

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1260622
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: _____

1260622



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

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

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

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

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

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

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

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

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

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

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

TUBING RECORD: Size: _____ Set At: _____ Packer At: _____ Liner Run: 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	Patricia 3-16
Doc ID	1260622

All Electric Logs Run

DIL
DUCP
MEL
BHCS

acct
Prod-MG



INVOICE

P.O. Box 205803
Dallas, TX 75320-5803

Invoice Number: 149997
Invoice Date: Jun 22, 2015
Page: 1

Voice: (832) 482-3742
Fax: (832) 482-3738

Federal Tax I.D.#: 20-8651475

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

Customer ID	Field Ticket #	Payment Terms	
Murfin	67766	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-01	Oakley	Jun 22, 2015	7/22/15

Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	Patricia #3-16		
245.00	CEMENT MATERIALS	Class A Common	17.90	4,385.50
691.00	CEMENT MATERIALS	Chloride	1.10	760.10
257.25	CEMENT SERVICE	Cubic Feet Charge	2.48	637.98
1,067.49	CEMENT SERVICE	Ton Mileage Charge	2.75	2,935.60
1.00	CEMENT SERVICE	Surface	1,512.25	1,512.25
90.00	CEMENT SERVICE	Pump Truck Mileage	7.70	693.00
90.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	396.00
1.00	CEMENT SUPERVISOR	Alan Ryan		
1.00	EQUIPMENT OPERATOR	Kevin Ryan		
1.00	OPERATOR ASSISTANT	Cory Brown		

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

\$ 5,660.21

ONLY IF PAID ON OR BEFORE

Jul 22, 2015

Subtotal	11,320.43
Sales Tax	419.37
Total Invoice Amount	11,739.80
Payment/Credit Applied	
TOTAL	11,739.80

- 5660.21
6079.59

OK JR

acct
Prod-MG



INVOICE

P.O. Box 205803
Dallas, TX 75320-5803

Invoice Number: 150077
Invoice Date: Jun 30, 2015
Page: 1

Voice: (832) 482-3742
Fax: (832) 482-3738

Federal Tax I.D.#: 20-8651475

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

Customer ID	Field Ticket #	Payment Terms	
Murfin	64750	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-03	Oakley	Jun 30, 2015	7/30/15

Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	Patricia 3-16		
255.00	CEMENT MATERIALS	60/40/4% Gel Blend	18.92	4,824.60
64.00	CEMENT MATERIALS	Flo Seal	2.97	190.08
273.87	CEMENT SERVICE	Cubic Feet Charge	2.48	679.20
571.49	CEMENT SERVICE	Ton Mileage Charge	2.75	1,571.60
1.00	CEMENT SERVICE	Plug to Abandon	2,600.47	2,600.47
50.00	CEMENT SERVICE	Pump Truck Mileage	7.70	385.00
1.00	EQUIPMENT SALES	8-5/8 Dry Hole Plug	110.00	110.00
1.00	CEMENT SUPERVISOR	Andrew Forslund		
1.00	EQUIPMENT OPERATOR	Wayne McGhghy		
1.00	OPERATOR ASSISTANT	Cory Brown		

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

\$ 5,125.47

ONLY IF PAID ON OR BEFORE

Jul 30, 2015

Subtotal	10,360.95
Sales Tax	844.42
Total Invoice Amount	11,205.37
Payment/Credit Applied	
TOTAL	11,205.37

-5125.47
6079.90

OK JR

MDCI
 Patricia #3-16
 700' FNL 1840' FWL
 Sec. 16-T1S-R37W
 3271' KB

Formation	Sample top	Datum	Ref	Log Top	Datum	Ref
Anhydrite	3220	+51	-2	3222	+49	-4
B/Anhydrite	3255	+16	-2	3256	+15	-3
Neva	3670	-399	+3	3674	-403	-1
Red Eagle	3735	-464	+1	3738	-467	-2
Foraker	3780	-509	+4	3785	-514	-1
Topeka	4007	-736	+2	4009	-738	Flat
Oread	4141	-870	+2	4146	-875	-3
Lansing	4220	-949	+3	4227	-956	-4
Stark	4439	-1168	+4	4441	-1170	+2
BKC	4497	-1226	Flat	4500	-1229	-3
Pawnee	4621	-1350	-2	4629	-1358	-10
Cherokee	4709	-1438	-6	4715	-1444	-12
RTD	4800	-1529				
LTD				4804	-1533	



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water STE 300
Wichita KS 67206

ATTN: Robert Hendrix

Patricia #3-16

16-1s-37w Cheyenne,KS

Start Date: 2015.06.26 @ 08:10:00

End Date: 2015.06.26 @ 16:39:50

Job Ticket #: 62595 DST #: 1

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

Printed: 2015.06.29 @ 11:19:33



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co.

16-1s-37w Cheyenne, KS

250 N. Water STE 300
Wichita KS 67206

Patricia #3-16

Job Ticket: 62595

DST#: 1

ATTN: Robert Hendrix

Test Start: 2015.06.26 @ 08:10:00

GENERAL INFORMATION:

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

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:49:10

Time Test Ended: 16:39:50

Test Type: Conventional Bottom Hole (Initial)

Tester: Ryan Nichols

Unit No: 78

Interval: 4178.00 ft (KB) To 4296.00 ft (KB) (TVD)

Reference Elevations: 3271.00 ft (KB)

Total Depth: 4296.00 ft (KB) (TVD)

3257.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 14.00 ft

Serial #: 6752

Inside

Press@RunDepth: 96.67 psig @ 4179.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.06.26

End Date:

2015.06.26

Last Calib.:

2015.06.26

Start Time: 08:10:01

End Time:

16:39:50

Time On Btm:

2015.06.26 @ 10:48:50

Time Off Btm:

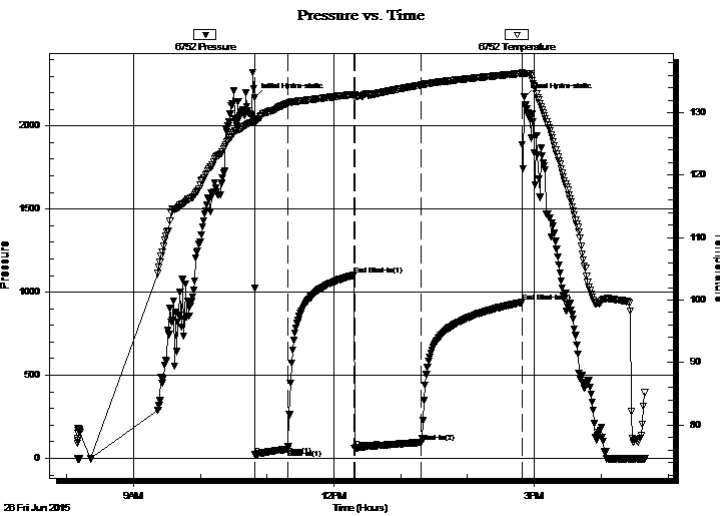
2015.06.26 @ 14:51:00

TEST COMMENT: 30 IF - 1/2" blow built to 2 3/4"

60 ISI - No return

60 FF - Surface blow started @ 47 mins

90 FSI - No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2172.01	128.78	Initial Hydro-static
1	20.49	128.35	Open To Flow (1)
30	54.98	131.48	Shut-In(1)
90	1102.63	132.95	End Shut-In(1)
90	61.00	132.31	Open To Flow (2)
150	96.67	134.40	Shut-In(2)
240	938.70	136.27	End Shut-In(2)
243	2173.03	136.28	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	WCM - 40%W - 60%M	0.30
60.00	Mud 100%M	0.30
30.00	Mud w / oil spots 100%M	0.15

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

16-1s-37w Cheyenne,KS

250 N. Water STE 300
Wichita KS 67206

Patricia #3-16

Job Ticket: 62595

DST#: 1

ATTN: Robert Hendrix

Test Start: 2015.06.26 @ 08:10:00

Tool Information

Drill Pipe:	Length: 3936.00 ft	Diameter: 3.80 inches	Volume: 55.21 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: 237.00 ft	Diameter: 2.25 inches	Volume: 1.17 bbl	Weight to Pull Loose:	90000.00 lb
			<u>Total Volume: 56.38 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial	78000.00 lb
Depth to Top Packer:	4178.00 ft			Final	78000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	118.00 ft				
Tool Length:	145.00 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			4152.00	
Shut In Tool	5.00			4157.00	
Hydraulic tool	5.00			4162.00	
Jars	5.00			4167.00	
Safety Joint	2.00			4169.00	
Packer	5.00			4174.00	27.00 Bottom Of Top Packer
Packer	4.00			4178.00	
Stubb	1.00			4179.00	
Recorder	0.00	6752	Inside	4179.00	
Recorder	0.00	8322	Outside	4179.00	
Perforations	17.00			4196.00	
Change Over Sub	1.00			4197.00	
Drill Pipe	95.00			4292.00	
Change Over Sub	1.00			4293.00	
Bullnose	3.00			4296.00	118.00 Bottom Packers & Anchor

Total Tool Length: 145.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

16-1s-37w Cheyenne,KS

250 N. Water STE 300
Wichita KS 67206

Patricia #3-16

Job Ticket: 62595

DST#: 1

ATTN: Robert Hendrix

Test Start: 2015.06.26 @ 08:10:00

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:

10500 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 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
60.00	WCM - 40%W - 60%M	0.295
60.00	Mud 100%M	0.295
30.00	Mud w / oil spots 100%M	0.148

Total Length: 150.00 ft Total Volume: 0.738 bbl

Num Fluid Samples: 0

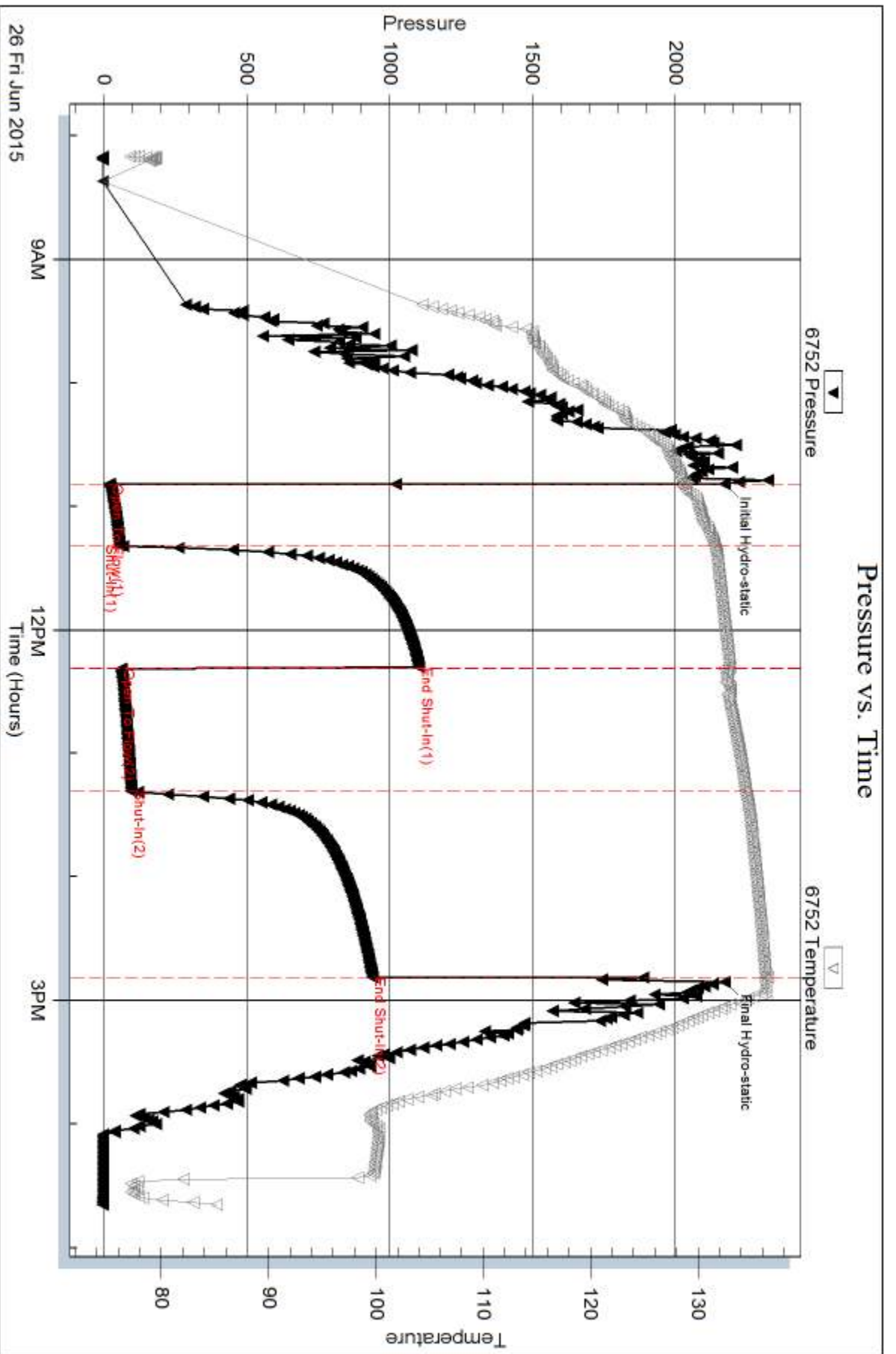
Num Gas Bombs: 0

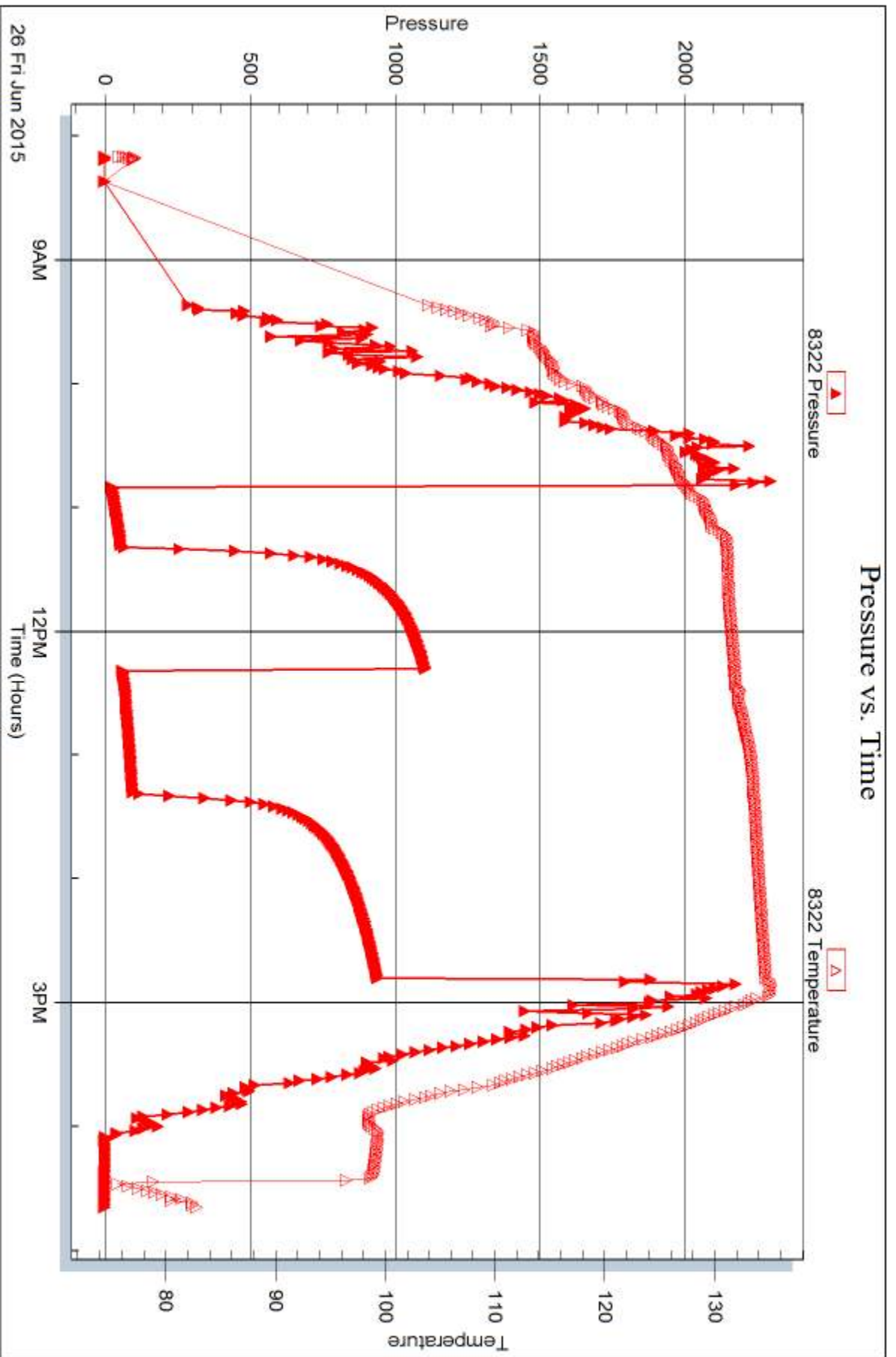
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW = .553 @ 78 DEG F







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water STE 300
Wichita KS 67206

ATTN: Robert Hendrix

Patricia #3-16

16-1s-37w Cheyenne,KS

Start Date: 2015.06.27 @ 12:43:00

End Date: 2015.06.27 @ 19:48:50

Job Ticket #: 62596 DST #: 2

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

Printed: 2015.06.29 @ 11:18:40



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co.

16-1s-37w Cheyenne,KS

250 N. Water STE 300
Wichita KS 67206

Patricia #3-16

Job Ticket: 62596

DST#: 2

ATTN: Robert Hendrix

Test Start: 2015.06.27 @ 12:43:00

GENERAL INFORMATION:

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

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:50:20

Time Test Ended: 19:48:50

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 78

Interval: 4299.00 ft (KB) To 4443.00 ft (KB) (TVD)

Reference Elevations: 3271.00 ft (KB)

Total Depth: 4443.00 ft (KB) (TVD)

3257.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 14.00 ft

Serial #: 6752 Inside

Press@RunDepth: 28.65 psig @ 4300.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.06.27 End Date: 2015.06.27

Last Calib.: 2015.06.27

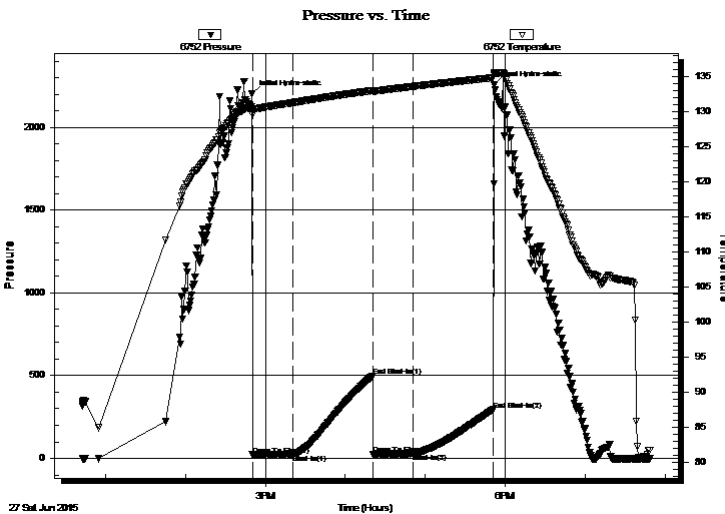
Start Time: 12:43:01 End Time: 19:48:50

Time On Btm: 2015.06.27 @ 14:50:10

Time Off Btm: 2015.06.27 @ 17:51:39

TEST COMMENT: 30 IF - 1/4" blow died @ 17 mins
60 ISI - No return
30 FF - No blow
60 FSI - No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2200.44	130.65	Initial Hydro-static
1	20.58	129.53	Open To Flow (1)
31	25.16	131.23	Shut-In(1)
91	497.21	132.94	End Shut-In(1)
91	25.83	132.77	Open To Flow (2)
121	28.65	133.54	Shut-In(2)
181	293.98	134.78	End Shut-In(2)
182	2254.86	135.53	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud 100%	0.02

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

16-1s-37w Cheyenne,KS

250 N. Water STE 300
Wichita KS 67206

Patricia #3-16

Job Ticket: 62596

DST#: 2

ATTN: Robert Hendrix

Test Start: 2015.06.27 @ 12:43:00

Tool Information

Drill Pipe:	Length: 4065.00 ft	Diameter: 3.80 inches	Volume: 57.02 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: 237.00 ft	Diameter: 2.25 inches	Volume: 1.17 bbl	Weight to Pull Loose: 95000.00 lb
			<u>Total Volume: 58.19 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 80000.00 lb
Depth to Top Packer:	4299.00 ft			Final 80000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	144.00 ft			
Tool Length:	171.00 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			4273.00	
Shut In Tool	5.00			4278.00	
Hydraulic tool	5.00			4283.00	
Jars	5.00			4288.00	
Safety Joint	2.00			4290.00	
Packer	5.00			4295.00	27.00 Bottom Of Top Packer
Packer	4.00			4299.00	
Stubb	1.00			4300.00	
Recorder	0.00	6752	Inside	4300.00	
Recorder	0.00	8322	Outside	4300.00	
Perforations	12.00			4312.00	
Change Over Sub	1.00			4313.00	
Drill Pipe	126.00			4439.00	
Change Over Sub	1.00			4440.00	
Bullnose	3.00			4443.00	144.00 Bottom Packers & Anchor

Total Tool Length: 171.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

16-1s-37w Cheyenne,KS

250 N. Water STE 300
Wichita KS 67206

Patricia #3-16

Job Ticket: 62596

DST#: 2

ATTN: Robert Hendrix

Test Start: 2015.06.27 @ 12:43:00

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: 5.99 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
5.00	Mud 100%	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

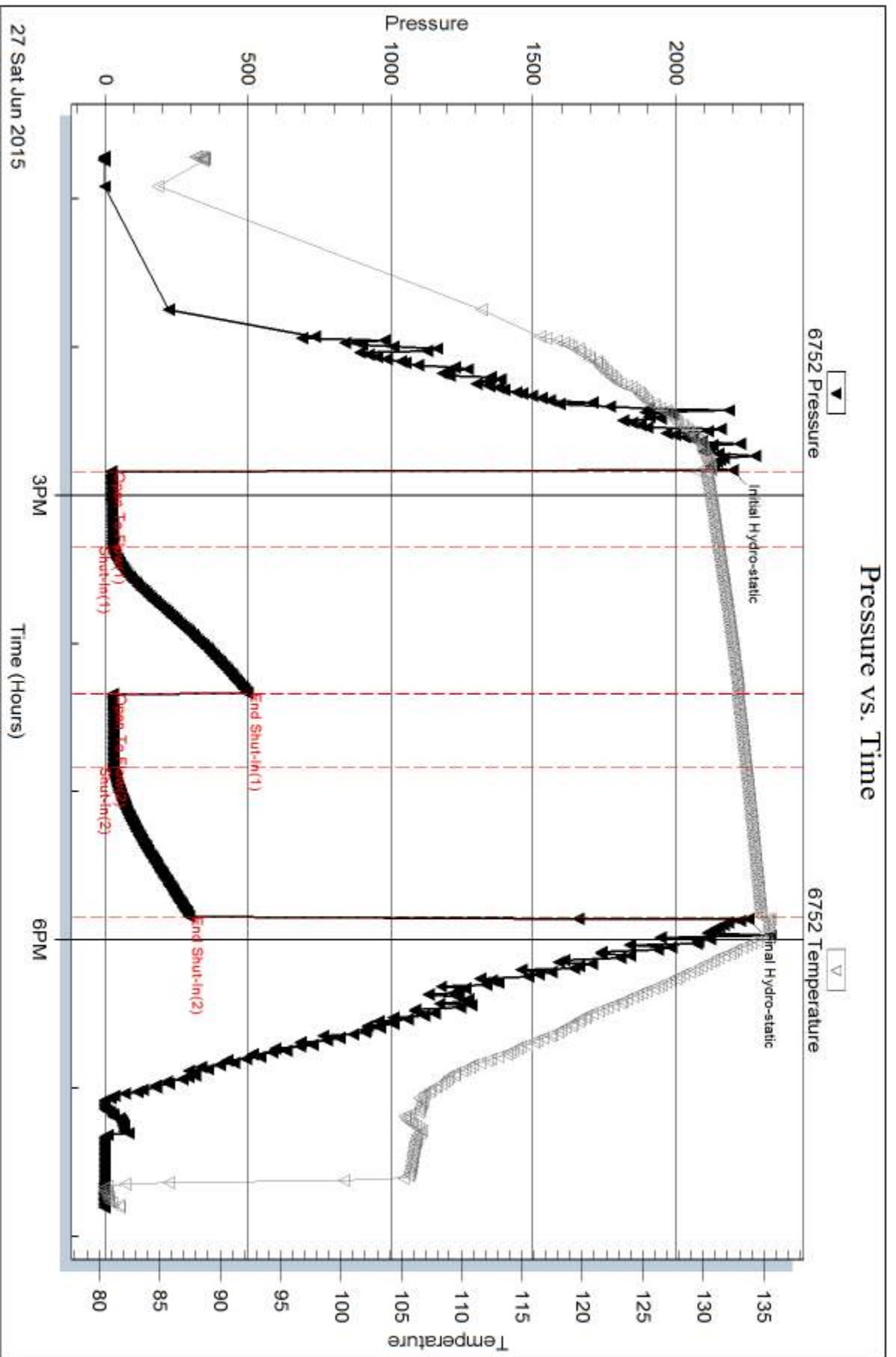
Num Gas Bombs: 0

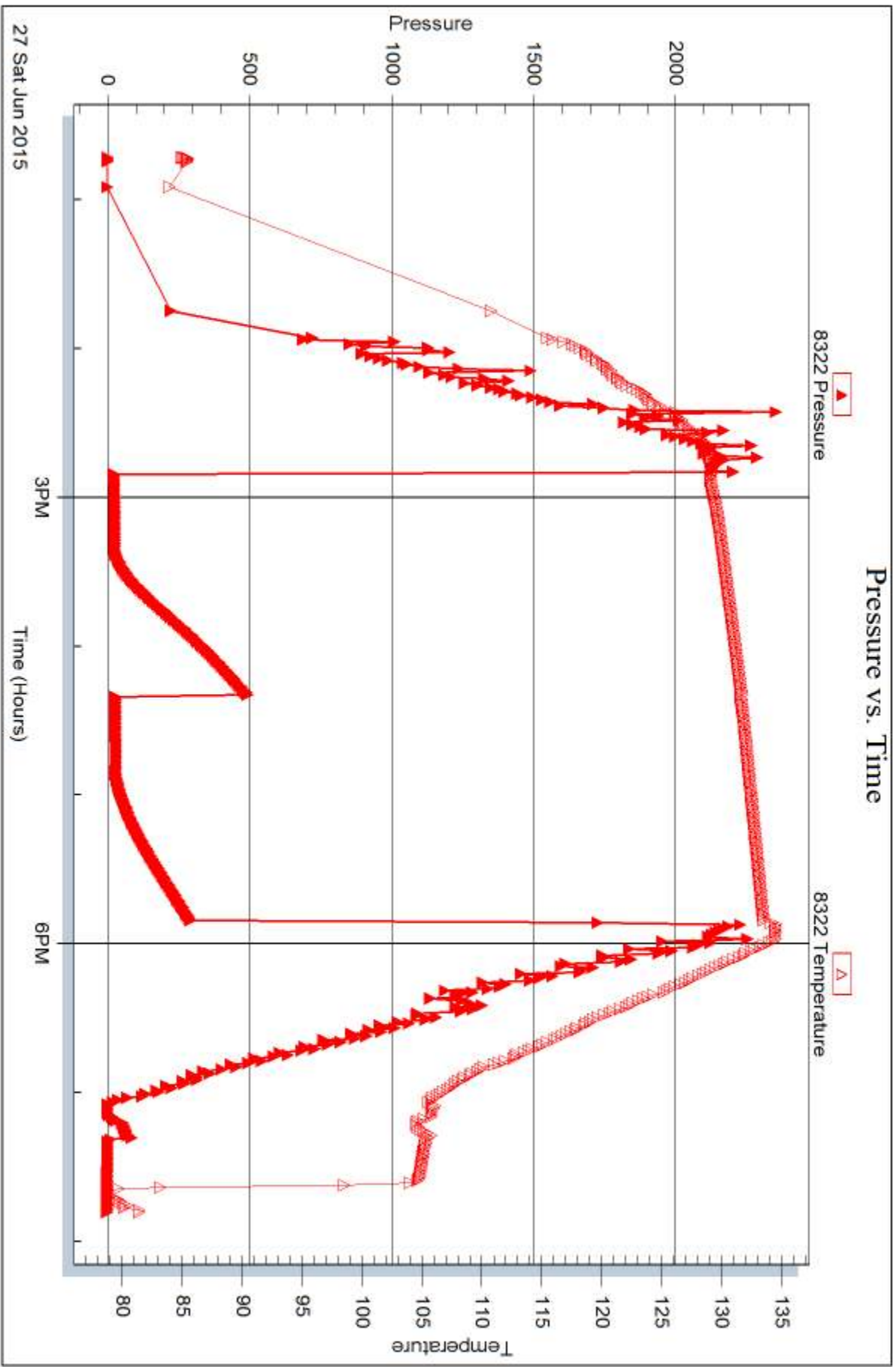
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water STE 300
Wichita KS 67206

ATTN: Robert Hendrix

Patricia #3-16

16-1s-37w Cheyenne,KS

Start Date: 2015.06.28 @ 20:37:00

End Date: 2015.06.29 @ 05:02:50

Job Ticket #: 62597 DST #: 3

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

Printed: 2015.06.29 @ 11:18:15



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co.

16-1s-37w Cheyenne, KS

250 N. Water STE 300
Wichita KS 67206

Patricia #3-16

Job Ticket: 62597

DST#: 3

ATTN: Robert Hendrix

Test Start: 2015.06.28 @ 20:37:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:44:00

Time Test Ended: 05:02:50

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 78

Interval: 4590.00 ft (KB) To 4642.00 ft (KB) (TVD)

Reference Elevations: 3271.00 ft (KB)

Total Depth: 4642.00 ft (KB) (TVD)

3257.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 14.00 ft

Serial #: 6752 Inside

Press@RunDepth: 23.92 psig @ 4591.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.06.28

End Date:

2015.06.29

Last Calib.:

2015.06.29

Start Time: 20:37:01

End Time:

05:02:50

Time On Btm:

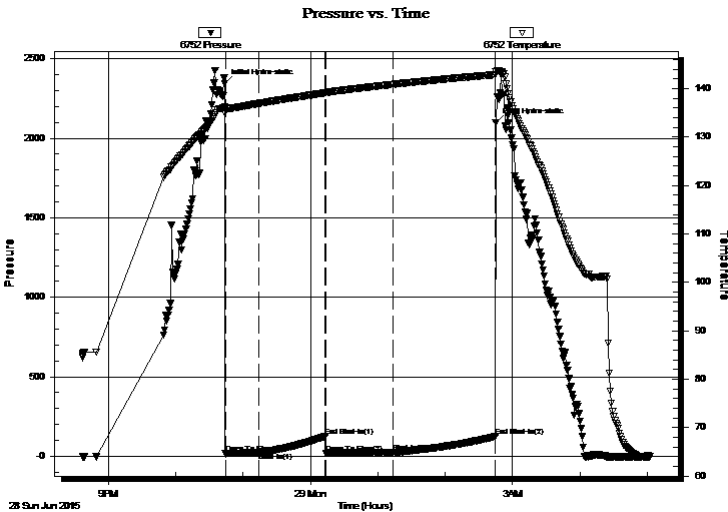
2015.06.28 @ 22:43:40

Time Off Btm:

2015.06.29 @ 02:45:00

TEST COMMENT: 30 IF - Surface blow built to 1/2" died back to surface
60 ISI - No return
60 FF - No blow
90 FSI - No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2342.88	136.14	Initial Hydro-static
1	16.31	134.98	Open To Flow (1)
31	22.59	136.91	Shut-In(1)
90	127.01	139.08	End Shut-In(1)
90	17.17	139.09	Open To Flow (2)
150	23.92	140.85	Shut-In(2)
241	124.85	142.85	End Shut-In(2)
242	2097.60	143.37	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	OCM - 10%o - 90%M	0.02

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.

16-1s-37w Cheyenne,KS

250 N. Water STE 300
Wichita KS 67206

Patricia #3-16

Job Ticket: 62597

DST#: 3

ATTN: Robert Hendrix

Test Start: 2015.06.28 @ 20:37:00

Tool Information

Drill Pipe:	Length: 4348.00 ft	Diameter: 3.80 inches	Volume: 60.99 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: 237.00 ft	Diameter: 2.25 inches	Volume: 1.17 bbl	Weight to Pull Loose: 95000.00 lb
			<u>Total Volume: 62.16 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 80000.00 lb
Depth to Top Packer:	4590.00 ft			Final 80000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	52.00 ft			
Tool Length:	79.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4564.00	
Shut In Tool	5.00			4569.00	
Hydraulic tool	5.00			4574.00	
Jars	5.00			4579.00	
Safety Joint	2.00			4581.00	
Packer	5.00			4586.00	27.00 Bottom Of Top Packer
Packer	4.00			4590.00	
Stubb	1.00			4591.00	
Recorder	0.00	6752	Inside	4591.00	
Recorder	0.00	8322	Outside	4591.00	
Perforations	15.00			4606.00	
Change Over Sub	1.00			4607.00	
Drill Pipe	31.00			4638.00	
Change Over Sub	1.00			4639.00	
Bullnose	3.00			4642.00	52.00 Bottom Packers & Anchor

Total Tool Length: 79.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

16-1s-37w Cheyenne,KS

250 N. Water STE 300
Wichita KS 67206

Patricia #3-16

Job Ticket: 62597

DST#: 3

ATTN: Robert Hendrix

Test Start: 2015.06.28 @ 20:37:00

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: 64.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.80 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
5.00	OCM - 10%o - 90%M	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

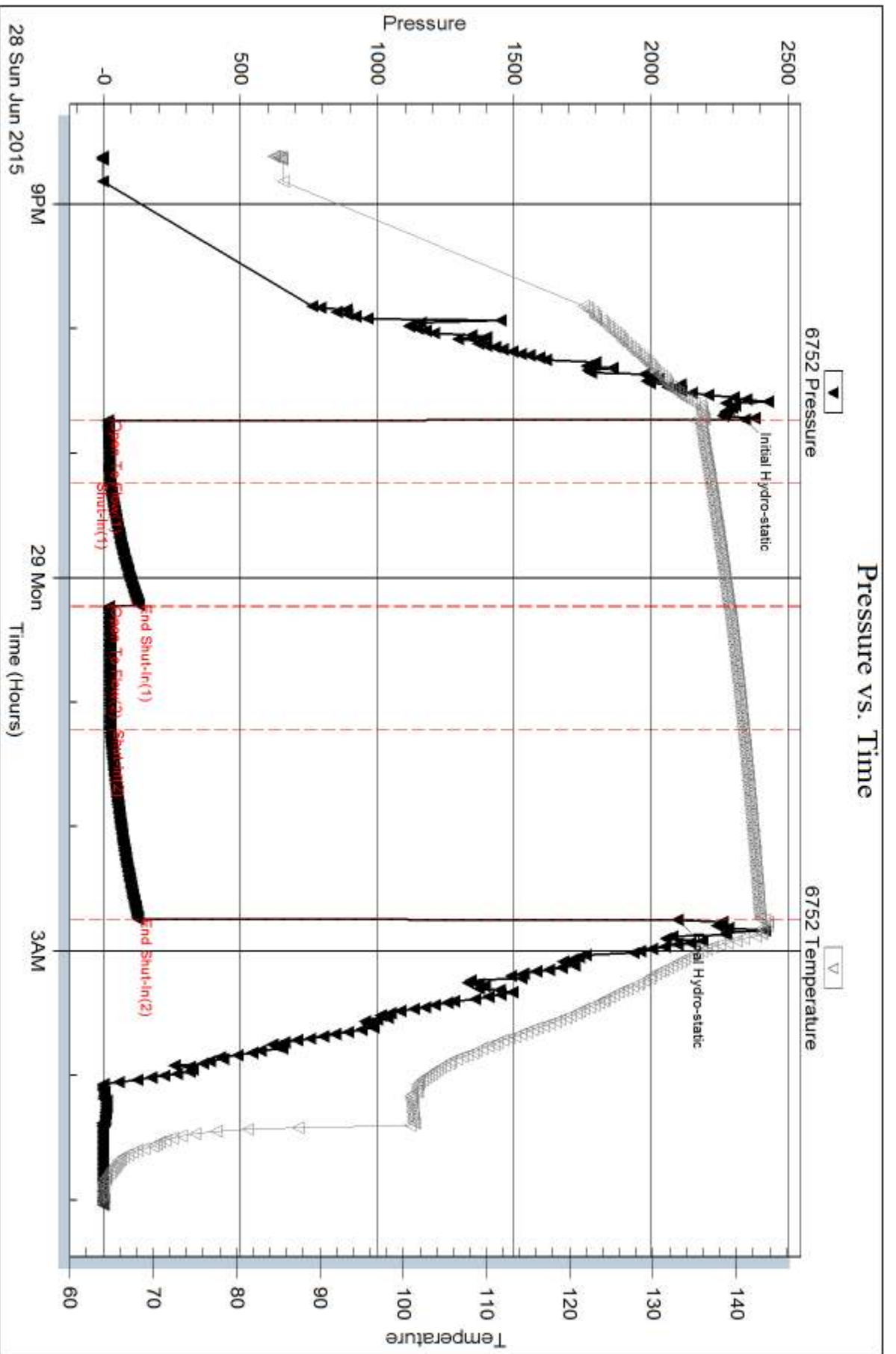
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

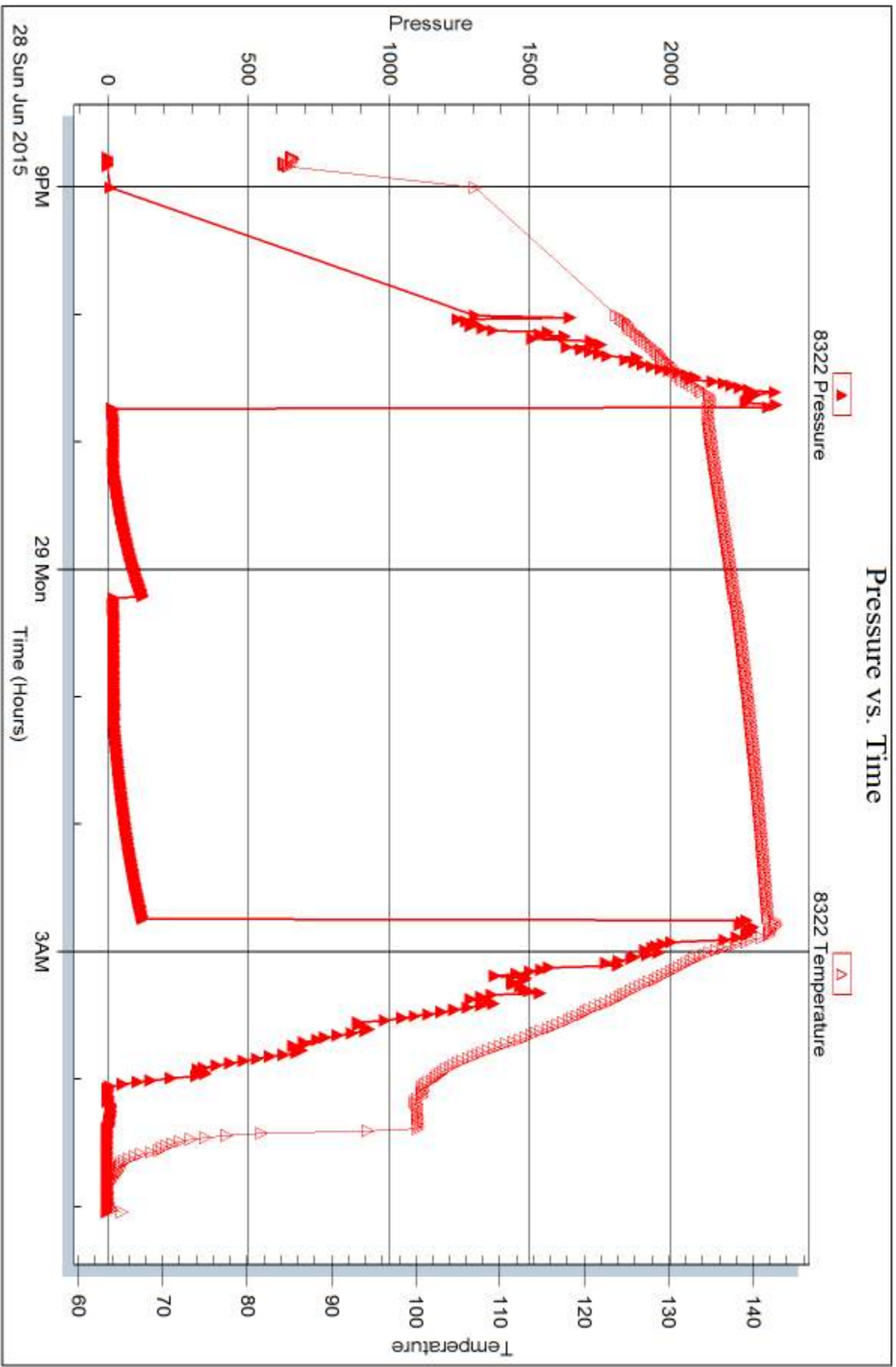


Serial #: 8322

Outside Murfin Drilling Co.

Patricia #3-16

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 62597

Printed: 2015.06.29 @ 11:18:17



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62595

Well Name & No. Patricia # 3-16 Test No. 1 Date 6/26/15
 Company Martin Drilling Co. Elevation 3271 KB 3257 GL
 Address 250 N. Water STE 300 Wichita KS 67206
 Co. Rep / Geo. Robert Hendrix Rig Martin # 2
 Location: Sec. 16 Twp. 1S Rge. 37W Co. Cheyenne State KS

Interval Tested 4178-4296 Zone Tested LKC "A-D"
 Anchor Length 118' Drill Pipe Run ~~393'~~ 393' Mud Wt. 9.4
 Top Packer Depth 4173 Drill Collars Run ~~237'~~ 237' Vis 55
 Bottom Packer Depth 4178 Wt. Pipe Run 0' WL 7.6
 Total Depth 4296 Chlorides 600 ppm System LCM 6

Blow Description IF - 1/2" blow built to 2 3/4"
ISI - No return
FF - Surface blow started @ 47 mins
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>Mud w/o. 1 spots</u>			<u>100</u>	<u>0</u>
<u>60</u>	<u>Mud</u>			<u>100</u>	<u>0</u>
<u>60</u>	<u>WCM</u>		<u>40</u>	<u>60</u>	<u>0</u>

Rec Total 150' BHT 136° Gravity — API RW .553 @ 78° F Chlorides 10,500 ppm

(A) Initial Hydrostatic <u>2172</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>07:30</u>
(B) First Initial Flow <u>20</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>08:10</u>
(C) First Final Flow <u>55</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>10:49</u>
(D) Initial Shut-In <u>1103</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>14:49</u>
(E) Second Initial Flow <u>61</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>16:39</u>
(F) Second Final Flow <u>97</u>	<input checked="" type="checkbox"/> Mileage <u>155 XT 155</u>	Comments
(G) Final Shut-In <u>939</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2173</u>	<input type="checkbox"/> Straddle	

Initial Open <u>30</u>	<input type="checkbox"/> Ruined Shale Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Ruined Packer
Final Flow <u>60</u>	<input type="checkbox"/> Extra Copies
Final Shut-In <u>90</u>	Sub Total <u>0</u>
	Total <u>1630</u>
	MP/DST Disc't
Sub Total <u>1630</u>	

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62596

Well Name & No. Patricia # 3-16 Test No. 2 Date 6/27/15
 Company Murfin Drilling Co. Elevation 3271 KB 3257 GL
 Address 250 N. Water STE 300 Wichita KS 67206
 Co. Rep / Geo. Robert Hendrix Rig Murfin # 2
 Location: Sec. 16 Twp. 1S Rge. 37W Co. Zhewenne State KS

Interval Tested 4299-4443 Zone Tested LKC "G-J"
 Anchor Length 144' Drill Pipe Run 4065' Mud Wt. 9.2
 Top Packer Depth 4294 Drill Collars Run ~~4065~~ 237' Vis 69
 Bottom Packer Depth 4299 Wt. Pipe Run 0' WL 6.0
 Total Depth 4443 Chlorides 700 ppm System LCM 8
 Blow Description IF - 1/4" blow died @ 17 mins
ISI - No return
FF - No blow
FSL - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>5'</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 5' BHT 135° Gravity — API RW — @ — ° F Chlorides — ppm

(A) Initial Hydrostatic <u>2200</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>12:30</u>
(B) First Initial Flow <u>21</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>12:43</u>
(C) First Final Flow <u>25</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>14:50</u>
(D) Initial Shut-In <u>497</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>17:50</u>
(E) Second Initial Flow <u>26</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>19:48</u>
(F) Second Final Flow <u>29</u>	<input checked="" type="checkbox"/> Mileage <u>155 RT</u> 155	Comments
(G) Final Shut-In <u>294</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2255</u>	<input type="checkbox"/> Straddle	
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Extra Copies
Final Flow <u>30</u>	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Accessibility	Total <u>1630</u>
	Sub Total <u>1630</u>	MP/DST Disc't

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

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62597

Well Name & No. Patricia #3-16 Test No. 3 Date 6/28/15
 Company Murfin Drilling Co. Elevation 3271 KB 3257 GL
 Address 250 N. Water STE 300 Wichita KS 67206
 Co. Rep / Geo. Robert Hendrix Rig Murfin #2
 Location: Sec. 16 Twp. 15 Rge. 37W Co. Cheyenne State KS

Interval Tested 4590-4642 Zone Tested Pawnee
 Anchor Length 4595 52' Drill Pipe Run 4348' Mud Wt. 9.2
 Top Packer Depth 4595 85 Drill Collars Run 237' Vis 84
 Bottom Packer Depth 4590 Wt. Pipe Run 0' WL 6.8
 Total Depth 4642 Chlorides 700 ppm System LCM 7
 Blow Description IF - Surface blow built to 1/2" died back to surface
ISI - No return
FF - No blow
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>5'</u>	<u>0 CM</u>	<u>10</u>		<u>90</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 1430 Gravity _____ API RW _____ @ _____ ° F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2343</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>20:00</u>
(B) First Initial Flow <u>16</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>20:37</u>
(C) First Final Flow <u>23</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>23:44</u>
(D) Initial Shut-In <u>127</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>02:44</u>
(E) Second Initial Flow <u>17</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>05:02</u>
(F) Second Final Flow <u>24</u>	<input checked="" type="checkbox"/> Mileage <u>155 RT</u> 155	Comments _____
(G) Final Shut-In <u>125</u>	<input type="checkbox"/> Sampler _____	<input type="checkbox"/> Ruined Shale Packer _____
(H) Final Hydrostatic <u>2098</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Packer _____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Extra Copies _____
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer _____	Sub Total <u>0</u>
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder _____	Total <u>1630</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby _____	MP/DST Disc't _____
	<input type="checkbox"/> Accessibility _____	
	Sub Total <u>1630</u>	

Approved By _____ Our Representative Robert Hendrix

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