

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

Confidentiality Requested:  
 Yes  No

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 Recompletion Date

API No.: \_\_\_\_\_

Spot Description: \_\_\_\_\_  
\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West  
\_\_\_\_\_ Feet from  North /  South Line of Section  
\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:  
 NE  NW  SE  SW

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

Datum:  NAD27  NAD83  WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

**Drilling Fluid Management Plan**  
*(Data must be collected from the Reserve Pit)*

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

**AFFIDAVIT**

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

Submitted Electronically

**KCC Office Use ONLY**

Confidentiality Requested  
Date: \_\_\_\_\_  
 Confidential Release Date: \_\_\_\_\_  
 Wireline Log Received  Drill Stem Tests Received  
 Geologist Report / Mud Logs Received  
 UIC Distribution  
ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

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

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

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No  Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No  List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  Name Top Datum
--	---

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

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

1. Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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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	MEARS 'B' 1-11
Doc ID	1429454

All Electric Logs Run

DIL
DUCP
MEL
BHCS





## Summary of Changes

Lease Name and Number: MEARS 'B' 1-11

API/Permit #: 15-023-21468-00-00

Doc ID: 1429454

Correction Number: 1

Approved By: Karen Ritter

Field Name	Previous Value	New Value
Approved Date	11/16/2017	12/07/2018
Producing Method Pumping	No	Yes
Save Link	<a href="http://.../kcc/detail/operatorEditDetail.cfm?docID=1367261">../..kcc/detail/operatorEditDetail.cfm?docID=1367261</a>	<a href="http://.../kcc/detail/operatorEditDetail.cfm?docID=1429454">../..kcc/detail/operatorEditDetail.cfm?docID=1429454</a>

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)*
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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) (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	MEARS 'B' 1-11
Doc ID	1367261

All Electric Logs Run

DIL
DUCP
MEL
BHCS





# GEOLOGIST'S REPORT

OPERATOR <b>MURFIN DRILLING COMP. INC.</b>		ELEVATIONS	
LEASE <b>MEARS 'B' #1-11</b>		KB <b>3396</b>	
LOCATION <b>1800 FSL 330 FEL</b>		GL <b>3391</b>	
SEC. <b>11</b>	TWSP. <b>2S</b>	RGE. <b>37W</b>	ALL MEASUREMENTS FROM K.B.
COUNTY <b>CHEYENNE</b>		STATE <b>KANSAS</b>	
FIELD <b>WILDCAT</b>			
CONTRACTOR <b>MURFIN DRILLING CO. INC. RIG NO. #24</b>		CASING RECORD	
COMMENCED <b>JULY 19, 2017</b>		Conductor	
COMPLETED <b>JULY 23, 2017</b>		Mud	
MUD DISPLACED <b>3910</b>		Surface <b>8.500 @ 346'</b>	
MUD TYPE <b>CHEMICAL</b>		Production <b>5.12 @ 489'</b>	
DRILLING TIME FROM <b>3900</b>		TO <b>4900</b>	
SAMPLES SAVED FROM <b>4000</b>		TO <b>4900</b>	
SAMPLES EXAMINED FROM <b>4000</b> TO <b>4900</b>			
GEOLOGICAL SUPERVISION FROM <b>4000</b> TO <b>4900</b>			
GEOLOGIST ON WELL <b>STEPHEN J MILLER</b>			
<b>ELECTRICAL SURVEYS:</b>			
<b>DUAL INDUCTION</b>			
<b>PIIONEER LOGGING</b>			
<b>COMP. NEUDEN</b>			
<b>SONIC LOG</b>			
<b>MICRO LOG</b>			
FORMATION NAME	LOG	SAMPLE DATUM	
BN/ANHYDRITE	3296 +70	3298 +68	
TOPEKA	4102 -706	4102 -706	
OREAD	4244 -848	4249 -853	
LANISING	4327 -831	4331 -835	
STARK SHALE	4542 -1146	4546 -1150	
MOUND CITY	4598 -1200	4599 -1202	
FT SCOTT	4724 -1328	4718 -1322	
EXCELLO	4774 -1378	4777 -1381	
Total Depth	4900 -1504	4900 -1504	

REMARKS  
 API 15-023-21468  
 Drilling Fluids: MORGAN MUD  
 Drill Stem Testing: TRILOBITE TESTERS  
 Gas Trailer: NONE  
 Reserve Pit Chlorides: 700PPM/ 800 BBL

DEPTH	DRILL TIME (MIN/FT)	SAMPLE DESCRIPTIONS	REMARKS
3900			
3950			
4000		Shale gray tan sandy	
		Limestone tan f-xln sli fos dense	
		Shale gray brn sli fis sli sandy	
		Limestone gray f-xln fos p. int-fos por fair tarry stain NSFO	
		Shale brn silty sli sandy	
4050		Shale red sandy soft	
		Limestone gray f-xln sli fos sli chalky dense	
		Shale green gray sli fis	
		Limestone tan f-xln sli fos dense	
		Limestone gray f-xln fos s cat fos-cast por NSFO s cat tarry stain	
		Shale red brn sandy soft	
4100		Limestone crm f-xln fos chalky NSFO s cat tarry stain	<b>TOPEKA LIME</b> <b>4102 -706</b>
		Limestone crm f-xln sli fos ool gd int-cool por NSFO s cat stain	
		Limestone crm f-xln sli fos chalky	
		Shale grn sli sandy	
		Shale brn soft silty	
		Sandstone gray f grain friable NSFO s cat dark stain	
		Shale gray brn grn silty sli sandy	
		Limestone gray tan f-xln dense	
4200		Shale gray purple silty	DST #14198-4270 30-60-30-60 NO BLOW/ NO BLOW REC 5' MUD FP 11-14# 14-16# SIP 882-812#
		Shale gray grn sli silty	
		Shale dk gray sli fis	
4250		Limestone crm tan f-xln sli fos sli chalky p-f. ppt por s cat fos-cast por SSFO no odor s cat dark brn stain	<b>OREAD LIME</b> <b>4249 -853</b>
		Limestone lt gray f-xln fos sli chalky	
		Shale dk gray grn brn sli silty	
		Limestone brn tan f-xln sli fos dense	
		Shale lt gray s cat sandy	
		Sandstone gray vf. grain friable pyritic, NS	DST #2 4292-4345 30-60-30-60 NO BLOW/ NO BLOW REC 1' CLEAN OIL 9' OCM 25% oil FP 12-17# 14-19# SIP 48-36#
		Shale gray brn grn red silty sli sandy	
		Limestone tan f-xln sli ool f-gd ooc and vug por FSPD fair odor sat brn stain	<b>LANISING LIME</b> <b>4331 -935</b>
		Limestone gray f-xln sli fos dense	
		Shale gray grn sli silty	
		Sandstone wht vf. grain friable s cat asphaltic stain	DST #3 4350-4408 30-60-60-90 BOB 2"/BOB 1" REC 130' GIP 400' OIL (27' gms) 500' MCGO (40% OIL) 1060' OCMW (10% OIL 80% W) FP 81-480# 495-856# SIP 1050-1046#
		Limestone gray f-xln sli fos sli chalky	
		Sandstone wht friable NS	
		Shale brn red gm prple sli sandy	
4350		Limestone crm gray f-xln fos sli chalky f fos-cast por SSFO odor on break brn to dk gray stain	DST #4 4416-4458 30-60-60-90 SURFACE BLOW 1/4"/ NO BLOW REC 2' MUD 80' CO (39' deg) 80' M.O. (50% OIL) FP 12-14# 13-14# SIP 30-29#
		Limestone crm f-xln sli fos dense	
		Shale red gm gray silty	
		Limestone gray f-xln fos sli chalky pyritic f. fos-cast and int-fos por FSPD(waxy) no odor spotted brn to gray stain	
		Shale dk gray carb	
		Shale gray gm brn silty sli sandy	
		Limestone gray f-xln fos sli chalky p fos-cast and int-fos por SSFO(flaky) no odor spotted brn stain	DST #5 4461-4544 30-60-60-90 BLOW 4"/BLOW 2" REC 60' GIP 80' CO (70% OIL) 80' M.O. (50% OIL) FP 19-54# 57-80# SIP 1347-1338#
4500		Shale gray sli mica sli silty	
		Limestone crm f-xln sli fos chalky	
		Shale gray gm brn silty soft sandy	
		Limestone gray f-xln sli fos sli chalky p fos-cast por SSFO(gassy) faint odor spotted brn stain	<b>STARK SHALE</b> <b>4546 -1150</b>
		Shale black carb	
		Shale brn gray grn silty sandy	
		Limestone gray cream f-xln sli fos s cat ppt por NSFO rare dark stain	
		Shale dk gray brn carb	
4550		Limestone crm f-xln fos sli chalky p fos-cast por NS	<b>MOUND CITY</b> <b>4598 -1202</b>
		Shale brn gm gray silty soft	
		Limestone crm f-xln fos chalky	
		Shale gray brn grn sandy silty	
		Limestone lt gray f-xln fos sli chalky dense	
4650		Shale purple brn gray silty sli sandy	DST #6 4617-4760 30-60-60-90 BLOW 11/2"/BLOW 4" REC 130' GIP 30' CO (39' deg) 80' M.O. (50% OIL) 80' OCM (25% oil) FP 16-31# 31-49# SIP 1148-1095#
		Limestone lt gray f-xln fos sli chalky sli oolite p int-fos and ool por VSSFO (flaky) no odor dk gray stain	
		Shale gray sli sandy	
		Shale dk gray carb	
		Limestone lt gray f-xln dense	
		Limestone gray f-xln sli chalky fos p ppt & int-fos por SSFO(gassy) faint odor s cat brn stain	
		Limestone brn f-xln fos dense	
		Shale gray dk gray carb	
		Limestone crm f-xln sli fos pyritic no vis por NS	
		Limestone tan gray f-xln sli fos dense	
4750		Shale dk gray black carb	<b>EXCELLO SHALE</b> <b>4777 -1381</b>
		Limestone tan gray f-xln fos sli chalky dense	
		Shale orange gray grn silty	
		Limestone tan brn f-xln fos s cat ppt por NS	<b>CELIA</b> <b>4806 -1410</b>
		Shale gray brn grn sli silty	
		Limestone crm tan f-xln fos sli cherty dense	
		Shale dk gray fis carb	
		Sandstone clear white fr-md grain poorly sorted friable sli silty NS	
		Shale brn orange gm silty	
4900			<b>TOTAL DEPTH 4900</b>

Operator: MURFIN DRILLING COMP. INC.

Lease: MEARS 'B' #1-11

Location: 1800 FSL 330 FEL SEC. 11 TWSP 2S RGE 37W

County: CHEYENNE State: KANSAS



## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita KS 67202+1216

ATTN: Steve Miller

### **Mears 'B' #1-11**

#### **11-2S-37W Cheyenne,KS**

Start Date: 2017.07.23 @ 17:46:00

End Date: 2017.07.24 @ 00:08:15

Job Ticket #: 62994                      DST #: 1

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.07.31 @ 11:50:58



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.  
 250 N Water STE 300  
 Wichita KS 67202+1216  
 ATTN: Steve Miller

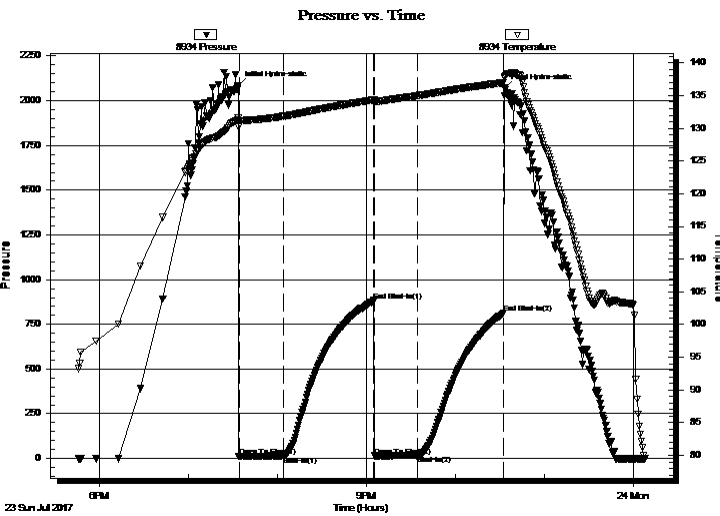
**11-2S-37W Cheyenne,KS**  
**Mears 'B' #1-11**  
 Job Ticket: 62994 **DST#: 1**  
 Test Start: 2017.07.23 @ 17:46:00

## GENERAL INFORMATION:

Formation: **Oread**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 19:34:45  
 Time Test Ended: 00:08:15  
 Interval: **4198.00 ft (KB) To 4270.00 ft (KB) (TVD)**  
 Total Depth: 4270.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Spencer J. Staab  
 Unit No: 84  
 Reference Elevations: 3396.00 ft (KB)  
 3391.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 8934 Inside**  
 Press@RunDepth: 16.99 psig @ 4202.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2017.07.23 End Date: 2017.07.24 Last Calib.: 2017.07.24  
 Start Time: 17:46:15 End Time: 00:08:15 Time On Btm: 2017.07.23 @ 19:33:45  
 Time Off Btm: 2017.07.23 @ 22:33:30

**TEST COMMENT:** 30-IF-Weak Surface Blow ; Died 15 mins in  
 60-ISI-No Return  
 30-FF-No Blow  
 60-FSI-No Return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2085.64	131.54	Initial Hydro-static
1	11.74	131.12	Open To Flow (1)
31	14.54	131.84	Shut-In(1)
92	882.49	134.33	End Shut-In(1)
92	14.34	133.91	Open To Flow (2)
121	16.99	134.98	Shut-In(2)
179	812.00	136.96	End Shut-In(2)
180	2070.20	137.86	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud	0.02

## 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+1216  
 ATTN: Steve Miller

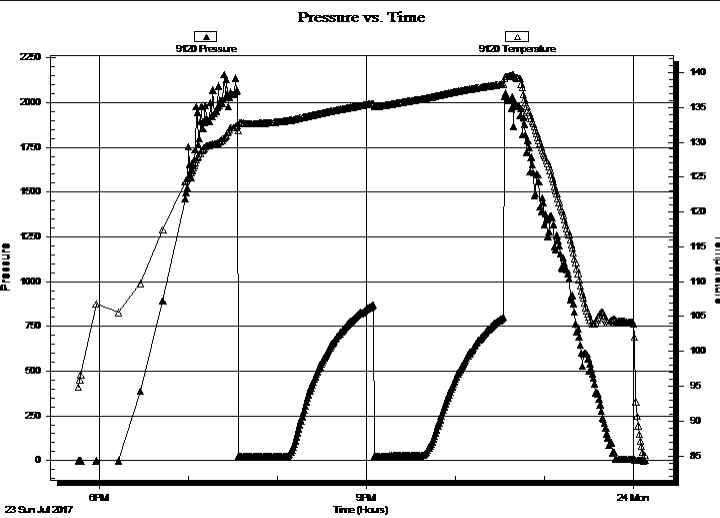
**11-2S-37W Cheyenne,KS**  
**Mears 'B' #1-11**  
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 Unit No: 84  
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 3391.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 9120 Inside**  
 Press@RunDepth: psig @ 4202.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2017.07.23 End Date: 2017.07.24 Last Calib.: 2017.07.24  
 Start Time: 17:46:15 End Time: 00:08:15 Time On Btm:  
 Time Off Btm:

**TEST COMMENT:** 30-IF-Weak Surface Blow ; Died 15 mins in  
 60-ISI-No Return  
 30-FF-No Blow  
 60-FSI-No Return



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

Recovery		
Length (ft)	Description	Volume (bbl)
5.00	Mud	0.02

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co. Inc.  
250 N Water STE 300  
Wichita KS 67202+1216  
ATTN: Steve Miller

**11-2S-37W Cheyenne,KS**  
**Mears 'B' #1-11**  
Job Ticket: 62994 **DST#: 1**  
Test Start: 2017.07.23 @ 17:46:00

## Tool Information

Drill Pipe:	Length: 3985.00 ft	Diameter: 3.80 inches	Volume: 55.90 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - 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: 64000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4198.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	72.00 ft			
Tool Length:	92.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4179.00	
Shut In Tool	5.00			4184.00	
Hydraulic tool	5.00			4189.00	
Packer	5.00			4194.00	20.00 Bottom Of Top Packer
Packer	4.00			4198.00	
Stubb	1.00			4199.00	
Perforations	2.00			4201.00	
Change Over Sub	1.00			4202.00	
Recorder	0.00	9120	Inside	4202.00	
Recorder	0.00	8934	Inside	4202.00	
Drill Pipe	63.00			4265.00	
Change Over Sub	1.00			4266.00	
Bullnose	4.00			4270.00	72.00 Bottom Packers & Anchor

**Total Tool Length: 92.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co. Inc.  
250 N Water STE 300  
Wichita KS 67202+1216  
ATTN: Steve Miller

**11-2S-37W Cheyenne,KS**  
**Mears 'B' #1-11**  
Job Ticket: 62994      **DST#: 1**  
Test Start: 2017.07.23 @ 17:46:00

## 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: 65.00 sec/qt	Cushion Volume: bbl		
Water Loss: 5.99 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 600.00 ppm			
Filter Cake: inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments: 5#LCM

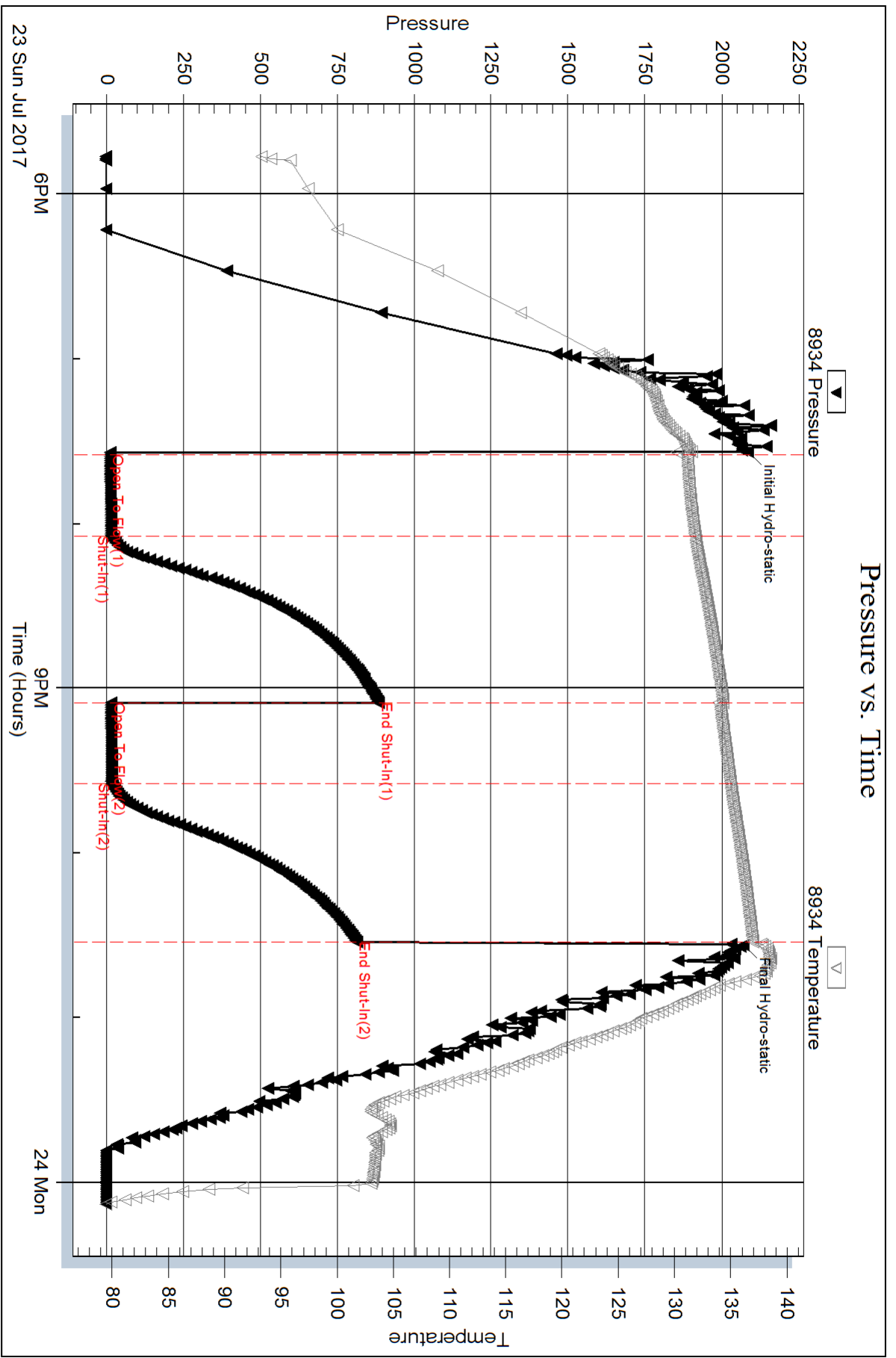
Serial #: 8934

Inside

Murfin Drilling Co. Inc.

Mears B: #1-11

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 62994

Printed: 2017.07.31 @ 11:51:00



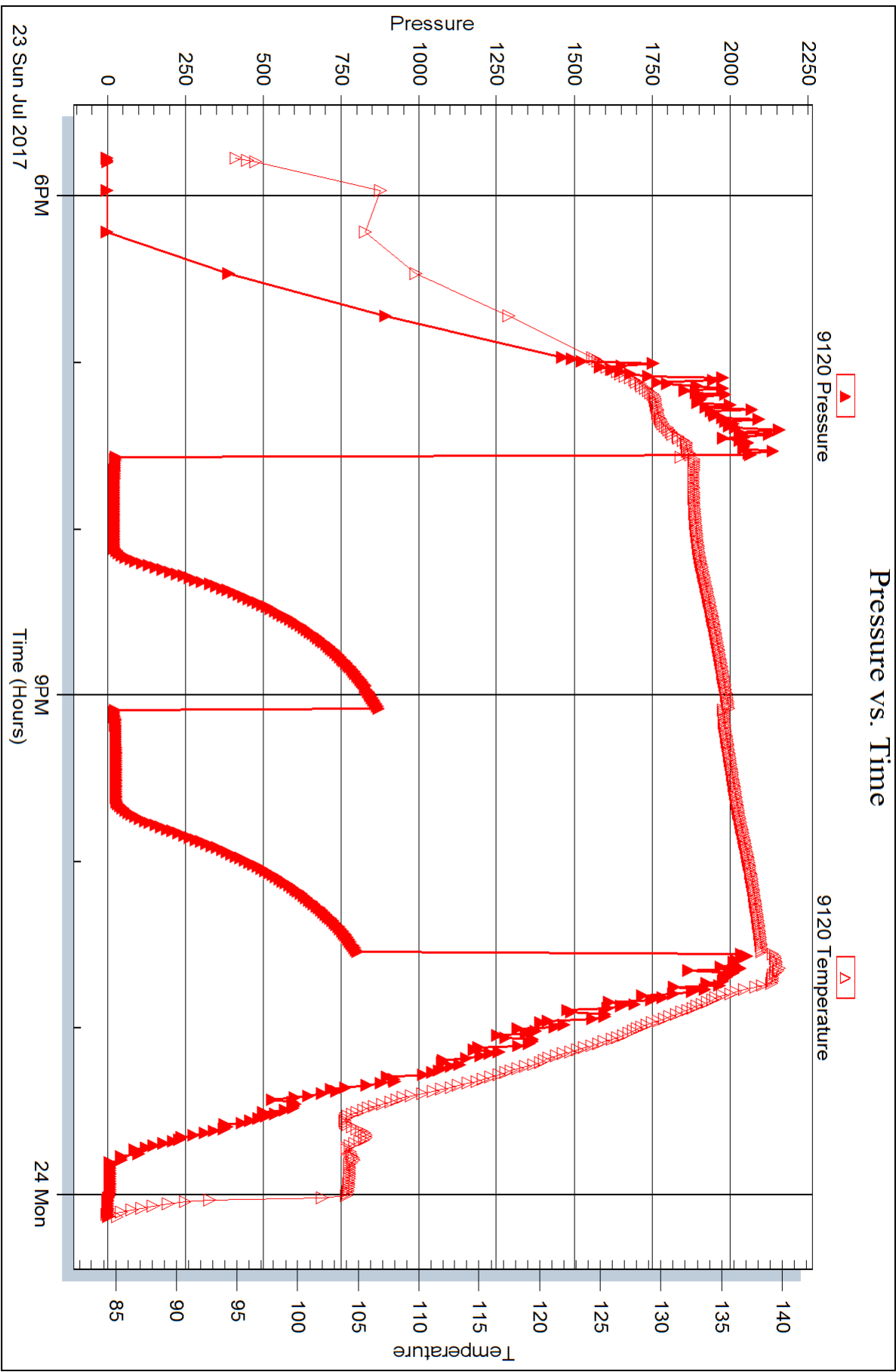
Serial #: 9120

Inside

Murfin Drilling Co. Inc.

Mears B#1-11

DST Test Number: 1





## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita KS 67202+1216

ATTN: Steve Miller

### **Mears 'B' #1-11**

#### **11-2S-37W Cheyenne,KS**

Start Date: 2017.07.24 @ 08:25:00

End Date: 2017.07.24 @ 15:15:00

Job Ticket #: 62995                      DST #: 2

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.07.31 @ 11:49:12



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.  
250 N Water STE 300  
Wichita KS 67202+1216  
ATTN: Steve Miller

**11-2S-37W Cheyenne,KS**  
**Mears 'B' #1-11**  
Job Ticket: 62995 **DST#: 2**  
Test Start: 2017.07.24 @ 08:25:00

## GENERAL INFORMATION:

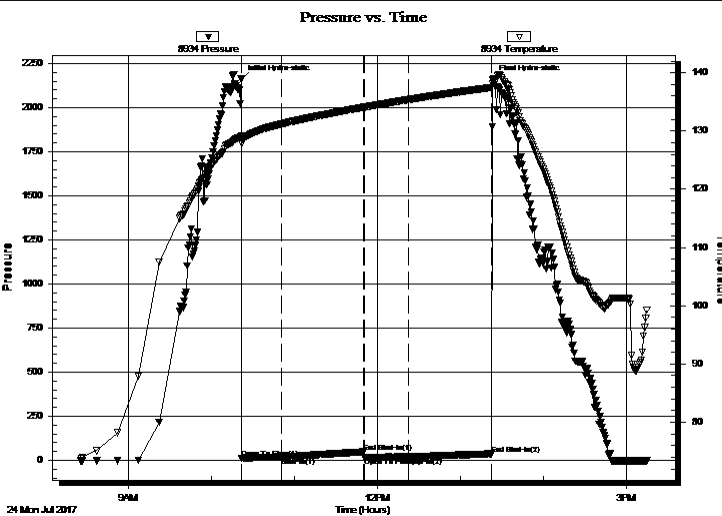
Formation: **LKC 'A'**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 10:21:45  
Time Test Ended: 15:15:00  
Interval: **4292.00 ft (KB) To 4345.00 ft (KB) (TVD)**  
Total Depth: 4345.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Spencer J. Staab  
Unit No: 84  
Reference Elevations: 3396.00 ft (KB)  
3391.00 ft (CF)  
KB to GR/CF: 5.00 ft

## Serial #: 8934

Inside

Press@RunDepth: 19.37 psig @ 4296.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2017.07.24 End Date: 2017.07.24 Last Calib.: 2017.07.24  
Start Time: 08:25:15 End Time: 15:15:00 Time On Btm: 2017.07.24 @ 10:21:30  
Time Off Btm: 2017.07.24 @ 13:23:15

TEST COMMENT: 30-IF-Weak Surge; Died Immediately  
60-ISI-No Return  
30-FF-No Blow  
60-FSI-No Return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2159.86	129.10	Initial Hydro-static
1	12.29	127.88	Open To Flow (1)
29	17.29	131.19	Shut-In(1)
89	48.41	134.07	End Shut-In(1)
89	14.81	134.08	Open To Flow (2)
121	19.37	135.39	Shut-In(2)
181	36.76	137.47	End Shut-In(2)
182	2157.03	138.88	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
9.00	OCM 25%O 75%M	0.04
1.00	Clean Oil 100%O	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.  
250 N Water STE 300  
Wichita KS 67202+1216  
ATTN: Steve Miller

**11-2S-37W Cheyenne,KS**  
**Mears 'B' #1-11**  
Job Ticket: 62995 **DST#: 2**  
Test Start: 2017.07.24 @ 08:25:00

## Tool Information

Drill Pipe:	Length: 4091.00 ft	Diameter: 3.80 inches	Volume: 57.39 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - 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: 64000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4292.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	53.00 ft			
Tool Length:	73.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4273.00	
Shut In Tool	5.00			4278.00	
Hydraulic tool	5.00			4283.00	
Packer	5.00			4288.00	20.00 Bottom Of Top Packer
Packer	4.00			4292.00	
Stubb	1.00			4293.00	
Perforations	2.00			4295.00	
Change Over Sub	1.00			4296.00	
Recorder	0.00	9120	Inside	4296.00	
Recorder	0.00	8934	Inside	4296.00	
Drill Pipe	32.00			4328.00	
Change Over Sub	1.00			4329.00	
Perforations	12.00			4341.00	
Bullnose	4.00			4345.00	53.00 Bottom Packers & Anchor

**Total Tool Length: 73.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co. Inc.  
250 N Water STE 300  
Wichita KS 67202+1216  
ATTN: Steve Miller

**11-2S-37W Cheyenne,KS**  
**Mears 'B' #1-11**  
Job Ticket: 62995      **DST#: 2**  
Test Start: 2017.07.24 @ 08:25:00

### Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 56.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.39 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 600.00 ppm			
Filter Cake: inches			

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
9.00	OCM 25%O 75%M	0.044
1.00	Clean Oil 100%O	0.005

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: 4#LCM

Serial #: 8934

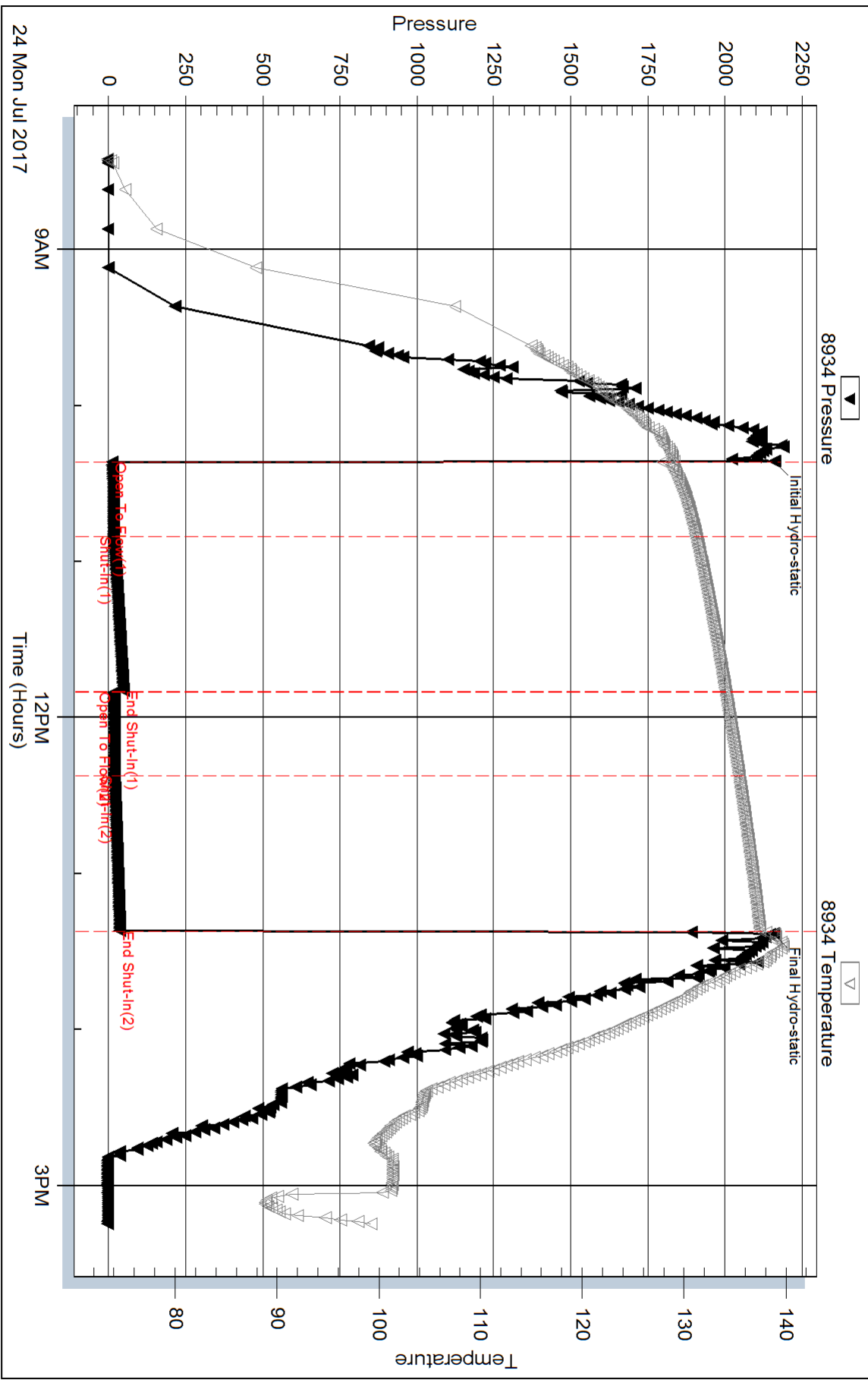
Inside

Murfin Drilling Co. Inc.

Mears B #1-11

DST Test Number: 2

### Pressure vs. Time



Triobite Testing, Inc

Ref. No: 62995

Printed: 2017.07.31 @ 11:49:13

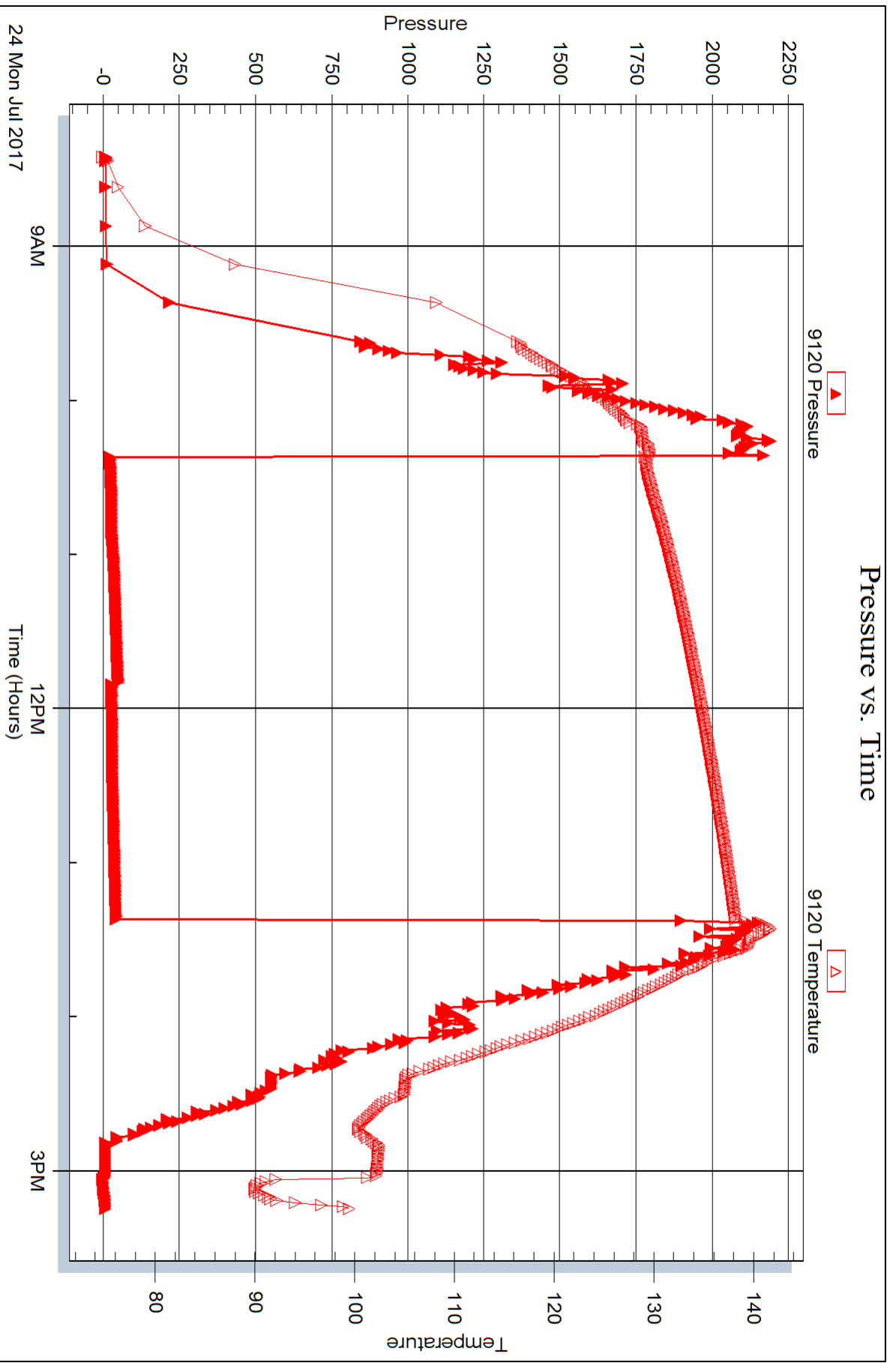
Serial #: 9120

Inside

Murfin Drilling Co. Inc.

Mears B #1-11

DST Test Number: 2







## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita KS 67202+1216

ATTN: Steve Miller

### **Mears 'B' #1-11**

#### **11-2S-37W Cheyenne,KS**

Start Date: 2017.07.25 @ 00:20:00

End Date: 2017.07.25 @ 10:58:30

Job Ticket #: 62996                      DST #: 3

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.07.31 @ 11:43:18

Murfin Drilling Co. Inc. 11-2S-37W Cheyenne,KS Mears 'B' #1-11 DST # 3 LKC 'D' 2017.07.25



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.  
 250 N Water STE 300  
 Wichita KS 67202+1216  
 ATTN: Steve Miller

**11-2S-37W Cheyenne,KS**  
**Mears 'B' #1-11**  
 Job Ticket: 62996 **DST#: 3**  
 Test Start: 2017.07.25 @ 00:20:00

## GENERAL INFORMATION:

Formation: **LKC 'D'**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 02:15:30 Tester: Spencer J. Staab  
 Time Test Ended: 10:58:30 Unit No: 84  
 Interval: **4350.00 ft (KB) To 4408.00 ft (KB) (TVD)** Reference Elevations: 3396.00 ft (KB)  
 Total Depth: 4408.00 ft (KB) (TVD) 3391.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

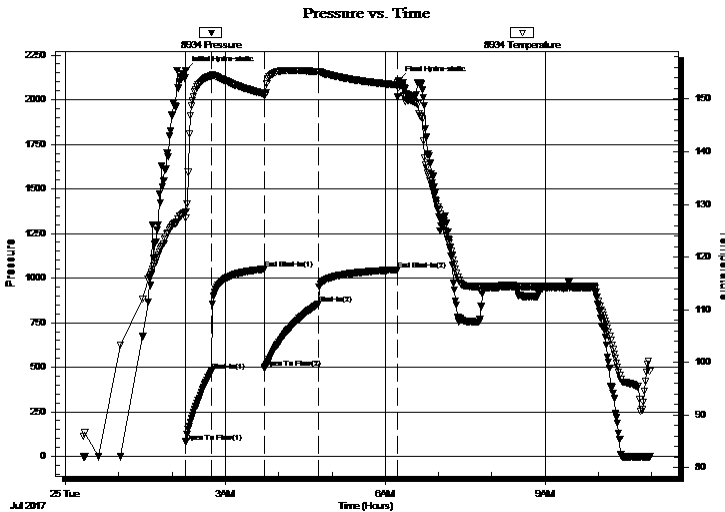
## Serial #: 8934

Inside

Press@RunDepth: 856.08 psig @ 4359.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2017.07.25 End Date: 2017.07.25 Last Calib.: 2017.07.25  
 Start Time: 00:20:15 End Time: 10:58:30 Time On Btm: 2017.07.25 @ 02:15:15  
 Time Off Btm: 2017.07.25 @ 06:15:30

**TEST COMMENT:** 30-IF-Strong Blow ; BOB in 2 mins  
 60-ISI-Weak Blow ; Built to 1"  
 60-FF-Strong Blow ; BOB in 1 1/2 min  
 90-FSI-Weak Blow ; Built to 1"

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2164.29	128.60	Initial Hydro-static
1	81.79	127.46	Open To Flow (1)
30	480.54	154.44	Shut-In(1)
89	1050.67	151.03	End Shut-In(1)
90	495.46	150.82	Open To Flow (2)
150	856.08	155.19	Shut-In(2)
239	1046.48	152.67	End Shut-In(2)
241	2106.80	152.22	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
1060.00	OMCW 10%O 10%M 80%W	13.00
500.00	MCGO 20%M 40%G 40%O	7.01
400.00	Clean Oil 100%O	5.61
0.00	180' GIP	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.  
250 N Water STE 300  
Wichita KS 67202+1216  
ATTN: Steve Miller

**11-2S-37W Cheyenne,KS**  
**Mears 'B' #1-11**  
Job Ticket: 62996 **DST#: 3**  
Test Start: 2017.07.25 @ 00:20:00

## Tool Information

Drill Pipe:	Length: 4155.00 ft	Diameter: 3.80 inches	Volume: 58.28 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - 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:	80000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
				String Weight: Initial	60000.00 lb
Drill Pipe Above KB:	30.00 ft			Final	69000.00 lb
Depth to Top Packer:	4350.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	58.00 ft				
Tool Length:	78.00 ft				
Number of Packers:	1	Diameter:	6.75 inches		
Tool Comments:					

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Change Over Sub	1.00			4331.00	
Shut In Tool	5.00			4336.00	
Hydraulic tool	5.00			4341.00	
Packer	5.00			4346.00	20.00 Bottom Of Top Packer
Packer	4.00			4350.00	
Stubb	1.00			4351.00	
Perforations	7.00			4358.00	
Change Over Sub	1.00			4359.00	
Recorder	0.00	9120	Inside	4359.00	
Recorder	0.00	8934	Inside	4359.00	
Drill Pipe	32.00			4391.00	
Change Over Sub	1.00			4392.00	
Perforations	12.00			4404.00	
Bullnose	4.00			4408.00	58.00 Bottom Packers & Anchor

**Total Tool Length: 78.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co. Inc.  
250 N Water STE 300  
Wichita KS 67202+1216  
ATTN: Steve Miller

**11-2S-37W Cheyenne,KS**  
**Mears 'B' #1-11**  
Job Ticket: 62996      **DST#: 3**  
Test Start: 2017.07.25 @ 00:20:00

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 27 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 32000 ppm
Viscosity: 56.00 sec/qt	Cushion Volume: bbl	
Water Loss: 6.39 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 600.00 ppm		
Filter Cake: inches		

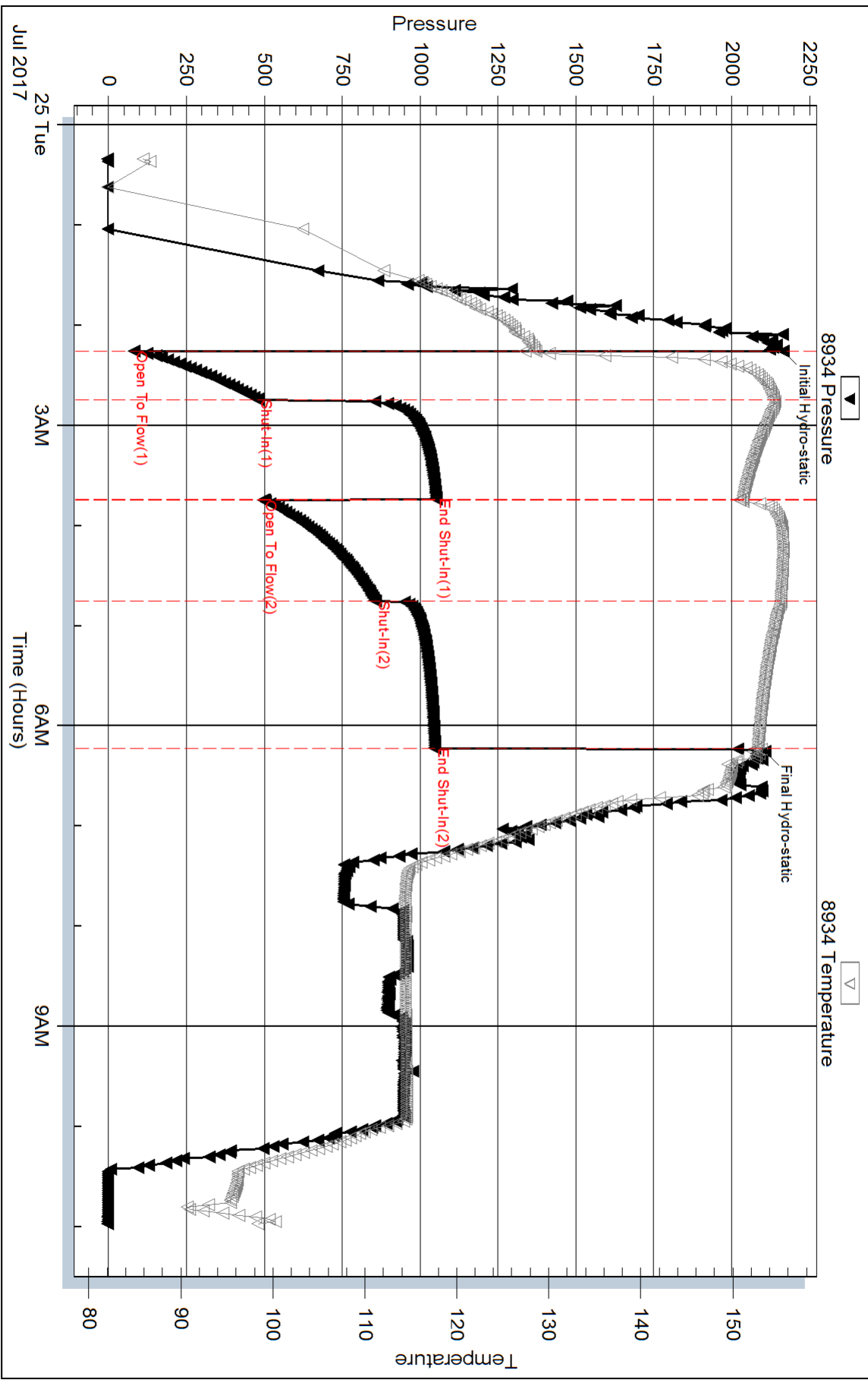
## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1060.00	OMCW 10%O 10%M 80%W	13.002
500.00	MCGO 20%M 40%G 40%O	7.014
400.00	Clean Oil 100%O	5.611
0.00	180' GIP	0.000

Total Length: 1960.00 ft      Total Volume: 25.627 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments: 4#LCM  
 RW=.081@84degrees

### Pressure vs. Time



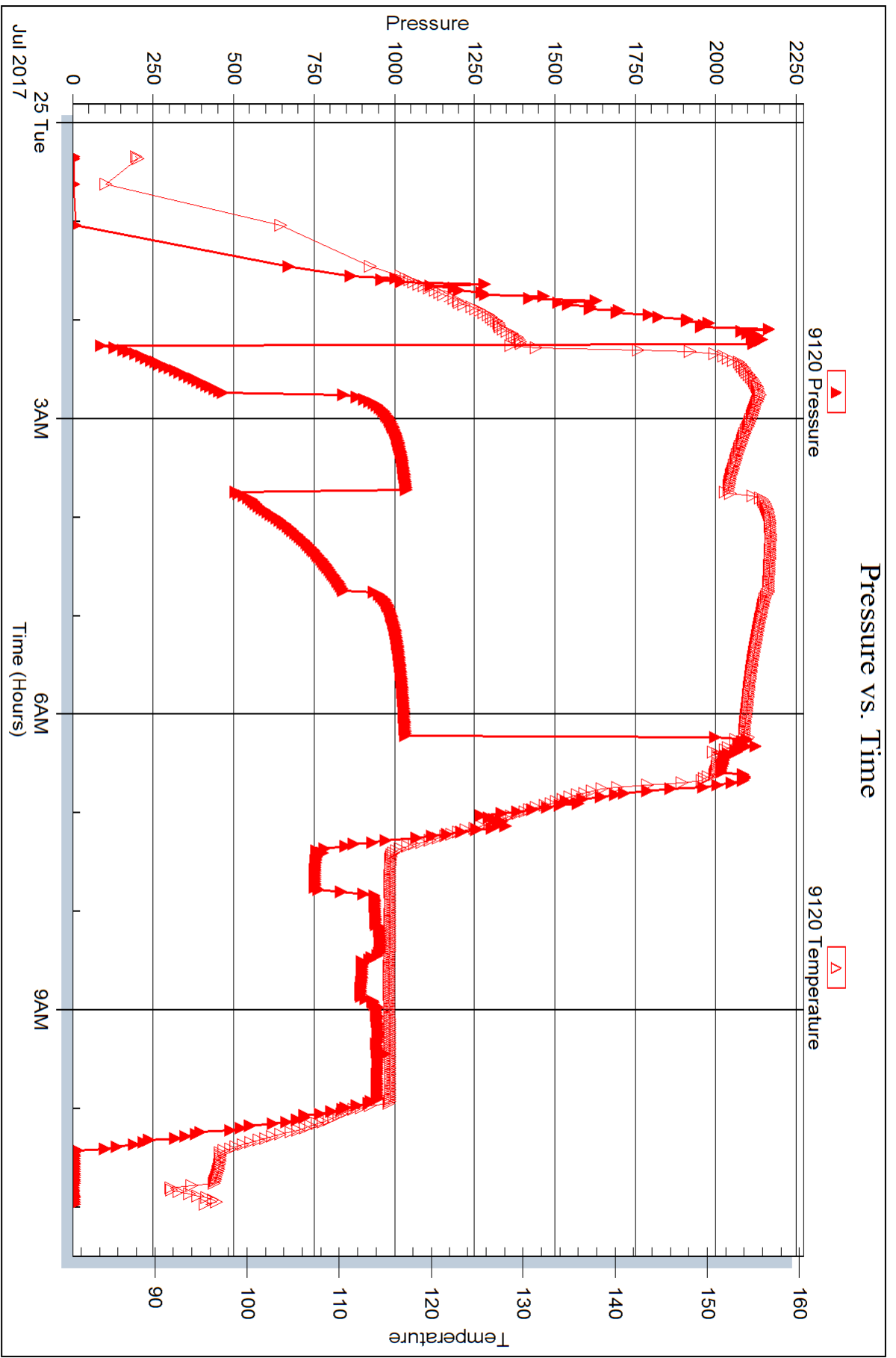
Serial #: 9120

Inside

Murfin Drilling Co. Inc.

Mears B #1-11

DST Test Number: 3





## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita KS 67202+1216

ATTN: Steve Miller

### **Mears 'B' #1-11**

#### **11-2S-37W Cheyenne,KS**

Start Date: 2017.07.25 @ 20:45:00

End Date: 2017.07.26 @ 03:53:30

Job Ticket #: 62997                      DST #: 4

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.07.31 @ 11:38:56

Murfin Drilling Co. Inc. 11-2S-37W Cheyenne,KS Mears 'B' #1-11 DST # 4 LKC 'G' 2017.07.25





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.  
 250 N Water STE 300  
 Wichita KS 67202+1216  
 ATTN: Steve Miller

**11-2S-37W Cheyenne,KS**  
**Mears 'B' #1-11**  
 Job Ticket: 62997 **DST#: 4**  
 Test Start: 2017.07.25 @ 20:45:00

## GENERAL INFORMATION:

Formation: **LKC 'G'**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 23:06:15  
 Time Test Ended: 03:53:30  
 Interval: **4416.00 ft (KB) To 4458.00 ft (KB) (TVD)**  
 Total Depth: 4458.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Spencer J. Staab  
 Unit No: 84  
 Reference Elevations: 3396.00 ft (KB)  
 3391.00 ft (CF)  
 KB to GR/CF: 5.00 ft

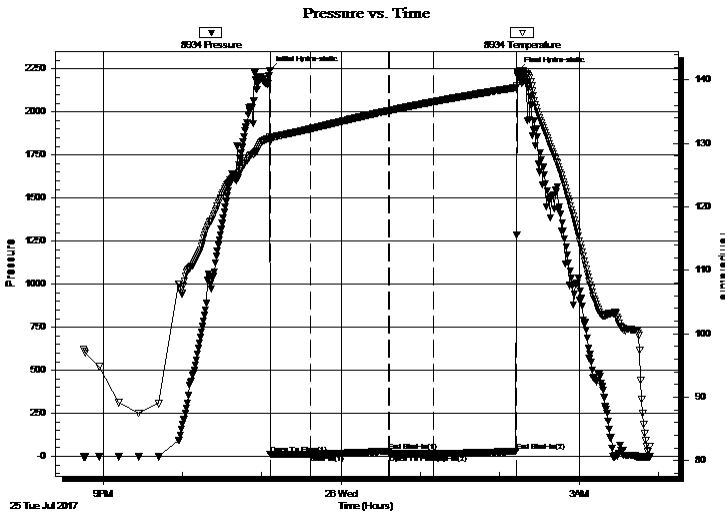
## Serial #: 8934

Inside

Press@RunDepth: 14.96 psig @ 4421.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2017.07.25 End Date: 2017.07.26 Last Calib.: 2017.07.26  
 Start Time: 20:45:15 End Time: 03:53:30 Time On Btm: 2017.07.25 @ 23:06:00  
 Time Off Btm: 2017.07.26 @ 02:13:15

TEST COMMENT: 30-IF-Weak Blow ; Built to 1/4"  
 60-ISI-No Return  
 30-FF-No Blow  
 60-FSI-No Return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2240.09	131.06	Initial Hydro-static
1	12.68	130.29	Open To Flow (1)
31	14.05	132.33	Shut-In(1)
90	30.56	135.17	End Shut-In(1)
91	13.83	135.17	Open To Flow (2)
124	14.96	136.56	Shut-In(2)
187	29.57	138.80	End Shut-In(2)
188	2234.45	140.64	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
2.00	Mud 100%M	0.01

\* 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.  
250 N Water STE 300  
Wichita KS 67202+1216  
ATTN: Steve Miller

**11-2S-37W Cheyenne,KS**  
**Mears 'B' #1-11**  
Job Ticket: 62997 **DST#: 4**  
Test Start: 2017.07.25 @ 20:45:00

## Tool Information

Drill Pipe:	Length: 4221.00 ft	Diameter: 3.80 inches	Volume: 59.21 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - 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: 80000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4416.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	42.00 ft			
Tool Length:	62.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Change Over Sub	1.00			4397.00	
Shut In Tool	5.00			4402.00	
Hydraulic tool	5.00			4407.00	
Packer	5.00			4412.00	20.00 Bottom Of Top Packer
Packer	4.00			4416.00	
Stubb	1.00			4417.00	
Perforations	3.00			4420.00	
Change Over Sub	1.00			4421.00	
Recorder	0.00	9120	Inside	4421.00	
Recorder	0.00	8934	Inside	4421.00	
Drill Pipe	32.00			4453.00	
Change Over Sub	1.00			4454.00	
Bullnose	4.00			4458.00	42.00 Bottom Packers & Anchor

**Total Tool Length: 62.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co. Inc.  
250 N Water STE 300  
Wichita KS 67202+1216  
ATTN: Steve Miller

**11-2S-37W Cheyenne,KS**  
**Mears 'B' #1-11**  
Job Ticket: 62997      **DST#: 4**  
Test Start: 2017.07.25 @ 20:45:00

## 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: 57.00 sec/qt	Cushion Volume: bbl		
Water Loss: 5.99 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 800.00 ppm			
Filter Cake: inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	Mud 100%M	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: 4#LCM

Serial #: 8934

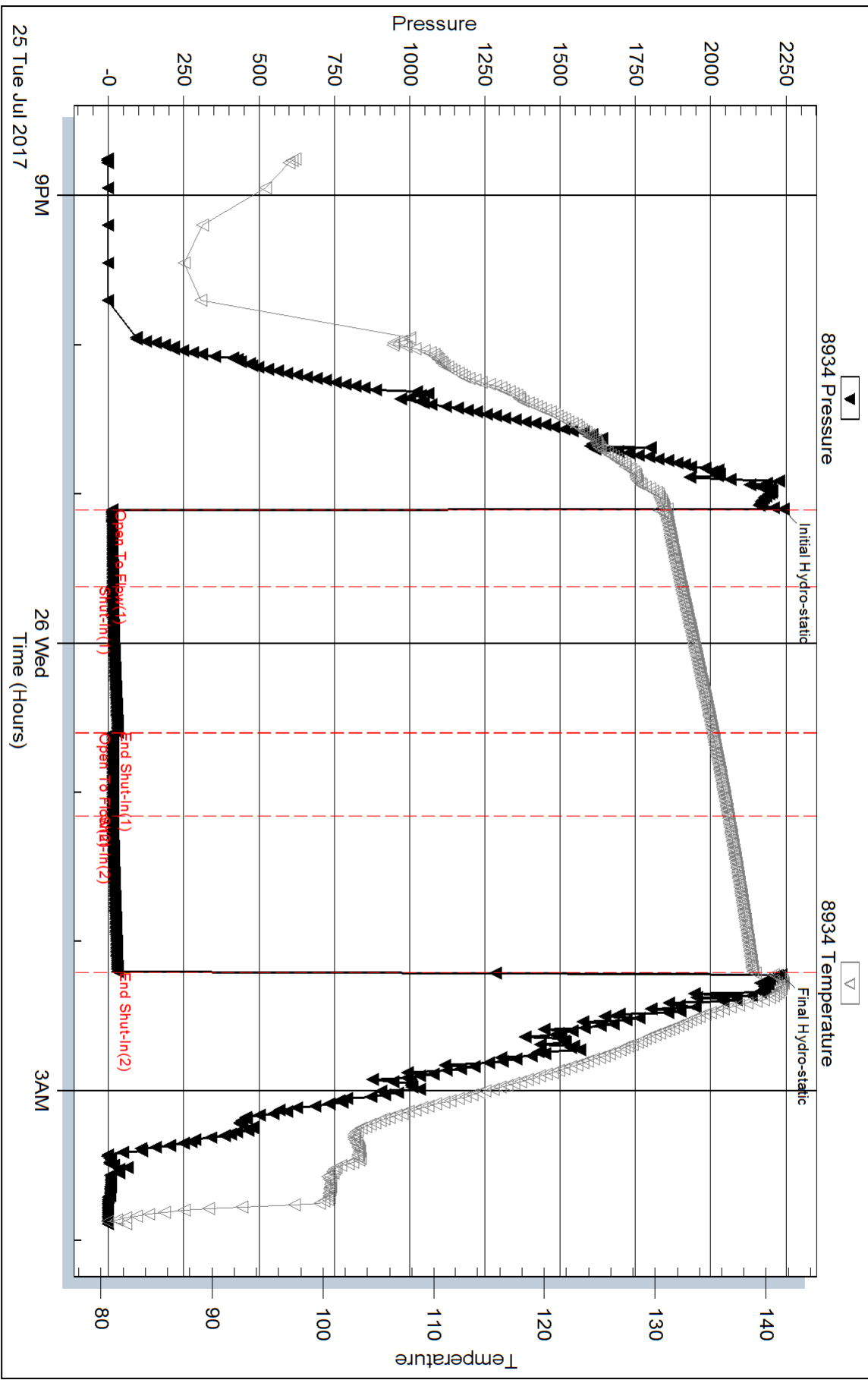
Inside

Murfin Drilling Co. Inc.

Mears B: #1-11

DST Test Number: 4

### Pressure vs. Time



Triobite Testing, Inc

Ref. No: 62997

Printed: 2017.07.31 @ 11:38:58

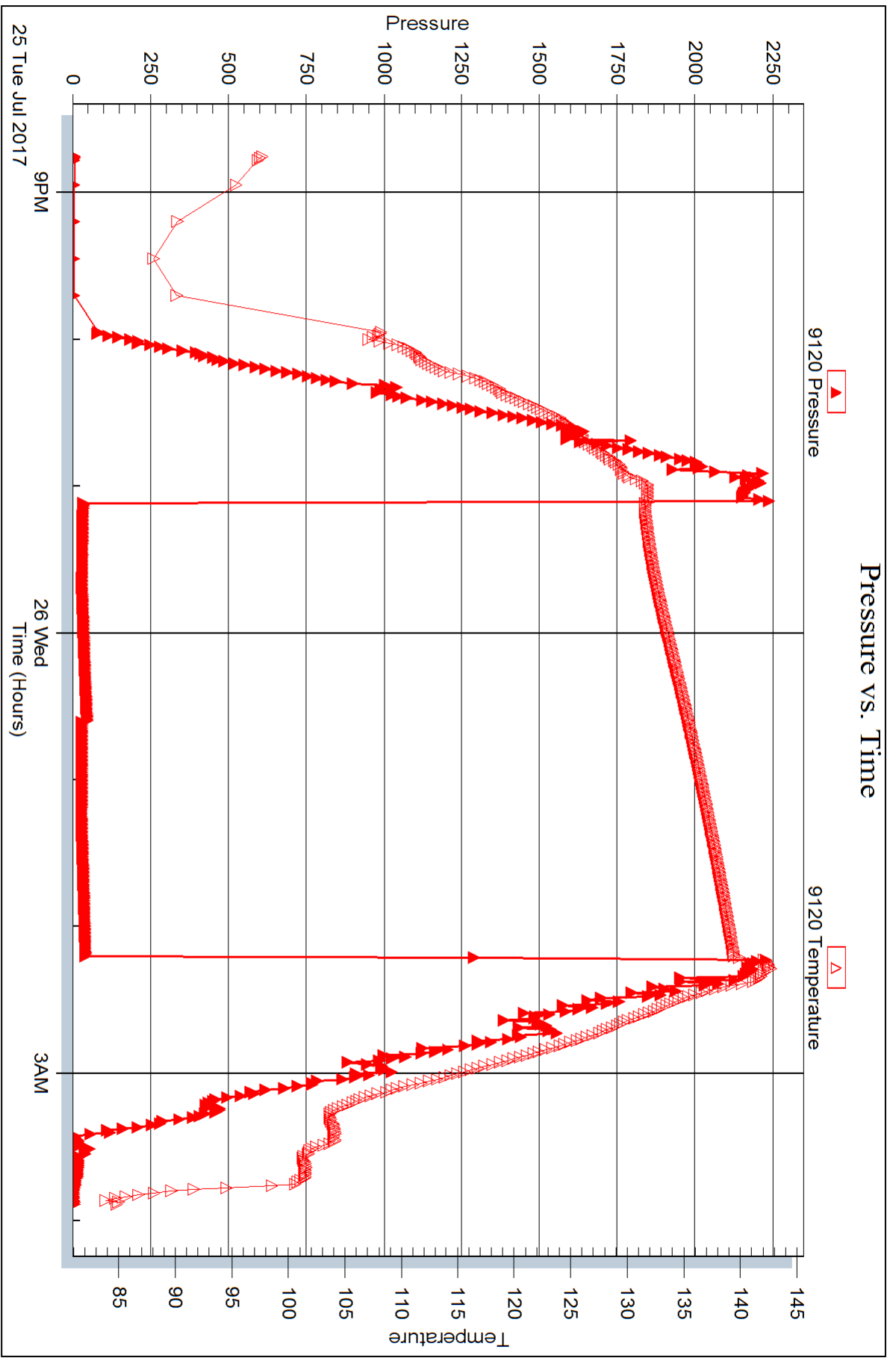
Serial #: 9120

Inside

Murfin Drilling Co. Inc.

Mears B #1-11

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 62997

Printed: 2017.07.31 @ 11:38:58



## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita KS 67202+1216

ATTN: Steve Miller

### **Mears 'B' #1-11**

#### **11-2S-37W Cheyenne,KS**

Start Date: 2017.07.26 @ 16:32:00

End Date: 2017.07.27 @ 00:52:30

Job Ticket #: 62998                      DST #: 5

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.07.31 @ 11:34:19

Murfin Drilling Co. Inc.

11-2S-37W Cheyenne,KS

Mears 'B' #1-11

DST # 5

LKC 'H-J'

2017.07.26



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.  
 250 N Water STE 300  
 Wichita KS 67202+1216  
 ATTN: Steve Miller

**11-2S-37W Cheyenne, KS**  
**Mears 'B' #1-11**  
 Job Ticket: 62998 **DST#: 5**  
 Test Start: 2017.07.26 @ 16:32:00

## GENERAL INFORMATION:

Formation: **LKC 'H-J'**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 18:34:45 Tester: Spencer J. Staab  
 Time Test Ended: 00:52:30 Unit No: 84  
 Interval: **4461.00 ft (KB) To 4544.00 ft (KB) (TVD)** Reference Elevations: 3396.00 ft (KB)  
 Total Depth: 4544.00 ft (KB) (TVD) 3391.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

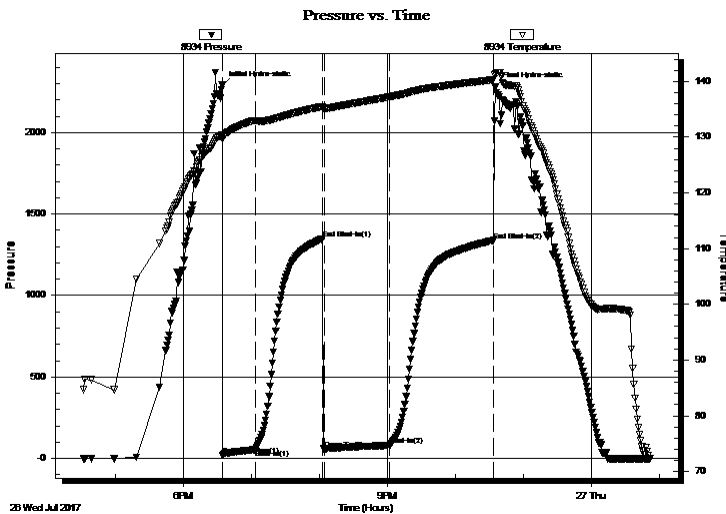
## Serial #: 8934

Inside

Press@RunDepth: 80.33 psig @ 4466.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2017.07.26 End Date: 2017.07.27 Last Calib.: 2017.07.27  
 Start Time: 16:32:15 End Time: 00:52:30 Time On Btm: 2017.07.26 @ 18:34:30  
 Time Off Btm: 2017.07.26 @ 22:35:30

TEST COMMENT: 30-IF-Weak Blow ; Built to 4 1/4"  
 60-ISI-No Return  
 60-FF-Weak Blow ; Built to 2"  
 90-FSI-No Return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2290.27	130.47	Initial Hydro-static
1	19.74	129.69	Open To Flow (1)
29	54.11	132.95	Shut-In(1)
89	1347.63	135.51	End Shut-In(1)
91	57.80	135.28	Open To Flow (2)
148	80.33	137.23	Shut-In(2)
240	1338.06	140.29	End Shut-In(2)
241	2283.31	141.43	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
80.00	Muddy Oil 50%M 50%O	0.39
80.00	Gassy Oil 30%G 70%O	0.39
0.00	60' GIP	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.  
250 N Water STE 300  
Wichita KS 67202+1216  
ATTN: Steve Miller

**11-2S-37W Cheyenne,KS**  
**Mears 'B' #1-11**  
Job Ticket: 62998 **DST#: 5**  
Test Start: 2017.07.26 @ 16:32:00

## Tool Information

Drill Pipe:	Length: 4245.00 ft	Diameter: 3.80 inches	Volume: 59.55 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - 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: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	9.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4461.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	83.00 ft			
Tool Length:	103.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4442.00	
Shut In Tool	5.00			4447.00	
Hydraulic tool	5.00			4452.00	
Packer	5.00			4457.00	20.00 Bottom Of Top Packer
Packer	4.00			4461.00	
Stubb	1.00			4462.00	
Perforations	3.00			4465.00	
Change Over Sub	1.00			4466.00	
Recorder	0.00	9120	Inside	4466.00	
Recorder	0.00	8934	Inside	4466.00	
Drill Pipe	63.00			4529.00	
Change Over Sub	1.00			4530.00	
Perforations	10.00			4540.00	
Bullnose	4.00			4544.00	83.00 Bottom Packers & Anchor

**Total Tool Length: 103.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co. Inc.  
250 N Water STE 300  
Wichita KS 67202+1216  
ATTN: Steve Miller

**11-2S-37W Cheyenne,KS**  
**Mears 'B' #1-11**  
Job Ticket: 62998      **DST#: 5**  
Test Start: 2017.07.26 @ 16:32:00

## Mud and Cushion Information

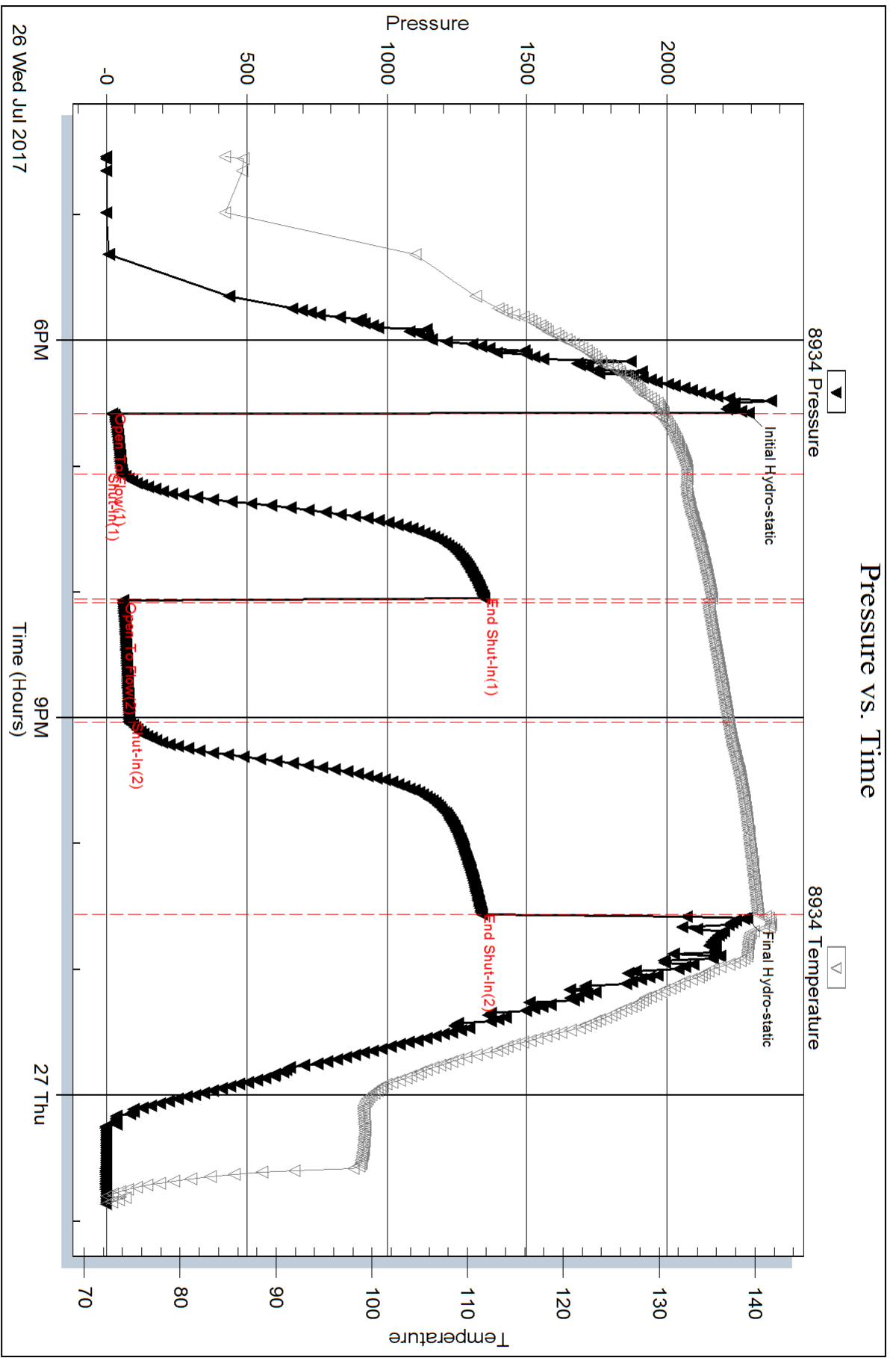
Mud Type: Gel Chem	Cushion Type:	Oil API: 36 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 73.00 sec/qt	Cushion Volume: bbl	
Water Loss: 6.39 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 800.00 ppm		
Filter Cake: inches		

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
80.00	Muddy Oil 50%M 50%O	0.393
80.00	Gassy Oil 30%G 70%O	0.393
0.00	60' GIP	0.000

Total Length: 160.00 ft      Total Volume: 0.786 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments: 6#LCM



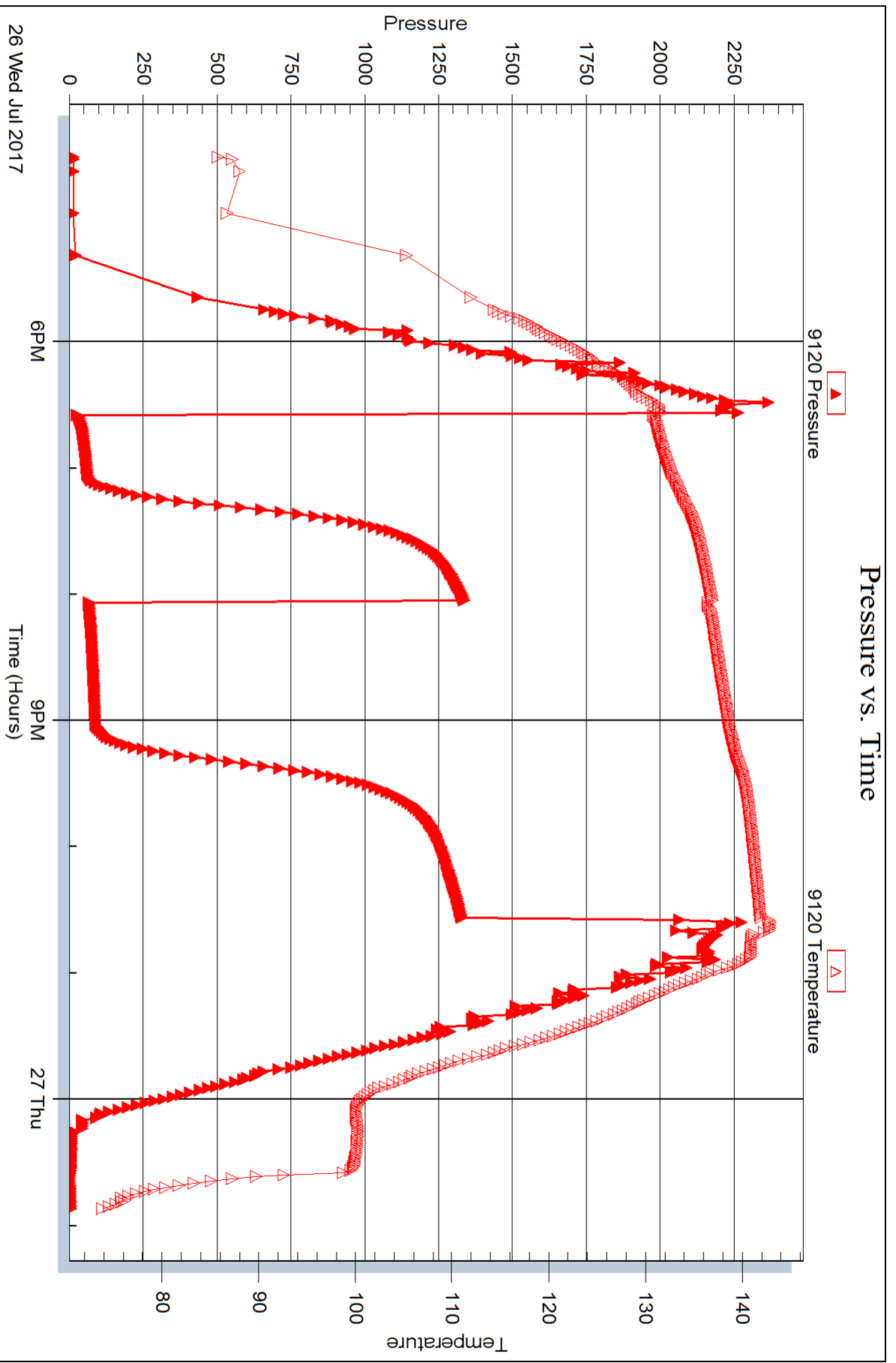
Serial #: 9120

Inside

Murfin Drilling Co. Inc.

Mears B#1-11

DST Test Number: 5





## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita KS 67202+1216

ATTN: Steve Miller

### **Mears 'B' #1-11**

#### **11-2S-37W Cheyenne,KS**

Start Date: 2017.07.27 @ 23:48:00

End Date: 2017.07.28 @ 07:40:45

Job Ticket #: 62999                      DST #: 6

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.07.31 @ 11:31:16



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.  
 250 N Water STE 300  
 Wichita KS 67202+1216  
 ATTN: Steve Miller

**11-2S-37W Cheyenne,KS**  
**Mears 'B' #1-11**  
 Job Ticket: 62999 **DST#: 6**  
 Test Start: 2017.07.27 @ 23:48:00

## GENERAL INFORMATION:

Formation: **Fort Scott**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 01:36:30  
 Time Test Ended: 07:40:45  
 Interval: **4617.00 ft (KB) To 4760.00 ft (KB) (TVD)**  
 Total Depth: 4760.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Spencer J. Staab  
 Unit No: 84  
 Reference Elevations: 3396.00 ft (KB)  
 3391.00 ft (CF)  
 KB to GR/CF: 5.00 ft

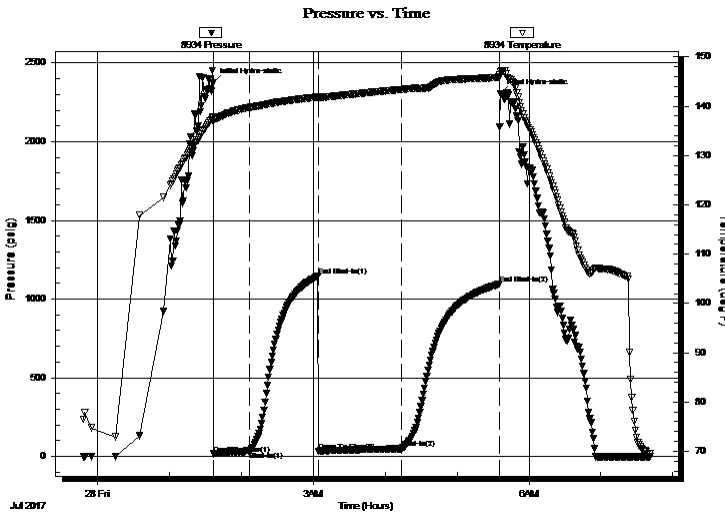
## Serial #: 8934

Inside

Press@RunDepth: 49.95 psig @ 4619.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2017.07.27 End Date: 2017.07.28 Last Calib.: 2017.07.28  
 Start Time: 23:48:15 End Time: 07:40:45 Time On Btm: 2017.07.28 @ 01:36:15  
 Time Off Btm: 2017.07.28 @ 05:36:15

TEST COMMENT: 30-IF-Weak Blow ; Built to 1 1/2"  
 60-ISI-No Return  
 60-FF-Weak Blow ; Built to 4 1/4"  
 90-FSI-No Return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2377.54	137.76	Initial Hydro-static
1	16.71	136.82	Open To Flow (1)
31	31.61	139.78	Shut-In(1)
88	1148.06	141.88	End Shut-In(1)
89	31.69	141.61	Open To Flow (2)
158	49.95	143.41	Shut-In(2)
239	1095.06	145.88	End Shut-In(2)
240	2304.08	146.98	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
50.00	OCM 25%O 75%M	0.25
30.00	Muddy Oil 50%M 50%O	0.15
30.00	Clean Oil 100%O	0.15

\* 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+1216  
 ATTN: Steve Miller

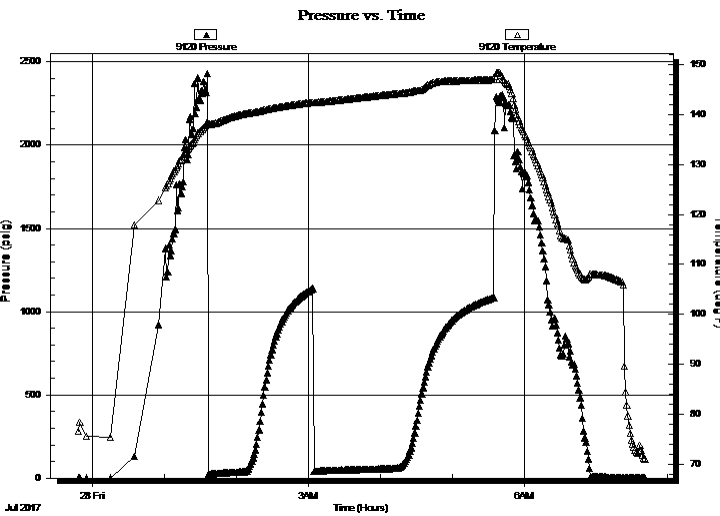
**11-2S-37W Cheyenne,KS**  
**Mears 'B' #1-11**  
 Job Ticket: 62999 **DST#: 6**  
 Test Start: 2017.07.27 @ 23:48:00

## GENERAL INFORMATION:

Formation: **Fort Scott**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 01:36:30  
 Time Test Ended: 07:40:45  
 Interval: **4617.00 ft (KB) To 4760.00 ft (KB) (TVD)**  
 Total Depth: 4760.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Spencer J. Staab  
 Unit No: 84  
 Reference Elevations: 3396.00 ft (KB)  
 3391.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 9120 Inside**  
 Press@RunDepth: psig @ 4619.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2017.07.27 End Date: 2017.07.28 Last Calib.: 2017.07.28  
 Start Time: 23:48:15 End Time: 07:40:45 Time On Btm:  
 Time Off Btm:

**TEST COMMENT:** 30-IF-Weak Blow ; Built to 1 1/2"  
 60-ISI-No Return  
 60-FF-Weak Blow ; Built to 4 1/4"  
 90-FSI-No Return



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
50.00	OCM 25%O 75%M	0.25
30.00	Muddy Oil 50%M 50%O	0.15
30.00	Clean Oil 100%O	0.15

## 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.

**11-2S-37W Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202+1216

**Mears 'B' #1-11**

Job Ticket: 62999

**DST#: 6**

ATTN: Steve Miller

Test Start: 2017.07.27 @ 23:48:00

## Tool Information

Drill Pipe:	Length: 4401.00 ft	Diameter: 3.80 inches	Volume: 61.73 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - 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: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	9.00 ft			String Weight: Initial 66000.00 lb
Depth to Top Packer:	4617.00 ft			Final 66000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	143.00 ft			
Tool Length:	163.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4598.00	
Shut In Tool	5.00			4603.00	
Hydraulic tool	5.00			4608.00	
Packer	5.00			4613.00	20.00 Bottom Of Top Packer
Packer	4.00			4617.00	
Stubb	1.00			4618.00	
Change Over Sub	1.00			4619.00	
Recorder	0.00	9120	Inside	4619.00	
Recorder	0.00	8934	Inside	4619.00	
Drill Pipe	126.00			4745.00	
Change Over Sub	1.00			4746.00	
Perforations	10.00			4756.00	
Bullnose	4.00			4760.00	143.00 Bottom Packers & Anchor

**Total Tool Length: 163.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co. Inc.  
250 N Water STE 300  
Wichita KS 67202+1216  
ATTN: Steve Miller

**11-2S-37W Cheyenne,KS**  
**Mears 'B' #1-11**  
Job Ticket: 62999      **DST#: 6**  
Test Start: 2017.07.27 @ 23:48:00

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 39 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 81.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.19 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 800.00 ppm		
Filter Cake: inches		

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
50.00	OCM 25%O 75%M	0.246
30.00	Muddy Oil 50%M 50%O	0.148
30.00	Clean Oil 100%O	0.148

Total Length: 110.00 ft      Total Volume: 0.542 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments: 5#LCM

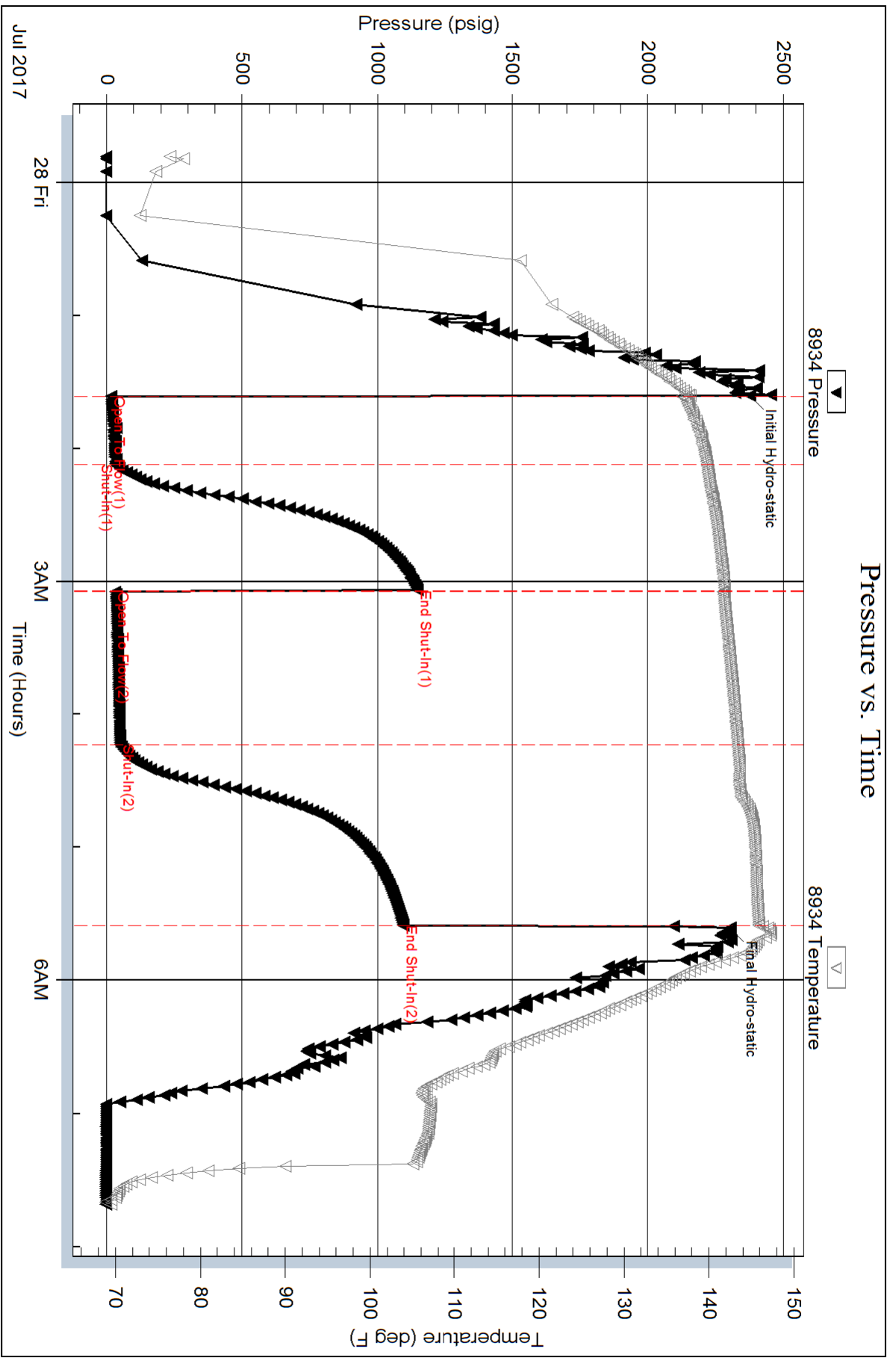
Serial #: 8934

Inside

Murfin Drilling Co. Inc.

Mears B: #1-11

DST Test Number: 6



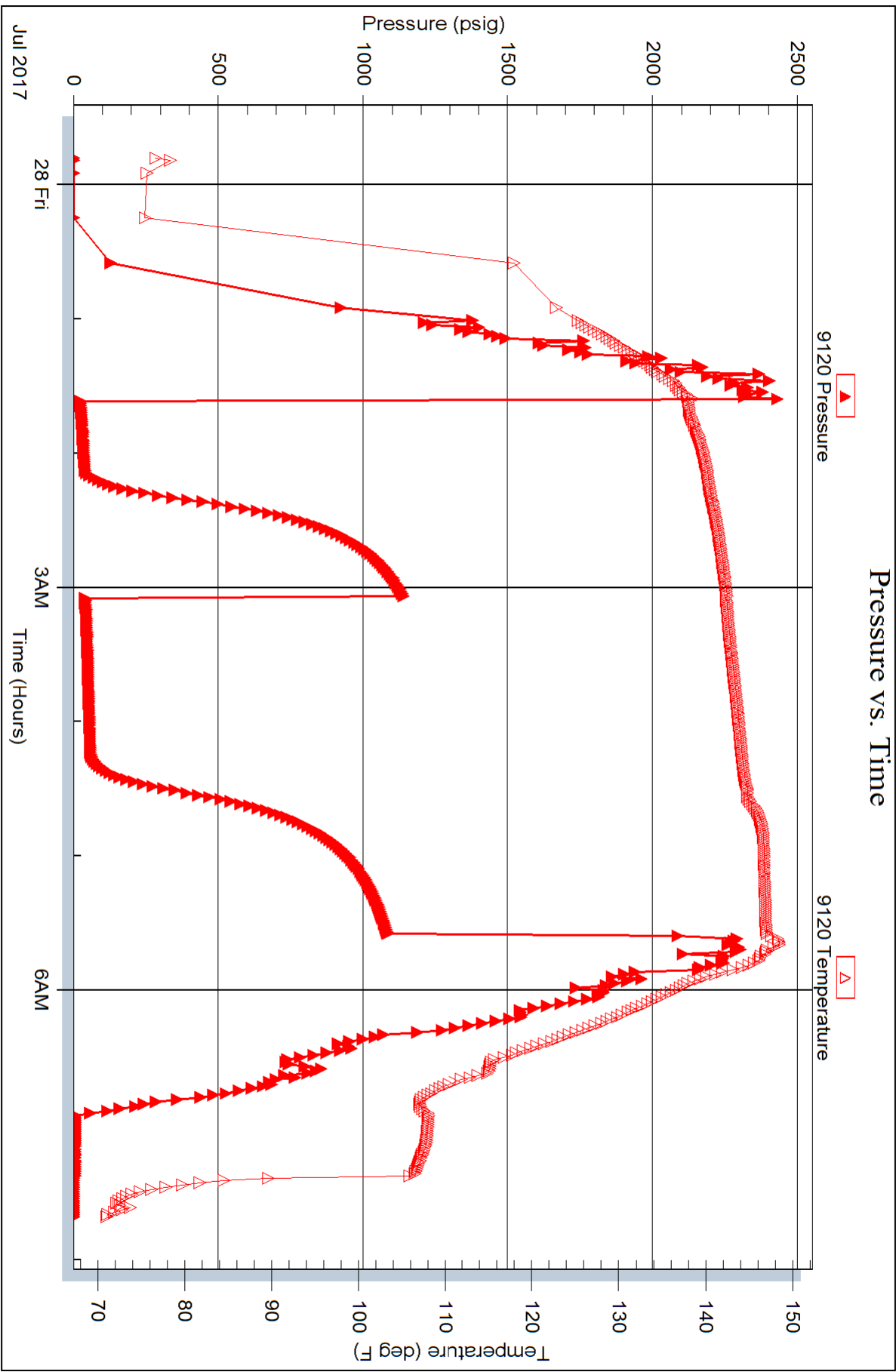
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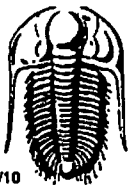
Inside

Murfin Drilling Co. Inc.

Mears B #1-11

DST Test Number: 6





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 62994

Well Name & No. Mears 'B' #1-11 Test No. 1 Date 07/23/2017  
 Company Murfin Drilling Co Elevation 3396 KB 3391 GL  
 Address 250 N Water STE 300 Wichita KS 67202+1216  
 Co. Rep / Geo. Steve Miller Rig Murfin #24  
 Location: Sec. 11 Twp. 24 Rge. 37 Co. Cheyenne State KS

Interval Tested 4198' - 4270' Zone Tested Orad  
 Anchor Length 72' Drill Pipe Run 3985' Mud Wt. 9.0  
 Top Packer Depth 4193' Drill Collars Run 205' Vis 65  
 Bottom Packer Depth 4198' Wt. Pipe Run - WL 6.0  
 Total Depth 4270' Chlorides 600 ppm System LCM 5#

Blow Description 17 - Weak Surface Blow; Died 15"  
ISA - No Return  
77 - No Blow  
75D - No Return

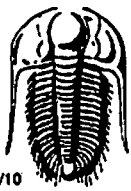
Rec	Feet of	%gas	%oil	%water	%mud
5'	Mud			100	

Rec Total 5' BHT 138° Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic 2085  Test 1150 T-On Location 17:03  
 (B) First Initial Flow 11  Jars - T-Started 17:46  
 (C) First Final Flow 14  Safety Joint - T-Open 19:33  
 (D) Initial Shut-In 882  Circ Sub - T-Pulled 22:33  
 (E) Second Initial Flow 14  Hourly Standby - T-Out 00:06 07/24/2017  
 (F) Second Final Flow 16  Mileage 340 RT 114rt 85.50 Comments Stayed in Benkelman  
 (G) Final Shut-In 812  Sampler -  
 (H) Final Hydrostatic 2070  Straddle -  Ruined Shale Packer -  
 Shale Packer -  Ruined Packer -

Initial Open 30  Extra Packer -  Extra Copies -  
 Initial Shut-In 60  Extra Recorder - Sub Total 0  
 Final Flow 30  Day Standby - Total 1235.50  
 Final Shut-In 60  Accessibility - MP/DST Disc't -  
 Sub Total 1235.50

Approved By \_\_\_\_\_ Our Representative Spencer J. Neal - Thanks!  
 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.  
 785-259-0056



# TRILOBITE TESTING INC.

1515 Commerce Parkway - Hays, Kansas 67601

## Test Ticket

NO. 62995

Well Name & No. Mears 'B' # 1-11 Test No. 2 Date 07/24/2017  
 Company Murfin Drilling Co, Inc Elevation 3396 KB 3391 GL  
 Address 250 N Water STE 300 Wichita Ks 67202+1216  
 Co. Rep / Geo. Steve Miller Rig Murfin #24  
 Location: Sec. 11 Twp. 2 S Rge. 37 W Co. Cheyenne State Ks

Interval Tested 4292' - 4345' Zone Tested LKC 'a'  
 Anchor Length 53' Drill Pipe Run 4091 Mud Wt. 9.1  
 Top Packer Depth 4287' Drill Collars Run 205' Vis 56  
 Bottom Packer Depth 4292' Wt. Pipe Run - WL 6.4  
 Total Depth 4345' Chlorides 600 ppm System LCM 4#

Blow Description 17-Surge Blow: Died immediately  
1SD- No Return  
77- No Blow  
7SD- No Return

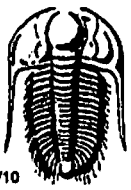
Rec	Feet of	%gas	%oil	%water	%mud
9'	OCM	25		75	
1'	Clean Oil	100			

Rec Total 10' BHT 138° Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic <u>2159</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>07:30</u>
(B) First Initial Flow <u>12</u>	<input type="checkbox"/> Jars	T-Started <u>08:25</u>
(C) First Final Flow <u>17</u>	<input type="checkbox"/> Safety Joint	T-Open <u>10:20</u>
(D) Initial Shut-In <u>48</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>13:20</u>
(E) Second Initial Flow <u>14</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>15:12</u>
(F) Second Final Flow <u>19</u>	<input checked="" type="checkbox"/> Mileage <u>340 RT</u> 85.50	Comments <u>Stayed in</u>
(G) Final Shut-In <u>36</u>	<input type="checkbox"/> Sampler	<u>Bemkelsman</u>
(H) Final Hydrostatic <u>2157</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	Total <u>1235.50</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't- <u>-</u>
	Sub Total <u>1235.50</u>	

Approved By \_\_\_\_\_ Our Representative Spencer J. Staal Thanks!  
 Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personal 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.

785-259-0056



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 62996

Well Name & No. Mears 'B' # 1-11 Test No. 3 Date 07/24/2017  
 Company Murfin Drilling Co., Inc. Elevation 3396 KB 3391 GL  
 Address 250 N Water St E 300 Wichita Ks 67202+1216  
 Co. Rep / Geo. Steve Miller Rig Murfin #24  
 Location: Sec. 11 Twp. 2s Rge. 37w Co. Cheyenne State Ks

Interval Tested 4350' - 4408' Zone Tested LKC 'D'  
 Anchor Length 58' Drill Pipe Run 4155' Mud Wt. 9.1  
 Top Packer Depth 4345' Drill Collars Run 205' Vis 56  
 Bottom Packer Depth 4350' Wt. Pipe Run - WL 6.4  
 Total Depth 4408' Chlorides 600 ppm System LCM 4#

Blow Description 77- Strong Blow; BOB 2' mins  
75D- Weak Blow; Built to 1"  
77- Strong Blow; BOB in 1:30  
75D- Weak Blow; Built to 1"

Rec	Feet of	%gas	%oil	%water	%mud
<u>1060'</u>	<u>0 MCW</u>	<u>10</u>	<u>80</u>	<u>10</u>	<u>0</u>
<u>500'</u>	<u>MCDO</u>	<u>40</u>	<u>40</u>	<u>20</u>	<u>0</u>
<u>400'</u>	<u>Clean Oil</u>	<u>100</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>180'</u>	<u>HP 180'</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

Rec Total 1960' BHT 152° Gravity 27° API RW 81 @ 84 ° F Chlorides 32,000 ppm

(A) Initial Hydrostatic 2164'  
 (B) First Initial Flow 81  
 (C) First Final Flow 480  
 (D) Initial Shut-In 1050  
 (E) Second Initial Flow 495  
 (F) Second Final Flow 856  
 (G) Final Shut-In 1046  
 (H) Final Hydrostatic 2106  
 Initial Open 30  
 Initial Shut-In 60  
 Final Flow 60  
 Final Shut-In 90

Test 1150  
 Jars \_\_\_\_\_  
 Safety Joint \_\_\_\_\_  
 Circ Sub \_\_\_\_\_  
 Hourly Standby \_\_\_\_\_  
 Mileage 340 RT 85.50  
 Sampler \_\_\_\_\_  
 Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_  
 Sub Total 1235.50

T-On Location 23:35  
 T-Started 00:20 07/24/2017  
 T-Open 02:15  
 T-Pulled 06:15  
 T-Out 10:56  
 Comments stayed in bucket  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_  
 Sub Total 0  
 Total 1235.50  
 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Spencer J. Gual Thanks!  
 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.

785-259-0056



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 62997

Well Name & No. Mears 'B' # 1-11 Test No. 4 Date 07/25/2017  
 Company Murfin Drilling Co., Inc. Elevation 3396 KB 3391 GL  
 Address 250 N Water STE 300 Wichita KS 67202 +1216  
 Co. Rep / Geo. Steve Miller Rig Murfin #24  
 Location: Sec. 11 Twp. 2s Rge. 37w Co. Cheyenne State KS

Interval Tested 4416' - 4458' Zone Tested LKC 'J'  
 Anchor Length 42' Drill Pipe Run 4221' Mud Wt. 9.2  
 Top Packer Depth 4411' Drill Collars Run 205' Vis 57  
 Bottom Packer Depth 4416' Wt. Pipe Run - WL 6.0  
 Total Depth 4458' Chlorides 800 ppm System LCM 4#

Blow Description 7-Weak Blow; Built to 1/4"

~~75D - No Return~~

~~77 - No Blow~~

~~78D - No Return~~

Rec	Feet of	%gas	%oil	%water	%mud
<u>2'</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 2' BHT 140° Gravity - API RW - @ - °F Chlorides - ppm

- (A) Initial Hydrostatic 2240
- (B) First Initial Flow 12
- (C) First Final Flow 14
- (D) Initial Shut-In 30
- (E) Second Initial Flow 13
- (F) Second Final Flow 14
- (G) Final Shut-In 29
- (H) Final Hydrostatic 2234

- Test 1150
- Jars
- Safety Joint
- Circ Sub
- Hourly Standby
- Mileage 340 RT 85.50
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility

- T-On Location 20:01
- T-Started 20:45
- T-Open 23:05
- T-Pulled 02:10 07/26/2017
- T-Out 03:52

Comments stayed in Bembeleson

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

- Ruined Shale Packer
- Ruined Packer 320
- Extra Copies
- Sub Total 3220
- Total 1555.50
- MP/DST Disc't

Sub Total 1235.50

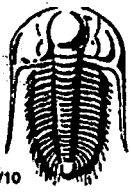
Approved By \_\_\_\_\_

Our Representative James J. Stahl Thanks!

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.

785-259-0056





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 62998

Well Name & No. Mears 'B' # 1-11 Test No. 5 Date 07/26/2017  
 Company Murfin Drilling Co Inc Elevation 3396 KB 3391 GL  
 Address 250 N Water St E 300 Wichita Ks 67202+1216  
 Co. Rep / Geo. Steve Miller Rig Murfin #24  
 Location: Sec. 11 Twp. 24 Rge. 37w Co. Cherokee State Ks

Interval Tested 4461' - 4544 Zone Tested LKC 'H-J'  
 Anchor Length 83' Drill Pipe Run 4245' Mud Wt. 9.1  
 Top Packer Depth 4456' Drill Collars Run 205' Vis 73  
 Bottom Packer Depth 4461' Wt. Pipe Run - WL 6.4  
 Total Depth 4544' Chlorides 800 ppm System LCM 6#

Blow Description 17-Weak Blow; Built to 4 1/4"

15D- No Return

77-Weak Blow; Built to 2"

75D- No Return

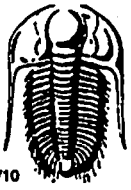
Rec	Feet of	%gas	%oil	%water	%mud
<u>80'</u>	<u>Gassy Oil</u>	<u>30%</u>	<u>70%</u>		
<u>80'</u>	<u>Muddy Oil</u>		<u>50%</u>		<u>50%</u>
	<u>60' JBP</u>	<u>100%</u>			
Rec Total	<u>160'</u>	BHT	<u>140°</u>	Gravity	<u>36°</u>
		API RW	<u>-</u>	@	<u>-</u>
		F	Chlorides		<u>-</u>
		ppm			

(A) Initial Hydrostatic 2290  Test 1150 T-On Location 15:15  
 (B) First Initial Flow 19  Jars 16:32  
 (C) First Final Flow 54  Safety Joint 18:33  
 (D) Initial Shut-In 1347  Circ Sub 22:33  
 (E) Second Initial Flow 57  Hourly Standby 00:51 07/27/17  
 (F) Second Final Flow 80  Mileage 340 RT 85.50 Comments stayed in  
 (G) Final Shut-In 1338  Sampler Benhelman  
 (H) Final Hydrostatic 2283  Straddle  Ruined Shale Packer  
 Shale Packer  Ruined Packer  
 Extra Packer  Extra Copies  
 Initial Open 30  Extra Recorder 0 Sub Total  
 Initial Shut-In 60  Day Standby 1235.50 Total  
 Final Flow 60  Accessibility MP/DST Disc't  
 Final Shut-In 90 Sub Total 1235.50

Approved By \_\_\_\_\_ Our Representative Spencer J. Staal Thanks

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785-259-0056



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 62999

Well Name & No. Mears 'B' #1-11 Test No. 6 Date 07/27/2017  
 Company Murfin Drilling Co. Inc. Elevation 3396 KB 3391 GL  
 Address 250 N Water STE 300 Wichita Ks 67202+1216  
 Co. Rep / Geo. Steve Miller Rig Murfin #24  
 Location: Sec. 11 Twp. 2s Rge. 37w Co. Cherokee State Ks

Interval Tested 4617'-4760' Zone Tested Fort Scott  
 Anchor Length 143' Drill Pipe Run 4401' Mud Wt. 9.3  
 Top Packer Depth 4612' Drill Collars Run 205' Vis 81  
 Bottom Packer Depth 4617' Wt. Pipe Run - WL 7.2  
 Total Depth 4760' Chlorides 800 ppm System LCM 5#

Blow Description 07-Weak Blow; Built to 1 1/2"  
DS- No Return  
77-Weak Blow; Built to 4 1/4"  
7SD- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>50'</u>	<u>OCM</u>	<u>25</u>	<u>0</u>	<u>75</u>	<u>0</u>
<u>30'</u>	<u>Muddy Oil</u>	<u>50</u>	<u>0</u>	<u>50</u>	<u>0</u>
<u>30'</u>	<u>Clean Oil</u>	<u>100</u>	<u>0</u>	<u>0</u>	<u>0</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 110' BHT 146° Gravity 39° API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 2377  Test 1150 T-On Location 22:05  
 (B) First Initial Flow 16  Jars - T-Started 23:48  
 (C) First Final Flow 31  Safety Joint - T-Open 01:35 07/28/2017  
 (D) Initial Shut-In 1148  Circ Sub - T-Pulled 05:35  
 (E) Second Initial Flow 31  Hourly Standby - T-Out 07:39  
 (F) Second Final Flow 49  Mileage 340 RT 171 Comments loaded tools @ 18:30  
 (G) Final Shut-In 1095  Sampler -  
 (H) Final Hydrostatic 2304  Straddle -  Ruined Shale Packer -  
 Shale Packer -  Ruined Packer 320  
 Extra Packer -  Extra Copies -  
 Extra Recorder - Sub Total 320  
 Day Standby - Total 1641  
 Accessibility - MP/DST Disc't -  
 Sub Total 1321

Approved By \_\_\_\_\_ Our Representative Spencer J. Staal-Thanks

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785-259-0056

**TREATMENT REPORT**



**HURRICANE SERVICES INC**

<b>Customer:</b> Murfin Drilling Company Inc.	<b>Date:</b> 7/20/2017	<b>Ticket No.:</b> 100773
<b>Field Rep:</b> Arturo		
<b>Address:</b>		
<b>City, State:</b>		
<b>County, Zip:</b>		

<b>Field Order No.:</b> 100773	<b>Open Hole:</b>	<b>Perf Depths (ft)</b>	<b>Perfs</b>
<b>Well Name:</b> Mears B # 1-11	<b>Casing Depth:</b> 345'		
<b>Location:</b> McDonald	<b>Casing Size:</b> 8.625 23 Lb		
<b>Formation:</b>	<b>Tubing Depth:</b>		
<b>Type of Service:</b> 8 5/8 Surface	<b>Tubing Size:</b>		
<b>Well Type:</b> Oil	<b>Liner Depth:</b>		
<b>Age of Well:</b> New	<b>Liner Size:</b>		
<b>Packer Type:</b>	<b>Liner Top:</b>		
<b>Packer Depth:</b>	<b>Liner Bottom:</b>		
<b>Treatment Via:</b> Casing	<b>Total Depth:</b> 345'		
		<b>Total Perfs</b>	<b>0</b>

TIME	INJECTION RATE		PRESSURE		REMARKS	PROP (lbs)	HCL (gts)	FLUID (bbbls)
	FLUID	N2/CO2	STP	ANNULUS				
8:30 AM					Called Out			
12:30 PM					On location with Trucks Hold Safety Meeting			
					Spot & Set Up Trucks			
					TD= 346' TP= 344.61 SJ=20'			
					Run 8 Jt's 23 Lb Csg Set @ 345' Centralizers Jt 1/2 1 Jt 4			
2:45 PM					Start Casing			
4:45 PM					Casing On Bottom			
5:00 PM					Hook Up To Casing & Break Circulation W/Rig			
5:30 PM	4.0		250.0		Start Pumping H2O			5.00
5:33 PM	4.0		250.0		Start Mix 285 Sacks Common 2% Gel 3% C.C. @ 15 Lb/Gal			69.03
5:51 PM	4.0		145.0		Start Displacement H2O			20.74
6:00 PM			200.0		Shut Down Close Valve on Casing			
					Good Circulation Thru Job			
					Circulate 6 Bbl's Cement To Pit			
6:15 PM					Off Location			
					Thank You			
					Please Call Again			
					Todd Cody Sheldon Tony			
<b>TOTAL:</b>								<b>94.77</b>

**SUMMARY**

Max Fl. Rate	Avg Fl. Rate	Max PSI	Avg PSI
4.0	4.0	250.0	211.3

**PRODUCTS USED**

285 Sacks Common 2%Gel 3% Calcium Chloride

Treater: todd Seba Tony

Customer: Arturo Cabezas



MDCI  
Mears 'B' #1-11  
1800' FSL 330'FEL  
Sec. 11-2S-37W  
3396' KB

Formation	Sample top	Datum	Ref	Log tops	Datum	Ref
Anhydrite	3298	+98	-4	3296	+100	-2
B/Anhydrite	3328	+68	-1	3326	+70	+1
Topeka	4102	-706	+1	4102	-706	+1
Oread	4249	-853	-10	4244	-848	-5
Lansing	4331	-935	-7	4327	-931	-3
Stark	4546	-1150	-1	4542	-1146	-3
Mound City	4598	-1202	-3	4596	-1200	-1
Ft Scott	4718	-1322	+5	4724	-1328	-1
Excello				4774	-1378	+2
Celia				4802	-1406	-1
RTD	4900					
LTD				4900		