



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1172270  
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: \_\_\_\_\_



1172270

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](mailto:kcc-well-logs@kcc.ks.gov). Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

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

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

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

Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*  
 Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*  
 Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

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

TUBING RECORD:      Size: \_\_\_\_\_ Set At: \_\_\_\_\_ Packer At: \_\_\_\_\_ Liner Run:  Yes  No

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

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

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <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> _____ <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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Form	ACO1 - Well Completion
Operator	Larson Engineering, Inc. dba Larson Operating Company
Well Name	Boomhower A 1-16
Doc ID	1172270

Tops

Name	Top	Datum
Anhydrite	2220	+606
B/Anhydrite	2247	+246
Heebner	3294	-1098
Lansing	3963	-1137
Stark	4222	-1396
Marmaton	4351	-1525
Pawnee	4422	-1596
Ft. Scott	4474	-1648
Cher Sh	4498	-1672
Eros Miss	4571	-1745

Form	ACO1 - Well Completion
Operator	Larson Engineering, Inc. dba Larson Operating Company
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Doc ID	1172270

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
4	4539-52, 4512-18, 4280-83	250 gal 15% RWR-1	4539-52, 4512-18
		750 gal 15% RWR-1	4539-52, 4512-18
		250 gal 15% RWR-1	4280-83
		sqz: 50 sx class A	4280-83
4	4267-70	250 gal 15% RWR-1	4267-70
		sqz: 50 sx class A	4267-70
4	4235-38		



CHARGE TO: Larson Engineering  
 ADDRESS: \_\_\_\_\_  
 CITY, STATE, ZIP CODE: \_\_\_\_\_

TICKET No 24917

SERVICE LOCATIONS  
 1. WELL/PROJECT NO. 1-16 LEASE Roomhauer COUNTY/PARISH Lane STATE KS CITY Healy DATE 8 SEP 13 OWNER \_\_\_\_\_  
 2. TICKET TYPE  SERVICE  SALES CONTRACTOR HD RIG NAME/NO. 3 SHIPPED  DELIVERED TO location ORDER NO. \_\_\_\_\_  
 3. WELL TYPE oil WELL CATEGORY Development JOB PURPOSE cement log string WELL PERMIT NO. \_\_\_\_\_ WELL LOCATION 16-17-24  
 4. REFERRAL LOCATION \_\_\_\_\_ INVOICE INSTRUCTIONS \_\_\_\_\_

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		UNIT PRICE		AMOUNT
		LOC	ACCT	DF		QTY.	U/M	QTY.	U/M	
575		1			MILEAGE TRK 114	50	mi	6.00		300.00
578		1			Pump Charge	1	ea	1500.00		1500.00
325		1			STANDARD cement (forest-2)	155	sk	14.00		2170.00
284		1			calseal	700	lb	35.00	7 sk	245.00
293		1			salt	800	lb	0.20		160.00
277		1			Coal seal (6-ounce)	1085	lb	0.75		813.75
292		1			WHD-322	100	lb	7.75		775.00
276		1			Flocble	25	lb	2.00		50.00
280		1			Flocrock-21	500	gal	3.00		1500.00
221		1			KCh liquid	2	gal	25.00		50.00
290		1			D-AIR	2	gal	42.00		84.00
419		1			Rotating head rental	5 1/2	in	200.00	1 ea	200.00

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions.

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS

x [Signature]  
 DATE SIGNED \_\_\_\_\_ TIME SIGNED \_\_\_\_\_  A.M.  P.M.

REMIT PAYMENT TO:  
 SWIFT SERVICES, INC.  
 P.O. BOX 466  
 NESS CITY, KS 67560  
 785-798-2300

SURVEY	AGREE	UN-DECIDED	DIS-AGREE	PAGE TOTAL	AMOUNT
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?				2	7847.75
WE UNDERSTOOD AND MET YOUR NEEDS?					742.00
OUR SERVICE WAS PERFORMED WITHOUT DELAY?				subtotal	8589.75
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?				Lane TAX 7.15%	432.41
ARE YOU SATISFIED WITH OUR SERVICE?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO		TOTAL	9022.16
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND					

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket.

SWIFT OPERATOR [Signature] APPROVAL \_\_\_\_\_

Thank You!



PO Box 466  
Ness City, KS 67560  
Off: 785-798-2300

TICKET CONTINUATION

TICKET No. 24917

CUSTOMER: *Leon Engineering* WEAL: *Brownhauer 1-16* DATE: *8 SEP 13* PAGE: *2* OF: *2*

PRICE REFERENCE	SECONDARY REFERENCE / PART NUMBER	ACCOUNTING			TIME	DESCRIPTION	CUBIC FEET		UNIT PRICE	AMOUNT
		LOC	ACCT	OF			QTY	UM		
<i>581</i>		<i>1</i>			SERVICE CHARGE				<i>200</i>	<i>310.00</i>
<i>583</i>		<i>1</i>			MILEAGE CHARGE: <i>172.80</i> TOTAL WEIGHT: <i>155</i> LOADED MILES: <i>50</i>		<i>432</i>	<i>1.00</i>	<i>432.00</i>	
									CONTINUATION TOTAL	<i>742.00</i>

JOB LOG

SWIFT Services, Inc.

DATE 8 SEP 13 PAGE NO. 1

CUSTOMER		WELL NO.		LEASE		JOB TYPE		TICKET NO.	
Larsen Engineering		1-16		Boonhauer		Account long string		24917	
CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS	
				T	C	TUBING	CASING		
								153sk 9A-2 w/ floater & coal seal 15.5" x 5 1/2" casing TD 4620' Sheet 42.42 part collar 2176'	
	2100							on loc. TRK 114	
	2115							Drop ball - circulate - ROTATE	
	1015	4 3/4	15			100		pump 5 bbl KCL flush	
		4 3/4	12			100		pump 50 gal flocheck - 21	
		4 3/4	155			100		pump 15 bbl KCL flush	
	1038		6					Plug R H 30 sks	
	1033	4 3/4	20			200		Mix 9A-2 cement 125 sks @ 15.3 gpg	
	1041							Drop latch down plug wash out pump line	
	1045	6 3/4				200		Displace plug	
		6 3/4	98			450			
	1100	6 3/4	109			550		land plug	
								Release pressure to truck - dried up	
	1105							wash truck	
								RACK UP	
	1040							job complete	
								Thank	
								Blaine Flint & Dave	



**CONSOLIDATED**  
Oil Well Services, LLC

261766

TICKET NUMBER 38077

LOCATION Osage

FOREMAN Dawn

PO Box 884, Chanute, KS 66720  
620-431-9210 or 800-467-8676

**FIELD TICKET & TREATMENT REPORT**

**CEMENT**

ks.

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY												
8/27/13	4802	Boomer "A" 1-16	16	17	29	Lane												
CUSTOMER <u>Larson Engineering</u>			<table border="1"> <thead> <tr> <th>TRUCK #</th> <th>DRIVER</th> <th>TRUCK #</th> <th>DRIVER</th> </tr> </thead> <tbody> <tr> <td>463</td> <td>Cory</td> <td></td> <td></td> </tr> <tr> <td>693</td> <td>Jordan</td> <td></td> <td></td> </tr> </tbody> </table>				TRUCK #	DRIVER	TRUCK #	DRIVER	463	Cory			693	Jordan		
TRUCK #	DRIVER	TRUCK #	DRIVER															
463	Cory																	
693	Jordan																	
MAILING ADDRESS			<p><i>Healy ETO Rd 1/25 into</i></p>															
CITY	STATE	ZIP CODE																

JOB TYPE Surface HOLE SIZE 12 1/4 HOLE DEPTH 268 CASING SIZE & WEIGHT 8 3/8 20'  
 CASING DEPTH 268.71 DRILL PIPE \_\_\_\_\_ TUBING \_\_\_\_\_ OTHER \_\_\_\_\_  
 SLURRY WEIGHT 1602 SLURRY VOL 1.36 WATER gal/sk 6.5 CEMENT LEFT In CASING 20'  
 DISPLACEMENT 16.16 DISPLACEMENT PSI \_\_\_\_\_ MIX PSI \_\_\_\_\_ RATE \_\_\_\_\_

REMARKS: Safety Meeting, Rig up on HD #3, Break Circulation with Rig Pump, Hook up to Pump Truck, Mix 175 SKs Com 3%CC 2% Gel Displace with water (16.16 bbl) Shut in. Wash up Pump & Lines Rig Down

Cement Did Circulate

Approx 3 bbl To Pit

Thanks. Dawn + Crew

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
54015	1	PUMP CHARGE	\$1150.00	\$1150.00 ✓
5406	45	MILEAGE	\$5.25	\$236.25 ✓
5407 A	8.23	Ton Mileage Delivery	\$81.75	\$674.83 ✓
1101 S	175 SKs	Class "A" Cement	\$18.55	\$3246.25 ✓
1102	494 *	Calcium Chloride	\$.94	\$464.36 ✓
1118 B	329 *	Bentonite	\$.27	\$88.83 ✓
			Subtotal	\$5833.62
			Less 10%	\$583.37 ✓
			Subtotal	\$5250.25
			SALES TAX	244.49 ✓
			ESTIMATED TOTAL	\$5494.81 ✓

**completed**

Revin 3737

AUTHORIZATION [Signature] TITLE Partner DATE \_\_\_\_\_

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form.





## DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 West State Rd  
Olmitz KS 67564

ATTN: Vern Schrag

**Boomhower "A" 1-16**

**16-17s-29w Lane,KS**

Start Date: 2013.09.02 @ 07:38:15

End Date: 2013.09.02 @ 13:30:15

Job Ticket #: 52909                      DST #: 1

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

Printed: 2013.09.10 @ 10:24:16



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering Inc

16-17s-29w Lane, KS

562 West State Rd  
Olmitz KS 67564

Boomhower "A" 1-16

Job Ticket: 52909

DST#: 1

ATTN: Vern Schrag

Test Start: 2013.09.02 @ 07:38:15

## GENERAL INFORMATION:

Formation: **LKC E**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:48:45

Time Test Ended: 13:30:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Mike Roberts

Unit No: 65

Interval: **4035.00 ft (KB) To 4051.00 ft (KB) (TVD)**

Reference Elevations: 2826.00 ft (KB)

Total Depth: 4051.00 ft (KB) (TVD)

2819.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

**Serial #: 8846 Outside**

Press @ RunDepth: 51.23 psig @ 4036.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.02

End Date: 2013.09.02

Last Calib.: 2013.09.02

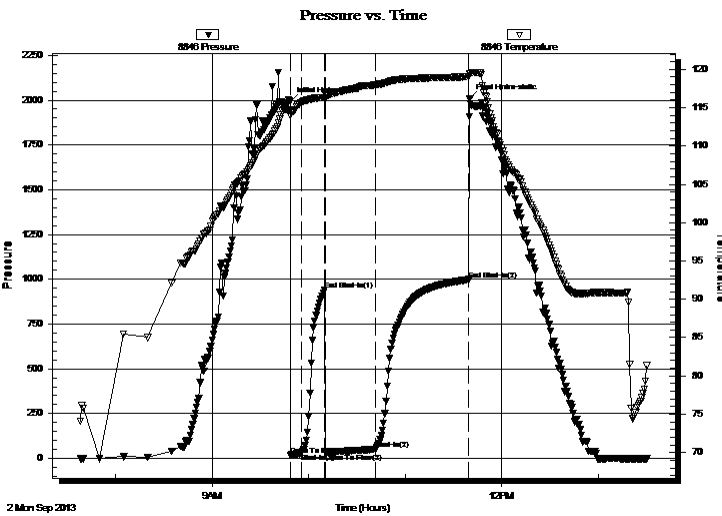
Start Time: 07:38:15

End Time: 13:30:15

Time On Btm: 2013.09.02 @ 09:48:30

Time Off Btm: 2013.09.02 @ 11:40:00

TEST COMMENT: IF: Built to 1" blow  
IS: No return blow  
FF: Built to 2 1/2" blow  
FS: No return blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1992.44	114.70	Initial Hydro-static
1	18.40	113.96	Open To Flow (1)
7	28.12	115.68	Shut-In(1)
22	939.42	116.30	End Shut-In(1)
22	30.71	116.27	Open To Flow (2)
53	51.23	117.96	Shut-In(2)
111	998.07	119.04	End Shut-In(2)
112	2008.96	119.46	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	GIP= 92 feet	0.00
117.00	GCOM 5%g 35% o 60%m	0.58

## Gas Rates

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



**TRILOBITE TESTING, INC.**

## DRILL STEM TEST REPORT

Larson Engineering Inc

16-17s-29w Lane, KS

562 West State Rd  
Olmitz KS 67564

Boomer "A" 1-16

Job Ticket: 52909

**DST#: 1**

ATTN: Vern Schrag

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Reference Elevations: 2826.00 ft (KB)

2819.00 ft (CF)

KB to GR/CF: 7.00 ft

**Serial #: 8737**

**Inside**

Press @ RunDepth: psig @ 4036.00 ft (KB)

Start Date: 2013.09.02

End Date:

2013.09.02

Start Time: 07:38:15

End Time:

13:30:00

Capacity: 8000.00 psig

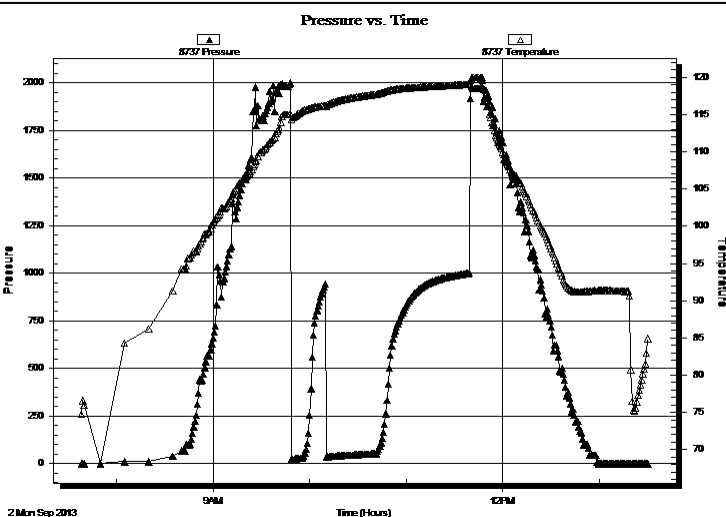
Last Calib.:

2013.09.02

Time On Btm:

Time Off Btm:

**TEST COMMENT:**  
IF: Built to 1" blow  
IS: No return blow  
FF: Built to 2 1/2" blow  
FS: No return blow



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
0.00	GIP= 92 feet	0.00
117.00	GCOM 5%g 35% o 60% m	0.58

### Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering Inc

**16-17s-29w Lane,KS**

562 West State Rd  
Olmitz KS 67564

**Boomhower "A" 1-16**

Job Ticket: 52909

**DST#: 1**

ATTN: Vern Schrag

Test Start: 2013.09.02 @ 07:38:15

## Tool Information

Drill Pipe:	Length: 3885.00 ft	Diameter: 3.80 inches	Volume: 54.50 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 147.00 ft	Diameter: 2.25 inches	Volume: 0.72 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 55.22 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 53000.00 lb
Depth to Top Packer:	4035.00 ft			Final 53000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	16.00 ft			
Tool Length:	44.00 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			4008.00	
Shut In Tool	5.00			4013.00	
Hydraulic tool	5.00			4018.00	
Jars	5.00			4023.00	
Safety Joint	3.00			4026.00	
Packer	5.00			4031.00	28.00 Bottom Of Top Packer
Packer	4.00			4035.00	
Stubb	1.00			4036.00	
Recorder	0.00	8737	Inside	4036.00	
Recorder	0.00	8846	Outside	4036.00	
Perforations	10.00			4046.00	
Bullnose	5.00			4051.00	16.00 Bottom Packers & Anchor

**Total Tool Length: 44.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering Inc

**16-17s-29w Lane,KS**

562 West State Rd  
Olmitz KS 67564

**Boomhower "A" 1-16**

Job Ticket: 52909

**DST#: 1**

ATTN: Vern Schrag

Test Start: 2013.09.02 @ 07:38:15

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.83 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	GIP= 92 feet	0.000
117.00	GCOM 5%g 35% o 60%m	0.575

Total Length: 117.00 ft

Total Volume: 0.575 bbl

Num Fluid Samples: 0

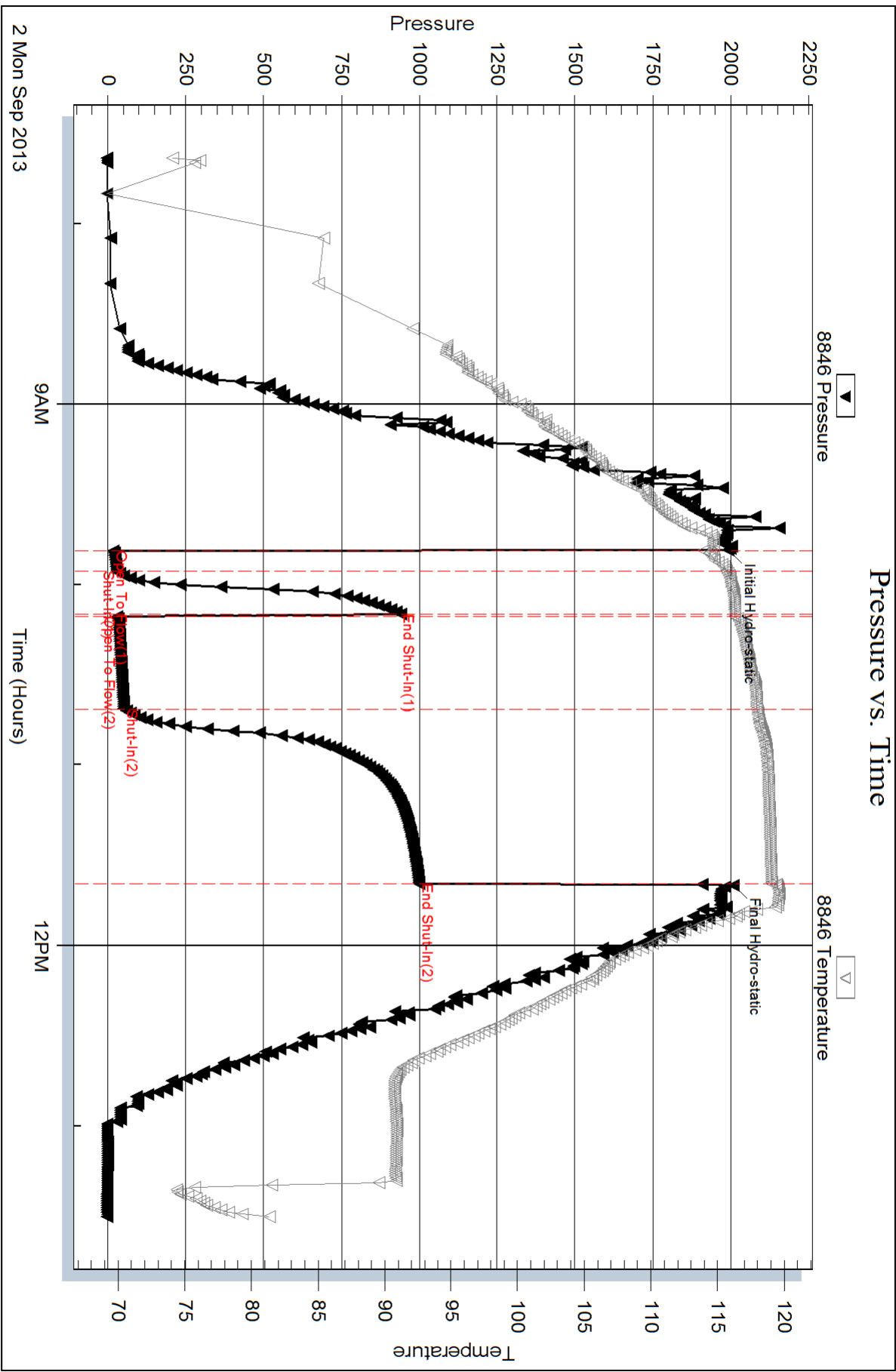
Num Gas Bombs: 0

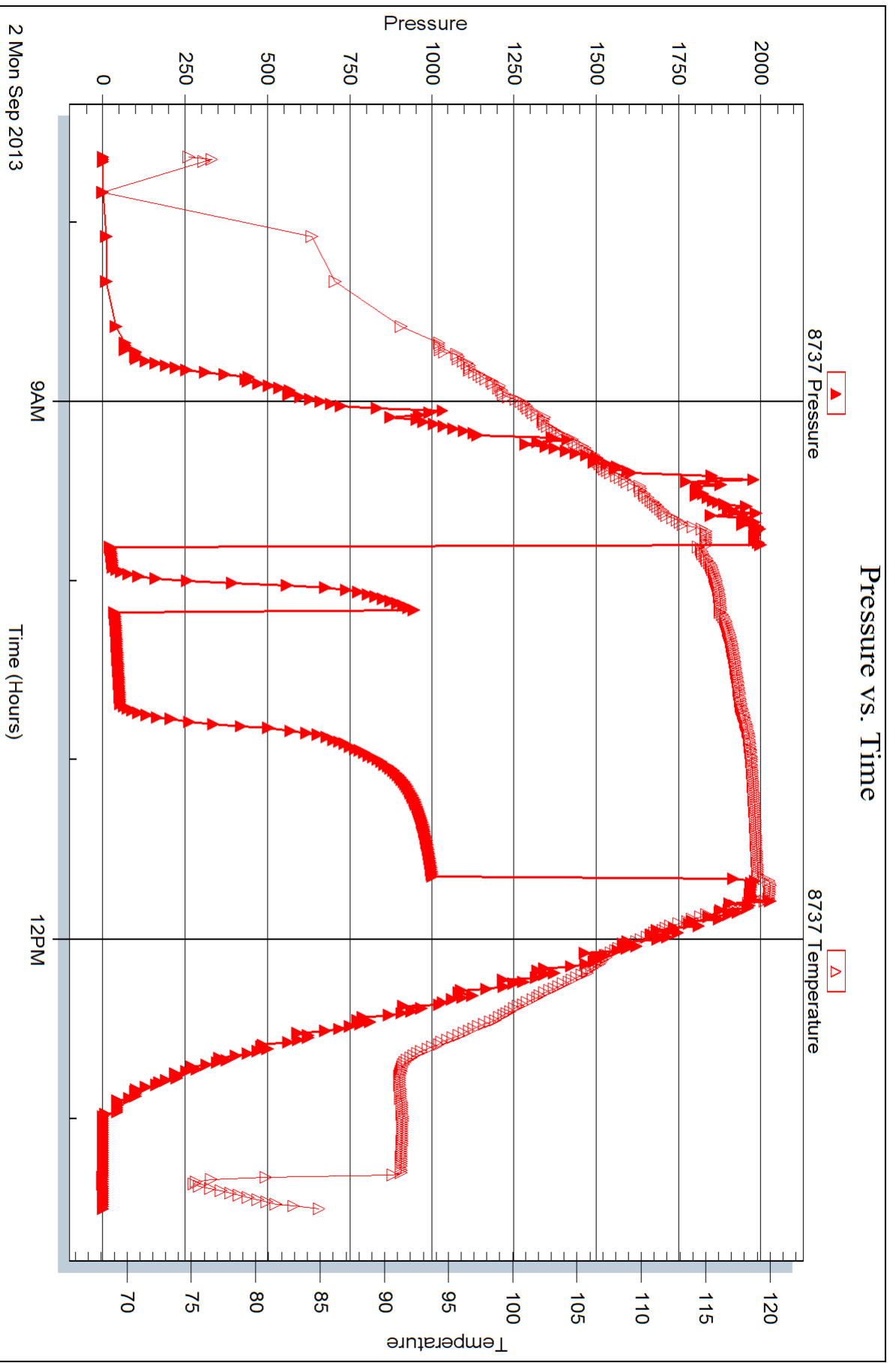
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 West State Rd  
Olmitz KS 67564

ATTN: Vern Schrag

**Boomhower "A" 1-16**

**16-17s-29w Lane,KS**

Start Date: 2013.09.03 @ 07:05:15

End Date: 2013.09.03 @ 12:32:30

Job Ticket #: 52910                      DST #: 2

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

Printed: 2013.09.10 @ 10:23:45





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering Inc

16-17s-29w Lane, KS

562 West State Rd  
Olmitz KS 67564

Boomhower "A" 1-16

ATTN: Vern Schrag

Job Ticket: 52910

DST#: 2

Test Start: 2013.09.03 @ 07:05:15

## GENERAL INFORMATION:

Formation: **LKC H**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:56:30

Time Test Ended: 12:32:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

Interval: **4130.00 ft (KB) To 4155.00 ft (KB) (TVD)**

Reference Elevations: 2826.00 ft (KB)

Total Depth: 4155.00 ft (KB) (TVD)

2819.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: **8846** Outside

Press @ Run Depth: 60.69 psig @ 4131.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.03

End Date: 2013.09.03

Last Calib.: 2013.09.03

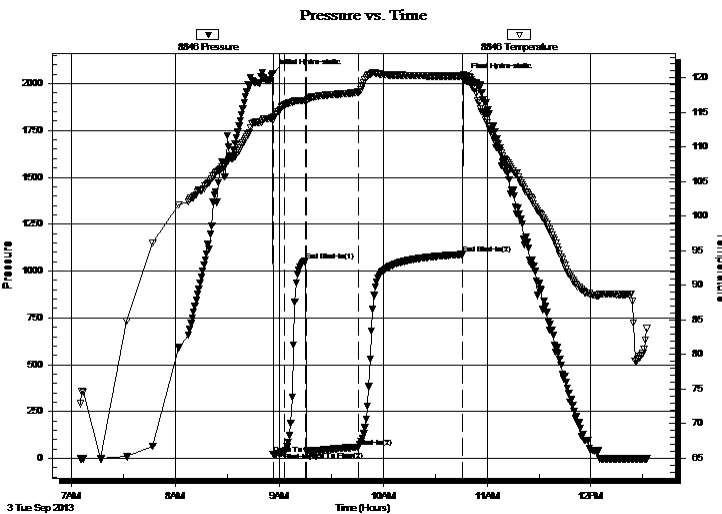
Start Time: 07:05:15

End Time: 12:32:30

Time On Btm: 2013.09.03 @ 08:56:15

Time Off Btm: 2013.09.03 @ 10:46:45

TEST COMMENT: IF: Built to 1" blow  
IS: No return blow  
FF: BOB in 29 min.  
FS: No return blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2052.03	114.28	Initial Hydro-static
1	20.54	113.97	Open To Flow (1)
7	31.42	116.07	Shut-In(1)
19	1055.10	116.72	End Shut-In(1)
20	37.68	116.64	Open To Flow (2)
50	60.69	117.91	Shut-In(2)
110	1088.61	120.28	End Shut-In(2)
111	2030.25	120.28	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	GIP= 62	0.00
117.00	GCMO 20%g 40%m 40%o	0.58

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering Inc  
562 West State Rd  
Olmitz KS 67564  
ATTN: Vern Schrag

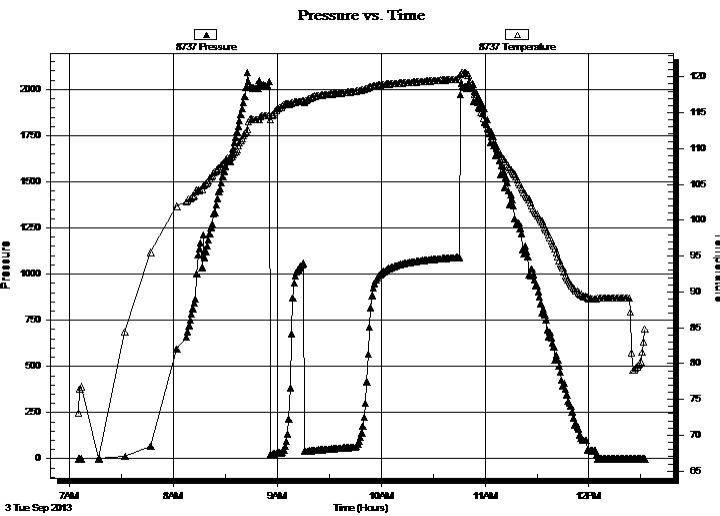
**16-17s-29w Lane, KS**  
**Boomhower "A" 1-16**  
Job Ticket: 52910      **DST#: 2**  
Test Start: 2013.09.03 @ 07:05:15

## GENERAL INFORMATION:

Formation: **LKC H**  
Deviated: No Whipstock:      ft (KB)  
Time Tool Opened: 08:56:30  
Time Test Ended: 12:32:30  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Mike Roberts  
Unit No: 65  
**Interval: 4130.00 ft (KB) To 4155.00 ft (KB) (TVD)**  
Reference Elevations: 2826.00 ft (KB)  
Total Depth: 4155.00 ft (KB) (TVD)      2819.00 ft (CF)  
Hole Diameter: 7.88 inches Hole Condition: Fair      KB to GR/CF: 7.00 ft

**Serial #: 8737      Inside**  
Press @ Run Depth:      psig @ 4131.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2013.09.03      End Date: 2013.09.03      Last Calib.: 2013.09.03  
Start Time: 07:05:15      End Time: 12:32:15      Time On Btm:  
Time Off Btm:

TEST COMMENT: IF: Built to 1" blow  
IS: No return blow  
FF: BOB in 29 min.  
FS: No return blow



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	GIP= 62	0.00
117.00	GCMO 20%g 40%m 40%o	0.58

\* 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

**16-17s-29w Lane,KS**

562 West State Rd  
Olmitz KS 67564

**Boomhower "A" 1-16**

Job Ticket: 52910

**DST#: 2**

ATTN: Vern Schrag

Test Start: 2013.09.03 @ 07:05:15

## Tool Information

Drill Pipe:	Length: 3970.00 ft	Diameter: 3.80 inches	Volume: 55.69 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 147.00 ft	Diameter: 2.25 inches	Volume: 0.72 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 56.41 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 53000.00 lb
Depth to Top Packer:	4130.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	25.00 ft			
Tool Length:	53.00 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			4103.00	
Shut In Tool	5.00			4108.00	
Hydraulic tool	5.00			4113.00	
Jars	5.00			4118.00	
Safety Joint	3.00			4121.00	
Packer	5.00			4126.00	28.00 Bottom Of Top Packer
Packer	4.00			4130.00	
Stubb	1.00			4131.00	
Recorder	0.00	8737	Inside	4131.00	
Recorder	0.00	8846	Outside	4131.00	
Perforations	19.00			4150.00	
Bullnose	5.00			4155.00	25.00 Bottom Packers & Anchor

**Total Tool Length: 53.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering Inc

**16-17s-29w Lane,KS**

562 West State Rd  
Olmitz KS 67564

**Boomhower "A" 1-16**

Job Ticket: 52910

**DST#: 2**

ATTN: Vern Schrag

Test Start: 2013.09.03 @ 07:05:15

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.72 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1600.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	GIP= 62	0.000
117.00	GCMO 20%g 40%m 40%o	0.575

Total Length: 117.00 ft

Total Volume: 0.575 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

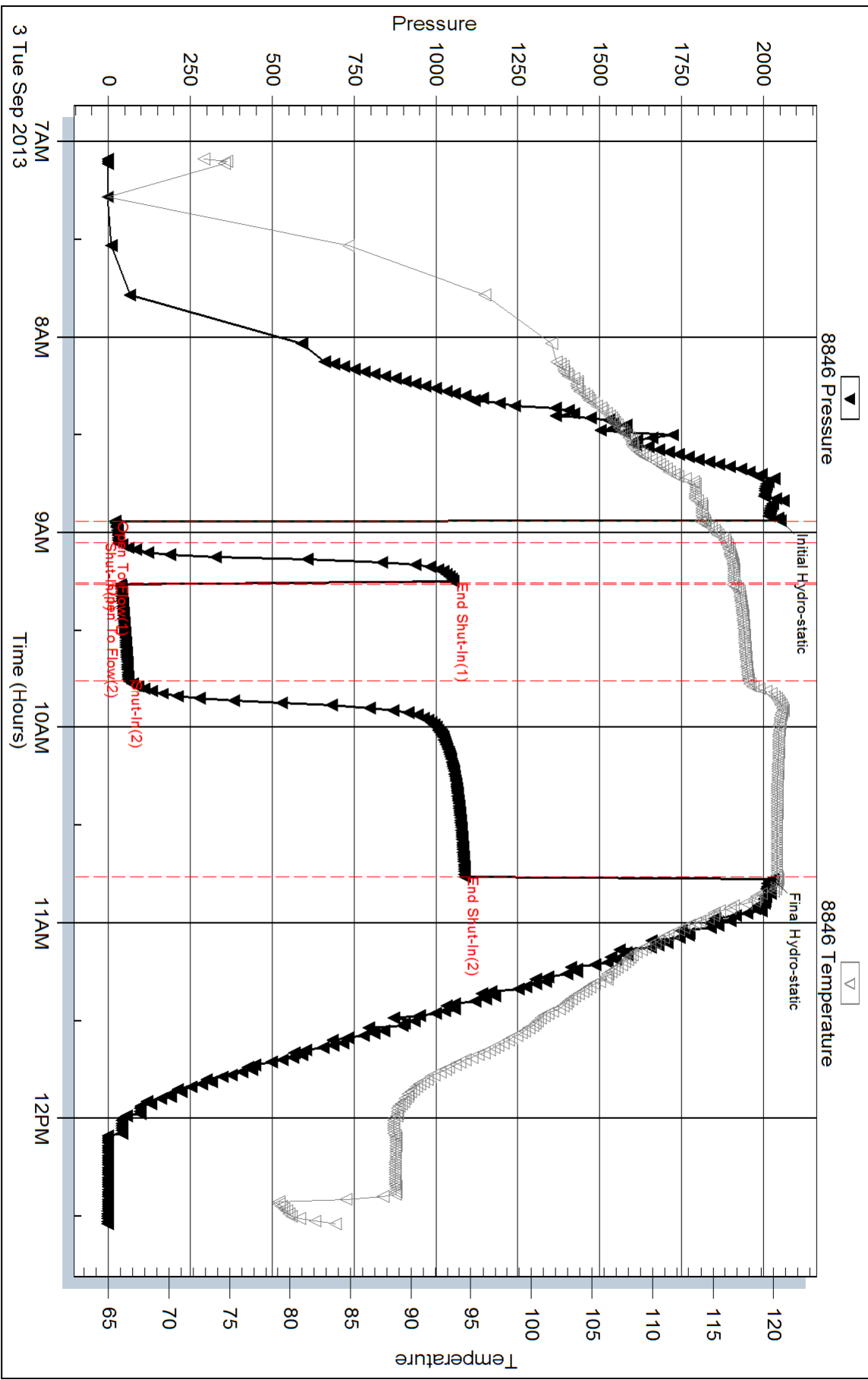
Serial #:

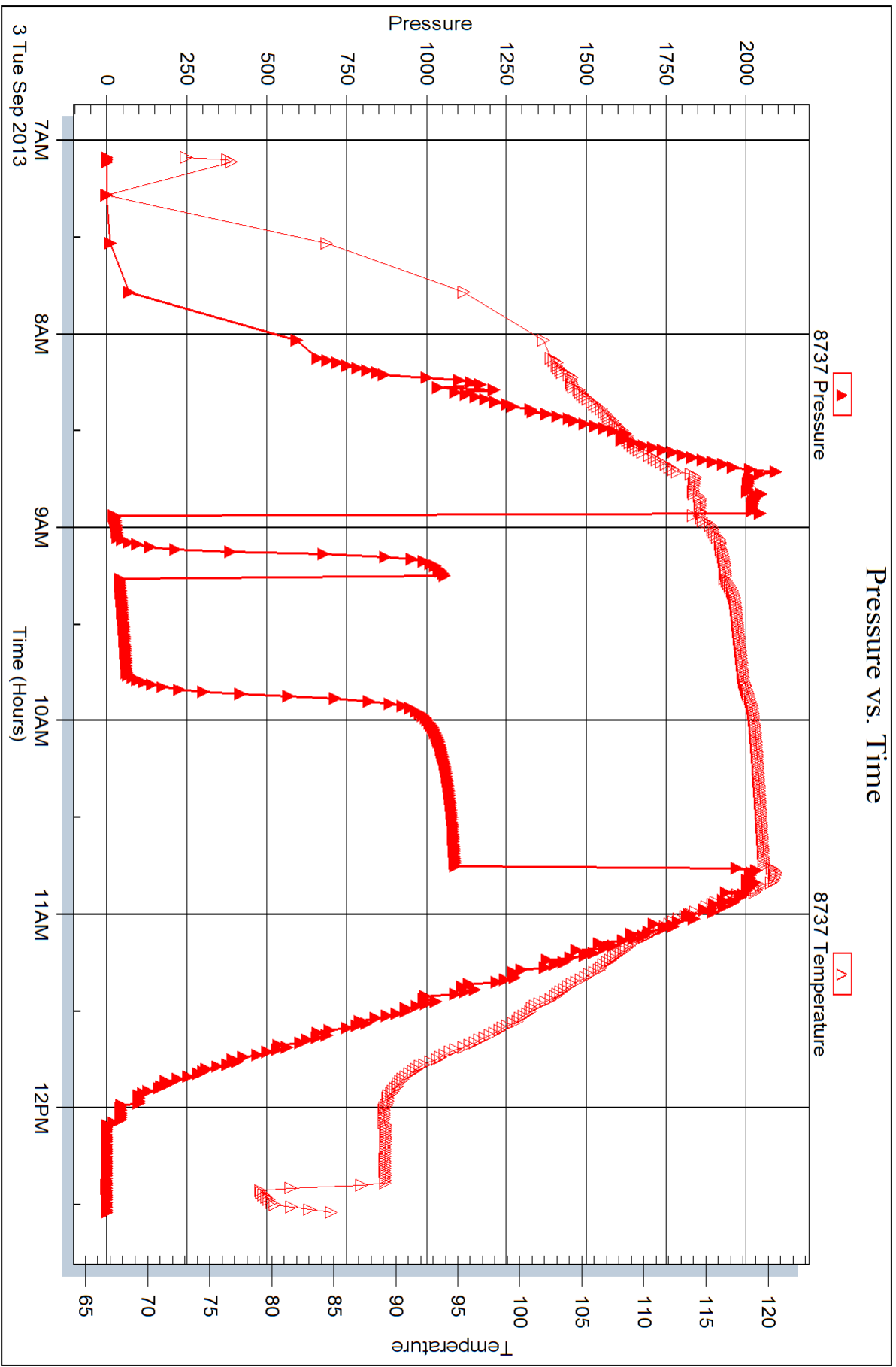
Laboratory Name:

Laboratory Location:

Recovery Comments:

# Pressure vs. Time







## DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 West State Rd  
Olmitz KS 67564

ATTN: Vern Schrag

**Boomhower "A" 1-16**

**16-17s-29w Lane,KS**

Start Date: 2013.09.03 @ 00:20:15

End Date: 2013.09.03 @ 05:38:00

Job Ticket #: 52911                      DST #: 3

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

Printed: 2013.09.10 @ 10:23:14



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering Inc

16-17s-29w Lane, KS

562 West State Rd  
Olmitz KS 67564

Boomhower "A" 1-16

ATTN: Vern Schrag

Job Ticket: 52911

DST#: 3

Test Start: 2013.09.03 @ 00:20:15

## GENERAL INFORMATION:

Formation: **LKC J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:03:45

Time Test Ended: 05:38:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

Interval: **4185.00 ft (KB) To 4206.00 ft (KB) (TVD)**

Reference Elevations: 2826.00 ft (KB)

Total Depth: 4206.00 ft (KB) (TVD)

2819.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: **8846**

Outside

Press @ Run Depth: 104.88 psig @ 4186.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.03

End Date:

2013.09.03

Last Calib.:

2013.09.04

Start Time: 00:20:15

End Time:

05:38:00

Time On Btm:

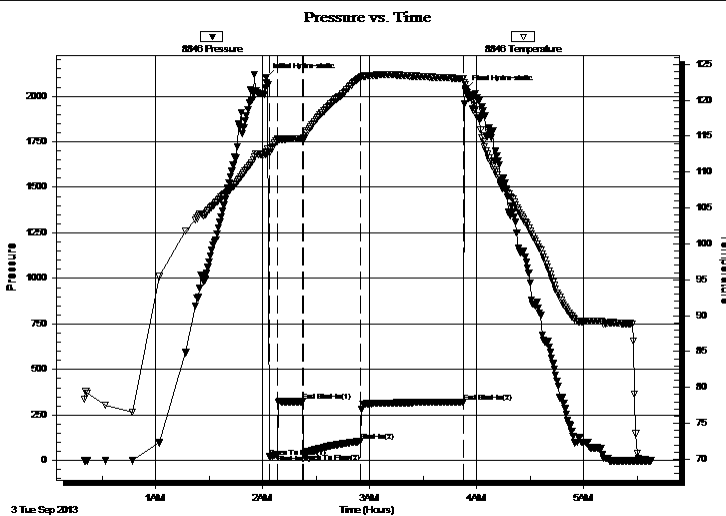
2013.09.03 @ 02:02:00

Time Off Btm:

2013.09.03 @ 03:53:45

TEST COMMENT: IF: Built to 1/2" blow  
IS: No return blow  
FF: Built to 4" blow  
FS: No return blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2103.13	112.60	Initial Hydro-static
2	19.82	112.62	Open To Flow (1)
7	34.99	114.56	Shut-In(1)
21	323.60	114.69	End Shut-In(1)
21	38.35	114.63	Open To Flow (2)
53	104.88	123.13	Shut-In(2)
111	320.55	122.98	End Shut-In(2)
112	2034.50	122.17	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
239.00	OCM 3%o 97%m	2.01

## Gas Rates

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

\* Recovery from multiple tests





# TRILOBITE TESTING, INC.

## DRILL STEM TEST REPORT

Larson Engineering Inc  
 562 West State Rd  
 Olmitz KS 67564  
 ATTN: Vern Schrag

16-17s-29w Lane,KS  
**Boomhower "A" 1-16**  
 Job Ticket: 52911 **DST#: 3**  
 Test Start: 2013.09.03 @ 00:20:15

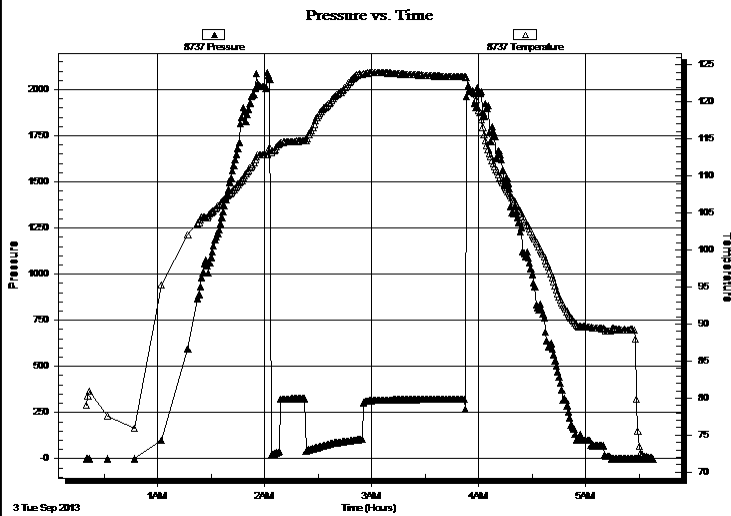
### GENERAL INFORMATION:

Formation: **LKC J**  
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 02:03:45 Tester: Mike Roberts  
 Time Test Ended: 05:38:00 Unit No: 65  
**Interval: 4185.00 ft (KB) To 4206.00 ft (KB) (TVD)** Reference Elevations: 2826.00 ft (KB)  
 Total Depth: 4206.00 ft (KB) (TVD) 2819.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 7.00 ft

### Serial #: 8737 Inside

Press @ Run Depth: psig @ 4186.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.09.03 End Date: 2013.09.03 Last Calib.: 2013.09.04  
 Start Time: 00:20:15 End Time: 05:38:00 Time On Btm:  
 Time Off Btm:

TEST COMMENT: IF: Built to 1/2" blow  
 IS: No return blow  
 FF: Built to 4" blow  
 FS: No return blow



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
239.00	OCM 3%o 97%m	2.01

### Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering Inc

**16-17s-29w Lane,KS**

562 West State Rd  
Olmitz KS 67564

**Boomhower "A" 1-16**

Job Ticket: 52911

**DST#: 3**

ATTN: Vern Schrag

Test Start: 2013.09.03 @ 00:20:15

## Tool Information

Drill Pipe:	Length: 4044.00 ft	Diameter: 3.80 inches	Volume: 56.73 bbl	Tool Weight:	1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 147.00 ft	Diameter: 2.25 inches	Volume: 0.72 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 57.45 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	34.00 ft			String Weight: Initial	58000.00 lb
Depth to Top Packer:	4185.00 ft			Final	59000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	21.00 ft				
Tool Length:	49.00 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			4158.00	
Shut In Tool	5.00			4163.00	
Hydraulic tool	5.00			4168.00	
Jars	5.00			4173.00	
Safety Joint	3.00			4176.00	
Packer	5.00			4181.00	28.00 Bottom Of Top Packer
Packer	4.00			4185.00	
Stubb	1.00			4186.00	
Recorder	0.00	8737	Inside	4186.00	
Recorder	0.00	8846	Outside	4186.00	
Perforations	15.00			4201.00	
Bullnose	5.00			4206.00	21.00 Bottom Packers & Anchor

**Total Tool Length: 49.00**



**TRILOBITE**  
**TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering Inc

**16-17s-29w Lane,KS**

562 West State Rd  
Olmitz KS 67564

**Boomhower "A" 1-16**

Job Ticket: 52911

**DST#: 3**

ATTN: Vern Schrag

Test Start: 2013.09.03 @ 00:20:15

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 67.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.34 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1700.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
239.00	OCM 3%o 97%m	2.013

Total Length: 239.00 ft

Total Volume: 2.013 bbl

Num Fluid Samples: 0

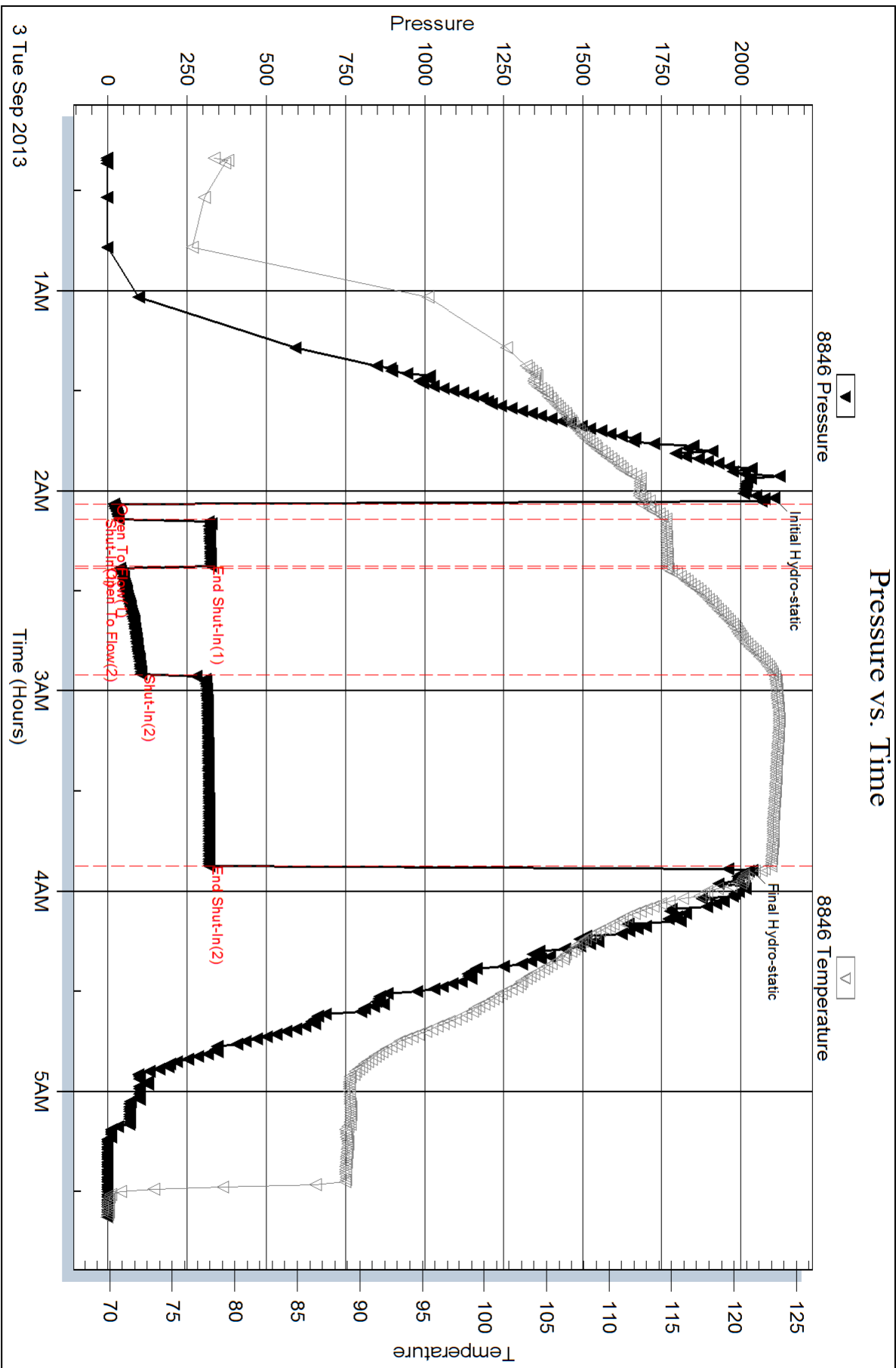
Num Gas Bombs: 0

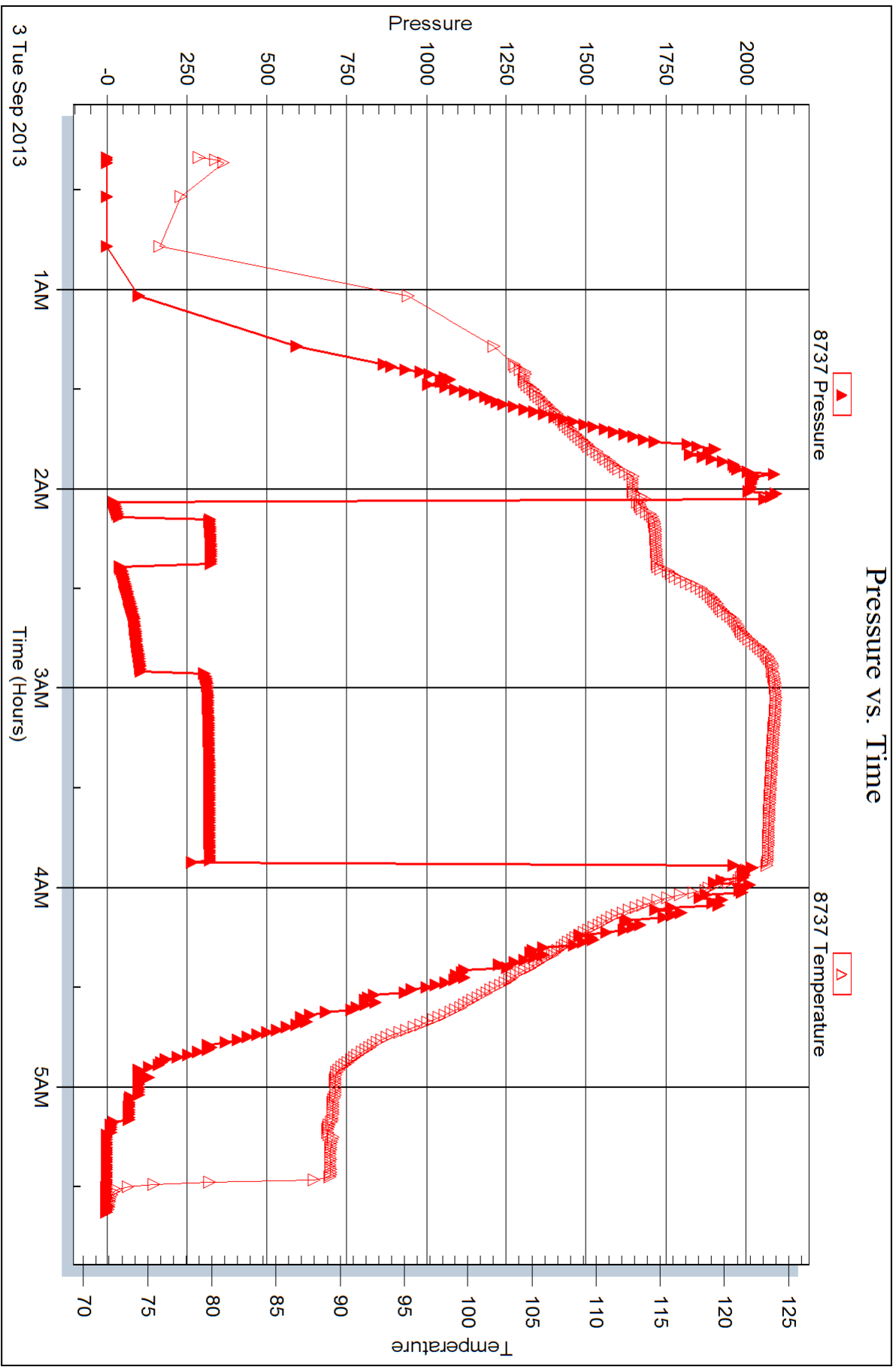
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 West State Rd  
Olmitz KS 67564

ATTN: Vern Schrag

**Boomhower "A" 1-16**

**16-17s-29w Lane,KS**

Start Date: 2013.09.04 @ 15:36:15

End Date: 2013.09.04 @ 20:31:30

Job Ticket #: 52912                      DST #: 4

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

Printed: 2013.09.10 @ 10:22:45



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering Inc

16-17s-29w Lane, KS

562 West State Rd  
Olmitz KS 67564

Boomhower "A" 1-16

ATTN: Vern Schrag

Job Ticket: 52912

DST#: 4

Test Start: 2013.09.04 @ 15:36:15

## GENERAL INFORMATION:

Formation: **LKC K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:24:15

Time Test Ended: 20:31:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

Interval: **4220.00 ft (KB) To 4236.00 ft (KB) (TVD)**

Reference Elevations: 2826.00 ft (KB)

Total Depth: 4236.00 ft (KB) (TVD)

2819.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: **8846** Outside

Press @ Run Depth: 99.63 psig @ 4221.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.04

End Date:

2013.09.04

Last Calib.: 2013.09.04

Start Time: 15:36:15

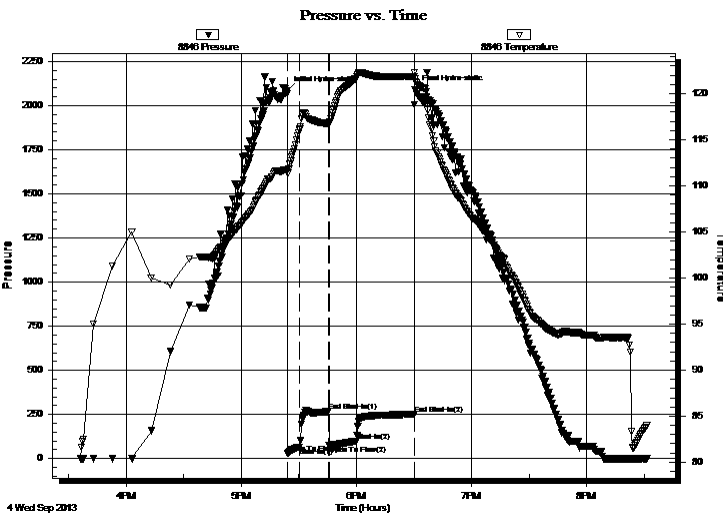
End Time:

20:31:30

Time On Btm: 2013.09.04 @ 17:24:00

Time Off Btm: 2013.09.04 @ 18:30:30

TEST COMMENT: IF: Built to 4" blow  
IS: No return blow  
FF: BOB in 12 min.  
FS: Built to 1" return blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2086.08	111.78	Initial Hydro-static
1	28.63	111.35	Open To Flow (1)
7	65.62	116.18	Shut-In(1)
22	266.94	116.76	End Shut-In(1)
22	73.04	116.70	Open To Flow (2)
36	99.63	121.68	Shut-In(2)
66	250.58	121.86	End Shut-In(2)
67	2092.35	121.61	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
117.00	GCOM 2%g 38%o 60%m	0.58
94.00	Free oil 100%o	1.05
0.00	GIP=92 feet	0.00

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering Inc

16-17s-29w Lane,KS

562 West State Rd  
Olmitz KS 67564

**Boomhower "A" 1-16**

ATTN: Vern Schrag

Job Ticket: 52912

**DST#: 4**

Test Start: 2013.09.04 @ 15:36:15

**GENERAL INFORMATION:**

Formation: **LKC K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:24:15

Time Test Ended: 20:31:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

**Interval: 4220.00 ft (KB) To 4236.00 ft (KB) (TVD)**

Reference Elevations: 2826.00 ft (KB)

Total Depth: 4236.00 ft (KB) (TVD)

2819.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

**Serial #: 8737 Inside**

Press @RunDepth: psig @ 4221.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.04

End Date: 2013.09.04

Last Calib.: 2013.09.04

Start Time: 15:36:15

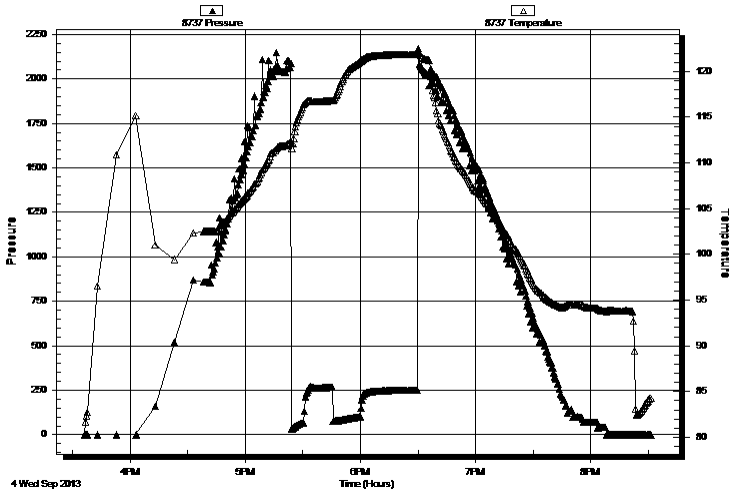
End Time: 20:31:30

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IF:Built to 4" blow  
IS:No return blow  
FF:BOB in 12 min.  
FS:Built to 1" return blow

**Pressure vs. Time**



**PRESSURE SUMMARY**

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

**Recovery**

Length (ft)	Description	Volume (bbl)
117.00	GCOM 2%g 38%o 60%m	0.58
94.00	Free oil 100%o	1.05
0.00	GIP=92 feet	0.00

**Gas Rates**

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

\* Recovery from multiple tests





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering Inc

**16-17s-29w Lane, KS**

562 West State Rd  
Olmitz KS 67564

**Boomhower "A" 1-16**

Job Ticket: 52912

**DST#: 4**

ATTN: Vern Schrag

Test Start: 2013.09.04 @ 15:36:15

## Tool Information

Drill Pipe:	Length: 4074.00 ft	Diameter: 3.80 inches	Volume: 57.15 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 147.00 ft	Diameter: 2.25 inches	Volume: 0.72 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 57.87 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial 59000.00 lb
Depth to Top Packer:	4220.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	16.00 ft			
Tool Length:	44.00 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			4193.00	
Shut In Tool	5.00			4198.00	
Hydraulic tool	5.00			4203.00	
Jars	5.00			4208.00	
Safety Joint	3.00			4211.00	
Packer	5.00			4216.00	28.00 Bottom Of Top Packer
Packer	4.00			4220.00	
Stubb	1.00			4221.00	
Recorder	0.00	8737	Inside	4221.00	
Recorder	0.00	8846	Outside	4221.00	
Perforations	10.00			4231.00	
Bullnose	5.00			4236.00	16.00 Bottom Packers & Anchor

**Total Tool Length: 44.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering Inc

**16-17s-29w Lane,KS**

562 West State Rd  
Olmitz KS 67564

**Boomhower "A" 1-16**

Job Ticket: 52912

**DST#: 4**

ATTN: Vern Schrag

Test Start: 2013.09.04 @ 15:36:15

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

28 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 63.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.75 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
117.00	GCOM 2%g 38%o 60%m	0.575
94.00	Free oil 100%o	1.045
0.00	GIP=92 feet	0.000

Total Length: 211.00 ft      Total Volume: 1.620 bbl

Num Fluid Samples: 0

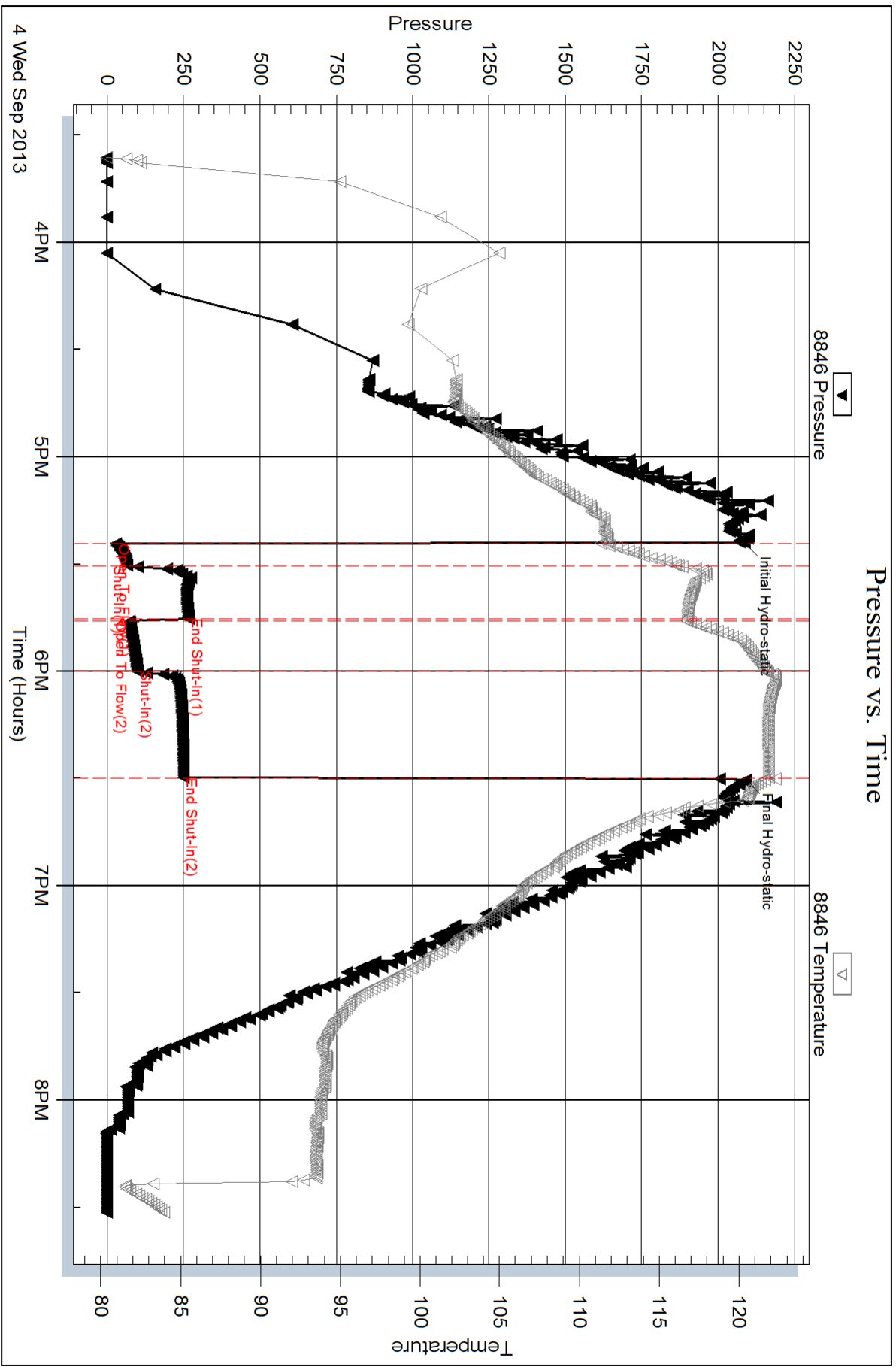
Num Gas Bombs: 0

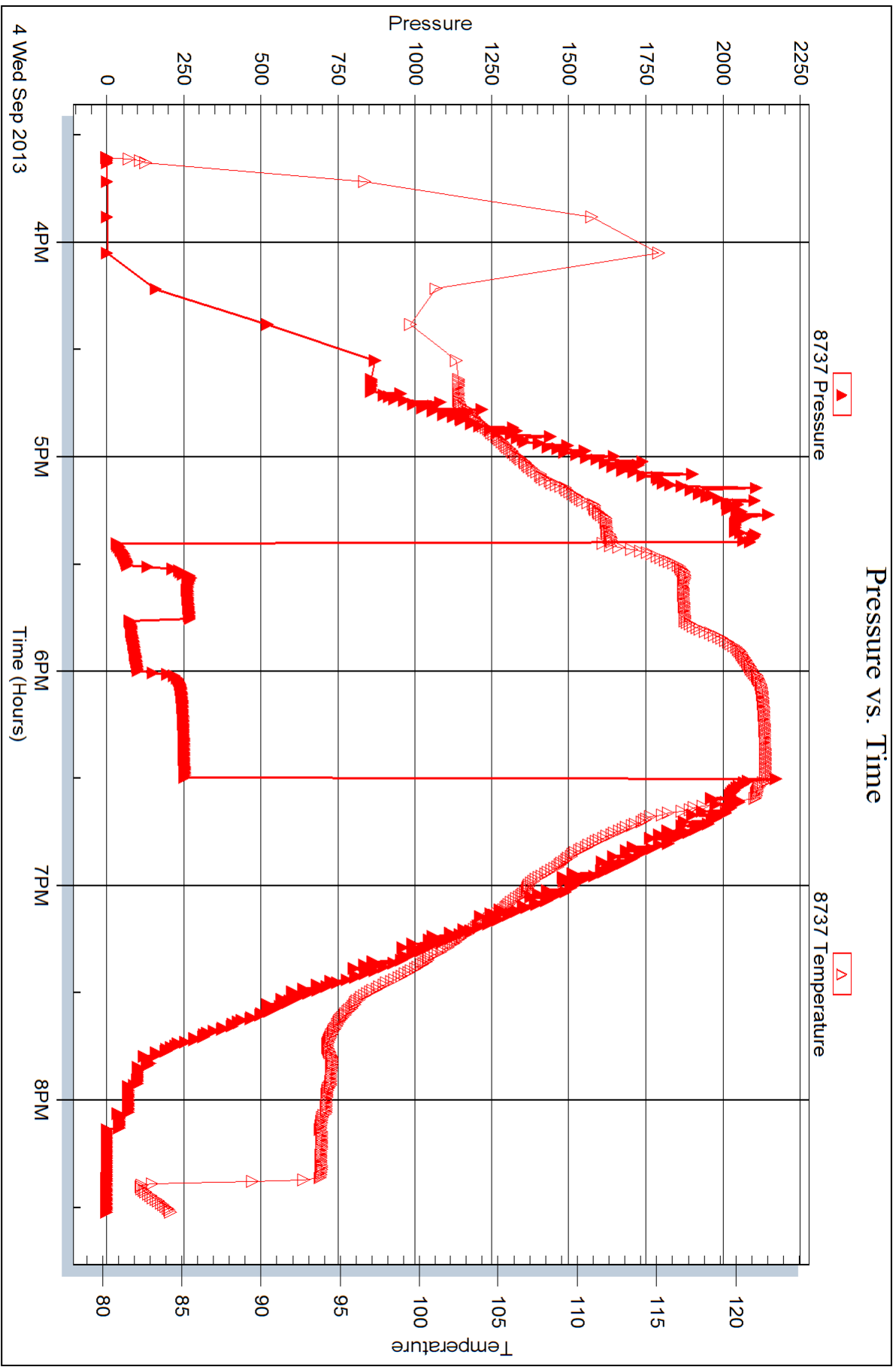
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API= 31 @90 corrected to 28 @ 60







## DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 West State Rd  
Olmitz KS 67564

ATTN: Vern Schrag

**Boomhower "A" 1-16**

**16-17s-29w Lane,KS**

Start Date: 2013.09.05 @ 08:30:15

End Date: 2013.09.05 @ 13:48:30

Job Ticket #: 52913                      DST #: 5

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

Printed: 2013.09.10 @ 10:21:50



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering Inc  
 562 West State Rd  
 Olmitz KS 67564  
 ATTN: Vern Schrag

**16-17s-29w Lane, KS**  
**Boomhower "A" 1-16**  
 Job Ticket: 52913 **DST#: 5**  
 Test Start: 2013.09.05 @ 08:30:15

## GENERAL INFORMATION:

Formation: **LKC L**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 10:45:15  
 Time Test Ended: 13:48:30  
 Interval: **4259.00 ft (KB) To 4275.00 ft (KB) (TVD)**  
 Total Depth: 4275.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Mike Roberts  
 Unit No: 65  
 Reference Elevations: 2826.00 ft (KB)  
 2819.00 ft (CF)  
 KB to GR/CF: 7.00 ft

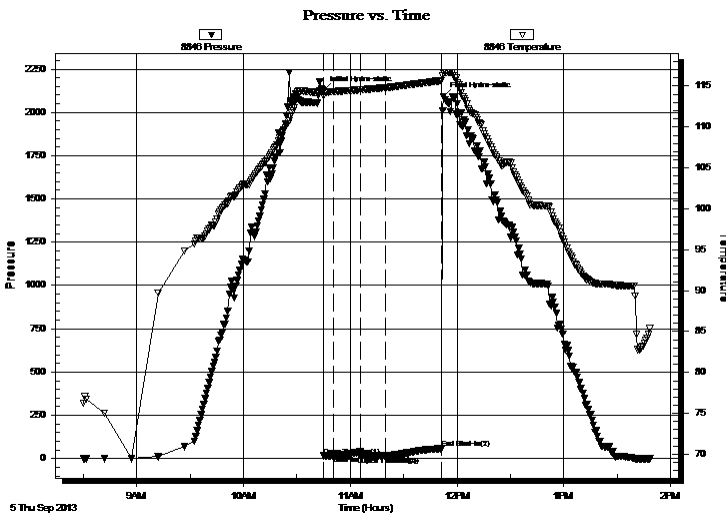
## Serial #: 8846

Outside

Press @ Run Depth: 16.41 psig @ 4260.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.09.05 End Date: 2013.09.05 Last Calib.: 2013.09.05  
 Start Time: 08:30:15 End Time: 13:48:30 Time On Btm: 2013.09.05 @ 10:45:00  
 Time Off Btm: 2013.09.05 @ 11:52:30

TEST COMMENT: IF:Weak surface  
 IS:No return blow  
 FF:No blow  
 FS:No return blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2125.74	114.35	Initial Hydro-static
1	16.12	113.81	Open To Flow (1)
6	16.76	114.32	Shut-In(1)
21	38.85	114.54	End Shut-In(1)
21	15.29	114.53	Open To Flow (2)
35	16.41	114.81	Shut-In(2)
67	57.30	115.68	End Shut-In(2)
68	2089.41	116.59	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
2.00	mud w ith oil spots	0.01

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering Inc

**16-17s-29w Lane, KS**

562 West State Rd  
Olmitz KS 67564

**Boomhower "A" 1-16**

Job Ticket: 52913 **DST#: 5**

ATTN: Vern Schrag

Test Start: 2013.09.05 @ 08:30:15

## GENERAL INFORMATION:

Formation: **LKC L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:45:15

Time Test Ended: 13:48:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

**Interval: 4259.00 ft (KB) To 4275.00 ft (KB) (TVD)**

Reference Elevations: 2826.00 ft (KB)

Total Depth: 4275.00 ft (KB) (TVD)

2819.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

**Serial #: 8737 Inside**

Press @ RunDepth: psig @ 4260.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.05 End Date: 2013.09.05

Last Calib.: 2013.09.05

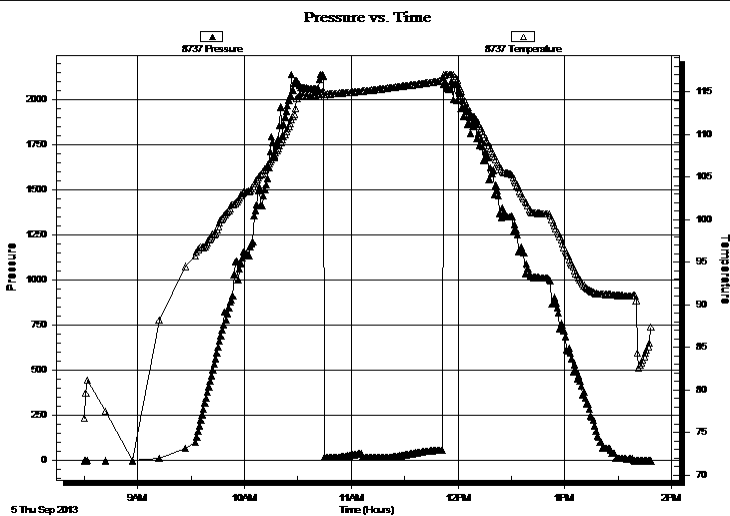
Start Time: 08:30:15 End Time: 13:48:30

Time On Btm:

Time Off Btm:

TEST COMMENT: IF:Weak surface  
IS:No return blow  
FF:No blow  
FS:No return blow

## PRESSURE SUMMARY



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

## Recovery

Length (ft)	Description	Volume (bbl)
2.00	mud w ith oil spots	0.01

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering Inc

**16-17s-29w Lane,KS**

562 West State Rd  
Olmitz KS 67564

**Boomhower "A" 1-16**

Job Ticket: 52913

**DST#: 5**

ATTN: Vern Schrag

Test Start: 2013.09.05 @ 08:30:15

## Tool Information

Drill Pipe:	Length: 4106.00 ft	Diameter: 3.80 inches	Volume: 57.60 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 147.00 ft	Diameter: 2.25 inches	Volume: 0.72 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 58.32 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 59000.00 lb
Depth to Top Packer:	4259.00 ft			Final 59000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	16.00 ft			
Tool Length:	44.00 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			4232.00	
Shut In Tool	5.00			4237.00	
Hydraulic tool	5.00			4242.00	
Jars	5.00			4247.00	
Safety Joint	3.00			4250.00	
Packer	5.00			4255.00	28.00 Bottom Of Top Packer
Packer	4.00			4259.00	
Stubb	1.00			4260.00	
Recorder	0.00	8737	Inside	4260.00	
Recorder	0.00	8846	Outside	4260.00	
Perforations	10.00			4270.00	
Bullnose	5.00			4275.00	16.00 Bottom Packers & Anchor

**Total Tool Length: 44.00**





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering Inc

**16-17s-29w Lane, KS**

562 West State Rd  
Olmitz KS 67564

**Boomhower "A" 1-16**

Job Ticket: 52913

**DST#: 5**

ATTN: Vern Schrag

Test Start: 2013.09.05 @ 08:30:15

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 63.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.75 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	mud w ith oil spots	0.010

Total Length: 2.00 ft      Total Volume: 0.010 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

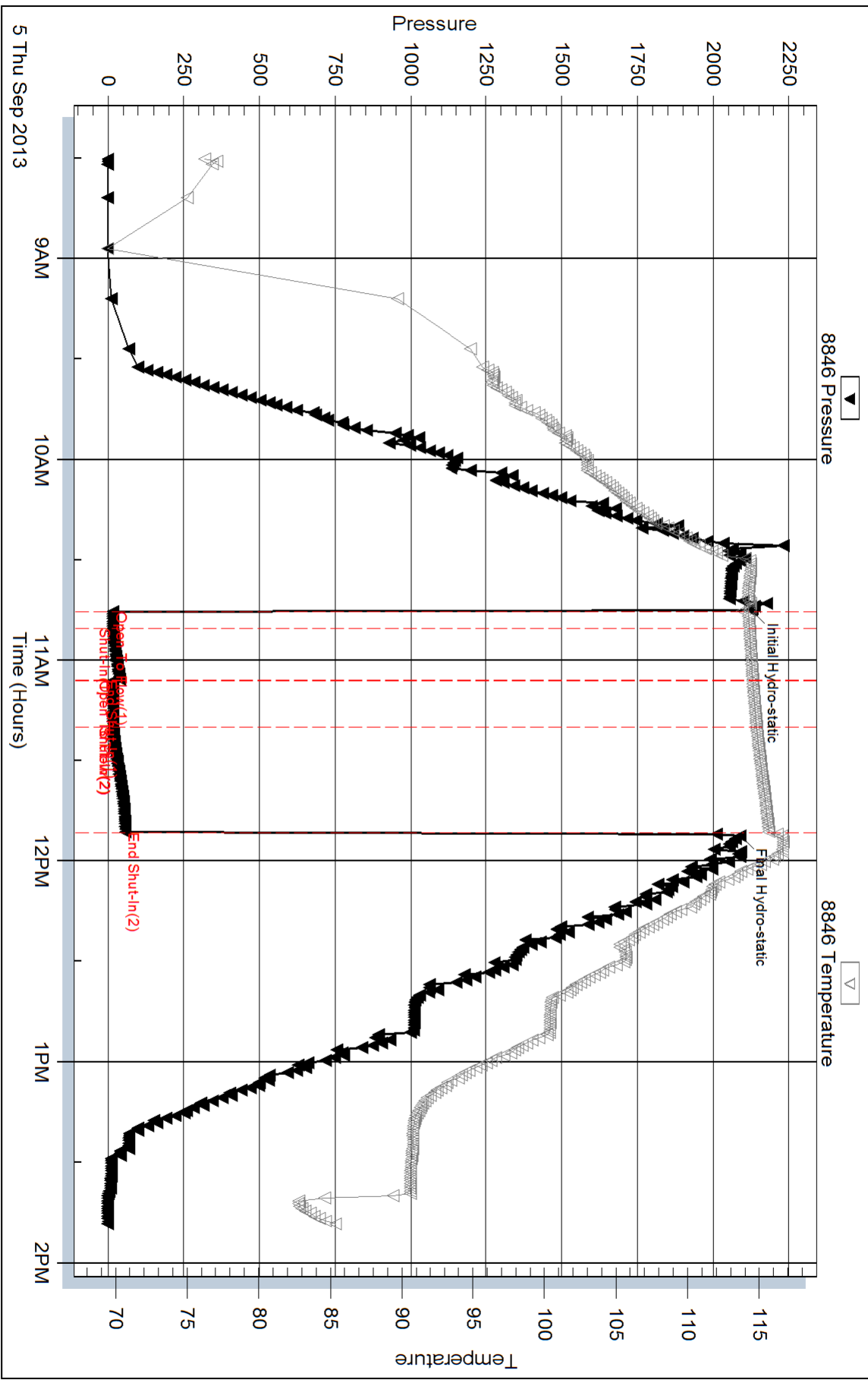
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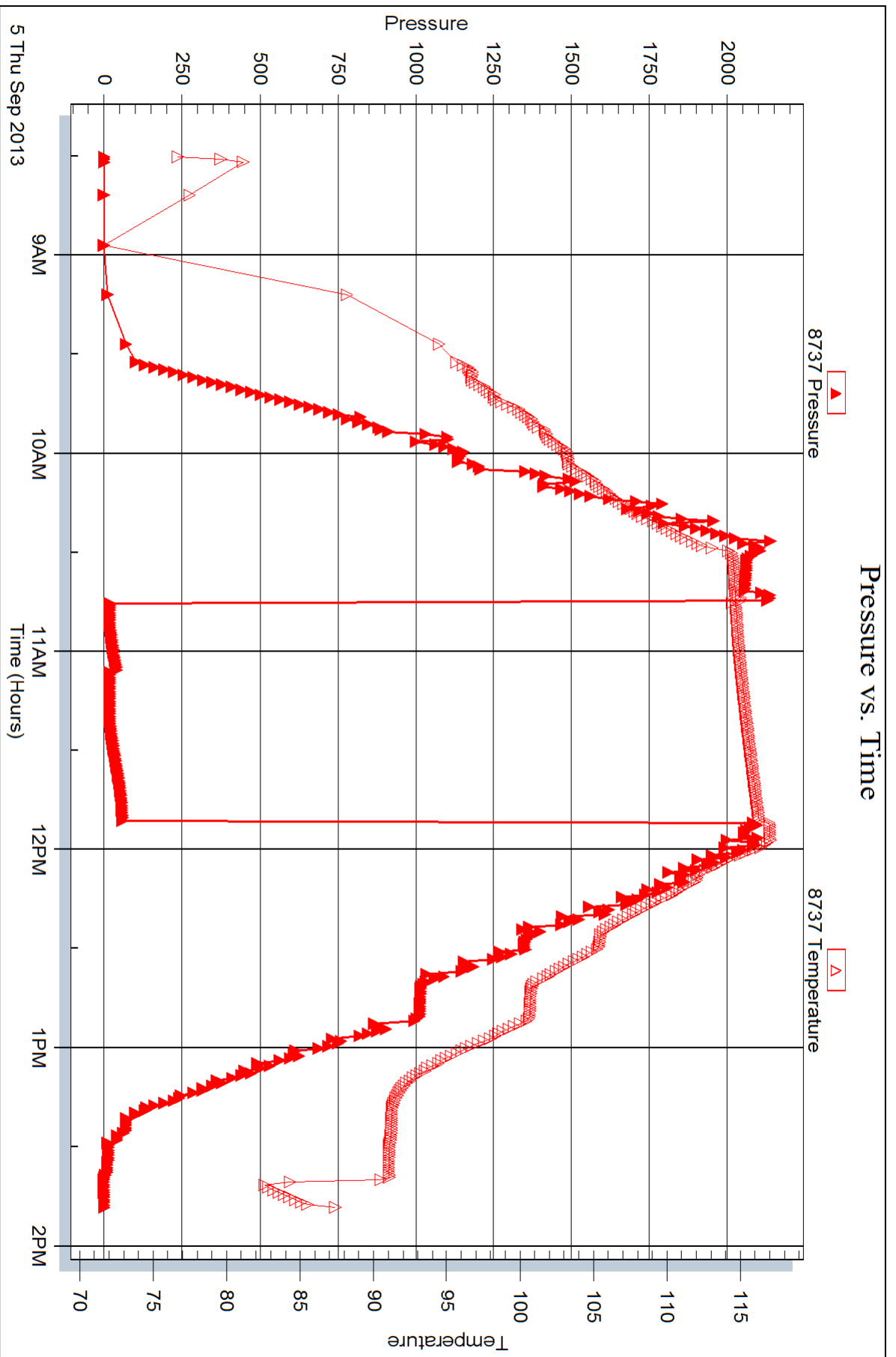
Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time







## DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 West State Rd  
Olmitz KS 67564

ATTN: Vern Schrag

**Boomhower "A" 1-16**

**16-17s-29w Lane,KS**

Start Date: 2013.09.06 @ 20:15:15

End Date: 2013.09.07 @ 01:07:15

Job Ticket #: 52914                      DST #: 6

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.09.10 @ 10:20:35



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering Inc

16-17s-29w Lane, KS

562 West State Rd  
Olmitz KS 67564

**Boomhower "A" 1-16**

Job Ticket: 52914

**DST#: 6**

ATTN: Vern Schrag

Test Start: 2013.09.06 @ 20:15:15

## GENERAL INFORMATION:

Formation: **Pawnee Ft. Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:12:45

Time Test Ended: 01:07:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

**Interval: 4418.00 ft (KB) To 4500.00 ft (KB) (TVD)**

Reference Elevations: 2826.00 ft (KB)

Total Depth: 4500.00 ft (KB) (TVD)

2819.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

**Serial #: 8846**

**Inside**

Press @ Run Depth: 56.70 psig @ 4419.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.06

End Date:

2013.09.07

Last Calib.: 2013.09.07

Start Time: 20:15:15

End Time:

01:07:15

Time On Btm: 2013.09.06 @ 22:12:30

Time Off Btm: 2013.09.06 @ 23:21:00

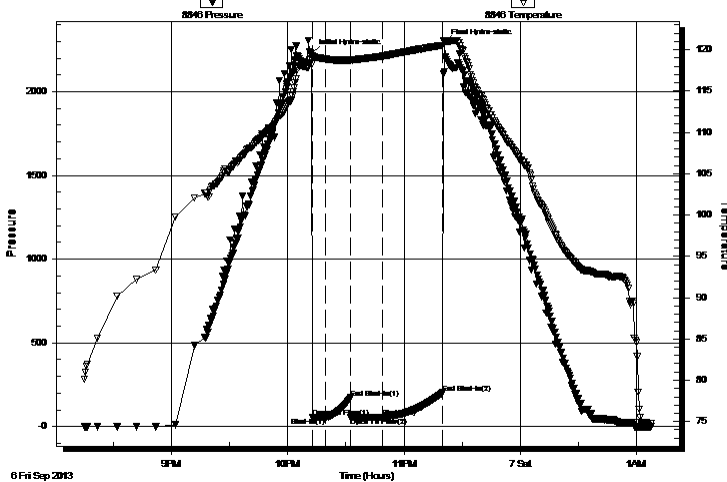
TEST COMMENT: IF: Built to weak surface blow

IS: No return blow

FF: No blow

FS: No return blow

Pressure vs. Time



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2227.65	119.31	Initial Hydro-static
1	55.50	118.40	Open To Flow (1)
7	55.64	118.87	Shut-In(1)
20	171.43	118.78	End Shut-In(1)
20	55.68	118.72	Open To Flow (2)
37	56.70	119.24	Shut-In(2)
68	201.50	120.55	End Shut-In(2)
69	2289.91	121.09	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud with oil spots	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

**16-17s-29w Lane,KS**

562 West State Rd  
Olmitz KS 67564

**Boomhower "A" 1-16**

Job Ticket: 52914

**DST#: 6**

ATTN: Vern Schrag

Test Start: 2013.09.06 @ 20:15:15

## Tool Information

Drill Pipe:	Length: 4261.00 ft	Diameter: 3.80 inches	Volume: 59.77 bbl	Tool Weight:	1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 147.00 ft	Diameter: 2.25 inches	Volume: 0.72 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 60.49 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial	60000.00 lb
Depth to Top Packer:	4418.00 ft			Final	60000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	82.00 ft				
Tool Length:	111.00 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			4390.00	
Shut In Tool	5.00			4395.00	
Hydraulic tool	5.00			4400.00	
Jars	5.00			4405.00	
Safety Joint	3.00			4408.00	
Packer	5.00			4413.00	29.00 Bottom Of Top Packer
Packer	5.00			4418.00	
Stubb	1.00			4419.00	
Recorder	0.00	8846	Inside	4419.00	
Recorder	0.00	8737	Outside	4419.00	
Perforations	6.00			4425.00	
Change Over Sub	1.00			4426.00	
Drill Pipe	63.00			4489.00	
Change Over Sub	1.00			4490.00	
Perforations	5.00			4495.00	
Bullnose	5.00			4500.00	82.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>111.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering Inc

**16-17s-29w Lane, KS**

562 West State Rd  
Olmitz KS 67564

**Boomhower "A" 1-16**

Job Ticket: 52914

**DST#: 6**

ATTN: Vern Schrag

Test Start: 2013.09.06 @ 20:15:15

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 49.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.36 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	mud w ith oil spots	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

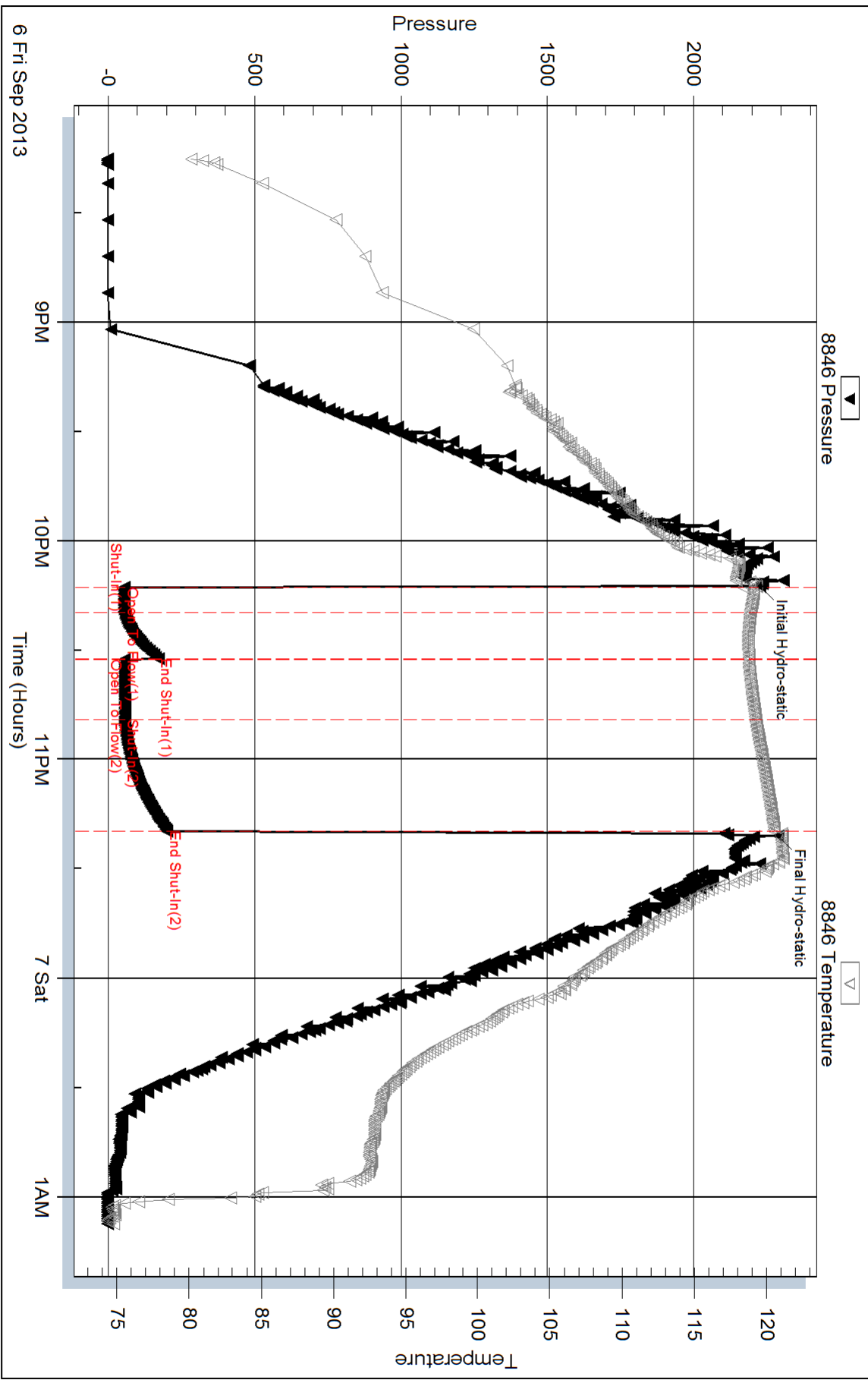
Laboratory Name:

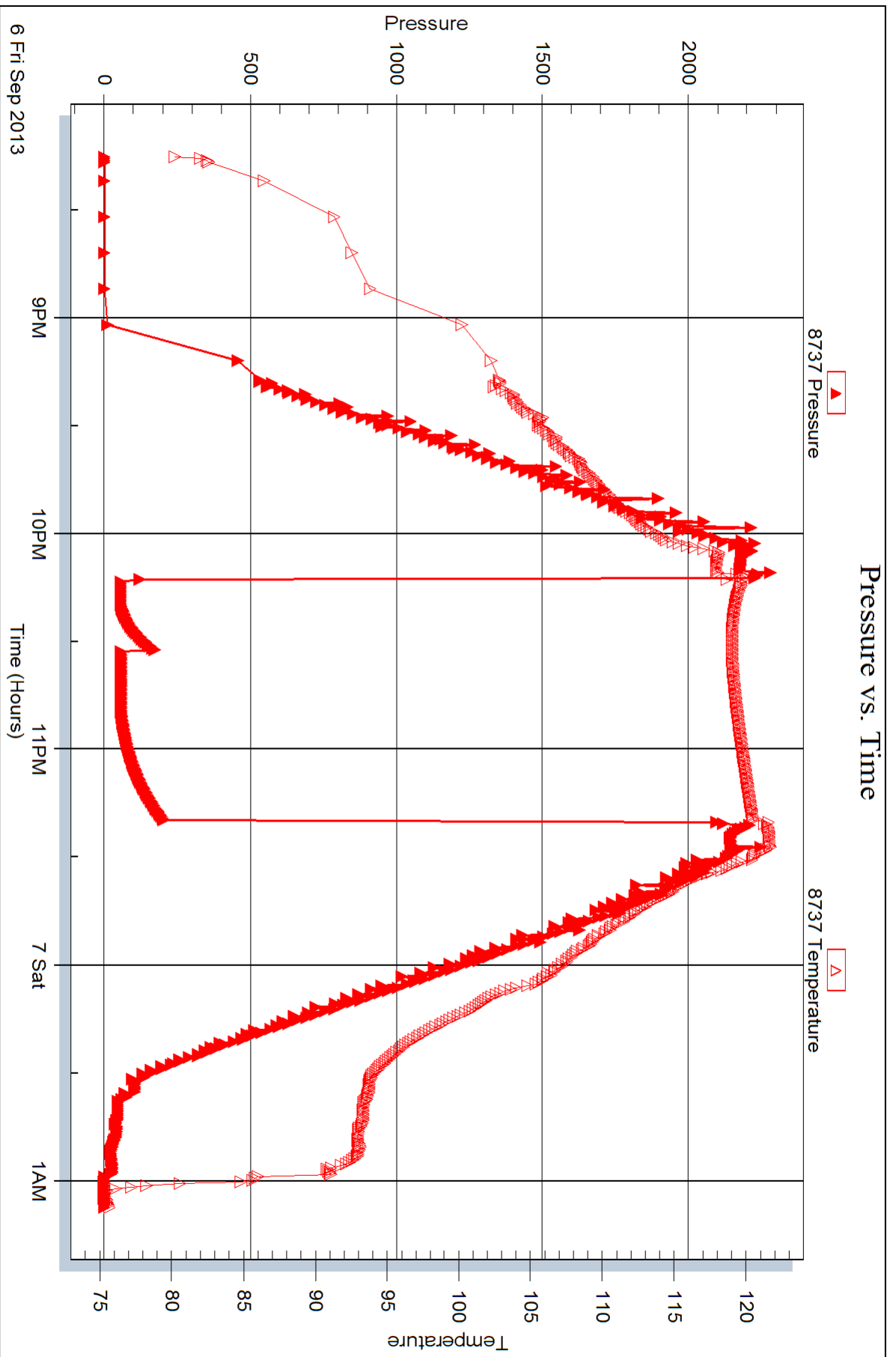
Laboratory Location:

Recovery Comments:



### Pressure vs. Time







## DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 West State Rd  
Olmitz KS 67564

ATTN: Vern Schrag

**Boomhower "A" 1-16**

**16-17s-29w Lane,KS**

Start Date: 2013.09.07 @ 13:05:00

End Date: 2013.09.07 @ 19:07:45

Job Ticket #: 52915                      DST #: 7

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.09.10 @ 10:20:04

Larson Engineering Inc

16-17s-29w Lane,KS

Boomhower "A" 1-16

DST # 7

Cherokee

2013.09.07



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering Inc  
 562 West State Rd  
 Olmitz KS 67564  
 ATTN: Vern Schrag

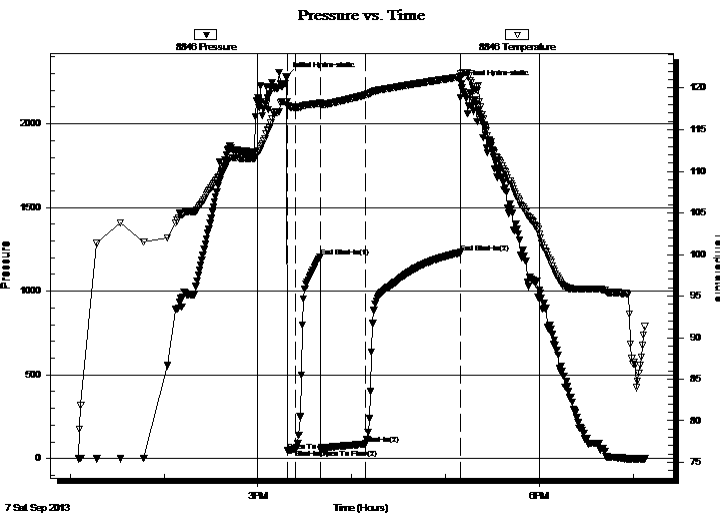
**16-17s-29w Lane, KS**  
**Boomhower "A" 1-16**  
 Job Ticket: 52915 **DST#: 7**  
 Test Start: 2013.09.07 @ 13:05:00

## GENERAL INFORMATION:

Formation: **Cherokee**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 15:18:45 Tester: Mike Roberts  
 Time Test Ended: 19:07:45 Unit No: 65  
 Interval: **4497.00 ft (KB) To 4560.00 ft (KB) (TVD)** Reference Elevations: 2826.00 ft (KB)  
 Total Depth: 4560.00 ft (KB) (TVD) 2819.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 7.00 ft

**Serial #: 8846 Inside**  
 Press @ Run Depth: 87.67 psig @ 4498.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.09.07 End Date: 2013.09.07 Last Calib.: 2013.09.07  
 Start Time: 13:05:15 End Time: 19:07:45 Time On Btm: 2013.09.07 @ 15:18:30  
 Time Off Btm: 2013.09.07 @ 17:10:15

**TEST COMMENT:** IF: Built to 2" blow  
 IS: No return blow  
 FF: BOB in 20 min.  
 FS: No return blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2279.97	118.37	Initial Hydro-static
1	46.14	117.87	Open To Flow (1)
6	56.65	117.66	Shut-In(1)
22	1206.50	118.20	End Shut-In(1)
22	57.30	117.99	Open To Flow (2)
51	87.67	119.17	Shut-In(2)
111	1231.16	121.35	End Shut-In(2)
112	2237.00	121.38	Final Hydro-static

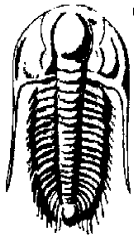
## Recovery

Length (ft)	Description	Volume (bbl)
147.00	gcom 5%g 15%o 80%m	0.72
30.00	free oil 100% o	0.42
0.00	GIP= 216 feet	0.00

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering Inc

16-17s-29w Lane, KS

562 West State Rd  
Olmitz KS 67564

**Boomhower "A" 1-16**

Job Ticket: 52915

**DST#: 7**

ATTN: Vern Schrag

Test Start: 2013.09.07 @ 13:05:00

## GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:18:45

Time Test Ended: 19:07:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

**Interval: 4497.00 ft (KB) To 4560.00 ft (KB) (TVD)**

Reference Elevations: 2826.00 ft (KB)

Total Depth: 4560.00 ft (KB) (TVD)

2819.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

**Serial #: 8737 Outside**

Press @ Run Depth: psig @ 4498.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.07

End Date:

2013.09.07

Last Calib.:

2013.09.07

Start Time: 13:05:15

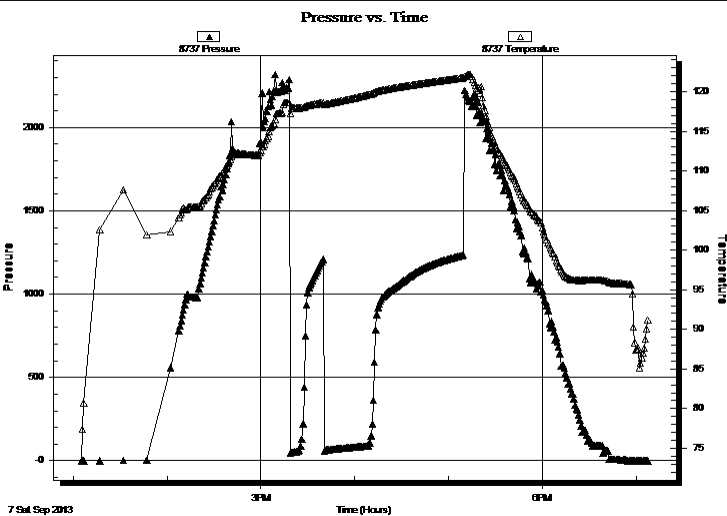
End Time:

19:07:45

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IF: Built to 2" blow  
IS: No return blow  
FF: BOB in 20 min.  
FS: No return blow



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
147.00	gcom 5%g 15%o 80%m	0.72
30.00	free oil 100% o	0.42
0.00	GIP= 216 feet	0.00

\* 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

**16-17s-29w Lane, KS**

562 West State Rd  
Olmitz KS 67564

**Boomhower "A" 1-16**

Job Ticket: 52915

**DST#: 7**

ATTN: Vern Schrag

Test Start: 2013.09.07 @ 13:05:00

## Tool Information

Drill Pipe:	Length: 4330.00 ft	Diameter: 3.80 inches	Volume: 60.74 bbl	Tool Weight:	1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	2500.00 lb
Drill Collar:	Length: 147.00 ft	Diameter: 2.25 inches	Volume: 0.72 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 61.46 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	9.00 ft			String Weight: Initial	60000.00 lb
Depth to Top Packer:	4497.00 ft			Final	62000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	63.00 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			4469.00	
Shut In Tool	5.00			4474.00	
Hydraulic tool	5.00			4479.00	
Jars	5.00			4484.00	
Safety Joint	3.00			4487.00	
Packer	5.00			4492.00	29.00 Bottom Of Top Packer
Packer	5.00			4497.00	
Stubb	1.00			4498.00	
Recorder	0.00	8846	Inside	4498.00	
Recorder	0.00	8737	Outside	4498.00	
Perforations	5.00			4503.00	
Change Over Sub	1.00			4504.00	
Drill Pipe	31.00			4535.00	
Change Over Sub	1.00			4536.00	
Perforations	19.00			4555.00	
Bullnose	5.00			4560.00	63.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>92.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering Inc

**16-17s-29w Lane,KS**

562 West State Rd  
Olmitz KS 67564

**Boomhower "A" 1-16**

Job Ticket: 52915

**DST#: 7**

ATTN: Vern Schrag

Test Start: 2013.09.07 @ 13:05:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

37 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.38 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1600.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
147.00	gcom 5%g 15%o 80%m	0.723
30.00	free oil 100% o	0.421
0.00	GIP= 216 feet	0.000

Total Length: 177.00 ft      Total Volume: 1.144 bbl

Num Fluid Samples: 0

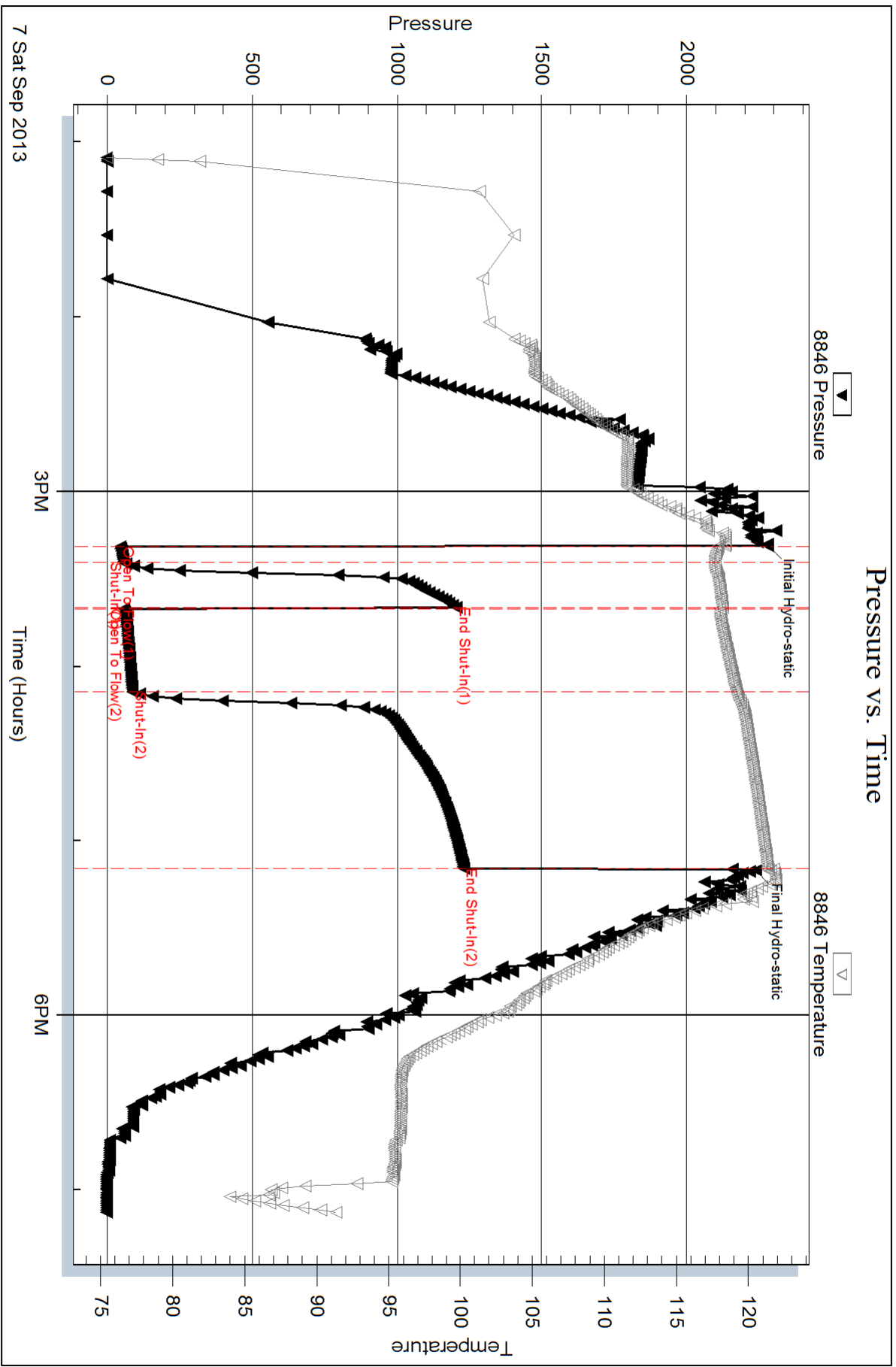
Num Gas Bombs: 0

Serial #:

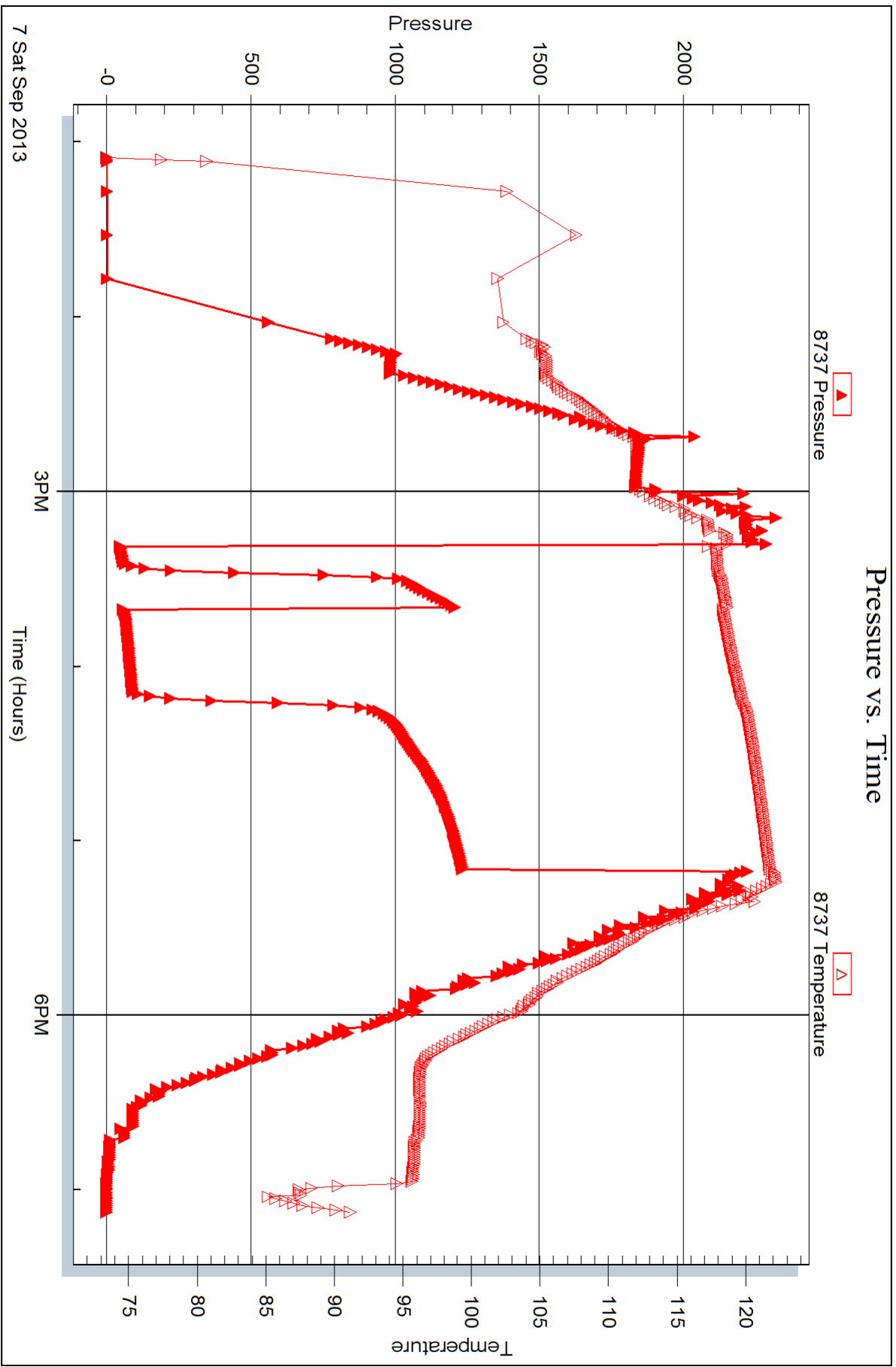
Laboratory Name:

Laboratory Location:

Recovery Comments: API= 41 @ 100 corrected to 37 @ 60









# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

00

NO. 52909

Well Name & No. Boomer 'A' 1-16 Test No. 1 Date 9-2-13  
 Company Larson Engineering Inc Elevation 2826 KB 2819 GL  
 Address 562 W State Rd 4 Omitz KS 67564  
 Co. Rep / Geo. Vern Schrag Rig HD # 2  
 Location: Sec. 16 Twp. 17s Rge. 29w Co. Lane State KS

Interval Tested 4035-4051 Zone Tested Kansing E  
 Anchor Length 16 Drill Pipe Run 3857 Mud Wt. 9.0  
 Top Packer Depth 4031 Drill Collars Run ~~715~~ 147 Vis 59  
 Bottom Packer Depth 4035 Wt. Pipe Run Ø WL 8.0  
 Total Depth 4051 Chlorides 1200 ppm System LCM 1  
 Blow Description IF: Built to 1" Blow  
FS: No Return Blows  
FF: Built to 2 1/2 Blow  
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<del>117</del>	GIP = <del>692'</del>	100			
117		5	35		60
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 117 BHT 118 Gravity — API RW — @ — °F Chlorides — ppm  
 (A) Initial Hydrostatic 1992  Test 1250 T-On Location 06:50  
 (B) First Initial Flow 18  Jars 250 T-Started 07:38  
 (C) First Final Flow 28  Safety Joint 75 NC T-Open 09:50  
 (D) Initial Shut-In 939  Circ Sub T-Pulled 11:40  
 (E) Second Initial Flow 30  Hourly Standby T-Out 13:30  
 (F) Second Final Flow 51  Mileage 64RT 99.20 Comments \_\_\_\_\_  
 (G) Final Shut-In 998  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2008  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

Initial Open 5  
 Initial Shut-In 15  
 Final Flow 30  
 Final Shut-In 60  
 Sub Total 0  
 Total 1674.20  
 MP/DST Disc't \_\_\_\_\_  
 Sub Total 1674.20

Approved By Vern Schrag Our Representative Mike Roberts  
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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 52910

Well Name & No. Boombower "A" 1-16 Test No. 2 Date 9-3-13  
 Company Larson Engineering Inc Elevation 2826 KB 2819 GL  
 Address 562 W. State Rd. #4 Olmitz KS 67564  
 Co. Rep / Geo. Vein Schrag Rig HD #2  
 Location: Sec. 16 Twp. 172 Rge. 29W Co. LANE State KS

Interval Tested 4130 - 4155 Zone Tested H  
 Anchor Length 25 Drill Pipe Run 3970 Mud Wt. 9.1  
 Top Packer Depth 4126 Drill Collars Run 147 Vis 52  
 Bottom Packer Depth 4130 Wt. Pipe Run φ WL 6.8  
 Total Depth 4155 Chlorides 1600 ppm System LCM 1  
 Blow Description IF: Built to 1" Blow  
IS: No Return Blow  
FF: BOB in 29 Min  
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<del>117</del>	Feet of <u>GIP = 62'</u>	100			
117	Feet of <u>gpm 0</u>	20	40		40
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 117 BHT 120 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2052</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>06:35</u>
(B) First Initial Flow <u>20</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>07:05</u>
(C) First Final Flow <u>31</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>08:55</u>
(D) Initial Shut-In <u>1055</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>10:45</u>
(E) Second Initial Flow <u>37</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>12:32</u>
(F) Second Final Flow <u>60</u>	<input checked="" type="checkbox"/> Mileage <u>64 RT</u> 99.20	Comments
(G) Final Shut-In <u>1088</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2030</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer

Initial Open 5  
 Initial Shut-In 15  
 Final Flow 30  
 Final Shut-In 60

Shale Packer  
 Extra Packer  
 Extra Recorder  
 Day Standby  
 Accessibility

Sub Total 1674.20  
 Total 1674.20  
 MP/DST Disc't

Approved By [Signature] Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 52911 9-4

Well Name & No. Boomer "A" 1-16 Test No. 3 Date 9-3-13  
 Company Larson Engineering Inc. Elevation 2826 KB 2819 GL  
 Address 562 W. State Rd 4 Olmitz KS 67564  
 Co. Rep / Geo. Vern Schrag Rig H0 # 2  
 Location: Soc. 16 Twp. 17S Rge. 29W Co. LANE State KS

Interval Tested 4185-4206 Zone Tested J  
 Anchor Length 21 Drill Pipe Run 4044 Mud Wt. 9.2  
 Top Packer Depth 4184 Drill Collars Run 147 Vis 67  
 Bottom Packer Depth 4185 Wt. Pipe Run 0 WL 6.4  
 Total Depth 4206 Chlorides 1700 ppm System LCM 1  
 Blow Description IF: Built to 1/2" Blow  
IS: No Return Blow  
FF: Built to 4" Blow  
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>239</u>	<u>OCM</u>	<u>3</u>		<u>97</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 239 BHT 123 Gravity — API RW — @ — °F Chlorides — ppm  
 (A) Initial Hydrostatic 2103  Test 1250 T-On Location 23:30  
 (B) First Initial Flow 19  Jars 250 T-Started 12:20  
 (C) First Final Flow 34  Safety Joint 75 T-Open 02:03  
 (D) Initial Shut-In 323  Circ Sub NC T-Pulled ~~03:53~~ 03:53  
 (E) Second Initial Flow 38  Hourly Standby T-Out 05:38  
 (F) Second Final Flow 104  Mileage 64 RT 99.20 Comments \_\_\_\_\_  
 (G) Final Shut-In 320  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2034  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

Initial Open 5  
 Initial Shut-In 15  
 Final Flow 30  
 Final Shut-In 60  
 Sub Total 1674.20

Approved By Jessie Schrag Our Representative Mike Ralston

Trilobite Testing Inc. shall not be liable for damaged or destroyed property of 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, to the extent that such loss or damage 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. 52912

Well Name & No. Boomer "A" 1-16 Test No. 4 Date 9-4-13  
 Company Larson Engineering Inc. Elevation 2826 KB 2819 GL  
 Address 562 W. State Rd 4 Olmitz KS 67564  
 Co. Rep / Geo. Vern Schrag Rig HO 2  
 Location: Sec. 16 Twp. 17S Rge. 29W Co. Lane State KS

Interval Tested 4220-4236 Zone Tested K  
 Anchor Length 16 Drill Pipe Run 4074 Mud Wt. 9.1  
 Top Packer Depth 4216 Drill Collars Run 147 Vis 63  
 Bottom Packer Depth 4220 Wt. Pipe Run 0 WL 6.8  
 Total Depth 4236 Chlorides 1800 ppm System LCM 1

Blow Description IF: Built to 4" Blow  
IS: No Return Blow  
FF: BOB in 12 Min  
FS: ~~No Return Blow~~ Built to 1" Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
	<u>92' GIP</u>	<u>100</u>			
<u>94</u>	<u>Free Oil</u>		<u>100</u>		
<del>117</del>	<u>geom</u>	<u>2</u>	<u>38</u>		<u>60</u>

Rec Total ~~211~~ 211 BHT 122 Gravity 28 API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic <u>2086</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>15:00</u>
(B) First Initial Flow <u>28</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>15:36</u>
(C) First Final Flow <u>65</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>17:24</u>
(D) Initial Shut-In <u>266</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u><del>17:14</del> 18:30</u>
(E) Second Initial Flow <u>73</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>20:31</u>
(F) Second Final Flow <u>99</u>	<input checked="" type="checkbox"/> Mileage <u>64 RT</u> 99.20	Comments
(G) Final Shut-In <u>250</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2092</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer

Initial Open 5  Shale Packer  
 Initial Shut-In 15  Extra Packer  
 Final Flow 15  Extra Recorder  
 Final Shut-In 30  Day Standby  
 Accessibility  
 Sub Total 1674.20 MP/DST Disc't

Approved By Daniel Kelly Our Representative Mike Roberts  
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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 52913

Well Name & No. Boomer "A" 1-16 Test No. 5 Date 9-5-13  
 Company Larson Engineering Inc. Elevation 2826 KB 2819 GL  
 Address 562 W. State Rd 4 Olmitz KS 67564  
 Co. Rep / Geo. Vern Schrag Rig HD #3  
 Location: Sec. 16 Twp. 17S Rge. 29W Co. ~~SE~~ LANE State KS

Interval Tested 4259-4275 Zone Tested L  
 Anchor Length 16 Drill Pipe Run 4106 Mud Wt. 9.1  
 Top Packer Depth 4254 Drill Collars Run 147 Vis 6.3  
 Bottom Packer Depth 4259 Wt. Pipe Run 8 WL 6.8  
 Total Depth 4275 Chlorides 1800 ppm System LCM 1

Blow Description IF: Weak surface Died in 1 Min  
FS: No Return Blow  
FF: No Blow  
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>MUD with 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 2 BHT 177 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2125</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>07:30</u>
(B) First Initial Flow <u>16</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>08:30</u>
(C) First Final Flow <u>16</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>10:45</u>
(D) Initial Shut-In <u>38</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>11:50</u>
(E) Second Initial Flow <u>15</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>13:48</u>
(F) Second Final Flow <u>16</u>	<input checked="" type="checkbox"/> Mileage <u>64 RT</u> 99.20	Comments
(G) Final Shut-In <u>57</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2089</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer

Initial Open 5  Extra Packer  
 Initial Shut-In 15  Extra Recorder  
 Final Flow 15  Day Standby  
 Final Shut-In 30  Accessibility

Sub Total 1674.20

Approved By [Signature] Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 52914

Well Name & No. Boomer "A" 1-16 Test No. 6 Date 9-6-13  
 Company Larson Engineering Inc Elevation 2826 KB 2819 GL  
 Address 562 W. St. Rd 4 Opm. Co. KS 67564  
 Co. Rep / Geo. Vern Schrag Rig HD #3  
 Location: Sec. 16 Twp. 17S Rge. 29W Co. Lane State KS

Interval Tested 4418-4500 Zone Tested Pawnee - Ft. Scott  
 Anchor Length 82 Drill Pipe Run 4261 Mud Wt. 9.1  
 Top Packer Depth 4414 Drill Collars Run 147 Vis 49  
 Bottom Packer Depth 4418 Wt. Pipe Run φ WL 8.4  
 Total Depth 4500 Chlorides 1800 ppm System LCM 1

Blow Description IF: Built to Leak Surface Blow  
IS: NO Return Blow  
FF: NO Blow  
FS: NO Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>MUD with oil spots</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 118 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2227</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>20:00</u>
(B) First Initial Flow <u>55</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>20:15</u>
(C) First Final Flow <u>55</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>22:13</u>
(D) Initial Shut-In <u>171</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>23:18</u>
(E) Second Initial Flow <u>55</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>01:07</u>
(F) Second Final Flow <u>56</u>	<input checked="" type="checkbox"/> Mileage <u>64 RT</u> 99.20	Comments _____
(G) Final Shut-In <u>201</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2289</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
	<input type="checkbox"/> Day Standby	Total <u>1674.20</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't _____
	Sub Total <u>1674.20</u>	

Initial Open 5  
 Initial Shut-In 15  
 Final Flow 15  
 Final Shut-In 30

Approved By Vern C Schrag Our Representative John Polt

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 52915

Well Name & No.	Boombower "A" 1-16		Test No.	7	Date	9-7-13	
Company	Larson Engineering Inc.		Elevation	2826	KB	2819	GL
Address	562 W. St. Rd 40 Olmitz KS 67564						
Co. Rep / Geo.	Vern Schrag		Rig	HD #3			
Location: Sec.	14	Twp.	17S	Rge.	29W	Co.	LANE State KS

Interval Tested	4497-4560	Zone Tested	Cherokee		
Anchor Length	63	Drill Pipe Run	4330	Mud Wt.	9.1
Top Packer Depth	4493	Drill Collars Run	147	Vis	52
Bottom Packer Depth	4497	Wt. Pipe Run	Ø	WL	8.4
Total Depth	4560	Chlorides	1600	ppm System	LCM 1

Blow Description IF: Built to 2" Blow  
 IS: No Return Blow  
 FF: BOB in 20 Min  
 FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
0	Feet of GLP = 216	100			
30	Feet of Free Oil	100			
147	Feet of geom	5	15	80	
	Feet of				
	Feet of				

Rec Total	171	BHT	122	Gravity	37	API RW	@	F Chlorides	ppm
(A) Initial Hydrostatic	2279	<input checked="" type="checkbox"/> Test	1250	T-On Location	12:30				
(B) First Initial Flow	46	<input checked="" type="checkbox"/> Jars	250	T-Started	<del>15:20</del> 13:05				
(C) First Final Flow	56	<input checked="" type="checkbox"/> Safety Joint	75	T-Open	15:20				
(D) Initial Shut-In	1206	<input checked="" type="checkbox"/> Circ Sub		T-Pulled	17:10				
(E) Second Initial Flow	57	<input type="checkbox"/> Hourly Standby		T-Out	19:07				
(F) Second Final Flow	87	<input checked="" type="checkbox"/> Mileage	64 RT 99.20	Comments					
(G) Final Shut-In	1231	<input type="checkbox"/> Sampler							
(H) Final Hydrostatic	2237	<input type="checkbox"/> Straddle							

Initial Open	5	<input type="checkbox"/> Ruined Shale Packer	
Initial Shut-In	15	<input type="checkbox"/> Ruined Packer	
Final Flow	30	<input type="checkbox"/> Extra Packer	
Final Shut-In	60	<input type="checkbox"/> Extra Recorder	
		<input type="checkbox"/> Day Standby	
		<input type="checkbox"/> Accessibility	
Sub Total	1674.20	MP/DST Disc't	

Approved By [Signature] Our Representative [Signature]

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# WELLSITE GEOLOGIST'S REPORT

VERNON C. SCHRAG  
CONSULTANT GEOLOGIST



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

**Well Name:** Boomhower A #1-16  
**Location:** NE SE NW SEC. 16-17s-29w  
**Licence Number:** API: 15-101-22457  
**Spud Date:** August 27, 2013  
**Surface Coordinates:** 860' FNL & 1173' FWL

**Region:** Lane Co., KS  
**Drilling Completed:** September 8, 2013

**Bottom Hole Coordinates:**  
**Ground Elevation (ft):** 2819'      **K.B. Elevation (ft):** 2826'  
**Logged Interval (ft):** 3800'      **To: RTD      Total Depth (ft):** 4620'  
**Formation:** 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 (Company Tools)**

**DP 4.5" XH (16.6#); DC 6.25" x 2.25" x 560'; Kelly 40.30'; Tool Joint 5.5" ; Bit: JZ-HA20-Q, 7-7/8" , 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 266'  
 Set 5-1/2" production casing

### CIRCULATION SYSTEM:

Continental EMSCO D-300, duplex, 6 x 14, 60 spm, 700 psi, Chemical, premix, displaced 3388 to 3402'; 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, Hays, KS, Jerrod Long, Log total depth (4621') was one foot long to rotary total depth (4620').**

### DRILL STEM TEST #1:

**LKC "E-zone": Interval: 4035-4051 (16'); Blow: weak incr 1" IFP, no RB, weak incr 2-1/2" FFP, no RB; Times: 5-15-30-60; Recovery: 92' GIP, 117' HOCM (5%G, 35%O, 60%M); Pressures: HP: 1992-2008, SIP: 939-998, FP: 18-28, 30-51; BHT: 118 F; Trilobite Testing, Inc., Scott City, KS, Mike Roberts.**

### DRILL STEM TEST #2:

**LKC "H-zone": Interval: 4130-4155 (25'); Blow: weak incr 1" IFP, no RB, weak incr BOB in 24 min FFP, no RB; Times: 5-15-30-60; Recovery: 62' GIP, 117' HOCM (20%G, 40%O, 40%M); Pressures: HP: 2052-2030, SIP: 1055-1088, FP: 20-31, 37-60; BHT: 117 F; Trilobite Testing, Inc., Scott City, KS, Mike Roberts.**

### DRILL STEM TEST #3:

**LKC "J-zone": Interval: 4185-4206' (21'); Blow: weak incr 1/2" IFP; no RB, weak incr 4" FFP, no RB; Times: 5-15-30-60; Recovery: 239' SOCM (3%O, 97%M); Pressures: HP: 2103-2034; SIP: 323-320; FP: 19-34, 38-104; BHT: 123 F; Trilobite Testing, Inc., Scott City, KS, Mike Roberts.**

### DRILL STEM TEST #4:

**LKC "K-zone": Interval: 4220-4236 (16'); Blow: weak incr 4" IFP, no RB, weak incr BOB 12 min FFP, 1" RB FSIP; Times: 5-15-30-60; Recovery: 92' GIP, 211' TF: 94' Oil (100%O, Grav 28), 117' GOCM (2%G, 38%O, 60%M); Pressures: HP: 2086-2092, SIP: 266-250, FP: 28-65, 73-99; BHT: 122 F; Trilobite Testing, Inc., Scott City, KS, Mike Roberts.**

### DRILL STEM TEST #5:

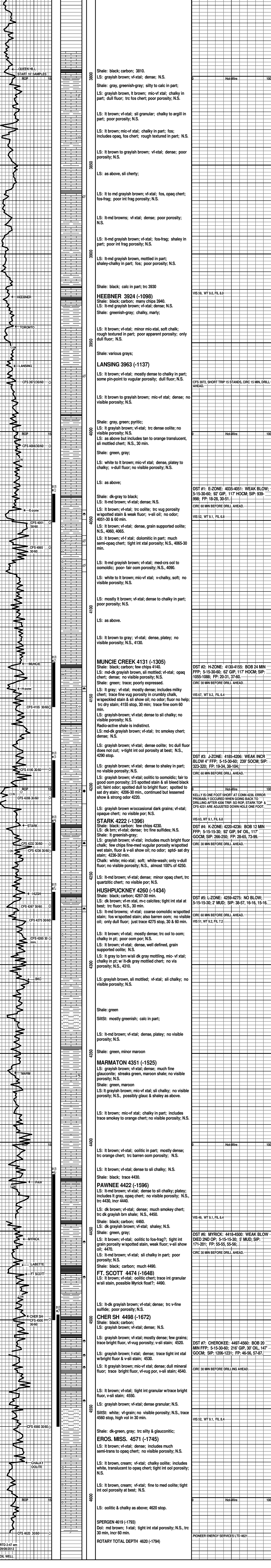
**LKC "L-zone": Interval: 4259-4275 (16'); No Blow; Times: 5-15-15-30; Recovery: 2' mud w/oil spots; Pressures: HP: 2125-2089, SIP: 38-57, FP: 16-16, 15-16; BHT: 117 F; Trilobite Testing, Inc., Scott City, KS, Mike Roberts.**

### DRILL STEM TEST #6:

**Pawnee, Myrick Station, Ft. Scott: Interval: 4418-4500 (82'); Blow blow died at 2nd open; Times: 5-15-15-30; Recovery: 5' mud w/oil spots (100%M); Pressures: HP: 2227-2289, SIP: 171-201, FP: 55-55, 55-56; BHT: 118 F; Trilobite Testing, Inc., Scott City, KS, Mike Roberts.**

### DRILL STEM TEST #7:

**Cherokee: Interval: 4497-4560 (63'); Blow: weak incr 2" IFP, no RB, weak incr BOB/20 min FFP, no RB; Times: 5-15-30-60; Recovery: 216' GIP, 177' TF: 30' Oil (100%O, 37 Grav), 147' GOCM (5%G, 15%O, 80%M); Pressures: HP: 2279-2237, SIP: 1206-1231, FP: 46-56, 57-87; BHT: 122 F; Trilobite Testing, Inc., Scott City, KS, Mike Roberts.**



RTD 2-47 am  
09/08/2013  
OIL WELL



CHARGE TO: Larson Engineering  
 ADDRESS:  
 CITY, STATE, ZIP CODE:

TICKET N<sup>o</sup> 24726

SERVICE LOCATIONS: 1. Newby KS WELL/PROJECT NO. 1 LEASE Boonhaver COUNTY/PARISH Lane STATE KS CITY Healy DATE 18 Sep 13 OWNER  
 2. TICKET TYPE  SERVICE  SALES CONTRACTOR Wild West RIG NAME/NO. location SHIPPED ET DELIVERED TO location ORDER NO.  
 3. WELL TYPE oil WELL CATEGORY Development JOB PURPOSE concrete post collar WELL PERMIT NO. WELL LOCATION 16-17-24  
 4. REFERRAL LOCATION INVOICE INSTRUCTIONS

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		UM		UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
575		1			MILEAGE	50		mi		6.00	300.00
576D		1			Pump Charge	1		ea		1500.00	1500.00
330		1			SMB cement	150		sk		17.00	2550.00
276		1			Flocele	50		lb		2.00	100.00
290		1			D-Air	2		gal		42.00	84.00
581		1			Drainage service charge	200		sk		2.00	400.00
583		1			service charge - Drainage	19902		lb	497.55	1.00	497.55

**LEGAL TERMS:** Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, **PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY** provisions.  
 MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS  
 X  
 DATE SIGNED \_\_\_\_\_ TIME SIGNED \_\_\_\_\_  A.M.  P.M.  
1030

REMIT PAYMENT TO:  
 SWIFT SERVICES, INC.  
 P.O. BOX 466  
 NESS CITY, KS 67560  
 785-798-2300

SURVEY	AGREE	UN-DECIDED	DIS-AGREE	PAGE TOTAL
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?				5931.55
WE UNDERSTOOD AND MET YOUR NEEDS?				
OUR SERVICE WAS PERFORMED WITHOUT DELAY?				Lanc TAX @ 7.15% 195.48
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?				
ARE YOU SATISFIED WITH OUR SERVICE? <input type="checkbox"/> YES <input type="checkbox"/> NO				TOTAL 5627.03

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket.  
 SWIFT OPERATOR [Signature] APPROVAL [Signature]  
 Thank You!

JOB LOG

SWIFT Services, Inc.

DATE 8/21/13 PAGE NO. 1

CUSTOMER		WELL NO.		LEASE		JOB TYPE		TICKET NO.	
LSDON Engineering		1		Boonhower		cement port collar		24726	
CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS	
				T	C	TUBING	CASING		
								200 sk SMD w/ 7" Flocele 2 3/8 x 5 1/2 port collar 2177'	
	0830							on loc TRK 114	
	0848					1000	1000	test to 1000 psi - held open port collar	
	0852	3	2			300		inj rate 3 bpm @ 300 psi	
	0857	4				300		mix SMD cement @ 11.2 ppg fluid to surface	
		4	12			300			
	0815	4	82			400		— cement to surface —	
								150 sk mixed } 15 to pit }	
		4	9			400			
	0928					1000	1000	Displace w/ H <sub>2</sub> O close port collar test to 1000 psi - held	
	0937							Run 5 joints Reverse hole clean - 2 cement plugs	
	0955		20					wash truck pull test	
								Rack up	
	1020							job complete flunks Blaine, Dave & Doug	