



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1209485
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: _____

1209485

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

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

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

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

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

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

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

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

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

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

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

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

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	Liberty Oper & Compl, Inc
Well Name	Muir 1
Doc ID	1209485

All Electric Logs Run

Sonic Log
Micro Log
Dual Induction Log
Compensated Neutron/Desity PE Log

Form	ACO1 - Well Completion
Operator	Liberty Oper & Compl, Inc
Well Name	Muir 1
Doc ID	1209485

Tops

Name	Top	Datum
Anhydrite	1401	+721
Topeka	3021	-899
Heebner	3237	-1115
Toronto	3253	-1131
L/KCA	3278	-1156
Stark Shale	3470	-1348
b/KC	3514	-1392
Conglomerate		
Arbuckle	3659	-1537

ALLIED CEMENTING CO., LLC. 041847

Federal Tax I.D.# 20-5975804

REMIT TO P.O. BOX 31
RUSSELL, KANSAS 67665

SERVICE POINT:
Russell KS

DATE <u>8-9-10</u>	SEC. <u>23</u>	TWP. <u>9</u>	RANGE <u>17</u>	CALLED OUT	ON LOCATION	JOB START	JOB FINISH
LEASE <u>Maver</u>						<u>2:30pm</u>	<u>3:15pm</u>
			LOCATION <u>Platteville KS 1 North 4 East</u>			COUNTY <u>Rooks</u>	STATE <u>Ks</u>
<input type="checkbox"/> OLD OR NEW (Circle one)							

CONTRACTOR Vision Road 17 OWNER _____
 TYPE OF JOB Ration Plug
 HOLE SIZE 7 7/8 TD. 3700
 CASING SIZE _____ DEPTH _____
 TUBING SIZE _____ DEPTH _____
 DRILL PIPE 4 1/2 KH DEPTH 3664
 TOOL _____ DEPTH _____
 PRES. MAX _____ MINIMUM _____
 MEAS. LINE _____ SHOE JOINT _____
 CEMENT LEFT IN CSG. _____
 PERFS. _____
 DISPLACEMENT _____

EQUIPMENT

PUMP TRUCK CEMENTER Tina Roberts
 # 398 HELPER Glen
 BULK TRUCK DRIVER Bill TWS Tahany
 BULK TRUCK DRIVER _____

REMARKS:

254 @ 2664
254 @ 1441
100 @ @ 900
40 @ @ 220
12 @ @ 40'
305k Rathde

CHARGE TO: Liberty

STREET _____ CITY _____ STATE _____ ZIP _____

CEMENT AMOUNT ORDERED 230 6940 4715.1 164 4 576

COMMON @ _____
 POZMIX @ _____
 GEL @ _____
 CHLORIDE @ _____
 ASC @ _____
 @ _____
 @ _____
 @ _____

HANDLING @ _____
 MILEAGE @ _____
 TOTAL _____

SERVICE

DEPTH OF JOB _____
 PUMP TRUCK CHARGE @ _____
 EXTRA FOOTAGE @ _____
 MILEAGE @ _____
 MANIFOLD @ _____
 @ _____
 @ _____

TOTAL _____

PLUG & FLOAT EQUIPMENT

@ _____
 @ _____
Dry Hole Plug @ _____
 @ _____
 @ _____
 TOTAL _____

To Allied Cementing Co., 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 Bill TWS

SALES TAX (If Any) _____
 TOTAL CHARGES _____
 DISCOUNT _____ IF PAID IN 30 DAYS

SIGNATURE _____



DRILL STEM TEST REPORT

Prepared For: **Liberty Operating**

308 W. Mill
Plainville, Ks 67663

ATTN: Tony Richardson

23-9S-17W Rooks, KS

Muir #1

Start Date: 2010.08.05 @ 09:41:58

End Date: 2010.08.05 @ 19:06:28

Job Ticket #: 39026 DST #: 1

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

Printed: 2014.06.20 @ 09:50:35



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Liberty Operating

Muir #1

308 W. Mill
Plainville, Ks 67663

23-9S-17W Rooks, KS

ATTN: Tony Richardson

Job Ticket: 39026

DST#: 1

Test Start: 2010.08.05 @ 09:41:58

GENERAL INFORMATION:

Formation: **Toront - A**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:10:58

Time Test Ended: 19:06:28

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 32

Interval: 3238.00 ft (KB) To 3301.00 ft (KB) (TVD)

Reference Elevations: 2122.00 ft (KB)

Total Depth: 3301.00 ft (KB) (TVD)

2114.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 8.00 ft

Serial #: 8360 Outside

Press@RunDepth: 59.95 psig @ 3273.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2010.08.05 End Date: 2010.08.05

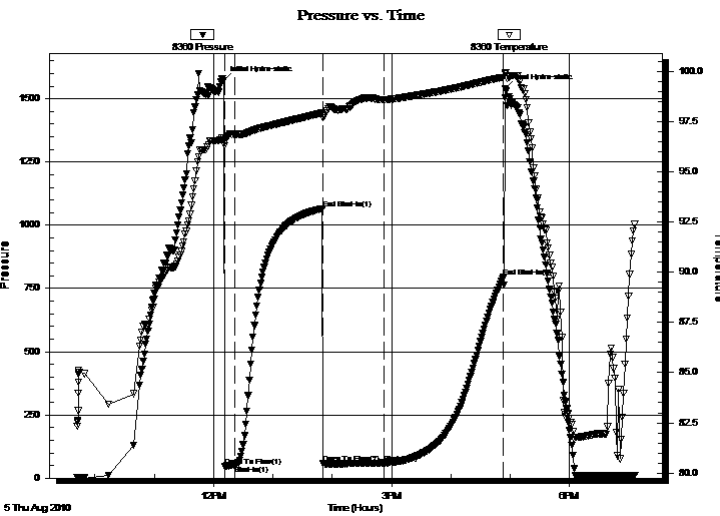
Last Calib.: 2010.08.05

Start Time: 09:42:00 End Time: 19:06:28

Time On Btm: 2010.08.05 @ 12:10:13

Time Off Btm: 2010.08.05 @ 16:55:13

TEST COMMENT: IF-Weak surface blow .
IS-No Return.
FF-Weak surface blow after 26 minutes. Died after 12 minutes.
FS-No Return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1573.12	96.69	Initial Hydro-static
1	47.61	96.29	Open To Flow (1)
12	50.79	96.86	Shut-In(1)
100	1066.40	97.93	End Shut-In(1)
101	56.64	97.71	Open To Flow (2)
162	59.95	98.58	Shut-In(2)
283	793.98	99.71	End Shut-In(2)
285	1538.47	99.93	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	100%Mud	0.42

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Liberty Operating

308 W. Mill
Plainville, Ks 67663

ATTN: Tony Richardson

Muir #1

23-9S-17W Rooks, KS

Job Ticket: 39026

DST#: 1

Test Start: 2010.08.05 @ 09:41:58

GENERAL INFORMATION:

Formation: **Toront - A**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:10:58

Time Test Ended: 19:06:28

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 32

Interval: 3238.00 ft (KB) To 3301.00 ft (KB) (TVD)

Total Depth: 3301.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Poor

Reference Elevations: 2122.00 ft (KB)

2114.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 6755 Inside

Press@RunDepth: psig @ 3273.00 ft (KB)

Start Date: 2010.08.05

End Date: 2010.08.05

Start Time: 09:42:30

End Time: 19:06:28

Capacity: 8000.00 psig

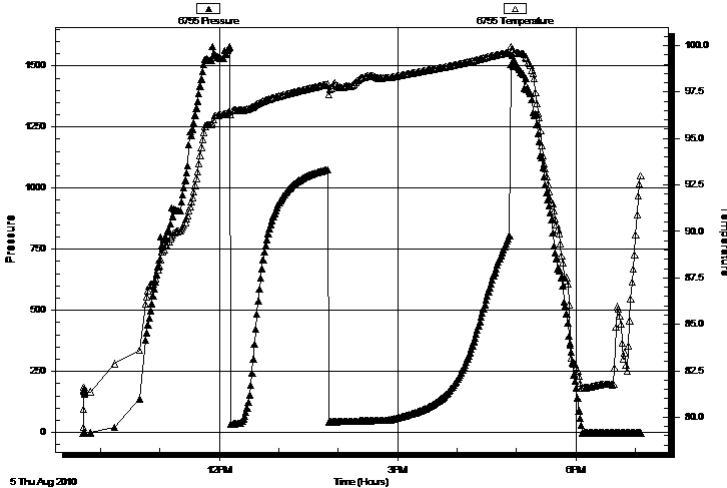
Last Calib.: 2010.08.05

Time On Btm:

Time Off Btm:

TEST COMMENT: IF-Weak surface blow .
IS-No Return.
FF-Weak surface blow after 26 minutes. Died after 12 minutes.
FS-No Return.

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
50.00	100%Mud	0.42

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Liberty Operating

Muir #1

308 W. Mill
Plainville, Ks 67663

23-9S-17W Rooks, KS

Job Ticket: 39026

DST#: 1

ATTN: Tony Richardson

Test Start: 2010.08.05 @ 09:41:58

Tool Information

Drill Pipe:	Length: 3193.00 ft	Diameter: 3.80 inches	Volume: 44.79 bbl	Tool Weight:	3000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	6000.00 lb
			<u>Total Volume: 44.94 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial	42000.00 lb
Depth to Top Packer:	3238.00 ft			Final	44000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	63.00 ft				
Tool Length:	84.00 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			3218.00	
Shut In Tool	5.00			3223.00	
Hydraulic tool	5.00			3228.00	
Packer	5.00			3233.00	21.00 Bottom Of Top Packer
Packer	5.00			3238.00	
Stubb	1.00			3239.00	
Change Over Sub	1.00			3240.00	
Drill Pipe	32.00			3272.00	
Change Over Sub	1.00			3273.00	
Recorder	0.00	6755	Inside	3273.00	
Recorder	0.00	8360	Outside	3273.00	
Perforations	25.00			3298.00	
Bullnose	3.00			3301.00	63.00 Bottom Packers & Anchor

Total Tool Length: 84.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Liberty Operating

Muir #1

308 W. Mill
Plainville, Ks 67663

23-9S-17W Rooks, KS

Job Ticket: 39026

DST#: 1

ATTN: Tony Richardson

Test Start: 2010.08.05 @ 09:41:58

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: 42.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
50.00	100%Mud	0.419

Total Length: 50.00 ft Total Volume: 0.419 bbl

Num Fluid Samples: 0

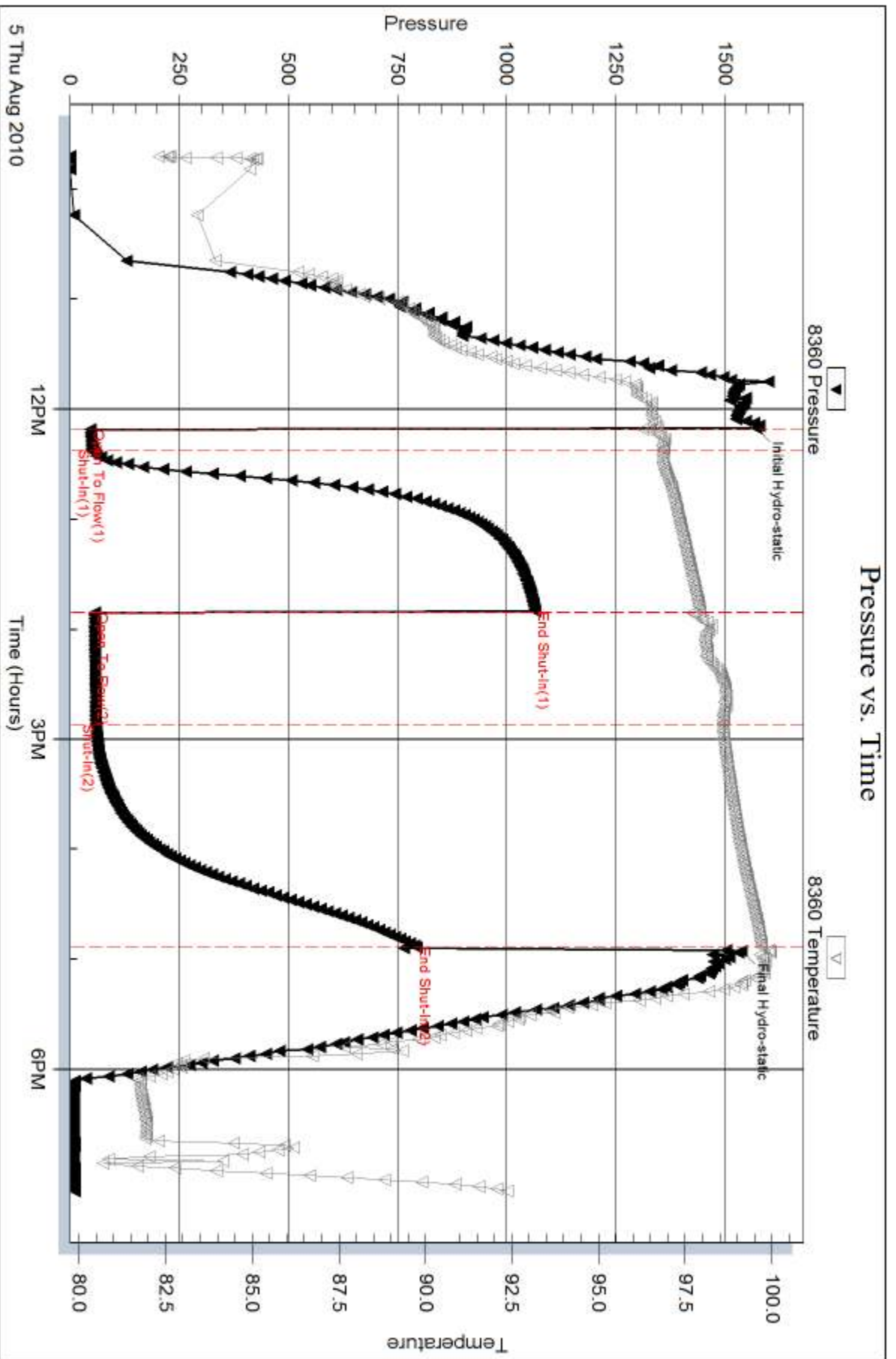
Num Gas Bombs: 0

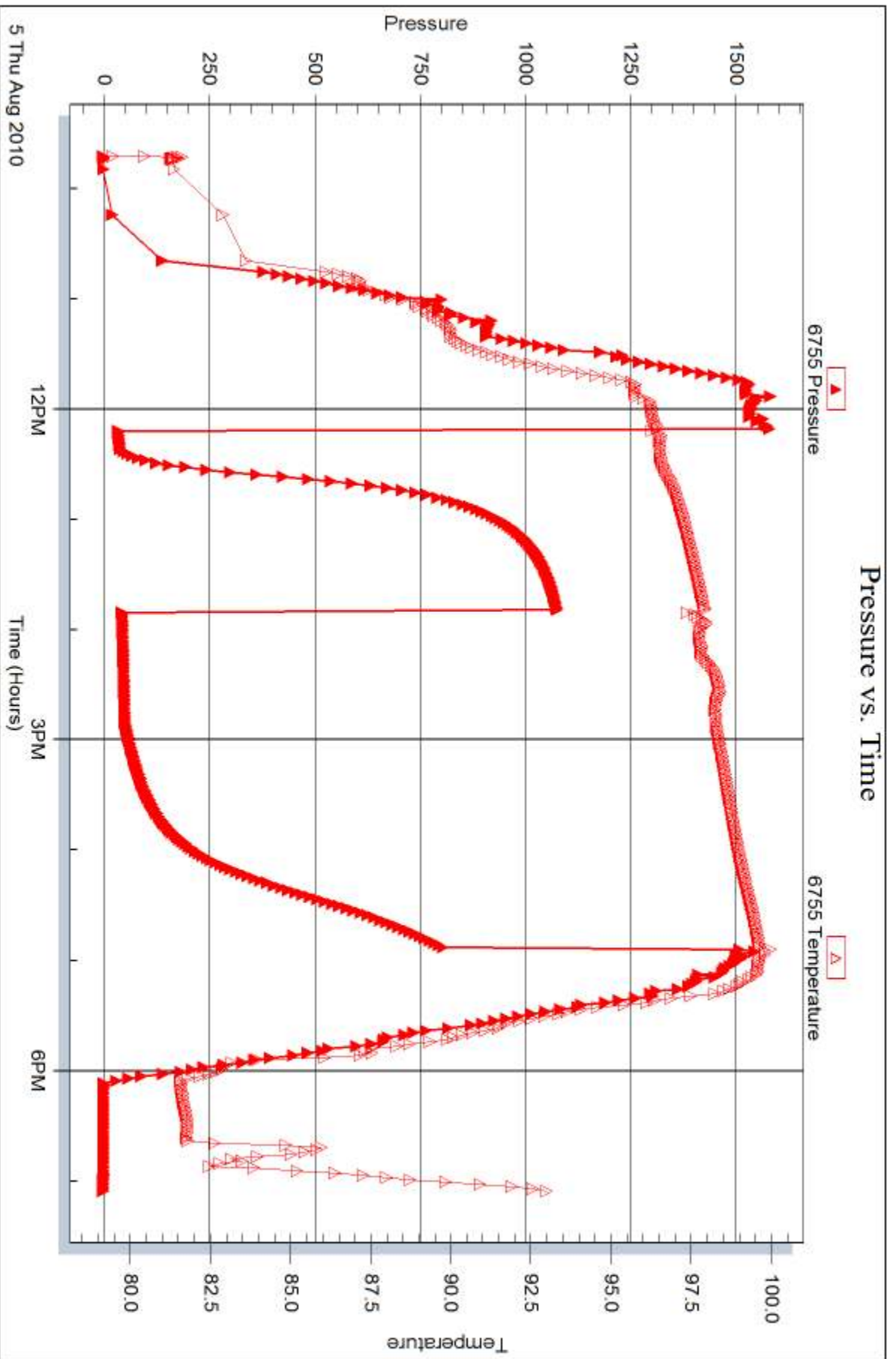
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Liberty Operating**

308 W. Mill
Plainville, Ks 67663

ATTN: Tony Richardson

23-9S-17W Rooks, KS

Muir #1

Start Date: 2010.08.06 @ 03:56:18

End Date: 2010.08.06 @ 14:05:33

Job Ticket #: 39027 DST #: 2

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

Printed: 2014.06.20 @ 09:50:13



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Liberty Operating

Muir #1

308 W. Mill
Plainville, Ks 67663

23-9S-17W Rooks, KS

Job Ticket: 39027

DST#: 2

ATTN: Tony Richardson

Test Start: 2010.08.06 @ 03:56:18

GENERAL INFORMATION:

Formation: **Toronto C&D**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:38:03

Time Test Ended: 14:05:33

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 32

Interval: 3295.00 ft (KB) To 3360.00 ft (KB) (TVD)

Reference Elevations: 2122.00 ft (KB)

Total Depth: 3360.00 ft (KB) (TVD)

2114.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 8.00 ft

Serial #: 8360 Outside

Press@RunDepth: 54.26 psig @ 3328.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2010.08.06

End Date:

2010.08.06

Last Calib.:

2010.08.06

Start Time: 03:56:20

End Time:

14:05:33

Time On Btm:

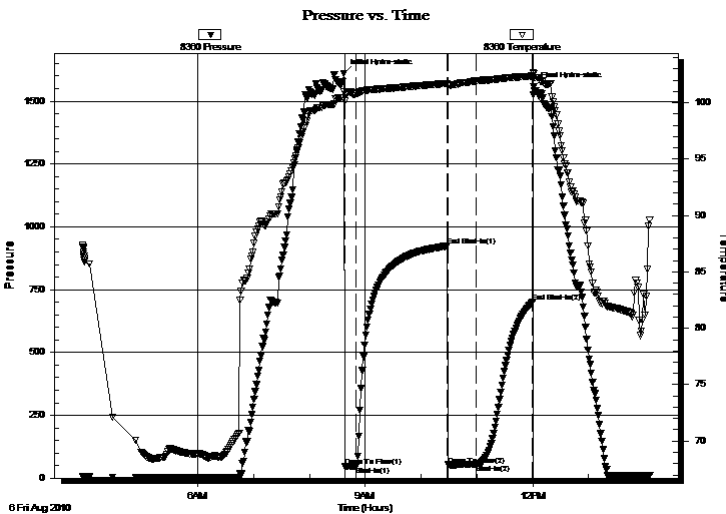
2010.08.06 @ 08:36:48

Time Off Btm:

2010.08.06 @ 12:01:03

TEST COMMENT: IF-Weak surface blow . No build.
IS-No Return.
FF-No blow .
FS-No Return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1610.75	100.98	Initial Hydro-static
2	48.34	100.12	Open To Flow (1)
13	48.49	100.77	Shut-In(1)
112	923.87	101.71	End Shut-In(1)
112	52.63	101.50	Open To Flow (2)
143	54.26	101.94	Shut-In(2)
203	701.69	102.36	End Shut-In(2)
205	1557.30	102.61	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
40.00	100%Mud	0.27

Gas Rates

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



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

Liberty Operating
308 W. Mill
Plainville, Ks 67663
ATTN: Tony Richardson

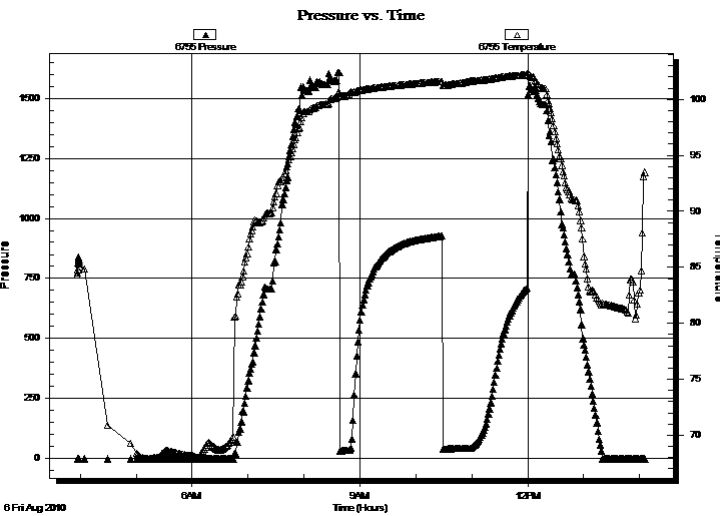
Muir #1
23-9S-17W Rooks, KS
Job Ticket: 39027 **DST#: 2**
Test Start: 2010.08.06 @ 03:56:18

GENERAL INFORMATION:

Formation: **Toronto C&D**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 08:38:03
Time Test Ended: 14:05:33
Interval: **3295.00 ft (KB) To 3360.00 ft (KB) (TVD)**
Total Depth: 3360.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Poor
Test Type: Conventional Bottom Hole (Initial)
Tester: Dustin Rash
Unit No: 32
Reference Elevations: 2122.00 ft (KB)
2114.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 6755 **Inside**
Press@RunDepth: psig @ 3328.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2010.08.06 End Date: 2010.08.06 Last Calib.: 2010.08.06
Start Time: 03:57:20 End Time: 14:05:33 Time On Btm:
Time Off Btm:

TEST COMMENT: IF-Weak surface blow . No build.
IS-No Return.
FF-No blow .
FS-No Return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
40.00	100%Mud	0.27

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Liberty Operating

Muir #1

308 W. Mill
Plainville, Ks 67663

23-9S-17W Rooks, KS

Job Ticket: 39027

DST#: 2

ATTN: Tony Richardson

Test Start: 2010.08.06 @ 03:56:18

Tool Information

Drill Pipe:	Length: 3255.00 ft	Diameter: 3.80 inches	Volume: 45.66 bbl	Tool Weight:	3000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 32.00 ft	Diameter: 2.25 inches	Volume: 0.16 bbl	Weight to Pull Loose:	4000.00 lb
			<u>Total Volume: 45.82 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial	45000.00 lb
Depth to Top Packer:	3295.00 ft			Final	45000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	65.00 ft				
Tool Length:	86.00 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			3275.00	
Shut In Tool	5.00			3280.00	
Hydraulic tool	5.00			3285.00	
Packer	5.00			3290.00	21.00 Bottom Of Top Packer
Packer	5.00			3295.00	
Stubb	1.00			3296.00	
Change Over Sub	1.00			3297.00	
Drill Pipe	31.00			3328.00	
Recorder	0.00	6755	Inside	3328.00	
Recorder	0.00	8360	Outside	3328.00	
Change Over Sub	1.00			3329.00	
Perforations	28.00			3357.00	
Bullnose	3.00			3360.00	65.00 Bottom Packers & Anchor

Total Tool Length: 86.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Liberty Operating

Muir #1

308 W. Mill
Plainville, Ks 67663

23-9S-17W Rooks, KS

Job Ticket: 39027

DST#: 2

ATTN: Tony Richardson

Test Start: 2010.08.06 @ 03:56:18

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: 47.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
40.00	100%Mud	0.270

Total Length: 40.00 ft Total Volume: 0.270 bbl

Num Fluid Samples: 0

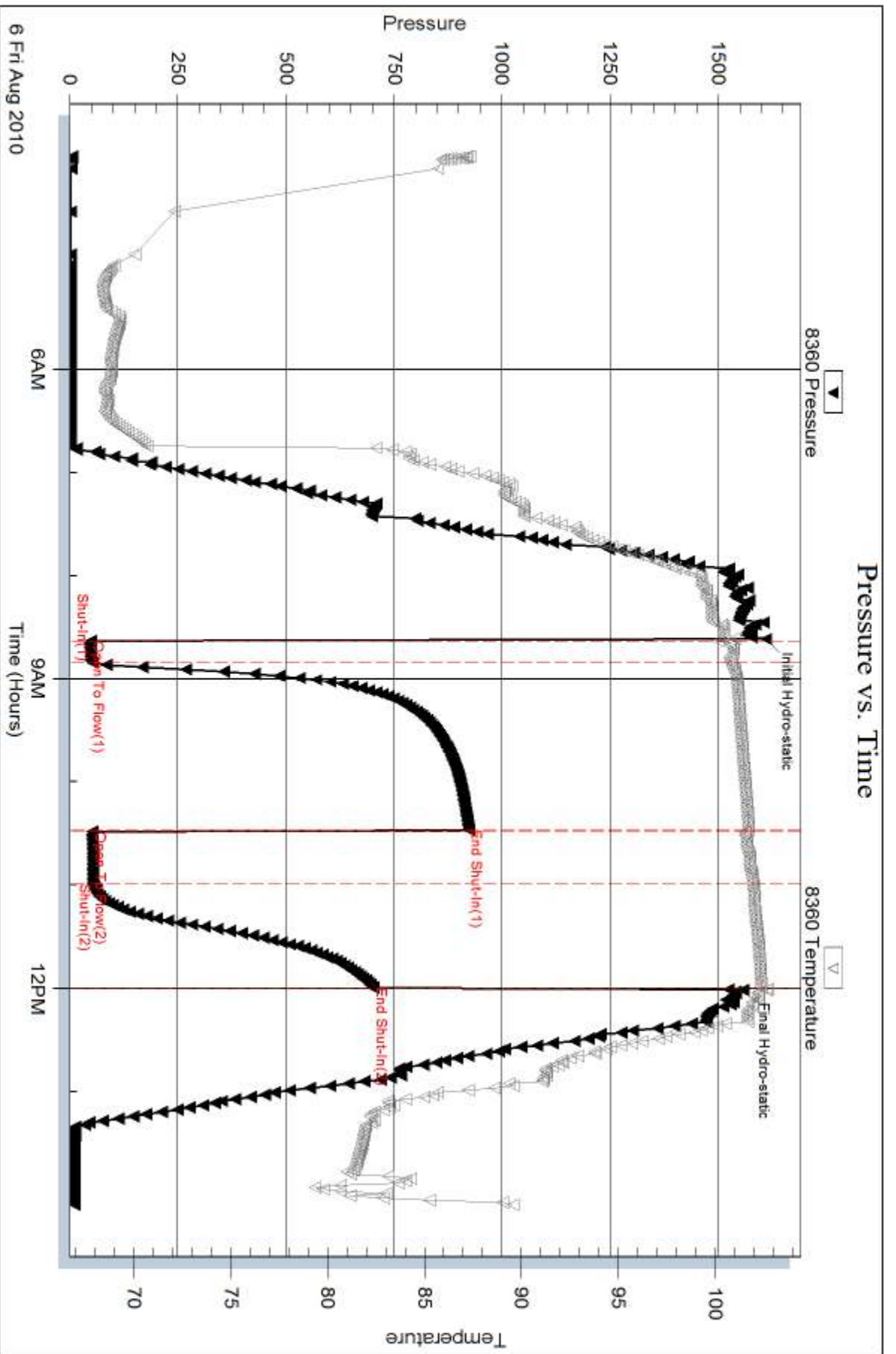
Num Gas Bombs: 0

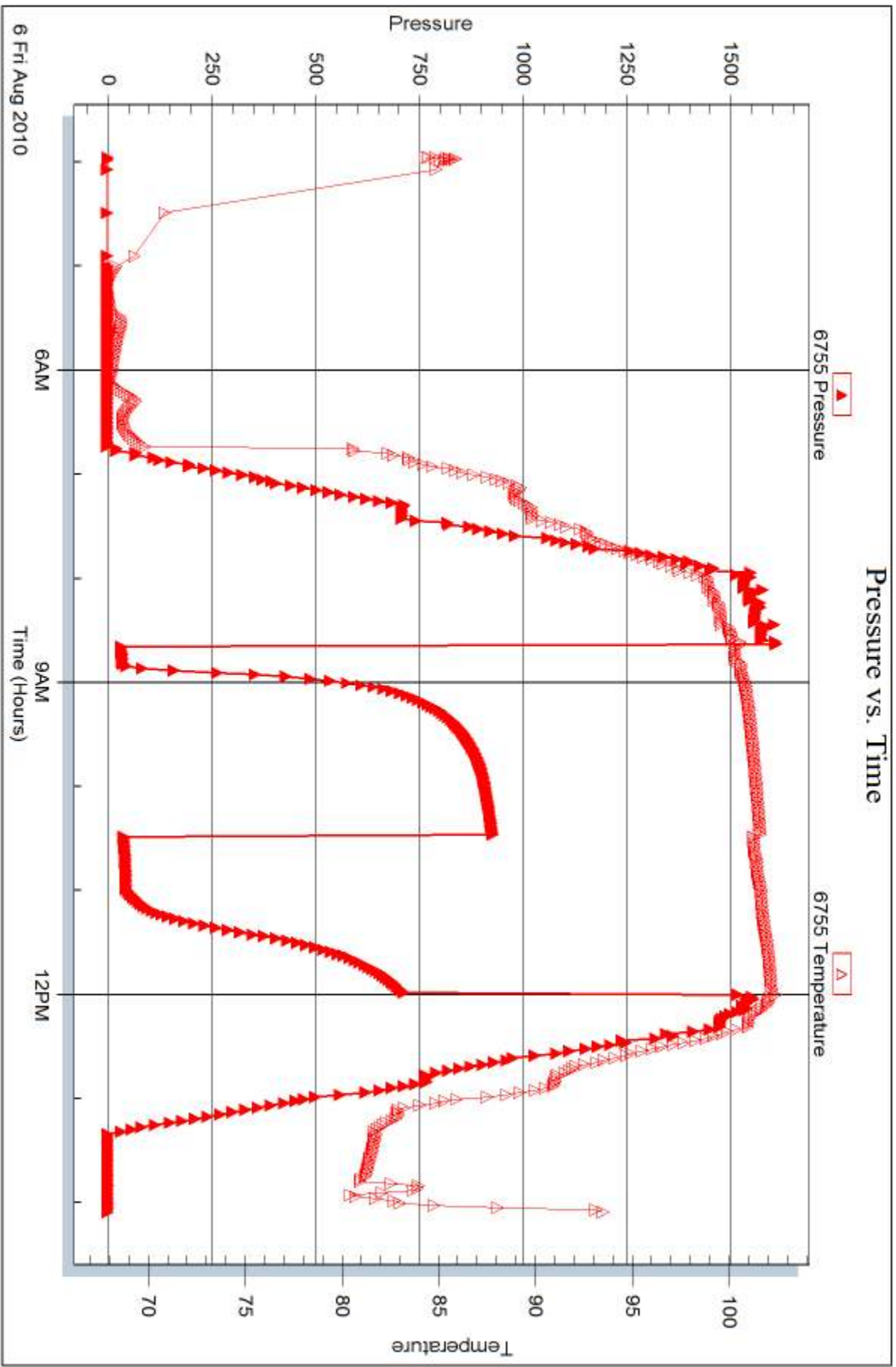
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Liberty Operating**

308 W. Mill
Plainville, Ks 67663

ATTN: Tony Richardson

23-9S-17W Rooks, KS

Muir #1

Start Date: 2010.08.07 @ 06:05:17

End Date: 2010.08.07 @ 15:29:47

Job Ticket #: 39028 DST #: 3

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

Printed: 2014.06.20 @ 09:49:15

Liberty Operating
Muir #1
23-9S-17W Rooks, KS
DST # 3
I-L
2010.08.07



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Liberty Operating

Muir #1

308 W. Mill
Plainville, Ks 67663

23-9S-17W Rooks, KS

Job Ticket: 39028

DST#: 3

ATTN: Tony Richardson

Test Start: 2010.08.07 @ 06:05:17

GENERAL INFORMATION:

Formation: **I-L**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 09:16:32
 Time Test Ended: 15:29:47
 Interval: **3410.00 ft (KB) To 3516.00 ft (KB) (TVD)**
 Total Depth: 3516.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Poor
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Dustin Rash
 Unit No: 32
 Reference Elevations: 2122.00 ft (KB)
 2114.00 ft (CF)
 KB to GR/CF: 8.00 ft

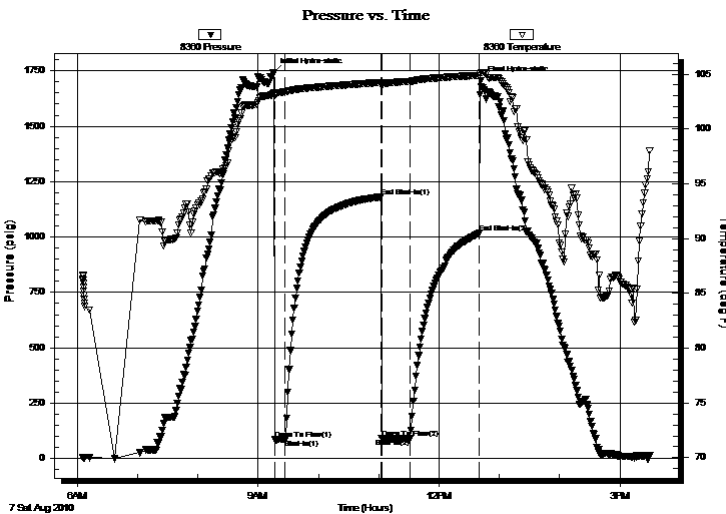
Serial #: 8360

Outside

Press@RunDepth: 91.90 psig @ 3506.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2010.08.07 End Date: 2010.08.07 Last Calib.: 2010.08.07
 Start Time: 06:05:19 End Time: 15:29:47 Time On Btm: 2010.08.07 @ 09:15:32
 Time Off Btm: 2010.08.07 @ 12:41:47

TEST COMMENT: IF-Weak surface blow . Built to 1/4 inch.
 IS-No return.
 FF-No blow .
 FS-No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1740.23	103.32	Initial Hydro-static
1	86.00	103.06	Open To Flow (1)
12	86.36	103.36	Shut-In(1)
107	1180.48	104.24	End Shut-In(1)
108	92.32	103.90	Open To Flow (2)
136	91.90	104.30	Shut-In(2)
205	1018.41	104.89	End Shut-In(2)
207	1706.78	105.14	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
40.00	100%Mud	0.27

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Liberty Operating

308 W. Mill
Plainville, Ks 67663

ATTN: Tony Richardson

Muir #1

23-9S-17W Rooks, KS

Job Ticket: 39028

DST#: 3

Test Start: 2010.08.07 @ 06:05:17

GENERAL INFORMATION:

Formation: **I-L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:16:32

Time Test Ended: 15:29:47

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 32

Interval: 3410.00 ft (KB) To 3516.00 ft (KB) (TVD)

Total Depth: 3516.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Poor

Reference Elevations: 2122.00 ft (KB)

2114.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 6755 Inside

Press@RunDepth: psig @ 3506.00 ft (KB)

Start Date: 2010.08.07

End Date: 2010.08.07

Start Time: 05:55:19

End Time: 15:29:47

Capacity: 8000.00 psig

Last Calib.: 2010.08.07

Time On Btm:

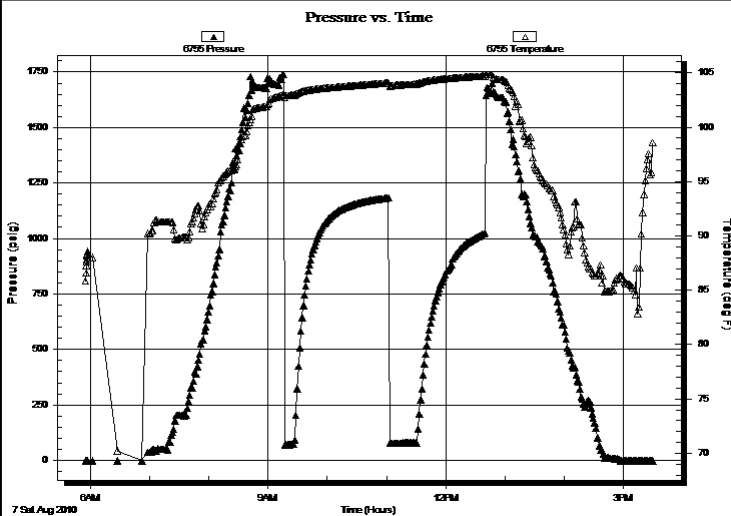
Time Off Btm:

TEST COMMENT: IF-Weak surface blow . Built to 1/4 inch.

ISI-No return.

FF-No blow .

FS-No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
40.00	100%Mud	0.27

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Liberty Operating

Muir #1

308 W. Mill
Plainville, Ks 67663

23-9S-17W Rooks, KS

Job Ticket: 39028

DST#: 3

ATTN: Tony Richardson

Test Start: 2010.08.07 @ 06:05:17

Tool Information

Drill Pipe:	Length: 3377.00 ft	Diameter: 3.80 inches	Volume: 47.37 bbl	Tool Weight:	3000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 32.00 ft	Diameter: 2.25 inches	Volume: 0.16 bbl	Weight to Pull Loose:	2000.00 lb
			<u>Total Volume: 47.53 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial	45000.00 lb
Depth to Top Packer:	3410.00 ft			Final	45000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	106.00 ft				
Tool Length:	127.00 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			3390.00	
Shut In Tool	5.00			3395.00	
Hydraulic tool	5.00			3400.00	
Packer	5.00			3405.00	21.00 Bottom Of Top Packer
Packer	5.00			3410.00	
Stubb	1.00			3411.00	
Change Over Sub	1.00			3412.00	
Drill Pipe	93.00			3505.00	
Change Over Sub	1.00			3506.00	
Recorder	0.00	6755	Inside	3506.00	
Recorder	0.00	8360	Outside	3506.00	
Perforations	7.00			3513.00	
Bullnose	3.00			3516.00	106.00 Bottom Packers & Anchor

Total Tool Length: 127.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Liberty Operating

Muir #1

308 W. Mill
Plainville, Ks 67663

23-9S-17W Rooks, KS

Job Ticket: 39028

DST#: 3

ATTN: Tony Richardson

Test Start: 2010.08.07 @ 06:05:17

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: 47.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
40.00	100%Mud	0.270

Total Length: 40.00 ft Total Volume: 0.270 bbl

Num Fluid Samples: 0

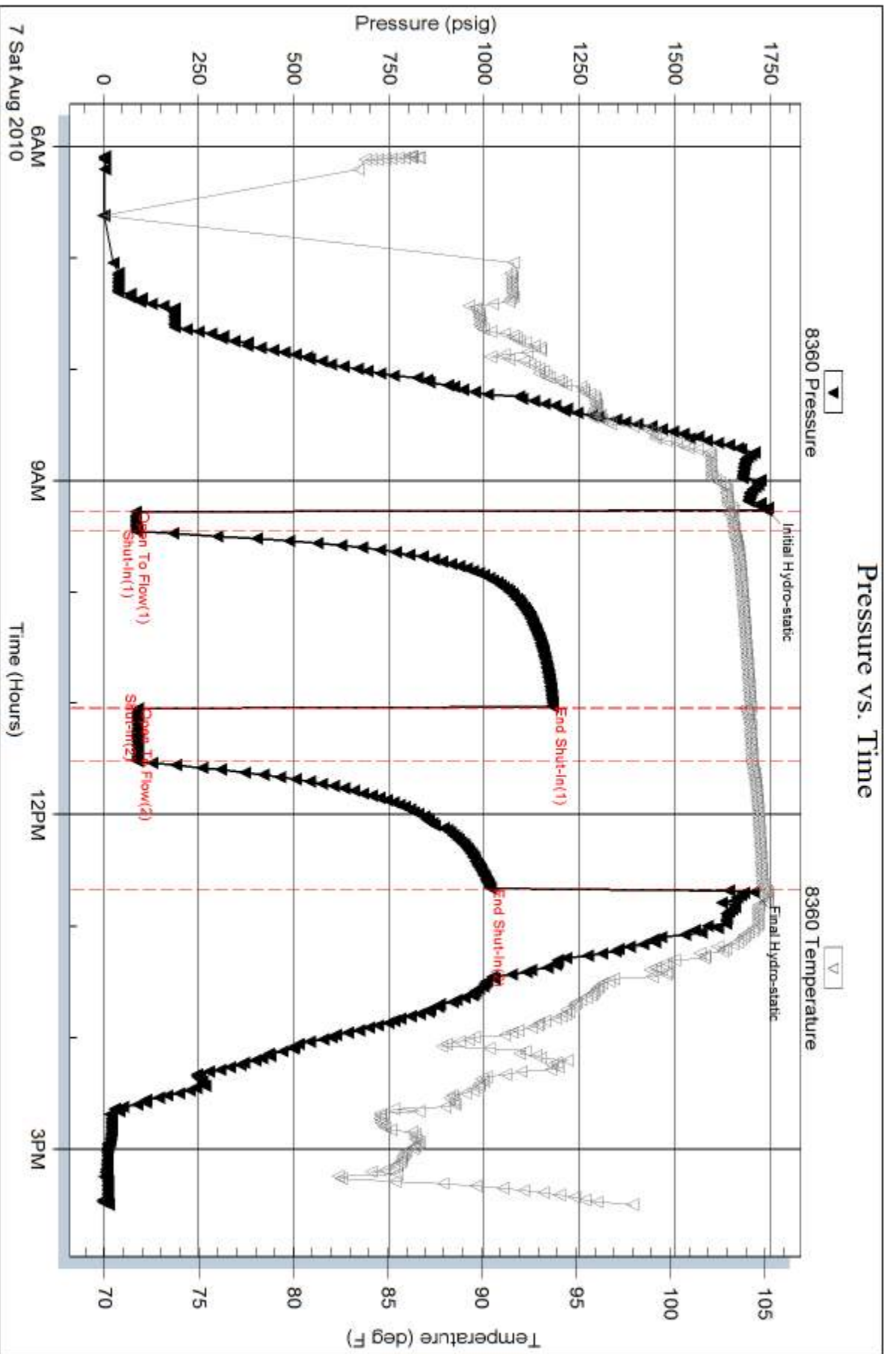
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



Serial #: 6755

Inside

Liberty Operating

23-9S-17W Roods, KS

DST Test Number: 3

