

TRILOBITE
TESTING, INC.

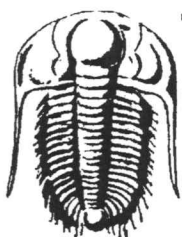
DRILL STEM TEST REPORT

Prepared for

Samuel Gary Jr. and Associates
1670 Broadway Ste. 330
Denver, CO 80202

City of Coldwater 23-10
23-32s-19w
Comanche, KS

Trilobite Testing, Inc
PO Box 362 - Hays, Kansas - 67601
ph: 785-625-4778 fax: 785-625-5620
e-mail: trilobite@eaglecom.net



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT
Samuel Gary Jr. and Associates
1670 Broadway Ste. 330
Denver, CO 80202

Well name#:	City of Coldwater 23-10	Date:	10/17/2003
Location#:	23-32s-19w Comanche, KS	Ticket #:	17202
		DST#	1

General Informaion:

Formation:	Mississippi	Test Type:	Conventional	BHT:	
Interval:	5129-5180	Tester:	Chris Hagman	OIL API:	
Total Depth:	5180	Elevation:	ft(KB)	H2O Salinity:	
Hole Diameter:	7 7/8"		1999 ft(CF)		

Start Data:		Tool Weight:	2000	Mud Type:	Chemical
Start Time:	14:00:00	Weight Set on Packers:		Mud Weight:	
Time tool opened:		Weight to Pull Loose:		Viscosity:	
Time Off Btm:		Initial String Weight:		Water Loss:	
End Date:		Final String Weight:		Resistivity:	
End Time:		Drill Pipe Length:		Salinity:	
		Drill Collar Length:			
		Wt. Pipe Length:			

Test Comment:	IF: Misrun @ 3000' driller hit a bridge and stacked out @ 35000 string ISI: weight after displacing 300 ft of water @ 5500ppm FF: Tripped out @ 4:00pm FSI:
Recovery Length(ft):	

Gas Volume Report

Recorder #:	Min:	Ins. Of water	Orifice	MCF/D
Pressure Summary:		PSIG	size	
Initial Hydro-static:				
Open to Flow (1):				
Shut-in (1):				
End Shut-in (1):				
Open to Flow (2):				
Shut-in (2):				
End Shut-in (2):				
Final Hydro-static:				



DRILL STEM TEST REPORT

Prepared For: **Samuel Gary Jr. & Assoc. Inc.**

1670 Broadway, Suite 3300
Denver, Co 80202

ATTN: Tom Fertal

23-32-19 Comanche

City of Coldwater 23-10

Start Date: 2003.10.18 @ 18:15:26

End Date: 2003.10.19 @ 06:21:26

Job Ticket #: 17820 DST #: 2

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1670 Broadway, Suite 3300
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ATTN: Tom Fertal

City of Coldwater 23-10

23-32-19 Comanche

Job Ticket: 17820

DST#: 2

Test Start: 2003.10.18 @ 18:15:26

GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:04:41

Time Test Ended: 06:21:26

Test Type: Conventional Bottom Hole

Tester: Nathan

Unit No: 16

Interval: **5129.00 ft (KB) To 5180.00 ft (KB) (TVD)**

Total Depth: 5180.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Poor

Reference Elevations: 2010.00 ft (KB)

1999.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 3310

Inside

Press@RunDepth: 99.00 psig @ 5164.00 ft (KB)

Start Date: 2003.10.18

End Date:

2003.10.19

Capacity: 7000.00 psig

Last Calib.: 1899.12.30

Start Time: 18:15:27

End Time:

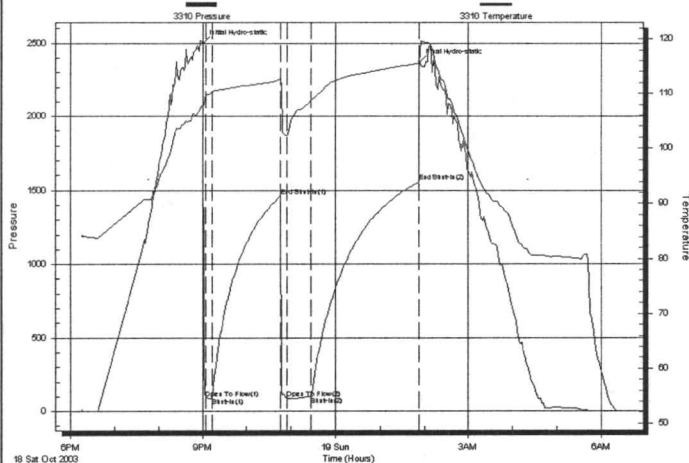
06:21:26

Time On Btm: 2003.10.18 @ 21:01:11

Time Off Btm: 2003.10.19 @ 01:53:26

TEST COMMENT: IF- Strong blow ; O.B.B. in 1min; GTS in 7min
ISI-No blow
FF-Strong blow ; GTS as soon as tool opened
FSI-No blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2500.91	107.82	Initial Hydro-static
4	87.32	109.67	Open To Flow (1)
13	90.35	110.32	Shut-In (1)
105	1457.17	112.60	End Shut-In (1)
114	84.08	102.29	Open To Flow (2)
146	99.00	108.78	Shut-In (2)
292	1555.32	115.50	End Shut-In (2)
293	2369.73	115.65	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
186.00	Muddy water 96% mud 4% w water	2.61

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.25	4.00	29.19
Last Gas Rate	0.25	14.00	45.05
Max. Gas Rate	0.25	14.00	45.05



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DRILL STEM TEST REPORT

TOOL DIAGRAM

Samuel Gary Jr. & Assoc. Inc.

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Denver, Co 80202

ATTN: Tom Fertal

City of Coldwater 23-10

23-32-19 Comanche

Job Ticket: 17820

DST#: 2

Test Start: 2003.10.18 @ 18:15:26

Tool Information

Drill Pipe:	Length: 5118.00 ft	Diameter: 3.80 inches	Volume: 71.79 bbl	Tool Weight: 2600.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 24000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 88000.00 lb
		Total Volume:	71.79 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial 69000.00 lb
Depth to Top Packer:	5129.00 ft			Final 69000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	51.00 ft			
Tool Length:	81.00 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			5100.00	
Shut In Tool	5.00			5105.00	
Sampler	3.00			5108.00	
Hydraulic tool	5.00			5113.00	
Jars	5.00			5118.00	
Safety Joint	2.00			5120.00	
Packer	4.00			5124.00	30.00 Bottom Of Top Packer
Packer	5.00			5129.00	
Stubb	1.00			5130.00	
Change Over Sub	1.00			5131.00	
Blank Spacing	32.00			5163.00	
Change Over Sub	1.00			5164.00	
Recorder	0.00	3310	Inside	5164.00	
Perforations	14.00			5178.00	
Recorder	0.00	10242	Outside	5178.00	
Bullnose	2.00			5180.00	51.00 Bottom Packers & Anchor
Total Tool Length:	81.00				



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DRILL STEM TEST REPORT

FLUID SUMMARY

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City of Coldwater 23-10

1670 Broadway, Suite 3300
Denver, Co 80202

23-32-19 Comanche

Job Ticket: 17820

DST#: 2

ATTN: Tom Fertal

Test Start: 2003.10.18 @ 18:15:26

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:

35000 ppm

Viscosity: 81.00 sec/qt

Cushion Volume:

bbl

Water Loss: 14.35 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 9000.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
186.00	Muddywater 96% mud 4% water	2.609

Total Length: 186.00 ft Total Volume: 2.609 bbl

Num Fluid Samples: 0

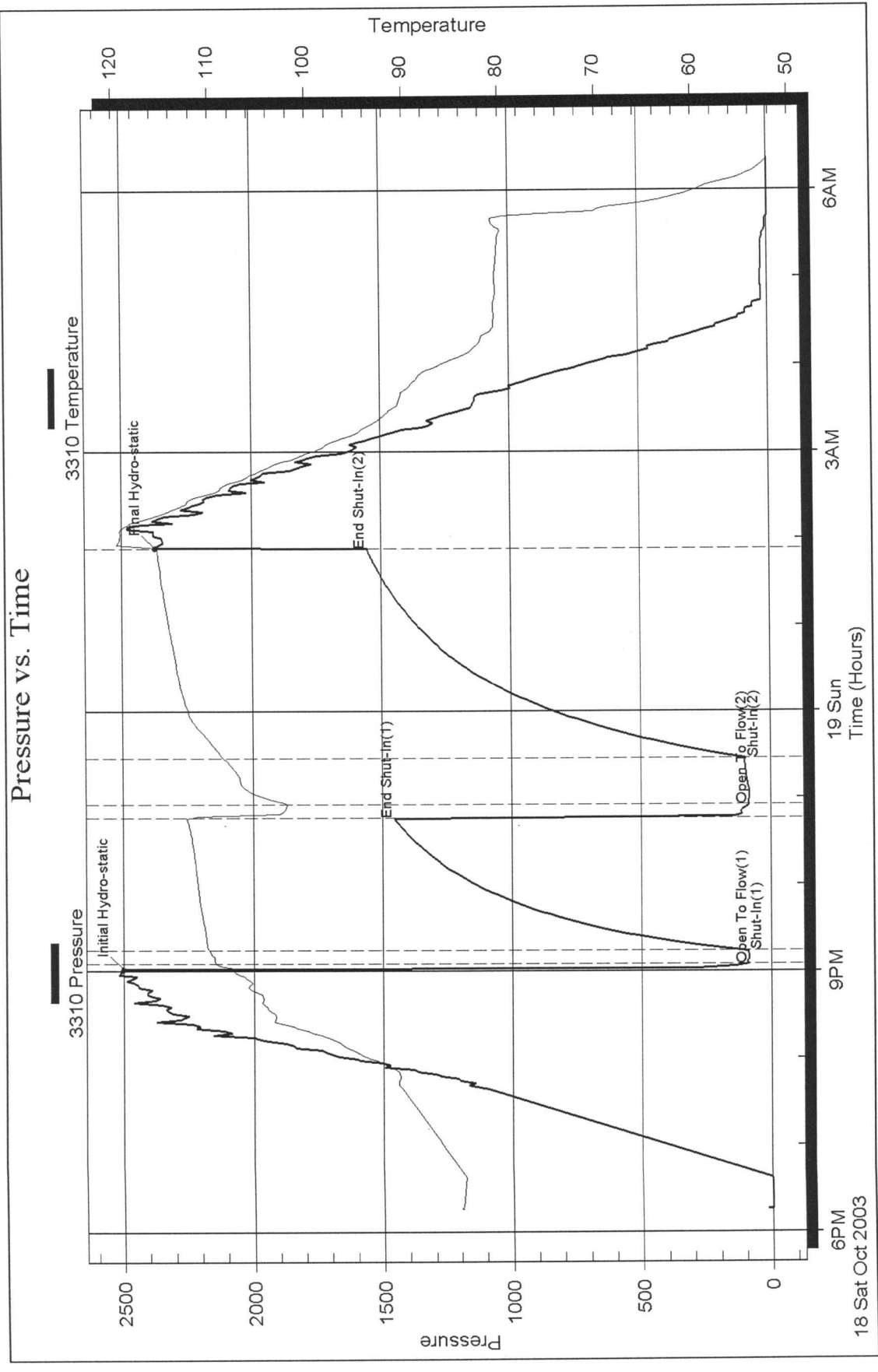
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Sampler recovery: 3000ml or 3.8CF gas @ 1400psi





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1670 Broadway, Suite 3300
Denver, Co 80202

ATTN: Tom Fertal

23-32-19 Comanche

City of Coldwater 23-10

Start Date: 2003.10.22 @ 00:23:09

End Date: 2003.10.22 @ 12:14:24

Job Ticket #: 17912 DST #: 3

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ATTN: Tom Fertal

City of Coldwater 23-10

23-32-19 Comanche

Job Ticket: 17912

DST#: 3

Test Start: 2003.10.22 @ 00:23:09

GENERAL INFORMATION:

Formation: **Viola**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:04:09

Time Test Ended: 12:14:24

Test Type: Conventional Bottom Hole

Tester: Gary Pevoteaux

Unit No: 23

Interval: **5776.00 ft (KB) To 5800.00 ft (KB) (TVD)**

Total Depth: 5800.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Poor

Reference Elevations: 2010.00 ft (KB)

1999.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 6770

Inside

Press@RunDepth: 41.80 psig @ 5777.00 ft (KB)

Start Date: 2003.10.22 End Date: 2003.10.22

Start Time: 00:23:10 End Time: 12:14:24

Capacity: 7000.00 psig

Last Calib.: 2003.10.22

Time On Btm: 2003.10.22 @ 04:00:24

Time Off Btm: 2003.10.22 @ 08:46:24

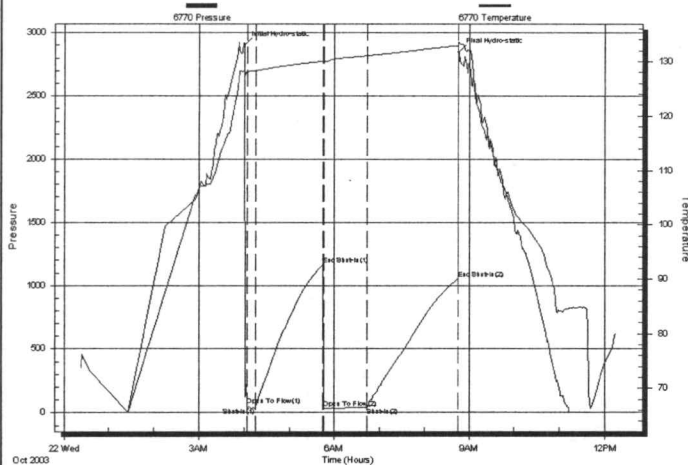
TEST COMMENT: IF: Fair to strong blow. B.O.B. in 6 mins.

IS: No blow.

FF: Strong blow. B.O.B. in 10 secs.

FS: No blow.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2907.15	128.37	Initial Hydro-static
4	52.49	128.16	Open To Flow (1)
15	41.11	128.35	Shut-In (1)
104	1162.36	130.06	End Shut-In (1)
105	32.67	129.98	Open To Flow (2)
164	41.80	131.06	Shut-In (2)
285	1052.51	132.87	End Shut-In (2)
286	2848.52	133.51	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
78.00	SO&WCGM 4%o 12%w 20%g 64%m	1.09
0.00	3100 ft. of gas in pipe	0.00

Gas Rates

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

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City of Coldwater 23-10

23-32-19 Comanche

Job Ticket: 17912

DST#: 3

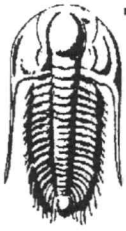
Test Start: 2003.10.22 @ 00:23:09

Tool Information

Drill Pipe:	Length: 5775.00 ft	Diameter: 3.80 inches	Volume: 81.01 bbl	Tool Weight: 2400.00 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: 82000.00 lb
			Total Volume: 81.01 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial 76000.00 lb
Depth to Top Packer:	5776.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	24.00 ft			
Tool Length:	54.00 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			5747.00	
Shut In Tool	5.00			5752.00	
Sampler	3.00			5755.00	
Hydraulic tool	5.00			5760.00	
Jars	5.00			5765.00	
Safety Joint	2.00			5767.00	
Packer	4.00			5771.00	30.00 Bottom Of Top Packer
Packer	5.00			5776.00	
Stubb	1.00			5777.00	
Recorder	0.00	6770	Inside	5777.00	
Perforations	18.00			5795.00	
Recorder	0.00	13222	Outside	5795.00	
Bullnose	5.00			5800.00	24.00 Bottom Packers & Anchor

Total Tool Length: 54.00



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23-32-19 Comanche

Job Ticket: 17912

DST#: 3

ATTN: Tom Fertal

Test Start: 2003.10.22 @ 00:23:09

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

41 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

19000 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbl

Water Loss: 10.38 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: 0.20 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
78.00	SO&WCGM 4%o 12%w 20%g 64%m	1.094
0.00	3100 ft.of gas in pipe	0.000

Total Length: 78.00 ft Total Volume: 1.094 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #: none

Laboratory Name:

Laboratory Location:

Recovery Comments: Sampler Data: 0.4 cubic ft. gas

400 ml. oil

Pressure vs. Time

