

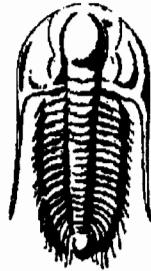
**CONFIDENTIAL**

**KCC**

**JUN 10 2001**

**CONFIDENTIAL**

**Release**  
**JUL 30 2004**  
**From**  
**Confidential**



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

RECEIVED  
JUN 11 2001  
KCC WICHITA

**DRILL STEM TEST REPORT**

**Release**  
**JUL 30 2004**  
**From**  
**Confidential**

Prepared For: **Ritchie Exploration Inc**

8100 E.22nd St.N.  
#700  
Wichita KS 67226

ATTN: Rocky Milford

**10-6s-22w Graham KS**

**R.E.T.#1**

Start Date: 2002.04.18 @ 18:08:28

End Date: 2002.04.19 @ 01:03:57

Job Ticket #: 16277          DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Ritchie Exploration Inc

R.E.T.#1

10-6s-22w Graham KS

DST # 1

Oread A&B

2002.04.18



**TRILOBITE  
TESTING, INC.**

**DRILL STAM REPORT**

Ritchie Exploration Inc  
8100 E.22nd St.N.  
#700  
Wichita KS 67226  
ATTN: Rocky Milford

**R.E.T.#1**  
**10-6s-22w Graham KS**  
Job Ticket: 16277      **DST#: 1**  
Test Start: 2002.04.18 @ 18:08:28

**GENERAL INFORMATION:**

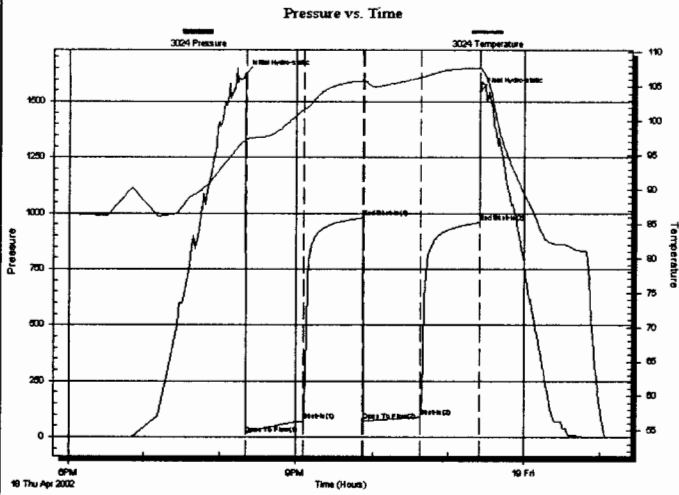
Formation: **Oread A&B**  
Deviated: **No** Whipstock:                      ft (KB)  
Time Tool Opened: 20:20:27  
Time Test Ended: 01:03:57  
Interval: **3412.00 ft (KB) To 3449.00 ft (KB) (TVD)**  
Total Depth: **3449.00 ft (KB) (TVD)**  
Hole Diameter: **7.85 inches** Hole Condition: Fair  
Test Type: **Conventional Bottom Hole**  
Tester: **Ray Schwager**  
Unit No: **16**  
Reference Elevations: **2261.00 ft (KB)**  
**2256.00 ft (CF)**  
KB to GR/CF: **5.00 ft**

**Serial #: 3024**

**Inside**

Press@RunDepth: **88.30 psig @ 3417.01 ft (KB)**      Capacity: **7000.00 psig**  
Start Date: **2002.04.18**      End Date: **2002.04.19**      Last Calib.: **2002.04.19**  
Start Time: **18:08:28**      End Time: **01:03:57**      Time On Btrm: **2002.04.18 @ 20:19:57**  
Time Off Btrm: **2002.04.18 @ 23:24:57**

**TEST COMMENT:** FFP-weak blow thru-out 1/4" to 2" blow  
FFP-weak blow thru-out 1" blow  
Times 45-45-s-45  
no blow on shut-in



**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1624.01	97.22	Initial Hydro-static
1	14.40	97.34	Open To Flow (1)
46	70.38	101.68	Shut-In(1)
92	979.62	105.82	End Shut-In(1)
93	71.72	105.85	Open To Flow (2)
138	88.30	106.36	Shut-In(2)
185	959.13	107.72	End Shut-In(2)
185	1545.97	107.70	Final Hydro-static

**Recovery**

Length (ft)	Description	Volume (bbl)
80.00	MW 40% mud 60% water w/show of oil	0.39
60.00	MW 15% mud 85% water w/show of oil	0.30

**Gas Rates**

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



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration Inc  
8100 E22nd St.N.  
#700  
Wichita KS 67226  
ATTN: Rocky Milford

**R.E.T.#1**  
**10-6s-22w Graham KS**  
Job Ticket: 16277      **DST#: 1**  
Test Start: 2002.04.18 @ 18:08:28

### Tool Information

Drill Pipe:	Length: 3216.00 ft	Diameter: 3.80 inches	Volume: 45.11 bbl	Tool Weight: 2200.00 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: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 46.00 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 36000.00 lb
Depth to Top Packer:	3412.00 ft			Final 36000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	37.02 ft			
Tool Length:	58.02 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

### Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			3392.00	
S.I. Tool	5.00			3397.00	
HMV	5.00			3402.00	
Packer	5.00			3407.00	21.00      Bottom Of Top Packer
Packer	5.00			3412.00	
Stubb	1.00			3413.00	
Perforations	4.00			3417.00	
Recorder	0.01	3024	Inside	3417.01	
Perforations	29.00			3446.01	
Recorder	0.01	11085	Outside	3446.02	
Bullnose	3.00			3449.02	37.02      Bottom Packers & Anchor

**Total Tool Length: 58.02**



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Ritchie Exploration Inc

**R.E.T.#1**

8100 E.22nd St.N.  
#700

**10-6s-22w Graham KS**

Wichita KS 67226

Job Ticket: 16277

**DST#: 1**

ATTN: Rocky Milford

Test Start: 2002.04.18 @ 18:08:28

**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:

65000 ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.50 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 1.00 inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
80.00	MW 40% mud 60%w ater w/show of oil	0.393
60.00	MW 15% mud 85%w ater w/show of oil	0.295

Total Length: 140.00 ft      Total Volume: 0.688 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .14@59F

Serial #: 3024

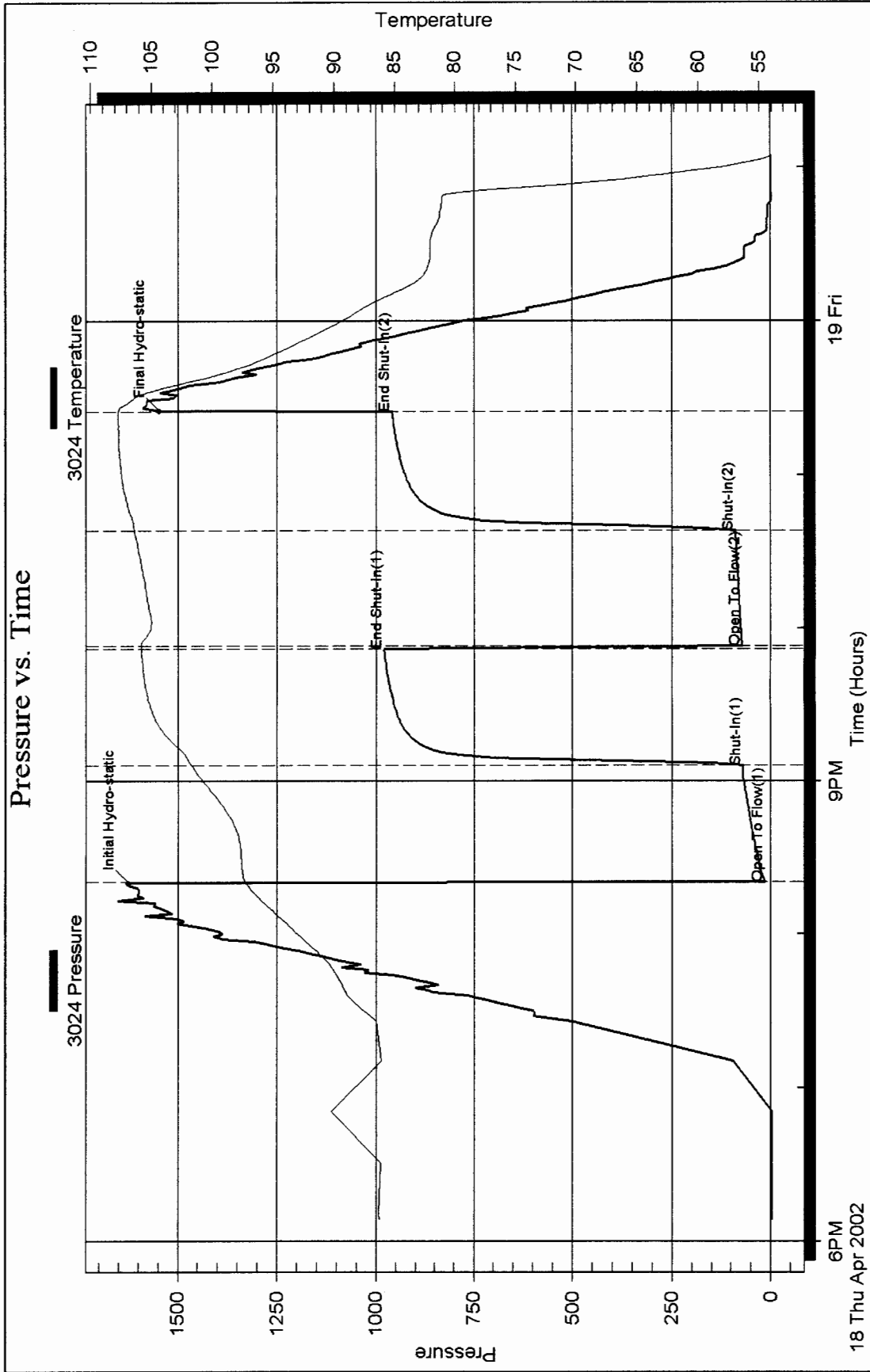
Inside

Ritchie Exploration Inc

10-6s-22w Graham KS

DST Test Number: 1

### Pressure vs. Time





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 E.22nd St.N.  
#700  
Wichita KS 67226

ATTN: Rocky Milford

**10-6s-22w Graham KS**

**R.E.T.#1**

Start Date: 2002.04.19 @ 07:47:20

End Date: 2002.04.19 @ 13:50:19

Job Ticket #: 16278                      DST #: 2

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

R.E.T.#1

8100 E.22nd St.N.  
#700  
Wichita KS 67226  
ATTN: Rocky Milford

**10-6s-22w Graham KS**  
Job Ticket: 16278      DST#: 2  
Test Start: 2002.04.19 @ 07:47:20

## GENERAL INFORMATION:

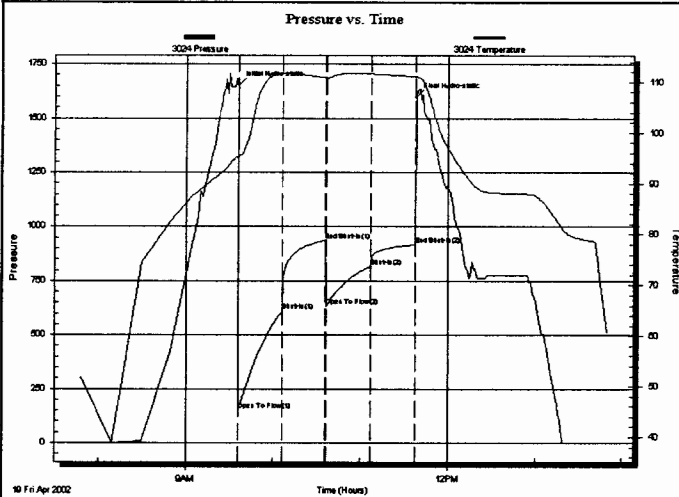
Formation: **Toronto**  
Deviated: **No** Whipstock:                      ft (KB)  
Time Tool Opened: 09:36:19  
Time Test Ended: 13:50:19  
Interval: **3460.00 ft (KB) To 3500.00 ft (KB) (TVD)**  
Total Depth: 3500.00 ft (KB) (TVD)  
Hole Diameter: 7.85 inches Hole Condition: Fair  
Reference Elevations: 2261.00 ft (KB)  
2256.00 ft (CF)  
KB to GR/CF: 5.00 ft

## Serial #: 3024

Inside

Press@RunDepth: 815.89 psig @ 3468.01 ft (KB)      Capacity: 7000.00 psig  
Start Date: 2002.04.19      End Date: 2002.04.19      Last Calib.: 2002.04.19  
Start Time: 07:47:20      End Time: 13:50:19      Time On Btm: 2002.04.19 @ 09:35:49  
Time Off Btm: 2002.04.19 @ 11:38:19

TEST COMMENT: FFP-strong blow in 1 min  
FFP-strong blow in 2 min  
Times 30-30-30-30  
weak surface blow on shut-in



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1654.39	95.30	Initial Hydro-static
1	150.57	95.43	Open To Flow (1)
31	613.70	111.67	Shut-In(1)
60	936.26	110.86	End Shut-In(1)
61	631.72	110.85	Open To Flow (2)
91	815.89	111.60	Shut-In(2)
122	917.33	111.05	End Shut-In(2)
123	1598.26	111.03	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
1610.00	water RW .11@55F	21.49
120.00	MW 15% mud 85% water w/show of oil	1.68

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration Inc  
8100 E.22nd St.N.  
#700  
Wichita KS 67226  
ATTN: Rocky Milford

**R.E.T.#1**  
**10-6s-22w Graham KS**  
Job Ticket: 16278      **DST#:2**  
Test Start: 2002.04.19 @ 07:47:20

### Tool Information

Drill Pipe:	Length: 3340.00 ft	Diameter: 3.80 inches	Volume: 46.85 bbl	Tool Weight: 2200.00 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: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 47.44 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 37000.00 lb
Depth to Top Packer:	3460.00 ft			Final 44000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	40.02 ft			
Tool Length:	61.02 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

### Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			3440.00	
S.I. Tool	5.00			3445.00	
HMV	5.00			3450.00	
Packer	5.00			3455.00	21.00      Bottom Of Top Packer
Packer	5.00			3460.00	
Stubb	1.00			3461.00	
Perforations	7.00			3468.00	
Recorder	0.01	3024	Inside	3468.01	
Perforations	29.00			3497.01	
Recorder	0.01	11085	Outside	3497.02	
Bullnose	3.00			3500.02	40.02      Bottom Packers & Anchor

**Total Tool Length: 61.02**



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration Inc

**R.E.T.#1**

8100 E.22nd St.N.  
#700

**10-6s-22w Graham KS**

Wichita KS 67226

Job Ticket: 16278

**DST#: 2**

ATTN: Rocky Milford

Test Start: 2002.04.19 @ 07:47:20

### 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:

92000 ppm

Viscosity: 49.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.88 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1100.00 ppm

Filter Cake: 1.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1610.00	w ater RW .11@55F	21.491
120.00	MW 15% mud 85% w ater w /show of oil	1.683

Total Length: 1730.00 ft

Total Volume: 23.174 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

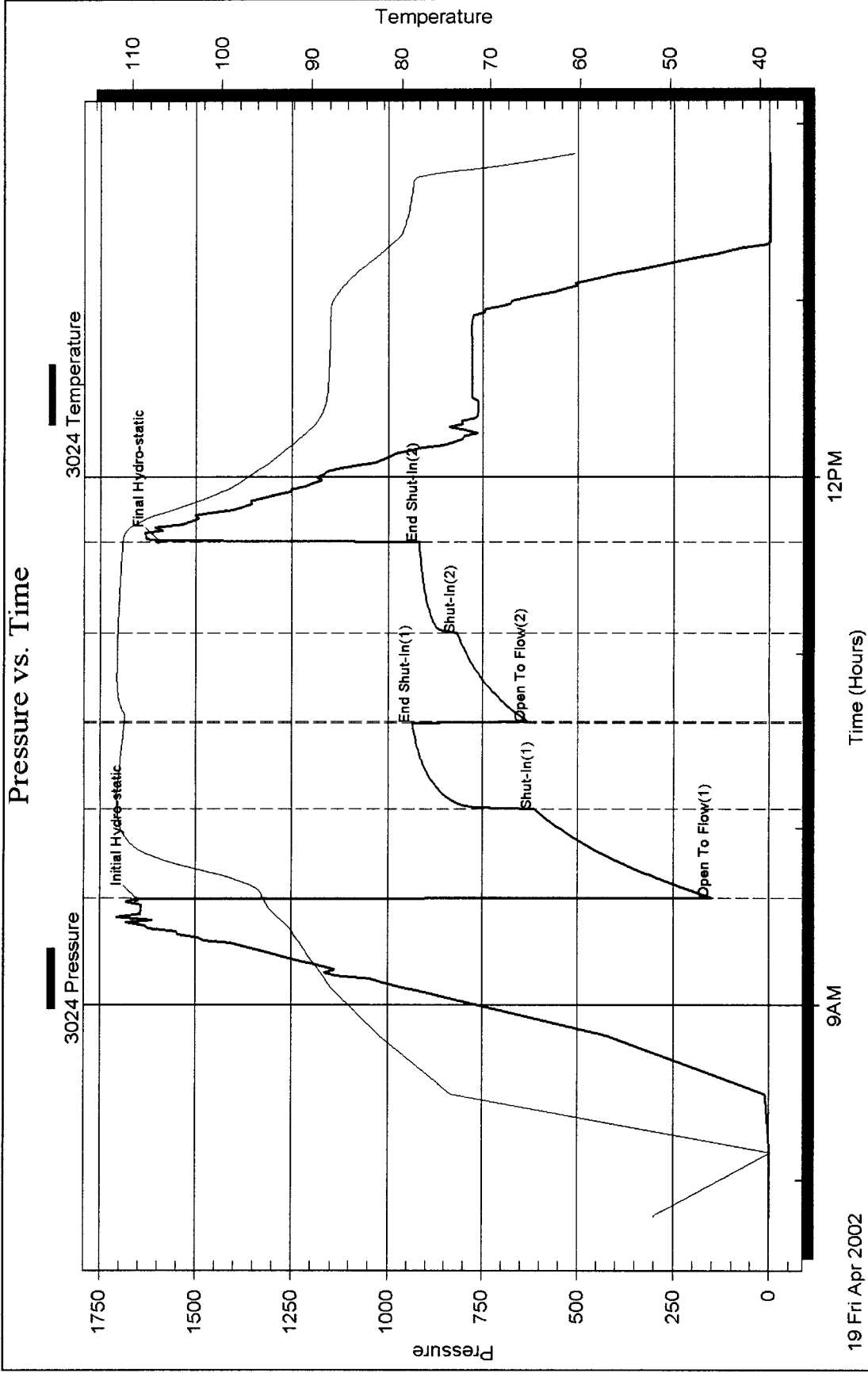
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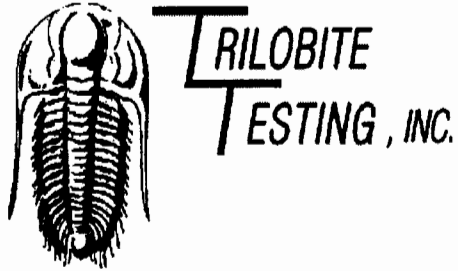
Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 E.22nd St.N.  
#700  
Wichita KS 67226

ATTN: Rocky Milford

**10-6s-22w Graham KS**

**R.E.T.#1**

Start Date: 2002.04.19 @ 19:41:30

End Date: 2002.04.20 @ 01:01:59

Job Ticket #: 16279                      DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Ritchie Exploration Inc

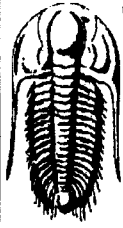
R.E.T.#1

10-6s-22w Graham KS

DST # 3

LKC "A"

2002.04.19



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc  
8100 E.22nd St.N.  
#700  
Wichita KS 67226  
ATTN: Rocky Milford

**R.E.T.#1**  
**10-6s-22w Graham KS**  
Job Ticket: 16279      **DST#: 3**  
Test Start: 2002.04.19 @ 19:41:30

## GENERAL INFORMATION:

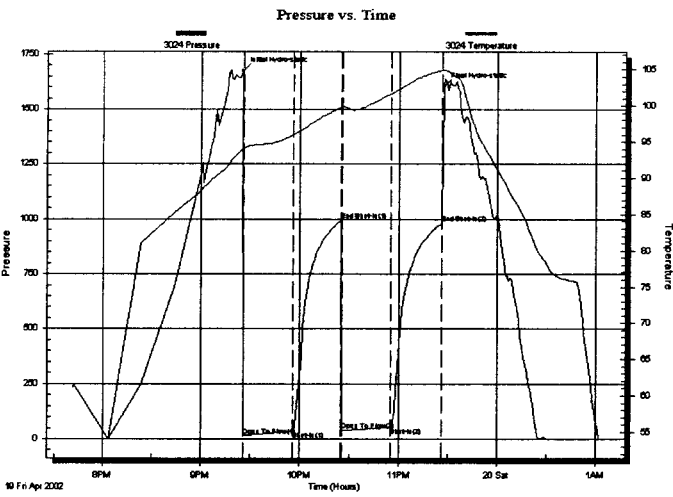
Formation: **LKC "A"**  
Deviated: **No** Whipstock:                      ft (KB)  
Time Tool Opened: 21:25:59  
Time Test Ended: 01:01:59  
Interval: **3497.00 ft (KB) To 3519.00 ft (KB) (TVD)**  
Total Depth: 3519.00 ft (KB) (TVD)  
Hole Diameter: 7.85 inches Hole Condition: Fair  
Test Type: Conventional Bottom Hole  
Tester: Ray Schwager  
Unit No: 16  
Reference Elevations: 2261.00 ft (KB)  
2256.00 ft (CF)  
KB to GR/CF: 5.00 ft

## Serial #: 3024

Inside

Press@RunDepth: 52.72 psig @ 3498.01 ft (KB)      Capacity: 7000.00 psig  
Start Date: 2002.04.19      End Date: 2002.04.20      Last Calib.: 2002.04.20  
Start Time: 19:41:30      End Time: 01:01:59      Time On Btrn: 2002.04.19 @ 21:25:29  
Time Off Btrn: 2002.04.19 @ 23:26:59

**TEST COMMENT:** FFP-weak blow thru-out 1/2"blow  
FFP-weak blow thru-out 1/4"blow  
Times 30-30-30-30  
no blow on shut-in



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1675.12	93.91	Initial Hydro-static
1	13.32	94.04	Open To Flow (1)
31	33.81	95.95	Shut-in(1)
60	993.90	99.77	End Shut-in(1)
60	38.50	99.85	Open To Flow (2)
90	52.72	101.68	Shut-in(2)
121	979.80	104.88	End Shut-in(2)
122	1604.53	104.92	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
65.00	SOCMW 2%oil 30%mud 68%water	0.32

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration Inc  
8100 E.22nd St.N.  
#700  
Wichita KS 67226  
ATTN: Rocky Milford

**R.E.T.#1**  
**10-6s-22w Graham KS**  
Job Ticket: 16279      **DST#: 3**  
Test Start: 2002.04.19 @ 19:41:30

### Tool Information

Drill Pipe:	Length: 3369.00 ft	Diameter: 3.80 inches	Volume: 47.26 bbl	Tool Weight: 2200.00 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: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 45000.00 lb
			<u>Total Volume: 47.85 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 37000.00 lb
Depth to Top Packer:	3497.00 ft			Final 37000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	22.02 ft			
Tool Length:	43.02 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

### Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			3477.00	
S.I. Tool	5.00			3482.00	
HMV	5.00			3487.00	
Packer	5.00			3492.00	21.00      Bottom Of Top Packer
Packer	5.00			3497.00	
Stubb	1.00			3498.00	
Recorder	0.01	3024	Inside	3498.01	
Perforations	18.00			3516.01	
Recorder	0.01	11085	Outside	3516.02	
Bullnose	3.00			3519.02	22.02      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>43.02</b>				



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration Inc

**R.E.T.#1**

8100 E.22nd St.N.

**10-6s-22w Graham KS**

#700

Job Ticket: 16279

**DST#: 3**

Wichita KS 67226

Test Start: 2002.04.19 @ 19:41:30

ATTN: Rocky Milford

### 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:

63000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.89 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1100.00 ppm

Filter Cake: 1.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
65.00	SOCMW 2%oil 30%mud 68%water	0.320

Total Length: 65.00 ft

Total Volume: 0.320 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .17@52F

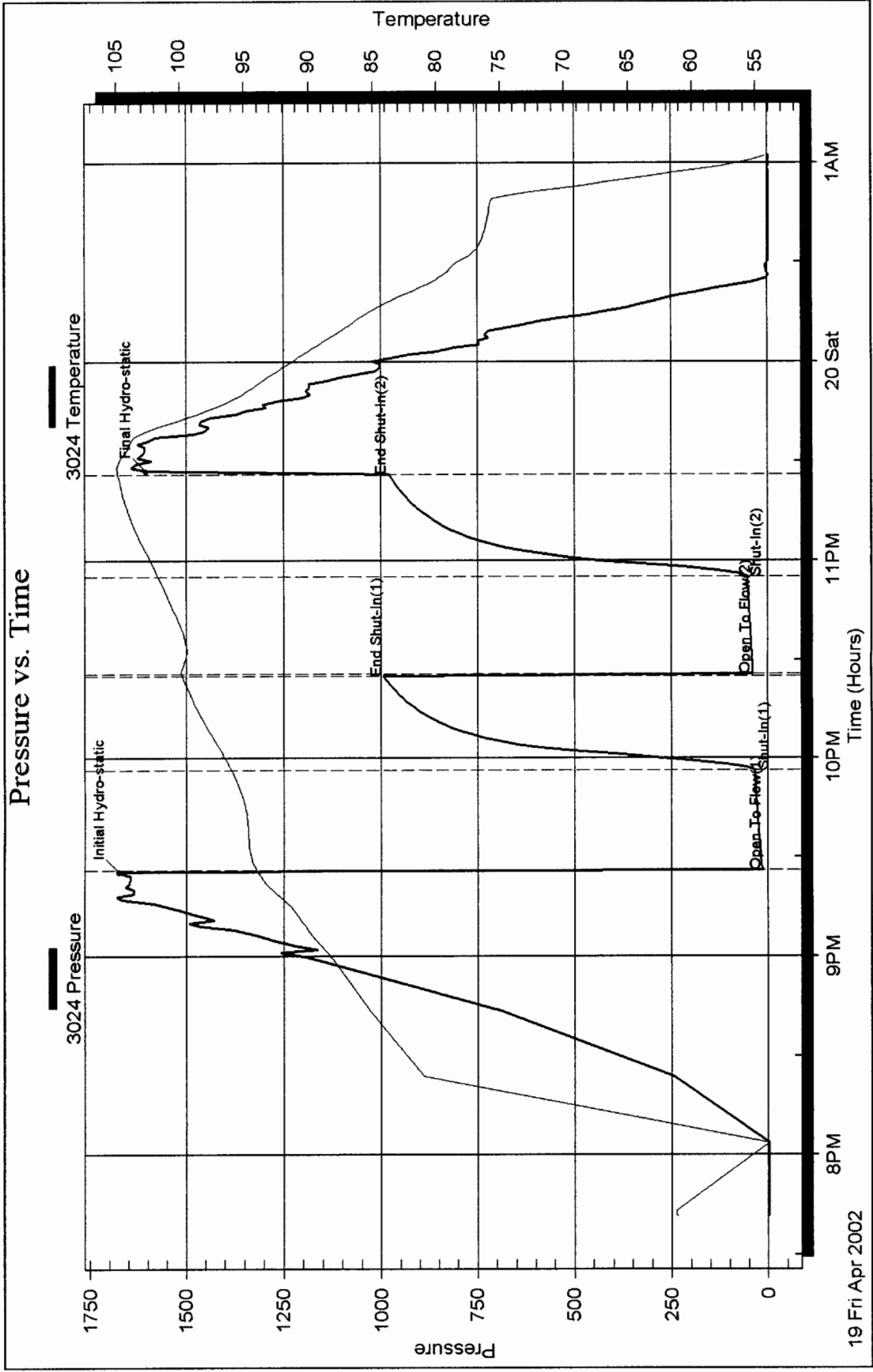
Serial #: 3024

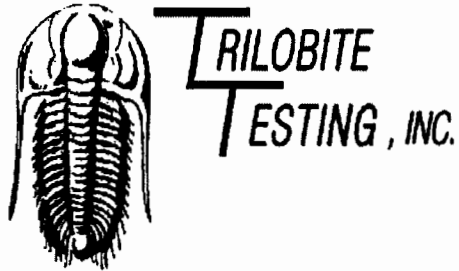
Inside

Ritchie Exploration Inc

10-6s-22w Graham KS

DST Test Number: 3





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 E.22nd St.N.  
#700  
Wichita KS 67226

ATTN: Rocky Milford

**10-6s-22w Graham KS**

**R.E.T.#1**

Start Date: 2002.04.20 @ 08:50:26

End Date: 2002.04.20 @ 15:21:25

Job Ticket #: 16280                      DST #: 4

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  
8100 E.22nd St.N.  
#700  
Wichita KS 67226  
ATTN: Rocky Milford

**R.E.T.#1**  
**10-6s-22w Graham KS**  
Job Ticket: 16280 **DST#: 4**  
Test Start: 2002.04.20 @ 08:50:26

## GENERAL INFORMATION:

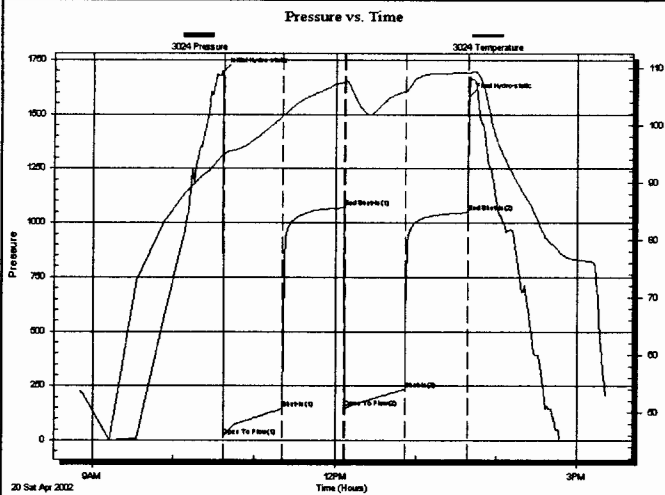
Formation: **LKC "C&D"**  
Deviated: **No** Whipstock: **ft (KB)**  
Time Tool Opened: 10:36:55  
Time Test Ended: 15:21:25  
Test Type: **Conventional Bottom Hole**  
Tester: **Ray Schwager**  
Unit No: **16**  
Interval: **3525.00 ft (KB) To 3561.00 ft (KB) (TVD)**  
Total Depth: **3561.00 ft (KB) (TVD)**  
Reference Elevations: **2261.00 ft (KB)**  
**2256.00 ft (CF)**  
Hole Diameter: **7.85 inches** Hole Condition: **Fair**  
KB to GR/CF: **5.00 ft**

## Serial #: 3024

**Inside**

Press@RunDepth: **235.70 psig @ 3530.01 ft (KB)**  
Capacity: **7000.00 psig**  
Start Date: **2002.04.20** End Date: **2002.04.20** Last Calib.: **2002.04.20**  
Start Time: **08:50:26** End Time: **15:21:25** Time On Btm: **2002.04.20 @ 10:36:25**  
Time Off Btm: **2002.04.20 @ 13:39:25**

**TEST COMMENT:** FFP-weak to good blow 1/2"to 6"blow  
FFP-weak blow thru-out 1/4"to 2"blow  
Times 45-45-45-45  
weak surface blow on shut-in



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1696.19	94.68	Initial Hydro-static
1	17.35	94.84	Open To Flow (1)
45	146.20	101.65	Shut-In(1)
90	1069.50	107.56	End Shut-In(1)
91	148.25	107.64	Open To Flow (2)
135	235.70	105.88	Shut-In(2)
183	1048.35	109.12	End Shut-In(2)
183	1582.96	109.10	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
375.00	water RW .13@51F	4.17
100.00	MW 10% mud 90% water / show of oil	1.40

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration Inc

**R.E.T.#1**

8100 E.22nd St.N.

**10-6s-22w Graham KS**

#700

Job Ticket: 16280

**DST#: 4**

Wichita KS 67226

Test Start: 2002.04.20 @ 08:50:26

ATTN: Rocky Milford

### Tool Information

Drill Pipe:	Length: 3400.00 ft	Diameter: 3.80 inches	Volume: 47.69 bbl	Tool Weight: 2200.00 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: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 45000.00 lb
			<u>Total Volume: 48.28 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 37000.00 lb
Depth to Top Packer:	3525.00 ft			Final 38000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	36.02 ft			
Tool Length:	57.02 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			3505.00	
S.I. Tool	5.00			3510.00	
HMV	5.00			3515.00	
Packer	5.00			3520.00	21.00 Bottom Of Top Packer
Packer	5.00			3525.00	
Stubb	1.00			3526.00	
Perforations	4.00			3530.00	
Recorder	0.01	3024	Inside	3530.01	
Perforations	28.00			3558.01	
Recorder	0.01	11085	Outside	3558.02	
Bullnose	3.00			3561.02	36.02 Bottom Packers & Anchor

**Total Tool Length: 57.02**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration Inc  
8100 E.22nd St.N.  
#700  
Wichita KS 67226  
ATTN: Rocky Milford

**R.E.T.#1**  
**10-6s-22w Graham KS**  
Job Ticket: 16280      **DST#: 4**  
Test Start: 2002.04.20 @ 08:50:26

## 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:	85000 ppm
Viscosity: 48.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.92 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3000.00 ppm			
Filter Cake: 2.00 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
375.00	water RW .13@51F	4.167
100.00	MW 10% mud 90% water w / show of oil	1.403

Total Length: 475.00 ft      Total Volume: 5.570 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments:

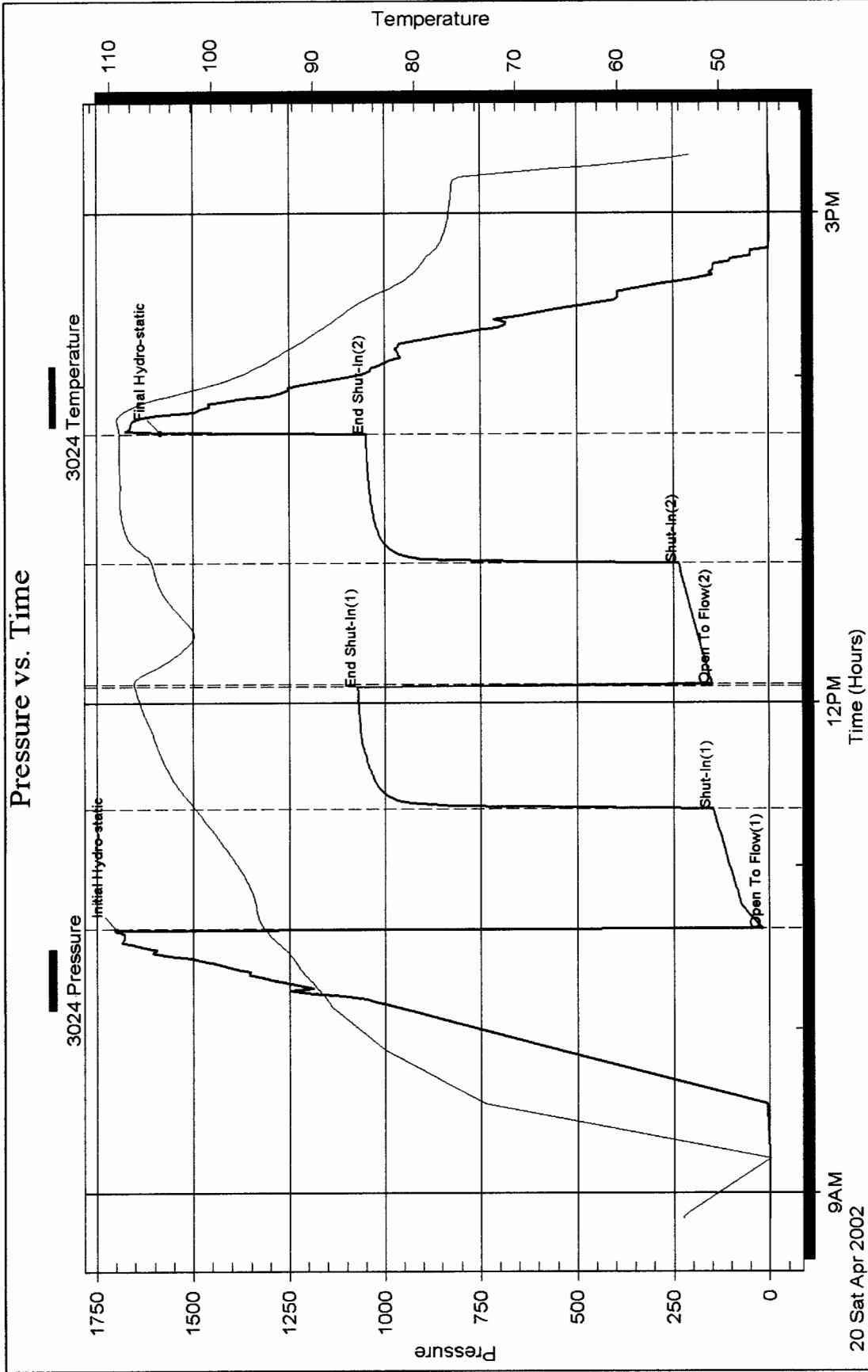
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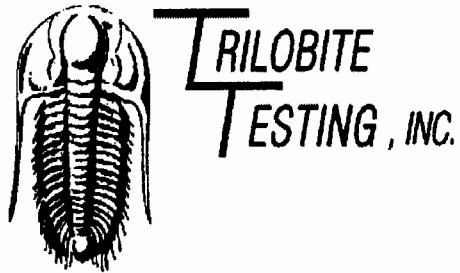
Inside

Ritchie Exploration Inc

10-6s-22w Graham KS

DST Test Number: 4





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 E.22nd St.N.  
#700  
Wichita KS 67226

ATTN: Rocky Milford

**10-6s-22w Graham KS**

**R.E.T.#1**

Start Date: 2002.04.21 @ 02:23:11

End Date: 2002.04.21 @ 08:05:40

Job Ticket #: 16281                      DST #: 5

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

R.E.T.#1

8100 E.22nd St.N.

10-6s-22w Graham KS

#700

Job Ticket: 16281

DST#: 5

Wichita KS 67226

ATTN: Rocky Milford

Test Start: 2002.04.21 @ 02:23:11

## GENERAL INFORMATION:

Formation: **LKC H&I**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:28:10

Time Test Ended: 08:05:40

Test Type: Conventional Bottom Hole

Tester: Ray Schwager

Unit No: 16

Interval: **3606.00 ft (KB) To 3649.00 ft (KB) (TVD)**

Reference Elevations: 2261.00 ft (KB)

Total Depth: 3649.00 ft (KB) (TVD)

2256.00 ft (CF)

Hole Diameter: 7.85 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: **3024**

Inside

Press@RunDepth: 19.47 psig @ 3614.01 ft (KB)

Capacity: 7000.00 psig

Start Date: 2002.04.21

End Date:

2002.04.21

Last Calib.: 2002.04.21

Start Time: 02:23:11

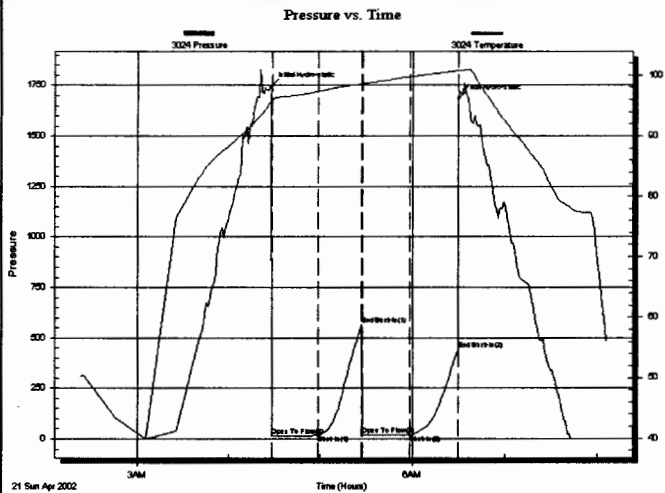
End Time:

08:05:40

Time On Btrc: 2002.04.21 @ 04:27:40

Time Off Btrc: 2002.04.21 @ 06:30:10

TEST COMMENT: FFP-weak blow 1/4" died in 20 min  
FFP-no blow  
Times 30-30-30-30



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1746.68	95.65	Initial Hydro-static
1	14.14	95.77	Open To Flow (1)
31	17.07	97.28	Shut-in(1)
60	564.21	98.58	End Shut-in(1)
60	17.47	98.62	Open To Flow (2)
91	19.47	99.72	Shut-in(2)
122	441.78	100.71	End Shut-in(2)
123	1683.87	100.71	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud	0.02

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Ritchie Exploration Inc  
8100 E.22nd St.N.  
#700  
Wichita KS 67226  
ATTN: Rocky Milford

**R.E.T.#1**  
**10-6s-22w Graham KS**  
Job Ticket: 16281      **DST#: 5**  
Test Start: 2002.04.21 @ 02:23:11

**Tool Information**

Drill Pipe:	Length: 3495.00 ft	Diameter: 3.80 inches	Volume: 49.03 bbl	Tool Weight: 2200.00 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: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 45000.00 lb
			<u>Total Volume: 49.62 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3606.00 ft			Final 38000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	43.02 ft			
Tool Length:	64.02 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			3586.00	
S.I. Tool	5.00			3591.00	
HMV	5.00			3596.00	
Packer	5.00			3601.00	21.00 Bottom Of Top Packer
Packer	5.00			3606.00	
Stubb	1.00			3607.00	
Perforations	7.00			3614.00	
Recorder	0.01	3024	Inside	3614.01	
Perforations	32.00			3646.01	
Recorder	0.01	11085	Outside	3646.02	
Bullnose	3.00			3649.02	43.02 Bottom Packers & Anchor

**Total Tool Length: 64.02**



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration Inc

**R.E.T.#1**

8100 E.22nd St.N.  
#700

**10-6s-22w Graham KS**

Wichita KS 67226

Job Ticket: 16281

**DST#: 5**

ATTN: Rocky Milford

Test Start: 2002.04.21 @ 02:23:11

### 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: 50.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.92 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbf
5.00	mud	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 3024

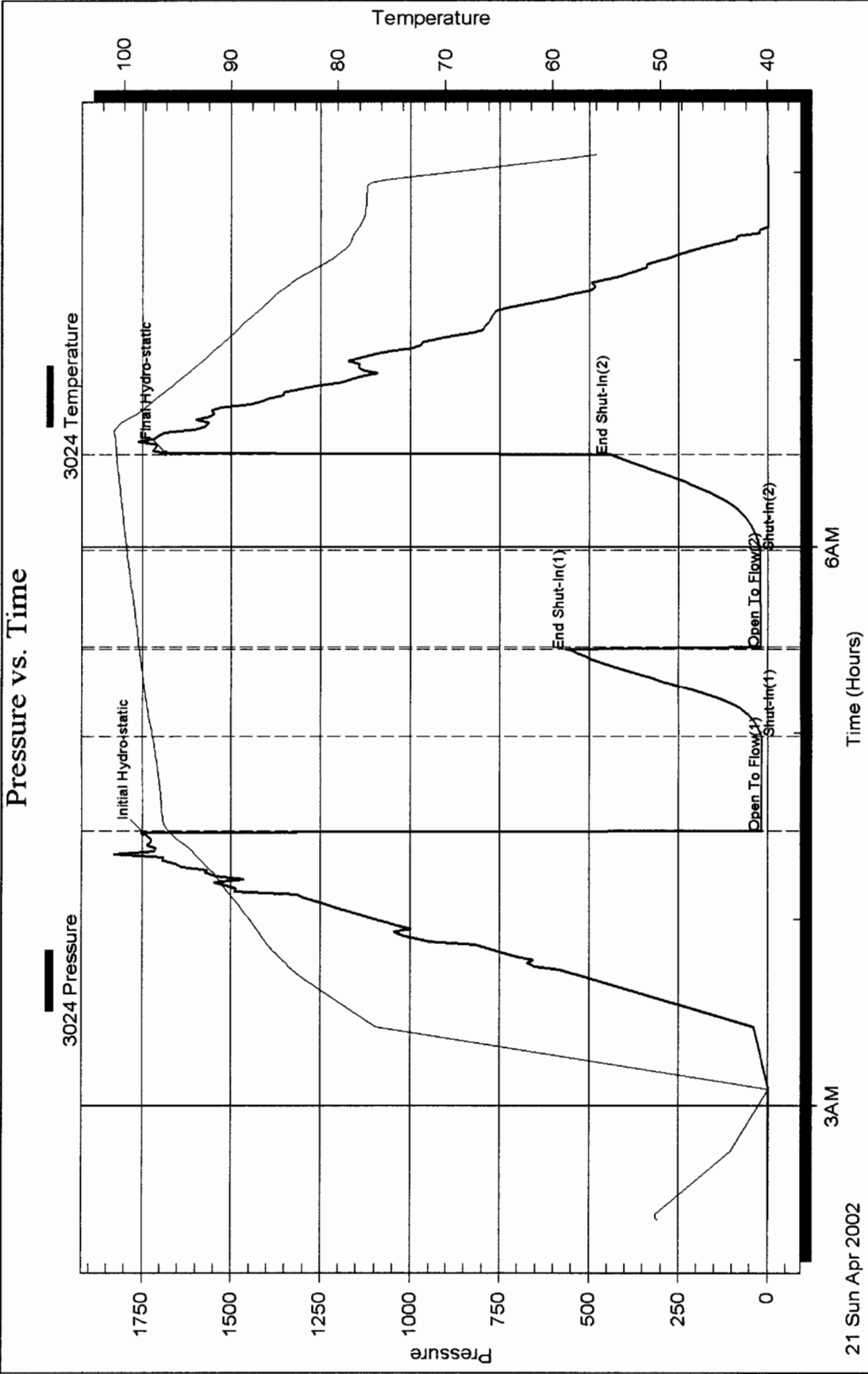
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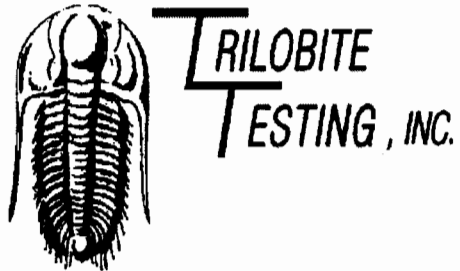
Ritchie Exploration Inc

10-6s-22w Graham KS

DST Test Number: 5

### Pressure vs. Time





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 E.22nd St.N.  
#700  
Wichita KS 67226

ATTN: Rocky Milford

**10-6s-22w Graham KS**

**R.E.T.#1**

Start Date: 2002.04.21 @ 13:27:55

End Date: 2002.04.21 @ 19:41:54

Job Ticket #: 16282                      DST #: 6

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

**R.E.T.#1**

8100 E.22nd St.N.  
#700  
Wichita KS 67226  
ATTN: Rocky Milford

**10-6s-22w Graham KS**

Job Ticket: 16282      **DST#: 6**

Test Start: 2002.04.21 @ 13:27:55

### GENERAL INFORMATION:

Formation: **LKC "J"**

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

Time Tool Opened: 15:14:24

Time Test Ended: 19:41:54

Test Type: **Conventional Bottom Hole**

Tester: **Ray Schwager**

Unit No: **16**

Interval: **3647.00 ft (KB) To 3666.00 ft (KB) (TVD)**

Reference Elevations:      2261.00 ft (KB)

Total Depth: **3666.00 ft (KB) (TVD)**

2256.00 ft (CF)

Hole Diameter: **7.85 inches** Hole Condition: **Fair**

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

**Serial #: 3024**

**Inside**

Press@RunDepth: **260.34 psig @ 3648.01 ft (KB)**

Capacity: **7000.00 psig**

Start Date: **2002.04.21**

End Date:

**2002.04.21**

Last Calib.: **2002.04.21**

Start Time: **13:27:55**

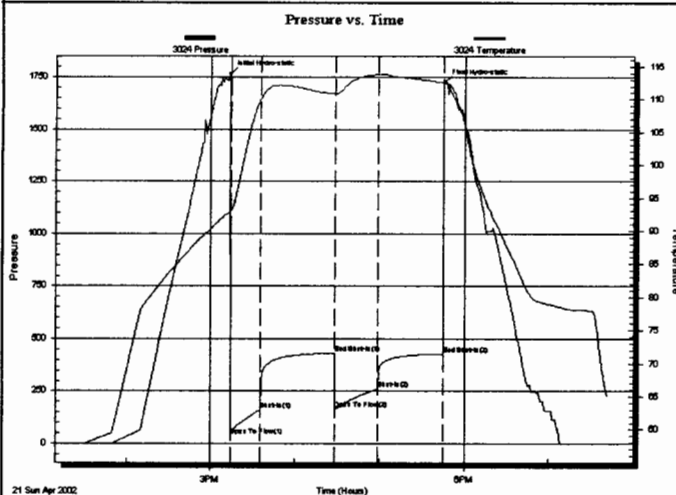
End Time:

**19:41:54**

Time On Btrm: **2002.04.21 @ 15:13:54**

Time Off Btrm: **2002.04.21 @ 17:45:24**

**TEST COMMENT:** FFP-weak to strong in 6 min  
FFP-weak to strong in 10 min  
Times 30-45-30-45  
weak blow back on shut-in 1/4" to surface blow



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1766.09	92.87	Initial Hydro-static
1	34.53	93.00	Open To Flow (1)
22	159.50	109.99	Shut-In(1)
75	432.89	110.86	End Shut-In(1)
75	165.35	110.86	Open To Flow (2)
105	260.34	113.82	Shut-In(2)
151	428.69	112.55	End Shut-In(2)
152	1724.87	112.52	Final Hydro-static

### Recovery

Length (ft)	Description	Volume (bbl)
300.00	water w/scum of oil thru-out	3.12
60.00	SOCMW 1%oil 10%mud 89%w ater	0.84
140.00	SOCMW 4%oil 20%mud 76%w ater	1.96
20.00	clean oil	0.28
60.00	GIP	0.84

### Gas Rates

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



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration Inc  
8100 E.22nd St.N.  
#700  
Wichita KS 67226  
ATTN: Rocky Milford

**R.E.T.#1**  
**10-6s-22w Graham KS**  
Job Ticket: 16282      **DST#: 6**  
Test Start: 2002.04.21 @ 13:27:55

### Tool Information

Drill Pipe:	Length: 3526.00 ft	Diameter: 3.80 inches	Volume: 49.46 bbl	Tool Weight: 2200.00 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: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 50.05 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3647.00 ft			Final 40000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	19.02 ft			
Tool Length:	40.02 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

### Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			3627.00	
S.I. Tool	5.00			3632.00	
HMV	5.00			3637.00	
Packer	5.00			3642.00	21.00      Bottom Of Top Packer
Packer	5.00			3647.00	
Stubb	1.00			3648.00	
Recorder	0.01	3024	Inside	3648.01	
Perforations	15.00			3663.01	
Recorder	0.01	11085	Outside	3663.02	
Bullnose	3.00			3666.02	19.02      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>40.02</b>				



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Ritchie Exploration Inc  
8100 E.22nd St.N.  
#700  
Wichita KS 67226  
ATTN: Rocky Milford

**R.E.T.#1**  
**10-6s-22w Graham KS**  
Job Ticket: 16282      **DST#: 6**  
Test Start: 2002.04.21 @ 13:27:55

**Mud and Cushion Information**

Mud Type: Gel Chem	Cushion Type:	Oil API: 40 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 77000 ppm
Viscosity: 51.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.93 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 3900.00 ppm		
Filter Cake: 2.00 inches		

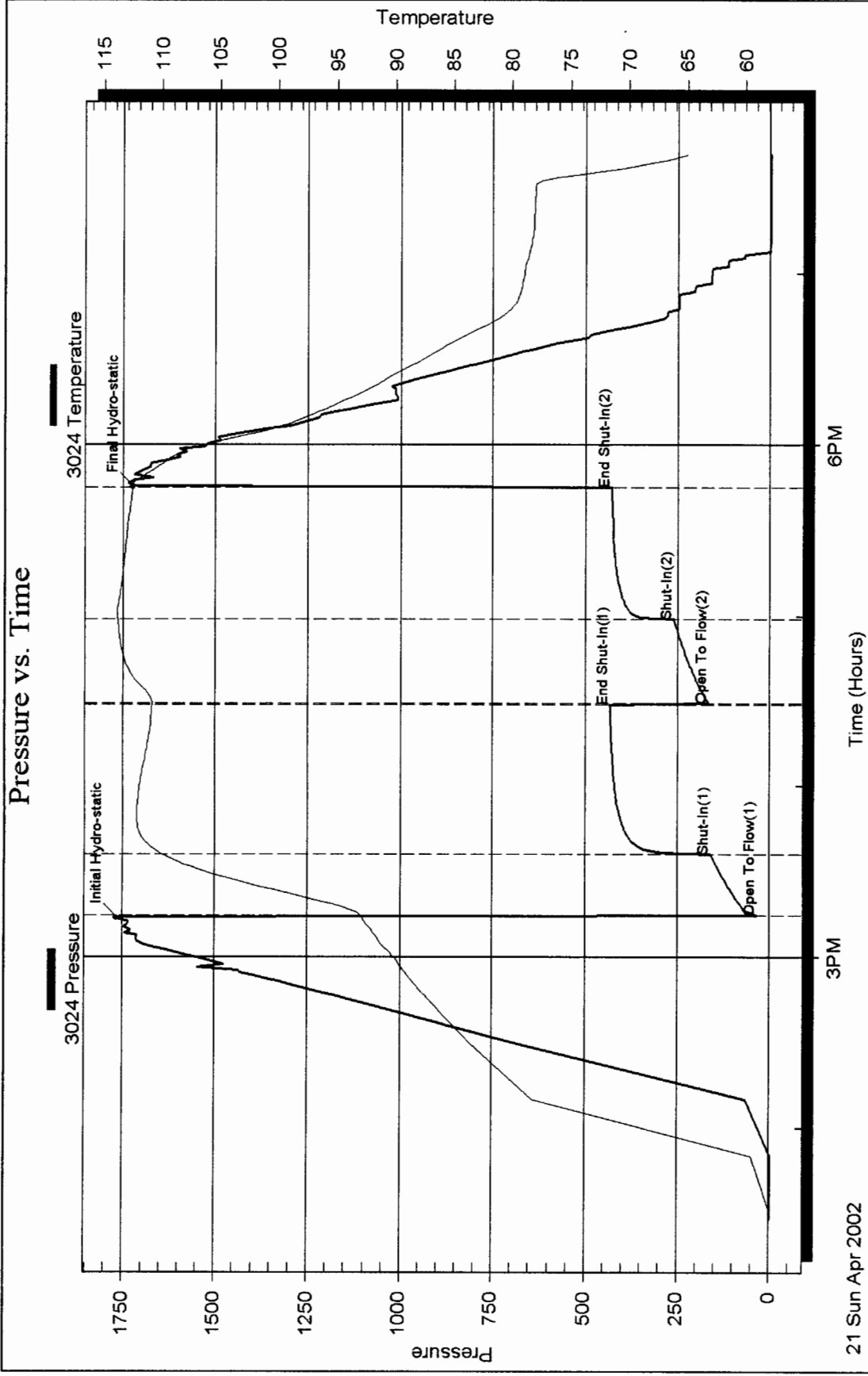
**Recovery Information**

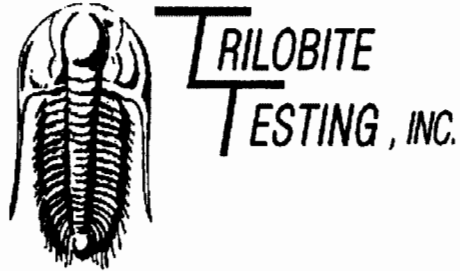
Recovery Table

Length ft	Description	Volume bbl
300.00	water w/scum of oil thru-out	3.115
60.00	SOCMW 1%oil 10%mud 89%w ater	0.842
140.00	SOCMW 4%oil 20%mud 76%w ater	1.964
20.00	clean oil	0.281
60.00	GIP	0.842

Total Length: 580.00 ft      Total Volume: 7.044 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments: RW.11 @ 65F

### Pressure vs. Time





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 E.22nd St.N.  
#700  
Wichita KS 67226

ATTN: Rocky Milford

**10-6s-22w Graham KS**

**R.E.T.#1**

Start Date: 2002.04.22 @ 03:02:45

End Date: 2002.04.22 @ 08:25:44

Job Ticket #: 16283                      DST #: 7

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Ritchie Exploration Inc

R.E.T.#1

10-6s-22w Graham KS

DST # 7

LKC

2002.04.22



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc  
8100 E.22nd St.N.  
#700  
Wichita KS 67226  
ATTN: Rocky Milford

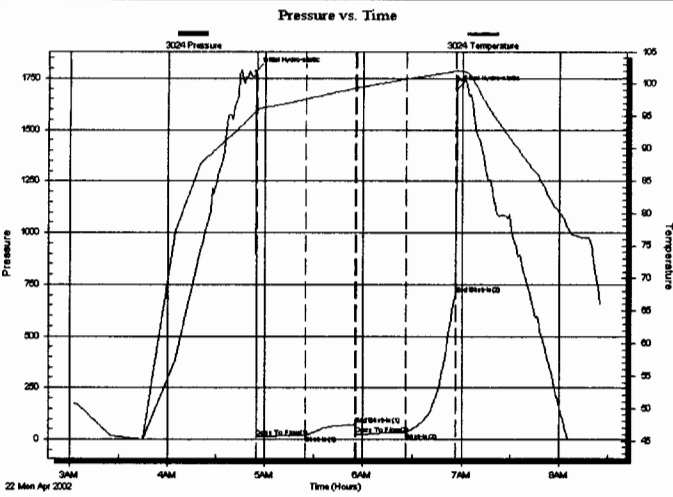
**R.E.T.#1**  
**10-6s-22w Graham KS**  
Job Ticket: 16283      **DST#: 7**  
Test Start: 2002.04.22 @ 03:02:45

## GENERAL INFORMATION:

Formation: **LKC**  
Deviated: **No** Whipstock: **ft (KB)**  
Time Tool Opened: 04:54:44  
Time Test Ended: 08:25:44  
Interval: **3668.00 ft (KB) To 3699.00 ft (KB) (TVD)**  
Total Depth: **3699.00 ft (KB) (TVD)**  
Hole Diameter: **7.85 inches** Hole Condition: **Fair**  
Test Type: **Conventional Bottom Hole**  
Tester: **Ray Schwager**  
Unit No: **16**  
Reference Elevations: **2261.00 ft (KB)**  
**2256.00 ft (CF)**  
KB to GR/CF: **5.00 ft**

**Serial #: 3024**      **Inside**  
Press@RunDepth: **34.91 psig @ 3672.01 ft (KB)**      Capacity: **7000.00 psig**  
Start Date: **2002.04.22**      End Date: **2002.04.22**      Last Calib.: **2002.04.22**  
Start Time: **03:02:45**      End Time: **08:25:44**      Time On Btrn: **2002.04.22 @ 04:54:14**  
Time Off Btrn: **2002.04.22 @ 06:56:44**

**TEST COMMENT:** FFP-weak blow thru-out 1/4"blow  
FFP-weak 1/4"blow, flushed tool remained weak thru-out  
Times 30-30-30-30



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1786.49	95.65	Initial Hydro-static
1	11.28	95.62	Open To Flow (1)
31	20.11	97.62	Shut-In(1)
61	68.94	99.29	End Shut-In(1)
62	22.74	99.31	Open To Flow (2)
92	34.91	100.73	Shut-In(2)
122	701.38	101.95	End Shut-In(2)
123	1698.79	102.14	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	HOCM 25%oil 75%mud	0.02
20.00	clean oil	0.10

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration Inc  
8100 E.22nd St.N.  
#700  
Wichita KS 67226  
ATTN: Rocky Milford

**R.E.T.#1**

**10-6s-22w Graham KS**

Job Ticket: 16283

DST#: 7

Test Start: 2002.04.22 @ 03:02:45

### Tool Information

Drill Pipe:	Length: 3557.00 ft	Diameter: 3.80 inches	Volume: 49.90 bbl	Tool Weight: 2200.00 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: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 50.49 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3668.00 ft			Final 38000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	31.02 ft			
Tool Length:	52.02 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

### Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			3648.00	
S.I. Tool	5.00			3653.00	
HMV	5.00			3658.00	
Packer	5.00			3663.00	21.00 Bottom Of Top Packer
Packer	5.00			3668.00	
Stubb	1.00			3669.00	
Perforations	3.00			3672.00	
Recorder	0.01	3024	Inside	3672.01	
Perforations	24.00			3696.01	
Recorder	0.01	11085	Outside	3696.02	
Bullnose	3.00			3699.02	31.02 Bottom Packers & Anchor

**Total Tool Length: 52.02**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration Inc  
8100 E.22nd St.N.  
#700  
Wichita KS 67226  
ATTN: Rocky Milford

**R.E.T.#1**  
**10-6s-22w Graham KS**  
Job Ticket: 16283      **DST#: 7**  
Test Start: 2002.04.22 @ 03:02:45

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 40 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 53.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.49 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 3900.00 ppm		
Filter Cake: 1.00 inches		

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	HOCM 25%oil 75%mud	0.025
20.00	clean oil	0.098

Total Length: 25.00 ft      Total Volume: 0.123 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments:

Serial #: 3024

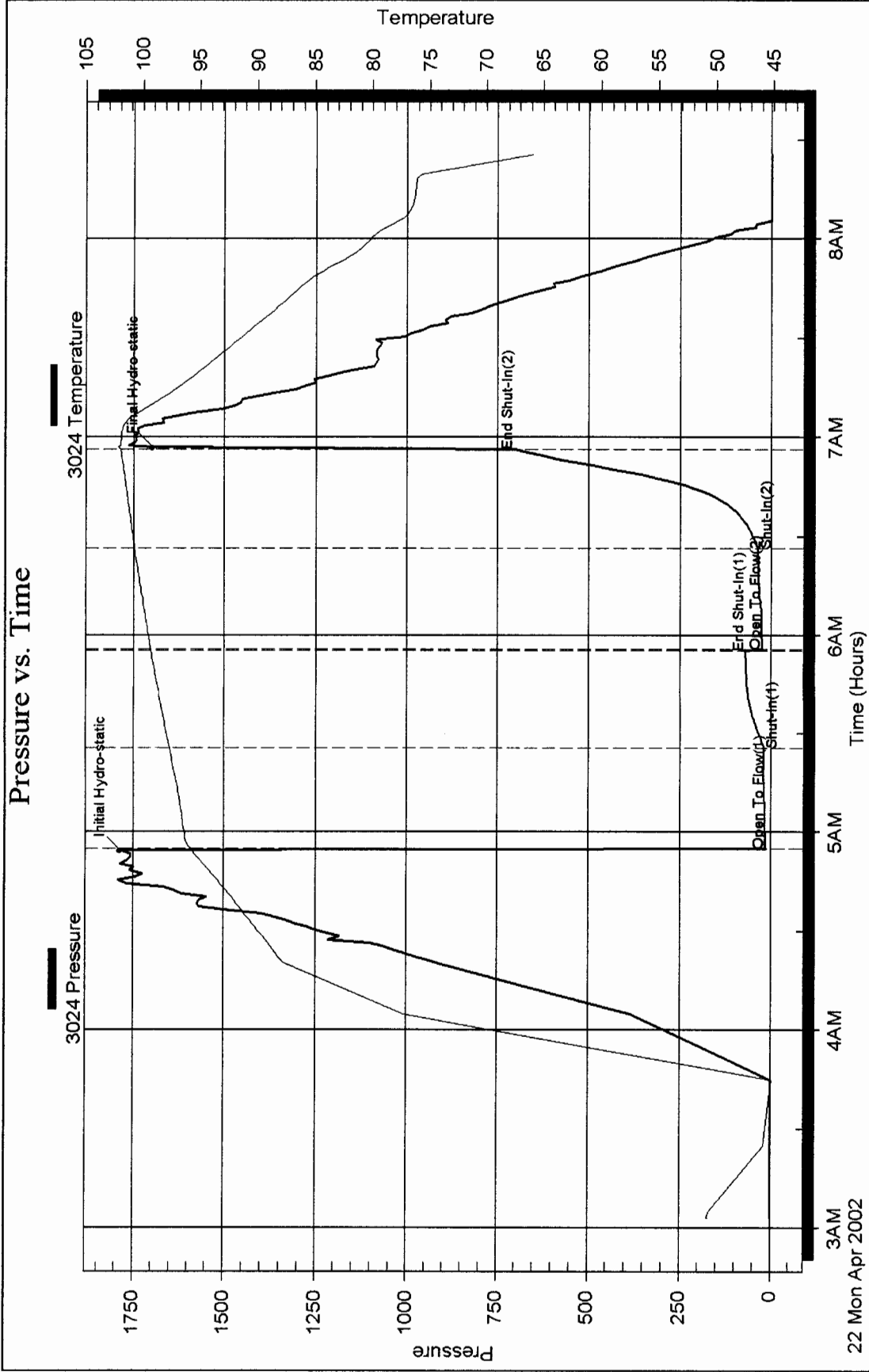
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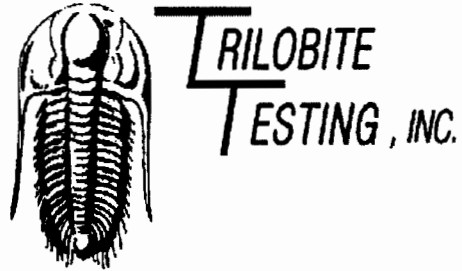
Ritchie Exploration Inc

10-6s-22w Graham KS

DST Test Number: 7

### Pressure vs. Time





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 E.22nd St.N.  
#700  
Wichita KS 67226

ATTN: Rocky Milford

**10-6s-22w Graham KS**

**R.E.T.#1**

Start Date: 2002.04.22 @ 16:32:23

End Date: 2002.04.22 @ 22:12:22

Job Ticket #: 16284                      DST #: 8

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  
8100 E.22nd St.N.  
#700  
Wichita KS 67226  
ATTN: Rocky Milford

**R.E.T.#1**  
**10-6s-22w Graham KS**  
Job Ticket: 16284      **DST#: 8**  
Test Start: 2002.04.22 @ 16:32:23

## GENERAL INFORMATION:

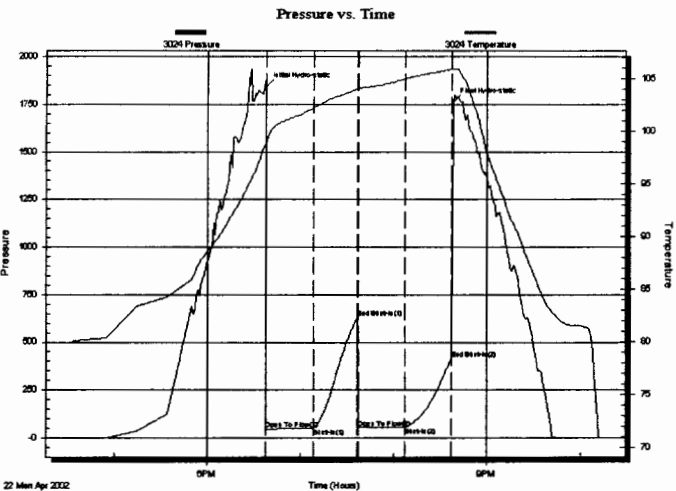
Formation: **congl**  
Deviated: **No Whipstock:**      ft (KB)  
Time Tool Opened: 18:37:52  
Time Test Ended: 22:12:22  
Interval: **3692.00 ft (KB) To 3773.00 ft (KB) (TVD)**  
Total Depth: **3773.00 ft (KB) (TVD)**  
Hole Diameter: **7.85 inches** Hole Condition: **Fair**  
Test Type: **Conventional Bottom Hole**  
Tester: **Ray Schwager**  
Unit No: **16**  
Reference Elevations: **2261.00 ft (KB)**  
**2256.00 ft (CF)**  
KB to GR/CF: **5.00 ft**

## Serial #: 3024

**Inside**

Press@RunDepth: **55.16 psig @ 3695.01 ft (KB)**      Capacity: **7000.00 psig**  
Start Date: **2002.04.22**      End Date: **2002.04.22**      Last Calib.: **2002.04.22**  
Start Time: **16:32:23**      End Time: **22:12:22**      Time On Btm: **2002.04.22 @ 18:37:22**  
Time Off Btm: **2002.04.22 @ 20:37:52**

TEST COMMENT: **FFP-weak blow 1/4",died in 20 min**  
**FFP-no blow**  
**Times 30-30-30-30**



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1843.43	98.84	Initial Hydro-static
1	44.70	98.87	Open To Flow (1)
31	51.15	102.21	Shut-In (1)
59	626.54	104.02	End Shut-In (1)
60	52.54	104.07	Open To Flow (2)
90	55.16	105.00	Shut-In (2)
120	412.22	105.92	End Shut-In (2)
121	1765.44	105.93	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud w/show of oil	0.05

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration Inc  
8100 E.22nd St.N.  
#700  
Wichita KS 67226  
ATTN: Rocky Milford

**R.E.T.#1**  
**10-6s-22w Graham KS**  
Job Ticket: 16284      **DST#: 8**  
Test Start: 2002.04.22 @ 16:32:23

**Tool Information**

Drill Pipe:	Length: 3556.00 ft	Diameter: 3.80 inches	Volume: 49.88 bbl	Tool Weight: 2200.00 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: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 45000.00 lb
			<u>Total Volume: 50.47 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 36000.00 lb
Depth to Top Packer:	3692.00 ft			Final 36000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	81.02 ft			
Tool Length:	102.02 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			3672.00	
S.I. Tool	5.00			3677.00	
HMV	5.00			3682.00	
Packer	5.00			3687.00	21.00      Bottom Of Top Packer
Packer	5.00			3692.00	
Stubb	1.00			3693.00	
Perforations	1.00			3694.00	
C.O. Sub	1.00			3695.00	
Recorder	0.01	3024	Inside	3695.01	
Blank Spacing	61.00			3756.01	
C.O. Sub	1.00			3757.01	
Perforations	13.00			3770.01	
Recorder	0.01	11085	Outside	3770.02	
Bullnose	3.00			3773.02	81.02      Bottom Packers & Anchor

**Total Tool Length: 102.02**



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# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration Inc

**R.E.T.#1**

8100 E.22nd St.N.

**10-6s-22w Graham KS**

#700

Job Ticket: 16284

**DST#: 8**

Wichita KS 67226

Test Start: 2002.04.22 @ 16:32:23

ATTN: Rocky Milford

## 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: 51.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.97 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3900.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbf
10.00	mud w/show of oil	0.049

Total Length: 10.00 ft

Total Volume: 0.049 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: LCM 1#

Serial #: 3024

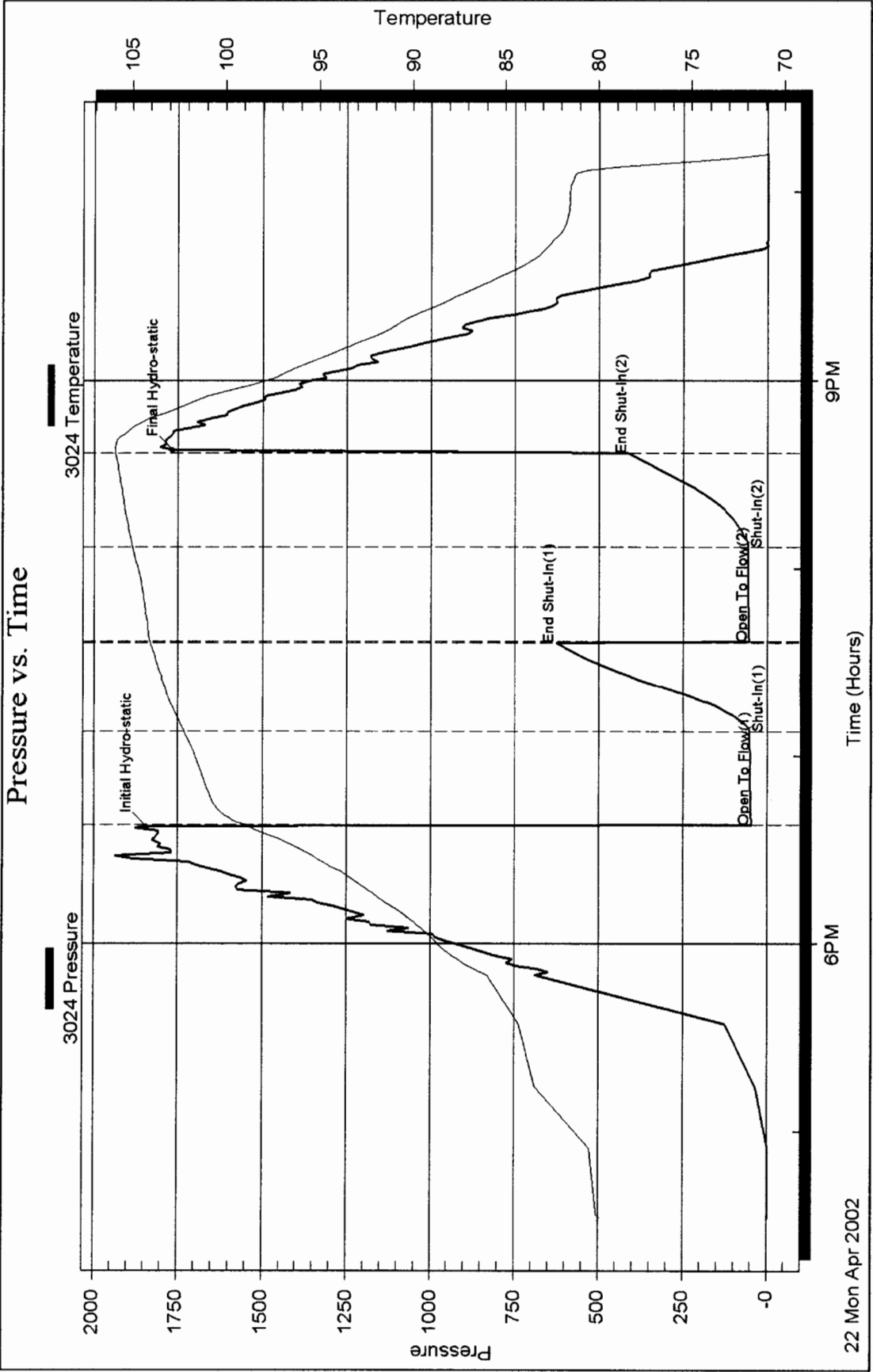
Inside

Ritchie Exploration Inc

10-6s-22w Graham KS

DST Test Number: 8

### Pressure vs. Time



22 Mon Apr 2002

6PM

9PM

Time (Hours)