



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1158875  
OIL & GAS CONSERVATION DIVISION

Form ACO-1  
August 2013

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       SIOW
- Gas       D&A       ENHR       SIGW
- OG       GSW       Temp. Abd.
- 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 ENHR       Conv. to SWD
- Plug Back       Conv. to GSW       Conv. to Producer
- Commingled      Permit #: \_\_\_\_\_
- Dual Completion      Permit #: \_\_\_\_\_
- SWD      Permit #: \_\_\_\_\_
- ENHR      Permit #: \_\_\_\_\_
- GSW      Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - \_\_\_\_\_

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
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_



1158875

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  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				

Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 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)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:	Size: _____ Set At: _____ Packer At: _____	Liner Run: <input type="checkbox"/> Yes <input type="checkbox"/> No
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Date of First, Resumed Production, SWD or ENHR. _____	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____
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Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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Conservation Division  
Finney State Office Building  
130 S. Market, Rm. 2078  
Wichita, KS 67202-3802



Phone: 316-337-6200  
Fax: 316-337-6211  
<http://kcc.ks.gov/>

Mark Sievers, Chairman  
Thomas E. Wright, Commissioner  
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

September 18, 2013

Leon Rodak  
Murfin Drilling Co., Inc.  
250 N WATER STE 300  
WICHITA, KS 67202-1216

Re: ACO1  
API 15-109-21184-00-00  
Kuhn 1-4  
SW/4 Sec.04-13S-32W  
Logan County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,  
Leon Rodak

MDCI Kuhn #1-4 1378' FSL 1030' FWL Sec. 5-T13S-R32W 3022' KB							MDCI LANA #1-5 1710' FNL 375' FEL Sec. 5-T13S-R32W 3060' KB	
Formation	SampleTops	Datum	Ref	Log Tops	Datum	Ref	Log Tops	Datum
Anhydrite	2504	+518	+2	2502	+517	+1	2544	+516
B/Anhydrite	2527	+495	+2	2527	+495	+2	2567	+493
Topeka	3741	-719	+2	3741	-719	+2	3781	-721
Heebner	3964	-942	+3	3964	-942	Flat	4005	-945
Lansing	4005	-983	+3	4009	-987	-2	4045	-985
Stark	4234	-1112	+7	4236	-1214	+5	4279	-1219
BKC	4295	-1173	+8	4298	-1276	+5	4341	-1281
Up Pawnee	4430	-1408	+8	4430	-1408	+8	4476	-1416
Chero Sh	4513	-1491	+7	4515	-1493	+5	4558	-1498
Johnson	4556	-1534	+8	4557	-1535	+7	4602	-1542
Mississippi	4620	-1598	+14	4619	-1597	+15	4672	-1612
RTD	4720						4770	
LTD				4722			4772	

Thomas J. Funk  
Petroleum Geologist

**Geologists Report**  
**Drilling Time and Sample Log**

OPERATOR **Murfin Drilling Co., Inc**  
LEASE **Kuhn**  
FIELD **Wildcat**  
LOCATION **1378' FSL & 1030' FWL**  
SEC. **4**  
COUNTY **Logan**

WELL NO **#1-4**  
API **15-109-21184**  
DATE **5/22/13**  
ELEVATION **KB 3022'**

DF **3022'**  
GL **3011'**  
Measurements Are All **From KB**

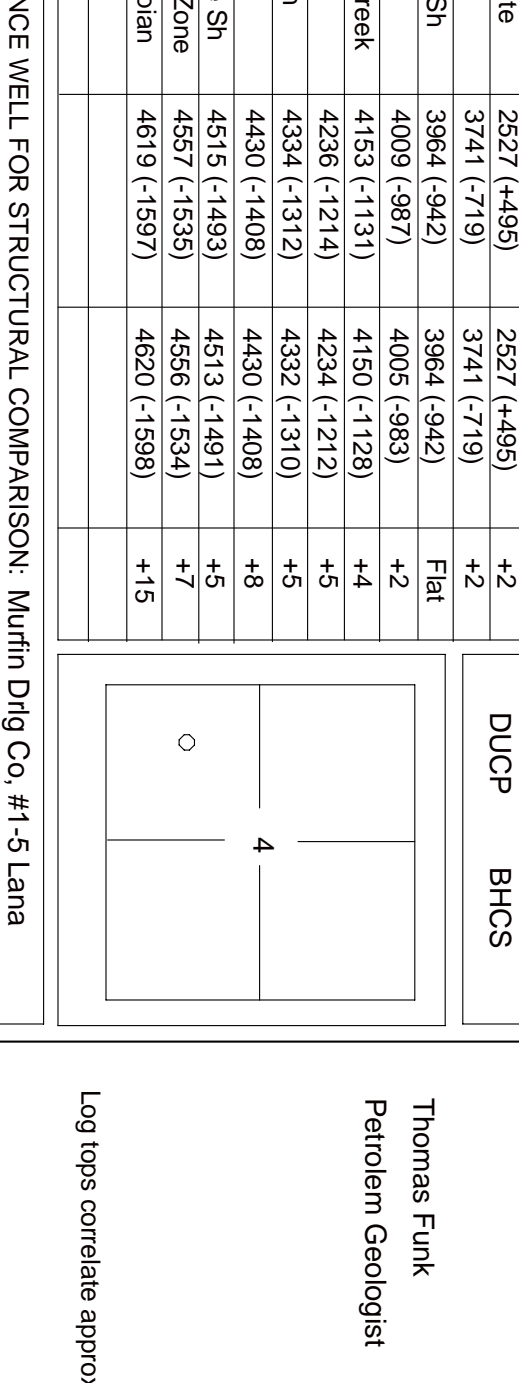
CONTRACTOR **Murfin Drilling Co** Rig # **22**  
COMM **5/23/13** COMP **6/4/13**  
RTD **4/20** LOG TD **4722'**  
SAMPLES SAVED FROM **3650'** TO **4720'**  
DRILLING TIME KEPT FROM **3650'** TO **4720'**  
SAMPLES EXAMINED FROM **3650'** TO **4720'**

MECHANICAL SUPERVISION FROM **3705'** TO **4720'**  
MUD/UP **3200** TYPE MUD **Chemical**

ELECTRICAL SURVEYS  
Log-Tech  
DIL  
DUCP  
MEL  
BHCS

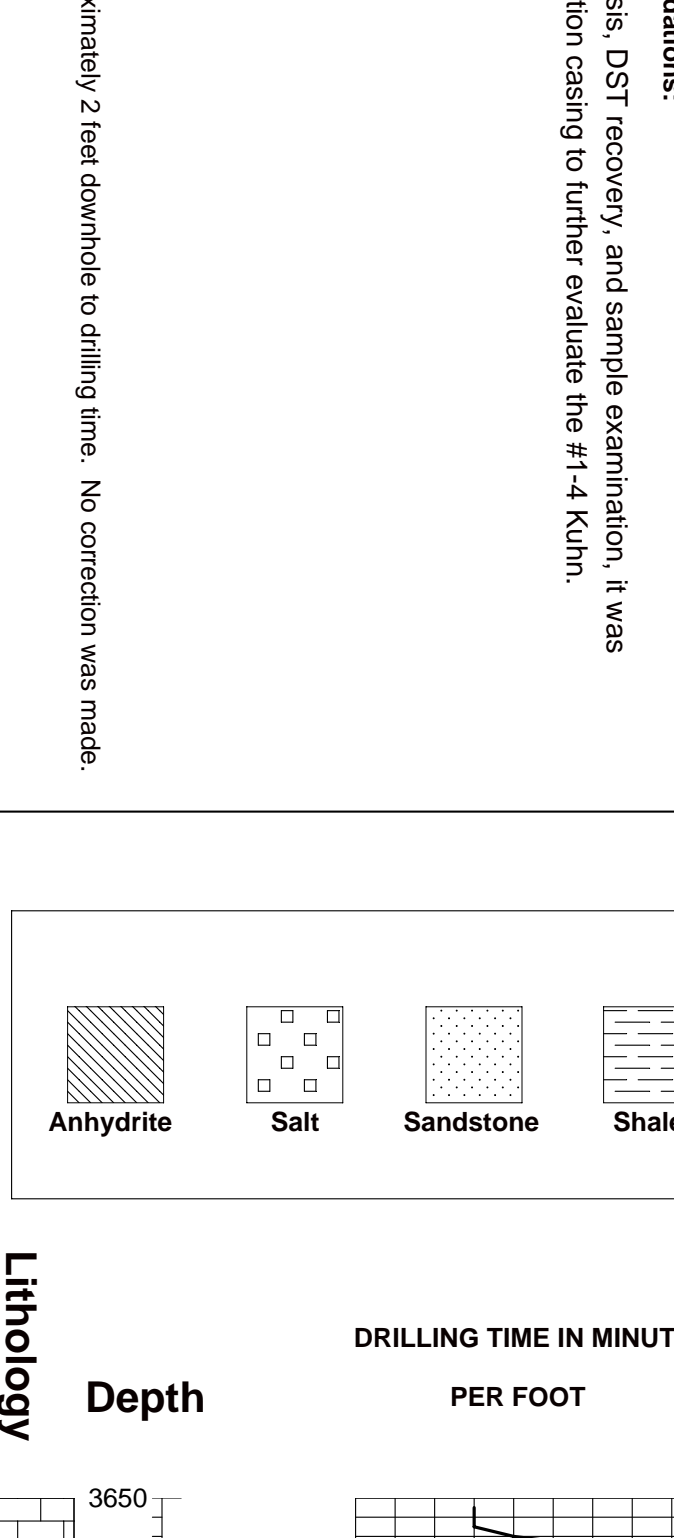
FORMATION	LOG TOP DATUM	SAMPLE TOP DATUM	STRUCT COMP
Anyhrite	2502 (-4517)	2504 (-4518)	+1
B/Anyhrite	2527 (-4493)	2527 (-4495)	+2
Topeka	3741 (-719)	3741 (-719)	+2
Heabene Sh	3964 (-942)	3964 (-942)	Flat
Lansing	4009 (-987)	4005 (-983)	+2
Murde Creek	4153 (-1131)	4150 (-1128)	+4
Stark Sh	4236 (-1214)	4234 (-1212)	+5
Marmaton	4334 (-1312)	4332 (-1310)	+5
Pawnee	4430 (-1408)	4430 (-1408)	+8
Cherokee Sh	4515 (-1493)	4513 (-1491)	+5
Johnson Zone	4557 (-1535)	4556 (-1534)	+7
Mississippi	4619 (-1597)	4620 (-1598)	+15

REFERENCE WELL FOR STRUCTURAL COMPARISON: Murfin Drilling Co. #1-5 Lana



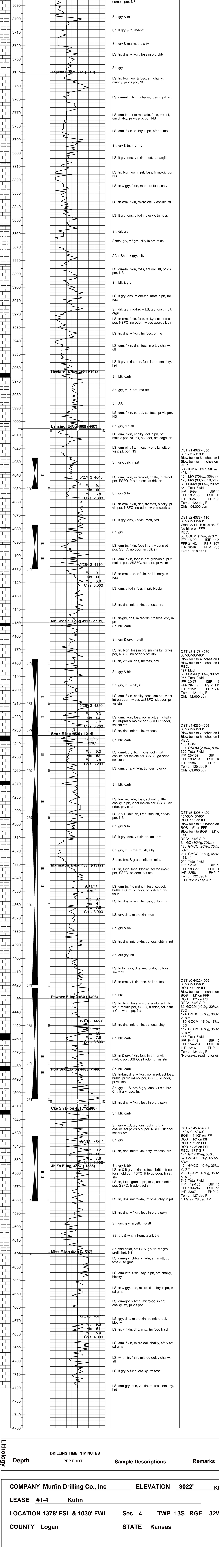
Date	Depth	NO	Size	Make	Type	Depth Out	Feet	Hours
5/23/13	Stud	1	12 1/4"	GMS	RR	224	224	3
5/23/13	40"	2	7 7/8"	HTC	DP906F	3650	3426	48
5/25/13	2500'	2	7 7/8"	HTC	GX20c	4365	745	52
5/26/13	3640'	3	7 7/8"	HTC	GX20c	4385	745	52
5/27/13	3970'	4	7 7/8"	HTC	GX22s	4720	300	28

**Remarks And Recommendations:**  
Based upon log analysis, DST recovery, and sample examination, it was decided to run production casing to further evaluate the #1-4 Kuhn.  
Thomas Funk  
Petroleum Geologist



**LEGEND**

- Anhydrite
- Salt
- Sandstone
- Shale
- Carb Shale
- Limestone
- Ool Limestone
- Chert
- Dolomite



COMPANY **Murfin Drilling Co., Inc** ELEVATION **3022'** KB

LEASE **#1-4** Kuhn

LOCATION **1378' FSL & 1030' FWL** Sec **4** TWP **13S** RGE **32W**

COUNTY **Logan** STATE **Kansas**



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Suite 300  
Wichita, KS 67202

ATTN: Tom Funk

**Kuhn #1-4**

**S4-13s-32w Logan,KS**

Start Date: 2013.05.27 @ 18:00:00

End Date: 2013.05.28 @ 01:53:39

Job Ticket #: 51748                      DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.06.06 @ 11:52:45









**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co.

**S4-13s-32w Logan,KS**

250 N. Water Suite 300  
Wichita, KS 67202

**Kuhn #1-4**

Job Ticket: 51748

**DST#: 1**

ATTN: Tom Funk

Test Start: 2013.05.27 @ 18:00:00

## Tool Information

Drill Pipe:	Length: 3792.00 ft	Diameter: 3.80 inches	Volume: 53.19 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 235.00 ft	Diameter: 2.25 inches	Volume: 1.16 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 54.35 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	27.50 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4027.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	23.00 ft			
Tool Length:	50.50 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			4000.50	
Shut In Tool	5.00			4005.50	
Hydraulic tool	5.00			4010.50	
Jars	5.00			4015.50	
Safety Joint	2.50			4018.00	
Packer	5.00			4023.00	27.50 Bottom Of Top Packer
Packer	4.00			4027.00	
Stubb	1.00			4028.00	
Recorder	0.00	8018	Inside	4028.00	
Recorder	0.00	6751	Outside	4028.00	
Perforations	19.00			4047.00	
Bullnose	3.00			4050.00	23.00 Bottom Packers & Anchor

**Total Tool Length: 50.50**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co.

**S4-13s-32w Logan,KS**

250 N. Water Suite 300  
Wichita, KS 67202

**Kuhn #1-4**

Job Ticket: 51748

**DST#: 1**

ATTN: Tom Funk

Test Start: 2013.05.27 @ 18:00:00

## 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:

54000 ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2600.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
60.00	OSMW 20m 80w	0.295
175.00	MW 10m 90w	0.861
124.00	MW 30m 70w	1.739
5.00	SOCMW 1o 49m 50w	0.070

Total Length: 364.00 ft      Total Volume: 2.965 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .170 @ 58 Degrees F = 54000 PPM

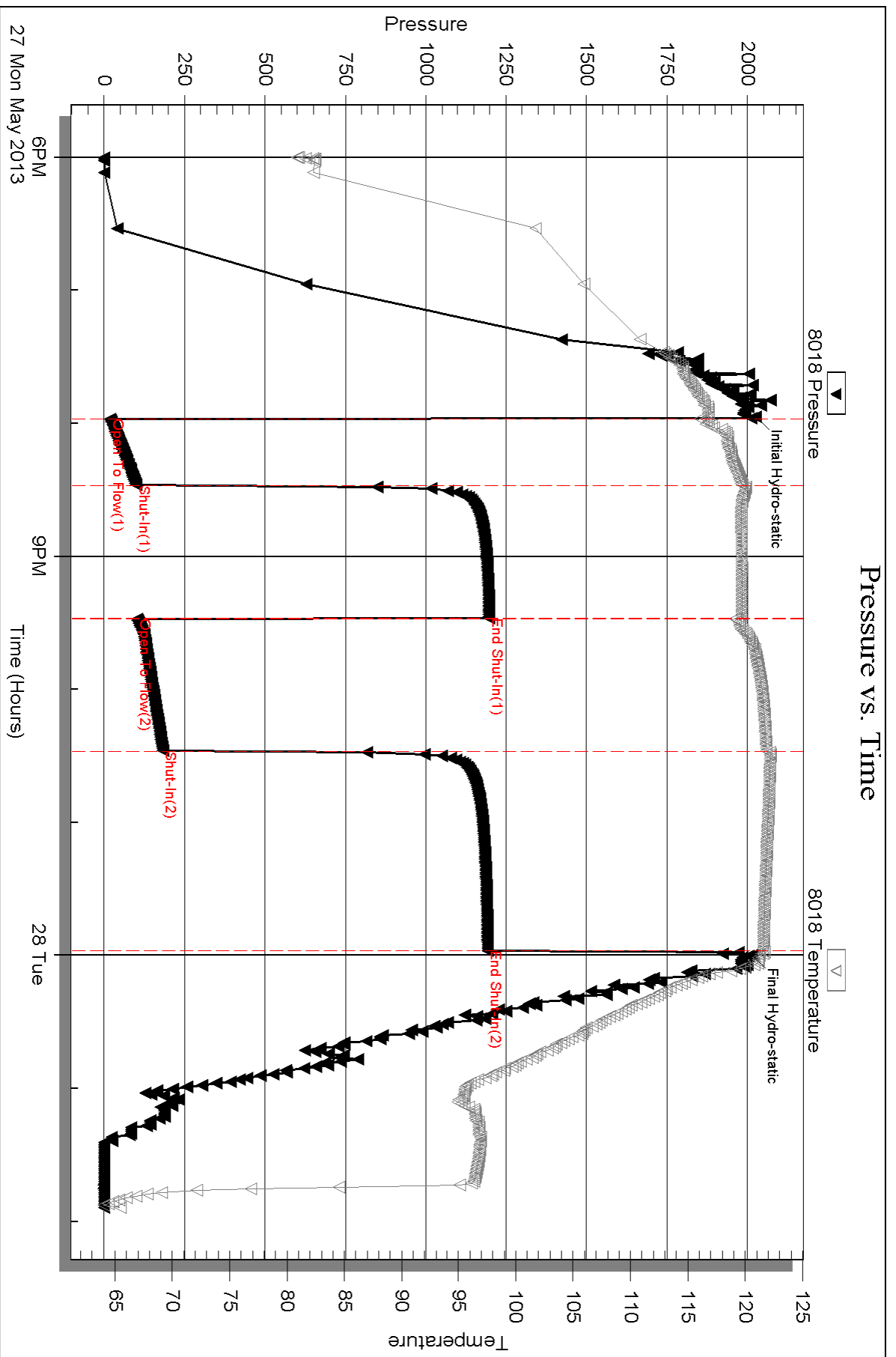
Serial #: 8018

Inside

Murfin Drilling Co.

Kuhn #1-4

DST Test Number: 1

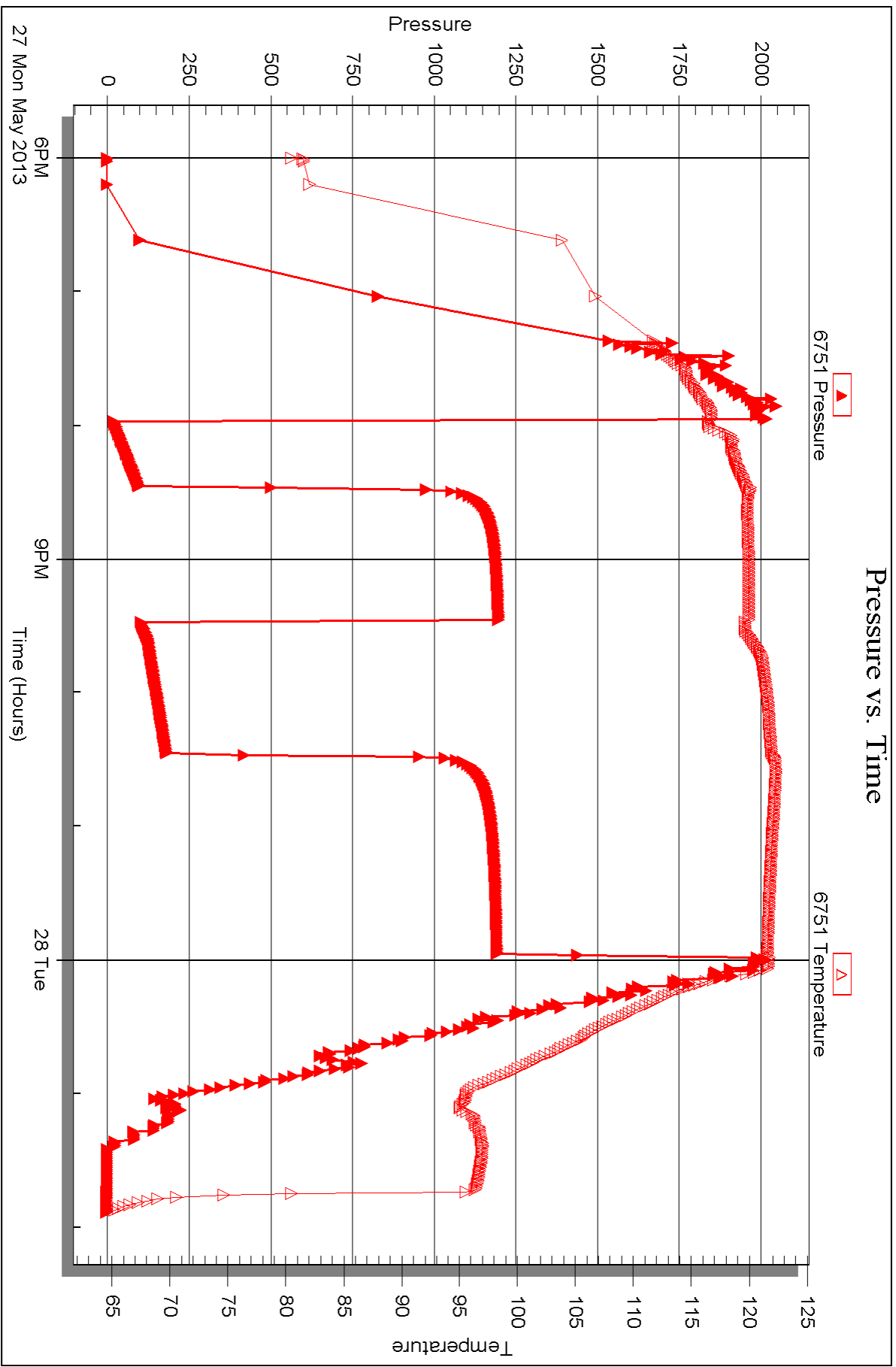


Serial #: 6751

Outside Murfin Drilling Co.

Kuhn #1-4

DST Test Number: 1





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Suite 300  
Wichita, KS 67202

ATTN: Tom Funk

**Kuhn #1-4**

**S4-13s-32w Logan,KS**

Start Date: 2013.05.28 @ 11:50:00

End Date: 2013.05.28 @ 19:00:20

Job Ticket #: 51749                      DST #: 2

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

Printed: 2013.06.06 @ 11:52:08

Murfin Drilling Co. S4-13s-32w Logan,KS Kuhn #1-4 DST # 2 Lansing, E-F 2013.05.28



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co.  
250 N. Water Suite 300  
Wichita, KS 67202  
ATTN: Tom Funk

**S4-13s-32w Logan,KS**

**Kuhn #1-4**

Job Ticket: 51749

**DST#: 2**

Test Start: 2013.05.28 @ 11:50:00

## GENERAL INFORMATION:

Formation: **Lansing 'E-F'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:09:40

Time Test Ended: 19:00:20

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

**Interval: 4077.00 ft (KB) To 4110.00 ft (KB) (TVD)**

Reference Elevations: 3022.00 ft (KB)

Total Depth: 4110.00 ft (KB) (TVD)

3011.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

**Serial #: 8018**

**Inside**

Press @ Run Depth: 41.67 psig @ 4078.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.05.28

End Date: 2013.05.28

Last Calib.: 2013.05.28

Start Time: 11:50:02

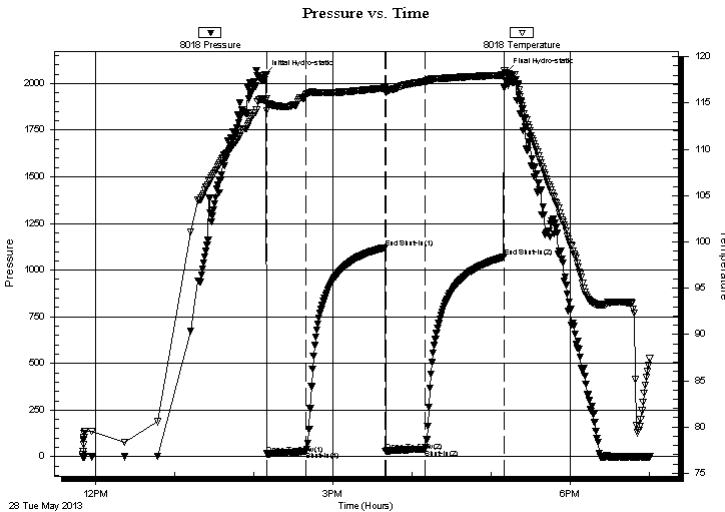
End Time: 19:00:19

Time On Btm: 2013.05.28 @ 14:08:30

Time Off Btm: 2013.05.28 @ 17:11:20

**TEST COMMENT:** 3/4" Blow .  
No return.  
No blow .  
No return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2048.97	115.24	Initial Hydro-static
2	16.07	114.16	Open To Flow (1)
31	28.83	115.92	Shut-In(1)
91	1120.62	116.61	End Shut-In(1)
92	30.92	116.11	Open To Flow (2)
122	41.67	117.32	Shut-In(2)
182	1069.89	118.02	End Shut-In(2)
183	2058.51	118.18	Final Hydro-static

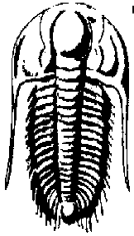
## Recovery

Length (ft)	Description	Volume (bbl)
58.00	SOCM 1 to 99m	0.29

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE**  
**TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co.  
250 N. Water Suite 300  
Wichita, KS 67202  
ATTN: Tom Funk

**S4-13s-32w Logan,KS**

**Kuhn #1-4**

Job Ticket: 51749

**DST#: 2**

Test Start: 2013.05.28 @ 11:50:00

## GENERAL INFORMATION:

Formation: **Lansing 'E-F'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:09:40

Time Test Ended: 19:00:20

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

**Interval: 4077.00 ft (KB) To 4110.00 ft (KB) (TVD)**

Total Depth: 4110.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3022.00 ft (KB)

3011.00 ft (CF)

KB to GR/CF: 11.00 ft

**Serial #: 6751 Outside**

Press @ RunDepth: psig @ 4078.00 ft (KB)

Start Date: 2013.05.28

End Date: 2013.05.28

Capacity: 8000.00 psig

Last Calib.: 2013.05.28

Start Time: 11:50:05

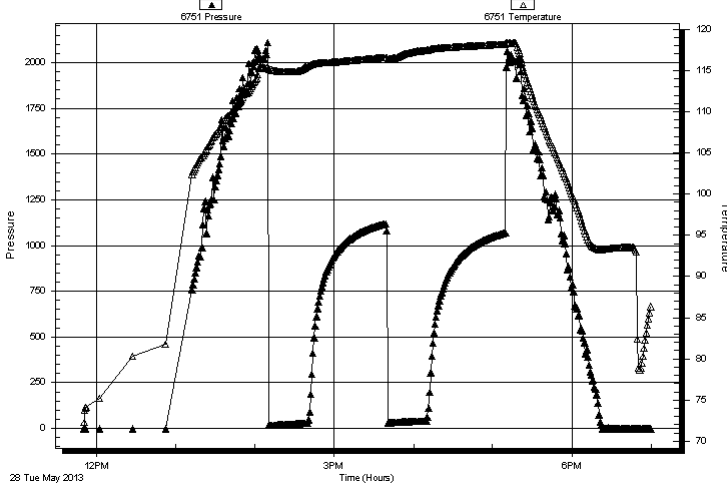
End Time: 19:00:20

Time On Btm:

Time Off Btm:

**TEST COMMENT:** 3/4" Blow .  
No return.  
No blow .  
No return.

Pressure vs. Time



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
58.00	SOCM 1 to 99m	0.29

## 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.

**S4-13s-32w Logan,KS**

250 N. Water Suite 300  
Wichita, KS 67202

**Kuhn #1-4**

Job Ticket: 51749

**DST#: 2**

ATTN: Tom Funk

Test Start: 2013.05.28 @ 11:50:00

### Tool Information

Drill Pipe:	Length: 3853.00 ft	Diameter: 3.80 inches	Volume: 54.05 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 235.00 ft	Diameter: 2.25 inches	Volume: 1.16 bbl	Weight to Pull Loose: 95000.00 lb
			<u>Total Volume: 55.21 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial 71000.00 lb
Depth to Top Packer:	4077.00 ft			Final 71000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	33.00 ft			
Tool Length:	53.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Change Over Sub	1.00			4058.00	
Shut In Tool	5.00			4063.00	
Hydraulic tool	5.00			4068.00	
Packer	5.00			4073.00	20.00 Bottom Of Top Packer
Packer	4.00			4077.00	
Stubb	1.00			4078.00	
Recorder	0.00	8018	Inside	4078.00	
Recorder	0.00	6751	Outside	4078.00	
Perforations	29.00			4107.00	
Bullnose	3.00			4110.00	33.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>53.00</b>				





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co.

**S4-13s-32w Logan,KS**

250 N. Water Suite 300  
Wichita, KS 67202

**Kuhn #1-4**

Job Ticket: 51749

**DST#: 2**

ATTN: Tom Funk

Test Start: 2013.05.28 @ 11:50:00

## 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: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.98 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
58.00	SOCM 1o 99m	0.285

Total Length: 58.00 ft      Total Volume: 0.285 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

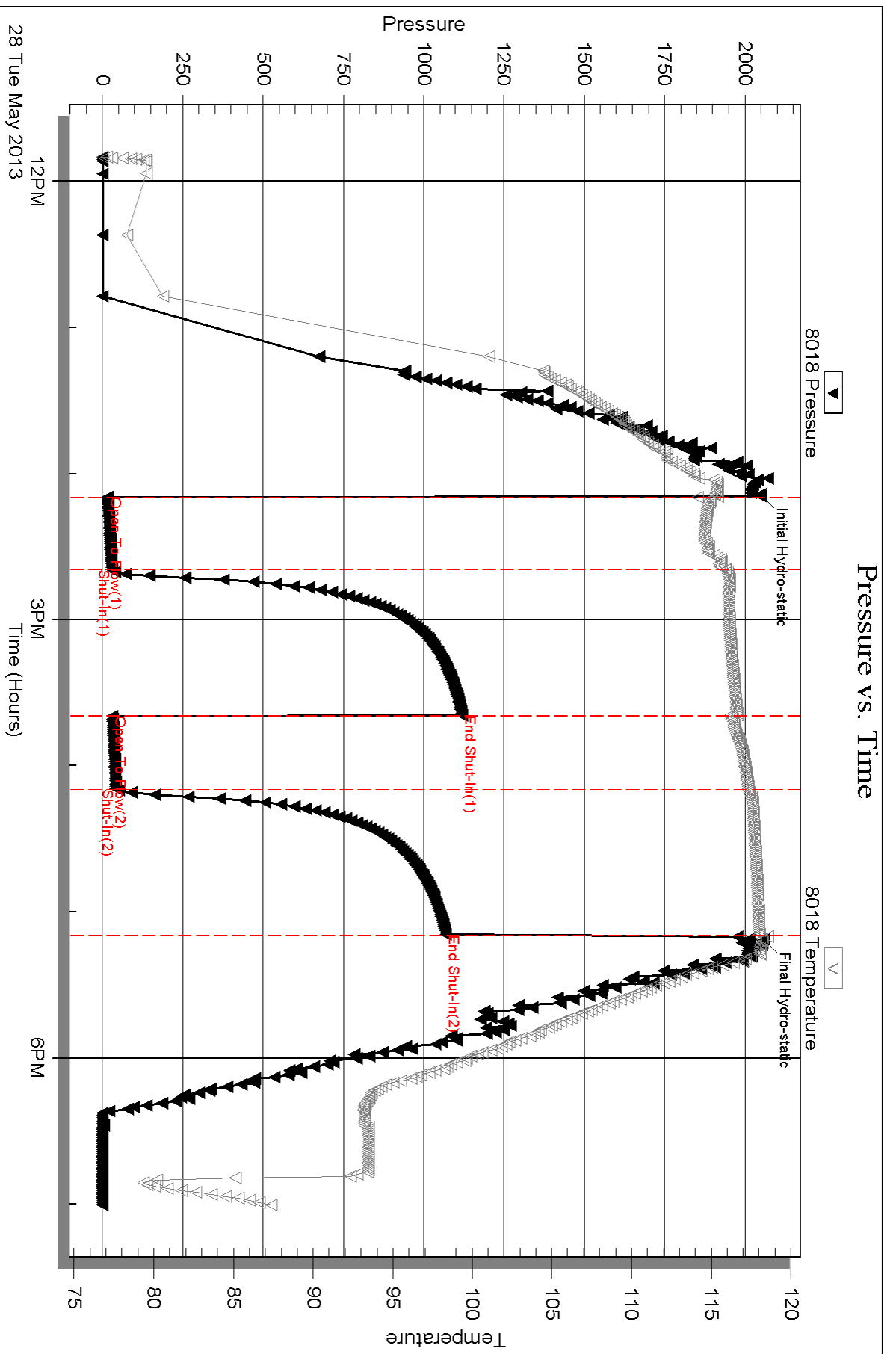
Serial #: 8018

Inside

Murfin Drilling Co.

Kuhn #1-4

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 51749

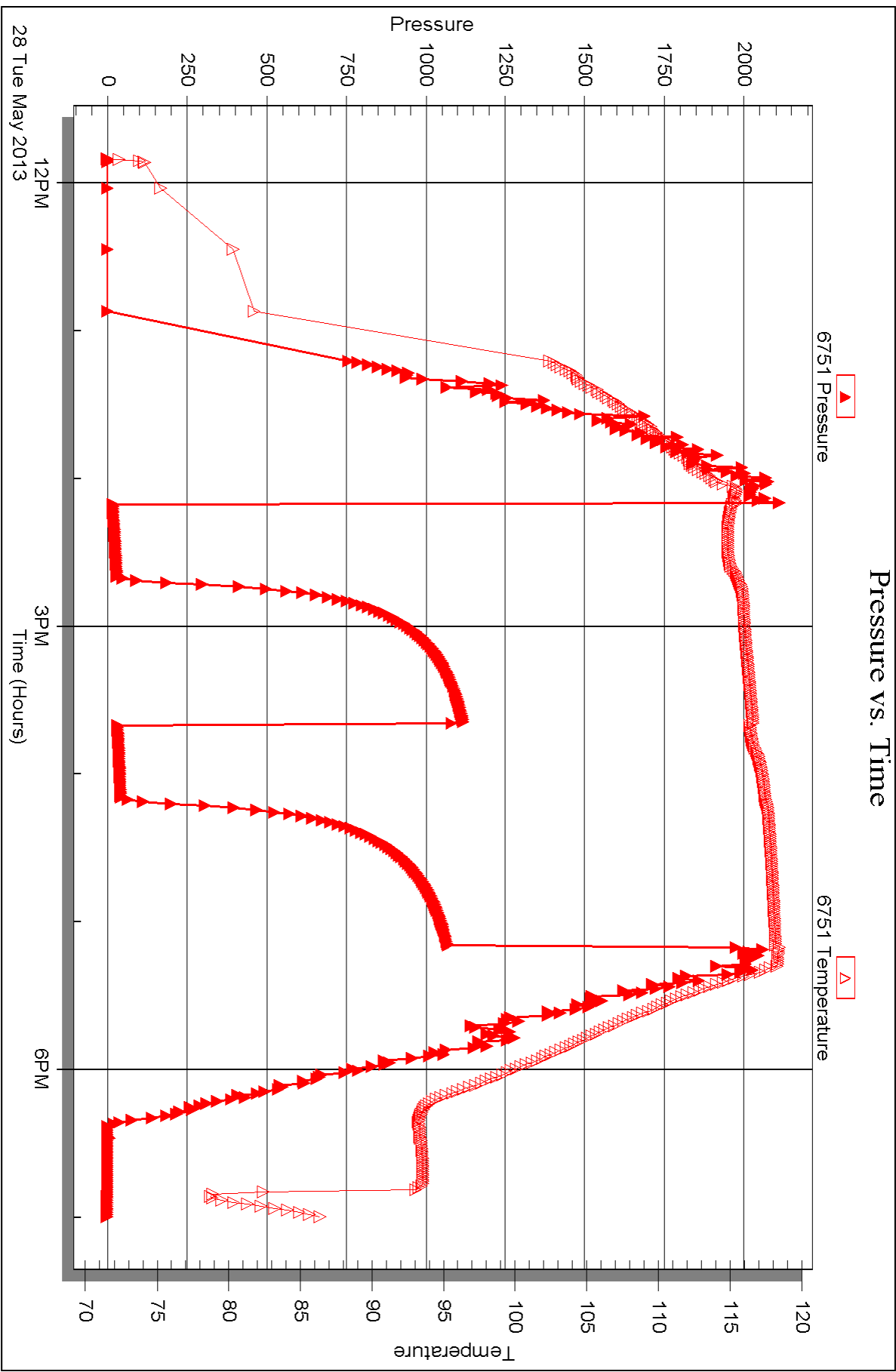
Printed: 2013.06.06 @ 11:52:11

Serial #: 6751

Outside Murfin Drilling Co.

Kuhn #1-4

DST Test Number: 2





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Suite 300  
Wichita, KS 67202

ATTN: Tom Funk

**Kuhn #1-4**

**S4-13s-32w Logan,KS**

Start Date: 2013.05.29 @ 11:13:00

End Date: 2013.05.30 @ 11:13:50

Job Ticket #: 51750                      DST #: 3

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

Printed: 2013.06.06 @ 11:51:28



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co.  
 250 N. Water Suite 300  
 Wichita, KS 67202  
 ATTN: Tom Funk

**S4-13s-32w Logan,KS**  
**Kuhn #1-4**  
 Job Ticket: 51750      **DST#: 3**  
 Test Start: 2013.05.29 @ 11:13:00

## GENERAL INFORMATION:

Formation: **Lansing 'I - J'**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 13:13:10  
 Time Test Ended: 11:13:50  
 Interval: **4175.00 ft (KB) To 4230.00 ft (KB) (TVD)**  
 Total Depth: 4230.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Chuck Smith  
 Unit No: 62  
 Reference Elevations: 3022.00 ft (KB)  
 3011.00 ft (CF)  
 KB to GR/CF: 11.00 ft

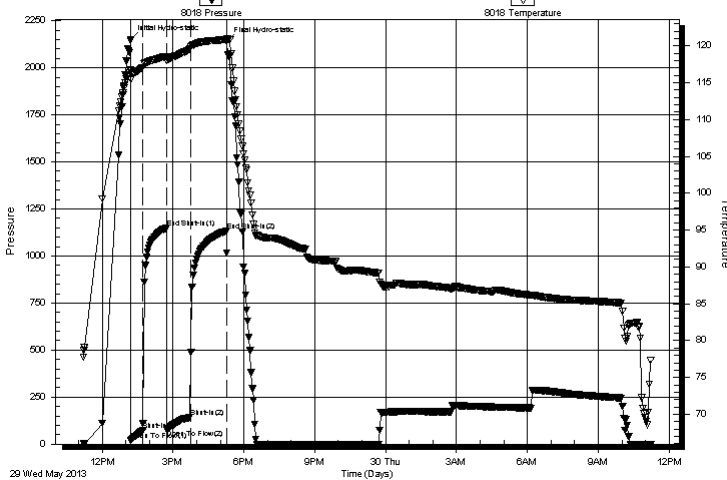
## Serial #: 8018

Inside

Press @ RunDepth: 141.79 psig @ 4176.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2013.05.29      End Date: 2013.05.30      Last Calib.: 2013.05.30  
 Start Time: 11:13:02      End Time: 11:13:50      Time On Btm: 2013.05.29 @ 13:12:00  
 Time Off Btm: 2013.05.29 @ 17:17:00

TEST COMMENT: 4 1/2" Blow .  
 No return.  
 4" Blow .  
 No return.

Pressure vs. Time



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2151.58	116.69	Initial Hydro-static
2	19.92	115.50	Open To Flow (1)
32	72.82	117.06	Shut-In(1)
92	1150.11	118.56	End Shut-In(1)
93	78.86	117.95	Open To Flow (2)
153	141.79	119.59	Shut-In(2)
244	1133.89	120.85	End Shut-In(2)
245	2140.38	121.01	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
58.00	OSWM 10w 90m	0.29
197.00	M 100m	1.15

\* 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.

**S4-13s-32w Logan,KS**

250 N. Water Suite 300  
Wichita, KS 67202

**Kuhn #1-4**

Job Ticket: 51750

**DST#: 3**

ATTN: Tom Funk

Test Start: 2013.05.29 @ 11:13:00

## Tool Information

Drill Pipe:	Length: 3945.00 ft	Diameter: 3.80 inches	Volume: 55.34 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 235.00 ft	Diameter: 2.25 inches	Volume: 1.16 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 56.50 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	32.50 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4175.00 ft			Final 73000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	55.00 ft			
Tool Length:	82.50 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			4148.50	
Shut In Tool	5.00			4153.50	
Hydraulic tool	5.00			4158.50	
Jars	5.00			4163.50	
Safety Joint	2.50			4166.00	
Packer	5.00			4171.00	27.50 Bottom Of Top Packer
Packer	4.00			4175.00	
Stubb	1.00			4176.00	
Recorder	0.00	8018	Inside	4176.00	
Recorder	0.00	6751	Outside	4176.00	
Perforations	18.00			4194.00	
Change Over Sub	1.00			4195.00	
Drill Pipe	31.00			4226.00	
Change Over Sub	1.00			4227.00	
Bullnose	3.00			4230.00	55.00 Bottom Packers & Anchor

**Total Tool Length: 82.50**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co.

**S4-13s-32w Logan,KS**

250 N. Water Suite 300  
Wichita, KS 67202

**Kuhn #1-4**

Job Ticket: 51750

**DST#: 3**

ATTN: Tom Funk

Test Start: 2013.05.29 @ 11:13:00

## 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:

42000 ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.77 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2600.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
58.00	OSWM 10w 90m	0.285
197.00	M 100m	1.151

Total Length: 255.00 ft      Total Volume: 1.436 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .170 @ 73 Degrees F = 42000 PPM



Serial #: 8018

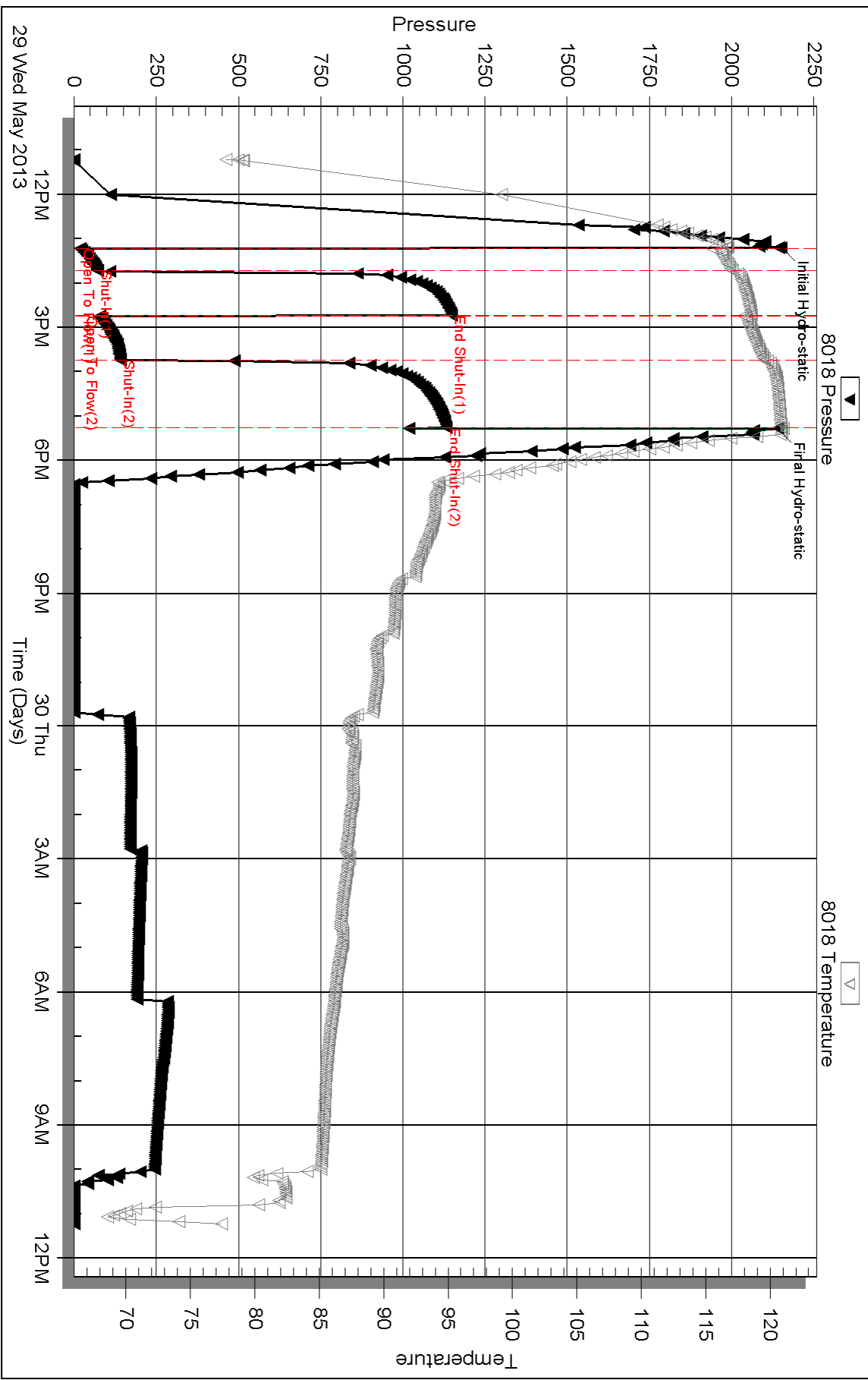
Inside

Murfin Drilling Co.

Kuhn #1-4

DST Test Number: 3

# Pressure vs. Time

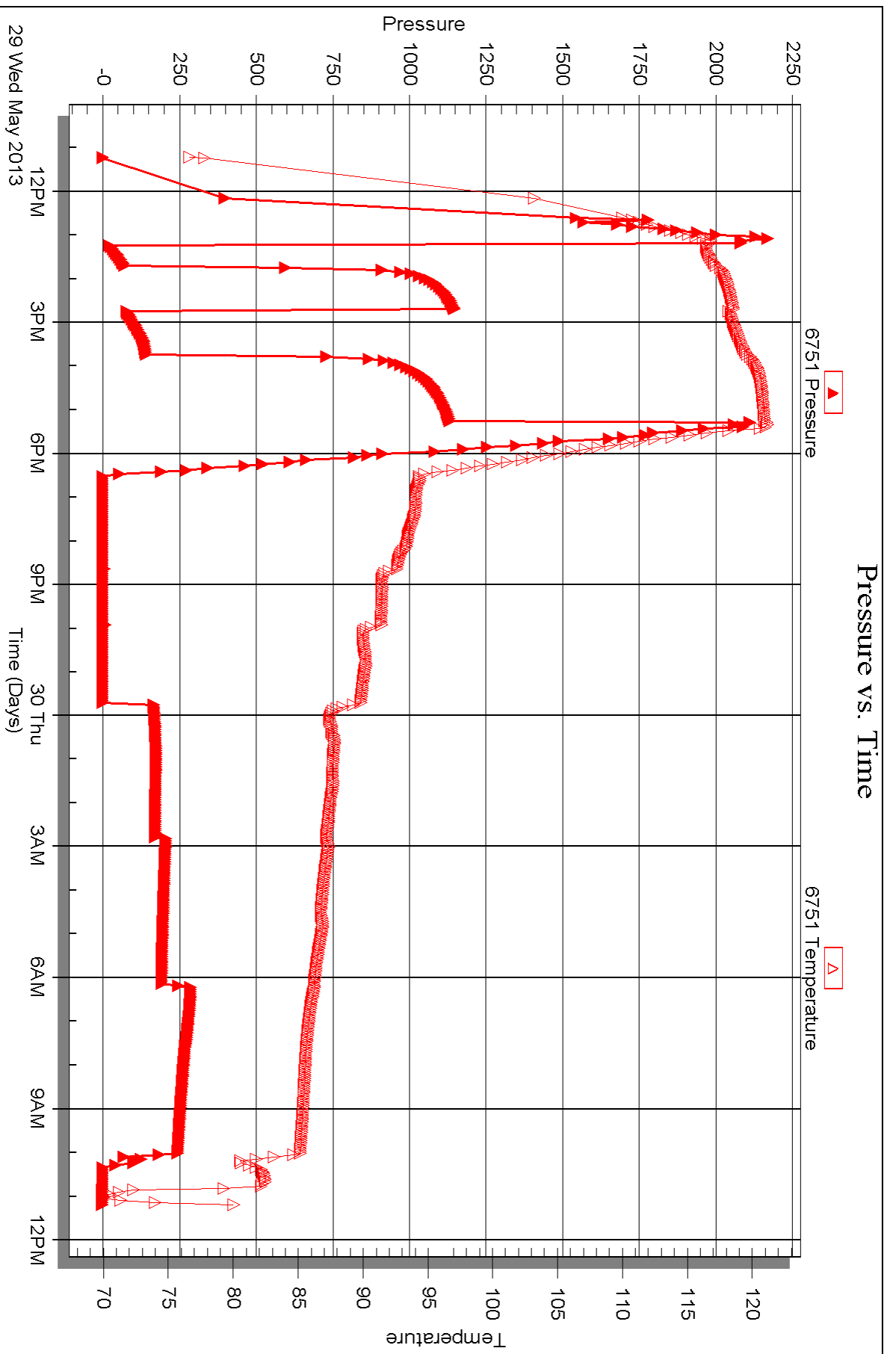


Serial #: 6751

Outside Murfin Drilling Co.

Kuhn #1-4

DST Test Number: 3





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Suite 300  
Wichita, KS 67202

ATTN: Tom Funk

**Kuhn #1-4**

**S4-13s-32w Logan,KS**

Start Date: 2013.05.30 @ 10:07:00

End Date: 2013.05.30 @ 19:22:40

Job Ticket #: 51752                      DST #: 4

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

Printed: 2013.06.06 @ 11:48:45



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co.  
250 N. Water Suite 300  
Wichita, KS 67202  
ATTN: Tom Funk

**S4-13s-32w Logan,KS**

**Kuhn #1-4**

Job Ticket: 51752

**DST#: 4**

Test Start: 2013.05.30 @ 10:07:00

## GENERAL INFORMATION:

Formation: **Lansing 'K- L'**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 12:31:00  
 Tester: Chuck Smith  
 Time Test Ended: 19:22:40  
 Unit No: 62  
 Interval: **4230.00 ft (KB) To 4295.00 ft (KB) (TVD)**  
 Reference Elevations: 3022.00 ft (KB)  
 Total Depth: 4295.00 ft (KB) (TVD)  
 3011.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Good  
 KB to GR/CF: 11.00 ft

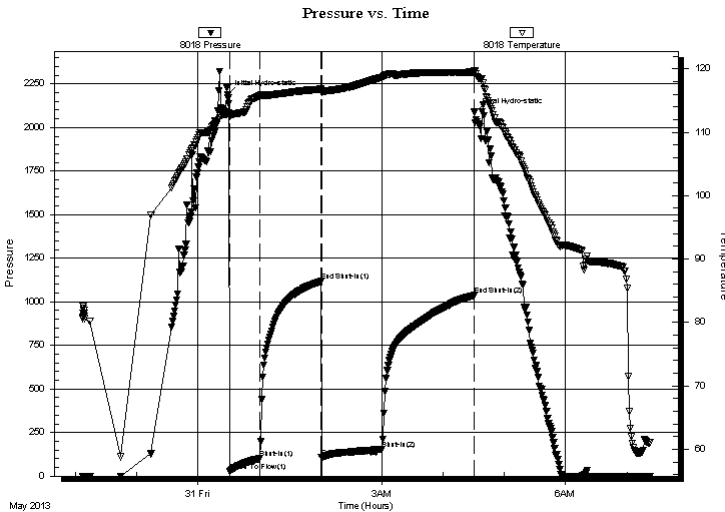
## Serial #: 8018

Inside

Press @ RunDepth: 154.19 psig @ 4234.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.05.30 End Date: 2013.05.31 Last Calib.: 2013.05.31  
 Start Time: 22:07:02 End Time: 07:22:40 Time On Btm: 2013.05.31 @ 00:29:00  
 Time Off Btm: 2013.05.31 @ 04:30:50

TEST COMMENT: 7" Blow .  
 No return.  
 6" Blow .  
 No return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2186.14	112.97	Initial Hydro-static
2	27.46	112.49	Open To Flow (1)
32	102.32	115.87	Shut-In(1)
92	1117.97	116.80	End Shut-In(1)
92	108.08	116.28	Open To Flow (2)
152	154.19	118.68	Shut-In(2)
242	1037.12	119.47	End Shut-In(2)
242	2087.45	119.76	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
117.00	OSWM 20w 80m	0.58
183.00	OSM 100m	1.49

\* 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.

**S4-13s-32w Logan,KS**

250 N. Water Suite 300  
Wichita, KS 67202

**Kuhn #1-4**

Job Ticket: 51752

**DST#: 4**

ATTN: Tom Funk

Test Start: 2013.05.30 @ 10:07:00

## Tool Information

Drill Pipe:	Length: 3977.00 ft	Diameter: 3.80 inches	Volume: 55.79 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 235.00 ft	Diameter: 2.25 inches	Volume: 1.16 bbl	Weight to Pull Loose: 85000.00 lb
			<u>Total Volume: 56.95 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	9.50 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4230.00 ft			Final 71000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	65.00 ft			
Tool Length:	92.50 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			4203.50	
Shut In Tool	5.00			4208.50	
Hydraulic tool	5.00			4213.50	
Jars	5.00			4218.50	
Safety Joint	2.50			4221.00	
Packer	5.00			4226.00	27.50 Bottom Of Top Packer
Packer	4.00			4230.00	
Stubb	1.00			4231.00	
Perforations	3.00			4234.00	
Recorder	0.00	8018	Inside	4234.00	
Recorder	0.00	6751	Outside	4234.00	
Perforations	25.00			4259.00	
Change Over Sub	1.00			4260.00	
Drill Pipe	31.00			4291.00	
Change Over Sub	1.00			4292.00	
Bullnose	3.00			4295.00	65.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>92.50</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co.

**S4-13s-32w Logan,KS**

250 N. Water Suite 300  
Wichita, KS 67202

**Kuhn #1-4**

Job Ticket: 51752

**DST#: 4**

ATTN: Tom Funk

Test Start: 2013.05.30 @ 10:07:00

## 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:

63000 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3200.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
117.00	OSWM 20w 80m	0.575
183.00	OSM 100m	1.492

Total Length: 300.00 ft      Total Volume: 2.067 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .175 @ 50 Degrees F = 63000 PPM

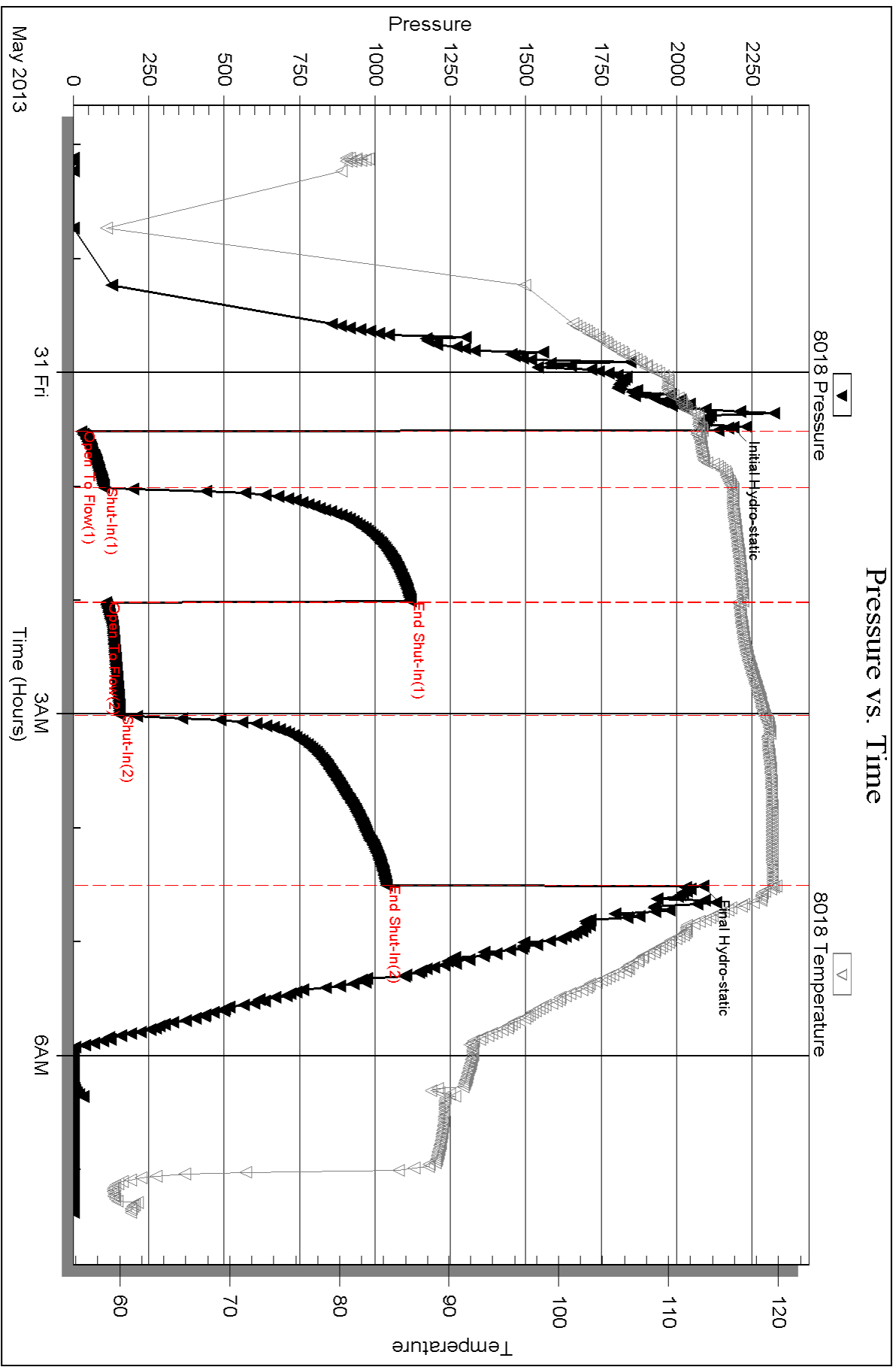
Serial #: 8018

Inside

Murfin Drilling Co.

Kuhn #1-4

DST Test Number: 4



Triobite Testing, Inc

Ref. No: 51752

Printed: 2013.06.06 @ 11:48:48

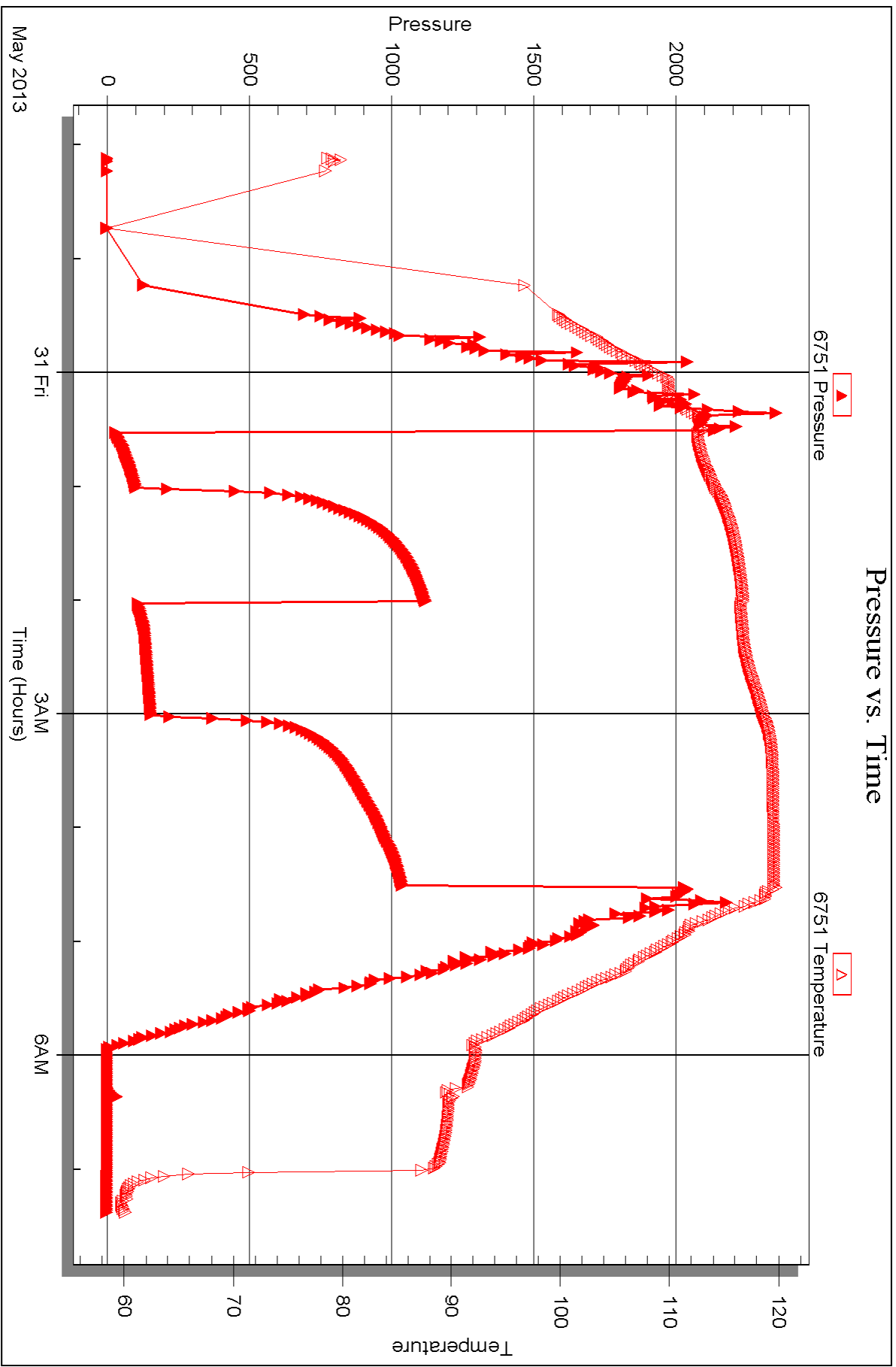


Serial #: 6751

Outside Murfin Drilling Co.

Kuhn #1-4

DST Test Number: 4





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Suite 300  
Wichita, KS 67202

ATTN: Tom Funk

**Kuhn #1-4**

**S4-13s-32w Logan,KS**

Start Date: 2013.05.31 @ 22:31:00

End Date: 2013.06.01 @ 07:28:40

Job Ticket #: 51753                      DST #: 5

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

Printed: 2013.06.06 @ 11:47:44







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co.

**S4-13s-32w Logan,KS**

250 N. Water Suite 300  
Wichita, KS 67202

**Kuhn #1-4**

Job Ticket: 51753

**DST#: 5**

ATTN: Tom Funk

Test Start: 2013.05.31 @ 22:31:00

## Tool Information

Drill Pipe:	Length: 4042.00 ft	Diameter: 3.80 inches	Volume: 56.70 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 235.00 ft	Diameter: 2.25 inches	Volume: 1.16 bbl	Weight to Pull Loose: 100000.0 lb
			<u>Total Volume: 57.86 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	9.50 ft			String Weight: Initial 71000.00 lb
Depth to Top Packer:	4295.00 ft			Final 73000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	125.00 ft			
Tool Length:	152.50 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Change Over Sub	1.00			4268.50	
Shut In Tool	5.00			4273.50	
Hydraulic tool	5.00			4278.50	
Jars	5.00			4283.50	
Safety Joint	2.50			4286.00	
Packer	5.00			4291.00	27.50 Bottom Of Top Packer
Packer	4.00			4295.00	
Stubb	1.00			4296.00	
Recorder	0.00	8018	Inside	4296.00	
Recorder	0.00	6751	Outside	4296.00	
Perforations	25.00			4321.00	
Change Over Sub	1.00			4322.00	
Drill Pipe	94.00			4416.00	
Change Over Sub	1.00			4417.00	
Bullnose	3.00			4420.00	125.00 Bottom Packers & Anchor

**Total Tool Length: 152.50**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co.

**S4-13s-32w Logan,KS**

250 N. Water Suite 300  
Wichita, KS 67202

**Kuhn #1-4**

Job Ticket: 51753

**DST#: 5**

ATTN: Tom Funk

Test Start: 2013.05.31 @ 22:31:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

26 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
297.00	GMCO 20g 15m 65o	2.025
186.00	GMCO 20g 5m 75o	2.609
31.00	GO 30g 70o	0.435
0.00	1615' GIP	0.000

Total Length: 514.00 ft      Total Volume: 5.069 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

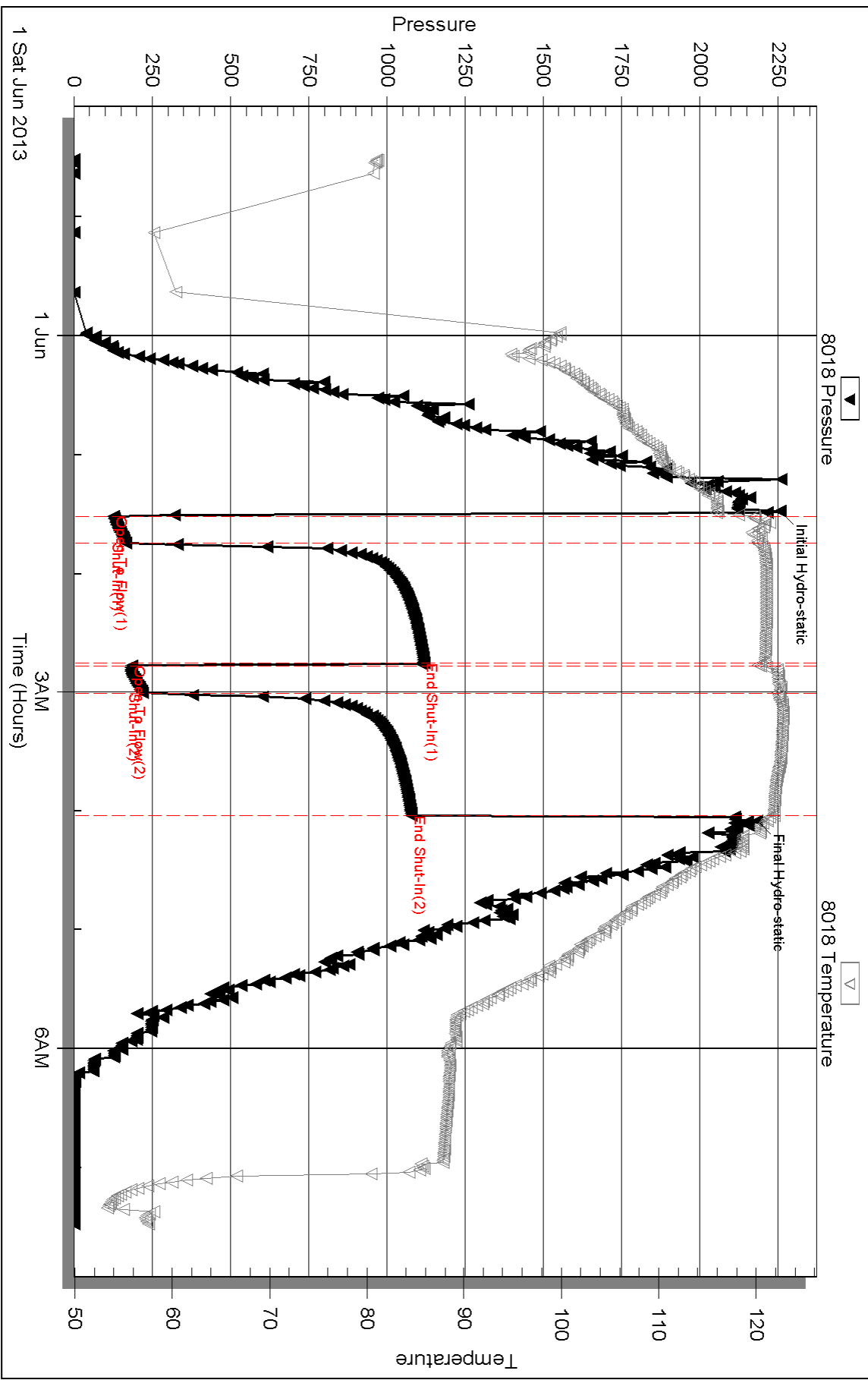
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API: 27 @ 70 Degrees F = 26.

# Pressure vs. Time

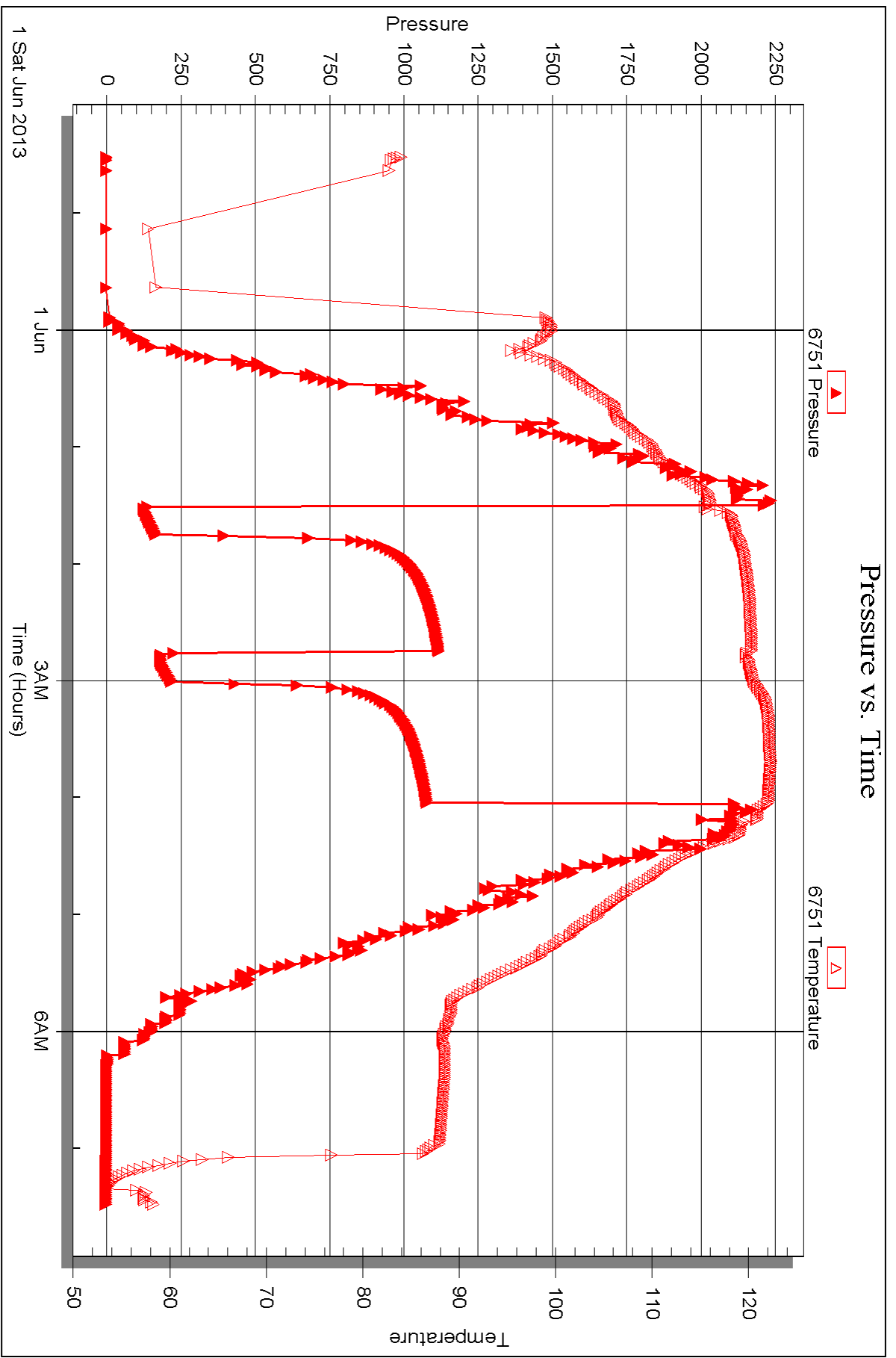


Serial #: 6751

Outside Murfin Drilling Co.

Kuhn #1-4

DST Test Number: 5



Triobite Testing, Inc

Ref. No: 51753

Printed: 2013.06.06 @ 11:47:47





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Suite 300  
Wichita, KS 67202

ATTN: Tom Funk

**Kuhn #1-4**

**S4-13s-32w Logan,KS**

Start Date: 2013.05.31 @ 22:31:00

End Date: 2013.06.01 @ 07:28:40

Job Ticket #: 51753                      DST #: 5

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

Printed: 2013.06.06 @ 11:46:35



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co.  
250 N. Water Suite 300  
Wichita, KS 67202  
ATTN: Tom Funk

**S4-13s-32w Logan,KS**

**Kuhn #1-4**

Job Ticket: 51753

**DST#: 5**

Test Start: 2013.05.31 @ 22:31:00

## GENERAL INFORMATION:

Formation: **Lenapah - Altamont**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:31:00

Time Test Ended: 07:28:40

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

**Interval: 4295.00 ft (KB) To 4420.00 ft (KB) (TVD)**

Reference Elevations: 3022.00 ft (KB)

Total Depth: 4420.00 ft (KB) (TVD)

3011.00 ft (CF)

Hole Diameter: 6.75 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

**Serial #: 8018**

**Inside**

Press @ Run Depth: 219.68 psig @ 4296.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.05.31

End Date:

2013.06.01

Last Calib.:

2013.06.01

Start Time: 22:31:02

End Time:

07:28:40

Time On Btm:

2013.06.01 @ 01:28:20

Time Off Btm:

2013.06.01 @ 04:05:09

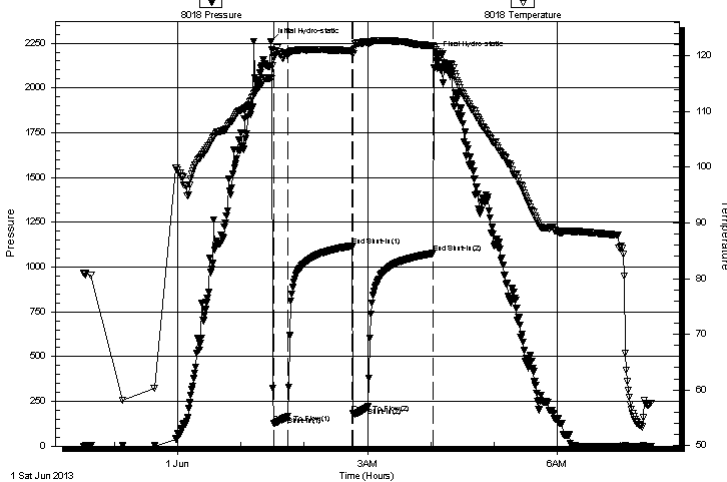
TEST COMMENT: B.O.B. @ 3 min.

10" Blow .

B.O.B. @ 5 1/2 min.

B.O.B. @ 32 min.

Pressure vs. Time



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2256.20	116.10	Initial Hydro-static
3	126.26	119.83	Open To Flow (1)
17	165.46	120.13	Shut-In(1)
77	1117.68	120.91	End Shut-In(1)
79	183.31	120.44	Open To Flow (2)
93	219.68	122.22	Shut-In(2)
155	1077.16	121.85	End Shut-In(2)
157	2182.86	121.16	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
297.00	GMCO 20g 15m 65o	2.03
186.00	GMCO 20g 5m 75o	2.61
31.00	GO 30g 70o	0.43
0.00	1615' GIP	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.

**S4-13s-32w Logan,KS**

250 N. Water Suite 300  
Wichita, KS 67202

**Kuhn #1-4**

Job Ticket: 51753

**DST#: 5**

ATTN: Tom Funk

Test Start: 2013.05.31 @ 22:31:00

## Tool Information

Drill Pipe:	Length: 4042.00 ft	Diameter: 3.80 inches	Volume: 56.70 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 235.00 ft	Diameter: 2.25 inches	Volume: 1.16 bbl	Weight to Pull Loose: 100000.0 lb
			<u>Total Volume: 57.86 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	9.50 ft			String Weight: Initial 71000.00 lb
Depth to Top Packer:	4295.00 ft			Final 73000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	125.00 ft			
Tool Length:	152.50 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			4268.50	
Shut In Tool	5.00			4273.50	
Hydraulic tool	5.00			4278.50	
Jars	5.00			4283.50	
Safety Joint	2.50			4286.00	
Packer	5.00			4291.00	27.50 Bottom Of Top Packer
Packer	4.00			4295.00	
Stubb	1.00			4296.00	
Recorder	0.00	8018	Inside	4296.00	
Recorder	0.00	6751	Outside	4296.00	
Perforations	25.00			4321.00	
Change Over Sub	1.00			4322.00	
Drill Pipe	94.00			4416.00	
Change Over Sub	1.00			4417.00	
Bullnose	3.00			4420.00	125.00 Bottom Packers & Anchor

**Total Tool Length: 152.50**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co.

**S4-13s-32w Logan,KS**

250 N. Water Suite 300  
Wichita, KS 67202

**Kuhn #1-4**

Job Ticket: 51753

**DST#: 5**

ATTN: Tom Funk

Test Start: 2013.05.31 @ 22:31:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

26 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
297.00	GMCO 20g 15m 65o	2.025
186.00	GMCO 20g 5m 75o	2.609
31.00	GO 30g 70o	0.435
0.00	1615' GIP	0.000

Total Length: 514.00 ft      Total Volume: 5.069 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

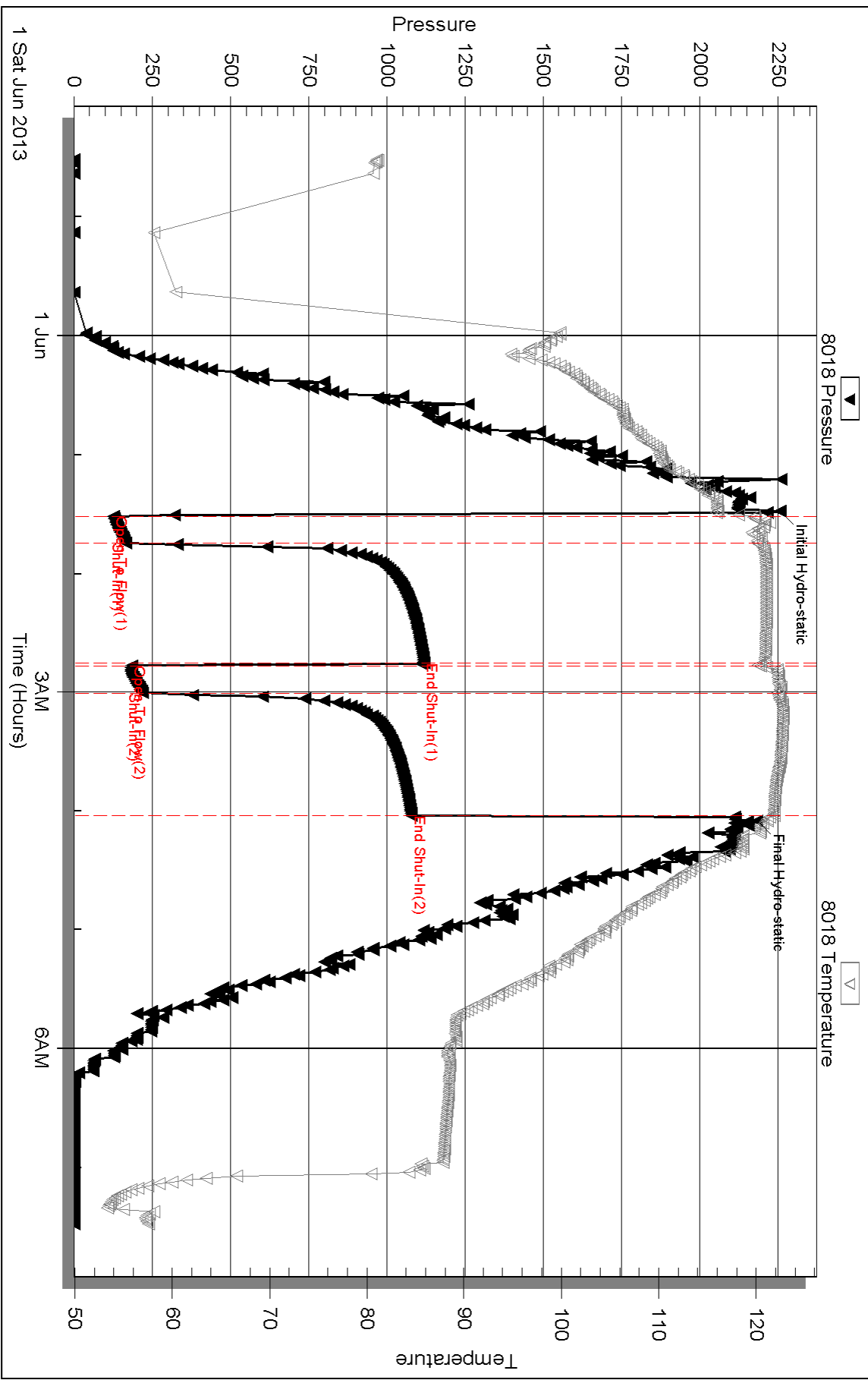
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API: 27 @ 70 Degrees F = 26.

# Pressure vs. Time

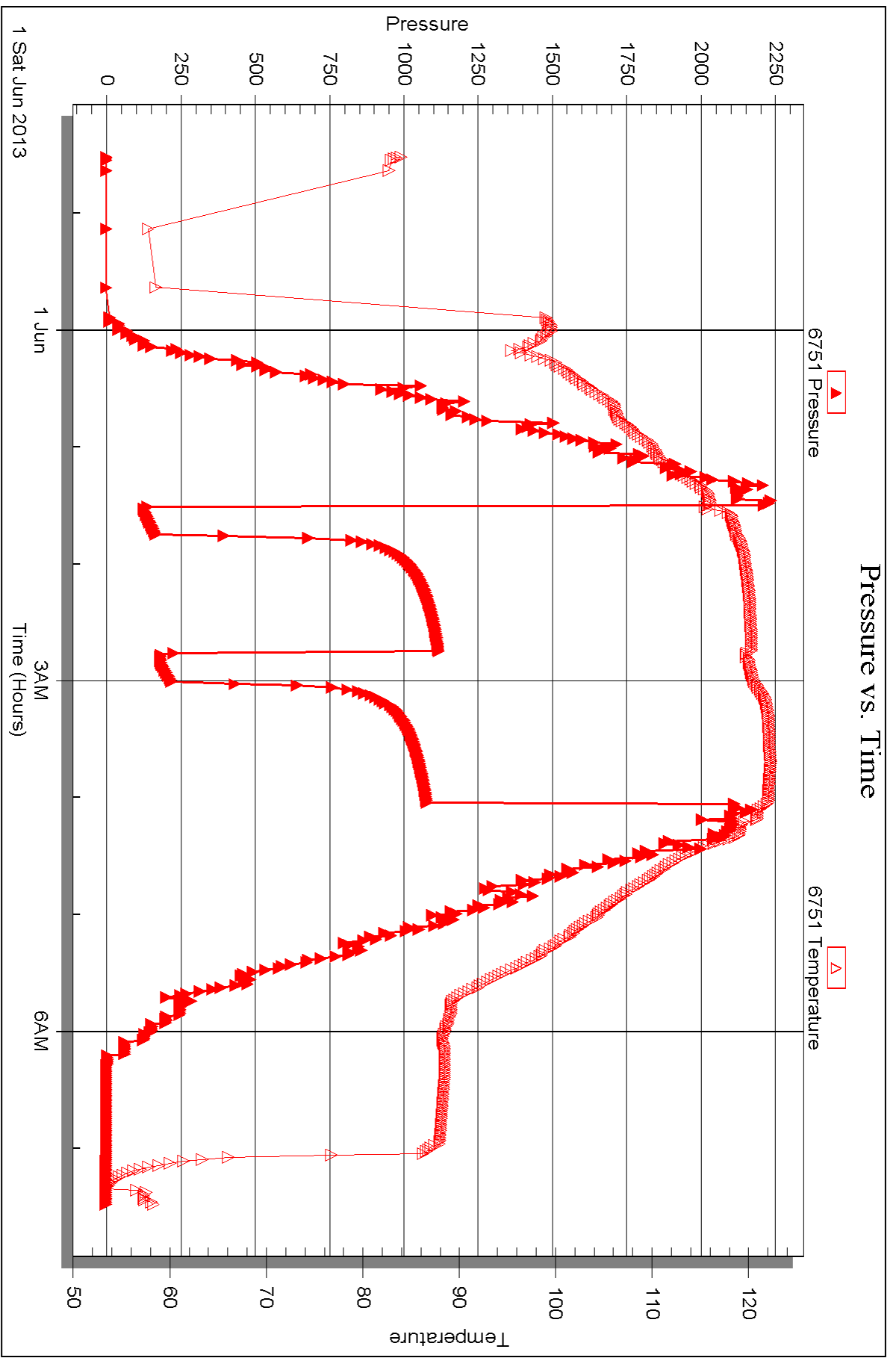


Serial #: 6751

Outside Murfin Drilling Co.

Kuhn #1-4

DST Test Number: 5





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Suite 300  
Wichita, KS 67202

ATTN: Tom Funk

**Kuhn #1-4**

**S4-13s-32w Logan,KS**

Start Date: 2013.06.02 @ 19:36:00

End Date: 2013.06.03 @ 03:15:20

Job Ticket #: 51755                      DST #: 7

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

Printed: 2013.06.06 @ 11:44:59

Murfin Drilling Co. S4-13s-32w Logan,KS Kuhn #1-4 DST # 7 Johnson 2013.06.02





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co.  
250 N. Water Suite 300  
Wichita, KS 67202  
ATTN: Tom Funk

**S4-13s-32w Logan,KS**

**Kuhn #1-4**

Job Ticket: 51755

**DST#: 7**

Test Start: 2013.06.02 @ 19:36:00

## GENERAL INFORMATION:

Formation: **Johnson**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 21:47:20  
 Time Test Ended: 03:15:20  
 Interval: **4532.00 ft (KB) To 4581.00 ft (KB) (TVD)**  
 Total Depth: 4581.00 ft (KB) (TVD)  
 Hole Diameter: 6.75 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Chuck Smith  
 Unit No: 62  
 Reference Elevations: 3022.00 ft (KB)  
 3011.00 ft (CF)  
 KB to GR/CF: 11.00 ft

## Serial #: 8018

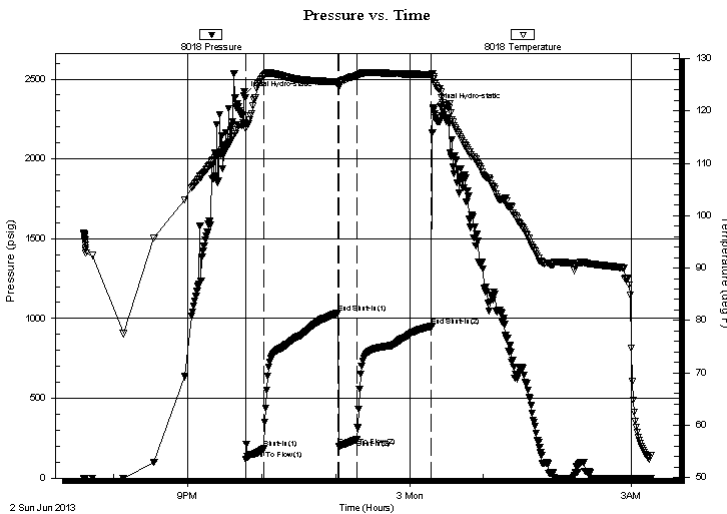
Inside

Press @ Run Depth: 241.52 psig @ 4533.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.06.02 End Date: 2013.06.03 Last Calib.: 2013.06.03  
 Start Time: 19:36:02 End Time: 03:15:19 Time On Btm: 2013.06.02 @ 21:45:50  
 Time Off Btm: 2013.06.03 @ 00:19:20

TEST COMMENT: B.O.B. @ 4 1/2 min.  
 B.O.B. @ 16 min.  
 B.O.B. @ 7 min.  
 B.O.B. @ 33 min.

## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2397.00	117.35	Initial Hydro-static
2	118.99	116.63	Open To Flow (1)
17	185.39	126.78	Shut-In(1)
77	1034.98	125.53	End Shut-In(1)
77	199.32	124.68	Open To Flow (2)
92	241.52	126.66	Shut-In(2)
152	951.17	126.96	End Shut-In(2)
154	2319.44	126.50	Final Hydro-static



## Recovery

Length (ft)	Description	Volume (bbl)
235.00	GOCM 15g 35o 50m	1.16
124.00	GMCO 40g 25m35o	1.74
62.00	GMCO 30g 5m 65o	0.87
124.00	GO 50g 50o	1.74
0.00	1178' 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.

**S4-13s-32w Logan,KS**

250 N. Water Suite 300  
Wichita, KS 67202

**Kuhn #1-4**

Job Ticket: 51755

**DST#: 7**

ATTN: Tom Funk

Test Start: 2013.06.02 @ 19:36:00

## Tool Information

Drill Pipe:	Length: 4292.00 ft	Diameter: 3.80 inches	Volume: 60.21 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 235.00 ft	Diameter: 2.25 inches	Volume: 1.16 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 61.37 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.50 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4532.00 ft			Final 74000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	49.00 ft			
Tool Length:	76.50 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Change Over Sub	1.00			4505.50	
Shut In Tool	5.00			4510.50	
Hydraulic tool	5.00			4515.50	
Jars	5.00			4520.50	
Safety Joint	2.50			4523.00	
Packer	5.00			4528.00	27.50 Bottom Of Top Packer
Packer	4.00			4532.00	
Stubb	1.00			4533.00	
Recorder	0.00	8018	Inside	4533.00	
Recorder	0.00	6751	Outside	4533.00	
Perforations	12.00			4545.00	
Change Over Sub	1.00			4546.00	
Drill Pipe	31.00			4577.00	
Change Over Sub	1.00			4578.00	
Bullnose	3.00			4581.00	49.00 Bottom Packers & Anchor

**Total Tool Length: 76.50**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co.

**S4-13s-32w Logan,KS**

250 N. Water Suite 300  
Wichita, KS 67202

**Kuhn #1-4**

Job Ticket: 51755

**DST#: 7**

ATTN: Tom Funk

Test Start: 2013.06.02 @ 19:36:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

28 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3900.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
235.00	GOCM 15g 35o 50m	1.156
124.00	GMCO 40g 25m35o	1.739
62.00	GMCO 30g 5m 65o	0.870
124.00	GO 50g 50o	1.739
0.00	1178' GIP	0.000

Total Length: 545.00 ft      Total Volume: 5.504 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API: 28 @ 60 Degrees F = 28.

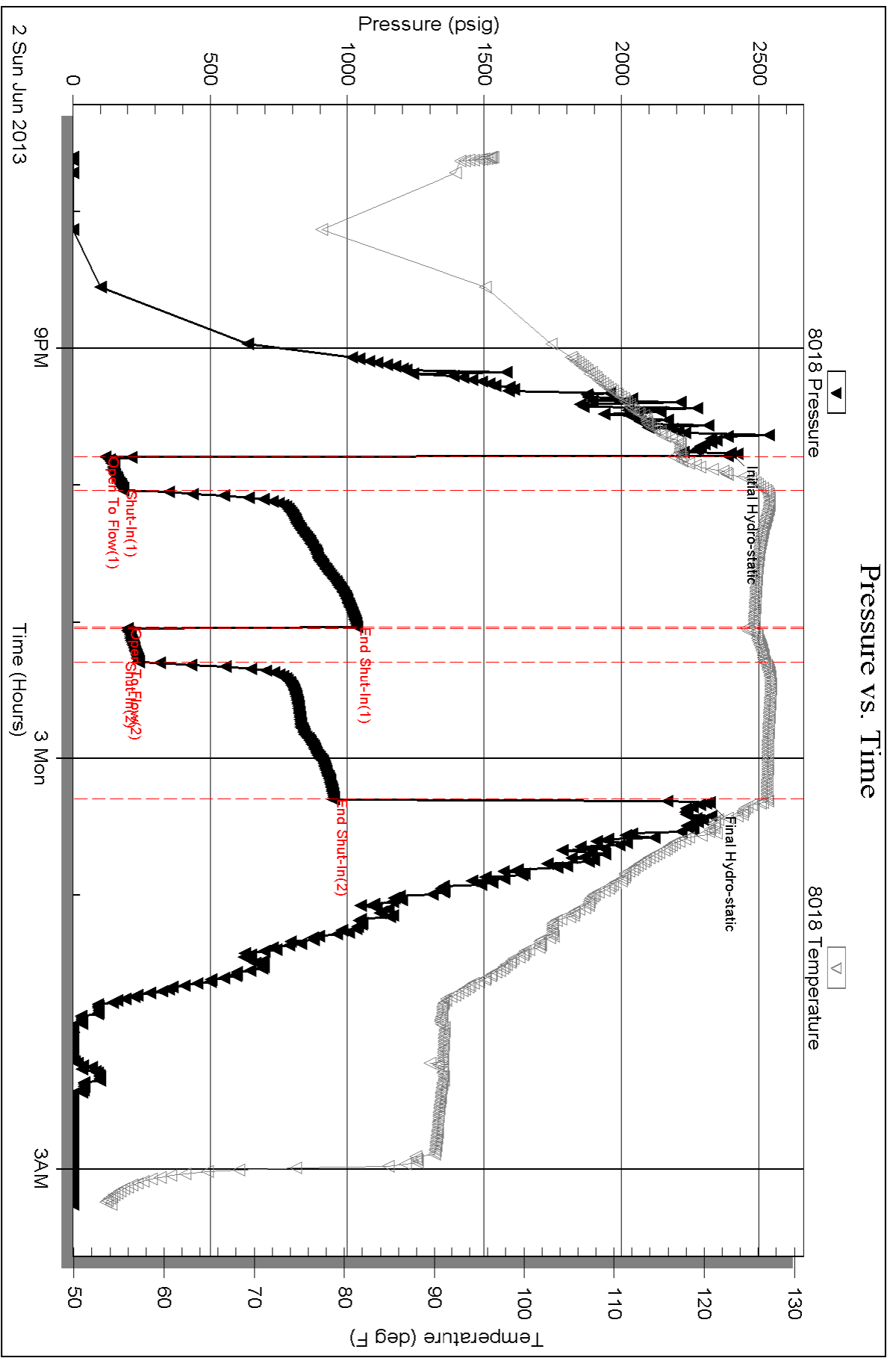
Serial #: 8018

Inside

Murfin Drilling Co.

Kuhn #1-4

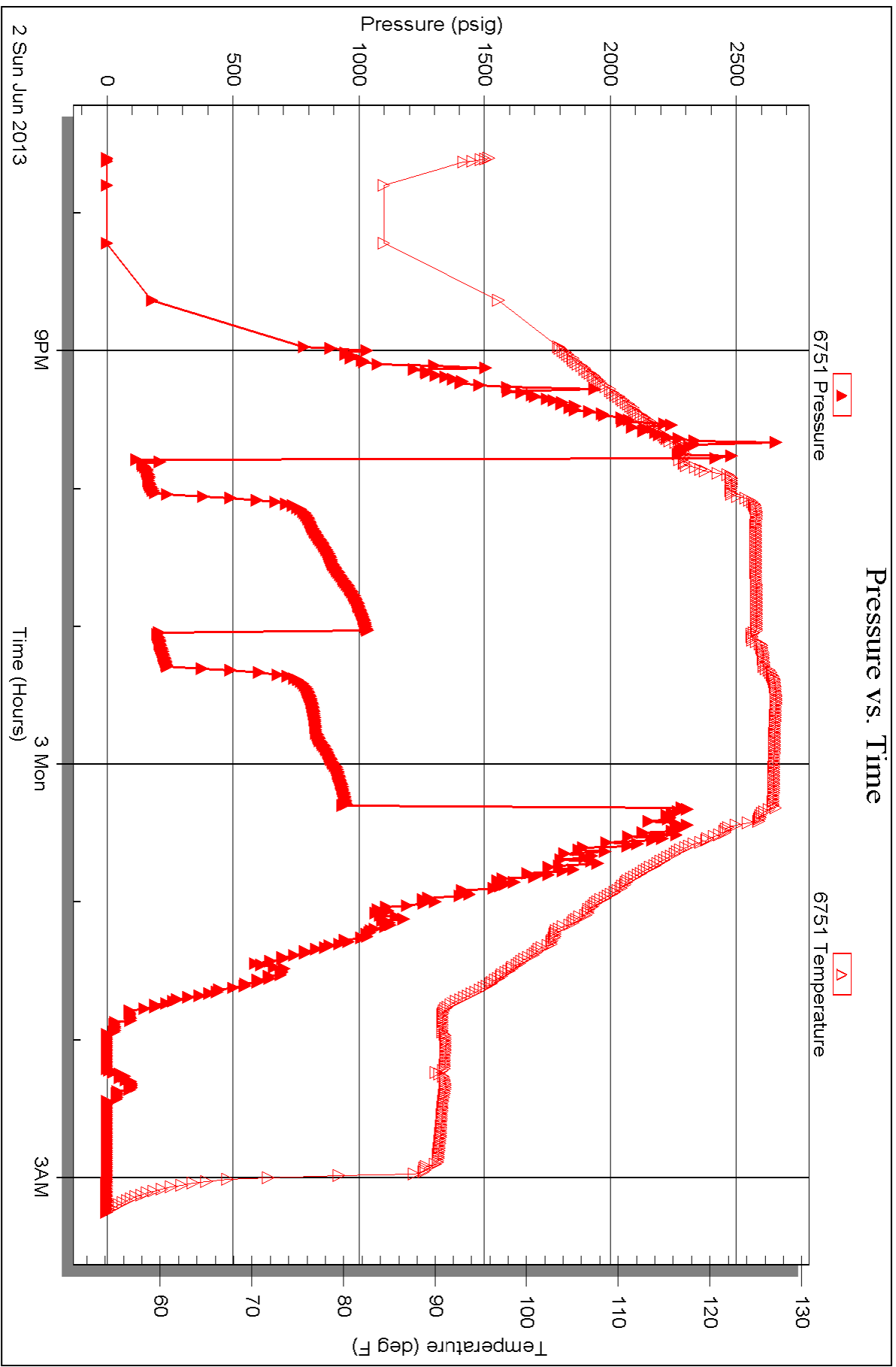
DST Test Number: 7

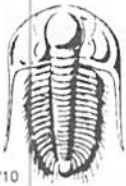


Triobite Testing, Inc

Ref. No: 51755

Printed: 2013.06.06 @ 11:45:02





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 51748

4/10

Well Name & No.	<u>Kuhn #1-4</u>	Test No.	<u>1</u>	Date	<u>5-27-13</u>
Company	<u>Murfin Drilling Co.</u>	Elevation	<u>3022</u>	KB	<u>3011</u> GL
Address	<u>250 N. Water STE 300 Wichita, KS 67202</u>				
Co. Rep / Geo.	<u>Tom Funk</u>	Rig	<u>MDC #22</u>		
Location: Sec.	<u>4</u>	Twp.	<u>13</u>	Rge.	<u>32</u>
		Co.	<u>Logan</u>	State	<u>KS</u>

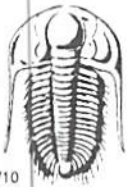
Interval Tested	<u>4027-4050</u>	Zone Tested	<u>Lansing 'B'</u>		
Anchor Length	<u>23</u>	Drill Pipe Run	<u>3792</u>	Mud Wt.	<u>9.3</u>
Top Packer Depth	<u>4023</u>	Drill Collars Run	<u>23.5</u>	Vis	<u>59</u>
Bottom Packer Depth	<u>4027</u>	Wt. Pipe Run	<u>-</u>	WL	<u>6.8</u>
Total Depth	<u>4050</u>	Chlorides	<u>2600</u> ppm System	LCM	<u>6"</u>
Blow Description	<u>6" Blow.</u>				
	<u>No return.</u>				
	<u>11" Blow.</u>				
	<u>No return.</u>				

Rec	<u>5</u>	Feet of	<u>SOCMW</u>	%gas	<u>1</u>	%oil	<u>50</u>	%water	<u>49</u>	%mud
Rec	<u>124</u>	Feet of	<u>MW</u>	%gas		%oil	<u>70</u>	%water	<u>30</u>	%mud
Rec	<u>175</u>	Feet of	<u>MW</u>	%gas		%oil	<u>90</u>	%water	<u>10</u>	%mud
Rec	<u>60</u>	Feet of	<u>OSMW</u>	%gas		%oil	<u>80</u>	%water	<u>20</u>	%mud
Rec		Feet of		%gas		%oil		%water		%mud

Rec Total	<u>364</u>	BHT	<u>122</u>	Gravity	<u>-</u>	API RW	<u>.170</u> @ <u>58</u> °F	Chlorides	<u>54,000</u> ppm
(A) Initial Hydrostatic	<u>2026</u>	<input checked="" type="checkbox"/>	Test	<u>1250</u>	T-On Location	<u>17:45</u>			
(B) First Initial Flow	<u>19</u>	<input checked="" type="checkbox"/>	Jars	<u>250</u>	T-Started	<u>18:00</u>			
(C) First Final Flow	<u>99</u>	<input checked="" type="checkbox"/>	Safety Joint	<u>75</u>	T-Open	<u>19:58</u>			
(D) Initial Shut-In	<u>1198</u>	<input checked="" type="checkbox"/>	Circ Sub	<u>N/C</u>	T-Pulled	<u>23:58</u>			
(E) Second Initial Flow	<u>103</u>	<input type="checkbox"/>	Hourly Standby		T-Out	<u>1:54</u>			
(F) Second Final Flow	<u>183</u>	<input checked="" type="checkbox"/>	Mileage	<u>76RT</u> 117.80	Comments				
(G) Final Shut-In	<u>1193</u>	<input type="checkbox"/>	Sampler						
(H) Final Hydrostatic	<u>2014</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>60</u>	<input type="checkbox"/>	Extra Recorder		Sub Total	<u>0</u>			
Final Shut-In	<u>90</u>	<input type="checkbox"/>	Day Standby		Total	<u>1692.80</u>			
		<input type="checkbox"/>	Accessibility		MP/DST Disc't				
		Sub Total	<u>1692.80</u>						

Approved By [Signature] Our Representative Chuck Smith

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. 51749

4/10

Well Name & No. Kuhn #1-4 Test No. 2 Date 5-28-13  
 Company Murfin Drilling Co. Elevation 3022 KB 3011 GL  
 Address 250 N. Water STE 300 Wichita, KS 67202  
 Co. Rep / Geo. Tom Funk Rig MDC #22  
 Location: Sec. 4 Twp. 13 Rge. 32 Co. Logan State Ks

Interval Tested 4077 - 4110 Zone Tested Lang Lansing 'E-F'  
 Anchor Length 33 Drill Pipe Run 3853 Mud Wt. 9.1  
 Top Packer Depth 4073 Drill Collars Run 235 Vis 60  
 Bottom Packer Depth 4077 Wt. Pipe Run - WL 6.0  
 Total Depth 4110 Chlorides 3000 ppm System LCM 4#  
 Blow Description 3/4" Blow.  
No return.  
No blow.  
No return.

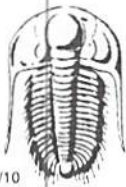
Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>58</u>	Feet of <u>SOCM</u>		<u>1</u>		<u>99</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 58 BHT 118 Gravity - API RW @ - °F Chlorides - ppm  
 (A) Initial Hydrostatic 2049  Test 1250 T-On Location 11:30  
 (B) First Initial Flow 16  Jars T-Started 11:50  
 (C) First Final Flow 29  Safety Joint T-Open 14:10  
 (D) Initial Shut-In 1121  Circ Sub N/C T-Pulled 17:10  
 (E) Second Initial Flow 31  Hourly Standby T-Out 19:00  
 (F) Second Final Flow 42  Mileage 76RT 117.80 Comments  
 (G) Final Shut-In 1070  Sampler  
 (H) Final Hydrostatic 2059  Straddle  Ruined Shale Packer  
 Shale Packer  Ruined Packer  
 Extra Packer  Extra Copies  
 Initial Open 30  Extra Recorder Sub Total 0  
 Initial Shut-In 60  Day Standby Total 1367.80  
 Final Flow 30  Accessibility MP/DST Disc't  
 Final Shut-In 60 Sub Total 1367.80

Approved By [Signature] Our Representative Chuck Smith

Trilobite Testing Inc. shall not be liable for damages 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. 51750

4/10

Well Name & No.	<u>Kuhn #1-4</u>	Test No.	<u>3</u>	Date	<u>5-29-13</u>
Company	<u>Murfin Drilling Co.</u>	Elevation	<u>3022</u>	KB	<u>3011</u> GL
Address	<u>250 N Water STE 300 Wichita, KS 67202</u>				
Co. Rep / Geo.	<u>Tom Funk</u>	Rig	<u>MDC #22</u>		
Location: Sec.	<u>4</u>	Twp.	<u>13</u>	Rge.	<u>32</u>
		Co.	<u>Logan</u>	State	<u>KS</u>

Interval Tested	<u>4175-4230</u>	Zone Tested	<u>Lansing 'I-J'</u>		
Anchor Length	<u>55</u>	Drill Pipe Run	<u>3945</u>	Mud Wt.	<u>9.2</u>
Top Packer Depth	<u>4171</u>	Drill Collars Run	<u>235</u>	Vis	<u>54</u>
Bottom Packer Depth	<u>4175</u>	Wt. Pipe Run	<u>-</u>	WL	<u>7.2</u>
Total Depth	<u>4230</u>	Chlorides	<u>3200</u> ppm System	LCM	<u>5<sup>#</sup></u>
Blow Description	<u>4 1/2" Blow.</u>				
	<u>No return.</u>				
	<u>4" ReBlow.</u>				
	<u>No return.</u>				

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>197</u>	Feet of <u>M</u>				
Rec <u>58</u>	Feet of <u>OSWM</u>			<u>10</u>	<u>90</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

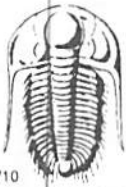
Rec Total 255 BHT 121 Gravity - API RW 170 @ 73 °F Chlorides 42000 ppm

(A) Initial Hydrostatic	<u>2152</u>	<input checked="" type="checkbox"/> Test	<u>1250</u>	T-On Location	<u>11:00</u>
(B) First Initial Flow	<u>20</u>	<input checked="" type="checkbox"/> Jars	<u>250</u>	T-Started	<u>11:13</u>
(C) First Final Flow	<u>73</u>	<input checked="" type="checkbox"/> Safety Joint	<u>75</u>	T-Open	<u>13:13</u>
(D) Initial Shut-In	<u>1150</u>	<input checked="" type="checkbox"/> Circ Sub	<u>NIC</u>	T-Pulled	<u>17:16</u>
(E) Second Initial Flow	<u>79</u>	<input type="checkbox"/> Hourly Standby		T-Out	<u>11:14 5-29-13</u>
(F) Second Final Flow	<u>142</u>	<input checked="" type="checkbox"/> Mileage	<u>76RT x2</u> 235.60	Comments	<u>30</u>
(G) Final Shut-In	<u>1134</u>	<input type="checkbox"/> Sampler		<u>Stopped pulling tool @ 58 stands due to damage to derrick board.</u>	
(H) Final Hydrostatic	<u>2140</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>60</u>	<input type="checkbox"/> Extra Recorder		Sub Total	<u>800</u>
Final Shut-In	<u>90</u>	<input checked="" type="checkbox"/> Day Standby	<u>1d during test</u>	Total	<u>2610.60</u>
		<input type="checkbox"/> Accessibility		MP/DST Disc't	
		Sub Total	<u>1810.60</u>		

Approved By [Signature] Our Representative Chuck Smith

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 51752

4/10

Well Name & No. Kuhn #1-4 Test No. 4 Date 5-30-13  
 Company Murfin Drilling Co. Elevation 3022 KB 3011 GL  
 Address 250 N. Water STE 300 Wichita, KS 67202  
 Co. Rep / Geo. Tom Funk Rig MDC #22  
 Location: Sec. 4 Twp. 13 Rge. 32 Co. Logan State KS

Interval Tested 4230-4295 Zone Tested Lansing 'K-L'  
 Anchor Length 65 Drill Pipe Run 3977 Mud Wt. 9.2  
 Top Packer Depth 4226 Drill Collars Run 235 Vis 55  
 Bottom Packer Depth 4230 Wt. Pipe Run 0 WL 6.8  
 Total Depth 4295 Chlorides 3200 ppm System LCM 6"  
 Blow Description 7" Blow.  
No return  
6" Blow.  
No return.

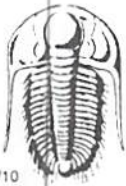
Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>183</u>	Feet of <u>OSM</u>			<u>100</u>	
Rec <u>117</u>	Feet of <u>OSWM</u>		<u>20</u>	<u>80</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 300 BHT 120 Gravity - API RW .175 @ 50 °F Chlorides 63000 ppm

(A) Initial Hydrostatic <u>2186</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>10:00 am</u>
(B) First Initial Flow <u>28</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>22:07</u>
(C) First Final Flow <u>102</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>00:31</u>
(D) Initial Shut-In <u>1118</u>	<input checked="" type="checkbox"/> Circ Sub <u>NK</u>	T-Pulled <u>4:31</u>
(E) Second Initial Flow <u>108</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>7:23</u>
(F) Second Final Flow <u>154</u>	<input checked="" type="checkbox"/> Mileage <u>76RT</u> 117.80	Comments
(G) Final Shut-In <u>1037</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2087</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Open <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u>60</u>	<input type="checkbox"/> Day Standby	Total <u>1692.80</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1692.80</u>	

Approved By Tom Funk Our Representative Chuck Smith

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 51753

4/10

Well Name & No. Kuhn #1-4 Test No. 5 Date 5-31-13  
 Company Murfin Drilling Co. Elevation 3022 KB 3011 GL  
 Address 250 N. Water STE 300 Wichita, KS 67202  
 Co. Rep / Geo. Tom Funk Rig MDC #22  
 Location: Sec. 4 Twp. 13 Rge. 32 Co. Logan State KS

Interval Tested 4295 - 4420 Zone Tested Lenapah - Altamont  
 Anchor Length 125 Drill Pipe Run 4042 Mud Wt. 9.3  
 Top Packer Depth 4291 Drill Collars Run 235 Vis 55  
 Bottom Packer Depth 4295 Wt. Pipe Run - WL 7.6  
 Total Depth 4420 Chlorides 3000 ppm System LCM 5#

Blow Description B.O.B. @ 3 min.  
10" Return.  
B.O.B. @ 5 1/2 min.  
B.O.B. @ 32 min.

Rec	Feet of	%gas	%oil	%water	%mud
<u>31</u>	<u>60</u>	<u>30</u>	<u>70</u>		
<u>186</u>	<u>GMCO</u>	<u>20</u>	<u>75</u>		<u>5</u>
<u>297</u>	<u>GMCO</u>	<u>20</u>	<u>65</u>		<u>15</u>

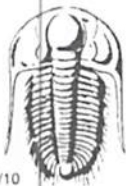
Rec Total 514 BHT 122 Gravity 26 API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic	<u>2256</u>	<input checked="" type="checkbox"/> Test	<u>1250</u>	T-On Location	<u>22:15</u>
(B) First Initial Flow	<u>126</u>	<input checked="" type="checkbox"/> Jars	<u>250</u>	T-Started	<u>22:31</u>
(C) First Final Flow	<u>165</u>	<input checked="" type="checkbox"/> Safety Joint	<u>75</u>	T-Open	<u>1:31</u>
(D) Initial Shut-In	<u>1118</u>	<input checked="" type="checkbox"/> Circ Sub	<u>N/C</u>	T-Pulled	<u>7:03</u>
(E) Second Initial Flow	<u>183</u>	<input type="checkbox"/> Hourly Standby		T-Out	<u>7:29</u>
(F) Second Final Flow	<u>220</u>	<input checked="" type="checkbox"/> Mileage	<u>76RT</u> 117.80	Comments	<u>Some rubber left</u>
(G) Final Shut-In	<u>1077</u>	<input type="checkbox"/> Sampler			<u>in the hole.</u>
(H) Final Hydrostatic	<u>2183</u>	<input type="checkbox"/> Straddle		<input checked="" type="checkbox"/> Ruined Shale Packer	

Initial Open	<u>15</u>	<input type="checkbox"/> Shale Packer		<input checked="" type="checkbox"/> Ruined Packer	<u>320</u>
Initial Shut-In	<u>60</u>	<input type="checkbox"/> Extra Packer		<input type="checkbox"/> Extra Copies	
Final Flow	<u>15</u>	<input type="checkbox"/> Extra Recorder		Sub Total	<u>0</u>
Final Shut-In	<u>60</u>	<input type="checkbox"/> Day Standby		Total	<u>2012.80</u>
		<input type="checkbox"/> Accessibility		MP/DST Disc't	
		Sub Total	<u>1692.80</u>		

Approved By Tom Funk Our Representative Chuck Smith

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 51754

4/10

Well Name & No.	<u>Kuhn # 1-4</u>	Test No.	<u>6</u>	Date	<u>6-1-13</u>
Company	<u>Murfin Drilling Co.</u>	Elevation	<u>3022</u>	KB	<u>3011</u> GL
Address	<u>250 N. Water STE 300 Wichita, KS 67202</u>				
Co. Rep / Geo.	<u>Tom Funk</u>	Rig	<u>MDC #22</u>		
Location: Sec.	<u>4</u>	Twp.	<u>13</u>	Rge.	<u>32</u>
		Co.	<u>Logan</u>	State	<u>KS</u>

Interval Tested	<u>4422 - 4505</u>	Zone Tested	<u>Pawnee - Ft. Scott</u>		
Anchor Length	<u>83</u>	Drill Pipe Run	<u>4167</u>	Mud Wt.	<u>9.2</u>
Top Packer Depth	<u>4418</u>	Drill Collars Run	<u>235</u>	Vis	<u>50</u>
Bottom Packer Depth	<u>4422</u>	Wt. Pipe Run	<u>-</u>	WL	<u>7.6</u>
Total Depth	<u>4505</u>	Chlorides	<u>3600</u> ppm System	LCM	<u>6<sup>#</sup></u>

Blow Description B.O.B. @ 9 min.  
11" Return  
B.O.B. @ 12 min.  
B.O.B. @ 13 min.

Rec	<u>35</u>	Feet of	<u>GOCM</u>	<u>10</u> %gas	<u>20</u> %oil	%water	<u>70</u> %mud
Rec	<u>124</u>	Feet of	<u>GMOO</u>	<u>50</u> %gas	<u>30</u> %oil	%water	<u>20</u> %mud
Rec	<u>180</u>	Feet of	<u>GOCM</u>	<u>45</u> %gas	<u>15</u> %oil	%water	<u>40</u> %mud
Rec	<u>117</u>	Feet of	<u>GOCM</u>	<u>10</u> %gas	<u>35</u> %oil	%water	<u>55</u> %mud
Rec		Feet of	<u>1645 GIP</u>	%gas	%oil	%water	%mud

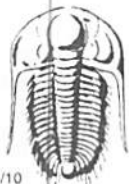
Rec Total 456 BHT 124 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides - ppm

(A) Initial Hydrostatic	<u>2316</u>	<input checked="" type="checkbox"/> Test	<u>1250</u>	T-On Location	<u>23:15</u>
(B) First Initial Flow	<u>64</u>	<input checked="" type="checkbox"/> Jars	<u>250</u>	T-Started	<u>23:27</u>
(C) First Final Flow	<u>148</u>	<input checked="" type="checkbox"/> Safety Joint	<u>75</u>	T-Open	<u>1:48</u>
(D) Initial Shut-In	<u>1088</u>	<input checked="" type="checkbox"/> Circ Sub	<u>NIC</u>	T-Pulled	<u>4:51</u>
(E) Second Initial Flow	<u>154</u>	<input type="checkbox"/> Hourly Standby		T-Out	<u>7:27</u>
(F) Second Final Flow	<u>204</u>	<input checked="" type="checkbox"/> Mileage	<u>76 RT</u> 117.80	Comments	
(G) Final Shut-In	<u>1054</u>	<input type="checkbox"/> Sampler			
(H) Final Hydrostatic	<u>2269</u>	<input type="checkbox"/> Straddle			

Initial Open	<u>30</u>	<input type="checkbox"/> Ruined Shale Packer	
Initial Shut-In	<u>60</u>	<input type="checkbox"/> Ruined Packer	
Final Flow	<u>30</u>	<input type="checkbox"/> Extra Packer	
Final Shut-In	<u>60</u>	<input type="checkbox"/> Extra Recorder	
		<input type="checkbox"/> Day Standby	
		<input type="checkbox"/> Accessibility	
		Sub Total	<u>1692.80</u>

Approved By [Signature] Our Representative Chuck Smith

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# TRILOBITE TESTING INC.

1516 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 51755

4/10

Well Name & No.	<u>Kuhn #1-4</u>	Test No.	<u>7</u>	Date	<u>6-2-13</u>
Company	<u>Murfin Drilling Co.</u>	Elevation	<u>3022</u>	KB	<u>3011</u> GL
Address	<u>250 N. Water STE 300 Wichita, KS 67202</u>				
Co. Rep / Geo.	<u>Tom Funk</u>	Rig	<u>MDC #22</u>		
Location: Sec.	<u>4</u>	Twp.	<u>13</u>	Rge.	<u>32</u>
		Co.	<u>Logan</u>	State	<u>KS</u>

Interval Tested	<u>4532 - 4581</u>	Zone Tested	<u>Johnson</u>
Anchor Length	<u>49</u>	Drill Pipe Run	<u>4292</u>
Top Packer Depth	<u>4528</u>	Drill Collars Run	<u>235</u>
Bottom Packer Depth	<u>4532</u>	Wt. Pipe Run	<u>-</u>
Total Depth	<u>4581</u>	Chlorides	<u>3900</u> ppm System
		Mud Wt.	<u>9.2</u>
		Vis	<u>60</u>
		WL	<u>7.6</u>
		LCM	<u>6"</u>

Blow Description B.O.B. @ 4 1/2 min.  
B.O.B. @ 16 min.  
B.O.B. @ 7 min.  
B.O.B. @ 33 min.

Rec	Feet of	%gas	%oil	%water	%mud
<u>124</u>	<u>60</u>	<u>50</u>	<u>50</u>		
<u>62</u>	<u>GMCO</u>	<u>30</u>	<u>65</u>		<u>5</u>
<u>124</u>	<u>GMCO</u>	<u>40</u>	<u>35</u>		<u>25</u>
<u>235</u>	<u>GOCM</u>	<u>15</u>	<u>35</u>		<u>50</u>
	<u>1178' GIP</u>				

Rec Total 545 BHT 127 Gravity 28 API RW @      °F Chlorides      ppm

(A) Initial Hydrostatic	<u>2397</u>	<input checked="" type="checkbox"/> Test	<u>1250</u>	T-On Location	<u>19:30</u>
(B) First Initial Flow	<u>119</u>	<input checked="" type="checkbox"/> Jars	<u>250</u>	T-Started	<u>19:36</u>
(C) First Final Flow	<u>185</u>	<input checked="" type="checkbox"/> Safety Joint	<u>75</u>	T-Open	<u>21:47</u>
(D) Initial Shut-In	<u>1035</u>	<input checked="" type="checkbox"/> Circ Sub	<u>N/C</u>	T-Pulled	<u>00:18</u>
(E) Second Initial Flow	<u>199</u>	<input type="checkbox"/> Hourly Standby		T-Out	<u>3:15</u>
(F) Second Final Flow	<u>242</u>	<input checked="" type="checkbox"/> Mileage	<u>76RT</u> 117.80	Comments	
(G) Final Shut-In	<u>951</u>	<input type="checkbox"/> Sampler			
(H) Final Hydrostatic	<u>2319</u>	<input type="checkbox"/> Straddle			

Initial Open	<u>15</u>	<input type="checkbox"/> Ruined Shale Packer	
Initial Shut-In	<u>60</u>	<input type="checkbox"/> Ruined Packer	
Final Flow	<u>15</u>	<input type="checkbox"/> Extra Packer	
Final Shut-In	<u>60</u>	<input type="checkbox"/> Extra Recorder	
		<input type="checkbox"/> Day Standby	
		<input type="checkbox"/> Accessibility	
		Sub Total	<u>0</u>
		Total	<u>1692.80</u>
		MP/DST Disc't	
		Sub Total	<u>1692.80</u>

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PO Box 93999  
Southlake, TX 76092

Voice: (817) 546-7282  
Fax: (817) 246-3361

*acct Prod-LH*

# INVOICE

Invoice Number: 136451  
Invoice Date: May 21, 2013  
Page: 1

PROD COPY

**Bill To:**  
Murfin Drlg. Co., Inc.  
250 N. Water  
STE #300  
Wichita, KS 67202

Now Includes:



Customer ID	Field Ticket #	Payment Terms	
Murfin	60782	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-01	Oakley	May 21, 2013	6/20/13

Quantity	Item	Description	Unit Price	Amount
165.00	MAT	Kuhn #1-4		
		Class A Common	17.90	2,953.50
6.00	MAT	Chloride	64.00	384.00
173.25	SER	Cubic Feet	2.48	429.66
1.00	SER	Ton Mileage Charge	380.00	380.00
1.00	SER	Surface	1,512.25	1,512.25
15.00	SER	Pump Truck Mileage	7.70	115.50
1.00	SER	Manifold Rental	275.00	275.00
15.00	SER	Light Vehicle Mileage	4.40	66.00
1.00	CEMENTER	Alan Ryan		
1.00	EQUIP OPER	Wayne McGhghy		
1.00	OPER ASSIST	Kevin Ryan		

Account	Unit Fig	W/L	No.	Amount	Description
<i>FD203</i>				<i>4235.33</i>	<i>CEMENT S. (Sg) = 1-4</i>
<i>3</i>			<i>4241.0001</i>		<i>WKM</i>

ALL PRICES ARE NET, PAYABLE 30 DAYS FOLLOWING DATE OF INVOICE. 1 1/2% CHARGED THEREAFTER. IF ACCOUNT IS CURRENT, TAKE DISCOUNT OF

*25/6 ok*

\$ 2,140.91

ONLY IF PAID ON OR BEFORE

Jun 15, 2013

Subtotal	6,115.91
Sales Tax	260.33
Total Invoice Amount	6,376.24
Payment/Credit Applied	
<b>TOTAL</b>	<b>6,376.24</b>

*- 2140.91*

*4235.33*

# ALLIED OIL & GAS SERVICES, LLC 060782

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999  
SOUTHLAKE, TEXAS 76092

SERVICE POINT: Dakley, KS

DATE <u>1/21/13</u>	SEC. <u>4</u>	TWP. <u>13</u>	RANGE <u>32</u>	CALLED OUT	ON LOCATION	JOB START <u>8:00am</u>	JOB FINISH <u>8:30pm</u>
LEASE <u>Ryans</u>	WELL # <u>1-4</u>	LOCATION <u>Dakley 115 1w 19 w 2v</u>		COUNTY <u>Logan</u>	STATE <u>KS</u>		
OLD OR NEW (Circle one)							

CONTRACTOR Mur Fin 22

TYPE OF JOB Surf Ace

HOLE SIZE 12 1/4 T.D. 224'

CASING SIZE 8 5/8 DEPTH 224'

TUBING SIZE \_\_\_\_\_ DEPTH \_\_\_\_\_

DRILL PIPE \_\_\_\_\_ DEPTH \_\_\_\_\_

TOOL \_\_\_\_\_ DEPTH \_\_\_\_\_

PRES. MAX \_\_\_\_\_ MINIMUM \_\_\_\_\_

MEAS. LINE \_\_\_\_\_ SHOE JOINT \_\_\_\_\_

CEMENT LEFT IN CSG. 15'

PERFS. \_\_\_\_\_

DISPLACEMENT 13.31.33 RBL

OWNER Same

CEMENT AMOUNT ORDERED 165 Com 3700CL2700L

COMMON	<u>165 SK</u>	@ <u>17.90</u>	<u>2953.50</u>
POZMIX		@	
OIL	<u>3</u>	@ <u>75.00</u>	<u>225.00</u>
CHLORIDE	<u>6</u>	@ <u>69.00</u>	<u>414.00</u>
ASC		@	

EQUIPMENT

PUMP TRUCK CEMENTER Alan Ryan

# 422 HELPER Wynn McGilghy

BULK TRUCK

# 347 DRIVER Kevin Ryan

BULK TRUCK

# \_\_\_\_\_ DRIVER \_\_\_\_\_

HANDLING 172.85

MILEAGE 2.48 @ 72.00 177.36

TOTAL 4248.16

REMARKS:

Analy, Circulate, Max Cement, Displacement

Shutin

Cement did Circulate

Thank You  
Alan, Wynn, Kevin

CHARGE TO: Murkin Drilling

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

SERVICE

DEPTH OF JOB	<u>224'</u>		
PUMP TRUCK CHARGE		@	<u>1512.00</u>
EXTRA FOOTAGE		@	
MILEAGE	<u>15</u>	@ <u>7.50</u>	<u>112.50</u>
MANIFOLD		@	<u>275.00</u>
<u>Waterhead</u>	<u>15</u>	@ <u>4.40</u>	<u>66.00</u>

TOTAL 1968.75

PLUG & FLOAT EQUIPMENT

	@	
	@	
	@	
	@	

TOTAL \_\_\_\_\_

To: Allied Oil & Gas Services, LLC.  
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

SALES TAX (If Any) \_\_\_\_\_

TOTAL CHARGES 6,116.91

DISCOUNT 2,140.91 IF PAID IN 30 DAYS

3,975.99 Net.

PRINTED NAME KELLY WILSON

SIGNATURE Kelly Wilson



# Invoice

Acctg -  
cc: WF  
cc: Liz  
cc: B:1



DATE	INVOICE #
6/11/2013	24776

**BILL TO**  
Murfin Drilling Co Inc  
PO Box 661  
Colby, KS 67701-0661

- Acidizing
- Cement
- Tool Rental

TERMS	Well No.	Lease	County	Contractor	Well Type	Well Category	Job Purpose	Operator
Net 30	#1-4	Kuhn	Logan		Oil	Development	Cement Port Collar	Don
PRICE REF.	DESCRIPTION				QTY	UM	UNIT PRICE	AMOUNT
575D	Mileage - 1 Way				80	Miles	6.00	480.00
576D-D	Pump Charge - Port Collar - 2498 Feet				1	Job	1,500.00	1,500.00
290	D-Air				2	Gallon(s)	42.00	84.00T
330	Swift Multi-Density Standard (MIDCON II)				175	Sacks	17.00	2,975.00T
276	Flocele				44	Lb(s)	2.00	88.00T
581D	Service Charge Cement				350	Sacks	2.00	700.00
583D	Drayage				696.6	Ton Miles	1.00	696.60
	Subtotal							6,523.60
	Sales Tax Logan County						7.80%	245.47
USED FOR <u>IC 103</u>								
APPROVED <u>[Signature]</u>								
<b>We Appreciate Your Business!</b>							<b>Total</b>	\$6,769.07





Services, Inc.

TICKET  
No 24776

CHARGE TO: Miner's Drilling Co.  
ADDRESS  
CITY, STATE, ZIP CODE

PAGE 1 OF 1

SERVICE LOCATIONS	WELL/PROJECT NO.	LEASE	COUNTY/PARISH	STATE	CITY	DATE	OWNER
1. <u>Hays, KS</u>	<u>1-4</u>	<u>KLN</u>	<u>Logan</u>	<u>Ks</u>		<u>6-11-13</u>	
2. <u>Ness City, KS</u>	TICKET TYPE <input checked="" type="checkbox"/> SERVICE <input type="checkbox"/> SALES	CONTRACTOR	RIG NAME/NO.	SHIPPED VIA	DELIVERED TO	ORDER NO.	
	<u>CS</u>			<u>CT</u>	<u>SW/Drilling, KS</u>		
3.	WELL TYPE	WELL CATEGORY	JOB PURPOSE	WELL PERMIT NO.	WELL LOCATION		
	<u>Oil</u>	<u>Wildcat</u>	<u>Cement Port Cellar</u>				
4.	INVOICE INSTRUCTIONS						
					<u>@ 2498'</u>		

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	MILEAGE	QTY.	U/M	QTY.	U/M	UNIT PRICE	AMOUNT
		LOC	ACCT	DF								
575		1			MILEAGE #113	80 mi					600	480.00
576 D		1			Ramp Change - 2nd Port Cellar	1 ea		2498'			1500.00	1500.00
390		1			D-Air	2 gal					4200	8400
330		2			SPD Cement	175 SKS		1937'			1200	208500
270		2			Fluoride	44 lbs					200	8800
581		2			Service Charge - Cement	350 SKS					200	70000
<del>582</del> 583		2			Drillage	696 lbs		17415'			200	69600

REMIT PAYMENT TO:

SWIFT SERVICES, INC.  
P.O. BOX 466  
NESS CITY, KS 67560  
785-798-2300

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions.

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS

X Paul Baker DATE SIGNED 6-11-13 TIME SIGNED 0800

A.M.  P.M.

SURVEY	80 mi	350 SKS	696 lbs	17415' lbs								
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?												
WE UNDERSTOOD AND MET YOUR NEEDS?												
OUR SERVICE WAS PERFORMED WITHOUT DELAY?												
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?												
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES											
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND												
PAGE TOTAL												
TOTAL												6769.07

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket.

SWIFT OPERATOR: Ken Stumm APPROVAL: \_\_\_\_\_

Thank You!

JOB LOG

SWIFT Services, Inc.

DATE 6-11-13 PAGE NO. 7

CUSTOMER Murphy Dry Co WELL NO. 1-4 LEASE Kuhn JOB TYPE Well Bit & Col TICKET NO. 24776

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0845					2 3/8	5 1/2	DN loc - 350 SKS 8MD. Unit Set up Tools - P.C @ 2498'
	0915					1200	1200	Tst P.C closed - OK
		3				C	600	Open P.C - in 1 rate Hook to 2 3/8 Tbg
		3	5			600	C	Start H2O Ahead - Have bleed
		3	8			500		Start unit - Have returns
			85					Unit circulate @ 150 SKS
								Tst in 25 SKS @ 14 #/gal
			110			500	C	Fin unit - Displ 8 BBL H2O
			8					Fin Displ.
						1200		Close P.C & Tst - OK
								Run 5 Tts Tbg
		2 1/2	8 / 13			350		Run-out 2 Passes
			25					All Clean - Fin run-out
	1030							Job Complete
								Wash up & Pack up Tools
	11:00							
								Thanks
								Don, Tom & John J.
								150 8MD @ 11.2 #/gal
								25 8MD @ 14 #/gal
								175 Total unit used
								25 SKS @ 11.2 #/gal to pit



**CONSOLIDATED**  
Oil Well Services, LLC

C Accty -  
cc: WF  
cc: Liz  
cc: B.I  
es, LLC  
46

MAIN OFFICE  
P.O. Box 884  
Chanute, KS 66720  
620/431-9210 • 1-800/467-8676  
Fax 620/431-0012

INVOICE

Invoice # 259339

Invoice Date: 06/10/2013 Terms: 10/10/30,n/30

Page 1

MURFIN DRILLING  
P.O. BOX 288  
RUSSELL KS 67665  
( ) -

KUHN 1-4  
39953  
4-13-32  
06-04-2013  
KS

USED FOR 1C103  
APPROVED JIK

Part Number	Description	Qty	Unit Price	Total
1126	OIL WELL CEMENT	225.00	23.7000	5332.50
1110A	KOL SEAL (50# BAG)	1125.00	.5600	630.00
1102	CALCIUM CHLORIDE (50#)	240.00	.9400	225.60
1111A	SODIUM METASILICATE	200.00	2.5200	504.00
1142A	KCL SUB MB6875 CC3107 (1	2.00	41.1000	82.20
4159	FLOAT SHOE AFU 5 1/2"	1.00	433.7500	433.75
4454	5 1/2" LATCH DOWN PLUG	1.00	318.2500	318.25
4285	5 1/2" PORT COLLAR	1.00	2178.7500	2178.75
4136	TURBOLIZER 5 1/2"	15.00	75.7500	1136.25
4315	ROTATING SCRATCHERS	17.00	94.5000	1606.50
4310	ROTATING HEAD	1.00	150.0000	150.00
4104	CEMENT BASKET 5 1/2"	2.00	290.0000	580.00

Sublet Performed	Description	Total
9996-130	CEMENT MATERIAL DISCOUNT	-1317.78
9995-130	CEMENT EQUIPMENT DISCOUNT	-368.38

Description	Hours	Unit Price	Total
397 MIN. BULK DELIVERY	1.00	430.00	430.00
405 CEMENT PUMP	1.00	3175.00	3175.00
405 EQUIPMENT MILEAGE (ONE WAY)	15.00	5.25	78.75

Amount Due 17889.42 if paid after 07/10/2013

Parts:	13177.80	Freight:	.00	Tax:	925.08	AR	16100.47
Labor:	.00	Misc:	.00	Total:	16100.47		
Sublt:	-1686.16	Supplies:	.00	Change:	.00		

Signed \_\_\_\_\_

Date \_\_\_\_\_



**CONSOLIDATED**  
Oil Well Services, LLC

PO Box 884, Chanute, KS 66720  
620-431-9210 or 800-467-8676

259339

TICKET NUMBER 39953

LOCATION Oakley, KS

FOREMAN Miles Shaw

**FIELD TICKET & TREATMENT REPORT**  
**CEMENT**

Watt Dunkel

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
6-4-13	5406	Kuhn 1-4	4	13	32 <sup>W</sup>	Logan
CUSTOMER			Oakley			
MURFIN DRILLING CO			TRUCK #	DRIVER	TRUCK #	DRIVER
MAILING ADDRESS			405	Miles		
CITY			397	Stan		
STATE				Kenney		Richer
ZIP CODE						
			1/2 W MS.			

JOB TYPE Prod HOLE SIZE 7 7/8 HOLE DEPTH 4920' CASING SIZE & WEIGHT 5 1/2 15.5  
 CASING DEPTH 4712' DRILL PIPE \_\_\_\_\_ TUBING \_\_\_\_\_ OTHER P.C. 2503'  
 SLURRY WEIGHT 14.2 SLURRY VOL \_\_\_\_\_ WATER gal/sk \_\_\_\_\_ CEMENT LEFT in CASING \_\_\_\_\_  
 DISPLACEMENT 112 1/4 DISPLACEMENT PSI \_\_\_\_\_ MIX PSI \_\_\_\_\_ RATE 6 BPM

REMARKS: Safety Meeting, rig up on Murfin 22, run Float Equipment Cat 1-14 +52, Basket on 52 +53, Part collar on 52<sup>#</sup>, Circ on bottom 45 min.  
Pump Flo clear Flush, mix 175 SKs OWC, 5<sup>#</sup> Kalseal, Clear Pump lines, release Plug + Displace 112 1/4 BBL H<sub>2</sub>O @ 900<sup>#</sup>, Land on Plug @ 1500<sup>#</sup>, release Pressure. Float Held.  
Mix 30 SKs in R.H  
Mix 20 SKs in U.H

*Thank You  
Miles + Crew*

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
5401	1	PUMP CHARGE	3,175 <sup>00</sup>	3,175 <sup>00</sup>
5406	15	MILEAGE	5 <sup>25</sup>	78 <sup>75</sup>
1126	225 SKs	OWC	23 <sup>70</sup>	5,332 <sup>50</sup>
110A	1125 <sup>#</sup>	Kalseal	1.56	630 <sup>00</sup>
1102	240 <sup>#</sup>	Calcium Chloride	.94	225 <sup>60</sup>
1111A	200 <sup>#</sup>	Sodium Metasilicate	2.52	504 <sup>00</sup>
1142A	2 gal	KCl	41 <sup>10</sup>	82 <sup>20</sup>
5407	10.6	Ten Mileage Delivery	1 <sup>35</sup>	430 <sup>00</sup>
4159	1	5 1/2 AFU Float Shoe	433 <sup>25</sup>	433 <sup>25</sup>
4454	1	5 1/2 Latdown assembly	318 <sup>25</sup>	318 <sup>25</sup>
4285	1	5 1/2 Port Collar	2,178 <sup>75</sup>	2,178 <sup>75</sup>
4136	15	5 1/2 Turbodrillers	75 <sup>75</sup>	1,132 <sup>25</sup>
4315	17	5' rotating Scraperbars	94 <sup>50</sup>	1,606 <sup>50</sup>
4310	1	rotating Head	150 <sup>00</sup>	150 <sup>00</sup>
4104	2	5 1/2 Baskets	290 <sup>00</sup>	580 <sup>00</sup>
			Subtotal =	16,861 <sup>55</sup>
			Less 10% Disc	1,686 <sup>16</sup>
				15,175 <sup>39</sup>
			SALES TAX	925 <sup>08</sup>
			ESTIMATED TOTAL	16100 <sup>47</sup>

**Completed**

Revin 3737

AUTHORIZATION Buck Selas

TITLE \_\_\_\_\_

DATE \_\_\_\_\_

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form.