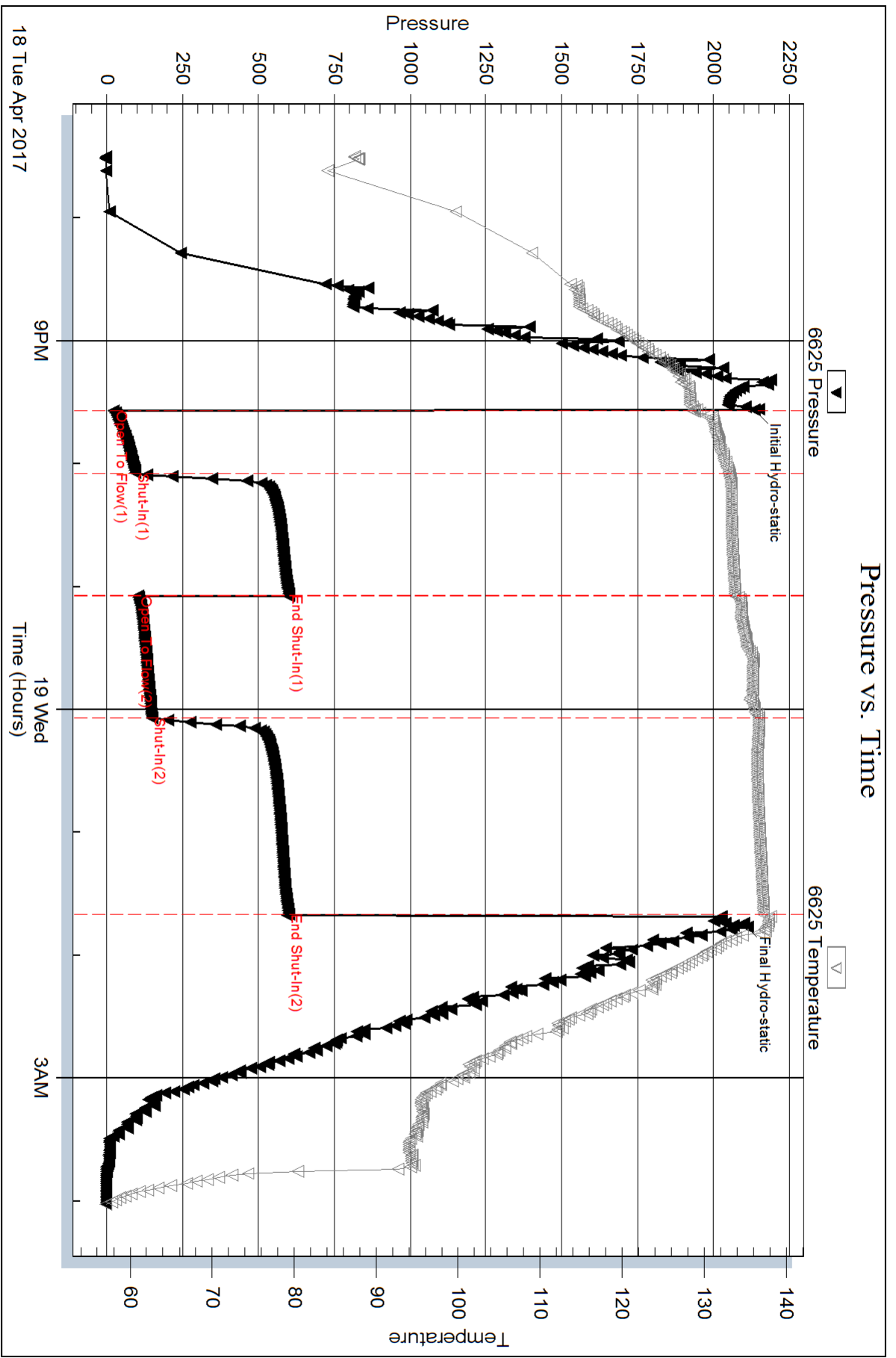
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

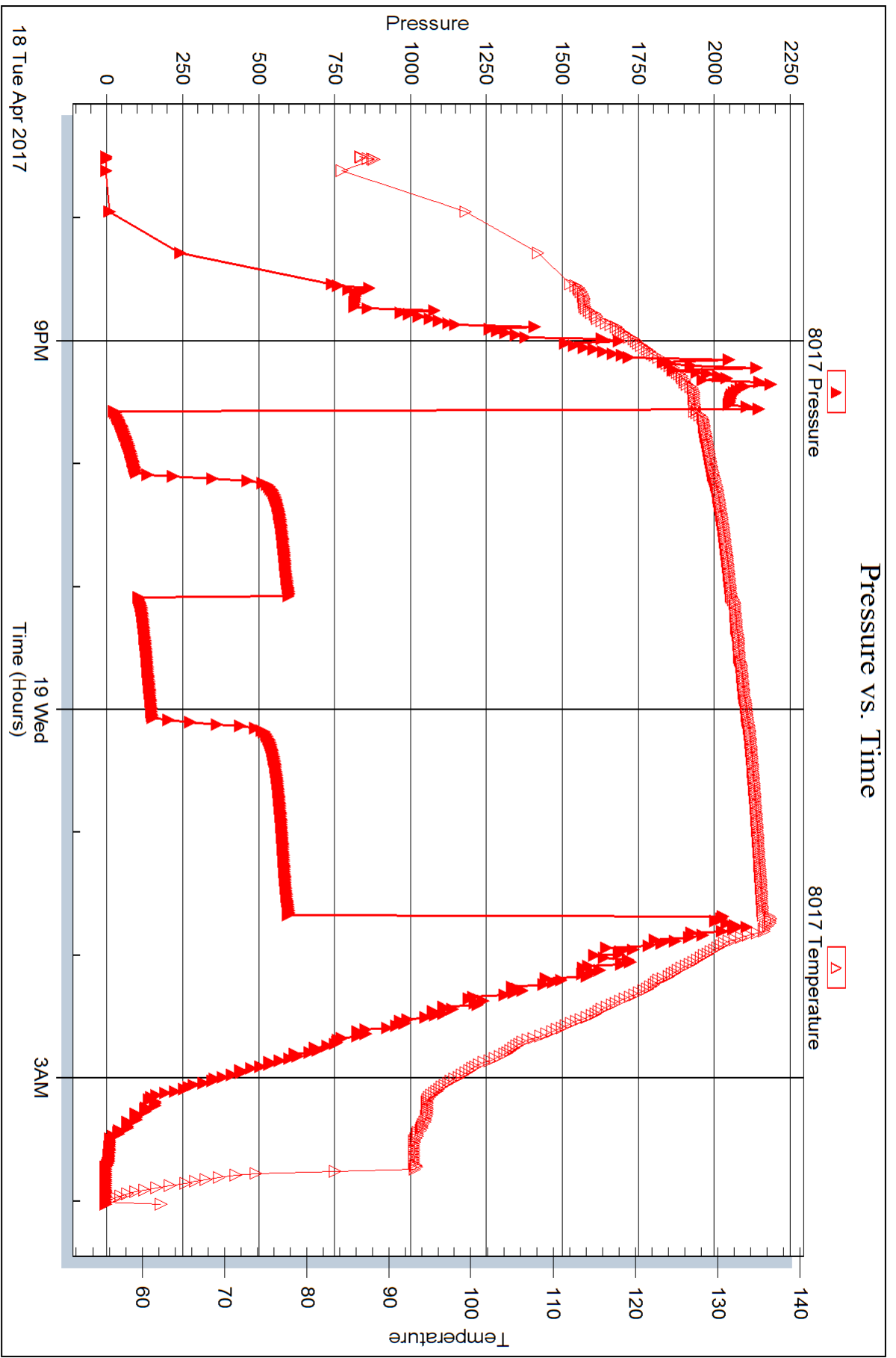


Serial #: 8017

Outside Murfin Drilling Co., Inc.

Munn #2-12

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

250 N. Water STE 300
Wichita, KS 67202

ATTN: Rocky Milford

Munn #2-12

12-2s-38w Cheyenne KS

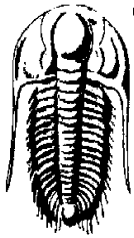
Start Date: 2017.04.19 @ 13:15:00

End Date: 2017.04.19 @ 20:09:30

Job Ticket #: 65441 DST #: 3

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

Printed: 2017.04.24 @ 09:20:08



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

12-2s-38w Cheyenne KS

250 N. Water STE 300
Wichita, KS 67202

Munn #2-12

Job Ticket: 65441

DST#: 3

ATTN: Rocky Milford

Test Start: 2017.04.19 @ 13:15:00

GENERAL INFORMATION:

Formation: **LKC "G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:07:00

Time Test Ended: 20:09:30

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 83

Interval: 4299.00 ft (KB) To 4350.00 ft (KB) (TVD)

Total Depth: 4350.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3278.00 ft (KB)

3273.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 6625 Inside

Press@RunDepth: 18.90 psig @ 4300.00 ft (KB)

Start Date: 2017.04.19

End Date:

2017.04.19

Start Time: 13:15:05

End Time:

20:09:29

Capacity: 8000.00 psig

Last Calib.: 2017.04.19

Time On Btm: 2017.04.19 @ 15:06:45

Time Off Btm: 2017.04.19 @ 18:11:15

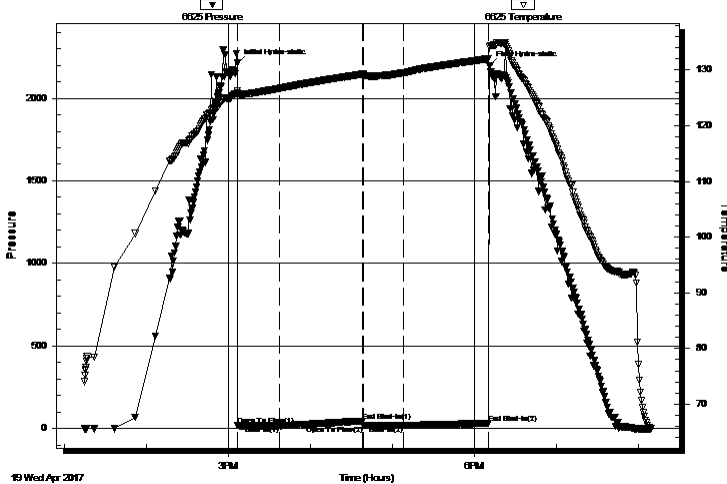
TEST COMMENT: 30 - IF: Blow built to 1/16", intermittent from 15 - 20 min. then dead

60 - IS: No blow

30 - FF: No blow

60 - FS: No blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2212.28	126.29	Initial Hydro-static
1	16.63	125.88	Open To Flow (1)
31	16.55	126.71	Shut-In(1)
92	45.03	129.27	End Shut-In(1)
92	18.40	129.26	Open To Flow (2)
122	18.90	129.46	Shut-In(2)
184	30.75	132.02	End Shut-In(2)
185	2196.71	134.23	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	Mud w /Oil spots 97%m, 3%o	0.01

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., Inc.

12-2s-38w Cheyenne KS

250 N. Water STE 300
Wichita, KS 67202

Munn #2-12

Job Ticket: 65441

DST#: 3

ATTN: Rocky Milford

Test Start: 2017.04.19 @ 13:15:00

Tool Information

Drill Pipe:	Length: 4090.00 ft	Diameter: 3.80 inches	Volume: 57.37 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: 205.00 ft	Diameter: 2.25 inches	Volume: 1.01 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 58.38 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4299.00 ft			Final 65000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	51.00 ft			
Tool Length:	80.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4271.00	
Shut In Tool	5.00			4276.00	
Hydraulic tool	5.00			4281.00	
Jars	5.00			4286.00	
Safety Joint	3.00			4289.00	
Packer	5.00			4294.00	29.00 Bottom Of Top Packer
Packer	5.00			4299.00	
Stubb	1.00			4300.00	
Recorder	0.00	6625	Inside	4300.00	
Recorder	0.00	8017	Outside	4300.00	
Perforations	15.00			4315.00	
Blank Spacing	32.00			4347.00	
Bullnose	3.00			4350.00	51.00 Bottom Packers & Anchor

Total Tool Length: 80.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

12-2s-38w Cheyenne KS

250 N. Water STE 300
Wichita, KS 67202

Munn #2-12

Job Ticket: 65441

DST#: 3

ATTN: Rocky Milford

Test Start: 2017.04.19 @ 13:15:00

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: 76.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	Mud w /Oil spots 97% _m , 3% _o	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

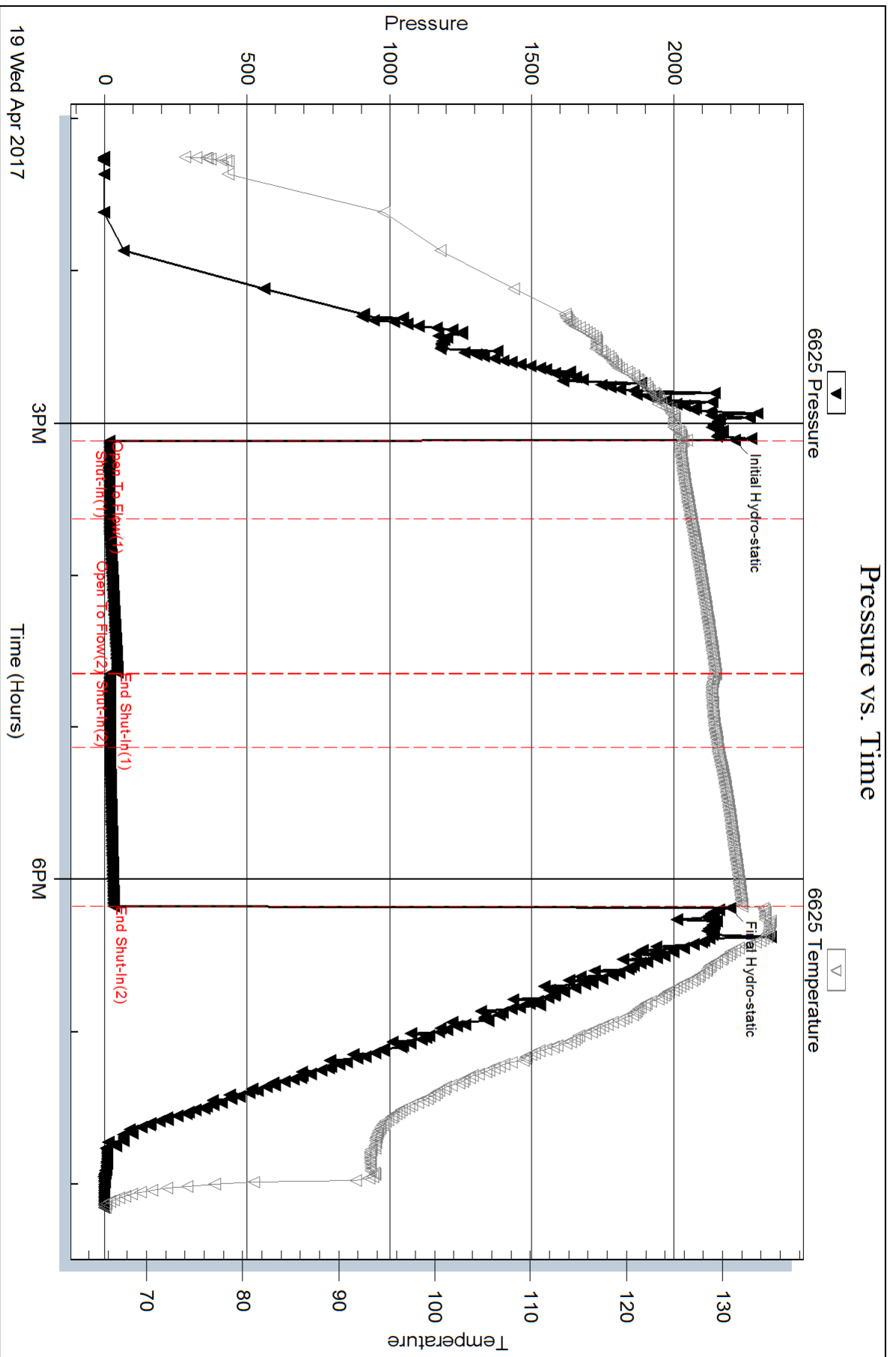
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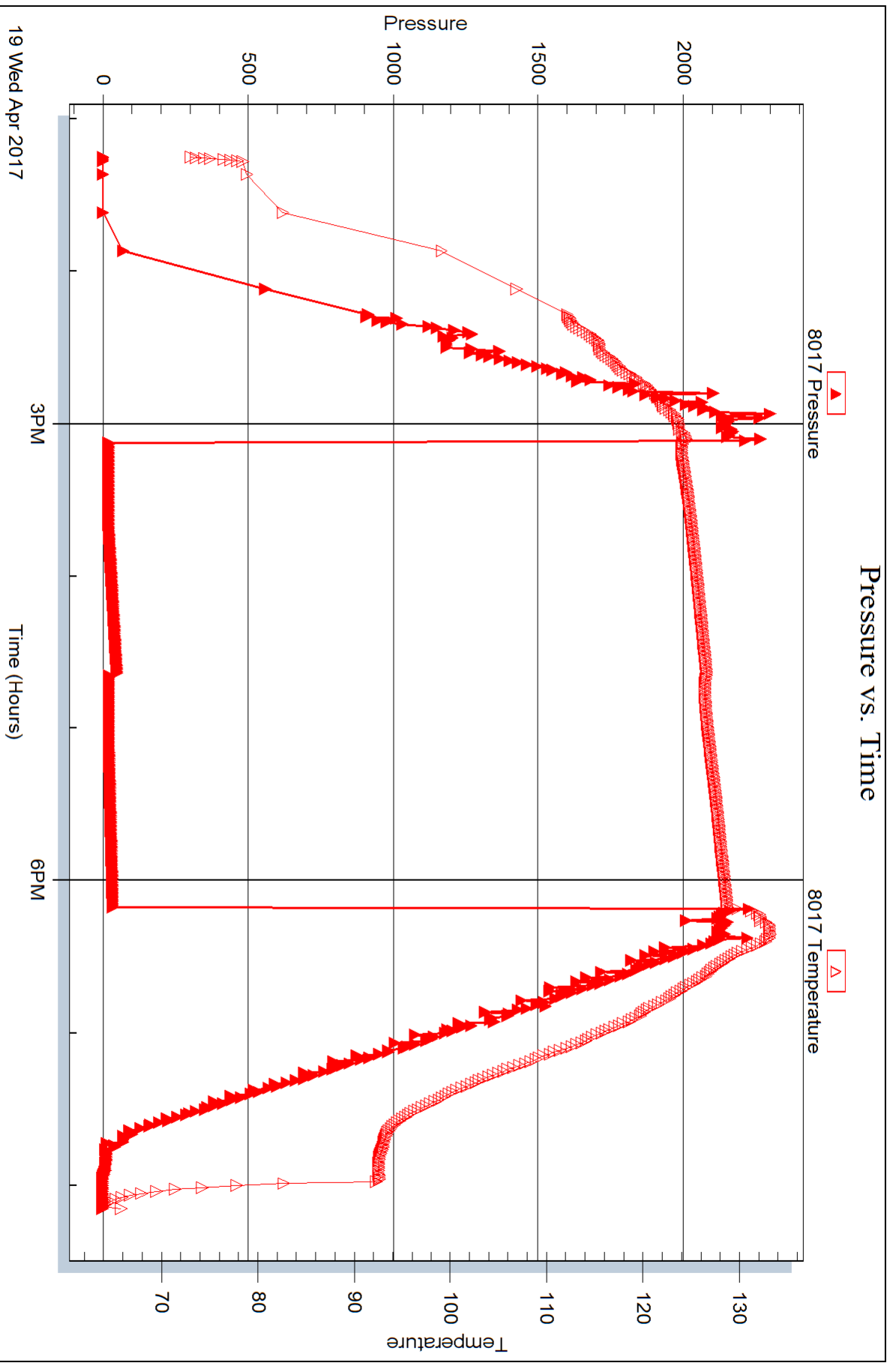
Inside

Murfin Drilling Co., Inc.

Munn #2-12

DST Test Number: 3







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

250 N. Water STE 300
Wichita, KS 67202

ATTN: Rocky Milford

Munn #2-12

12-2s-38w Cheyenne KS

Start Date: 2017.04.20 @ 10:22:00

End Date: 2017.04.20 @ 18:19:15

Job Ticket #: 65442 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2017.04.24 @ 09:19:47



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
 250 N. Water STE 300
 Wichita, KS 67202
 ATTN: Rocky Milford

12-2s-38w Cheyenne KS

Munn #2-12

Job Ticket: 65442

DST#: 4

Test Start: 2017.04.20 @ 10:22:00

GENERAL INFORMATION:

Formation: **LKC "H - J"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 12:10:30
 Time Test Ended: 18:19:15
 Interval: **4346.00 ft (KB) To 4435.00 ft (KB) (TVD)**
 Total Depth: 4435.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 3278.00 ft (KB)
 3273.00 ft (CF)
 KB to GR/CF: 5.00 ft

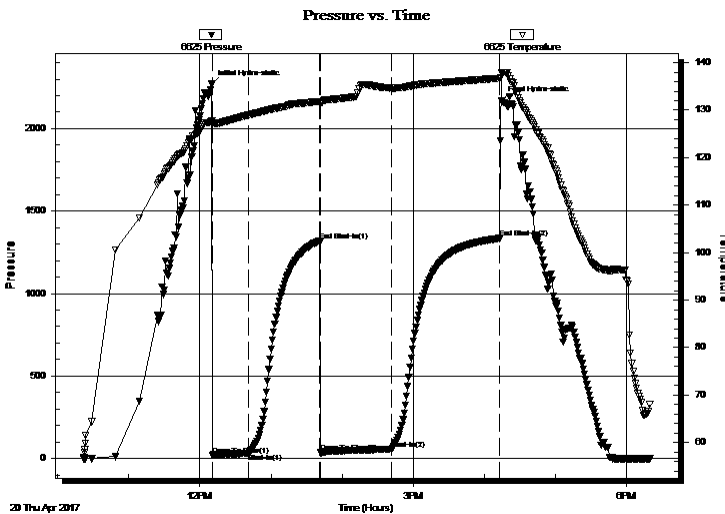
Serial #: 6625

Inside

Press@RunDepth: 57.65 psig @ 4347.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.04.20 End Date: 2017.04.20 Last Calib.: 2017.04.20
 Start Time: 10:22:05 End Time: 18:19:14 Time On Btm: 2017.04.20 @ 12:10:15
 Time Off Btm: 2017.04.20 @ 16:14:30

TEST COMMENT: 30 - IF: Blow built to 6 1/4"
 60 - IS: No blow back
 60 - FF: Blow built to BOB (11") at 43 min.
 90 - FS: No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2268.89	127.80	Initial Hydro-static
1	18.67	126.95	Open To Flow (1)
31	32.20	128.98	Shut-In(1)
91	1320.02	131.85	End Shut-In(1)
92	34.43	131.62	Open To Flow (2)
152	57.65	134.65	Shut-In(2)
243	1334.89	136.71	End Shut-In(2)
245	2169.23	137.79	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
70.00	GOM 45% m, 41% o, 14% g	0.34
40.00	CO 98% o, 2% g	0.20
0.00	GIP = 320'	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

12-2s-38w Cheyenne KS

250 N. Water STE 300
Wichita, KS 67202

Munn #2-12

Job Ticket: 65442

DST#: 4

ATTN: Rocky Milford

Test Start: 2017.04.20 @ 10:22:00

Tool Information

Drill Pipe:	Length: 4120.00 ft	Diameter: 3.80 inches	Volume: 57.79 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: 205.00 ft	Diameter: 2.25 inches	Volume: 1.01 bbl	Weight to Pull Loose: 74000.00 lb
			<u>Total Volume: 58.80 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4346.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	89.00 ft			
Tool Length:	118.00 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			4318.00	
Shut In Tool	5.00			4323.00	
Hydraulic tool	5.00			4328.00	
Jars	5.00			4333.00	
Safety Joint	3.00			4336.00	
Packer	5.00			4341.00	29.00 Bottom Of Top Packer
Packer	5.00			4346.00	
Stubb	1.00			4347.00	
Recorder	0.00	6625	Inside	4347.00	
Recorder	0.00	8017	Outside	4347.00	
Perforations	21.00			4368.00	
Blank Spacing	64.00			4432.00	
Bullnose	3.00			4435.00	89.00 Bottom Packers & Anchor

Total Tool Length: 118.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

12-2s-38w Cheyenne KS

250 N. Water STE 300
Wichita, KS 67202

Munn #2-12

Job Ticket: 65442

DST#: 4

ATTN: Rocky Milford

Test Start: 2017.04.20 @ 10:22:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

37.4 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 81.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
70.00	GOM 45% _m , 41% _o , 14% _g	0.344
40.00	CO 98% _o , 2% _g	0.197
0.00	GIP = 320'	0.000

Total Length: 110.00 ft Total Volume: 0.541 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

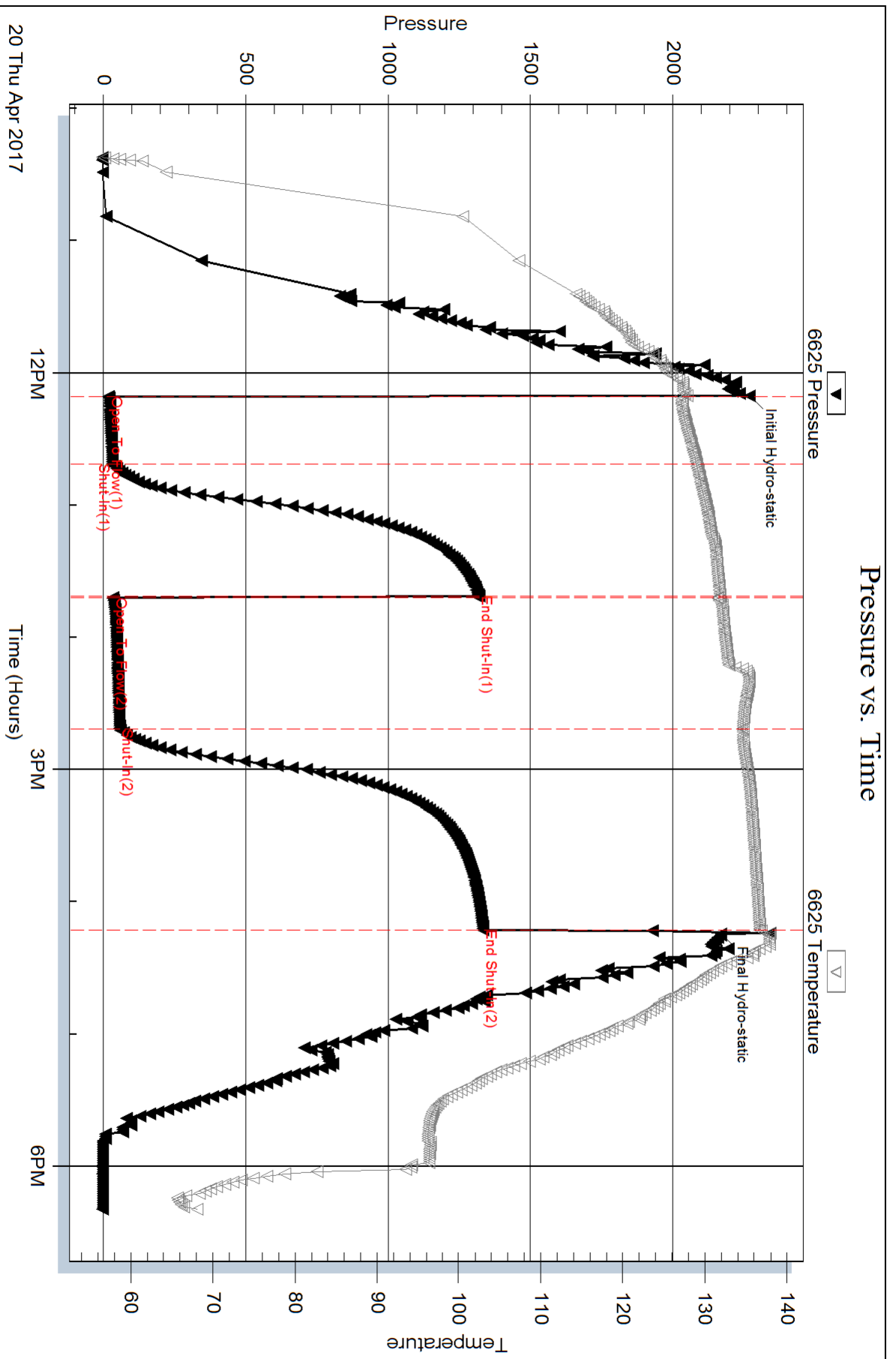
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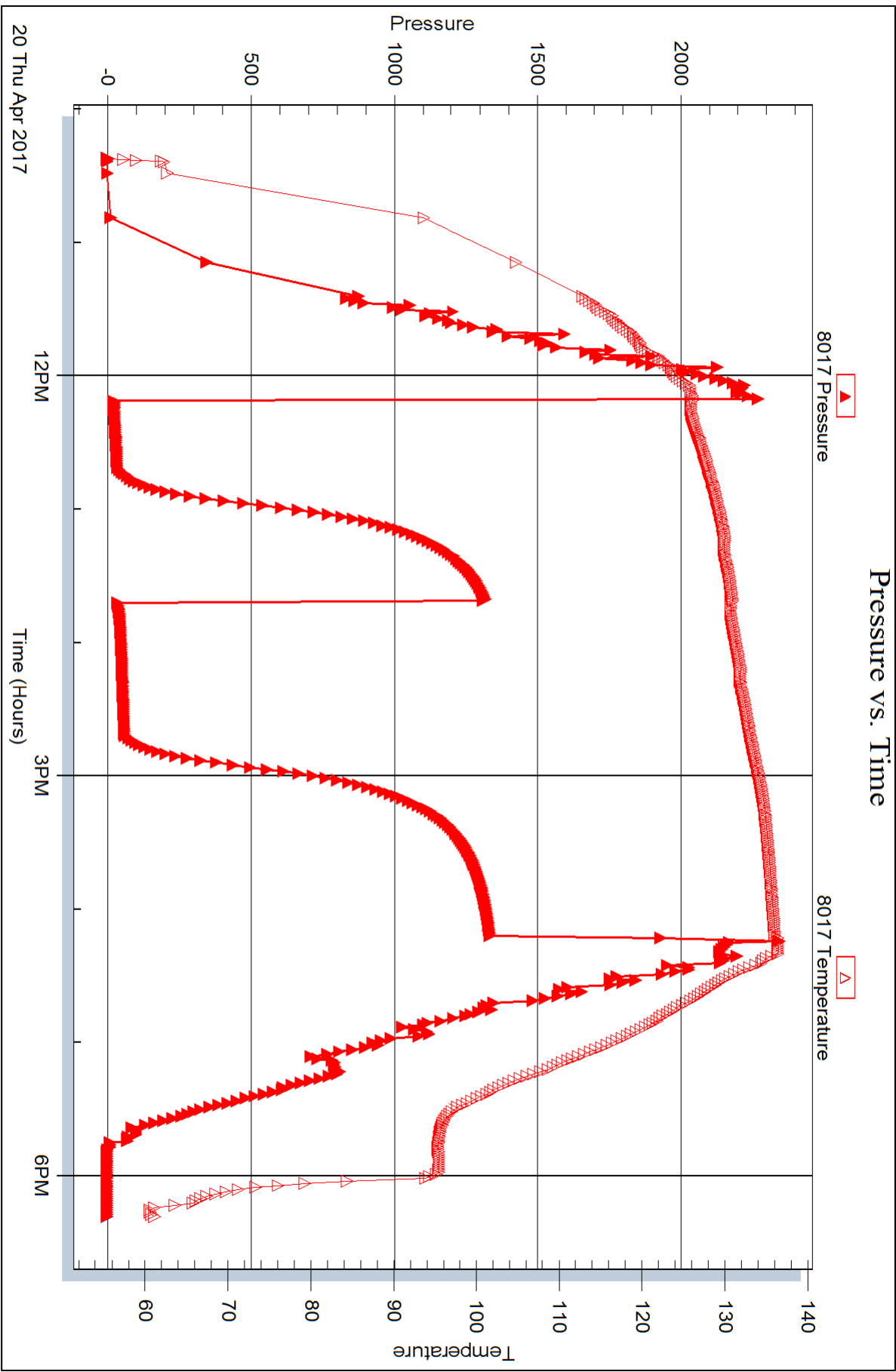
Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity = 38.8 api @ 74 deg F

Corrected Gravity = 37.4 api







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

250 N. Water STE 300
Wichita, KS 67202

ATTN: Rocky Milford

Munn #2-12

12-2s-38w Cheyenne KS

Start Date: 2017.04.21 @ 15:56:00

End Date: 2017.04.21 @ 22:53:00

Job Ticket #: 65443 DST #: 5

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

Printed: 2017.04.24 @ 09:19:21



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
 250 N. Water STE 300
 Wichita, KS 67202
 ATTN: Rocky Milford

12-2s-38w Cheyenne KS

Munn #2-12

Job Ticket: 65443

DST#: 5

Test Start: 2017.04.21 @ 15:56:00

GENERAL INFORMATION:

Formation: **Ft. Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:44:45

Time Test Ended: 22:53:00

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 83

Interval: 4589.00 ft (KB) To 4640.00 ft (KB) (TVD)

Reference Elevations: 3278.00 ft (KB)

Total Depth: 4640.00 ft (KB) (TVD)

3273.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6625 Inside

Press@RunDepth: 37.05 psig @ 4590.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.04.21

End Date:

2017.04.21

Last Calib.: 2017.04.21

Start Time: 15:56:05

End Time:

22:52:59

Time On Btm: 2017.04.21 @ 17:44:30

Time Off Btm: 2017.04.21 @ 20:47:15

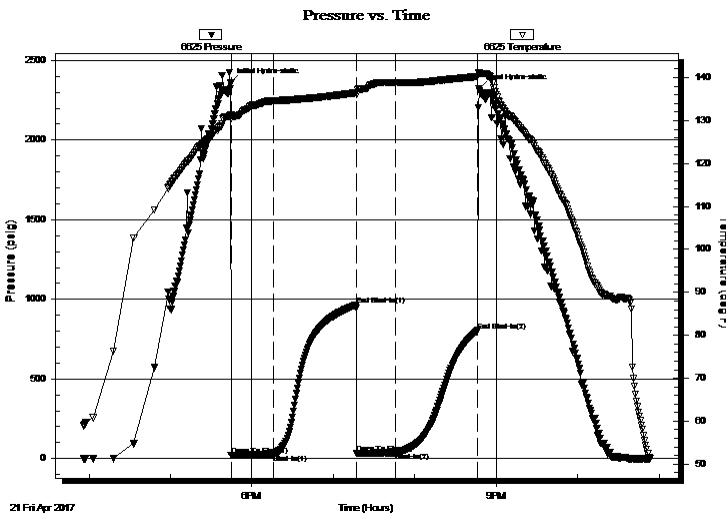
TEST COMMENT: 30 - IF: Blow built to 1 1/4"

60 - IS: No blow back

30 - FF: No blow

60 - FS: No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2357.82	131.43	Initial Hydro-static
1	20.43	130.49	Open To Flow (1)
32	27.10	134.61	Shut-In(1)
93	965.32	136.47	End Shut-In(1)
93	31.82	136.19	Open To Flow (2)
122	37.05	138.80	Shut-In(2)
182	803.24	140.25	End Shut-In(2)
183	2323.29	141.09	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
45.00	Mud w /Oil spots 98%m, 2%o	0.22

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

12-2s-38w Cheyenne KS

250 N. Water STE 300
Wichita, KS 67202

Munn #2-12

Job Ticket: 65443

DST#: 5

ATTN: Rocky Milford

Test Start: 2017.04.21 @ 15:56:00

Tool Information

Drill Pipe:	Length: 4367.00 ft	Diameter: 3.80 inches	Volume: 61.26 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: 205.00 ft	Diameter: 2.25 inches	Volume: 1.01 bbl	Weight to Pull Loose: 74000.00 lb
			<u>Total Volume: 62.27 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4589.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	51.00 ft			
Tool Length:	80.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4561.00	
Shut In Tool	5.00			4566.00	
Hydraulic tool	5.00			4571.00	
Jars	5.00			4576.00	
Safety Joint	3.00			4579.00	
Packer	5.00			4584.00	29.00 Bottom Of Top Packer
Packer	5.00			4589.00	
Packer - Shale	0.00			4589.00	
Stubb	1.00			4590.00	
Recorder	0.00	6625	Inside	4590.00	
Recorder	0.00	8017	Outside	4590.00	
Perforations	14.00			4604.00	
Blank Spacing	33.00			4637.00	
Bullnose	3.00			4640.00	51.00 Bottom Packers & Anchor

Total Tool Length: 80.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

12-2s-38w Cheyenne KS

250 N. Water STE 300
Wichita, KS 67202

Munn #2-12

Job Ticket: 65443

DST#: 5

ATTN: Rocky Milford

Test Start: 2017.04.21 @ 15:56:00

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: 67.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
45.00	Mud w /Oil spots 98%m, 2%o	0.221

Total Length: 45.00 ft Total Volume: 0.221 bbl

Num Fluid Samples: 0

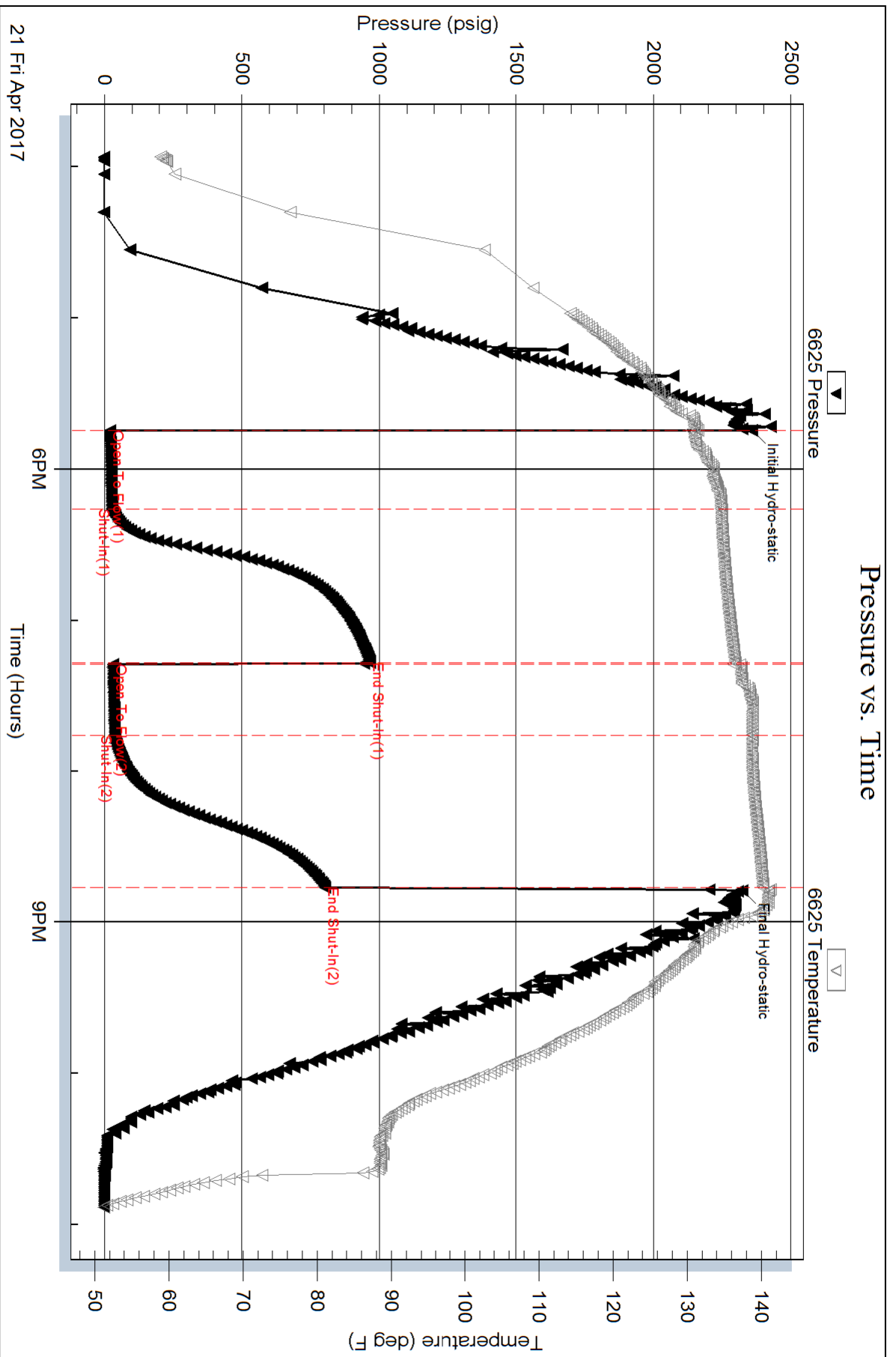
Num Gas Bombs: 0

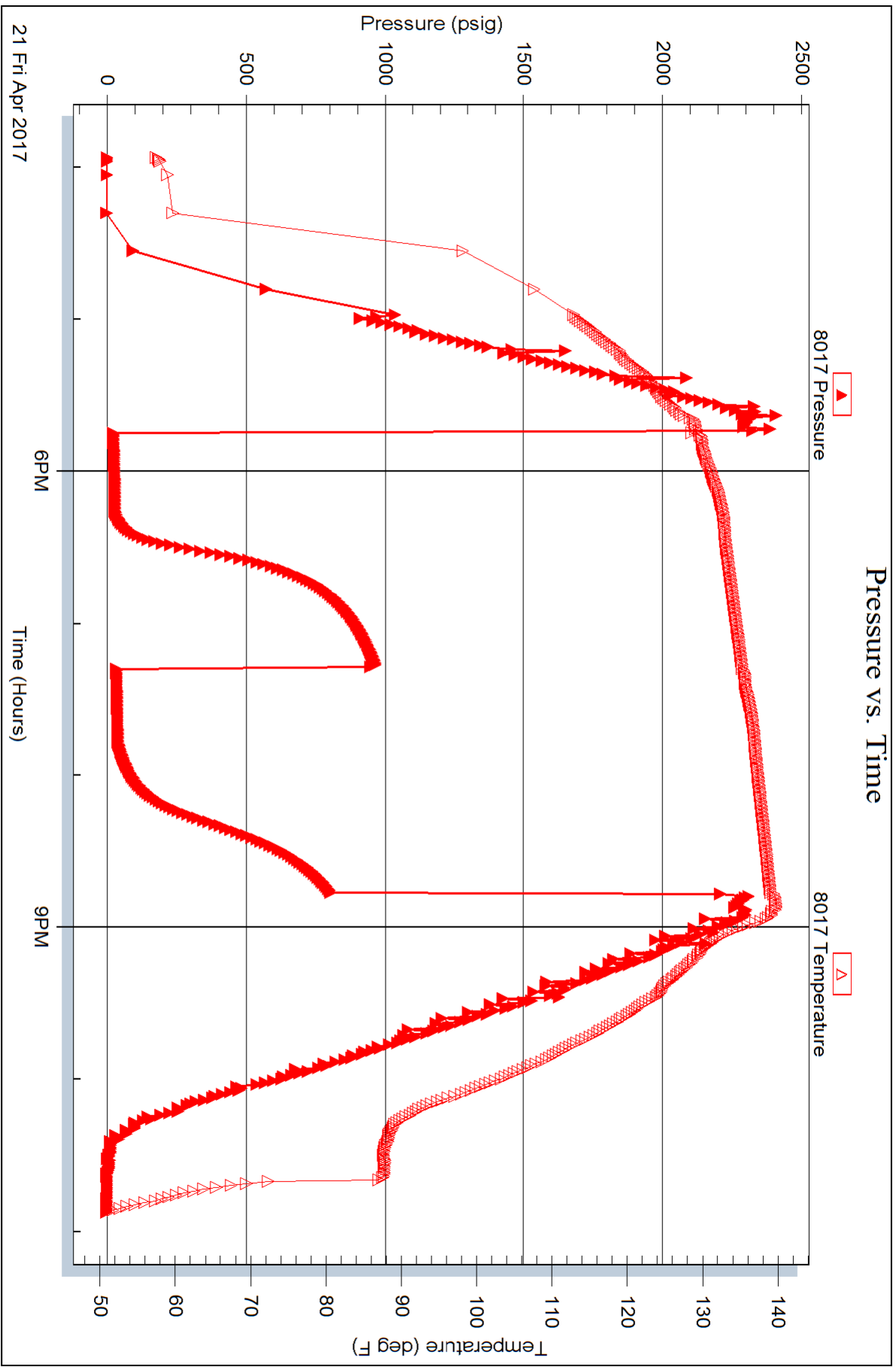
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65439

Well Name & No. Munn # 2-12 Test No. 1 Date 4-17-17
 Company Murfin Drilling Co. Inc Elevation 3278 KB 3273 GL
 Address 250 N. Water STE 300 Wichita KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #24
 Location: Sec. 12 Twp. 2s Rge. 38w Co. Cheyenne State KS

Interval Tested 3967 - 4014 Zone Tested Topeka
 Anchor Length 47 Drill Pipe Run 3746 Mud Wt. 8.9
 Top Packer Depth 3962 Drill Collars Run 205 Vis 69
 Bottom Packer Depth 3967 (shale) Wt. Pipe Run - WL 5.6
 Total Depth 4014 Chlorides 600 ppm System LCM 5
 Blow Description IF: Blow built to 1/2", died back to weak surface blow at close
ISI: No blow
FF: No blow
FSI: No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>Mud w/oil spots</u>	<u>4</u>	<u>96</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 15 BHT 132 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1957 Test 1050 T-On Location 5:00
 (B) First Initial Flow 16 Jars 250 T-Started 6:00
 (C) First Final Flow 17 Safety Joint 75 T-Open 8:22
 (D) Initial Shut-In 1052 Circ Sub _____ T-Pulled 11:23
 (E) Second Initial Flow 20 Hourly Standby _____ T-Out 13:15
 (F) Second Final Flow 21 Mileage 134RT 100.50 Comments _____
 (G) Final Shut-In 970 Sampler _____
 (H) Final Hydrostatic 1943 Straddle _____
 Shale Packer 250 Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1725.50
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1725.50

Approved By Rocky Milford

Our Representative James Winkler

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. **65440**

Well Name & No. Munn # 2-12 Test No. 2 Date 4-18-17
 Company Murfin Drilling Co. Inc. Elevation 3278 KB 3273 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #24
 Location: Sec. 12 Twp. 2S Rge. 38W Co. Cheyenne State KS

Interval Tested 4165 - 4305 Zone Tested Douglas Sand - LKC "D" prime
 Anchor Length 140 Drill Pipe Run 3964 Mud Wt. 9.2
 Top Packer Depth 4160 Drill Collars Run 205 Vis 69
 Bottom Packer Depth 4165 (Shale) Wt. Pipe Run - WL 6.4
 Total Depth 4305 Chlorides 600 ppm System LCM 4
 Blow Description IF: Blow built to 7"
ISI: No blowback
FP: Blow built to 7"
FST: No blowback

Rec	Feet of	%gas	%oil	%water	%mud
<u>160</u>	<u>60cm</u>	<u>10</u>	<u>7</u>	<u>-</u>	<u>83</u>
<u>116</u>	<u>60wcm</u>	<u>15</u>	<u>5</u>	<u>9</u>	<u>71</u>
<u> </u>	<u>5IP=20'</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

Rec Total 276 BHT 137 Gravity API RW @ °F Chlorides ppm

(A) Initial Hydrostatic 2134 Test 1150 T-On Location 18:30 4/18
 (B) First Initial Flow 23 Jars 250 T-Started 19:30
 (C) First Final Flow 95 Safety Joint 75 T-Open 21:34
 (D) Initial Shut-In 601 Circ Sub T-Pulled 1:40
 (E) Second Initial Flow 104 Hourly Standby T-Out 4:00 4/19
 (F) Second Final Flow 148 Mileage 134 RT 100.50 Comments
 (G) Final Shut-In 599 Sampler
 (H) Final Hydrostatic 2100 Straddle Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Initial Open 30 Extra Packer Sub Total 0
 Initial Shut-In 60 Extra Recorder Total 1825.50
 Final Flow 60 Day Standby MP/DST Disc't
 Final Shut-In 90 Accessibility
 Sub Total 1825.50

Approved By Rocky Milford Our Representative James Winder
 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. **65441**

Well Name & No. Munn #2-12 Test No. 3 Date 4-19-17
 Company Murfin Drilling Co Inc Elevation 3278 KB 3273 GL
 Address 250 N. Water STE 300 Wichita KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #24
 Location: Sec. 12 Twp. 2s Rge. 38w Co. Cheyenne State KS

Interval Tested 4299 - 4350 Zone Tested LKC "G"
 Anchor Length 51 Drill Pipe Run 4090 Mud Wt. 9.2
 Top Packer Depth 4294 Drill Collars Run 205 Vis 76
 Bottom Packer Depth 4299 Wt. Pipe Run - WL 6.8
 Total Depth 4350 Chlorides 700 ppm System LCM 4

Blow Description IF: Blow built to 1/16", intermittent from 15-20 min. then dead
ISI: No blow
FF: No blow
FSI: No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>Mud w/oil spots</u>	<u>3</u>		<u>97</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 2 BHT 132 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2212 Test 1150 T-On Location 12:35
 (B) First Initial Flow 17 Jars 250 T-Started 13:15
 (C) First Final Flow 17 Safety Joint 75 T-Open 15:07
 (D) Initial Shut-In 45 Circ Sub _____ T-Pulled 18:10
 (E) Second Initial Flow 18 Hourly Standby _____ T-Out 20:05
 (F) Second Final Flow 19 Mileage 134RT 100.50 Comments _____
 (G) Final Shut-In 31 Sampler _____
 (H) Final Hydrostatic 2197 Straddle _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1575.50
 MP/DST Disc't _____

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

Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1575.50

Approved By Rocky Milford Our Representative James Winkler

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. **65442**

Well Name & No. Munn #2-12 Test No. 4 Date 4-20-17
 Company Murfin Drilling Co. Inc Elevation 3278 KB 3273 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #24
 Location: Sec. 12 Twp. 2S Rge. 38W Co. Cheyenne State KS

Interval Tested 4346-4435 Zone Tested LKC "H-J"
 Anchor Length 89 Drill Pipe Run 4120 Mud Wt. 9.4
 Top Packer Depth 4341 Drill Collars Run 205 Vis 81
 Bottom Packer Depth 4346 Wt. Pipe Run - WL 6.8
 Total Depth 4435 Chlorides 700 ppm System LCM 5
 Blow Description IF: Blow built to 6 1/4"
ISI: No blowback
FF: Blow built to BOB(11") at 43 min.
FSI: No blowback

Rec	Feet of	%gas	%oil	%water	%mud
<u>40</u>	<u>CO</u>	<u>2</u>	<u>98</u>		
<u>70</u>	<u>GOM</u>	<u>14</u>	<u>41</u>	<u>-</u>	<u>45</u>
	<u>GIP = 110'</u>				

Rec Total 110 BHT 137 Gravity 37.4 API RW @ °F Chlorides ppm

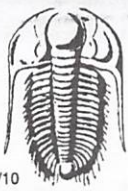
(A) Initial Hydrostatic 2269 Test 1150 T-On Location 9:25
 (B) First Initial Flow 19 Jars 250 T-Started 10:22
 (C) First Final Flow 32 Safety Joint 75 T-Open 12:10
 (D) Initial Shut-In 1320 Circ Sub T-Pulled 16:13
 (E) Second Initial Flow 34 Hourly Standby T-Out 18:15
 (F) Second Final Flow 58 Mileage 134RT 100.50
 (G) Final Shut-In 1335 Sampler
 (H) Final Hydrostatic 2169 Straddle
 Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility
 Sub Total 1575.50

Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1575.50
 MP/DST Disc't

Approved By Rocky Milford

Our Representative James Winder

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **65443**

Well Name & No. Munn #2-12 Test No. 5 Date 4-21-17
 Company Murfin Drilling Co Inc Elevation 3278 KB 3273 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #24
 Location: Sec. 12 Twp. 2S Rge. 38W Co. Cheyenne State KS

Interval Tested 4589-4640 Zone Tested Ft. Scott
 Anchor Length 51 Drill Pipe Run 4367 Mud Wt. 9.1
 Top Packer Depth 4584 Drill Collars Run 205 Vis 67
 Bottom Packer Depth 4589 (shale) Wt. Pipe Run - WL 6.8
 Total Depth 4640 Chlorides 800 ppm System LCM 4
 Blow Description IF: Blow built to 1 1/4"
ISI: No blowback
FF: No blow
FSI: No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>45</u>	<u>Mud w/oil spots</u>		<u>2</u>		<u>98</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 45 BHT 140 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2358 Test 1150 T-On Location 14:30
 (B) First Initial Flow 20 Jars 250 T-Started 15:56
 (C) First Final Flow 27 Safety Joint 75 T-Open 17:44
 (D) Initial Shut-In 965 Circ Sub _____ T-Pulled 20:46
 (E) Second Initial Flow 32 Hourly Standby _____ T-Out 22:45
 (F) Second Final Flow 37 Mileage 134x2 201 Comments _____
 (G) Final Shut-In 803 Sampler _____ loaded 4/22 12:00
 (H) Final Hydrostatic 2323 Straddle _____ Ruined Shale Packer _____
 Shale Packer 250 Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1926
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1926

Approved By Rocky Milford

Our Representative James Winda

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