



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1108461
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: _____



1108461

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

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

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

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

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

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

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

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

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

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

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

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

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

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

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <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	Helen 3-17
Doc ID	1108461

Tops

Name	Top	Datum
Anhydrite	2125	+671
Bae Anhydrite	2155	+641
Heebner	3967	-1171
Lansing	4007	-1211
Stark	4290	-1494
Pawnee	4492	-1696
Ft. Scott	4541	-1775
Cherokee Sh	4570	-1774
Mississippi	4661	-1865

Form	ACO1 - Well Completion
Operator	Larson Engineering, Inc. dba Larson Operating Company
Well Name	Helen 3-17
Doc ID	1108461

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
4	4612-14, 4542-45, 4342-44	250 gal 15% NEFe	4612-14
		250 gal 15% MCA	4542-45
		500 gal 15% MCA	4542-45
4	4344-55	250 gal 15% MCA	4342-55
		SQZ: 100 sx Class A	4342-55
4	4198-4203	250 gal 15% MCA	4198-4203
		500 gal 15% NEFe	4198-4203
4	4213-15		
4	4198-4202	200 gal 15% NEFe	4198-4202
		750 gal 15% NEFe	4542-45



CONSOLIDATED
Oil Well Services, LLC

TICKET NUMBER 37164
LOCATION Oakley KS
FOREMAN Mits Shaw

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
<u>10-19-12</u>	<u>4802</u>	<u>Helen # 3-17</u>	<u>17</u>	<u>19S</u>	<u>28W</u>	<u>Lane</u>
CUSTOMER <u>Larson Engineering</u>		Direction S to E 90 1/4 East	TRUCK #	DRIVER	TRUCK #	DRIVER
MAILING ADDRESS			<u>4527118</u>	<u>Tim W</u>		
CITY			<u>5285127</u>	<u>M. K. M</u>		
STATE						
ZIP CODE						

JOB TYPE Surf HOLE SIZE 12 1/4" HOLE DEPTH 264' CASING SIZE & WEIGHT 8 5/8 20 #
CASING DEPTH 264.03 DRILL PIPE _____ TUBING _____ OTHER _____
SLURRY WEIGHT 14.8 SLURRY VOL 1.36 WATER gal/sk _____ CEMENT LEFT in CASING 20'
DISPLACEMENT 15.6 bbls DISPLACEMENT PSI _____ MIX PSI _____ RATE _____

REMARKS: Safety Meeting and rig up on H D drilling rig #3 Circulate casing
mix 175 sks Common with 38 sacks 20 gal displace 15.6 bbls
Shut in Cement did Circulate Approx 5 bbls top it

Thanks Mits & Crew

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
<u>5401S</u>	<u>1</u>	<u>PUMP CHARGE</u>	<u>1085.⁰⁰</u>	<u>1085.⁰⁰</u>
<u>5406</u>	<u>30</u>	<u>MILEAGE</u>	<u>5.⁰⁰</u>	<u>150.⁰⁰</u>
<u>5407A</u>	<u>822 bbls</u>	<u>Ten mileage delivery</u>	<u>410.⁰⁰</u>	<u>411.90</u>
<u>1104S</u>	<u>175 sks</u>	<u>Common class A Cement</u>	<u>17.65</u>	<u>3088.75</u>
<u>1102</u>	<u>493 #</u>	<u>Calcium Chloride</u>	<u>.89</u>	<u>438.77</u>
<u>1118B</u>	<u>329 #</u>	<u>Dextrorite gel</u>	<u>.25</u>	<u>82.25</u>
			<u>Subtotal</u>	<u>5256.67</u>
			<u>less 10% discount</u>	<u>525.67</u>
			<u>Subtotal</u>	<u>4731.00</u>
			<u>SALES TAX</u>	<u>204.67</u>
			<u>ESTIMATED TOTAL</u>	<u>4935.67</u>

Revin 3737

AUTHORIZATION Phyllis Turner TITLE Partner DATE 10-19-12

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.

253857



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

TICKET N^o 23457

PAGE 1 OF 2

SERVICE LOCATIONS 1. Ness City KS WELL/PROJECT NO. 3-17 LEASE Helen COUNTY/PARISH Lane STATE KS CITY Dighton DATE 11-1-12 OWNER Same

2. TICKET TYPE SERVICE SALES CONTRACTOR H-D Drilling RIG NAME/NO. #3 SHIPPED VIA ACT DELIVERED TO Location ORDER NO. _____

3. WELL TYPE OIL WELL CATEGORY Development JOB PURPOSE Conert 5 1/2" Long string WELL PERMIT NO. _____ WELL LOCATION Dighton KS, 6S, 1 1/4 E, N into

4. REFERRAL LOCATION _____ INVOICE INSTRUCTIONS _____

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		U/M		UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
52		1			MILEAGE			40	mi	6 ⁰⁰	240 ⁰⁰
578		1			Pump Charge		1		job	1500 ⁰⁰	1500 ⁰⁰
280		1			Flocheck 21			500	gal	2 ⁵⁰	1250 ⁰⁰
221		1			Liquid KCL			2	gal	25 ⁰⁰	50 ⁰⁰
419		1			Rotating Head Rental			5 1/2	in	200 ⁰⁰	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

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?				#1	3240 ⁰⁰
WE UNDERSTOOD AND MET YOUR NEEDS?				#2	5312 ⁴⁰
OUR SERVICE WAS PERFORMED WITHOUT DELAY?					
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?				Subtotal	8552 ⁴⁰
ARE YOU SATISFIED WITH OUR SERVICE?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			Tax	387 ⁷⁷
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND				TOTAL	8940 ¹⁷

X DATE SIGNED 11-1-12 TIME SIGNED 8:00 A.M. P.M.

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

SWIFT OPERATOR DAVE KWEND APPROVAL *[Signature]* Thank You!



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

TICKET CONTINUATION

TICKET No. 23457

PRICE REFERENCE	SECONDARY REFERENCE / PART NUMBER	ACCOUNTING			TIME	DESCRIPTION	QTY.		UNIT PRICE		AMOUNT			
		LOC	ACCT	DF			QTY.	UM	QTY.	UM	QTY.	UM	QTY.	UM
325		1				Standard Cement		155	50	13	50	2092	50	
284		1				Culseal	5	%	7	50	35	00	245	00
283		1				Sulf	10	%	800	50	00	20	160	00
292		1				Haked 322	1	%	150	50	7	75	1162	50
277		1				Coal Seal (Gilsomite)	7	50	1100	50	00	75	825	00
276		1				Flocele	1/4	50	50	50	2	00	100	00
290		1				D-Air			2	50	35	00	70	00
S81		1				SERVICE CHARGE		CUBIC FEET	155		2	00	310	00
S83		1				MILEAGE CHARGE	TOTAL WEIGHT	LOADED MILES	TON MILES		1	00	347	40
											CONTINUATION TOTAL		5312.40	

JOB LOG

SWIFT Services, Inc.

DATE 11-1-12 PAGE NO. 1

CUSTOMER LARSON ENGINEERING WELL NO. 3-17 LEASE HELEN JOB TYPE 5 1/2" LONGSTRENG TICKET NO. 23457

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) GAL	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0800							ON LOCATION
								TD-4708 SET= 4704
								TP-4704 5 1/2" 15.5
								ST-42'
								PORT COLLAR = 2088'
	0700							DROP BALL - CALCULATE ROTATE TIGHT
	0840	6	15		✓		500	PUMP KCL FLUSH
	0842	6	12		✓		500	PUMP FLOCHECK-21 (500 GAL)
	0845	6	5		✓		500	PUMP KCL FLUSH
			7					PLUG RH (30 SPS)
	0852	4 1/2	37		✓		200	MAX CEMENT 125 SKS EA-2 @ 15.3 PPG
	0902							WASH OUT PUMP - LINES
	0902							RELEASE LATCH DOWN PLUG
	0905	7	0		✓			DISPLACE PLUG
		7	110				750	"
	0923	6 1/2	110.9				1500	PLUG DOWN - PSE UP LATCH IN PLUG
	0925						OK	RELEASE PSE - HELD
								WASH TRUCK
	1000							JOB COMPLETE
								THANK YOU
								DAVE K., TJ, DOUG, WAWIE



CHARGE TO: LARSON ENGINEERING
 ADDRESS:
 CITY, STATE, ZIP CODE:

TICKET N^o 23392

PAGE 1 OF 1

SERVICE LOCATIONS: 1. Ness City, Ks
 WELL/PROJECT NO. #3 LEASE HELEN COUNTY/PARISH LANE STATE Ks CITY DATE 11-6-12 OWNER SAME
 2. TICKET TYPE SALES CONTRACTOR WDD West Well Service RIG NAME/NO. SHIPPED VIA CT DELIVERED TO LOCATION ORDER NO.
 3. WELL TYPE Oil WELL CATEGORY DEVELOPMENT JOB PURPOSE CEMENT PORT COWAR WELL PERMIT NO. WELL LOCATION Dighton, Ks - bs, 1/4 E, N
 4. REFERRAL LOCATION INVOICE INSTRUCTIONS

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		UNIT PRICE		AMOUNT	
		LOC	ACCT	DF			UM		UM		
575		1			MILEAGE # 115	40	MI	6.00		240.00	
576D		1			PUMP CHARGE - PORT COWAR	1	JOB	1250.00		1250.00	
330		1			SWIFT MULTI-DEGREE STAIRS	235	SYS	16.50		3877.50	
276		1			FLOORS	50	lbs	2.00		100.00	
290		1			D-ADR	2	gal	35.00		70.00	
581		1			SERVICE CHARGE CEMENT	235	SYS	2.00		470.00	
583		1			DRYAGE	23310	lbs	466.2	mm	1.00	466.20

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 MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS
 X
 DATE SIGNED 11-6-12 TIME SIGNED 0900 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
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?				6473.70
WE UNDERSTOOD AND MET YOUR NEEDS?				
OUR SERVICE WAS PERFORMED WITHOUT DELAY?				
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?				
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES <input type="checkbox"/> NO			
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND				
Lane TAX 6.3%				254.99
TOTAL				6728.69

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

JOB LOG

SWIFT Services, Inc.

DATE 11-6-12 PAGE NO.

CUSTOMER LARSEN ENGINEERING WELL NO. # 3 LEASE HELEN JOB TYPE CEMENT PORT COLLAR TICKET NO. 23392

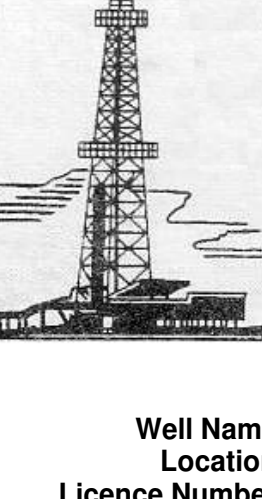
CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0900							ON LOCATION
								2 3/8 x 5 1/2 PORT COLLAR = 2088'
	0915				✓		1000	PSI TEST CASING - HEAD
	0920	3	2	✓			500	OPEN PORT COLLAR - INT RATE
	0925	4 1/4	130	✓			750	MIX CEMENT 235 SKS SMD = 11.2 PPG
	0955	4	7	✓			800	DISPASE CEMENT
	1000			✓			1000	CLOSE PORT COLLAR - PSI TEST - HEAD
								CIRCULATED 20 SKS CEMENT TO PET
	1015	4	25	✓			500	RUN 5 SKS - CIRCULATE CLEAN
								WASH TRUCK
	1100							JOB COMPLETE
								THANK YOU WAYNE, JEFF, FLINT

WELLSITE GEOLOGIST'S REPORT

VERNON C. SCHRAG
CONSULTANT GEOLOGIST



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



Well Name: Helen #3-17
Location: Nw SE SW SW SEC. 17-19s-28w
Licence Number: API: 15-101-22405
Spud Date: October 19, 2012
Surface Coordinates: 462' FSL & 847' FWL
Region: Lane Co., KS
Drilling Completed: October 31, 2012

Bottom Hole Coordinates:
Ground Elevation (ft): 2789' K.B. Elevation (ft): 2796'
Logged Interval (ft): 3800' To: RTD Total Depth (ft): 4709'
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
Olmert, KS 67564-8561

DRILLING CONTRACTOR:

H. D. Drilling, LLC, Rig #3 (#33935)

DP 4.5" XH (16.6#); DC 6.25" x 2.25" x 560', Kelly 40.30', Tool Joint 5.5" ; Bit: JZ-QX21 down to 3706', JZ-QX20 to RTD, 7-7/8", jets 15-15-15; rpm 80, WOB 35k; Kelly Bushing 7' above ground level; LeWayne "Lew" Tresner (tool pusher).

CASING:

8-5/8" (20#) casing at 261'
5-1/2" production casing

CIRCULATION SYSTEM:

Continental EMSCO D-300, duplex, 6 x 14, 60 spm, Chemical, premix, displaced about 3400'; earth pits, Morgan Mud, Inc., David Lines, 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, D. Schmidt, Log total depth (4708') was one foot high to rotary total depth (4709').

DRILL STEM TEST #1:

Middle Creek: Interval: 4326-4343 (15'); Blow: weak surf IFP, no RB, no blow FFP, no RB; Times: 5-15-15-30; Recovery: 1' mud (100%M, no show); Pressures: HP: 2161-2116; SIP: 19-20; FP: 15-15, 16-16; BHT: 115 F; dual packers, jars, joints, 150' DC; Trilobite Testing, Inc., Scott City, KS, Chuck Smith.

DRILL STEM TEST #2:

Kans. City "L": Interval: 4326-4348 (22'); Blow: BOB 2 min IFP; weak RB; BOB 2 min FFP; no RB; Times: 5-15-30-60; Recovery: 1209' TF: 92' OSWM (15%W, 85%M), 186' OSWM (80%W, 20%M), 931' OSWM (95%W, 5%M, Rw 0.250 at 26 F, chlorides 85k); Pressures: HP: 2189-2149, SIP: 619-620, FP: 152-250, 264-566; BHT: 129 F; dual packers, jars, joints, 150' DC; Trilobite Testing, Inc., Scott City, KS, Chuck Smith.

DRILL STEM TEST #3:

Pleasanton: Interval: 4370-4392 (22'); Blow: weak 1/2" IFP, no RB, no blow FFP, no RB; Times: 5-15-15-30; Recovery: 1' mud (no show); Pressures: HP: 2223-2167; SIP: 29-26; FP: 19-19, 18-19; BHT: 112 F; dual packers, jars, joints, 150' DC; Trilobite Testing, Inc., Scott City, KS, Chuck Smith.

DRILL STEM TEST #4:

Marmaton: Interval: 4388-4465 (77'); Blow: weak 1/2" IFP, no RB, no blow FFP, no RB; Times: 5-15-15-30; Recovery: 5' mud (no show); Pressures: HP: 2223-2167; SIP: 33-33; FP: 20-20, 20-21; BHT: 112 F; dual packers, jars, joints, 150' DC; Trilobite Testing, Inc., Scott City, KS, Chuck Smith.

DRILL STEM TEST #5:

Pawnee thru Ft. Scott: Interval: 4484-4570 (86'); Blow: weak incr 2.5" IFP; no RB; weak incr 7" FFP, no RB; Recovery: 195' TF: 76' mud (100%M), 119' GOSWM (2%G, 20%W, 78%M); Pressures: HP: 2263-2241, SIP: 1010-947; FP: 25-51, 57-114; BHT: 120 F; dual packers (w/shale packer), jars, joints, 150' DC; Trilobite Testing, Inc., Scott City, KS, Chuck Smith.

DRILL STEM TEST #6:

Cherokee: Interval: 4569-4625 (56'); Blow: weak 1/8" IFP, no RB, no blow FFP, no RB; Recovery: 2' OSM (100%M); Pressures: HP: 2336-2284, SIP: 104-121, FP: 20-20, 20-21; BHT: 115 F; dual packers, jars, joints, 150' DC; Trilobite Testing, Inc., Scott City, KS, Chuck Smith.

DRILL STEM TEST #7:

Kans. City "H": Straddle Test Interval: 4178-4205 (log measurements, 27' anchor, 503' tailpipe); Blow: 8.75" IFP, 1/4" RB, BOB 16 min FFP, 1" RB died 42 min; Recovery: 170' GIP, 315' TF: 135' GO (20%G, 80%O, 33 grav), 180' GOCM (10%G, 20%O, 70%M); Pressures: HP: 2144-2088, SIP: 598-520, FP: 57-95, 102-137; BHT: 118 F; dual packers (shale packer), straddle packer (shale packer), jars, joints, 147' DC, Trilobite Testing, Inc., Scott City, KS, Samuel Esparza.

Geological Descriptions table with columns: ROP (min/ft), DST, Lithology, Depth, Geological Descriptions, Total Gas (TG units). Includes detailed log data for intervals from 3700' to 4709'.



DRILL STEM TEST REPORT

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

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Helen #3-17

S17-19s-28w Lane,KS

Start Date: 2012.10.26 @ 15:44:00

End Date: 2012.10.26 @ 20:54:24

Job Ticket #: 48473 DST #: 1

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

Printed: 2012.11.02 @ 13:44:20



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S17-19s-28w Lane, KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

ATTN: Vern Schrag

Job Ticket: 48473

DST#: 1

Test Start: 2012.10.26 @ 15:44:00

GENERAL INFORMATION:

Formation: "L"

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:41:48

Time Test Ended: 20:54:24

Test Type: Conventional Bottom Hole (Initial)

Tester: Chuck Smith

Unit No: 62

Interval: 4328.00 ft (KB) To 4343.00 ft (KB) (TVD)

Total Depth: 4343.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2796.00 ft (KB)

2789.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 6751 Outside

Press @ Run Depth: 15.73 psig @ 4330.00 ft (KB)

Start Date: 2012.10.26

End Date: 2012.10.26

Start Time: 15:44:05

End Time: 20:54:24

Capacity: 8000.00 psig

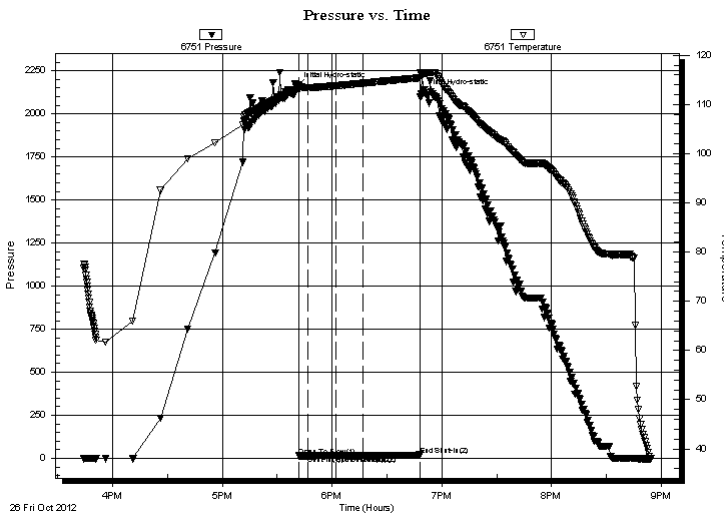
Last Calib.: 2012.10.26

Time On Btm: 2012.10.26 @ 17:40:24

Time Off Btm: 2012.10.26 @ 18:48:36

TEST COMMENT: Surface blow .
No return.
No blow .
No return.

PRESSURE SUMMARY



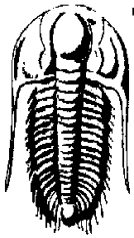
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2161.02	113.31	Initial Hydro-static
2	14.82	112.91	Open To Flow (1)
7	15.34	113.47	Shut-In(1)
22	18.65	113.80	End Shut-In(1)
22	15.65	113.81	Open To Flow (2)
37	15.73	114.32	Shut-In(2)
68	19.81	115.43	End Shut-In(2)
69	2116.13	116.13	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	M100m	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S17-19s-28w Lane,KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 48473

DST#: 1

ATTN: Vern Schrag

Test Start: 2012.10.26 @ 15:44:00

GENERAL INFORMATION:

Formation: "L"

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:41:48

Time Test Ended: 20:54:24

Interval: 4328.00 ft (KB) To 4343.00 ft (KB) (TVD)

Total Depth: 4343.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole (Initial)

Tester: Chuck Smith

Unit No: 62

Reference Elevations: 2796.00 ft (KB)

2789.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8018 Inside

Press @ Run Depth: psig @ 4330.00 ft (KB)

Start Date: 2012.10.26

End Date:

2012.10.26

Start Time: 15:44:05

End Time:

20:54:14

Capacity: 8000.00 psig

Last Calib.:

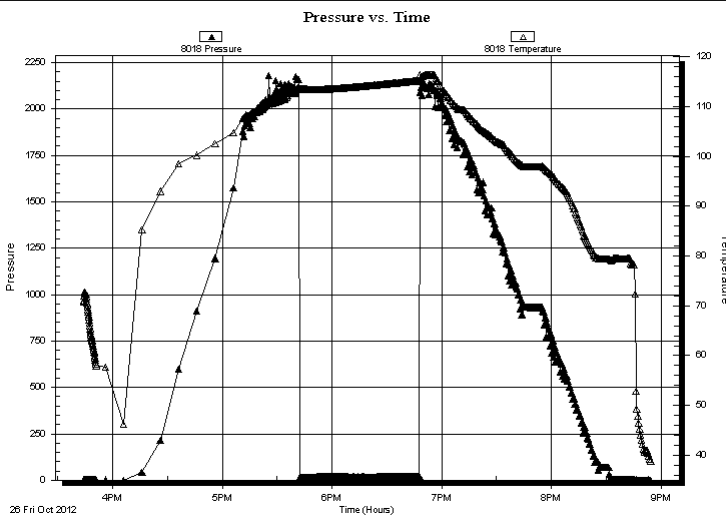
2012.10.26

Time On Btm:

Time Off Btm:

TEST COMMENT: Surface blow .
No return.
No blow .
No return.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
1.00	M100m	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

S17-19s-28w Lane,KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 48473

DST#: 1

ATTN: Vern Schrag

Test Start: 2012.10.26 @ 15:44:00

Tool Information

Drill Pipe:	Length: 4167.00 ft	Diameter: 3.80 inches	Volume: 58.45 bbl	Tool Weight:	2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 150.00 ft	Diameter: 2.25 inches	Volume: 0.74 bbl	Weight to Pull Loose:	75000.00 lb
			<u>Total Volume: 59.19 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	16.50 ft			String Weight: Initial	65000.00 lb
Depth to Top Packer:	4328.00 ft			Final	65000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	15.00 ft				
Tool Length:	42.50 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			4301.50	
Shut In Tool	5.00			4306.50	
Hydraulic tool	5.00			4311.50	
Jars	5.00			4316.50	
Safety Joint	2.50			4319.00	
Packer	5.00			4324.00	27.50 Bottom Of Top Packer
Packer	4.00			4328.00	
Stubb	1.00			4329.00	
Perforations	1.00			4330.00	
Recorder	0.00	8018	Inside	4330.00	
Recorder	0.00	6751	Outside	4330.00	
Perforations	10.00			4340.00	
Bullnose	3.00			4343.00	15.00 Bottom Packers & Anchor

Total Tool Length: 42.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S17-19s-28w Lane,KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 48473

DST#: 1

ATTN: Vern Schrag

Test Start: 2012.10.26 @ 15:44:00

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: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.16 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
1.00	M 100m	0.005

Total Length: 1.00 ft Total Volume: 0.005 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

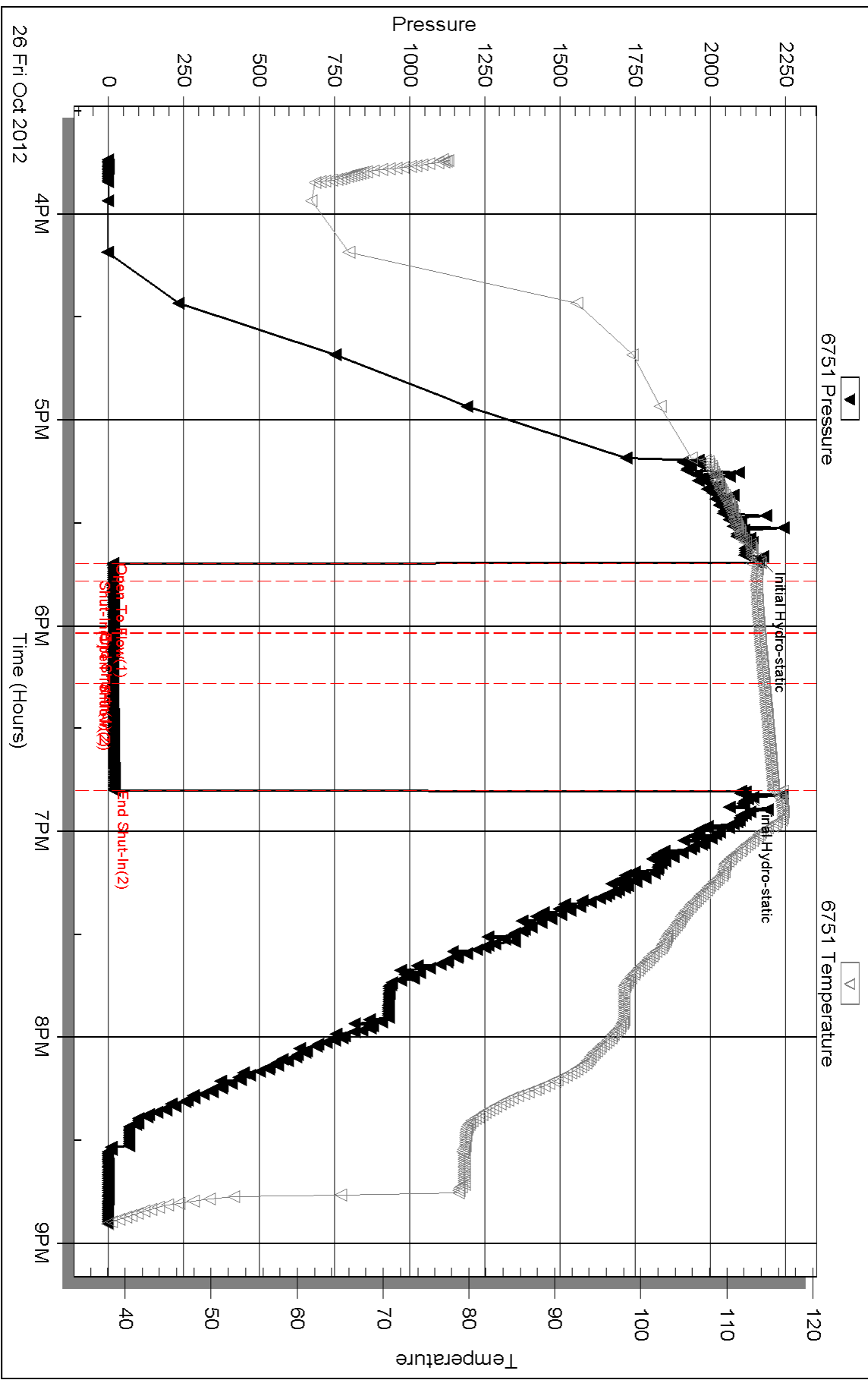
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



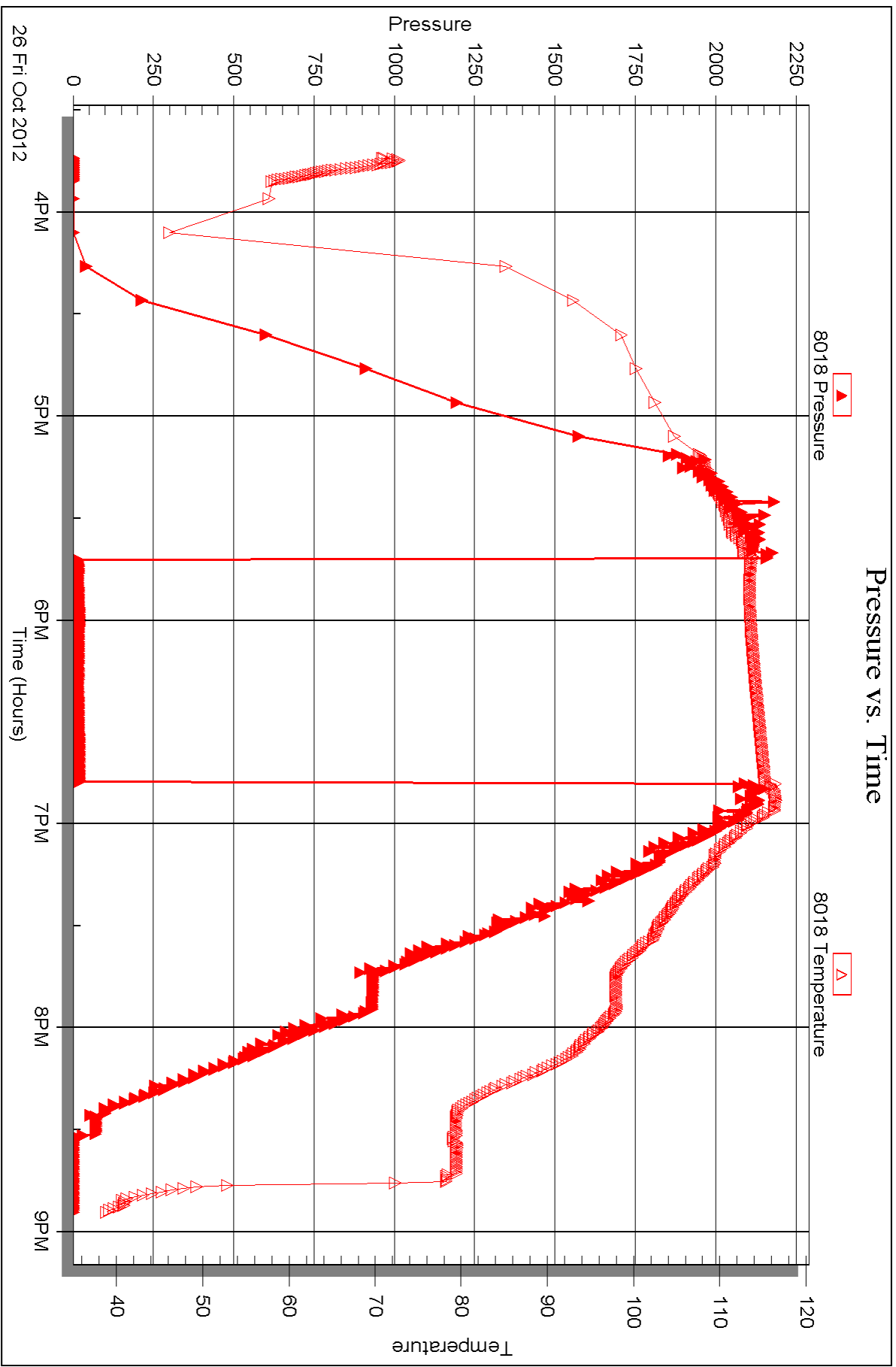
Serial #: 8018

Inside

Larson Engineering, Inc.

Helen #3-17

DST Test Number: 1





DRILL STEM TEST REPORT

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

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Helen #3-17

S17-19s-28w Lane,KS

Start Date: 2012.10.27 @ 04:12:00

End Date: 2012.10.27 @ 10:34:15

Job Ticket #: 48475 DST #: 2

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

Printed: 2012.11.02 @ 13:43:31



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S17-19s-28w Lane, KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

ATTN: Vern Schrag

Job Ticket: 48475

DST#: 2

Test Start: 2012.10.27 @ 04:12:00

GENERAL INFORMATION:

Formation: **LKC 'L'**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 06:22:30
 Time Test Ended: 10:34:15
 Interval: **4326.00 ft (KB) To 4348.00 ft (KB) (TVD)**
 Total Depth: 4348.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Chuck Smith
 Unit No: 62
 Reference Elevations: 2796.00 ft (KB)
 2789.00 ft (CF)
 KB to GR/CF: 7.00 ft

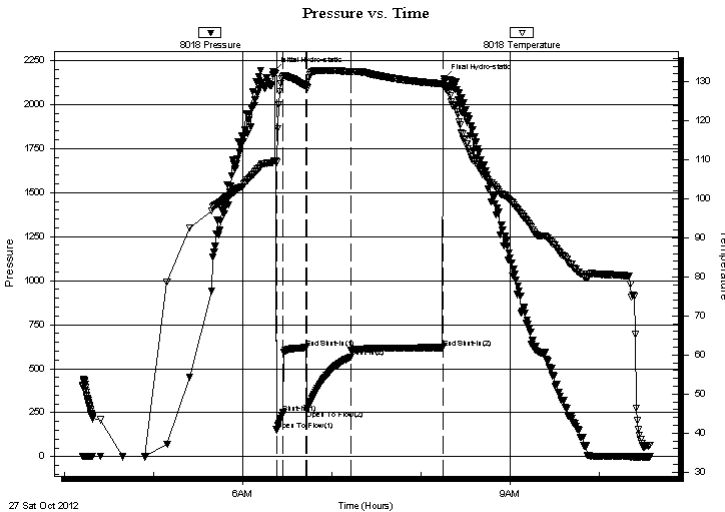
Serial #: 8018

Inside

Press @ Run Depth: 566.28 psig @ 4328.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.10.27 End Date: 2012.10.27 Last Calib.: 2012.10.27
 Start Time: 04:12:05 End Time: 10:34:14 Time On Btm: 2012.10.27 @ 06:20:30
 Time Off Btm: 2012.10.27 @ 08:15:30

TEST COMMENT: B.O.B. @ 2 min.
 1/8" Return.
 B.O.B. @ 2 min.
 No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2189.46	109.34	Initial Hydro-static
2	153.46	109.39	Open To Flow (1)
7	250.33	131.25	Shut-In(1)
22	619.29	128.97	End Shut-In(1)
23	264.07	128.67	Open To Flow (2)
52	566.28	132.58	Shut-In(2)
114	619.57	129.41	End Shut-In(2)
115	2149.00	129.51	Final Hydro-static

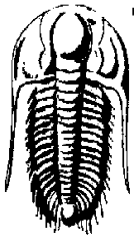
Recovery

Length (ft)	Description	Volume (bbl)
931.00	OSMW 5m 95w Popping gas	11.69
186.00	OSMW 20m 80w	2.61
92.00	OSWM 15w 85m	1.29

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S17-19s-28w Lane,KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 48475

DST#: 2

ATTN: Vern Schrag

Test Start: 2012.10.27 @ 04:12:00

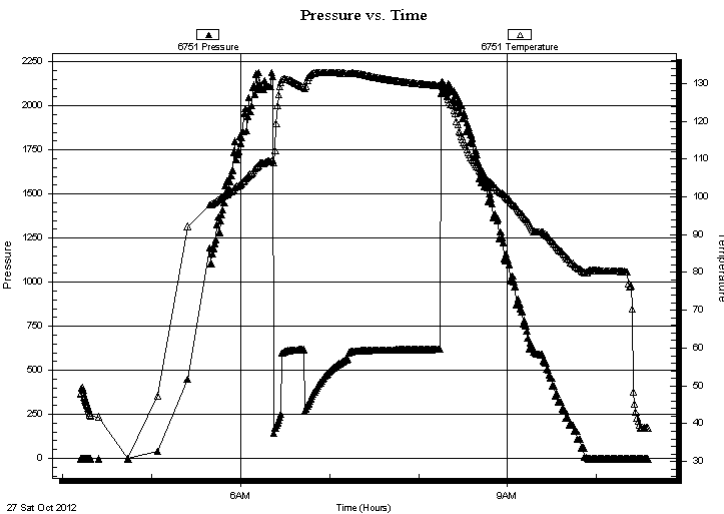
GENERAL INFORMATION:

Formation: **LKC 'L'**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 06:22:30
 Time Test Ended: 10:34:15
 Interval: **4326.00 ft (KB) To 4348.00 ft (KB) (TVD)**
 Total Depth: 4348.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Chuck Smith
 Unit No: 62
 Reference Elevations: 2796.00 ft (KB)
 2789.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 6751 Outside

Press @ RunDepth: psig @ 4328.00 ft (KB)
 Start Date: 2012.10.27 End Date: 2012.10.27 Capacity: 8000.00 psig
 Start Time: 04:12:05 End Time: 10:34:24 Last Calib.: 2012.10.27
 Time On Btm:
 Time Off Btm:

TEST COMMENT: B.O.B. @ 2 min.
 1/8" Return.
 B.O.B. @ 2 min.
 No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
931.00	OSMW 5m 95w Popping gas	11.69
186.00	OSMW 20m 80w	2.61
92.00	OSWM 15w 85m	1.29

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.

S17-19s-28w Lane,KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 48475

DST#: 2

ATTN: Vern Schrag

Test Start: 2012.10.27 @ 04:12:00

Tool Information

Drill Pipe:	Length: 4168.00 ft	Diameter: 3.80 inches	Volume: 58.47 bbl	Tool Weight:	2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer:	22000.00 lb
Drill Collar:	Length: 150.00 ft	Diameter: 2.25 inches	Volume: 0.74 bbl	Weight to Pull Loose:	75000.00 lb
			<u>Total Volume: 59.21 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	19.50 ft			String Weight: Initial	65000.00 lb
Depth to Top Packer:	4326.00 ft			Final	68000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	22.00 ft				
Tool Length:	49.50 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			4299.50	
Shut In Tool	5.00			4304.50	
Hydraulic tool	5.00			4309.50	
Jars	5.00			4314.50	
Safety Joint	2.50			4317.00	
Packer	5.00			4322.00	27.50 Bottom Of Top Packer
Packer	4.00			4326.00	
Stubb	1.00			4327.00	
Perforations	1.00			4328.00	
Recorder	0.00	8018	Inside	4328.00	
Recorder	0.00	6751	Outside	4328.00	
Perforations	17.00			4345.00	
Bullnose	3.00			4348.00	22.00 Bottom Packers & Anchor

Total Tool Length: 49.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S17-19s-28w Lane,KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 48475

DST#: 2

ATTN: Vern Schrag

Test Start: 2012.10.27 @ 04:12:00

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:

85000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.16 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 bbbl
931.00	OSMW 5m 95w Popping gas	11.693
186.00	OSMW 20m 80w	2.609
92.00	OSWM 15w 85m	1.291

Total Length: 1209.00 ft Total Volume: 15.593 bbl

Num Fluid Samples: 0

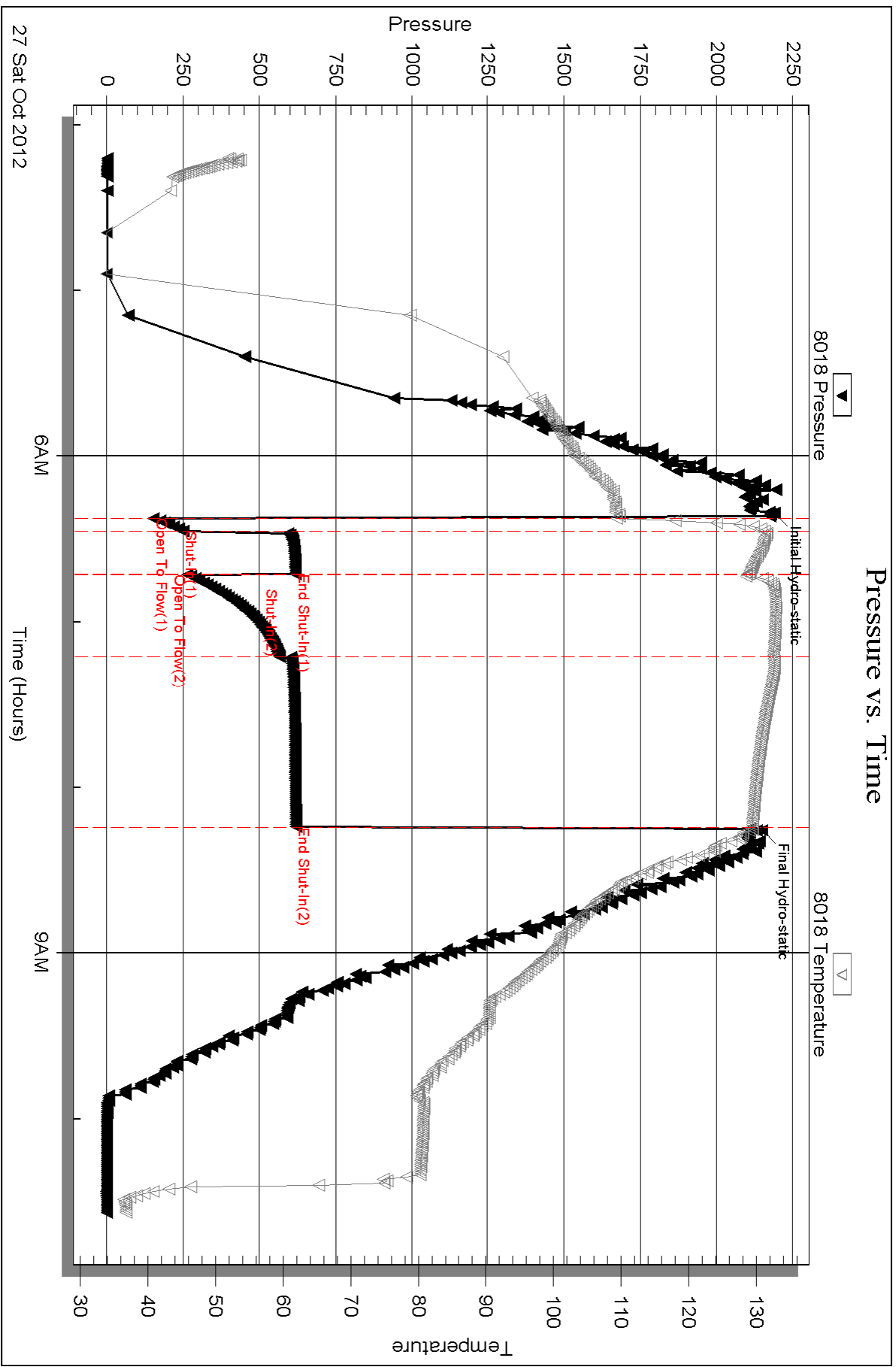
Num Gas Bombs: 0

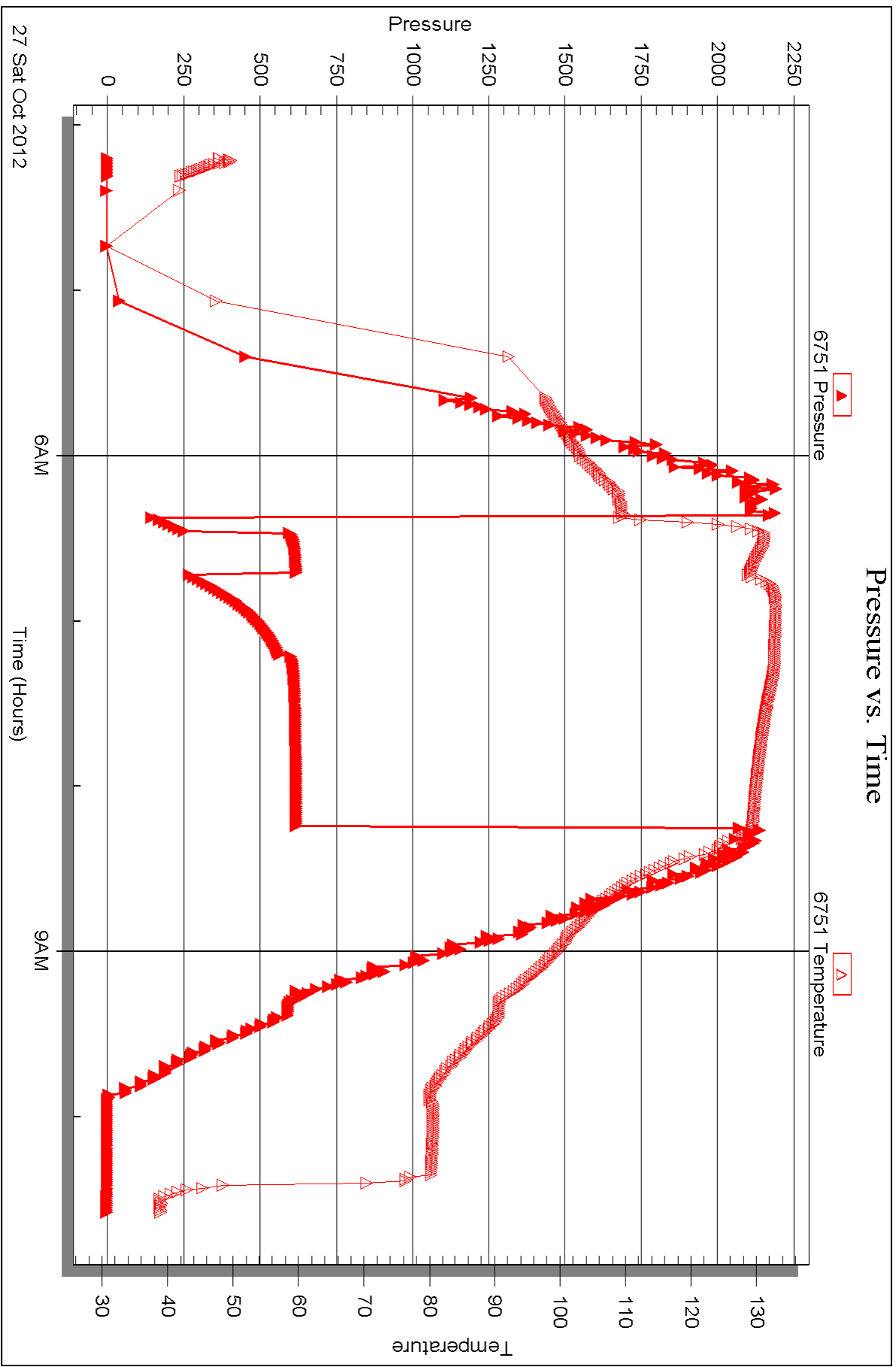
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .250 @ 26 Degrees F = 85000 PPM







DRILL STEM TEST REPORT

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

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Helen #3-17

S17-19s-28w Lane,KS

Start Date: 2012.10.27 @ 23:19:00

End Date: 2012.10.28 @ 04:48:45

Job Ticket #: 48476 DST #: 3

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

Printed: 2012.11.02 @ 13:42:42



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.
 562 W. State Rd. 4
 Olmitz, KS 67564
 ATTN: Vern Schrag

S17-19s-28w Lane, KS

Helen #3-17

Job Ticket: 48476

DST#: 3

Test Start: 2012.10.27 @ 23:19:00

GENERAL INFORMATION:

Formation: **Pleasanton**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 01:39:00
 Time Test Ended: 04:48:45
 Interval: **4370.00 ft (KB) To 4392.00 ft (KB) (TVD)**
 Total Depth: 4392.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Chuck Smith
 Unit No: 62
 Reference Elevations: 2796.00 ft (KB)
 2789.00 ft (CF)
 KB to GR/CF: 7.00 ft

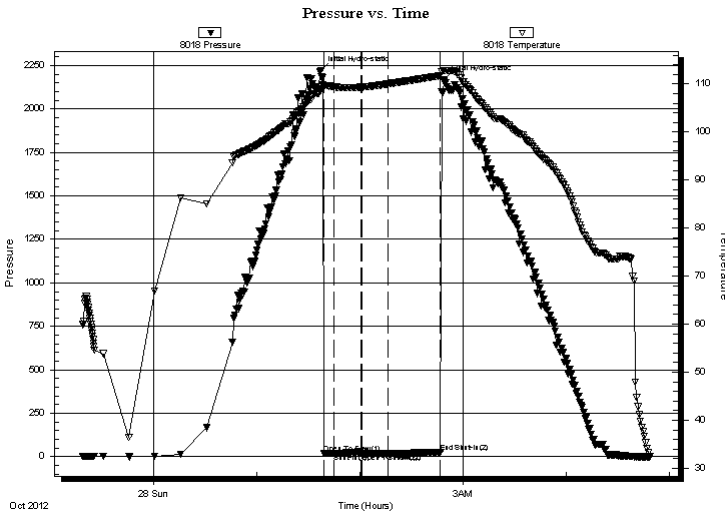
Serial #: 8018

Inside

Press @ Run Depth: 18.92 psig @ 4372.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.10.27 End Date: 2012.10.28 Last Calib.: 2012.10.28
 Start Time: 23:19:05 End Time: 04:48:44 Time On Btm: 2012.10.28 @ 01:37:15
 Time Off Btm: 2012.10.28 @ 02:48:45

TEST COMMENT: 1/2" Blow .
 No return.
 No blow .
 No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2222.57	108.58	Initial Hydro-static
2	18.54	109.42	Open To Flow (1)
8	18.83	109.41	Shut-In(1)
24	28.62	109.33	End Shut-In(1)
24	17.56	109.34	Open To Flow (2)
40	18.92	110.02	Shut-In(2)
70	26.37	111.73	End Shut-In(2)
72	2167.33	112.83	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	M100m	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.

S17-19s-28w Lane,KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 48476

DST#: 3

ATTN: Vern Schrag

Test Start: 2012.10.27 @ 23:19:00

GENERAL INFORMATION:

Formation: **Pleasanton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:39:00

Time Test Ended: 04:48:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4370.00 ft (KB) To 4392.00 ft (KB) (TVD)

Reference Elevations: 2796.00 ft (KB)

Total Depth: 4392.00 ft (KB) (TVD)

2789.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 6751 Outside

Press @ Run Depth: psig @ 4372.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.10.27

End Date:

2012.10.28

Last Calib.:

2012.10.28

Start Time: 23:19:05

End Time:

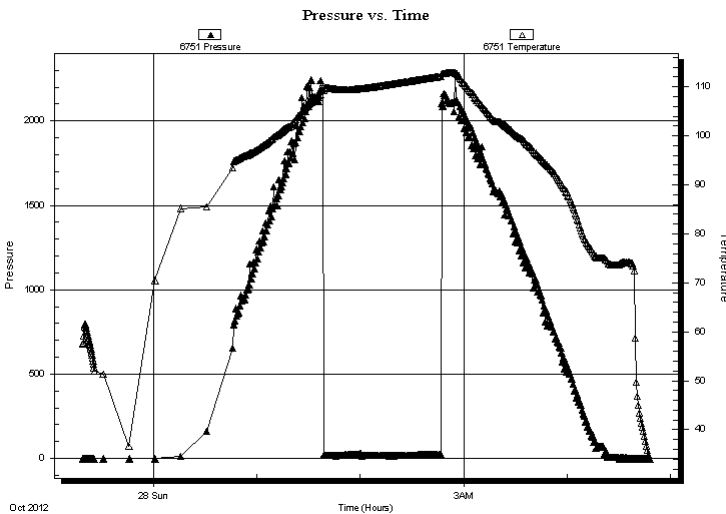
04:48:12

Time On Btm:

Time Off Btm:

TEST COMMENT: 1/2" Blow .
No return.
No blow .
No return.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
1.00	M 100m	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.

S17-19s-28w Lane,KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 48476

DST#: 3

ATTN: Vern Schrag

Test Start: 2012.10.27 @ 23:19:00

Tool Information

Drill Pipe:	Length: 4200.00 ft	Diameter: 3.80 inches	Volume: 58.91 bbl	Tool Weight:	2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 150.00 ft	Diameter: 2.25 inches	Volume: 0.74 bbl	Weight to Pull Loose:	75000.00 lb
			<u>Total Volume: 59.65 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	7.50 ft			String Weight: Initial	65000.00 lb
Depth to Top Packer:	4370.00 ft			Final	65000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	22.00 ft				
Tool Length:	49.50 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			4343.50	
Shut In Tool	5.00			4348.50	
Hydraulic tool	5.00			4353.50	
Jars	5.00			4358.50	
Safety Joint	2.50			4361.00	
Packer	5.00			4366.00	27.50 Bottom Of Top Packer
Packer	4.00			4370.00	
Stubb	1.00			4371.00	
Perforations	1.00			4372.00	
Recorder	0.00	8018	Inside	4372.00	
Recorder	0.00	6751	Outside	4372.00	
Perforations	17.00			4389.00	
Bullnose	3.00			4392.00	22.00 Bottom Packers & Anchor

Total Tool Length: 49.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S17-19s-28w Lane,KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 48476

DST#: 3

ATTN: Vern Schrag

Test Start: 2012.10.27 @ 23:19:00

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: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.16 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
1.00	M 100m	0.005

Total Length: 1.00 ft Total Volume: 0.005 bbl

Num Fluid Samples: 0

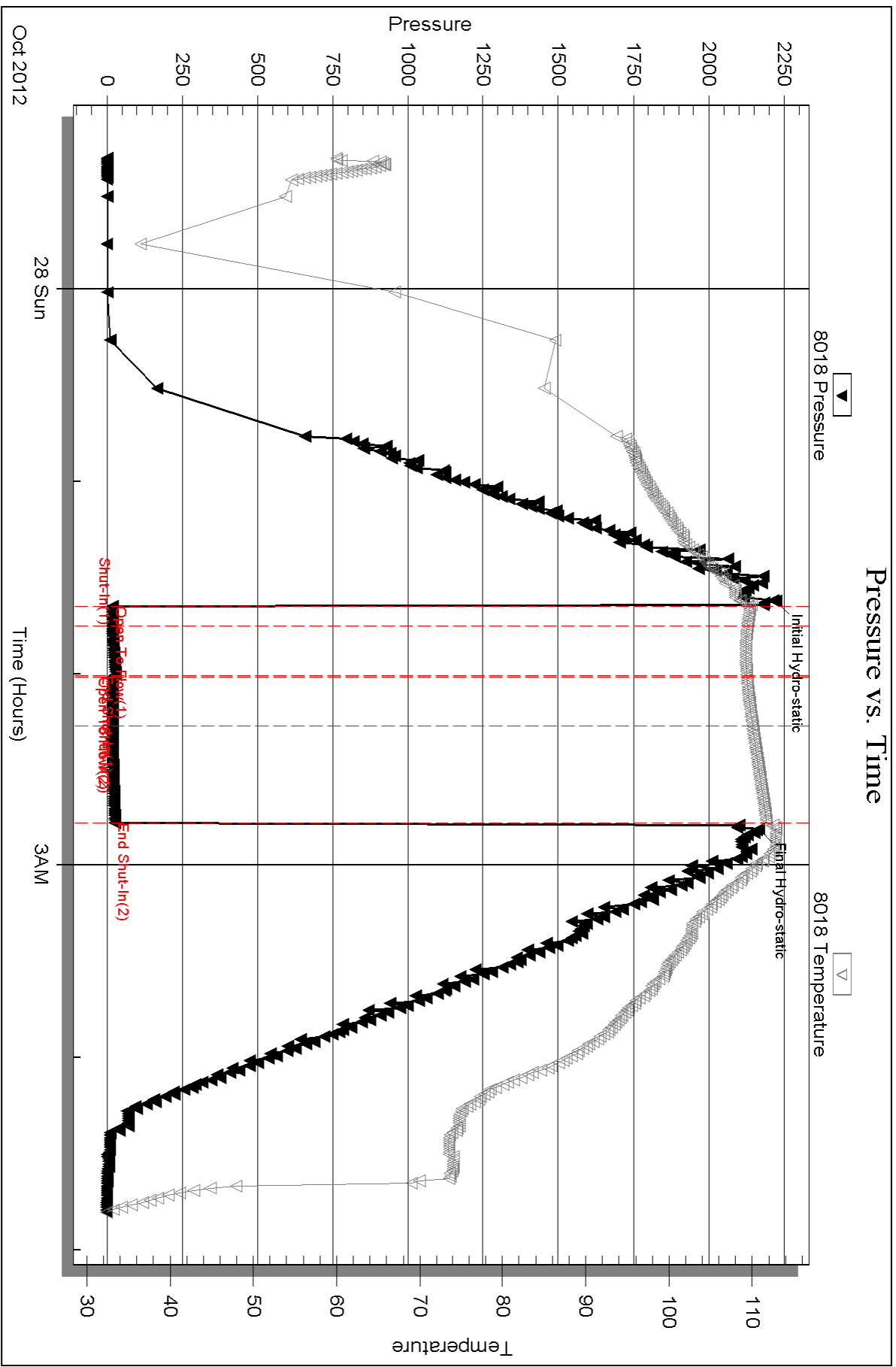
Num Gas Bombs: 0

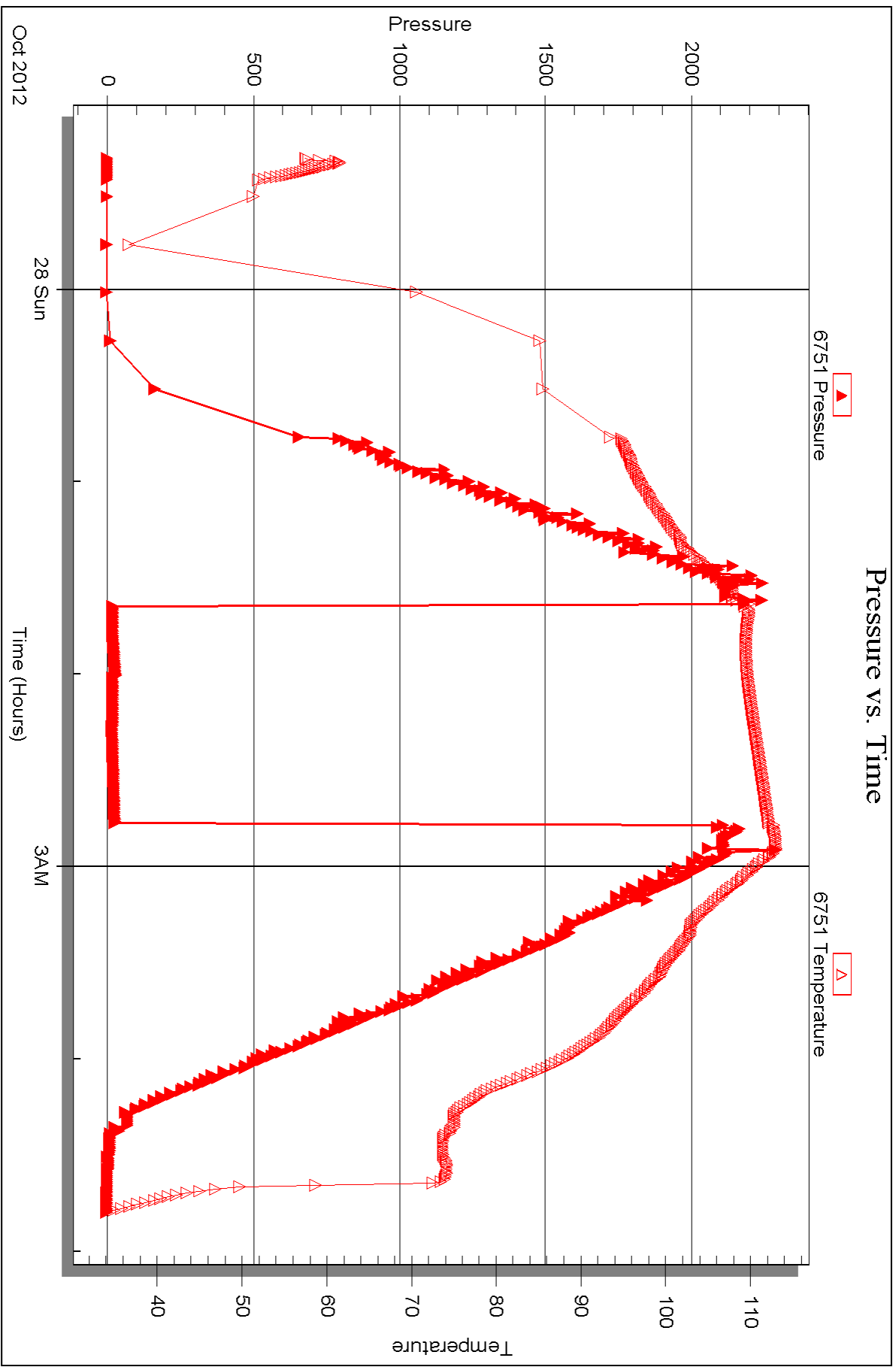
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

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

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Helen #3-17

S17-19s-28w Lane,KS

Start Date: 2012.10.28 @ 18:26:00

End Date: 2012.10.28 @ 23:44:45

Job Ticket #: 48477 DST #: 4

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

Printed: 2012.11.02 @ 13:42:00



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S17-19s-28w Lane, KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 48477

DST#: 4

ATTN: Vern Schrag

Test Start: 2012.10.28 @ 18:26:00

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:33:00

Time Test Ended: 23:44:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4388.00 ft (KB) To 4465.00 ft (KB) (TVD)

Reference Elevations: 2796.00 ft (KB)

Total Depth: 4465.00 ft (KB) (TVD)

2789.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8018

Inside

Press @ Run Depth: 20.86 psig @ 4392.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.10.28

End Date:

2012.10.28

Last Calib.: 2012.10.28

Start Time: 18:26:05

End Time:

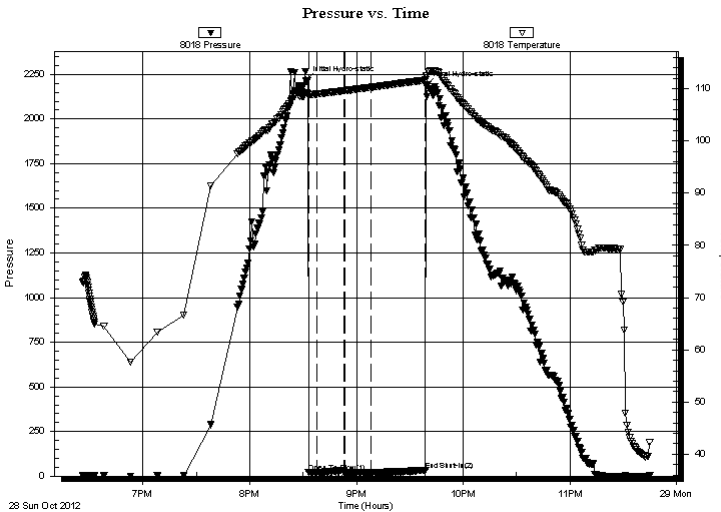
23:44:44

Time On Btm: 2012.10.28 @ 20:31:30

Time Off Btm: 2012.10.28 @ 21:39:15

TEST COMMENT: 1/2" Blow .
No return.
No blow .
No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2216.07	109.39	Initial Hydro-static
2	19.91	108.50	Open To Flow (1)
7	20.09	108.96	Shut-In(1)
22	33.02	109.63	End Shut-In(1)
22	19.59	109.62	Open To Flow (2)
37	20.86	110.28	Shut-In(2)
68	32.89	111.65	End Shut-In(2)
68	2186.40	112.42	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	M100m	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.

S17-19s-28w Lane,KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 48477

DST#: 4

ATTN: Vern Schrag

Test Start: 2012.10.28 @ 18:26:00

Tool Information

Drill Pipe:	Length: 4230.00 ft	Diameter: 3.80 inches	Volume: 59.34 bbl	Tool Weight:	2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer:	22000.00 lb
Drill Collar:	Length: 150.00 ft	Diameter: 2.25 inches	Volume: 0.74 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 60.08 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	19.50 ft			String Weight: Initial	66000.00 lb
Depth to Top Packer:	4388.00 ft			Final	66000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	77.00 ft				
Tool Length:	104.50 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			4361.50	
Shut In Tool	5.00			4366.50	
Hydraulic tool	5.00			4371.50	
Jars	5.00			4376.50	
Safety Joint	2.50			4379.00	
Packer	5.00			4384.00	27.50 Bottom Of Top Packer
Packer	4.00			4388.00	
Stubb	1.00			4389.00	
Perforations	3.00			4392.00	
Recorder	0.00	8018	Inside	4392.00	
Recorder	0.00	6751	Outside	4392.00	
Perforations	6.00			4398.00	
Change Over Sub	1.00			4399.00	
Drill Pipe	62.00			4461.00	
Change Over Sub	1.00			4462.00	
Bullnose	3.00			4465.00	77.00 Bottom Packers & Anchor
Total Tool Length:	104.50				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S17-19s-28w Lane,KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 48477

DST#: 4

ATTN: Vern Schrag

Test Start: 2012.10.28 @ 18:26:00

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: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	M 100m	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

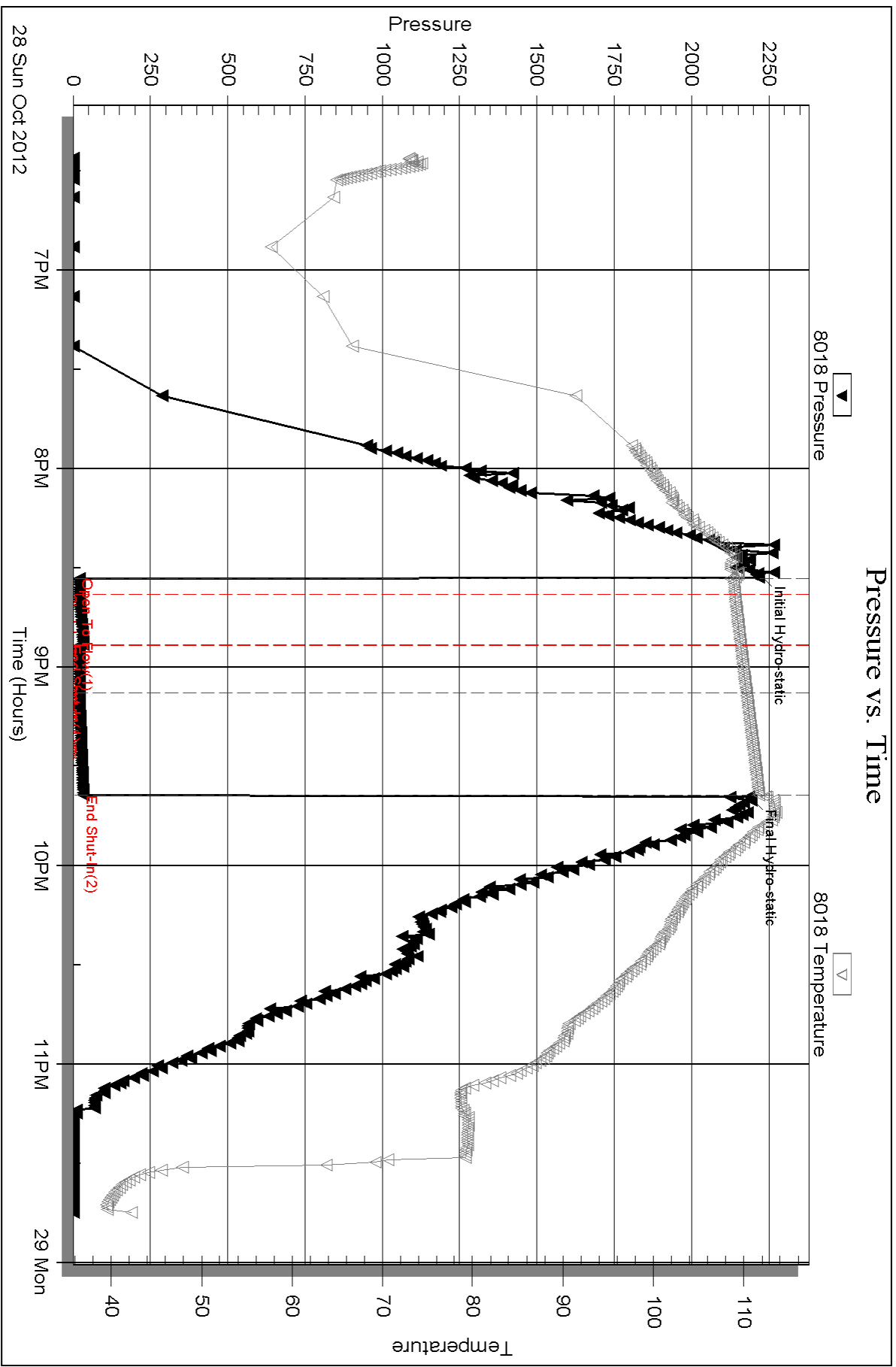
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





DRILL STEM TEST REPORT

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

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Helen #3-17

S17-19s-28w Lane,KS

Start Date: 2012.10.29 @ 16:59:00

End Date: 2012.10.29 @ 22:46:30

Job Ticket #: 48478 DST #: 5

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

Printed: 2012.11.02 @ 13:41:15



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S17-19s-28w Lane, KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 48478

DST#: 5

ATTN: Vern Schrag

Test Start: 2012.10.29 @ 16:59:00

GENERAL INFORMATION:

Formation: **Pawnee - Ft. Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:49:45

Time Test Ended: 22:46:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4484.00 ft (KB) To 4570.00 ft (KB) (TVD)

Reference Elevations: 2796.00 ft (KB)

Total Depth: 4570.00 ft (KB) (TVD)

2789.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8018

Inside

Press @ Run Depth: 114.03 psig @ 4488.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.10.29

End Date:

2012.10.29

Last Calib.:

2012.10.29

Start Time: 16:59:05

End Time:

22:46:29

Time On Btm:

2012.10.29 @ 18:47:30

Time Off Btm:

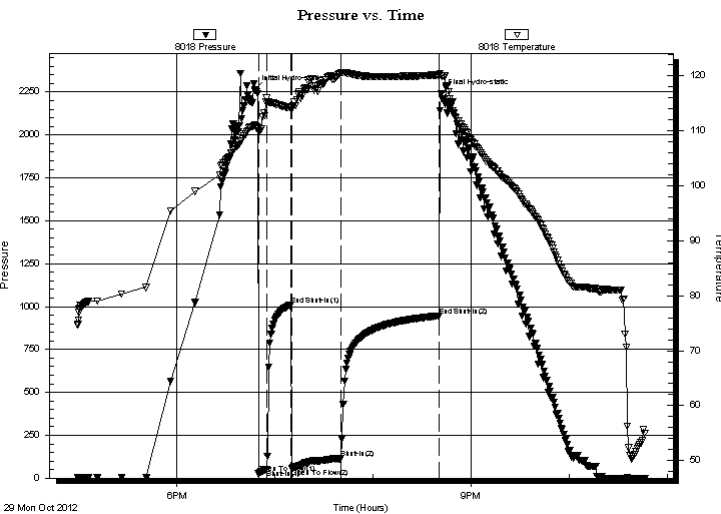
2012.10.29 @ 20:41:45

TEST COMMENT: 2 1/2" Blow .

No return.

7" Blow .

No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2263.47	111.07	Initial Hydro-static
3	25.45	109.82	Open To Flow (1)
8	51.36	115.96	Shut-In(1)
23	1010.26	114.15	End Shut-In(1)
23	57.49	113.90	Open To Flow (2)
53	114.03	120.59	Shut-In(2)
113	946.55	120.21	End Shut-In(2)
115	2241.07	120.09	Final Hydro-static

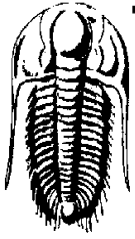
Recovery

Length (ft)	Description	Volume (bbl)
119.00	GOSWM 2g 20w 78m	0.59
76.00	M100m	0.78

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S17-19s-28w Lane, KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 48478

DST#: 5

ATTN: Vern Schrag

Test Start: 2012.10.29 @ 16:59:00

GENERAL INFORMATION:

Formation: **Pawnee - Ft. Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:49:45

Time Test Ended: 22:46:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4484.00 ft (KB) To 4570.00 ft (KB) (TVD)

Total Depth: 4570.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2796.00 ft (KB)

2789.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 6751 Outside

Press @ Run Depth: psig @ 4488.00 ft (KB)

Start Date: 2012.10.29

End Date: 2012.10.29

Start Time: 16:59:05

End Time: 22:46:36

Capacity: 8000.00 psig

Last Calib.: 2012.10.29

Time On Btm:

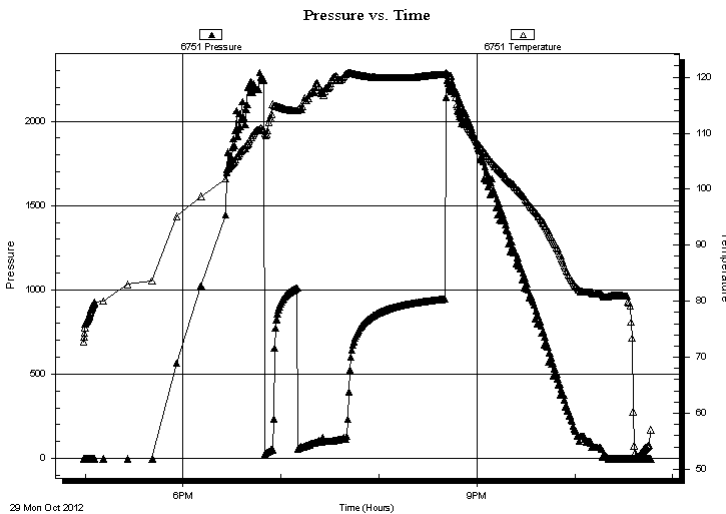
Time Off Btm:

TEST COMMENT: 2 1/2" Blow .

No return.

7" Blow .

No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
119.00	GOSWM 2g 20w 78m	0.59
76.00	M100m	0.78

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.

S17-19s-28w Lane,KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 48478

DST#: 5

ATTN: Vern Schrag

Test Start: 2012.10.29 @ 16:59:00

Tool Information

Drill Pipe:	Length: 4326.00 ft	Diameter: 3.80 inches	Volume: 60.68 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 150.00 ft	Diameter: 2.25 inches	Volume: 0.74 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 61.42 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	19.50 ft			String Weight: Initial 66000.00 lb
Depth to Top Packer:	4484.00 ft			Final 67000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	86.00 ft			
Tool Length:	113.50 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			4457.50	
Shut In Tool	5.00			4462.50	
Hydraulic tool	5.00			4467.50	
Jars	5.00			4472.50	
Safety Joint	2.50			4475.00	
Packer	5.00			4480.00	27.50 Bottom Of Top Packer
Packer	4.00			4484.00	
Stubb	1.00			4485.00	
Perforations	3.00			4488.00	
Recorder	0.00	8018	Inside	4488.00	
Recorder	0.00	6751	Outside	4488.00	
Perforations	14.00			4502.00	
Change Over Sub	1.00			4503.00	
Drill Pipe	63.00			4566.00	
Change Over Sub	1.00			4567.00	
Bullnose	3.00			4570.00	86.00 Bottom Packers & Anchor
Total Tool Length:	113.50				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S17-19s-28w Lane,KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 48478

DST#: 5

ATTN: Vern Schrag

Test Start: 2012.10.29 @ 16:59:00

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:

38000 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.96 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
119.00	GOSWM 2g 20w 78m	0.585
76.00	M 100m	0.784

Total Length: 195.00 ft Total Volume: 1.369 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

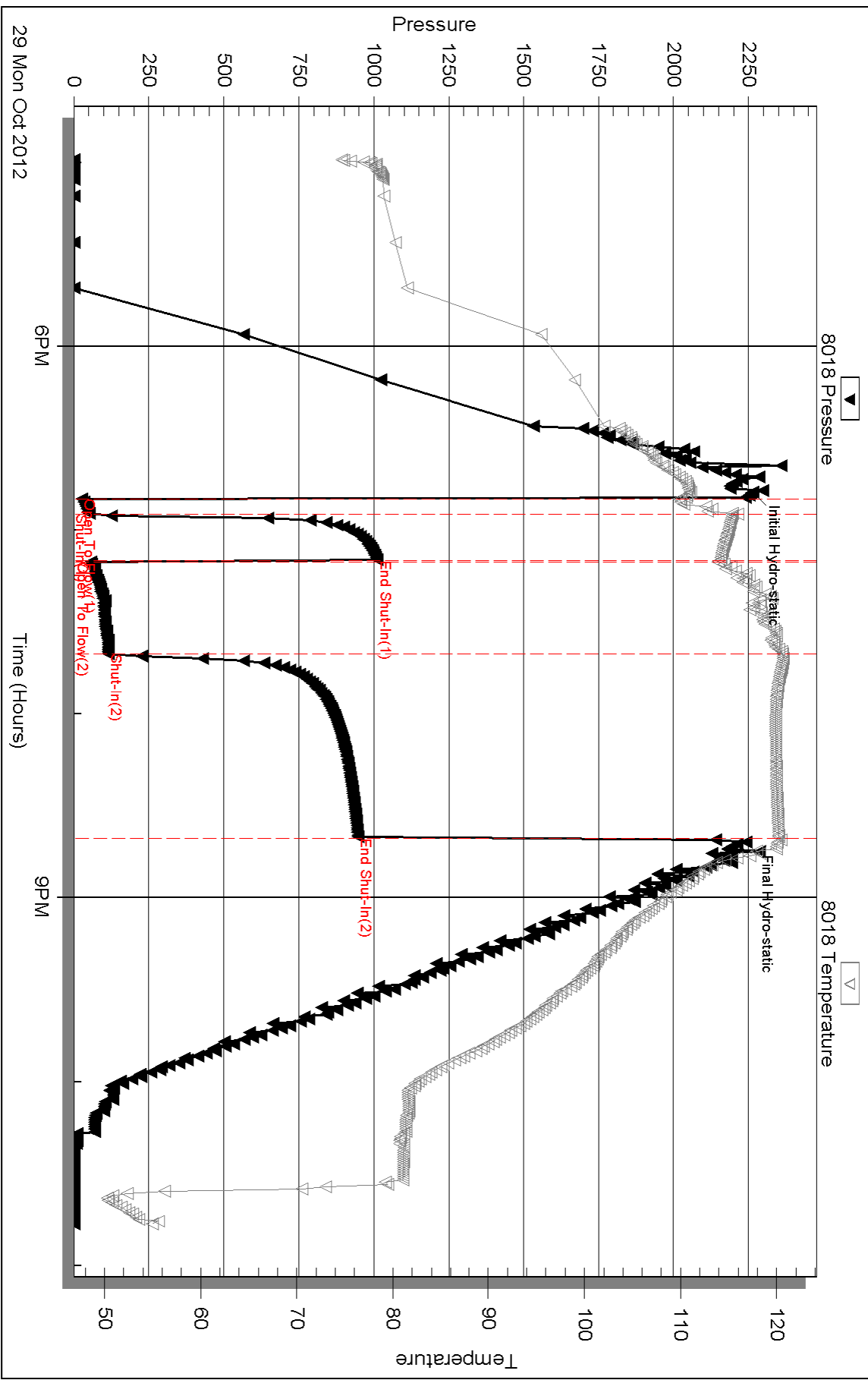
Serial #:

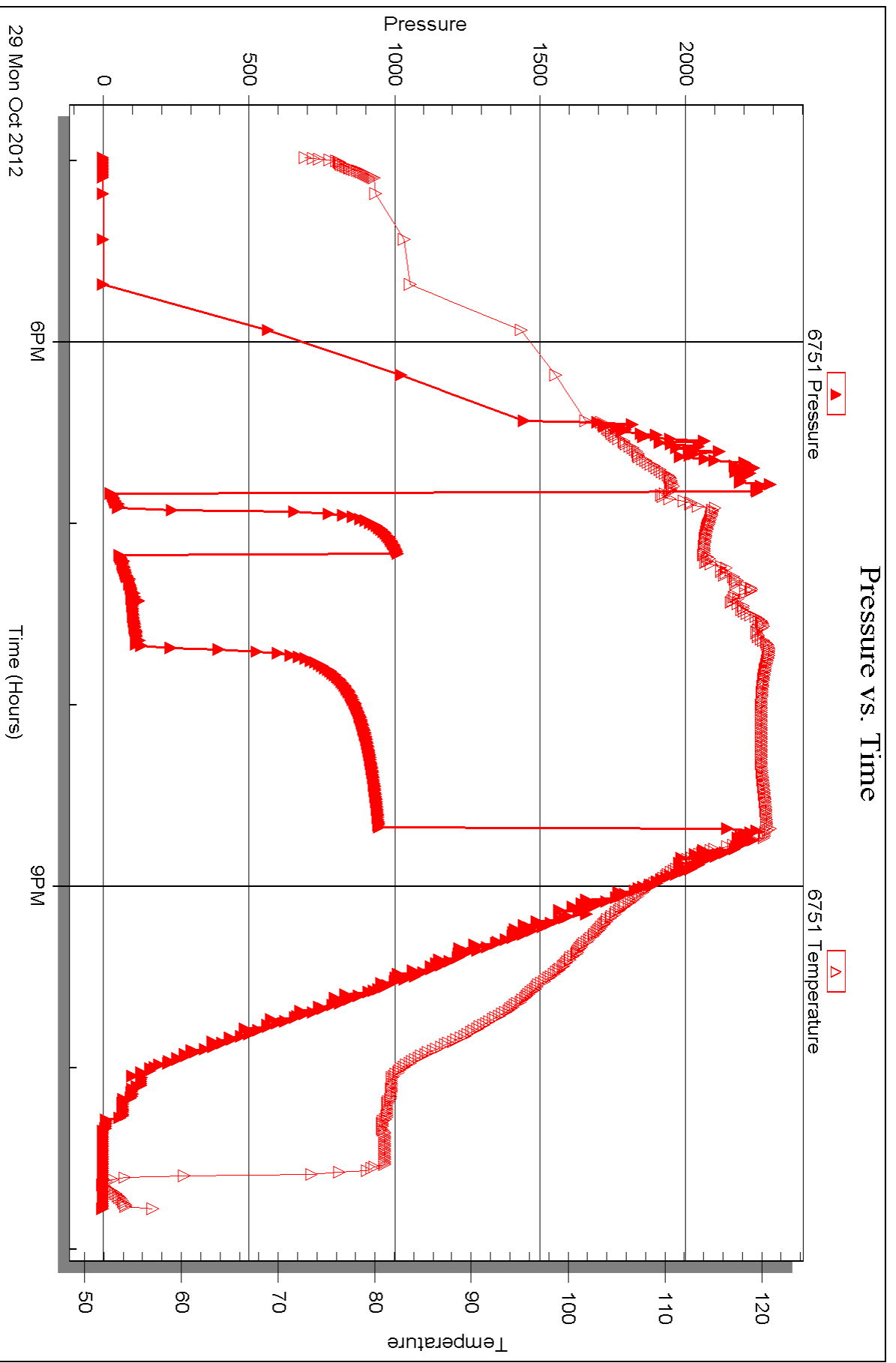
Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .275 @ 51 Degrees F = 38000 PPM

Pressure vs. Time







DRILL STEM TEST REPORT

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

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Helen #3-17

S17-19s-28w Lane,KS

Start Date: 2012.10.30 @ 10:31:00

End Date: 2012.10.30 @ 15:23:00

Job Ticket #: 48479 DST #: 6

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

Printed: 2012.11.02 @ 13:40:13



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S17-19s-28w Lane, KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 48479

DST#: 6

ATTN: Vern Schrag

Test Start: 2012.10.30 @ 10:31:00

GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:17:15

Time Test Ended: 15:23:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4569.00 ft (KB) To 4625.00 ft (KB) (TVD)

Reference Elevations: 2796.00 ft (KB)

Total Depth: 4625.00 ft (KB) (TVD)

2789.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8018 Inside

Press @ RunDepth: 21.30 psig @ 4573.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.10.30

End Date: 2012.10.30

Last Calib.: 2012.10.30

Start Time: 10:31:05

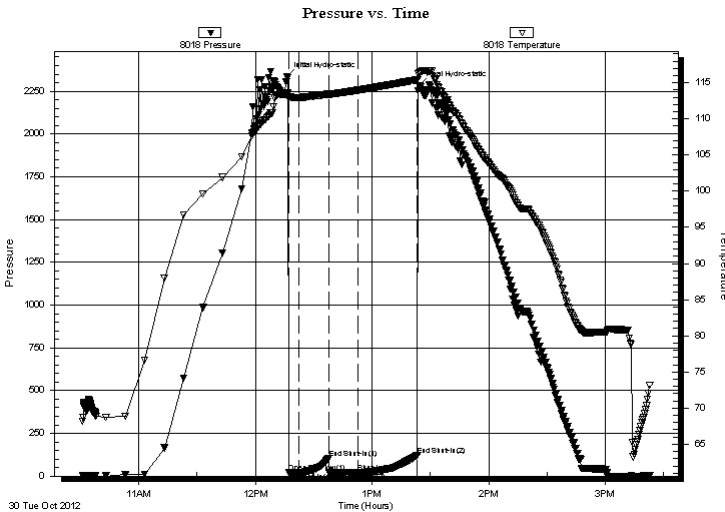
End Time: 15:22:59

Time On Btm: 2012.10.30 @ 12:16:00

Time Off Btm: 2012.10.30 @ 13:24:15

TEST COMMENT: 1/8" Blow .
No return.
No blow .
No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2336.02	113.40	Initial Hydro-static
2	20.04	112.86	Open To Flow (1)
7	20.41	112.96	Shut-In(1)
22	103.82	113.45	End Shut-In(1)
22	19.77	113.38	Open To Flow (2)
37	21.30	113.98	Shut-In(2)
68	121.41	115.44	End Shut-In(2)
69	2284.18	116.33	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	OSM 100m	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.

S17-19s-28w Lane, KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 48479

DST#: 6

ATTN: Vern Schrag

Test Start: 2012.10.30 @ 10:31:00

GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:17:15

Time Test Ended: 15:23:00

Interval: 4569.00 ft (KB) To 4625.00 ft (KB) (TVD)

Total Depth: 4625.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Reference Elevations: 2796.00 ft (KB)

2789.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 6751 **Outside**

Press @ Run Depth: psig @ 4573.00 ft (KB)

Start Date: 2012.10.30

End Date: 2012.10.30

Start Time: 10:31:05

End Time: 15:22:59

Capacity: 8000.00 psig

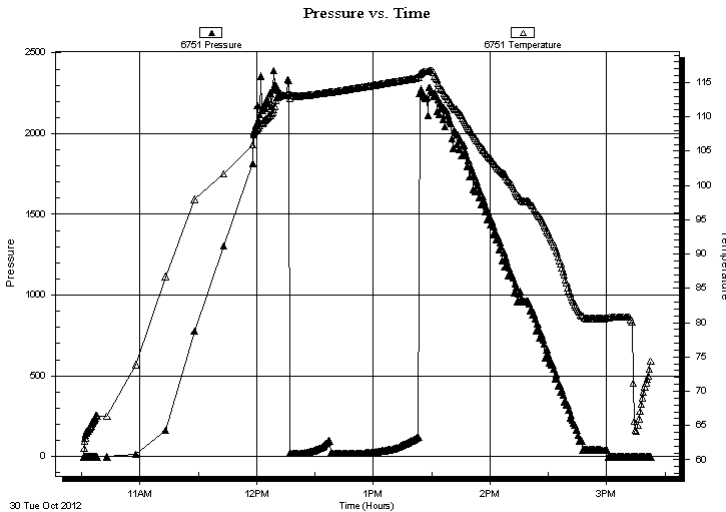
Last Calib.: 2012.10.30

Time On Btm:

Time Off Btm:

TEST COMMENT: 1/8" Blow .
No return.
No blow .
No return.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
2.00	OSM 100m	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.

S17-19s-28w Lane, KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 48479

DST#: 6

ATTN: Vern Schrag

Test Start: 2012.10.30 @ 10:31:00

Tool Information

Drill Pipe:	Length: 4420.00 ft	Diameter: 3.80 inches	Volume: 62.00 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 150.00 ft	Diameter: 2.25 inches	Volume: 0.74 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 62.74 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	28.50 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4569.00 ft			Final 65000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	56.00 ft			
Tool Length:	83.50 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			4542.50	
Shut In Tool	5.00			4547.50	
Hydraulic tool	5.00			4552.50	
Jars	5.00			4557.50	
Safety Joint	2.50			4560.00	
Packer	5.00			4565.00	27.50 Bottom Of Top Packer
Packer	4.00			4569.00	
Stubb	1.00			4570.00	
Perforations	3.00			4573.00	
Recorder	0.00	8018	Inside	4573.00	
Recorder	0.00	6751	Outside	4573.00	
Perforations	16.00			4589.00	
Change Over Sub	1.00			4590.00	
Drill Pipe	31.00			4621.00	
Change Over Sub	1.00			4622.00	
Bullnose	3.00			4625.00	56.00 Bottom Packers & Anchor
Total Tool Length:	83.50				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S17-19s-28w Lane,KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 48479

DST#: 6

ATTN: Vern Schrag

Test Start: 2012.10.30 @ 10:31:00

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: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.97 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	OSM 100m	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

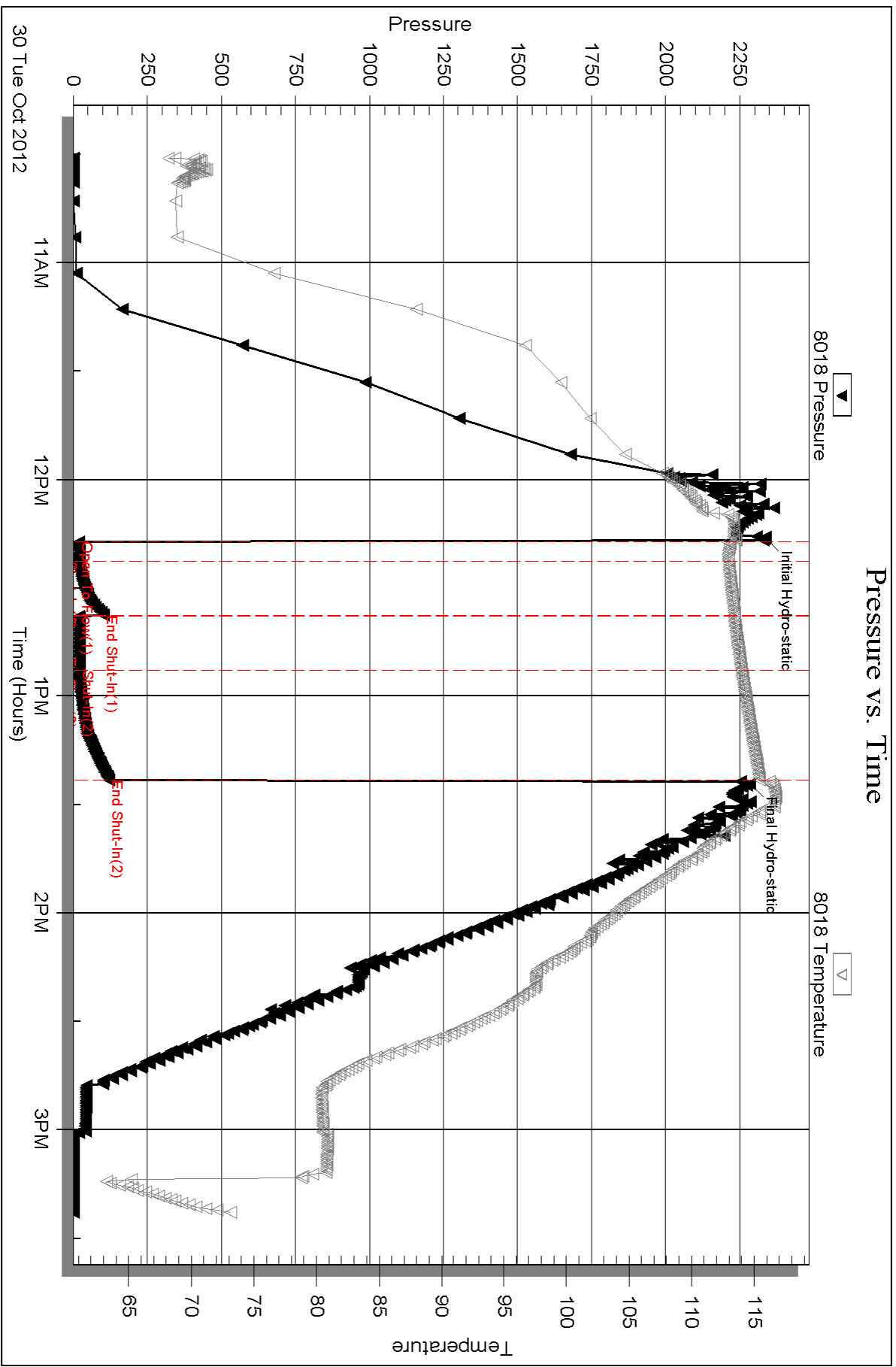
Num Gas Bombs: 0

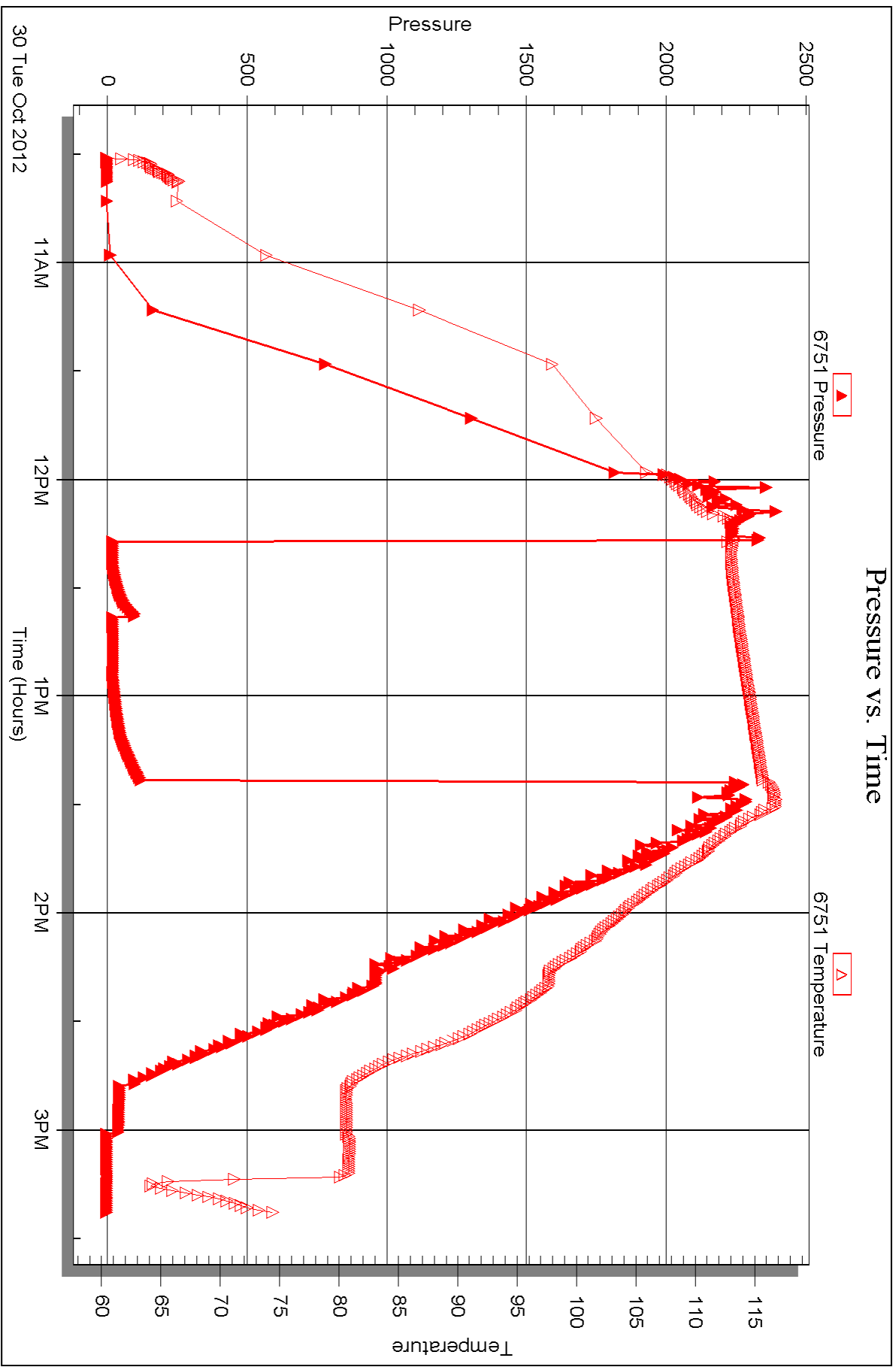
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

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

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Helen #3-17

S17-19s-28w Lane,KS

Start Date: 2012.10.31 @ 12:25:00

End Date: 2012.10.31 @ 18:41:45

Job Ticket #: 49813 DST #: 7

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

Printed: 2012.11.02 @ 13:31:47



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.
 562 W. State Rd. 4
 Olmitz, KS 67564
 ATTN: Vern Schrag

S17-19s-28w Lane, KS

Helen #3-17

Job Ticket: 49813

DST#: 7

Test Start: 2012.10.31 @ 12:25:00

GENERAL INFORMATION:

Formation: "H"
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 14:22:00
 Time Test Ended: 18:41:45
 Interval: **4178.00 ft (KB) To 4205.00 ft (KB) (TVD)**
 Total Depth: 4708.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Straddle (Reset)
 Tester: Sam Esparza
 Unit No: 58
 Reference Elevations: 2796.00 ft (KB)
 2789.00 ft (CF)
 KB to GR/CF: 7.00 ft

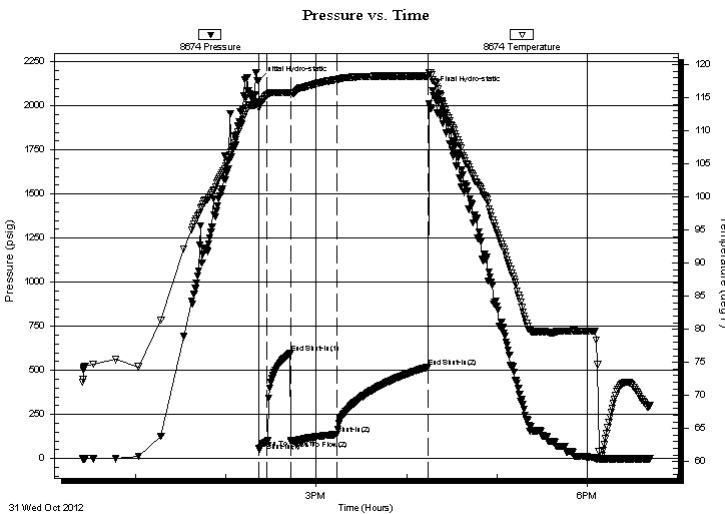
Serial #: 8674

Inside

Press @ Run Depth: 137.22 psig @ 4179.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.10.31 End Date: 2012.10.31 Last Calib.: 2012.10.31
 Start Time: 12:25:05 End Time: 18:41:44 Time On Btm: 2012.10.31 @ 14:21:45
 Time Off Btm: 2012.10.31 @ 16:17:15

TEST COMMENT: IF: 8 3/4" blow.
 IS: 1/4" return.
 FF: BOB @ 16 min.
 FS: 1" return died @ 42 min.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2143.76	114.25	Initial Hydro-static
1	57.47	113.45	Open To Flow (1)
6	94.68	115.35	Shut-In(1)
22	597.58	115.80	End Shut-In(1)
22	101.85	115.54	Open To Flow (2)
52	137.22	117.71	Shut-In(2)
113	520.00	118.24	End Shut-In(2)
116	2087.77	117.63	Final Hydro-static

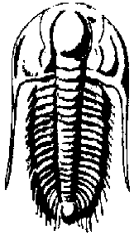
Recovery

Length (ft)	Description	Volume (bbl)
180.00	GOCM 10g 20o 70m	1.16
135.00	GO 20g 80o	1.89
0.00	170' GIP	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.

S17-19s-28w Lane, KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 49813

DST#: 7

ATTN: Vern Schrag

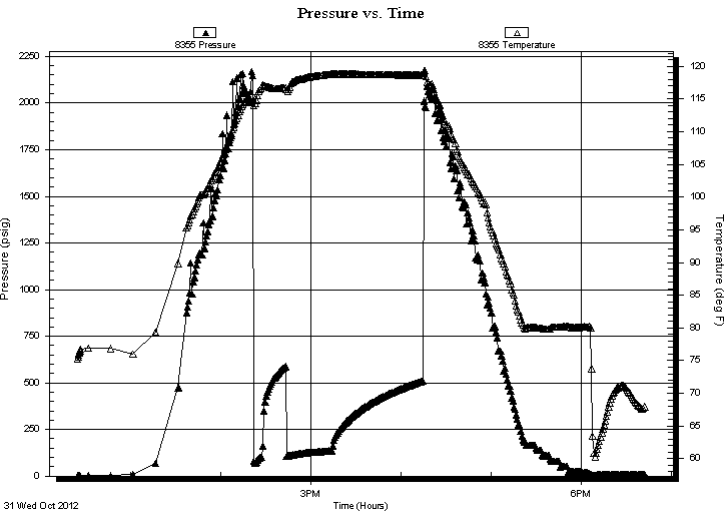
Test Start: 2012.10.31 @ 12:25:00

GENERAL INFORMATION:

Formation: "H"
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 14:22:00
 Time Test Ended: 18:41:45
 Test Type: Conventional Straddle (Reset)
 Tester: Sam Esparza
 Unit No: 58
 Interval: **4178.00 ft (KB) To 4205.00 ft (KB) (TVD)**
 Reference Elevations: 2796.00 ft (KB)
 Total Depth: 4708.00 ft (KB) (TVD)
 2789.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good
 KB to GR/CF: 7.00 ft

Serial #: 8355 Outside
 Press @ Run Depth: psig @ 4179.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.10.31 End Date: 2012.10.31 Last Calib.: 2012.10.31
 Start Time: 12:24:35 End Time: 18:42:29 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF: 8 3/4" blow.
 IS: 1/4" return.
 FF: BOB @ 16 min.
 FS: 1" return died @ 42 min.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
180.00	GOCM 10g 20o 70m	1.16
135.00	GO 20g 80o	1.89
0.00	170' GIP	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.

S17-19s-28w Lane, KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 49813

DST#: 7

ATTN: Vern Schrag

Test Start: 2012.10.31 @ 12:25:00

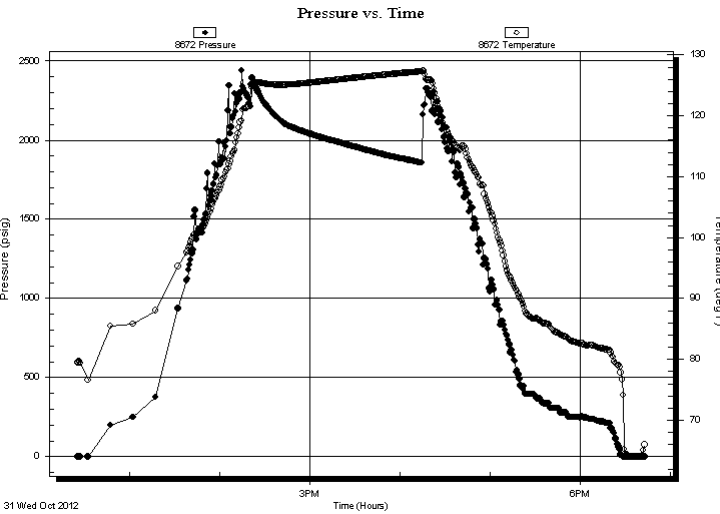
GENERAL INFORMATION:

Formation: **"H"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 14:22:00
 Time Test Ended: 18:41:45
 Interval: **4178.00 ft (KB) To 4205.00 ft (KB) (TVD)**
 Total Depth: 4708.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Straddle (Reset)
 Tester: Sam Esparza
 Unit No: 58
 Reference Elevations: 2796.00 ft (KB)
 2789.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8672 Below (Straddle)

Press @ Run Depth: psig @ 4703.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.10.31 End Date: 2012.10.31 Last Calib.: 2012.10.31
 Start Time: 12:25:05 End Time: 18:42:44 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF: 8 3/4" blow.
 IS: 1/4" return.
 FF: BOB @ 16 min.
 FS: 1" return died @ 42 min.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
180.00	GOCM 10g 20o 70m	1.16
135.00	GO 20g 80o	1.89
0.00	170' GIP	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.

S17-19s-28w Lane,KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 49813

DST#: 7

ATTN: Vern Schrag

Test Start: 2012.10.31 @ 12:25:00

Tool Information

Drill Pipe:	Length: 4009.00 ft	Diameter: 3.80 inches	Volume: 56.24 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 150.00 ft	Diameter: 2.25 inches	Volume: 0.74 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 56.98 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	9.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4178.00 ft			Final 74000.00 lb
Depth to Bottom Packer:	4205.00 ft			
Interval between Packers:	27.00 ft			
Tool Length:	557.00 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			4151.00	
Shut In Tool	5.00			4156.00	
Hydraulic tool	5.00			4161.00	
Jars	5.00			4166.00	
Safety Joint	3.00			4169.00	
Packer	5.00			4174.00	28.00 Bottom Of Top Packer
Packer	4.00			4178.00	
Stubb	1.00			4179.00	
Recorder	0.00	8355	Outside	4179.00	
Recorder	0.00	8674	Inside	4179.00	
Perforations	22.00			4201.00	
Blank Off Sub	1.00			4202.00	
Top of F Packer	3.00			4205.00	27.00 Tool Interval
Packer	0.00			4205.00	
Perforations	26.00			4231.00	
Change Over Sub	1.00			4232.00	
Drill Pipe	471.00			4703.00	
Recorder	0.00	8672	Below	4703.00	
Change Over Sub	1.00			4704.00	
Bullnose	3.00			4707.00	502.00 Bottom Packers & Anchor

Total Tool Length: 557.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S17-19s-28w Lane,KS

562 W. State Rd. 4
Olmitz, KS 67564

Helen #3-17

Job Ticket: 49813

DST#: 7

ATTN: Vern Schrag

Test Start: 2012.10.31 @ 12:25:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

33 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.39 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
180.00	GOCM 10g 20o 70m	1.158
135.00	GO 20g 80o	1.894
0.00	170' GIP	0.000

Total Length: 315.00 ft Total Volume: 3.052 bbl

Num Fluid Samples: 0

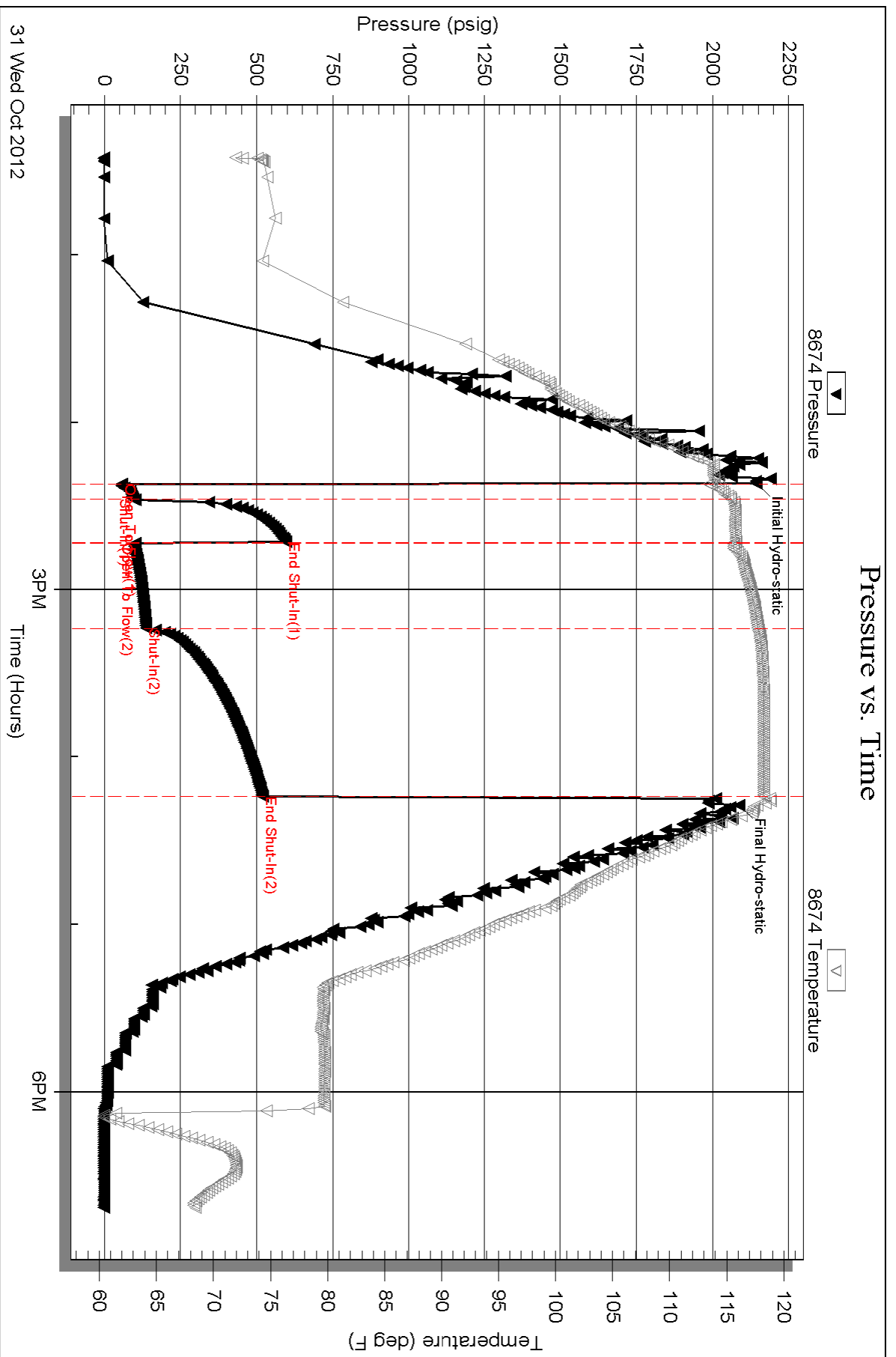
Num Gas Bombs: 0

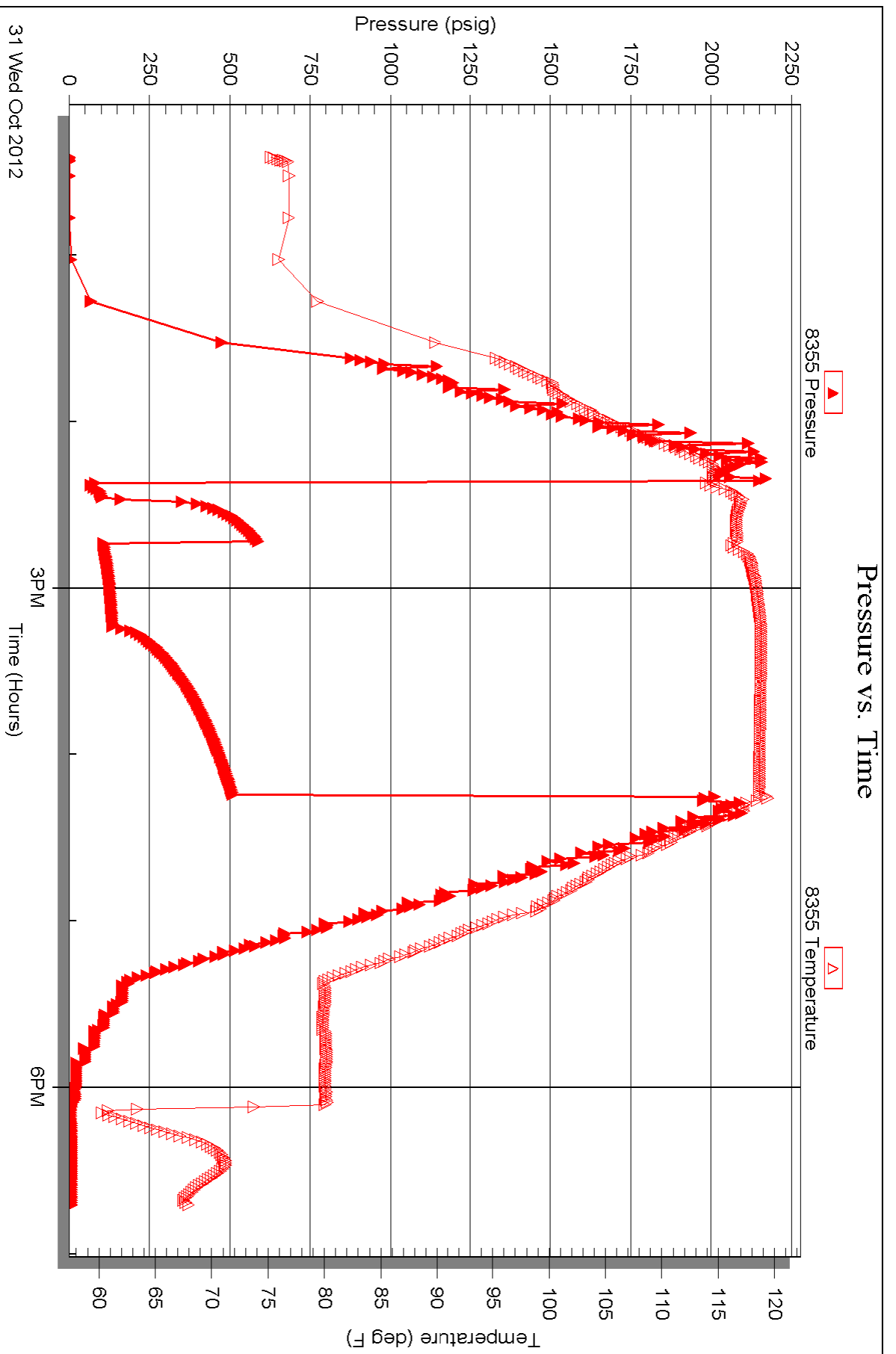
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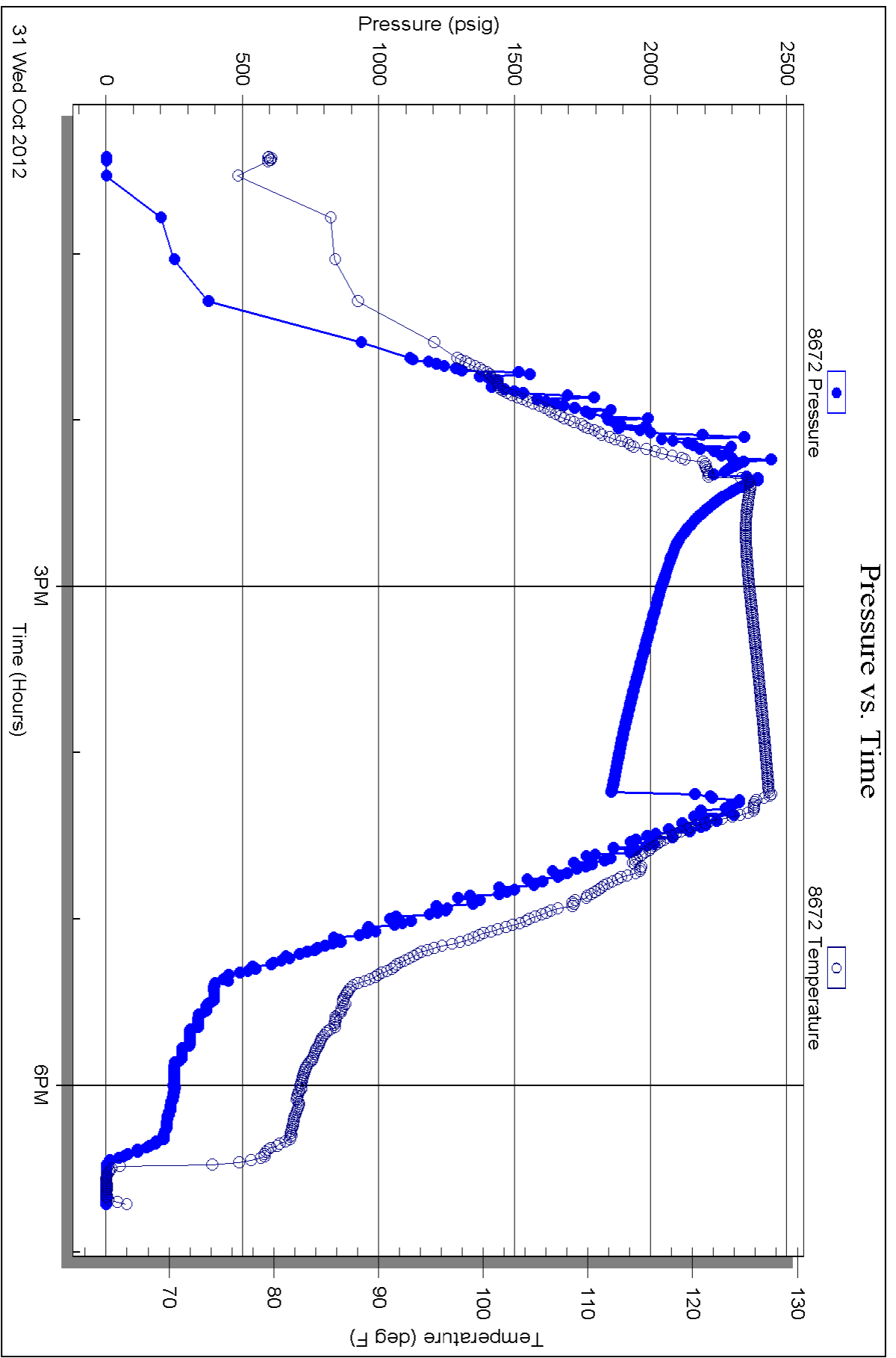
Laboratory Name:

Laboratory Location:

Recovery Comments: Oil API: 34@70 degrees= 33 API



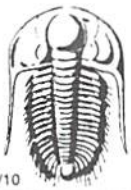




31 Wed Oct 2012

3PM
Time (Hours)

6PM



TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 48473

Well Name & No. HELEN 3-17 Test No. 1 Date 10-26-12
 Company Larson Engineering, Inc. Elevation 2796 KB 2789 GL
 Address 562 W. State Rd 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 17 Twp. 19s Rge. 28w Co. Lane State KS

Interval Tested 4328-4343 Zone Tested LKC 2'
 Anchor Length 15 Drill Pipe Run 4167 Mud Wt. 9.2
 Top Packer Depth 4324 Drill Collars Run 150 Vis 50
 Bottom Packer Depth 4328 Wt. Pipe Run 0 WL 7.2
 Total Depth 4343 Chlorides 2500 ppm System LCM 1"
 Blow Description Surface blow.
No return.
No blow.
No return.

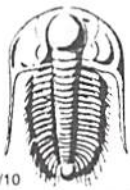
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>1</u>	Feet of <u>M</u>	%gas	%oil	%water <u>100</u>	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 1 BHT 115 Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic <u>2161</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>15:15</u>
(B) First Initial Flow <u>15</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>15:44</u>
(C) First Final Flow <u>15</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>17:42</u>
(D) Initial Shut-In <u>19</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIC</u>	T-Pulled <u>18:48</u>
(E) Second Initial Flow <u>16</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>20:54</u>
(F) Second Final Flow <u>16</u>	<input checked="" type="checkbox"/> Mileage <u>62RT</u> 96.10	Comments
(G) Final Shut-In <u>20</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2116</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>1671.10</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1671.10</u>	

Approved By Vern C Schrag Our Representative Chuck Smith

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.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 48475

Well Name & No. HELEN 3-17 Test No. 2796 Date 10-27-12
 Company Larson Engineering, Inc. Elevation 2796 KB 2789 GL
 Address 562 W. State Rd 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 17 Twp. 19s Rge. 28w Co. Lane State KS

Interval Tested 4326-4348 Zone Tested LKC 'L'
 Anchor Length 22 Drill Pipe Run 4168 Mud Wt. 9.3
 Top Packer Depth 4322 Drill Collars Run 150 Vis 54
 Bottom Packer Depth 4326 Wt. Pipe Run 0 WL 7.2
 Total Depth 4348 Chlorides 2500 ppm System LCM 2
 Blow Description B.O.B. @ 2min.
1/8" Return.
B.O.B. @ 2min.
No return.

Rec	Feet of	%gas	%oil	%water	%mud
92	0.5 MW		15	85	
186	0.5 MW		80	20	
931	0.5 MW Popping gas		95	5	

Rec Total 1209 BHT 129 Gravity - API RW .250 @ 26 °F Chlorides 85000 ppm

(A) Initial Hydrostatic 2189 Test 1250 T-On Location 3:50
 (B) First Initial Flow 153 Jars 250 T-Started 4:12
 (C) First Final Flow 250 Safety Joint 75 T-Open 6:23
 (D) Initial Shut-In 699 Circ Sub T-Pulled 8:15
 (E) Second Initial Flow 264 Hourly Standby T-Out 10:34
 (F) Second Final Flow 566 Mileage 62RT 96.10 Comments _____
 (G) Final Shut-In 620 Sampler _____
 (H) Final Hydrostatic 2149 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 1671.10 MP/DST Disc't _____

Approved By Vern Schrag Our Representative Chuck Smith

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TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 48476

Well Name & No. HELEN 3-17 Test No. 3 Date 10-27-12
 Company Larson Engineering, Inc. Elevation 2796 KB 2789 GL
 Address 562 W. State Rd 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 17 Twp. 19s Rge. 28W Co. Lane State KS

Interval Tested 4370 - 4392 Zone Tested Pleasanton
 Anchor Length 22 Drill Pipe Run 4200 Mud Wt. 9.2
 Top Packer Depth 4366 Drill Collars Run 150 Vis 58
 Bottom Packer Depth 4370 Wt. Pipe Run 0 WL 7.2
 Total Depth 4392 Chlorides 2500 ppm System LCM 1"
 Blow Description 1/2" Blow
No return.
No blow.
No return.

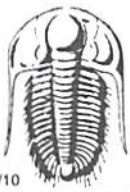
Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>1</u>	Feet of <u>M</u>			%water <u>100</u>	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 1 BHT 112 Gravity — API RW @ ° F Chlorides — ppm

(A) Initial Hydrostatic <u>2223</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>11:00pm</u>
(B) First Initial Flow <u>19</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>11:19pm</u>
(C) First Final Flow <u>19</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>1:39am</u>
(D) Initial Shut-In <u>29</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIC</u>	T-Pulled <u>2:47am</u>
(E) Second Initial Flow <u>18</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>4:49am</u>
(F) Second Final Flow <u>19</u>	<input checked="" type="checkbox"/> Mileage <u>62RT</u> 96.10	Comments
(G) Final Shut-In <u>26</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2167</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>6</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>1671.10</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1671.10</u>	

Approved By Dan C. Schrag Our Representative Chuck Smith

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TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 48477

Well Name & No. HELEN 3-17 Test No. 4 Date 10-28-12
 Company Larson Engineering, Inc. Elevation 2796 KB 2789 GL
 Address 562 W. State Rd 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD³
 Location: Sec. 17 Twp. 19s Rge. 28w Co. Lane State Ks

Interval Tested 4388 - 4465 Zone Tested Marmaton
 Anchor Length 77 Drill Pipe Run 4230 Mud Wt. 9.3
 Top Packer Depth 4384 Drill Collars Run 150 Vis 51
 Bottom Packer Depth 4388 Wt. Pipe Run 0 WL 6.8
 Total Depth 4465 Chlorides 3000 ppm System LCM 1st
 Blow Description 1/2" Blow.
No return.
No blow.
No return.

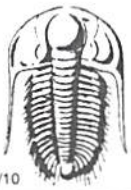
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>5</u>	Feet of <u>M</u>	%gas	%oil	%water <u>100</u>	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5 BHT 112 Gravity - API RW @ °F Chlorides - ppm

(A) Initial Hydrostatic <u>2216</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>18:15</u>
(B) First Initial Flow <u>20</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>18:26</u>
(C) First Final Flow <u>20</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>20:33</u>
(D) Initial Shut-In <u>33</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>21:39</u>
(E) Second Initial Flow <u>20</u>	<input type="checkbox"/> Hourly Standby	T-Out
(F) Second Final Flow <u>21</u>	<input checked="" type="checkbox"/> Mileage <u>96.10</u>	Comments
(G) Final Shut-In <u>33</u>	<input type="checkbox"/> Sampler	<input type="checkbox"/> Ruined Shale Packer
(H) Final Hydrostatic <u>2186</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Packer
Initial Open <u>5</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>15</u>	<input type="checkbox"/> Extra Packer	Sub Total <u>0</u>
Final Flow <u>15</u>	<input type="checkbox"/> Extra Recorder	Total <u>1671.10</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby	MP/DST Disc't
	<input type="checkbox"/> Accessibility	
	Sub Total <u>1671.10</u>	

Approved By Vern C Schrag Our Representative Chuck Smith

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TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 48478

Well Name & No. HELEN #3-17 Test No. 5 Date 10-29-12
 Company Larson Engineering, Inc. Elevation 2796 KB 2789 GL
 Address 562 W. State Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 17 Twp. 19s Rge. 28w Co. Lane State KS

Interval Tested 4484-4570 Zone Tested Pawnee-Ft. Scott
 Anchor Length 86 Drill Pipe Run 4326 Mud Wt. 9.3
 Top Packer Depth 4480 Drill Collars Run 150 Vis 52
 Bottom Packer Depth 4484 Wt. Pipe Run 0 WL 8.0
 Total Depth 4570 Chlorides 3000 ppm System LCM 1"
 Blow Description 2 1/2" Blow.
No return.
7" Blow.
No return.

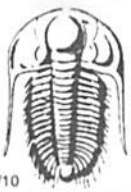
Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>76</u>	Feet of <u>M</u>				
Rec <u>119</u>	Feet of <u>GOSWM</u>	<u>2</u>		<u>5</u>	<u>93</u>
Rec <u>119</u>	Feet of <u>GOSWM</u>	<u>2</u>		<u>20</u>	<u>78</u>
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 195 BHT 120 Gravity - API RW .275 @ 51 °F Chlorides 3800 ppm

(A) Initial Hydrostatic 2263 Test 1250 T-On Location 16:30
 (B) First Initial Flow 25 Jars 250 T-Started 16:59
 (C) First Final Flow 51 Safety Joint 75 T-Open 18:50
 (D) Initial Shut-In 1010 Circ Sub NIC T-Pulled 20:41
 (E) Second Initial Flow 59 Hourly Standby T-Out 22:47
 (F) Second Final Flow 114 Mileage 62 RT 96.10 Comments _____
 (G) Final Shut-In 947 Sampler _____
 (H) Final Hydrostatic 2241 Straddle _____
 Shale Packer 250 Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1921.10
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1921.10

Approved By Vernon C. Schrag Our Representative Chuck Smith

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TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 48479

Well Name & No. HELEN # 3-17 Test No. 6 Date 10-30-12
 Company Larson Engineering, Inc. Elevation 2796 KB 2789 GL
 Address 562 W. State Rd. 4 Omitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 17 Twp. 19s Rge. 28w Co. Lane State KS

Interval Tested 4569 - 4625 Zone Tested Cherokee
 Anchor Length 56 Drill Pipe Run 4420 Mud Wt. 9.3
 Top Packer Depth 4565 Drill Collars Run 150 Vis 54
 Bottom Packer Depth 4569 Wt. Pipe Run 0 WL 8.0
 Total Depth 4625 Chlorides 3000 ppm System LCM 1#
 Blow Description 1/8" Blow.
No return.
No blow.
No return.

Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>2</u>	Feet of <u>05M</u>	%gas	%oil	%water <u>100</u>	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 2 BHT 115 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2336</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>10:15</u>
(B) First Initial Flow <u>20</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>10:31</u>
(C) First Final Flow <u>20</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>12:17</u>
(D) Initial Shut-In <u>104</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIC</u>	T-Pulled <u>13:23</u>
(E) Second Initial Flow <u>20</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>15:23</u>
(F) Second Final Flow <u>21</u>	<input checked="" type="checkbox"/> Mileage <u>62 RT</u> 96.10	Comments
(G) Final Shut-In <u>121</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2284</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>5</u>	<input type="checkbox"/> Shale Packer	<input checked="" type="checkbox"/> Ruined Packer <u>320</u>
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>320</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby	Total <u>1991.10</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1671.10</u>	

Approved By Vern C Schrag Our Representative Chuck Smith

TriLOBITE Testing Inc. shall not be liable for damaged of any kind of the 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, 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. 49813

Well Name & No. Helen #3-17 Test No. 7 Date 10/31/12
 Company Lorson Engineering, Inc Elevation 2796 KB 2789 GL
 Address 562 W State Rd. 4 Ozmite, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 17 Twp. 19S Rge. 28W Co. Lane State KS

Interval Tested 4178-4205 Zone Tested "H"
 Anchor Length 27' Drill Pipe Run 4009 Mud Wt. 9.3
 Top Packer Depth 4174 Drill Collars Run 147 Vis 56
 Bottom Packer Depth 4178 Wt. Pipe Run Ø WL 8.4
 Total Depth 4708 Chlorides 3000 ppm System LCM 1
 Blow Description 8 3/4" blow.
4" return.
Bob 16 min.
1" return died @ 42 min.

Rec	Feet of	%gas	%oil	%water	%mud
135'	90	20	80		
180'	90M	10	20		70
	170' GIP				

Rec Total 315 BHT 118 Gravity 33 API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic <u>2144</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>10:50</u>
(B) First Initial Flow <u>57</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>12:25</u>
(C) First Final Flow <u>95</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>14:23</u>
(D) Initial Shut-In <u>598</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>16:15</u>
(E) Second Initial Flow <u>102</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>18:44</u>
(F) Second Final Flow <u>137</u>	<input checked="" type="checkbox"/> Mileage <u>62 RT</u> 96.10	Comments <u>loaded tools</u>
(G) Final Shut-In <u>520</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2568</u>	<input checked="" type="checkbox"/> Straddle 600	<input checked="" type="checkbox"/> Ruined Shale Packer 350
	<input checked="" type="checkbox"/> Shale Packer <u>X2</u> 500	<input type="checkbox"/> Ruined Packer
Initial Open <u>5</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>15</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>350</u>
Final Flow <u>30</u>	<input type="checkbox"/> Day Standby	Total <u>3121.10</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>2771.10</u>	

Approved By Vern Schrag 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.



CHARGE TO: **LARSON ENGINEERING**
 ADDRESS:
 CITY, STATE, ZIP CODE:

TICKET No 23703

SERVICE LOCATIONS: 1. **NESS CITY, KS.**
 WELL/PROJECT NO.: **HELEN 3-17** LEASE: **LANE** COUNTY/PARISH: **KS.** CITY: **DIGHTON, KS.** DATE: **19 Nov 12** OWNER:
 TICKET TYPE: SERVICE SALES CONTRACTOR: **WILD WEST WELL SERV.** RIG NAME/NO.: SHIPPED VIA: DELIVERED TO: ORDER NO.:
 WELL TYPE: **OIL** WELL CATEGORY: **DEVELOPMENT** JOB PURPOSE: **PERF SQUEEZE** WELL PERMIT NO.: WELL LOCATION: **LOS 14E, NIUTO**
 REFERRAL LOCATION: INVOICE INSTRUCTIONS:

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		U/M		UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
575					MILEAGE #115	40	MIL			6.00	240.00
578					Pump CHARGE	1	HR			1500.00	1500.00
288					SAND	1	SX			22.00	22.00
290					D-AIR	1	YAL			35.00	35.00
325					STANDARD CEMENT	100	SX			13.50	1350.00
581					CEMENT SERVICE CHARGE	100	SX			2.00	200.00
583 582					MINIMUM DRAVAGE	9400	LLS	1888	T/M	250.00	250.00

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
 DATE SIGNED: **19 Nov 12** TIME SIGNED: **1230** 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?				3597.00	
WE UNDERSTOOD AND MET YOUR NEEDS?					
OUR SERVICE WAS PERFORMED WITHOUT DELAY?					
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?					
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES	<input type="checkbox"/> NO			
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND				TOTAL	3685.64

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 19 Nov 12 PAGE NO.

CUSTOMER LARSON ENGINEERING-

WELL NO.

LEASE HELEN 3-17

JOB TYPE PERF. SQUEEZE

TICKET NO. 23703

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0900							ON LOCATION
	0921			✓		1500		TEST TOOLS - HELD
	0932		2 1/2	✓				SPOT 15X SAND PULL PACKER TO 4217
	1008		58	✓		500		LOAD ANNULUS - PSI up - SHUT IN.
	1027	5		✓		200		LOAD TUBING - TAKE INS. RATE.
	1036	4	21	✓		100		MIX 100SX STANDARD
	1043							WASH OUT PUMP & LINES.
	1046	3						START DISPLACEMENT
	1048	0	1	✓		2000		STAGING.
	1057	3	100	✓		1000		RELEASE PACKER - CIRCULATE CEMENT OUT
	1134							PULL 3 JTS.
	1141			✓		1000		SET PACKER - PSI up - SHUT IN.
	1143							WASH TRUCK
	1153			✓		1000		RELEASE PSI - DRY
	1155	4	20	✓		400		REVERSE CLEAN.
	1207							BACK TRUCK UP.
	1230							JOB COMPLETE
								THANKS #115
								JASON JEFF JEREMY

Conservation Division
Finney State Office Building
130 S. Market, Rm. 2078
Wichita, KS 67202-3802



Phone: 316-337-6200
Fax: 316-337-6211
<http://kcc.ks.gov/>

Mark Sievers, Chairman
Thomas E. Wright, Commissioner
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

February 14, 2013

Thomas Larson
Larson Engineering, Inc. dba Larson Operating
Company
562 W STATE RD 4
OLMITZ, KS 67564-8561

Re: ACO1
API 15-101-22405-00-00
Helen 3-17
SW/4 Sec.17-19S-28W
Lane County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,
Thomas Larson