

15-179-21176

15-10s-26w

IND



**TRILOBITE TESTING, INC.**

**DRILL STEM TEST REPORT**

Prepared For: **Ritchie Exploration Inc**

PO Box 783188  
Wichita KS 67278

ATTN: Bob Stolze

**15 14 10 26 Sheridan KS**

**Werth #1-15B**

Start Date: 2007.06.16 @ 04:00:52

End Date: 2007.06.16 @ 06:50:52

Job Ticket #: 28648                      DST #: 1

Ritchie Exploration Inc

Werth #1-15B

15 14 10 26 Sheridan KS

DST # 1

LKC-"D"

2007.06.16

Section 15, not 14 as printed

**CONFIDENTIAL**

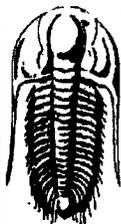
**OCT 02 2007**

**KCC**

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc

PO Box 783188  
Wichita KS 67278

ATTN: Bob Stolze

**Werth #1-15B**

**14 10 26 Sheridan KS**

Job Ticket: 28648

**DST#: 1**

Test Start: 2007.06.16 @ 04:00:52

## GENERAL INFORMATION:

Formation: **LKC-"D"**

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

Time Tool Opened:

Time Test Ended: **06:50:52**

Interval: **3860.00 ft (KB) To 3910.00 ft (KB) (TVD)**

Total Depth: **3910.00 ft (KB) (TVD)**

Hole Diameter: **7.80 inches** Hole Condition: **Good**

Test Type: **Conventional Bottom Hole**

Tester: **Jason McLemore**

Unit No: **32**

Reference Elevations: **2596.00 ft (KB)**

**2591.00 ft (CF)**

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

**Serial #: 6719** **Inside**

Press@RunDepth: **psig @ 3863.00 ft (KB)**

Start Date: **2007.06.16**

End Date: **2007.06.16**

Start Time: **04:00:54**

End Time: **06:50:52**

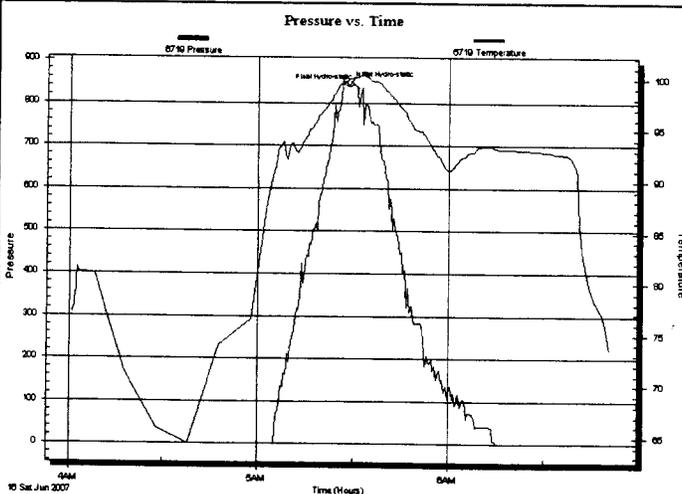
Capacity: **7000.00 psig**

Last Calib.: **2007.06.16**

Time On Btm: **2007.06.16 @ 05:28:07**

Time Off Btm: **2007.06.16 @ 05:31:22**

TEST COMMENT: **IFP Bridged Off 24 Stands in Opened Tool No Gain Pull Tool**



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	841.23	99.86	Initial Hydro-static
4	834.96	100.14	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
40.06	Mud	0.20

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration Inc

**Werth #1-15B**

PO Box 783188  
Wichita KS 67278

**14 10 26 Sheridan KS**

Job Ticket: 28648

**DST#: 1**

ATTN: Bob Stolze

Test Start: 2007.06.16 @ 04:00:52

### Tool Information

Drill Pipe:	Length: 1500.00 ft	Diameter: 3.80 inches	Volume: 21.04 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer:	lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	lb
			<u>Total Volume: 21.65 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	-2208.00 ft			String Weight: Initial	lb
Depth to Top Packer:	3860.00 ft			Final	lb
Depth to Bottom Packer:	ft				
Interval between Packers:	50.00 ft				
Tool Length:	78.00 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			3833.00	
Shut In Tool	5.00			3838.00	
Hydraulic tool	5.00			3843.00	
Jars	5.00			3848.00	
Safety Joint	2.00			3850.00	
Packer	5.00			3855.00	28.00 Bottom Of Top Packer
Packer	5.00			3860.00	
Stubb	1.00			3861.00	
Perforations	1.00			3862.00	
Change Over Sub	1.00			3863.00	
Recorder	0.00	6719	Inside	3863.00	
Blank Spacing	31.00			3894.00	
Change Over Sub	1.00			3895.00	
Perforations	12.00			3907.00	
Recorder	0.00	13221	Outside	3907.00	
Bullnose	3.00			3910.00	50.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>78.00</b>				



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Ritchie Exploration Inc  
PO Box 783188  
Wichita KS 67278  
ATTN: Bob Stolzie

**Werth #1-15B**  
**14 10 26 Sheridan KS**  
Job Ticket: 28648      **DST#: 1**  
Test Start: 2007.06.16 @ 04:00:52

**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: 45.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.38 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 1800.00 ppm			
Filter Cake: inches			

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
40.00	Mud	0.197

Total Length: 40.00 ft      Total Volume: bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments:

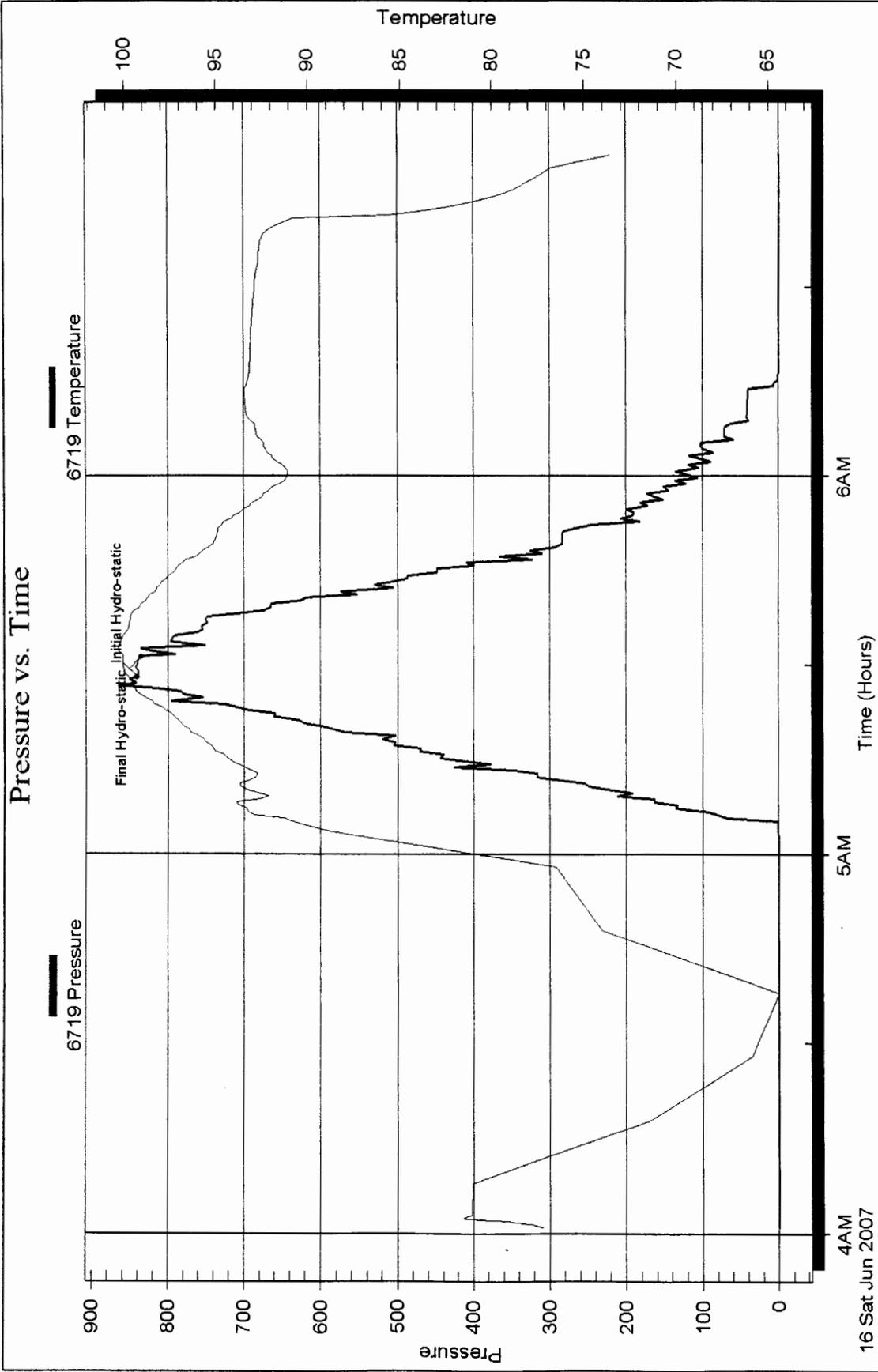
Serial #: 6719

Inside

Richie Exploration Inc

14 10 26 Sheridan KS

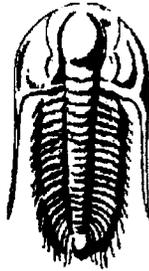
DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 28648

Printed: 2007.06.19 @ 12:13:18 Page 5



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

## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

PO Box 783188  
Wichita KS 67278

ATTN: Bob Stolze

**14 10 26 Sheridan KS**

**Werth #1-15B**

Start Date: 2007.06.16 @ 12:00:05

End Date: 2007.06.16 @ 20:09:50

Job Ticket #: 28649                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Ritchie Exploration Inc

Werth #1-15B

14 10 26 Sheridan KS

DST # 2

LKC-"B"

2007.06.16



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc

PO Box 783188  
Wichita KS 67278

ATTN: Bob Stolze

**Werth #1-15B**

**14 10 26 Sheridan KS**

Job Ticket: 28649

**DST#: 2**

Test Start: 2007.06.16 @ 12:00:05

## GENERAL INFORMATION:

Formation: **LKC-"B"**

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

Time Tool Opened: 14:24:20

Time Test Ended: 20:09:50

Interval: **3860.00 ft (KB) To 3910.00 ft (KB) (TVD)**

Total Depth: **3910.00 ft (KB) (TVD)**

Hole Diameter: **7.80 inches** Hole Condition: **Good**

Test Type: **Conventional Bottom Hole**

Tester: **Jason McLemore**

Unit No: **32**

Reference Elevations: **2596.00 ft (KB)**

**2591.00 ft (CF)**

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

**Serial #: 6719**

**Inside**

Press@RunDepth: **354.26 psig @ 3863.00 ft (KB)**

Start Date: **2007.06.16**

End Date: **2007.06.16**

Capacity: **7000.00 psig**

Last Calib.: **2007.06.16**

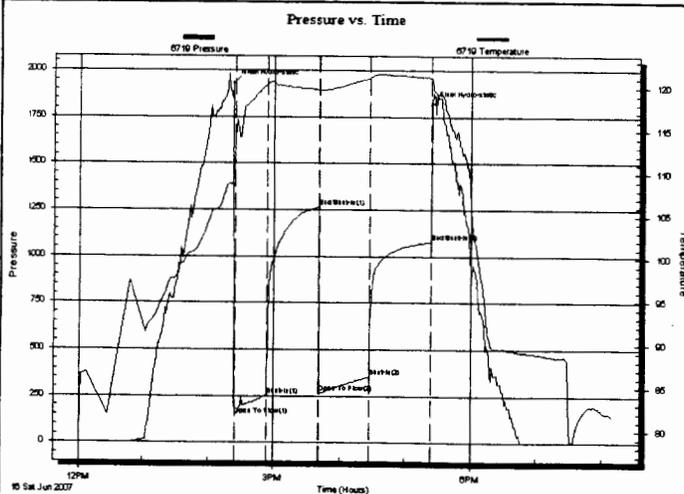
Start Time: **12:00:07**

End Time: **20:09:50**

Time On Btm: **2007.06.16 @ 14:22:50**

Time Off Btm: **2007.06.16 @ 17:24:35**

TEST COMMENT: IFP Strong BOB in 2-1/2 Min  
ISI Dead  
FFP Fair Blow BOB in 19 Min  
FSI Dead



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1928.83	109.03	Initial Hydro-static
2	143.85	114.07	Open To Flow (1)
31	255.24	120.26	Shut-In(1)
78	1265.14	119.70	End Shut-In(1)
79	267.55	119.43	Open To Flow (2)
124	354.26	121.06	Shut-In(2)
182	1078.67	121.09	End Shut-In(2)
182	1814.35	120.96	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
300.00	OCMV 15%O 60%W 25%M	2.51
180.00	GOCVM 10%G 25%O 25%W 40%M	2.52
250.00	GOCVM 10%G 20%O 10%W 60%M	3.51

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration Inc

**Werth #1-15B**

PO Box 783188  
Wichita KS 67278

**14 10 26 Sheridan KS**

Job Ticket: 28649

**DST#: 2**

ATTN: Bob Stolzie

Test Start: 2007.06.16 @ 12:00:05

### Tool Information

Drill Pipe:	Length: 3663.00 ft	Diameter: 3.80 inches	Volume: 51.38 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 50000.00 lb
		Total Volume: 52.29 bbl		Tool Chased 0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3860.00 ft			Final 41000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	50.00 ft			
Tool Length:	78.00 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			3833.00	
Shut In Tool	5.00			3838.00	
Hydraulic tool	5.00			3843.00	
Jars	5.00			3848.00	
Safety Joint	2.00			3850.00	
Packer	5.00			3855.00	28.00 Bottom Of Top Packer
Packer	5.00			3860.00	
Stubb	1.00			3861.00	
Perforations	1.00			3862.00	
Change Over Sub	1.00			3863.00	
Recorder	0.00	6719	Inside	3863.00	
Blank Spacing	31.00			3894.00	
Change Over Sub	1.00			3895.00	
Perforations	12.00			3907.00	
Recorder	0.00	13221	Outside	3907.00	
Bullnose	3.00			3910.00	50.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>78.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration Inc

**Werth #1-15B**

PO Box 783188  
Wichita KS 67278

**14 10 26 Sheridan KS**

Job Ticket: 28649

**DST#: 2**

ATTN: Bob Stolzie

Test Start: 2007.06.16 @ 12:00:05

## 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:

31000 ppm

Viscosity: 66.00 sec/qt

Cushion Volume:

bbf

Water Loss: 6.38 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbf
300.00	OCMW 15%O 60%W 25%M	2.514
180.00	GOCWM 10%G 25%O 25%W 40%M	2.525
250.00	GOCWM 10%G 20%O 10%W 60%M	3.507

Total Length: 730.00 ft

Total Volume: 8.546 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

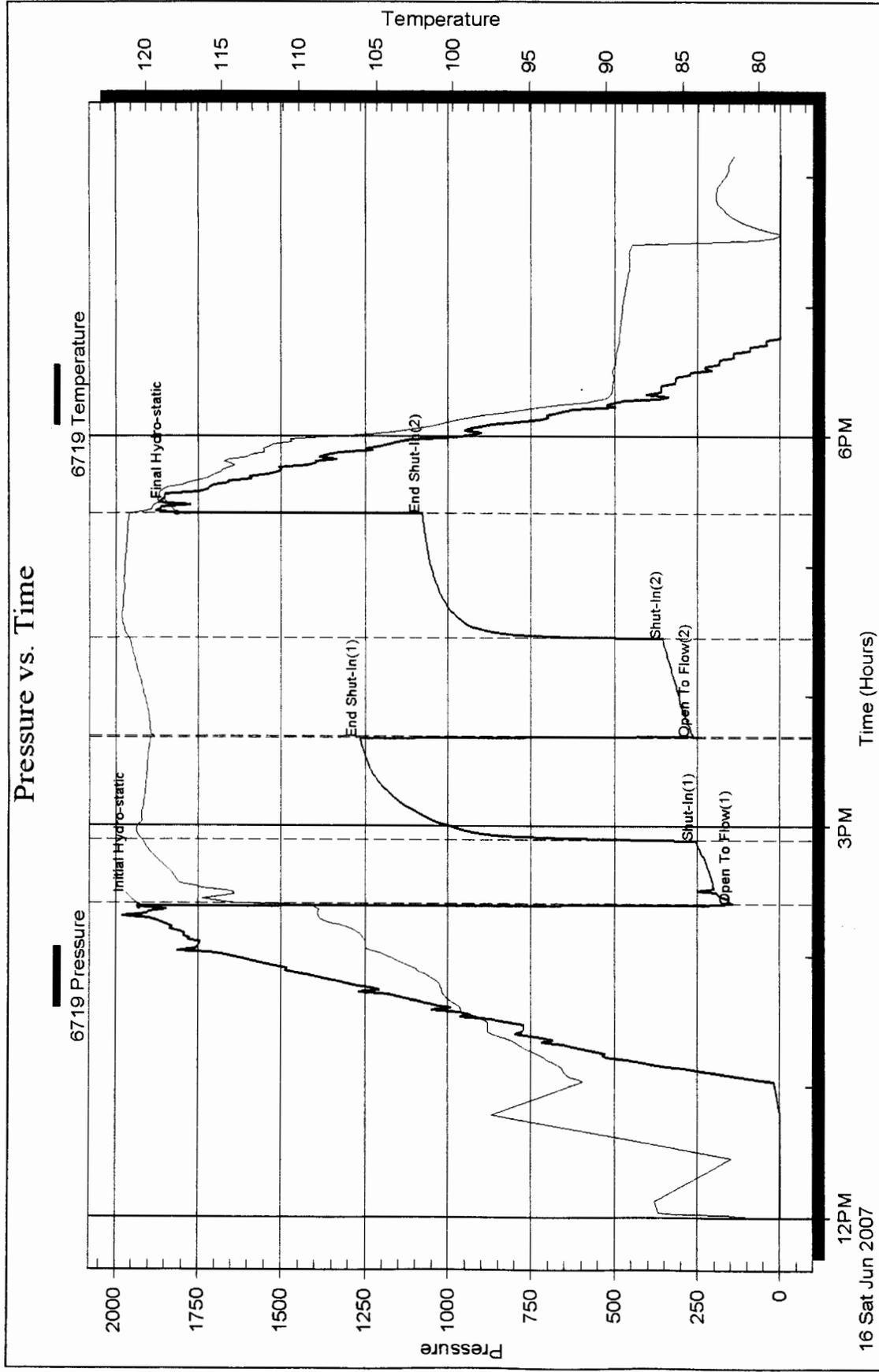
Serial #:

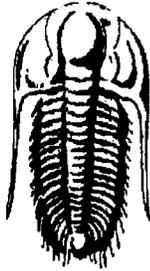
Laboratory Name:

Laboratory Location:

Recovery Comments:

# Pressure vs. Time





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

## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

PO Box 783188  
Wichita KS 67278

ATTN: Bob Stolze

**14 10 26 Sheridan KS**

**Werth #1-15B**

Start Date: 2007.06.17 @ 03:22:34

End Date: 2007.06.17 @ 10:20:19

Job Ticket #: 28650                      DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Ritchie Exploration Inc

Werth #1-15B

14 10 26 Sheridan KS

DST # 3

LKC-"E-F"

2007.06.17



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc

**Werth #1-15B**

PO Box 783188  
Wichita KS 67278

**14 10 26 Sheridan KS**

Job Ticket: 28650

**DST#: 3**

ATTN: Bob Stolze

Test Start: 2007.06.17 @ 03:22:34

## GENERAL INFORMATION:

Formation: **LKC-"E-F"**

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

Time Tool Opened: 05:14:34

Time Test Ended: 10:20:19

Test Type: **Conventional Bottom Hole**

Tester: **Jason McLemore**

Unit No: **32**

Interval: **3919.00 ft (KB) To 3944.00 ft (KB) (TVD)**

Reference Elevations: **2596.00 ft (KB)**

Total Depth: **3944.00 ft (KB) (TVD)**

**2591.00 ft (CF)**

Hole Diameter: **7.80 inches** Hole Condition: **Good**

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

**Serial #: 6719** **Inside**

Press@RunDepth: **137.16 psig @ 3921.00 ft (KB)**

Capacity: **7000.00 psig**

Start Date: **2007.06.17**

End Date: **2007.06.17**

Last Calib.: **2007.06.17**

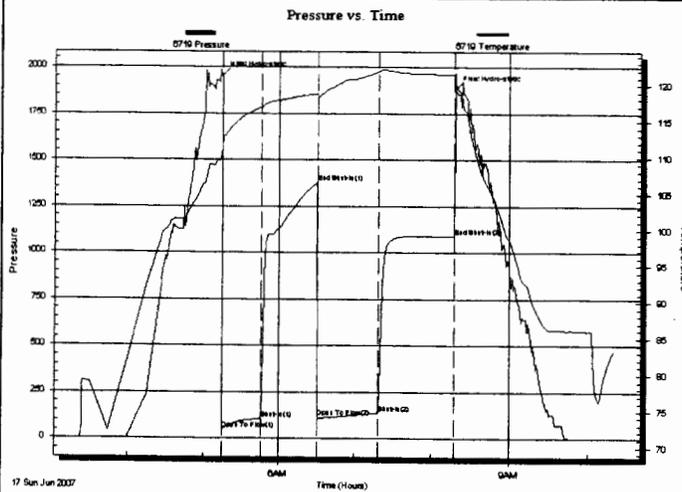
Start Time: **03:22:36**

End Time: **10:20:19**

Time On Btm: **2007.06.17 @ 05:14:19**

Time Off Btm: **2007.06.17 @ 08:18:34**

TEST COMMENT: IFP Good Blow BOB in 30 Min.  
ISI Dead  
FFP Good Blow BOB in 40 Mn  
FSI Dead



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1955.66	110.93	Initial Hydro-static
1	48.80	111.63	Open To Flow (1)
31	105.95	116.91	Shut-In(1)
76	1376.21	118.80	End Shut-In(1)
77	112.68	118.51	Open To Flow (2)
124	137.16	121.83	Shut-In(2)
184	1088.44	121.51	End Shut-In(2)
185	1884.06	120.35	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
120.00	OCMW 15%O 50%W 35%M	0.59
30.00	OCWM 20%O 15%W 65%M	0.15
90.00	MCO 50%O 50%M	0.93
35.00	Clean Oil	0.49
0.00	150 Gas In Pipe	0.00

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Ritchie Exploration Inc

**Werth #1-15B**

PO Box 783188  
Wichita KS 67278

**14 10 26 Sheridan KS**

Job Ticket: 28650

**DST#: 3**

ATTN: Bob Stolzie

Test Start: 2007.06.17 @ 03:22:34

**Tool Information**

Drill Pipe:	Length: 3721.00 ft	Diameter: 3.80 inches	Volume: 52.20 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose:	40000.00 lb
			<u>Total Volume: 53.11 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial	38000.00 lb
Depth to Top Packer:	3919.00 ft			Final	40000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	25.00 ft				
Tool Length:	48.00 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			3897.00		
Shut In Tool	5.00			3902.00		
Hydraulic tool	5.00			3907.00		
Safety Joint	2.00			3909.00		
Packer	5.00			3914.00	23.00	Bottom Of Top Packer
Packer	5.00			3919.00		
Stubb	1.00			3920.00		
Perforations	1.00			3921.00		
Recorder	0.00	6719	Inside	3921.00		
Perforations	20.00			3941.00		
Recorder	0.00	13221	Outside	3941.00		
Bullnose	3.00			3944.00	25.00	Bottom Packers & Anchor

**Total Tool Length: 48.00**



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Ritchie Exploration Inc

**Werth #1-15B**

PO Box 783188  
Wichita KS 67278

**14 10 26 Sheridan KS**

Job Ticket: 28650

**DST#: 3**

ATTN: Bob Stolzie

Test Start: 2007.06.17 @ 03:22:34

**Mud and Cushion Information**

Mud Type: Gel Chem

Cushion Type:

Oil API:

31 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

27000 ppm

Viscosity: 45.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.37 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbbl
120.00	OCMV 15%O 50%W 35%M	0.590
30.00	OCVM 20%O 15%W 65%M	0.148
90.00	MCO 50%O 50%M	0.935
35.00	Clean Oil	0.491
0.00	150 Gas In Pipe	0.000

Total Length: 275.00 ft

Total Volume: 2.727 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

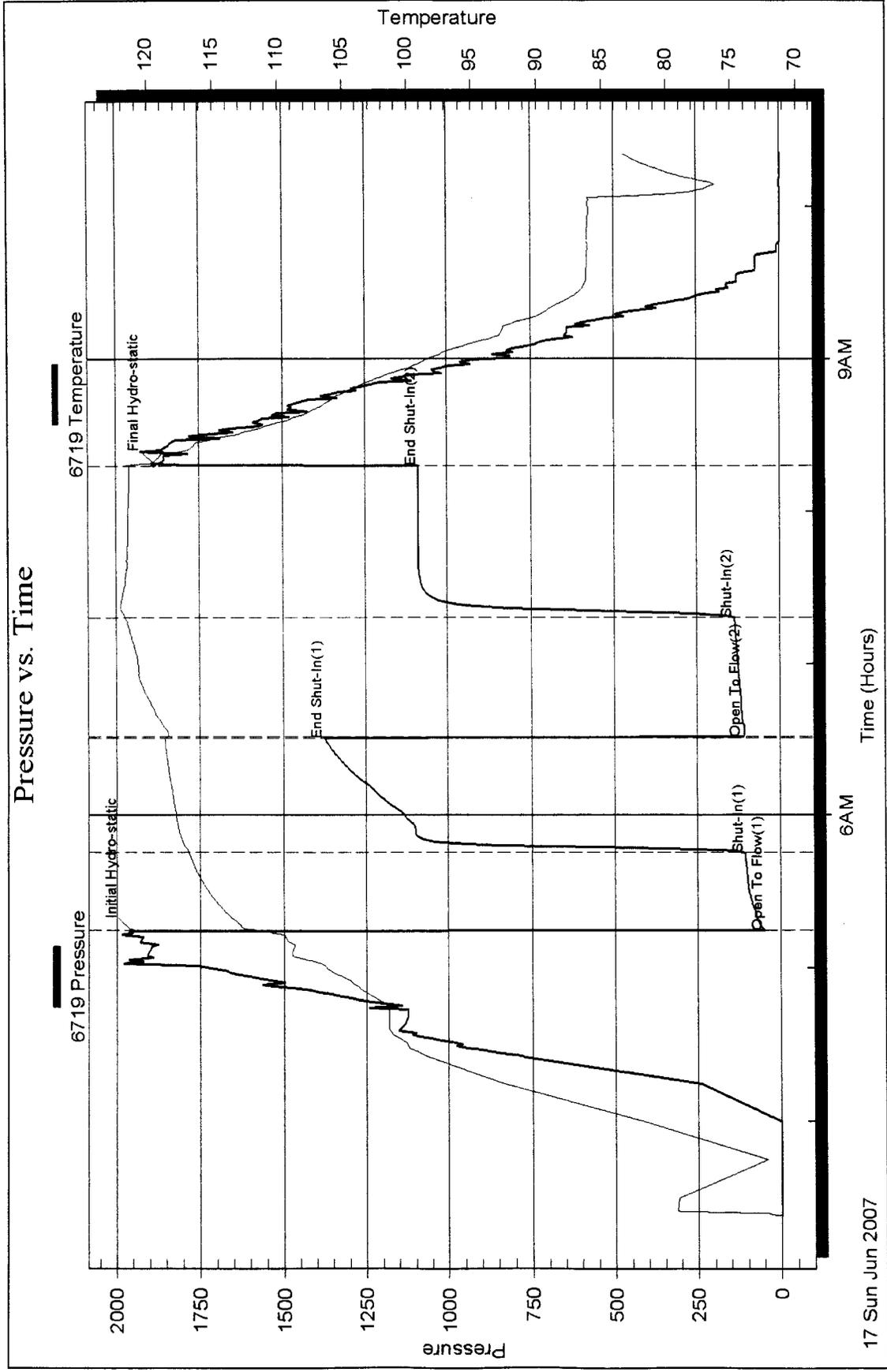
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time





**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

PO Box 783188  
Wichita KS 67278

ATTN: Bob Stolze

**14 10 26 Sheridan KS**

**Werth #1-15B**

Start Date: 2007.06.17 @ 20:42:18

End Date: 2007.06.18 @ 04:21:48

Job Ticket #: 28301                      DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Ritchie Exploration Inc

Werth #1-15B

14 10 26 Sheridan KS

DST # 4

LKC-"H-I"

2007.06.17



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc

**Werth #1-15B**

PO Box 783188  
Wichita KS 67278

**14 10 26 Sheridan KS**

ATTN: Bob Stolzie

Job Ticket: 28301

**DST#: 4**

Test Start: 2007.06.17 @ 20:42:18

## GENERAL INFORMATION:

Formation: **LKC-"H-I"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:49:03

Time Test Ended: 04:21:48

Test Type: Conventional Bottom Hole

Tester: Jason McLemore

Unit No: 32

Interval: **3965.00 ft (KB) To 4020.00 ft (KB) (TVD)**

Reference Elevations: 2596.00 ft (KB)

Total Depth: 4020.00 ft (KB) (TVD)

2591.00 ft (CF)

Hole Diameter: 7.80 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 6719**

Inside

Press@RunDepth: 351.98 psig @ 3968.00 ft (KB)

Capacity: 7000.00 psig

Start Date: 2007.06.17

End Date: 2007.06.18

Last Calib.: 2007.06.18

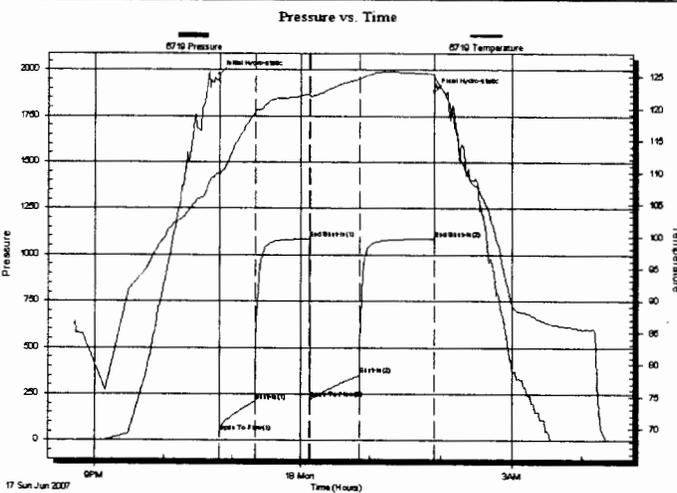
Start Time: 20:42:20

End Time: 04:21:48

Time On Btm: 2007.06.17 @ 22:48:33

Time Off Btm: 2007.06.18 @ 01:54:33

**TEST COMMENT:** IFP Good Blow BOB in 8 Min  
ISI Blow back Built to 1/8 "  
FFP Good Blow BOB in 12 Min  
FSI Weak Surface Blow back For 10 Min



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1977.02	110.02	Initial Hydro-static
1	45.56	109.70	Open To Flow (1)
32	210.44	119.27	Shut-In(1)
80	1084.30	122.30	End Shut-In(1)
80	221.92	122.05	Open To Flow(2)
123	351.98	124.62	Shut-In(2)
186	1087.14	125.39	End Shut-In(2)
186	1884.08	125.51	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
475.00	VSOCMW 2%O 88%W 10%M	4.97
1.00	Clean Oil	0.01

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration Inc

**Werth #1-15B**

PO Box 783188  
Wichita KS 67278

**14 10 26 Sheridan KS**

Job Ticket: 28301

**DST#: 4**

ATTN: Bob Stolze

Test Start: 2007.06.17 @ 20:42:18

### Tool Information

Drill Pipe:	Length: 3778.00 ft	Diameter: 3.80 inches	Volume: 53.00 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 45000.00 lb
			<u>Total Volume: 53.91 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial 40000.00 lb
Depth to Top Packer:	3965.00 ft			Final 42000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	55.00 ft			
Tool Length:	83.00 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			3938.00	
Shut In Tool	5.00			3943.00	
Hydraulic tool	5.00			3948.00	
Jars	5.00			3953.00	
Safety Joint	2.00			3955.00	
Packer	5.00			3960.00	28.00 Bottom Of Top Packer
Packer	5.00			3965.00	
Stubb	1.00			3966.00	
Perforations	1.00			3967.00	
Change Over Sub	1.00			3968.00	
Recorder	0.00	6719	Inside	3968.00	
Blank Spacing	31.00			3999.00	
Change Over Sub	1.00			4000.00	
Perforations	17.00			4017.00	
Recorder	0.00	13221	Outside	4017.00	
Bullnose	3.00			4020.00	55.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>83.00</b>				



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Ritchie Exploration Inc

**Werth #1-15B**

PO Box 783188  
Wichita KS 67278

**14 10 26 Sheridan KS**

Job Ticket: 28301

**DST#: 4**

ATTN: Bob Stolze

Test Start: 2007.06.17 @ 20:42:18

**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:

47000 ppm

Viscosity: 45.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.38 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbbl
475.00	VSOCMW 2%O 88%W 10%M	4.969
1.00	Clean Oil	0.014

Total Length: 476.00 ft

Total Volume: 5.547 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

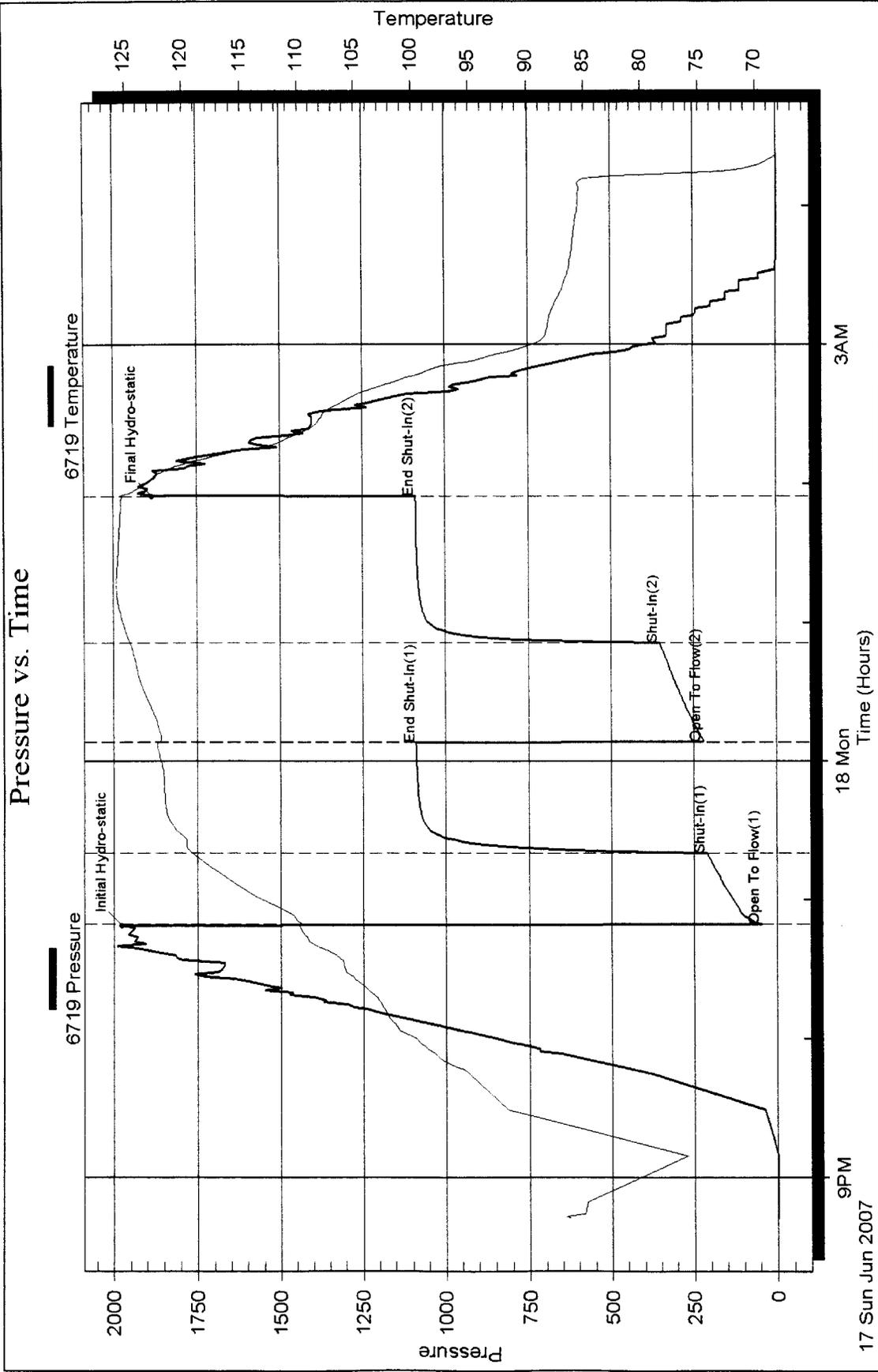
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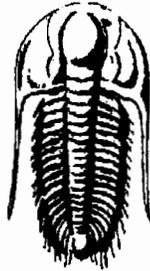
Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time





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

## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

PO Box 783188  
Wichita KS 67278

ATTN: Bob Stolze

**14 10 26 Sheridan KS**

**Werth #1-15B**

Start Date: 2007.06.18 @ 10:55:11

End Date: 2007.06.18 @ 17:55:26

Job Ticket #: 28302                      DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Ritchie Exploration Inc

Werth #1-15B

14 10 26 Sheridan KS

DST # 5

LKC-"J"

2007.06.18



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc

**Werth #1-15B**

PO Box 783188  
Wichita KS 67278

**14 10 26 Sheridan KS**

Job Ticket: 28302

**DST#: 5**

ATTN: Bob Stolze

Test Start: 2007.06.18 @ 10:55:11

## GENERAL INFORMATION:

Formation: **LKC-"J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:59:26

Time Test Ended: 17:55:26

Test Type: Conventional Bottom Hole

Tester: Jason McLemore

Unit No: 32

Interval: **4015.00 ft (KB) To 4040.00 ft (KB) (TVD)**

Reference Elevations: 2596.00 ft (KB)

Total Depth: 4040.00 ft (KB) (TVD)

2591.00 ft (CF)

Hole Diameter: 7.80 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 6719**

**Inside**

Press@RunDepth: 118.07 psig @ 4017.00 ft (KB)

Capacity: 7000.00 psig

Start Date: 2007.06.18

End Date: 2007.06.18

Last Calib.: 2007.06.18

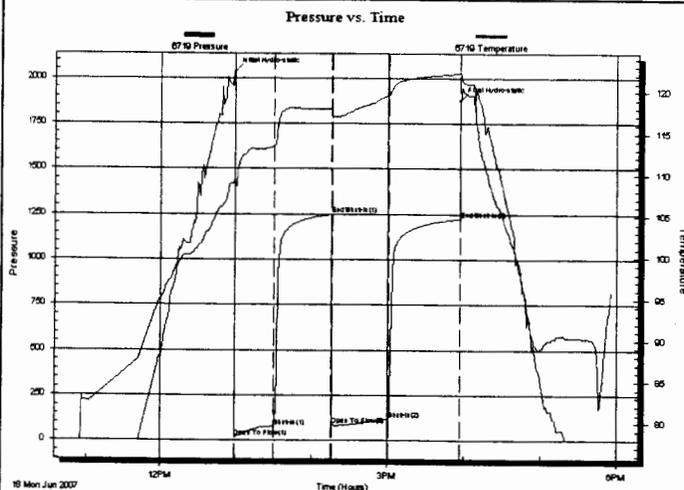
Start Time: 10:55:13

End Time: 17:55:26

Time On Btm: 2007.06.18 @ 12:59:11

Time Off Btm: 2007.06.18 @ 15:57:11

**TEST COMMENT:** IFF Good Blow BOB in 11-1/2 Mn  
ISI Blow back Built to 1-1/4 "  
FFP Good Blow BOB in 7 Mn  
FSI Blow back Built to 1 "



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2035.36	109.27	Initial Hydro-static
1	16.91	108.81	Open To Flow (1)
31	75.72	113.43	Shut-In (1)
77	1247.22	117.90	End Shut-In (1)
77	88.22	117.22	Open To Flow (2)
122	118.07	119.61	Shut-In (2)
178	1222.43	122.22	End Shut-In (2)
178	1874.92	122.41	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
45.00	MCO 80%O 20%M	0.22
265.00	Gassy Oil 20%G 80%O	2.43
0.00	830' Gas in Pipe	0.00

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Ritchie Exploration Inc

**Werth #1-15B**

PO Box 783188  
Wichita KS 67278

**14 10 26 Sheridan KS**

Job Ticket: 28302

**DST#: 5**

ATTN: Bob Stolze

Test Start: 2007.06.18 @ 10:55:11

**Tool Information**

Drill Pipe:	Length: 3827.00 ft	Diameter: 3.80 inches	Volume: 53.68 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 48000.00 lb
		<u>Total Volume:</u>	<u>54.59 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	4015.00 ft			Final 39000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	25.00 ft			
Tool Length:	46.00 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			3995.00	
Shut In Tool	5.00			4000.00	
Hydraulic tool	5.00			4005.00	
Packer	5.00			4010.00	21.00 Bottom Of Top Packer
Packer	5.00			4015.00	
Stubb	1.00			4016.00	
Perforations	1.00			4017.00	
Recorder	0.00	6719	Inside	4017.00	
Perforations	20.00			4037.00	
Recorder	0.00	13221	Outside	4037.00	
Bullnose	3.00			4040.00	25.00 Bottom Packers & Anchor

**Total Tool Length: 46.00**



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc

**Werth #1-15B**

PO Box 783188  
Wichita KS 67278

**14 10 26 Sheridan KS**

Job Ticket: 28302

**DST#: 5**

ATTN: Bob Stolzie

Test Start: 2007.06.18 @ 10:55:11

### 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:

ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2400.00 ppm

Filter Cake: inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
45.00	MCO 80%O 20%M	0.221
265.00	Gassy Oil 20%G 80%O	2.433
0.00	830' Gas in Pipe	0.000

Total Length: 310.00 ft

Total Volume: 3.219 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

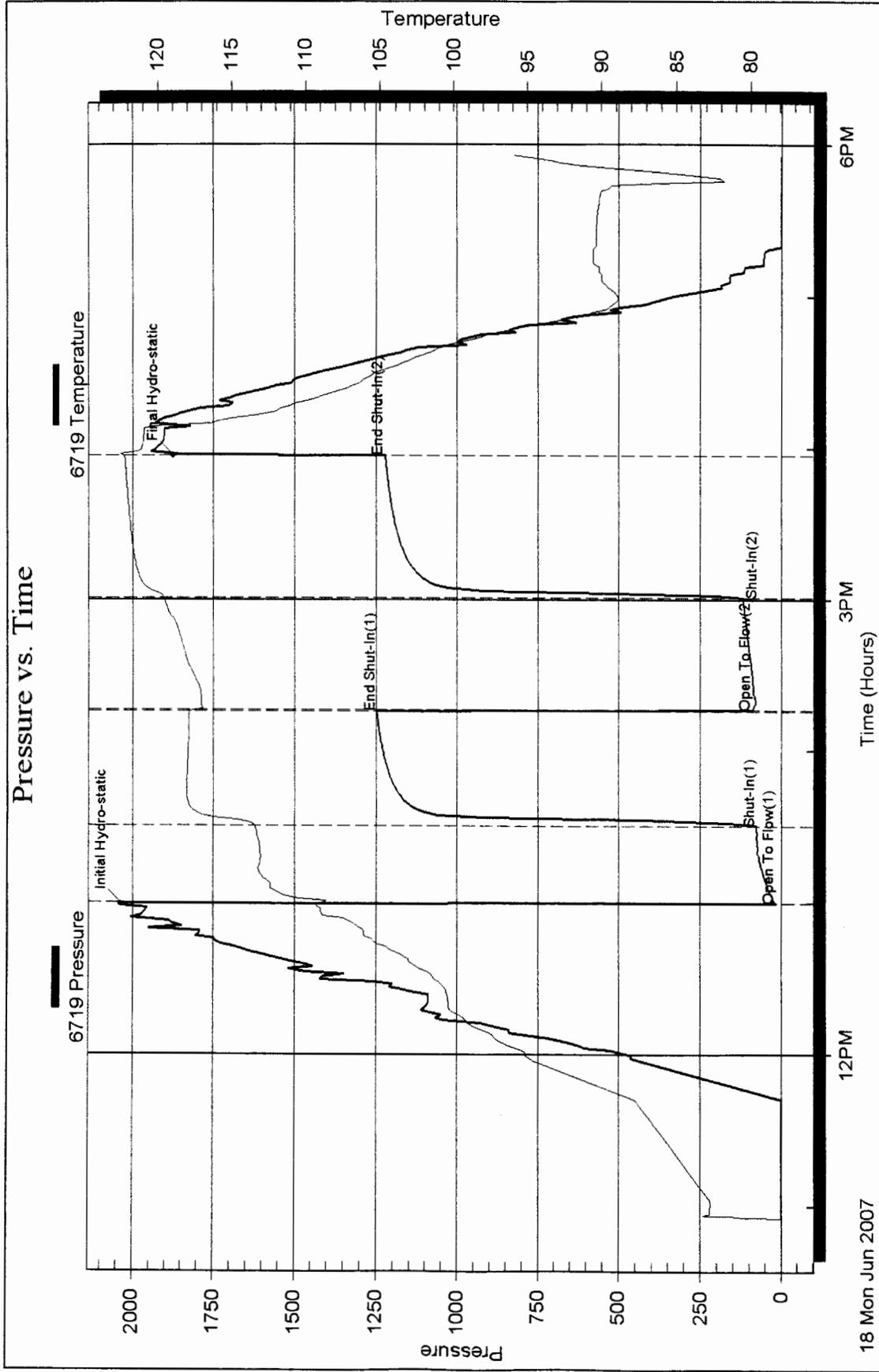
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time

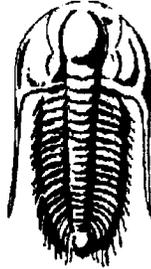


18 Mon Jun 2007

12PM

3PM

6PM



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

## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

PO Box 783188  
Wichita KS 67278

ATTN: Bob Stolze

**14 10 26 Sheridan KS**

**Werth #1-15B**

Start Date: 2007.06.19 @ 00:14:11

End Date: 2007.06.19 @ 06:22:56

Job Ticket #: 28303                      DST #: 6

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Ritchie Exploration Inc

Werth #1-15B

14 10 26 Sheridan KS

DST # 6

LKC-"K"

2007.06.19



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc

**Werth #1-15B**

PO Box 783188  
Wichita KS 67278

**14 10 26 Sheridan KS**

Job Ticket: 28303 **DST#: 6**

ATTN: Bob Stolzie

Test Start: 2007.06.19 @ 00:14:11

## GENERAL INFORMATION:

Formation: **LKC-"K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:32:26

Time Test Ended: 06:22:56

Test Type: Conventional Bottom Hole

Tester: Jason McLemore

Unit No: 32

Interval: **4043.00 ft (KB) To 4060.00 ft (KB) (TVD)**

Reference Elevations: 2596.00 ft (KB)

Total Depth: 4060.00 ft (KB) (TVD)

2591.00 ft (CF)

Hole Diameter: 7.80 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 6719** Inside

Press@RunDepth: 16.72 psig @ 4045.00 ft (KB)

Capacity: 7000.00 psig

Start Date: 2007.06.19 End Date: 2007.06.19

Last Calib.: 2007.06.19

Start Time: 00:14:13 End Time: 06:22:56

Time On Btm: 2007.06.19 @ 02:32:11

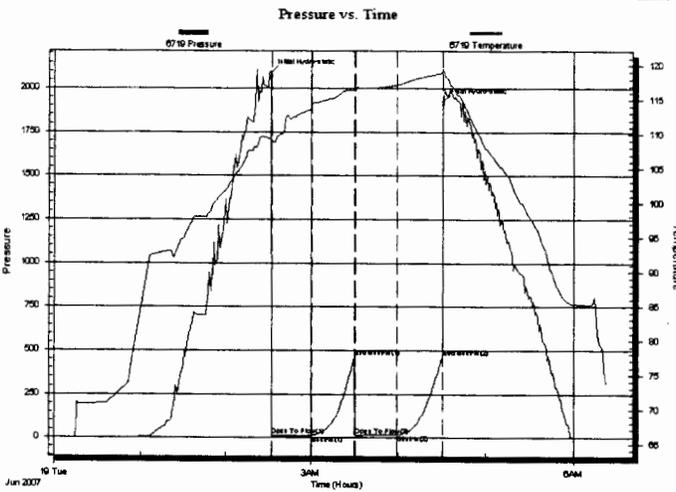
Time Off Btm: 2007.06.19 @ 04:30:26

**TEST COMMENT:** IFP Weak Surface Blow Died in 10 Min

ISI Dead

FFP Dead

FSI Dead



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2088.11	109.45	Initial Hydro-static
1	13.35	108.98	Open To Flow (1)
29	14.75	114.28	Shut-In(1)
58	461.84	116.40	End Shut-In(1)
59	15.69	116.28	Open To Flow (2)
88	16.72	117.21	Shut-In(2)
118	460.26	118.90	End Shut-In(2)
119	1921.43	119.22	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud W/Oil Spots	0.02

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Ritchie Exploration Inc

**Werth #1-15B**

PO Box 783188  
Wichita KS 67278

**14 10 26 Sheridan KS**

Job Ticket: 28303

**DST#: 6**

ATTN: Bob Stolze

Test Start: 2007.06.19 @ 00:14:11

**Tool Information**

Drill Pipe:	Length: 3848.00 ft	Diameter: 3.80 inches	Volume: 53.98 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 45000.00 lb
		Total Volume: 54.89 bbl		Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 40000.00 lb
Depth to Top Packer:	4043.00 ft			Final 40000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	17.00 ft			
Tool Length:	38.00 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			4023.00	
Shut In Tool	5.00			4028.00	
Hydraulic tool	5.00			4033.00	
Packer	5.00			4038.00	21.00 Bottom Of Top Packer
Packer	5.00			4043.00	
Stubb	1.00			4044.00	
Perforations	1.00			4045.00	
Recorder	0.00	6719	Inside	4045.00	
Perforations	12.00			4057.00	
Recorder	0.00	13221	Outside	4057.00	
Bullnose	3.00			4060.00	17.00 Bottom Packers & Anchor

**Total Tool Length: 38.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration Inc

**Werth #1-15B**

PO Box 783188  
Wichita KS 67278

**14 10 26 Sheridan KS**

Job Ticket: 28303

**DST#: 6**

ATTN: Bob Stolzle

Test Start: 2007.06.19 @ 00:14:11

## 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: 45.00 sec/qt

Cushion Volume:

bbl

Water Loss: 6.38 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud W/Oil Spots	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 6719

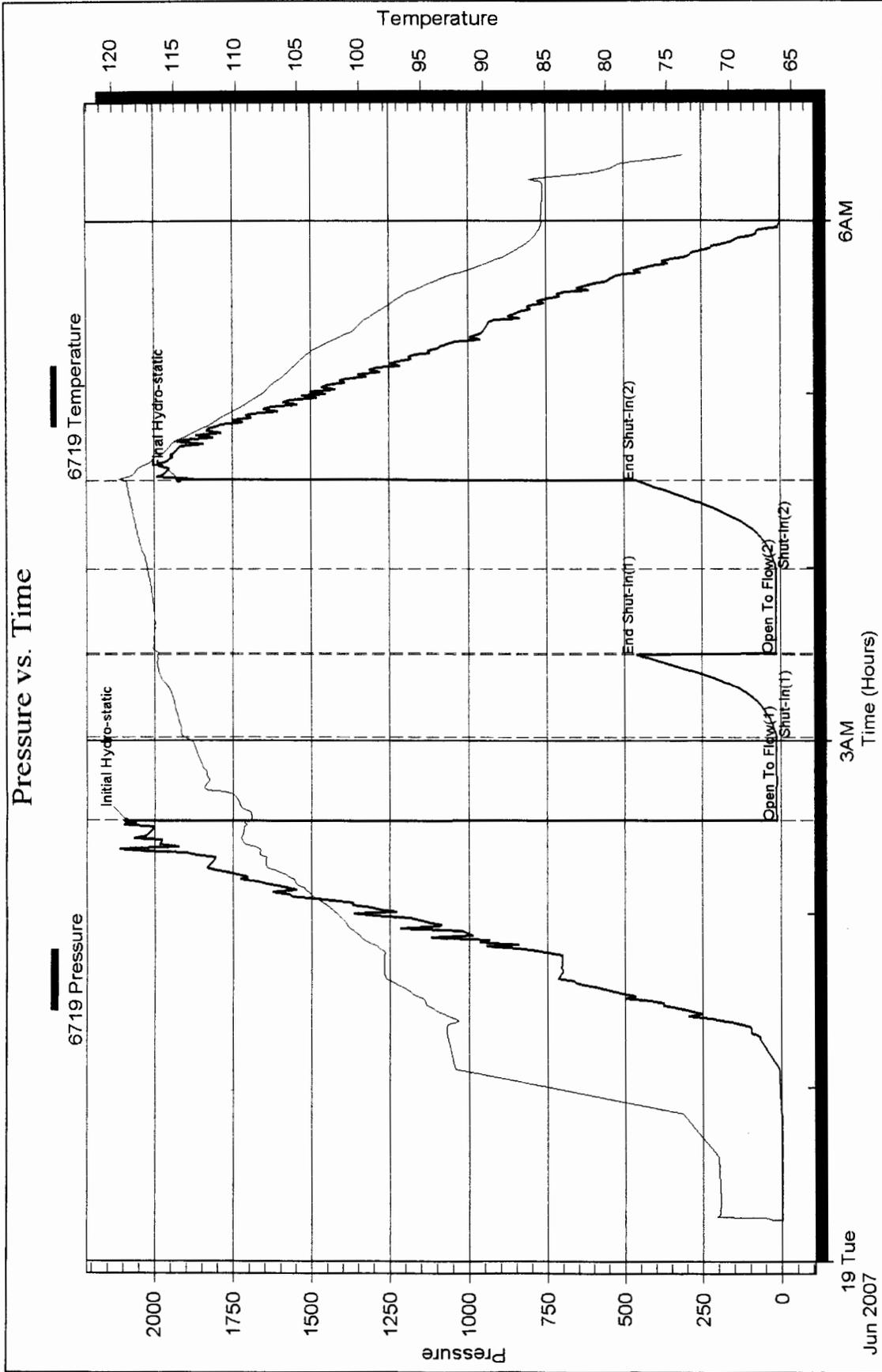
Inside

Richie Exploration Inc

14 10 26 Sheridan KS

DST Test Number: 6

### Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 28303

Printed: 2007.06.19 @ 12:15:56 Page 5