

Confidentiality Requested:

☐ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1092389

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

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: _____

1092389

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 ☐ Yes ☐ No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey ☐ Yes ☐ No Cores Taken ☐ Yes ☐ No Electric Log Run ☐ Yes ☐ No List All E. Logs Run: _____	☐ Log Formation (Top), Depth and Datum ☐ Sample Name Top Datum
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CASING RECORD ☐ New ☐ 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
____ Perforate				
____ Protect Casing				
____ Plug Back TD				
____ 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
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Date of First, Resumed Production, SWD or ENHR.	Producing Method: ☐ Flowing ☐ Pumping ☐ Gas Lift ☐ Other <i>(Explain)</i> _____
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Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
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DISPOSITION OF GAS: ☐ Vented ☐ Sold ☐ Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: ☐ Open Hole ☐ Perf. ☐ Dually Comp. ☐ Commingled <i>(Submit ACO-5)</i> ☐ Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Larson Engineering, Inc. dba Larson Operating Company
Well Name	Cramer 1-17
Doc ID	1092389

Tops

Name	Top	Datum
Anhydrite	2228	+661
Base Anhydrite	2289	+600
Heebner Sh	3898	-1016
Lansing	3933	-1051
Stark Sh	4207	-1318
Marmaton	4320	-1431
Pawnee	4410	-1521
Cherokee Sh	4480	-1591
Mississippi	4554	-1665



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

TICKET NUMBER 36982
LOCATION Oakley Ks
FOREMAN Walt Dunkel
ORT Joe Blumh...

FIELD TICKET & TREATMENT REPORT CEMENT

620-431-9210 or 800-467-8676			CEMENT			
DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
6-25-12	4802	Cramer 1-17	17	12S	30W	Lane
CUSTOMER Larson Engineering						
MAILING ADDRESS			TRUCK #	DRIVER	TRUCK #	DRIVER
			399	Damon Miller		
			566	Cody Roetz / Jordan		
CITY						
STATE		ZIP CODE				
			LOADING SIZE & WEIGHT		85% - 2nd	

JOB TYPE <u>Surface</u>	HOLE SIZE <u>12 1/4</u>	HOLE DEPTH <u>264'</u>	CASING SIZE & WEIGHT <u>8 5/8 - 20#</u>
CASING DEPTH <u>261</u>	DRILL PIPE _____	TUBING _____	OTHER _____
SLURRY WEIGHT <u>15.2</u>	SLURRY VOL _____	WATER gal/sk _____	CEMENT LEFT in CASING <u>15' to 20'</u>
DISPLACEMENT <u>15.5</u>	DISPLACEMENT PSI _____	MIX PSI _____	RATE <u>5 BPM</u>

DISPLACEMENT 12.5 DISPLACEMENT PSI _____ MIX T/C _____
REMARKS: Safety meeting, Rig up HD#3, Circ. casing on bottom,
mix 125 sls conc, 3% cc - 2% Gel, Displace 15 1/2 BBL H₂O, Shut in
Cement Did Cure

Thank You
Walt, Joe & Crew

[illegible]

Ravin 3737

AUTHORIZATION Quayne Turner

TITLE Fushet

250800

DATE 6x 25-12

AUTHORIZATION Subj. name FILE 123
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.



FIELD TICKET & TREATMENT REPORT

CEMENT

TICKET NUMBER 36975

LOCATION Oakley, KS

FOREMAN Kelly Gabe

DATE	CUSTOMER #	WELL NAME & NUMBER		SECTION	TOWNSHIP	RANGE	COUNTY
7-8-12	4802	Cramer 1-17		17	175	30W	Lane
CUSTOMER				TRUCK #			
Larsen Engr				DRIVER			
MAILING ADDRESS				TRUCK #			
				DRIVER			
CITY	STATE	ZIP CODE					

JOB TYPE <u>PTA</u>	HOLE SIZE <u>7 7/8</u>	HOLE DEPTH _____	CASING SIZE & WEIGHT _____
CASING DEPTH _____	DRILL PIPE _____	TUBING _____	OTHER _____
SLURRY WEIGHT _____	SLURRY VOL _____	WATER gal/sk _____	CEMENT LEFT in CASING _____
DISPLACEMENT _____	DISPLACEMENT PSI _____	MIX PSI _____	RATE _____

REMARKS: Safety meeting, rigged up on HD drilling Rig # 3, mixed cement plugs & displaced washed out pump, rigged down
50 SKS @ 2290
80 SKS @ 1600
50 SKS @ 200
50 SKS @ 290
20 SKS @ 60
30 SKS RH

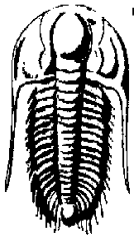
Thank You
Kelly & Ernie

[illegible]

Ravin 3737		ESTIMATED TOTAL		617.07
11:30 AM		TOTAL		6087.29
AUTHORIZATION <i>Quincy Traver</i>		TITLE <i>Pusher</i>		DATE 7-8-10

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:

251071



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48789

DST#: 1

ATTN: Vern Schrag

Test Start: 2012.06.30 @ 03:48:00

GENERAL INFORMATION:

Formation: **Lansing "B"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:19:45

Time Test Ended: 09:17:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Sam Esparza

Unit No: 53

Interval: 3958.00 ft (KB) To 3980.00 ft (KB) (TVD)

Reference Elevations: 2889.00 ft (KB)

Total Depth: 3980.00 ft (KB) (TVD)

2882.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition:

KB to GR/CF: 7.00 ft

Serial #: 8522 Inside

Press@RunDepth: 42.10 psig @ 3959.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.06.30

End Date:

2012.06.30

Last Calib.: 2012.06.30

Start Time: 03:48:05

End Time:

09:17:29

Time On Btm: 2012.06.30 @ 06:19:30

Time Off Btm: 2012.06.30 @ 07:30:30

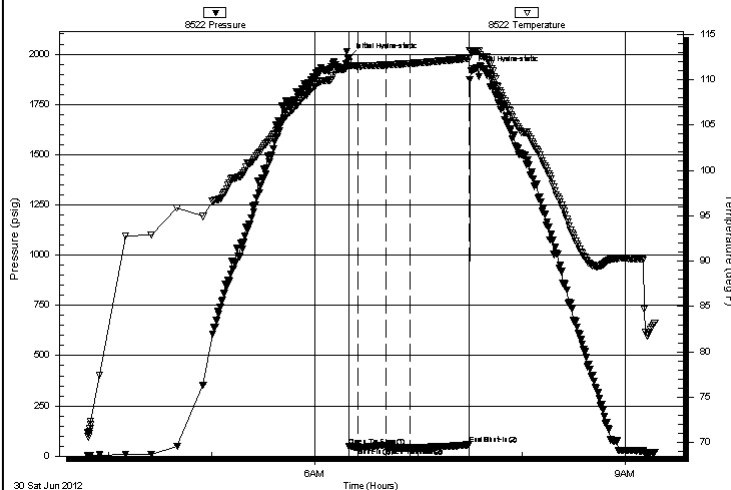
TEST COMMENT: IF: Weak surface blow .

IS: No return.

FF: No blow .

FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

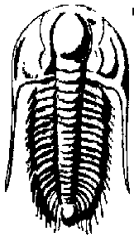
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1982.33	111.92	Initial Hydro-static
1	49.04	111.40	Open To Flow (1)
6	42.94	111.50	Shut-In(1)
22	54.97	111.61	End Shut-In(1)
22	45.75	111.61	Open To Flow (2)
36	42.10	111.77	Shut-In(2)
70	58.28	112.35	End Shut-In(2)
71	1916.30	113.07	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	M 100m	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48789

DST#: 1

ATTN: Vern Schrag

Test Start: 2012.06.30 @ 03:48:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 60.00 sec/qt

Water Loss: 8.39 in³

Resistivity: 0.00 ohm.m

Salinity: 2000.00 ppm

Filter Cake: 2.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

deg API

ppm

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

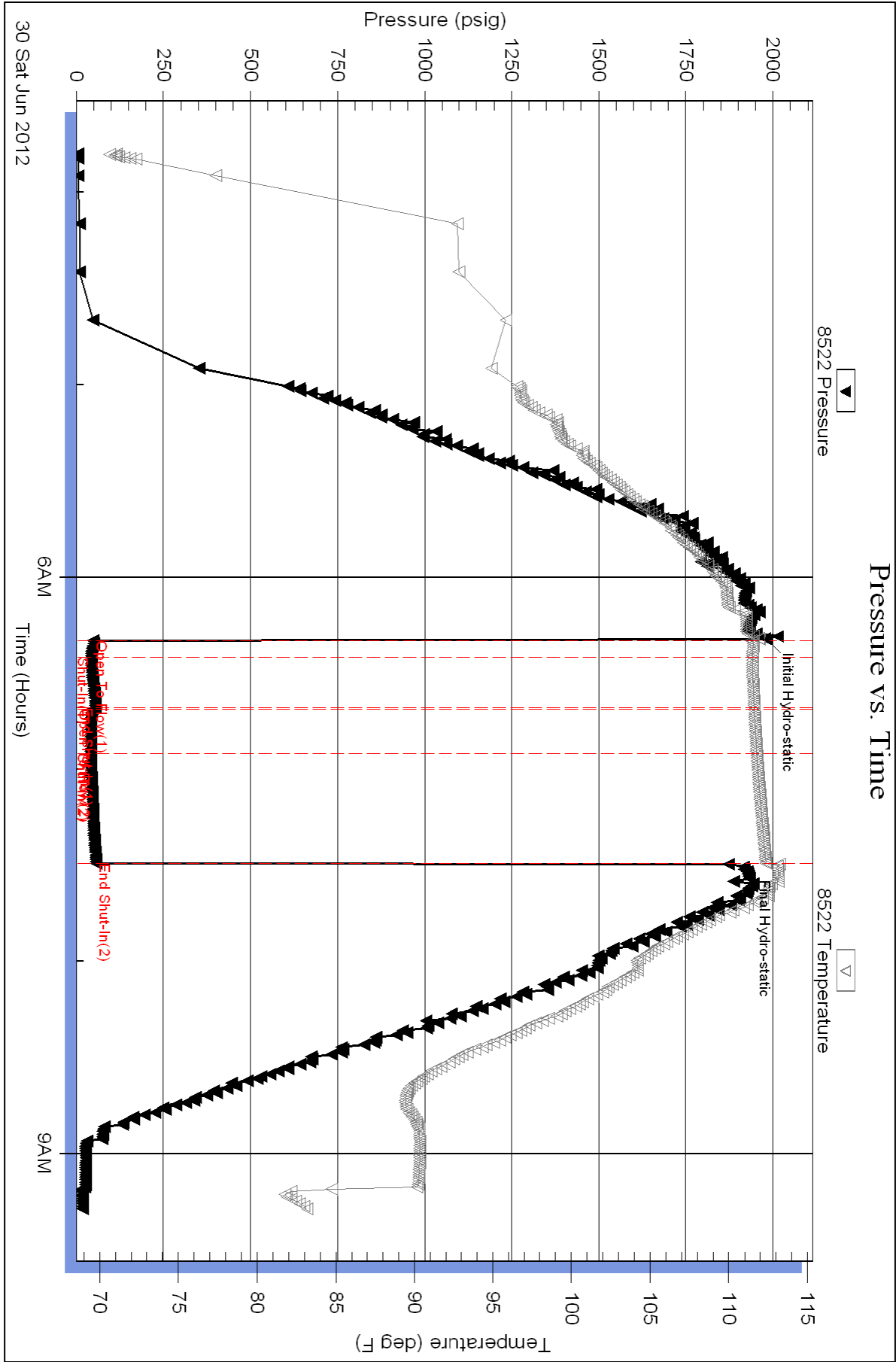
Num Gas Bombs: 0

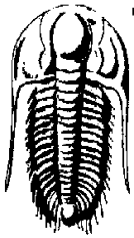
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48790

DST#: 2

ATTN: Vern Schrag

Test Start: 2012.07.01 @ 06:59:00

GENERAL INFORMATION:

Formation: **Lansing "H, I"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:23:15

Time Test Ended: 13:16:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Sam Esparza

Unit No: 53

Interval: 4109.00 ft (KB) To 4165.00 ft (KB) (TVD)

Reference Elevations: 2889.00 ft (KB)

Total Depth: 4165.00 ft (KB) (TVD)

2882.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition:

KB to GR/CF: 7.00 ft

Serial #: 8522 Inside

Press@RunDepth: 141.15 psig @ 4110.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.07.01

End Date:

2012.07.01

Last Calib.: 2012.07.01

Start Time: 06:59:05

End Time:

13:15:59

Time On Btm: 2012.07.01 @ 09:22:45

Time Off Btm: 2012.07.01 @ 11:15:45

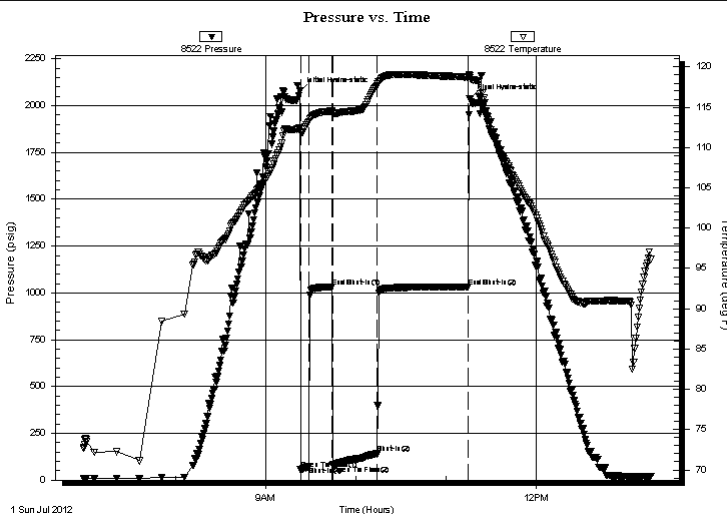
TEST COMMENT: IF: 1 1/2" Blow .

IS: No return.

FF: 5" Blow .

FS: No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2076.64	112.44	Initial Hydro-static
1	55.23	111.86	Open To Flow (1)
6	74.16	113.18	Shut-In(1)
22	1031.43	114.52	End Shut-In(1)
22	79.14	114.16	Open To Flow (2)
52	141.15	117.72	Shut-In(2)
112	1031.68	118.73	End Shut-In(2)
113	2039.06	118.89	Final Hydro-static

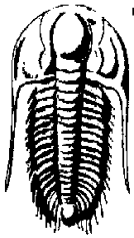
Recovery

Length (ft)	Description	Volume (bbl)
185.00	WM 10w 90m	1.26
15.00	OCM 5o 95m	0.21

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48790

DST#: 2

ATTN: Vern Schrag

Test Start: 2012.07.01 @ 06:59:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 53.00 sec/qt

Water Loss: 7.60 in³

Resistivity: 0.00 ohm.m

Salinity: 2500.00 ppm

Filter Cake: 2.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
185.00	WM 10w 90m	1.256
15.00	OCM 5o 95m	0.210

Total Length: 200.00 ft

Total Volume: 1.466 bbl

Num Fluid Samples: 0

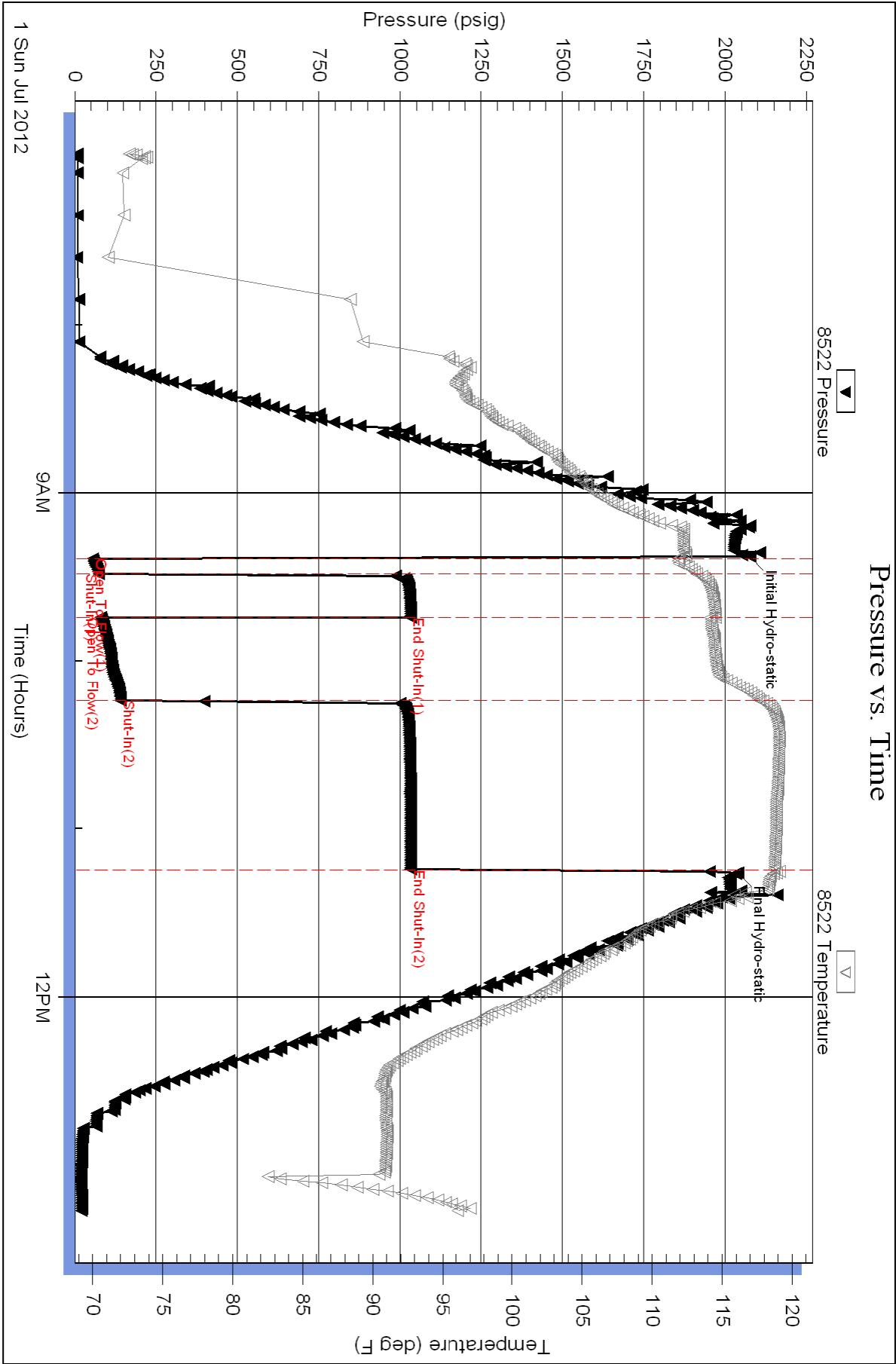
Num Gas Bombs: 0

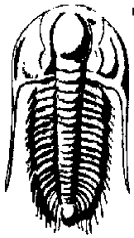
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48791

DST#: 3

ATTN: Vern Schrag

Test Start: 2012.07.01 @ 20:39:00

GENERAL INFORMATION:

Formation: **Lansing " Lower I "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:08:15

Time Test Ended: 01:15:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Sam Esparza

Unit No: 53

Interval: **4164.00 ft (KB) To 4183.00 ft (KB) (TVD)**

Total Depth: 4183.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition:

Reference Elevations: 2889.00 ft (KB)

2882.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8522 Inside

Press@RunDepth: 20.85 psig @ 4165.00 ft (KB)

Start Date: 2012.07.01

End Date:

2012.07.02

Start Time: 20:39:05

End Time:

01:14:59

Capacity: 8000.00 psig

Last Calib.: 2012.07.02

Time On Btm: 2012.07.01 @ 22:08:00

Time Off Btm: 2012.07.01 @ 23:15:45

TEST COMMENT: IF: Weak surface blow .

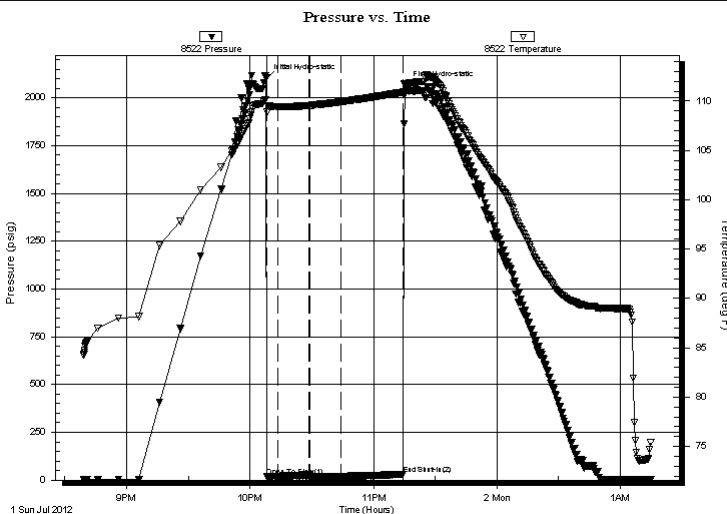
IS: No return.

FF: No blow .

FS: No return.

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2102.14	110.14	Initial Hydro-static
1	19.43	108.88	Open To Flow (1)
6	21.12	109.42	Shut-In(1)
21	27.93	109.56	End Shut-In(1)
21	19.81	109.56	Open To Flow (2)
37	20.85	109.93	Shut-In(2)
67	30.92	110.90	End Shut-In(2)
68	2064.12	111.78	Final Hydro-static



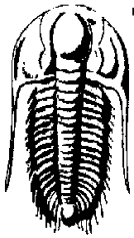
Recovery

Length (ft)	Description	Volume (bbl)
1.00	M 100m	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering, Inc.

502 w state rd 4
Olmitz, Ks 67564

ATTN: Vern Schrag

17-17s-30w Lane

Cramer 1-17

Job Ticket: 48791

DST#: 3

Test Start: 2012.07.01 @ 20:39:00

GENERAL INFORMATION:

Formation: **Lansing " Lower I "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:08:15

Time Test Ended: 01:15:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Sam Esparza

Unit No: 53

Interval: 4164.00 ft (KB) To 4183.00 ft (KB) (TVD)

Total Depth: 4183.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition:

Reference Elevations: 2889.00 ft (KB)

2882.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8677 Outside

Press@RunDepth: psig @ 4165.00 ft (KB)

Start Date: 2012.07.01

End Date:

2012.07.02

Start Time: 20:39:05

End Time:

01:14:14

Capacity: 8000.00 psig

Last Calib.: 2012.07.02

Time On Btm:

Time Off Btm:

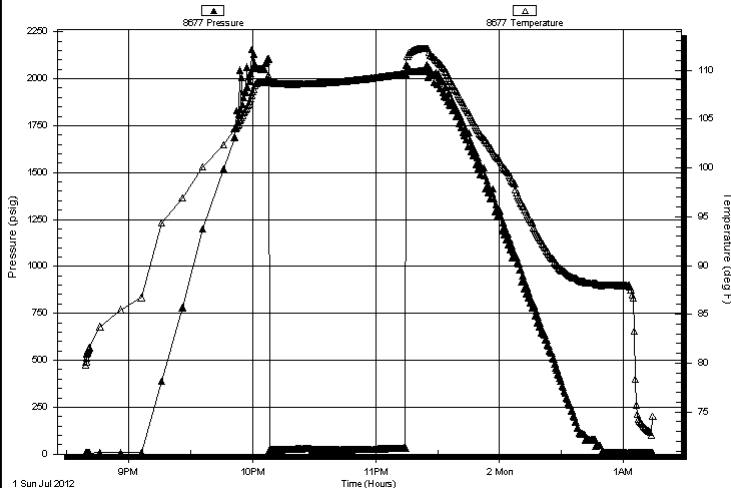
TEST COMMENT: IF: Weak surface blow .

IS: No return.

FF: No blow .

FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

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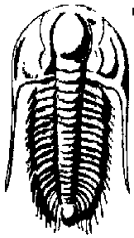
Recovery

Length (ft)	Description	Volume (bbl)
1.00	M 100m	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48791

DST#: 3

ATTN: Vern Schrag

Test Start: 2012.07.01 @ 20:39:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 50.00 sec/qt

Water Loss: 7.99 in³

Resistivity: 0.00 ohm.m

Salinity: 2500.00 ppm

Filter Cake: 2.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

deg API

ppm

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:

Serial #: 8522

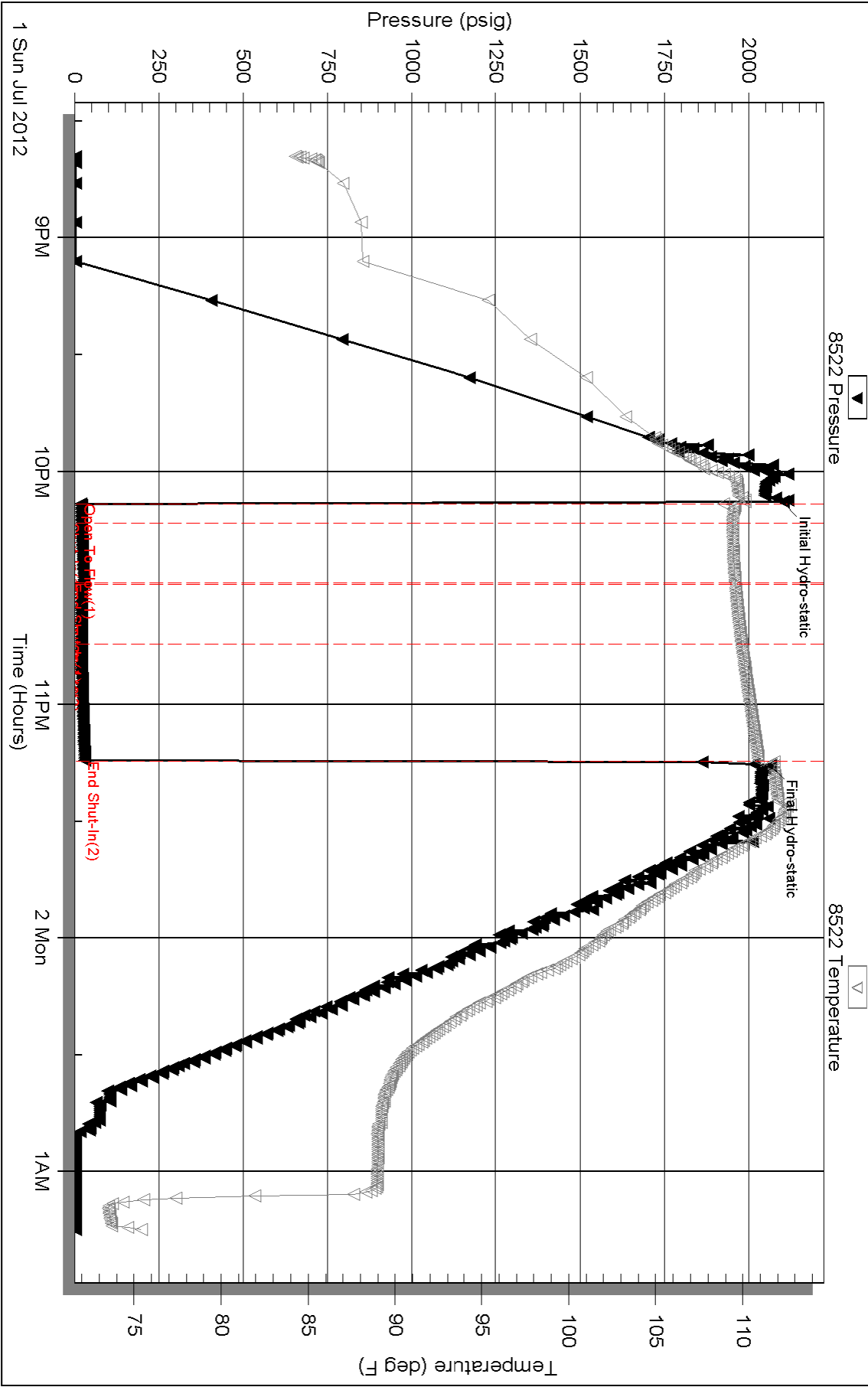
Inside

Larson Engineering, Inc.

Cramer 1-17

DST Test Number: 3

Pressure vs. Time

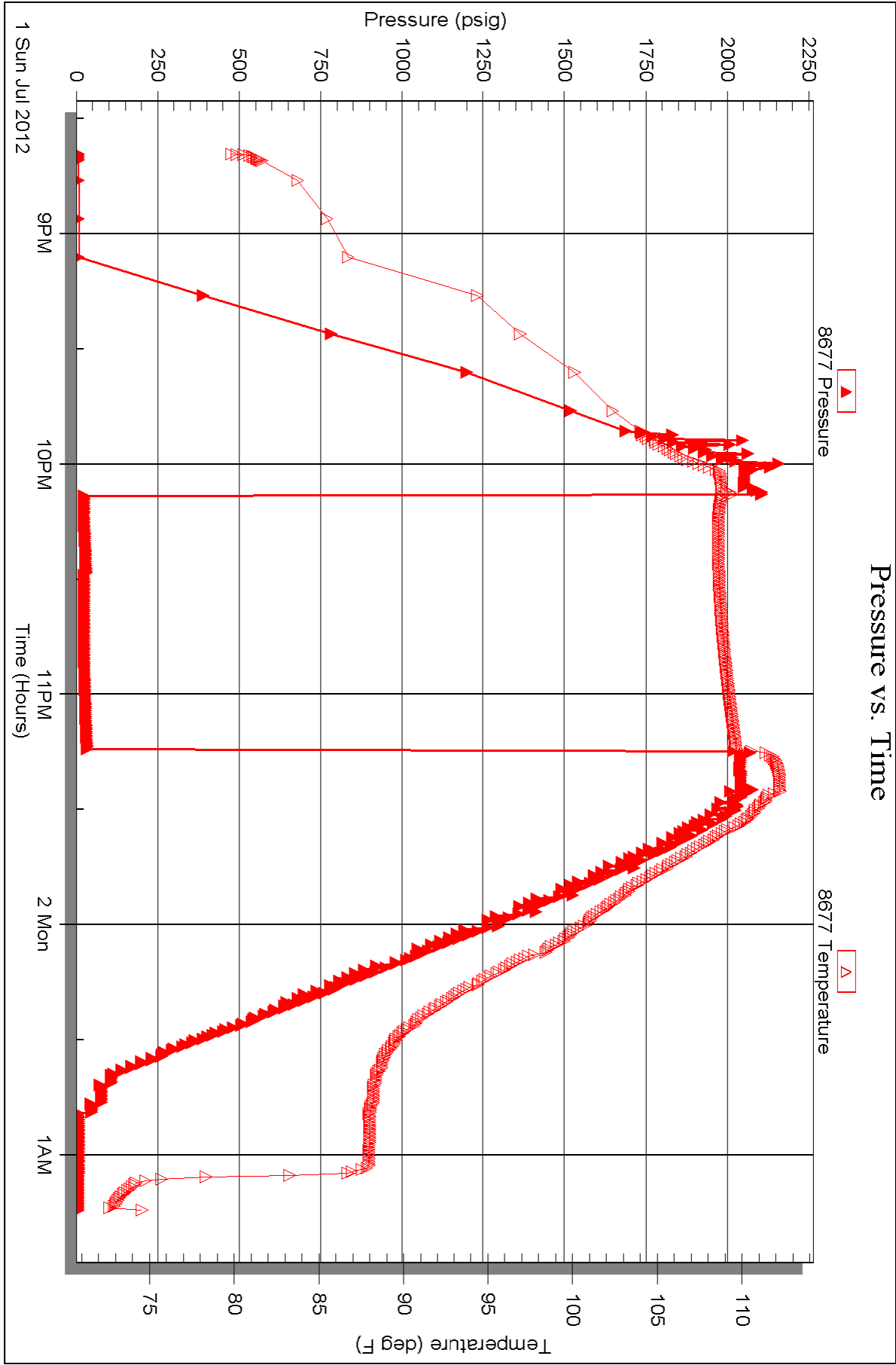


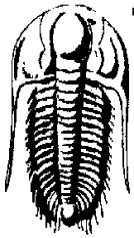
Serial #: 8677

Outside Larson Engineering, Inc.

Cramer 1-17

DST Test Number: 3





TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48792

DST#: 4

ATTN: Vern Schrag

Test Start: 2012.07.02 @ 13:17:00

GENERAL INFORMATION:

Formation: **Lansing "K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:07:00

Time Test Ended: 18:12:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Sam Esparza

Unit No: 53

Interval: 4205.00 ft (KB) To 4243.00 ft (KB) (TVD)

Total Depth: 4243.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition:

Reference Elevations: 2889.00 ft (KB)

2882.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8522 Inside

Press@RunDepth: 266.24 psig @ 4206.00 ft (KB)

Start Date: 2012.07.02

End Date:

2012.07.02

Start Time: 13:17:05

End Time:

18:12:29

Capacity: 8000.00 psig

Last Calib.: 2012.07.02

Time On Btm: 2012.07.02 @ 15:06:45

Time Off Btm: 2012.07.02 @ 16:13:30

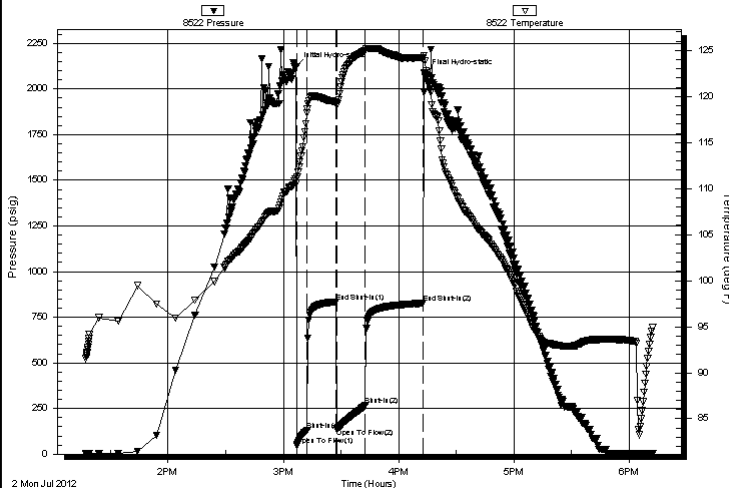
TEST COMMENT: IF: BOB @ 5 min.

IS: No return.

FF: BOB @ 5 1/2 min.

FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2122.00	111.07	Initial Hydro-static
1	47.88	110.59	Open To Flow (1)
6	131.83	118.66	Shut-In (1)
21	834.25	119.43	End Shut-In (1)
21	139.09	119.02	Open To Flow (2)
36	266.24	125.01	Shut-In (2)
66	826.08	124.16	End Shut-In (2)
67	2086.34	124.43	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
125.00	MCW 20m 80w	0.61
420.00	MCW 35m 65w	5.69

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



Larson Engineering, Inc.

ATTN: Vern Schrag

Cramer 1-17

DST#: 4

Test Start: 2012.07.02 @ 13:17:00

Formation: **Lansing "K"**

Time Test Ended: 18:12:30

Unit No: 53

2882.00 ft (CF)

KB to GR/CF: 7.00 ft

Capacity: 8000.00 psig

Last Calib.: 2012.07.02

Time On Btm:

Time Off Btm:

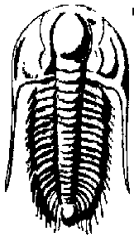
FSI: No return.



Recovery

Gas Rates

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48792

DST#: 4

ATTN: Vern Schrag

Test Start: 2012.07.02 @ 13:17:00

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:

43000 ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbl

Water Loss: 8.39 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
125.00	MCW 20m 80w	0.615
420.00	MCW 35m 65w	5.691

Total Length: 545.00 ft

Total Volume: 6.306 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

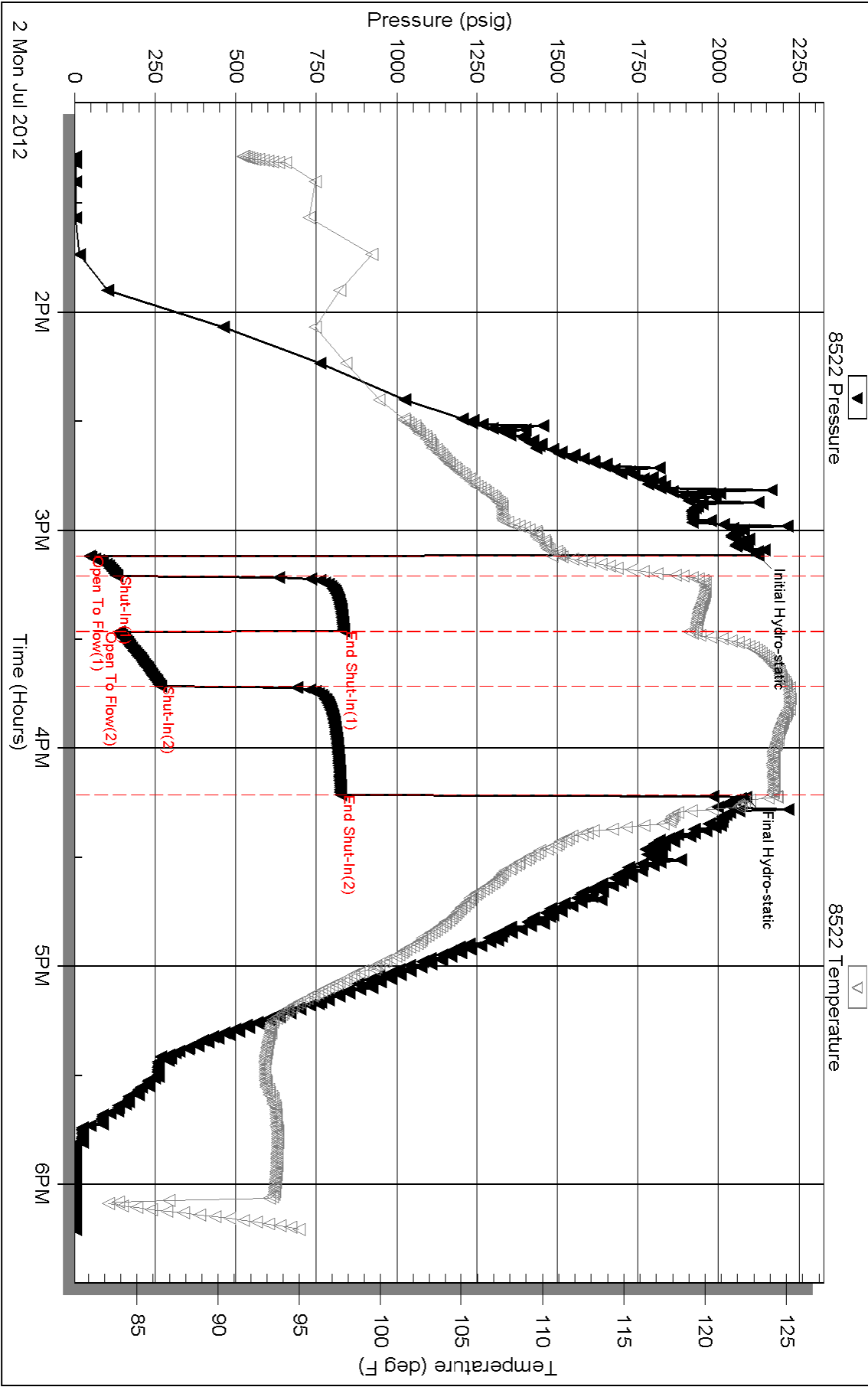
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .134 @ 85 degrees = 43000 ppm

Pressure vs. Time

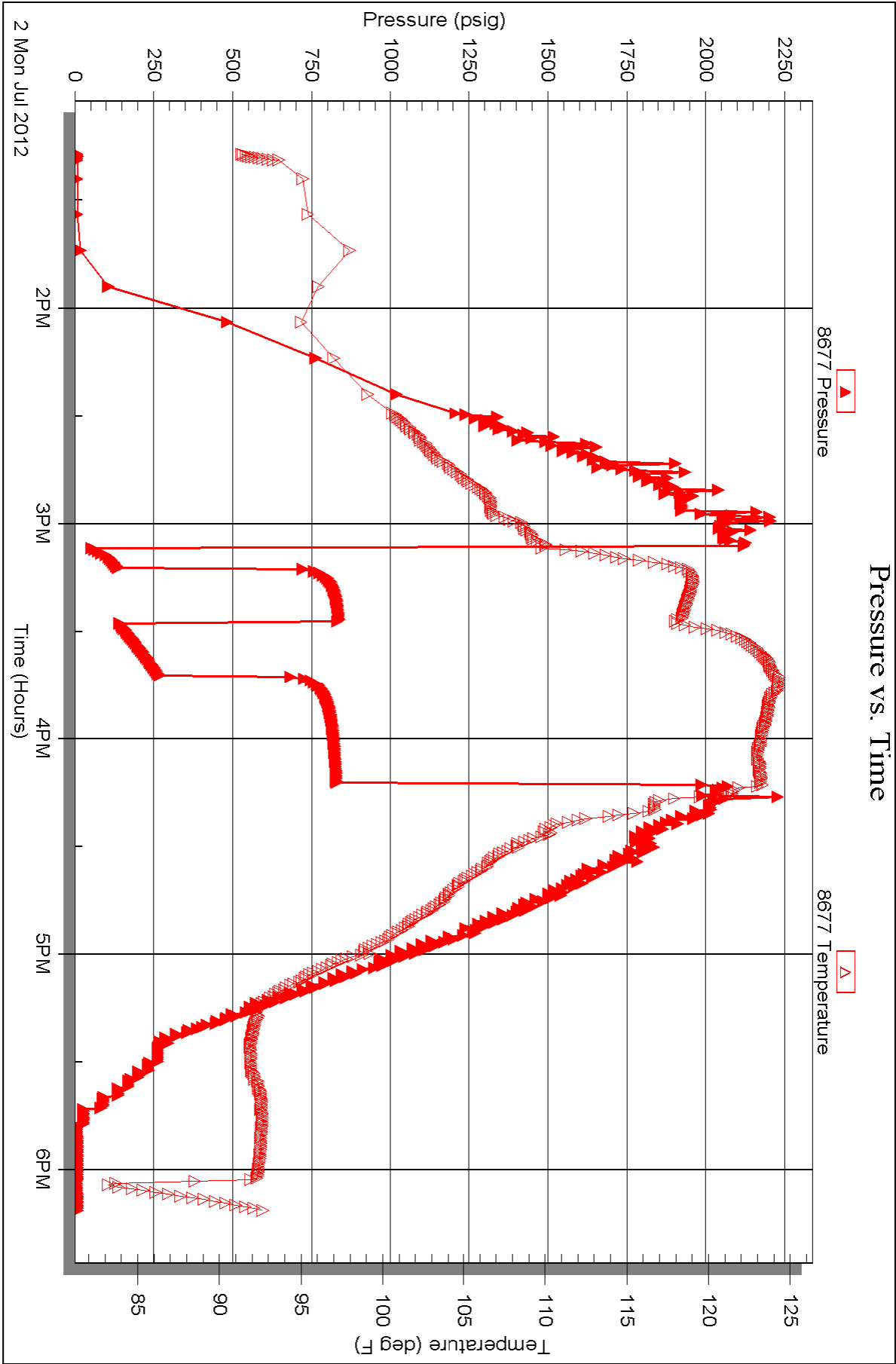


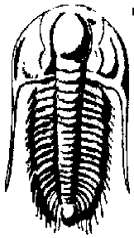
Serial #: 8677

Outside Larson Engineering, Inc.

Cramer 1-17

DST Test Number: 4





TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48793

DST#: 5

ATTN: Vern Schrag

Test Start: 2012.07.03 @ 05:42:00

GENERAL INFORMATION:

Formation: **Lansing "L"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:17:15

Time Test Ended: 12:09:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Sam Esparza

Unit No: 53

Interval: 4246.00 ft (KB) To 4270.00 ft (KB) (TVD)

Reference Elevations: 2889.00 ft (KB)

Total Depth: 4270.00 ft (KB) (TVD)

2882.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition:

KB to GR/CF: 7.00 ft

Serial #: 8522 Inside

Press@RunDepth: 140.89 psig @ 4247.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.07.03

End Date:

2012.07.03

Last Calib.: 2012.07.03

Start Time: 05:42:05

End Time:

12:08:59

Time On Btm: 2012.07.03 @ 08:17:00

Time Off Btm: 2012.07.03 @ 10:09:30

TEST COMMENT: IF: 3" Blow.

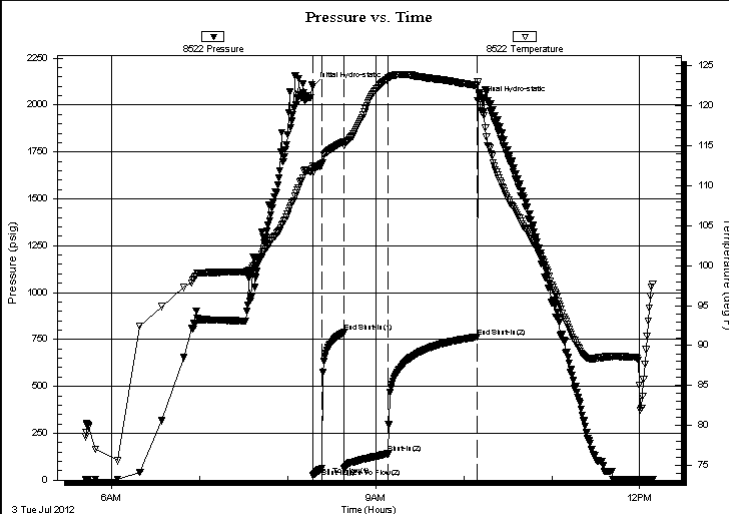
ISl: No return.

FF: BOB @ 26 min.

FSl: No return

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2098.59	112.44	Initial Hydro-static
1	24.81	111.69	Open To Flow (1)
7	65.26	112.70	Shut-In(1)
22	787.09	115.49	End Shut-In(1)
22	61.63	115.07	Open To Flow (2)
52	140.89	123.37	Shut-In(2)
112	763.54	122.52	End Shut-In(2)
113	2023.81	122.96	Final Hydro-static



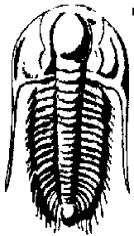
Recovery

Length (ft)	Description	Volume (bbl)
190.00	MCW 35m 65w	1.33
85.00	WCM 30w 70m	1.19

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48793

DST#: 5

ATTN: Vern Schrag

Test Start: 2012.07.03 @ 05:42:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

33000 ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbl

Water Loss: 8.37 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
190.00	MCW 35m 65w	1.326
85.00	WCM 30w 70m	1.192

Total Length: 275.00 ft

Total Volume: 2.518 bbl

Num Fluid Samples: 0

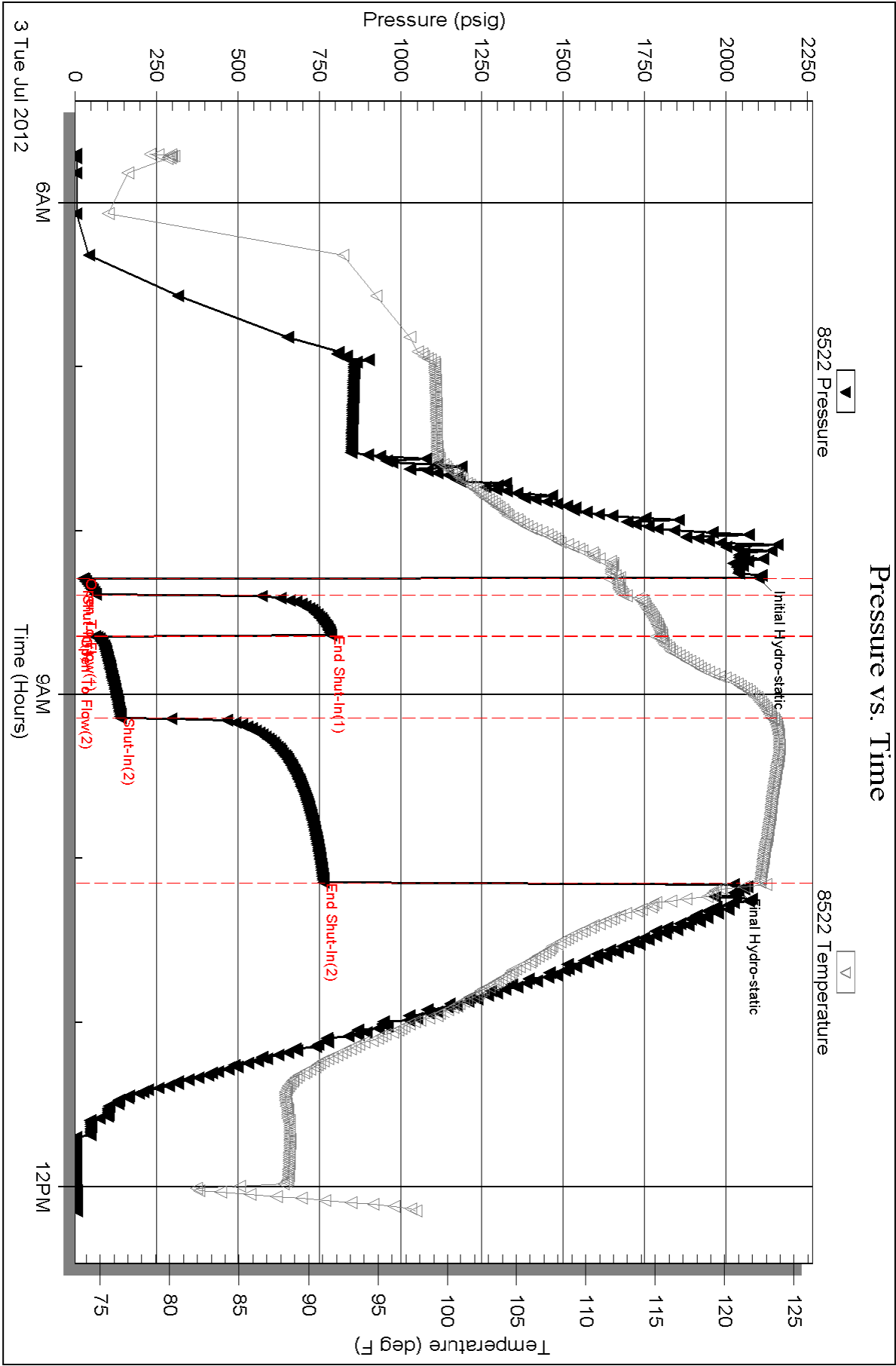
Num Gas Bombs: 0

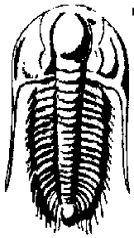
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .168 @ 81 degrees= 33000 ppm





TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48794

DST#: 6

ATTN: Vern Schrag

Test Start: 2012.07.03 @ 20:38:00

GENERAL INFORMATION:

Formation: **Pleasanton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:21:00

Time Test Ended: 02:11:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Sam Esparza

Unit No: 53

Interval: 4292.00 ft (KB) To 4305.00 ft (KB) (TVD)

Reference Elevations: 2889.00 ft (KB)

Total Depth: 4305.00 ft (KB) (TVD)

2882.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition:

KB to GR/CF: 7.00 ft

Serial #: 8522 Inside

Press@RunDepth: 60.86 psig @ 4293.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.07.03

End Date:

2012.07.04

Last Calib.: 2012.07.04

Start Time: 20:38:05

End Time:

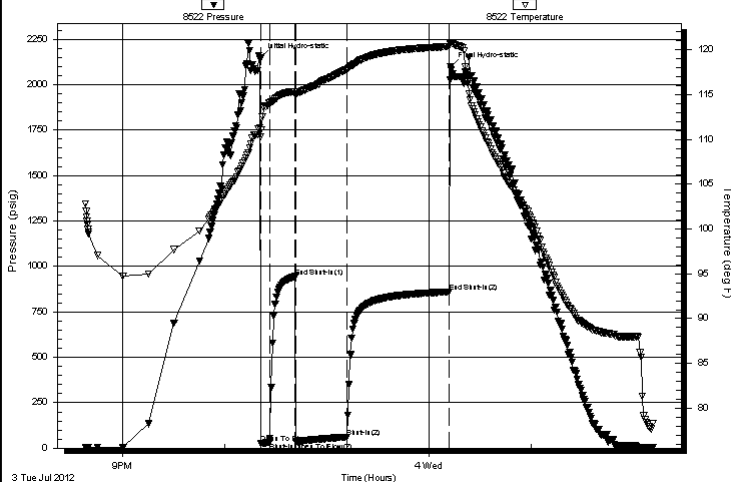
02:11:44

Time On Btm: 2012.07.03 @ 22:20:45

Time Off Btm: 2012.07.04 @ 00:12:45

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

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2147.01	111.32	Initial Hydro-static
1	25.31	110.32	Open To Flow (1)
6	31.64	114.04	Shut-In(1)
21	944.12	115.36	End Shut-In(1)
21	34.52	114.91	Open To Flow (2)
51	60.86	117.81	Shut-In(2)
111	859.97	120.38	End Shut-In(2)
112	2097.71	120.83	Final Hydro-static

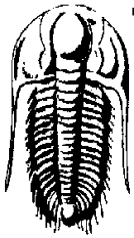
Recovery

Length (ft)	Description	Volume (bbl)
70.00	WM 20w 80m (Oil Spots)	0.34

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48794

DST#: 6

ATTN: Vern Schrag

Test Start: 2012.07.03 @ 20:38:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 47.00 sec/qt

Water Loss: 8.39 in³

Resistivity: 0.00 ohm.m

Salinity: 2600.00 ppm

Filter Cake: 2.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
70.00	WM 20w 80m (Oil Spots)	0.344

Total Length: 70.00 ft Total Volume: 0.344 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

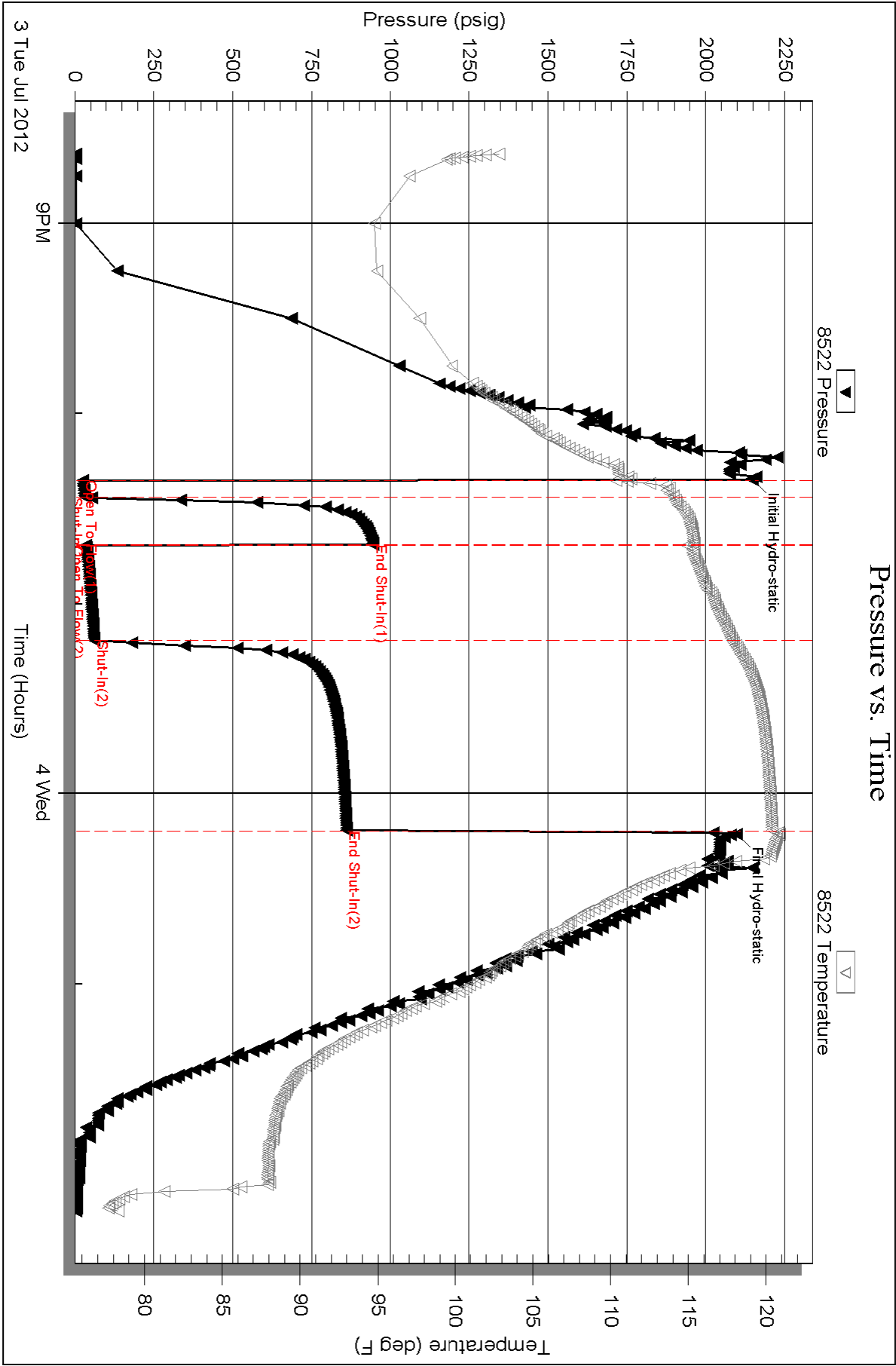
Serial #: 8522

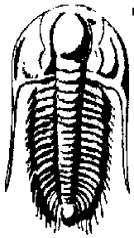
Inside

Larson Engineering, Inc.

Cramer 1-17

DST Test Number: 6





TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48795

DST#: 7

ATTN: Vern Schrag

Test Start: 2012.07.04 @ 21:17:00

GENERAL INFORMATION:

Formation: **Pawnee, Ft. Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:06:45

Time Test Ended: 04:02:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Sam Esparza

Unit No: 53

Interval: 4402.00 ft (KB) To 4483.00 ft (KB) (TVD)

Reference Elevations: 2889.00 ft (KB)

Total Depth: 4483.00 ft (KB) (TVD)

2882.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition:

KB to GR/CF: 7.00 ft

Serial #: 8522 Inside

Press@RunDepth: 776.71 psig @ 4403.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.07.04

End Date:

2012.07.05

Last Calib.: 2012.07.05

Start Time: 21:17:05

End Time:

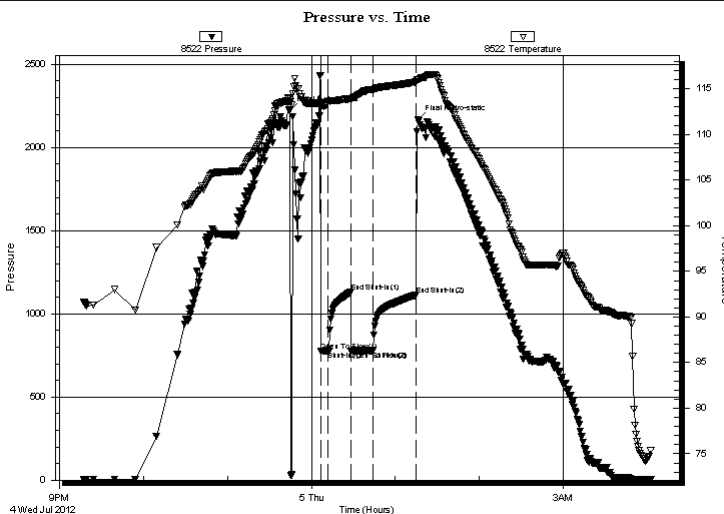
04:02:44

Time On Btm: 2012.07.04 @ 23:44:30

Time Off Btm: 2012.07.05 @ 01:16:00

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

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2222.52	114.03	Initial Hydro-static
23	773.81	113.04	Open To Flow (1)
28	777.56	113.60	Shut-In(1)
44	1131.83	113.95	End Shut-In(1)
44	777.24	113.86	Open To Flow (2)
60	776.71	114.90	Shut-In(2)
90	1113.40	115.73	End Shut-In(2)
92	2167.24	115.99	Final Hydro-static

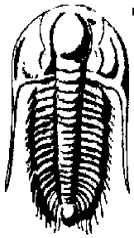
Recovery

Length (ft)	Description	Volume (bbl)
1386.00	M 100m (Oil spots)	18.10

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48795

DST#: 7

ATTN: Vern Schrag

Test Start: 2012.07.04 @ 21:17:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 59.00 sec/qt

Water Loss: 8.78 in³

Resistivity: 0.00 ohm.m

Salinity: 2600.00 ppm

Filter Cake: 2.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1386.00	M 100m (Oil spots)	18.103

Total Length: 1386.00 ft

Total Volume: 18.103 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

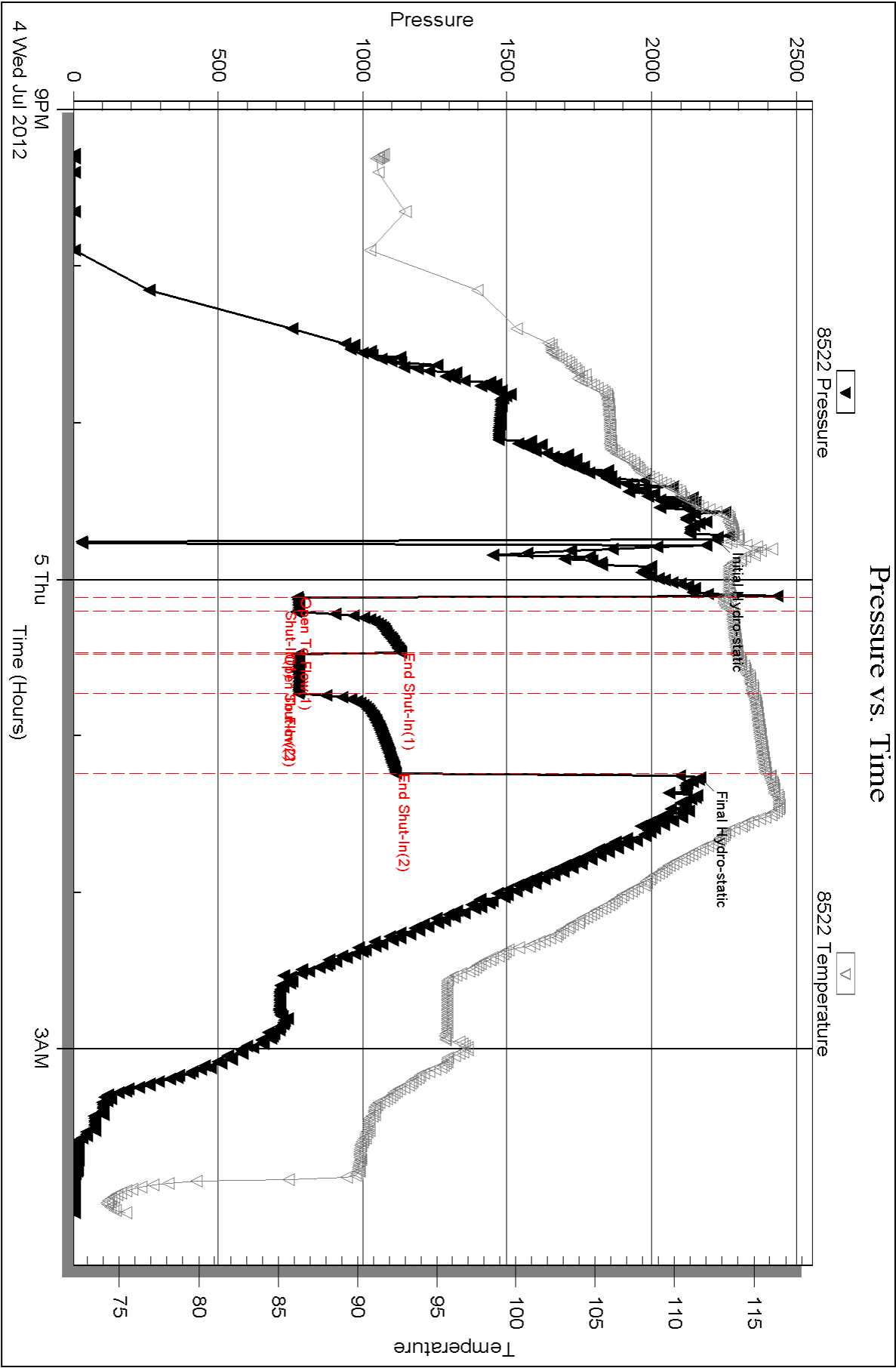
Serial #: 8522

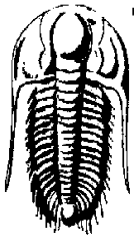
Inside

Larson Engineering, Inc.

Cramer 1-17

DST Test Number: 7





TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48796

DST#: 8

ATTN: Vern Schrag

Test Start: 2012.07.05 @ 04:58:00

GENERAL INFORMATION:

Formation: **Pawnee, Ft. Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:00:30

Time Test Ended: 11:11:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Sam Esparza

Unit No: 53

Interval: 4426.00 ft (KB) To 4483.00 ft (KB) (TVD)

Reference Elevations: 2889.00 ft (KB)

Total Depth: 4483.00 ft (KB) (TVD)

2882.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8522 Inside

Press@RunDepth: 63.16 psig @ 4427.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.07.05

End Date:

2012.07.05

Last Calib.: 2012.07.05

Start Time: 04:58:05

End Time:

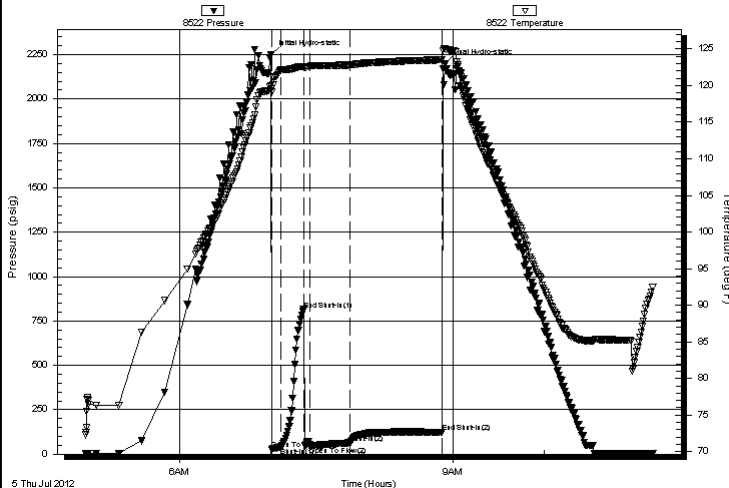
11:11:44

Time On Btm: 2012.07.05 @ 07:00:15

Time Off Btm: 2012.07.05 @ 08:54:30

TEST COMMENT: IF: 2 1/4" blow.
IS: No return.
FF: BOB @ 22 min.
FS: BOB @ 58 min.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2248.68	120.02	Initial Hydro-static
1	24.84	119.08	Open To Flow (1)
6	36.88	122.07	Shut-In(1)
22	814.33	122.60	End Shut-In(1)
26	44.08	122.64	Open To Flow (2)
52	63.16	122.82	Shut-In(2)
113	122.86	123.52	End Shut-In(2)
115	2196.29	125.02	Final Hydro-static

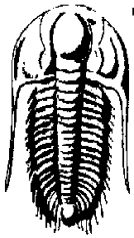
Recovery

Length (ft)	Description	Volume (bbl)
125.00	GOCM 10g 40o 50m	0.61
15.00	GMCO 10m 20g 70o	0.07
0.00	485' GIP	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48796

DST#: 8

ATTN: Vern Schrag

Test Start: 2012.07.05 @ 04:58:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 59.00 sec/qt

Water Loss: 8.79 in³

Resistivity: 0.00 ohm.m

Salinity: 2600.00 ppm

Filter Cake: 2.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
125.00	GOCM 10g 40o 50m	0.615
15.00	GMCO 10m 20g 70o	0.074
0.00	485' GIP	0.000

Total Length: 140.00 ft

Total Volume: 0.689 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

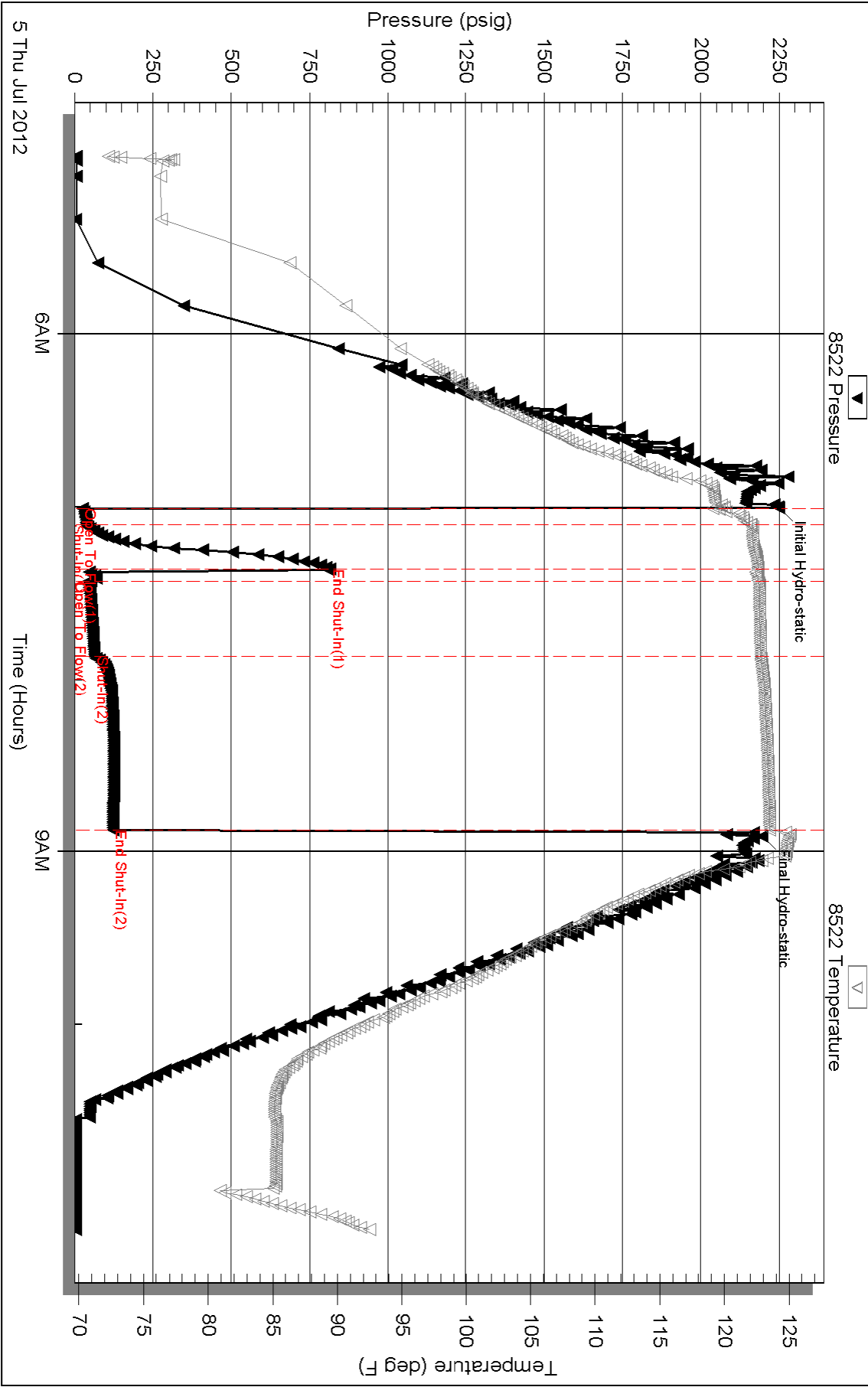
Serial #:

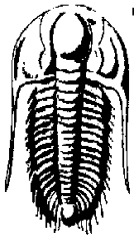
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time





**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48797

DST#: 9

ATTN: Vern Schrag

Test Start: 2012.07.05 @ 23:52:00

GENERAL INFORMATION:

Formation: **Pawnee, Ft. Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:04:15

Time Test Ended: 06:34:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Sam Esparza

Unit No: 53

Interval: **4429.00 ft (KB) To 4483.00 ft (KB) (TVD)**

Reference Elevations: 2889.00 ft (KB)

Total Depth: 4483.00 ft (KB) (TVD)

2882.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition:

KB to GR/CF: 7.00 ft

Serial #: 8677 Outside

Press@RunDepth: 59.36 psig @ 4430.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.07.05

End Date:

2012.07.06

Last Calib.: 2012.07.06

Start Time: 23:52:05

End Time:

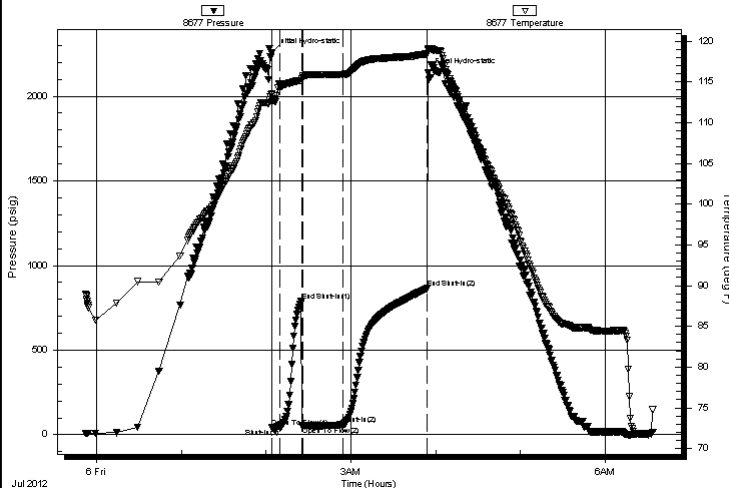
06:34:14

Time On Btm: 2012.07.06 @ 02:04:00

Time Off Btm: 2012.07.06 @ 03:54:30

TEST COMMENT: IF: 1 1/2" blow .
IS: No return.
FF: BOB @ 24 min.
FS: 5" return

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2256.31	113.51	Initial Hydro-static
1	44.58	112.61	Open To Flow (1)
6	40.01	114.49	Shut-In(1)
21	787.93	115.19	End Shut-In(1)
22	50.44	115.54	Open To Flow (2)
51	59.36	115.93	Shut-In(2)
110	864.41	118.44	End Shut-In(2)
111	2140.35	118.98	Final Hydro-static

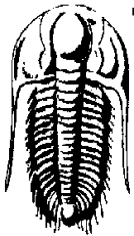
Recovery

Length (ft)	Description	Volume (bbl)
60.00	ocm 30o 70g	0.30
30.00	gocm 35g 30o 35m	0.15
0.00	270' GIP	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48797

DST#: 9

ATTN: Vern Schrag

Test Start: 2012.07.05 @ 23:52:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 51.00 sec/qt

Water Loss: 8.79 in³

Resistivity: 0.00 ohm.m

Salinity: 3000.00 ppm

Filter Cake: 2.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

0 deg API

0 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	ocm 30o 70g	0.295
30.00	gocm 35g 30o 35m	0.148
0.00	270' GIP	0.000

Total Length: 90.00 ft

Total Volume: 0.443 bbl

Num Fluid Samples: 0

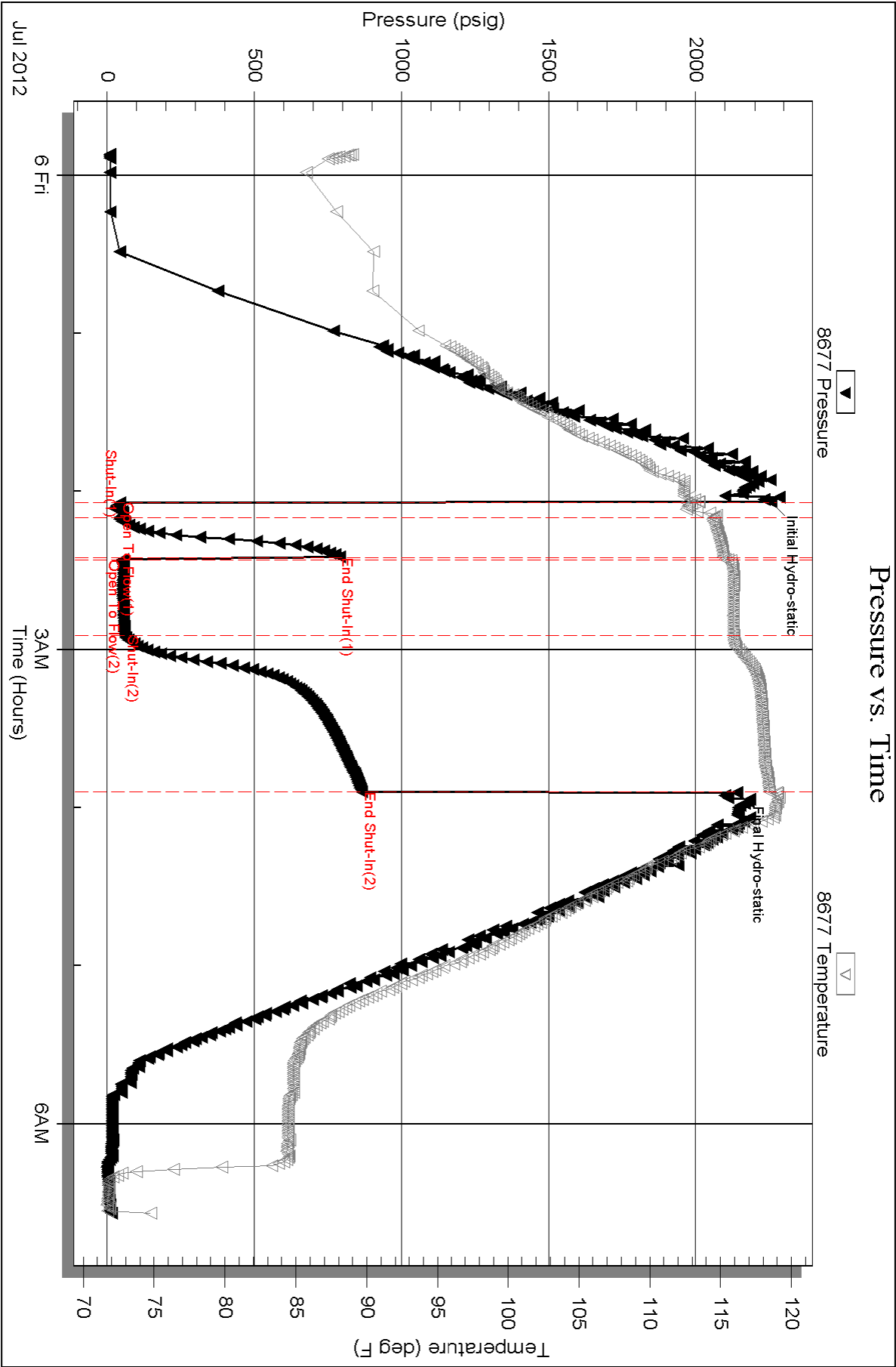
Num Gas Bombs: 0

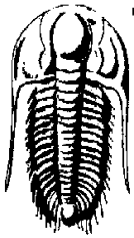
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48798

DST#: 10

ATTN: Vern Schrag

Test Start: 2012.07.06 @ 16:10:00

GENERAL INFORMATION:

Formation: **Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:17:30

Time Test Ended: 21:44:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Bradley Walter

Unit No: 53

Interval: 4479.00 ft (KB) To 4583.00 ft (KB) (TVD)

Reference Elevations: 2889.00 ft (KB)

Total Depth: 4583.00 ft (KB) (TVD)

2882.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8522 Inside

Press@RunDepth: 27.01 psig @ 4480.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.07.06

End Date:

2012.07.06

Last Calib.: 2012.07.06

Start Time: 16:10:05

End Time:

21:44:14

Time On Btm: 2012.07.06 @ 18:17:15

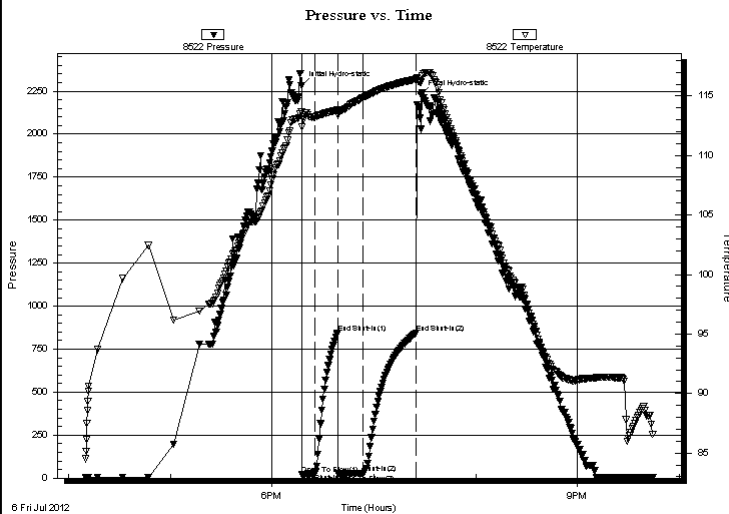
Time Off Btm: 2012.07.06 @ 19:27:30

TEST COMMENT: IF: Surface blow .

IS: No return.

FF: No blow .

FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2283.63	113.64	Initial Hydro-static
1	22.66	112.37	Open To Flow (1)
8	30.82	113.22	Shut-In(1)
22	844.17	113.83	End Shut-In(1)
22	24.93	113.40	Open To Flow (2)
37	27.01	114.88	Shut-In(2)
68	842.74	116.42	End Shut-In(2)
71	2229.69	116.20	Final Hydro-static

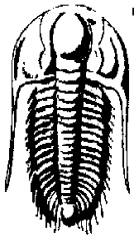
Recovery

Length (ft)	Description	Volume (bbl)
12.00	M 100m (oil spots)	0.06

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

502 w state rd 4
Olmitz, Ks 67564

ATTN: Vern Schrag

17-17s-30w Lane

Cramer 1-17

Job Ticket: 48798

DST#: 10

Test Start: 2012.07.06 @ 16:10:00

GENERAL INFORMATION:

Formation: **Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:17:30

Time Test Ended: 21:44:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Bradley Walter

Unit No: 53

Interval: 4479.00 ft (KB) To 4583.00 ft (KB) (TVD)

Reference Elevations: 2889.00 ft (KB)

Total Depth: 4583.00 ft (KB) (TVD)

2882.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8677 Outside

Press@RunDepth: psig @ 4480.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.07.06

End Date:

2012.07.06

Last Calib.:

2012.07.06

Start Time: 16:10:05

End Time:

21:43:14

Time On Btm:

Time Off Btm:

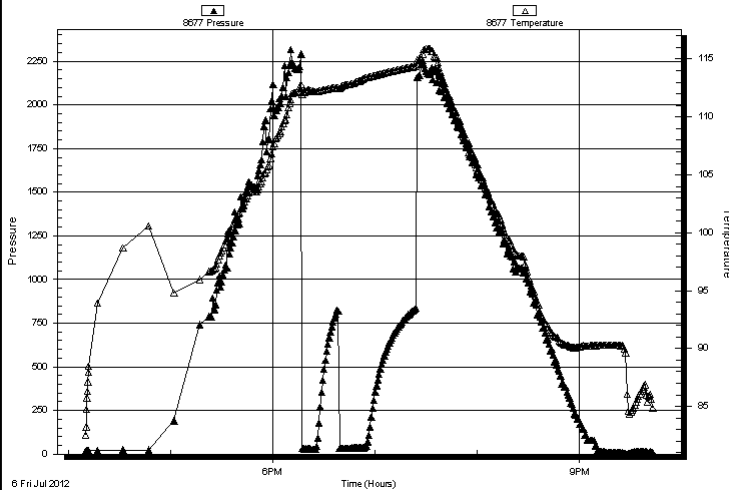
TEST COMMENT: IF: Surface blow .

IS: No return.

FF: No blow .

FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

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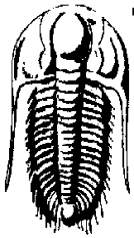
Recovery

Length (ft)	Description	Volume (bbl)
12.00	M 100m (oil spots)	0.06

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48798

DST#: 10

ATTN: Vern Schrag

Test Start: 2012.07.06 @ 16:10:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 55.00 sec/qt

Water Loss: 8.79 in³

Resistivity: 0.00 ohm.m

Salinity: 3300.00 ppm

Filter Cake: 2.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

Oil API:

Water Salinity:

0 deg API

0 ppm

ft

bbl

psig

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
12.00	M 100m (oil spots)	0.059

Total Length: 12.00 ft

Total Volume: 0.059 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

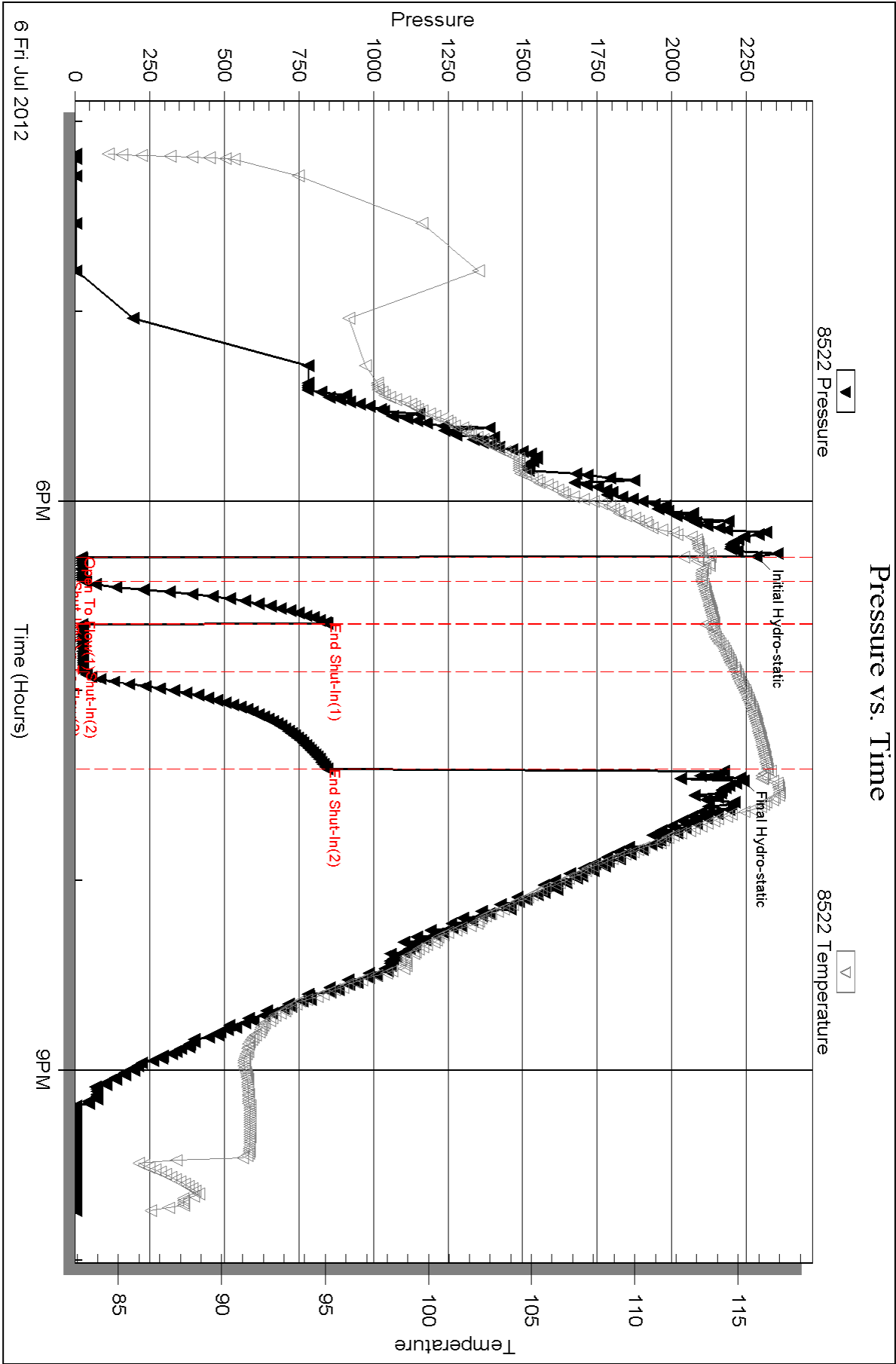
Serial #: 8522

Inside

Larson Engineering, Inc.

Cramer 1-17

DST Test Number: 10

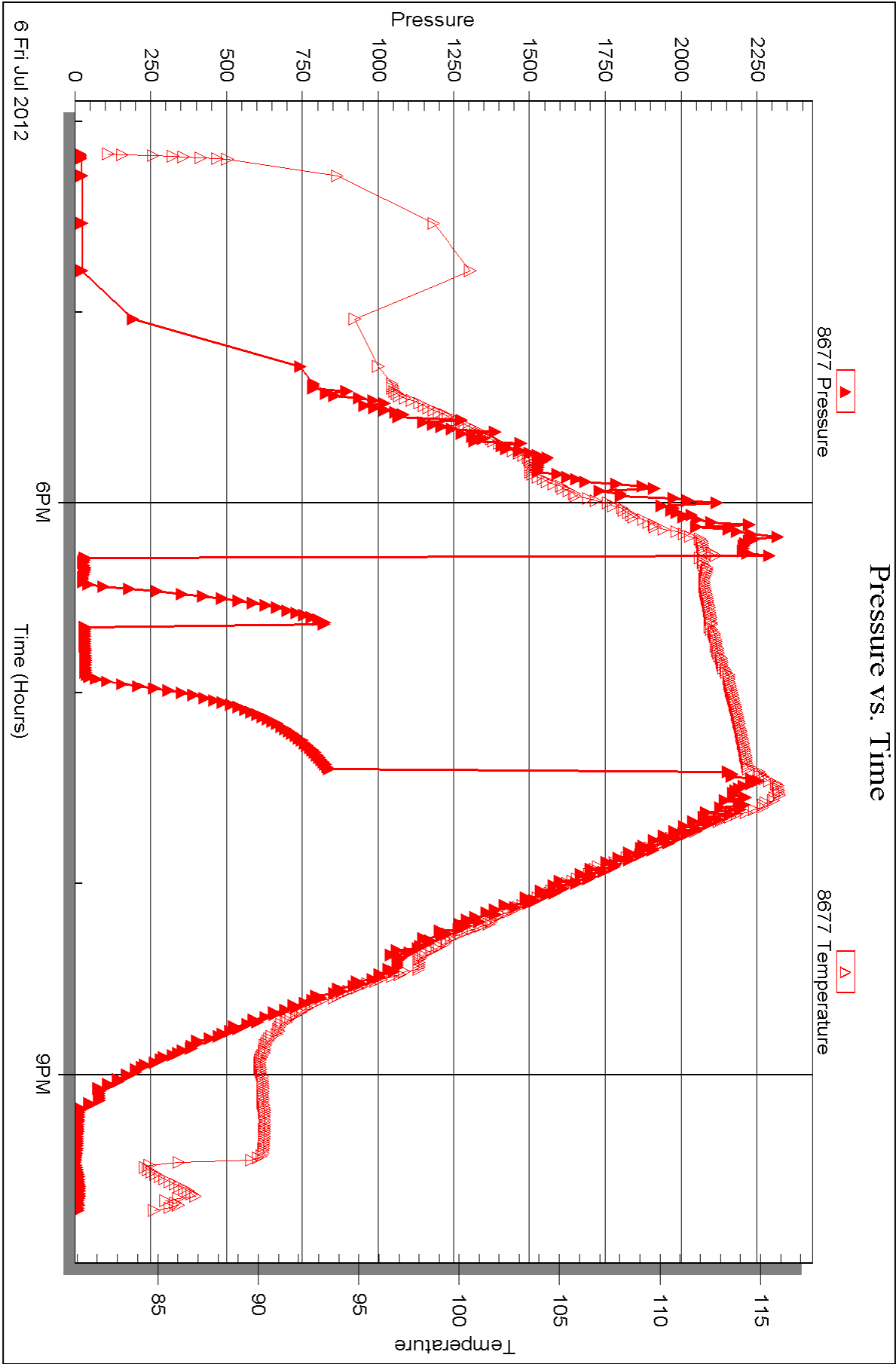


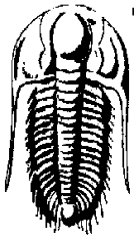
Serial #: 8677

Outside Larson Engineering, Inc.

Cramer 1-17

DST Test Number: 10





**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48799

DST#: 11

ATTN: Vern Schrag

Test Start: 2012.07.07 @ 19:10:00

GENERAL INFORMATION:

Formation: **Altamont B**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:06:15

Time Test Ended: 01:30:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Bradley Walter

Unit No: 53

Interval: 4326.00 ft (KB) To 4412.00 ft (KB) (TVD)

Total Depth: 4412.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2889.00 ft (KB)

2882.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8677 Inside

Press@RunDepth: 195.25 psig @ 4327.00 ft (KB)

Start Date: 2012.07.07

End Date:

2012.07.08

Start Time: 19:10:05

End Time:

01:29:59

Capacity: 8000.00 psig

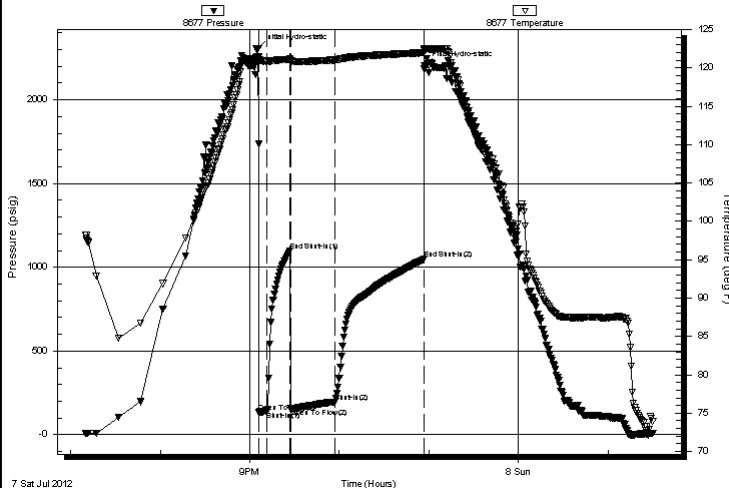
Last Calib.: 2012.07.08

Time On Btm: 2012.07.07 @ 21:05:45

Time Off Btm: 2012.07.07 @ 22:57:15

TEST COMMENT: IF: 2" blow.
IS: No return.
FF: 4" blow.
FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2305.75	121.51	Initial Hydro-static
1	135.73	120.85	Open To Flow (1)
6	143.12	120.77	Shut-In(1)
22	1097.20	121.13	End Shut-In(1)
22	155.88	120.76	Open To Flow (2)
52	195.25	121.02	Shut-In(2)
111	1047.85	121.98	End Shut-In(2)
112	2206.65	122.28	Final Hydro-static

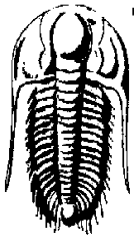
Recovery

Length (ft)	Description	Volume (bbl)
150.00	socm 2o 98m	0.75

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48799

DST#: 11

ATTN: Vern Schrag

Test Start: 2012.07.07 @ 19:10:00

GENERAL INFORMATION:

Formation: **Altamont B**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:06:15

Time Test Ended: 01:30:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Bradley Walter

Unit No: 53

Interval: 4326.00 ft (KB) To 4412.00 ft (KB) (TVD)

Reference Elevations: 2889.00 ft (KB)

Total Depth: 4412.00 ft (KB) (TVD)

2882.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8678 Inside

Press@RunDepth: psig @ 4327.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.07.07

End Date:

2012.07.08

Last Calib.:

2012.07.08

Start Time: 19:10:05

End Time:

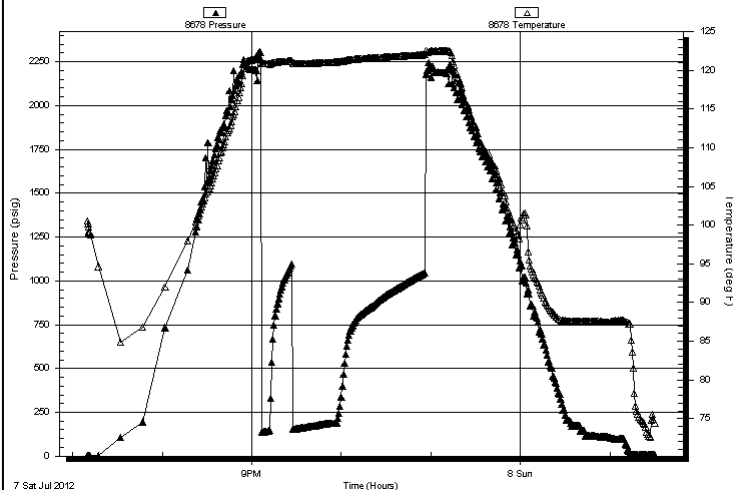
01:29:59

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: 2" blow.
IS: No return.
FF: 4" blow.
FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

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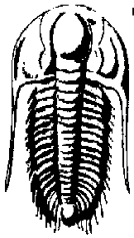
Recovery

Length (ft)	Description	Volume (bbl)
150.00	socm 2o 98m	0.75

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

502 w state rd 4
Olmitz, Ks 67564

ATTN: Vern Schrag

17-17s-30w Lane

Cramer 1-17

Job Ticket: 48799

DST#: 11

Test Start: 2012.07.07 @ 19:10:00

GENERAL INFORMATION:

Formation: **Altamont B**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:06:15

Time Test Ended: 01:30:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Bradley Walter

Unit No: 53

Interval: 4326.00 ft (KB) To 4412.00 ft (KB) (TVD)

Total Depth: 4412.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2889.00 ft (KB)

2882.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8522 Below (Straddle)

Press@RunDepth: psig @ 4427.00 ft (KB)

Start Date: 2012.07.07

End Date:

2012.07.08

Start Time: 19:10:05

End Time:

01:29:14

Capacity: 8000.00 psig

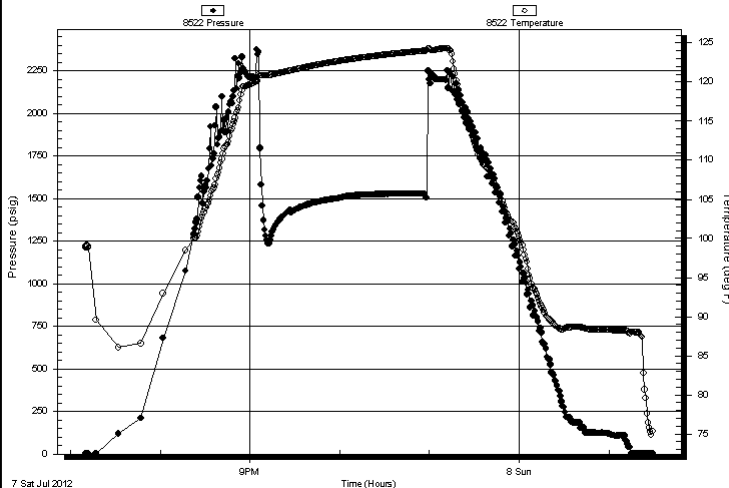
Last Calib.: 2012.07.08

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: 2" blow.
IS: No return.
FF: 4" blow.
FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

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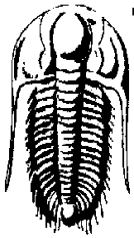
Recovery

Length (ft)	Description	Volume (bbl)
150.00	socm 2o 98m	0.75

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

17-17s-30w Lane

502 w state rd 4
Olmitz, Ks 67564

Cramer 1-17

Job Ticket: 48799

DST#: 11

ATTN: Vern Schrag

Test Start: 2012.07.07 @ 19:10:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 54.00 sec/qt

Water Loss: 8.79 in³

Resistivity: 0.00 ohm.m

Salinity: 3300.00 ppm

Filter Cake: 2.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

0 deg API

0 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
150.00	socm 2o 98m	0.753

Total Length: 150.00 ft

Total Volume: 0.753 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

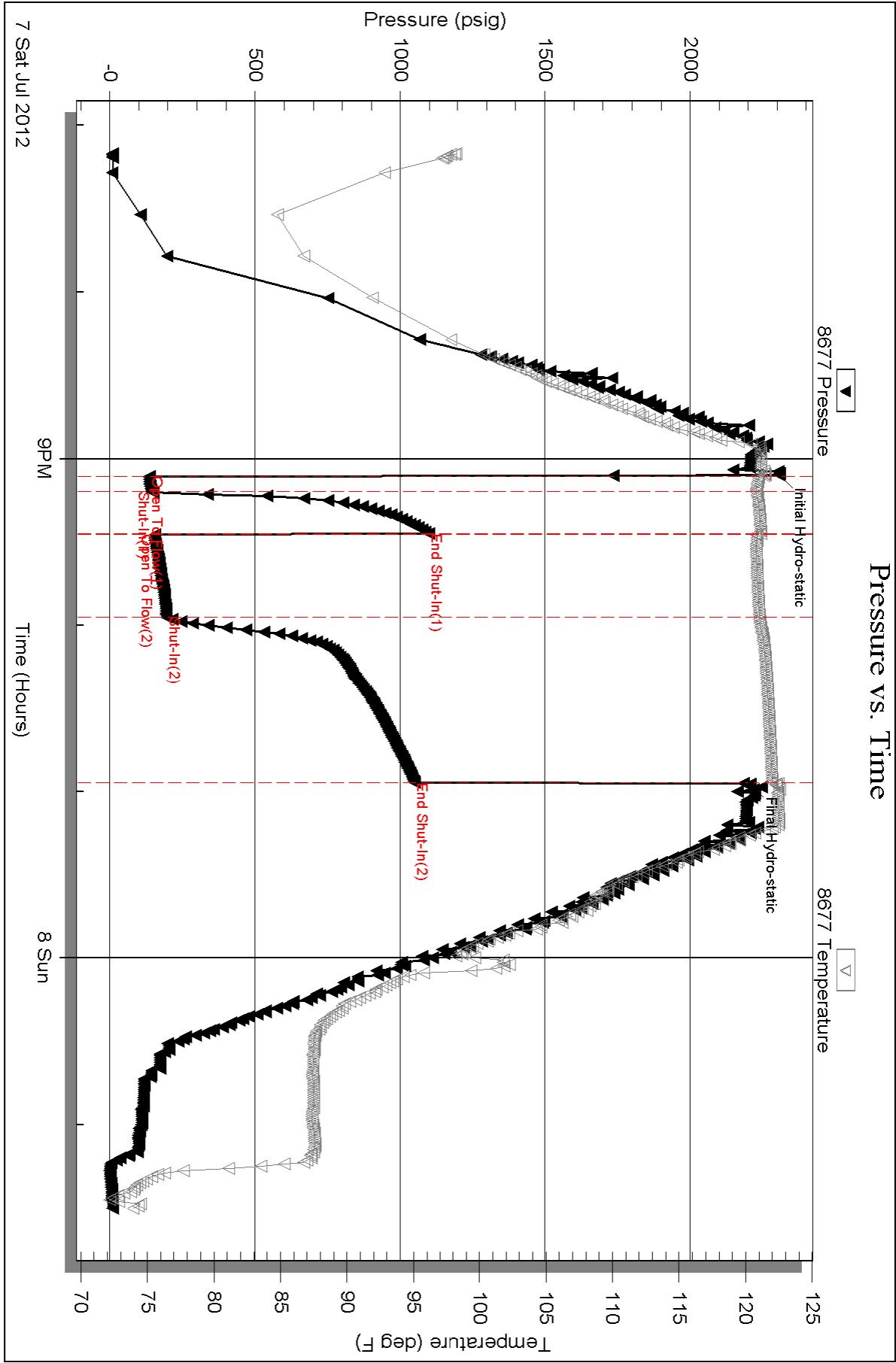
Serial #: 8677

Inside

Larson Engineering, Inc.

Cramer 1-17

DST Test Number: 11



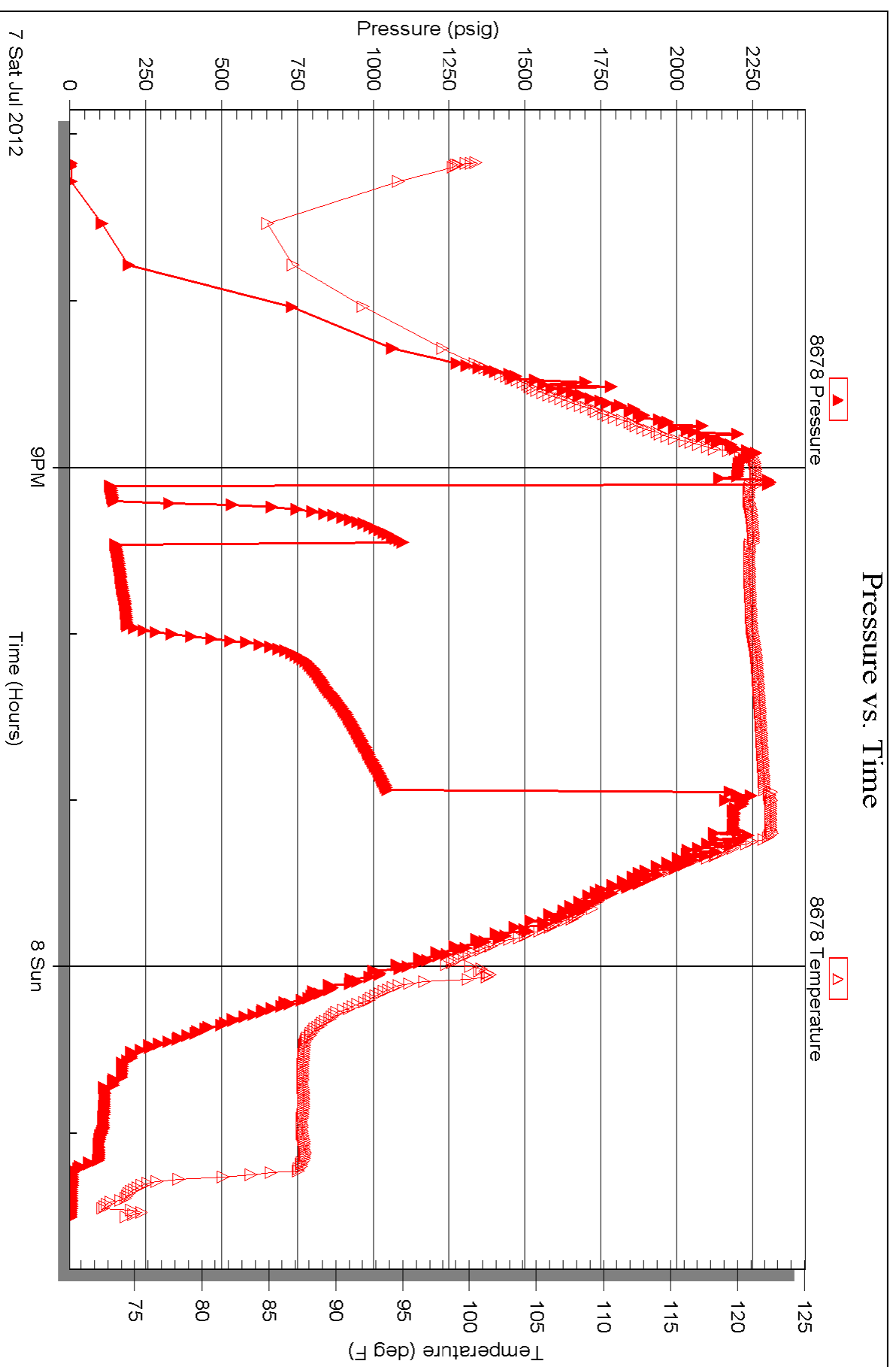
Serial #: 8678

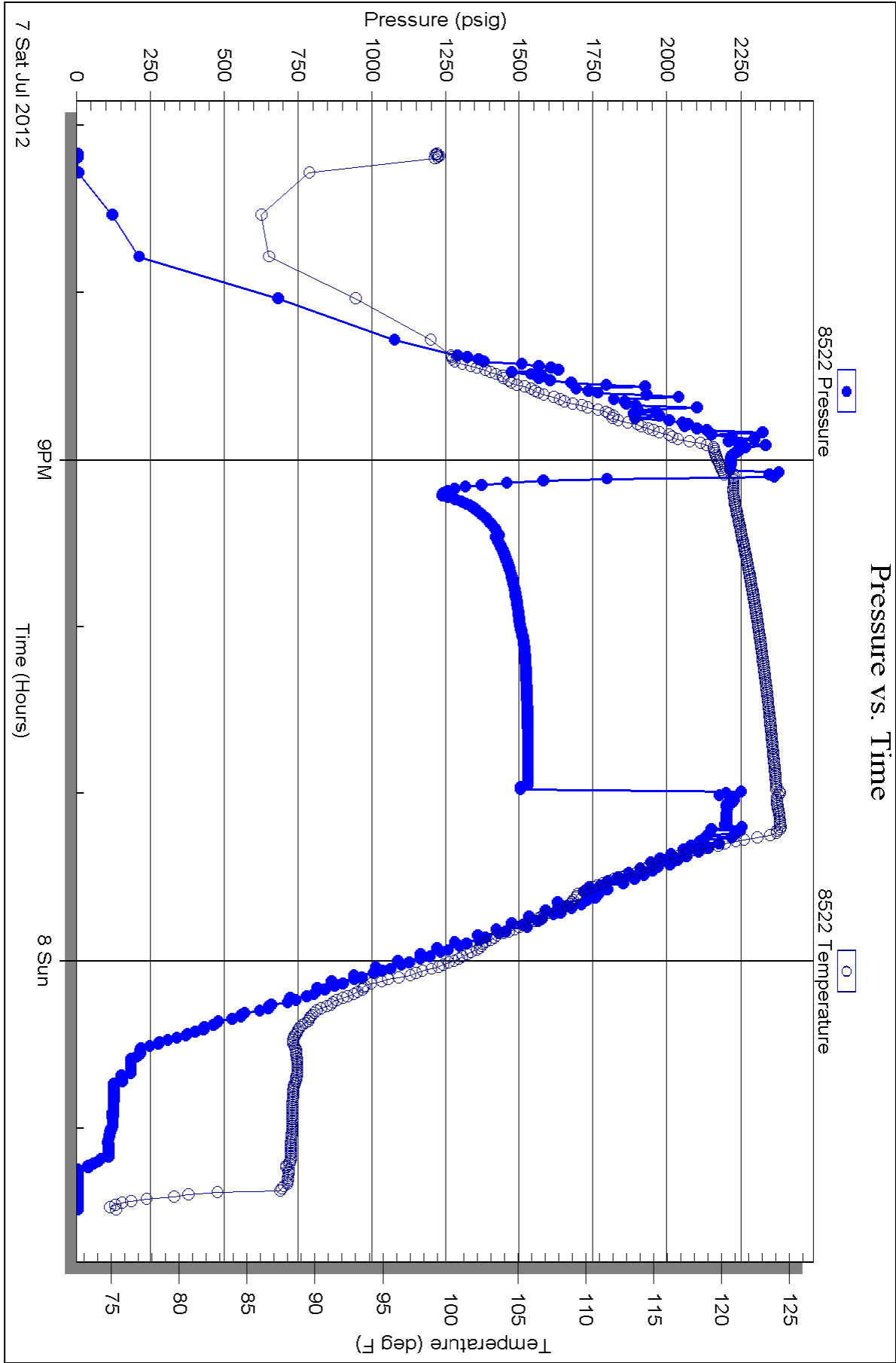
Inside

Larson Engineering, Inc.

Cramer 1-17

DST Test Number: 11





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

September 20, 2012

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

Re: ACO1
API 15-101-22383-00-00
Cramer 1-17
SE/4 Sec.17-17S-30W
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