



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1226837
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: _____

1226837

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

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

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

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

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

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

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

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

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

TUBING RECORD: Size: _____ Set At: _____ Packer At: _____ Liner Run: Yes No

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

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	Virginia 'B' 1-11
Doc ID	1226837

All Electric Logs Run

DIL
DUCP
MEL
BHCS



acc
Prod-MG

INVOICE

PO Box 93999
Southlake, TX 76092

Invoice Number: 145202

Invoice Date: Aug 18, 2014

Page: 1

Voice: (817) 546-7282

Fax: (817) 246-3361

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

Customer ID	Field Ticket #	Payment Terms	
Murfin	64203	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-01	Oakley	Aug 18, 2014	9/17/14

Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	Virginia B #1-11		
220.00	CEMENT MATERIALS	Class A Common	17.90	3,938.00
620.00	CEMENT MATERIALS	Chloride	1.10	682.00
231.00	CEMENT SERVICE	Cubic Feet Charge	2.48	572.88
852.00	CEMENT SERVICE	Ton Mileage Charge	2.75	2,343.00
1.00	CEMENT SERVICE	Surface	1,512.25	1,512.25
80.00	CEMENT SERVICE	Pump Truck Mileage	7.70	616.00
1.00	CEMENT SERVICE	Manifold Head Rental	275.00	275.00
80.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	352.00
1.00	CEMENT SUPERVISOR	Andrew Forslund		
1.00	EQUIPMENT OPERATOR	Wayne McGhghy		

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

\$ 3,601.89

ONLY IF PAID ON OR BEFORE

Sep 17, 2014

Subtotal	10,291.13
Sales Tax	364.98
Total Invoice Amount	10,656.11
Payment/Credit Applied	
TOTAL	10,656.11

- 3601.89
7054.22

OK JR

ALLIED OIL & GAS SERVICES, LLC 064203

Federal Tax I.D. # 20-8651475

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

SERVICE POINT:

064203

DATE <i>8-18-14</i>	SEC. <i>11</i>	TWP. <i>1</i>	RANGE <i>36</i>	CALLED OUT	ON LOCATION <i>7:00 AM</i>	JOB START <i>8:30 PM</i>	JOB FINISH <i>9:00 PM</i>
LEASE <i>Virginia</i>	WELL # <i>1-11</i>	LOCATION <i>Beardley N TO AA W TOS-5</i>			COUNTY <i>Rowles</i>	STATE <i>KS</i>	
OLD OR NEW (Circle one) <u>NEW</u>				<i>1N 4W 12N</i>			

CONTRACTOR *Murfin 2*
 TYPE OF JOB *Surface*
 HOLE SIZE *12 1/4* T.D. *224'*
 CASING SIZE *8 1/2* DEPTH *222'*
 TUBING SIZE DEPTH
 DRILL PIPE DEPTH
 TOOL DEPTH
 PRES. MAX MINIMUM
 MEAS. LINE SHOE JOINT
 CEMENT LEFT IN CSG. *15'*
 PERFS.
 DISPLACEMENT *13 BBL*

OWNER *same*
 CEMENT
 AMOUNT ORDERED *220 sks 1017.98*

EQUIPMENT
 PUMP TRUCK CEMENTER *Andrea Ford*
 # *431* HELPER *Wayne McSherry*
 BULK TRUCK
 # *891* DRIVER *Juan (TWS)*
 BULK TRUCK
 # DRIVER

COMMON *220 sks* @ *12.90* *2938.00*
 POZMIX @
 GEL @
 CHLORIDE *620** @ *1.10* *682.00*
 ASC @
 Material *1017.98* @ *4.600.00*
 (1617.00 / 35%)
 HANDLING *23104/ft* @ *2.48* *572.88*
 MILEAGE *2.25 ton/mile* *1065 ton* *2343.00*

REMARKS:

Cement did circulate

thank you

CHARGE TO: *Murfin*
 STREET _____
 CITY _____ STATE _____ ZIP _____

TOTAL

SERVICE

DEPTH OF JOB *224'*
 PUMP TRUCK CHARGE *1512.25*
 EXTRA FOOTAGE @
 MILEAGE *80 miles* @ *7.70* *616.00*
 MANIFOLD *head* @ *225.00*
Light vehicle @ *440* *352.00*
 (1984.89 / 35%)
 TOTAL *5671.13*

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 *Armando Cubero*
 SIGNATURE *Armando Cubero*

SALES TAX (if Any) _____
 TOTAL CHARGES *10,291.13*
 DISCOUNT *3,601.89 (35%)* IF PAID IN 30 DAYS
7,100.88 Net.

Virginia 'B' #1-11
 Daily Drilling Report
 Page Two

- 8/25/14 Depth 4550'. Cut 160'. DT: None. CT: 13 hrs. Dev.: None. **DST #3 4298-4390 (LKC H-J):** 30-60-30-60. IF: surf blw died in 7mins. FF: no blw. Rec.: 30'M, 60'WM (30%W, 70%M), 60'MW (40%M, 60%W), 60'WM (40%W, 60%M). HP: 2055-2014. FP: 26/94, 66/125. SIP: 1249-1230. BHT: 137°.
- 8/26/14 RTD 4712'. Cut 162'. DT: none. CT: 13¾ hrs. Dev.: ¼° @ 4712'. Pioneer logged 2:15AM – 6:00AM 8/26. LTD: 4720'. To plug
- 8/27/14 RTD: 4712'. CT: 12½ hrs. Allied plugged hole, 1:15PM – 3:30PM 8/26, as follows using 60/40Poz, 4%Gel, ¼#Flo seal, 50sxs @ 3150', 100sxs @ 2350', 50sxs @ 275', 10sxs @ 40', 30sxs RH, 15sxs MH. Orders: Case Morris KCC Hays. RR @ 7:30PM 8/26/14
FINAL REPORT

		MDCI Virginia 'B' #1-11 330' FSL 330' FWL Sec. 11-T1S-R36W 3192' KB				MDCI Burk Trust 'B' #1-14 330' FNL 1920' FEL Sec. 14-T1S-R36W 3280' KB			
Formation	Sample top	Datum	Ref	Log Top	Datum	Ref	Log Top	Datum	
Anhydrite	3117	+75	+1	3118	+74	Flat	3206	+74	
B/Anhydrite	3150	+42	+6	3148	+44	+8	3244	+36	
Neva	3599	-407	+7	3597	-405	+9	3694	-414	
Red Eagle	3663	-471	+5	3662	-470	+6	3756	-476	
Foraker	3709	-517	+6	3709	-517	+6	3803	-523	
Topeka	3921	-729	+4	3922	-730	+3	4013	-733	
Oread	4037	-845	+4	4039	-847	+2	4129	-849	
Lansing	4138	-946	+4	4139	-947	+3	4230	-950	
Stark	4355	-1169	+3	4357	-1165	+1	4446	-1166	
BKC	4407	-1215	+2	4409	-1217	Flat	4497	-1217	
Pawnee	4532	-1340	Flat	4529	-1337	+3	4620	-1340	
Cherokee	4609	-1479	+5	4610	-1418	+4	4702	-1422	
RTD	4712	-1520					4800	-1520	
LTD				4720	-1528		4810	-1530	



DRILL STEM TEST REPORT

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

250 N Water STE #300
Wichita, KS 67202

ATTN: Robert Hendrix

Virginia 'B' #1-11

11-1s-36w Rawlins,KS

Start Date: 2014.08.22 @ 13:25:00

End Date: 2014.08.22 @ 21:21:00

Job Ticket #: 55909 DST #: 1

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

Printed: 2014.09.02 @ 09:06:47



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

11-1s-36w Rawlins,KS

250 N Water STE #300
Wichita, KS 67202

Virginia 'B' #1-11

Job Ticket: 55909

DST#: 1

ATTN: Robert Hendrix

Test Start: 2014.08.22 @ 13:25:00

GENERAL INFORMATION:

Formation: **LKC "D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:58:30

Time Test Ended: 21:21:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 4155.00 ft (KB) To 4208.00 ft (KB) (TVD)

Reference Elevations: 3192.00 ft (KB)

Total Depth: 4208.00 ft (KB) (TVD)

3181.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8874

Inside

Press@RunDepth: 32.23 psig @ 4156.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.22

End Date:

2014.08.22

Last Calib.:

2014.08.22

Start Time: 13:26:00

End Time:

21:21:00

Time On Btm:

2014.08.22 @ 15:57:30

Time Off Btm:

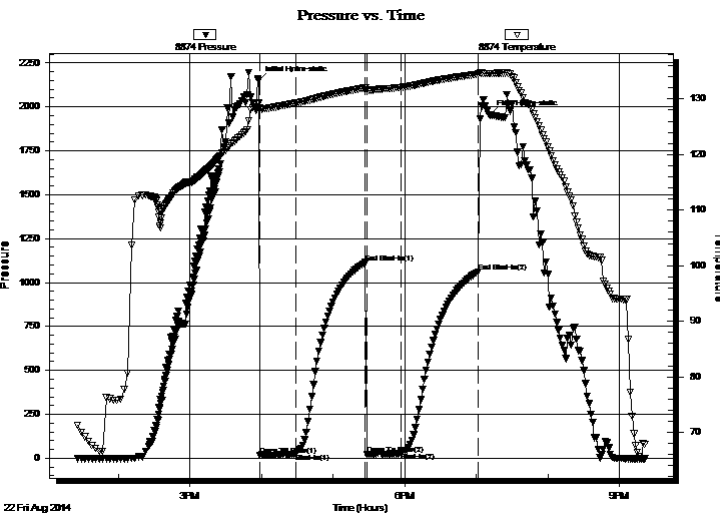
2014.08.22 @ 19:11:30

TEST COMMENT: 30 - IF- Surface Blow died at 7 min.

60 - IS- No Return

30 - FF- No Blow

60 - FS- No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2150.74	129.26	Initial Hydro-static
1	16.77	128.46	Open To Flow (1)
32	29.34	129.25	Shut-In(1)
90	1114.36	132.01	End Shut-In(1)
91	22.71	131.69	Open To Flow (2)
120	32.23	132.07	Shut-In(2)
184	1061.41	134.46	End Shut-In(2)
194	1953.44	134.60	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	OSM 100M (Oil Spots)	0.02

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

11-1s-36w Rawlins,KS

250 N Water STE #300
Wichita, KS 67202

Virginia 'B' #1-11

Job Ticket: 55909

DST#: 1

ATTN: Robert Hendrix

Test Start: 2014.08.22 @ 13:25:00

Tool Information

Drill Pipe:	Length: 3941.00 ft	Diameter: 3.80 inches	Volume: 55.28 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: 206.00 ft	Diameter: 2.25 inches	Volume: 1.01 bbl	Weight to Pull Loose: 82000.00 lb
			<u>Total Volume: 56.29 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 80000.00 lb
Depth to Top Packer:	4155.00 ft			Final 80000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	53.00 ft			
Tool Length:	81.00 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			4128.00	
Shut In Tool	5.00			4133.00	
Hydraulic tool	5.00			4138.00	
Jars	5.00			4143.00	
Safety Joint	3.00			4146.00	
Packer	5.00			4151.00	28.00 Bottom Of Top Packer
Packer	4.00			4155.00	
Stubb	1.00			4156.00	
Recorder	0.00	8653	Outside	4156.00	
Recorder	0.00	8874	Inside	4156.00	
Perforations	13.00			4169.00	
Change Over Sub	1.00			4170.00	
Drill Pipe	32.00			4202.00	
Change Over Sub	1.00			4203.00	
Bullnose	5.00			4208.00	53.00 Bottom Packers & Anchor

Total Tool Length: 81.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

11-1s-36w Rawlins,KS

250 N Water STE #300
Wichita, KS 67202

Virginia 'B' #1-11

Job Ticket: 55909

DST#: 1

ATTN: Robert Hendrix

Test Start: 2014.08.22 @ 13:25:00

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: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 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
5.00	OSM 100M (Oil Spots)	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

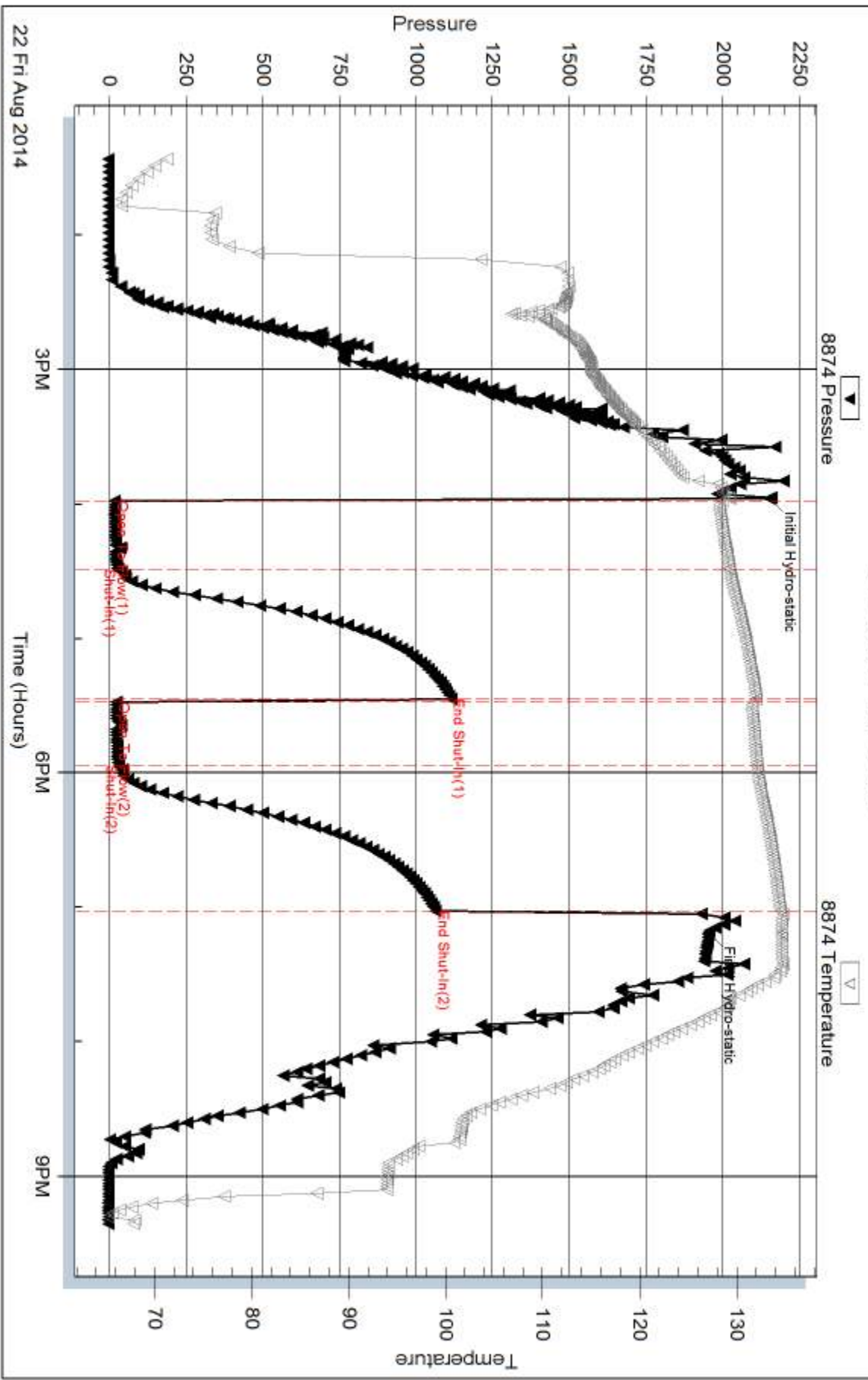
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

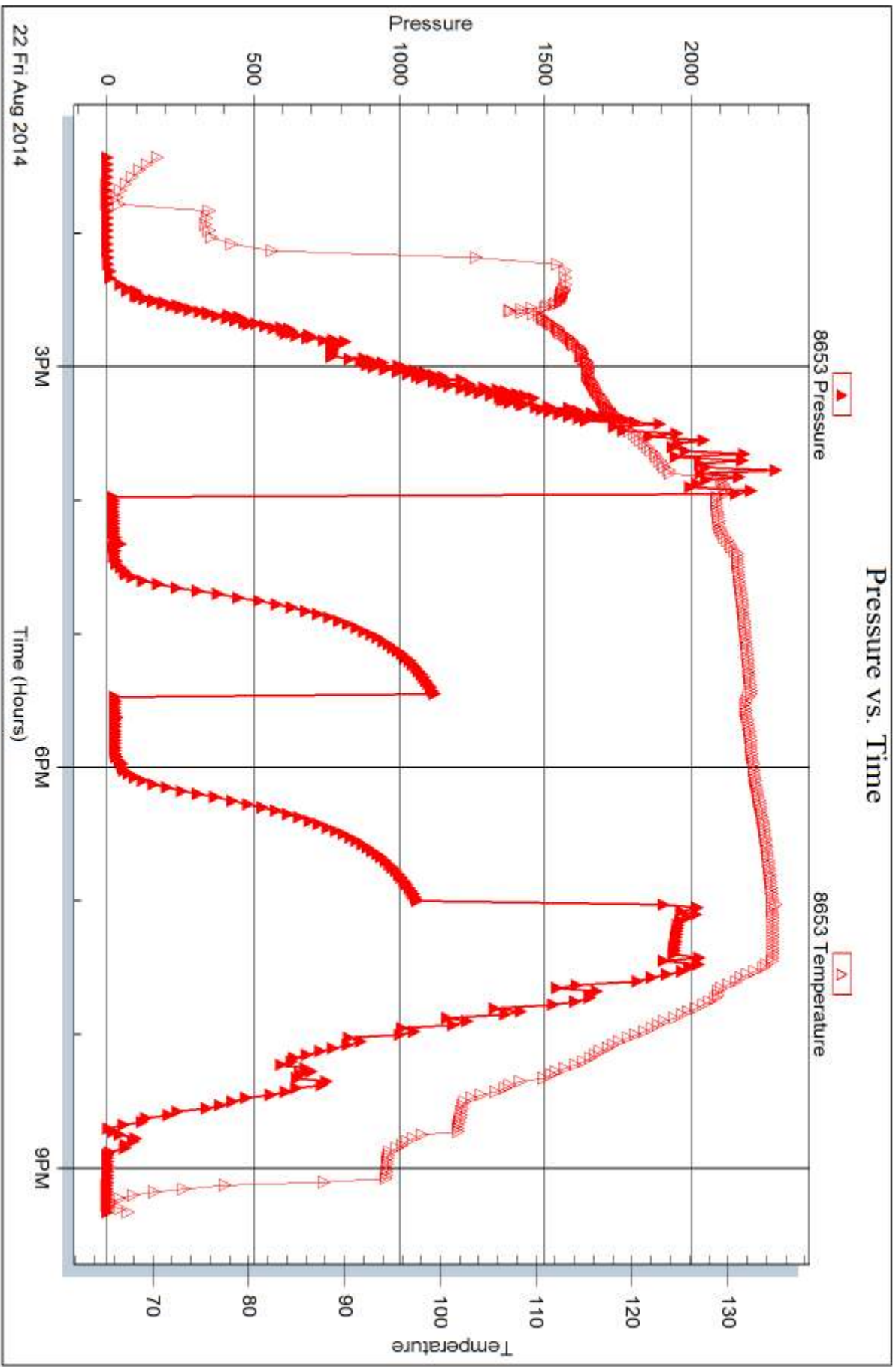


Serial #: 8653

Outside Murfin Drilling Co., Inc.

Virginia 'B' #1-11

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 55909

Printed: 2014.09.02 @ 09:06:48



DRILL STEM TEST REPORT

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

250 N Water STE #300
Wichita, KS 67202

ATTN: Robert Hendrix

Virginia 'B' #1-11

11-1s-36w Rawlins,KS

Start Date: 2014.08.23 @ 08:38:00

End Date: 2014.08.23 @ 16:35:30

Job Ticket #: 55910 DST #: 2

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

Printed: 2014.09.02 @ 09:03:49



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

11-1s-36w Rawlins,KS

250 N Water STE #300
Wichita, KS 67202

Virginia 'B' #1-11

Job Ticket: 55910

DST#: 2

ATTN: Robert Hendrix

Test Start: 2014.08.23 @ 08:38:00

GENERAL INFORMATION:

Formation: **LKC "G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:26:40

Time Test Ended: 16:35:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 4218.00 ft (KB) To 4266.00 ft (KB) (TVD)

Reference Elevations: 3192.00 ft (KB)

Total Depth: 4266.00 ft (KB) (TVD)

3181.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8874

Inside

Press@RunDepth: 40.68 psig @ 4219.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.23

End Date:

2014.08.23

Last Calib.:

2014.08.23

Start Time:

08:39:00

End Time:

16:35:30

Time On Btm:

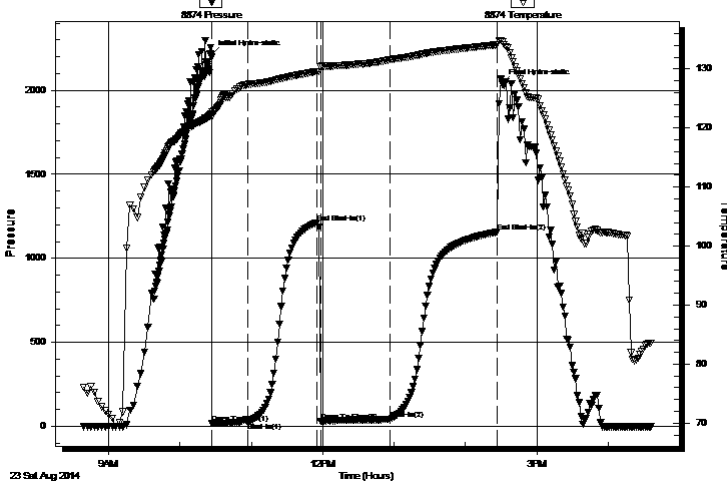
2014.08.23 @ 10:26:20

Time Off Btm:

2014.08.23 @ 14:31:00

TEST COMMENT: 30 - IF- 1/4" Blow built to 1 1/4"
60 - IS- No Return
60 - FF- Surface Blow started at 3 min. Built to 6 1/2"
90 - FS- No Return

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2212.66	122.42	Initial Hydro-static
1	16.69	121.86	Open To Flow (1)
31	22.91	127.37	Shut-In(1)
89	1212.88	129.59	End Shut-In(1)
92	28.91	130.35	Open To Flow (2)
151	40.68	131.58	Shut-In(2)
241	1156.60	134.11	End Shut-In(2)
245	2037.44	134.70	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
40.00	GOCM 10G 40o 50M	0.20
30.00	Clean Gassy Oil 20G 80o	0.15
0.00	80' GIP 100G	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

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

11-1s-36w Rawlins,KS

Virginia 'B' #1-11

Job Ticket: 55910 **DST#: 2**
Test Start: 2014.08.23 @ 08:38:00

GENERAL INFORMATION:

Formation: **LKC "G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:26:40

Time Test Ended: 16:35:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 4218.00 ft (KB) To 4266.00 ft (KB) (TVD)

Total Depth: 4266.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3192.00 ft (KB)

3181.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8653 Outside

Press@RunDepth: psig @ 4219.00 ft (KB)

Start Date: 2014.08.23 End Date: 2014.08.23

Start Time: 08:39:00 End Time: 16:34:00

Capacity: 8000.00 psig

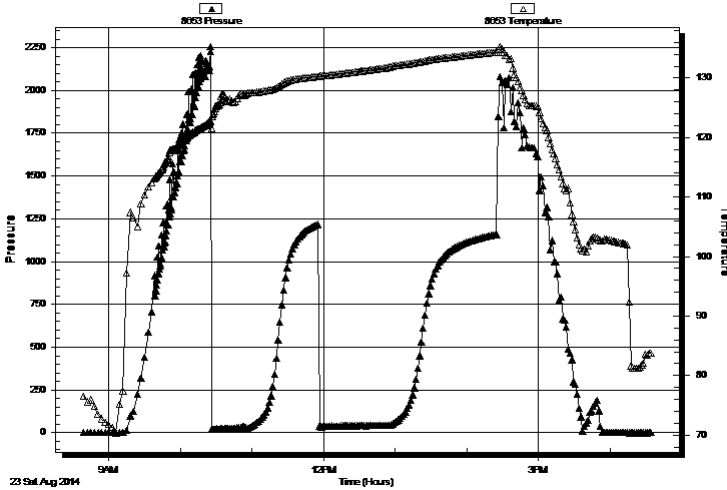
Last Calib.: 1899.12.30

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF- 1/4" Blow built to 1 1/4"
60 - IS- No Return
60 - FF- Surface Blow started at 3 min. Built to 6 1/2"
90 - FS- No Return

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
40.00	GOCM 10G 40o 50M	0.20
30.00	Clean Gassy Oil 20G 80o	0.15
0.00	80' GIP 100G	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

11-1s-36w Rawlins,KS

250 N Water STE #300
Wichita, KS 67202

Virginia 'B' #1-11

Job Ticket: 55910

DST#: 2

ATTN: Robert Hendrix

Test Start: 2014.08.23 @ 08:38:00

Tool Information

Drill Pipe:	Length: 4003.00 ft	Diameter: 3.80 inches	Volume: 56.15 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: 207.00 ft	Diameter: 2.25 inches	Volume: 1.02 bbl	Weight to Pull Loose: 8400.00 lb
			<u>Total Volume: 57.17 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 80000.00 lb
Depth to Top Packer:	4218.00 ft			Final 80000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	48.00 ft			
Tool Length:	76.00 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			4191.00	
Shut In Tool	5.00			4196.00	
Hydraulic tool	5.00			4201.00	
Jars	5.00			4206.00	
Safety Joint	3.00			4209.00	
Packer	5.00			4214.00	28.00 Bottom Of Top Packer
Packer	4.00			4218.00	
Stubb	1.00			4219.00	
Recorder	0.00	8653	Outside	4219.00	
Recorder	0.00	8874	Inside	4219.00	
Perforations	8.00			4227.00	
Change Over Sub	1.00			4228.00	
Drill Pipe	32.00			4260.00	
Change Over Sub	1.00			4261.00	
Bullnose	5.00			4266.00	48.00 Bottom Packers & Anchor

Total Tool Length: 76.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

11-1s-36w Rawlins,KS

250 N Water STE #300
Wichita, KS 67202

Virginia 'B' #1-11

Job Ticket: 55910

DST#: 2

ATTN: Robert Hendrix

Test Start: 2014.08.23 @ 08:38:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

35 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 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 bbbl
40.00	GOCM 10G 40o 50M	0.197
30.00	Clean Gassy Oil 20G 80o	0.148
0.00	80' GIP 100G	0.000

Total Length: 70.00 ft Total Volume: 0.345 bbl

Num Fluid Samples: 0

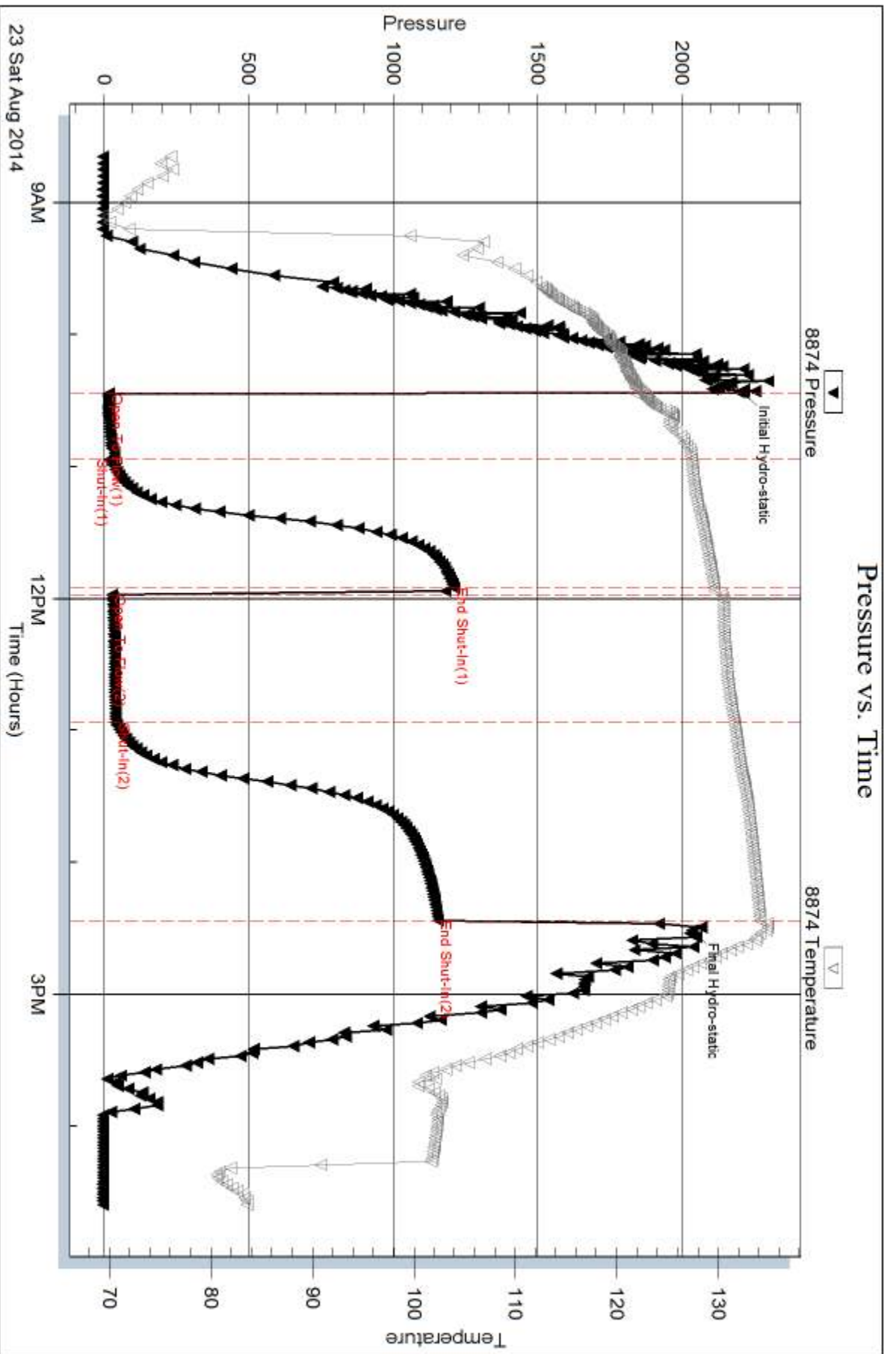
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Oil API 38 @ 90 deg = 35 cor

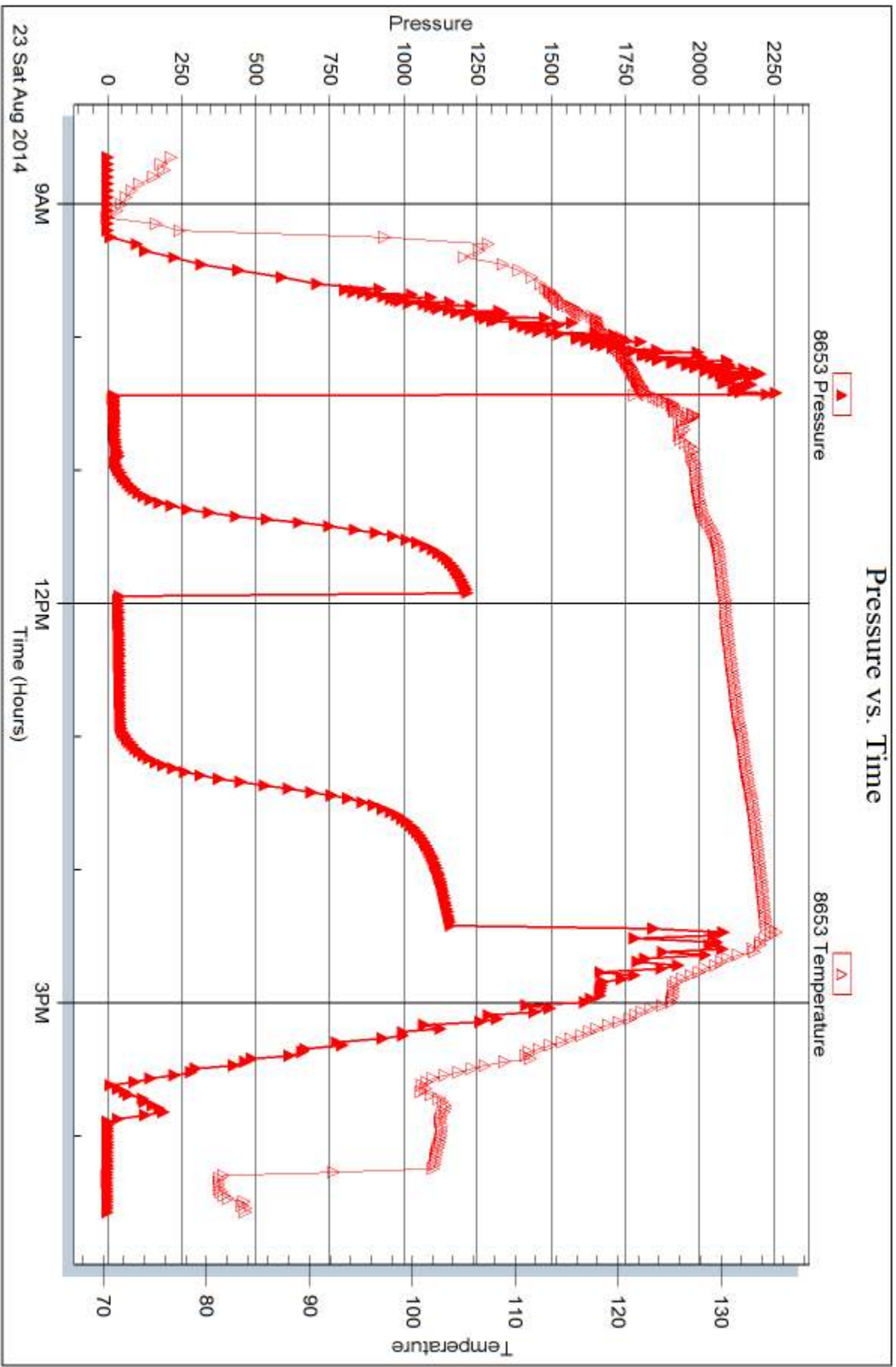


Serial #: 8653

Outside Murfin Drilling Co., Inc.

Virginia 'B' #1-11

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 55910

Printed: 2014.09.02 @ 09:03:50



DRILL STEM TEST REPORT

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

250 N Water STE #300
Wichita, KS 67202

ATTN: Robert Hendrix

Virginia 'B' #1-11

11-1s-36w Rawlins,KS

Start Date: 2014.08.23 @ 08:49:00

End Date: 2014.08.23 @ 16:08:00

Job Ticket #: 55911 DST #: 3

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

Printed: 2014.09.02 @ 09:02:59



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

250 N Water STE #300
Wichita, KS 67202

ATTN: Robert Hendrix

11-1s-36w Rawlins,KS

Virginia 'B' #1-11

Job Ticket: 55911

DST#: 3

Test Start: 2014.08.23 @ 08:49:00

GENERAL INFORMATION:

Formation: **LKC "I-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:57:00

Time Test Ended: 16:08:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 4298.00 ft (KB) To 4390.00 ft (KB) (TVD)

Reference Elevations: 3192.00 ft (KB)

Total Depth: 4390.00 ft (KB) (TVD)

3181.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8874

Inside

Press@RunDepth: 125.00 psig @ 4299.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.23

End Date:

2014.08.23

Last Calib.:

2014.08.24

Start Time: 08:50:00

End Time:

16:08:00

Time On Btm:

2014.08.23 @ 10:56:00

Time Off Btm:

2014.08.23 @ 14:01:30

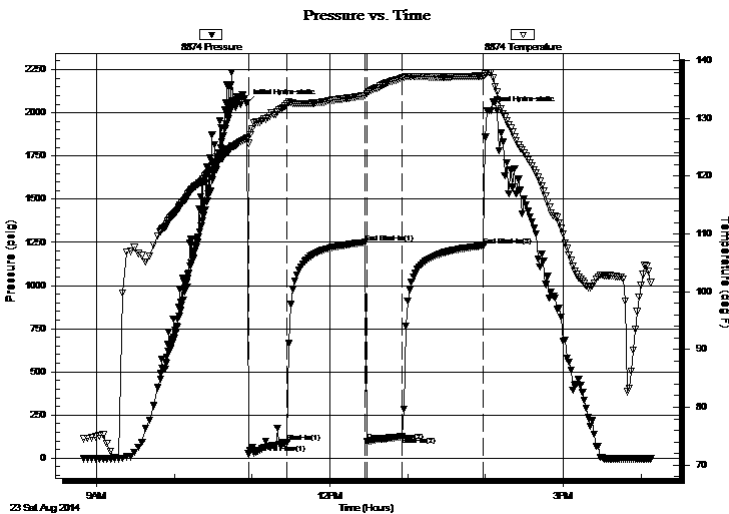
TEST COMMENT: 30 - IF- Surface Blow died in 7 min.

60 - IS- No Return

30 - FF- No Blow

60 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2054.81	126.57	Initial Hydro-static
1	25.91	125.74	Open To Flow (1)
31	93.98	132.46	Shut-In(1)
91	1249.39	133.92	End Shut-In(1)
93	95.91	134.30	Open To Flow (2)
120	125.00	136.97	Shut-In(2)
183	1230.41	137.37	End Shut-In(2)
186	2013.56	137.97	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	WM 40W 60M	0.30
60.00	MW 60W 40M	0.30
60.00	WM 30W 70M	0.30
30.00	Mud 100M	0.17

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

11-1s-36w Rawlins,KS

250 N Water STE #300
Wichita, KS 67202

Virginia 'B' #1-11

Job Ticket: 55911

DST#: 3

ATTN: Robert Hendrix

Test Start: 2014.08.23 @ 08:49:00

Tool Information

Drill Pipe:	Length: 4095.00 ft	Diameter: 3.80 inches	Volume: 57.44 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: 207.00 ft	Diameter: 2.25 inches	Volume: 1.02 bbl	Weight to Pull Loose: 100000.0 lb
			<u>Total Volume: 58.46 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 82000.00 lb
Depth to Top Packer:	4298.00 ft			Final 82000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	92.00 ft			
Tool Length:	120.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4271.00	
Shut In Tool	5.00			4276.00	
Hydraulic tool	5.00			4281.00	
Jars	5.00			4286.00	
Safety Joint	3.00			4289.00	
Packer	5.00			4294.00	28.00 Bottom Of Top Packer
Packer	4.00			4298.00	
Stubb	1.00			4299.00	
Recorder	0.00	8653	Outside	4299.00	
Recorder	0.00	8874	Inside	4299.00	
Perforations	21.00			4320.00	
Change Over Sub	1.00			4321.00	
Drill Pipe	63.00			4384.00	
Change Over Sub	1.00			4385.00	
Bullnose	5.00			4390.00	92.00 Bottom Packers & Anchor

Total Tool Length: 120.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

11-1s-36w Rawlins,KS

250 N Water STE #300
Wichita, KS 67202

Virginia 'B' #1-11

Job Ticket: 55911

DST#: 3

ATTN: Robert Hendrix

Test Start: 2014.08.23 @ 08:49:00

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:

8500 ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 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 bbbl
60.00	WM 40W 60M	0.295
60.00	MW 60W 40M	0.295
60.00	WM 30W 70M	0.295
30.00	Mud 100M	0.175

Total Length: 210.00 ft Total Volume: 1.060 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .5 @ 100 deg = 8500ppm

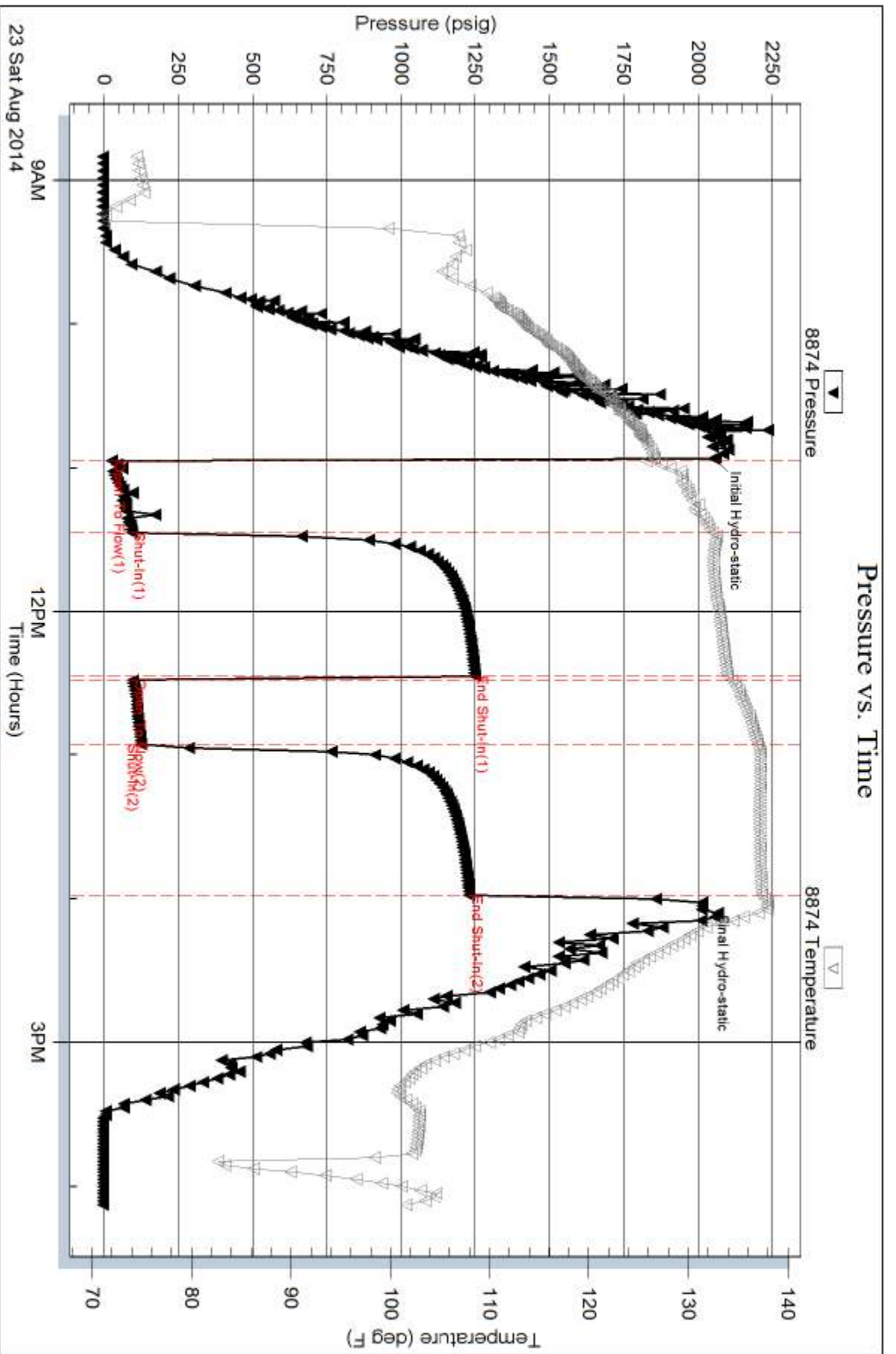
Serial #: 8874

Inside

Murfin Drilling Co., Inc.

Virginia 'B' #1-11

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 55911

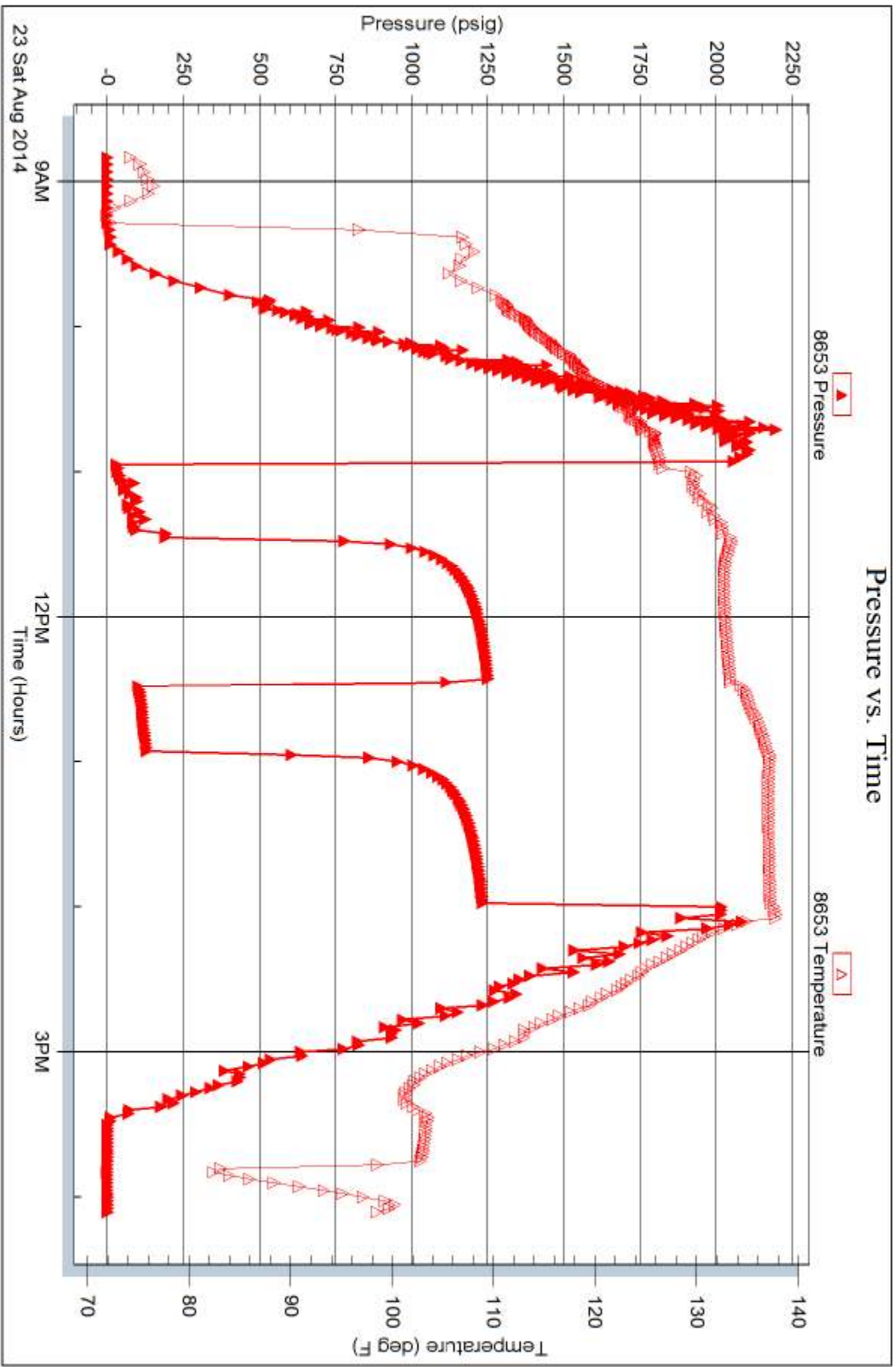
Printed: 2014.09.02 @ 09:03:00

Serial #: 8653

Outside Murfin Drilling Co., Inc.

Virginia 'B' #1-11

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 55911

Printed: 2014.09.02 @ 09:03:00



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 55909

4/10

Well Name & No. Virginia 'B' #1-11 Test No. 1 Date 8-22-14
 Company Murfin Drilling Co., Inc. Elevation 3192 KB 3181 GL
 Address 2500 N Water STE # 3000 Wichita, KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #2
 Location: Sec. 11 Twp. 15 Rge. 36W Co. Rawlins State KS

Interval Tested 4155-4208 Zone Tested LKC "D"
 Anchor Length 53' Drill Pipe Run _____ Mud Wt. 9.1
 Top Packer Depth 4151 Drill Collars Run 207' Vis 62
 Bottom Packer Depth 4155 Wt. Pipe Run Ø WL 6.8
 Total Depth 4208 Chlorides 6000 ppm System LCM 11#
 Blow Description IF - Surface Blow died in 7 min.
ISI - No Return
FF - No Blow
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>OSM</u>	<u>SPOTS</u>		<u>1000</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5 BHT 135 Gravity ~ API RW ~ @ - °F Chlorides - ppm

(A) Initial Hydrostatic 2150 Test 1250 T-On Location 12:00 PM
 (B) First Initial Flow 160 Jars 250 T-Started 1:25 PM
 (C) First Final Flow 29 Safety Joint 75 T-Open 4:00 PM
 (D) Initial Shut-In 1114 Circ Sub _____ T-Pulled 7:00 PM
 (E) Second Initial Flow 22 Hourly Standby _____ T-Out 9:25 PM
 (F) Second Final Flow 32 Mileage 116 RT 179.80 Comments _____
 (G) Final Shut-In 1061 Sampler _____
 (H) Final Hydrostatic 1953 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 300
 Initial Shut-In 600
 Final Flow 300
 Final Shut-In 600

Sub Total 1754.80
 Total 1754.80
 MP/DST Disc't _____

Approved By _____ Our Representative

TriLOBITE Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 55910

Well Name & No. Virginia 'B' #1-11 Test No. 2 Date 8-23-14
 Company Murfin Drilling Co., Inc. Elevation 3192 KB 3181 GL
 Address 2508 N Water STE # 3000 Wichita, KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #2
 Location: Sec. 11 Twp. 1S Rge. 36W Co. Rawlins State KS

Interval Tested 4218-4266 Zone Tested LKC "G"
 Anchor Length 48' Drill Pipe Run 4003' Mud Wt. 9.1
 Top Packer Depth 4214 Drill Collars Run 207' Vis 62
 Bottom Packer Depth 4218 Wt. Pipe Run 0 WL 6.8
 Total Depth 4266 Chlorides 6000 ppm System LCM 11#

Blow Description IF-1/4" Blow built to 1/4
ISI- No Return
FF-Surface Blow started at 3 min. Built to 6 1/2"
PSI- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>Feet of Clean Gassy Oil</u>	<u>20</u>	<u>80</u>		
<u>40</u>	<u>Feet of GCM</u>	<u>10</u>	<u>40</u>	<u>50</u>	
<u>80</u>	<u>Feet of GIP</u>	<u>100</u>			

Rec Total 70' BHT 134 Gravity 35 API RW - @ - °F Chlorides - ppm

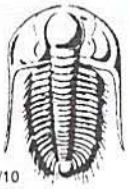
(A) Initial Hydrostatic 2212 Test 1250 T-On Location 8:25 AM
 (B) First Initial Flow 16 Jars 250 T-Started 8:38 AM
 (C) First Final Flow 22 Safety Joint 75 T-Open 10:27 AM
 (D) Initial Shut-In 1212 Circ Sub _____ T-Pulled 2:27 PM
 (E) Second Initial Flow 28 Hourly Standby _____ T-Out 4:30 PM
 (F) Second Final Flow 40 Mileage 116 RT 179.80
 (G) Final Shut-In 1156 Sampler _____
 (H) Final Hydrostatic 2037 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 60
 Final Shut-In 90

Sub Total 1754.80
 Total 1754.80
 MP/DST Disc't _____

Approved By _____ Our Representative

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 55911

Well Name & No. Virginia 'B' #111 Test No. 3 Date 8-24-14
 Company Murfin Drilling Co., Inc Elevation 3192 KB 3181 GL
 Address 2508 N Water STE #300 Wichita, KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #2
 Location: Sec. 11 Twp. 1S Rge. 36W Co. Rawlins State KS

Interval Tested 4298-4390 Zone Tested LKL "I, J, K"
 Anchor Length 92' Drill Pipe Run 4095' Mud Wt. 9.0
 Top Packer Depth 4294 Drill Collars Run 207' Vis 60
 Bottom Packer Depth 4298 Wt. Pipe Run 6 WL 6.4
 Total Depth 4390 Chlorides 6000 ppm System LCM 10#

Blow Description IF - Surface Blow died in 7 min.

ISI - NO Return

FF - NO Blow

FST - NO Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>Mud</u>			<u>100</u>	
<u>60</u>	<u>WM</u>		<u>30</u>	<u>70</u>	
<u>60</u>	<u>MW</u>		<u>60</u>	<u>40</u>	
<u>60</u>	<u>WM</u>		<u>40</u>	<u>60</u>	

Rec Total 210' BHT 137' Gravity _____ API RW .5 @ 100 °F Chlorides 8500 ppm

(A) Initial Hydrostatic 2054 Test 1250 T-On Location 8:30 AM
 (B) First Initial Flow 25 Jars 250 T-Started 8:49 AM
 (C) First Final Flow 93 Safety Joint 75 T-Open 10:57 AM
 (D) Initial Shut-In 1249 Circ Sub _____ T-Pulled 1:57 PM
 (E) Second Initial Flow 95 Hourly Standby _____ T-Out 4:10 PM
 (F) Second Final Flow 125 Mileage 116 RT 179.80 Comments Loaded tools @ 6:00 pm 8-25-14
 (G) Final Shut-In 1230 Sampler _____ 179.80
 (H) Final Hydrostatic 2013 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____

Initial Open 30 Extra Packer _____ Extra Copies _____
 Initial Shut-In 60 Extra Recorder _____ Sub Total 800
 Final Flow 300 Day Standby Xchange 1d 1.75h Total 2734.60
 Final Shut-In 60 Accessibility _____ MP/DST Disc't _____
 Sub Total 1934.60

Approved By _____ Our Representative [Signature]

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Robert D. Hendrix

Petroleum Geologist

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY: **Murfin Drilling Co. Inc.**

LEASE: **Virginia B #1-11**

FIELD: **Widacat**

LOCATION: **3301st & 3301st**

SEC: **11** TWP: **1s** RGE: **36N**

COUNTY: **Rawlins** STATE: **Kansas**

CONTRACTOR: **Murfin Drilling Co. Inc. Rig #2**

SPUD: **8/18/2014** COME: **8/26/2014**

RTD: **4/7/2015** LTD: **4/7/2015**

MUD UP: **3/21/15** TYPE MUD: **Chemical**

SAMPLES SAVED FROM: **3500' TO 1D**

DRILLING TIME KEPT FROM: **3500' TO 1D**

SAMPLES EXAMINED FROM: **3500' TO 1D**

GEOLOGICAL SUPERVISION FROM: **3471'**

GEOLOGIST ON WELL: **Robert D. Hendrix**

FORMER SUPERVISORS: **Demetrius Henderson, Dennis**

FORMER GEOL: **Robert D. Hendrix**

FORMER DRILLERS: **Demetrius Henderson, Dennis**

FORMER MUD LOGGERS: **Demetrius Henderson, Dennis**

FORMER LOGGERS: **Demetrius Henderson, Dennis**

FORMER DRILLERS: **Demetrius Henderson, Dennis**

FORMER LOGGERS: **Demetrius Henderson, Dennis**

FORMER DRILLERS: **Demetrius Henderson, Dennis**

FORMER LOGGERS: **Demetrius Henderson, Dennis**

ELEVATIONS

KB: **3192'**

DF: _____

GL: **3181'**

Measurements Are All From **Kelly Bushing**

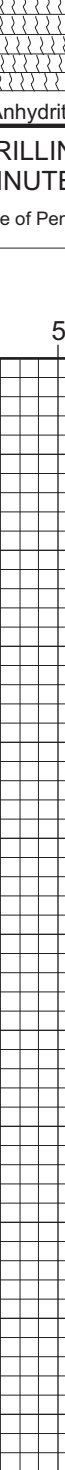
CASING

CONDUCTOR: _____

SURFACE: **8,508' at 2245'**

PRODUCTION: _____

ELECTRICAL SURVEYS



REMARKS:

LEGEND



DEPTH	LITHOLOGY	SAMPLE DESCRIPTION	REMARKS
3100	Anhydrite		Anhydrite 3117 (+75)
3150	Anhydrite		Base Anhydrite 3150 (+42)
3200			Geologist on location 3471' at 12:11 pm 8/20/2014 Pipe Strap at 3504.26 was 0.22' short to board
3500	Shale	Shale: red, some gray, v-sandy, vfn-fn gr; prly sorted; subang, friable, calcareously cemented, no vis por	
3550	Sandstone	Sandstone: white to lt gray, vfn-fn gr; prly sorted; subang, semi-friable, calcareously cemented, no vis por	
3600	Shale	Shale: red, gray, brown, silty, sandy	
3650	Shale	Shale: red, gray, brown, silty, sandy	
3700	Limestone	Limestone: white, mxln, sl chalky, oolitic in part, fossiliferous, sl interxn por, ns	
3750	Shale	Shale: red, gray, green, waxy, silty	
3800	Shale	Shale: red, brown, silty, sandy	
3850	Sandstone	Sandstone: gray to white, biotitic, fngm, submd, mod sorted, calcareous, no vis por	
3900	Limestone	Limestone: gray to tan, fxn, cherty (orange, red), fossiliferous, no vis por	
3950	Limestone	Limestone: brown to gray, fxn, cherty (orange), sl fossiliferous, dense, no vis por	
4000	Shale	Shale: red, brown, gray, silty	
4050	Shale	Shale: red, brown, gray, silty	
4100	Limestone	Limestone: tan to white, f-mxn, sl cherty, granular, sl fossiliferous, pr interxn por, 10% sample dark sat to spotty stain, sifo, faint odor	
4150	Limestone	Limestone: tan to white, f-mxn, sl cherty, sl fossiliferous, no vis por, ns	
4200	Shale	Shale: gray, dark gray	
4250	Limestone	Limestone: tan, fxn, granular, sl fossiliferous, no vis por, ns	
4300	Shale	Shale: gray, green, silty	
4350	Limestone/Dolomite	Limestone/Dolomite: gray to tan, f-mxn, chalky, sl cherty, sl fossiliferous, fr interxn por, ns	
4400	Shale	Shale: gray, green, silty	
4450	Shale	Shale: red, green, gray, black	
4500	Limestone	Limestone: white, f-mxn, oolitic in part, granular, no vis por	
4550	Shale	Shale: gray, brown, red, silty	
4600	Limestone	Limestone: brown to white, fxn, granular, sl cherty, fossiliferous, no vis por	
4650	Shale	Shale: red, gray, silty	
4700	Limestone	Limestone: tan to gray, fxn, chalky, oolitic in part, v-fossiliferous, no vis por, ns	8:00am, 8/21/2014
4750	Limestone	Limestone: tan, fxn, granular, sl fossiliferous, no vis por, no odor	
4800	Shale	Shale: red, gray, silty	
4850	Limestone	Limestone: white to tan, fxn, v-fossiliferous, no vis por, no odor	
4900	Limestone	Limestone: white, f-mxn, v-fossiliferous, sl pyritic, no vis por	Stotler 3864 (-672)
4950	Shale	Shale: gray, red, silty	
5000	Limestone	Limestone: white to tan, f-mxn, chalky, fossiliferous, no vis por	
5050	Limestone	Limestone: tan, mxln, sl chalky, sl cherty, v-fossiliferous, no vis por	
5100	Shale	Shale: gray, black, red	wt 9.0, vis. 60, lcm 10# Morgan Mud, Dave Lines
5150	Limestone	Limestone: white, mxln, sl chalky, pyritic, oolitic, pr interxn por, ns	Topeka 3921 (-729)
5200	Shale	Shale: gray, red, silty	
5250	Limestone	Limestone: white, f-mxn, sl chalky, oolitic, fossiliferous, no vis por	
5300	Limestone	Limestone: white, fxn, chalky, mostly dense, sl fossiliferous, no vis por	
5350	Shale	Shale: gray, red, black, silty	
5400	Shale	Shale: red, gray, silty	
5450	Limestone	Limestone: white, f-mxn, sl chalky, granular, fossiliferous, no vis por	
5500	Shale	Shale: red, gray, silty	
5550	Shale	Shale: gray, red, purple, silty	
5600	Limestone	Limestone: white, f-mxn, chalky, oolitic, fossiliferous, sl interxn vug por, ns	Oread 4037 (-845)
5650	Limestone	Limestone: white, f-mxn, chalky, v-fossiliferous fr vug por, ns	
5700	Limestone/siltstone	Limestone/siltstone: gray, fxn, chalky, silty, sl fossiliferous, no vis por	
5750	Shale	Shale: red, gray, brown, black carbonaceous	
5800	Limestone	Limestone: brown to lt gray, fxn, sl cherty, dense, sl fossiliferous, no vis por, ns	
5850	Shale	Shale: black, gray, brown, silty	
5900	Shale	Shale: red, gray, brown black	
5950	Limestone	Limestone: white, fxn, fossiliferous, 1% sample sl interxn por, fr dark spotty surface stain, nfo, no odor	
6000	Limestone	Limestone: white to tan, fxn, dense, no vis por	
6050	Shale	Shale: gray, red, sandy	
6100	Sandstone	Sandstone: lt gray to green, v-fngm, well sorted, submd, sl calcareous, friable, no vis por, ns	DST #1 4155-44208 30-60-30-60 1st open: surface blow died 7min no returns Rec: 5' osm hydra: 2150-1953 psi lf: 160-29 psi ff: 22-32 psi sjp: 1114-1061 psi bht: 135° F
6150	Shale	Shale: gray, red, brown, black	
6200	Limestone	Limestone: white, fxn, sl chalky, fossiliferous, sl interxn to vug por, 1% sample black spotty to sat stain, sifo, faint odor	
6250	Shale	Shale: gray, red, black	8:00am, 8/22/2014 wt 9.1, vis. 62, lcm 11# Morgan Mud, Dave Lines
6300	Limestone	Limestone: tan, fxn, dense, fossiliferous, no vis por	DST #2 4218-4266 30-60-60-90 1st open: blow built to 1 1/4" no returns 2nd open: blow built to 6 1/2" no returns Rec: 30' gpm 20/80 40' gpm 10/40/50 80' gip hydra: 2212-2037 psi lf: 16-22 psi ff: 28-40 psi sjp: 1212-1156 psi bht: 134° F gravity: 35° api
6350	Shale	Shale: gray lt to dark, red, blocky	
6400	Limestone	Limestone: tan, fxn, sl chalky, dense, fossiliferous, no vis por	8:00am, 8/23/2014 wt 9.1, vis. 65, lcm 9# Morgan Mud, Dave Lines
6450	Shale	Shale: gray, red, brown, silty, blocky	
6500	Limestone	Limestone: white to tan, f-mxn, sl chalky, sl oolitic, fossiliferous, no vis por, ns	DST #3 4298-4390 30-60-30-60 1st open: surface blow died 7min no returns Rec: 30' mud 60' wm 30/70 60' wm 60/40 60' wm 40/60 hydra: 2054-2013 psi lf: 25-93 psi ff: 95-125 psi sjp: 1249-1230 psi bht: 137° F chl: 8,500 ppm
6550	Shale	Shale: gray, red, green	
6600	Limestone	Limestone: tan, fxn, sl chalky, sl fossiliferous, dense, no vis por, ns	
6650	Shale	Shale: gray, red, silty	
6700	Limestone	Limestone: white, fxn, sl chalky, sl fossiliferous, no vis por, ns	
6750	Limestone	Limestone: white to lt gray, fxn, sl chalky, fossiliferous, no vis por	
6800	Shale	Shale: gray light to dark, red	
6850	Shale	Shale: red, sandy	
6900	Limestone	Limestone: white, fxn, sl chalky, sl fossiliferous, no vis por, ns	
6950	Shale	Shale: gray, red, silty	8:00am, 8/24/2014 wt 9.1, vis. 65, lcm 10# Morgan Mud, Dave Lines
7000	Limestone	Limestone: white to gray, fxn, chalky, fossiliferous, no vis por	
7050	Shale	Shale: gray, red	
7100	Limestone	Limestone: white to lt gray, f-mxn, chalky, fossiliferous, no vis por	
7150	Shale	Shale: gray, blocky, silty	
7200	Limestone	Limestone: white, f-mxn, chalky, fossiliferous, no vis por	
7250	Shale	Shale: gray, blocky, silty	
7300	Limestone	Limestone: white to gray, fxn, v-chalky, dense, sl fossiliferous, no vis por	
7350	Shale	Shale: gray, green, red, brown, sl sandy	
7400	Shale	Shale: gray, red, silty	
7450	Limestone	Limestone: lt gray, fxn, silty, dense, no vis por	
7500	Shale	Shale: gray, green, red, brown, silty	
7550	Limestone	Limestone: white to tan, f-mxn, oolitic, fossiliferous, no vis por	
7600	Limestone	Limestone: white to lt gray, fxn, sl chalky, sl cherty, fossiliferous, no vis por	
7650	Shale	Shale: dark to light gray, red	
7700	Limestone	Limestone: brown to gray, v-fxn, dense, sl oolitic, cherty, no vis por	
7750	Limestone	Limestone: gray, fxn, sl fossiliferous, granular, no vis por	8:00am, 8/25/2014
7800	Limestone	Limestone: tan to brown, fxn, oolitic, dense, no vis por	wt 9.1, vis. 72, lcm 10# Morgan Mud, Dave Lines
7850	Shale	Shale: black carbonaceous, gray, silty	
7900	Limestone	Limestone: white to tan, fxn, sl chalky, oolitic, fossiliferous, no vis por	
7950	Limestone	Limestone: white to tan, fxn, sl cherty, oolitic in part, fossiliferous, no vis por	
8000	Shale	Shale: black carbonaceous, gray, silty	
8050	Limestone	Limestone: tan to white, fxn, chalky, sl fossiliferous, no vis por	
8100	Shale	Shale: gray, green, red	
8150	Limestone	Limestone: tan, fxn, sl chalky, fossiliferous, pr vug por, ns	
8200	Shale	Shale: gray, green, red	
8250	Limestone	Limestone: white to tan, fxn, sl chalky, mostly dense, no vis por	
8300	Shale	Shale: gray, green, red	
8350	Limestone	Limestone: white to tan, fxn, sl chalky, mostly dense, sl fossiliferous, no vis por	
8400	Shale	Shale: gray, red, silty	
8450	Shale	Shale: gray, green, red, silty, sandy	
8500	Shale	Shale: red, gray, green, silty	
8550	Shale	Shale: gray, green, red, yellow, sandy	
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