



DRILL STEM TEST REPORT

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

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

Trost #1-30

31-18s-27w Lane,KS

Start Date: 2014.02.01 @ 06:20:00

End Date: 2014.02.01 @ 12:13:45

Job Ticket #: 56691 DST #: 1

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

Printed: 2014.02.06 @ 14:46:18



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

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

31-18s-27w Lane, KS

Trost #1-30

Job Ticket: 56691

DST#: 1

Test Start: 2014.02.01 @ 06:20:00

GENERAL INFORMATION:

Formation: **LKC K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:47:30

Time Test Ended: 12:13:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Bob Hamel

Unit No: 71

Interval: 4260.00 ft (KB) To 4275.00 ft (KB) (TVD)

Reference Elevations: 2727.00 ft (KB)

Total Depth: 4275.00 ft (KB) (TVD)

2720.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: 8845 Outside

Press@RunDepth: 102.89 psig @ 4262.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.02.01 End Date: 2014.02.01

Last Calib.: 2014.02.01

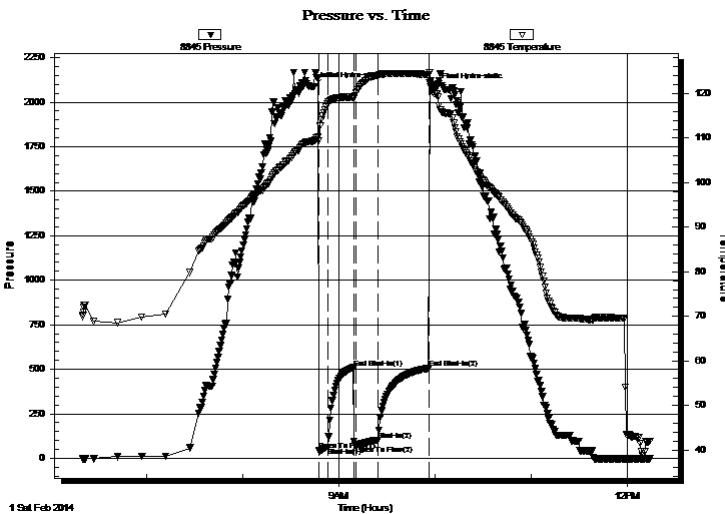
Start Time: 06:20:05 End Time: 12:13:44

Time On Btm: 2014.02.01 @ 08:44:30

Time Off Btm: 2014.02.01 @ 09:59:45

TEST COMMENT: I.F. - 5 - BOB in 3 min
I.S.I. - 15 - Weak surface blow back throughout
F.F. - 15 - BOB in 3 min
F.S.I. - 30 - Weak surface blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2087.82	109.37	Initial Hydro-static
3	42.82	109.42	Open To Flow (1)
9	63.28	117.62	Shut-In(1)
25	509.58	119.19	End Shut-In(1)
27	71.75	120.21	Open To Flow (2)
40	102.89	124.12	Shut-In(2)
72	504.61	124.23	End Shut-In(2)
76	2084.31	119.98	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
147.00	S,W,C,M,C,G,O 5%WTR 5%MUD 15%GA 1.11%OIL	
126.00	S,M,C,G,O, 5 %MUD 10%GAS 85%OIL	1.77
10.00	CLEAN OIL 100%	0.14
0.00	63' G.I.P.	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

31-18s-27w Lane, KS

522 West State Road 4
Olmitz, KS 67564

Trost #1-30

Job Ticket: 56691

DST#: 1

ATTN: Vern Schrag

Test Start: 2014.02.01 @ 06:20:00

Tool Information

Drill Pipe:	Length: 4150.00 ft	Diameter: 3.80 inches	Volume: 58.21 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 105.00 ft	Diameter: 2.25 inches	Volume: 0.52 bbl	Weight to Pull Loose:	65000.00 lb
			<u>Total Volume: 58.73 bbl</u>	Tool Chased	2.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial	60000.00 lb
Depth to Top Packer:	4260.00 ft			Final	60000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	15.00 ft				
Tool Length:	43.00 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			4233.00	
Shut In Tool	5.00			4238.00	
Hydraulic tool	5.00			4243.00	
Jars	5.00			4248.00	
Safety Joint	3.00			4251.00	
Packer	5.00			4256.00	28.00 Bottom Of Top Packer
Packer	4.00			4260.00	
Stubb	1.00			4261.00	
Perforations	1.00			4262.00	
Recorder	0.00	6772	Outside	4262.00	
Recorder	0.00	8845	Outside	4262.00	
Perforations	8.00			4270.00	
Bullnose	5.00			4275.00	15.00 Bottom Packers & Anchor

Total Tool Length: 43.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

31-18s-27w Lane, KS

522 West State Road 4
Olmitz, KS 67564

Trost #1-30

Job Ticket: 56691

DST#: 1

ATTN: Vern Schrag

Test Start: 2014.02.01 @ 06:20:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

27.6 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.17 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2100.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
147.00	S,W,C,M,C,G,O 5%WTR 5%MUD 15%GAS 75	1.106
126.00	S,M,C,G,O, 5 %MUD 10%GAS 85%OIL	1.767
10.00	CLEAN OIL 100%	0.140
0.00	63' G.I.P.	0.000

Total Length: 283.00 ft Total Volume: 3.013 bbl

Num Fluid Samples: 0

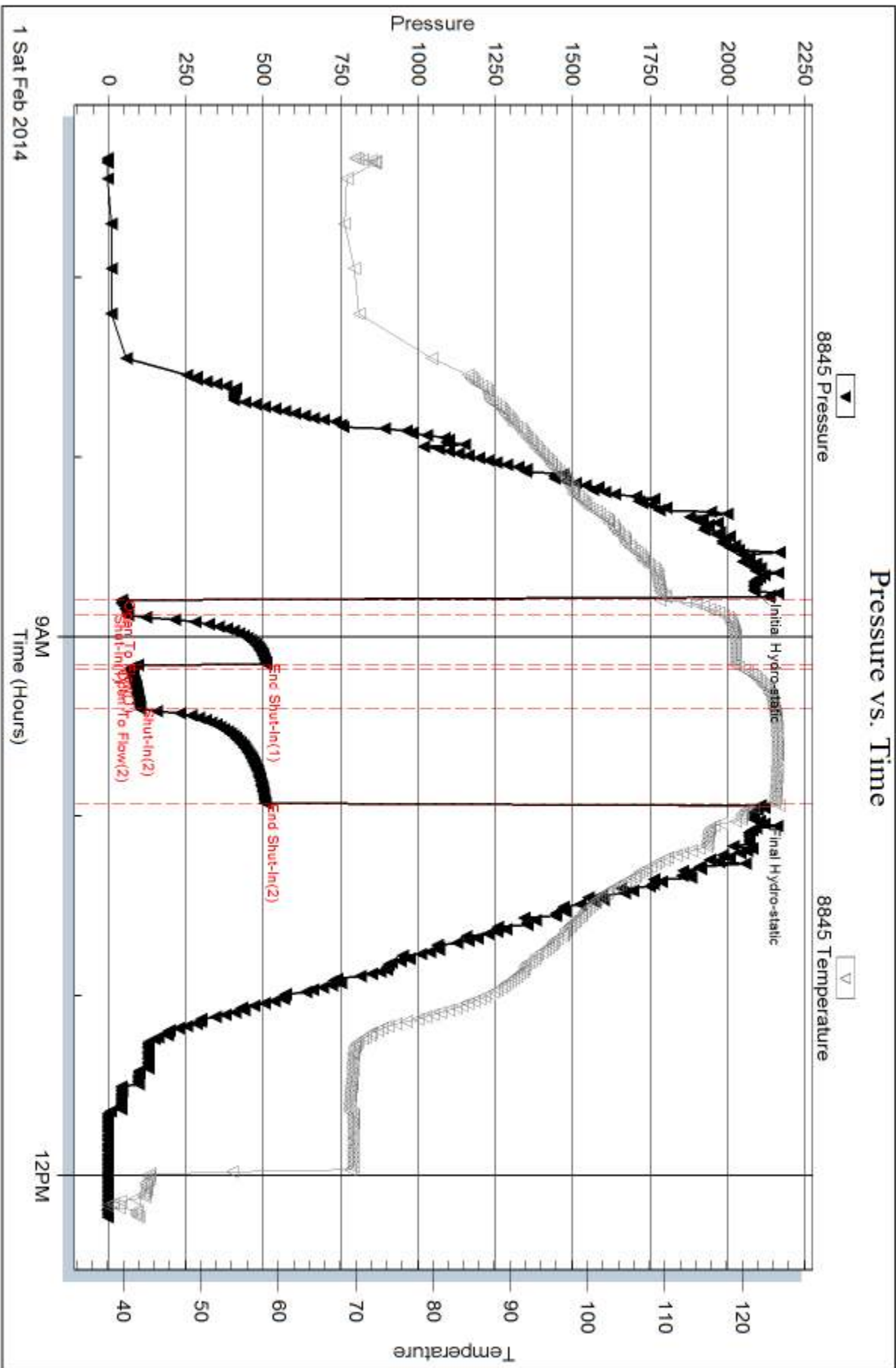
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: CLEAN OIL GRAVITY = 27.6 @ 60 DEG

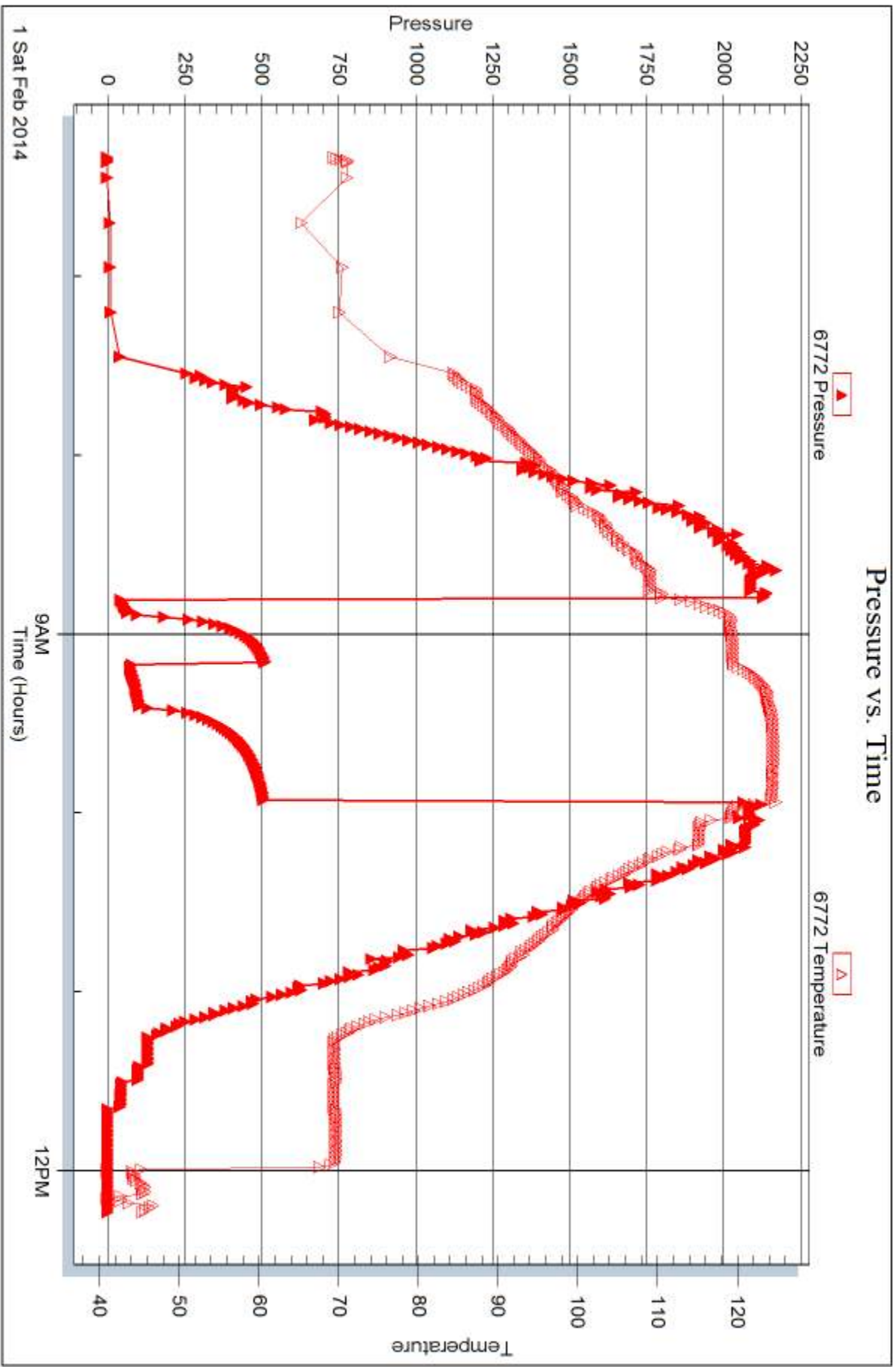


Serial #: 6772

Outside Larson Engineering, Inc.

Trost #1-30

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 56691

Printed: 2014.02.06 @ 14:46:21



DRILL STEM TEST REPORT

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

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

Trost #1-30

31-18s-27w Lane,KS

Start Date: 2014.02.01 @ 23:30:00

End Date: 2014.02.02 @ 05:26:45

Job Ticket #: 56692 DST #: 2

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

Printed: 2014.02.06 @ 14:45:26



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering, Inc.

31-18s-27w Lane, KS

522 West State Road 4
Olmitz, KS 67564

Trost #1-30

Job Ticket: 56692

DST#: 2

ATTN: Vern Schrag

Test Start: 2014.02.01 @ 23:30:00

GENERAL INFORMATION:

Formation: **LKC L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:19:30

Time Test Ended: 05:26:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Bob Hamel

Unit No: 71

Interval: 4296.00 ft (KB) To 4314.00 ft (KB) (TVD)

Reference Elevations: 2727.00 ft (KB)

Total Depth: 4314.00 ft (KB) (TVD)

2720.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: 8845 Outside

Press@RunDepth: 22.17 psig @ 4301.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.02.01 End Date: 2014.02.02

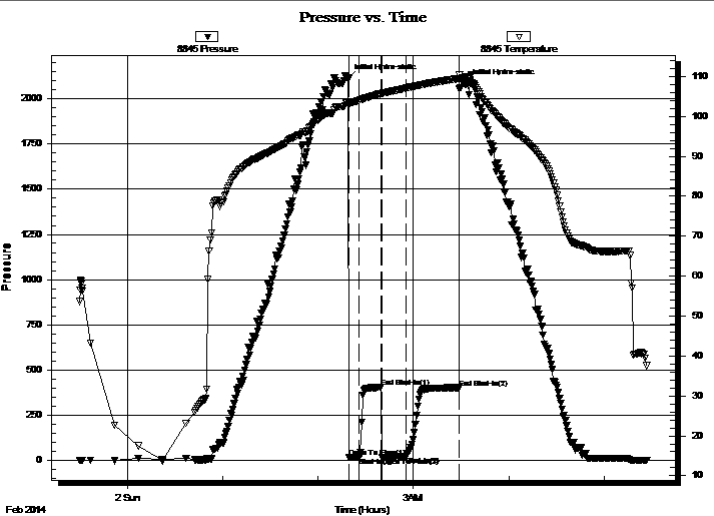
Last Calib.: 2014.02.01

Start Time: 23:30:05 End Time: 05:26:44

Time On Btm: 2014.02.02 @ 02:19:00

Time Off Btm:

TEST COMMENT: I.F. - 5 - Weak surface blow
I.S.I - 15 - Weak surface blow back
F.F. - 15 - Weak surface blow built to 1/2"
F.S.I. - 30 - Weak surface blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2110.42	103.55	Initial Hydro-static
1	14.03	102.81	Open To Flow (1)
7	16.01	104.01	Shut-In(1)
21	403.13	105.67	End Shut-In(1)
22	16.82	105.63	Open To Flow (2)
37	22.17	107.05	Shut-In(2)
70	401.01	109.48	End Shut-In(2)
74	2082.07	109.79	Initial Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100%	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.

31-18s-27w Lane,KS

522 West State Road 4
Olmitz, KS 67564

Trost #1-30

Job Ticket: 56692

DST#: 2

ATTN: Vern Schrag

Test Start: 2014.02.01 @ 23:30:00

Tool Information

Drill Pipe:	Length: 4179.00 ft	Diameter: 3.80 inches	Volume: 58.62 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 105.00 ft	Diameter: 2.25 inches	Volume: 0.52 bbl	Weight to Pull Loose:	60000.00 lb
			<u>Total Volume: 59.14 bbl</u>	Tool Chased	3.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial	60000.00 lb
Depth to Top Packer:	4296.00 ft			Final	60000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	18.00 ft				
Tool Length:	46.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			4269.00	
Shut In Tool	5.00			4274.00	
Hydraulic tool	5.00			4279.00	
Jars	5.00			4284.00	
Safety Joint	3.00			4287.00	
Packer	5.00			4292.00	28.00 Bottom Of Top Packer
Packer	4.00			4296.00	
Stubb	1.00			4297.00	
Perforations	4.00			4301.00	
Recorder	0.00	6772	Outside	4301.00	
Recorder	0.00	8845	Outside	4301.00	
Perforations	8.00			4309.00	
Bullnose	5.00			4314.00	18.00 Bottom Packers & Anchor

Total Tool Length: 46.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

31-18s-27w Lane, KS

522 West State Road 4
Olmitz, KS 67564

Trost #1-30

Job Ticket: 56692

DST#: 2

ATTN: Vern Schrag

Test Start: 2014.02.01 @ 23:30:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.17 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	mud 100%	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

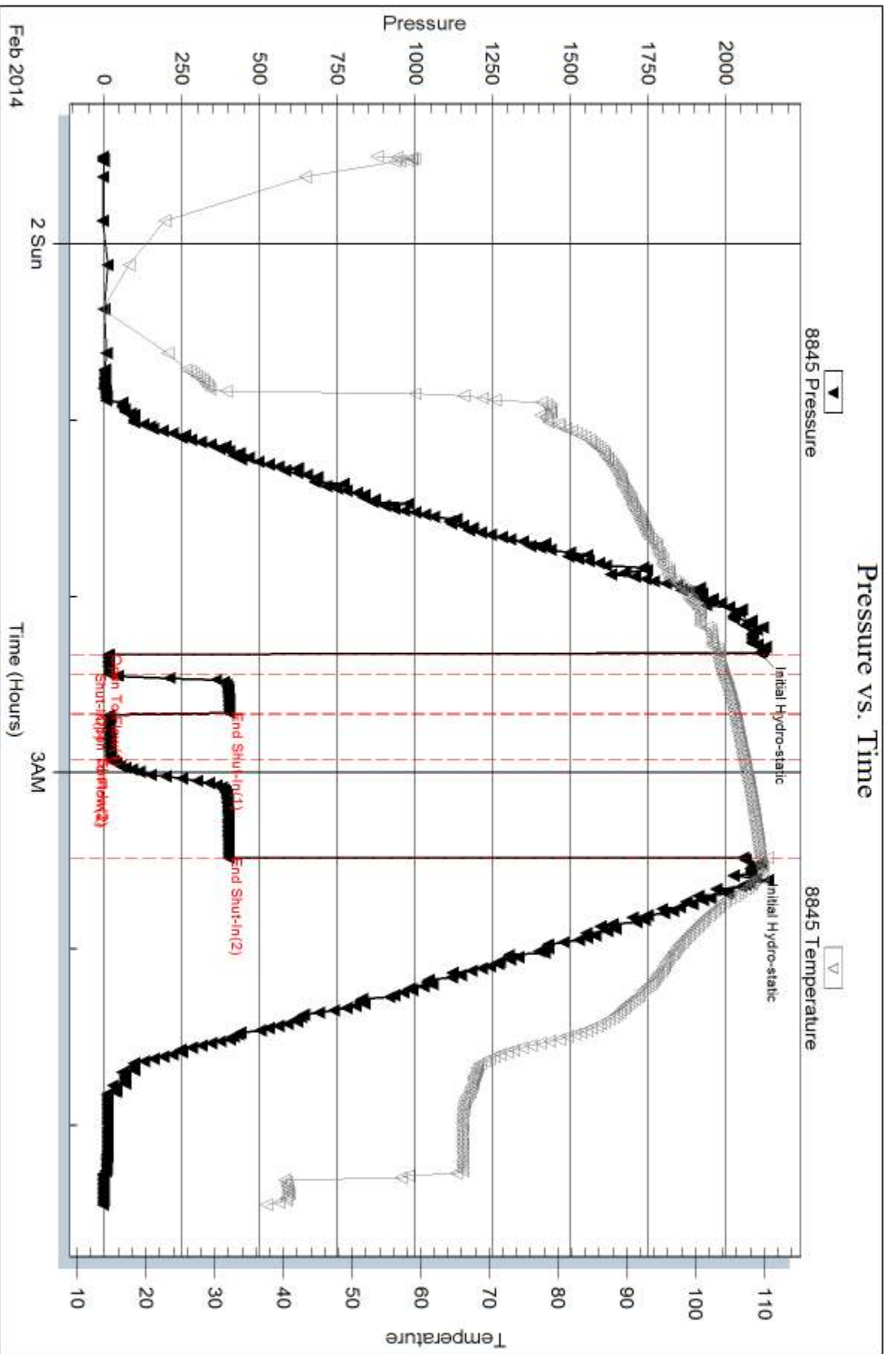
Num Gas Bombs: 0

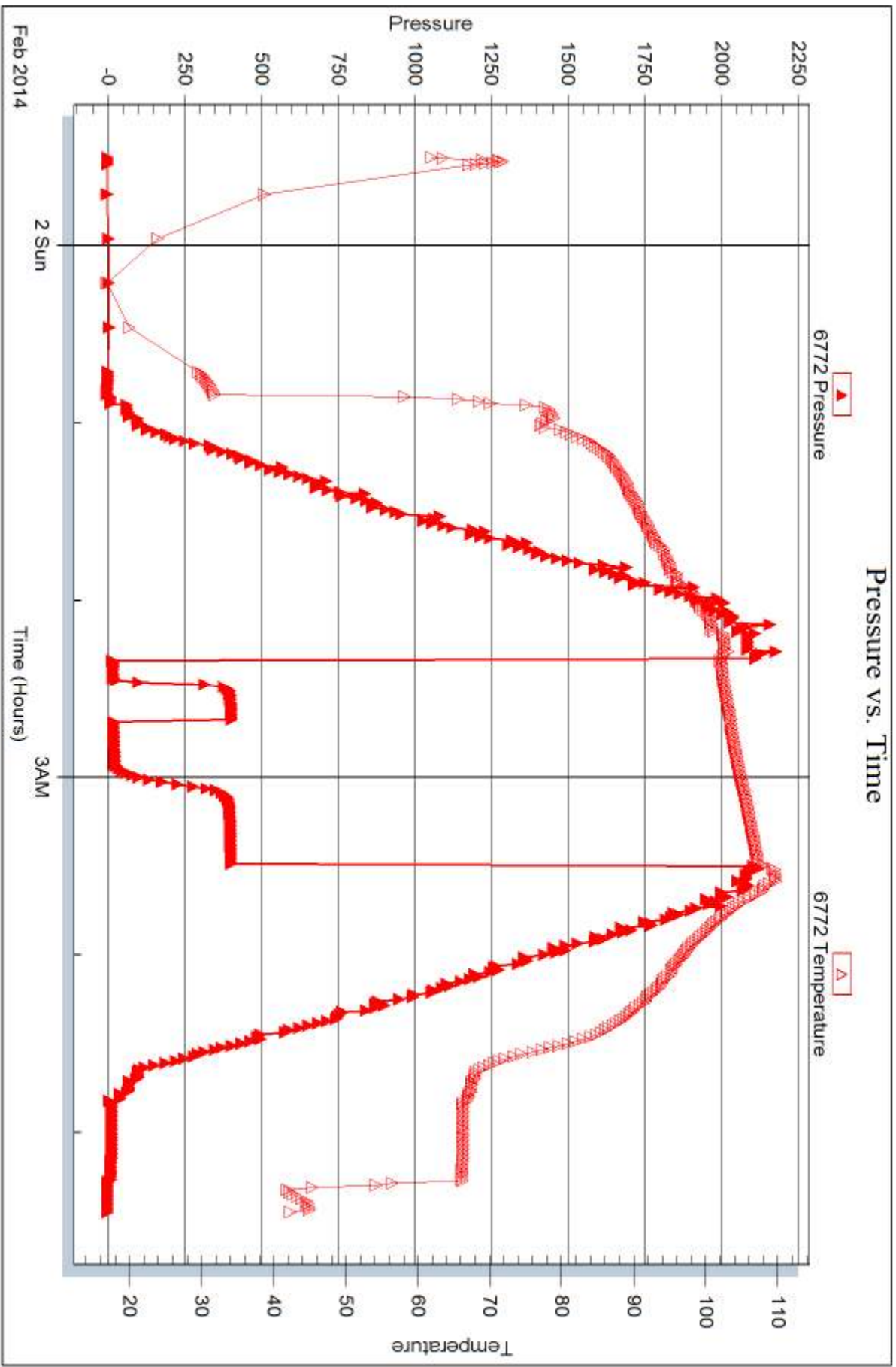
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

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

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

Trost #1-30

31-18s-27w Lane,KS

Start Date: 2014.02.02 @ 20:47:00

End Date: 2014.02.03 @ 03:34:15

Job Ticket #: 56693 DST #: 3

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

Printed: 2014.02.06 @ 14:43:30



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

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

31-18s-27w Lane, KS

Trost #1-30

Job Ticket: 56693

DST#: 3

Test Start: 2014.02.02 @ 20:47:00

GENERAL INFORMATION:

Formation: **Pleasanton**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:30:45
 Time Test Ended: 03:34:15
 Interval: **4343.00 ft (KB) To 4389.00 ft (KB) (TVD)**
 Total Depth: 4389.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Bob Hamel
 Unit No: 71
 Reference Elevations: 2727.00 ft (KB)
 2720.00 ft (CF)
 KB to GR/CF: 7.00 ft

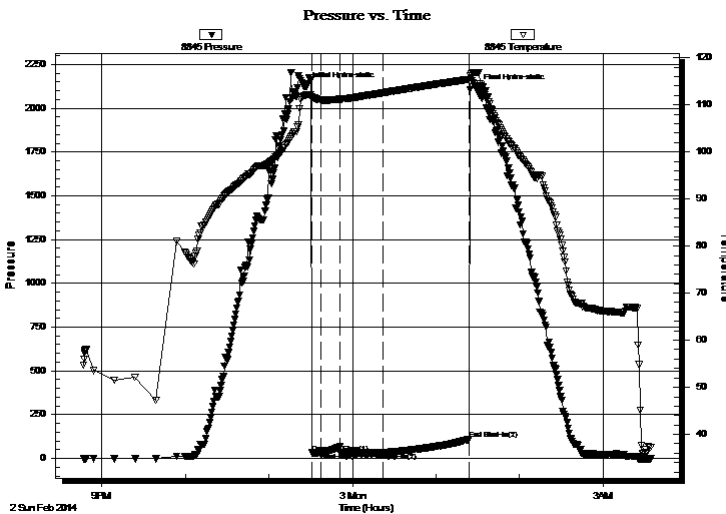
Serial #: 8845

Outside

Press@RunDepth: 32.48 psig @ 4376.00 ft (KB)
 Start Date: 2014.02.02 End Date: 2014.02.03
 Start Time: 20:47:05 End Time: 03:34:14
 Capacity: 8000.00 psig
 Last Calib.: 2014.02.02
 Time On Btm: 2014.02.02 @ 23:26:45
 Time Off Btm: 2014.02.03 @ 01:29:15

TEST COMMENT: I.F. - 5 - Weak surface blow built to 3/4"
 I.S.I. - 15 - Weak surface blow back
 F.F. - 30 - Weak surface blow
 F.S.I. - 60 - Weak surface blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2123.65	112.09	Initial Hydro-static
4	31.39	111.26	Open To Flow (1)
11	32.05	111.03	Shut-In(1)
25	66.24	111.20	End Shut-In(1)
25	32.13	111.20	Open To Flow (2)
55	32.48	112.53	Shut-In(2)
117	108.25	115.42	End Shut-In(2)
123	2114.24	116.82	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	MUD 100%	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.

31-18s-27w Lane, KS

522 West State Road 4
Olmitz, KS 67564

Trost #1-30

Job Ticket: 56693

DST#: 3

ATTN: Vern Schrag

Test Start: 2014.02.02 @ 20:47:00

Tool Information

Drill Pipe:	Length: 4216.00 ft	Diameter: 3.80 inches	Volume: 59.14 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 105.00 ft	Diameter: 2.25 inches	Volume: 0.52 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 59.66 bbl</u>	Tool Chased 3.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4343.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	46.00 ft			
Tool Length:	74.00 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			4316.00	
Shut In Tool	5.00			4321.00	
Hydraulic tool	5.00			4326.00	
Jars	5.00			4331.00	
Safety Joint	3.00			4334.00	
Packer	5.00			4339.00	28.00 Bottom Of Top Packer
Packer	4.00			4343.00	
Stubb	1.00			4344.00	
Change Over Sub	1.00			4345.00	
Drill Pipe	30.00			4375.00	
Change Over Sub	1.00			4376.00	
Recorder	0.00	6772	Outside	4376.00	
Recorder	0.00	8845	Outside	4376.00	
Perforations	8.00			4384.00	
Bullnose	5.00			4389.00	46.00 Bottom Packers & Anchor

Total Tool Length: 74.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

31-18s-27w Lane, KS

522 West State Road 4
Olmitz, KS 67564

Trost #1-30

Job Ticket: 56693

DST#: 3

ATTN: Vern Schrag

Test Start: 2014.02.02 @ 20:47:00

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: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2400.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	MUD 100%	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

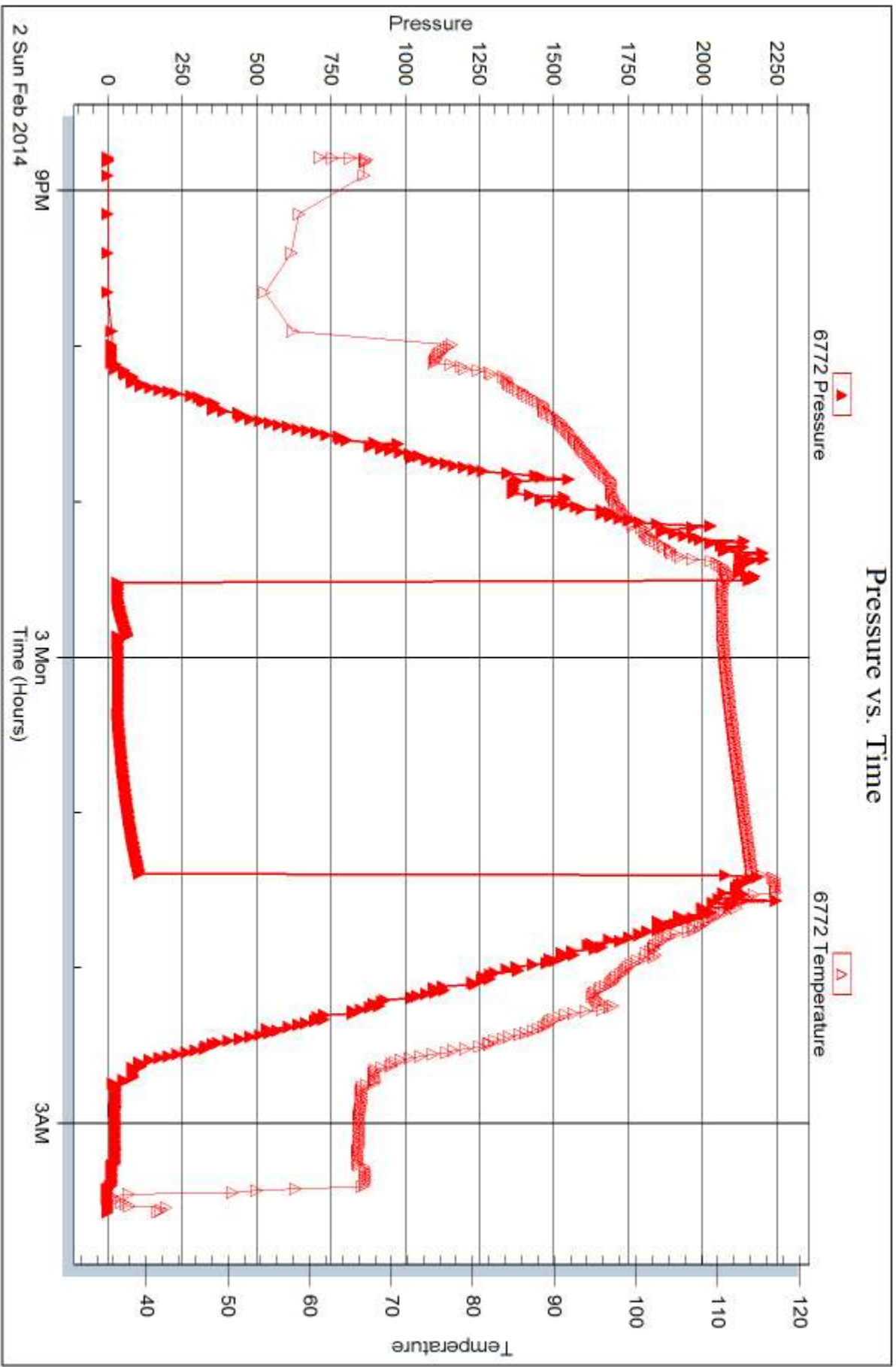
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





DRILL STEM TEST REPORT

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

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern schrag

Trost #1-30

31-18s-27w Lane,KS

Start Date: 2014.02.04 @ 00:45:00

End Date: 2014.02.04 @ 06:45:15

Job Ticket #: 56694 DST #: 4

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

Printed: 2014.02.06 @ 14:42:15



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering, Inc.
522 West State Road 4
Olmitz, KS 67564
ATTN: Vern schrag

31-18s-27w Lane,KS

Trost #1-30

Job Ticket: 56694

DST#: 4

Test Start: 2014.02.04 @ 00:45:00

GENERAL INFORMATION:

Formation: **Ft Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:20:30

Time Test Ended: 06:45:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Bob Hamel

Unit No: 71

Interval: 4415.00 ft (KB) To 4539.00 ft (KB) (TVD)

Reference Elevations: 2727.00 ft (KB)

Total Depth: 4539.00 ft (KB) (TVD)

2720.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: 8845 Outside

Press@RunDepth: 203.04 psig @ 4514.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.02.04

End Date:

2014.02.04

Last Calib.: 2014.02.04

Start Time: 00:45:05

End Time:

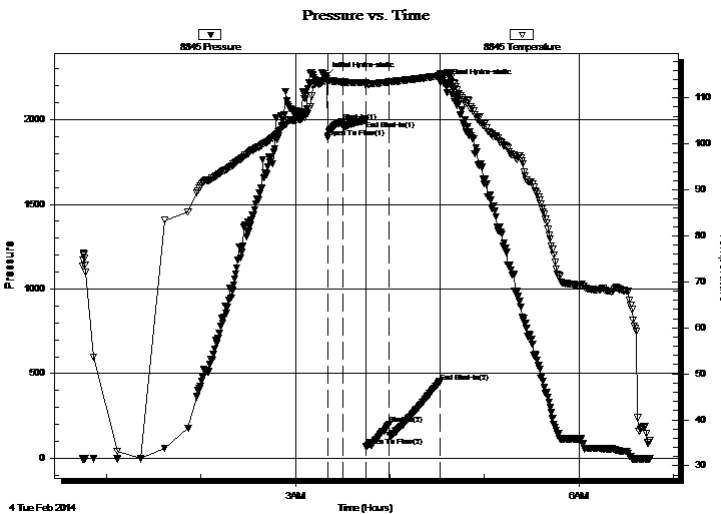
06:45:14

Time On Btm: 2014.02.04 @ 03:19:00

Time Off Btm: 2014.02.04 @ 04:34:30

TEST COMMENT: I.F. - 5 - No blow
I.S.I - 15 - No blow back
F.F. - 15 - Weak surface blow died in 2 min
F.S.I. - 30 - No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2254.86	113.71	Initial Hydro-static
2	1893.57	113.58	Open To Flow (1)
11	1988.53	113.46	Shut-In(1)
26	1995.25	113.39	End Shut-In(1)
26	69.35	112.69	Open To Flow (2)
41	203.04	113.47	Shut-In(2)
73	452.48	114.79	End Shut-In(2)
76	2214.35	115.08	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	MUD 100%	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.

31-18s-27w Lane, KS

522 West State Road 4
Olmitz, KS 67564

Trost #1-30

Job Ticket: 56694

DST#: 4

ATTN: Vern schrag

Test Start: 2014.02.04 @ 00:45:00

Tool Information

Drill Pipe:	Length: 4306.00 ft	Diameter: 3.80 inches	Volume: 60.40 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 105.00 ft	Diameter: 2.25 inches	Volume: 0.52 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 60.92 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4415.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	124.00 ft			
Tool Length:	152.00 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			4388.00	
Shut In Tool	5.00			4393.00	
Hydraulic tool	5.00			4398.00	
Jars	5.00			4403.00	
Safety Joint	3.00			4406.00	
Packer	5.00			4411.00	28.00 Bottom Of Top Packer
Packer	4.00			4415.00	
Stubb	1.00			4416.00	
Perforations	3.00			4419.00	
Change Over Sub	1.00			4420.00	
Drill Pipe	93.00			4513.00	
Change Over Sub	1.00			4514.00	
Recorder	0.00	6772	Outside	4514.00	
Recorder	0.00	8845	Outside	4514.00	
Perforations	20.00			4534.00	
Bullnose	5.00			4539.00	124.00 Bottom Packers & Anchor
Total Tool Length:	152.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

31-18s-27w Lane, KS

522 West State Road 4
Olmitz, KS 67564

Trost #1-30

Job Ticket: 56694

DST#: 4

ATTN: Vern schrag

Test Start: 2014.02.04 @ 00:45:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	MUD 100%	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

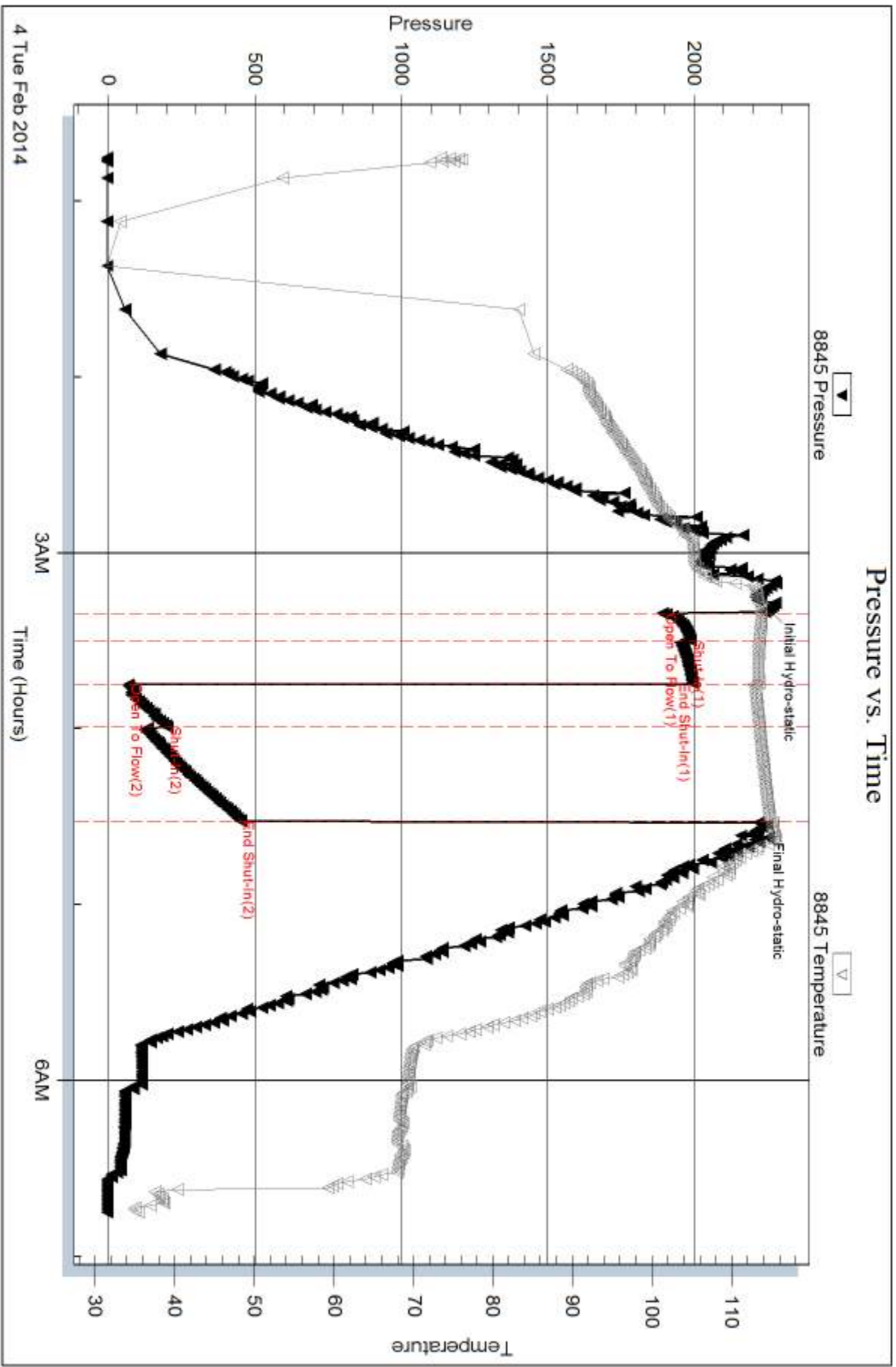
Num Gas Bombs: 0

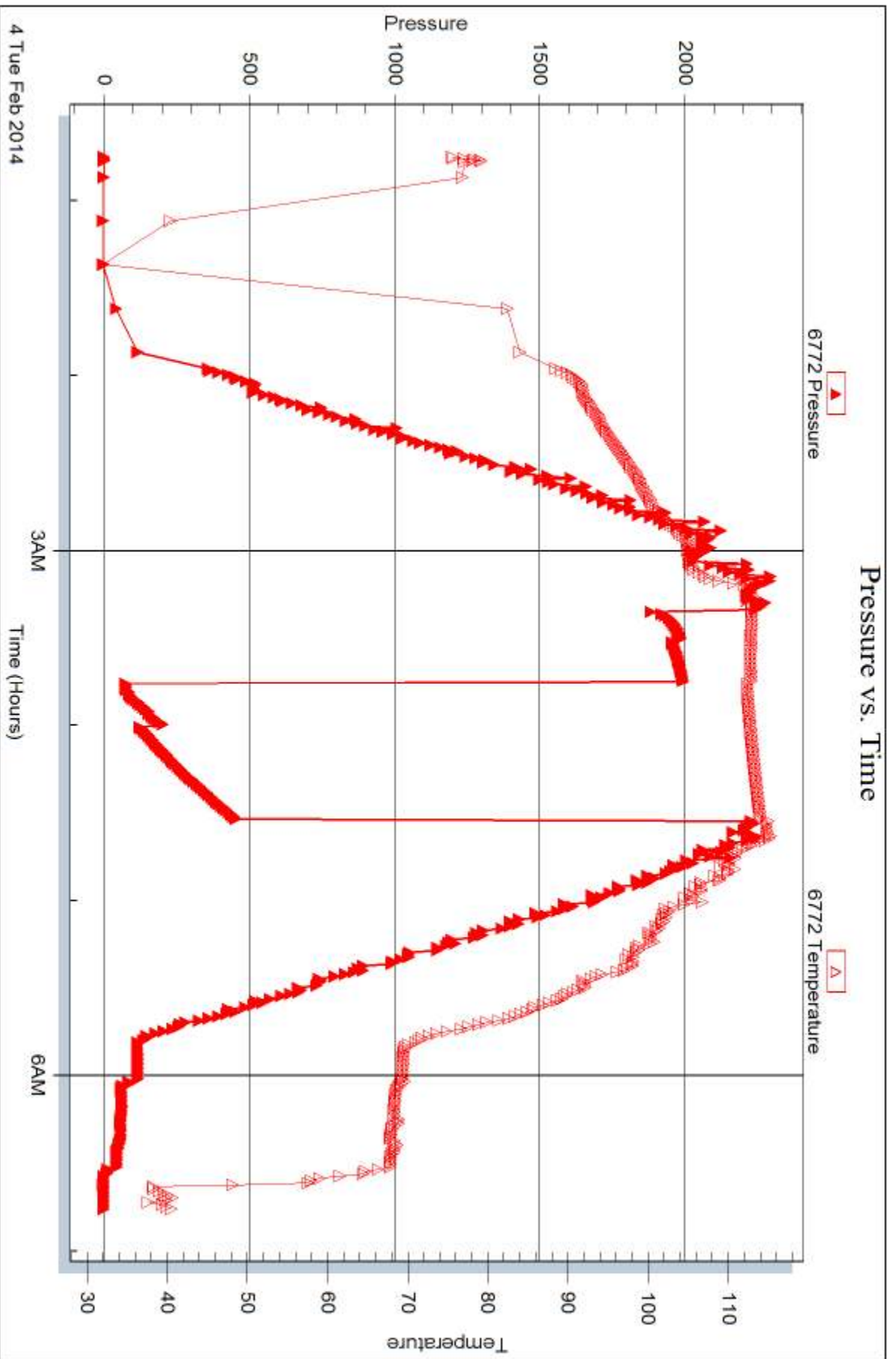
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

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

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern schrag

Trost #1-30

31-18s-27w Lane,KS

Start Date: 2014.02.04 @ 19:08:00

End Date: 2014.02.05 @ 01:29:15

Job Ticket #: 56717 DST #: 5

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

Printed: 2014.02.06 @ 14:41:35



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering, Inc.
 522 West State Road 4
 Olmitz, KS 67564
 ATTN: Vern schrag

31-18s-27w Lane, KS

Trost #1-30

Job Ticket: 56717

DST#: 5

Test Start: 2014.02.04 @ 19:08:00

GENERAL INFORMATION:

Formation: **Cherokee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 21:10:30
 Time Test Ended: 01:29:15
 Interval: **4538.00 ft (KB) To 4600.00 ft (KB) (TVD)**
 Total Depth: 4600.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Sam Esparza
 Unit No: 71
 Reference Elevations: 2727.00 ft (KB)
 2720.00 ft (CF)
 KB to GR/CF: 7.00 ft

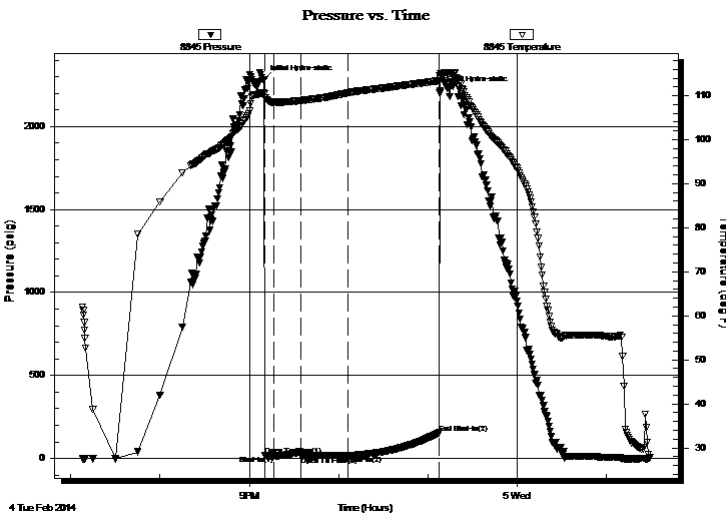
Serial #: 8845

Outside

Press@RunDepth: 16.26 psig @ 4539.00 ft (KB)
 Start Date: 2014.02.04 End Date: 2014.02.05
 Start Time: 19:08:05 End Time: 01:29:14
 Capacity: 8000.00 psig
 Last Calib.: 2014.02.05
 Time On Btm: 2014.02.04 @ 21:10:00
 Time Off Btm: 2014.02.04 @ 23:08:00

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

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2282.14	110.54	Initial Hydro-static
1	16.11	109.62	Open To Flow (1)
7	16.24	108.52	Shut-In(1)
25	40.91	108.88	End Shut-In(1)
25	15.12	108.87	Open To Flow (2)
56	16.26	110.65	Shut-In(2)
118	153.85	113.42	End Shut-In(2)
118	2214.13	113.95	Final Hydro-static

Recovery

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

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

31-18s-27w Lane, KS

522 West State Road 4
Olmitz, KS 67564

Trost #1-30

Job Ticket: 56717

DST#: 5

ATTN: Vern schrag

Test Start: 2014.02.04 @ 19:08:00

Tool Information

Drill Pipe:	Length: 4389.00 ft	Diameter: 3.80 inches	Volume: 61.57 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 146.00 ft	Diameter: 2.25 inches	Volume: 0.72 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 62.29 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial	64000.00 lb
Depth to Top Packer:	4538.00 ft			Final	64000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	62.00 ft				
Tool Length:	90.00 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			4511.00	
Shut In Tool	5.00			4516.00	
Hydraulic tool	5.00		Inside	4521.00	
Jars	5.00			4526.00	
Safety Joint	3.00			4529.00	
Packer	5.00			4534.00	28.00 Bottom Of Top Packer
Packer	4.00			4538.00	
Stubb	1.00			4539.00	
Recorder	0.00	6772	Inside	4539.00	
Recorder	0.00	8845	Outside	4539.00	
Perforations	23.00			4562.00	
Change Over Sub	1.00			4563.00	
Drill Pipe	31.00			4594.00	
Change Over Sub	1.00			4595.00	
Bullnose	5.00			4600.00	62.00 Bottom Packers & Anchor

Total Tool Length: 90.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

31-18s-27w Lane, KS

522 West State Road 4
Olmitz, KS 67564

Trost #1-30

Job Ticket: 56717

DST#: 5

ATTN: Vern schrag

Test Start: 2014.02.04 @ 19:08:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Mud 100m	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

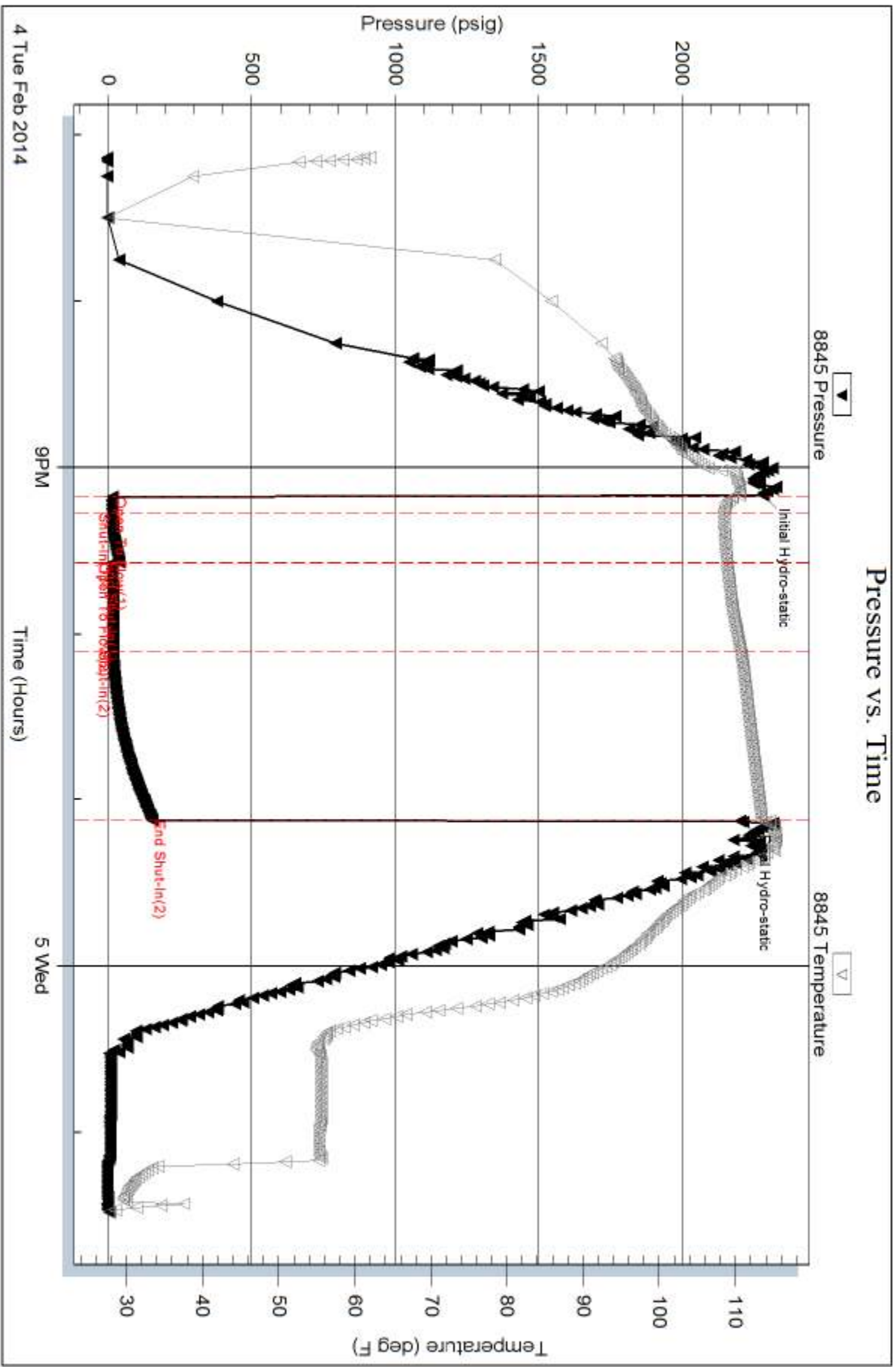
Num Gas Bombs: 0

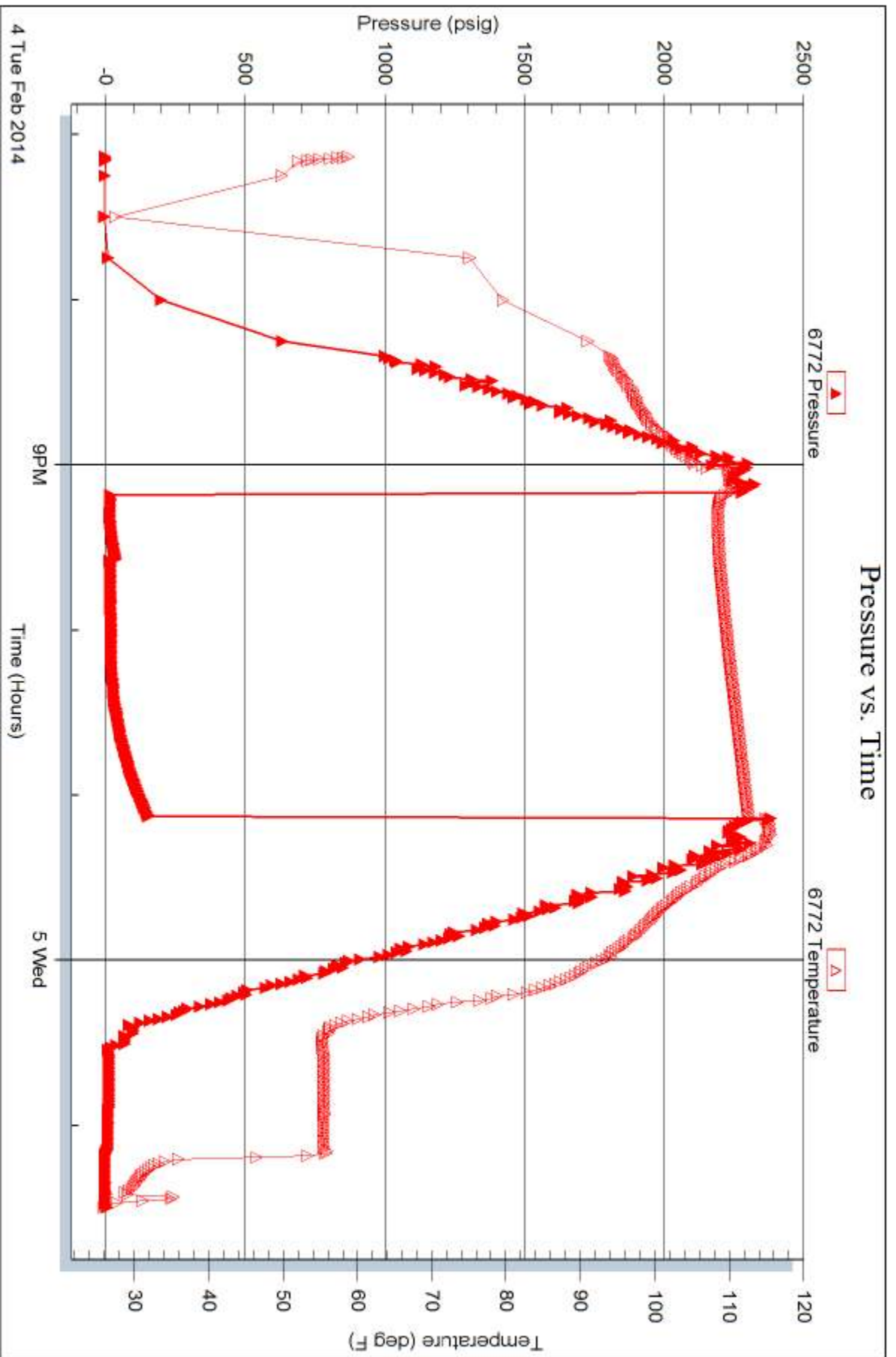
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 56691

Well Name & No. trost #1-30 Test No. 1 Date 2-1-14
 Company Larson Engineering, INC. Elevation 2727 KB 2720 GL
 Address 525 West State R.D. 4 01/1/12 K.S. 67564
 Co. Rep / Geo. Vern Schrag Rig HD Rig #3
 Location: Sec. 31 Twp. 18-S Rge. 27-W Co. Lane State KS.

Interval Tested 4260-4275 Zone Tested "K"
 Anchor Length 15' Drill Pipe Run 4150 Mud Wt. 9.1
 Top Packer Depth 4255 Drill Collars Run 105 Vis 55
 Bottom Packer Depth 4260 Wt. Pipe Run --- WL 7.2
 Total Depth 4275 Chlorides 2,100 ppm System LCM 1

Blow Description I.F.-5-1/2 INT. Blow Built to B.O.B. in 3 min.
I.S.I-15-W.S.B.B. started @ 2 min No Build
F.F-15-1/2 INT. Blow Built to B.O.B. in 3 min.
E.S.I-30-W.S.B.B. started @ 5 min Built to 3 1/2" in 30 min.

Rec	Feet of	%gas	%oil	%water	%mud
	<u>63' GIP</u>	<u>100</u>			
Rec <u>10</u>	Feet of <u>C/O</u>	%gas	<u>100</u> %oil	%water	%mud
Rec <u>126</u>	Feet of <u>S, M, C, G, O</u>	<u>20</u> %gas	<u>85</u> %oil	%water	<u>10</u> %mud
Rec <u>147</u>	Feet of <u>S, W, C, M, C, G, O</u>	<u>15</u> %gas	<u>75</u> %oil	<u>5</u> %water	<u>5</u> %mud
Rec	Feet of	%gas	%oil	%water	%mud

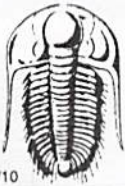
Rec Total 283' BHT 120 Gravity 27.6 API RW --- @ --- °F Chlorides --- ppm

(A) Initial Hydrostatic 2088 Test 1250 T-On Location 05:20:00
 (B) First Initial Flow 43 Jars 250 T-Started 06:20:00
 (C) First Final Flow 63 Safety Joint 75 T-Open 08:58:00
 (D) Initial Shut-In 510 Circ Sub _____ T-Pulled 10:03:00
 (E) Second Initial Flow 72 Hourly Standby _____ T-Out 12:25:00
 (F) Second Final Flow 103 Mileage 66 Mi RT 102.30 Comments _____
 (G) Final Shut-In 505 Sampler _____ thank-you
 (H) Final Hydrostatic 2084 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____

Initial Open 5
 Initial Shut-In 15
 Final Flow 15
 Final Shut-In 30
 Sub Total 1677.30

Approved By Dennis C. Schrag Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 56692

4/10

Well Name & No. Trost #1-30 Test No. 2 Date 2-1-14
 Company Larson Engineering INC. Elevation 2727 KB 2720 GL
 Address 522 West State R.D. 4 Omitz KS. 67564
 Co. Rep / Geo. Vern Gehray Rig H.Q. Rig #3
 Location: Sec. 31 Twp. 18-S. Rge. 27-W. Co. Lane State KS.

Interval Tested 4296-4314 Zone Tested L
 Anchor Length 18 Drill Pipe Run 4179 Mud Wt. 9.1
 Top Packer Depth 4291 Drill Collars Run 105' Vis 52
 Bottom Packer Depth 4296 Wt. Pipe Run --- WL 7.2
 Total Depth 4314 Chlorides 2,500 ppm System LCM 1

Blow Description I.F.-5-14 INT. Blow No Build
I.S.I.-15-W.S.B.B. No Build
E.F.-15-W.S.B. Built to 1/2 in 15 min.
E.S.I.-30-W.S.B.B. No Build

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

Rec Total 5 BHT 109 Gravity --- API RW --- @ --- °F Chlorides --- ppm

(A) Initial Hydrostatic 2,110 Test 1250 T-On Location 23:18:00
 (B) First Initial Flow 14 Jars 250 T-Started 23:30:00
 (C) First Final Flow 16 Safety Joint 75 T-Open 02:20:00
 (D) Initial Shut-In 405 Circ Sub _____ T-Pulled 03:25:00
 (E) Second Initial Flow 17 Hourly Standby _____ T-Out 05:30:00
 (F) Second Final Flow 22 Mileage 66/R.t. 102.30 Comments _____
 (G) Final Shut-In 400 Sampler _____ Thank-you
 (H) Final Hydrostatic 2,082 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____

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

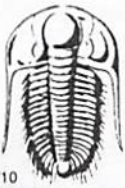
Extra Recorder _____
 Day Standby _____
 Accessibility _____

Sub Total 1677.30

Sub Total 1677.30

Approved By _____ Our Representative Bel Han

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **56693**

4/10

Well Name & No. Frost #1-30 Test No. 3 Date 2-2-14
 Company harson Engineering INC. Elevation 2727 KB 2720 GL
 Address 522 West State RD. 4 1/2 mi. W KS 67564
 Co. Rep / Geo. Vern Schrag Rig H.D. Rig #3
 Location: Sec. 31 Twp. 18-S Rge. 27-W Co. Lane State KS

Interval Tested 4343-4389 Zone Tested Pleasanton
 Anchor Length 46 Drill Pipe Run 4216 Mud Wt. 9.1
 Top Packer Depth 4338 Drill Collars Run 105 Vis 52
 Bottom Packer Depth 4343 Wt. Pipe Run _____ WL 6.8
 Total Depth 4389 Chlorides 2,400 ppm System LCM 1.0

Blow Description I.F.-5- 1/4 INT. Blow Built to (3/4 in 5 Min.)
I.S.T.-15-W.S.B.B. No Build
E.F.-30-W.S.B. No Build
F.S.I.-60-W.S.B.B. No Build

Rec	Feet of	%gas	%oil	%water	%mud
<u>3</u>				<u>100</u>	

Rec Total 3 BHT 116 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2,124</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>20:45:00</u>
(B) First Initial Flow <u>32</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>20:47:00</u>
(C) First Final Flow <u>32</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>23:31:00</u>
(D) Initial Shut-In <u>66</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>01:21:00</u>
(E) Second Initial Flow <u>32</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>03:34:00</u>
(F) Second Final Flow <u>32</u>	<input checked="" type="checkbox"/> Mileage <u>66/R.F.</u> 102.30	Comments _____
(G) Final Shut-In <u>108</u>	<input type="checkbox"/> Sampler _____	<u>Thank-you</u>
(H) Final Hydrostatic <u>2,114</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Packer _____

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

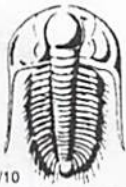
Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Sub Total 1677.30

Total 1677.30
 MP/DST Disc't _____

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 56694

Well Name & No. Trust # 1-30 Test No. 4 Date 2-4-14
 Company Harson Engineering INC. Elevation 2727 KB 2720 GL
 Address 522 West State RD. 40/mitz Ks. 67564
 Co. Rep / Geo. Vern Schrag Rig H.D. Rig #3
 Location: Sec. 31 Twp. 18-S Rge. 27-W Co. lane State Ks.

Interval Tested 4415-4539 Zone Tested Ft. Scott
 Anchor Length 124 Drill Pipe Run 4306 Mud Wt. 9.0
 Top Packer Depth 4410 Drill Collars Run 105 Vis 57
 Bottom Packer Depth 4415 Wt. Pipe Run WL 6.8
 Total Depth 4539 Chlorides 2,500 ppm System LCM 1.5

Blow Description I.F.-5- No Blow
I.S.I-15- No B.B.
F.F-15- w.s.B. Died in 2 Min.
F.S.I-30- No B.B.

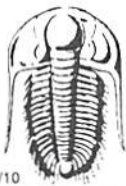
Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>					<u>100</u>

Rec Total 5 BHT 115 Gravity API RW @ °F Chlorides ppm

(A) Initial Hydrostatic <u>2,255</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>00:15:00</u>
(B) First Initial Flow <u>1,894 ?</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>00:45:00</u>
(C) First Final Flow <u>1,989 ?</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>03:25:00</u>
(D) Initial Shut-In <u>1,995 ?</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>04:30:00</u>
(E) Second Initial Flow <u>69</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>06:45:00</u>
(F) Second Final Flow <u>203</u>	<input checked="" type="checkbox"/> Mileage <u>66 R.T.</u> 102.30	Comments <u> </u>
(G) Final Shut-In <u>452</u>	<input type="checkbox"/> Sampler	<u>thank-you</u>
(H) Final Hydrostatic <u>2,214</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>5</u>	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<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>1727.30</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't <u> </u>
	Sub Total <u>1727.30</u>	

Approved By _____ Our Representative Bul [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 56717

Well Name & No. Trost # 1-30 Test No. 5 Date 2/4/14
 Company Larson Engineering, Inc. Elevation 2727 KB 2700 GL
 Address 522 West State Road 4 Omitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD # 3
 Location: Sec. 31 Twp. 18S Rge. 27W Co. Lane State KS

Interval Tested 4538-4600 Zone Tested Cherokee
 Anchor Length 62' Drill Pipe Run 4389 Mud Wt. 9.2
 Top Packer Depth 4534 Drill Collars Run 146 Vis 54
 Bottom Packer Depth 4538 Wt. Pipe Run 0 WL 7.2
 Total Depth 4600 Chlorides 2800 ppm System LCM 2

Blow Description FF: 4" Blow.
ISI: No Return.
FF: Weak surface Blow.
FSB: No Return.

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

Rec Total 10 BHT 113 Gravity _____ API RW _____ @ _____ F Chlorides _____ ppm

(A) Initial Hydrostatic	<u>2282</u>	<input checked="" type="checkbox"/> Test	<u>1250</u>	T-On Location	<u>6:20</u> <u>18:20</u>
(B) First Initial Flow	<u>16</u>	<input checked="" type="checkbox"/> Jars	<u>250</u>	T-Started	<u>7:08</u> <u>19:08</u>
(C) First Final Flow	<u>16</u>	<input checked="" type="checkbox"/> Safety Joint	<u>75</u>	T-Open	<u>9:21:11</u>
(D) Initial Shut-In	<u>41</u>	<input checked="" type="checkbox"/> Circ Sub	<u>N/C</u>	T-Pulled	<u>23:08</u>
(E) Second Initial Flow	<u>15</u>	<input type="checkbox"/> Hourly Standby		T-Out	<u>1:30</u>
(F) Second Final Flow	<u>16</u>	<input checked="" type="checkbox"/> Mileage	<u>66 R/T</u> <u>102.30</u>	Comments	<u>loaded tools</u>
(G) Final Shut-In	<u>154</u>	<input type="checkbox"/> Sampler			
(H) Final Hydrostatic	<u>2214</u>	<input type="checkbox"/> Straddle			

Initial Open 5 Ruined Shale Packer
 Initial Shut-In 15 Ruined Packer 320
 Final Flow 30 Extra Packer
 Final Shut-In 60 Extra Recorder
 Extra Copies
 Sub Total 0
 Total 1997.30
 MP/DST Disc't _____

Approved By [Signature] Our Representative [Signature]

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