



DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc**

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

EM Stanley Unit 1-20

20 18s 27w Lane,KS

Start Date: 2014.07.31 @ 22:30:00

End Date: 2014.08.01 @ 03:13:15

Job Ticket #: 59137 DST #: 1

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

Printed: 2014.08.06 @ 11:46:56



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering, Inc

20 18s 27w Lane, KS

562 W St Rd 4
Olmitz, KS 67564

EM Stanley Unit 1-20

Job Ticket: 59137

DST#: 1

ATTN: Vern Schrag

Test Start: 2014.07.31 @ 22:30:00

GENERAL INFORMATION:

Formation: **LKC - K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:26:30

Time Test Ended: 03:13:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Bradley Walter

Unit No: 69

Interval: 4242.00 ft (KB) To 4256.00 ft (KB) (TVD)

Reference Elevations: 2694.00 ft (KB)

Total Depth: 4256.00 ft (KB) (TVD)

2688.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 6.00 ft

Serial #: 8522 Outside

Press@RunDepth: 23.41 psig @ 4243.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.07.31

End Date:

2014.08.01

Last Calib.: 2014.08.01

Start Time: 22:30:05

End Time:

03:13:14

Time On Btm: 2014.08.01 @ 00:26:15

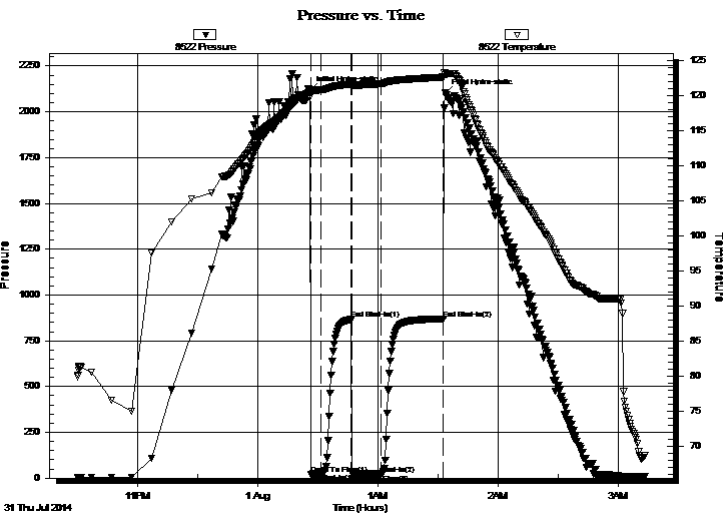
Time Off Btm: 2014.08.01 @ 01:33:45

TEST COMMENT: IF: Surface blow, died @ 15 min.

IS: No return.

FF: No blow.

FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2113.74	120.85	Initial Hydro-static
1	21.81	119.98	Open To Flow (1)
6	23.81	120.83	Shut-In(1)
21	866.38	121.63	End Shut-In(1)
21	23.16	121.38	Open To Flow (2)
36	23.41	121.73	Shut-In(2)
67	869.95	122.66	End Shut-In(2)
68	2102.06	123.05	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
3.00	Mud 100m	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc

20 18s 27w Lane, KS

562 W St Rd 4
Olmitz, KS 67564

EM Stanley Unit 1-20

Job Ticket: 59137

DST#: 1

ATTN: Vern Schrag

Test Start: 2014.07.31 @ 22:30:00

Tool Information

Drill Pipe:	Length: 4113.00 ft	Diameter: 3.80 inches	Volume: 57.69 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:	25000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 58.30 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial	58000.00 lb
Depth to Top Packer:	4242.00 ft			Final	58000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	14.00 ft				
Tool Length:	41.00 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			4216.00	
Shut In Tool	5.00			4221.00	
Hydraulic tool	5.00			4226.00	
Jars	5.00			4231.00	
Safety Joint	2.00			4233.00	
Packer	5.00			4238.00	27.00 Bottom Of Top Packer
Packer	4.00			4242.00	
Stubb	1.00			4243.00	
Recorder	0.00	8365	Inside	4243.00	
Recorder	0.00	8522	Outside	4243.00	
Perforations	10.00			4253.00	
Bullnose	3.00			4256.00	14.00 Bottom Packers & Anchor

Total Tool Length: 41.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc

20 18s 27w Lane, KS

562 W St Rd 4
Olmitz, KS 67564

EM Stanley Unit 1-20

Job Ticket: 59137

DST#: 1

ATTN: Vern Schrag

Test Start: 2014.07.31 @ 22:30:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 57.00 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
3.00	Mud 100m	0.015

Total Length: 3.00 ft Total Volume: 0.015 bbl

Num Fluid Samples: 0

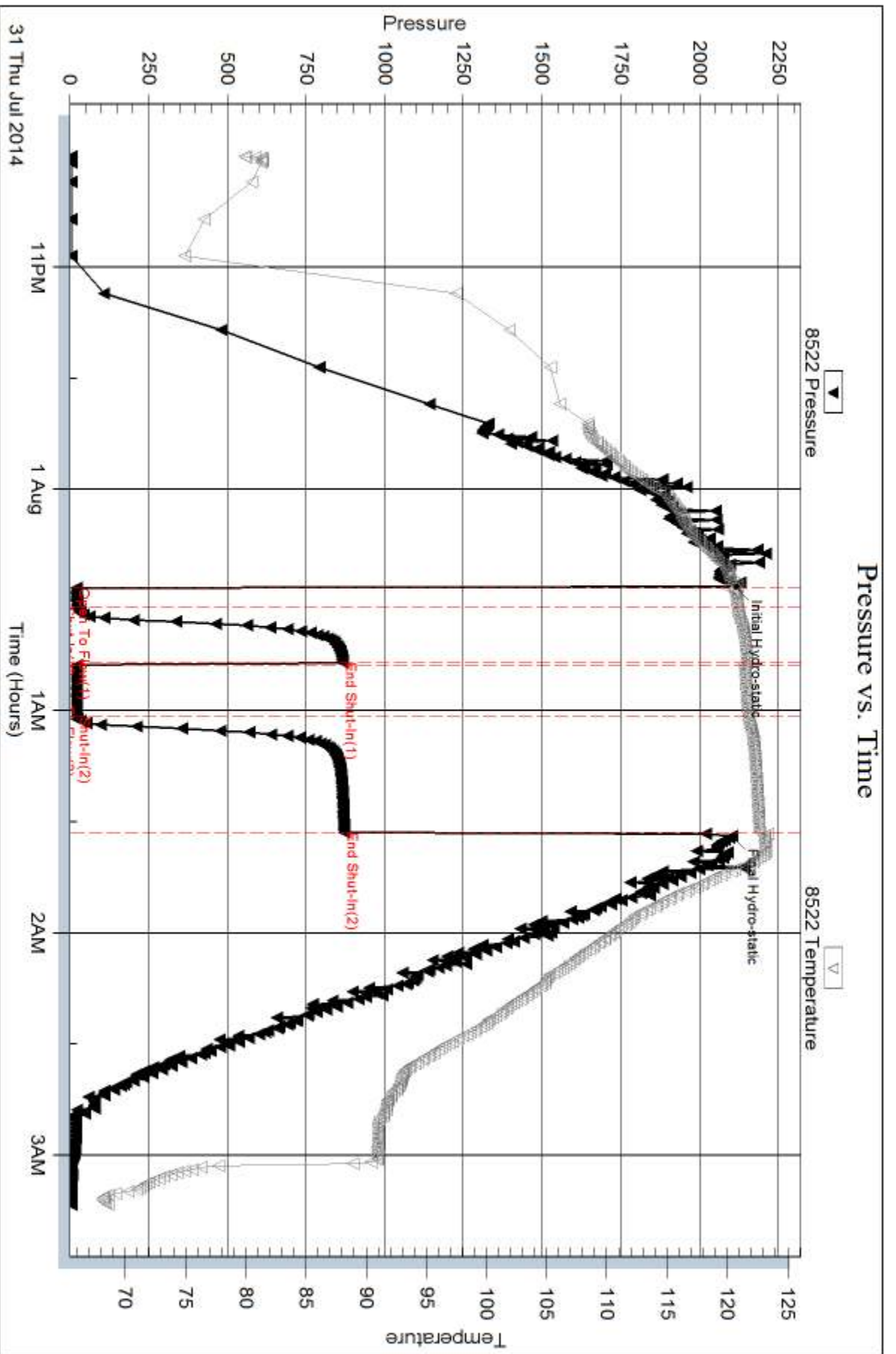
Num Gas Bombs: 0

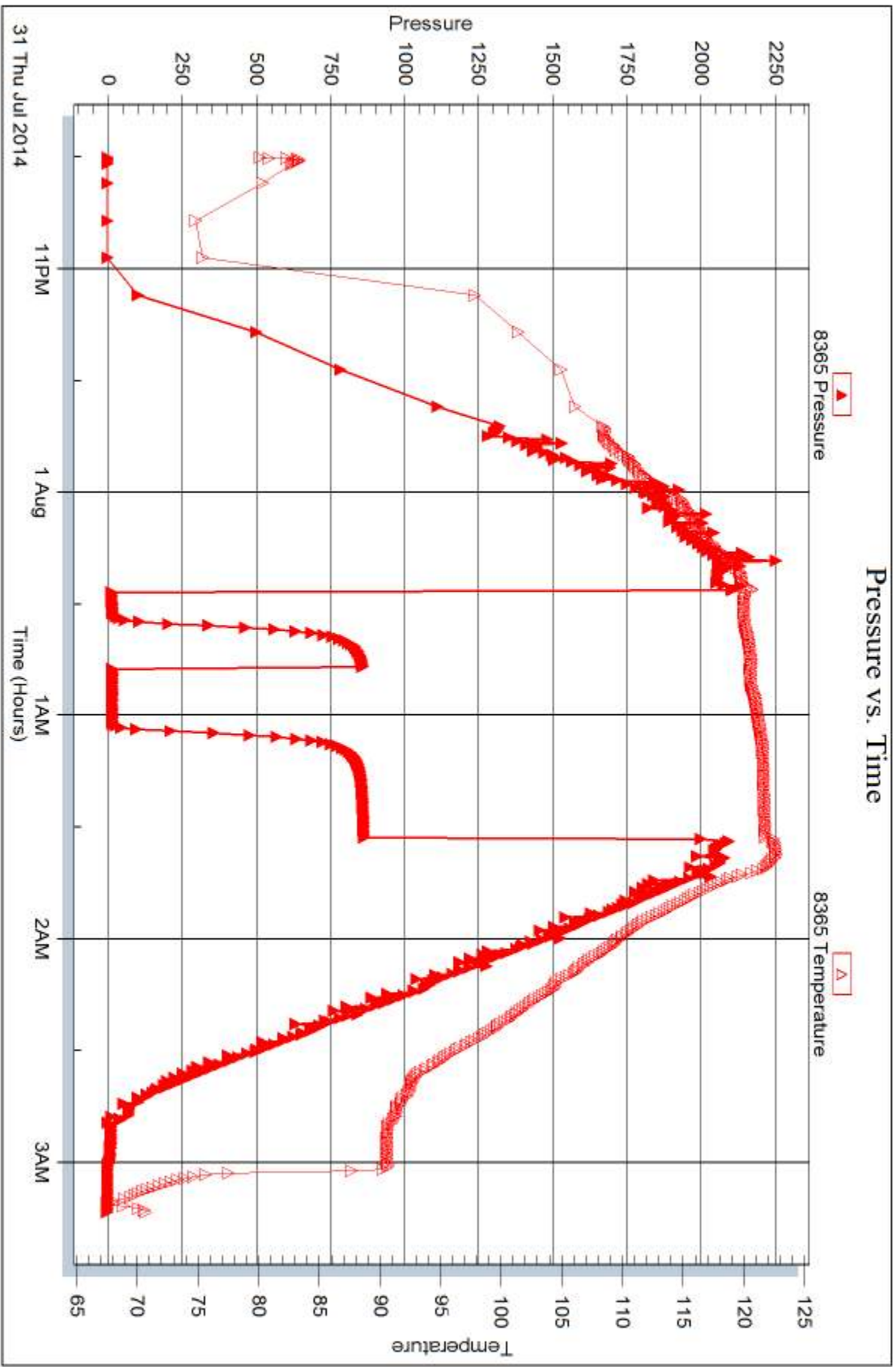
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc**

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

EM Stanley Unit 1-20

20 18s 27w Lane,KS

Start Date: 2014.08.01 @ 16:57:00

End Date: 2014.08.01 @ 21:35:45

Job Ticket #: 59138 DST #: 2

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

Printed: 2014.08.06 @ 11:46:36



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering, Inc

20 18s 27w Lane, KS

562 W St Rd 4
Olmitz, KS 67564

EM Stanley Unit 1-20

ATTN: Vern Schrag

Job Ticket: 59138

DST#: 2

Test Start: 2014.08.01 @ 16:57:00

GENERAL INFORMATION:

Formation: **LKC -L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:47:30

Time Test Ended: 21:35:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Bradley Walter

Unit No: 69

Interval: 4278.00 ft (KB) To 4298.00 ft (KB) (TVD)

Reference Elevations: 2694.00 ft (KB)

Total Depth: 4298.00 ft (KB) (TVD)

2688.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 6.00 ft

Serial #: 8365

Inside

Press@RunDepth: 17.26 psig @ 4279.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.01

End Date:

2014.08.01

Last Calib.:

2014.08.01

Start Time: 16:57:05

End Time:

21:35:44

Time On Btm:

2014.08.01 @ 18:47:15

Time Off Btm:

2014.08.01 @ 19:56:15

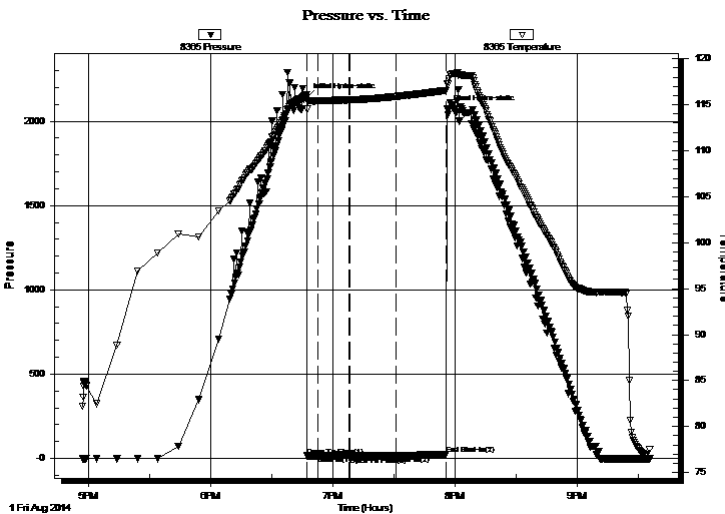
TEST COMMENT: IF: Surface blow , died @ 4 min.

IS: No return.

FF: No blow .

FS: No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2142.14	116.10	Initial Hydro-static
1	14.64	114.52	Open To Flow (1)
6	15.77	115.42	Shut-In(1)
21	23.73	115.53	End Shut-In(1)
21	14.37	115.53	Open To Flow (2)
44	17.26	115.90	Shut-In(2)
69	23.87	116.56	End Shut-In(2)
69	2072.10	117.28	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	Mud 100m	0.01

* 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

20 18s 27w Lane, KS

562 W St Rd 4
Olmitz, KS 67564

EM Stanley Unit 1-20

Job Ticket: 59138

DST#: 2

ATTN: Vern Schrag

Test Start: 2014.08.01 @ 16:57:00

Tool Information

Drill Pipe:	Length: 4145.00 ft	Diameter: 3.80 inches	Volume: 58.14 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: 25000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 72000.00 lb
			<u>Total Volume: 58.75 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 59000.00 lb
Depth to Top Packer:	4278.00 ft			Final 59000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	20.00 ft			
Tool Length:	47.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4252.00	
Shut In Tool	5.00			4257.00	
Hydraulic tool	5.00			4262.00	
Jars	5.00			4267.00	
Safety Joint	2.00			4269.00	
Packer	5.00			4274.00	27.00 Bottom Of Top Packer
Packer	4.00			4278.00	
Stubb	1.00			4279.00	
Recorder	0.00	8365	Inside	4279.00	
Recorder	0.00	8522	Outside	4279.00	
Perforations	16.00			4295.00	
Bullnose	3.00			4298.00	20.00 Bottom Packers & Anchor

Total Tool Length: 47.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc

20 18s 27w Lane, KS

562 W St Rd 4
Olmitz, KS 67564

EM Stanley Unit 1-20

Job Ticket: 59138

DST#: 2

ATTN: Vern Schrag

Test Start: 2014.08.01 @ 16:57:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.38 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3300.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	Mud 100m	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

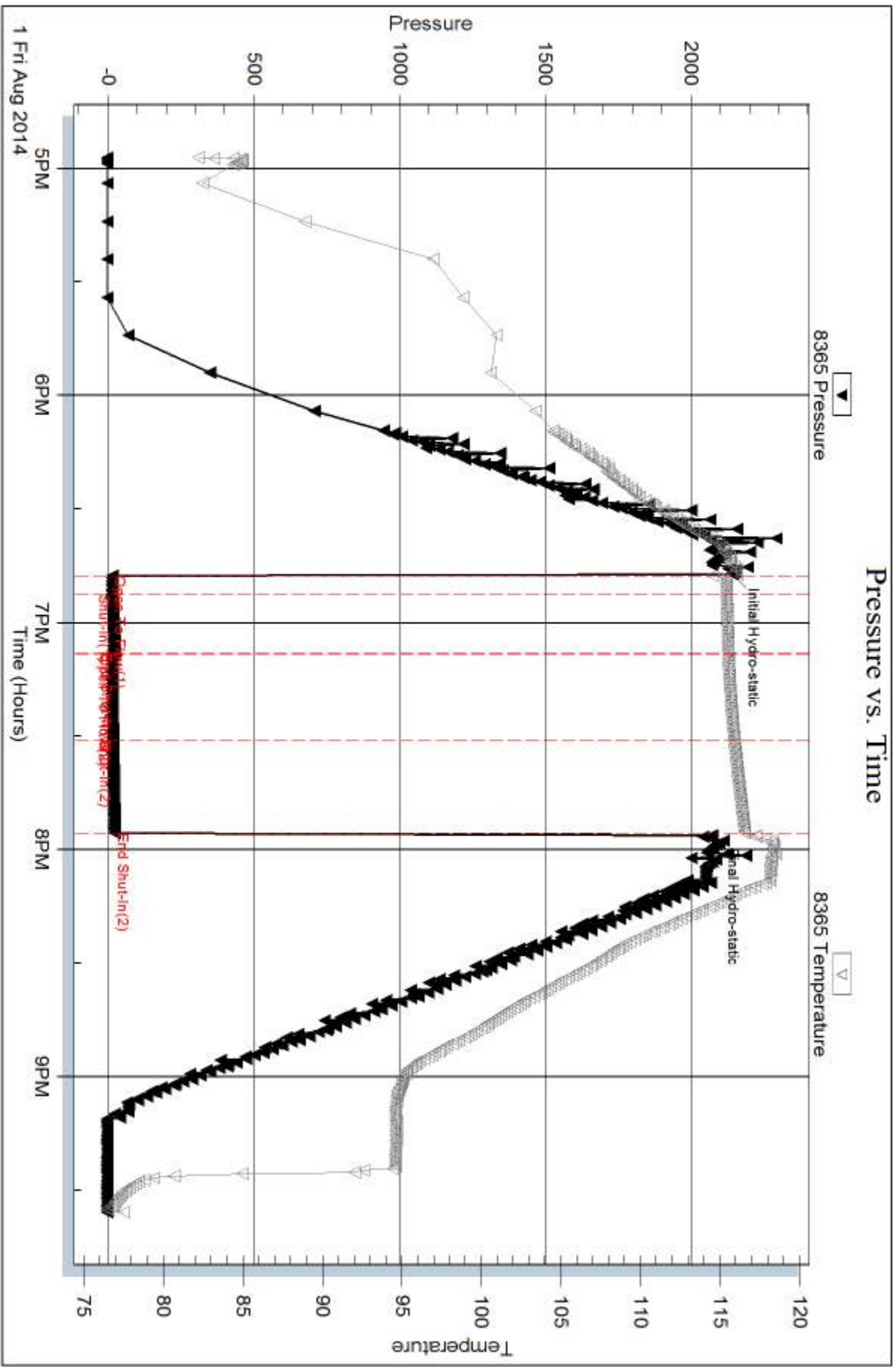
Num Gas Bombs: 0

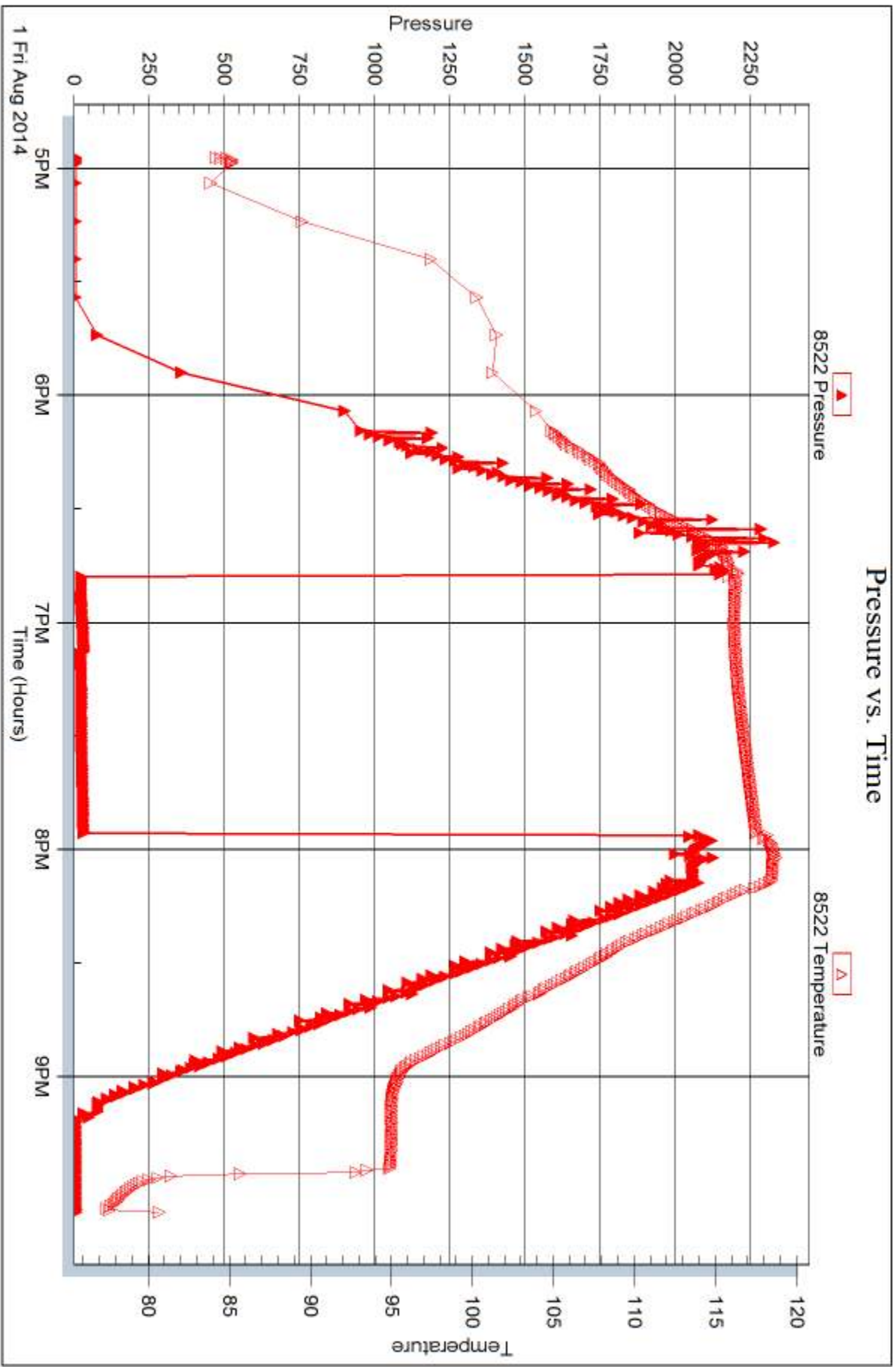
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc**

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

EM Stanley Unit 1-20

20 18s 27w Lane,KS

Start Date: 2014.08.02 @ 12:31:00

End Date: 2014.08.02 @ 17:29:15

Job Ticket #: 59139 DST #: 3

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

Printed: 2014.08.06 @ 11:46:15



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering, Inc

20 18s 27w Lane, KS

562 W St Rd 4
Olmitz, KS 67564

EM Stanley Unit 1-20

ATTN: Vern Schrag

Job Ticket: 59139

DST#: 3

Test Start: 2014.08.02 @ 12:31:00

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:34:45

Time Test Ended: 17:29:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Bradley Walter

Unit No: 69

Interval: 4324.00 ft (KB) To 4420.00 ft (KB) (TVD)

Reference Elevations: 2694.00 ft (KB)

Total Depth: 4420.00 ft (KB) (TVD)

2688.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 6.00 ft

Serial #: 8365 Inside

Press@RunDepth: 21.28 psig @ 4325.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.02

End Date: 2014.08.02

Last Calib.: 2014.08.02

Start Time: 12:31:05

End Time: 17:29:14

Time On Btm: 2014.08.02 @ 14:34:30

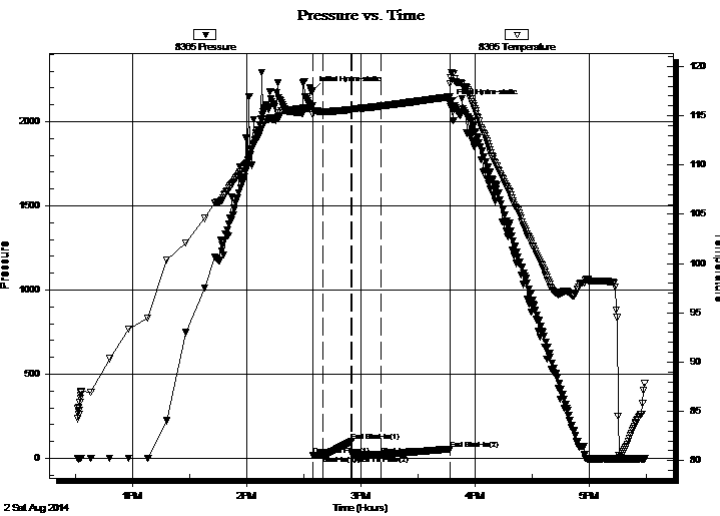
Time Off Btm: 2014.08.02 @ 15:47:00

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	2184.50	116.01	Initial Hydro-static
1	17.00	115.14	Open To Flow (1)
6	18.83	115.42	Shut-In(1)
21	101.18	115.62	End Shut-In(1)
21	20.26	115.62	Open To Flow (2)
37	21.28	115.98	Shut-In(2)
73	55.87	116.93	End Shut-In(2)
73	2108.82	118.27	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud 100m (oil spots)	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

20 18s 27w Lane, KS

562 W St Rd 4
Olmitz, KS 67564

EM Stanley Unit 1-20

Job Ticket: 59139

DST#: 3

ATTN: Vern Schrag

Test Start: 2014.08.02 @ 12:31:00

Tool Information

Drill Pipe:	Length: 4205.00 ft	Diameter: 3.80 inches	Volume: 58.99 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:	25000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 59.60 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial	59000.00 lb
Depth to Top Packer:	4324.00 ft			Final	59000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	96.00 ft				
Tool Length:	123.00 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			4298.00	
Shut In Tool	5.00			4303.00	
Hydraulic tool	5.00			4308.00	
Jars	5.00			4313.00	
Safety Joint	2.00			4315.00	
Packer	5.00			4320.00	27.00 Bottom Of Top Packer
Packer	4.00			4324.00	
Stubb	1.00			4325.00	
Recorder	0.00	8365	Inside	4325.00	
Recorder	0.00	8522	Outside	4325.00	
Perforations	28.00			4353.00	
Change Over Sub	1.00			4354.00	
Drill Pipe	62.00			4416.00	
Change Over Sub	1.00			4417.00	
Bullnose	3.00			4420.00	96.00 Bottom Packers & Anchor

Total Tool Length: 123.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc

20 18s 27w Lane, KS

562 W St Rd 4
Olmitz, KS 67564

EM Stanley Unit 1-20

Job Ticket: 59139

DST#: 3

ATTN: Vern Schrag

Test Start: 2014.08.02 @ 12:31:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 63.00 sec/qt

Cushion Volume:

bbl

Water Loss: 8.79 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Mud 100m (oil spots)	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

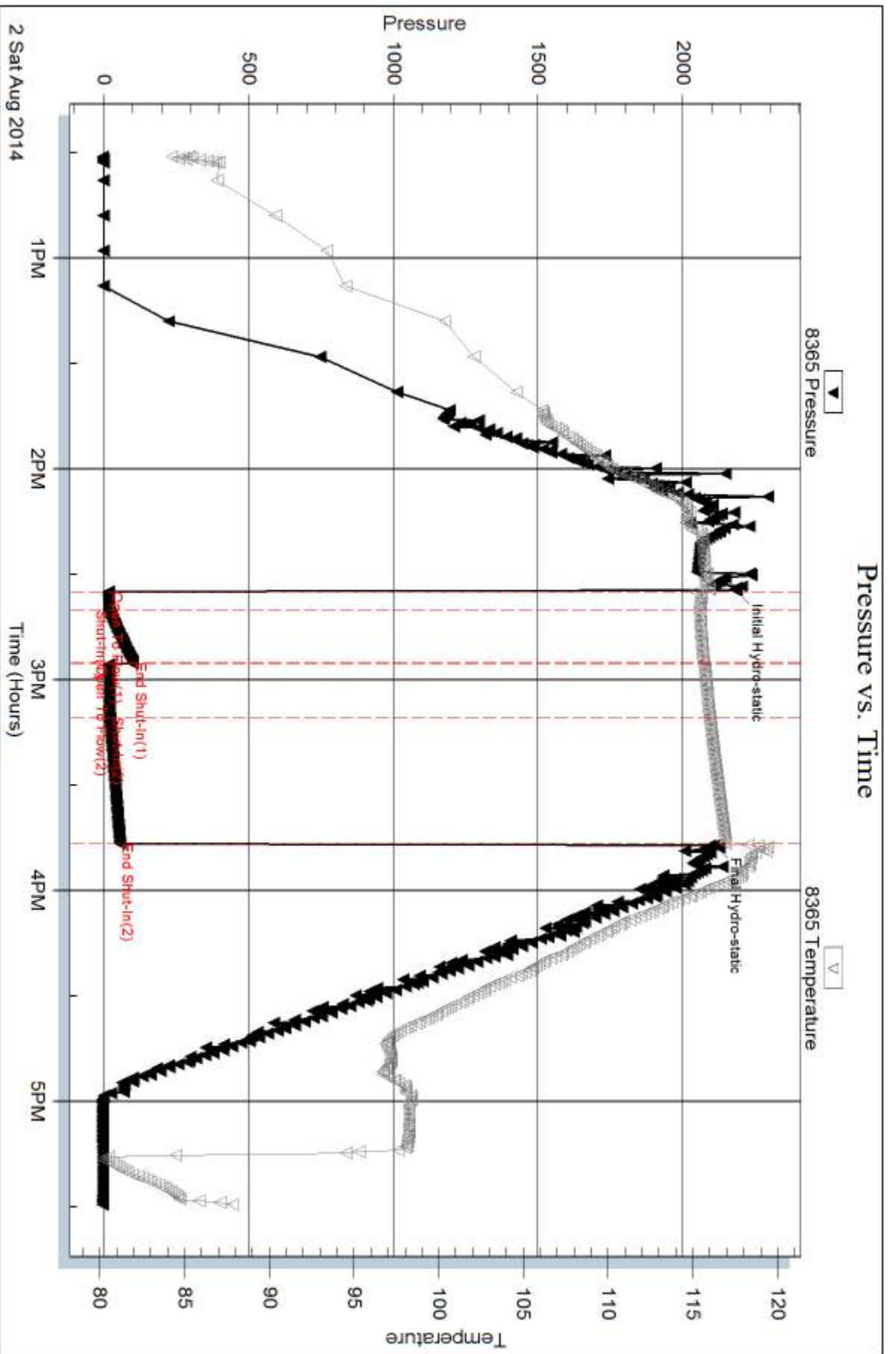
Num Gas Bombs: 0

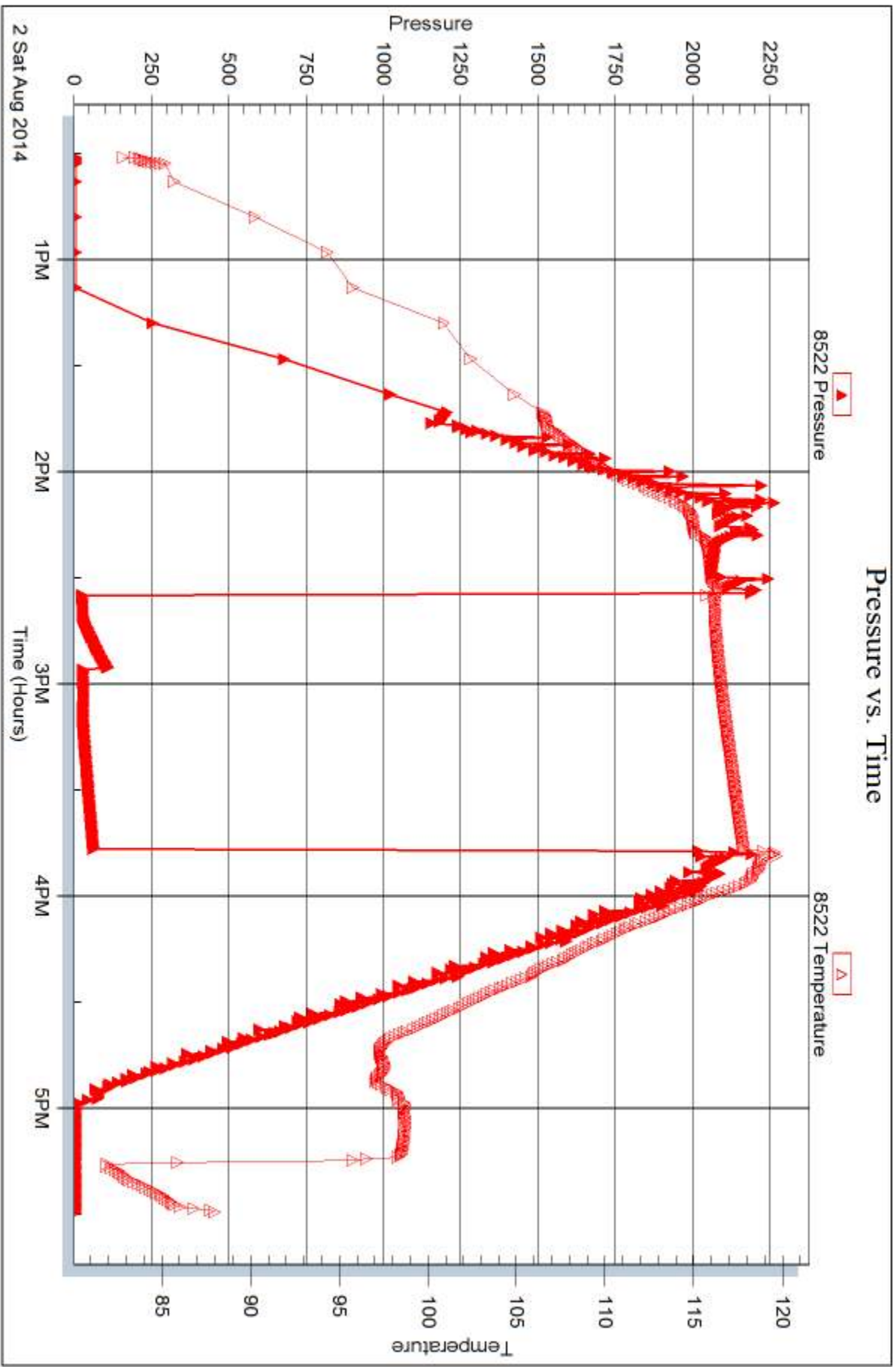
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc**

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

EM Stanley Unit 1-20

20 18s 27w Lane,KS

Start Date: 2014.08.03 @ 11:38:00

End Date: 2014.08.03 @ 16:20:53

Job Ticket #: 59140 DST #: 4

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

Printed: 2014.08.06 @ 11:45:53



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

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

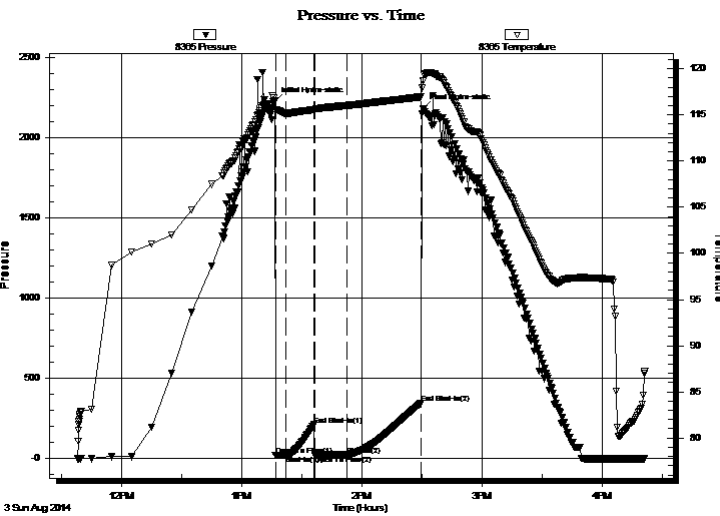
20 18s 27w Lane, KS
EM Stanley Unit 1-20
Job Ticket: 59140 **DST#: 4**
Test Start: 2014.08.03 @ 11:38:00

GENERAL INFORMATION:

Formation: **Cherokee**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 13:16:45
Time Test Ended: 16:20:53
Interval: **4432.00 ft (KB) To 4575.00 ft (KB) (TVD)**
Total Depth: 4575.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Reset)
Tester: Bradley Walter
Unit No: 69
Reference Elevations: 2694.00 ft (KB)
2688.00 ft (CF)
KB to GR/CF: 6.00 ft

Serial #: 8365 Inside
Press@RunDepth: 21.95 psig @ 4433.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.08.03 End Date: 2014.08.03 Last Calib.: 2014.08.03
Start Time: 11:38:05 End Time: 16:20:52 Time On Btm: 2014.08.03 @ 13:16:15
Time Off Btm: 2014.08.03 @ 14:30:15

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	2223.80	116.55	Initial Hydro-static
1	18.97	115.57	Open To Flow (1)
6	20.40	115.14	Shut-In(1)
20	210.02	115.58	End Shut-In(1)
20	20.61	115.54	Open To Flow (2)
36	21.95	116.00	Shut-In(2)
73	345.46	116.95	End Shut-In(2)
74	2179.74	118.68	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	Mud 100m (oil specs)	0.07

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc

20 18s 27w Lane, KS

562 W St Rd 4
Olmitz, KS 67564

EM Stanley Unit 1-20

Job Ticket: 59140

DST#: 4

ATTN: Vern Schrag

Test Start: 2014.08.03 @ 11:38:00

Tool Information

Drill Pipe:	Length: 4300.00 ft	Diameter: 3.80 inches	Volume: 60.32 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:	25000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	74000.00 lb
			<u>Total Volume: 60.93 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial	60000.00 lb
Depth to Top Packer:	4432.00 ft			Final	60000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	143.00 ft				
Tool Length:	170.00 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			4406.00	
Shut In Tool	5.00			4411.00	
Hydraulic tool	5.00			4416.00	
Jars	5.00			4421.00	
Safety Joint	2.00			4423.00	
Packer	5.00			4428.00	27.00 Bottom Of Top Packer
Packer	4.00			4432.00	
Stubb	1.00			4433.00	
Recorder	0.00	8365	Inside	4433.00	
Recorder	0.00	8522	Outside	4433.00	
Perforations	12.00			4445.00	
Change Over Sub	1.00			4446.00	
Drill Pipe	125.00			4571.00	
Change Over Sub	1.00			4572.00	
Bullnose	3.00			4575.00	143.00 Bottom Packers & Anchor

Total Tool Length: 170.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc

20 18s 27w Lane, KS

562 W St Rd 4
Olmitz, KS 67564

EM Stanley Unit 1-20

Job Ticket: 59140

DST#: 4

ATTN: Vern Schrag

Test Start: 2014.08.03 @ 11:38:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.39 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
15.00	Mud 100m (oil specs)	0.074

Total Length: 15.00 ft Total Volume: 0.074 bbl

Num Fluid Samples: 0

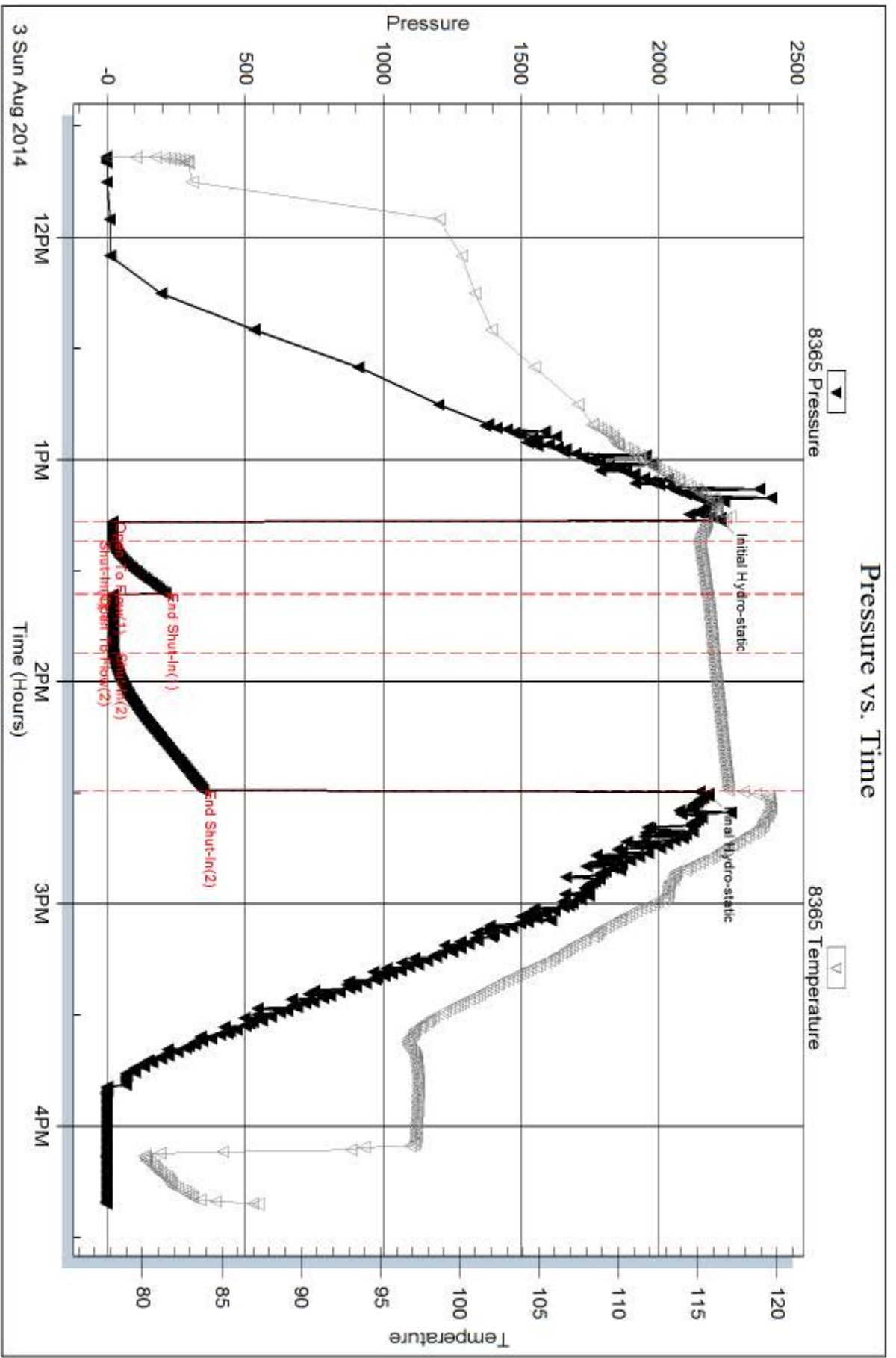
Num Gas Bombs: 0

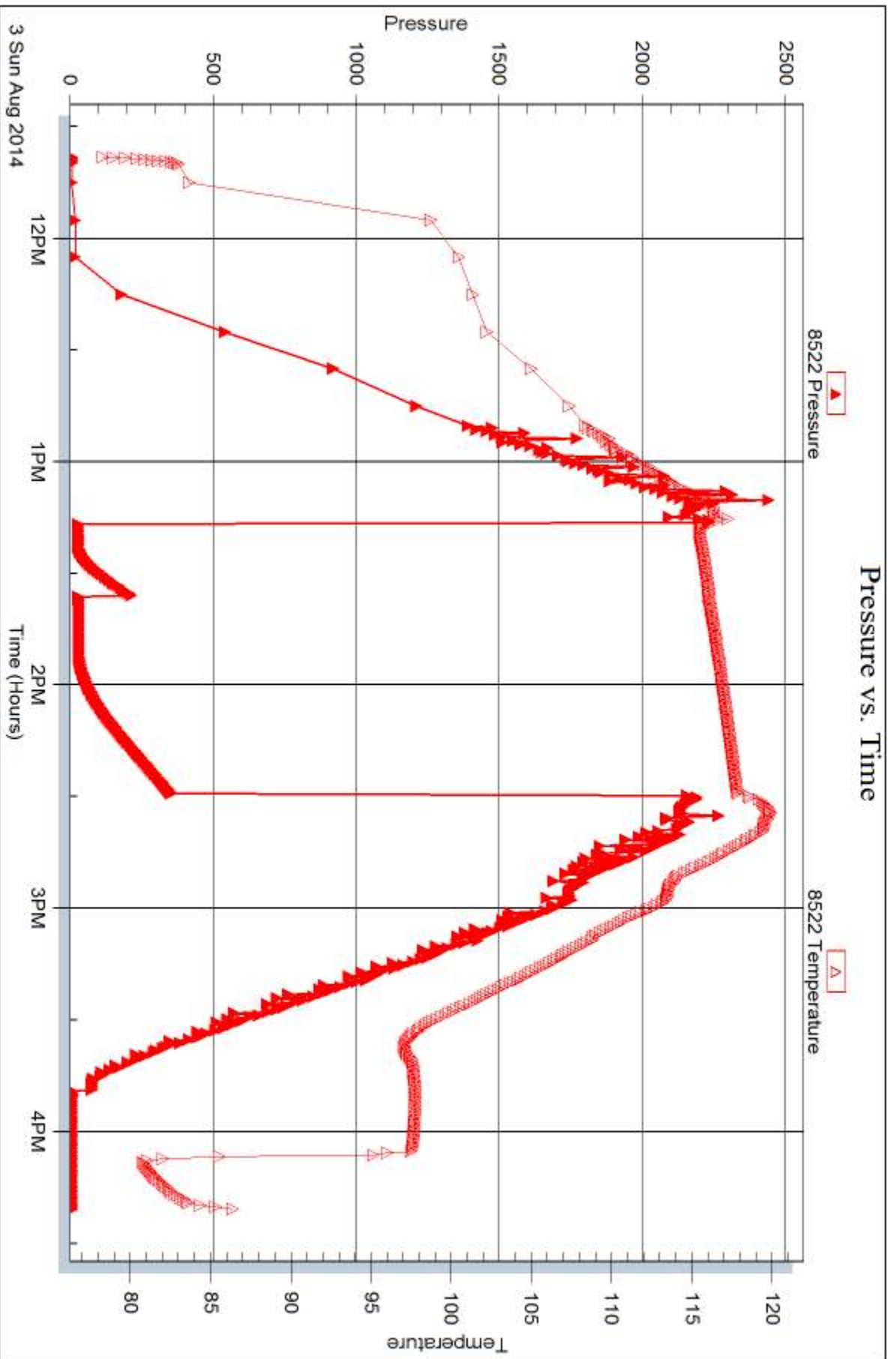
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc**

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

EM Stanley Unit 1-20

20 18s 27w Lane,KS

Start Date: 2014.08.04 @ 00:20:00

End Date: 2014.08.04 @ 05:22:45

Job Ticket #: 59141 DST #: 5

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

Printed: 2014.08.06 @ 11:45:25



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

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

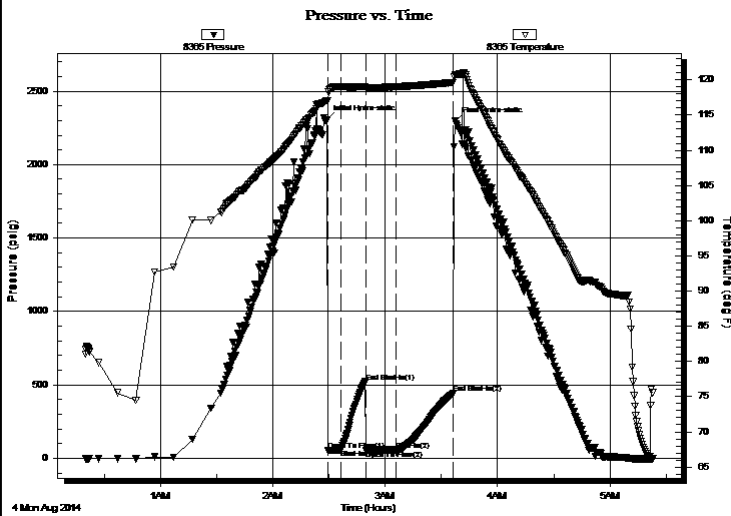
20 18s 27w Lane, KS
EM Stanley Unit 1-20
Job Ticket: 59141 **DST#: 5**
Test Start: 2014.08.04 @ 00:20:00

GENERAL INFORMATION:

Formation: **4590**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 02:29:15
Time Test Ended: 05:22:45
Interval: **4565.00 ft (KB) To 4590.00 ft (KB) (TVD)**
Total Depth: 4590.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Reference Elevations: 2694.00 ft (KB)
2688.00 ft (CF)
KB to GR/CF: 6.00 ft
Test Type: Conventional Bottom Hole (Reset)
Tester: Bradley Walter
Unit No: 69

Serial #: 8365 Inside
Press@RunDepth: 57.87 psig @ 4566.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.08.04 End Date: 2014.08.04 Last Calib.: 2014.08.04
Start Time: 00:20:05 End Time: 05:22:44 Time On Btm: 2014.08.04 @ 02:28:45
Time Off Btm: 2014.08.04 @ 03:37:15

TEST COMMENT: IF: 3" blow receded to a 2" blow . tool slid 2' took on some mud.
IS: No return.
FF: No blow .
FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2303.15	117.06	Initial Hydro-static
1	55.43	117.06	Open To Flow (1)
8	60.77	119.04	Shut-In(1)
21	521.19	119.04	End Shut-In(1)
21	56.65	118.91	Open To Flow (2)
37	57.87	119.03	Shut-In(2)
68	441.20	119.63	End Shut-In(2)
69	2294.42	120.70	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
70.00	Mud 100m	0.34

* 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

20 18s 27w Lane, KS

562 W St Rd 4
Olmitz, KS 67564

EM Stanley Unit 1-20

Job Ticket: 59141

DST#: 5

ATTN: Vern Schrag

Test Start: 2014.08.04 @ 00:20:00

Tool Information

Drill Pipe:	Length: 4425.00 ft	Diameter: 3.80 inches	Volume: 62.07 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: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 62.68 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4565.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	25.00 ft			
Tool Length:	52.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4539.00	
Shut In Tool	5.00			4544.00	
Hydraulic tool	5.00			4549.00	
Jars	5.00			4554.00	
Safety Joint	2.00			4556.00	
Packer	5.00			4561.00	27.00 Bottom Of Top Packer
Packer	4.00			4565.00	
Stubb	1.00			4566.00	
Recorder	0.00	8365	Inside	4566.00	
Recorder	0.00	8522	Outside	4566.00	
Perforations	21.00			4587.00	
Bullnose	3.00			4590.00	25.00 Bottom Packers & Anchor

Total Tool Length: 52.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc

20 18s 27w Lane, KS

562 W St Rd 4
Olmitz, KS 67564

EM Stanley Unit 1-20

Job Ticket: 59141

DST#: 5

ATTN: Vern Schrag

Test Start: 2014.08.04 @ 00:20:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.59 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
70.00	Mud 100m	0.344

Total Length: 70.00 ft Total Volume: 0.344 bbl

Num Fluid Samples: 0

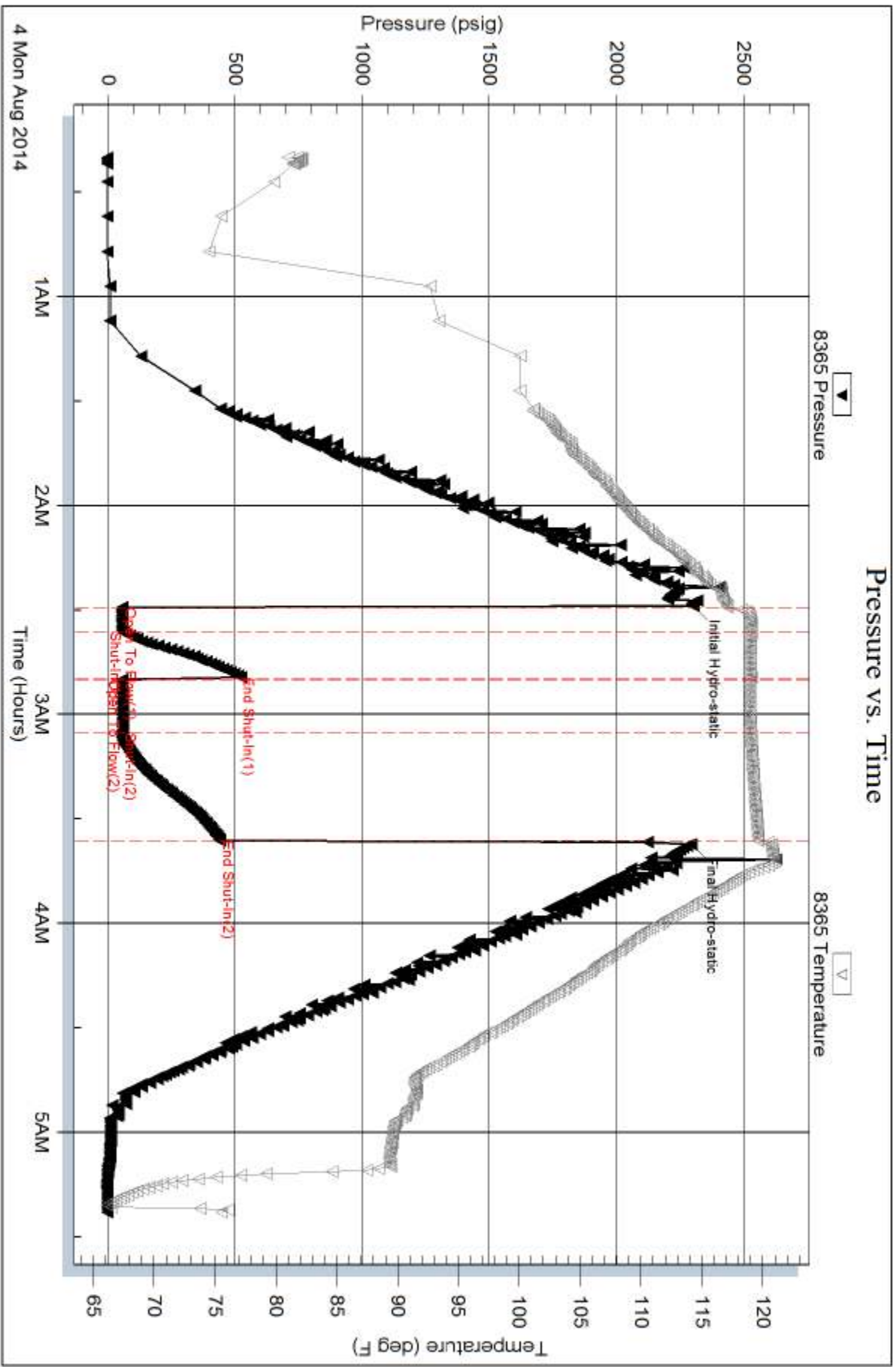
Num Gas Bombs: 0

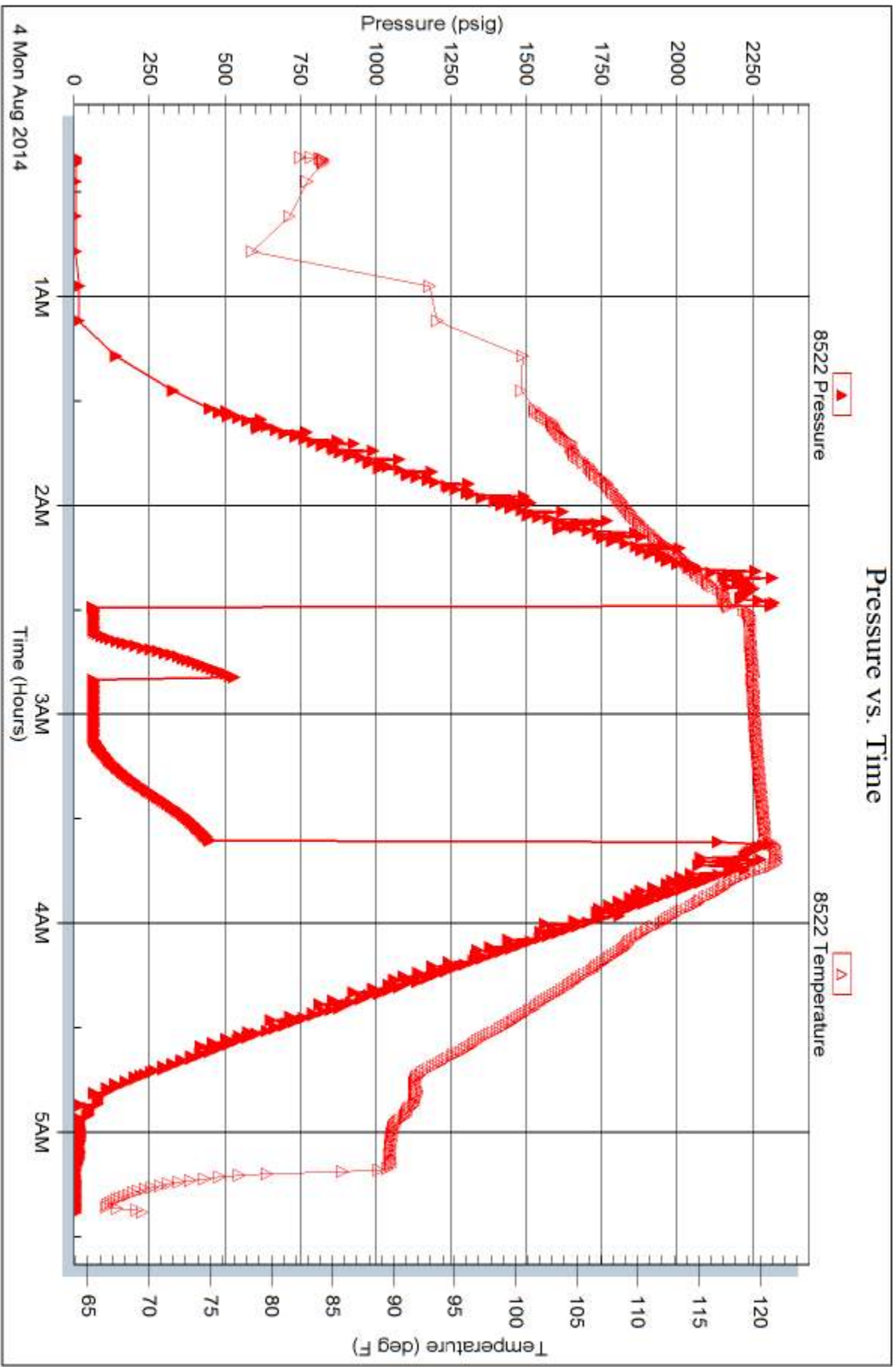
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59137

7-31-14

Well Name & No. EM Stanley Unit #1-20 Test No. 1 Date 8/01/14
 Company Larson Engineering, Inc Elevation ~~4242~~ 2694 KB 2688 GL
 Address 562 W St Rd #4 Olmütz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 20 Twp. 18 S Rge. 27w Co. Lane State KS

Interval Tested 4242 4256 Zone Tested LKC - K
 Anchor Length 14 Drill Pipe Run 4113 Mud Wt. 9.0
 Top Packer Depth 4237 Drill Collars Run 124 Vis 57
 Bottom Packer Depth 4242 Wt. Pipe Run 0 WL 6.8
 Total Depth 4256 Chlorides 3,000 ppm System LCM 2#

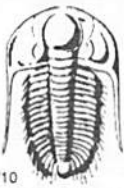
Blow Description IF: Surface blow died @ 5 min.
ISI: No return.
FF: No blow
FSI: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>3</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 3 BHT 123 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2114 Test 1250 T-On Location 2030
 (B) First Initial Flow 22 Jars 250 T-Started 2230
 (C) First Final Flow 24 Safety Joint 75 T-Open 0026
 (D) Initial Shut-In 866 Circ Sub N/C T-Pulled 0131
 (E) Second Initial Flow 23 Hourly Standby — T-Out 0313
 (F) Second Final Flow 23 Mileage 66 er 102.30
 (G) Final Shut-In 870 Sampler —
 (H) Final Hydrostatic 2102 Straddle —
 Shale Packer — Ruined Shale Packer —
 Extra Packer — Ruined Packer —
 Extra Recorder — Extra Copies —
 Initial Open 5
 Initial Shut-In 15
 Final Flow 15
 Final Shut-In 30
 Day Standby —
 Accessibility —
 Sub Total 1677.30
 Sub Total 1677.30
 Total 1677.30
 MP/DST Disc't —

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59138

4/10

Well Name & No. EM Stanley Unit #1-20 Test No. 2 Date 8/01/14
 Company Larson Engineering, Inc. Elevation 2694 KB 2688 GL
 Address 562 W St Rd 4 Omitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig H10 3
 Location: Sec. 20 Twp. 18S Rge. 27W Co. Lane State KS

Interval Tested 4278-4298 Zone Tested LKC L
 Anchor Length 20 Drill Pipe Run 4145 Mud Wt. 9.1
 Top Packer Depth 4273 Drill Collars Run 124 Vis 53
 Bottom Packer Depth 4276 Wt. Pipe Run 0 WL 8.4
 Total Depth 4298 Chlorides 3300 ppm System LCM 1#

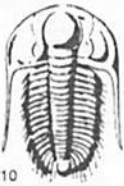
Blow Description IF: Surface blow, died @ 4 min.
ISI: No return
FF: No blow
FSI: No return

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

Rec Total 2 BHT 117 Gravity — API RW — @ — ° F Chlorides — ppm

(A) Initial Hydrostatic <u>2142</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>1630</u>
(B) First Initial Flow <u>15</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>1657</u>
(C) First Final Flow <u>16</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>1849</u>
(D) Initial Shut-In <u>24</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>1954</u>
(E) Second Initial Flow <u>14</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>2137</u>
(F) Second Final Flow <u>17</u>	<input checked="" type="checkbox"/> Mileage <u>6621</u> <u>102.30</u>	Comments
(G) Final Shut-In <u>24</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2072</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<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>0</u>
Final Flow <u>15</u>	<input type="checkbox"/> Day Standby	Total <u>1677.30</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1677.30</u>	

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59139

4/10

Well Name & No. EM Stanley Unit #1-20 Test No. 3 Date 8/02/04
 Company Larson Engineering, Inc Elevation 2694 KB 2688 GL
 Address 562 W St. Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Kern Schrag Rig #10 #3
 Location: Sec. 20 Twp. 18s Rge. 27w Co. Lane State KS

Interval Tested 4324 - 4420 Zone Tested Marmaton
 Anchor Length 96 Drill Pipe Run 4205 Mud Wt. 9.1
 Top Packer Depth 4319 Drill Collars Run 124 Vis 63
 Bottom Packer Depth 4324 Wt. Pipe Run 0 WL 8.8
 Total Depth 4420 Chlorides 2900 ppm System LCM 2#

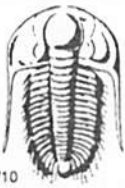
Blow Description IF: Surface blow.
IST: No return
FF: No blow
FST: No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>MOD (OIL SAOTS)</u>			<u>100</u>	

Rec Total 10 BHT 117 Gravity — API RW — @ — ° F Chlorides — ppm

(A) Initial Hydrostatic <u>2185</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>1200</u>
(B) First Initial Flow <u>17</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>1231</u>
(C) First Final Flow <u>19</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>1436</u>
(D) Initial Shut-In <u>101</u>	<input checked="" type="checkbox"/> Circ Sub <u>1 1/2</u>	T-Pulled <u>1541</u>
(E) Second Initial Flow <u>20</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>1729</u>
(F) Second Final Flow <u>21</u>	<input checked="" type="checkbox"/> Mileage <u>66.24</u> <u>102.30</u>	Comments
(G) Final Shut-In <u>56</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2109</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Open <u>9</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>19</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u>15</u>	<input type="checkbox"/> Day Standby	Total <u>1677.30</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1677.30</u>	

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59140

Well Name & No. EM Stanley Unit # 1-20 Test No. 4 Date 8/03/14
 Company Larson Engineering Elevation 2694 KB 2602 GL
 Address 562 W St. Rd # Olmitz, Ks 67564
 Co. Rep / Geo. Vevnskray Rig HD #3
 Location: Sec. 20 Twp. 18S Rge. 27W Co. Lane State Ks

Interval Tested 4432 - 4575 Zone Tested Cherokee
 Anchor Length 143 Drill Pipe Run 4300 Mud Wt. 11.1
 Top Packer Depth 4427 Drill Collars Run 124 Vis 54
 Bottom Packer Depth 4452 Wt. Pipe Run 8 WL 8.4
 Total Depth 4575 Chlorides 2900 ppm System LCM 1#

Blow Description IF: Surface flow
ISS: No return
FF: No blow
FSI: No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>MUD (OIL SPECS)</u>				

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

(A) Initial Hydrostatic 2224 Test 1250 T-On Location 11 00
 (B) First Initial Flow 19 Jars 250 T-Started 10 38
 (C) First Final Flow 20 Safety Joint 75 T-Open 13 16
 (D) Initial Shut-In 210 Circ Sub NC T-Pulled 14 21
 (E) Second Initial Flow 21 Hourly Standby _____ T-Out 16 21
 (F) Second Final Flow 22 Mileage 66 102.30 Comments _____
 (G) Final Shut-In 345 Sampler _____
 (H) Final Hydrostatic 2180 Straddle _____ Ruined Shale Packer _____
 Shale Packer 250 Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 5 Extra Recorder _____ Sub Total 0
 Initial Shut-In 15 Day Standby _____ Total 1927.30
 Final Flow 15 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 30 Sub Total 1927.30

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59141

Well Name & No. EM Stanley Unit # 1-20 Test No. 5 Date 8/04/14
 Company Larson Engineering, Inc Elevation 2640 KB 2688 GL
 Address 562 W St Rd 4 Olmitz, Ks 67564
 Co. Rep / Geo. Vern Schrag Rig HR #3
 Location: Sec. 20 Twp. 18S Rge. 27W Co. Lane State Ks

Interval Tested 4565 4590 Zone Tested Cherokee sand
 Anchor Length 25 Drill Pipe Run 4425 Mud Wt. 9.0
 Top Packer Depth 4560 Drill Collars Run 124 Vis 57
 Bottom Packer Depth 4565 Wt. Pipe Run 0 WL 9.6
 Total Depth 4590 Chlorides 2600 ppm System LCM 1#

Blow Description IF: 3" reced to 2 inches - tool slid 2' took on some mud.
IST: No return
FF: No blow
FSI No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>70</u>	<u>MOD</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 70 BHT 119 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic	<u>2303</u>	<input checked="" type="checkbox"/> Test	<u>1250</u>	T-On Location	<u>2345 8/03</u>
(B) First Initial Flow	<u>55</u>	<input checked="" type="checkbox"/> Jars	<u>250</u>	T-Started	<u>0020</u>
(C) First Final Flow	<u>61</u>	<input checked="" type="checkbox"/> Safety Joint	<u>75</u>	T-Open	<u>0228</u>
(D) Initial Shut-In	<u>521</u>	<input checked="" type="checkbox"/> Circ Sub etc		T-Pulled	<u>0333</u>
(E) Second Initial Flow	<u>57</u>	<input type="checkbox"/> Hourly Standby		T-Out	<u>0523</u>
(F) Second Final Flow	<u>58</u>	<input checked="" type="checkbox"/> Mileage <u>66</u>	<u>102.30</u>	Comments	
(G) Final Shut-In	<u>441</u>	<input type="checkbox"/> Sampler			
(H) Final Hydrostatic	<u>2294</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>1927.30</u>
		<input type="checkbox"/> Accessibility		MP/DST Disc't	
		Sub Total	<u>1927.30</u>		

Approved By _____ Our Representative

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