



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1207998
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: _____

1207998

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> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	Ivalee 1-4
Doc ID	1207998

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
4	4198-4203 LKC D	300g 15 % MCA	
			AD-1 Packer - 4272
4	4294-4300 LKC H	300g 15% MCA	
4	4334-4342 LKC J	300g 15% MCA	
4	4345-4350 LKC J	300g 15% MCA	
4	4530-4536 Pawnee	1000g 15% MCA	



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300
Wichita KS 67202

ATTN: Keith Reavis

Ivatee #1-4

4 -1s -37w Cheyenne Ks

Start Date: 2014.02.17 @ 02:22:00

End Date: 2014.02.17 @ 09:34:00

Job Ticket #: 56752 DST #: 1

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

Printed: 2014.02.27 @ 11:55:35



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water STE 300
Wichita KS 67202
ATTN: Keith Reavis

4 -1s -37w Cheyenne Ks

Ivaley #1-4

Job Ticket: 56752

DST#: 1

Test Start: 2014.02.17 @ 02:22:00

GENERAL INFORMATION:

Formation: **Foraker**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:32:30

Time Test Ended: 09:34:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Robert Zodrow

Unit No: 66

Interval: 3664.00 ft (KB) To 3716.00 ft (KB) (TVD)

Reference Elevations: 3170.00 ft (KB)

Total Depth: 3716.00 ft (KB) (TVD)

3157.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 13.00 ft

Serial #: 8874

Inside

Press@RunDepth: 29.67 psig @ 3665.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.02.17

End Date:

2014.02.17

Last Calib.:

2014.02.17

Start Time: 02:23:00

End Time:

09:34:00

Time On Btm:

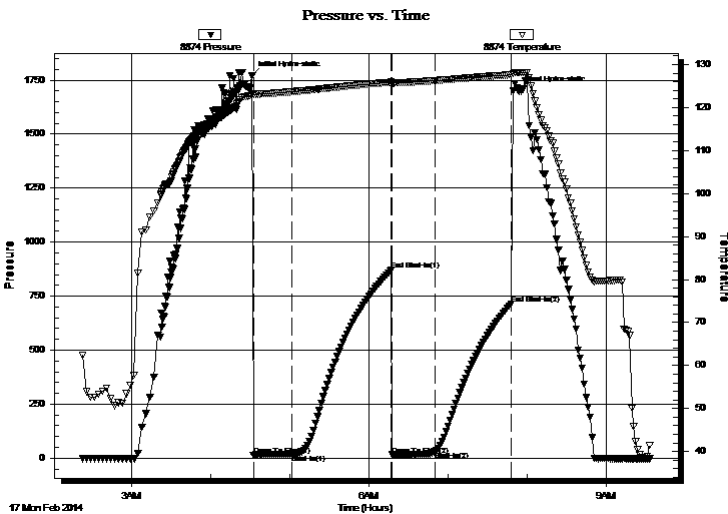
2014.02.17 @ 04:31:30

Time Off Btm:

2014.02.17 @ 07:53:30

TEST COMMENT: 30-IF- weak surface blow
60-ISI- no return
30-FF- no blow
60-FSI- no return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1771.39	123.20	Initial Hydro-static
1	14.22	123.04	Open To Flow (1)
31	15.22	123.68	Shut-In(1)
106	870.90	125.89	End Shut-In(1)
106	15.09	125.54	Open To Flow (2)
139	29.67	126.25	Shut-In(2)
197	714.29	127.60	End Shut-In(2)
202	1700.94	128.14	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	mud 100%m	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water STE 300
Wichita KS 67202
ATTN: Keith Reavis

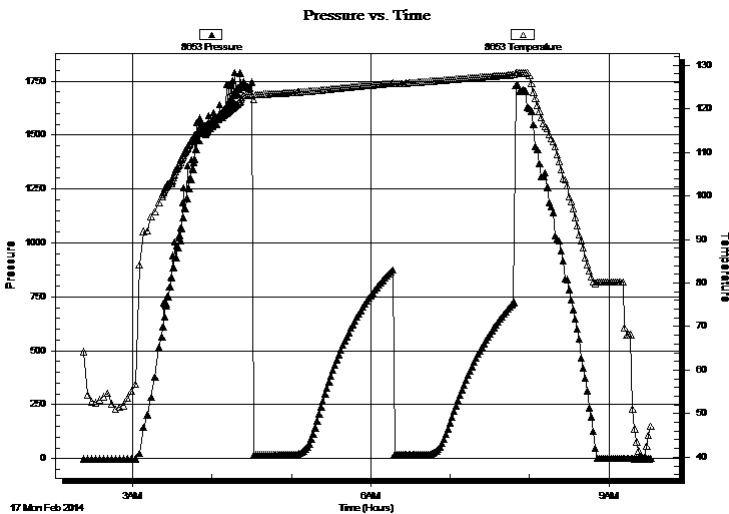
4 -1s -37w Cheyenne Ks
Ivaley #1-4
Job Ticket: 56752 **DST#: 1**
Test Start: 2014.02.17 @ 02:22:00

GENERAL INFORMATION:

Formation: **Foraker**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:32:30
Time Test Ended: 09:34:00
Interval: **3664.00 ft (KB) To 3716.00 ft (KB) (TVD)**
Total Depth: 3716.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Reference Elevations: 3170.00 ft (KB)
3157.00 ft (CF)
KB to GR/CF: 13.00 ft

Serial #: 8653 **Outside**
Press@RunDepth: psig @ 3665.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.02.17 End Date: 2014.02.17 Last Calib.: 2014.02.17
Start Time: 02:23:00 End Time: 09:32:30 Time On Btm:
Time Off Btm:

TEST COMMENT: 30-IF- weak surface blow
60-ISI-no return
30-FF- no blow
60-FSI- no return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
1.00	mud 100%m	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

4 -1s -37w Cheyenne Ks

250 N Water STE 300
Wichita KS 67202

Ivalee #1-4

Job Ticket: 56752

DST#: 1

ATTN: Keith Reavis

Test Start: 2014.02.17 @ 02:22:00

Tool Information

Drill Pipe:	Length: 3649.00 ft	Diameter: 3.88 inches	Volume: 53.36 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 40000.00 lb
			<u>Total Volume: 53.36 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3664.00 ft			Final 38000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	52.00 ft			
Tool Length:	80.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3637.00	
Shut In Tool	5.00			3642.00	
Hydraulic tool	5.00			3647.00	
Jars	5.00			3652.00	
Safety Joint	3.00			3655.00	
Packer	5.00			3660.00	28.00 Bottom Of Top Packer
Packer	4.00			3664.00	
Stubb	1.00			3665.00	
Recorder	0.00	8653	Outside	3665.00	
Recorder	0.00	8874	Inside	3665.00	
Perforations	13.00			3678.00	
Change Over Sub	1.00			3679.00	
Drill Pipe	31.00			3710.00	
Change Over Sub	1.00			3711.00	
Bullnose	5.00			3716.00	52.00 Bottom Packers & Anchor

Total Tool Length: 80.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

4 -1s -37w Cheyenne Ks

250 N Water STE 300
Wichita KS 67202

Ivaley #1-4

Job Ticket: 56752

DST#: 1

ATTN: Keith Reavis

Test Start: 2014.02.17 @ 02:22:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 69.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1.00	mud 100%m	0.015

Total Length: 1.00 ft Total Volume: 0.015 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

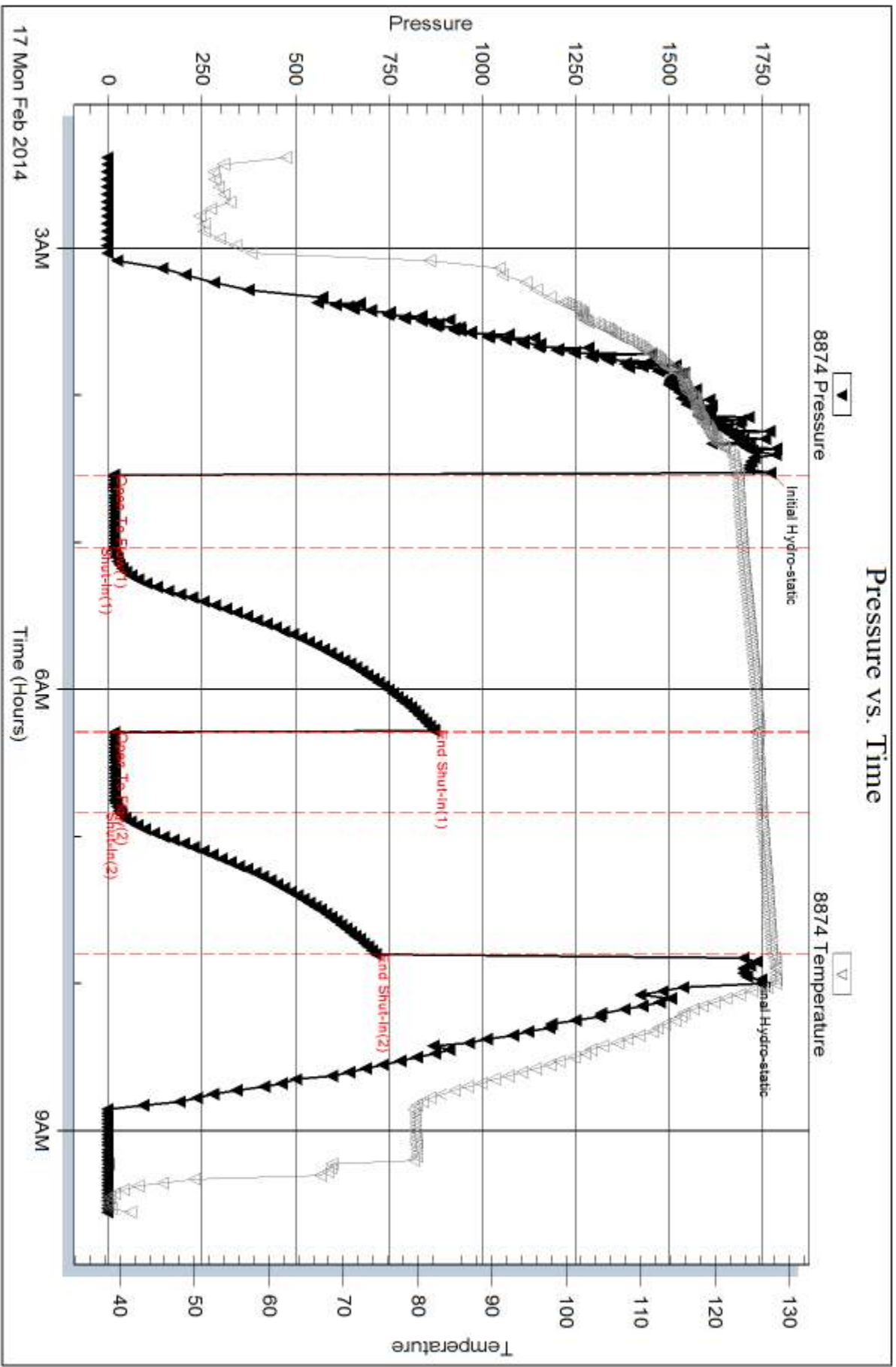
Serial #: 8874

Inside

Murfin Drilling Co

Walee #1-4

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 56752

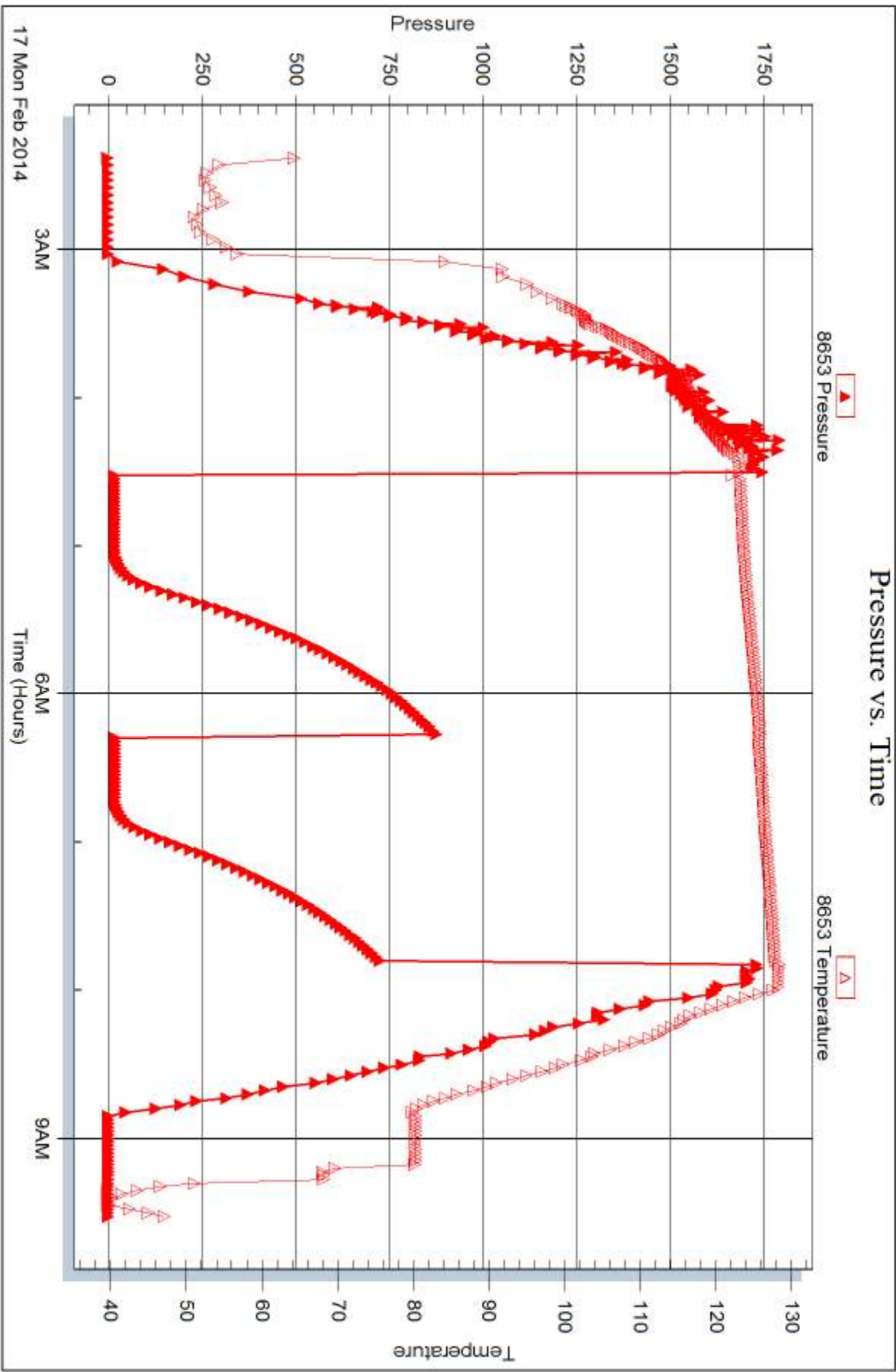
Printed: 2014.02.27 @ 11:55:37

Serial #: 8653

Outside Murfin Drilling Co

Wells #1-4

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 56752

Printed: 2014.02.27 @ 11:55:37



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300
Wichita KS 67202

ATTN: Keith Reavis

Ivatee #1-4

4 -1s -37w Cheyenne Ks

Start Date: 2014.02.18 @ 05:46:00

End Date: 2014.02.18 @ 12:52:30

Job Ticket #: 56753 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.02.27 @ 11:55:11



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co

4 -1s -37w Cheyenne Ks

250 N Water STE 300
Wichita KS 67202

Ivaley #1-4

Job Ticket: 56753

DST#: 2

ATTN: Keith Reavis

Test Start: 2014.02.18 @ 05:46:00

GENERAL INFORMATION:

Formation: **Oread**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:00:30

Time Test Ended: 12:52:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Robert Zodrow

Unit No: 66

Interval: 4009.00 ft (KB) To 4073.00 ft (KB) (TVD)

Total Depth: 3716.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3170.00 ft (KB)

3157.00 ft (CF)

KB to GR/CF: 13.00 ft

Serial #: 8874

Inside

Press@RunDepth: 33.93 psig @ 4010.00 ft (KB)

Start Date: 2014.02.18

End Date:

2014.02.18

Start Time: 05:47:00

End Time:

12:52:30

Capacity: 8000.00 psig

Last Calib.: 2014.02.18

Time On Btm: 2014.02.18 @ 08:00:00

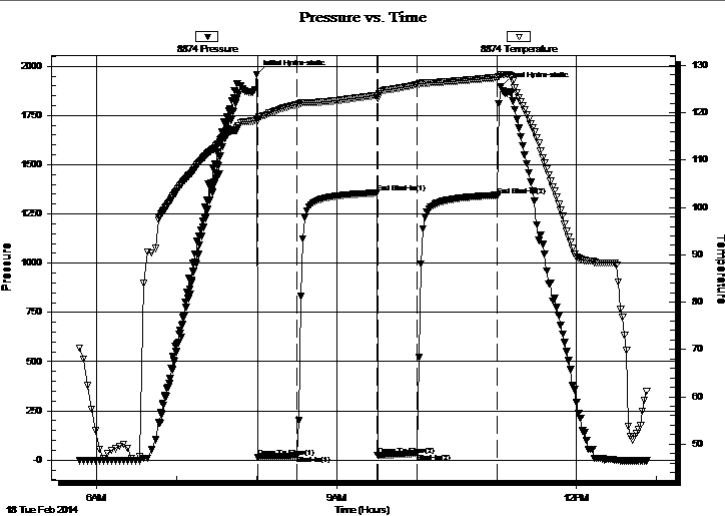
Time Off Btm: 2014.02.18 @ 11:03:00

TEST COMMENT: 30-IF- Blow Built To 1 1/4"

60-ISI- No Return

30-FF- Blow Built 1/4"

60-FSI- No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1958.79	118.53	Initial Hydro-static
1	15.01	118.47	Open To Flow (1)
30	22.46	121.73	Shut-In(1)
90	1356.34	123.71	End Shut-In(1)
91	24.35	123.09	Open To Flow (2)
120	33.93	125.98	Shut-In(2)
181	1343.06	127.47	End Shut-In(2)
183	1896.88	128.10	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	Mud 100% with oil spots	0.73

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co

4 -1s -37w Cheyenne Ks

250 N Water STE 300
Wichita KS 67202

Ivalee #1-4

Job Ticket: 56753

DST#: 2

ATTN: Keith Reavis

Test Start: 2014.02.18 @ 05:46:00

GENERAL INFORMATION:

Formation: **Oread**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:00:30

Time Test Ended: 12:52:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Robert Zodrow

Unit No: 66

Interval: 4009.00 ft (KB) To 4073.00 ft (KB) (TVD)

Total Depth: 3716.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3170.00 ft (KB)

3157.00 ft (CF)

KB to GR/CF: 13.00 ft

Serial #: 8653 Outside

Press@RunDepth: psig @ 4010.00 ft (KB)

Start Date: 2014.02.18 End Date: 2014.02.18

Start Time: 05:47:00 End Time: 12:51:30

Capacity: 8000.00 psig

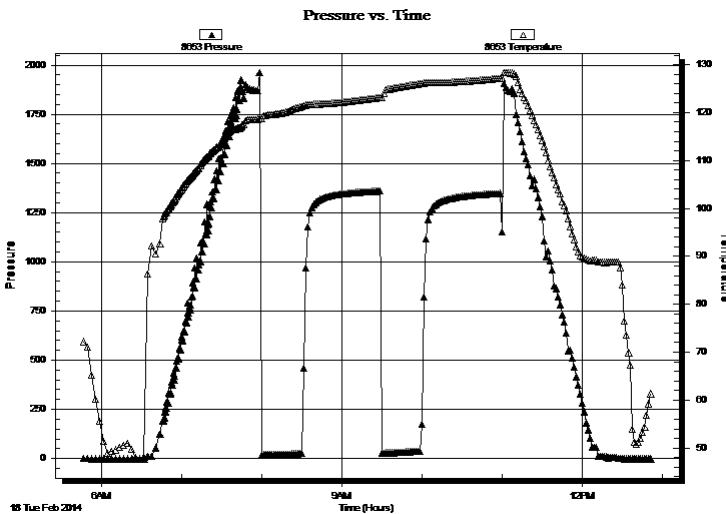
Last Calib.: 2014.02.18

Time On Btm:

Time Off Btm:

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

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
50.00	Mud 100% with oil spots	0.73

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

4 -1s -37w Cheyenne Ks

250 N Water STE 300
Wichita KS 67202

Ivalee #1-4

Job Ticket: 56753

DST#: 2

ATTN: Keith Reavis

Test Start: 2014.02.18 @ 05:46:00

Tool Information

Drill Pipe:	Length: 3995.00 ft	Diameter: 3.88 inches	Volume: 58.42 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 46000.00 lb
			<u>Total Volume: 58.42 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial 42000.00 lb
Depth to Top Packer:	4009.00 ft			Final 42000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	64.00 ft			
Tool Length:	92.00 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			3982.00	
Shut In Tool	5.00			3987.00	
Hydraulic tool	5.00			3992.00	
Jars	5.00			3997.00	
Safety Joint	3.00			4000.00	
Packer	5.00			4005.00	28.00 Bottom Of Top Packer
Packer	4.00			4009.00	
Stubb	1.00			4010.00	
Recorder	0.00	8653	Outside	4010.00	
Recorder	0.00	8874	Inside	4010.00	
Perforations	25.00			4035.00	
Change Over Sub	1.00			4036.00	
Drill Pipe	31.00			4067.00	
Change Over Sub	1.00			4068.00	
Bullnose	5.00			4073.00	64.00 Bottom Packers & Anchor

Total Tool Length: 92.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

4 -1s -37w Cheyenne Ks

250 N Water STE 300
Wichita KS 67202

Ivalee #1-4

Job Ticket: 56753

DST#: 2

ATTN: Keith Reavis

Test Start: 2014.02.18 @ 05:46:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
50.00	Mud 100% with oil spots	0.731

Total Length: 50.00 ft Total Volume: 0.731 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8874

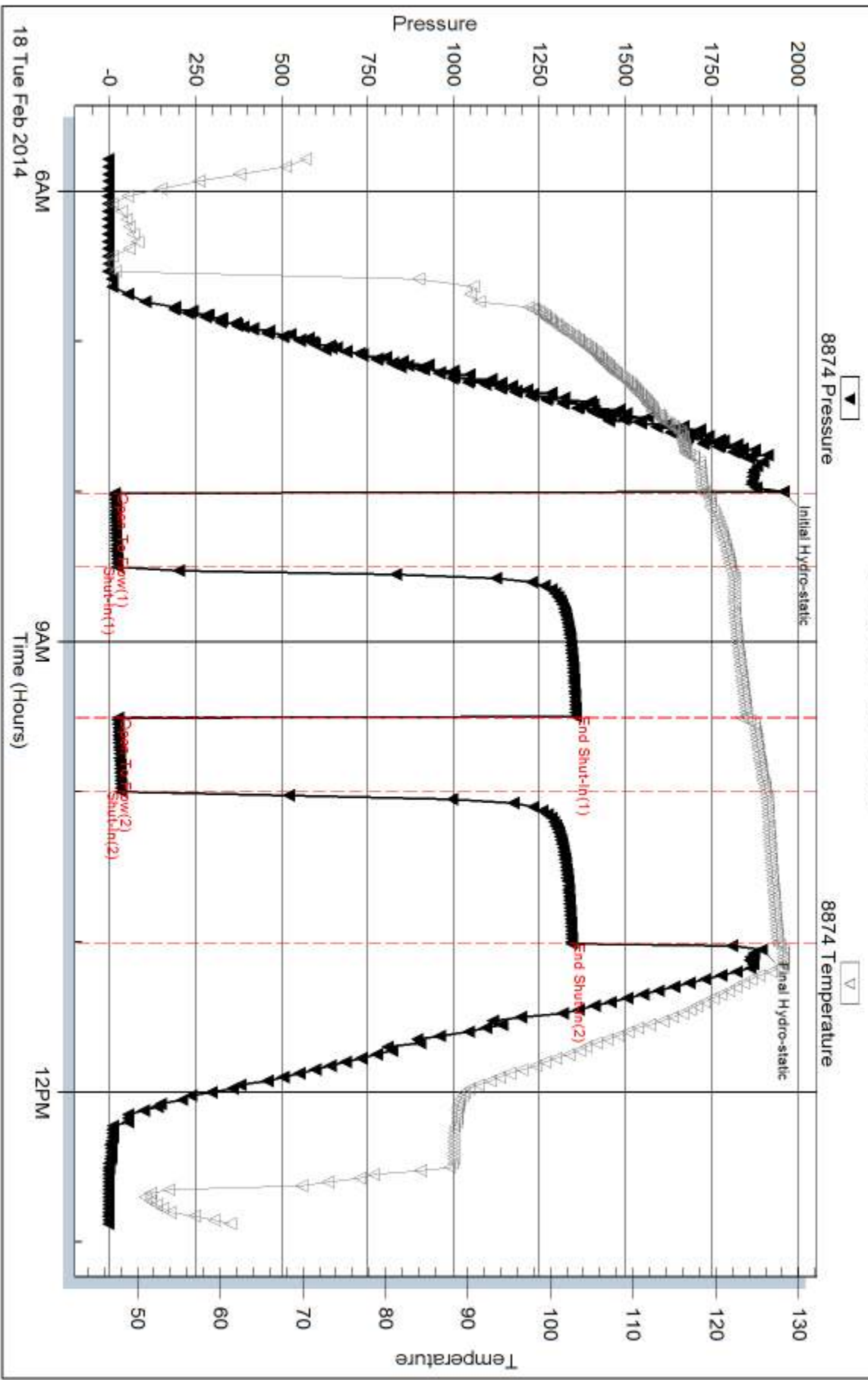
Inside

Murfin Drilling Co

Wells #1-4

DST Test Number: 2

Pressure vs. Time

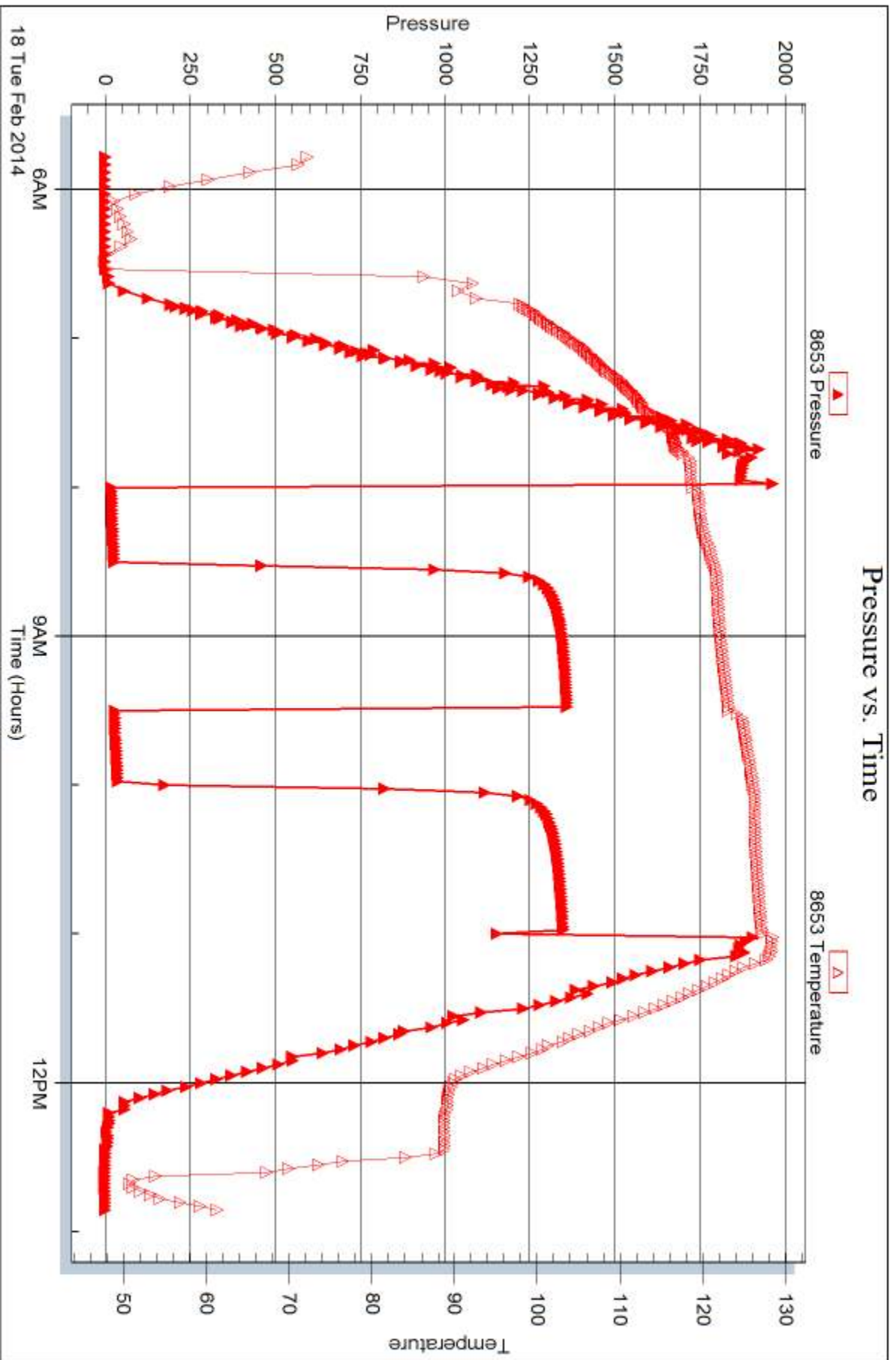


Serial #: 8653

Outside Murfin Drilling Co

Wells #1-4

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 56753

Printed: 2014.02.27 @ 11:55:13



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300
Wichita KS 67202

ATTN: Keith Reavis

Ivatee #1-4

4 -1s -37w Cheyenne Ks

Start Date: 2014.02.19 @ 02:25:00

End Date: 2014.02.19 @ 10:06:00

Job Ticket #: 56754 DST #: 3

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

Printed: 2014.02.27 @ 11:54:47



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co

4 -1s -37w Cheyenne Ks

250 N Water STE 300
Wichita KS 67202

Ivalee #1-4

Job Ticket: 56754

DST#: 3

ATTN: Keith Reavis

Test Start: 2014.02.19 @ 02:25:00

GENERAL INFORMATION:

Formation: **LKC "A - D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:23:00

Time Test Ended: 10:06:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Robert Zodrow

Unit No: 66

Interval: 4146.00 ft (KB) To 4218.00 ft (KB) (TVD)

Total Depth: 3716.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3170.00 ft (KB)

3157.00 ft (CF)

KB to GR/CF: 13.00 ft

Serial #: 8874

Inside

Press@RunDepth: 50.21 psig @ 4147.00 ft (KB)

Start Date: 2014.02.19

End Date:

2014.02.19

Start Time: 02:26:00

End Time:

10:06:00

Capacity: 8000.00 psig

Last Calib.: 2014.02.19

Time On Btm: 2014.02.19 @ 05:22:30

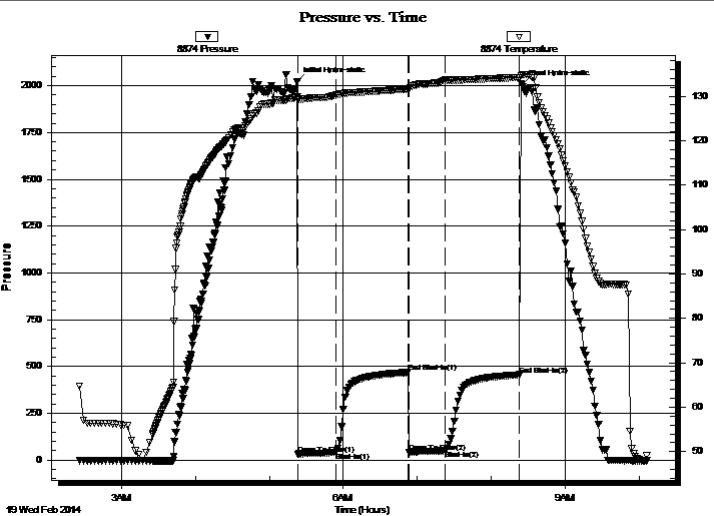
Time Off Btm: 2014.02.19 @ 08:25:00

TEST COMMENT: 30-IF-Blow Built To 2"

60-ISI- No Return

30-FF-No Blow

60-FSI-No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2023.62	129.80	Initial Hydro-static
1	32.36	129.30	Open To Flow (1)
32	41.46	130.26	Shut-In(1)
90	468.18	131.64	End Shut-In(1)
91	43.37	131.49	Open To Flow (2)
120	50.21	133.63	Shut-In(2)
181	456.11	134.23	End Shut-In(2)
183	2005.11	134.83	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
70.00	OCM 99% _m 1% _o	1.02

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co
 250 N Water STE 300
 Wichita KS 67202
 ATTN: Keith Reavis

4 -1s -37w Cheyenne Ks
Ivaley #1-4
 Job Ticket: 56754 **DST#: 3**
 Test Start: 2014.02.19 @ 02:25:00

GENERAL INFORMATION:

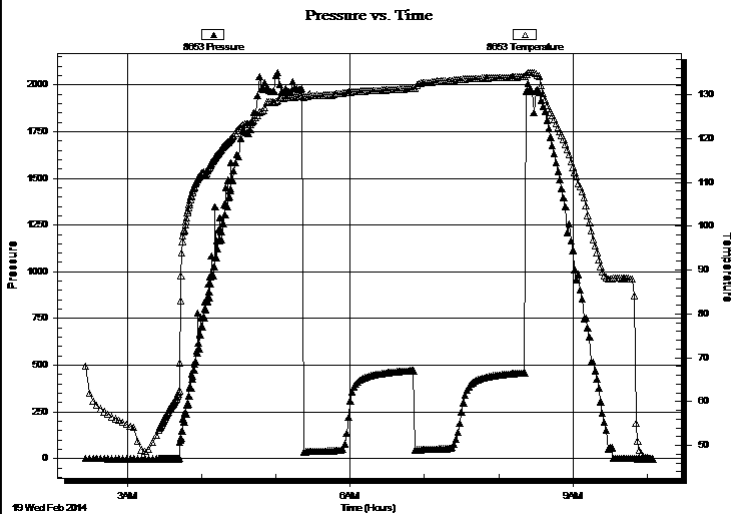
Formation: **LKC "A - D"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 05:23:00
 Time Test Ended: 10:06:00
 Interval: **4146.00 ft (KB) To 4218.00 ft (KB) (TVD)**
 Total Depth: 3716.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Robert Zodrow
 Unit No: 66
 Reference Elevations: 3170.00 ft (KB)
 3157.00 ft (CF)
 KB to GR/CF: 13.00 ft

Serial #: 8653

Outside

Press@RunDepth: psig @ 4147.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.02.19 End Date: 2014.02.19 Last Calib.: 2014.02.19
 Start Time: 02:26:00 End Time: 10:04:30 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30-IF-Blow Built To 2"
 60-ISI- No Return
 30-FF-No Blow
 60-FSI-No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
70.00	OCM 99% _m 1% _o	1.02

* 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

4 -1s -37w Cheyenne Ks

250 N Water STE 300
Wichita KS 67202

Ivalee #1-4

Job Ticket: 56754

DST#: 3

ATTN: Keith Reavis

Test Start: 2014.02.19 @ 02:25:00

Tool Information

Drill Pipe:	Length: 4151.00 ft	Diameter: 3.88 inches	Volume: 60.71 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 56000.00 lb
			<u>Total Volume: 60.71 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial 42000.00 lb
Depth to Top Packer:	4146.00 ft			Final 42000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	72.00 ft			
Tool Length:	100.00 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			4119.00	
Shut In Tool	5.00			4124.00	
Hydraulic tool	5.00			4129.00	
Jars	5.00			4134.00	
Safety Joint	3.00			4137.00	
Packer	5.00			4142.00	28.00 Bottom Of Top Packer
Packer	4.00			4146.00	
Stubb	1.00			4147.00	
Recorder	0.00	8653	Outside	4147.00	
Recorder	0.00	8874	Inside	4147.00	
Perforations	33.00			4180.00	
Change Over Sub	1.00			4181.00	
Drill Pipe	31.00			4212.00	
Change Over Sub	1.00			4213.00	
Bullnose	5.00			4218.00	72.00 Bottom Packers & Anchor

Total Tool Length: 100.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

4 -1s -37w Cheyenne Ks

250 N Water STE 300
Wichita KS 67202

Ivaley #1-4

Job Ticket: 56754

DST#: 3

ATTN: Keith Reavis

Test Start: 2014.02.19 @ 02:25:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 70.00 sec/qt

Cushion Volume:

bbl

Water Loss: 5.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
70.00	OCM 99%m 1%o	1.024

Total Length: 70.00 ft Total Volume: 1.024 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Hit A Bridge 5 Foot Off Bottom And The Tool Opened , The Fluid Dropped
15 Foot

Serial #: 8874

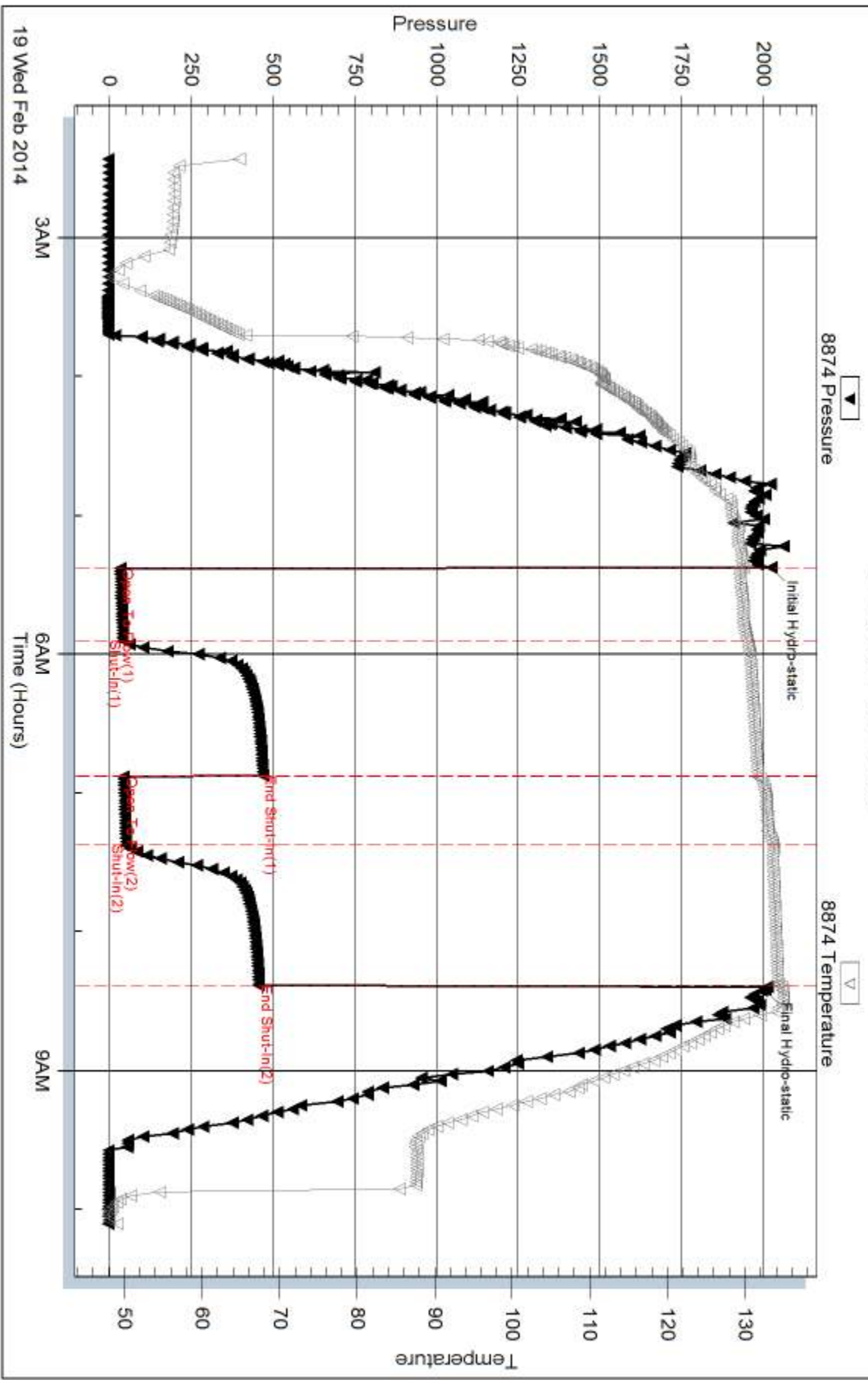
Inside

Murfin Drilling Co

Walee #1-4

DST Test Number: 3

Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 56754

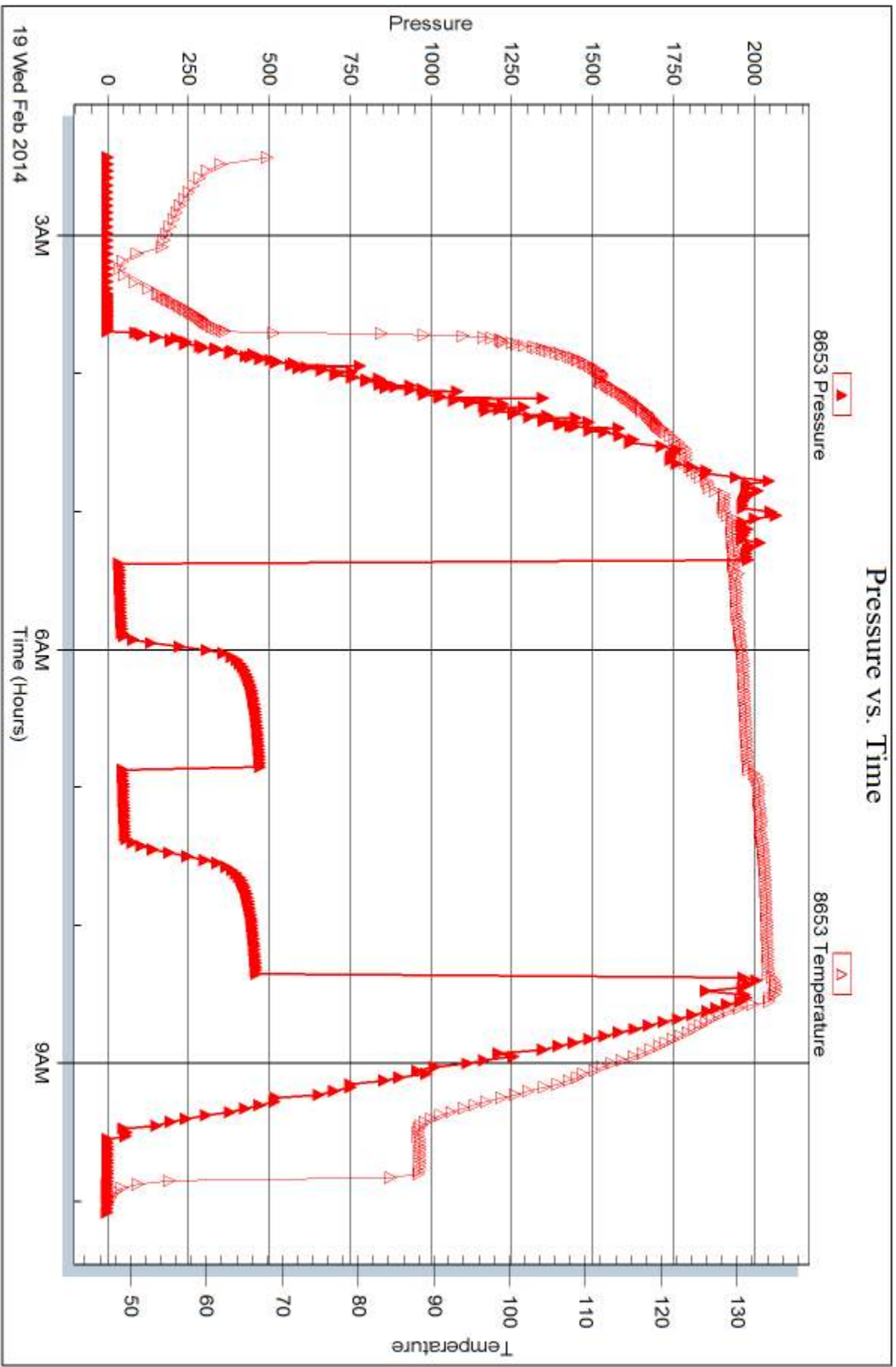
Printed: 2014.02.27 @ 11:54:49

Serial #: 8653

Outside Murfin Drilling Co

Wells #1-4

DST Test Number: 3



19 Wed Feb 2014

Trilobite Testing, Inc

Ref. No: 56754

Printed: 2014.02.27 @ 11:54:49



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300
Wichita KS 67202

ATTN: Keith Reavis

Ivatee #1-4

4 -1s -37w Cheyenne Ks

Start Date: 2014.02.19 @ 18:26:00

End Date: 2014.02.20 @ 01:39:30

Job Ticket #: 53392 DST #: 4

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

Printed: 2014.02.27 @ 11:54:20

Murfin Drilling Co
4 -1s -37w Cheyenne Ks
Ivatee #1-4
DST # 4
LKC "G-G"
2014.02.19



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water STE 300
Wichita KS 67202
ATTN: Keith Reavis

4 -1s -37w Cheyenne Ks

Ivaley #1-4

Job Ticket: 53392

DST#: 4

Test Start: 2014.02.19 @ 18:26:00

GENERAL INFORMATION:

Formation: **LKC "G-G" "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:37:00

Time Test Ended: 01:39:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 4212.00 ft (KB) To 4292.00 ft (KB) (TVD)

Total Depth: 4292.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3170.00 ft (KB)

3157.00 ft (CF)

KB to GR/CF: 13.00 ft

Serial #: 8653 Outside

Press@RunDepth: 21.10 psig @ 4213.00 ft (KB)

Start Date: 2014.02.19

End Date:

2014.02.20

Start Time: 18:27:00

End Time:

01:39:30

Capacity: 8000.00 psig

Last Calib.: 2014.02.20

Time On Btm: 2014.02.19 @ 20:36:30

Time Off Btm: 2014.02.19 @ 23:40:00

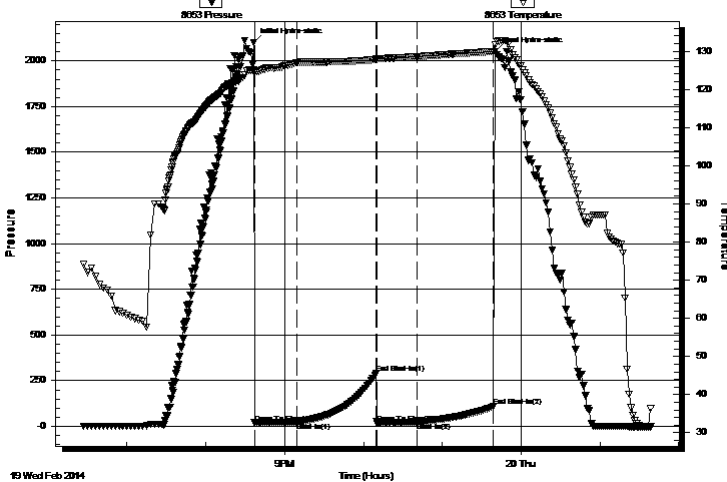
TEST COMMENT: 30 - IF- 1/2" Blow built to 1 1/2"

60 - IS- No Return

30 - FF- No Blow

60 - FS- No Return

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2101.33	125.06	Initial Hydro-static
1	19.05	124.70	Open To Flow (1)
33	21.21	127.03	Shut-In(1)
93	288.07	127.77	End Shut-In(1)
94	17.33	128.04	Open To Flow (2)
124	21.10	128.57	Shut-In(2)
182	107.75	129.94	End Shut-In(2)
184	2052.69	131.57	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	OCM 80M 20o	0.21

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co

4 -1s -37w Cheyenne Ks

250 N Water STE 300
Wichita KS 67202

Ivaley #1-4

Job Ticket: 53392

DST#: 4

ATTN: Keith Reavis

Test Start: 2014.02.19 @ 18:26:00

GENERAL INFORMATION:

Formation: **LKC "G-G" "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:37:00

Time Test Ended: 01:39:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 4212.00 ft (KB) To 4292.00 ft (KB) (TVD)

Total Depth: 4292.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3170.00 ft (KB)

3157.00 ft (CF)

KB to GR/CF: 13.00 ft

Serial #: 8874 Inside

Press@RunDepth: psig @ 4213.00 ft (KB)

Start Date: 2014.02.19

End Date:

2014.02.20

Start Time: 18:27:00

End Time:

01:41:00

Capacity: 8000.00 psig

Last Calib.:

2014.02.20

Time On Btm:

Time Off Btm:

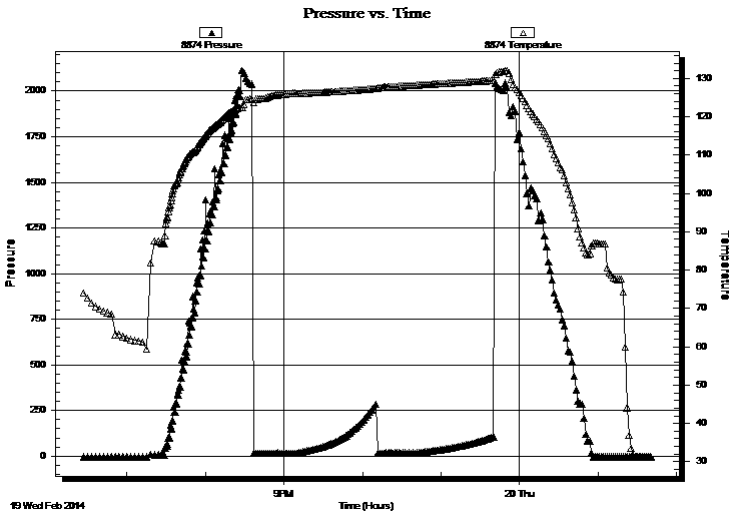
TEST COMMENT: 30 - IF- 1/2" Blow built to 1 1/2"

60 - IS- No Return

30 - FF- No Blow

60 - FS- No Return

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
15.00	OCM 80M 20o	0.21

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

4 -1s -37w Cheyenne Ks

250 N Water STE 300
Wichita KS 67202

Ivalee #1-4

Job Ticket: 53392

DST#: 4

ATTN: Keith Reavis

Test Start: 2014.02.19 @ 18:26:00

Tool Information

Drill Pipe:	Length: 4215.00 ft	Diameter: 3.80 inches	Volume: 59.13 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	55000.00 lb
			<u>Total Volume: 59.13 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial	44000.00 lb
Depth to Top Packer:	4212.00 ft			Final	44000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	80.00 ft				
Tool Length:	108.00 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			4185.00	
Shut In Tool	5.00			4190.00	
Hydraulic tool	5.00			4195.00	
Jars	5.00			4200.00	
Safety Joint	3.00			4203.00	
Packer	5.00			4208.00	28.00 Bottom Of Top Packer
Packer	4.00			4212.00	
Stubb	1.00			4213.00	
Packer - Shale	0.00			4213.00	
Recorder	0.00	8653	Outside	4213.00	
Recorder	0.00	8874	Inside	4213.00	
Perforations	9.00			4222.00	
Change Over Sub	1.00			4223.00	
Drill Pipe	63.00			4286.00	
Change Over Sub	1.00			4287.00	
Bullnose	5.00			4292.00	80.00 Bottom Packers & Anchor
Total Tool Length:	108.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

4 -1s -37w Cheyenne Ks

250 N Water STE 300
Wichita KS 67202

Ivalee #1-4

Job Ticket: 53392

DST#: 4

ATTN: Keith Reavis

Test Start: 2014.02.19 @ 18:26:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 4.79 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	OCM 80M 20o	0.210

Total Length: 15.00 ft Total Volume: 0.210 bbl

Num Fluid Samples: 0

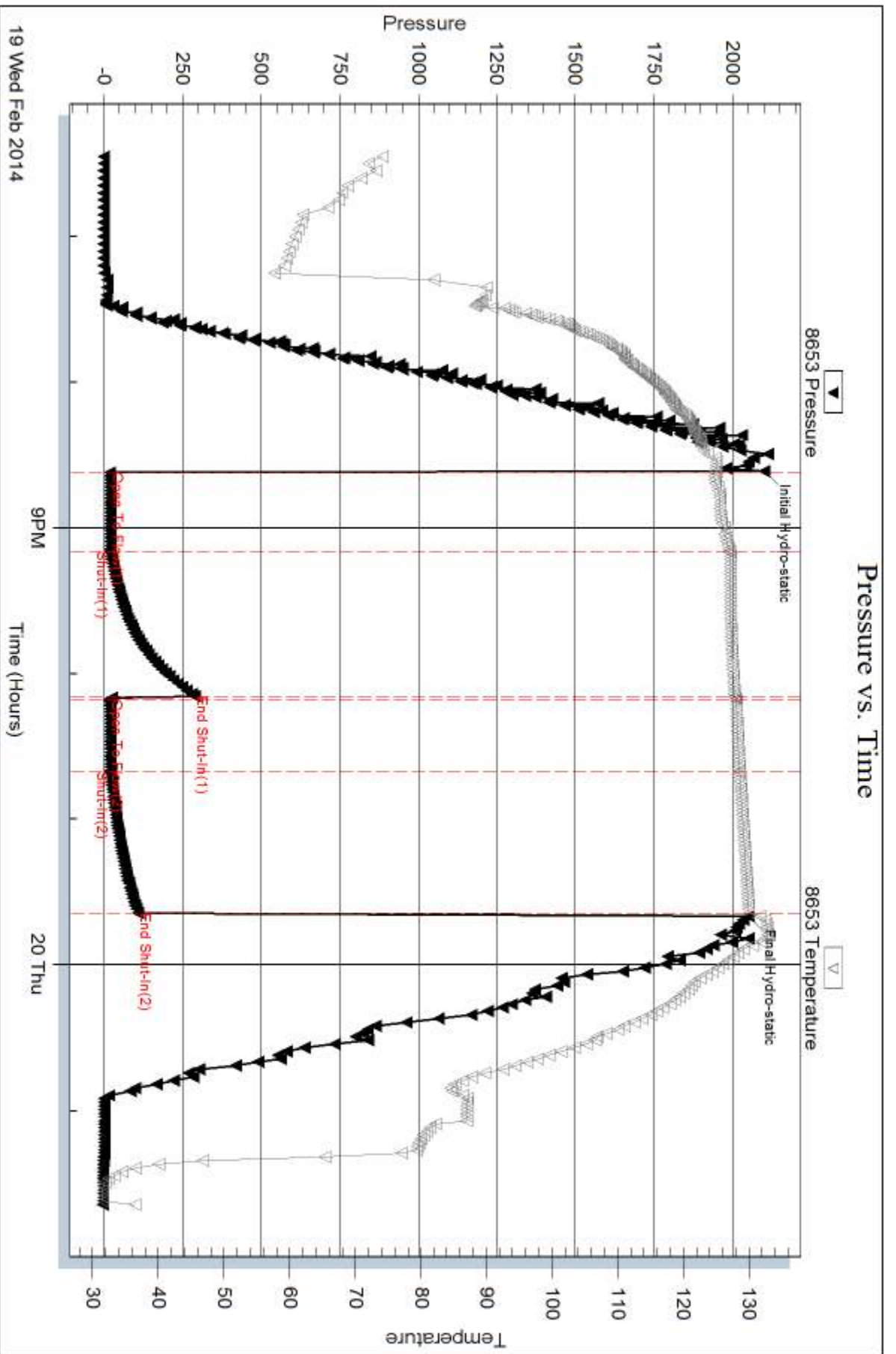
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



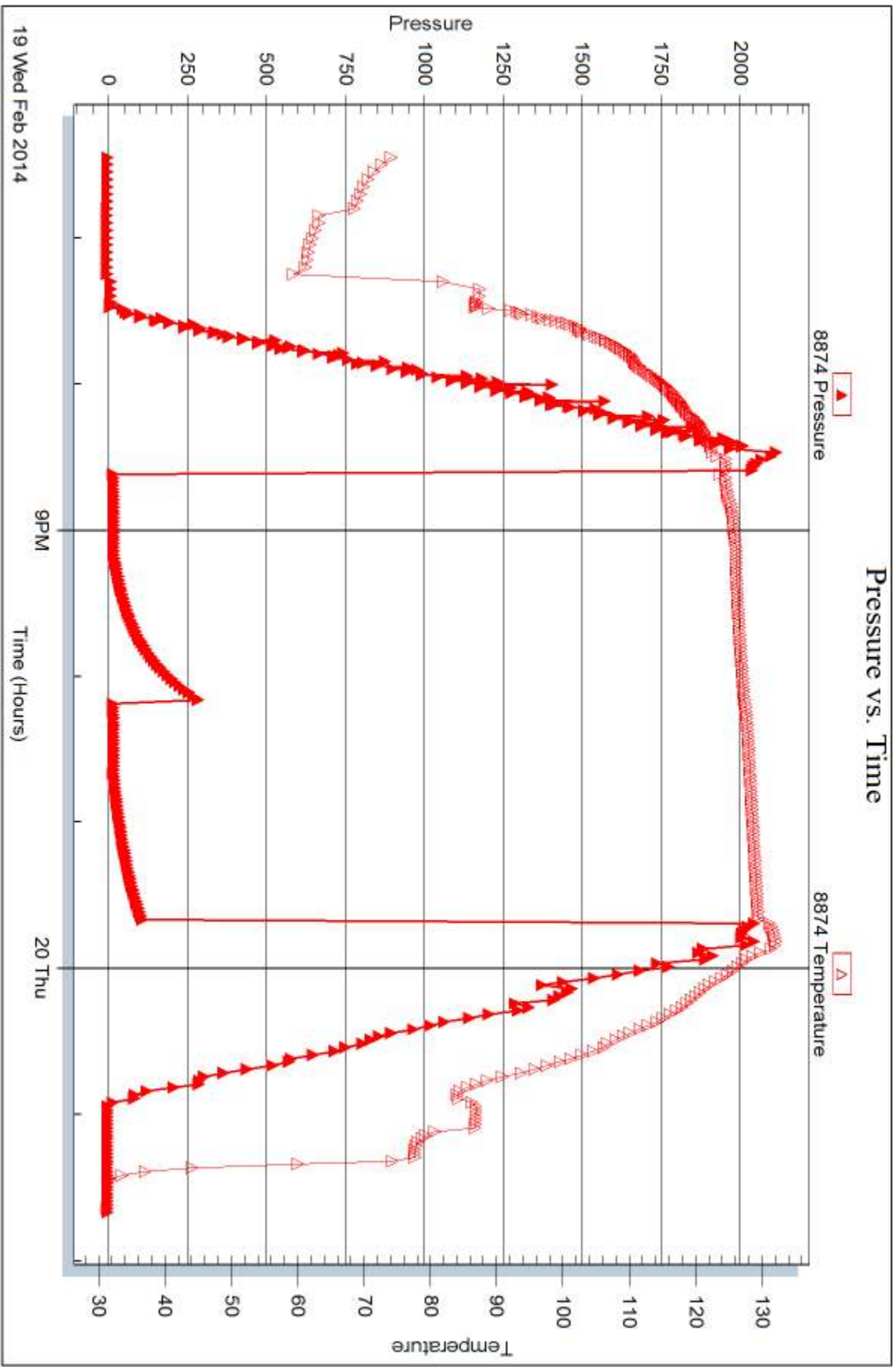
Serial #: 8874

Inside

Murfin Drilling Co

Walee #1-4

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 53392

Printed: 2014.02.27 @ 11:54:23



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300
Wichita KS 67202

ATTN: Keith Reavis

Ivalee #1-4

4 -1s -37w Cheyenne Ks

Start Date: 2014.02.20 @ 12:45:00

End Date: 2014.02.20 @ 21:57:00

Job Ticket #: 53393 DST #: 5

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

Printed: 2014.02.27 @ 11:53:55



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water STE 300
Wichita KS 67202
ATTN: Keith Reavis

4 -1s -37w Cheyenne Ks

Ivaley #1-4

Job Ticket: 53393

DST#: 5

Test Start: 2014.02.20 @ 12:45:00

GENERAL INFORMATION:

Formation: **LKC "H-J"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 15:15:30 Tester: Kevin Mack
 Time Test Ended: 21:57:00 Unit No: 66
 Interval: **4266.00 ft (KB) To 4360.00 ft (KB) (TVD)** Reference Elevations: 3170.00 ft (KB)
 Total Depth: 4360.00 ft (KB) (TVD) 3157.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 13.00 ft

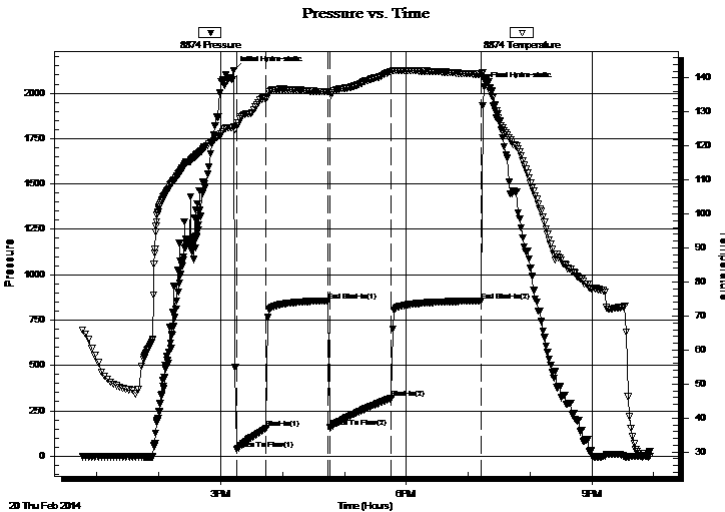
Serial #: 8874

Inside

Press@RunDepth: 320.55 psig @ 4267.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.02.20 End Date: 2014.02.20 Last Calib.: 2014.02.20
 Start Time: 12:46:00 End Time: 21:57:00 Time On Btm: 2014.02.20 @ 15:12:30
 Time Off Btm: 2014.02.20 @ 19:15:30

TEST COMMENT: 30 - IF- BoB in 8 min.
 60 - IS- BoB in 45 min.
 60 - FF- BoB in 7 min.
 90 - FS- Surface Blow built to 9"

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2125.53	125.51	Initial Hydro-static
3	39.47	125.85	Open To Flow (1)
32	152.36	133.88	Shut-In(1)
92	856.52	135.91	End Shut-In(1)
93	156.90	135.62	Open To Flow (2)
153	320.55	141.93	Shut-In(2)
240	855.37	141.12	End Shut-In(2)
243	2034.30	139.59	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
94.00	OCM 10o 90M	1.32
238.00	GOCM 10G 30o 60M	3.34
441.00	Clean Gassy Oil 20G 80o	6.19
0.00	720' GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water STE 300
Wichita KS 67202
ATTN: Keith Reavis

4 -1s -37w Cheyenne Ks
Ivalee #1-4
Job Ticket: 53393 **DST#: 5**
Test Start: 2014.02.20 @ 12:45:00

GENERAL INFORMATION:

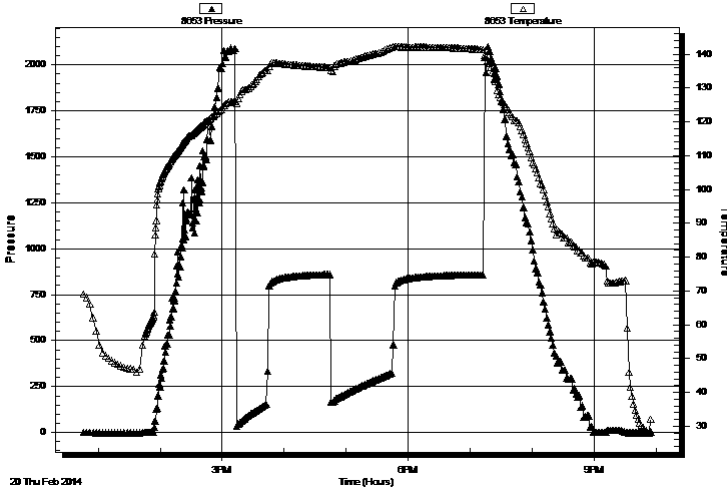
Formation: **LKC "H-J"**
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 15:15:30 Tester: Kevin Mack
 Time Test Ended: 21:57:00 Unit No: 66
 Interval: **4266.00 ft (KB) To 4360.00 ft (KB) (TVD)** Reference Elevations: 3170.00 ft (KB)
 Total Depth: 4360.00 ft (KB) (TVD) 3157.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 13.00 ft

Serial #: 8653 Outside

Press@RunDepth: psig @ 4267.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.02.20 End Date: 2014.02.20 Last Calib.: 2014.02.20
 Start Time: 12:46:00 End Time: 21:55:30 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30 - IF- BoB in 8 min.
 60 - IS- BoB in 45 min.
 60 - FF- BoB in 7 min.
 90 - FS- Surface Blow built to 9"

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
94.00	OCM 10o 90M	1.32
238.00	GOCM 10G 30o 60M	3.34
441.00	Clean Gassy Oil 20G 80o	6.19
0.00	720' GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

4 -1s -37w Cheyenne Ks

250 N Water STE 300
Wichita KS 67202

Ivalee #1-4

Job Ticket: 53393

DST#: 5

ATTN: Keith Reavis

Test Start: 2014.02.20 @ 12:45:00

Tool Information

Drill Pipe:	Length: 4245.00 ft	Diameter: 3.80 inches	Volume: 59.55 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 59.55 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 45000.00 lb
Depth to Top Packer:	4266.00 ft			Final 45000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	94.00 ft			
Tool Length:	122.00 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			4239.00	
Shut In Tool	5.00			4244.00	
Hydraulic tool	5.00			4249.00	
Jars	5.00			4254.00	
Safety Joint	3.00			4257.00	
Packer	5.00			4262.00	28.00 Bottom Of Top Packer
Packer	4.00			4266.00	
Stubb	1.00			4267.00	
Packer - Shale	0.00			4267.00	
Recorder	0.00	8653	Outside	4267.00	
Recorder	0.00	8874	Inside	4267.00	
Perforations	23.00			4290.00	
Change Over Sub	1.00			4291.00	
Drill Pipe	63.00			4354.00	
Change Over Sub	1.00			4355.00	
Bullnose	5.00			4360.00	94.00 Bottom Packers & Anchor
Total Tool Length:	122.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

4 -1s -37w Cheyenne Ks

250 N Water STE 300
Wichita KS 67202

Ivalee #1-4

Job Ticket: 53393

DST#: 5

ATTN: Keith Reavis

Test Start: 2014.02.20 @ 12:45:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

39 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbf

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
94.00	OCM 10o 90M	1.319
238.00	GOCM 10G 30o 60M	3.339
441.00	Clean Gassy Oil 20G 80o	6.186
0.00	720' GIP	0.000

Total Length: 773.00 ft Total Volume: 10.844 bbf

Num Fluid Samples: 0

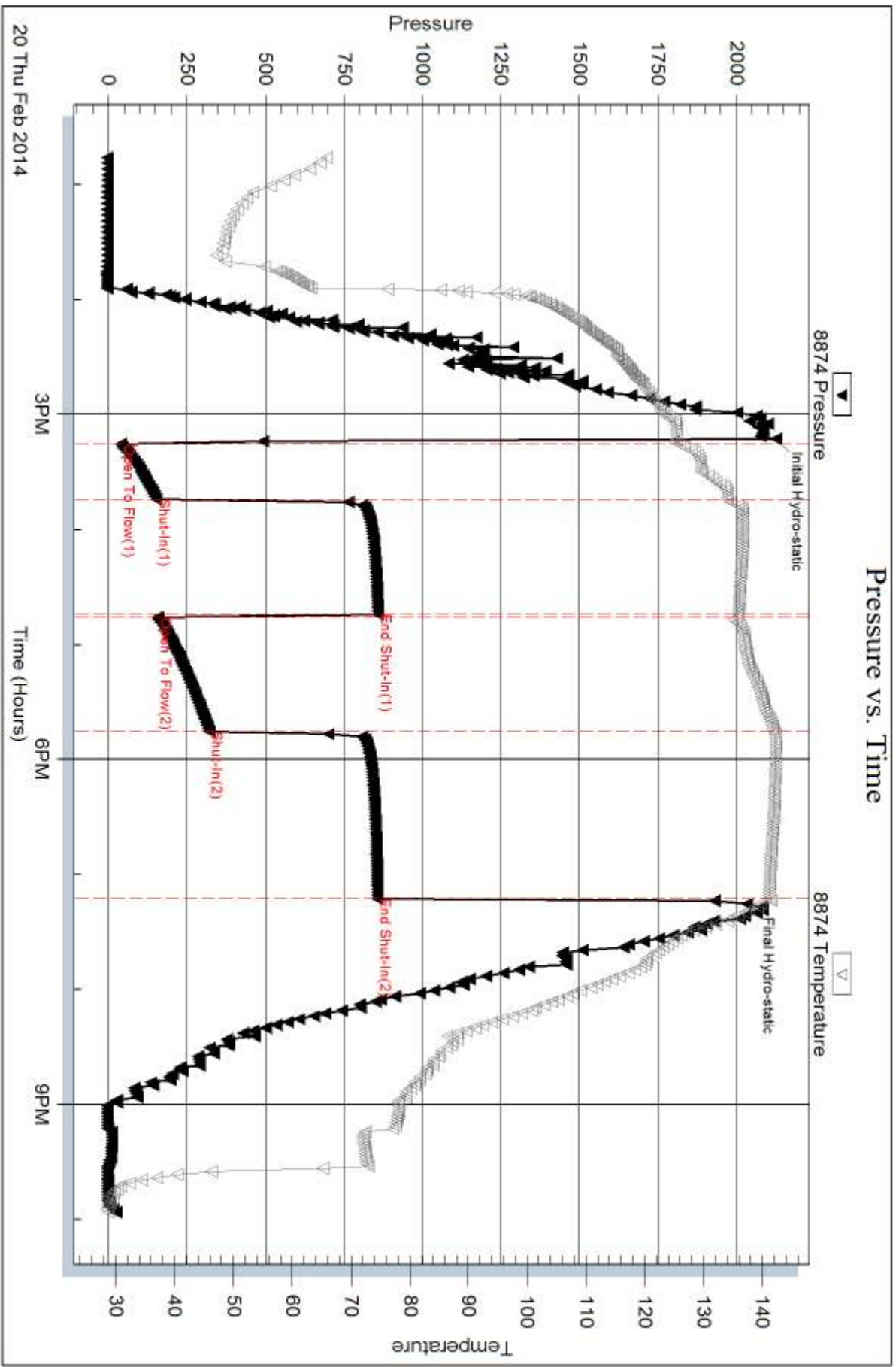
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Oil API 38 @ 50 deg = 39 cor.

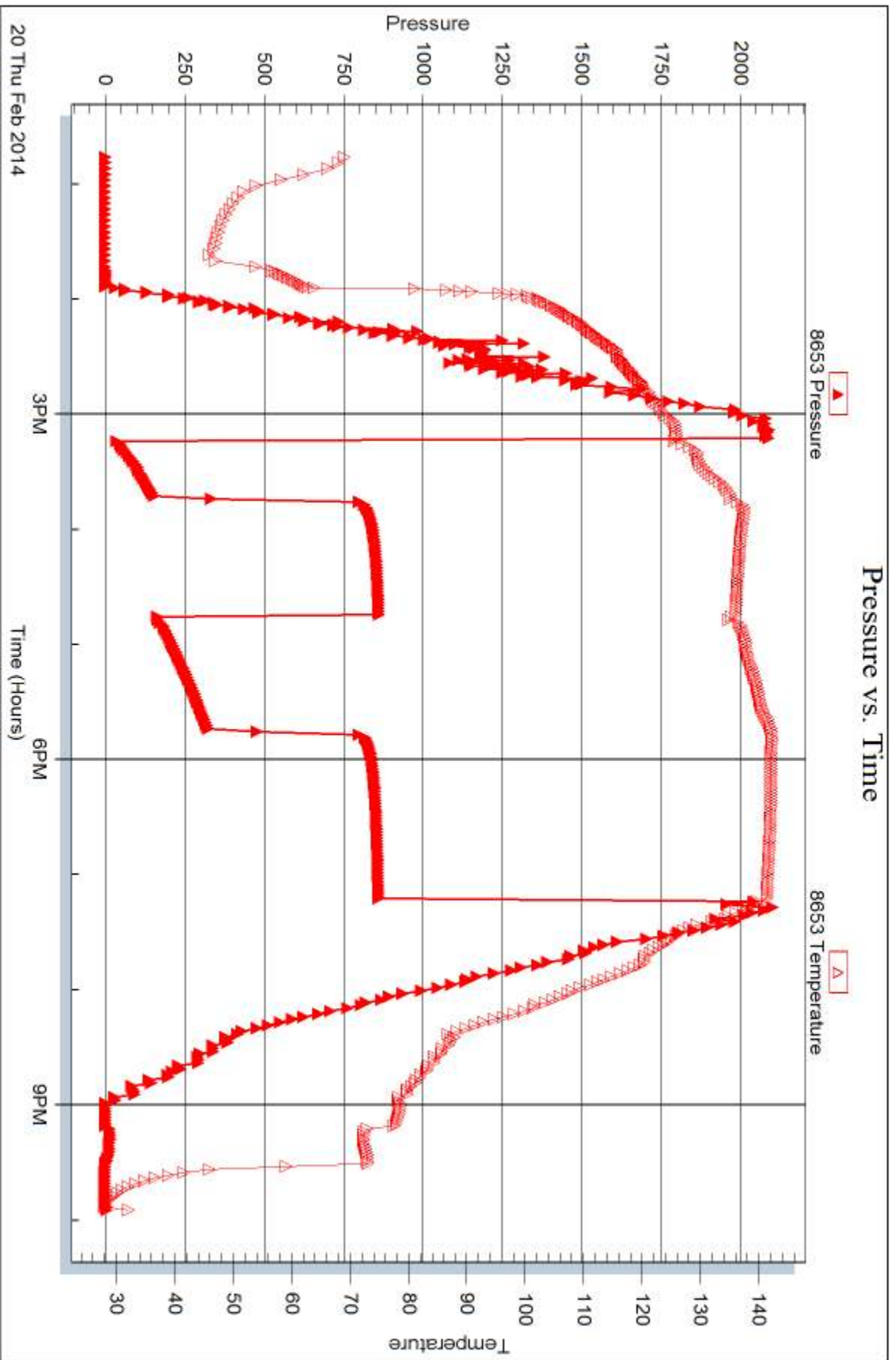


Serial #: 8653

Outside Murfin Drilling Co

Wells #1-4

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 53393

Printed: 2014.02.27 @ 11:53:57



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300
Wichita KS 67202

ATTN: Keith Reavis

Ivalee #1-4

4 -1s -37w Cheyenne Ks

Start Date: 2014.02.21 @ 23:50:00

End Date: 2014.02.22 @ 06:52:00

Job Ticket #: 53394 DST #: 6

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.02.27 @ 11:53:01



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water STE 300
Wichita KS 67202
ATTN: Keith Reavis

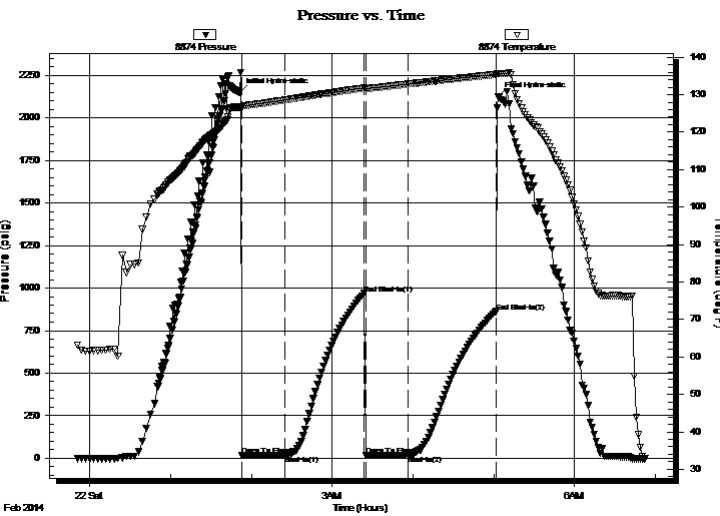
4 -1s -37w Cheyenne Ks
Ivaley #1-4
Job Ticket: 53394 **DST#: 6**
Test Start: 2014.02.21 @ 23:50:00

GENERAL INFORMATION:

Formation: **Pawnee**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 01:53:00
Time Test Ended: 06:52:00
Interval: **4511.00 ft (KB) To 4554.00 ft (KB) (TVD)**
Total Depth: 4554.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Kevin Mack
Unit No: 66
Reference Elevations: 3170.00 ft (KB)
3157.00 ft (CF)
KB to GR/CF: 13.00 ft

Serial #: 8874 **Inside**
Press@RunDepth: 19.66 psig @ 4512.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.02.21 End Date: 2014.02.22 Last Calib.: 2014.02.22
Start Time: 23:51:00 End Time: 06:52:00 Time On Btm: 2014.02.22 @ 01:51:00
Time Off Btm: 2014.02.22 @ 05:03:30

TEST COMMENT: 30 - IF- 1/2" Blow built to 1 1/4"
60 - IS- No Return
30 - FF- No Blow
60 - FS- No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2149.46	126.71	Initial Hydro-static
2	17.00	126.56	Open To Flow (1)
34	17.95	128.58	Shut-In(1)
93	968.14	131.76	End Shut-In(1)
94	18.93	131.60	Open To Flow (2)
126	19.66	132.82	Shut-In(2)
191	861.85	135.36	End Shut-In(2)
193	2123.67	135.57	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	Mud 100M	0.21

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water STE 300
Wichita KS 67202
ATTN: Keith Reavis

4 -1s -37w Cheyenne Ks

Ivaley #1-4

Job Ticket: 53394

DST#: 6

Test Start: 2014.02.21 @ 23:50:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:53:00

Time Test Ended: 06:52:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 4511.00 ft (KB) To 4554.00 ft (KB) (TVD)

Reference Elevations: 3170.00 ft (KB)

Total Depth: 4554.00 ft (KB) (TVD)

3157.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 13.00 ft

Serial #: 8653 Outside

Press@RunDepth: psig @ 4512.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.02.21

End Date:

2014.02.22

Last Calib.:

2014.02.22

Start Time: 23:51:00

End Time:

06:51:00

Time On Btm:

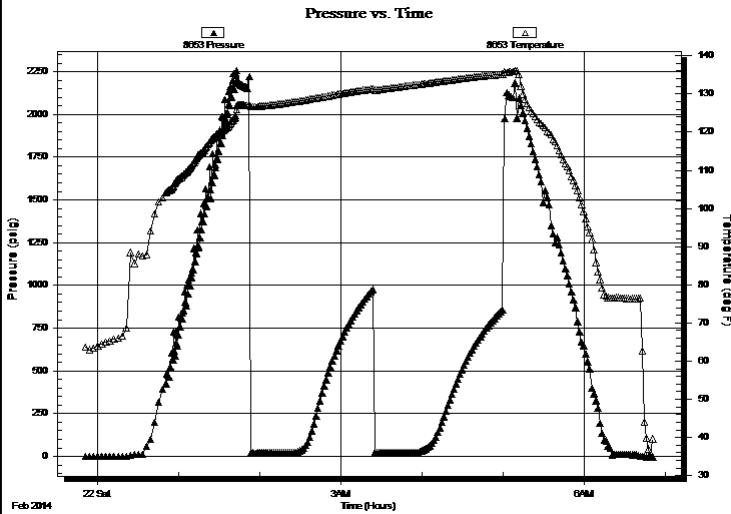
Time Off Btm:

TEST COMMENT: 30 - IF- 1/2" Blow built to 1 1/4"

60 - IS- No Return

30 - FF- No Blow

60 - FS- No Return



PRESSURE SUMMARY

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

Recovery

Gas Rates

Length (ft)	Description	Volume (bbl)
15.00	Mud 100M	0.21

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

4 -1s -37w Cheyenne Ks

250 N Water STE 300
Wichita KS 67202

Ivalee #1-4

Job Ticket: 53394

DST#: 6

ATTN: Keith Reavis

Test Start: 2014.02.21 @ 23:50:00

Tool Information

Drill Pipe:	Length: 4495.00 ft	Diameter: 3.80 inches	Volume: 63.05 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 63.05 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	4511.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	43.00 ft			
Tool Length:	71.00 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			4484.00	
Shut In Tool	5.00			4489.00	
Hydraulic tool	5.00			4494.00	
Jars	5.00			4499.00	
Safety Joint	3.00			4502.00	
Packer	5.00			4507.00	28.00 Bottom Of Top Packer
Packer	4.00			4511.00	
Stubb	1.00			4512.00	
Packer - Shale	0.00			4512.00	
Recorder	0.00	8653	Outside	4512.00	
Recorder	0.00	8874	Inside	4512.00	
Perforations	3.00			4515.00	
Change Over Sub	1.00			4516.00	
Drill Pipe	32.00			4548.00	
Change Over Sub	1.00			4549.00	
Bullnose	5.00			4554.00	43.00 Bottom Packers & Anchor
Total Tool Length:	71.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

4 -1s -37w Cheyenne Ks

250 N Water STE 300
Wichita KS 67202

Ivalee #1-4

Job Ticket: 53394

DST#: 6

ATTN: Keith Reavis

Test Start: 2014.02.21 @ 23:50:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 123.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 4.39 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	Mud 100M	0.210

Total Length: 15.00 ft Total Volume: 0.210 bbl

Num Fluid Samples: 0

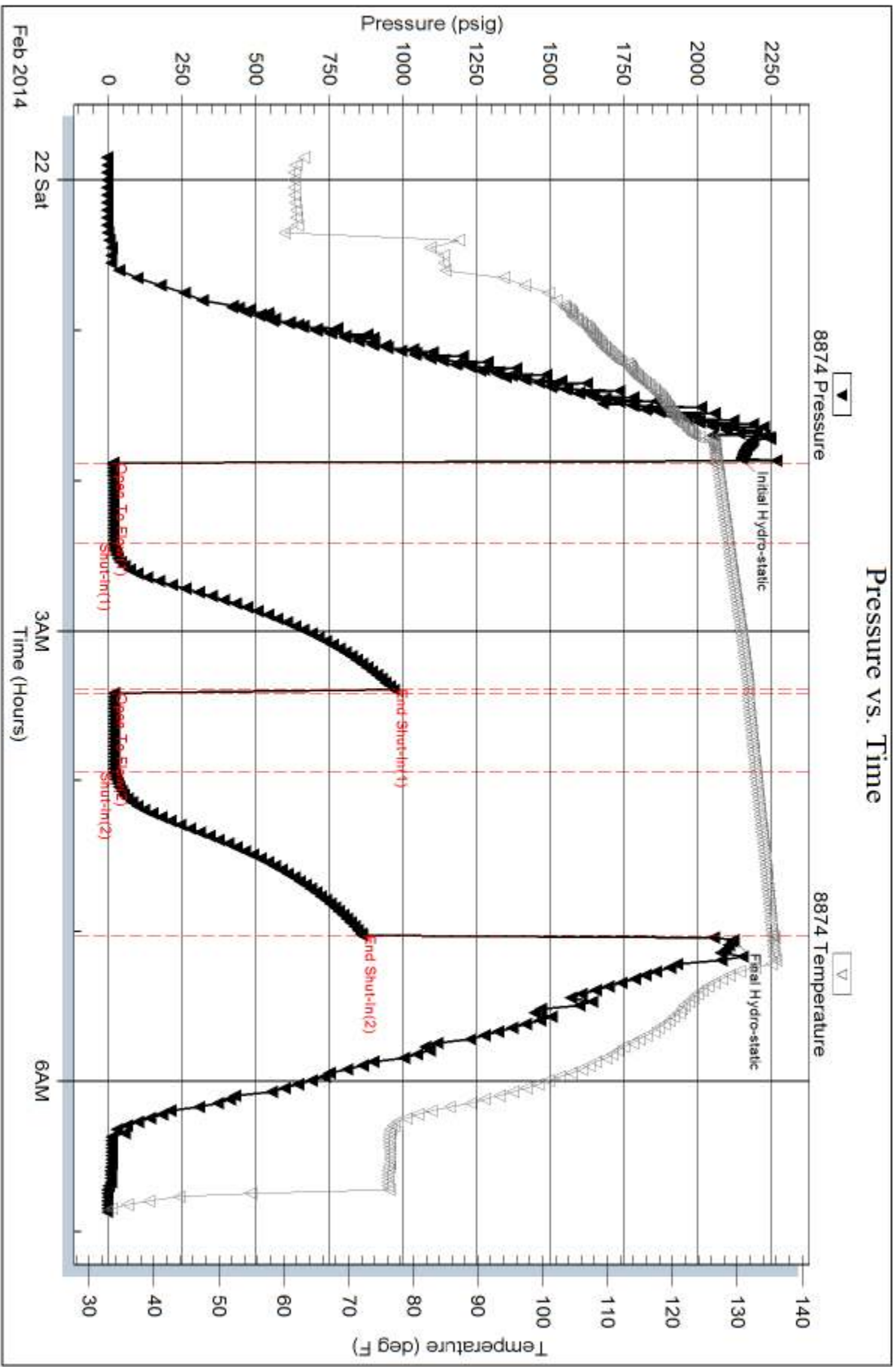
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

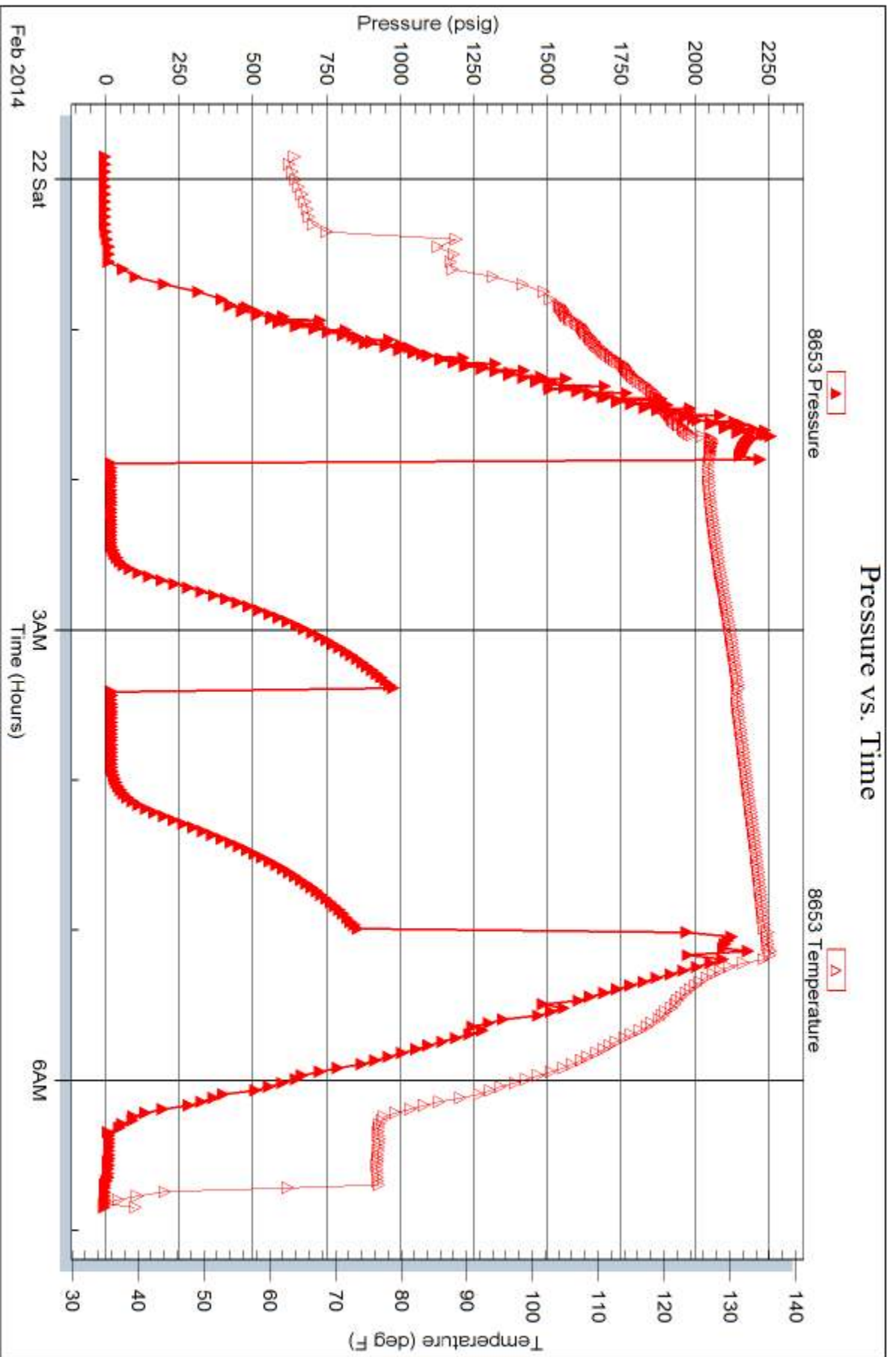


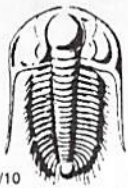
Serial #: 8653

Outside Murfin Drilling Co

Wells #1-4

DST Test Number: 6





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 56752

4/10

Well Name & No. Ivatee #1-4 Test No. 1 Date 2-17-2014
 Company Murfin Drilling CO Elevation 3170 KB 3157 GL
 Address 250 N water st E 300 Wichita KS, 67202
 Co. Rep / Geo. Keith Reavis Rig Murfin #25
 Location: Sec. 4 Twp. 15 Rge. 374 Co. Cheyenne State KS

Interval Tested 3664 - 3716 Zone Tested Foraker
 Anchor Length 52 Drill Pipe Run 3649 Mud Wt. 8.6
 Top Packer Depth 3660 Drill Collars Run 0 Vis 69
 Bottom Packer Depth 3664 (shale) Wt. Pipe Run 0 WL 5.6
 Total Depth 3716 Chlorides 600 ppm System LCM 6.0
 Blow Description IF - weak surface blow
EST - no return
FF - no blow
FSE - no return

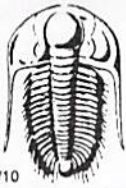
Rec	Feet of	%gas	%oil	%water	%mud
<u>1</u>	<u>mud</u>			<u>100</u>	

Rec Total 1 BHT 127 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1771 Test 1150 T-On Location 2:00 AM 2-17
 (B) First Initial Flow 14 Jars 250 T-Started 2:22 AM
 (C) First Final Flow 15 Safety Joint 75 T-Open 4:32 AM
 (D) Initial Shut-In 871 Circ Sub _____ T-Pulled 7:32 AM
 (E) Second Initial Flow 15 Hourly Standby _____ T-Out 9:15 AM
 (F) Second Final Flow 30 Mileage 176 RT 160rt 248 Comments _____
 (G) Final Shut-In 714 Sampler _____
 (H) Final Hydrostatic 1701 Straddle _____ Ruined Shale Packer _____
 Shale Packer 250 Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1973
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1973

Approved By _____ Our Representative Robert Zohraw

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 56753

4/10

Well Name & No. Iva Lee #1-4 Test No. 2 Date 2-18-2014
 Company Murfin Drilling CO Elevation 3170 KB 3157 GL
 Address 250 N water ste 300 Wichita KS, 67202
 Co. Rep / Geo. Keith Reavis Rig Murfin #25
 Location: Sec. 4 Twp. 1S Rge. 37W Co. Cheyenne State KS

Interval Tested 4009 - 4073 Zone Tested ORFAD
 Anchor Length 64 Drill Pipe Run 3995 Mud Wt. 9.2
 Top Packer Depth 4004 Drill Collars Run 0 Vis 58
 Bottom Packer Depth 4009 (shale) Wt. Pipe Run 0 WL 6.0
 Total Depth 4073 Chlorides 700 ppm System LCM 4.0
 Blow Description IF - blow built to 1 1/4"
ISI - no return
FF - blow built to 1/4"
FSL - no return

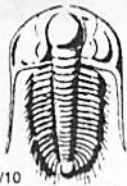
Rec	Feet of	%gas	%oil	%water	%mud
<u>50</u>	<u>M w/ oil spots</u>	<u>spotted</u>		<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 50 BHT 127 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1959 Test 1250 T-On Location 4:45 AM 2-18
 (B) First Initial Flow 15 Jars 250 T-Started 5:46 AM
 (C) First Final Flow 22 Safety Joint 75 T-Open 8:00 AM
 (D) Initial Shut-In 1356 Circ Sub NC T-Pulled 11:00 AM
 (E) Second Initial Flow 24 Hourly Standby _____ T-Out 12:45 PM
 (F) Second Final Flow 34 Mileage 176 RT 248 Comments _____
 (G) Final Shut-In 1343 Sampler _____
 (H) Final Hydrostatic 1897 Straddle _____ Ruined Shale Packer _____
 Shale Packer 250 Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 2073
 Accessibility _____ MP/DST Disc't _____
 Sub Total 2073

Approved By _____ Our Representative Robert Zecher

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 56754

Well Name & No. Eval Lee # 1-4 Test No. 3 Date 2-19-2014
 Company MURFIN Drilling CO Elevation 3170 KB 3157 GL
 Address 250 N water ste 300 Wichita KS, 67202
 Co. Rep / Geo. Keith Reavis Rig MURFIN #25
 Location: Sec. 4 Twp. 1 S Rge. 37 W Co. Cheyenne State KS

Interval Tested 4146 - 4218 Zone Tested LKC "A-D"
 Anchor Length 72 Drill Pipe Run 4151 Mud Wt. 9.2
 Top Packer Depth 4142 Drill Collars Run 0 Vis 70
 Bottom Packer Depth 4146 (shale) Wt. Pipe Run 0 WL 5.6
 Total Depth 4218 Chlorides 600 ppm System LCM 2.0
 Blow Description _____

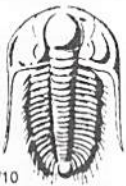
Rec	Feet of	%gas	%oil	%water	%mud
<u>70</u>	<u>0 cm</u>	<u>1</u>		<u>99</u>	
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Rec Total 70 BHT 134 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2024 Test 1250 T-On Location 1:25 AM 2-19
 (B) First Initial Flow 32 Jars 250 T-Started 2:25 AM
 (C) First Final Flow 41 Safety Joint 75 T-Open 5:23 AM
 (D) Initial Shut-In 468 Circ Sub _____ T-Pulled 8:23 AM
 (E) Second Initial Flow 43 Hourly Standby _____ T-Out 10:10 AM
 (F) Second Final Flow 50 Mileage 176 RT 248 Comments Hit a bridge
 (G) Final Shut-In 456 Sampler _____ 5 feet off bottom and
 (H) Final Hydrostatic 2005 Straddle _____ the tool opened fluid dropped
 Ruined Shale Packer 15 foot
 Ruined Packer _____
 Extra Copies _____
 Initial Open 30 Extra Packer _____ Sub Total 0
 Initial Shut-In 60 Extra Recorder _____ Total 2073
 Final Flow 30 Day Standby _____ MP/DST Disc't _____
 Final Shut-In 60 Accessibility _____
 Sub Total 2073

Approved By Keith Reavis Our Representative Robert Zolner

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53392

Well Name & No. Iva Lee #1-4 Test No. 4 Date 2-19-14
 Company Murfin Drilling Co., Inc Elevation 3170 KB 3157 GL
 Address 2500 N Water STE # 3000 Wichita, KS 67202
 Co. Rep / Geo. Keith Rivas Rig Murfin #25
 Location: Sec. 4 Twp. 1S Rge. 37W Co. Cheyenne State KS

Interval Tested ~~4200~~ 4212-4292 Zone Tested LKC "G-B"
 Anchor Length 80' Drill Pipe Run 4215' Mud Wt. 9.4
 Top Packer Depth 4208 Drill Collars Run 0 Vis 57
 Bottom Packer Depth 4212 Wt. Pipe Run 0 WL 4.8
 Total Depth 4292 Chlorides 600 ppm System LCM 2#

Blow Description IF-1/2" Blow built to 1 1/2"
ISI- NO Return
FF- No Blow
FSI- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>OCM</u>	<u>20</u>		<u>80</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 15 BHT 130 Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic <u>2101</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>5:40 PM</u>
(B) First Initial Flow <u>19</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>6:26 PM</u>
(C) First Final Flow <u>21</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>8:40 PM</u>
(D) Initial Shut-In <u>288</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIC</u>	T-Pulled <u>11:40 PM</u>
(E) Second Initial Flow <u>17</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>1:40 AM</u>
(F) Second Final Flow <u>21</u>	<input checked="" type="checkbox"/> Mileage <u>160 RT</u> 248	Comments
(G) Final Shut-In <u>107</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2052</u>	<input type="checkbox"/> Straddle	

Initial Open <u>30</u>	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Ruined Shale Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	Total <u>2073</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>2073</u>	

Approved By _____ Our Representative

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53393

Well Name & No. Iva Lee Test No. 5 Date 2-28-14
 Company Murfin Drilling Co., Inc Elevation 3170 KB 3157 GL
 Address 250 N Water STE #300 Wichita, KS 67202
 Co. Rep / Geo. Keith Rivas Rig Murfin #25
 Location: Sec. 4 Twp. 1S Rge. 37W Co. Cheyenne State KS

Interval Tested 4266-4360 Zone Tested LKC "H, I, J"
 Anchor Length 94' Drill Pipe Run 4245 Mud Wt. 9.4
 Top Packer Depth 4262 Drill Collars Run 0 Vis 54
 Bottom Packer Depth 4266 Wt. Pipe Run 0 WL 6.0
 Total Depth 4360 Chlorides 600 ppm System LCM 2#

Blow Description IF- BoB in 8 min.
ISI- BoB in 45 min.
FF- BoB in 7 min.
FSI- Surface Return built to 9"

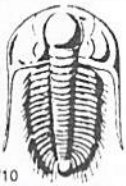
Rec	Feet of	%gas	%oil	%water	%mud
<u>441</u>	<u>Clean Gassy oil</u>	<u>20</u>	<u>80</u>		
<u>238</u>	<u>60CM</u>	<u>10</u>	<u>30</u>		<u>60</u>
<u>94</u>	<u>OCM</u>		<u>10</u>		<u>90</u>
<u>720</u>	<u>GFP</u>	<u>100</u>			

Rec Total _____ BHT 141 Gravity 39 API RW - @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2125 Test 1250 T-On Location 12:15 PM
 (B) First Initial Flow 39 Jars 250 T-Started 12:45 PM
 (C) First Final Flow 152 Safety Joint 75 T-Open 3:15 PM
 (D) Initial Shut-In 856 Circ Sub NIC T-Pulled 7:15 PM
 (E) Second Initial Flow 156 Hourly Standby _____ T-Out 10:00 PM
 (F) Second Final Flow 320 Mileage 160 RT 248 Comments _____
 (G) Final Shut-In 855 Sampler _____
 (H) Final Hydrostatic 2034 Straddle _____ Ruined Shale Packer _____

Initial Open 30 Shale Packer 250 Ruined Packer _____
 Initial Shut-In 60 Extra Packer _____ Extra Copies _____
 Final Flow 60 Extra Recorder _____ Sub Total 0
 Final Shut-In 90 Day Standby _____ Total 2073
 Accessibility _____ MP/DST Disc't _____
 Sub Total 2073

Approved By _____ Our Representative [Signature]
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53394

4/10

Well Name & No. Iva Lee # H4 Test No. 6 Date 2-21-14
 Company Murkin Drilling Co., Inc Elevation 3170 KB 3157 GL
 Address 250 N Water STE #300 Wichita, KS 67202
 Co. Rep / Geo. Keith Rivas Rig Murkin #25
 Location: Sec. 4 Twp. 1S Rge. 37W Co. Cheyenne State KS

Interval Tested 4511-4554 Zone Tested Pawnee
 Anchor Length 43' Drill Pipe Run 4495 Mud Wt. 8.7
 Top Packer Depth 4507 Drill Collars Run 0 Vis 123
 Bottom Packer Depth 4511 Wt. Pipe Run 0 WL 4.4
 Total Depth 4554 Chlorides 800 ppm System LCM 10#

Blow Description IF - 1/2" Blow built to 1 1/4"
ISI - No Return
FF - No Blow
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 15 BHT 135 Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 2149 Test 1250 T-On Location 10:30 PM
 (B) First Initial Flow 17 Jars 250 T-Started 11:50 PM
 (C) First Final Flow 17 Safety Joint 75 T-Open 1:55 AM
 (D) Initial Shut-In 968 Circ Sub M/C T-Pulled 4:55 AM
 (E) Second Initial Flow 18 Hourly Standby _____ T-Out 6:55 AM
 (F) Second Final Flow 19 Mileage 160 RT 248
 (G) Final Shut-In 861 Sampler _____
 (H) Final Hydrostatic 2123 Straddle _____

Initial Open 308 Ruined Shale Packer _____
 Initial Shut-In 68 Ruined Packer _____
 Final Flow 308 Extra Packer _____
 Final Shut-In 68 Extra Recorder _____
 Extra Copies _____
 Sub Total 0
 Total 2073
 MP/DST Disc't _____
 Sub Total 2073

Approved By _____ Our Representative [Signature]

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OPERATOR

Company: Murfin Drilling Company, Inc.
 Address: 250 N. Water
 Suite 300
 Wichita, KS 67202
 Contact Geologist: Shauna Gunzelman
 Contact Phone Nbr: 316-267-3241
 Well Name: Ivalee #1-4
 Location: Sec. 4 - T1S - R37W
 Pool:
 State: Kansas

API: 15-023-21380-0000
 Field: Jones Canyon
 Country: USA



Scale 1:240 Imperial

Well Name: Ivalee #1-4
 Surface Location: Sec. 4 - T1S - R37W
 Bottom Location:
 API: 15-023-21380-0000
 License Number: 30606
 Spud Date: 2/14/2014 Time: 19:45
 Region: Cheyenne County Time: 18:15
 Drilling Completed: 2/22/2014
 Surface Coordinates: 990' FSL & 1980' FWL
 Bottom Hole Coordinates:
 Ground Elevation: 3157.00ft
 K.B. Elevation: 3170.00ft
 Logged Interval: 3506.00ft To: 4719.00ft
 Total Depth: 3719.00ft
 Formation: Cherokee
 Drilling Fluid Type: Chemical/Fresh Water Gel

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: Latitude:
 N/S Co-ord: 990' FSL
 E/W Co-ord: 1980' FWL

LOGGED BY

Keith Reavis
Consulting Geologist

Company: Keith Reavis, Inc.
 Address: 3420 22nd Street
 Great Bend, KS 67530

Phone Nbr: 620-617-4091
 Logged By: KLG #136 Name: Keith Reavis

CONTRACTOR

Contractor: Murfin Drilling Company, Inc.
 Rig #: 25
 Rig Type: mud rotary
 Spud Date: 2/14/2014 Time: 19:45
 TD Date: 2/22/2014 Time: 18:15
 Rig Release: Time:

ELEVATIONS

ELEVATIONS

K.B. Elevation: 3170.00ft
K.B. to Ground: 13.00ft

Ground Elevation: 3157.00ft

NOTES

Due to the positive results of DST #5 it was elected to set 5 1/2" production casing and further test the Lansing J through perforations and stimulation.

The gamma ray and caliper curves were imported into this report from the electrical log suite. Electrical log tops were consistently 4 to 10 ft high to the driller measurements. Plotted drill time in this report was not shifted to match the electrical log tops, but left as recorded in the field.

The samples were saved and will be available for review at the Kansas Geological Survey Well Sample Library located in Wichita, KS.

Respectfully submitted,
Keith Reavis

Murfin Drilling Company

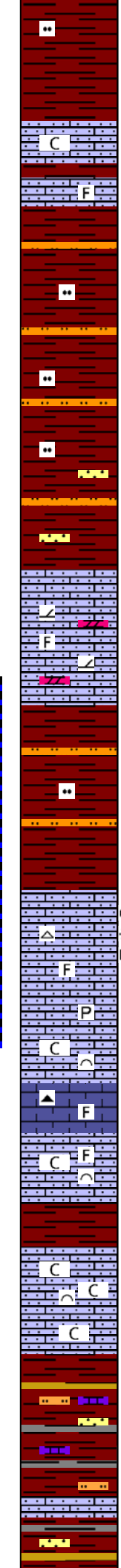
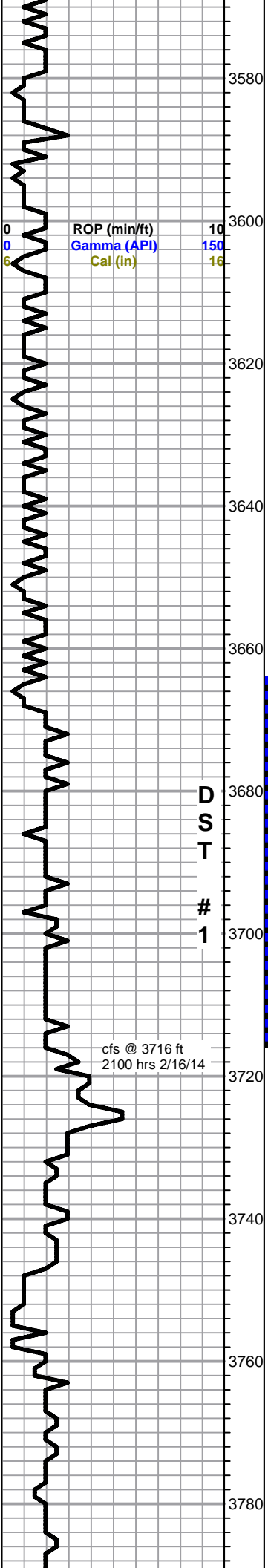
daily drilling report

DATE	7:00 AM DEPTH	REMARKS
02/16/2014		Geologist Keith Reavis on location @ 1310 hrs, 3506 ft, bit trip complete bit trip, ctch, resume drilling, Neva, Red Eagle, Foraker, show in Foraker warrants test, TOH for DST #1
02/17/2014	3716	conduct and complete DST #1, successful test, TIH w/bit, resume drilling
02/18/2014	4073	drilling Topeka, Oread, show in Oread warrants test, short trip, TOH w/bit, conducting DST #2, complete DST #2, successful test, TIH w/bit, drill ahead Oread, Lansing
02/19/2014	4218	shows in Lansing A - D warrant test, TOH w/bit, conduct and complete DST #3, successful test, TIH w/bit, resume drilling, show in G warrants test, TOH w/bit, conducting DST #4
02/20/2014	4320	complete DST #4, successful trip, TIH w/bit, drill ahead, cut H, I, J, show warrants test, TOH w/bit, conduct and complete DST #5, successful test
02/21/2014	4360	lost packer in hole, chasing down with bit, lost circ, re-gain returns, resume drilling 0800 hrs, drilling BKC, Marmaton, Pawnee, show in Pawnee warrants test, short trip, TOH w/bit, in with tools
02/22/2014	4554	conduct and complete DST #6, successful test, TIH w/bit, resume drilling Cherokee, TD 4719 ft @ hrs, TOH for logs, conduct logging operations
02/23/2014	4719	complete logging operations, geologist off location 0045 hrs

Murfin Drilling Company

well comparison sheet

DRILLING WELL					COMPARISON WELL				COMPARISON WELL			
Murfin - Ivalee #1-4 990' FSL & 1980' FWL Sec. 4 - T1S - R37W					Murfin - Patti G #1-4 660' FSL & 2200' FEL Sec. 4 - T1S - R37W				Murfin - Shones Unit #1-5 2600' FSL & 660' FEL Sec. 5 - T1S - R37W			
3170 KB					3147 KB		Structural Relationship		3177 KB		Structural Relationship	
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Neva	3586	-416	*		3562	-415	-1		3596	-419	3	
Red Eagle	3649	-479	*		3626	-479	0		3661	-484	5	
Foraker	3694	-524	*		3674	-527	3		3707	-530	6	
Topeka	3921	-751	*		3893	-746	-5		3925	-748	-3	
Oread	4060	-890	4055	-885	4027	-880	-10	-5	4060	-883	-7	-2
Lansing	4141	-971	4134	-964	4108	-961	-10	-3	4138	-961	-10	-3
Stark	4352	-1182	4350	-1180	4321	-1174	-8	-6	4357	-1180	-2	0
BKC	4416	-1246	4408	-1238	4380	-1233	-13	-5	4414	-1237	-9	-1
Pawnee	4539	-1369	4529	-1359	4498	-1351	-18	-8	4530	-1353	-16	-6
Cherokee	4623	-1453	4615	-1445	4585	-1438	-15	-7	4619	-1442	-11	-3
Mississippian	nr	nr	nr	nr	nr	nr	nr	nr	4870	-1693	na	na
Total Depth	4719	-1549	4714	-1544	4669	-1522	-27	-22	4960	-1783	234	239



Neva 3586 -416

limestone, white to pale green/gray, micro-cryptocrystalline, chalky to sandy, slightly fossiliferous, poor visible porosity, no shows, abundant chalk in samples

red silty soft shale, sticky, with red siltstone

as above, some gray/green silstone and very fine grain sandstone

Red Eagle 3649 -479

limestone, light gray to gray/green, sandy, dolomitic in part, fossiliferous and chalky in part, poor visible porosity, some light gray fine sucrosic dolomite, friable, no visible porosity, no shows

shales and silts as above

Foraker 3694 -524

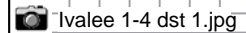
limestone, light gray, microcrystalline, sandy, fossiliferous, trace pyritic and cherty, good scattered pinpoint porosity, trace small vugs, black to brown spotty to saturated stain, bleeding some free oil, slow bleeding gas, no odor, good fluorescence, good cut

limestone as above, some bioclastic, with gray/black very dense cherty limestone, white fossil clasts, no shows

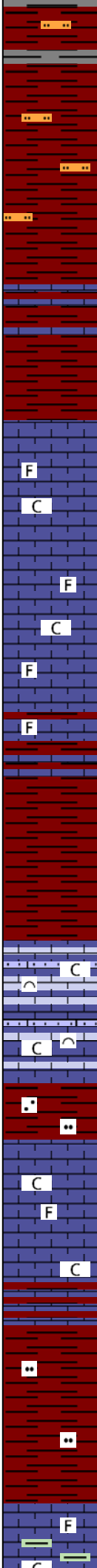
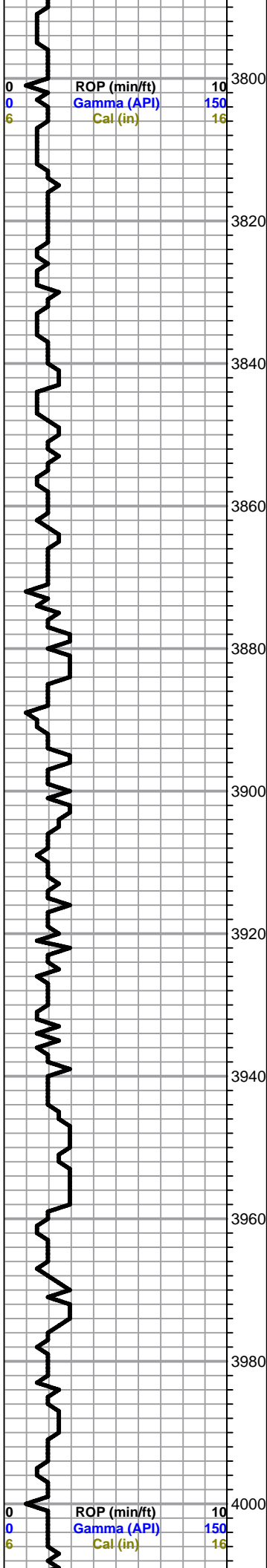
limestone, white to gray, microcrystalline, sandy in part, bioclastic, chalky, flood chalk in samples, no shows

shale, sticky red, gray and maroon, abundant siltstones, trace yellow to maroon dirty sandstone, stringers mixed fossiliferous limestones,

0	Total Gas (units)	100
0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100



Morgan Mud chk
@ 3716 ft.
0730 hrs. 2/17/14
Vis. 58 Wt. 9.2
PV 24 YP 20
WL 6.0
Cake 2/32,
pH 10.5
CHL 700 ppm
Ca 30 ppm
Sol 6.4 LCM 4#
DMC \$2350.00
CMC \$15952.00



as above

grades to mostly red shale and siltstone

limestone, gray to light gray, cryptocrystalline, dense fossiliferous, some arenaceous, no visible porosity or shows

red and orange shales

3870 sample - limestone, light gray to cream, some mottled, microcrystalline, fossiliferous, arenaceous, chalky in part, some edge etching with spotty black dead gilsonitic stain, good even mineral fluorescence, good cut, no show free oil, no odor

carrying abundant limestone a.a. thru 3910 samples, some weathered/chalky

limestone above dropping out, influx limestone, gray to gray/green, micro-cryptocrystalline, fossiliferous, dense, no show

3920 and 30 sample, flood red sticky soft shale

Topeka 3921 -751

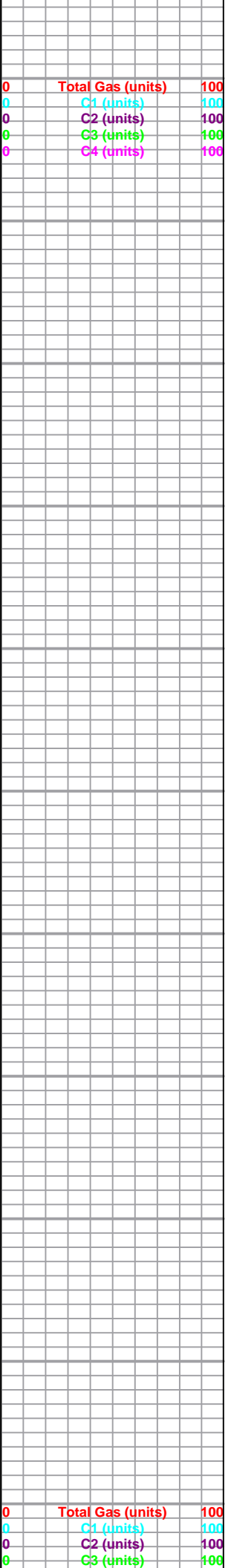
limestone, as above, some sandy with flood limestone, light gray to white, bioclastic, chalky, poor visible porosity, no shows, abundant chalk

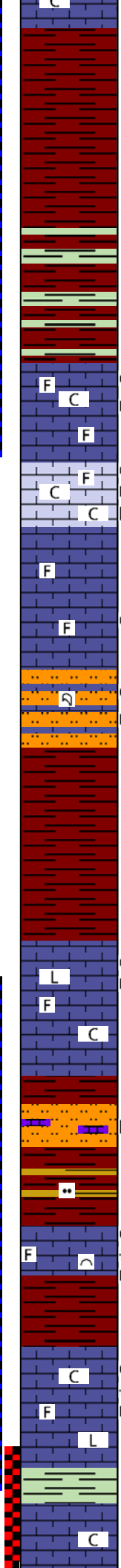
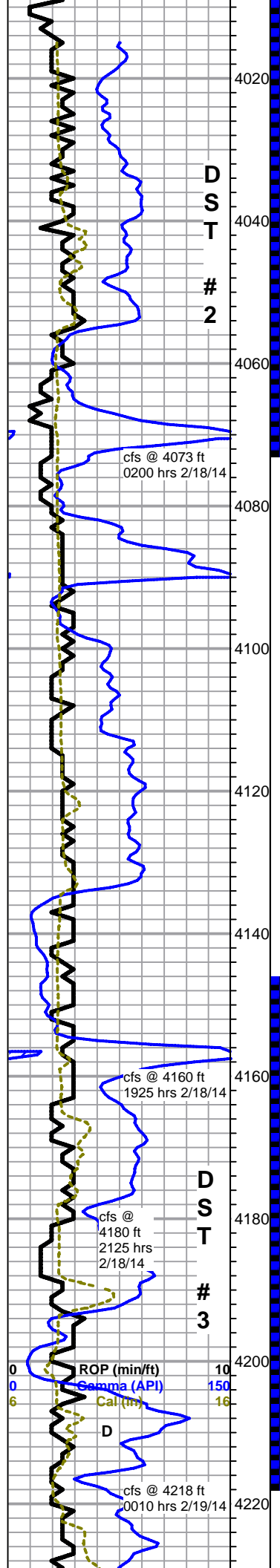
red silty shale, some green shale, trace small green-maroon dirty sand clusters

limestone, white to light gray, micro-cryptocrystalline, fossiliferous, chalky, poor visible porosity, no shows, abundant chalk

red shale

samples, limestone, white with some green tint, mostly cryptocrystalline, fossiliferous, mostly dense, some chalky, poor visible porosity, no shows, abundant light green shale





red/brn shale mottled

red and green shales

Oread 4060 -890 (log top 4055 -885)

● limestone, light gray, microcrystalline, fossiliferous, leached with abundant edge etching and pinpoint porosity, spotty to saturated dark brown-black staining, fair show free oil and heavy sheen, fair overall even fluorescence, excellent cut, faint odor, some chalk

○ limestone, white, chalky weathered fossiliferous, some vugs, abundant black gilsonitic/asphaltic staining, trace clingy tarry oil, some light scattered fluorescence, good cut, no odor

grades to limestone, light gray, cryptocrystalline, fossiliferous, dense, no show

○ 4110 sample, a.a. with influx gray arenaceous limestone, few pieces with leached pinpoint porosity, grayish black saturated stain, slight show free oil on break, no odor, dull yellow fluorescence

● siltstone to very fine grain dirty sandstone, light gray to gray green, poor visible porosity, slightly friable, light stain, scaly tarry free oil on break, with limestone stringers, gray green, sandy, vuggy coral fragments, inter-intraclast stain, bleeds heavy free oil, poor fluorescence, excellent milky cut, fleeting odor

red shales

Lansing 4141 -971 (log top 4134 -964)

○ limestone, light gray to white, cryptocrystalline, lithographic, trace fossiliferous, some scattered stained solution vugs, trace scaly oil on break, no odor, poor overall fluorescence, good slow streaming cut, some chalk

cfs samples grades to limestone a.a., no show, with scattered gray chert

● siltstone, pale gray green, some dark maroon, trace stain, some pale green sandy limestone, some pelletal, trace dead black stain, no show free oil or odor - grades back to red and olive/yellow silty shale

● limestone, light gray to pale green, microcrystalline, arenaceous to bioclastic and fossiliferous, appx. 40% with good etching to vuggy porosity, fair black to brown spotty to saturated stain, show gas and heavy free oil, heavy sheen in tray, fleeting odor, spotty light fluorescence, excellent cut

● limestone, white, cryptocrystalline, chalky, lithographic to fossiliferous in part, some good small to medium solution vugs, staining through vugs, bleeding heavy free oil, some gas bubbles, fairly even light fluorescence, good cut with halo, no odor

cfs samples - grades to limestone, pale green, crypto-microcrystalline, dense lithographic, with green shale, no shows, still abundant limestone a.a.

limestone, white, cryptocrystalline, very chalky, soft, no shows

0 C4 (units) 100

No open hole electrical log ran above this point

lvallee 1-4 dst 2.jpg

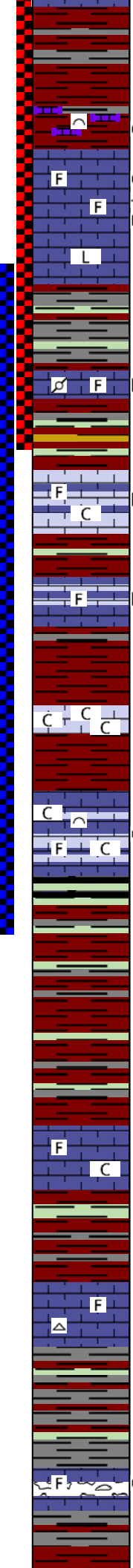
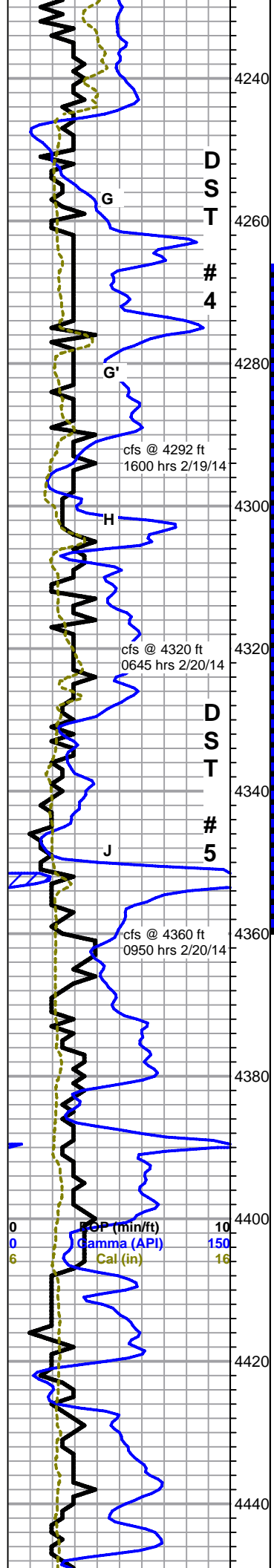
deviation survey 0.6 deg

Morgan Mud chk @ 4073 ft. 0730 hrs. 2/18/14 Vis. 70 Wt. 9.2 PV 30 YP 22 WL 5.6 Cake 2/32, pH 10.5 CHL 600 ppm Ca 30 ppm Sol 6.4 LCM 2# DMC \$3439.00 CMC \$19391.00

lvallee 1-4 dst 3.jpg

0	Total Gas (units)	100
0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100

Morgan Mud chk @ 4218 ft. 0715 hrs. 2/19/14 Vis. 57 Wt. 9.4 PV 26 YP 20



shales, red, sticky, soft, some gray

4260 sample, shale as above with limestone, gray, bioclastic, good pinpoint porosity, saturated grayish/black stain, good sheen in tray, no free oil droplets, poor fluorescence, fair cut, no odor, still abundant shale

4270 sample, grades to limestone, white to light gray and gray/green, cryptocrystalline, fossiliferous, some large clasts, some fair interclast wormy/vuggy porosity, good brown staining in vugs, bleeding free oil and gas bubbles, fleeting odor, poor fluorescence, good milky cut to poor light cut

4280 sample, grades to limestone, pale green, cryptocrystalline, lithographic, dense, no shows

dense gray/green to gray and brick orange shale

limestone, gray to tan, mottled, pelletal and fossiliferous, some large secondary calcite crystals, spotty black dead stain, no show free oil or odor, with white to pale green cryptocrystalline limestone, lithographic, barren

limestone, white to light gray, chalky fossiliferous, with limestone, gray/green, cryptocrystalline, arenaceous, slightly fossiliferous, few pieces both facies with slight etching and dead black stain, no show free oil, poor overall porosity and fluorescence, no odor

limestone, white to pale gray/gray green, microcrystalline, fossiliferous, chalky in part, some interclast porosity, spotty to saturated black stain, trace scaly sheen, no odor, light yellow to spotty fair fluorescence

flood chalk in 4350 sample, some light green gritty fossiliferous limestone

limestone, white to light gray and gray/green, microcrystalline, fossiliferous to bioclastic, chalky in part, some scattered interclast porosity, very spotty light staining, sheen light oil on break and in tray, no questionable odor, fair even green fluorescence, fair cut - still flood chalk in samples

Stark Shale 4352 -1182 (log top 4350 -1180)

mixed red, gray and green shales, samples heavy red wash

lost packer in hole after test, lost circ pushing packer to bottom. 450 bbl

limestone, white to light gray, gray and gray green, mostly cryptocrystalline fossiliferous, some chalky in part, trace glauconitic, poor visible porosity, no shows

limestone as above, with some brown pelletal, trace chert, no shows

Base KC 4416 -1246 (log top 4408 -1238)

limestone, gray, dense arenaceous, light gray fossiliferous, 1 piece with vugs, slight stain (sluff from above?), no show, abundant brecciated fossiliferous limestone with maroon shale infill

WL 4.8
Cake 2/32,
pH 11.0
CHL 600 ppm
Ca 20 ppm
Sol 7.1 LCM 2#
DMC \$2198.00
CMC \$21589.00

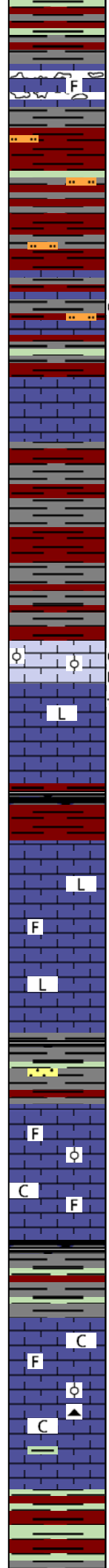
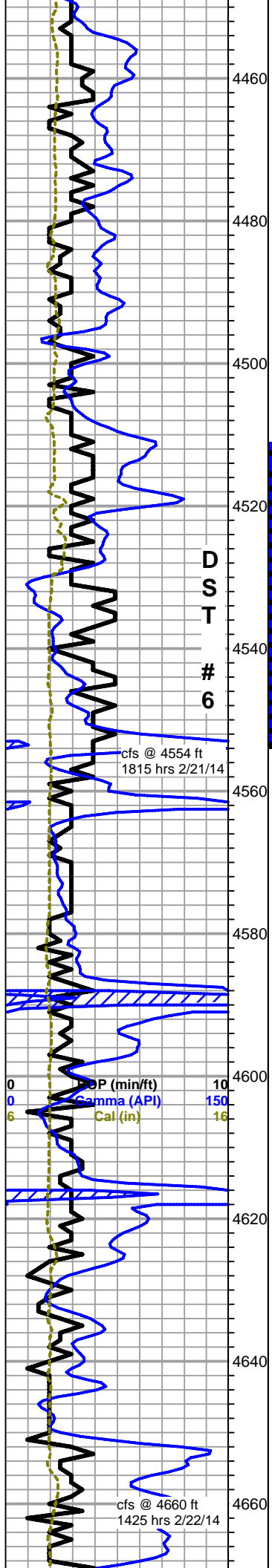
Ivalee 1-4 dst 4.jpg

Ivalee 1-4 dst 5.jpg

Morgan Mud chk @ 4320 ft.
0715 hrs. 2/20/14
Vis. 54 Wt. 9.4
PV 21 YP 18
WL 6.0
Cake 2/32,
pH 10.5
CHL 600 ppm
Ca 20 ppm
Sol 7.8 LCM 2#
DMC \$0.00
CMC \$21589.00

Morgan Mud chk @ 4360 ft.
0700 hrs. 2/21/14
Vis. 123 Wt. 8.7
PV 30 YP 37
WL 4.4
Cake 2/32,
pH 11.5
CHL 800 ppm
Ca 10 ppm
Sol 2.9 LCM 10#
DMC \$8182.00
CMC \$29771.00

0	Total Gas (units)	100
0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100



limestones as above, no shows

mixed shales, mostly reds, some burnt orange, abundant reddish pink siltstone, dense

limestone, white to light gray, chalky, bioclastic to fossiliferous, some micro-oolitic, questionable stain on few pieces, seems organic not petroleum based, no fluorescence or cut

limestone, gray, cryptocrystalline, arenaceous, gritty, dense

shale, red, influx abundant gray shale, some brown shale with fossil pellets

Pawnee 4539 -1369 (log top 4529 -1359)

limestone, white to light gray, oolitic, some fair inter-oolite porosity, slight framework, wormy saturated inter-oolite stain, fair show free oil, trace gas bubbles, faint odor, fair even fluorescence, fair to good cut with halo

grades to limestone, gray, cryptocrystalline, arenaceous and to smooth lithographic, dense

limestone, variable gray, cryptocrystalline, arenaceous to lithographic, dense, some scattered light gray to cream fossiliferous, some chalk, no shows

mostly gray shales, soft, heavy gray wash, trace dirty medium grain glauconitic sandstone, no show

limestone, light gray to white, microcrystalline, fossiliferous to flattened oolitic, chalky in part, poor visible porosity, with limestone, cream to gray, cryptocrystalline, arenaceous, chalky in part, no shows

Cherokee 4623 -1423 (log top 4615 -1445)

limestone, white to gray, chalky fossiliferous to oolitic, limestone, some brown fossiliferous, variable gray, cryptocrystalline lithographic to fossiliferous, dense, abundant chalk, some orange cherts, no shows

as above, cherts dropping out, some bright turquoise shales

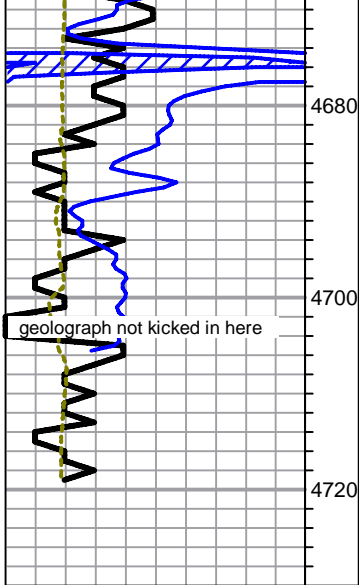
red, green, olive mottled shales

losing some fluid here, about 40 bbls, built back up to 10# lcm

lvalee 1-4 dst 6.jpg

Morgan Mud chk @ 4554 ft.
0715 hrs. 2/22/14
Vis. 60 Wt. 9.1
PV 32 YP 10
WL 6.0
Cake 2/32,
pH 10.5
CHL 600 ppm
Ca 20 ppm
Sol 5.7 LCM 12#
DMC \$2542.00
CMC \$32313.00

0	Total Gas (units)	100
0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100



4680
4700
4720



limestone, light gray to white, microcrystalline, fossiliferous, chalky in part, poor visible porosity, no shows

red, green and gray variable shale, sandstone, white, quartz, fine to very fine grain, sub angular to sub round, poor to fair sorting, siliceous cement, well cemented, poor visible porosity, barren

conglomerate? red and green mottled shales, heavy red wash, abundant large quartz shards, some fractured, some orange and pink angular feldspars, abundant sand grains

Rotary TD 4719 ft. @ 1815 hrs 2/22/14
Pioneer Wireline Log TD 4714 ft.
Complete Logging Operations @ 0030 hrs 2/23/14

deviation survey 0.6 degrees



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co
 250 N Water STE 300
 Wichita KS, 67202
 ATTN: Keith Reavis

4 1s 37w Cheyenne Ks

IvaLee #1-4

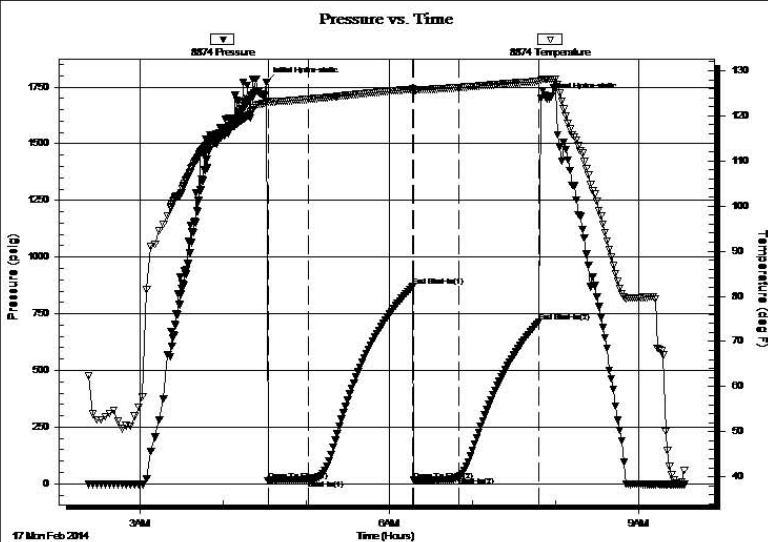
Job Ticket: 56752 **DST#: 1**
 Test Start: 2014.02.17 @ 02:22:00

GENERAL INFORMATION:

Formation: **Foraker**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:32:30
 Time Test Ended: 09:34:00
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Robert Zodrow
 Unit No: 66
 Interval: **3664.00 ft (KB) To 3716.00 ft (KB) (TVD)**
 Total Depth: 3716.00 ft (KB) (TVD)
 Reference Elevations: 3170.00 ft (KB)
 3157.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 KB to GR/CF: 13.00 ft

Serial #: 8874 **Inside**
 Press@RunDepth: 29.67 psig @ 3665.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.02.17 End Date: 2014.02.17 Last Calib.: 2014.02.17
 Start Time: 02:23:00 End Time: 09:34:00 Time On Btm: 2014.02.17 @ 04:31:30
 Time Off Btm: 2014.02.17 @ 07:53:30

TEST COMMENT: 30-IF- w eak surface blow
 60-IS- no return
 30-FF- no blow
 60-FS- no return



PRESSURE SUMMARY

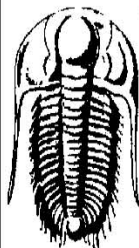
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1771.39	123.20	Initial Hydro-static
1	14.22	123.04	Open To Flow (1)
31	15.22	123.68	Shut-In(1)
106	870.90	125.89	End Shut-In(1)
106	15.09	125.54	Open To Flow (2)
139	29.67	126.25	Shut-In(2)
197	714.29	127.60	End Shut-In(2)
202	1700.94	128.14	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	mud 100%m	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water STE 300
Wichita KS, 67202
ATTN: Keith Reavis

4 1s 37w Cheyenne Ks

Ivalee #1-4

Job Ticket: 56753

DST#: 2

Test Start: 2014.02.18 @ 05:46:00

GENERAL INFORMATION:

Formation: **Oread**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:00:30

Time Test Ended: 12:52:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Robert Zodrow

Unit No: 66

Interval: 4009.00 ft (KB) To 4073.00 ft (KB) (TVD)

Total Depth: 3716.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3170.00 ft (KB)

3157.00 ft (CF)

KB to GR/CF: 13.00 ft

Serial #: 8874 Inside

Press@RunDepth: 33.93 psig @ 4010.00 ft (KB)

Start Date: 2014.02.18

End Date: 2014.02.18

Start Time: 05:47:00

End Time: 12:52:30

Capacity: 8000.00 psig

Last Calib.: 2014.02.18

Time On Btm: 2014.02.18 @ 08:00:00

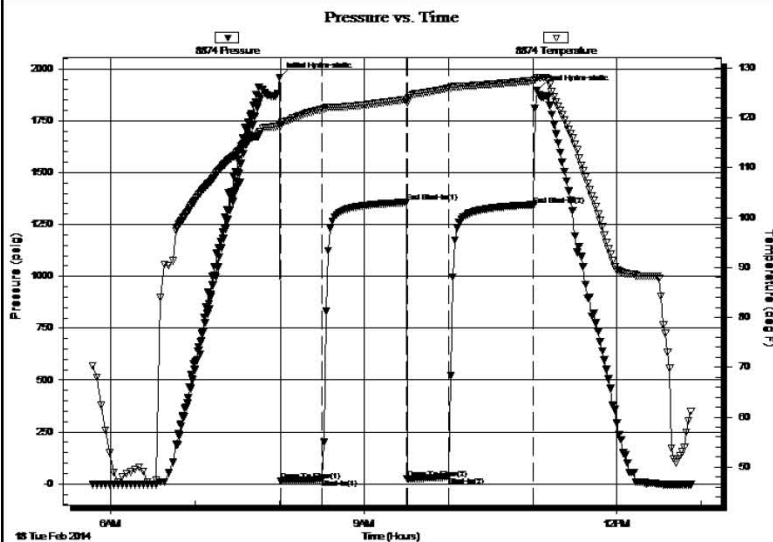
Time Off Btm: 2014.02.18 @ 11:03:00

TEST COMMENT: 30-IF- Blow Built To 1 1/4"

60-ISI- No Return

30-FF- Blow Built 1/4"

60-FSI- No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1958.79	118.53	Initial Hydro-static
1	15.01	118.47	Open To Flow (1)
30	22.46	121.73	Shut-In(1)
90	1356.34	123.71	End Shut-In(1)
91	24.35	123.09	Open To Flow (2)
120	33.93	125.98	Shut-In(2)
181	1343.06	127.47	End Shut-In(2)
183	1896.88	128.10	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	Mud 100% with oil spots	0.73

Gas Rates

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

* Recovery from multiple tests

DRILL STEM TEST REPORT

Murfin Drilling Co
 250 N Water STE 300
 Wichita KS, 67202
 ATTN: Keith Reavis

4 1s 37w Cheyenne Ks

IvaLee #1-4

Job Ticket: 56754 **DST#: 3**
 Test Start: 2014.02.19 @ 02:25:00



GENERAL INFORMATION:

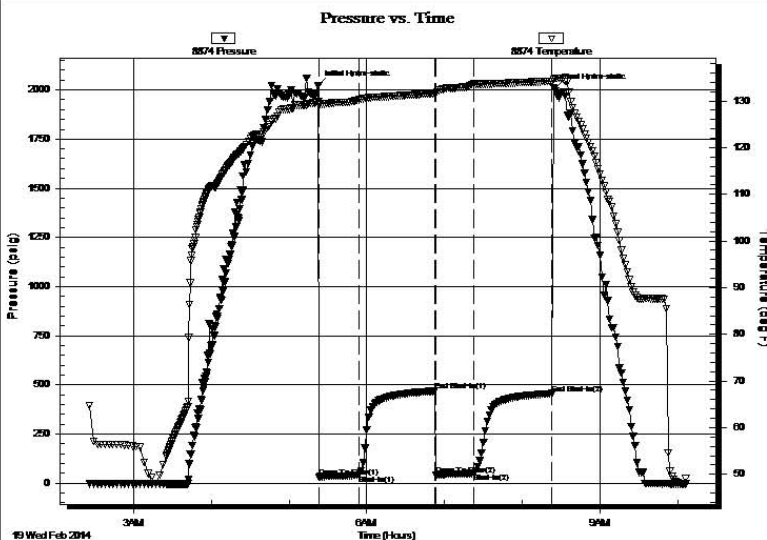
Formation: **LKC "A - D"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 05:23:00
 Time Test Ended: 10:06:00
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Robert Zodrow
 Unit No: 66
 Interval: **4146.00 ft (KB) To 4218.00 ft (KB) (TVD)**
 Total Depth: 3716.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Reference Elevations: 3170.00 ft (KB)
 3157.00 ft (CF)
 KB to GR/CF: 13.00 ft

Serial #: 8874

Inside

Press@RunDepth: 50.21 psig @ 4147.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.02.19 End Date: 2014.02.19 Last Calib.: 2014.02.19
 Start Time: 02:26:00 End Time: 10:06:00 Time On Btm: 2014.02.19 @ 05:22:30
 Time Off Btm: 2014.02.19 @ 08:25:00

TEST COMMENT: 30-IF-Blow Built To 2"
 60-ISI- No Return
 30-FF-No Blow
 60-FSI-No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2023.62	129.80	Initial Hydro-static
1	32.36	129.30	Open To Flow (1)
32	41.46	130.26	Shut-In(1)
90	468.18	131.64	End Shut-In(1)
91	43.37	131.49	Open To Flow (2)
120	50.21	133.63	Shut-In(2)
181	456.11	134.23	End Shut-In(2)
183	2005.11	134.83	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
70.00	OCM 99% _m 1% _o	1.02

Gas Rates

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

* Recovery from multiple tests

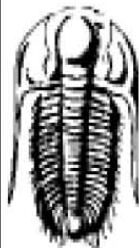
DRILL STEM TEST REPORT

Murfin Drilling Co
 250 N Water STE 300
 Wichita KS, 67202
 ATTN: Keith Reavis

4 1s 37w Cheyenne Ks

IvaLee #1-4

Job Ticket: 53392 **DST#: 4**
 Test Start: 2014.02.19 @ 18:26:00



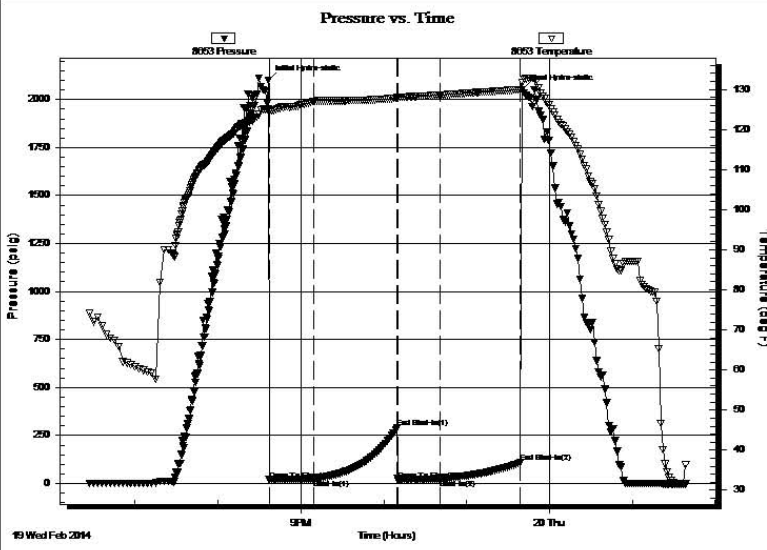
TRILOBITE TESTING, INC

GENERAL INFORMATION:

Formation: **LKC "G-G" "**
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 20:37:00 Tester: Kevin Mack
 Time Test Ended: 01:39:30 Unit No: 66
 Interval: **4212.00 ft (KB) To 4292.00 ft (KB) (TVD)** Reference Elevations: 3170.00 ft (KB)
 Total Depth: 4292.00 ft (KB) (TVD) 3157.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 13.00 ft

Serial #: 8653 Outside
 Press@RunDepth: 21.10 psig @ 4213.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.02.19 End Date: 2014.02.20 Last Calib.: 2014.02.20
 Start Time: 18:27:00 End Time: 01:39:30 Time On Btm: 2014.02.19 @ 20:36:30
 Time Off Btm: 2014.02.19 @ 23:40:00

TEST COMMENT: 30 - IF- 1/2" Blow built to 1 1/2"
 60 - IS- No Return
 30 - FF- No Blow
 60 - FS- No Return



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2101.33	125.06	Initial Hydro-static
1	19.05	124.70	Open To Flow (1)
33	21.21	127.03	Shut-In(1)
93	288.07	127.77	End Shut-In(1)
94	17.33	128.04	Open To Flow (2)
124	21.10	128.57	Shut-In(2)
182	107.75	129.94	End Shut-In(2)
184	2052.69	131.57	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
15.00	OCM 80M 20o	0.21

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

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water STE 300
Wichita KS, 67202
ATTN: Keith Reavis

4 1s 37w Cheyenne Ks

IvaLee #1-4

Job Ticket: 53393

DST#: 5

Test Start: 2014.02.20 @ 12:45:00



TRILOBITE
TESTING, INC.

GENERAL INFORMATION:

Formation: LKC "H,I,J"

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:15:30

Time Test Ended: 21:57:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 4266.00 ft (KB) To 4360.00 ft (KB) (TVD)

Total Depth: 4360.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3170.00 ft (KB)

3157.00 ft (CF)

KB to GR/CF: 13.00 ft

Serial #: 8874

Inside

Press@RunDepth: 320.55 psig @ 4267.00 ft (KB)

Start Date: 2014.02.20

End Date: 2014.02.20

Start Time: 12:46:00

End Time: 21:57:00

Capacity: 8000.00 psig

Last Calib.: 2014.02.20

Time On Btm: 2014.02.20 @ 15:12:30

Time Off Btm: 2014.02.20 @ 19:15:30

TEST COMMENT:

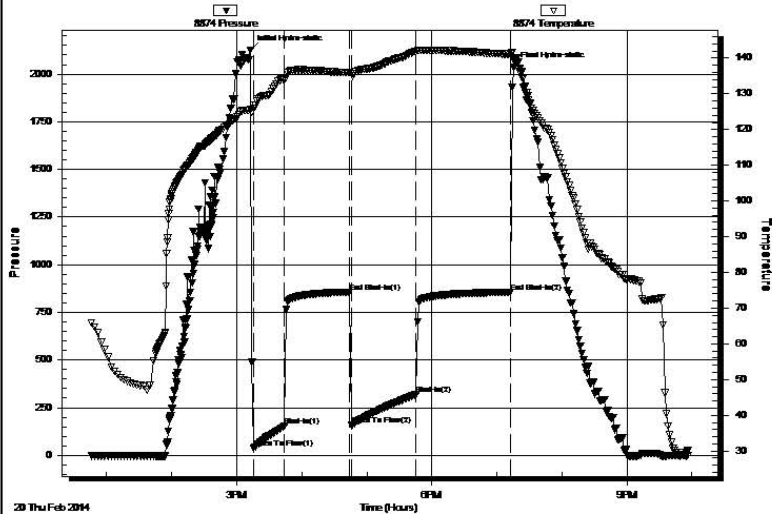
30 - IF- BoB in 8 min.

60 - IS- BoB in 45 min.

60 - FF- BoB in 7 min.

90 - FS- Surface Blow built to 9"

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2125.53	125.51	Initial Hydro-static
3	39.47	125.85	Open To Flow (1)
32	152.36	133.88	Shut-In(1)
92	856.52	135.91	End Shut-In(1)
93	156.90	135.62	Open To Flow (2)
153	320.55	141.93	Shut-In(2)
240	855.37	141.12	End Shut-In(2)
243	2034.30	139.59	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
94.00	OCM 10o 90M	1.32
238.00	GOCM 10G 30o 60M	3.34
441.00	Clean Gassy Oil 20G 80o	6.19
0.00	720' GIP	0.00

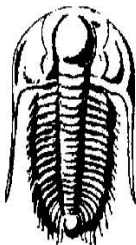
Gas Rates

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

DRILL STEM TEST REPORT

Murfin Drilling Co
 250 N Water STE300
 Wichita KS, 67202
 ATTN: Keith Reavis

4 1s 37w Cheyenne Ks
IvaLee #1-4
 Job Ticket: 53394 **DST#: 6**
 Test Start: 2014.02.21 @ 23:50:00



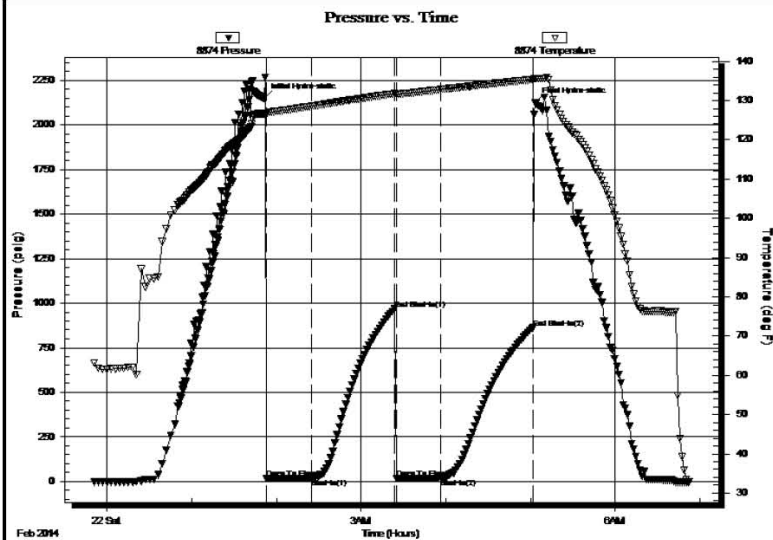
TRILOBITE TESTING, INC

GENERAL INFORMATION:

Formation: **Pawnee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 01:53:00
 Time Test Ended: 06:52:00
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Kevin Mack
 Unit No: 66
 Interval: **4511.00 ft (KB) To 4554.00 ft (KB) (TVD)**
 Total Depth: 4554.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Reference Elevations: 3170.00 ft (KB)
 3157.00 ft (CF)
 KB to GR/CF: 13.00 ft

Serial #: 8874 Inside
 Press@RunDepth: 19.66 psig @ 4512.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.02.21 End Date: 2014.02.22 Last Calib.: 2014.02.22
 Start Time: 23:51:00 End Time: 06:52:00 Time On Btm: 2014.02.22 @ 01:51:00
 Time Off Btm: 2014.02.22 @ 05:03:30

TEST COMMENT: 30 - IF- 1/2" Blow built to 1 1/4"
 60 - IS- No Return
 30 - FF- No Blow
 60 - FS- No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2149.46	126.71	Initial Hydro-static
2	17.00	126.56	Open To Flow (1)
34	17.95	128.58	Shut-In(1)
93	968.14	131.76	End Shut-In(1)
94	18.93	131.60	Open To Flow (2)
126	19.66	132.82	Shut-In(2)
191	861.85	135.36	End Shut-In(2)
193	2123.67	135.57	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	Mud 100M	0.21

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (M cf/d)

Ivalee #1-4
 Daily Drilling Report
 Page 3

MDCI Ivalee #1-4 990' FSL 1980' FWL Sec. 4-T1S-R37W 3170' KB							MDCI Patti G #1-4 660' FSL 2200' FEL Sec. 4-T1S-R37W 3147' KB	
Formation	Sample top	Datum	Ref	Log Top	Datum	Ref	Log Top	Datum
Anhydrite	3144	+26	-11				3110	+37
B/Anhydrite	3177	-7	-3				3143	+4
Neva	3586	-416	Flat				3563	-416
Red Eagle	3649	-479	Flat				3626	-479
Foraker	3694	-524	+3				3674	-527
Stotler							3822	-675
Topeka	3921	-751	-4				3894	-747
Oread	4060	-890	-10	4055	-885	-5	4027	-880
Lansing	4141	-971	-10	4134	-964	-3	4108	-961
Stark	4352	-1182	-9	4351	-1181	-8	4320	-1173
BKC	4416	-1246	-13	4408	-1238	-5	4380	-1233
Pawnee	4539	-1369	-18	4529	-1359	-8	4498	-1351
Cherokee	4623	-1423	-16	4616	-1446	-7	4586	-1439
Mississippi	NR			NR			NR	
RTD	4719	-1549					4670	-1523
LTD				4714	-1544		4669	-1522



PO Box 93999
Southlake, TX 76092

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

*acct.
Prod-LH*

INVOICE

Invoice Number: 141381

Invoice Date: Feb 13, 2014

Page: 1

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

Customer ID	Field Ticket #	Payment Terms	
Murfin	62547	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-01	Oakley	Feb 13, 2014	3/15/14

Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	Ivatee #1-4		
200.00	CEMENT MATERIALS	Class A Common	17.90	3,580.00
7.00	CEMENT MATERIALS	Chloride	64.00	448.00
210.00	CEMENT SERVICE	Cubic Feet Charge	2.48	520.80
968.00	CEMENT SERVICE	Ton Mileage Charge	2.60	2,516.80
1.00	CEMENT SERVICE	Surface	1,512.25	1,512.25
100.00	CEMENT SERVICE	Pump Truck Mileage	7.70	770.00
1.00	CEMENT SERVICE	Swedge Manifold Rental	275.00	275.00
100.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	440.00
1.00	CEMENT SUPERVISOR	LaRene Wentz		
1.00	EQUIPMENT OPERATOR	Kevin Ryan		

Subtotal	10,062.85
Sales Tax	328.28
Total Invoice Amount	10,391.13
Payment/Credit Applied	
TOTAL	10,391.13

ALL PRICES ARE NET, PAYABLE 30 DAYS FOLLOWING DATE OF INVOICE. 1 1/2% CHARGED THEREAFTER. IF ACCOUNT IS CURRENT, TAKE DISCOUNT OF *35%*

\$ 3,521.99

ONLY IF PAID ON OR BEFORE
Mar 10, 2014

- 3521.99
6869.14

ALLIED OIL & GAS SERVICES, LLC 062547

Federal Tax I.D. # 20-8651475

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

SERVICE POINT:
Dakley, KS
2-14-14

DATE <u>2-13-14</u>	SEC. <u>4</u>	TWP. <u>1</u>	RANGE <u>37</u>	CALLED OUT.	ON LOCATION <u>11:30 pm</u>	JOB START <u>2:00 pm</u>	JOB FINISH <u>2:15 am</u>
LEASE <u>Fualey</u>	WELL # <u>1-4</u>	LOCATION <u>Bird City N to 1-4</u>			COUNTY <u>Cheyenne</u>	STATE <u>KS</u>	
OLD OR <u>NEW</u> (Circle one)				<u>Dakley 3 E, #10, Conto</u>			

CONTRACTOR Marfin 25

TYPE OF JOB Surface

HOLE SIZE 12 1/4 T.D. 2301

CASING SIZE 8 7/8 DEPTH 229.931

TUBING SIZE _____ DEPTH _____

DRILL PIPE _____ DEPTH _____

TOOL _____ DEPTH _____

PRES. MAX _____ MINIMUM _____

MEAS. LINE _____ SHOE JOINT _____

CEMENT LEFT IN CSG. 151

PERFS. _____

DISPLACEMENT 13.76

OWNER same

CEMENT AMOUNT ORDERED 2405 lbs Conto 390cc

EQUIPMENT

PUMP TRUCK CEMENTER Loren Erdant

423/281 HELPER Keon Ryan

BULK TRUCK DRIVER Juan Tamer (TWS)

818/281

BULK TRUCK DRIVER _____

COMMON	<u>2405 lbs</u>	@	<u>17.90</u>	<u>3582.00</u>
POZMIX		@		
GEL		@		
CHLORIDE	<u>75 lbs</u>	@	<u>64.00</u>	<u>498.00</u>
ASC		@		
HANDLING	<u>210 hrs</u>	@	<u>2.48</u>	<u>520.80</u>
MILEAGE	<u>2687 mi</u>	@	<u>2.60</u>	<u>7006.20</u>
TOTAL				<u>7563.60</u>

REMARKS:
Mix 200 lbs cement
Displace with water
(cement did) circulate

SERVICE

DEPTH OF JOB				
PUMP TRUCK CHARGE			<u>1512.25</u>	
EXTRA FOOTAGE	@			
MILEAGE <u>MDHU</u>	<u>100</u>	@	<u>7.70</u> <u>770.00</u>	
MANIFOLD <u>54 edge</u>		@	<u>295.00</u>	
<u>MDLV</u>	<u>100</u>	@	<u>4.90</u> <u>490.00</u>	
TOTAL				<u>2997.25</u>

CHARGE TO: Marfin

STREET _____

CITY _____ STATE _____ ZIP _____

PLUG & FLOAT EQUIPMENT

_____	@		
_____	@		
_____	@		
_____	@		
_____	@		

TOTAL _____

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

PRINTED NAME Keon Ryan Blm

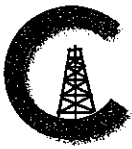
SIGNATURE [Signature]

SALES TAX (If Any) _____

TOTAL CHARGES 10,062.85

DISCOUNT 3521.99 IF PAID IN 30 DAYS

6,540.85 Net.



CONSOLIDATED
Oil Well Services, LLC

REMIT TO
FINV
Consolidated Oil Well Services, LLC
Dept. 970
P.O. Box 4346
Houston, TX 77210-4346

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

INVOICE

Invoice # 266114

Invoice Date: 02/24/2014 Terms: 10/10/30,n/30

Page 1

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

I VALLEE 1-4
43086
4-1S-37W
02-23-2014
KS

USED FOR 1C103
APPROVED JRK
FH

Part Number	Description	Qty	Unit Price	Total
1104D	CLASS "A" CEMENT CMD	300.00	27.9200	8376.00
1107	FLO-SEAL (25#)	150.00	2.9700	445.50
1110A	KOL SEAL (50# BAG)	1000.00	.5600	560.00
1126	OIL WELL CEMENT	200.00	23.7000	4740.00
1142A	KCL SUB MB6875 CC3107 (1	2.00	41.1000	82.20
1144G	MUD FLUSH (SALE)	500.00	1.0000	500.00
4136	TURBOLIZER 5 1/2"	15.00	75.7500	1136.25
4159	FLOAT SHOE AFU 5 1/2"	1.00	433.7500	433.75
4454	5 1/2" LATCH DOWN PLUG	1.00	567.0000	567.00
4310	ROTATING HEAD	1.00	200.0000	200.00

Sublet Performed	Description	Total
9996-130	CEMENT MATERIAL DISCOUNT	-1704.07
9995-130	CEMENT EQUIPMENT DISCOUNT	-711.73

Description	Hours	Unit Price	Total
T-118 SINGLE PUMP	1.00	3175.00	3175.00
T-118 EQUIPMENT MILEAGE (ONE WAY)	85.00	5.25	446.25
T-127 TON MILEAGE DELIVERY	1.00	3496.05	3496.05

Amount Due 25546.81 if paid after 03/26/2014

Parts:	17040.70	Freight:	.00	Tax:	1249.93	AR	22992.13
Labor:	.00	Misc:	.00	Total:	22992.13		
Sublt:	-2415.80	Supplies:	.00	Change:	.00		

Signed _____

Date _____

BARTLESVILLE, OK
918/338-0808

EL DORADO, KS
316/322-7022

EUREKA, KS
620/583-7664

PONCA CITY, OK
580/762-2303

OAKLEY, KS
785/672-8822

OTTAWA, KS
785/242-4044

THAYER, KS
620/839-5269

GILLETTE, WY
307/686-4914

CUSHING, OK
918/225-2650

