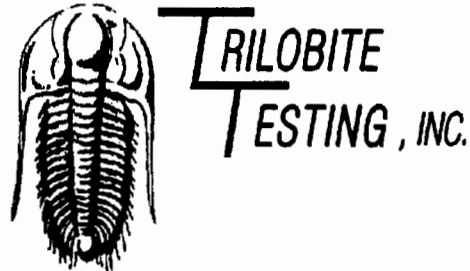


15-195-22615

23-135-22w

IND
VCE



DRILL STEM TEST REPORT

Prepared For: **DNOC**

PO Box 372
Hays Ks 67601

ATTN: Ron Nelson

23 13 22 Trego KS

RS # 1-23

Start Date: 2009.07.04 @ 19:10:24

End Date: 2009.07.05 @ 00:34:24

Job Ticket #: 34319 DST #: 1

DNOC
RS # 1-23
23 13 22 Trego KS
DST # 1
C-D
LKC
2009.07.04

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

DNOC
PO Box 372
Hays Ks 67601
ATTN: Ron Nelson

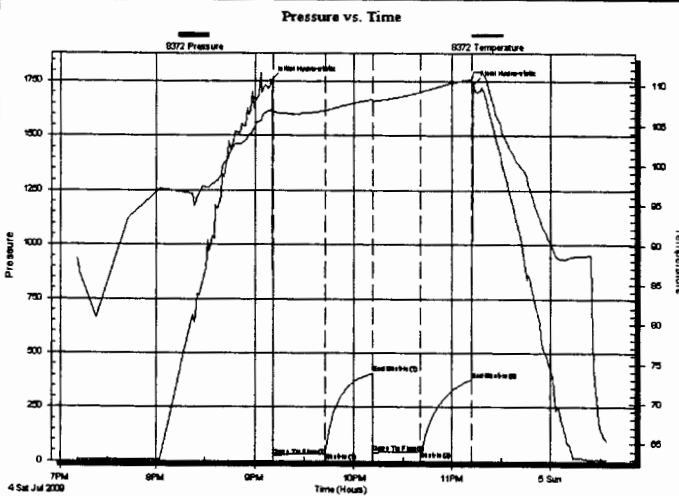
RS # 1-23
23 13 22 Trego KS
Job Ticket: 34319 **DST#: 1**
Test Start: 2009.07.04 @ 19:10:24

GENERAL INFORMATION:

Formation: **C-D LKC**
Deviated: **No Whipstock** ft (KB)
Time Tool Opened: 21:10:54
Time Test Ended: 00:34:24
Interval: **3614.00 ft (KB) To 3656.00 ft (KB) (TVD)**
Total Depth: **3656.00 ft (KB) (TVD)**
Hole Diameter: **7.88 inches** Hole Condition: **Good**
Test Type: **Conventional Bottom Hole**
Tester: **Dan Bangle**
Unit No: **38**
Reference Elevations: **2247.00 ft (KB)**
2239.00 ft (CF)
KB to GR/CF: **8.00 ft**

Serial #: 8372 **Inside**
Press@RunDepth: **45.81 psig @ 3617.00 ft (KB)**
Start Date: **2009.07.04** End Date: **2009.07.05** Capacity: **7000.00 psig**
Start Time: **19:10:25** End Time: **00:34:24** Last Calib.: **2009.07.05**
Time On Btm: **2009.07.04 @ 21:09:54**
Time Off Btm: **2009.07.04 @ 23:12:54**

TEST COMMENT: **IF-Weak building to 3/4"**
FF-Weak steady surface blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1752.87	106.95	Initial Hydro-static
1	21.10	106.33	Open To Flow (1)
33	37.32	106.81	Shut-In(1)
61	405.61	108.22	End Shut-In(1)
62	40.24	107.98	Open To Flow(2)
91	45.81	109.14	Shut-In(2)
122	377.71	110.79	End Shut-In(2)
123	1736.08	111.75	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	Mty Wtr	0.43

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

DNOC

RS # 1-23

PO Box 372
Hays Ks 67601

23 13 22 Trego KS

Job Ticket: 34319

DST#: 1

ATTN: Ron Nelson

Test Start: 2009.07.04 @ 19:10:24

Tool Information

Drill Pipe:	Length: 3584.00 ft	Diameter: 3.80 inches	Volume: 50.27 bbl	Tool Weight: 2000.00 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: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 50.42 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 44000.00 lb
Depth to Top Packer:	3614.00 ft			Final 44000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	42.00 ft			
Tool Length:	62.00 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			3595.00	
Shut In Tool	5.00			3600.00	
Hydraulic tool	5.00			3605.00	
Packer	5.00			3610.00	20.00 Bottom Of Top Packer
Packer	4.00			3614.00	
Stubb	1.00			3615.00	
Perforations	1.00			3616.00	
Change Over Sub	1.00			3617.00	
Recorder	0.00	8372	Inside	3617.00	
Recorder	0.00	8520	Outside	3617.00	
Drill Pipe	31.00			3648.00	
Change Over Sub	1.00			3649.00	
Perforations	4.00			3653.00	
Bullnose	3.00			3656.00	42.00 Bottom Packers & Anchor

Total Tool Length: 62.00



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

DNOC
PO Box 372
Hays Ks 67601
ATTN: Ron Nelson

RS # 1-23
23 13 22 Trego KS
Job Ticket: 34319 DST#: 1
Test Start: 2009.07.04 @ 19:10:24

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:	9.16 in ³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	2000.00 ppm				
Filter Cake:	inches				

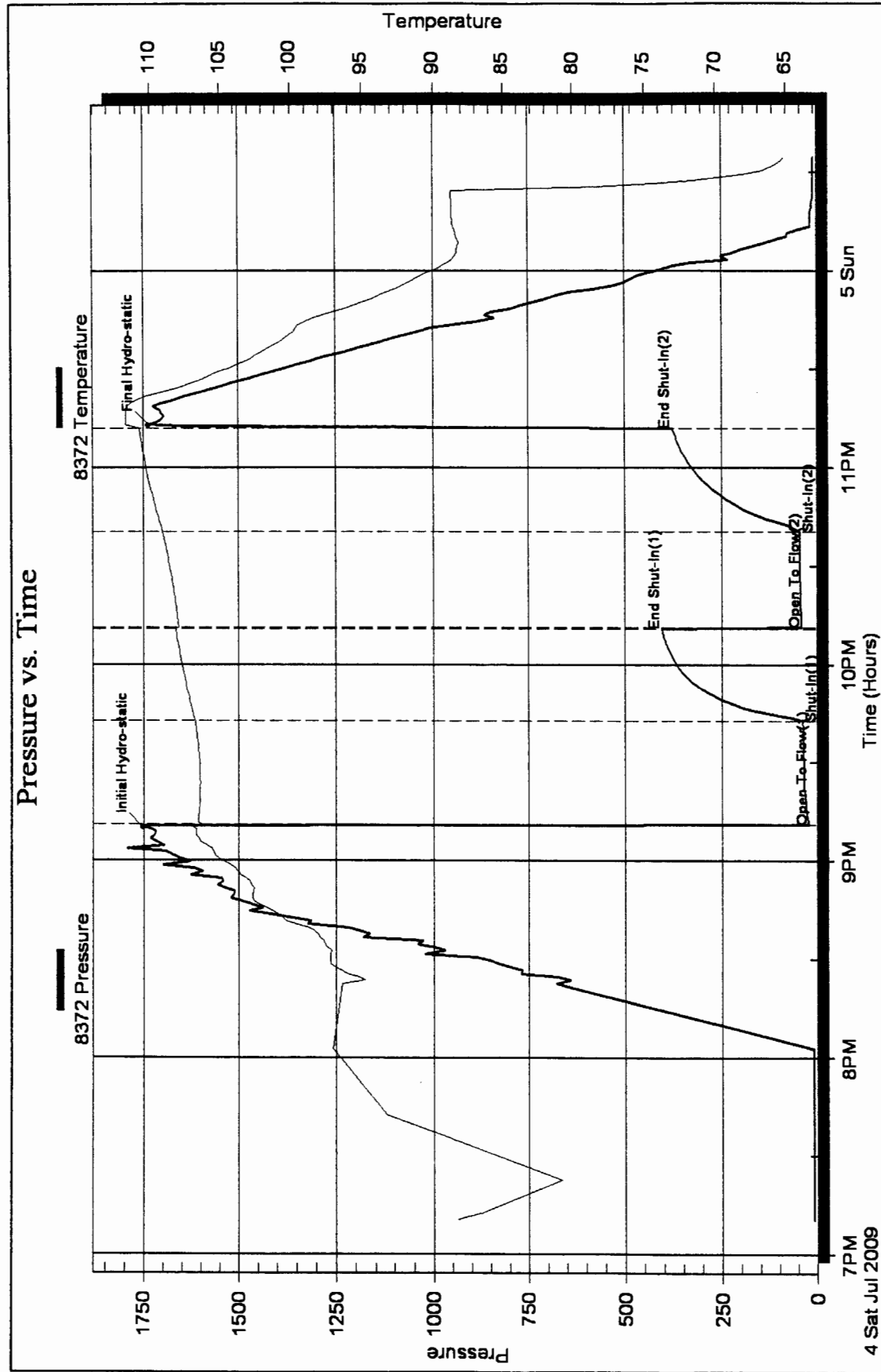
Recovery Information

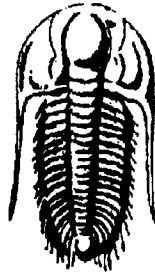
Recovery Table

Length ft	Description	Volume bbbl
50.00	Mdy Wtr	0.428

Total Length: 50.00 ft Total Volume: 0.428 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

Pressure vs. Time





TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **DNOC**

PO Box 372
Hays Ks 67601

ATTN: Ron Nelson

23 13 22 Trego KS

RS # 1-23

Start Date: 2009.07.05 @ 14:27:08

End Date: 2009.07.05 @ 21:10:38

Job Ticket #: 34320 DST #: 2

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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

DNOC

RS # 1-23

23 13 22 Trego KS

DST # 2

1-1

2009.07.05



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

DNOC
PO Box 372
Hays Ks 67601
ATTN: Ron Nelson

RS # 1-23
23 13 22 Trego KS
Job Ticket: 34320 **DST#: 2**
Test Start: 2009.07.05 @ 14:27:08

GENERAL INFORMATION:

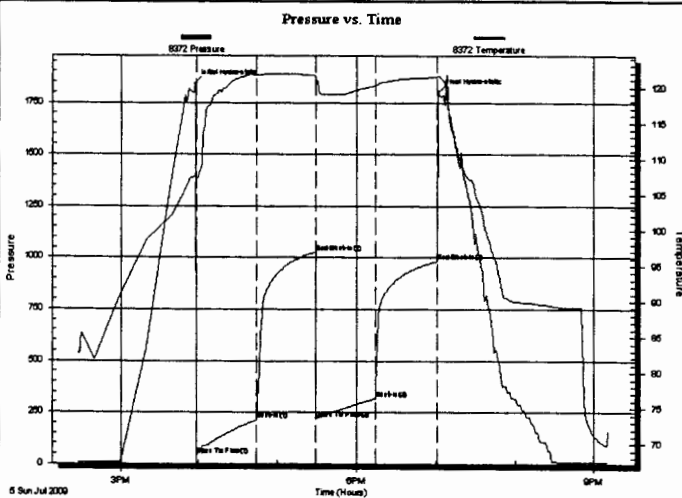
Formation: I-J
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 15:58:08
Time Test Ended: 21:10:38
Test Type: Conventional Bottom Hole
Tester: Dan Bangle
Unit No: 38
Interval: 3740.00 ft (KB) To 3790.00 ft (KB) (TVD)
Reference Elevations: 2247.00 ft (KB)
Total Depth: 3790.00 ft (KB) (TVD) 2239.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 8.00 ft

Serial #: 8372

Inside

Press@RunDepth: 316.98 psig @ 3743.00 ft (KB) Capacity: 7000.00 psig
Start Date: 2009.07.05 End Date: 2009.07.05 Last Calib.: 2009.07.05
Start Time: 14:27:09 End Time: 21:10:38 Time On Btrm: 2009.07.05 @ 15:57:08
Time Off Btrm: 2009.07.05 @ 19:01:38

TEST COMMENT: IF-Strong B-B in 7 min
IS-Weak blow back after 10 min
FF-Strong B-B in 7 min
FSI-Weak building to 5"



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1840.05	107.56	Initial Hydro-static
1	39.81	107.10	Open To Flow (1)
48	213.13	121.74	Shut-In(1)
92	1027.06	121.61	End Shut-In(1)
93	218.18	121.14	Open To Flow (2)
137	316.98	120.19	Shut-In(2)
184	981.68	121.37	End Shut-In(2)
185	1801.04	121.63	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
245.00	Wtr	3.16
185.00	O&GCMdyW 10%g 20%o 50%w 20%m	2.60
30.00	MGSyO 20%g 60%o 20%m	0.42
185.00	CGSyO 20%g 80%o	2.60
0.00	895 GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

DNOC

RS # 1-23

PO Box 372
Hays Ks 67601

23 13 22 Trego KS

Job Ticket: 34320

DST#: 2

ATTN: Ron Nelson

Test Start: 2009.07.05 @ 14:27:08

Tool Information

Drill Pipe:	Length: 3710.00 ft	Diameter: 3.80 inches	Volume: 52.04 bbl	Tool Weight:	2000.00 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: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	60000.00 lb
			Total Volume: 52.19 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial	45000.00 lb
Depth to Top Packer:	3740.00 ft			Final	49000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	49.00 ft				
Tool Length:	69.00 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			3721.00	
Shut In Tool	5.00			3726.00	
Hydraulic tool	5.00			3731.00	
Packer	5.00			3736.00	20.00 Bottom Of Top Packer
Packer	4.00			3740.00	
Stubb	1.00			3741.00	
Perforations	1.00			3742.00	
Change Over Sub	1.00			3743.00	
Recorder	0.00	8372	Inside	3743.00	
Recorder	0.00	8520	Outside	3743.00	
Drill Pipe	32.00			3775.00	
Change Over Sub	1.00			3776.00	
Perforations	10.00			3786.00	
Bullnose	3.00			3789.00	49.00 Bottom Packers & Anchor

Total Tool Length: 69.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

DNOC
PO Box 372
Hays Ks 67601
ATTN: Ron Nelson

RS # 1-23
23 13 22 Trego KS
Job Ticket: 34320 DST#: 2
Test Start: 2009.07.05 @ 14:27:08

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 30 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 80000 ppm
Viscosity: 50.00 sec/qt	Cushion Volume: bbl	
Water Loss: 9.97 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 2800.00 ppm		
Filter Cake: inches		

Recovery Information

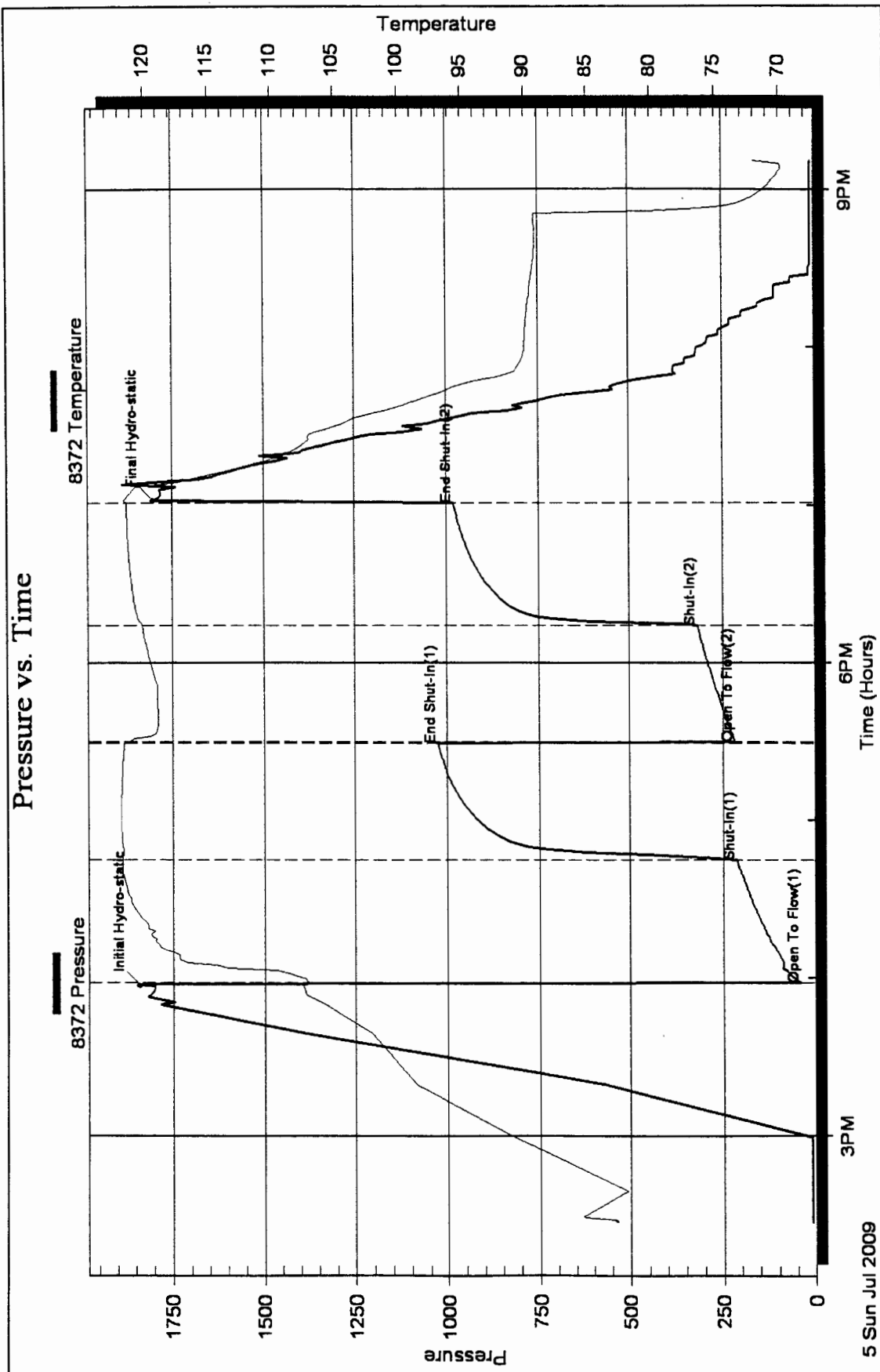
Recovery Table

Length ft	Description	Volume bbl
245.00	Wtr	3.163
185.00	O&GCMdyW 10%g 20%o 50%w 20%m	2.595
30.00	MCGsyO 20%g 60%o 20%m	0.421
185.00	CGsyO 20%g 80%o	2.595
0.00	895 GIP	0.000

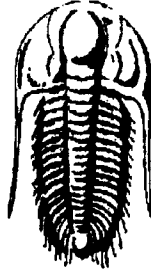
Total Length: 645.00 ft Total Volume: 8.774 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments: Rw .08 @ 80 = 80000ppm

Pressure vs. Time



5 Sun Jul 2009



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **DNOC**

PO Box 372
Hays Ks 67601

ATTN: Ron Nelson

23 13 22 Trego KS

RS # 1-23

Start Date: 2009.07.06 @ 14:25:59

End Date: 2009.07.06 @ 20:44:59

Job Ticket #: 34321 DST #: 3

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

DNOC
PO Box 372
Hays Ks 67601

ATTN: Ron Nelson

RS # 1-23

23 13 22 Trego KS

Job Ticket: 34321

DST#: 3

Test Start: 2009.07.06 @ 14:25:59

GENERAL INFORMATION:

Formation: **Cher Sd**

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

Time Tool Opened: 16:04:59

Time Test Ended: 20:44:59

Test Type: **Conventional Bottom Hole**

Tester: **Dan Bangle**

Unit No: **38**

Interval: **3958.00 ft (KB) To 4029.00 ft (KB) (TVD)**

Total Depth: **4029.00 ft (KB) (TVD)**

Hole Diameter: **7.88 inches** Hole Condition: **Good**

Reference Elevations: **2247.00 ft (KB)**

2239.00 ft (CF)

KB to GR/CF: **8.00 ft**

Serial #: **8372** **Inside**

Press@RunDepth: **92.36 psig @ 3963.00 ft (KB)**

Start Date: **2009.07.06**

End Date:

2009.07.06

Capacity: **7000.00 psig**

Last Calib.: **2009.07.06**

Start Time: **14:26:00**

End Time:

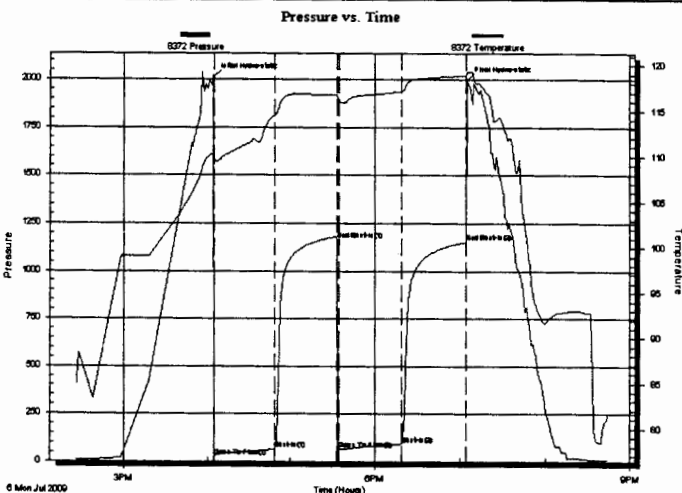
20:44:59

Time On Btm: **2009.07.06 @ 16:04:29**

Time Off Btm: **2009.07.06 @ 19:04:59**

TEST COMMENT: **IF-Weak building to 4"**

FF-Weak building to 1"



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2012.32	110.21	Initial Hydro-static
1	26.59	109.15	Open To Flow (1)
44	64.67	114.51	Shut-In(1)
89	1165.35	116.79	End Shut-In(1)
90	64.85	116.03	Open To Flow (2)
134	92.36	117.12	Shut-In(2)
180	1151.97	118.90	End Shut-In(2)
181	1997.88	119.32	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
115.00	MCGsyO 10%g 50%o 40%w	1.34
70.00	CGsyO 10%g 90%o	0.98
0.00	185 GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

DNOC
PO Box 372
Hays Ks 67601
ATTN: Ron Nelson

RS # 1-23
23 13 22 Trego KS
Job Ticket: 34321 DST#: 3
Test Start: 2009.07.06 @ 14:25:59

Tool Information

Drill Pipe:	Length: 3929.00 ft	Diameter: 3.80 inches	Volume: 55.11 bbl	Tool Weight:	2000.00 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: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	60000.00 lb
			<u>Total Volume: 55.26 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial	50000.00 lb
Depth to Top Packer:	3958.00 ft			Final	50000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	71.00 ft				
Tool Length:	91.00 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			3939.00	
Shut In Tool	5.00			3944.00	
Hydraulic tool	5.00			3949.00	
Packer	5.00			3954.00	20.00 Bottom Of Top Packer
Packer	4.00			3958.00	
Stubb	1.00			3959.00	
Perforations	3.00			3962.00	
Change Over Sub	1.00			3963.00	
Recorder	0.00	8372	Inside	3963.00	
Drill Pipe	62.00			4025.00	
Change Over Sub	1.00			4026.00	
Bullnose	3.00			4029.00	71.00 Bottom Packers & Anchor

Total Tool Length: 91.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

DNOC
PO Box 372
Hays Ks 67601
ATTN: Ron Nelson

RS # 1-23
23 13 22 Trego KS
Job Ticket: 34321 DST#: 3
Test Start: 2009.07.06 @ 14:25:59

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 36 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 50.00 sec/qt	Cushion Volume: bbl	
Water Loss: 10.38 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 4000.00 ppm		
Filter Cake: inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
115.00	MCGsyO 10%g 50%o 40%m	1.340
70.00	CGsyO 10%g 90%o	0.982
0.00	185 GIP	0.000

Total Length: 185.00 ft Total Volume: 2.322 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Pressure vs. Time

