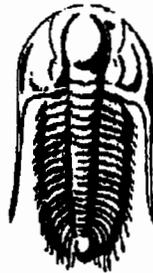


15-101-22206

19-19s-29w

Section is 19,  
not 10 as listed  
in report.



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

Prepared For: **Larson Engineering Inc**

562 St Rd 4  
Olmitz, KS 67564

ATTN: Bob Lewellyn

19  
**10-19s-29w Lane, Ks**

**Suppes #1-19**

Start Date: 2009.12.08 @ 04:00:00

End Date: 2009.12.08 @ 11:12:00

Job Ticket #: 37686                      DST #: 1

**KCC  
MAR 30 2010  
CONFIDENTIAL**

19-19s-29w

Larson Engineering Inc

Suppes #1-19

10-19s-29w Lane, Ks

DST # 1

Altamont

2009.12.08

Trilobite Testing, Inc  
PO Box 1733 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

**RECEIVED  
MAR 31 2010  
KCC WICHITA**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Larson Engineering Inc

562 St Rd 4  
Olmritz, KS 67564

ATTN: Bob Lewellyn

**Suppes #1-19**

**10-19s-29w Lane, Ks**

Job Ticket: 37686

DST#: 1

Test Start: 2009.12.08 @ 04:00:00

## GENERAL INFORMATION:

Formation: **Altamont**

Deviated: **No Whipstock** ft (KB)

Time Tool Opened: 06:39:30

Time Test Ended: 11:12:00

Test Type: **Conventional Bottom Hole**

Tester: **Shane McBride**

Unit No: **40**

Interval: **4370.00 ft (KB) To 4475.00 ft (KB) (TVD)**

Total Depth: **4475.00 ft (KB) (TVD)**

Hole Diameter: **7.88 inches** Hole Condition: **Fair**

Reference Elevations: **2870.00 ft (KB)**

**2865.00 ft (CF)**

KB to GR/CF: **5.00 ft**

**Serial #: 8368**

**Inside**

Press@RunDepth: **28.80 psig @ 4375.00 ft (KB)**

Start Date: **2009.12.08**

End Date:

**2009.12.08**

Start Time: **04:00:15**

End Time:

**11:12:00**

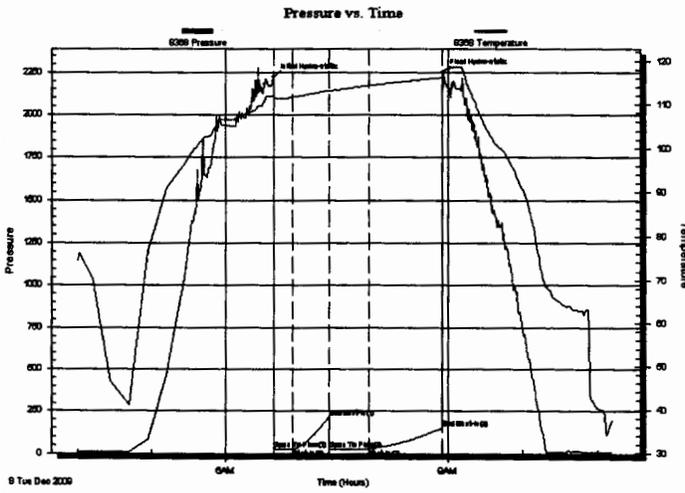
Capacity: **8000.00 psig**

Last Calib.: **2009.12.09**

Time On Btrr: **2009.12.08 @ 06:39:00**

Time Off Btrr: **2009.12.08 @ 08:56:15**

**TEST COMMENT:** Weak 1/2" in blow died in 10 min  
No return  
Weak surface blow died in 3 min.  
No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2222.52	111.99	Initial Hydro-static
1	26.64	111.36	Open To Flow (1)
16	27.66	111.64	Shut-in(1)
46	214.49	113.18	End Shut-in(1)
46	27.03	113.07	Open To Flow (2)
78	28.80	114.32	Shut-in(2)
137	151.25	116.12	End Shut-in(2)
138	2249.94	117.63	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
3.00	mud 100% m	0.04

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Larson Engineering Inc

**Suppes #1-19**

562 St Rd 4  
Olmitz, KS 67564

**10-19s-29w Lane, Ks**

Job Ticket: 37686

**DST#: 1**

ATTN: Bob Lewellyn

Test Start: 2009.12.08 @ 04:00:00

**Tool Information**

Drill Pipe:	Length: 4371.00 ft	Diameter: 3.80 inches	Volume: 61.31 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 61.31 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4370.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	105.00 ft			
Tool Length:	132.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4344.00	
Shut In Tool	5.00			4349.00	
Hydraulic tool	5.00			4354.00	
Jars	5.00			4359.00	
Safety Joint	2.00			4361.00	
Packer	5.00			4366.00	27.00 Bottom Of Top Packer
Packer	4.00			4370.00	
Stubb	1.00			4371.00	
Perforations	4.00			4375.00	
Recorder	0.00	8368	inside	4375.00	
Recorder	0.00	6771	inside	4375.00	
Change Over Sub	1.00			4376.00	
Blank Spacing	93.00			4469.00	
Change Over Sub	1.00			4470.00	
Bullnose	5.00			4475.00	105.00 Bottom Packers & Anchor

**Total Tool Length: 132.00**



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Larson Engineering Inc

**Suppes #1-19**

562 St Rd 4  
Olmitz, KS 67564

**10-19s-29w Lane, Ks**

Job Ticket: 37686

**DST#: 1**

ATTN: Bob Lewellyn

Test Start: 2009.12.08 @ 04:00:00

**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: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2200.00 ppm

Filter Cake: 1.00 inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbbl
3.00	mud 100% <sub>m</sub>	0.042

Total Length: 3.00 ft

Total Volume: 0.042 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

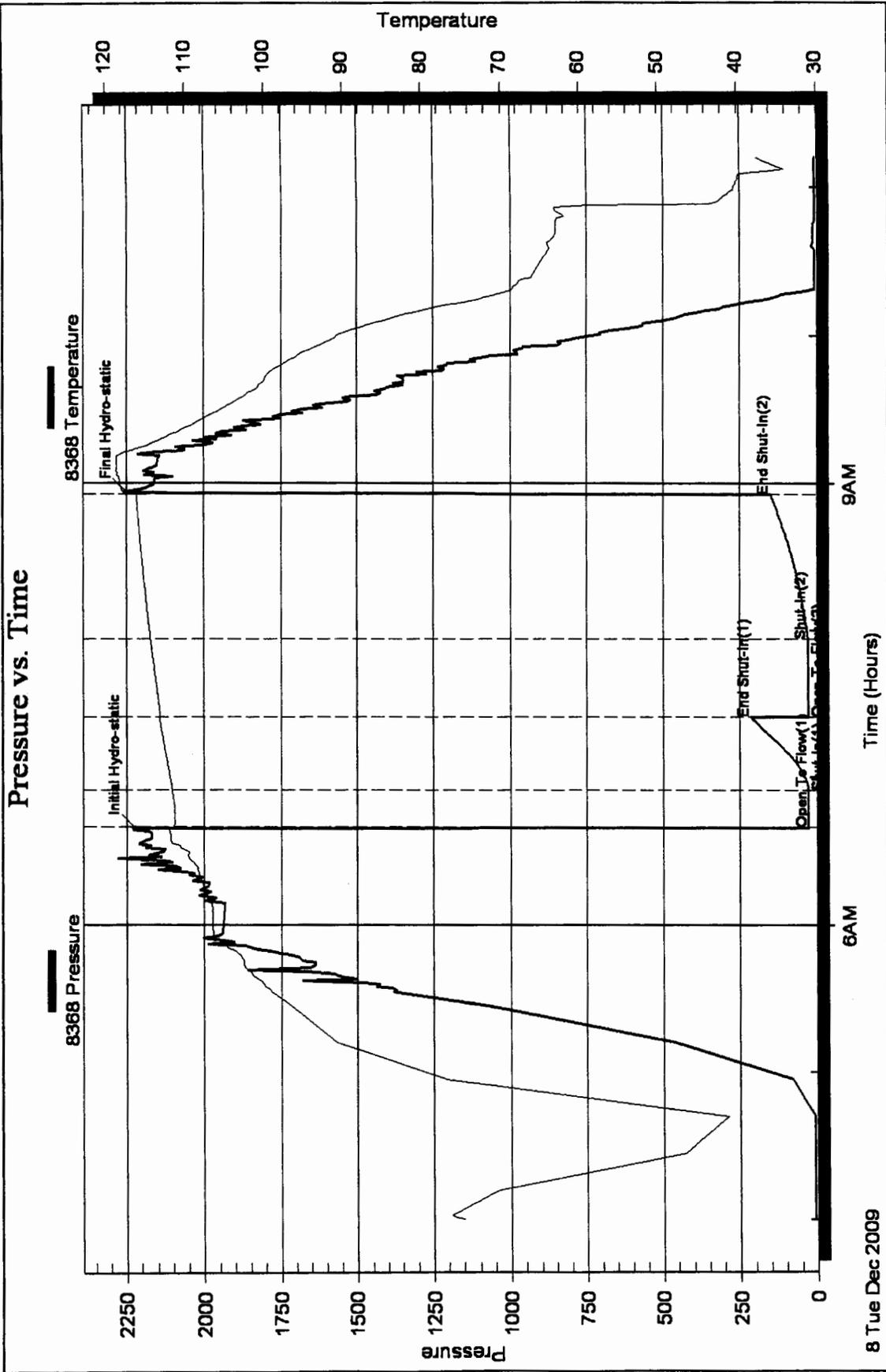
Serial #:

Laboratory Name:

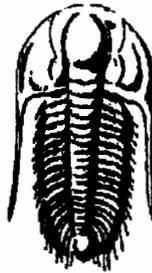
Laboratory Location:

Recovery Comments:

### Pressure vs. Time



8 Tue Dec 2009



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 St Rd 4  
Olmitz , KS 67564

ATTN: Bob Lewellyn

**10-19s-29w Lane, Ks**

**Suppes #1-19**

Start Date: 2009.12.09 @ 06:00:18

End Date: 2009.12.09 @ 17:05:48

Job Ticket #: 37686                      DST #: 2

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Larson Engineering Inc

562 St Rd 4  
Olmritz, KS 67564

ATTN: Bob Lewellyn

**Suppes #1-19**

**10-19s-29w Lane, Ks**

Job Ticket: 37686

**DST#: 2**

Test Start: 2009.12.09 @ 06:00:18

## GENERAL INFORMATION:

Formation: **Pawnee-Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:36:18

Time Test Ended: 17:05:48

Test Type: Conventional Bottom Hole

Tester: Shane McBride

Unit No: 40

Interval: **4502.00 ft (KB) To 4575.00 ft (KB) (TVD)**

Reference Elevations: 2870.00 ft (KB)

Total Depth: 4575.00 ft (KB) (TVD)

2865.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8368**

Inside

Press@RunDepth: 33.59 psig @ 4510.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2009.12.09

End Date:

2009.12.09

Last Calib.: 2009.12.09

Start Time: 06:00:18

End Time:

16:51:48

Time On Btrr: 2009.12.09 @ 11:36:03

Time Off Btrr: 2009.12.09 @ 14:43:18

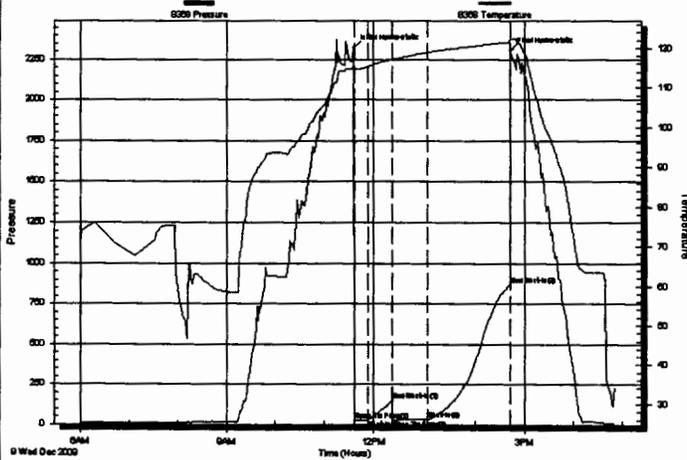
TEST COMMENT: 1 1/4" in blow

No return

3 1/2" in @ open built to 7" in

No return

Pressure vs. Time



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2321.65	115.33	Initial Hydro-static
1	27.81	114.36	Open To Flow (1)
17	30.95	115.32	Shut-In (1)
46	149.01	117.14	End Shut-In (1)
46	27.90	117.13	Open To Flow (2)
88	33.59	118.94	Shut-In (2)
187	868.31	121.53	End Shut-In (2)
188	2304.11	122.41	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
25.00	mud w/ oil spots 100% m	0.35
0.00	155' gas in pipe	0.00

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Larson Engineering Inc

**Suppes #1-19**

562 St Rd 4  
Olmitz, KS 67564

**10-19s-29w Lane, Ks**

Job Ticket: 37686

**DST#: 2**

ATTN: Bob Lewellyn

Test Start: 2009.12.09 @ 06:00:18

**Tool Information**

Drill Pipe:	Length: 4504.00 ft	Diameter: 3.80 inches	Volume: 63.18 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 90000.00 lb
			<b>Total Volume: 63.18 bbl</b>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4502.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	77.00 ft			
Tool Length:	100.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4480.00	
Shut In Tool	5.00			4485.00	
Hydraulic tool	5.00			4490.00	
Jars	5.00			4495.00	
Safety Joint	2.00			4497.00	
Packer	5.00			4502.00	23.00 Bottom Of Top Packer
Packer - Shale	4.00			4506.00	
Stubb	1.00			4507.00	
Perforations	3.00			4510.00	
Recorder	0.00	8368	inside	4510.00	
Recorder	0.00	6771	inside	4510.00	
Change Over Sub	1.00			4511.00	
Blank Spacing	62.00			4573.00	
Change Over Sub	1.00			4574.00	
Bullnose	5.00			4579.00	77.00 Anchor Tool

**Total Tool Length: 100.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering Inc

**Suppes #1-19**

562 St Rd 4  
Olmritz, KS 67564

**10-19s-29w Lane, Ks**

Job Ticket: 37686

**DST#: 2**

ATTN: Bob Lew ellyn

Test Start: 2009.12.09 @ 06:00:18

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.38 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2300.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbf
25.00	mud w/ oil spots 100%m	0.351
0.00	155' gas in pipe	0.000

Total Length: 25.00 ft      Total Volume: 0.351 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

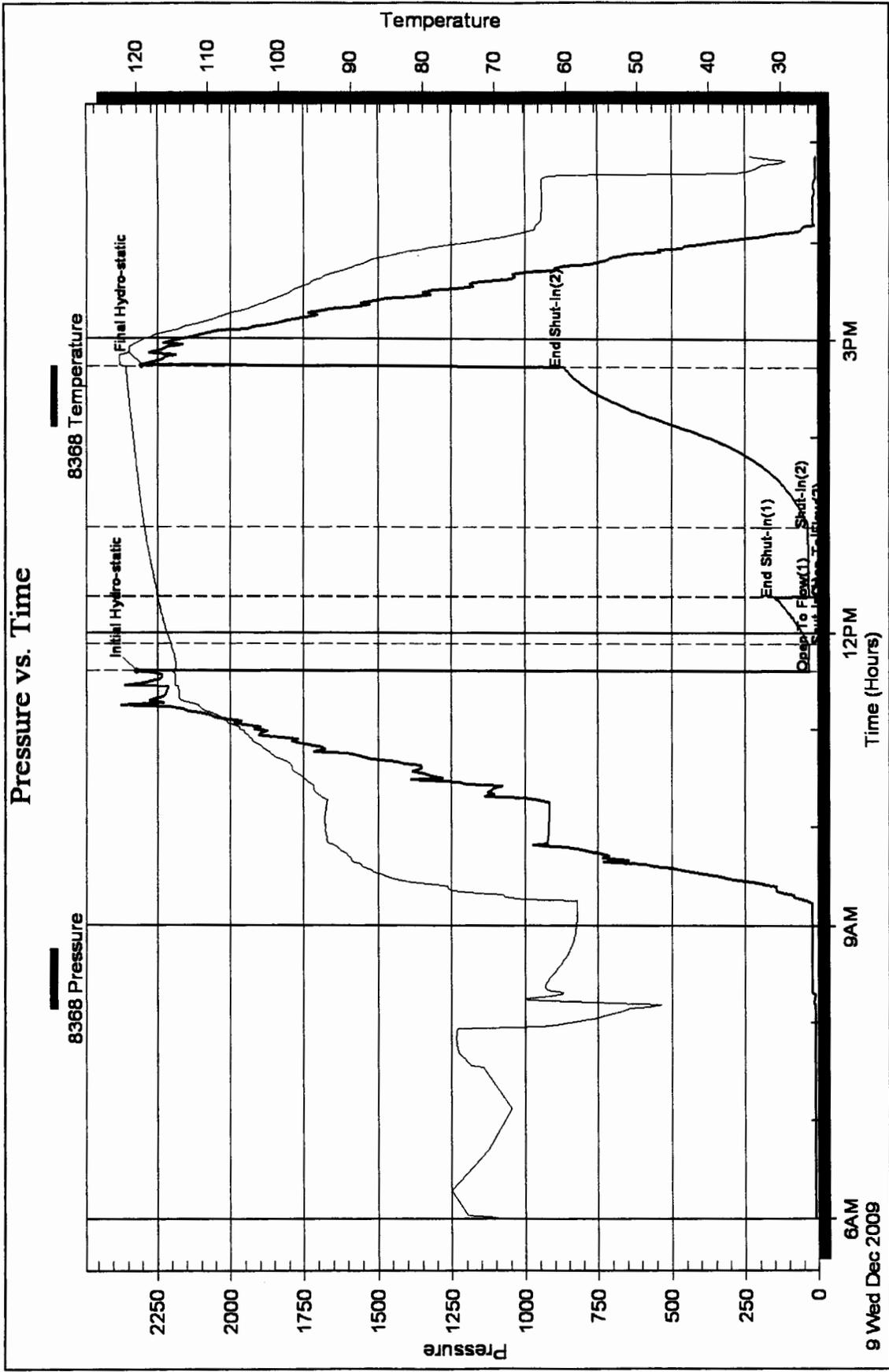
Serial #: 8368

Inside Larson Engineering Inc

10-19s-29w Lane, Ks

DST Test Number: 2

### Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 37686

Printed: 2009.12.29 @ 21:50:18 Page 5



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 St Rd 4  
Olmitz , KS 67564

ATTN: Bob Lewellyn

**10-19s-29w Lane, Ks**

**Suppes #1-19**

Start Date: 2009.12.20 @ 11:58:27

End Date: 2009.12.20 @ 19:45:06

Job Ticket #: 35324                      DST #: 3

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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

Larson Engineering Inc

Suppes #1-19

10-19s-29w Lane, Ks

DST # 3

Johnson

2009.12.20



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Larson Engineering Inc

562 St Rd 4  
Olmitz, KS 67564

ATTN: Bob Lewellyn

**Supps #1-19**

**10-19s-29w Lane, Ks**

Job Ticket: 35324      **DST#: 3**

Test Start: 2009.12.20 @ 11:58:27

## GENERAL INFORMATION:

Formation: **Johnson**  
 Deviated: **No Whipstock**      ft (KB)  
 Test Type: **Conventional Bottom Hole**  
 Time Tool Opened: 14:19:07  
 Tester: **Brandon Turley**  
 Time Test Ended: 19:45:06  
 Unit No: **35**

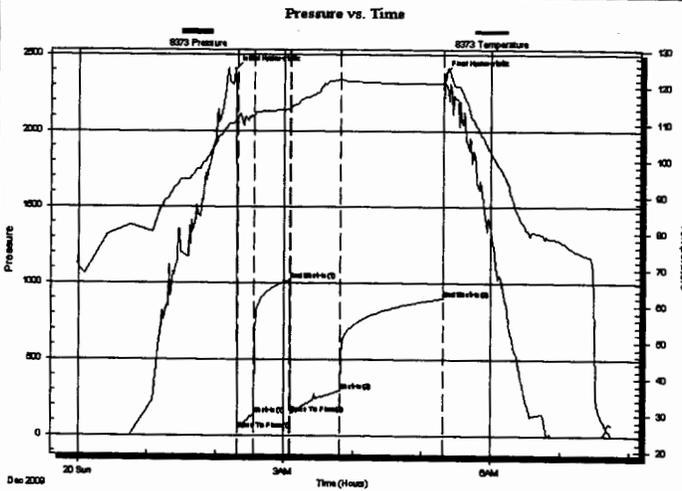
Interval: **4486.00 ft (KB) To 4645.00 ft (KB) (TVD)**  
 Reference Elevations: **2870.00 ft (KB)**  
 Total Depth: **4645.00 ft (KB) (TVD)**  
**2865.00 ft (CF)**  
 Hole Diameter: **7.88 inches** Hole Condition: **Fair**  
 KB to GR/CF: **5.00 ft**

**Serial #: 8373**

**Inside**

Press@RunDepth: **296.02 psig @ 4518.00 ft (KB)**      Capacity: **8000.00 psig**  
 Start Date: **2009.12.19**      End Date: **2009.12.20**      Last Calib.: **2009.12.20**  
 Start Time: **23:58:27**      End Time: **07:45:06**      Time On Btm: **2009.12.20 @ 02:16:52**  
 Time Off Btm: **2009.12.20 @ 05:19:51**

**TEST COMMENT:** IF: 1/4 blow BOB in 9 min.  
 IS: No return.  
 FF: Surface blow BOB in 20 min.  
 FS: No return.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2399.80	110.58	Initial Hydro-static
3	38.49	111.46	Open To Flow (1)
17	137.77	111.73	Shut-In (1)
48	1020.84	114.08	End Shut-In (1)
49	141.74	114.17	Open To Flow (2)
92	296.02	122.26	Shut-In (2)
182	900.86	121.15	End Shut-In (2)
183	2371.29	121.12	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
124.00	w cm 30%w 70%m	1.74
403.00	mud 100%m	5.65

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Larson Engineering Inc

**Suppes #1-19**

562 St Rd 4  
Olmritz, KS 67564

**10-19s-29w Lane, Ks**

Job Ticket: 35324

**DST#: 3**

ATTN: Bob Lewellyn

Test Start: 2009.12.20 @ 11:58:27

**Tool Information**

Drill Pipe:	Length: 4469.00 ft	Diameter: 3.80 inches	Volume: 62.69 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 100000.0 lb
			<u>Total Volume: 62.69 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4486.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	163.00 ft			
Tool Length:	186.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4464.00	
Shut In Tool	5.00			4469.00	
Hydraulic tool	5.00			4474.00	
Jars	5.00			4479.00	
Safety Joint	2.00			4481.00	
Packer	5.00			4486.00	23.00 Bottom Of Top Packer
Packer - Shale	4.00			4490.00	
Stubb	1.00			4491.00	
Perforations	27.00			4518.00	
Recorder	0.00	8373	inside	4518.00	
Recorder	0.00	6772	inside	4518.00	
Change Over Sub	1.00			4519.00	
Blank Spacing	124.00			4643.00	
Change Over Sub	1.00			4644.00	
Bullnose	5.00			4649.00	163.00 Anchor Tool
<b>Total Tool Length:</b>	<b>186.00</b>				



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Larson Engineering Inc

**Suppes #1-19**

562 St Rd 4  
Olmitz, KS 67564

**10-19s-29w Lane, Ks**

Job Ticket: 35324

**DST#: 3**

ATTN: Bob Lewellyn

Test Start: 2009.12.20 @ 11:58:27

**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:

26000 ppm

Viscosity: 49.00 sec/qt

Cushion Volume:

bbf

Water Loss: 8.77 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2700.00 ppm

Filter Cake: 1.00 inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbf
124.00	w cm 30%w 70%m	1.739
403.00	mud 100%m	5.653

Total Length: 527.00 ft

Total Volume: 7.392 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .31@60=26000

Serial #: 8373

Inside

Larson Engineering Inc

10-19s-29w Lane, Ks

DST Test Number: 3

### Pressure vs. Time

