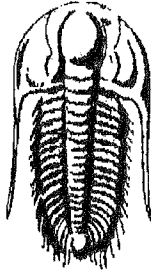


Ind



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

Prepared For: **Woolsey Operating**

125 N Market Ste1000  
Wichita KS 67202

**KCC  
SEP 21 2007  
CONFIDENTIAL**

ATTN: Curtis Covey

**19 34 11 Barber KS**

**Logan X 3**

Start Date: 2007.06.02 @ 22:20:36

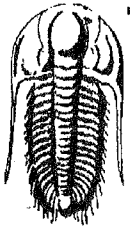
End Date: 2007.06.03 @ 07:04:51

Job Ticket #: 26967                      DST #: 1

**RECEIVED  
KANSAS CORPORATION COMMISSION  
SEP 21 2007  
CONSERVATION DIVISION  
WICHITA, KS**

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

Woolsey Operating  
Logan X 3  
19 34 11 Barber KS  
DST # 1  
Cherokee  
2007.06.02



**TRILOBITE TESTING, INC**

## DRILL STEM TEST REPORT

**Logan X 3**

Woolsey Operating

125 N Market Ste1000  
Wichita KS 67202

ATTN: Curtis Covey

**19 34 11 Barber KS**

Job Ticket: 26967      **DST#: 1**

Test Start: 2007.06.02 @ 22:20:36

**GENERAL INFORMATION:**

Formation: **Cherokee**

Deviated: No Whipstock:                      ft (KB)

Time Tool Opened: 00:42:21

Time Test Ended: 07:04:51

Test Type: Conventional Bottom Hole

Tester: Leal Cason

Unit No: 23

Interval: **4626.00 ft (KB) To 4646.00 ft (KB) (TVD)**

Total Depth: 4646.00 ft (KB) (TVD)

Hole Diameter: 7.75 inches Hole Condition: Poor

Reference Elevations: 1412.00 ft (KB)

1403.00 ft (CF)

KB to GR/CF: 9.00 ft

**Serial #: 8289      Inside**

Press@RunDepth: 32.06 psig @ 4627.00 ft (KB)

Start Date: 2007.06.02      End Date: 2007.06.03

Start Time: 22:20:41      End Time: 07:04:51

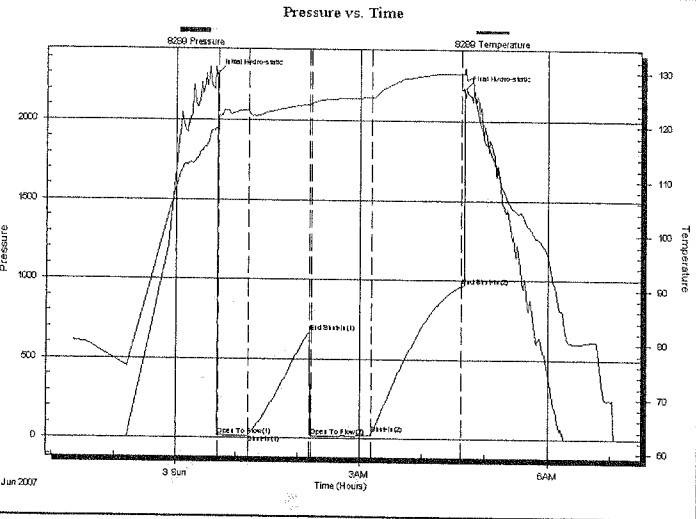
Capacity: 7000.00 psig

Last Calib.: 2007.06.03

Time On Btm: 2007.06.03 @ 00:41:06

Time Off Btm: 2007.06.03 @ 04:40:35

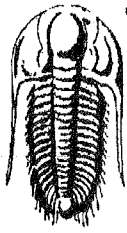
**TEST COMMENT:** IF Strong blow Build to 8 inch.  
ISI No blow  
FF Strong blow BOB in 30 secs.  
FSI No blow back



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2291.73	119.55	Initial Hydro-static
2	17.23	121.60	Open To Flow (1)
31	19.41	122.87	Shut-In(1)
90	668.23	124.05	End Shut-In(1)
92	15.32	124.41	Open To Flow (2)
151	32.06	125.34	Shut-In(2)
237	964.97	129.86	End Shut-In(2)
240	2202.24	130.57	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
25.00	SOCM 2%O 98%M	0.35

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



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Woolsey Operating

**Logan X 3**

125 N Market Ste1000  
Wichita KS 67202

**19 34 11Barber KS**

ATTN: Curtis Covey

Job Ticket: 26967

**DST#: 1**

Test Start: 2007.06.02 @ 22:20:36

**Tool Information**

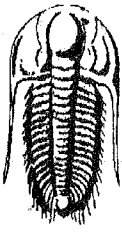
Drill Pipe:	Length: 4626.00 ft	Diameter: 3.80 inches	Volume: 64.89 bbl	Tool Weight:	2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	96000.00 lb
			<u>Total Volume: 64.89 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial	60000.00 lb
Depth to Top Packer:	4626.00 ft			Final	62000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	20.00 ft				
Tool Length:	42.00 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			4605.00	
Shut In Tool	5.00			4610.00	
Hydraulic tool	5.00			4615.00	
Safety Joint	2.00			4617.00	
Packer	4.00			4621.00	22.00 Bottom Of Top Packer
Packer	5.00			4626.00	
Stubb	1.00			4627.00	
Recorder	0.00	8289	Inside	4627.00	
Perforations	14.00			4641.00	
Recorder	0.00	13789	Outside	4641.00	
Bullnose	5.00			4646.00	20.00 Bottom Packers & Anchor

**Total Tool Length: 42.00**



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Woolsey Operating  
125 N Market Ste1000  
Wichita KS 67202  
ATTN: Curtis Covey

**Logan X 3**  
**19 34 11Barber KS**  
Job Ticket: 26967      **DST#: 1**  
Test Start: 2007.06.02 @ 22:20:36

### 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: 48.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.77 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 5000.00 ppm			
Filter Cake: inches			

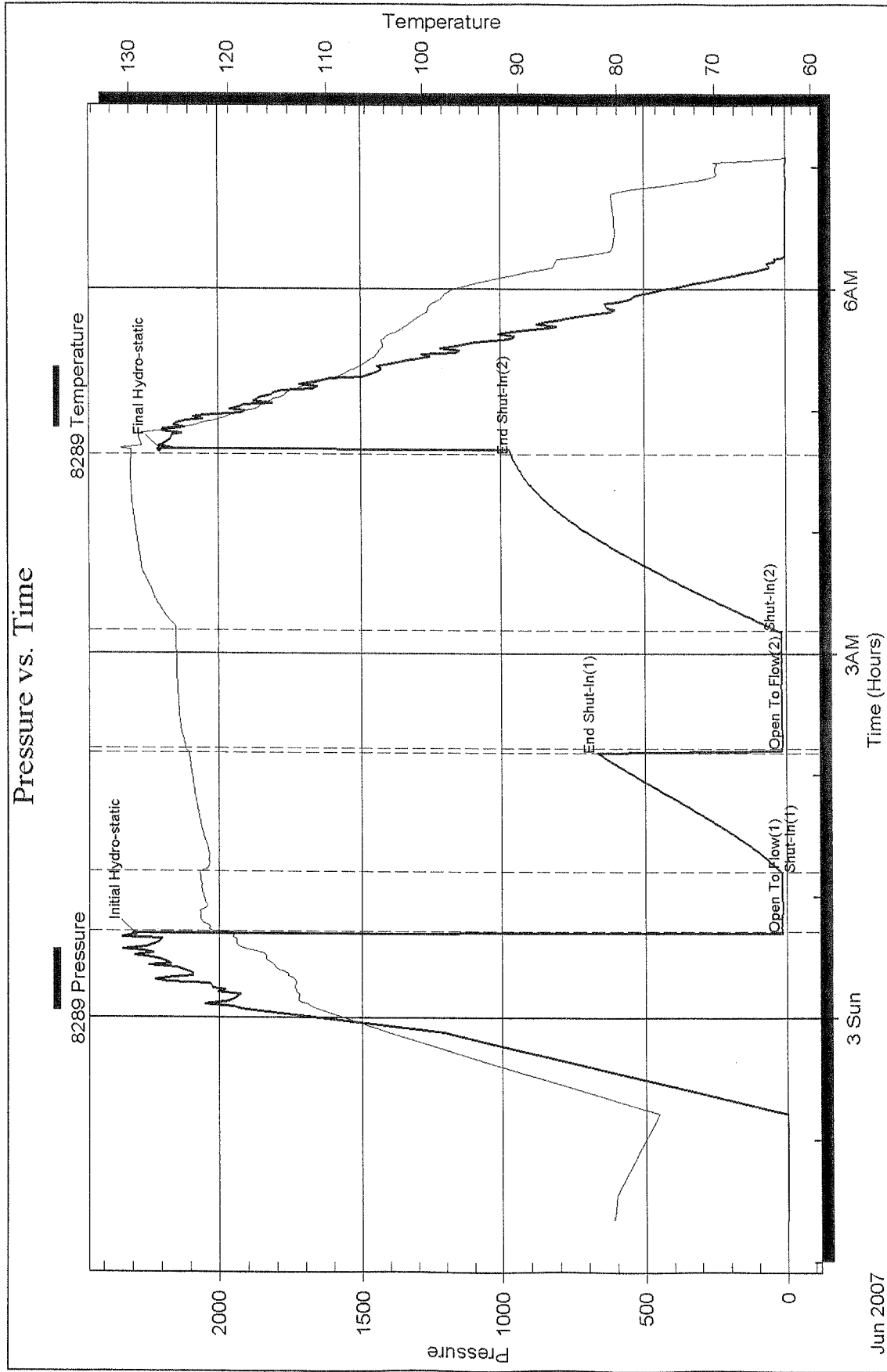
### Recovery Information

Recovery Table

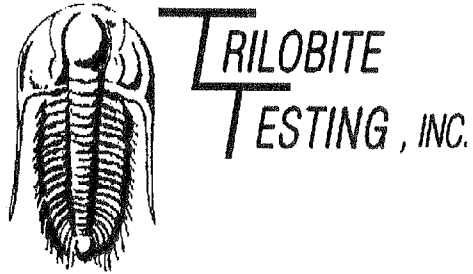
Length ft	Description	Volume bbl
25.00	SOCM 2%O 98%M	0.351

Total Length: 25.00 ft      Total Volume: 0.351 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

### Pressure vs. Time







## DRILL STEM TEST REPORT

Prepared For: **Woolsey Operating**

125 N Market Ste1000  
Wichita KS 67202

ATTN: Curtis Covey

**19 34 11Barber KS**

**Logan X 3**

Start Date: 2007.06.03 @ 17:02:58

End Date: 2007.06.04 @ 03:07:58

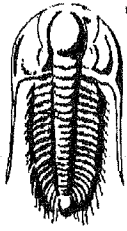
Job Ticket #: 26968                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Woolsey Operating

**Logan X 3**

125 N Market Ste1000  
Wichita KS 67202

**19 34 11Barber KS**

Job Ticket: 26968

**DST#: 2**

ATTN: Curtis Covey


Test Start: 2007.06.03 @ 17:02:58

### Tool Information

Drill Pipe:	Length: 4654.00 ft	Diameter: 3.80 inches	Volume: 65.28 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 86000.00 lb
		<b>Total Volume:</b>	<b>65.28 bbl</b>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4666.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	28.00 ft			
Tool Length:	50.00 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			4645.00	
Shut In Tool	5.00			4650.00	
Hydraulic tool	5.00			4655.00	
Safety Joint	2.00			4657.00	
Packer	4.00			4661.00	22.00 Bottom Of Top Packer
Packer	5.00			4666.00	
Stubb	1.00			4667.00	
Recorder	0.00	8289	Inside	4667.00	
Perforations	22.00			4689.00	
Recorder	0.00	13789	Outside	4689.00	
Bullnose	5.00			4694.00	28.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>50.00</b>				



<b>DRILL STEM TEST REPORT</b>	<b>FLUID SUMMARY</b>
Woolsey Operating	<b>Logan X 3</b>
125 N Market Ste1000 Wichita KS 67202	<b>19 34 11Barber KS</b>
ATTN: Curtis Covey	Job Ticket: 26968 <b>DST#: 2</b>
	Test Start: 2007.06.03 @ 17:02:58

**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: 55.00 sec/qt	Cushion Volume: bbl		
Water Loss: 9.57 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 8000.00 ppm			
Filter Cake: 0.02 inches			

**Recovery Information**

Recovery Table

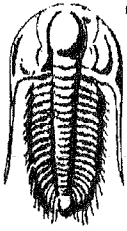
Length ft	Description	Volume bbl
0.00	GIP AFFF	0.000
120.00	GSY OWCM 2%G 12%O 20%W 66%M	1.683
105.00	GSY WOCM 2%G 10%W 40%O 48%M	1.473

Total Length: 225.00 ft      Total Volume: 3.156 bbl

Num Fluid Samples: 2      Num Gas Bombs: 2      Serial #:

Laboratory Name: Caraway      Laboratory Location: Liberal, KS

Recovery Comments:



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**GAS RATES**

Woolsey Operating  
125 N Market Ste1000  
Wichita KS 67202

**Logan X 3**

**19 34 11Barber KS**

Job Ticket: 26968

DST#: 2

ATTN: Curtis Covey

Test Start: 2007.06.03 @ 17:02:58

## Gas Rates Information

Temperature: 59 deg C  
Relative Density: 0.65  
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (mm)	Pressure (kPaa)	Gas Rate (m <sup>3</sup> /d)
1	10	0.75	22.00	568.56
1	10	0.75	22.00	568.56
1	15	0.75	22.00	568.56
1	20	0.75	20.00	537.32
1	25	0.75	20.00	537.32
1	30	0.75	20.00	537.32
2	5	0.75	22.00	568.56
2	10	0.75	26.00	631.04
2	15	0.75	26.00	631.04
2	20	0.75	26.00	631.04
2	25	0.75	26.00	631.04
2	30	0.75	24.00	599.80
2	35	0.75	24.00	599.80
2	40	0.75	24.00	599.80
2	45	0.75	24.00	599.80
2	50	0.75	24.00	599.80
2	55	0.75	24.00	599.80

Serial #: 8289

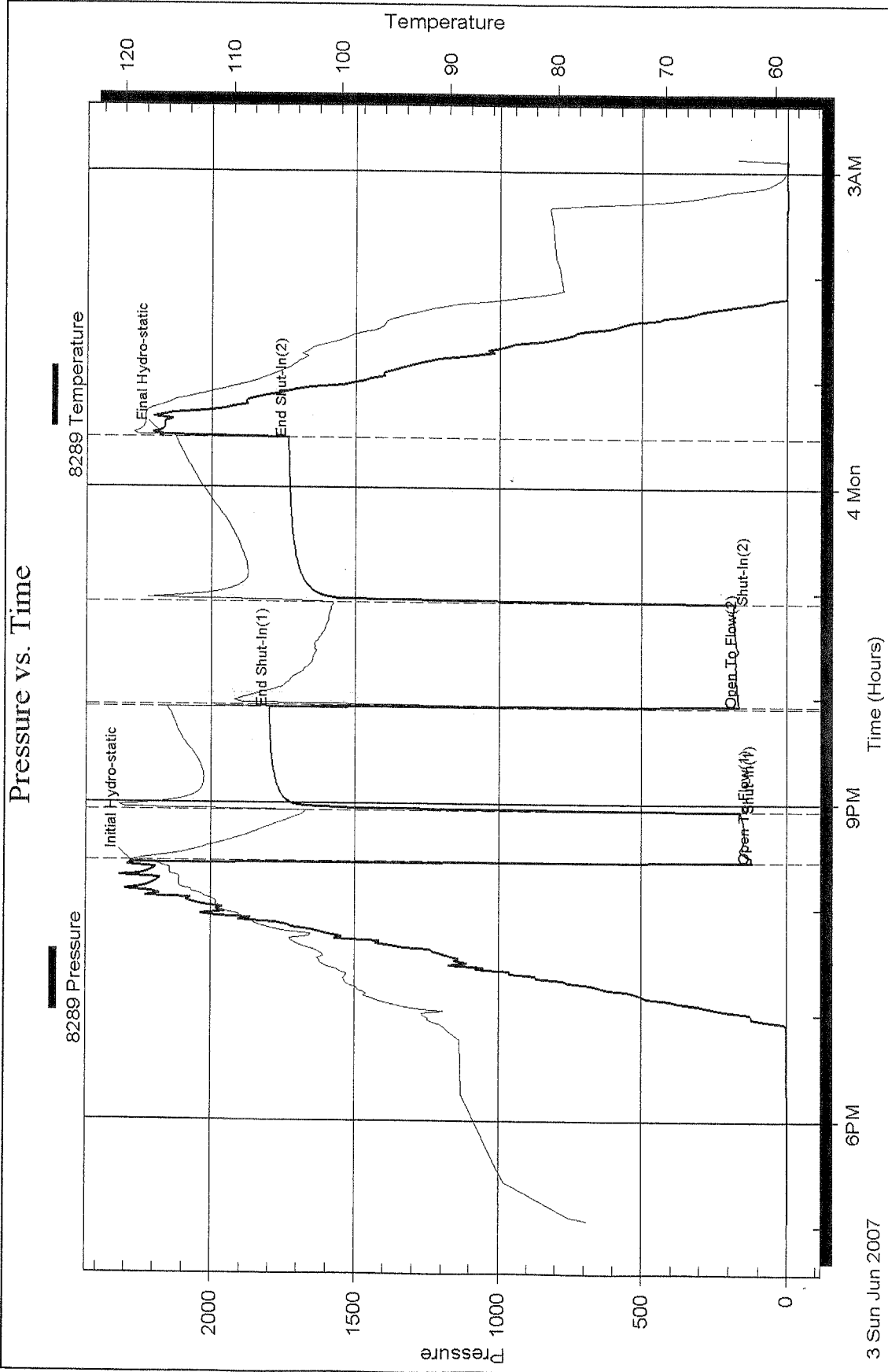
Inside

Woolsey Operating

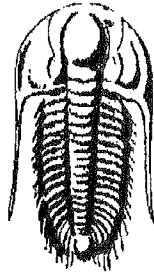
19 34 11 Barber KS

DST Test Number: 2

### Pressure vs. Time



206150



**TRILOBITE**  
**TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Woolsey Operating**

125 N Market Ste1000  
Wichita KS 67202

ATTN: Curtis Covey

**19 34 11Barber KS**

**Logan X 3**

Start Date: 2007.06.04 @ 14:31:25

End Date: 2007.06.05 @ 00:03:10

Job Ticket #: 26969                      DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Woolsey Operating

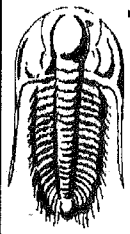
Logan X 3

19 34 11Barber KS

DST # 3

Mississippi

2007.06.04



**TRILOBITE TESTING, INC**

## DRILL STEM TEST REPORT

---

Woolsey Operating

125 N Market Ste1000  
Wichita KS 67202

ATTN: Curtis Covey

**Logan X 3**

**19 34 11 Barber KS**

Job Ticket: 26969      **DST#: 3**

Test Start: 2007.06.04 @ 14:31:25

**GENERAL INFORMATION:**

Formation: **Mississippi**

Deviated: No Whipstock:                      ft (KB)

Time Tool Opened: 16:41:55

Time Test Ended: 00:03:10

Test Type: Conventional Bottom Hole

Tester: Leal Cason

Unit No: 23

Interval: **4700.00 ft (KB) To 4754.00 ft (KB) (TVD)**

Total Depth: 4754.00 ft (KB) (TVD)

Hole Diameter: 7.75 inches Hole Condition: Poor

Reference Elevations: 1412.00 ft (KB)  
1403.00 ft (CF)

KB to GR/CF: 9.00 ft

**Serial #: 8289      Inside**

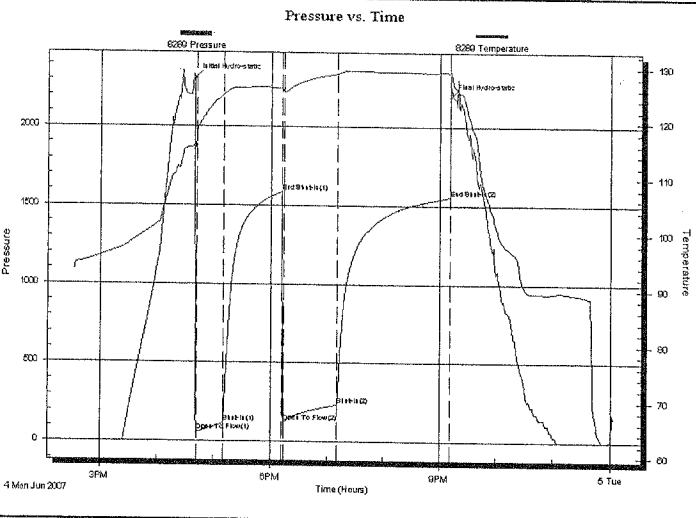
Press@RunDepth: 236.69 psig @ 4701.00 ft (KB)      Capacity: 7000.00 psig

Start Date: 2007.06.04      End Date: 2007.06.05      Last Calib.: 2007.06.05

Start Time: 14:31:30      End Time: 00:03:10      Time On Btm: 2007.06.04 @ 16:39:40

Time Off Btm: 2007.06.04 @ 21:11:24

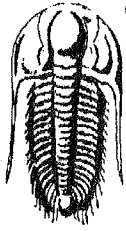
**TEST COMMENT:** IF Strong blow BOB in 45 secs. Gas @ surface in 20 mins.(See gas report)  
ISI Bled off Weak blow to 1/4  
FF Strong blow BOB immediately Gas immediately (See gas report)  
FSI Bled off Blow back at BOB



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2303.53	116.10	Initial Hydro-static
3	61.77	118.77	Open To Flow (1)
31	117.20	125.03	Shut-In(1)
92	1586.43	126.39	End Shut-In(1)
94	121.93	125.61	Open To Flow (2)
151	236.69	128.86	Shut-In(2)
272	1554.01	129.18	End Shut-In(2)
272	2188.13	129.44	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
0.00	GIP 4236 Feet	0.00
120.00	GSY SOMCW 20%G 4%O 12%M 64%V1.68	
240.00	GSY OMCW 22%G 8%O 15%M 55%V3.37	
90.00	GSY SOWCM 6%G 2%O 22%W 70%M1.26	

Gas Rates			
	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	2.75	6.42
Last Gas Rate	0.25	19.00	52.99
Max. Gas Rate	0.25	20.00	54.57



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Woolsey Operating

**Logan X 3**

125 N Market Ste1000  
Wichita KS 67202

**19 34 11Barber KS**

ATTN: Curtis Covey

Job Ticket: 26969

**DST#: 3**

Test Start: 2007.06.04 @ 14:31:25

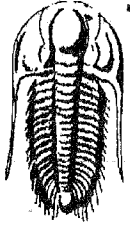
### Tool Information

Drill Pipe:	Length: 4686.00 ft	Diameter: 3.80 inches	Volume: 65.73 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 78000.00 lb
			<u>Total Volume: 65.73 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4700.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	54.00 ft			
Tool Length:	76.00 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			4679.00	
Shut In Tool	5.00			4684.00	
Hydraulic tool	5.00			4689.00	
Safety Joint	2.00			4691.00	
Packer	4.00			4695.00	22.00 Bottom Of Top Packer
Packer	5.00			4700.00	
Stubb	1.00			4701.00	
Recorder	0.00	8289	Inside	4701.00	
Perforations	10.00			4711.00	
Blank Spacing	32.00			4743.00	
Change Over Sub	1.00			4744.00	
Perforations	5.00			4749.00	
Recorder	0.00	13789	Outside	4749.00	
Bullnose	5.00			4754.00	54.00 Bottom Packers & Anchor

**Total Tool Length: 76.00**



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Woolsey Operating  
125 N Market Ste1000  
Wichita KS 67202  
ATTN: Curtis Covey

**Logan X 3**  
**19 34 11Barber KS**  
Job Ticket: 26969      **DST#: 3**  
Test Start: 2007.06.04 @ 14:31:25

### 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: 200000 ppm	
Viscosity: 48.00 sec/qt	Cushion Volume: bbl		
Water Loss: 10.77 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 10000.00 ppm			
Filter Cake: 0.02 inches			

### Recovery Information

Recovery Table

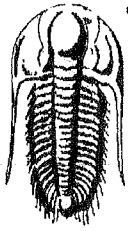
Length ft	Description	Volume bbl
0.00	GIP 4236 Feet	0.000
120.00	GSY SOMCW 20%G 4%O 12%M 64%W	1.683
240.00	GSY OMCW 22%G 8%O 15%M 55%W	3.367
90.00	GSY SOWCM 6%G 2%O 22%W 70%M	1.262

Total Length: 450.00 ft      Total Volume: 6.312 bbl

Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:

Laboratory Name:      Laboratory Location:

Recovery Comments:



**TRILOBITE**  
**TESTING, INC.**

# DRILL STEM TEST REPORT

**GAS RATES**

Woolsey Operating  
125 N Market Ste1000  
Wichita KS 67202

**Logan X 3**

**19 34 11Barber KS**

Job Ticket: 26969

**DST#: 3**

ATTN: Curtis Covey

Test Start: 2007.06.04 @ 14:31:25

## Gas Rates Information

Temperature: 59 deg C  
Relative Density: 0.65  
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (mm)	Pressure (kPaa)	Gas Rate (m <sup>3</sup> /d)
1	20	0.13	2.75	6.42
1	20	0.13	2.75	6.42
1	25	0.13	3.00	6.51
1	30	0.13	6.00	7.64
2	5	0.25	16.00	48.23
2	10	0.25	18.00	51.40
2	15	0.25	18.00	51.40
2	20	0.25	18.00	51.40
2	25	0.25	19.00	52.99
2	30	0.25	20.00	54.57
2	35	0.25	20.00	54.57
2	40	0.25	20.00	54.57
2	45	0.25	20.00	54.57
2	55	0.25	19.00	52.99
2	60	0.25	19.00	52.99

Serial #: 8289

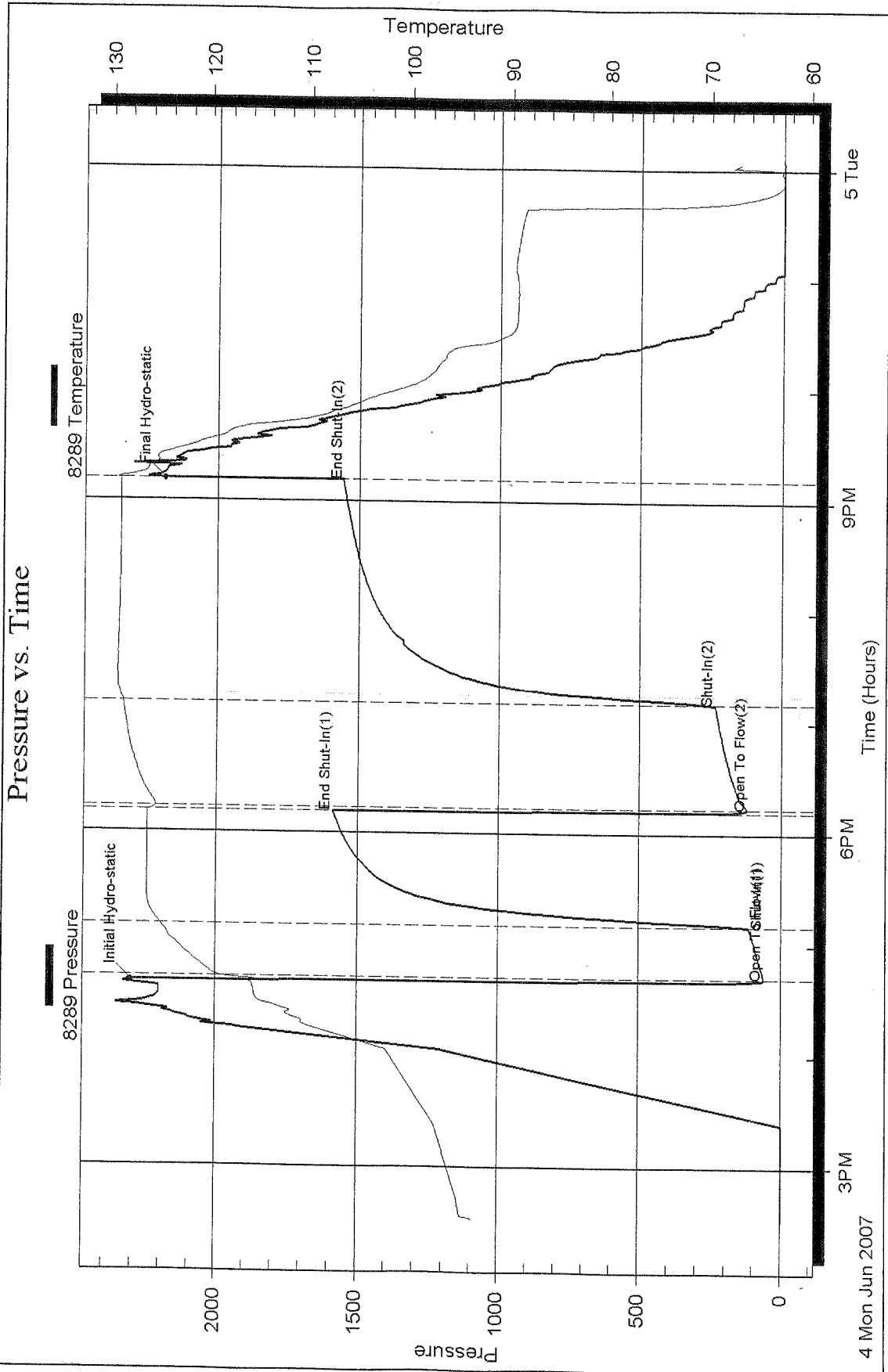
Inside

Woodsey Operating

19 34 11 Barber KS

DST Test Number: 3

### Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 26969

Printed: 2007.06.07 @ 12:07:24 Page 6

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