



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1119139
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: _____



1119139

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 <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
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:				

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: Yes No

Date of First, Resumed Production, SWD or ENHR. _____ Producing Method:
 Flowing Pumping Gas Lift Other *(Explain)* _____

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> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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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

February 19, 2013

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

Re: ACO1
API 15-109-21143-00-00
WWWM 1-4
SE/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

WWWM #1-4 2310' FSL 1200' FEL Sec. 4-T12S-R32W 3056' KB							J & J Kuhlman 1800' FSL 1950' FWL Sec. 4-T13S-R32W 3055' KB	
Formation	sample tops	Datum	Ref	Log Tops	Datum	Ref	Log Tops	Datum
Anhydrite	2538	+518	+5	2538	+518	+5	2542	+513
B/Anhydrite	2560	+496	+9	2559	+496	+9	2568	+487
Topeka	3772	-716	+6	3774	-716	+6	3777	-722
Heebner	4000	-944	+2	3998	-942	+4	4001	-946
Toronto	4023	-967	+3	4022	-966	+4	4025	-970
Lansing	4041	-985	+1	4042	-986	Flat	4041	-986
Stark	4274	-1218	+1	4275	-1219	Flat	4274	-1219
Up Pawnee	4475	-1419	-2	4473	-1417	Flat	4472	-1417
Fort Scott	4530	-1474	-1	4529	-1473	-2	4526	-1471
Cherokee	4559	-1503	-3	4560	-1504	-4	4555	-1500
Johnson	4602	-1546	-3	4600	-1544	-1	4598	-1543
Mrw Sd	4662	-1606	-8	4652	-1596	+2	4653	-1598
Mississippi	4682	-1623	-5	4682	-1626	-5	4676	-1621
RTD	4745						4730	
LTD				4744				

Robert D. Hendrix

Petroleum Geologist

GEOLOGIST'S REPORT DRILLING TIME AND SAMPLE LOG

COMPANY **Murfin Drilling Co., Inc.**

LEASE **WWW #1-4**

FIELD **Wildcat**

LOCATION **2310' 1st & 1200' 1st**

SEC **4** TWP **13 S** R **32 W**

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

CONTRACTOR **Murfin Drilling Co Inc Rig 22**

SPUD **11/17/2012** COMP **11/18/2012**

RTD **4/745** LTD **4/744**

WHD UP **3600** TYPE MUD **Chemical**

SAMPLES SAVED FROM **3680 TO 7D**

DRILLING TIME KEPT FROM **3600 TO 7D**

SAMPLES EXAMINED FROM **3680 TO 7D**

GEOLOGICAL SUPERVISION FROM **3600**

GEOLOGIST ON WELL **Robert D. Hendrix**

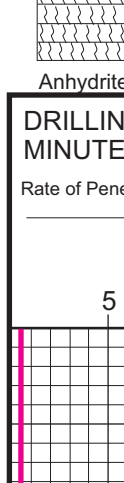
ELEVATIONS
KB **3056'**

DEF **GL-3045'**

Measurements Are All From **Kelly Bushing**

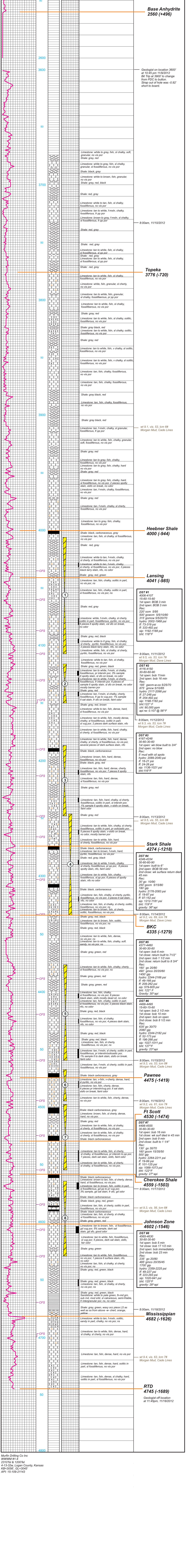
CASING
CONDUCTOR
SPPFACE: **8.56" at 224'**
PRODUCTION **5.12"**

FORMATION TOPS	ELECTRIC LOG	SAMPLE
Anhydrite	2534 (-429)	2538 (-518)
Base Anhydrite	2560 (-406)	2560 (-496)
Topersk Shale	3274 (-718)	3276 (-720)
Lansing	3998 (-942)	4000 (-944)
Stark Shale	4272 (-1216)	4274 (-1218)
Pawnee	4472 (-1416)	4473 (-1418)
H. Scott	4529 (-1473)	4530 (-1474)
Mississippian	4681 (-1625)	4682 (-1626)



REMARKS:
The multiple positive DST's along with good structural position it is strongly recommended that production casing be set on this well.

Robert D. Hendrix





DRILL STEM TEST REPORT

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

250 N Water STE 300
Wichita, KS 67202

ATTN: Robert Hendrix

W W W M #1-4

4-13s-32w Logan,KS

Start Date: 2012.11.11 @ 10:14:00

End Date: 2012.11.11 @ 17:11:45

Job Ticket #: 49820 DST #: 1

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

Printed: 2012.11.23 @ 10:52:41



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

4-13s-32w Logan, KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 49820

DST#: 1

ATTN: Robert Hendrix

Test Start: 2012.11.11 @ 10:14:00

GENERAL INFORMATION:

Formation: **Toronto- Lansing D**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:10:45

Time Test Ended: 17:11:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Sam Esparza

Unit No: 58

Interval: 4006.00 ft (KB) To 4107.00 ft (KB) (TVD)

Reference Elevations: 3056.00 ft (KB)

Total Depth: 4107.00 ft (KB) (TVD)

3045.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8674

Inside

Press @ Run Depth: 491.85 psig @ 4007.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.11.11

End Date:

2012.11.11

Last Calib.:

2012.11.11

Start Time: 10:14:05

End Time:

17:11:44

Time On Btm:

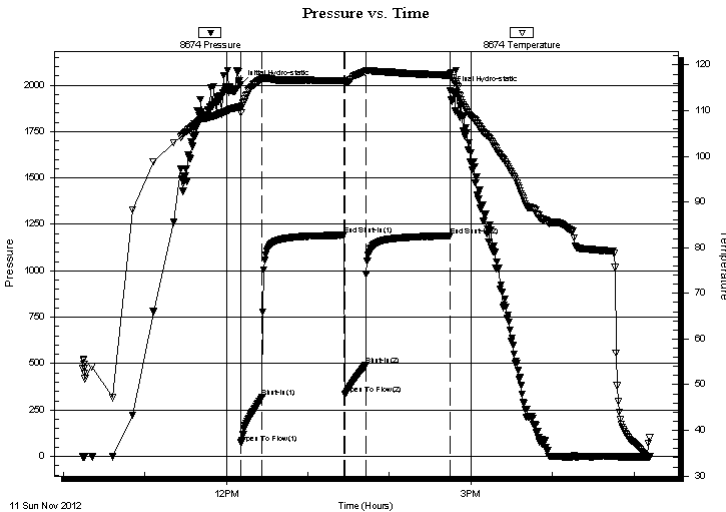
2012.11.11 @ 12:10:30

Time Off Btm:

2012.11.11 @ 14:44:30

TEST COMMENT: IF: BOB @ 3 min.
IS: No return.
FF: BOB @ 3 min.
FS: No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2001.79	110.71	Initial Hydro-static
1	73.06	109.62	Open To Flow (1)
16	319.15	116.94	Shut-In(1)
77	1191.83	116.56	End Shut-In(1)
77	332.71	116.09	Open To Flow (2)
92	491.85	118.58	Shut-In(2)
154	1188.10	117.78	End Shut-In(2)
154	1968.20	118.09	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
315.00	GOMCW 5g 5o 20m 70w	2.28
500.00	GOWCM 5g 5o 10w 80m	7.01
220.00	OCM 5o 95m	3.09

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

4-13s-32w Logan, KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 49820

DST#: 1

ATTN: Robert Hendrix

Test Start: 2012.11.11 @ 10:14:00

GENERAL INFORMATION:

Formation: **Toronto- Lansing D**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:10:45

Time Test Ended: 17:11:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Sam Esparza

Unit No: 58

Interval: 4006.00 ft (KB) To 4107.00 ft (KB) (TVD)

Total Depth: 4107.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3056.00 ft (KB)

3045.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8355 Outside

Press @ Run Depth: psig @ 4007.00 ft (KB)

Start Date: 2012.11.11

End Date: 2012.11.11

Capacity: 8000.00 psig

Last Calib.: 2012.11.11

Start Time: 10:13:20

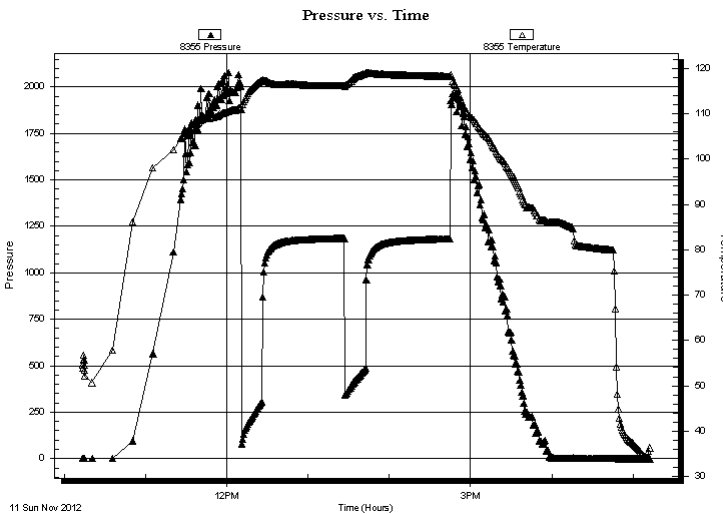
End Time: 17:12:14

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: BOB @ 3 min.
IS: No return.
FF: BOB @ 3 min.
FS: No return.

PRESSURE SUMMARY



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

Recovery

Gas Rates

Length (ft)	Description	Volume (bbl)
315.00	GOMCW 5g 5o 20m 70w	2.28
500.00	GOWCM 5g 5o 10w 80m	7.01
220.00	OCM 5o 95m	3.09

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co. Inc.

4-13s-32w Logan,KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 49820

DST#: 1

ATTN: Robert Hendrix

Test Start: 2012.11.11 @ 10:14:00

Tool Information

Drill Pipe:	Length: 3754.00 ft	Diameter: 3.80 inches	Volume: 52.66 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 2000.00 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: 53.82 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 67000.00 lb
Depth to Top Packer:	4006.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	101.00 ft			
Tool Length:	124.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3984.00	
Shut In Tool	5.00			3989.00	
Hydraulic tool	5.00			3994.00	
Safety Joint	3.00			3997.00	
Packer	5.00			4002.00	23.00 Bottom Of Top Packer
Packer	4.00			4006.00	
Stubb	1.00			4007.00	
Recorder	0.00	8355	Outside	4007.00	
Recorder	0.00	8674	Inside	4007.00	
Perforations	32.00			4039.00	
Change Over Sub	1.00			4040.00	
Drill Pipe	63.00			4103.00	
Change Over Sub	1.00			4104.00	
Bullnose	3.00			4107.00	101.00 Bottom Packers & Anchor

Total Tool Length: 124.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

4-13s-32w Logan,KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 49820

DST#: 1

ATTN: Robert Hendrix

Test Start: 2012.11.11 @ 10:14:00

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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.37 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3200.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
315.00	GOMCW 5g 5o 20m 70w	2.278
500.00	GOWCM 5g 5o 10w 80m	7.014
220.00	OCM 5o 95m	3.086

Total Length: 1035.00 ft Total Volume: 12.378 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

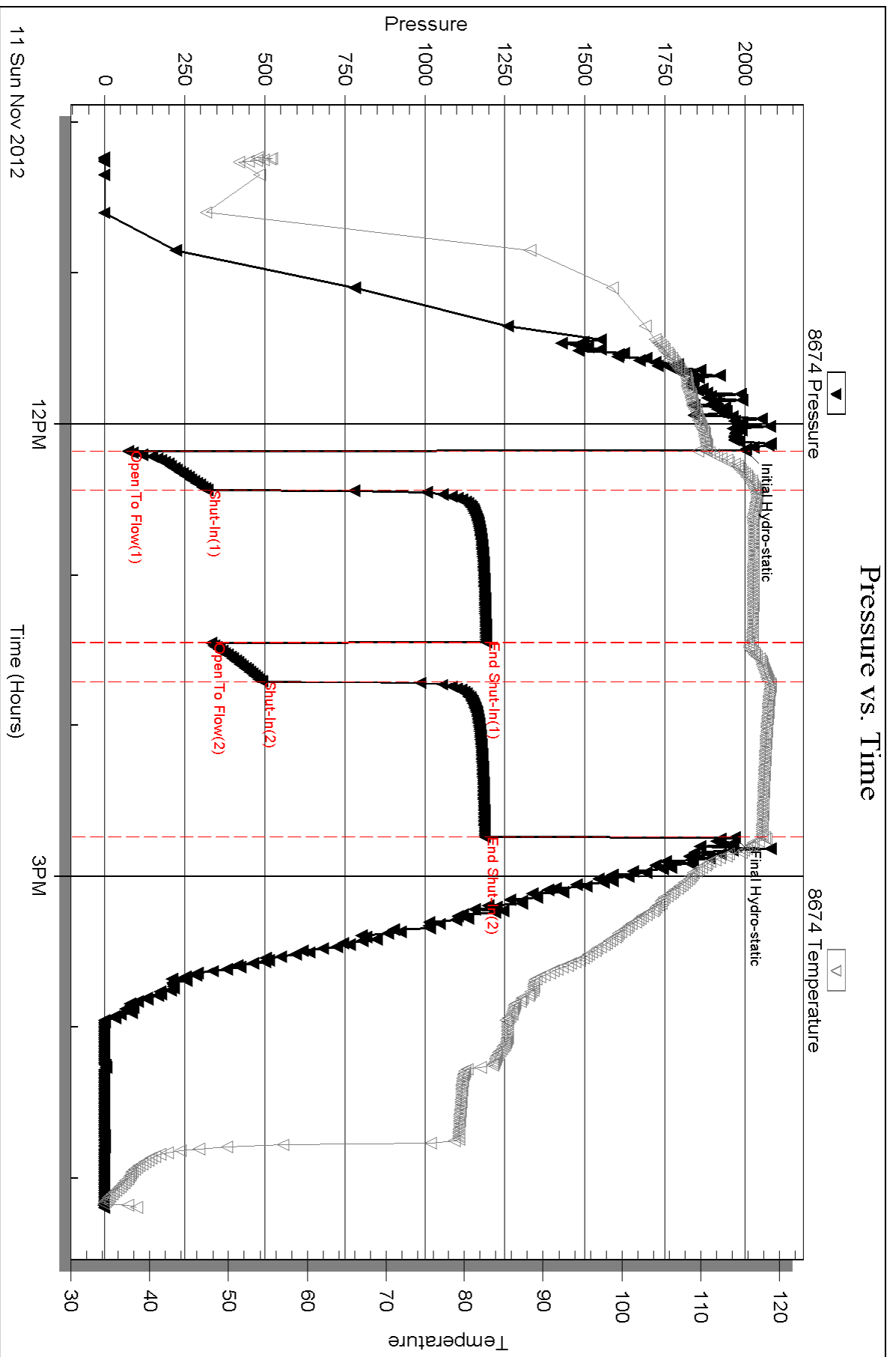
Serial #: 8674

Inside

Murfin Drilling Co. Inc.

WVWM#1-4

DST Test Number: 1

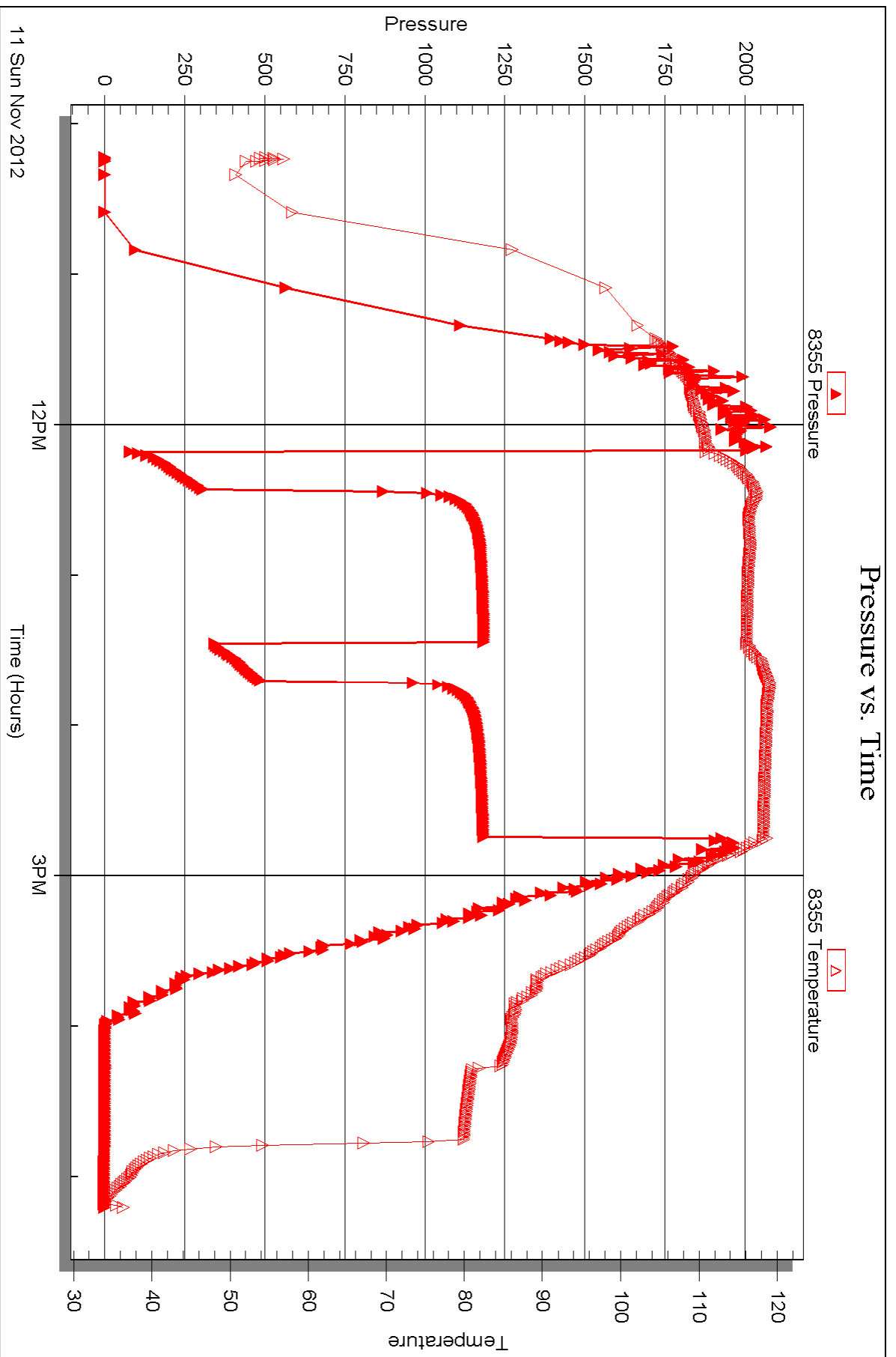


Serial #: 8355

Outside Murfin Drilling Co. Inc.

WWWM#1-4

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 49820

Printed: 2012.11.23 @ 10:52:46



DRILL STEM TEST REPORT

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

250 N Water STE 300
Wichita, KS 67202

ATTN: Robert Hendrix

W W W M #1-4

4-13s-32w Logan,KS

Start Date: 2012.11.12 @ 03:35:00

End Date: 2012.11.12 @ 12:39:30

Job Ticket #: 49821 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.11.23 @ 10:52:01



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

4-13s-32w Logan, KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 49821

DST#: 2

ATTN: Robert Hendrix

Test Start: 2012.11.12 @ 03:35:00

GENERAL INFORMATION:

Formation: **Lansing E-F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:06:00

Time Test Ended: 12:39:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Sam Esparza

Unit No: 58

Interval: 4116.00 ft (KB) To 4150.00 ft (KB) (TVD)

Reference Elevations: 3056.00 ft (KB)

Total Depth: 4150.00 ft (KB) (TVD)

3045.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8674

Inside

Press @ Run Depth: 492.41 psig @ 4117.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.11.12

End Date:

2012.11.12

Last Calib.: 2012.11.12

Start Time: 03:35:05

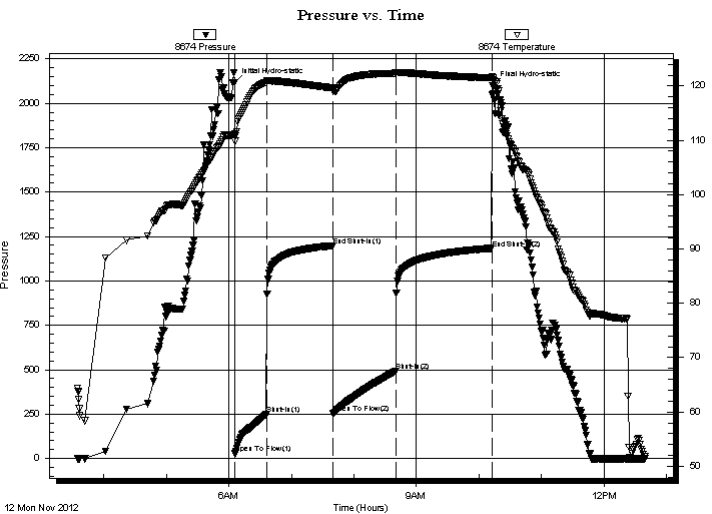
End Time:

12:39:30

Time On Btm: 2012.11.12 @ 06:05:45

Time Off Btm: 2012.11.12 @ 10:13:00

TEST COMMENT: IF: BOB @ 11 min.
IS: No return.
FF: BOB @ 16 min.
FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2117.23	111.20	Initial Hydro-static
1	27.21	109.84	Open To Flow (1)
31	247.82	120.70	Shut-In(1)
94	1198.15	119.65	End Shut-In(1)
94	253.76	119.02	Open To Flow (2)
155	492.41	122.35	Shut-In(2)
247	1181.75	121.48	End Shut-In(2)
248	2097.79	121.46	Final Hydro-static

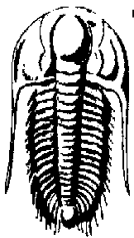
Recovery

Length (ft)	Description	Volume (bbl)
875.00	GMCW 5g 10m 85w	10.13
150.00	GWCM (Oil Spots) 5g 25w 70m	2.10

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

250 N Water STE 300
Wichita, KS 67202

ATTN: Robert Hendrix

4-13s-32w Logan, KS

W W W M #1-4

Job Ticket: 49821

DST#: 2

Test Start: 2012.11.12 @ 03:35:00

GENERAL INFORMATION:

Formation: **Lansing E-F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:06:00

Time Test Ended: 12:39:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Sam Esparza

Unit No: 58

Interval: **4116.00 ft (KB) To 4150.00 ft (KB) (TVD)**

Total Depth: 4150.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3056.00 ft (KB)

3045.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: **8355** Outside

Press @ Run Depth: psig @ 4117.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.11.12

End Date:

2012.11.12

Last Calib.:

2012.11.12

Start Time: 03:35:05

End Time:

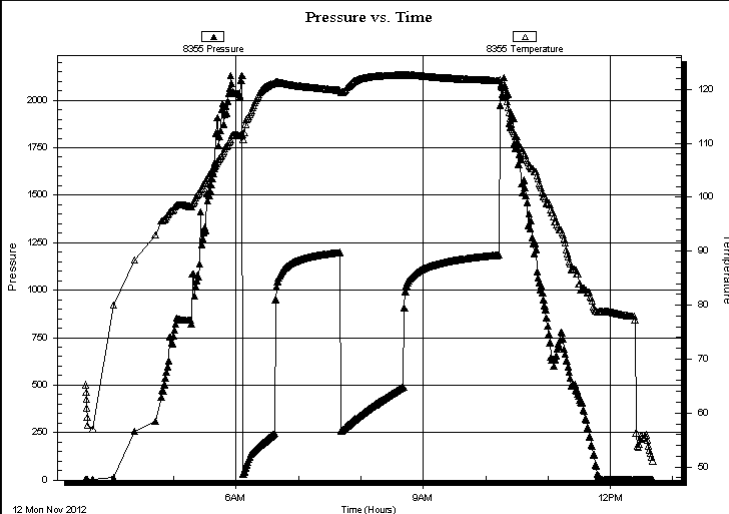
12:41:15

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: BOB @ 11 min.
IS: No return.
FF: BOB @ 16 min.
FS: No return.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
875.00	GMCW 5g 10m 85w	10.13
150.00	GWCM (Oil Spots) 5g 25w 70m	2.10

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.

4-13s-32w Logan,KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 49821

DST#: 2

ATTN: Robert Hendrix

Test Start: 2012.11.12 @ 03:35:00

Tool Information

Drill Pipe:	Length: 3880.00 ft	Diameter: 3.80 inches	Volume: 54.43 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 235.00 ft	Diameter: 2.25 inches	Volume: 1.16 bbl	Weight to Pull Loose: 85000.00 lb
			<u>Total Volume: 55.59 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 66000.00 lb
Depth to Top Packer:	4116.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	34.00 ft			
Tool Length:	57.00 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			4094.00	
Shut In Tool	5.00			4099.00	
Hydraulic tool	5.00			4104.00	
Safety Joint	3.00			4107.00	
Packer	5.00			4112.00	23.00 Bottom Of Top Packer
Packer	4.00			4116.00	
Stubb	1.00			4117.00	
Recorder	0.00	8355	Outside	4117.00	
Recorder	0.00	8674	Inside	4117.00	
Perforations	30.00			4147.00	
Bullnose	3.00			4150.00	34.00 Bottom Packers & Anchor

Total Tool Length: 57.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

4-13s-32w Logan,KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 49821

DST#: 2

ATTN: Robert Hendrix

Test Start: 2012.11.12 @ 03:35:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.37 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
875.00	GMCW 5g 10m 85w	10.133
150.00	GWCM (Oil Spots) 5g 25w 70m	2.104

Total Length: 1025.00 ft Total Volume: 12.237 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API RW: .107 @ 56 degrees= 90,000 ppm

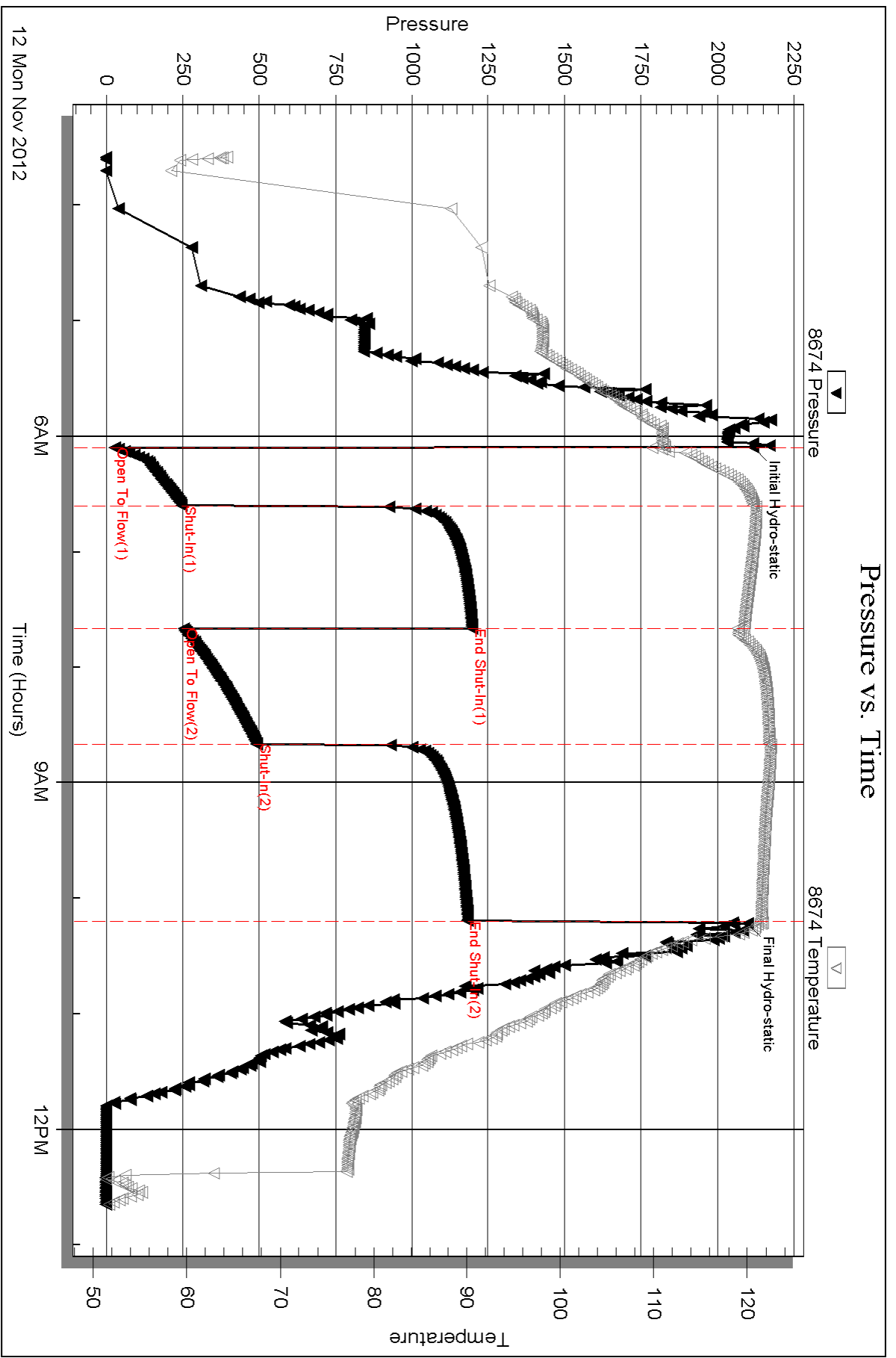
Serial #: 8674

Inside

Murfin Drilling Co. Inc.

WWWM#1-4

DST Test Number: 2

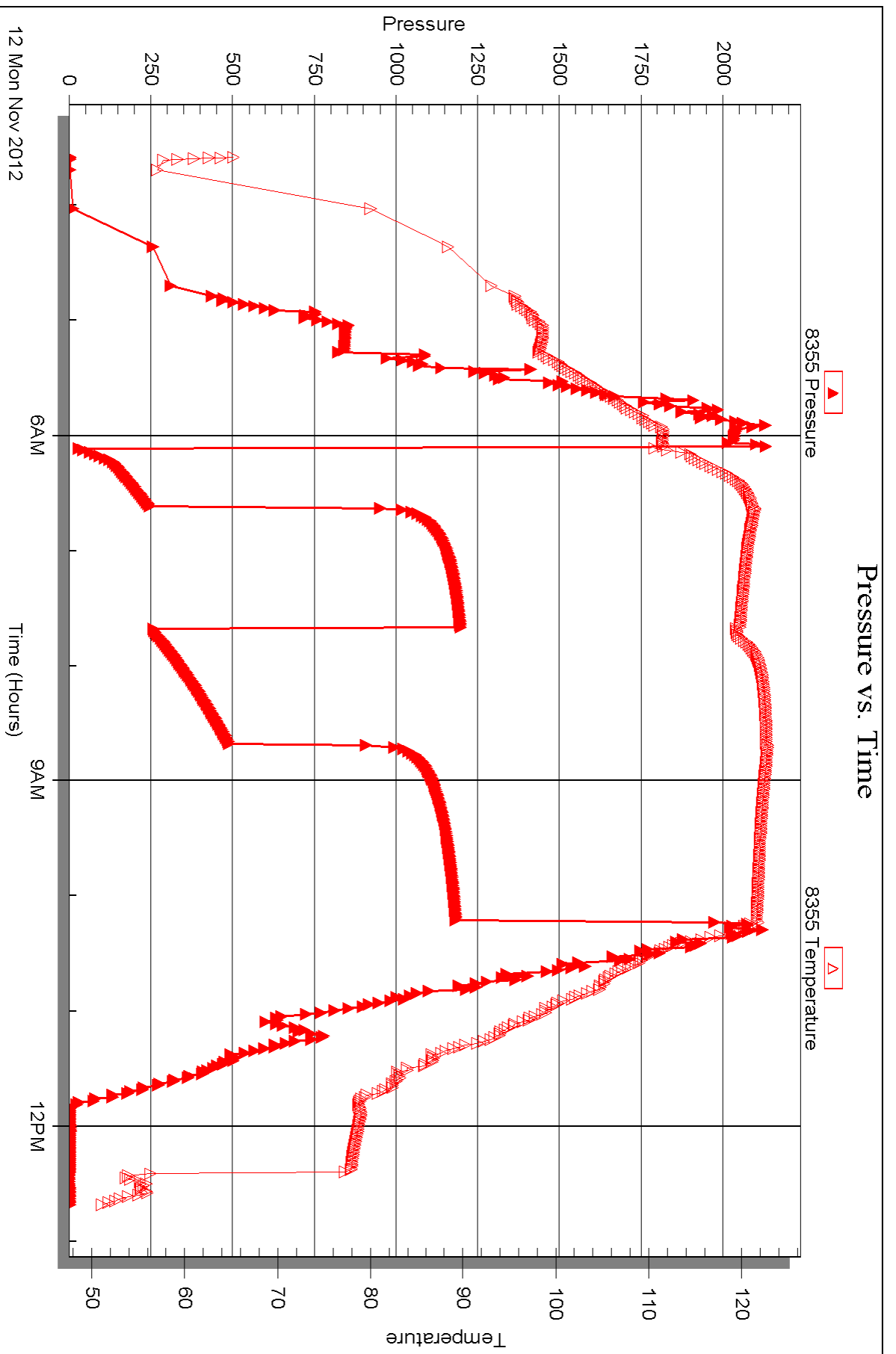


Serial #: 8355

Outside Murfin Drilling Co. Inc.

WWWM#1-4

DST Test Number: 2





DRILL STEM TEST REPORT

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

250 N Water STE 300
Wichita, KS 67202

ATTN: Robert Hendrix

W W W M #1-4

4-13s-32w Logan,KS

Start Date: 2012.11.13 @ 04:27:00

End Date: 2012.11.13 @ 11:15:15

Job Ticket #: 49822 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.11.23 @ 10:51:20

Murfin Drilling Co. Inc.

4-13s-32w Logan,KS

W W W M #1-4

DST # 3

Lansing "H-I"

2012.11.13



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

4-13s-32w Logan, KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 49822

DST#: 3

ATTN: Robert Hendrix

Test Start: 2012.11.13 @ 04:27:00

GENERAL INFORMATION:

Formation: **Lansing "H-I"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:18:45

Time Test Ended: 11:15:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Sam Esparza

Unit No: 58

Interval: 4187.00 ft (KB) To 4248.00 ft (KB) (TVD)

Reference Elevations: 3056.00 ft (KB)

Total Depth: 4248.00 ft (KB) (TVD)

3045.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8674

Inside

Press @ Run Depth: 26.47 psig @ 4188.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.11.13

End Date:

2012.11.13

Last Calib.: 2012.11.13

Start Time: 04:27:05

End Time:

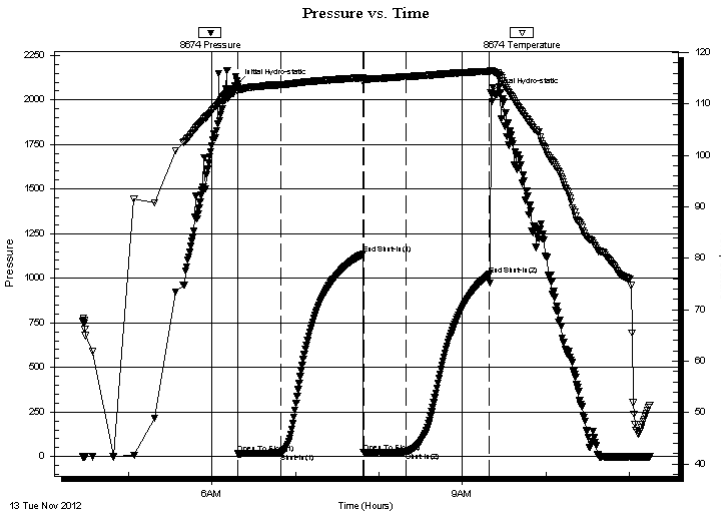
11:15:14

Time On Btm: 2012.11.13 @ 06:18:30

Time Off Btm: 2012.11.13 @ 09:20:30

TEST COMMENT: IF: 3/4" blow.
IS: No return.
FF: No blow.
FS: No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2089.05	113.28	Initial Hydro-static
1	15.85	112.41	Open To Flow (1)
31	20.79	113.73	Shut-In(1)
91	1135.98	115.11	End Shut-In(1)
91	23.92	114.35	Open To Flow (2)
121	26.47	115.32	Shut-In(2)
181	1021.01	116.36	End Shut-In(2)
182	2039.65	116.53	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud (Oil Spots) 100m	0.02

* 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.

4-13s-32w Logan,KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 49822

DST#: 3

ATTN: Robert Hendrix

Test Start: 2012.11.13 @ 04:27:00

Tool Information

Drill Pipe:	Length: 3944.00 ft	Diameter: 3.80 inches	Volume: 55.32 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 235.00 ft	Diameter: 2.25 inches	Volume: 1.16 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 56.48 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial	69000.00 lb
Depth to Top Packer:	4187.00 ft			Final	69000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	61.00 ft				
Tool Length:	84.00 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			4165.00	
Shut In Tool	5.00			4170.00	
Hydraulic tool	5.00			4175.00	
Safety Joint	3.00			4178.00	
Packer	5.00			4183.00	23.00 Bottom Of Top Packer
Packer	4.00			4187.00	
Stubb	1.00			4188.00	
Recorder	0.00	8355	Outside	4188.00	
Recorder	0.00	8674	Inside	4188.00	
Perforations	24.00			4212.00	
Change Over Sub	1.00			4213.00	
Drill Pipe	31.00			4244.00	
Change Over Sub	1.00			4245.00	
Bullnose	3.00			4248.00	61.00 Bottom Packers & Anchor

Total Tool Length: 84.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

4-13s-32w Logan,KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 49822

DST#: 3

ATTN: Robert Hendrix

Test Start: 2012.11.13 @ 04:27:00

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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.57 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 4900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud (Oil Spots) 100m	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:

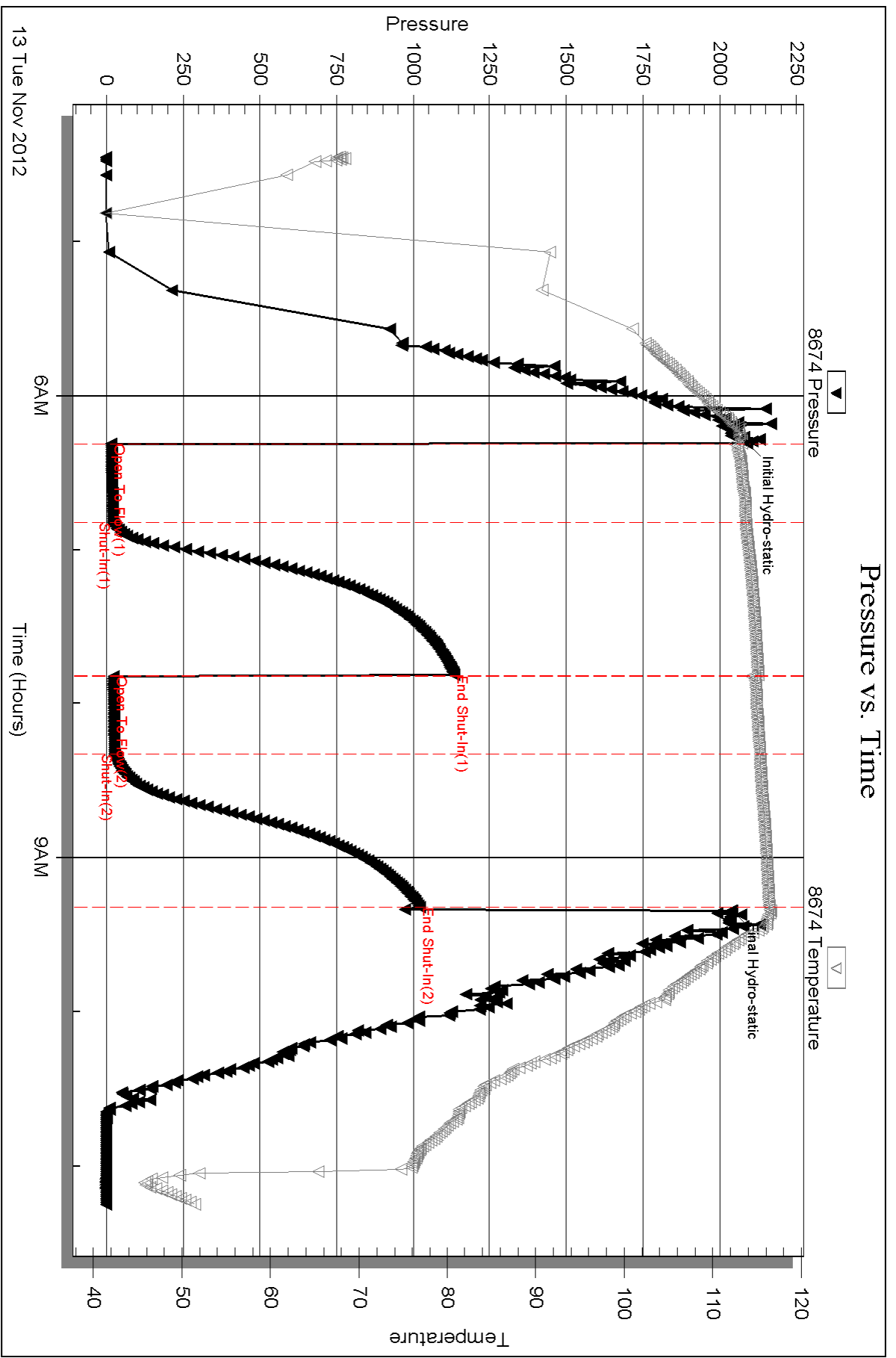
Serial #: 8674

Inside

Murfin Drilling Co. Inc.

WVWM#1-4

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 49822

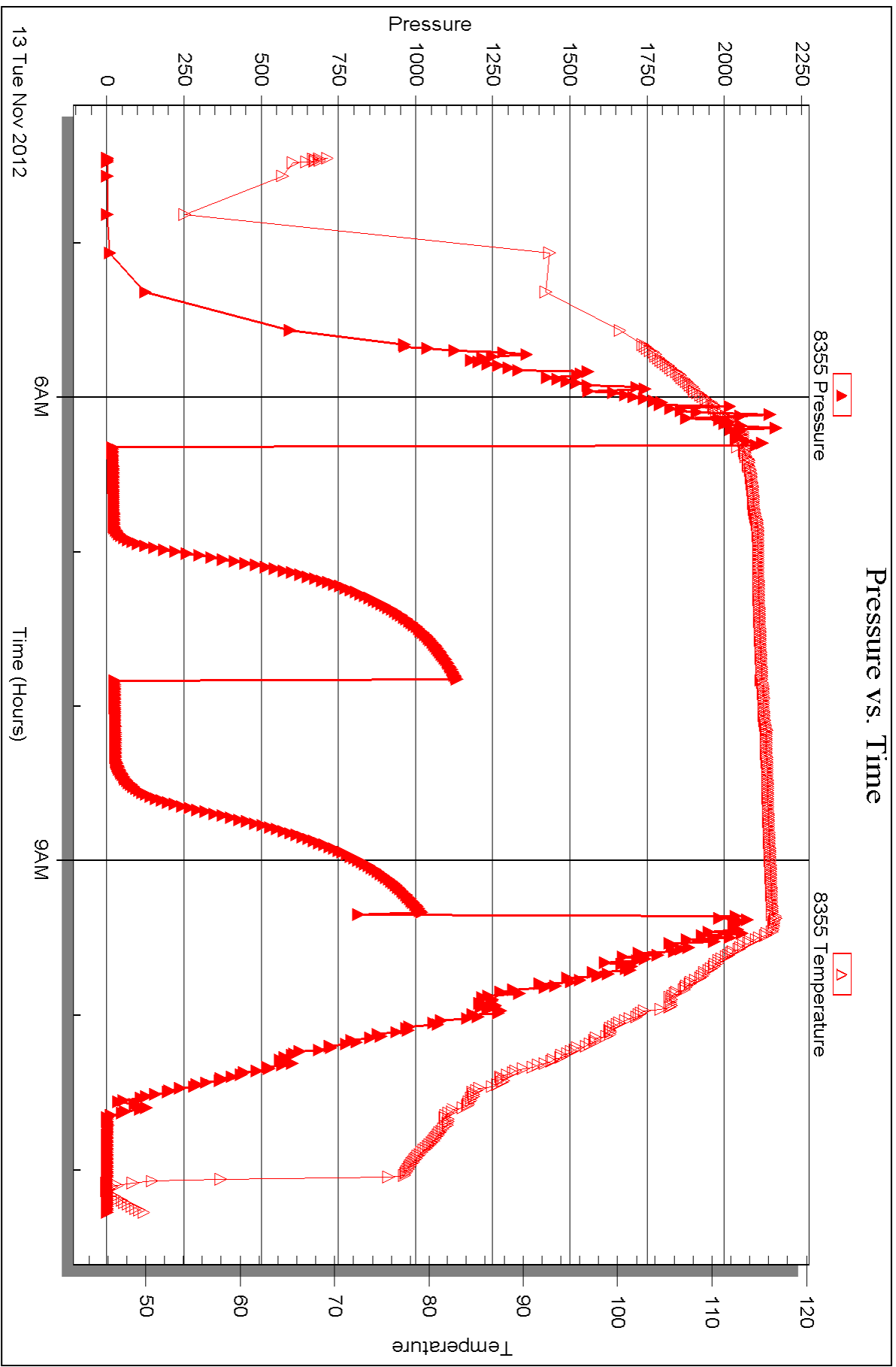
Printed: 2012.11.23 @ 10:51:24

Serial #: 8355

Outside Murfin Drilling Co. Inc.

WWWM#1-4

DST Test Number: 3





DRILL STEM TEST REPORT

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

250 N Water STE 300
Wichita, KS 67202

ATTN: Robert Hendrix

W W W M #1-4

4-13s-32w Logan,KS

Start Date: 2012.11.14 @ 03:52:00

End Date: 2012.11.14 @ 12:29:15

Job Ticket #: 49823 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.11.23 @ 10:50:39

Murfin Drilling Co. Inc.
4-13s-32w Logan,KS
W W W M #1-4
DST # 4
Lansing "J-K-L"
2012.11.14



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

4-13s-32w Logan, KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 49823

DST#: 4

ATTN: Robert Hendrix

Test Start: 2012.11.14 @ 03:52:00

GENERAL INFORMATION:

Formation: **Lansing "J-K-L"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:05:45

Time Test Ended: 12:29:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Sam Esparza

Unit No: 58

Interval: 4246.00 ft (KB) To 4334.00 ft (KB) (TVD)

Reference Elevations: 3056.00 ft (KB)

Total Depth: 4334.00 ft (KB) (TVD)

3045.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition:

KB to GR/CF: 11.00 ft

Serial #: 8674 Inside

Press @ Run Depth: 151.64 psig @ 4247.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.11.14

End Date:

2012.11.14

Last Calib.: 2012.11.14

Start Time: 03:52:05

End Time:

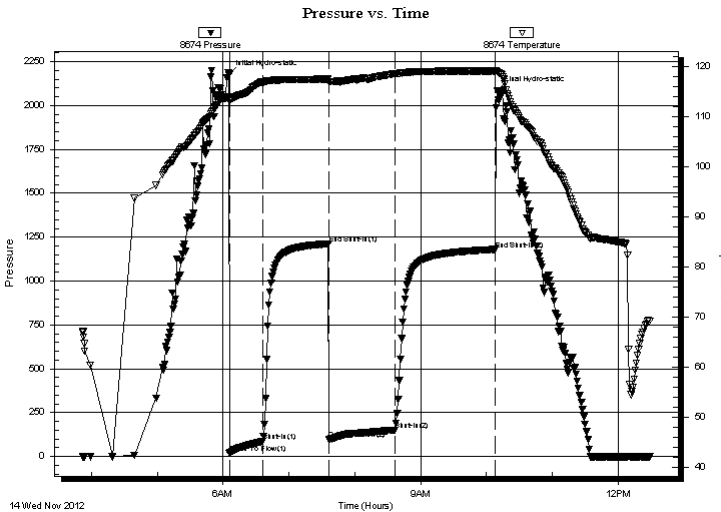
12:29:15

Time On Btm: 2012.11.14 @ 06:05:30

Time Off Btm: 2012.11.14 @ 10:09:45

TEST COMMENT: IF: 6" blow.
IS: No return.
FF: BOB @ 58 min.
FS: Weak surface return died @ 45 min.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2176.00	114.04	Initial Hydro-static
1	19.36	113.12	Open To Flow (1)
31	86.97	116.91	Shut-In(1)
91	1212.45	117.49	End Shut-In(1)
91	96.92	117.00	Open To Flow (2)
152	151.64	118.60	Shut-In(2)
243	1180.60	119.09	End Shut-In(2)
245	2083.04	119.05	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
250.00	GOCM 5g 15o 80m	1.37
30.00	GO 10g 90o	0.42
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

Murfin Drilling Co. Inc.

250 N Water STE 300
Wichita, KS 67202

ATTN: Robert Hendrix

4-13s-32w Logan,KS

W W W M #1-4

Job Ticket: 49823

DST#: 4

Test Start: 2012.11.14 @ 03:52:00

GENERAL INFORMATION:

Formation: **Lansing "J-K-L"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:05:45

Time Test Ended: 12:29:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Sam Esparza

Unit No: 58

Interval: 4246.00 ft (KB) To 4334.00 ft (KB) (TVD)

Reference Elevations: 3056.00 ft (KB)

Total Depth: 4334.00 ft (KB) (TVD)

3045.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition:

KB to GR/CF: 11.00 ft

Serial #: 8355 Outside

Press @ Run Depth: psig @ 4247.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.11.14

End Date:

2012.11.14

Last Calib.:

2012.11.14

Start Time: 03:52:05

End Time:

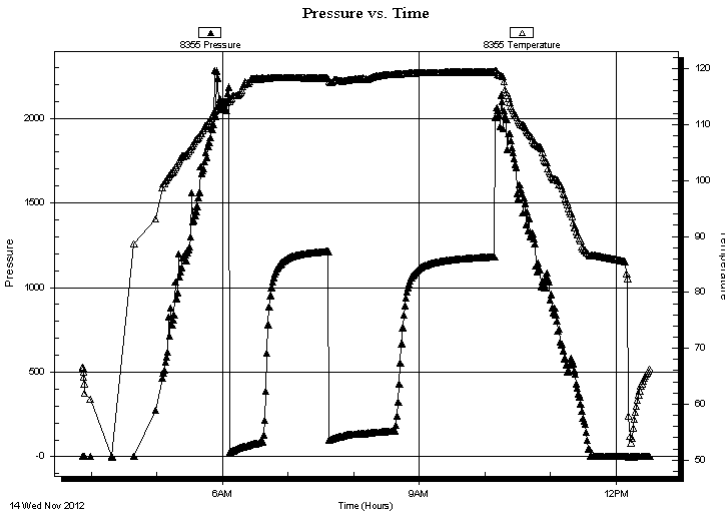
12:30:45

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: 6" blow.
IS: No return.
FF: BOB @ 58 min.
FS: Weak surface return died @ 45 min.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
250.00	GOCM 5g 15o 80m	1.37
30.00	GO 10g 90o	0.42
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.

4-13s-32w Logan,KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 49823

DST#: 4

ATTN: Robert Hendrix

Test Start: 2012.11.14 @ 03:52:00

Tool Information

Drill Pipe:	Length: 4004.00 ft	Diameter: 3.80 inches	Volume: 56.17 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 235.00 ft	Diameter: 2.25 inches	Volume: 1.16 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 57.33 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 67000.00 lb
Depth to Top Packer:	4246.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	88.00 ft			
Tool Length:	111.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4224.00	
Shut In Tool	5.00			4229.00	
Hydraulic tool	5.00			4234.00	
Safety Joint	3.00			4237.00	
Packer	5.00			4242.00	23.00 Bottom Of Top Packer
Packer	4.00			4246.00	
Stubb	1.00			4247.00	
Recorder	0.00	8355	Outside	4247.00	
Recorder	0.00	8674	Inside	4247.00	
Perforations	19.00			4266.00	
Change Over Sub	1.00			4267.00	
Drill Pipe	63.00			4330.00	
Change Over Sub	1.00			4331.00	
Bullnose	3.00			4334.00	88.00 Bottom Packers & Anchor

Total Tool Length: 111.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

4-13s-32w Logan,KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 49823

DST#: 4

ATTN: Robert Hendrix

Test Start: 2012.11.14 @ 03:52:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
250.00	GOCM 5g 15o 80m	1.366
30.00	GO 10g 90o	0.421
0.00	180' GIP	0.000

Total Length: 280.00 ft Total Volume: 1.787 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Oil API: 36 @ 60 degrees= 36 API

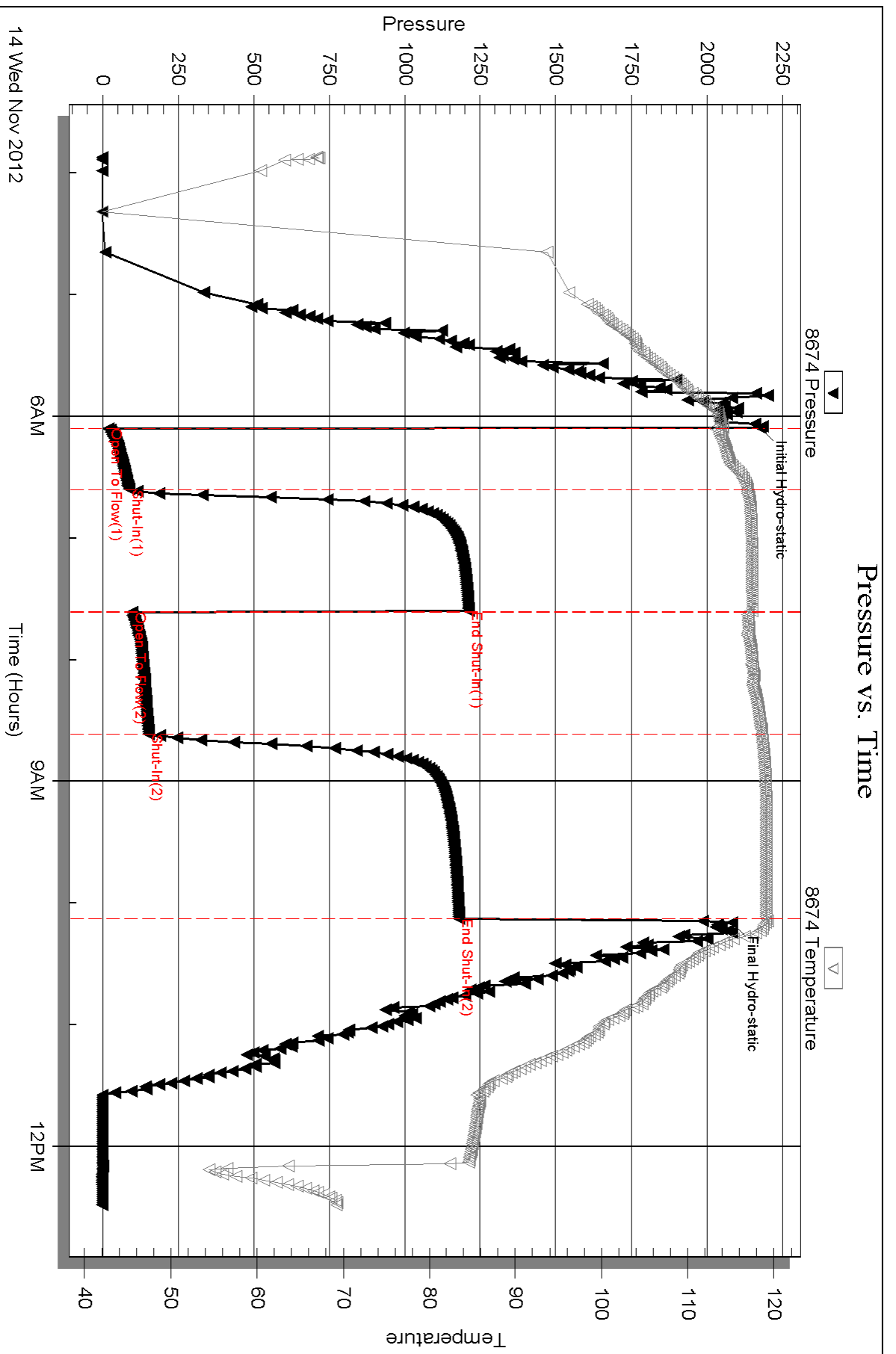
Serial #: 8674

Inside

Murfin Drilling Co. Inc.

WWWM#1-4

DST Test Number: 4



Triobite Testing, Inc

Ref. No: 49823

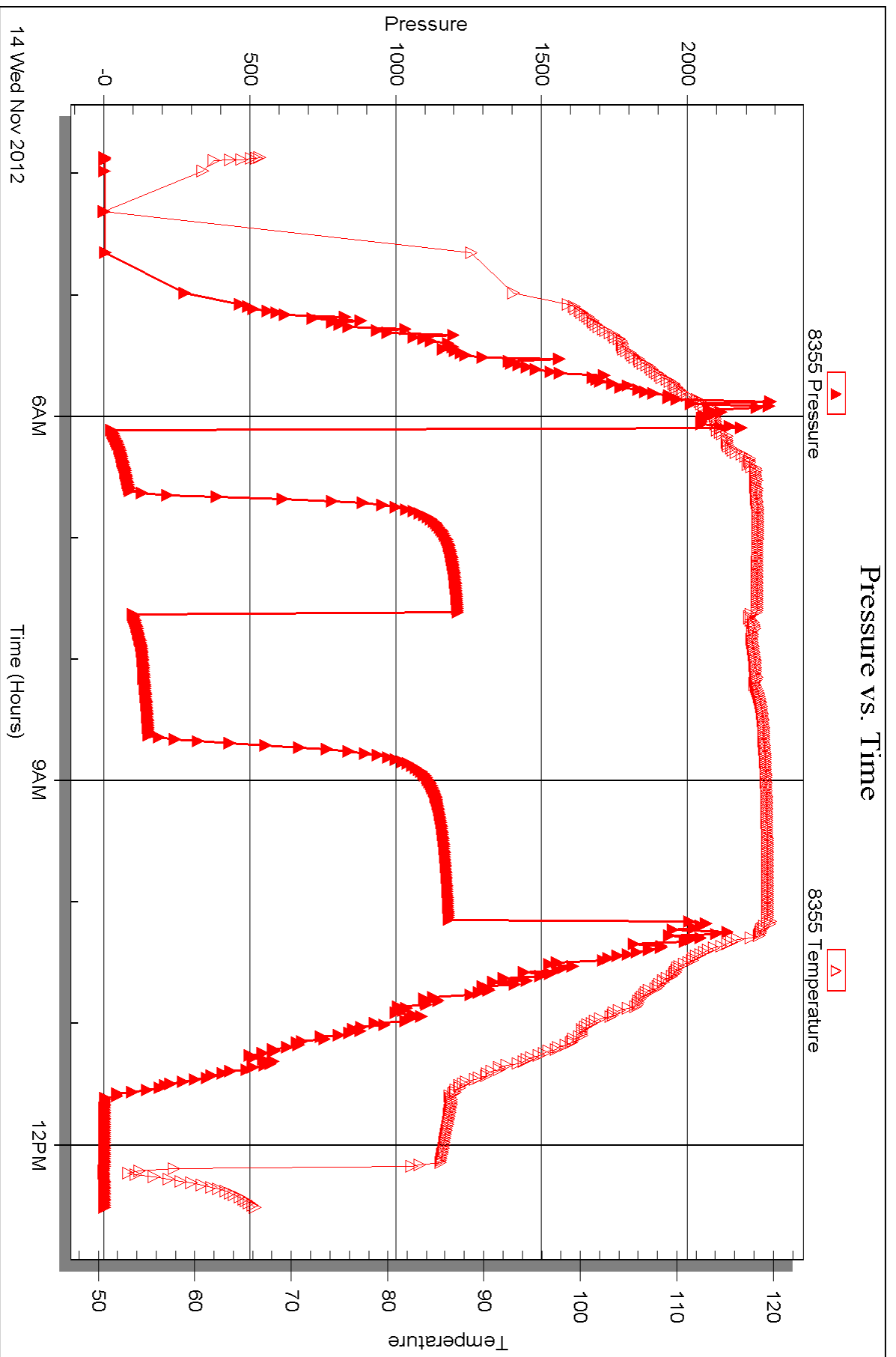
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Serial #: 8355

Outside Murfin Drilling Co. Inc.

WWWM#1-4

DST Test Number: 4



Triobite Testing, Inc

Ref. No: 49823

Printed: 2012.11.23 @ 10:50:44



DRILL STEM TEST REPORT

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

250 N Water STE 300
Wichita, KS 67202

ATTN: Robert Hendrix

W W W M #1-4

4-13s-32w Logan,KS

Start Date: 2012.11.15 @ 05:50:00

End Date: 2012.11.15 @ 13:47:30

Job Ticket #: 49824 DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.11.23 @ 10:50:01

Murfin Drilling Co. Inc.

4-13s-32w Logan,KS

W W W M #1-4

DST # 5

Marmaton-Altamont

2012.11.15



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

4-13s-32w Logan, KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 49824

DST#: 5

ATTN: Robert Hendrix

Test Start: 2012.11.15 @ 05:50:00

GENERAL INFORMATION:

Formation: **Marmaton- Altamont**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:01:00

Time Test Ended: 13:47:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Sam Esparza

Unit No: 58

Interval: 4377.00 ft (KB) To 4460.00 ft (KB) (TVD)

Reference Elevations: 3056.00 ft (KB)

Total Depth: 4460.00 ft (KB) (TVD)

3045.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8674

Inside

Press @ Run Depth: 262.11 psig @ 4378.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.11.15

End Date:

2012.11.15

Last Calib.:

2012.11.15

Start Time: 05:50:05

End Time:

13:47:29

Time On Btm:

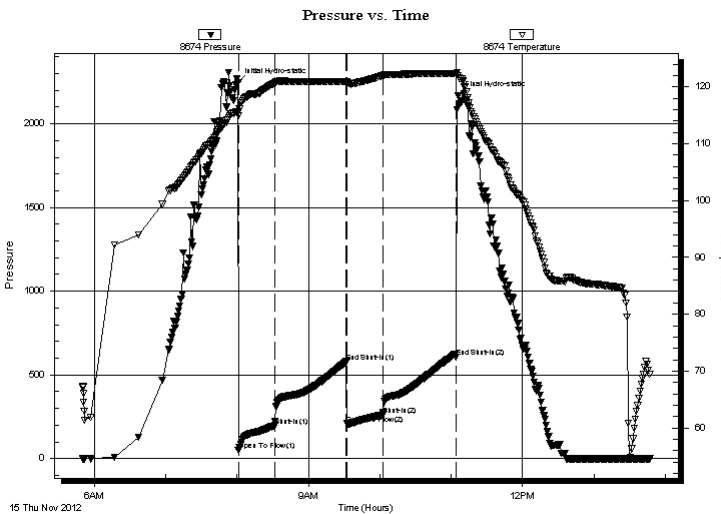
2012.11.15 @ 08:00:45

Time Off Btm:

2012.11.15 @ 11:05:45

TEST COMMENT: IF: BOB @ 6 min.
IS: 7 1/2" return.
FF: BOB @ 1 1/2 min.
FS: 8 3/4" return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2244.46	115.69	Initial Hydro-static
1	48.67	114.96	Open To Flow (1)
31	196.47	120.68	Shut-In(1)
91	579.23	120.96	End Shut-In(1)
92	208.65	120.75	Open To Flow (2)
122	262.11	122.00	Shut-In(2)
183	604.98	122.36	End Shut-In(2)
185	2166.33	122.07	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
490.00	GMCO 20g 20m 60o	4.73
160.00	GO 20g 80o	2.24
0.00	1450' GIP	0.00

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

4-13s-32w Logan,KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 49824

DST#: 5

ATTN: Robert Hendrix

Test Start: 2012.11.15 @ 05:50:00

GENERAL INFORMATION:

Formation: **Marmaton- Altamont**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:01:00

Time Test Ended: 13:47:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Sam Esparza

Unit No: 58

Interval: **4377.00 ft (KB) To 4460.00 ft (KB) (TVD)**

Reference Elevations: 3056.00 ft (KB)

Total Depth: 4460.00 ft (KB) (TVD)

3045.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: **8355** Outside

Press @ Run Depth: psig @ 4378.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.11.15

End Date:

2012.11.15

Last Calib.:

2012.11.15

Start Time: 05:50:05

End Time:

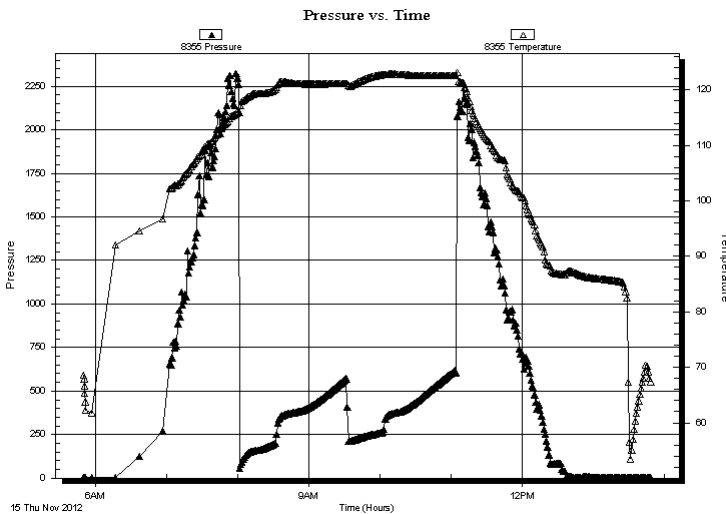
13:48:59

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: BOB @ 6 min.
IS: 7 1/2" return.
FF: BOB @ 1 1/2 min.
FS: 8 3/4" return.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
490.00	GMCO 20g 20m 60o	4.73
160.00	GO 20g 80o	2.24
0.00	1450' 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. Inc.

4-13s-32w Logan,KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 49824

DST#: 5

ATTN: Robert Hendrix

Test Start: 2012.11.15 @ 05:50:00

Tool Information

Drill Pipe:	Length: 4130.00 ft	Diameter: 3.80 inches	Volume: 57.93 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 235.00 ft	Diameter: 2.25 inches	Volume: 1.16 bbl	Weight to Pull Loose:	84000.00 lb
			<u>Total Volume: 59.09 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial	66000.00 lb
Depth to Top Packer:	4377.00 ft			Final	70000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	83.00 ft				
Tool Length:	106.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4355.00	
Shut In Tool	5.00			4360.00	
Hydraulic tool	5.00			4365.00	
Safety Joint	3.00			4368.00	
Packer	5.00			4373.00	23.00 Bottom Of Top Packer
Packer	4.00			4377.00	
Stubb	1.00			4378.00	
Recorder	0.00	8355	Outside	4378.00	
Recorder	0.00	8674	Inside	4378.00	
Perforations	14.00			4392.00	
Change Over Sub	1.00			4393.00	
Drill Pipe	63.00			4456.00	
Change Over Sub	1.00			4457.00	
Bullnose	3.00			4460.00	83.00 Bottom Packers & Anchor

Total Tool Length: 106.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

4-13s-32w Logan,KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 49824

DST#: 5

ATTN: Robert Hendrix

Test Start: 2012.11.15 @ 05:50:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

30 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 69.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.18 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
490.00	GMCO 20g 20m 60o	4.733
160.00	GO 20g 80o	2.244
0.00	1450' GIP	0.000

Total Length: 650.00 ft Total Volume: 6.977 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Oil API: 30 @ 60 degrees= 30

Serial #: 8674

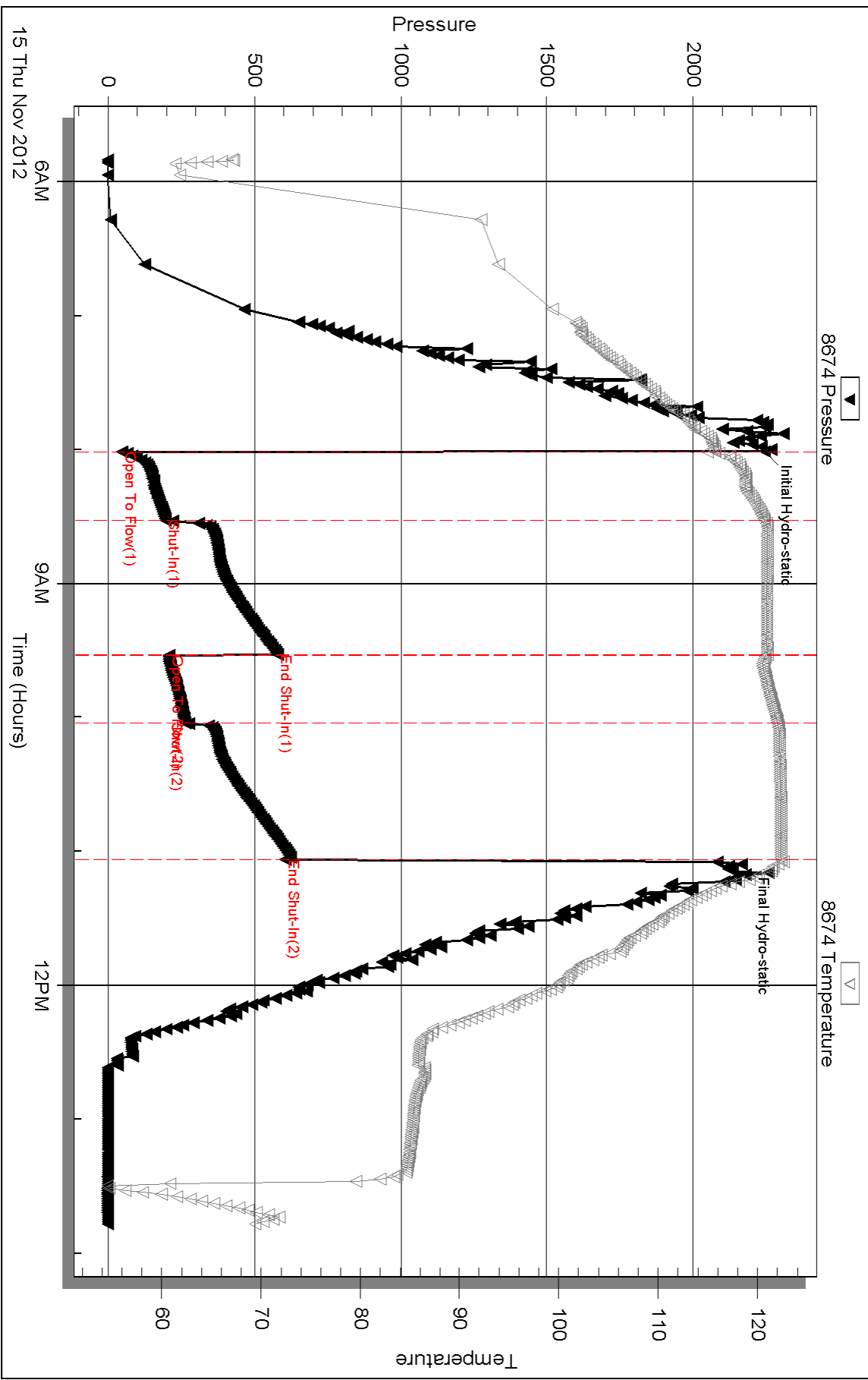
Inside

Murfin Drilling Co. Inc.

WWWM#1-4

DST Test Number: 5

Pressure vs. Time



Triobite Testing, Inc

Ref. No: 49824

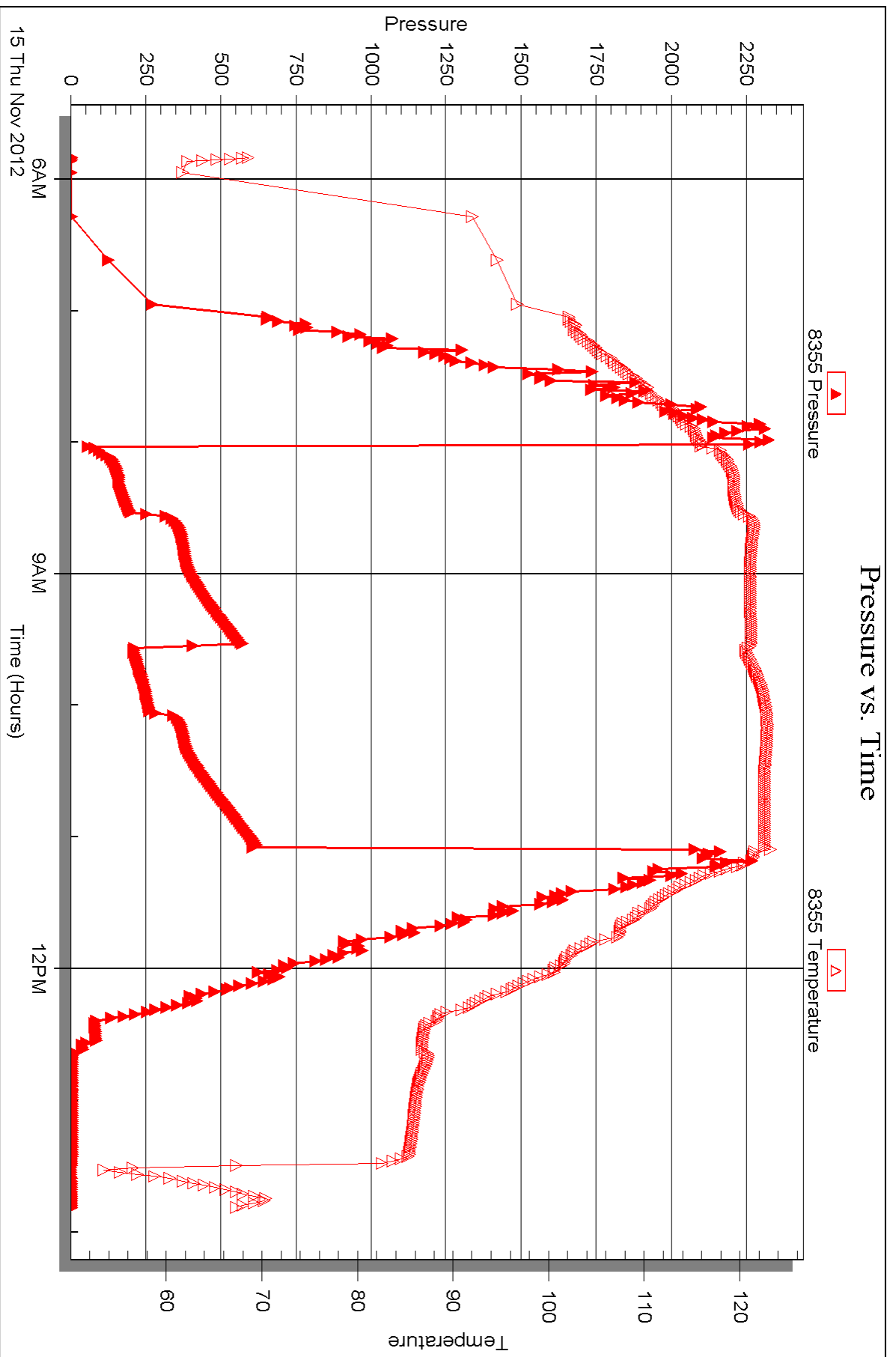
Printed: 2012.11.23 @ 10:50:05

Serial #: 8355

Outside Murfin Drilling Co. Inc.

WWWM#1-4

DST Test Number: 5



Triobite Testing, Inc

Ref. No: 49824

Printed: 2012.11.23 @ 10:50:06



DRILL STEM TEST REPORT

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

250 N Water STE 300
Wichita, KS 67202

ATTN: Robert Hendrix

W W W M #1-4

4-13s-32w Logan,KS

Start Date: 2012.11.15 @ 23:42:00

End Date: 2012.11.16 @ 08:42:30

Job Ticket #: 49825 DST #: 6

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.11.23 @ 10:49:21



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

4-13s-32w Logan, KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 49825

DST#: 6

ATTN: Robert Hendrix

Test Start: 2012.11.15 @ 23:42:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:47:00

Time Test Ended: 08:42:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Sam Esparza

Unit No: 58

Interval: 4468.00 ft (KB) To 4495.00 ft (KB) (TVD)

Total Depth: 4495.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3056.00 ft (KB)

3045.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8674 Inside

Press @ Run Depth: 265.72 psig @ 4469.00 ft (KB)

Start Date: 2012.11.15

End Date:

2012.11.16

Start Time: 23:42:05

End Time:

08:42:30

Capacity: 8000.00 psig

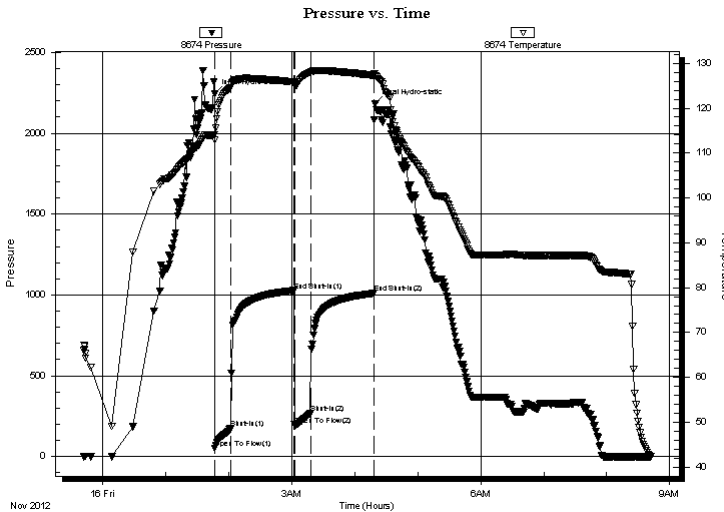
Last Calib.: 2012.11.16

Time On Btm: 2012.11.16 @ 01:46:45

Time Off Btm: 2012.11.16 @ 04:19:45

TEST COMMENT: IF: BOB @ 2 1/2 min.
IS: BOB return @ 10 min.
FF: BOB Immediately
FS: BOB return @ 8 1/2 min.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2244.06	114.15	Initial Hydro-static
1	52.40	112.86	Open To Flow (1)
16	172.89	124.67	Shut-In(1)
76	1027.39	125.79	End Shut-In(1)
77	195.53	125.36	Open To Flow (2)
92	265.72	127.97	Shut-In(2)
152	1010.51	127.37	End Shut-In(2)
153	2182.34	127.32	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
635.00	GO 30g 70o	6.77
0.00	2080' GIP	0.00

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

4-13s-32w Logan,KS

W W W M #1-4

Job Ticket: 49825

DST#: 6

Test Start: 2012.11.15 @ 23:42:00

GENERAL INFORMATION:

Formation: **Pawnee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 01:47:00
 Time Test Ended: 08:42:30
 Interval: **4468.00 ft (KB) To 4495.00 ft (KB) (TVD)**
 Total Depth: 4495.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Sam Esparza
 Unit No: 58
 Reference Elevations: 3056.00 ft (KB)
 3045.00 ft (CF)
 KB to GR/CF: 11.00 ft

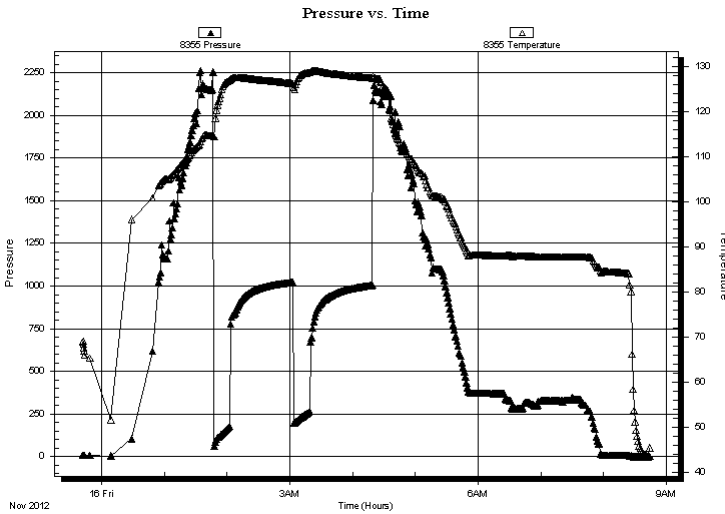
Serial #: 8355

Outside

Press @ Run Depth: psig @ 4469.00 ft (KB)
 Start Date: 2012.11.15 End Date: 2012.11.16
 Start Time: 23:42:05 End Time: 08:44:15
 Capacity: 8000.00 psig
 Last Calib.: 2012.11.16
 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF: BOB @ 2 1/2 min.
 IS: BOB return @ 10 min.
 FF: BOB Immediately
 FS: BOB return @ 8 1/2 min.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
635.00	GO 30g 70o	6.77
0.00	2080' 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.

4-13s-32w Logan,KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 49825

DST#: 6

ATTN: Robert Hendrix

Test Start: 2012.11.15 @ 23:42:00

Tool Information

Drill Pipe:	Length: 4225.00 ft	Diameter: 3.80 inches	Volume: 59.27 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 235.00 ft	Diameter: 2.25 inches	Volume: 1.16 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 60.43 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 66000.00 lb
Depth to Top Packer:	4468.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	27.00 ft			
Tool Length:	50.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			4446.00	
Shut In Tool	5.00			4451.00	
Hydraulic tool	5.00			4456.00	
Safety Joint	3.00			4459.00	
Packer	5.00			4464.00	23.00 Bottom Of Top Packer
Packer	4.00			4468.00	
Stubb	1.00			4469.00	
Recorder	0.00	8355	Outside	4469.00	
Recorder	0.00	8674	Inside	4469.00	
Perforations	23.00			4492.00	
Bullnose	3.00			4495.00	27.00 Bottom Packers & Anchor

Total Tool Length: 50.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

4-13s-32w Logan,KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 49825

DST#: 6

ATTN: Robert Hendrix

Test Start: 2012.11.15 @ 23:42:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

23 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 4100.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
635.00	GO 30g 70o	6.767
0.00	2080' GIP	0.000

Total Length: 635.00 ft Total Volume: 6.767 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Oil API: 20 @ 30 degrees= 23 API

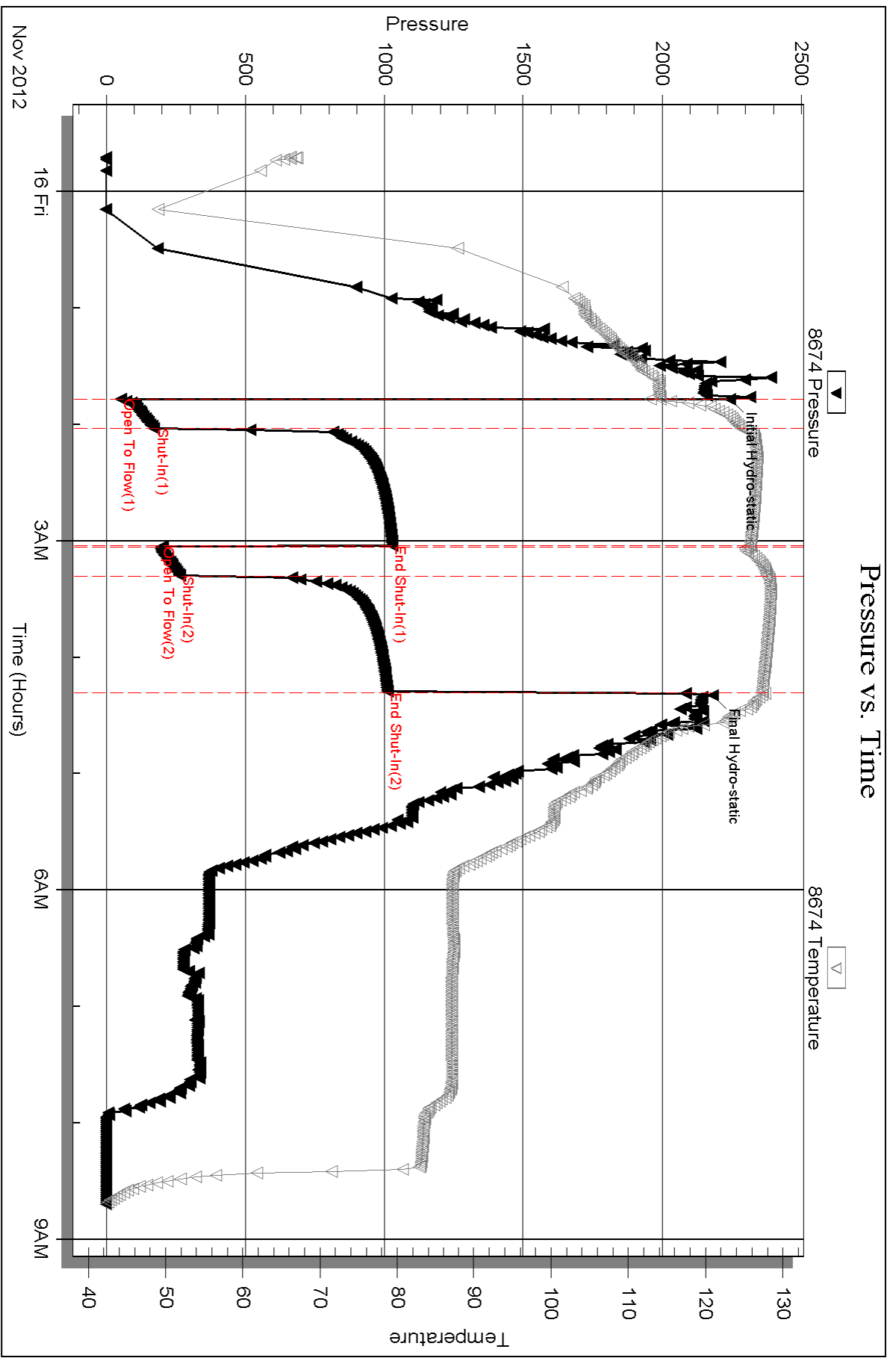
Serial #: 8674

Inside

Murfin Drilling Co. Inc.

WWWM#1-4

DST Test Number: 6



Triobite Testing, Inc

Ref. No: 49825

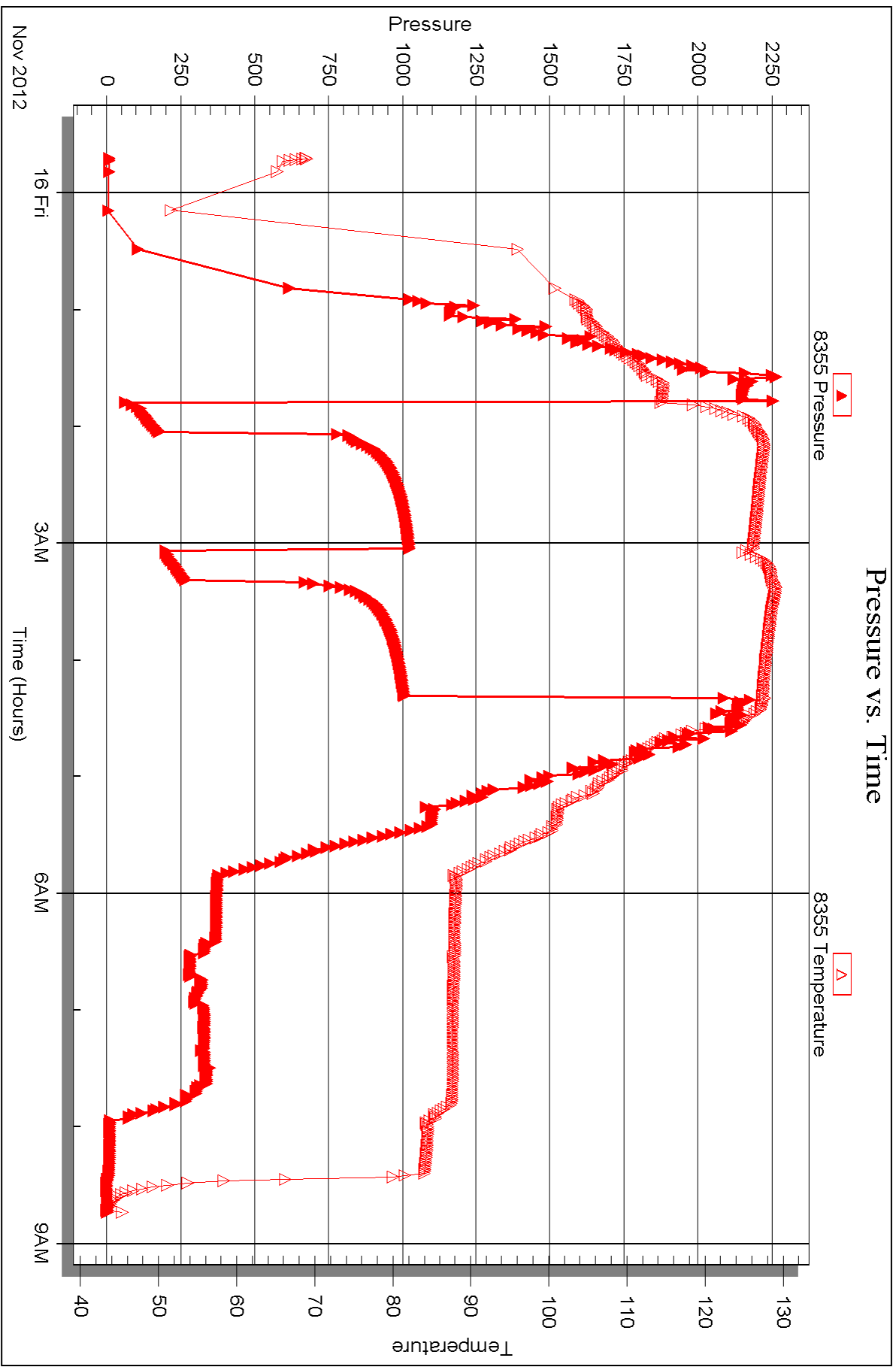
Printed: 2012.11.23 @ 10:49:25

Serial #: 8355

Outside Murfin Drilling Co. Inc.

WWWM#1-4

DST Test Number: 6





DRILL STEM TEST REPORT

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

250 N Water STE 300
Wichita, KS 67202

ATTN: Robert Hendrix

W W W M #1-4

4-13s-32w Logan,KS

Start Date: 2012.11.16 @ 19:50:00

End Date: 2012.11.17 @ 03:27:15

Job Ticket #: 51251 DST #: 7

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.11.23 @ 10:48:33

Murfin Drilling Co. Inc.

4-13s-32w Logan,KS

W W W M #1-4

DST # 7

Lower Pawnee- Ft. Sc

2012.11.16



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

4-13s-32w Logan, KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

ATTN: Robert Hendrix

Job Ticket: 51251

DST#: 7

Test Start: 2012.11.16 @ 19:50:00

GENERAL INFORMATION:

Formation: **Lower Pawnee- Ft. Sc**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:36:45

Time Test Ended: 03:27:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Sam Esparza

Unit No: 58

Interval: 4498.00 ft (KB) To 4555.00 ft (KB) (TVD)

Reference Elevations: 3056.00 ft (KB)

Total Depth: 4555.00 ft (KB) (TVD)

3045.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8674 Inside

Press @ Run Depth: 124.95 psig @ 4499.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.11.16

End Date:

2012.11.17

Last Calib.: 2012.11.17

Start Time: 19:50:05

End Time:

03:27:14

Time On Btm: 2012.11.16 @ 21:36:30

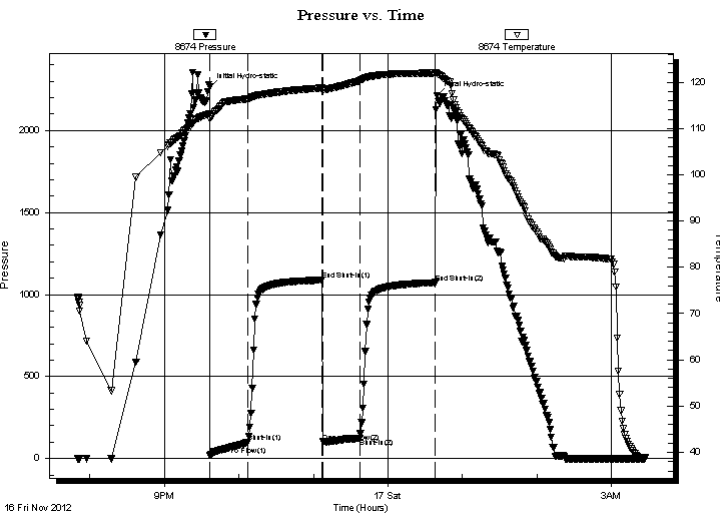
Time Off Btm: 2012.11.17 @ 00:39:30

TEST COMMENT: IF: BOB @ 16 min.

ISI: Weak surface return died @ 43 min.

FF: BOB @ 9 min.

FSI: 1 14" return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2264.41	113.25	Initial Hydro-static
1	19.14	112.06	Open To Flow (1)
31	98.66	116.41	Shut-In(1)
91	1088.31	118.74	End Shut-In(1)
91	101.21	118.34	Open To Flow (2)
121	124.95	120.31	Shut-In(2)
182	1072.58	121.97	End Shut-In(2)
183	2211.16	121.87	Final Hydro-static

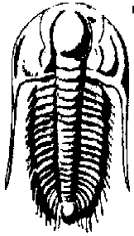
Recovery

Length (ft)	Description	Volume (bbl)
160.00	GOCM 15g 35o 50m	0.79
130.00	GO 30g 70o	1.14
0.00	500' GIP	0.00

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

250 N Water STE 300
Wichita, KS 67202

ATTN: Robert Hendrix

4-13s-32w Logan, KS

W W W M #1-4

Job Ticket: 51251

DST#: 7

Test Start: 2012.11.16 @ 19:50:00

GENERAL INFORMATION:

Formation: **Lower Pawnee- Ft. Sc**

Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)

Time Tool Opened: 21:36:45 Tester: Sam Esparza

Time Test Ended: 03:27:15 Unit No: 58

Interval: **4498.00 ft (KB) To 4555.00 ft (KB) (TVD)** Reference Elevations: 3056.00 ft (KB)

Total Depth: 4555.00 ft (KB) (TVD) 3045.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 11.00 ft

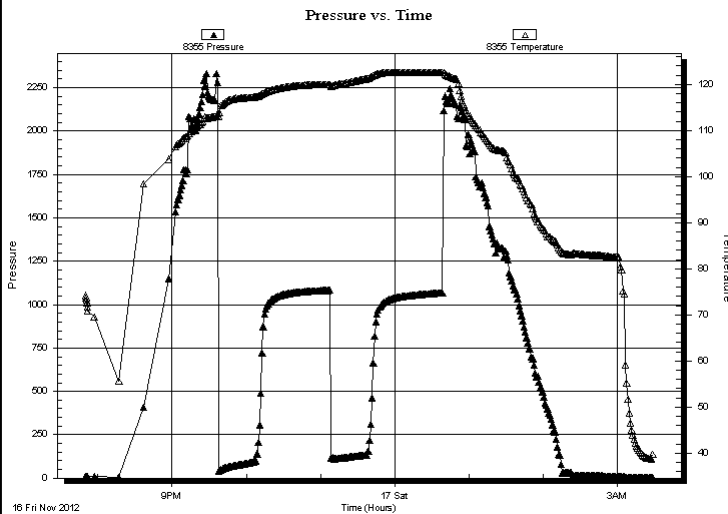
Serial #: 8355 Outside

Press @ Run Depth: psig @ 4499.00 ft (KB) Capacity: 8000.00 psig

Start Date: 2012.11.16 End Date: 2012.11.17 Last Calib.: 2012.11.17

Start Time: 19:50:05 End Time: 03:28:44 Time On Btm:
Time Off Btm:

TEST COMMENT: IF: BOB @ 16 min.
ISI: Weak surface return died @ 43 min.
FF: BOB @ 9 min.
FSI: 1 14" return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
160.00	GOCM 15g 35o 50m	0.79
130.00	GO 30g 70o	1.14
0.00	500' 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.

4-13s-32w Logan,KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 51251

DST#: 7

ATTN: Robert Hendrix

Test Start: 2012.11.16 @ 19:50:00

Tool Information

Drill Pipe:	Length: 4256.00 ft	Diameter: 3.80 inches	Volume: 59.70 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 235.00 ft	Diameter: 2.25 inches	Volume: 1.16 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 60.86 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4498.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	57.00 ft			
Tool Length:	80.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			4476.00	
Shut In Tool	5.00			4481.00	
Hydraulic tool	5.00			4486.00	
Safety Joint	3.00			4489.00	
Packer	5.00			4494.00	23.00 Bottom Of Top Packer
Packer	4.00			4498.00	
Stubb	1.00			4499.00	
Recorder	0.00	8355	Outside	4499.00	
Recorder	0.00	8674	Inside	4499.00	
Perforations	20.00			4519.00	
Change Over Sub	1.00			4520.00	
Drill Pipe	31.00			4551.00	
Change Over Sub	1.00			4552.00	
Bullnose	3.00			4555.00	57.00 Bottom Packers & Anchor

Total Tool Length: 80.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

4-13s-32w Logan,KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 51251

DST#: 7

ATTN: Robert Hendrix

Test Start: 2012.11.16 @ 19:50:00

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:

ppm

Viscosity: 61.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
160.00	GOCM 15g 35o 50m	0.787
130.00	GO 30g 70o	1.140
0.00	500' GIP	0.000

Total Length: 290.00 ft Total Volume: 1.927 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Oil API: 25 @ 40degrees= 27 API

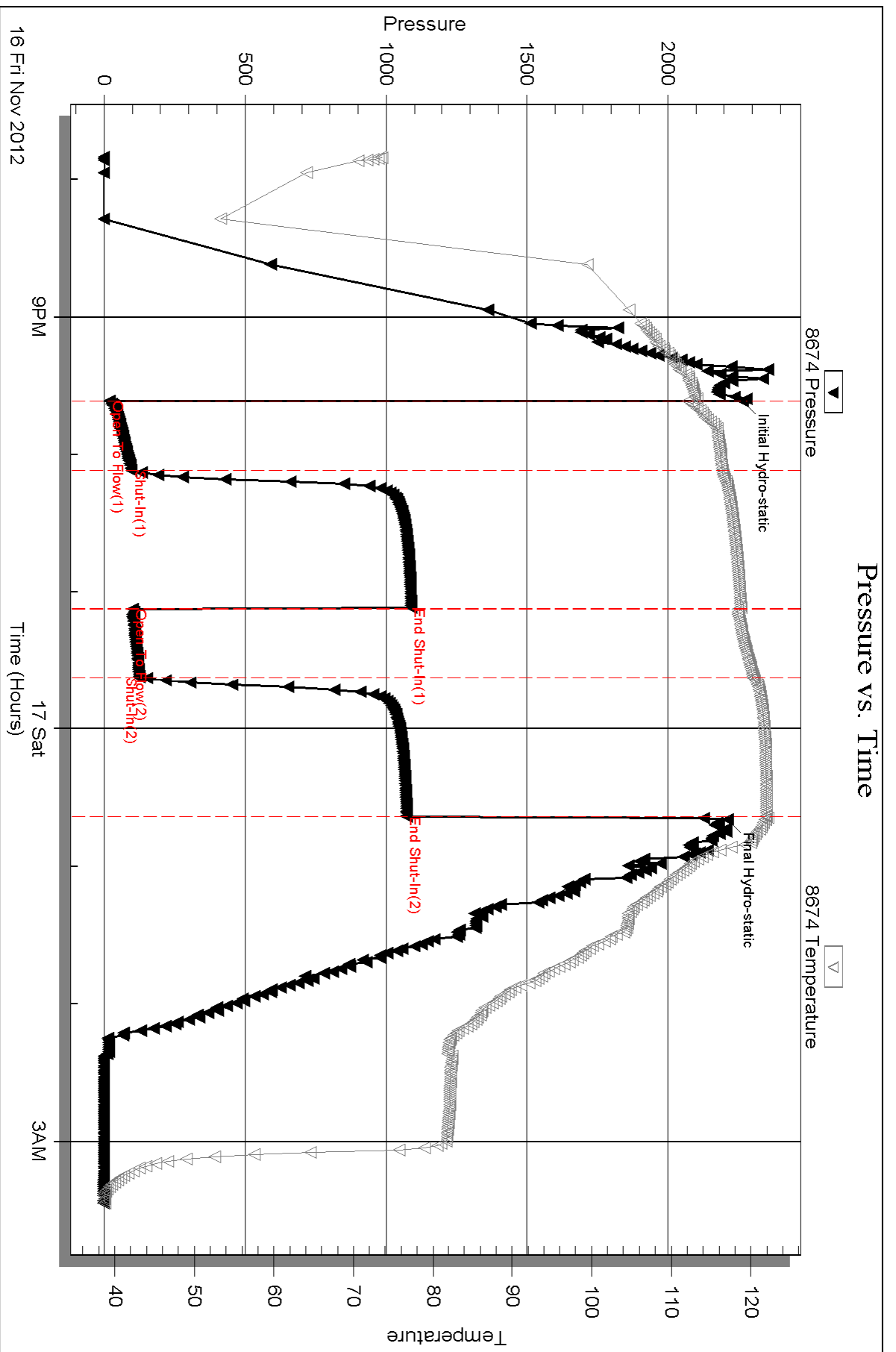
Serial #: 8674

Inside

Murfin Drilling Co. Inc.

WWWM#1-4

DST Test Number: 7

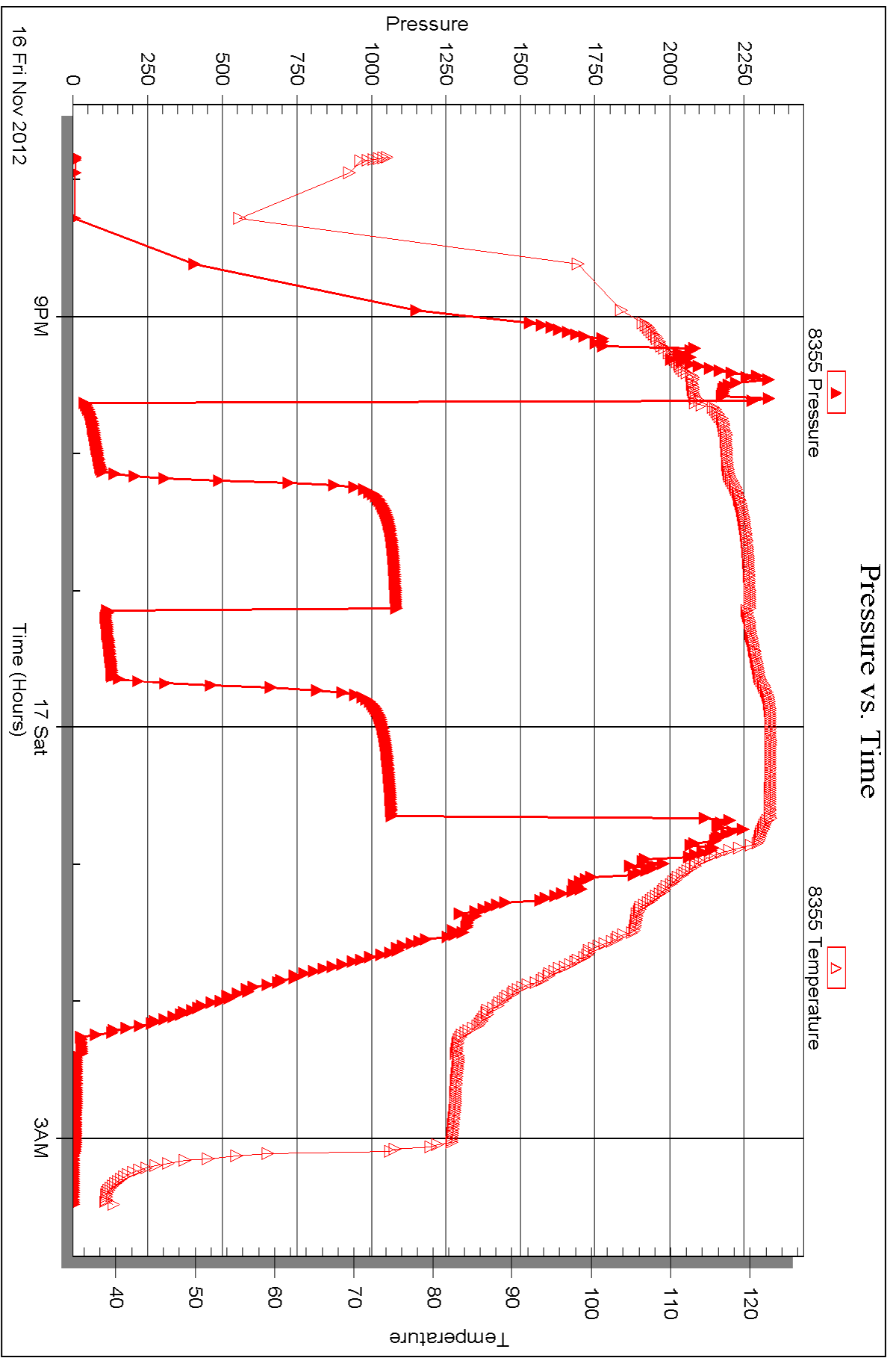


Serial #: 8355

Outside Murfin Drilling Co. Inc.

WWWM#1-4

DST Test Number: 7





DRILL STEM TEST REPORT

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

250 N Water STE 300
Wichita, KS 67202

ATTN: Robert Hendrix

W W W M #1-4

4-13s-32w Logan,KS

Start Date: 2012.11.17 @ 16:37:00

End Date: 2012.11.18 @ 00:49:15

Job Ticket #: 51252 DST #: 8

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.11.23 @ 10:47:48



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

4-13s-32w Logan, KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

ATTN: Robert Hendrix

Job Ticket: 51252

DST#: 8

Test Start: 2012.11.17 @ 16:37:00

GENERAL INFORMATION:

Formation: **Cherokee- Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:26:30

Time Test Ended: 00:49:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Sam Esparza

Unit No: 58

Interval: 4565.00 ft (KB) To 4630.00 ft (KB) (TVD)

Reference Elevations: 3056.00 ft (KB)

Total Depth: 4630.00 ft (KB) (TVD)

3045.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8674

Inside

Press @ Run Depth: 292.62 psig @ 4566.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.11.17

End Date:

2012.11.18

Last Calib.:

2012.11.18

Start Time:

16:37:05

End Time:

00:49:14

Time On Btm:

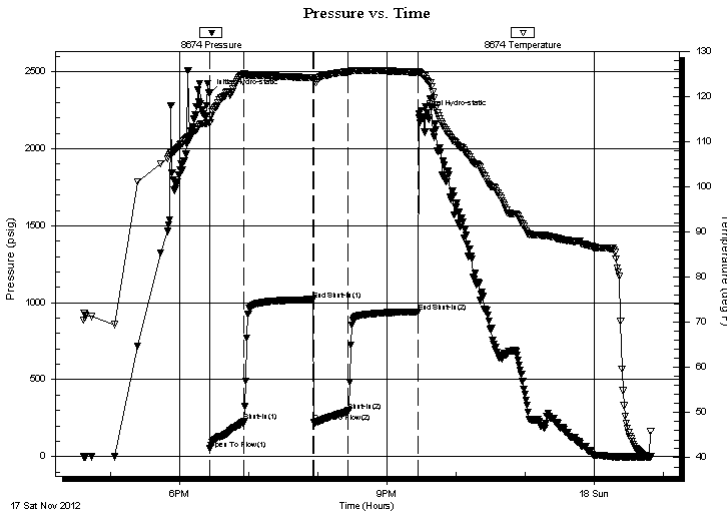
2012.11.17 @ 18:26:00

Time Off Btm:

2012.11.17 @ 21:28:00

TEST COMMENT: IF: BOB @ 5 min.
IS: BOB return @ 17 1/2 min.
FF: BOB immediatly.
FS: BOB return @ 23 min.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2359.07	114.92	Initial Hydro-static
1	49.34	114.13	Open To Flow (1)
31	226.75	125.07	Shut-In(1)
91	1020.37	124.23	End Shut-In(1)
91	222.79	123.83	Open To Flow (2)
121	292.62	125.52	Shut-In(2)
181	941.37	125.43	End Shut-In(2)
182	2225.31	125.46	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
485.00	GMCO 20g 35m 45o	4.66
235.00	GO 20g 80o	3.30
0.00	1700' GIP	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

250 N Water STE 300
Wichita, KS 67202

ATTN: Robert Hendrix

4-13s-32w Logan, KS

W W W M #1-4

Job Ticket: 51252

DST#: 8

Test Start: 2012.11.17 @ 16:37:00

GENERAL INFORMATION:

Formation: **Cherokee- Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:26:30

Time Test Ended: 00:49:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Sam Esparza

Unit No: 58

Interval: 4565.00 ft (KB) To 4630.00 ft (KB) (TVD)

Reference Elevations: 3056.00 ft (KB)

Total Depth: 4630.00 ft (KB) (TVD)

3045.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8355 Outside

Press @ Run Depth: psig @ 4566.00 ft (KB)

Start Date: 2012.11.17

End Date:

2012.11.18

Capacity: 8000.00 psig

Last Calib.:

2012.11.18

Start Time: 16:37:05

End Time:

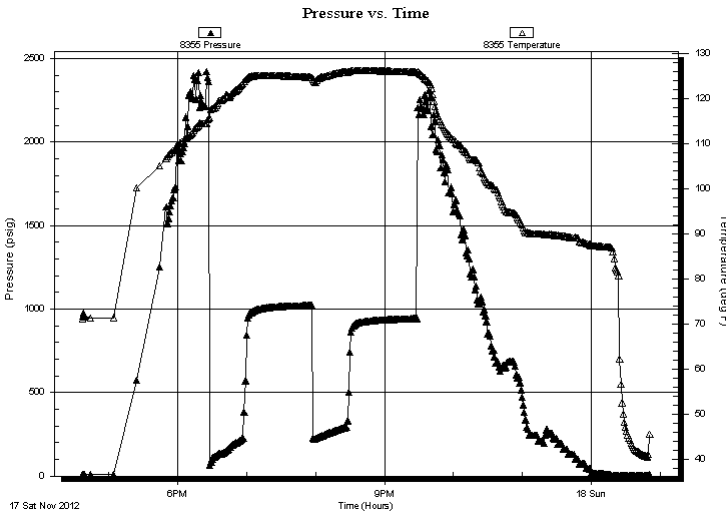
00:50:59

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: BOB @ 5 min.
IS: BOB return @ 17 1/2 min.
FF: BOB immediatly.
FS: BOB return @ 23 min.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
485.00	GMCO 20g 35m 45o	4.66
235.00	GO 20g 80o	3.30
0.00	1700' 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.

4-13s-32w Logan, KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 51252

DST#: 8

ATTN: Robert Hendrix

Test Start: 2012.11.17 @ 16:37:00

Tool Information

Drill Pipe:	Length: 4319.00 ft	Diameter: 3.80 inches	Volume: 60.58 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 235.00 ft	Diameter: 2.25 inches	Volume: 1.16 bbl	Weight to Pull Loose: 95000.00 lb
			<u>Total Volume: 61.74 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4565.00 ft			Final 71000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	65.00 ft			
Tool Length:	88.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4543.00	
Shut In Tool	5.00			4548.00	
Hydraulic tool	5.00			4553.00	
Safety Joint	3.00			4556.00	
Packer	5.00			4561.00	23.00 Bottom Of Top Packer
Packer	4.00			4565.00	
Stubb	1.00			4566.00	
Recorder	0.00	8355	Outside	4566.00	
Recorder	0.00	8674	Inside	4566.00	
Perforations	28.00			4594.00	
Change Over Sub	1.00			4595.00	
Drill Pipe	31.00			4626.00	
Change Over Sub	1.00			4627.00	
Bullnose	3.00			4630.00	65.00 Bottom Packers & Anchor

Total Tool Length: 88.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

4-13s-32w Logan,KS

250 N Water STE 300
Wichita, KS 67202

W W W M #1-4

Job Ticket: 51252

DST#: 8

ATTN: Robert Hendrix

Test Start: 2012.11.17 @ 16:37:00

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.39 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
485.00	GMCO 20g 35m 45o	4.663
235.00	GO 20g 80o	3.296
0.00	1700' GIP	0.000

Total Length: 720.00 ft Total Volume: 7.959 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Oil API: 26 @ 40 degrees= 28 API

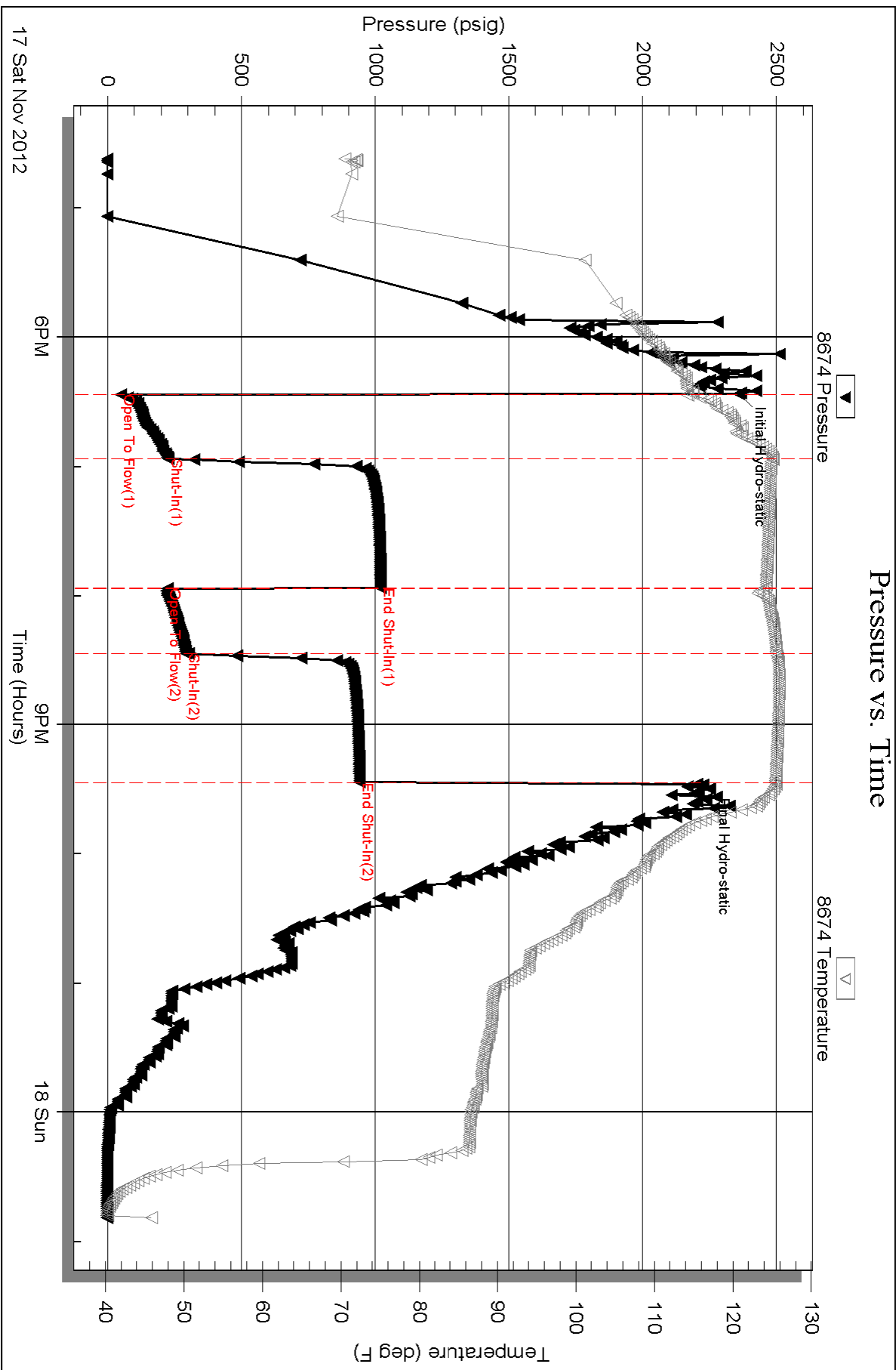
Serial #: 8674

Inside

Murfin Drilling Co. Inc.

WWWM#1-4

DST Test Number: 8

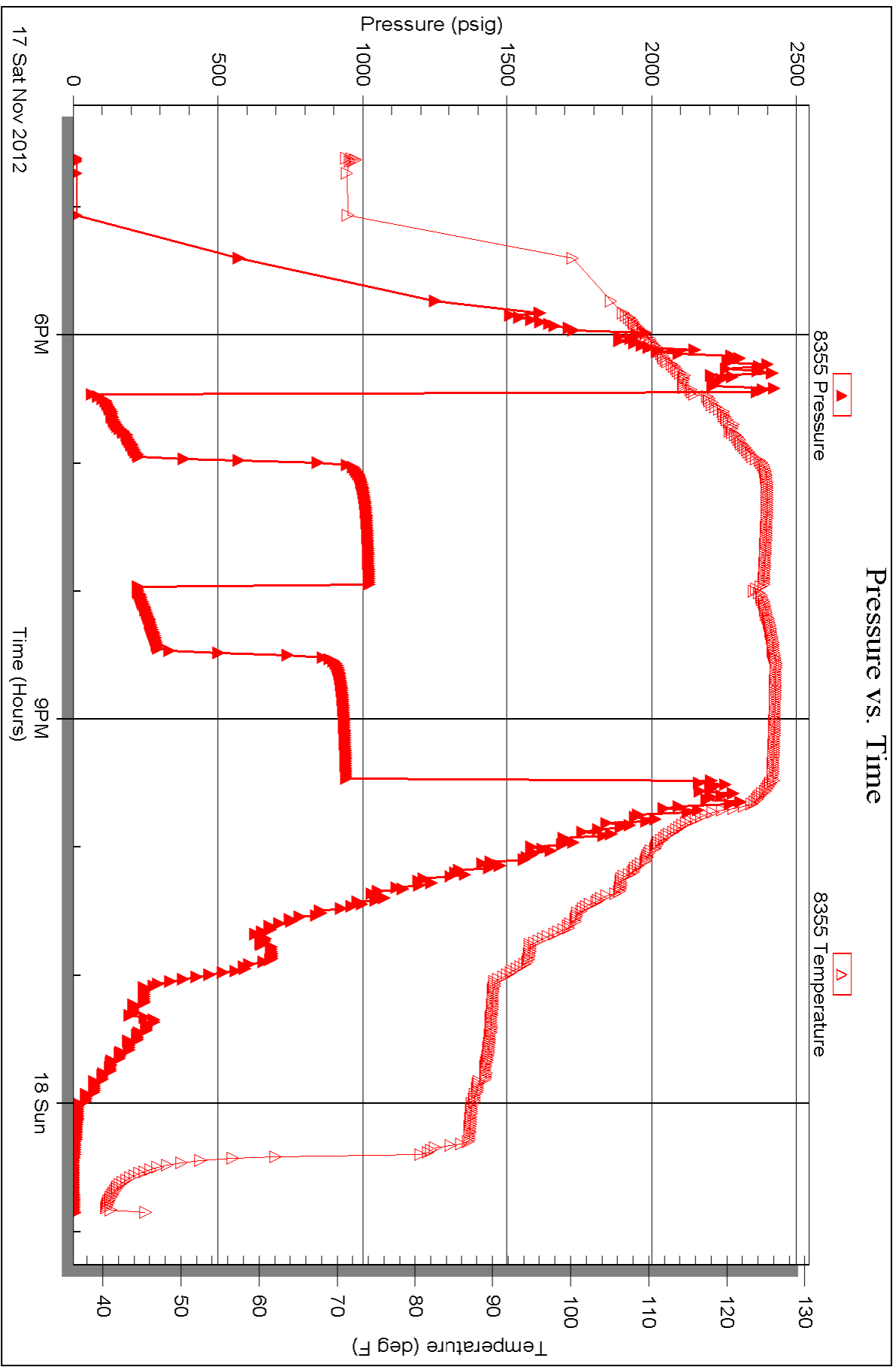


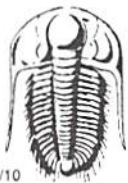
Serial #: 8355

Outside Murfin Drilling Co. Inc.

WWWM#1-4

DST Test Number: 8





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **49820**

4/10

Well Name & No. <u>WWWM #1-4</u>	Test No. <u>1</u>	Date <u>11/11/12</u>
Company <u>Murfin Drilling Co. Inc.</u>	Elevation <u>3056</u>	KB <u>3045</u> GL
Address <u>250 N Water STE 300 Wichita, KS 67202</u>		
Co. Rep / Geo. <u>Robert Hendrix</u>	Rig <u>Murfin #22</u>	
Location: Sec. <u>4</u> Twp. <u>13S</u> Rge. <u>32W</u> Co. <u>Logan</u> State <u>KS</u>		

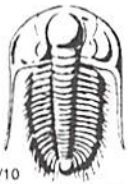
Interval Tested <u>4006-4107</u>	Zone Tested <u>Toronto - Lansing "D"</u>
Anchor Length <u>101'</u>	Drill Pipe Run <u>3754</u> Mud Wt. <u>9.1</u>
Top Packer Depth <u>4002</u>	Drill Collars Run <u>235</u> Vis <u>53</u>
Bottom Packer Depth <u>4006</u>	Wt. Pipe Run <u>Ø</u> WL <u>6.4</u>
Total Depth <u>4107</u>	Chlorides <u>3200</u> ppm System LCM <u>6</u>
Blow Description <u>BoB@ 3 min.</u>	
<u>No return.</u>	
<u>BoB@ 3 min.</u>	
<u>No return</u>	

Rec	Feet of	%gas	%oil	%water	%mud
<u>220'</u>	<u>OCM</u>	<u>5</u>	<u>5</u>	<u>95</u>	<u>95</u>
<u>500'</u>	<u>60WCM</u>	<u>5</u>	<u>5</u>	<u>10</u>	<u>80</u>
<u>315'</u>	<u>60MCW</u>	<u>5</u>	<u>5</u>	<u>70</u>	<u>20</u>
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____

Rec Total <u>1035</u>	BHT <u>118</u>	Gravity _____	API RW _____	@ _____ °F	Chlorides _____ ppm
(A) Initial Hydrostatic <u>2002</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>9:15</u>			
(B) First Initial Flow <u>73</u>	<input type="checkbox"/> Jars _____	T-Started <u>10:14</u>			
(C) First Final Flow <u>319</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>12:12</u>			
(D) Initial Shut-In <u>1192</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>14:44</u>			
(E) Second Initial Flow <u>333</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>17:13</u>			
(F) Second Final Flow <u>492</u>	<input checked="" type="checkbox"/> Mileage <u>74 R/T</u> 114.70	Comments _____			
(G) Final Shut-In <u>1188</u>	<input type="checkbox"/> Sampler _____				
(H) Final Hydrostatic <u>1968</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____			
Initial Open <u>15</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>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>1439.70</u>			
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____			
	Sub Total <u>1439.70</u>				

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 49821

Well Name & No. WWWM #1-4 Test No. 2 Date 11/12/12
 Company Murfin Drilling Co Inc Elevation 3556 KB 3045 GL
 Address 250 N Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #22
 Location: Sec. 4 Twp. 13S Rge. 32W Co. Logan State KS

Interval Tested 4116-4150 Zone Tested Lansing "E-F"
 Anchor Length 34' Drill Pipe Run 3880 Mud Wt. 9.5
 Top Packer Depth 4112 Drill Collars Run 235 Vis 53
 Bottom Packer Depth 4116 Wt. Pipe Run Ø WL 6.4
 Total Depth 4150 Chlorides 4000 ppm System LCM 7

Blow Description BoB @ 11 min.
No return.
BoB @ 16 min.
No return.

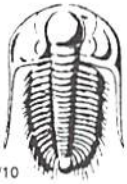
Rec	Feet of	%gas	%oil	%water	%mud
150	Gwcm (oil spots)	5	25	70	
875	Gmcw	5	85	10	

Rec Total 1025 BHT 122 Gravity — API RW .107 @ 56 °F Chlorides 90,000 ppm

(A) Initial Hydrostatic <u>2117</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>2:55</u>
(B) First Initial Flow <u>27</u>	<input type="checkbox"/> Jars	T-Started <u>3:35</u>
(C) First Final Flow <u>248</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>6:08</u>
(D) Initial Shut-In <u>1198</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>10:10</u>
(E) Second Initial Flow <u>254</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>12:41</u>
(F) Second Final Flow <u>492</u>	<input checked="" type="checkbox"/> Mileage <u>74 R/T</u> 114.70	Comments
(G) Final Shut-In <u>1182</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2098</u>	<input type="checkbox"/> Straddle	
	<input type="checkbox"/> Shale Packer	
	<input type="checkbox"/> Extra Packer	
	<input type="checkbox"/> Extra Recorder	
	<input type="checkbox"/> Day Standby	
	<input type="checkbox"/> Accessibility	
Initial Open <u>30</u>	Sub Total <u>1439.70</u>	
Initial Shut-In <u>60</u>		
Final Flow <u>60</u>		
Final Shut-In <u>90</u>		

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **49822**

Well Name & No. WWWM #1-4 Test No. 3 Date 11/13/12
 Company Murfin Drilling Co Inc. Elevation 3056 KB 3045 GL
 Address 250 N Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #22
 Location: Sec. 4 Twp. 13S Rge. 32W Co. Logan State KS

Interval Tested 4187-4248 Zone Tested Lensing "H-I"
 Anchor Length 61' Drill Pipe Run 3944 Mud Wt. 9.3
 Top Packer Depth 4183 Drill Collars Run 235 Vis 53
 Bottom Packer Depth 4187 Wt. Pipe Run Ø WL 7.6
 Total Depth 4248 Chlorides 4900 ppm System LCM 7
 Blow Description 3/4" blow.
No return.

No blow.
No return.

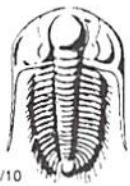
Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Mud (oil spots)</u>				<u>100</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5 BHT 116 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2089</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>3:50</u>
(B) First Initial Flow <u>16</u>	<input type="checkbox"/> Jars	T-Started <u>4:27</u>
(C) First Final Flow <u>21</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>6:20</u>
(D) Initial Shut-In <u>1136</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/K</u>	T-Pulled <u>9:21</u>
(E) Second Initial Flow <u>24</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>11:17</u>
(F) Second Final Flow <u>26</u>	<input checked="" type="checkbox"/> Mileage <u>74 R/T</u> 114.70	Comments
(G) Final Shut-In <u>1021</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2040</u>	<input type="checkbox"/> Straddle	
	<input type="checkbox"/> Shale Packer	
	<input type="checkbox"/> Extra Packer	
	<input type="checkbox"/> Extra Recorder	
	<input type="checkbox"/> Day Standby	
	<input type="checkbox"/> Accessibility	
Initial Open <u>30</u>	Sub Total <u>1439.70</u>	
Initial Shut-In <u>60</u>		
Final Flow <u>30</u>		
Final Shut-In <u>60</u>		

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **49823**

4/10

Well Name & No. WWWM # 1-4 Test No. 4 Date 11/14/12
 Company Murfin Drilling Co Inc Elevation 3056 KB 3045 GL
 Address 250 N Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #22
 Location: Sec. 4 Twp. 13S Rge. 32W Co. Logan State KS

Interval Tested 4246-4334 Zone Tested Lansing "J-K-L"
 Anchor Length 88' Drill Pipe Run 4004 Mud Wt. 9.5
 Top Packer Depth 4242 Drill Collars Run 235 Vis SS
 Bottom Packer Depth 4246 Wt. Pipe Run Ø WL 7.6
 Total Depth 4334 Chlorides 4000 ppm System LCM 8

Blow Description 6" blow.

No return.

Bob @ 58 min.

Weak surface return died @ 45 min

Rec	Feet of	%gas	%oil	%water	%mud
<u>30'</u>	<u>60</u>	<u>10</u>	<u>90</u>		
<u>250'</u>	<u>700m</u>	<u>5</u>	<u>15</u>		<u>80</u>
<u>180' GID</u>					

Rec Total 280 BHT 119 Gravity 36 API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2176 Test 1250 T-On Location 3:00
 (B) First Initial Flow 19 Jars T-Started 3:52
 (C) First Final Flow 87 Safety Joint 75 T-Open 6:06
 (D) Initial Shut-In 1212 Circ Sub N/C T-Pulled 10:08
 (E) Second Initial Flow 97 Hourly Standby T-Out 12:31
 (F) Second Final Flow 152 Mileage 74 R/T 114.70
 (G) Final Shut-In 1181 Sampler
 (H) Final Hydrostatic 2083 Straddle Ruined Shale Packer
 Shale Packer Ruined Packer
 Extra Packer Extra Copies

Initial Open 30 Extra Recorder
 Initial Shut-In 60 Day Standby
 Final Flow 60 Accessibility
 Final Shut-In 90 Sub Total 1439.70
 Sub Total 1439.70 MP/DST Disc't

Approved By Rob D. Hendrix Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 49824

Well Name & No. WWM #1-4 Test No. 5 Date 11/15/12
 Company Murfin Drilling Co Inc Elevation 3556 KB 3045 GL
 Address 250 N Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #22
 Location: Sec. 4 Twp. 13S Rge. 32W Co. Logan State KS

Interval Tested 4377-4460 Zone Tested Marmaton - Altamont
 Anchor Length 83' Drill Pipe Run 4130 Mud Wt. 9.2
 Top Packer Depth 4373 Drill Collars Run 235 Vis 69
 Bottom Packer Depth 4377 Wt. Pipe Run Ø WL 7.2
 Total Depth 4460 Chlorides 5000 ppm System LCM 7
 Blow Description Bob @ 6 min.
7 1/2" return.
Bob @ 1 1/2 min.
8 3/4" return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>160</u>	<u>GO</u>	<u>20</u>	<u>80</u>		
<u>490</u>	<u>GMCO</u>	<u>20</u>	<u>60</u>		<u>20</u>
	<u>1450' GIP</u>				

Rec Total 650 BHT 122 Gravity 30 API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic <u>2244</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>5:30</u>
(B) First Initial Flow <u>49</u>	<input type="checkbox"/> Jars	T-Started <u>5:50</u>
(C) First Final Flow <u>196</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>8:02</u>
(D) Initial Shut-In <u>579</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>11:04</u>
(E) Second Initial Flow <u>209</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>13:42</u>
(F) Second Final Flow <u>262</u>	<input checked="" type="checkbox"/> Mileage <u>74 R/T</u> 114.70	Comments
(G) Final Shut-In <u>605</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2166</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>30</u>	<input type="checkbox"/> Day Standby	Total <u>1439.70</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1439.70</u>	

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **49825**

4/10

Well Name & No. WWWM #1-4 Test No. 6 Date 11/15/12
 Company Murfin Drilling Co. Inc. Elevation 356 KB 3045 GL
 Address 250 N Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #22
 Location: Sec. 4 Twp. 13S Rge. 32W Co. Logan State KS

Interval Tested 4468-4495 Zone Tested Pawnee
 Anchor Length 27' Drill Pipe Run 4225 Mud Wt. 9.3
 Top Packer Depth 4464 Drill Collars Run 235 Vis 53
 Bottom Packer Depth 4468 Wt. Pipe Run Ø WL 7.6
 Total Depth 4495 Chlorides 4100 ppm System LCM 8

Blow Description BoB @ 2 1/2 min
BoB @ 10 min return.
BoB @ immediately
BoB @ 8 1/2 min return.

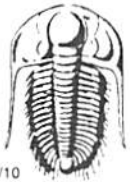
Rec	Feet of	%gas	%oil	%water	%mud
<u>635</u>	<u>GO</u>	<u>30</u>	<u>70</u>		
	<u>2080' GIP</u>				

Rec Total 635 BHT 127 Gravity 23 API RW — @ — ° F Chlorides — ppm

(A) Initial Hydrostatic <u>2244</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>2315</u>
(B) First Initial Flow <u>52</u>	<input type="checkbox"/> Jars	T-Started <u>23:42</u>
(C) First Final Flow <u>173</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>1:48</u>
(D) Initial Shut-In <u>1027</u>	<input checked="" type="checkbox"/> Circ Sub <u>USED</u> 50	T-Pulled <u>4:19</u>
(E) Second Initial Flow <u>196</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>8:44</u>
(F) Second Final Flow <u>266</u>	<input checked="" type="checkbox"/> Mileage <u>74 R/T</u> 114.70	Comments
(G) Final Shut-In <u>1011</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2182</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Open <u>15</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>15</u>	<input type="checkbox"/> Day Standby	Total <u>1489.70</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1489.70</u>	

Approved By [Signature] Our Representative [Signature]

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. 51251

Well Name & No. WWW #1-4 Test No. 7 Date 11/16/12
 Company Murfin Drilling Co Inc Elevation 3056 KB 3045 GL
 Address 250 N Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #22
 Location: Sec. 4 Twp. 13S Rge. 32W Co. Logan State KS

Interval Tested 4498-4555 Zone Tested Lower Pawnee - Ft. Scott
 Anchor Length 57' Drill Pipe Run 4256 Mud Wt. 9.2
 Top Packer Depth 4494 Drill Collars Run 235 Vis 61
 Bottom Packer Depth 4498 Wt. Pipe Run Ø WL 7.2
 Total Depth 4555 Chlorides 3800 ppm System LCM Ø 7
 Blow Description BoB @ 16 min.
Weak surface return died @ 43 min.
BoB @ 9 min.
1 1/4" return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>130</u>	<u>60</u>	<u>30</u>	<u>70</u>		
<u>160</u>	<u>90 CM</u>	<u>15</u>	<u>35</u>		<u>50</u>
<u> </u>	<u>500' GP</u>				
<u> </u>	<u> </u>				
<u> </u>	<u> </u>				

Rec Total 290 BHT 122 Gravity 27 API RW @ °F Chlorides ppm

(A) Initial Hydrostatic <u>2264</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>19:30</u>
(B) First Initial Flow <u>19</u>	<input type="checkbox"/> Jars <u> </u>	T-Started <u>19:50</u>
(C) First Final Flow <u>99</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>21:37</u>
(D) Initial Shut-In <u>1088</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>00:38</u>
(E) Second Initial Flow <u>101</u>	<input type="checkbox"/> Hourly Standby <u> </u>	T-Out <u>3:28</u>
(F) Second Final Flow <u>125</u>	<input checked="" type="checkbox"/> Mileage <u>74 R/T</u> 114.70	Comments <u> </u>
(G) Final Shut-In <u>1073</u>	<input type="checkbox"/> Sampler <u> </u>	<input type="checkbox"/> Ruined Shale Packer <u> </u>
(H) Final Hydrostatic <u>2211</u>	<input type="checkbox"/> Straddle <u> </u>	<input type="checkbox"/> Ruined Packer <u> </u>
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer <u> </u>	<input type="checkbox"/> Extra Copies <u> </u>
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer <u> </u>	Sub Total <u>0</u>
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder <u> </u>	Total <u>1439.70</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby <u> </u>	MP/DST Disc't <u> </u>
	<input type="checkbox"/> Accessibility <u> </u>	
	Sub Total <u>1439.70</u>	

Approved By [Signature] Our Representative [Signature]

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. 51252

Well Name & No. WWJM #1-4 Test No. 8 Date 11/17/12
 Company Murfin Drilling Co Inc Elevation 3056 KB 345 GL
 Address 250 N Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #22
 Location: Sec. 4 Twp. 13S Rge. 32W Co. Logan State KS

Interval Tested 4565-4630 Zone Tested Cherokee - Johnson
 Anchor Length 65' Drill Pipe Run 4319 Mud Wt. 9.3
 Top Packer Depth 4561 Drill Collars Run 235 Vis 56
 Bottom Packer Depth 4565 Wt. Pipe Run Ø WL 8.4
 Total Depth 4630 Chlorides 3800 ppm System LCM 6

Blow Description Bob @ 5 min.
Bob return @ 17 1/2 min.
Bob immediately.
Bob return @ 23 min.

Rec	Feet of	%gas	%oil	%water	%mud
<u>235</u>	<u>70</u>	<u>20</u>	<u>80</u>		
<u>485</u>	<u>GMCO</u>	<u>20</u>	<u>45</u>		<u>35</u>
	<u>1700' GIP</u>				

Rec Total 720 BHT 125 Gravity 28 API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2359 Test 1250 T-On Location 16:20
 (B) First Initial Flow 49 Jars — T-Started 16:37
 (C) First Final Flow 227 Safety Joint 75 T-Open 18:27
 (D) Initial Shut-In 1020 Circ Sub N/C T-Pulled 21:28
 (E) Second Initial Flow 223 Hourly Standby — T-Out 00:51
 (F) Second Final Flow 293 Mileage 74 R/T 229.40 Comments Graded 600pm
 (G) Final Shut-In 941 Sampler — 11/17/12
 (H) Final Hydrostatic 2225 Straddle — Ruined Shale Packer —
 Shale Packer — Ruined Packer 320
 Extra Packer — Extra Copies —

Initial Open 30 Extra Recorder — Sub Total 320
 Initial Shut-In 60 Day Standby — Total 1874.40
 Final Flow 30 Accessibility — MP/DST Disc't —
 Final Shut-In 60 Sub Total 1554.40

Approved By Robert P. Hendrix Our Representative [Signature]

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.



acct.
Prod. - L2H

INVOICE

PO Box 93999
Southlake, TX 76092

Invoice Number: 133454

Invoice Date: Nov 7, 2012

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

Page: 1



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

Customer ID	Well Name/# or Customer P.O.	Payment Terms	
Murfin	WWWWM #1-4	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-01	Oakley	Nov 7, 2012	12/7/12

Quantity	Item	Description	Unit Price	Amount
160.00	MAT	Class A Common	17.90	2,864.00
6.00	MAT	Chloride	64.00	384.00
168.00	SER	Cubic Feet	2.48	416.64
100.62	SER	Ton Mileage	2.60	261.61
1.00	SER	Surface	1,512.25	1,512.25
13.00	SER	Pump Truck Mileage	7.70	100.10
1.00	SER	Manifold Head Rental	275.00	275.00
13.00	SER	Light Vehicle Mileage	4.40	57.20
1.00	CEMENTER	Andrew Forslund		
1.00	EQUIP OPER	Dane Retzloff		
1.00	OPER ASSIST	D J Gray		

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

\$ 2289.61

ONLY IF PAID ON OR BEFORE
Dec 2, 2012

Subtotal	5,870.80
Sales Tax	253.34
Total Invoice Amount	6,124.14
Payment/Credit Applied	
TOTAL	6,124.14

OKD

ALLIED OIL & GAS SERVICES, LLC 058965

Federal Tax I.D.# 20-5976804

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

SERVICE POINT:
Oakley

DATE <u>11-7-12</u>	SEC <u>4</u>	TWP <u>13</u>	RANGE <u>32</u>	CALLED OUT	ON LOCATION	JOB START <u>9:00 PM</u>	JOB FINISH <u>9:20 PM</u>
WELL # <u>1-4</u>	LOCATION <u>Oakley 115 1W 125</u>		COUNTY <u>LOGAN</u>	STATE <u>KS</u>			
OLD OR <input checked="" type="checkbox"/> NEW (Circle one)		WIND <u>winfd</u>					

CONTRACTOR <u>Murfin 22</u>	OWNER <u>same</u>
TYPE OF JOB <u>Surface</u>	
HOLESIZE <u>12 1/4</u>	TD. <u>225</u>
CASING SIZE <u>8 5/8</u>	DEPTH <u>225</u>
TUBING SIZE	DEPTH
DRILL PIPE	DEPTH
COOL	DEPTH
RES. MAX	MINIMUM
WEAS. LINE	SHOE JOINT
CEMENT LEFT IN CSG. <u>15'</u>	
WEARS.	
DISPLACEMENT <u>13,37 GAL</u>	

CEMENT	AMOUNT ORDERED <u>160 sks com</u>
	<u>380 cc</u>
COMMON <u>160 sks</u>	@ <u>17.90</u> <u>2864.00</u>
POZMIX	@
GEL	@
CHLORIDE <u>6 sks</u>	@ <u>64.00</u> <u>384.00</u>
ASC	@

PUMP TRUCK	CEMENTER <u>Andrew 1</u>
	HELPER <u>Dane 2</u>
TANK TRUCK	
	DRIVER <u>DJ 3</u>
TANK TRUCK	
	DRIVER

HANDLING <u>168 cu/ft</u>	@ <u>2.48</u> <u>416.64</u>
MILEAGE <u>2.60 hrs/mile</u>	@ <u>274.25</u> <u>713.05</u>
	TOTAL <u>392.69</u>

REMARKS:

Cement in cellar

Thank you

CHARGE TO: Murfin

STREET _____

CITY _____ STATE _____ ZIP _____

SERVICE

DEPTH OF JOB <u>225'</u>	
PUMP TRUCK CHARGE	<u>1572.25</u>
EXTRA FOOTAGE	@
MILEAGE <u>13 miles</u>	@ <u>7.70</u> <u>100.10</u>
MANIFOLD <u>head</u>	@ <u>275.00</u>
Light vehicle	@ <u>410</u> <u>571.20</u>

PLUG & FLOAT EQUIPMENT

_____	@	_____
_____	@	_____
_____	@	_____
_____	@	_____
_____	@	_____

TOTAL _____

SALES TAX (If Any) 253.34

TOTAL CHARGES 5,870.80

DISCOUNT 2289.61 IF PAID IN 30 DAYS

For: 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.

PRINTED NAME Kelly Wilson

SIGNATURE Kelly Wilson

3990



P. O. Box 466
 Ness City, KS 67560
 Off: 785-798-2300



Invoice

DATE	INVOICE #
11/27/2012	22942

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	WWWM	Logan	Company Rig	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 - 2557 Feet				1	Job	1,250.00	1,250.00
290	D-Air				2	Gallon(s)	35.00	70.00T
330	Swift Multi-Density Standard (MIDCON II)				200	Sacks	16.50	3,300.00T
276	Flocele				50	Lb(s)	2.00	100.00T
581D	Service Charge Cement				350	Sacks	2.00	700.00
583D	Drayage				1,395.16	Ton Miles	1.00	1,395.16
	Subtotal							7,295.16
	Sales Tax Logan County						7.80%	270.66
<p>APPROVED _____ 11/27/12 JL</p> <p>APPROVED _____ JL</p>								

Thank You For Your Business & Best Wishes For A Wonderful Holiday Season!!

Total \$7,565.82



CHARGE TO: Murphy Drilling Co.
 ADDRESS
 CITY, STATE, ZIP CODE

TICKET NO. 22942

PAGE 1 OF 2

SERVICE LOCATIONS: WELL/PROJECT NO. 1-4 LEASE W2221111 COUNTY/PARISH 1898A STATE TX CITY 5/11/12 DATE 11-27-12 OWNER

1. Mess City, TX TICKET TYPE CONTRACTOR RIG NAME/NO. 5/11/12 DELIVERED TO 5/11/12 ORDER NO.

2. Mess City, TX SERVICE SALES WELL TYPE W2221111 JOB PURPOSE Permit for 30' collar @ 2557' WELL PERMIT NO. WELL LOCATION

3. REFERRAL LOCATION INVOICE INSTRUCTIONS

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING		DESCRIPTION	QTY.	UM	QTY.	UM	UNIT PRICE	AMOUNT
		LOC	ACCT							
575		1		MILEAGE #113	80	mi			600	48000
576 D		1		Drill Pumps - cost for collar	1	ea	2557	#	125000	125000
298		1		D-Air	2	gal			3500	7000
330		2		SUD cement	201	bs			16.50	3300.00
276		2		Fluore	50	bs			200	10000
581		2		Service Charge - cement						
583		2		Drillage						

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
 DATE SIGNED 11-27-12 TIME SIGNED 8:00 P.M.
 X [Signature]

SWIFT OPERATOR [Signature] APPROVAL

REMIT PAYMENT TO:

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

8 mi 1395.14 to 34879 lbs

SURVEY

OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?
 YES NO

WE UNDERSTOOD AND MET YOUR NEEDS?
 YES NO

OUR SERVICE WAS PERFORMED WITHOUT DELAY?
 YES NO

WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?
 YES NO

ARE YOU SATISFIED WITH OUR SERVICE?
 YES NO

CUSTOMER DID NOT WISH TO RESPOND

PAGE TOTAL 7295.16

TOTAL 7565.82

Logan
 Tax 718.00
 270.66

Thank You!

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

JOB LOG

SWIFT Services, Inc.

DATE 11-22-12 PAGE NO. 1

CUSTOMER Martin Drly Co. WELL NO. 1-4 LEASE WWSM JOB TYPE Cement Port Collar TICKET NO. 22942

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	On location - 350 SKS SMD cont
								Set up Trks
	0915					1200	1200	P.C @ 2557 - 1st closed - ok
		3	3			C	1400/1000	Open P.C - inj rate
								Hook to Hqs.
		3				1000	1000	Start H2O ahead
		3	3			800	800	Have cir - start cont
						600	600	Cont cir - 175 SKS @ 11.2 #/gal
						400	400	Incr cont to 13 #/gal 25 SKS
						400	400	Fin cont - Displ 9 BBL
						400	400	Fin Displ.
								Close P.C to 1st ok
								Run 5 SKS.
	1045	2	10/14			400		Rev-out 2 - Plugs - clean
			25					Fin rev-out.
								Wash up & Pack up Trk
	11:00							Job Complete
								175 SKS @ 11.2 #/gal - to cir
								25 SKS @ 13 #/gal Tail in
								200 SKS SMD - TOTAL USED
								<i>[Signature]</i>

Accty -

cc: W1
cc: L17
cc: L-1



P. O. Box 466
Ness City, KS 67560
Off: 785-798-2300



Invoice

DATE	INVOICE #
11/19/2012	22939

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	WWWM	Logan	Company Rig	Oil	Development	Cement LongStri...	Don
PRICE REF.	DESCRIPTION				QTY	UM	UNIT PRICE	AMOUNT
575D	Mileage - 1 Way				80	Miles	6.00	480.00
578D-L	Pump Charge - Long String - 4733 Feet				1	Job	1,500.00	1,500.00
221	Liquid KCL (Clayfix)				4	Gallon(s)	25.00	100.00T
280	Flocheck 21				500	Gallon(s)	2.50	1,250.00T
290	D-Air				3	Gallon(s)	35.00	105.00T
403-5	5 1/2" Cement Basket				2	Each	250.00	500.00T
404-5	5 1/2" Port Collar				1	Each	2,400.00	2,400.00T
406-5	5 1/2" Latch Down Plug & Baffle				1	Each	250.00	250.00T
407-5	5 1/2" Insert Float Shoe With Auto Fill				1	Each	350.00	350.00T
409-5	5 1/2" Turbolizer				15	Each	90.00	1,350.00T
413-5	5 1/2" Roto Wall Scratcher				12	Each	40.00	480.00T
419-5	5 1/2" Rotating Head Rental				1	Each	200.00	200.00T
325	Standard Cement				225	Sacks	13.50	3,037.50T
276	Flocele				57	Lb(s)	2.00	114.00T
283	Salt				1,125	Lb(s)	0.20	225.00T
284	Calseal				11	Sack(s)	35.00	385.00T
285	CFR-1				159	Lb(s)	4.00	636.00T
581D	Service Charge Cement				225	Sacks	2.00	450.00
583D	Drayage				941.96	Ton Miles	1.00	941.96
	Subtotal							14,754.46
	Sales Tax Logan County						7.80%	887.84
We Appreciate Your Business!							Total	\$15,642.30

USED BY IC 103
APPROVED JF R



CHARGE TO: Martin Dr. Co.
 ADDRESS
 CITY, STATE, ZIP CODE

TICKET NO: 22939

PAGE 1 OF 2

SERVICE LOCATIONS	WELL/PROJECT NO.	LEASE	COUNTY/PARISH	STATE	CITY	DATE	OWNER
1. <u>Days 1st</u>	<u>1-4</u>	<u>Whelan</u>	<u>Logan</u>	<u>Ks</u>		<u>11-19-12</u>	
2. <u>Ness City, KS</u>	TICKET TYPE <input checked="" type="checkbox"/> SERVICE <input type="checkbox"/> SALES	CONTRACTOR <u>Co R's</u>	RIG NAME/NO. <u>#22</u>	SHIPPED VIA <u>ET</u>	DELIVERED TO <u>S. Delivery, KS</u>	ORDER NO.	
3.	WELL TYPE <u>D11</u>	WELL CATEGORY <u>Unfield</u>	JOB PURPOSE <u>Revent Longstring</u>	WELL PERMIT NO.		WELL LOCATION	
4.	REFERRAL LOCATION	INVOICE INSTRUCTIONS					

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING		DESCRIPTION	QTY.	UM	QTY.	UM	UNIT PRICE	AMOUNT
		LOC	ACCT							
575				MILEAGE #113	80 mi				600	48000
578				Pump Change - cur. Longstring	1 ea				150000	150000
281				Liquid RCL	4 gal				2500	10000
280				Flack-21	500 gal				250	125000
290				D. AIR	3 gal				3500	10500
403				Revent Baskets	2 ea				25000	50000
404				Part Oillet	1 ea				24000	24000
406				Latex Dress Plug V B-A	1 ea				25000	25000
407				Insert Fresh Seal fill up	1 ea				35000	35000
409				Turbolizers	15 ea				9000	135000
413				Rate Well Services	12 ea				4000	48000
419				Ratings Head Rental	1 ea				20000	20000

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

DATE SIGNED 11-19-12 TIME SIGNED 0900 A.M. P.M.

REMIT PAYMENT TO:

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

SURVEY	AGREE	UN-DECIDED	DIS-AGREE
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"/> NO	

PAGE TOTAL	896500
TOTAL	15,642.30

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES

The customer hereby acknowledges receipt of the materials and services listed on this ticket

APPROVAL

Thank You!



PO Box 466,
Ness City, KS 67560
Off: 785-798-2300

TICKET CONTINUATION

TICKET No. 22939

CUSTOMER
Mustin Driggs Co.

WELL
1-4 WUWUM

DATE
11-19-12

PAGE 2 OF 2

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			TIME	DESCRIPTION	WELL				UNIT PRICE	AMOUNT
		LOC	ACCT	DF			QTY	UM	QTY	UM		
325		2				Standard Prod	225	SKS	2150	lbs	1350	3037.50
276		2				Flacefs	57	lbs			200	114.00
283		2				Sell	1185	lbs			20	235.00
284		2				Balance	1058	lbs	11	SKS	3500	385.00
285		2				PPR-1	159	lbs			4.00	636.00
581		2									200	450.00
583		2									1.00	941.96
SERVICE CHARGE						Cement						
MILEAGE CHARGE												
TOTAL WEIGHT						80						
LOADED MILES						80						
CUBIC FEET						225	SKS					
TON MILES						941.96						

CONTINUATION TOTAL 5789.46

JOB LOG

SWIFT Services, Inc.

DATE 1-19-12 PAGE NO. 1

CUSTOMER Martin Drilling Co WELL NO. 1-4 LEASE WJWLM JOB TYPE Concrete Logging TICKET NO. 22939

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0850					15.5	5 1/2	To 4745'
	0910							On loc - F.E. - Rig changing over to new casing
								Start 5 1/2 15.5 #/ft 1514 to 4733'
								Insert Float Shoe w/ Pullup
								LD Baffle - 55 - 21' = 4712' <u>112 1/4</u>
								Cont. Turbo's - 1 through 13 - 50-51
								Cont. Bckt. # 51 & 52 Pinned
								P.C @ 2563' # 52 <u>(12' Roto Scrappers)</u>
	1010							Break Cir # 57
	1020							Cont. run casing
	1055							Drop ball up ball - 6 1/2 to cut / Fin casing
	1100							Cir / Rotate - (cut on location)
	1115							KCL Flush 15881
		6	15					500 flocheck 12881
		5	12					KCL spacer 5881
		5	5					Start 175 gals EA-2 mud @ 15.5 #/gal
			43					Fin cut - Waste Pump to Lines
		9						320 Drop L.D Plug - Start Displ
		8	80					400 Caught 1.1 ft psi
	1320	6 1/2	112 1/4			900	1000	Plug Down - Hold - Release & Hold
	1345	6	7					Plug RH - 30 gals ALH 20 gals
	1400		5					Job Complete
								Washup TK / Pullup

[Signature]
Don Brown