



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1227640
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: _____

1227640

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
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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	Larson Engineering, Inc. dba Larson Operating Company
Well Name	Judy Unit 1-32
Doc ID	1227640

Tops

Name	Top	Datum
Anhydrite	2054	+650
Base Anhydrite	2085	+619
Heebner	3930	-1226
Lansing	3971	-1267
Stark Sh	4236	-1532
Marmaton	4370	-1666
Pawnee	4429	-1725
Ft. Scott	4585	-1781
Cherokee Sh	4511	-1807

QUALITY WELL SERVICE, INC.

6196

Federal Tax I.D. # 481187368

Home Office 324 Simpson St., Pratt, KS 67124

Office 620-727-3410
Fax 620-672-3663

Rich's Cell 620-727-3409
Brady's Cell 620-727-6964

Date	08-09-14	Sec.	32	Twp.	18s	Range	27w	County	Lane	State	KS	On Location	5:00PM	Finish	6:45PM	
Lease	Judy Unit			Well No.	1-32			Location	Dighton KS, SE, 39, 3/4E, East & North to Rig							
Contractor	H4D							Owner	To Quality Well Service, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.							
Type Job	Surface							Charge To	Larson							
Hole Size	12 1/4			T.D.	264			Street								
Csg.	8 5/8			Depth	262'			City	State							
Tbg. Size				Depth				The above was done to satisfaction and supervision of owner agent or contractor.								
Tool				Depth				Cement Amount Ordered 165sx A + 2% gel + 3% cc								
Cement Left in Csg.	20'			Shoe Joint	N/A											
Meas Line				Displace	15 1/4 Bbls Fresh											
EQUIPMENT																
Pumptrk	8	No.	David F			Common			165							
Bulktrk	10	No.	Mike B			Poz. Mix										
Bulktrk		No.				Gel.			3							
Pickup		No.				Calcium			6							
JOB SERVICES & REMARKS																
Rat Hole								Hulls								
Mouse Hole								Salt								
Centralizers								Flowseal								
Baskets								Kol-Seal								
D/V or Port Collar								Mud CLR 48								
Pipe on Btm, Break Circ, Pump Spacer Mix 165sx A 243 cement, Start Disp. wash up truck, See Steady increase in PST, Slow Rate, Stop Pump at 15 1/4 Bbls total Disp, Shut in, Cement Did Circ.								CFL-117 or CD110 CAF 38								
								Sand								
								Handling	174							
								Mileage	35							
FLOAT EQUIPMENT																
								Guide Shoe								
								Centralizer								
								Baskets								
								AFU Inserts								
								Float Shoe								
								Latch Down								
								LMV	35							
								Service Supervisor								
								Pumptrk Charge	Surface							
								Mileage	35 x 2							
												Tax				
												Discount				
												Total Charge				
X Signature <i>Ed Wayne Thomas</i>																

QUALITY WELL SERVICE, INC.

6200

Federal Tax I.D. # 481187368

Home Office 324 Simpson St., Pratt, KS 67124

Office 620-727-3410
Fax 620-672-3663

Rich's Cell 620-727-3409
Brady's Cell 620-727-6964

Date	08-18-14	Sec.	38	Twp.	18s	Range	27w	County	Lone	State	KS	On Location	5:00pm	Finish	8:00 PM	
Lease	Judy Unit	Well No.	1-32			Location Dighton, KS, 8E, 3S, 3/4E, E & N/into										
Contractor	H-D							Owner	Larson							
Type Job	Rotary Plug TA							To Quality Well Service, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.								
Hole Size	7 7/8			T.D.	4643'											
Csg.								Depth	Charge To Larson							
Tbg. Size	4 1/2 Drill Pipe			Depth	2070'											
Tool								Depth	Street							
Cement Left in Csg.								Shoe Joint	City							
Meas Line								Displace	State							
							The above was done to satisfaction and supervision of owner agent or contractor.									
							Cement Amount Ordered 280 sx 60:40:4% gel + 1/4"									
EQUIPMENT																
Pumptrk	6	No.	Rich			Flowseal										
Bulktrk	10	No.	Derek B			Common 170										
Bulktrk		No.				Poz. Mix 110										
Pickup		No.	David F Dana H			Gel. 10										
							Calcium									
JOB SERVICES & REMARKS																
Rat Hole	30sx							Hulls								
Mouse Hole								Salt								
Centralizers								Flowseal 70								
Baskets								Kol-Seal								
D/V or Port Collar								Mud CLR 48								
Drill Pipe at 2070' Load hole, Pump Spacers,							CFL-117 or CD110 CAF 38									
Mix 50sx 60:40 cement, Disp. w/ 3 BBLs							Sand									
Fresh water & 20 BBLs Drilling Mud, Drill Pipe							Handling 290									
at 1230', load hole, Pump Fresh Spacers, Mix							Mileage 35									
80sx cement, Disp. w/ 3 BBLs & 9 BBLs, DP							FLOAT EQUIPMENT									
at 600', Pump Spacers, Mix 50sx, Disp. w/							Guide Shoe									
Swater, DP at 300' Pump 3 Ahead, mix 50							Centralizer									
Disp. w/ 1 BBL water, DP at 60', mix 20sx							Baskets									
Plug in the end 30sx cement Did Csc.							AFU Inserts									
							Float Shoe									
							Latch Down									
							Service Supervisor									
							LMD 35									
							Pumptrk Charge Rotary Plug									
							Mileage 35 x 2									
												Tax				
												Discount				
												Total Charge				
Signature <i>Chuck Jones</i>																



DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

Judy Unit #1-32

32-18s-27w Lane,KS

Start Date: 2014.08.13 @ 02:08:00

End Date: 2014.08.13 @ 06:46:30

Job Ticket #: 56589 DST #: 1

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

Printed: 2014.08.20 @ 13:30:57



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering, Inc.
 562 West State Road 4
 Olmitz, KS 67564
 ATTN: Vern Schrag

32-18s-27w Lane, KS

Judy Unit #1-32

Job Ticket: 56589 **DST#: 1**
 Test Start: 2014.08.13 @ 02:08:00

GENERAL INFORMATION:

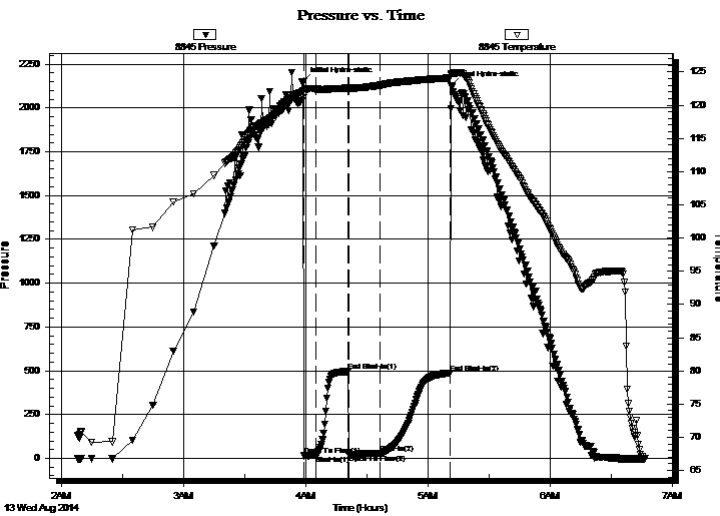
Formation: " K "
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 03:59:00 Tester: Samuel Esparza
 Time Test Ended: 06:46:30 Unit No: 72
 Interval: **4236.00 ft (KB) To 4250.00 ft (KB) (TVD)** Reference Elevations: 2704.00 ft (KB)
 Total Depth: 4250.00 ft (KB) (TVD) 2697.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 7.00 ft

Serial #: 8845

Outside

Press@RunDepth: 28.08 psig @ 4237.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.08.13 End Date: 2014.08.13 Last Calib.: 2014.08.13
 Start Time: 02:08:05 End Time: 06:46:29 Time On Btm: 2014.08.13 @ 03:58:45
 Time Off Btm: 2014.08.13 @ 05:11:30

TEST COMMENT: IF: Weak Surface Blow .
 IS: No Return.
 FF: 1/4" Blow .
 FS: No Return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2147.78	122.11	Initial Hydro-static
1	15.00	121.17	Open To Flow (1)
6	19.08	122.44	Shut-In(1)
22	495.96	122.57	End Shut-In(1)
23	23.18	122.32	Open To Flow (2)
38	28.08	122.97	Shut-In(2)
72	486.93	124.10	End Shut-In(2)
73	2126.82	124.69	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud 100m (Oil Spots)	0.05

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

32-18s-27w Lane,KS

562 West State Road 4
Olmitz, KS 67564

Judy Unit #1-32

Job Ticket: 56589

DST#: 1

ATTN: Vern Schrag

Test Start: 2014.08.13 @ 02:08:00

Tool Information

Drill Pipe:	Length: 4109.00 ft	Diameter: 3.80 inches	Volume: 57.64 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 58.25 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4236.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	14.00 ft			
Tool Length:	42.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Change Over Sub	1.00			4209.00	
Shut In Tool	5.00			4214.00	
Hydraulic tool	5.00			4219.00	
Jars	5.00			4224.00	
Safety Joint	3.00			4227.00	
Packer	5.00			4232.00	28.00 Bottom Of Top Packer
Packer	4.00			4236.00	
Stubb	1.00			4237.00	
Recorder	0.00	6772	Outside	4237.00	
Recorder	0.00	8845	Outside	4237.00	
Perforations	8.00			4245.00	
Bullnose	5.00			4250.00	14.00 Bottom Packers & Anchor

Total Tool Length: 42.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

32-18s-27w Lane,KS

562 West State Road 4
Olmitz, KS 67564

Judy Unit #1-32

Job Ticket: 56589

DST#: 1

ATTN: Vern Schrag

Test Start: 2014.08.13 @ 02:08:00

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: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.94 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Mud 100m (Oil Spots)	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

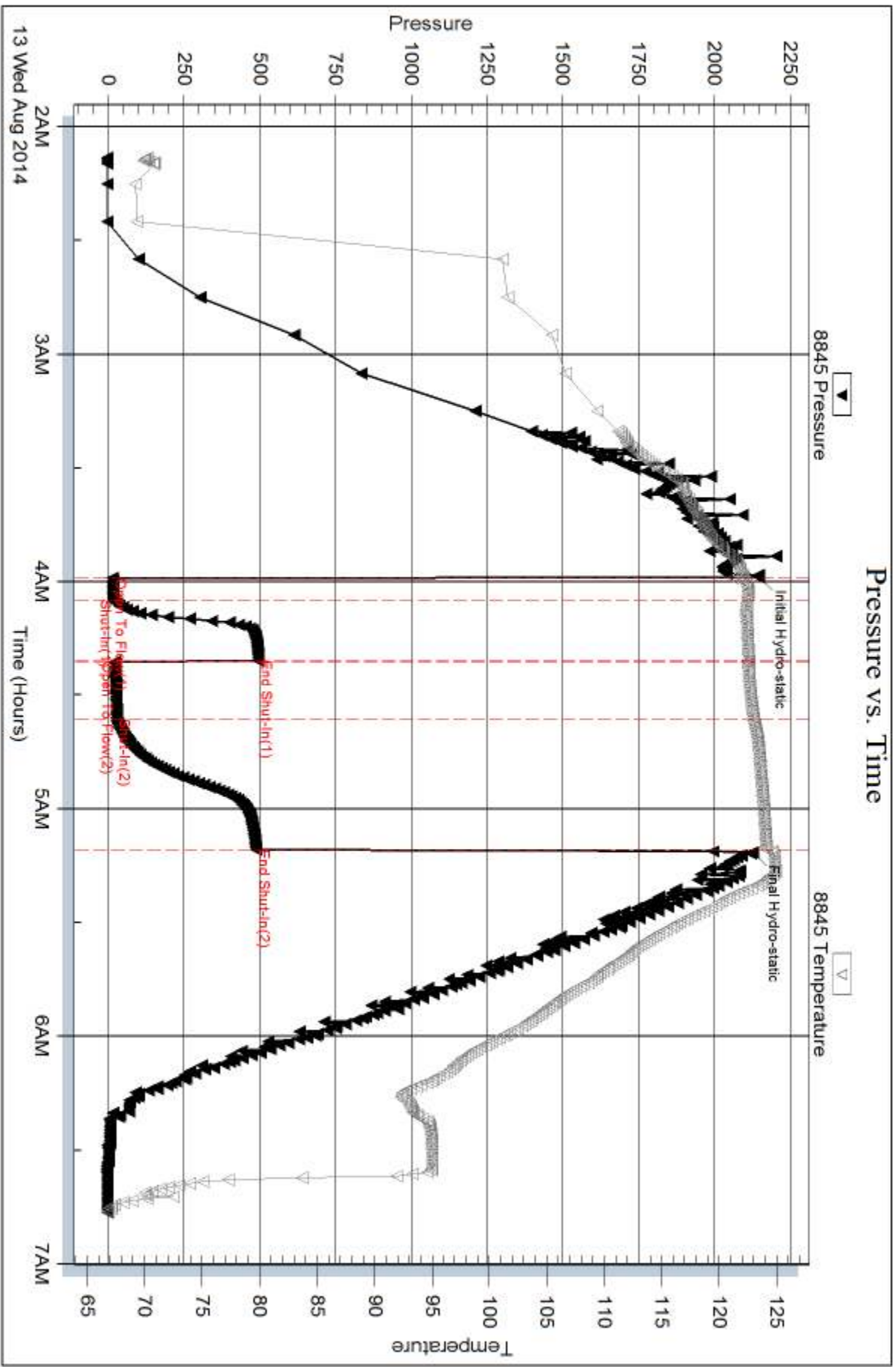
Num Gas Bombs: 0

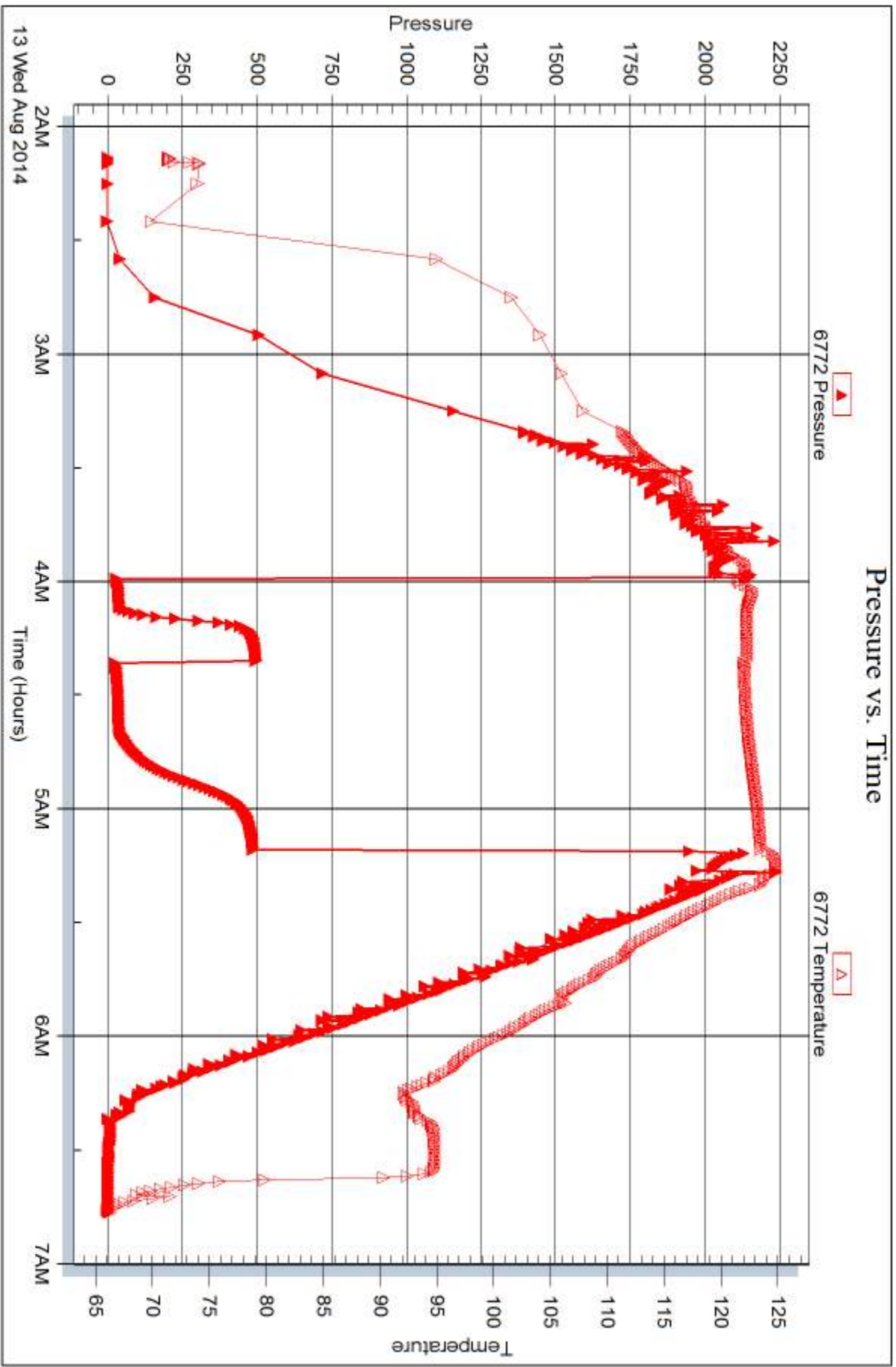
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

Judy Unit #1-32

32-18s-27w Lane,KS

Start Date: 2014.08.13 @ 16:30:00

End Date: 2014.08.13 @ 21:33:15

Job Ticket #: 59590 DST #: 2

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

Printed: 2014.08.20 @ 13:30:26



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering, Inc.
 562 West State Road 4
 Olmitz, KS 67564
 ATTN: Vern Schrag

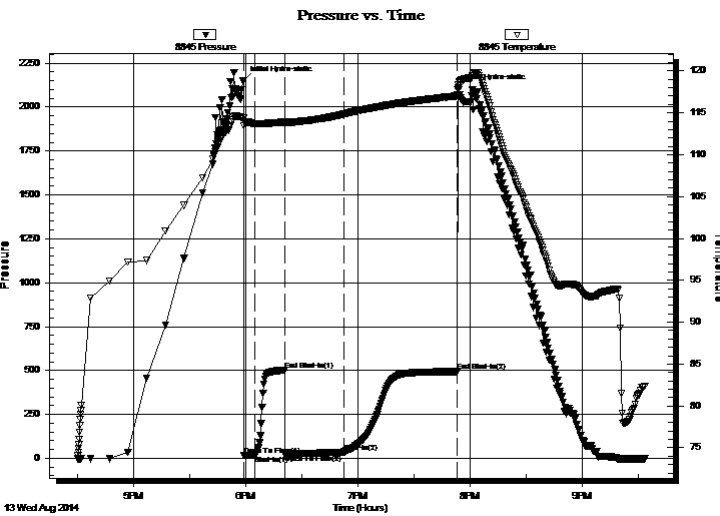
32-18s-27w Lane, KS
Judy Unit #1-32
 Job Ticket: 59590 **DST#: 2**
 Test Start: 2014.08.13 @ 16:30:00

GENERAL INFORMATION:

Formation: " K "
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 17:59:00
 Time Test Ended: 21:33:15
 Interval: **4234.00 ft (KB) To 4253.00 ft (KB) (TVD)**
 Total Depth: 4253.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Samuel Esparza
 Unit No: 72
 Reference Elevations: 2704.00 ft (KB)
 2697.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8845 Outside
 Press@RunDepth: 35.70 psig @ 4235.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.08.13 End Date: 2014.08.13 Last Calib.: 2014.08.13
 Start Time: 16:30:05 End Time: 21:33:14 Time On Btm: 2014.08.13 @ 17:58:45
 Time Off Btm: 2014.08.13 @ 19:53:30

TEST COMMENT: IF: 1/2" Blow .
 IS: No Return.
 FF: 1" Blow .
 FS: No Return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2151.20	114.38	Initial Hydro-static
1	16.79	113.48	Open To Flow (1)
6	18.17	113.72	Shut-In(1)
22	501.95	113.91	End Shut-In(1)
23	21.86	113.70	Open To Flow (2)
54	35.70	114.84	Shut-In(2)
115	493.98	117.03	End Shut-In(2)
115	2107.69	117.75	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	OCM 15o 85m	0.07

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

32-18s-27w Lane, KS

562 West State Road 4
Olmitz, KS 67564

Judy Unit #1-32

Job Ticket: 59590

DST#: 2

ATTN: Vern Schrag

Test Start: 2014.08.13 @ 16:30:00

Tool Information

Drill Pipe:	Length: 4109.00 ft	Diameter: 3.80 inches	Volume: 57.64 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 85000.00 lb
			<u>Total Volume: 58.25 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4234.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	19.00 ft			
Tool Length:	47.00 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			4207.00	
Shut In Tool	5.00			4212.00	
Hydraulic tool	5.00			4217.00	
Jars	5.00			4222.00	
Safety Joint	3.00			4225.00	
Packer	5.00			4230.00	28.00 Bottom Of Top Packer
Packer	4.00			4234.00	
Stubb	1.00			4235.00	
Recorder	0.00	6772	Outside	4235.00	
Recorder	0.00	8845	Outside	4235.00	
Perforations	13.00			4248.00	
Bullnose	5.00			4253.00	19.00 Bottom Packers & Anchor

Total Tool Length: 47.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

32-18s-27w Lane,KS

562 West State Road 4
Olmitz, KS 67564

Judy Unit #1-32

Job Ticket: 59590

DST#: 2

ATTN: Vern Schrag

Test Start: 2014.08.13 @ 16:30:00

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: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.93 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	OCM 15o 85m	0.074

Total Length: 15.00 ft Total Volume: 0.074 bbl

Num Fluid Samples: 0

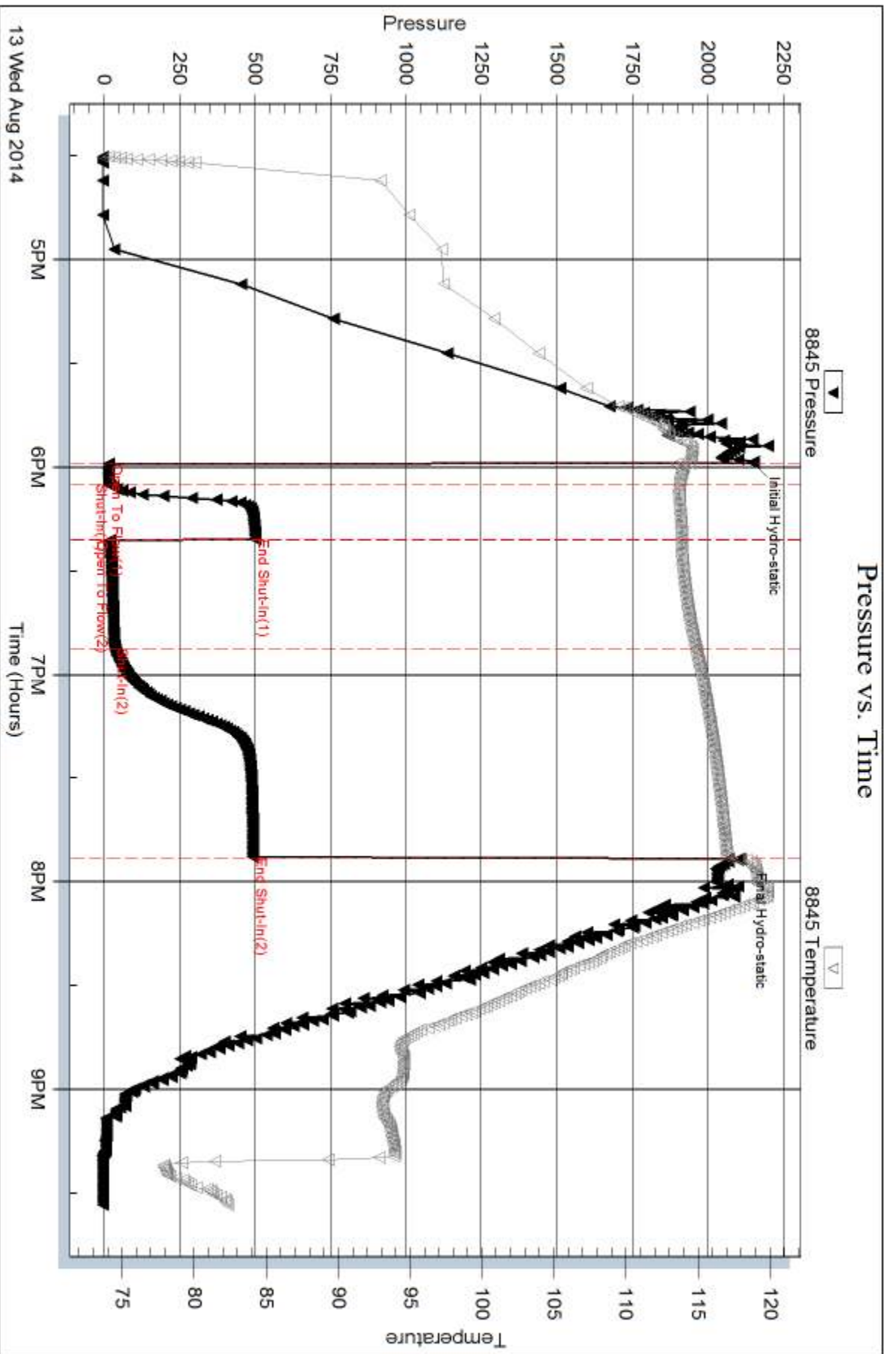
Num Gas Bombs: 0

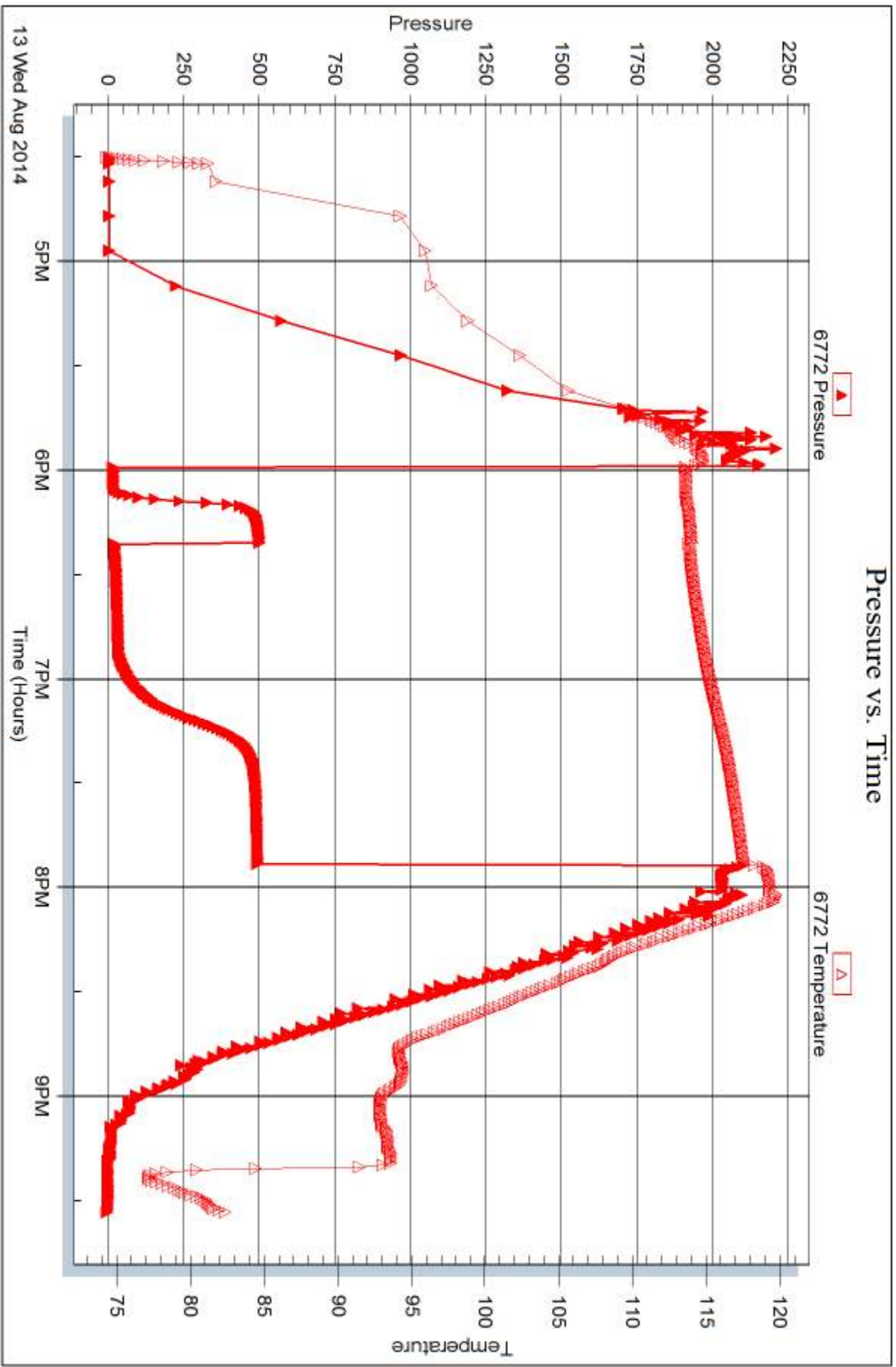
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

Judy Unit #1-32

32-18s-27w Lane,KS

Start Date: 2014.08.14 @ 02:36:00

End Date: 2014.08.14 @ 08:50:45

Job Ticket #: 59591 DST #: 3

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

Printed: 2014.08.20 @ 13:29:54



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering, Inc.
 562 West State Road 4
 Olmitz, KS 67564
 ATTN: Vern Schrag

32-18s-27w Lane, KS

Judy Unit #1-32

Job Ticket: 59591

DST#: 3

Test Start: 2014.08.14 @ 02:36:00

GENERAL INFORMATION:

Formation: " K "
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:33:45
 Time Test Ended: 08:50:45
 Interval: **4232.00 ft (KB) To 4258.00 ft (KB) (TVD)**
 Total Depth: 4258.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Samuel Esparza
 Unit No: 72
 Reference Elevations: 2704.00 ft (KB)
 2697.00 ft (CF)
 KB to GR/CF: 7.00 ft

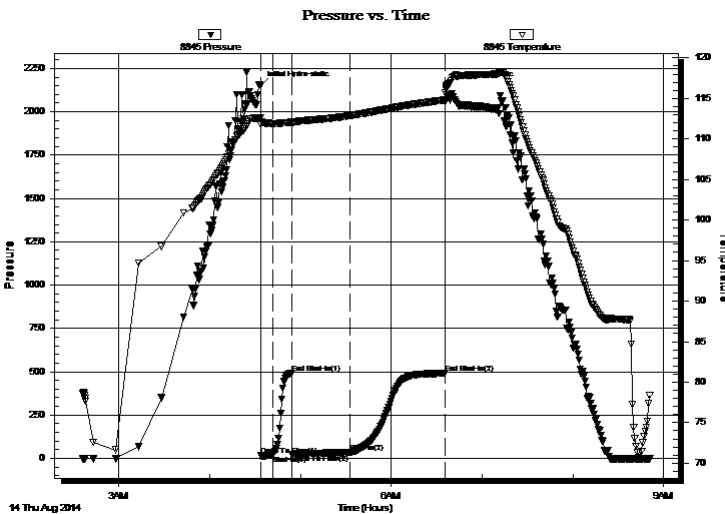
Serial #: 8845

Outside

Press@RunDepth: 35.23 psig @ 4233.00 ft (KB)
 Start Date: 2014.08.14 End Date: 2014.08.14
 Start Time: 02:36:05 End Time: 08:50:44
 Capacity: 8000.00 psig
 Last Calib.: 2014.08.14
 Time On Btm: 2014.08.14 @ 04:33:30
 Time Off Btm: 2014.08.14 @ 06:36:15

TEST COMMENT: IF: 1/4" Blow .
 IS: No Return.
 FF: 1 1/4" Blow .
 FS: No Return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2150.95	112.59	Initial Hydro-static
1	14.96	111.79	Open To Flow (1)
8	18.21	111.91	Shut-In(1)
21	492.44	112.05	End Shut-In(1)
21	22.02	111.88	Open To Flow (2)
60	35.23	112.87	Shut-In(2)
122	490.28	114.80	End Shut-In(2)
123	2149.54	116.01	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	OCM 15o 85m	0.07

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

32-18s-27w Lane, KS

562 West State Road 4
Olmitz, KS 67564

Judy Unit #1-32

Job Ticket: 59591

DST#: 3

ATTN: Vern Schrag

Test Start: 2014.08.14 @ 02:36:00

Tool Information

Drill Pipe:	Length: 4110.00 ft	Diameter: 3.80 inches	Volume: 57.65 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 58.26 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4232.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	26.00 ft			
Tool Length:	54.00 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			4205.00	
Shut In Tool	5.00			4210.00	
Hydraulic tool	5.00			4215.00	
Jars	5.00			4220.00	
Safety Joint	3.00			4223.00	
Packer	5.00			4228.00	28.00 Bottom Of Top Packer
Packer	4.00			4232.00	
Stubb	1.00			4233.00	
Recorder	0.00	6772	Outside	4233.00	
Recorder	0.00	8845	Outside	4233.00	
Perforations	20.00			4253.00	
Bullnose	5.00			4258.00	26.00 Bottom Packers & Anchor

Total Tool Length: 54.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

32-18s-27w Lane, KS

562 West State Road 4
Olmitz, KS 67564

Judy Unit #1-32

Job Ticket: 59591

DST#: 3

ATTN: Vern Schrag

Test Start: 2014.08.14 @ 02:36:00

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: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.94 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	OCM 15o 85m	0.074

Total Length: 15.00 ft Total Volume: 0.074 bbl

Num Fluid Samples: 0

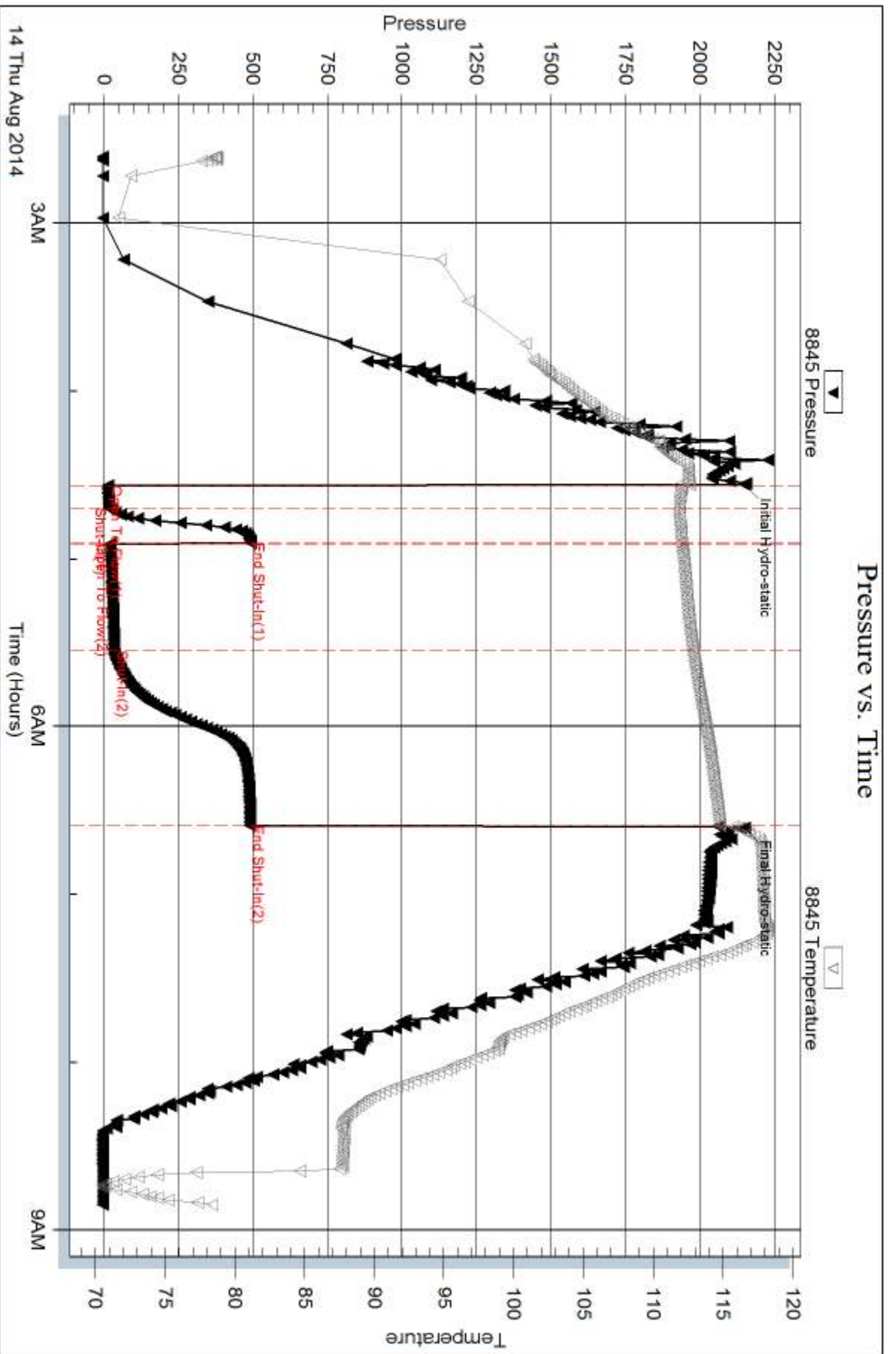
Num Gas Bombs: 0

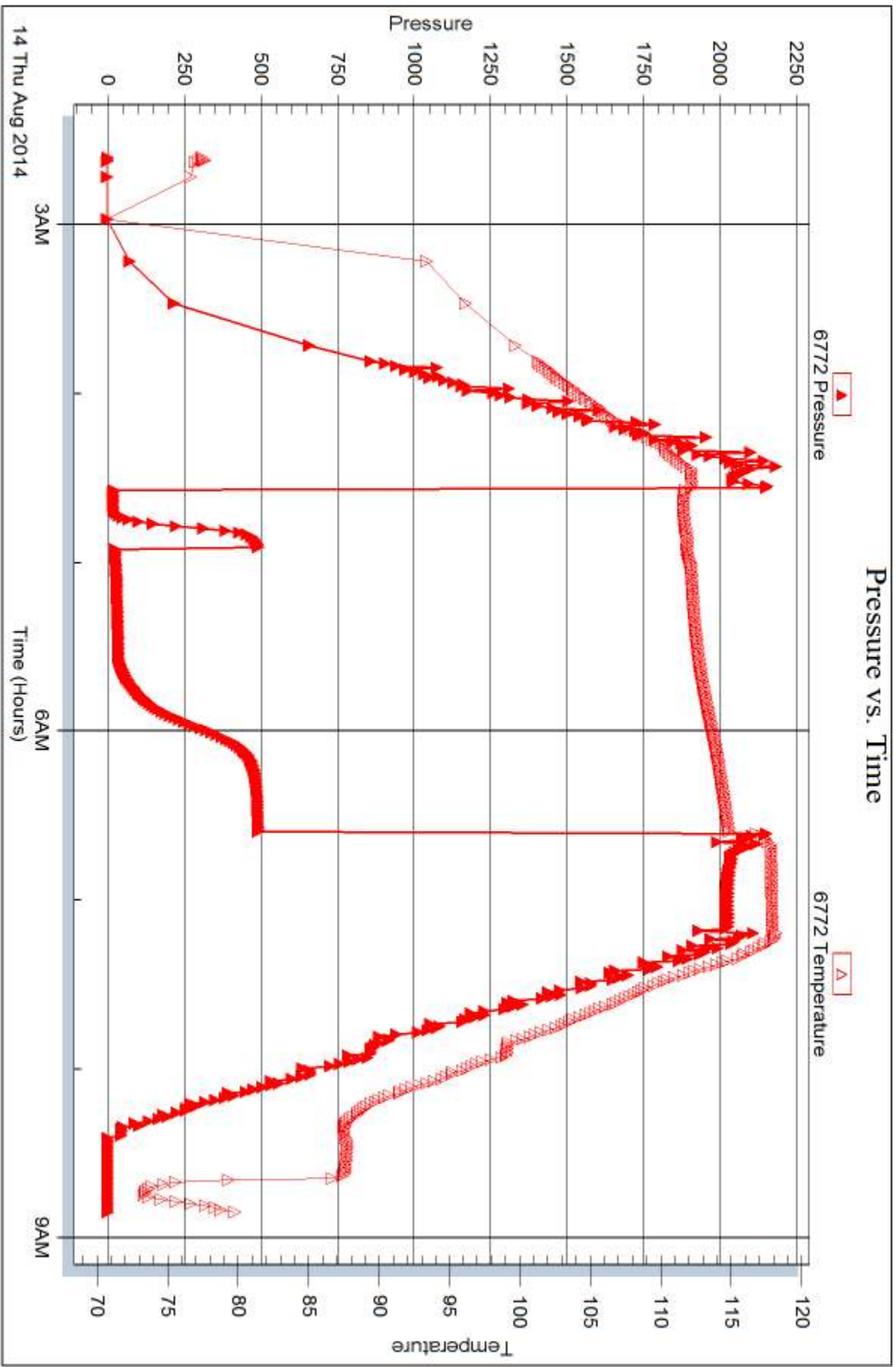
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

Judy Unit #1-32

32-18s-27w Lane,KS

Start Date: 2014.08.15 @ 00:42:00

End Date: 2014.08.15 @ 06:14:30

Job Ticket #: 56592 DST #: 4

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

Printed: 2014.08.20 @ 13:29:17



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering, Inc.
562 West State Road 4
Olmitz, KS 67564
ATTN: Vern Schrag

32-18s-27w Lane, KS

Judy Unit #1-32

Job Ticket: 56592

DST#: 4

Test Start: 2014.08.15 @ 00:42:00

GENERAL INFORMATION:

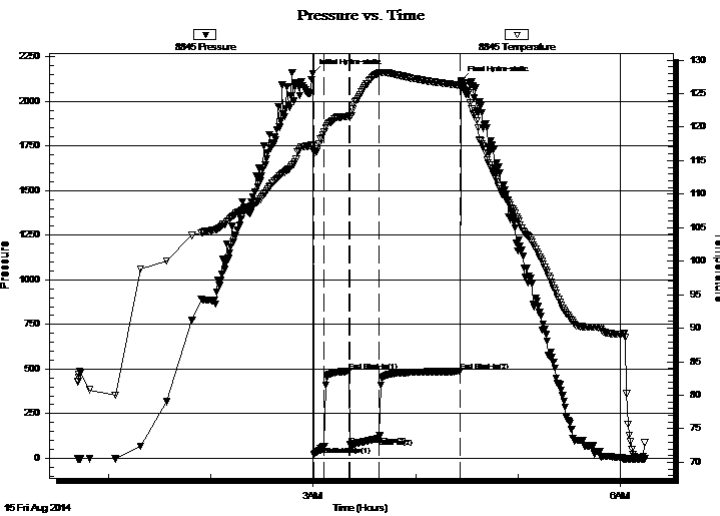
Formation: " L "
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 03:00:15
 Time Test Ended: 06:14:30
 Interval: **4266.00 ft (KB) To 4290.00 ft (KB) (TVD)**
 Total Depth: 4290.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Samuel Esparza
 Unit No: 72
 Reference Elevations: 2704.00 ft (KB)
 2697.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8845

Outside

Press@RunDepth: 111.75 psig @ 4267.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.08.15 End Date: 2014.08.15 Last Calib.: 2014.08.15
 Start Time: 00:42:05 End Time: 06:14:29 Time On Btm: 2014.08.15 @ 03:00:00
 Time Off Btm: 2014.08.15 @ 04:26:45

TEST COMMENT: IF: 3 1/2" Blow .
 IS: No Return.
 FF: 4 1/4" Blow .
 FS: No Return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2152.96	117.23	Initial Hydro-static
1	18.99	116.22	Open To Flow (1)
7	68.62	119.33	Shut-In(1)
21	487.46	121.60	End Shut-In(1)
22	75.15	121.48	Open To Flow (2)
39	111.75	128.07	Shut-In(2)
86	486.80	126.25	End Shut-In(2)
87	2116.12	126.58	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
210.00	MW 20m 80w	1.82

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

32-18s-27w Lane, KS

562 West State Road 4
Olmitz, KS 67564

Judy Unit #1-32

Job Ticket: 56592

DST#: 4

ATTN: Vern Schrag

Test Start: 2014.08.15 @ 00:42:00

Tool Information

Drill Pipe:	Length: 4144.00 ft	Diameter: 3.80 inches	Volume: 58.13 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 58.74 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4266.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	24.00 ft			
Tool Length:	52.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4239.00	
Shut In Tool	5.00			4244.00	
Hydraulic tool	5.00			4249.00	
Jars	5.00			4254.00	
Safety Joint	3.00			4257.00	
Packer	5.00			4262.00	28.00 Bottom Of Top Packer
Packer	4.00			4266.00	
Stubb	1.00			4267.00	
Recorder	0.00	6772	Outside	4267.00	
Recorder	0.00	8845	Outside	4267.00	
Perforations	18.00			4285.00	
Bullnose	5.00			4290.00	24.00 Bottom Packers & Anchor

Total Tool Length: 52.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

32-18s-27w Lane, KS

562 West State Road 4
Olmitz, KS 67564

Judy Unit #1-32

Job Ticket: 56592

DST#: 4

ATTN: Vern Schrag

Test Start: 2014.08.15 @ 00:42:00

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:

65000 ppm

Viscosity: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.75 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3500.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
210.00	MW 20m 80w	1.816

Total Length: 210.00 ft Total Volume: 1.816 bbl

Num Fluid Samples: 0

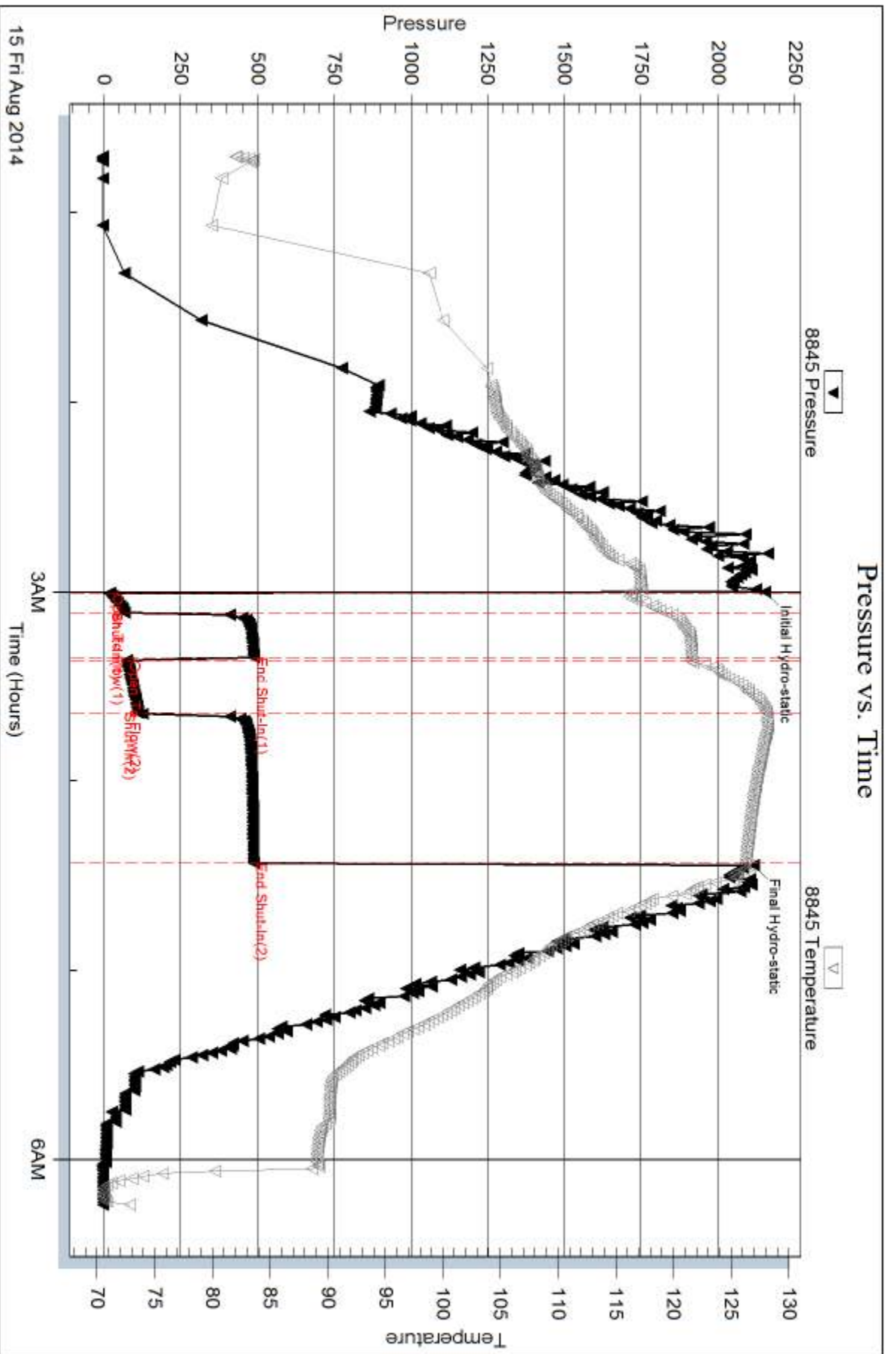
Num Gas Bombs: 0

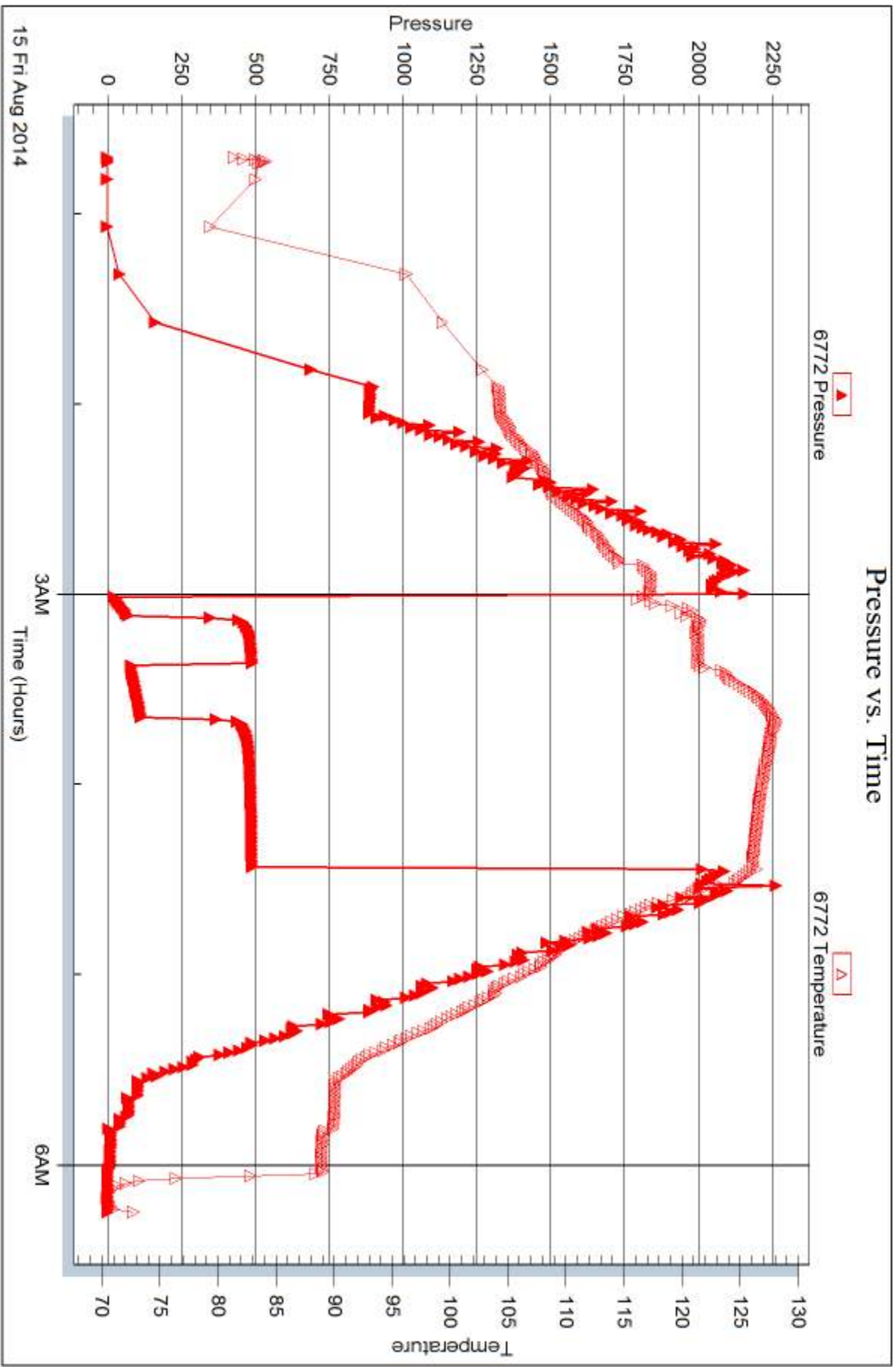
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Water Salinity: .118 @ 70 degrees= 65,000 ppm







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

Judy Unit #1-32

32-18s-27w Lane,KS

Start Date: 2014.08.15 @ 21:08:00

End Date: 2014.08.16 @ 01:14:30

Job Ticket #: 59593 DST #: 5

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

Printed: 2014.08.20 @ 13:28:42



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering, Inc.
 562 West State Road 4
 Olmitz, KS 67564
 ATTN: Vern Schrag

32-18s-27w Lane, KS

Judy Unit #1-32

Job Ticket: 59593

DST#: 5

Test Start: 2014.08.15 @ 21:08:00

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:31:45

Time Test Ended: 01:14:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Samuel Esparza

Unit No: 72

Interval: 4311.00 ft (KB) To 4410.00 ft (KB) (TVD)

Reference Elevations: 2704.00 ft (KB)

Total Depth: 4410.00 ft (KB) (TVD)

2697.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8845

Inside

Press@RunDepth: 24.85 psig @ 4312.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.15

End Date:

2014.08.16

Last Calib.:

2014.08.16

Start Time: 21:08:05

End Time:

01:14:30

Time On Btm:

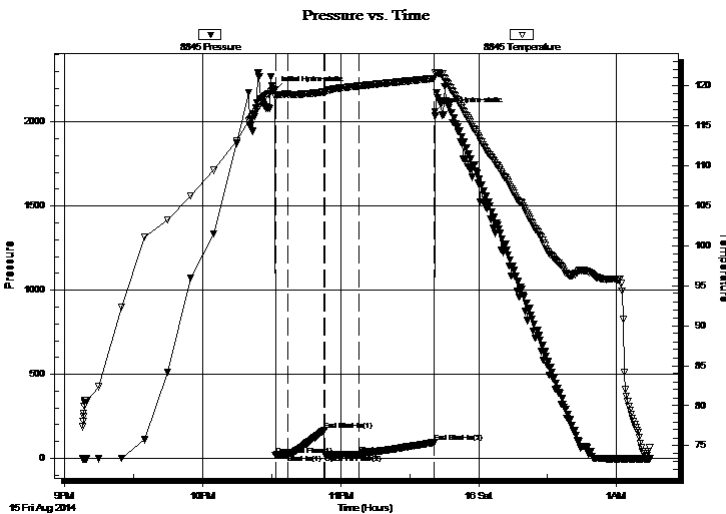
2014.08.15 @ 22:31:30

Time Off Btm:

2014.08.15 @ 23:41:00

TEST COMMENT: IF: 1/4" Blow .
 IS: No Return.
 FF: No Blow .
 FS: No Return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2188.67	119.39	Initial Hydro-static
1	18.89	118.51	Open To Flow (1)
6	21.67	118.89	Shut-In(1)
22	167.53	119.14	End Shut-In(1)
22	22.69	119.08	Open To Flow (2)
37	24.85	119.90	Shut-In(2)
69	94.91	120.84	End Shut-In(2)
70	2061.92	121.60	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud 100m	0.05

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

32-18s-27w Lane, KS

562 West State Road 4
Olmitz, KS 67564

Judy Unit #1-32

Job Ticket: 59593

DST#: 5

ATTN: Vern Schrag

Test Start: 2014.08.15 @ 21:08:00

Tool Information

Drill Pipe:	Length: 4169.00 ft	Diameter: 3.80 inches	Volume: 58.48 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 59.09 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4311.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	99.00 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			4284.00	
Shut In Tool	5.00			4289.00	
Hydraulic tool	5.00			4294.00	
Jars	5.00			4299.00	
Safety Joint	3.00			4302.00	
Packer	5.00			4307.00	28.00 Bottom Of Top Packer
Packer	4.00			4311.00	
Stubb	1.00			4312.00	
Recorder	0.00	6772	Outside	4312.00	
Recorder	0.00	8845	Inside	4312.00	
Perforations	28.00			4340.00	
Change Over Sub	1.00			4341.00	
Drill Pipe	63.00			4404.00	
Change Over Sub	1.00			4405.00	
Bullnose	5.00			4410.00	99.00 Bottom Packers & Anchor

Total Tool Length: 127.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

32-18s-27w Lane, KS

562 West State Road 4
Olmitz, KS 67564

Judy Unit #1-32

Job Ticket: 59593

DST#: 5

ATTN: Vern Schrag

Test Start: 2014.08.15 @ 21:08:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.35 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3700.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Mud 100m	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

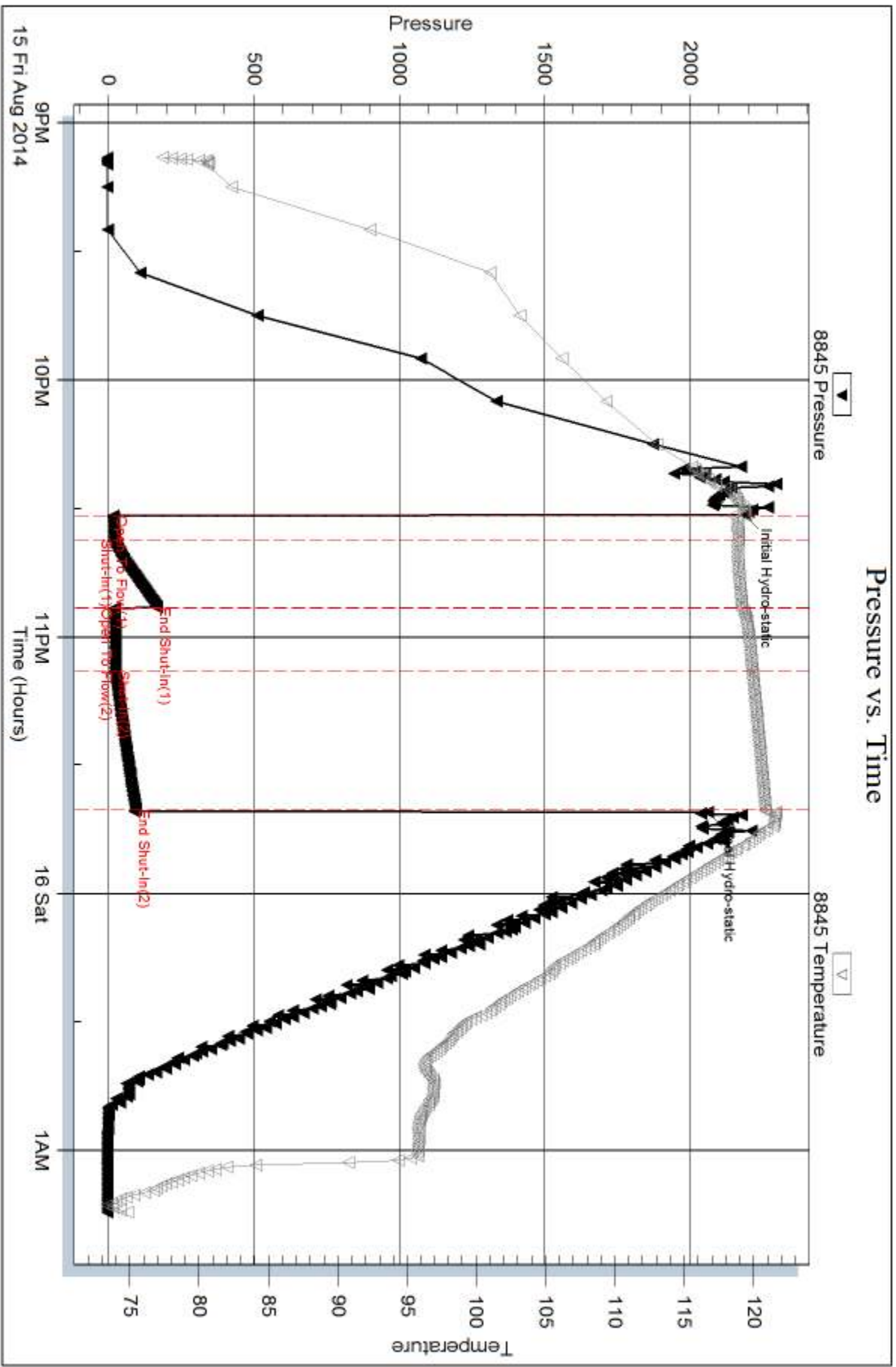
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

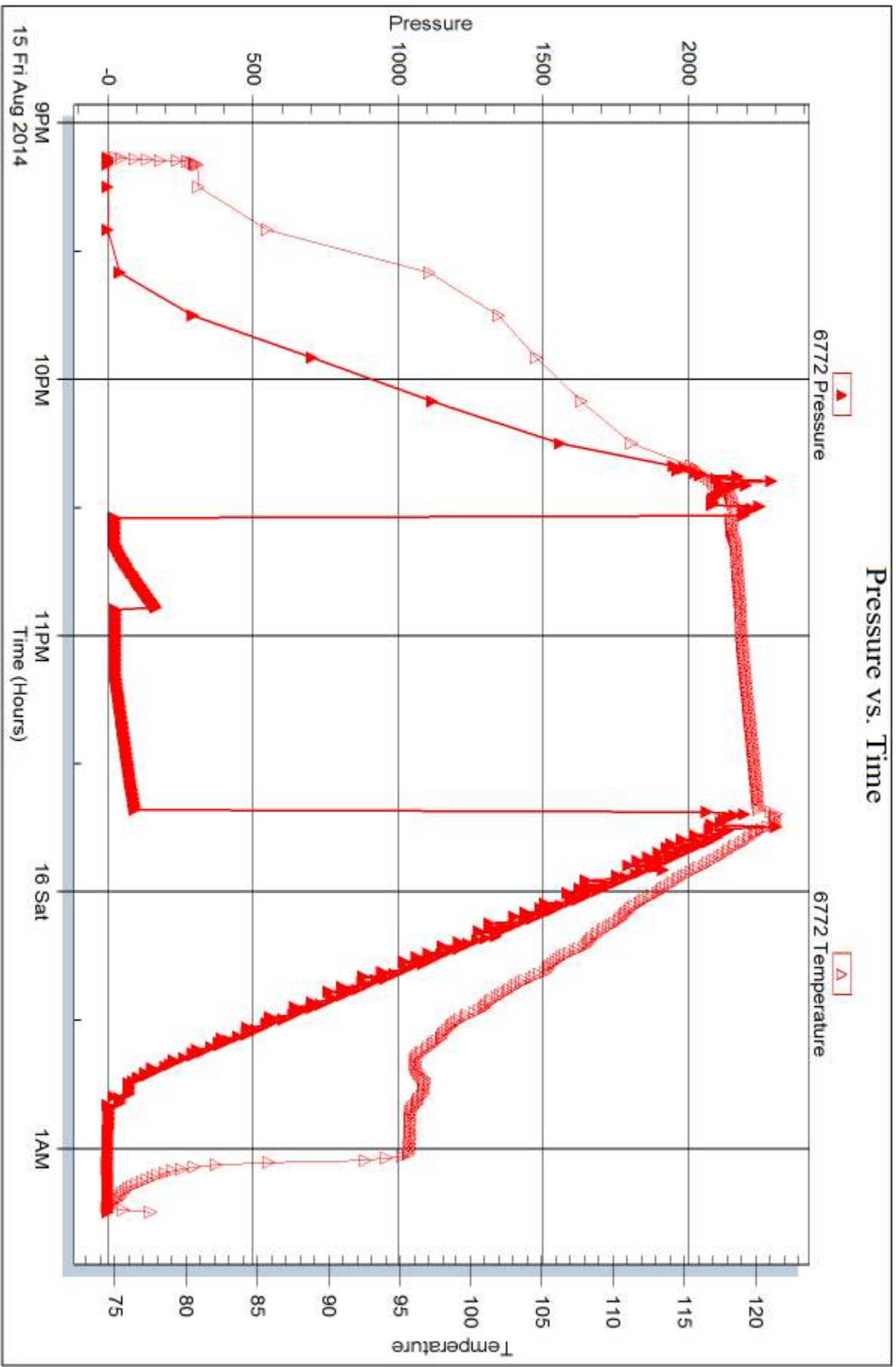


Serial #: 6772

Outside Larson Engineering, Inc.

Judy Unit #1-32

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 59593

Printed: 2014.08.20 @ 13:28:44



DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

Judy Unit #1-32

32-18s-27w Lane,KS

Start Date: 2014.08.16 @ 21:28:00

End Date: 2014.08.17 @ 01:36:30

Job Ticket #: 59594 DST #: 6

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

Printed: 2014.08.20 @ 13:27:51



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering, Inc.
 562 West State Road 4
 Olmitz, KS 67564
 ATTN: Vern Schrag

32-18s-27w Lane, KS
Judy Unit #1-32
 Job Ticket: 59594 **DST#: 6**
 Test Start: 2014.08.16 @ 21:28:00

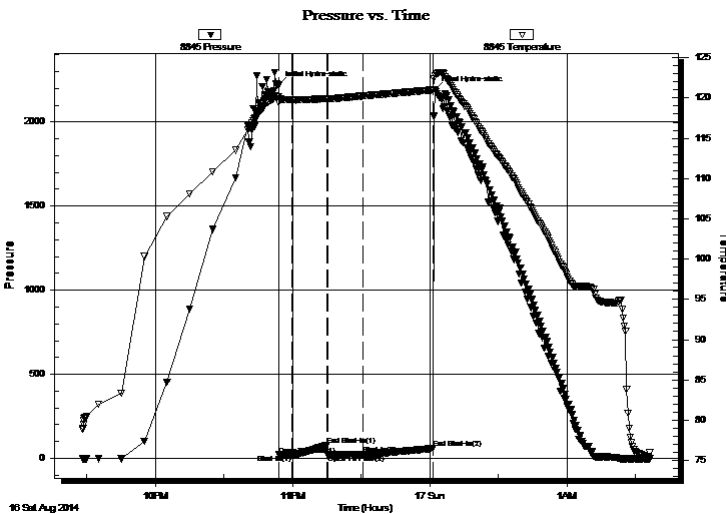
GENERAL INFORMATION:

Formation: **Cherokee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 22:54:00
 Time Test Ended: 01:36:30
 Interval: **4426.00 ft (KB) To 4570.00 ft (KB) (TVD)**
 Total Depth: 4570.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Samuel Esparza
 Unit No: 72
 Reference Elevations: 2704.00 ft (KB)
 2697.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8845 Inside
 Press@RunDepth: 23.11 psig @ 4427.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.08.16 End Date: 2014.08.17 Last Calib.: 2014.08.17
 Start Time: 21:28:05 End Time: 01:36:30 Time On Btm: 2014.08.16 @ 22:53:45
 Time Off Btm: 2014.08.17 @ 00:02:15

TEST COMMENT: IF: 1/4" Blow .
 IS: No Return.
 FF: No Blow .
 FS: No Return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2219.21	120.15	Initial Hydro-static
1	21.44	119.42	Open To Flow (1)
6	21.30	119.77	Shut-In(1)
22	78.27	119.94	End Shut-In(1)
22	21.43	119.91	Open To Flow (2)
37	23.11	120.26	Shut-In(2)
68	59.81	121.02	End Shut-In(2)
69	2189.28	122.71	Final Hydro-static

Recovery

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

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

32-18s-27w Lane, KS

562 West State Road 4
Olmitz, KS 67564

Judy Unit #1-32

Job Ticket: 59594

DST#: 6

ATTN: Vern Schrag

Test Start: 2014.08.16 @ 21:28:00

Tool Information

Drill Pipe:	Length: 4296.00 ft	Diameter: 3.80 inches	Volume: 60.26 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 95000.00 lb
			<u>Total Volume: 60.87 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4426.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	144.00 ft			
Tool Length:	172.00 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			4399.00	
Shut In Tool	5.00			4404.00	
Hydraulic tool	5.00			4409.00	
Jars	5.00			4414.00	
Safety Joint	3.00			4417.00	
Packer	5.00			4422.00	28.00 Bottom Of Top Packer
Packer	4.00			4426.00	
Stubb	1.00			4427.00	
Recorder	0.00	6772	Outside	4427.00	
Recorder	0.00	8845	Inside	4427.00	
Perforations	10.00			4437.00	
Change Over Sub	1.00			4438.00	
Drill Pipe	126.00			4564.00	
Change Over Sub	1.00			4565.00	
Bullnose	5.00			4570.00	144.00 Bottom Packers & Anchor

Total Tool Length: 172.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

32-18s-27w Lane, KS

562 West State Road 4
Olmitz, KS 67564

Judy Unit #1-32

Job Ticket: 59594

DST#: 6

ATTN: Vern Schrag

Test Start: 2014.08.16 @ 21:28:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.95 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud 100m	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

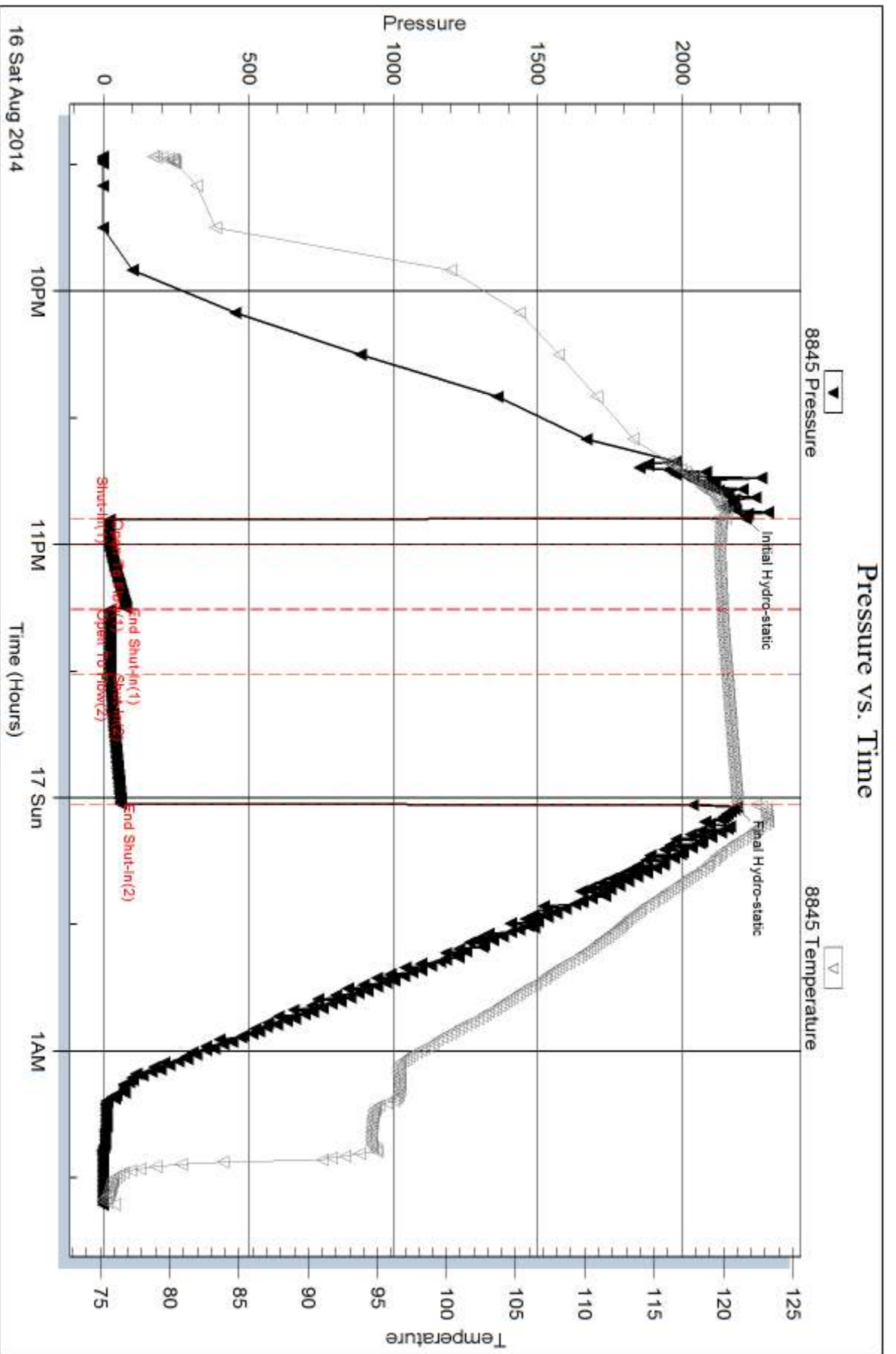
Num Gas Bombs: 0

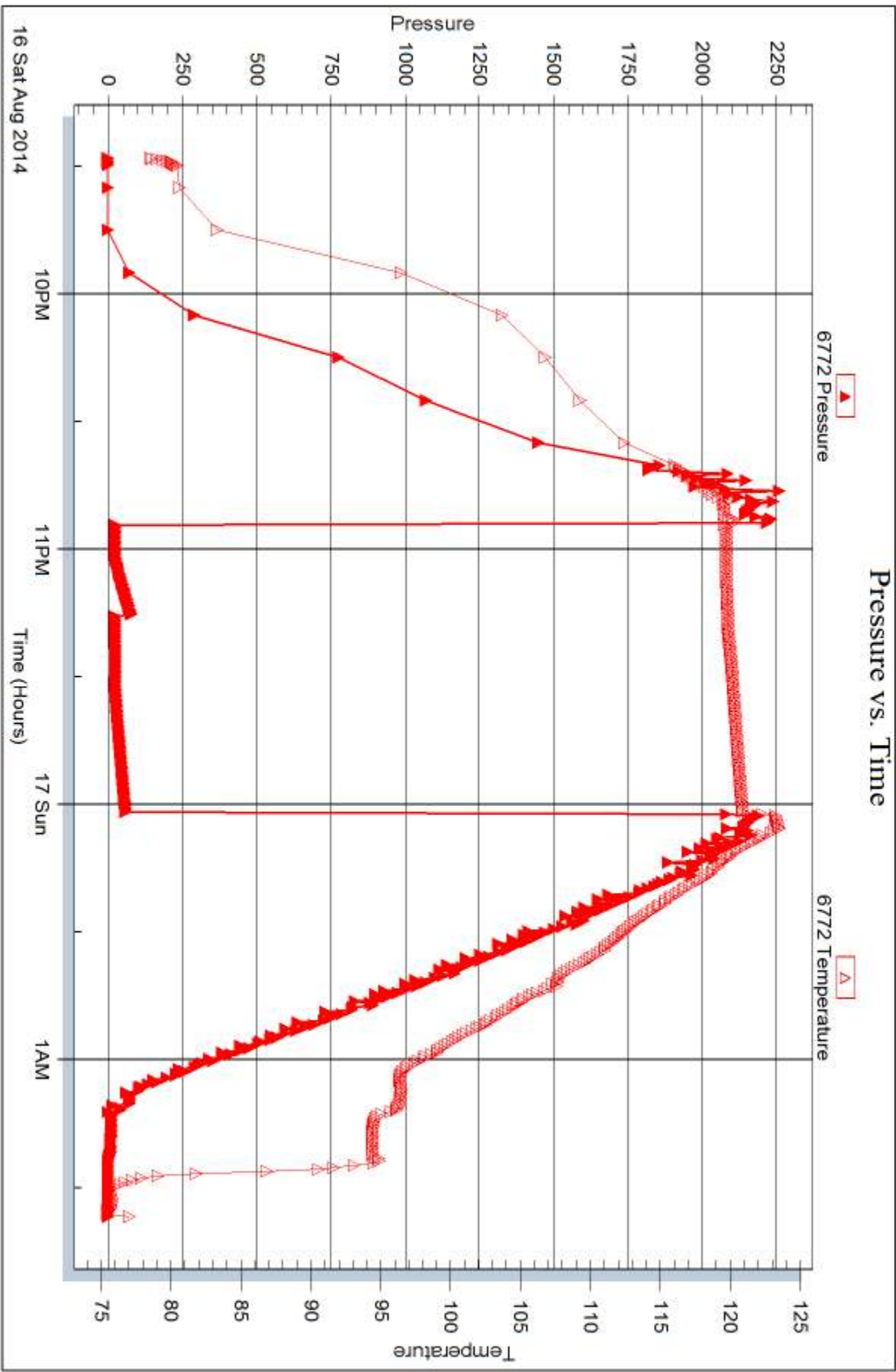
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

Judy Unit #1-32

32-18s-27w Lane,KS

Start Date: 2014.08.17 @ 09:12:00

End Date: 2014.08.17 @ 14:51:39

Job Ticket #: 57717 DST #: 7

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

Printed: 2014.08.20 @ 13:26:36



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering, Inc.
 562 West State Road 4
 Olmitz, KS 67564
 ATTN: Vern Schrag

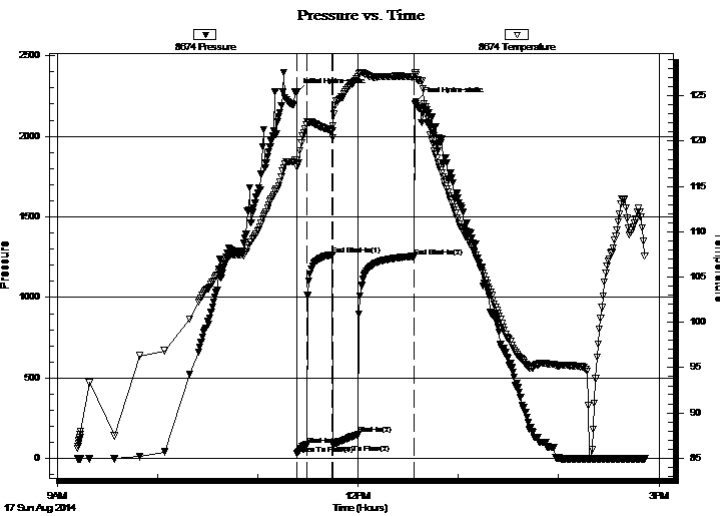
32-18s-27w Lane, KS
Judy Unit #1-32
 Job Ticket: 57717 **DST#: 7**
 Test Start: 2014.08.17 @ 09:12:00

GENERAL INFORMATION:

Formation: **Mississippi**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 11:23:10
 Time Test Ended: 14:51:39
 Interval: **4554.00 ft (KB) To 4612.00 ft (KB) (TVD)**
 Total Depth: 4612.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Will MacLean
 Unit No: 71
 Reference Elevations: 2704.00 ft (KB)
 2697.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8674 Inside
 Press@RunDepth: 149.48 psig @ 4555.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.08.17 End Date: 2014.08.17 Last Calib.: 2014.08.17
 Start Time: 09:12:00 End Time: 14:51:39 Time On Btm: 2014.08.17 @ 11:22:55
 Time Off Btm: 2014.08.17 @ 12:34:25

TEST COMMENT: IF- Weak Surface Blow Built to 5"
 IS- No Blow
 FF- Weak Surface Blow Built to 9 3/4"
 FS- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2273.31	117.91	Initial Hydro-static
1	30.20	117.12	Open To Flow (1)
6	86.03	121.78	Shut-In(1)
22	1264.75	121.17	End Shut-In(1)
22	88.82	121.74	Open To Flow (2)
37	149.48	127.09	Shut-In(2)
71	1254.89	127.12	End Shut-In(2)
72	2212.91	127.30	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	WOGCM 2%w 5%oil 7%g 86%m	0.61
62.00	WOGCM 3%w 5%oil 8%g 84%m	0.87
97.00	OCM 7%oil 93%m	1.36

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

32-18s-27w Lane,KS

562 West State Road 4
Olmitz, KS 67564

Judy Unit #1-32

Job Ticket: 57717

DST#: 7

ATTN: Vern Schrag

Test Start: 2014.08.17 @ 09:12:00

Tool Information

Drill Pipe:	Length: 4425.00 ft	Diameter: 3.80 inches	Volume: 62.07 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	8000.00 lb
			<u>Total Volume: 62.68 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial	66000.00 lb
Depth to Top Packer:	4554.00 ft			Final	66000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	58.00 ft				
Tool Length:	85.00 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			4528.00	
Shut In Tool	5.00			4533.00	
Hydraulic tool	5.00			4538.00	
Jars	5.00			4543.00	
Safety Joint	2.00			4545.00	
Packer	5.00			4550.00	27.00 Bottom Of Top Packer
Packer	4.00			4554.00	
Stubb	1.00			4555.00	
Recorder	0.00	8355	Outside	4555.00	
Recorder	0.00	8674	Inside	4555.00	
Perforations	19.00			4574.00	
Change Over Sub	1.00			4575.00	
Drill Pipe	31.00			4606.00	
Change Over Sub	1.00			4607.00	
Bullnose	5.00			4612.00	58.00 Bottom Packers & Anchor

Total Tool Length: 85.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

32-18s-27w Lane,KS

562 West State Road 4
Olmitz, KS 67564

Judy Unit #1-32

Job Ticket: 57717

DST#: 7

ATTN: Vern Schrag

Test Start: 2014.08.17 @ 09:12:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.95 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
124.00	WOGCM 2%w 5%oil 7%g 86%m	0.610
62.00	WOGCM 3%w 5%oil 8%g 84%m	0.870
97.00	OCM 7%oil 93%m	1.361

Total Length: 283.00 ft Total Volume: 2.841 bbl

Num Fluid Samples: 0

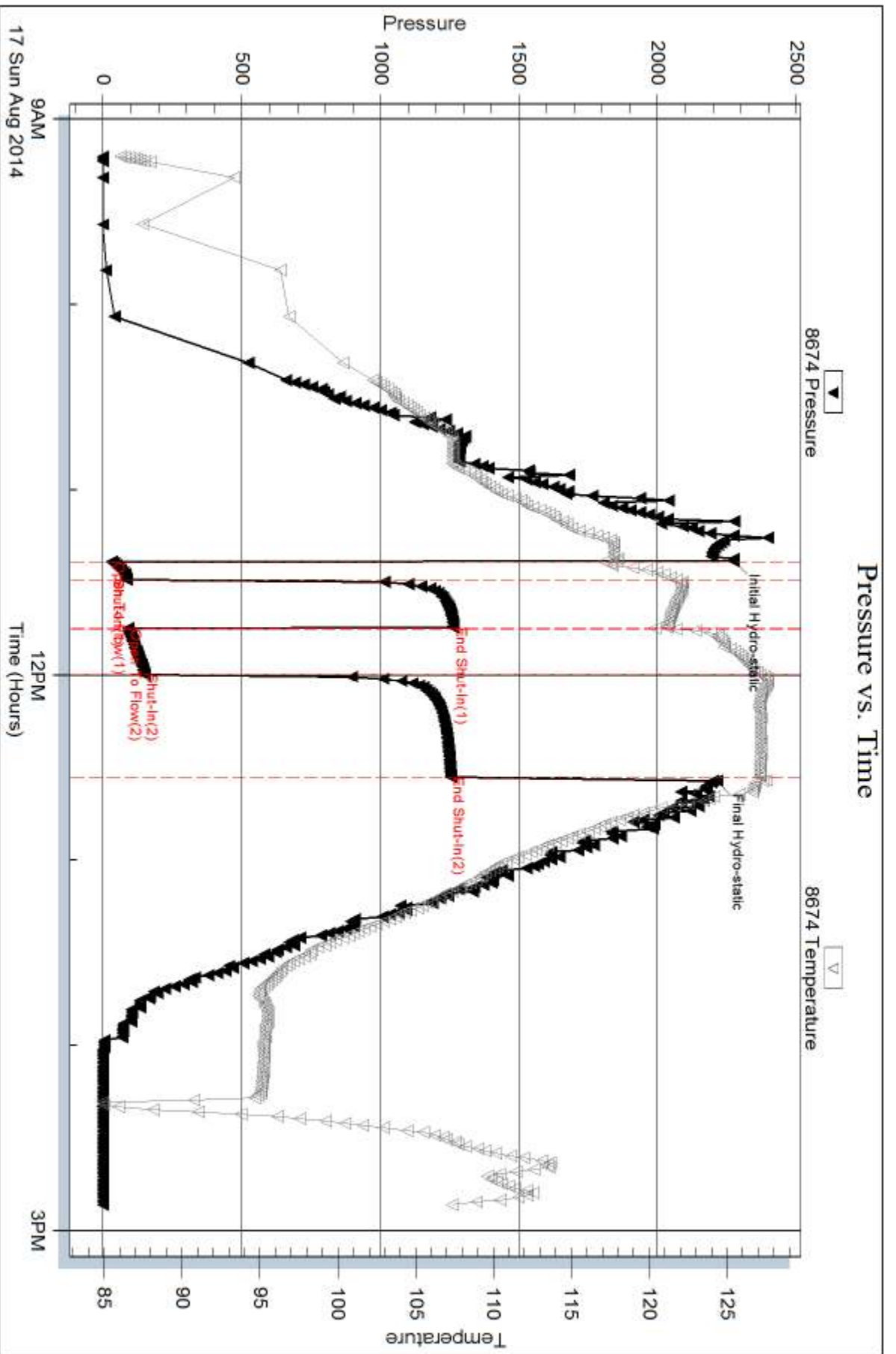
Num Gas Bombs: 0

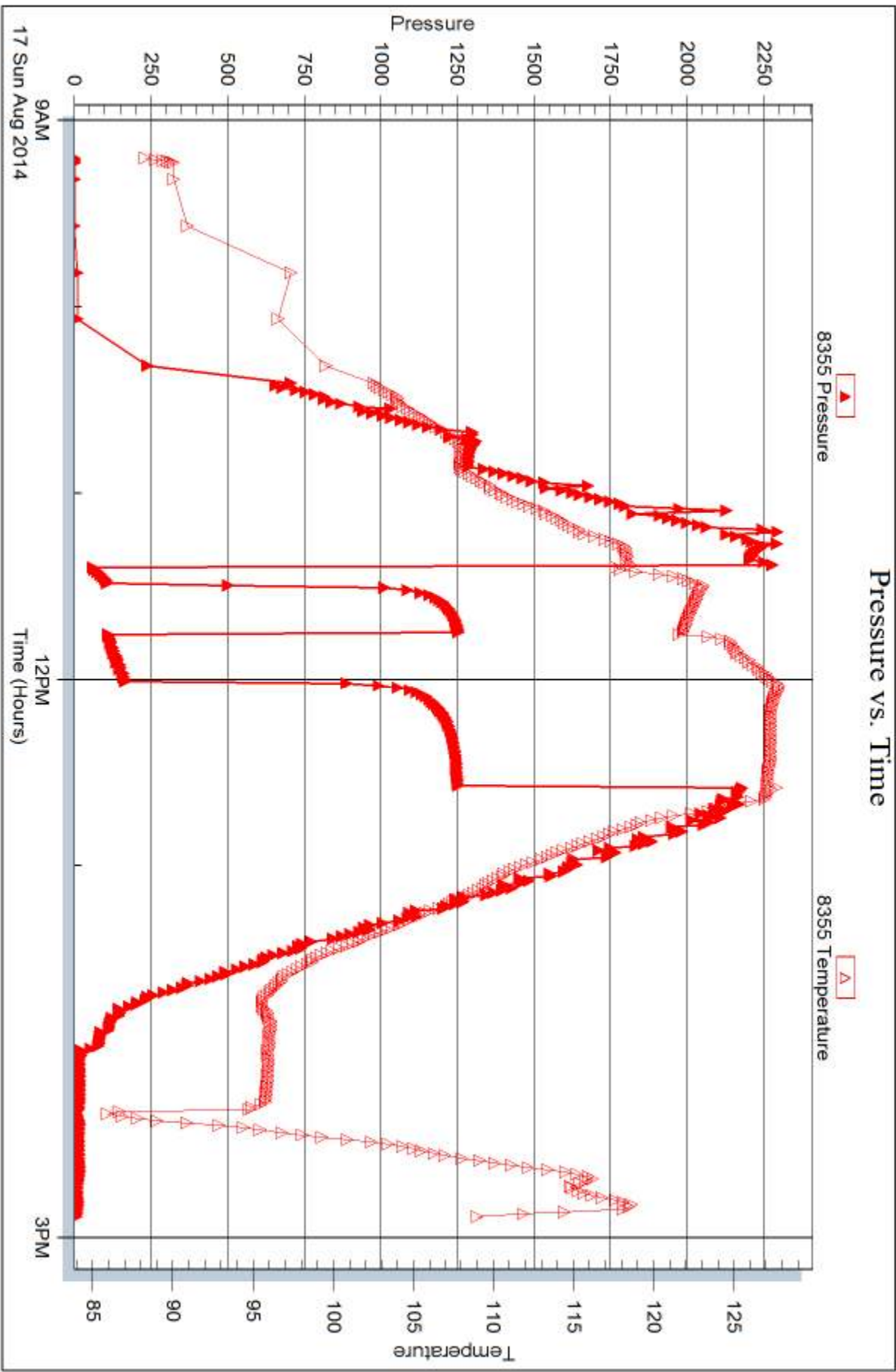
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

Judy Unit #1-32

32-18s-27w Lane,KS

Start Date: 2014.08.18 @ 02:04:00

End Date: 2014.08.18 @ 10:20:09

Job Ticket #: 57718 DST #: 8

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

Printed: 2014.08.20 @ 13:25:52



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering, Inc.
 562 West State Road 4
 Olmitz, KS 67564
 ATTN: Vern Schrag

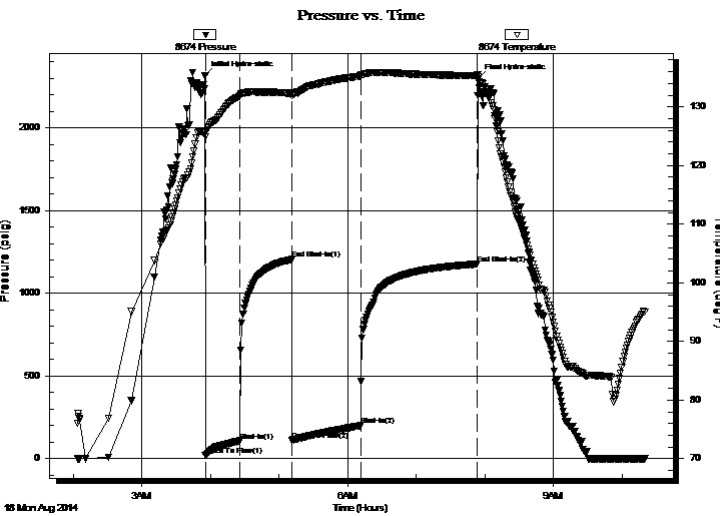
32-18s-27w Lane, KS
Judy Unit #1-32
 Job Ticket: 57718 **DST#: 8**
 Test Start: 2014.08.18 @ 02:04:00

GENERAL INFORMATION:

Formation: **Mississippi**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 03:55:40
 Time Test Ended: 10:20:09
 Interval: **4578.00 ft (KB) To 4605.00 ft (KB) (TVD)**
 Total Depth: 4642.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Straddle (Reset)
 Tester: Will MacLean
 Unit No: 71
 Reference Elevations: 2704.00 ft (KB)
 2697.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8674 Inside
 Press@RunDepth: 200.58 psig @ 4579.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.08.18 End Date: 2014.08.18 Last Calib.: 2014.08.18
 Start Time: 02:04:00 End Time: 10:20:09 Time On Btm: 2014.08.18 @ 03:55:25
 Time Off Btm: 2014.08.18 @ 07:53:54

TEST COMMENT: IF- Weak Surface Blow Built to 11"
 IS- No Blow
 FF- Weak Surface Blow Built to BOB in 50 min
 FS- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2317.99	125.99	Initial Hydro-static
1	20.64	124.95	Open To Flow (1)
31	108.17	131.85	Shut-In(1)
76	1204.91	132.35	End Shut-In(1)
77	112.19	131.96	Open To Flow (2)
136	200.58	135.27	Shut-In(2)
238	1177.55	135.33	End Shut-In(2)
239	2295.72	135.09	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
248.00	MCW 4% m 96% w with Oil Spots	2.35
62.00	MCW 7% m 93% w with a Skim of Oil on	0.87
77.00	OMCW 2% oil 45% m 53% w	1.08
15.00	MCO 5% m 95% oil	0.21

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

32-18s-27w Lane, KS

562 West State Road 4
Olmitz, KS 67564

Judy Unit #1-32

Job Ticket: 57718

DST#: 8

ATTN: Vern Schrag

Test Start: 2014.08.18 @ 02:04:00

Tool Information

Drill Pipe:	Length: 4452.00 ft	Diameter: 3.80 inches	Volume: 62.45 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 32000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 8000.00 lb
			<u>Total Volume: 63.06 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4578.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	4605.00 ft			
Interval between Packers:	27.00 ft			
Tool Length:	92.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		
Tool Comments:				

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4551.00	
Shut In Tool	5.00			4556.00	
Hydraulic tool	5.00			4561.00	
Jars	5.00			4566.00	
Safety Joint	3.00			4569.00	
Packer	5.00			4574.00	28.00 Bottom Of Top Packer
Packer	4.00			4578.00	
Stubb	1.00			4579.00	
Recorder	0.00	8355	Outside	4579.00	
Recorder	0.00	8674	Inside	4579.00	
Perforations	22.00			4601.00	
Blank Off Sub	1.00			4602.00	
Top of Straddle Packer	3.00			4605.00	27.00 Tool Interval
Packer	0.00			4605.00	
Stubb	1.00			4606.00	
Recorder	0.00	8672	Below	4606.00	
Perforations	1.00			4607.00	
Change Over Sub	1.00			4608.00	
Drill Pipe	31.00			4639.00	
Change Over Sub	1.00			4640.00	
Bullnose	2.00			4642.00	37.00 Bottom Packers & Anchor
Total Tool Length:	92.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

32-18s-27w Lane, KS

562 West State Road 4
Olmitz, KS 67564

Judy Unit #1-32

Job Ticket: 57718

DST#: 8

ATTN: Vern Schrag

Test Start: 2014.08.18 @ 02:04:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

15100 ppm

Viscosity: 49.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
248.00	MCW 4%m 96%w with Oil Spots	2.349
62.00	MCW 7%m 93%w with aSkim of Oil on Top	0.870
77.00	OMCW 2%oil 45%m 53%w	1.080
15.00	MCO 5%m 95%oil	0.210

Total Length: 402.00 ft Total Volume: 4.509 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

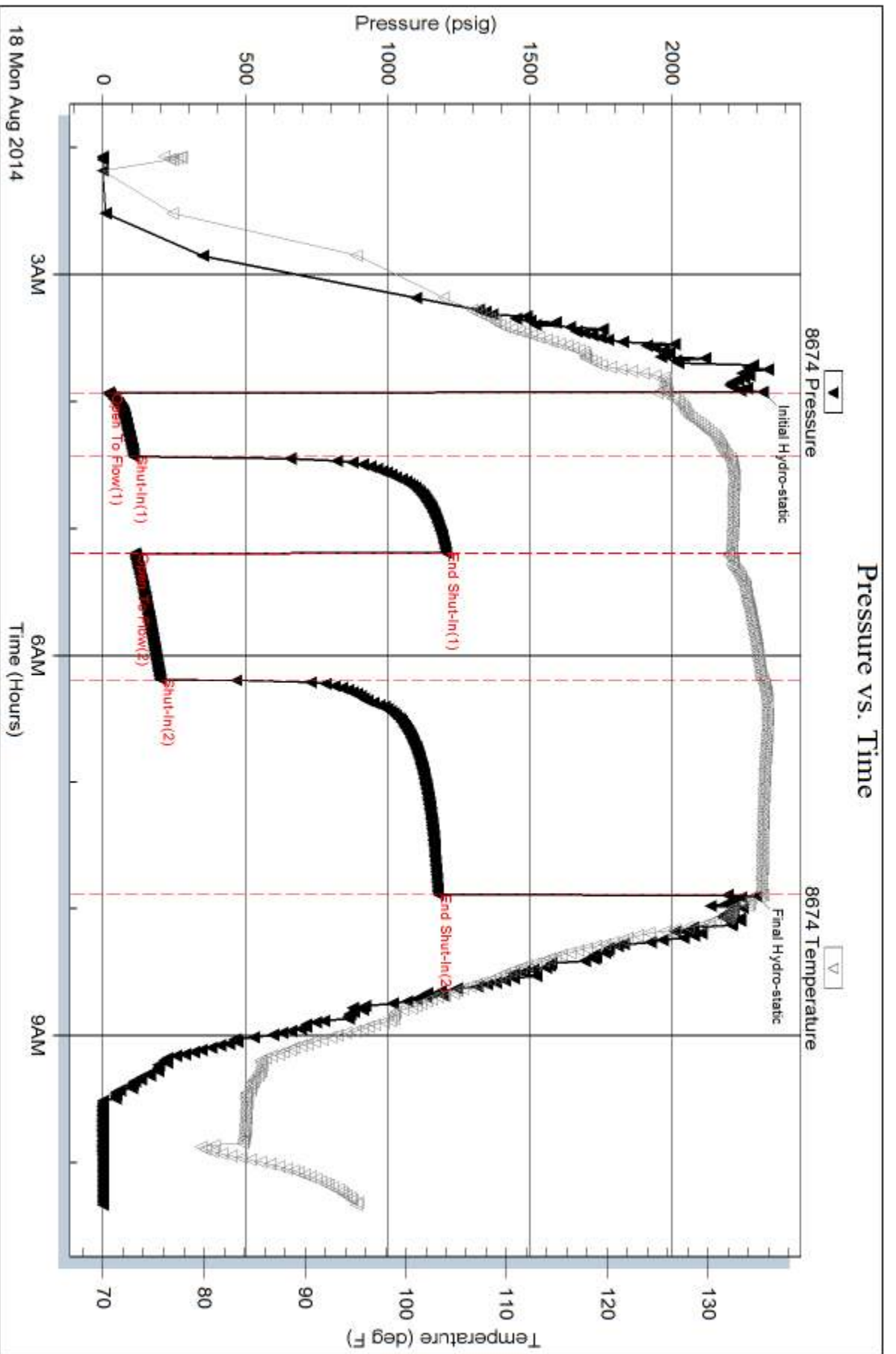
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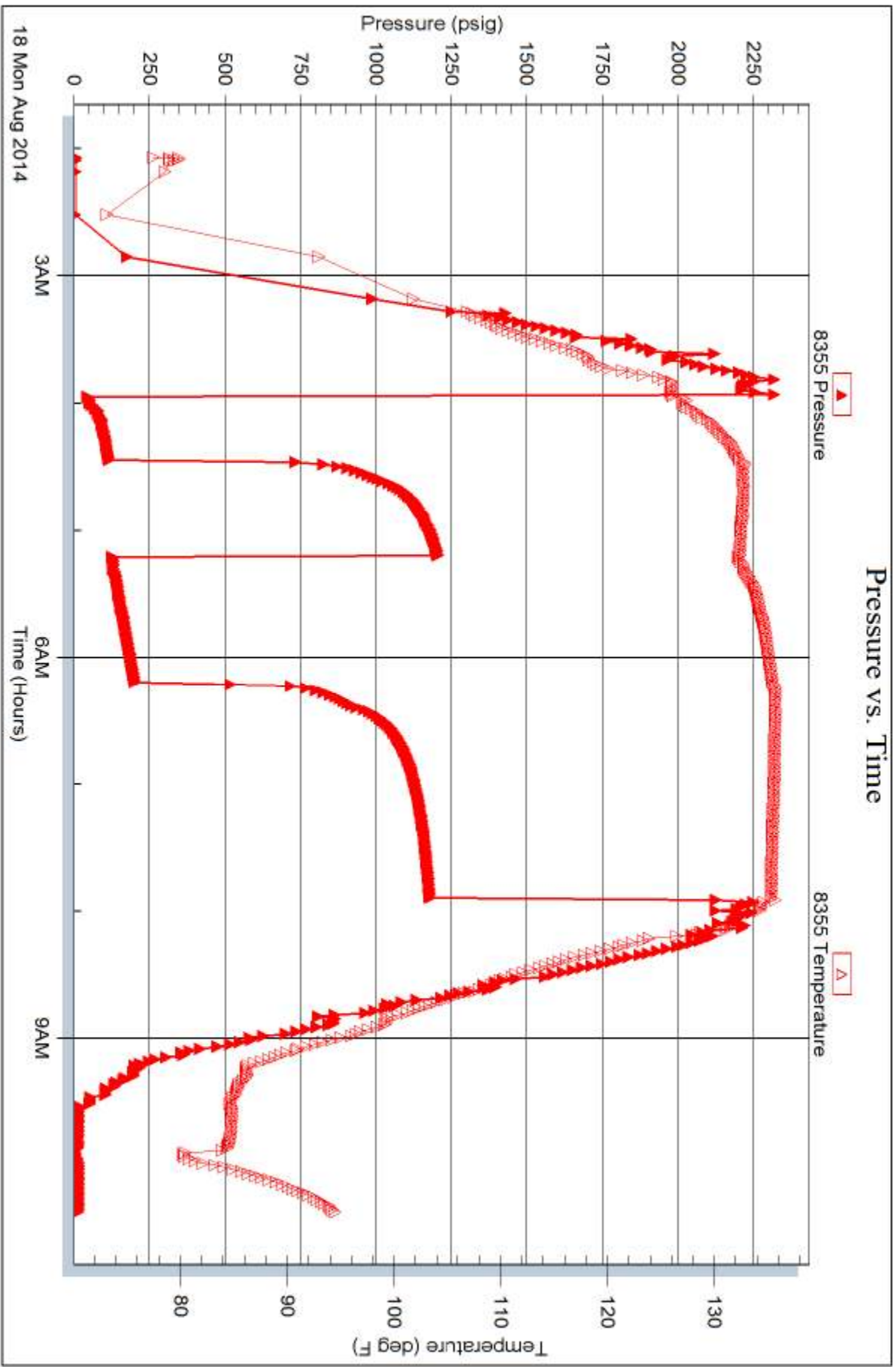
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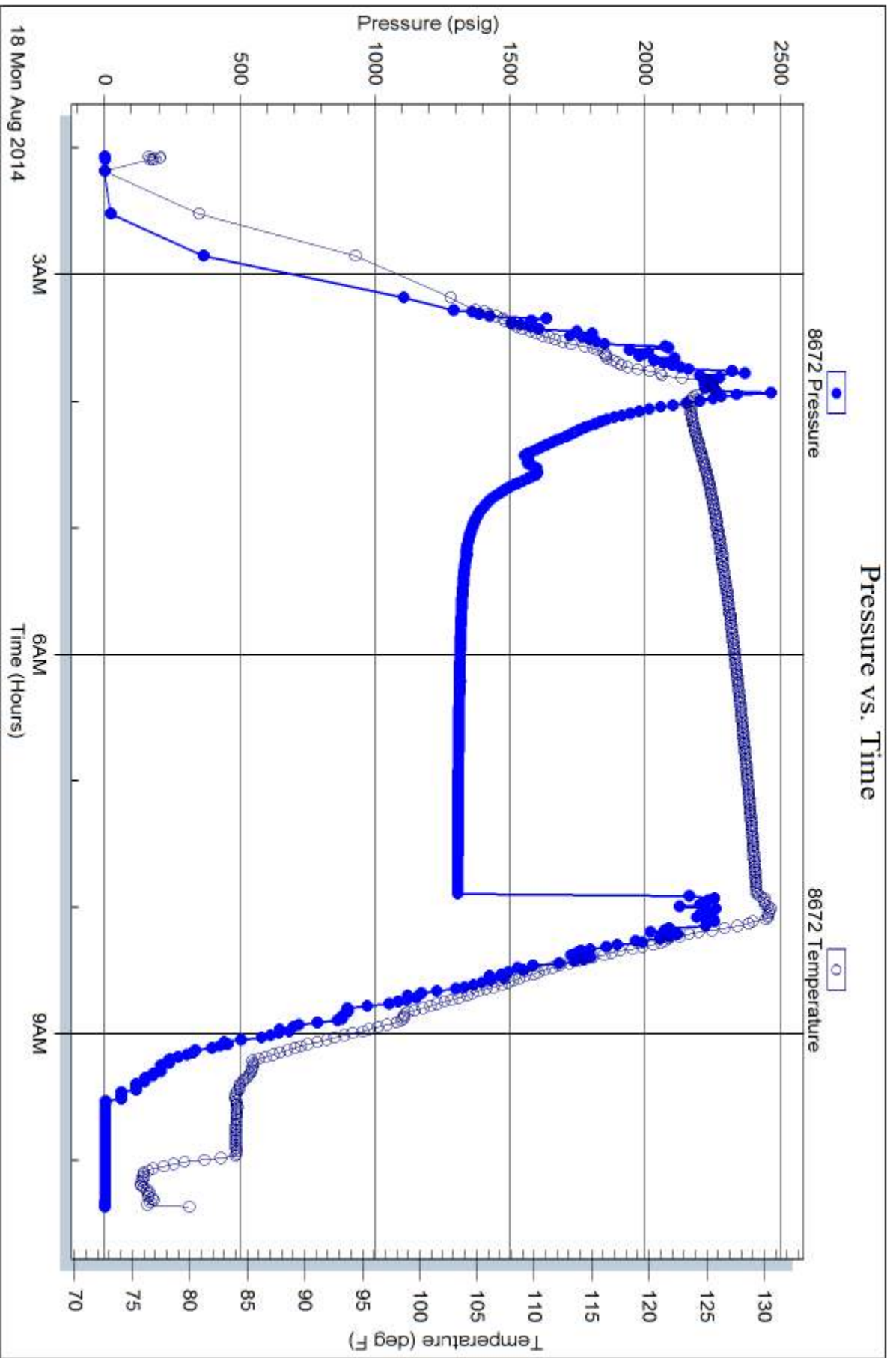
Laboratory Location:

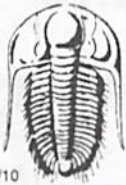
Recovery Comments: RW is .343 @ 85f = 15100

API is 38 @ 80f = 36









TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **59589**

4/10

Well Name & No. Judy Unit #1-32 Test No. 1 Date 8/13/14
 Company Larson Engineering, Inc. Elevation 2704 KB 2697 GL
 Address 562 West State Road 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrage Rig HD #3
 Location: Sec. 32 Twp. 18S Rge. 27W Co. Lane State KS

Interval Tested 4236 - 4250 Zone Tested "K"
 Anchor Length 14 Drill Pipe Run 4109 Mud Wt. 9.0
 Top Packer Depth 4232 Drill Collars Run 124 Vis 60
 Bottom Packer Depth 4236 Wt. Pipe Run Ø WL 8.0
 Total Depth 4250 Chlorides 2600 ppm System LCM 1

Blow Description IF: Weak Surface Blow.
ISI: No Return.
FF: 4" Blow.
FSI: No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>Mud (oil spots)</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10 BHT 124 Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic <u>2148</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>0200 0200</u>
(B) First Initial Flow <u>15</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>0208</u>
(C) First Final Flow <u>19</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>0359</u>
(D) Initial Shut-In <u>496</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>0511</u>
(E) Second Initial Flow <u>23</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>0648</u>
(F) Second Final Flow <u>28</u>	<input checked="" type="checkbox"/> Mileage <u>70 R/T</u> 108.50	Comments
(G) Final Shut-In <u>487</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2127</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>5</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>15</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>15</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby	Total <u>1683.50</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1683.50</u>	

Approved By _____ Our Representative [Signature]

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59590

4/10

Well Name & No. Judy Unit # 1-32 Test No. 2 Date 8/13/14
 Company Larson Engineering, Inc. Elevation 2704 KB 2697 GL
 Address 562 West State Road 4 O'nitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 32 Twp. 18S Rge. 27W Co. Lane State KS

Interval Tested 4234 - 4253 Zone Tested "K"
 Anchor Length 19' Drill Pipe Run 4109 Mud Wt. 9.1
 Top Packer Depth 4230 Drill Collars Run 124 Vis 61
 Bottom Packer Depth 4234 Wt. Pipe Run Ø WL 8.0
 Total Depth 4253 Chlorides 3200 ppm System LCM 1

Blow Description IF: 3" Blow.
ISI: No Return.
FF: 1" Blow.
FSD: No Return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>OCM</u>	<u>15</u>		<u>85</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 15 BHT 117 Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic <u>2151</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>1445</u>
(B) First Initial Flow <u>17</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>1500</u>
(C) First Final Flow <u>18</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>1630</u>
(D) Initial Shut-In <u>502</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>1823</u>
(E) Second Initial Flow <u>22</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>2008</u>
(F) Second Final Flow <u>36</u>	<input checked="" type="checkbox"/> Mileage <u>70 RFD</u> 108.50	Comments
(G) Final Shut-In <u>494</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2108</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>5</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>15</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>1030</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	Total <u>1683.50</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1683.50</u>	

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. 59591

4/10

Well Name & No. Judy Unit #1-32 Test No. 3 Date 8/14/14
 Company Loren Engineering, Inc. Elevation 2704 KB 2697 GL
 Address 562 West State Road 4 Olinitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 32 Twp. 18p Rge. 27W Co. Lora State KS

Interval Tested 4232-4258 Zone Tested "K"
 Anchor Length 26' Drill Pipe Run 410 Mud Wt. 8.9
 Top Packer Depth 4228 Drill Collars Run 124 Vis 60
 Bottom Packer Depth 4232 Wt. Pipe Run Ø WL 8.0
 Total Depth 4258 Chlorides 3200 ppm System LCM 1

Blow Description IP: 1/2" Blow.
ISI: No Return
EE: 1 1/4" Blow.
FBI: No Return.

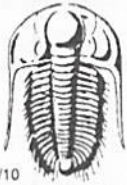
Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>0cm</u>	<u>15</u>		<u>85</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 15 BHT 115 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2151</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>0215</u>
(B) First Initial Flow <u>15</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>0236</u>
(C) First Final Flow <u>18</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>0440</u>
(D) Initial Shut-In <u>492</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>0642</u>
(E) Second Initial Flow <u>22</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>0854</u>
(F) Second Final Flow <u>35</u>	<input checked="" type="checkbox"/> Mileage <u>70 RT</u> <u>108.50</u>	Comments _____
(G) Final Shut-In <u>490</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>2150</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Open <u>5</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Packer _____
Initial Shut-In <u>15</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby _____	Total <u>1683.50</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1683.50</u>	

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. 59592

4/10

Well Name & No. Judy Unit # 1-32 Test No. 41 Date 8/15/14
 Company Larsen Engineering, Inc. Elevation 2704 KB 2697 GL
 Address 562 West State Road 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schroy Rig AD #3
 Location: Sec. 32 Twp. 18N Rge. 27W Co. Linn State KS

Interval Tested 4266-4290 Zone Tested "L"
 Anchor Length 24' Drill Pipe Run 4144 Mud Wt. 9.0
 Top Packer Depth 4262 Drill Collars Run 124 Vis 42
 Bottom Packer Depth 4266 Wt. Pipe Run 0 WL 8.8
 Total Depth 4290 Chlorides 3500 ppm System LCM 1

Blow Description IF: 3 1/2" Bb
1st: NO Return
RF: 4 1/4" Blow
2st: NO Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>210</u>	<u>600 MW</u>		<u>80</u>	<u>20</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 210 BHT 126 Gravity - API RW 118 @ 71 °F Chlorides 65,000 ppm
 (A) Initial Hydrostatic 2153 Test 1250 T-On Location 6030
 (B) First Initial Flow 19 Jars 250 T-Started 0040
 (C) First Final Flow 69 Safety Joint 75 T-Open 0301
 (D) Initial Shut-In 487 Circ Sub N/C T-Pulled 0418
 (E) Second Initial Flow 75 Hourly Standby _____ T-Out 0615
 (F) Second Final Flow 112 Mileage 70 108.50 Comments _____
 (G) Final Shut-In 487 Sampler _____
 (H) Final Hydrostatic 2116 Straddle _____ Ruined Shale Packer _____
 Initial Open 5 Shale Packer _____ Ruined Packer _____
 Initial Shut-In 15 Extra Packer _____ Extra Copies _____
 Final Flow 15 Extra Recorder _____ Sub Total 0
 Final Shut-In 30 Day Standby _____ Total 1683.50
 Sub Total 1683.50 Accessibility _____ MP/DST Disc't _____

Approved By _____ Our Representative _____

Trilobite Testing Inc. shall not be liable for damaged or 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. 59593

4/10

Well Name & No. Judy Unit #1-32 Test No. 5 Date 8/15/14
 Company Larson Engineering, Inc. Elevation 2704 KB 2697 GL
 Address 562 West State Road 4 Omitz, KS 67561
 Co. Rep / Geo. Vern Schroy Rig HD #3
 Location: Sec. 32 Twp. 18S Rge. 27W Co. Lane State KS

Interval Tested 4311-4410 Zone Tested Marmaton
 Anchor Length 99 Drill Pipe Run 4169 Mud Wt. 9.1
 Top Packer Depth 4307 Drill Collars Run 124 Vis 53
 Bottom Packer Depth 4311 Wt. Pipe Run 0 WL 8.4
 Total Depth 4410 Chlorides 3700 ppm System LCM 1
 Blow Description IF: 4" Blow.
ISS: No Return.
FF: No Blow.
RST: No Return.

Rec	Feet of	%gas	%oil	%water	%mud
10	Mud			100	

Rec Total 10 BHT 121 Gravity — API RW — @ — °F Chlorides — ppm
 (A) Initial Hydrostatic 2189 Test 1250 T-On Location 2050
 (B) First Initial Flow 19 Jars 250 T-Started 2108
 (C) First Final Flow 22 Safety Joint 75 T-Open 2241
 (D) Initial Shut-In 168 Circ Sub N/C T-Pulled 2351
 (E) Second Initial Flow 23 Hourly Standby _____ T-Out 0124
 (F) Second Final Flow 25 Mileage TO RPT 108.50 Comments _____
 (G) Final Shut-In 95 Sampler _____
 (H) Final Hydrostatic 2062 Straddle _____ Ruined Shale Packer _____
 Shale Packer 250 Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 5 Extra Recorder _____ Sub Total 0
 Initial Shut-In 15 Day Standby _____ Total 1933.50
 Final Flow 15 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 30 Sub Total 1933.50

Approved By _____ Our Representative

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59594

4/10

Well Name & No. Judy Unit #1-32 Test No. 6 Date 8/16/14
 Company Larson Engineering, Inc. Elevation 2704 KB 2697 GL
 Address 562 West State Road 4 Omitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 32 Twp. 18S Rge. 27W Co. Lane State KS

Interval Tested 4426-4570 Zone Tested "Cherokee"
 Anchor Length 144 Drill Pipe Run 4296 Mud Wt. 9.1
 Top Packer Depth 4422 Drill Collars Run 124 Vis 57
 Bottom Packer Depth 4426 Wt. Pipe Run Ø WL 8.0
 Total Depth 4570 Chlorides 2500 ppm System LCM 2

Blow Description IF: 4" Blw.
IST: No Return.
RF: NO Blw.
FST: No Return.

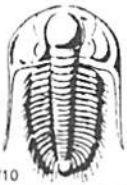
Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5 BHT 121 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2219 Test 1250 T-On Location 2115
 (B) First Initial Flow 21 Jars 250 T-Started 2128
 (C) First Final Flow 21 Safety Joint 75 T-Open 2255
 (D) Initial Shut-In 78 Circ Sub N/C T-Pulled 0003
 (E) Second Initial Flow 21 Hourly Standby — T-Out 0138
 (F) Second Final Flow 23 Mileage 70 R/T 108.50 Comments Can't find tools
 (G) Final Shut-In 60 Sampler —
 (H) Final Hydrostatic 259 Straddle — Ruined Shale Packer —
 Shale Packer 250 Ruined Packer —
 Extra Packer — Extra Copies —
 Initial Open 5 Extra Recorder — Sub Total 0
 Initial Shut-In 15 Day Standby — Total 1933.50
 Final Flow 15 Accessibility — MP/DST Disc't —
 Final Shut-In 30 Sub Total 1933.50

Approved By _____ Our Representative

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 57717

Well Name & No. Judy Unit #1-32 Test No. DST #17 Date 8-17-14
 Company Larson Engineering Inc Elevation 2704 KB 2697 GL
 Address 562 West State Rd 4 Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig H-D #3
 Location: Sec. 32 Twp. 18s Rge. 27w Co. Lane State _____

Interval Tested 4554-4612 Zone Tested Mississippi
 Anchor Length 58 Drill Pipe Run 4425 Mud Wt. 9.1
 Top Packer Depth 4550 Drill Collars Run 124 Vis 57
 Bottom Packer Depth 4554 Wt. Pipe Run 0 WL 8-0
 Total Depth 4612 Chlorides 2000 ppm System LCM 215
 Blow Description IF- Weak Surface Blow Built to 5"
IS- No Blow
FF- Weak Surface Blow Built to 9 3/4
FSI- No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>97</u>	<u>OCM</u>	<u>7</u>	<u>9</u>	<u>93</u>	
<u>62</u>	<u>WOGCM</u>	<u>8</u>	<u>5</u>	<u>3</u>	<u>84</u>
<u>124</u>	<u>WOGCM</u>	<u>7</u>	<u>5</u>	<u>2</u>	<u>86</u>
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____

Rec Total 283 BHT 127 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

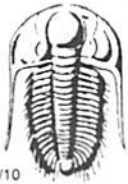
(A) Initial Hydrostatic 2273 Test 1250 T-On Location 7:08
 (B) First Initial Flow 30 Jars 250 T-Started 9:12
 (C) First Final Flow 86 Safety Joint 75 T-Open 11:23
 (D) Initial Shut-In 1264 Circ Sub N/C T-Pulled 12:34
 (E) Second Initial Flow 88 Hourly Standby T-Out 14:51
 (F) Second Final Flow 149 Mileage 70 RIT 108.50 Comments _____
 (G) Final Shut-In 1254 Sampler _____
 (H) Final Hydrostatic 2212 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 3
 Initial Shut-In 15
 Final Flow 15
 Final Shut-In 30

Sub Total 1683.50 Total 1683.50
 MP/DST Disc't _____

Approved By Vern Schrag Our Representative Wainman

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 57718

Well Name & No. Judy Unit # 1-32 Test No. DST #8 Date 8-18-14
 Company Larson Engineering Inc Elevation 2704 KB 2697 GL
 Address 562 West State Rd 4 Olathe KS 67564
 Co. Rep / Geo. Vern Schrag Rig H-D #3
 Location: Sec. 32 Twp. 18S Rge. 27W Co. Lane State KS

Interval Tested 4578 - 4605 Zone Tested Mississippi
 Anchor Length 27 Drill Pipe Run 4452 Mud Wt. 9.2
 Top Packer Depth 4578 Drill Collars Run 0 Vis 49
 Bottom Packer Depth 4605 Wt. Pipe Run 0 WL 7.6
 Total Depth 4642 Logger TD Chlorides 4000 ppm System LCM 216
 Blow Description IF - Weak Surface Blow Built to 11"
IST - No Blow
FF - Weak Surface Blow Built to BOB in 50 min
F2I - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>MCO</u>	<u>95</u>	<u>5</u>	<u>5</u>	<u>5</u>
<u>77</u>	<u>OMCW</u>	<u>2</u>	<u>53</u>	<u>45</u>	<u>45</u>
<u>62</u>	<u>MCO with a skin of oil on top</u>	<u>93</u>	<u>7</u>	<u>7</u>	<u>7</u>
<u>248</u>	<u>MCO with oil spots</u>	<u>96</u>	<u>4</u>	<u>4</u>	<u>4</u>

Rec Total 402 BHT 135 Gravity 36 API RW .343 @ 85 °F Chlorides 15100 ppm
 (A) Initial Hydrostatic 2317 Test 1250 T-On Location 1:30
 (B) First Initial Flow 20 Jars 250 T-Started 2:04
 (C) First Final Flow 108 Safety Joint 75 T-Open 3:55
 (D) Initial Shut-In 1204 Circ Sub NIC T-Pulled 7:53
 (E) Second Initial Flow 112 Hourly Standby T-Out 10:20
 (F) Second Final Flow 200 Mileage 70 RIT 108.50 Comments _____
 (G) Final Shut-In 1177 Sampler _____
 (H) Final Hydrostatic 2295 Straddle 600 Ruined Shale Packer _____

Initial Open 30 Shale Packer _____
 Initial Shut-In 45 Extra Packer _____
 Final Flow 60 Extra Recorder _____
 Final Shut-In 90 Day Standby _____
 Sub Total 2283.50 Accessibility _____
 Total 2283.50 MP/DST Disc't _____

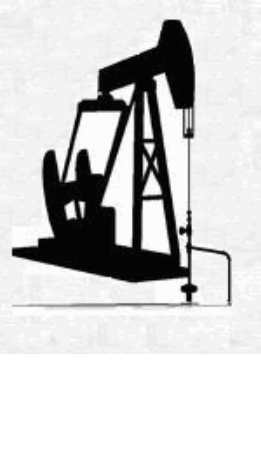
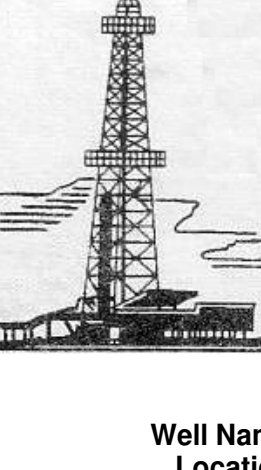
Approved By Vern C Schrag Our Representative [Signature]

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WELLSITE GEOLOGIST'S REPORT

VERNON C. SCHRAG
CONSULTANT GEOLOGIST

Scale 1:240 (5"=100') Imperial



Well Name: **JUDY UNIT #1-20**
 Location: **SW NW NW SW of SEC. 32-18S-27W**
 Licence Number: **API: 15-101-22532**
 Spud Date: **August 07, 2014**
 Surface Coordinates: **2280' FSL & 37' FWL**

Region: **Lane Co., KS**
 Drilling Completed: **August 18, 2014**

Bottom Hole Coordinates:
 Ground Elevation (ft): **2697'** K.B. Elevation (ft): **2704'**
 Logged Interval (ft): **3800'** To: **RTD** Total Depth (ft): **4643'**
 Formation: **D&A, Mississippi**
 Type of Drilling Fluid: **Chemical Premix (Displaced)**
 Printed by **MUD.LOG** from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR:

Company: **Larson Engineering Inc.**
 Address: **562 West State Road 4**
Olmitz, KS 67564-8561

DRILLING CONTRACTOR:

H. D. Drilling, LLC, Rig #3 (Co. Tools)

DP 4.5" XH (16.6#); DC 6-1/4" x 2-3/8" x 556', Kelly 40.30', Tool Joint 5.5" ; Bit: JZ-HA20Q, 7-7/8" , standard jets 15-15-15; rpm 80, WOB 35k; Kelly Bushing 7' above ground level; LeWayne "Lew" Tresner (tool pusher).

CASING:

Set 8-5/8" casing at 262'

CIRCULATION SYSTEM:

Continental EMSCO D-300, duplex, 6 x 14, 60-62 spm, Chemical, premix, earth pits, Morgan Mud, Inc., Cade Lines.

OPEN HOLE LOGS:

DN, DI (SP) (Run-1); ML (Run-2); No Sonic; 5" detail LTD-3600; 2" DI to surface casing; LogTech-Pioneer Wireline Services, Hays, KS, R. Bamhart, Log total depth (4642') was short to rotary total depth (4643').

DRILL STEM TEST #1:

LKC "K-zone": Interval: 4236-4250 (14') : Blow: weak surf IFP, no RB, weak incr 1/4" FFP, no RB; Times: 5-15-15-30; Recovery: 10' mud w/oil spots (100%M); Pressures: HP: 2148-2127, SIP: 496-487; FP: 15-19, 23-28; BHT: 124 F; Trilobite Testing, Inc., Scott City, KS, Sam Esparza.

DRILL STEM TEST #2:

LKC "K-zone": Interval: 4234-4253 (19') : Blow: weak surf incr to 1/2" IFP, no RB, incr to 1" FFP, no RB; Times: 5-15-15-30; Recovery: 15' OCM (15%O, 85%M); Pressures: HP: 2151-2108, SIP: 502-494; FP: 17-18, 22-36; BHT: 117 F; Trilobite Testing, Inc., Scott City, KS, Sam Esparza.

DRILL STEM TEST #3:

LKC "K-zone": Interval: 4232-4258 (26') : Blow: weak surf incr to 1/4" IFP, no RB, incr to 1-1/4" FFP, no RB; Times: 5-15-15-30-60; Recovery: 15' OCM (15%O, 85%M); Pressures: HP: 2151-2150, SIP: 492-490; FP: 15-18, 22-35; BHT: 115 F; Trilobite Testing, Inc., Scott City, KS, Sam Esparza.

DRILL STEM TEST #4:

LKC (L-zone): Interval: 4266-4290 (24') : Blow: 3-1/2" IFP, no RB, 4-1/2" FFP, no RB; Times: 5-15-15-30; Recovery: 210' MW (80%W, 20%M, Rw 0.118 at 71 F, chlorides 65k); Pressures: HP: 2153-2116, SIP: 487-487, FP: 19-69, 75-112; BHT: 126 F; Trilobite Testing, Inc., Scott City, KS, Sam Esparza.

DRILL STEM TEST #5:

Pleas., Marmaton: Interval: 4311-4410 (99') : Blow: weak surf incr to 1/4" IFP, no RB, no blow 2nd open; Times: 5-15-15-30; Recovery: 10' mud (100%M); Pressures: HP: 2189-2062, SIP: 168-95; FP: 19-22, 23-25; BHT: 121 F; Trilobite Testing, Inc., Scott City, KS, Sam Esparza.

DRILL STEM TEST #6:

Pawnee thru Cherokee: Interval: 4426-4570 (144') : Blow: weak surf incr to 1/4" IFP, no RB, no blow 2nd open; Times: 5-15-15-30; Recovery: 5' mud (100%M); Pressures: HP: 2219-2189, SIP: 78-60; FP: 21-21, 21-23; BHT: 121 F; Trilobite Testing, Inc., Scott City, KS, Sam Esparza.

DRILL STEM TEST #7:

Mississippi Dolomite (Spergen): Interval: 4554-4612 (58') : Blow: weak incr 5" IFP, no RB, incr 9-3/4" FFP, no RB; Times: 5-15-15-30; Recovery: 283' TF, no GIP; Grindouts: 97' SOCM (7%O, 93%M), 62' SOWCM (8%G, 5%O, 3%W, 84%M), 124' SOWCM (7%G, 5%O, 2%W, 86%M); Pressures: HP: 2273-2212; FP: 30-86, 88-149; BHT: 127 F; Trilobite Testing, Inc., Scott City, KS, Will MacLeon.

DRILL STEM TEST #8:

Mississippi Dolomite (Spergen): Straddle Interval: 4578-4605 (27' anchor, 37' tailpipe, log measurements): Blow: weak incr 11" IFP, no RB, BOB 50 min FFP, no RB; Times: 30-45-60-90; Recovery: 402' TF; Grindouts: 15' SMCO (95%O, 5%M, grav 36), 77' OMCW (2%O, 53%W, 45%M); 62' MCW (93%W, 7%M), 248' MCW (96%W, 4%M, Rw 0.343 at 85 F, chlorides 15.1k), Pressures: HP: 2317-2295, SIP: 1204-1177, FP: 20-108, 112-200; BHT: 135 F; Trilobite Testing, Inc., Scott City, KS, Will MacLeon.

