

**CONFIDENTIAL**

KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION

**ORIGINAL**

Form ACO-1

June 2009

Form Must Be Typed

Form must be Signed

All blanks must be Filled

**WELL COMPLETION FORM**  
**WELL HISTORY - DESCRIPTION OF WELL & LEASE**

3/31/13

OPERATOR: License # 4767  
Name: Ritchie Exploration, Inc.  
Address 1: P.O. Box 783188  
Address 2: \_\_\_\_\_  
City: Wichita State: KS Zip: 67278 + 3188  
Contact Person: John Niemberger  
Phone: ( 316 ) 691-500  
CONTRACTOR: License # 30606  
Name: Murfin Drilling Co., Inc.  
Wellsite Geologist: Bob Peterson  
Purchaser: NCRA

**KCC**  
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Designate Type of Completion:

- New Well       Re-Entry       Workover
- Oil       WSW       SWD       SIOW
- Gas       D&A       ENHR       SIGW
- OG       GSW       Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic       Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: \_\_\_\_\_  
Well Name: \_\_\_\_\_  
Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_  
 Deepening       Re-perf.       Conv. to ENHR       Conv. to SWD  
 Conv. to GSW  
 Plug Back: \_\_\_\_\_ Plug Back Total Depth  
 Commingled      Permit #: \_\_\_\_\_  
 Dual Completion      Permit #: \_\_\_\_\_  
 SWD      Permit #: \_\_\_\_\_  
 ENHR      Permit #: \_\_\_\_\_  
 GSW      Permit #: \_\_\_\_\_

<u>12/16/10</u>	<u>1/4/11</u>	<u>1/4/11</u>
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 137-20541-00-00  
Spot Description: 42' N & 301' E  
SE SE NE Sec. 32 Twp. 5 S. R. 24  East  West  
2,268 Feet from  North /  South Line of Section  
29 Feet from  East /  West Line of Section  
Footages Calculated from Nearest Outside Section Corner:  
 NE  NW  SE  SW  
County: Norton  
Lease Name: Slipke Unit Well #: 1  
Field Name: \_\_\_\_\_  
Producing Formation: LKC  
Elevation: Ground: 2471 Kelly Bushing: 2476  
Total Depth: 3850 Plug Back Total Depth: 3823  
Amount of Surface Pipe Set and Cemented at: 261 Feet  
Multiple Stage Cementing Collar Used?  Yes  No  
If yes, show depth set: 2065 Feet  
If Alternate II completion, cement circulated from: surface  
feet depth to: 2065 w/ 350 sx cmt.

**Drilling Fluid Management Plan**

(Data must be collected from the Reserve Pit)

Chloride content: 18000 ppm Fluid volume: 1000 bbls  
Dewatering method used: evaporation  
Location of fluid disposal if hauled offsite: \_\_\_\_\_  
Operator Name: \_\_\_\_\_  
Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_  
Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West  
County: \_\_\_\_\_ Permit #: \_\_\_\_\_

**INSTRUCTIONS:** An original and two copies of this form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information of side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form (see rule 82-3-107 for confidentiality in excess of 12 months). One copy of all wireline logs and geologist well report shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells.

**AFFIDAVIT**

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Signature: \_\_\_\_\_  
Title: Production Manager Date: 3/31/11

**KCC Office Use ONLY**

Letter of Confidentiality Received  
Date: 3/31/11 - 3/31/13 **RECEIVED**  
 Confidential Release Date: APR 01 2011  
 Wireline Log Received  
 Geologist Report Received  
 UIC Distribution  
ALT  I  II  III Approved by: [Signature] Date: \_\_\_\_\_  
**KCC WICHITA**

Operator Name: Ritchie Exploration, Inc. Lease Name: Slipke Unit Well #: 1

Sec. 32 Twp. 5 S. R. 24  East  West County: Norton

**INSTRUCTIONS:** Show important tops and base of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken  Yes  No  
*(Attach Additional Sheets)*

Samples Sent to Geological Survey  Yes  No

Cores Taken  Yes  No

Electric Log Run  Yes  No

Electric Log Submitted Electronically  Yes  No  
*(If no, Submit Copy)*

List All E. Logs Run:  
 Compensated Density/Neutron Log  
 Dual Induction Log

Log Formation (Top), Depth and Datum  Sample

Name Top Datum

SEE ATTACHED

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CASING RECORD <input checked="" type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface	12-1/4	8-5/8	23#	261	common	235	3% cc, 2% gel
Production	7-7/8	4-1/2	10.5#	3849	Poz	155	10% salt, 2% gel, 3/4% CD-31

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record (Amount and Kind of Material Used)	Depth
4	3762.5' - 3764.5' (2/10/11)	500 gallons 15% NE	

TUBING RECORD: Size: 2-3/8" Set At: 3817' Packer At: \_\_\_\_\_ Liner Run:  Yes  No

Date of First, Resumed Production, SWD or ENHR: 3/16/11 Producing Method:  Flowing  Pumping  Gas Lift  Other (Explain) \_\_\_\_\_

Estimated Production Per 24 Hours	Oil Bbls. <u>27.05</u>	Gas Mcf	Water Bbls. <u>2.34</u>	Gas-Oil Ratio	Gravity <u>36</u>
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DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-1B.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i> <input type="checkbox"/> Other (Specify) _____	PRODUCTION INTERVAL: _____ _____
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Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202

**RECEIVED**  
**APR 01 2011**  
**KCC WICHITA**



KCC  
MAR 31 2011  
CONFIDENTIAL

**#1 Slipke Unit**

2,268' FNL & 29' FEL

42' N & 301' E of SE SE NE Section 32-5S-24W

Norton County, Kansas

API# 15-137-20541-0000

Elevation: GL: 2471', KB: 2476'

<u>Sample Tops</u>			<u>Ref.</u>	<u>Well</u>
Anhydrite	2092'	+384	-1	
B/Anhydrite	2124'	+352	-1	
Heebner	3579'	-1103	+5	
Lansing	3619'	-1143	+4	
Muncie Shale	3719'	-1243	+2	
BKC	3803'	-1327	+6	
RTD	3850'	-1374		

RECEIVED

APR 01 2011

KCC WICHITA

P.O. Box 783188  
Wichita, Kansas 67278-3188

(316) 691-9500  
Fax (316) 691-9550  
[rei@ritchic-exp.com](mailto:rei@ritchic-exp.com)

8100 E. 22<sup>nd</sup> St. N., Bldg. 700  
Wichita, Kansas 67226-2328



# ALLIED CEMENTING CO., LLC. 034082

REMIT TO P.O. BOX 31  
RUSSELL, KANSAS 67665

SERVICE POINT:  
Russell Ks.

KCC  
MAR 31 2011  
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DATE <u>1-4-2011</u>	SEC. <u>32</u>	TWP. <u>5 S</u>	RANGE <u>24 W</u>	CALLED OUT	ON LOCATION	JOB START <u>5:00 PM</u>	JOB FINISH <u>5:30 PM</u>
SLIPKE LEASE UNIT	WELL #	LOCATION <u>Hill City 10W 14N 1/4W 1/2N</u>			COUNTY <u>NORTON</u>	STATE <u>KANSAS</u>	
OLD OR NEW (Circle one)							

CONTRACTOR MURKIN DRIG, Rig # 8  
 TYPE OF JOB PRODUCTION STRING  
 HOLE SIZE 7 7/8 TD. 3850'  
 CASING SIZE 4 1/2 New DEPTH 3849'  
 TUBING SIZE 10.50 # DEPTH (ON JT #47)  
 DRILL PIPE PORT COLLAR DEPT @ 2068  
 TOOL AFE INSERT DEPTH @ 3827  
 PRES. MAX MINIMUM  
 MEAS. LINE SHOE JOINT 22.07  
 CEMENT LEFT IN CSG 22.07  
 PERFS.  
 DISPLACEMENT 61 / BBL  
 EQUIPMENT

OWNER  
 CEMENT  
 AMOUNT ORDERED 210 SX @ 60/40 10% SUT 2394  
3/4 OF 1% CD-31  
500 GAL WFR-2 FLUSH  
 COMMON 120 @ 13.50 1620.00  
 POZMIX 80 @ 7.50 600.00  
 GEL 4 @ 20.25 81.00  
 CHLORIDE @  
 ASC @  
 CD<sup>31</sup> 129 lbs @ 9.10 1173.90  
Salt 8 @ 21.25 170.00  
 @  
 WFR-500 @ 1.00 550.00  
 @  
 @  
 @  
 @  
 HANDLING 200 @ 2.25 450.00  
 MILEAGE 57 mi @ 10 900.00  
 TOTAL 5548.90

PUMP TRUCK CEMENTER Glenn  
 # 398 HELPER Heath  
 BULK TRUCK  
 # 495 DRIVER Kevin rws  
 BULK TRUCK  
 # DRIVER  
PORT COLLAR ON JT. #47

REMARKS:  
Ran 101, JTs, New 4 1/2, 10.50 #. Set @  
3849' Circulate on bottom for  
45 min. Pump flush, Cement w/ 5% SUT  
Clear line, Release T.R.P., Displace 60 BBL  
H<sub>2</sub>O, Land wiper plug @ 1000' E. AFE (Held)  
Released  
15 SX @ Impulse hole  
30 SX @ Re-hole  
THANK'S

CHARGE TO: RITCHIE EXPLORATION INC  
 STREET  
 CITY STATE ZIP

SERVICE  
 DEPTH OF JOB  
 PUMP TRUCK CHARGE 1957.00  
 EXTRA FOOTAGE @  
 MILEAGE 45 @ 7.00 315.00  
 MANIFOLD @  
Rotating Head @  
 TOTAL 2272.00

To Allied Cementing Co., LLC.  
 You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

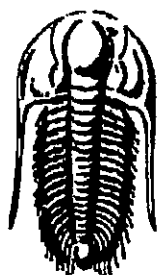
"4 1/2" PLUG & FLOAT EQUIPMENT  
Guide Shoe 73.00  
AFE INSERT @ 10.00  
T.R.P. @ 27.00  
5 - CENTRALIZERS @ 32.00 160.00  
2 - BASKETS @ 147.00 294.00  
1 - PORT COLLAR @ 1673.00  
 TOTAL 2328.00

PRINTED NAME Rodney Fair  
 SIGNATURE Rodney Fair

SALES TAX (If Any)  
 TOTAL CHARGES  
 DISCOUNT IF PAID IN 30 DAYS

RECEIVED  
 APR 01 2011  
 KCC WICHITA





**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

Prepared For: **Ritchie Exploration**

8100 E. 22nd st. #700  
Wichita KS 67278

ATTN: Bob Peterson

**32 5s 24w Norton KS**

**Slipke Unit #1**

Start Date: 2010.12.30 @ 11:15:00

End Date: 2010.12.30 @ 17:26:30

Job Ticket #: 040125 DST #: 1

**KCC  
MAR 31 2011  
CONFIDENTIAL**

Trilobite Testing, Inc  
PO Box 1733 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

**RECEIVED  
APR 01 2011  
KCC WICHITA**

Ritchie Exploration

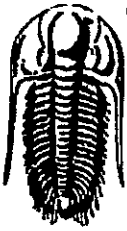
Slipke Unit #1

32 5s 24w Norton KS

DST # 1

Toronto, LKC-A

2010.12.30



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

Ritchie Exploration  
8100 E. 22nd st. #700  
Wichita KS 67278  
ATTN: Bob Peterson

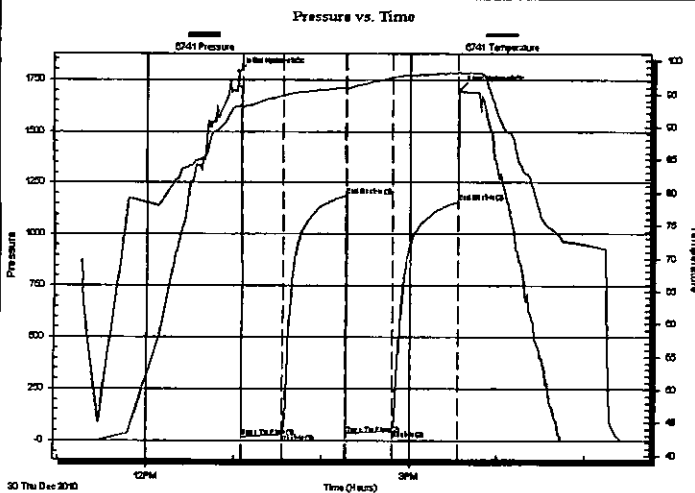
**Slipke Unit #1**  
**32 5s 24w Norton KS**  
Job Ticket: 040125      DST#: 1  
Test Start: 2010.12.30 @ 11:15:00

### GENERAL INFORMATION:

Formation: Toronto, LKC-A  
Deviated: No Whipstock:                      ft (KB)  
Time Tool Opened: 13:05:00  
Time Test Ended: 17:26:30  
Interval: 3574.00 ft (KB) To 3635.00 ft (KB) (TVD)  
Total Depth: 3635.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Good  
Test Type: Conventional Bottom Hole  
Tester: Chuck Kreutzer Jr.  
Unit No: 36  
Reference Elevations: 2469.00 ft (KB)  
2464.00 ft (CF)  
KB to GR/CF: 5.00 ft

Serial #: 6741      Inside  
Press@RunDepth: 48.79 psig @ 3579.60 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2010.12.30      End Date: 2010.12.30      Last Calib.: 2010.12.30  
Start Time: 11:15:01      End Time: 17:26:30      Time On Btm: 2010.12.30 @ 13:02:30  
Time Off Btm: 2010.12.30 @ 15:34:00

TEST COMMENT: IF: Weak surface blow over 30 mins.  
IS: No blow back over 45 mins.  
FF: Weak surface blow after 15 mins, never built passed surface.  
FSI: No blow back over 45 mins



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1786.75	93.10	Initial Hydro-static
3	17.04	92.83	Open To Flow (1)
31	30.79	94.77	Shut-In(1)
74	1187.30	96.05	End Shut-In(1)
75	33.77	95.84	Open To Flow (2)
106	48.79	97.41	Shut-In(2)
151	1159.06	98.21	End Shut-In(2)
152	1701.93	98.20	Final Hydro-static

### Recovery

Length (ft)	Description	Volume (bbl)
60.00	mud	0.30

### Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration  
8100 E. 22nd st. #700  
Wichita KS 67278  
ATTN: Bob Peterson

**Slipke Unit #1**  
**32 5s 24w Norton KS**  
Job Ticket: 040125      DST#: 1  
Test Start: 2010.12.30 @ 11:15:00

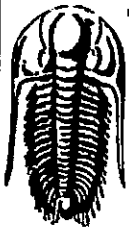
**Tool Information**

Drill Pipe:	Length: 3385.00 ft	Diameter: 3.80 inches	Volume: 47.48 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: 28000.00 lb
Drill Collar:	Length: 179.00 ft	Diameter: 2.25 inches	Volume: 0.88 bbl	Weight to Pull Loose: 55000.00 lb
			<b>Total Volume: 48.36 bbl</b>	Tool Chased 2.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3574.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	60.47 ft			
Tool Length:	88.47 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3551.00	
Hydraulic tool	5.00			3556.00	
Jars	5.00			3561.00	
Safety Joint	3.00			3564.00	
Packer	5.00			3569.00	28.00      Bottom Of Top Packer
Packer	5.00			3574.00	
Stubb	1.00			3575.00	
Perforations	4.00			3579.00	
Change Over Sub	0.60			3579.60	
Recorder	0.00	6752	inside	3579.60	
Recorder	0.00	6741	inside	3579.60	
Blank Spacing	31.27			3610.87	
Change Over Sub	0.60			3611.47	
Perforations	20.00			3631.47	
Bullnose	3.00			3634.47	60.47      Bottom Packers & Anchor

**Total Tool Length: 88.47**



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Ritchie Exploration

Silpke Unit #1

8100 E. 22nd st. #700  
Wichita KS 67278

32 5s 24w Norton KS

Job Ticket: 040125

DST#: 1

ATTN: Bob Peterson

Test Start: 2010.12.30 @ 11:15:00

**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: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.37 in<sup>3</sup>

Gas Cushion Type:

Gas Cushion Pressure:

psig

Resistivity: ohm.m

Salinity: 1000.00 ppm

Filter Cake: 2.00 inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
60.00	mud	0.295

Total Length: 60.00 ft      Total Volume: 0.295 bbl

Num Fluid Samples: 0

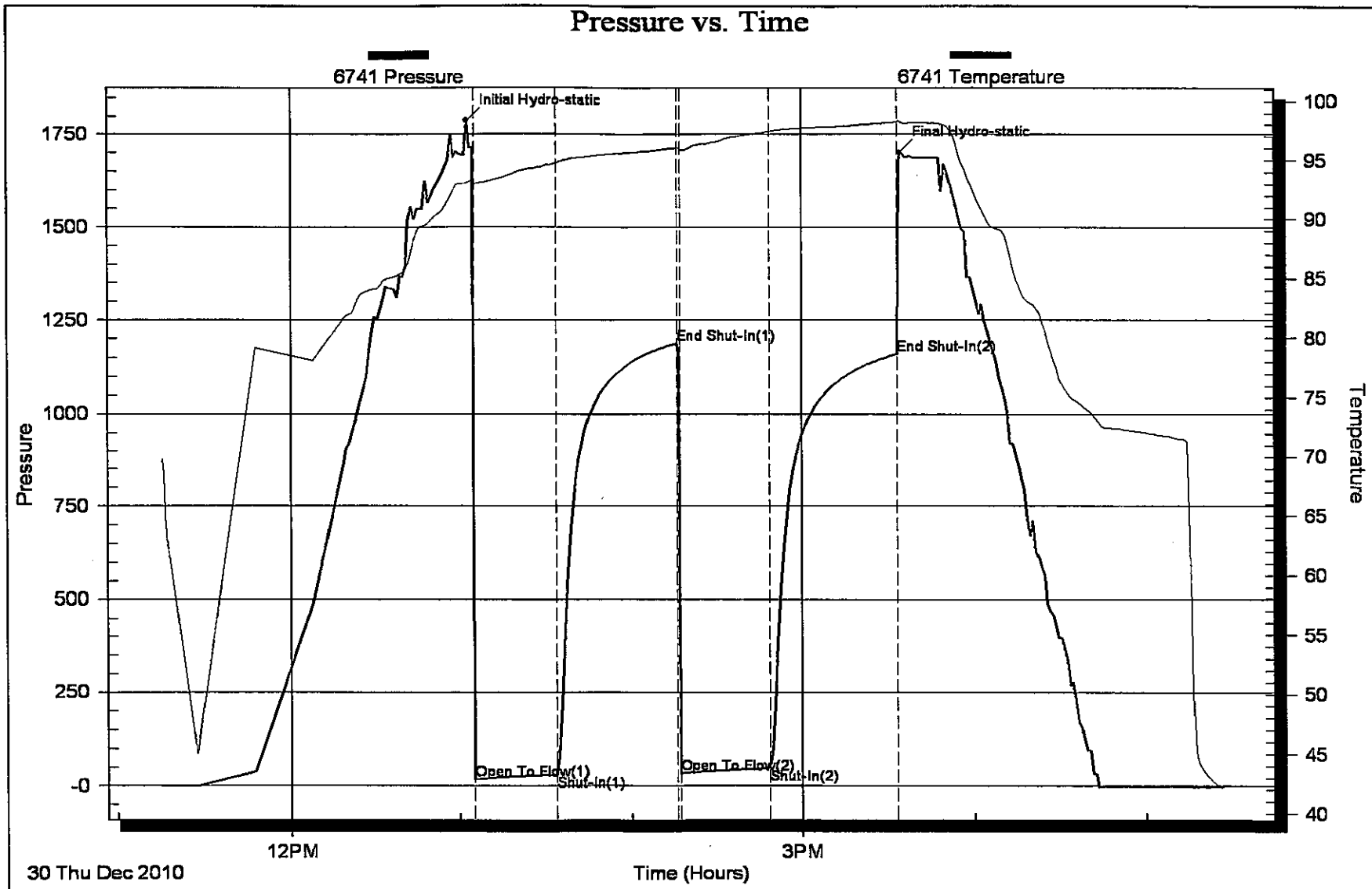
Num Gas Bombs: 0

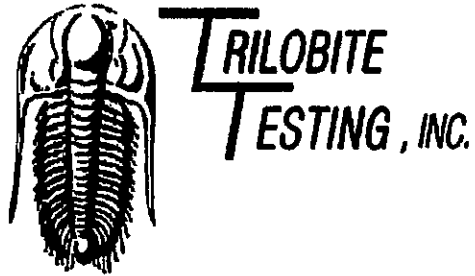
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

8100 E. 22nd st. #700  
Wichita KS 67278

ATTN: Bob Peterson

**32 5s 24w Norton KS**

**Slipke Unit #1**

Start Date: 2010.12.31 @ 00:10:00

End Date: 2010.12.31 @ 09:28:00

Job Ticket #: 040026      DST #: 2

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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

Ritchie Exploration

Slipke Unit #1

32 5s 24w Norton KS

DST # 2

LKC-C

2010.12.31



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Ritchie Exploration  
8100 E. 22nd st. #700  
Wichita KS 67278  
ATTN: Bob Peterson

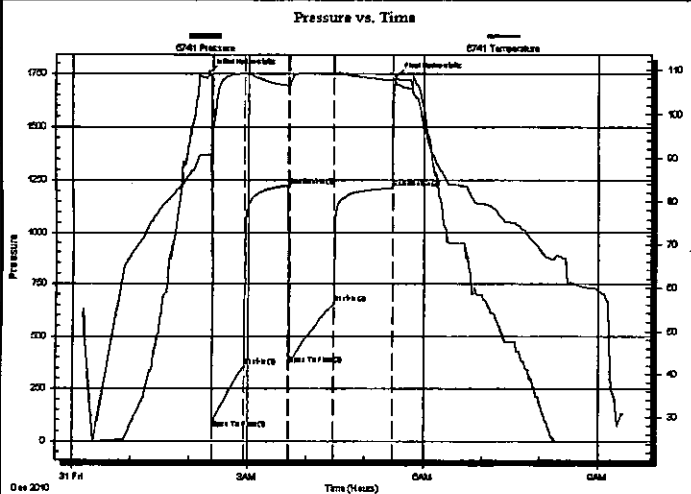
**Slipke Unit #1**  
32 5s 24w Norton KS  
Job Ticket: 040026      DST#: 2  
Test Start: 2010.12.31 @ 00:10:00

### GENERAL INFORMATION:

Formation: LKC-C  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole  
 Time Tool Opened: 02:23:30  
 Tester: Chuck Kreuzer Jr.  
 Time Test Ended: 09:28:00  
 Unit No: 36  
 Interval: 3630.00 ft (KB) To 3655.00 ft (KB) (TVD)  
 Reference Elevations: 2469.00 ft (KB)  
 Total Depth: 3655.00 ft (KB) (TVD)  
 2464.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Good  
 KB to GR/CF: 5.00 ft

**Serial #: 6741**      Inside  
 Press@RunDepth: 658.93 psig @ 3631.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2010.12.31      End Date: 2010.12.31      Last Calib.: 2010.12.31  
 Start Time: 00:10:01      End Time: 09:28:00      Time On Btm: 2010.12.31 @ 02:20:00  
 Time Off Btm: 2010.12.31 @ 05:32:00

**TEST COMMENT:** IF: Strong blow, Built to B.O.B in 4 mins.  
 IS: Bled off, Blow back after 10 mins. Built to 1/2 in. over 45 mins.  
 FF: Fair blow, Built to B.O.B in 15 mins.  
 FS: Bled off, Blow back after 10 mins. B



### PRESSURE SUMMARY

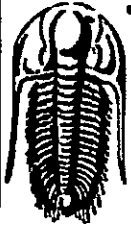
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1754.92	90.88	Initial Hydro-static
4	61.22	92.32	Open To Flow (1)
36	360.81	109.19	Shut-In(1)
81	1222.34	106.54	End Shut-In(1)
82	367.61	106.11	Open To Flow (2)
129	658.93	109.35	Shut-In(2)
189	1214.02	107.72	End Shut-In(2)
192	1737.07	106.72	Final Hydro-static

### Recovery

Length (ft)	Description	Volume (bbl)
1158.00	mcw-5% m95%w	14.61
186.00	mcw-10% m90%w	2.61
186.00	gomcw-2% o3% g30% m65%w	2.61
62.00	gomcw-5% g5% o30% m60%w	0.87
40.00	gc-10% g90%o	0.56

### Gas Rates

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



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Ritchie Exploration  
8100 E. 22nd st. #700  
Wichita KS 67278  
ATTN: Bob Peterson

**Slipke Unit #1**  
**32 5s 24w Norton KS**  
Job Ticket: 040026      DST#: 2  
Test Start: 2010.12.31 @ 00:10:00

**Tool Information**

Drill Pipe:	Length: 3443.00 ft	Diameter: 3.80 inches	Volume: 48.30 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: 28000.00 lb
Drill Collar:	Length: 179.00 ft	Diameter: 2.25 inches	Volume: 0.88 bbl	Weight to Pull Loose: 52000.00 lb
			<u>Total Volume: 49.18 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 45000.00 lb
Depth to Top Packer:	3630.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	25.00 ft			
Tool Length:	53.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3607.00	
Hydraulic tool	5.00			3612.00	
Jars	5.00			3617.00	
Safety Joint	3.00			3620.00	
Packer	5.00			3625.00	28.00      Bottom Of Top Packer
Packer	5.00			3630.00	
Stubb	1.00			3631.00	
Recorder	0.00	6752	Inside	3631.00	
Recorder	0.00	6741	Inside	3631.00	
Perforations	21.00			3652.00	
Bullnose	3.00			3655.00	25.00      Bottom Packers & Anchor

**Total Tool Length: 53.00**



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration

**Slipke Unit #1**

8100 E. 22nd st. #700  
Wichita KS 67278

**32 5s 24w Norton KS**

Job Ticket: 040026      DST#: 2

ATTN: Bob Peterson

Test Start: 2010.12.31 @ 00:10:00

### Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 57.00 sec/qt  
Water Loss: 7.36 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 1000.00 ppm  
Filter Cake: 2.00 inches

Cushion Type:  
Cushion Length: ft  
Cushion Volume: bbl  
Gas Cushion Type:  
Gas Cushion Pressure: psig

Oil API: 31 deg API  
Water Salinity: 16000 ppm

### Recovery Information

Recovery Table

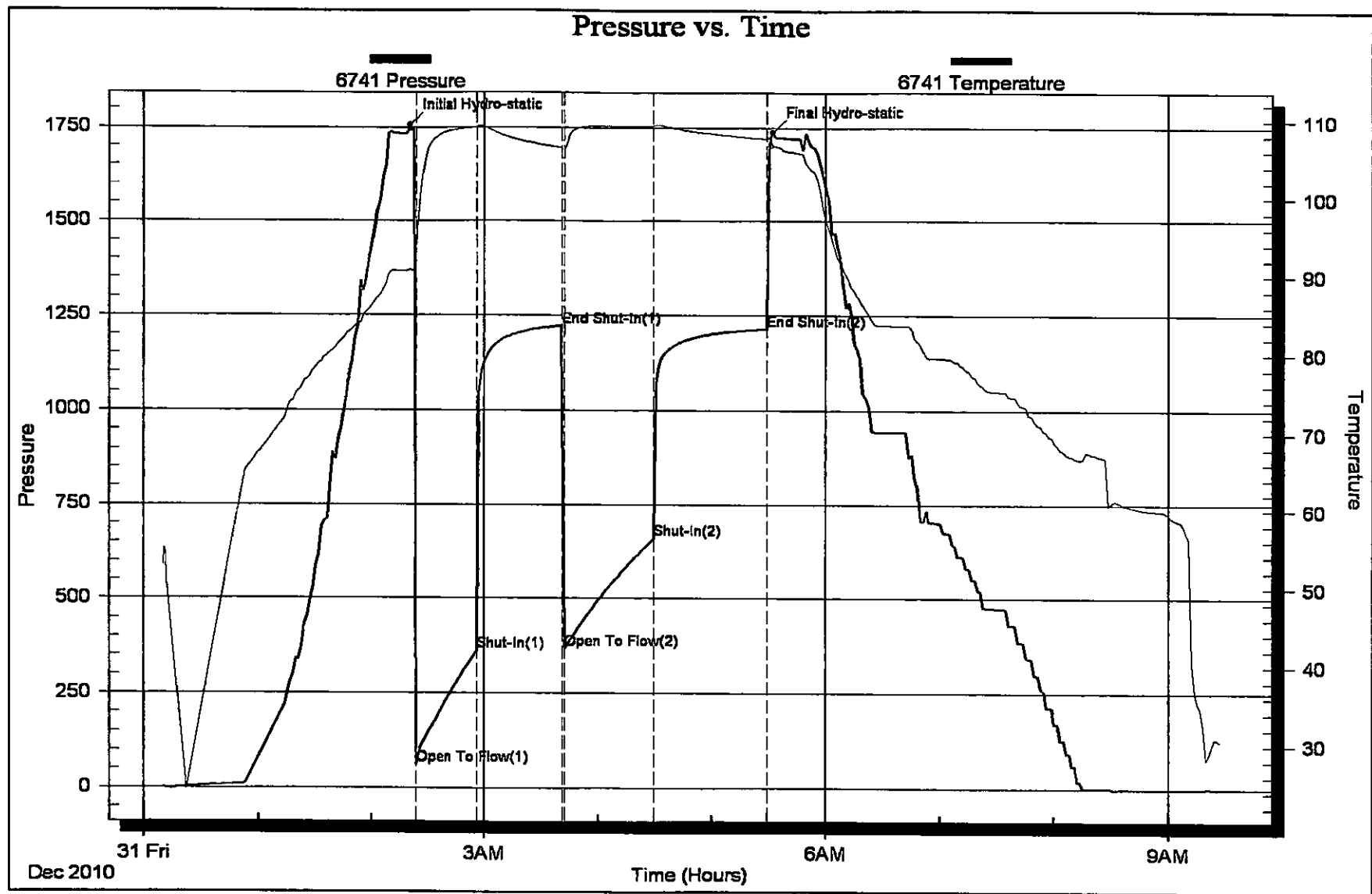
Length ft	Description	Volume bbl
1158.00	mcw -5% <i>m</i> 95% <i>w</i>	14.613
186.00	mcw -10% <i>m</i> 90% <i>w</i>	2.609
186.00	gomcw -2% <i>o</i> 3% <i>g</i> 30% <i>m</i> 65% <i>w</i>	2.609
62.00	gomcw -5% <i>g</i> 5% <i>o</i> 30% <i>m</i> 60% <i>w</i>	0.870
40.00	go-10% <i>g</i> 90% <i>o</i>	0.561

Total Length: 1632.00 ft      Total Volume: 21.262 bbl

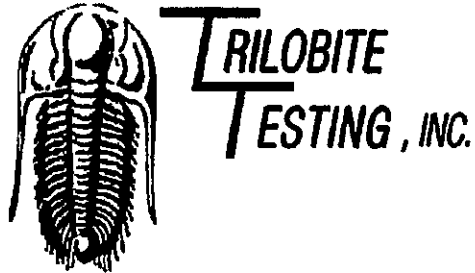
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:

Laboratory Name:      Laboratory Location:

Recovery Comments: RW .1 @ 30F = 16000 ppm chlorides







## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

8100 E. 22nd st. #700  
Wichita KS 67278

ATTN: Bob Peterson

**32 5s 24w Norton KS**

**Slipke Unit #1**

Start Date: 2010.12.31 @ 16:25:00

End Date: 2011.01.01 @ 01:01:30

Job Ticket #: 040027      DST #: 3

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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

Ritchie Exploration

Slipke Unit #1

32 5s 24w Norton KS

DST # 3

LKC-D

2010.12.31



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

Ritchie Exploration  
8100 E 22nd st. #700  
Wichita KS 67278  
ATTN: Bob Peterson

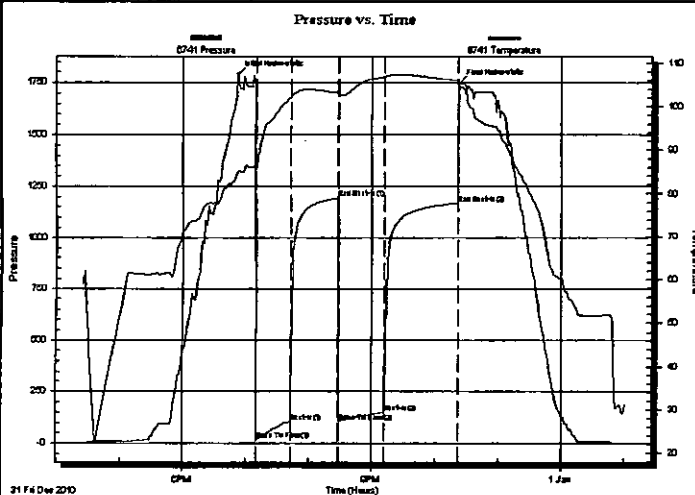
**Slipke Unit #1**  
**32 5s 24w Norton KS**  
Job Ticket: 040027      DST#: 3  
Test Start: 2010.12.31 @ 16:25:00

### GENERAL INFORMATION:

Formation: **LKC-D**  
Deviated: No      Whipstock:      ft (KB)  
Time Tool Opened: 19:10:00  
Time Test Ended: 01:01:30  
Interval: **3653.00 ft (KB) To 3675.00 ft (KB) (TVD)**  
Total Depth: **3675.00 ft (KB) (TVD)**  
Hole Diameter: **7.88 inches** Hole Condition: Good  
Test Type: Conventional Bottom Hole  
Tester: Chuck Kreutzer Jr.  
Unit No: 36  
Reference Elevations: 2469.00 ft (KB)  
2464.00 ft (CF)  
KB to GR/CF: 5.00 ft

**Serial #: 6741**      Inside  
Press@RunDepth: 150.63 psig @ 3654.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2010.12.31      End Date: 2011.01.01      Last Calib.: 2011.01.01  
Start Time: 16:25:01      End Time: 01:01:30      Time On Btm: 2010.12.31 @ 18:52:00  
Time Off Btm: 2010.12.31 @ 22:22:30

**TEST COMMENT:** IF: Fair blow , Built to B.O.B in 27 mins.  
IS: Weak blow back after 20 mins. Surface over 45 mins.  
FF: Weak blow , Built to 7 in. over 45 mins.  
FS: Weak blow after 20 mins. Surface blow back over 6



### PRESSURE SUMMARY

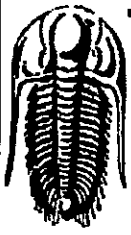
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1788.98	84.70	Initial Hydro-static
18	18.26	85.84	Open To Flow (1)
51	101.84	102.14	Shut-In(1)
97	1191.97	103.14	End Shut-In(1)
97	104.97	102.69	Open To Flow (2)
141	150.63	106.72	Shut-In(2)
210	1168.34	105.85	End Shut-In(2)
211	1745.73	105.02	Final Hydro-static

### Recovery

Length (ft)	Description	Volume (bbl)
179.00	mcw -10% m90%w	0.88
62.00	mcw -25% m75%w	0.87
30.00	mcw -40% m60%w	0.42

### Gas Rates

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



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration  
8100 E. 22nd st. #700  
Wichita KS 67278  
ATTN: Bob Peterson

**Slipke Unit #1**  
**32 5s 24w Norton KS**  
Job Ticket: 040027      DST#: 3  
Test Start: 2010.12.31 @ 16:25:00

### Tool Information

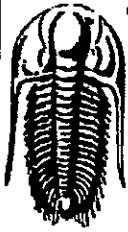
Drill Pipe:	Length: 3478.00 ft	Diameter: 3.80 inches	Volume: 48.79 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 28000.00 lb
Drill Collar:	Length: 179.00 ft	Diameter: 2.25 inches	Volume: 0.88 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: 49.67 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 45000.00 lb
Depth to Top Packer:	3653.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	22.00 ft			
Tool Length:	50.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

### Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3630.00	
Hydraulic tool	5.00			3635.00	
Jars	5.00			3640.00	
Safety Joint	3.00			3643.00	
Packer	5.00			3648.00	28.00      Bottom Of Top Packer
Packer	5.00			3653.00	
Stubb	1.00			3654.00	
Recorder	0.00	6752	inside	3654.00	
Recorder	0.00	6741	inside	3654.00	
Perforations	18.00			3672.00	
Bullnose	3.00			3675.00	22.00      Bottom Packers & Anchor

**Total Tool Length: 50.00**



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Ritchie Exploration

Silpke Unit #1

8100 E. 22nd st. #700  
Wichita KS 67278

32 5s 24w Norton KS

Job Ticket: 040027

DST#: 3

ATTN: Bob Peterson

Test Start: 2010.12.31 @ 16:25:00

**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: 16000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume: bbl

Water Loss: 7.96 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.60 ohm.m

Gas Cushion Pressure: psig

Salinity: 1700.00 ppm

Filter Cake: 2.00 inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
179.00	mcw -10% m90%w	0.880
62.00	mcw -25% m75%w	0.870
30.00	mcw -40% m60%w	0.421

Total Length: 271.00 ft      Total Volume: 2.171 bbl

Num Fluid Samples: 0

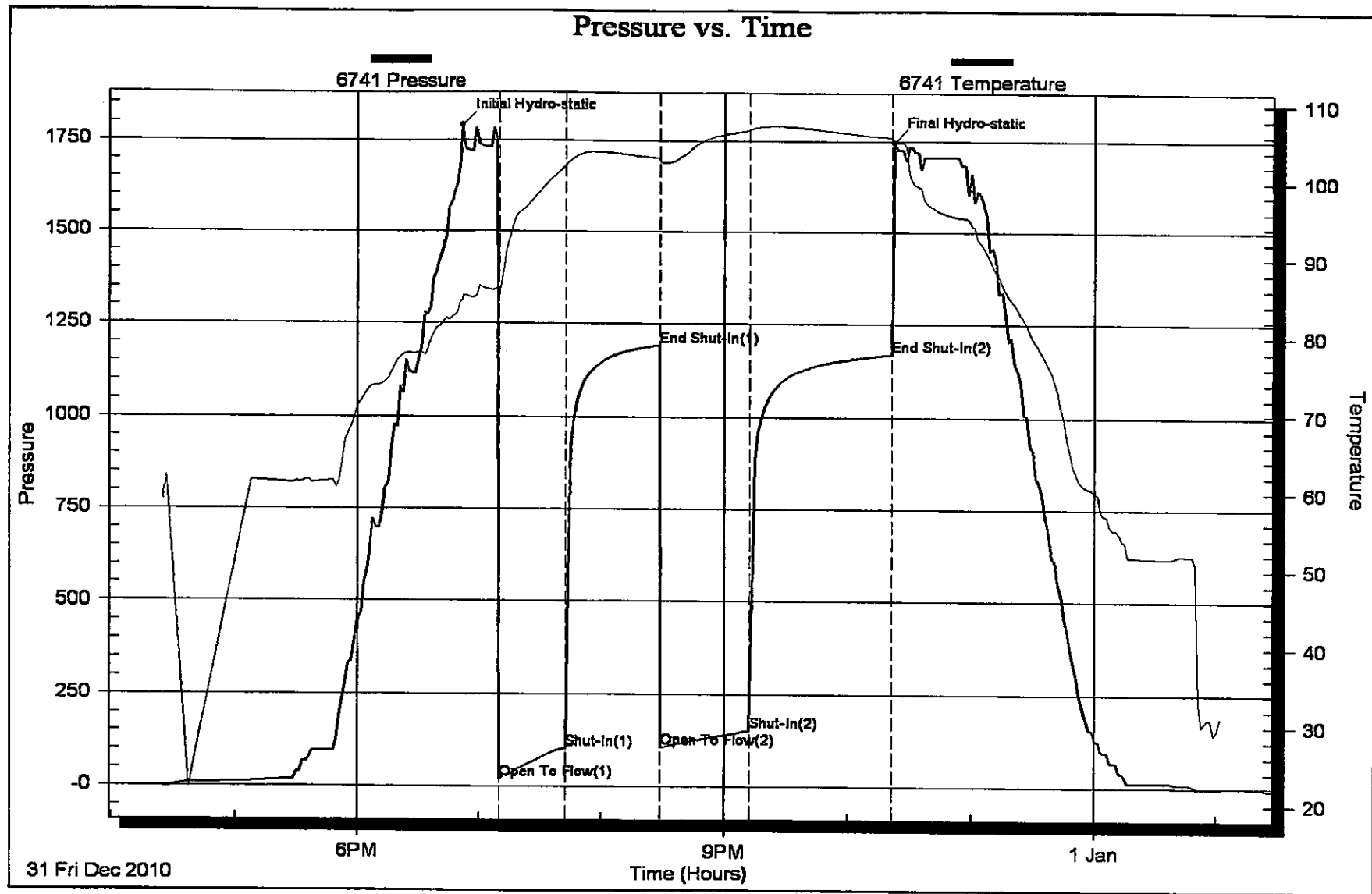
Num Gas Bombs: 0

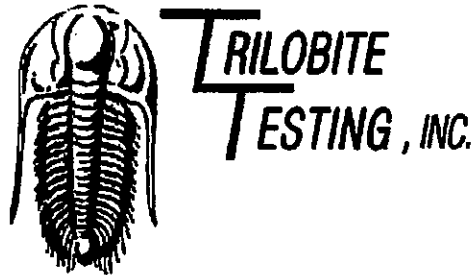
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .6 @ 50F = 16000





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

8100 E. 22nd st. #700  
Wichita KS 67278

ATTN: Bob Peterson

**32 5s 24w Norton KS**

**Slipke Unit #1**

Start Date: 2011.01.01 @ 09:55:00

End Date: 2011.01.01 @ 17:18:30

Job Ticket #: 040028      DST #: 4

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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

Ritchie Exploration

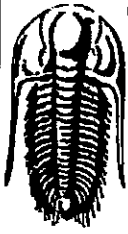
Slipke Unit #1

32 5s 24w Norton KS

DST # 4

LKC-E

2011.01.01



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration  
 8100 E. 22nd st. #700  
 Wichita KS 67278  
 ATTN: Bob Peterson

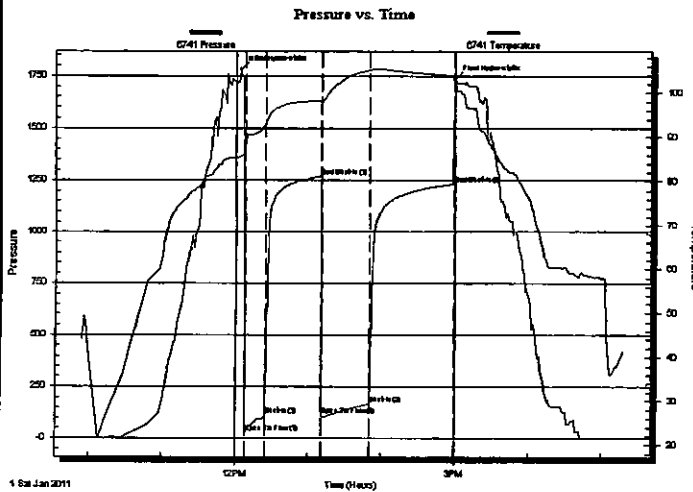
**Slipke Unit #1**  
**32 5s 24w Norton KS**  
 Job Ticket: 040028      DST#: 4  
 Test Start: 2011.01.01 @ 09:55:00

## GENERAL INFORMATION:

Formation: **LKC-E**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 12:08:00  
 Time Test Ended: 17:18:30  
 Interval: **3673.00 ft (KB) To 3700.00 ft (KB) (TVD)**  
 Total Depth: **3700.00 ft (KB) (TVD)**  
 Hole Diameter: **7.88 inches** Hole Condition: **Good**  
 Test Type: **Conventional Bottom Hole**  
 Tester: **Chuck Kreutzer Jr.**  
 Unit No: **36**  
 Reference Elevations: **2469.00 ft (KB)**  
**2464.00 ft (CF)**  
 KB to GR/CF: **5.00 ft**

**Serial #: 6741**      **Inside**  
 Press@RunDepth: **166.06 psig @ 3674.00 ft (KB)**      Capacity: **8000.00 psig**  
 Start Date: **2011.01.01**      End Date: **2011.01.01**      Last Calib.: **2011.01.02**  
 Start Time: **09:55:01**      End Time: **17:18:30**      Time On Btm: **2011.01.01 @ 12:04:00**  
 Time Off Btm: **2011.01.01 @ 14:59:30**

**TEST COMMENT:** IF: Strong blow, Built to B.O.B in 5 mins.  
 IS: Blow back after 5 mins, Weak surface over 45 mins.  
 FF: Fair blow, Built to B.O.B in 10 mins.  
 IS: Blow back after 10 mns. Weak surface over 60 mins.



## PRESSURE SUMMARY

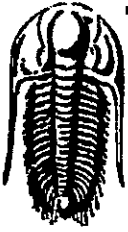
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1782.15	85.65	Initial Hydro-static
4	27.18	87.30	Open To Flow (1)
21	112.48	93.13	Shut-In(1)
67	1266.86	98.10	End Shut-In(1)
68	112.56	97.61	Open To Flow (2)
107	166.06	105.03	Shut-In(2)
175	1231.43	103.77	End Shut-In(2)
176	1735.43	102.64	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
117.00	gow cm-10%g10%o20%m60%w	0.58
62.00	gow cm-10%g10%o30%w 50%m	0.30
62.00	gw mco-10%g10%w 20%m60%o	0.87
62.00	gmco-10%g20%m70%o	0.87
62.00	go-10%g90%o	0.87

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Ritchie Exploration  
8100 E. 22nd st. #700  
Wichita KS 67278  
ATTN: Bob Peterson

**Silpke Unit #1**  
**32 5s 24w Norton KS**  
Job Ticket: 040028      DST#: 4  
Test Start: 2011.01.01 @ 09:55:00

**Tool Information**

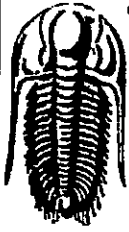
Drill Pipe:	Length: 3479.00 ft	Diameter: 3.80 inches	Volume: 48.80 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 28000.00 lb
Drill Collar:	Length: 179.00 ft	Diameter: 2.25 inches	Volume: 0.88 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: 49.68 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3673.00 ft			Final 51000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	27.00 ft			
Tool Length:	55.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3650.00	
Hydraulic tool	5.00			3655.00	
Jars	5.00			3660.00	
Safety Joint	3.00			3663.00	
Packer	5.00			3668.00	28.00      Bottom Of Top Packer
Packer	5.00			3673.00	
Stubb	1.00			3674.00	
Recorder	0.00	6752	Inside	3674.00	
Recorder	0.00	6741	Inside	3674.00	
Perforations	23.00			3697.00	
Bullnose	3.00			3700.00	27.00      Bottom Packers & Anchor

**Total Tool Length: 55.00**





**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Ritchie Exploration

**Slipke Unit #1**

8100 E. 22nd st. #700  
Wichita KS 67278

**32 5s 24w Norton KS**

Job Ticket: 040028

DST#: 4

ATTN: Bob Peterson

Test Start: 2011.01.01 @ 09:55:00

**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:

bbl

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

Gas Cushion Type:

Gas Cushion Pressure:

psig

Resistivity: ohm.m

Salinity: 1700.00 ppm

Filter Cake: 2.00 inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
117.00	gow cm-10%g10%o20%m60%w	0.575
62.00	gow cm-10%g10%o30%w 50%m	0.305
62.00	gw mco-10%g10%w 20%m60%o	0.870
62.00	gmco-10%g20%m70%o	0.870
62.00	go-10%g90%o	0.870

Total Length: 365.00 ft

Total Volume: 3.490 bbl

Num Fluid Samples: 0

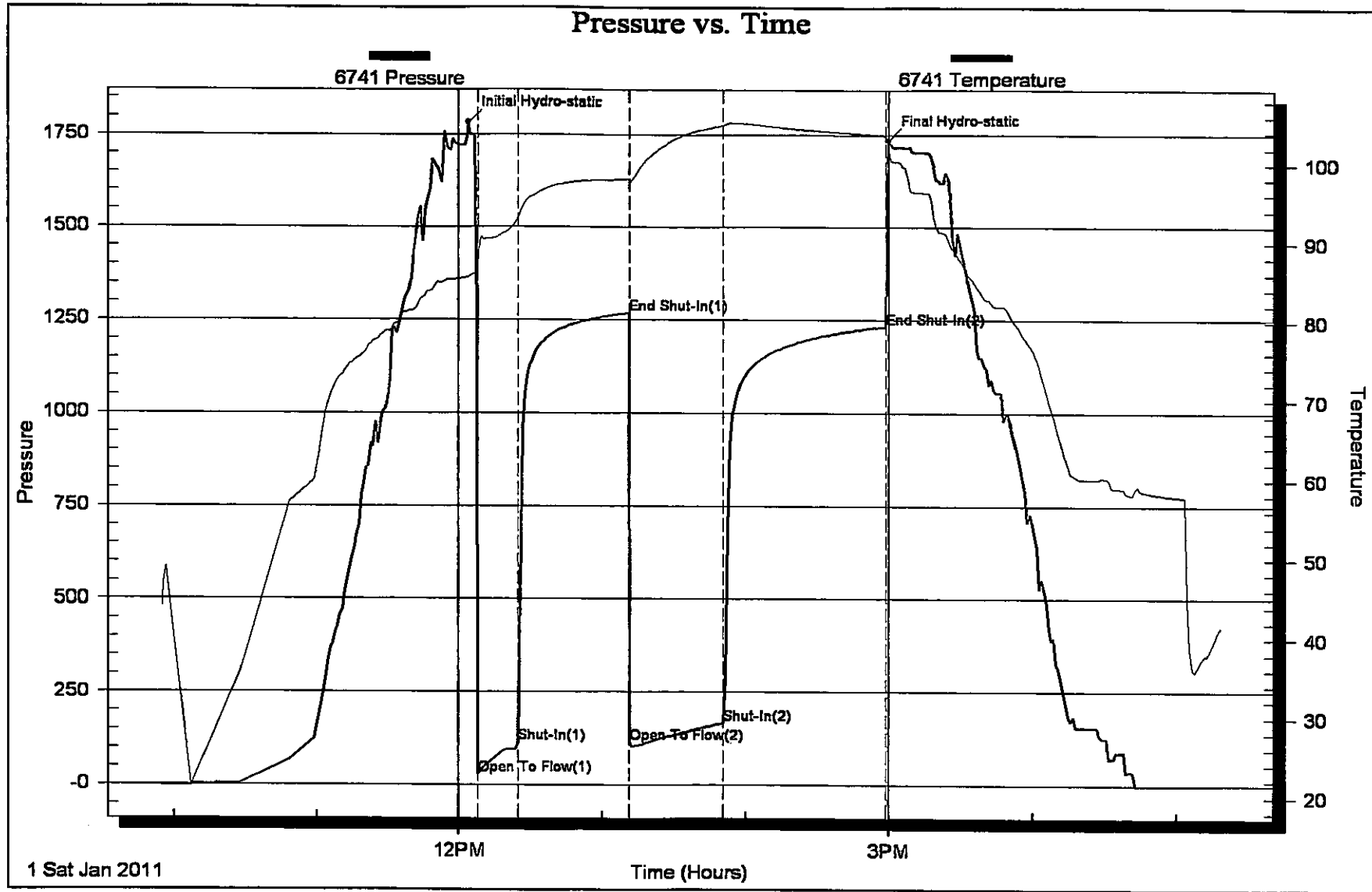
Num Gas Bombs: 0

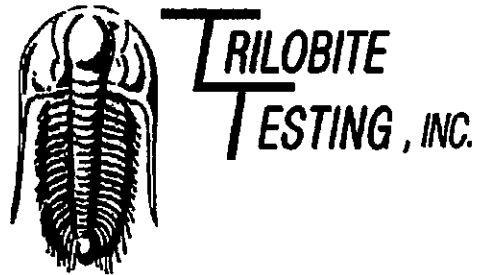
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

8100 E. 22nd st. #700  
Wichita KS 67278

ATTN: Bob Peterson

**32 5s 24w Norton KS**

**Slipke Unit #1**

Start Date: 2011.01.02 @ 05:15:00

End Date: 2011.01.02 @ 12:55:00

Job Ticket #: 040029      DST #: 5

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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

Ritchie Exploration

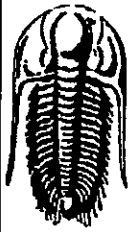
Slipke Unit #1

32 5s 24w Norton KS

DST # 5

LKC-H,1

2011.01.02



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration  
8100 E. 22nd st. #700  
Wichita KS 67278  
ATTN: Bob Peterson

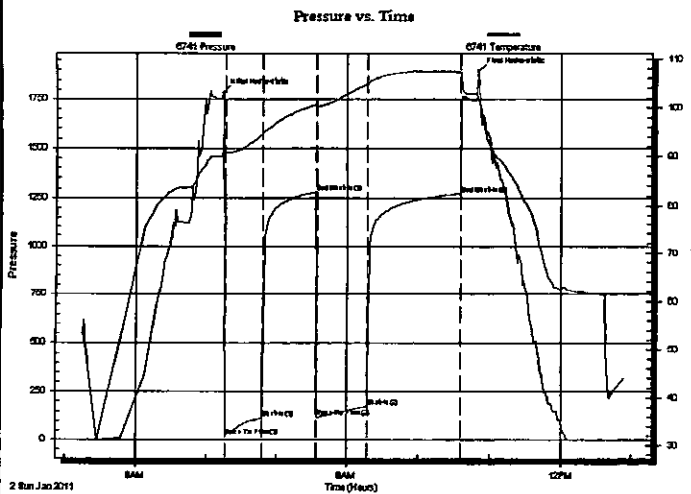
**Slipke Unit #1**  
**32 5s 24w Norton KS**  
Job Ticket: 040029      DST#: 5  
Test Start: 2011.01.02 @ 05:15:00

## GENERAL INFORMATION:

Formation: LKC-H,I  
Deviated: No Whipstock:      ft (KB)  
Time Tool Opened: 07:15:30  
Time Test Ended: 12:55:00  
Interval: 3713.00 ft (KB) To 3758.00 ft (KB) (TVD)  
Total Depth: 3758.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Good  
Test Type: Conventional Bottom Hole  
Tester: Chuck Kreutzer Jr.  
Unit No: 36  
Reference Elevations: 2469.00 ft (KB)  
2464.00 ft (CF)  
KB to GR/CF: 5.00 ft

**Serial #: 6741**      Inside  
Press@RunDepth: 171.72 psig @ 3717.60 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2011.01.02      End Date: 2011.01.02      Last Calib.: 2011.01.02  
Start Time: 05:15:01      End Time: 12:55:00      Time On Btm: 2011.01.02 @ 07:13:30  
Time Off Btm: 2011.01.02 @ 10:50:30

**TEST COMMENT:** IF: Weak blow, Built to 7 in. over 30 mins.  
IS: Weak surface blow back, After 10 mins. surface over 45 mins.  
FF: Weak blow, Built to 5 in. over 45 mins.  
FS: Weak surface blow back, After 10 mins.,



## PRESSURE SUMMARY

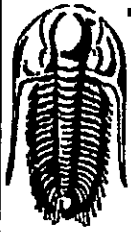
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1782.73	90.53	Initial Hydro-static
2	20.12	90.60	Open To Flow (1)
34	113.28	94.60	Shut-In(1)
79	1276.24	100.53	End Shut-In(1)
80	116.57	100.22	Open To Flow (2)
123	171.72	104.81	Shut-In(2)
202	1269.39	107.30	End Shut-In(2)
217	1892.90	102.18	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
179.00	w cm-10% m90% w	0.88
62.00	w cm-30% m70% w	0.87
62.00	gow cm-10% g10% o30% w 50% m	0.87
50.00	Hocmw -10% m10% w 80% o	0.70

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration  
8100 E. 22nd st. #700  
Wichita KS 67278  
ATTN: Bob Peterson

**Slipke Unit #1**  
**32 5s 24w Norton KS**  
Job Ticket: 040029      DST#: 5  
Test Start: 2011.01.02 @ 05:15:00

**Tool Information**

Drill Pipe:	Length: 3513.00 ft	Diameter: 3.80 inches	Volume: 49.28 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: 28000.00 lb
Drill Collar:	Length: 179.00 ft	Diameter: 2.25 inches	Volume: 0.88 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: 50.16 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3713.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	44.47 ft			
Tool Length:	72.47 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3690.00	
Hydraulic tool	5.00			3695.00	
Jars	5.00			3700.00	
Safety Joint	3.00			3703.00	
Packer	5.00			3708.00	28.00      Bottom Of Top Packer
Packer	5.00			3713.00	
Stubb	1.00			3714.00	
Perforations	3.00			3717.00	
Change Over Sub	0.60			3717.60	
Recorder	0.00	6752	Inside	3717.60	
Recorder	0.00	6741	Inside	3717.60	
Blank Spacing	31.27			3748.87	
Change Over Sub	0.60			3749.47	
Perforations	5.00			3754.47	
Bullnose	3.00			3757.47	44.47      Bottom Packers & Anchor

**Total Tool Length: 72.47**



**TRILOBITE  
TESTING, INC**

### DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration  
8100 E. 22nd st. #700  
Wichita KS 67278  
ATTN: Bob Peterson

**Slipke Unit #1**  
**32 5s 24w Norton KS**  
Job Ticket: 040029      DST#: 5  
Test Start: 2011.01.02 @ 05:15:00

#### 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: bbl		
Water Loss: 7.97 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 1700.00 ppm			
Filter Cake: 2.00 inches			

#### Recovery Information

Recovery Table

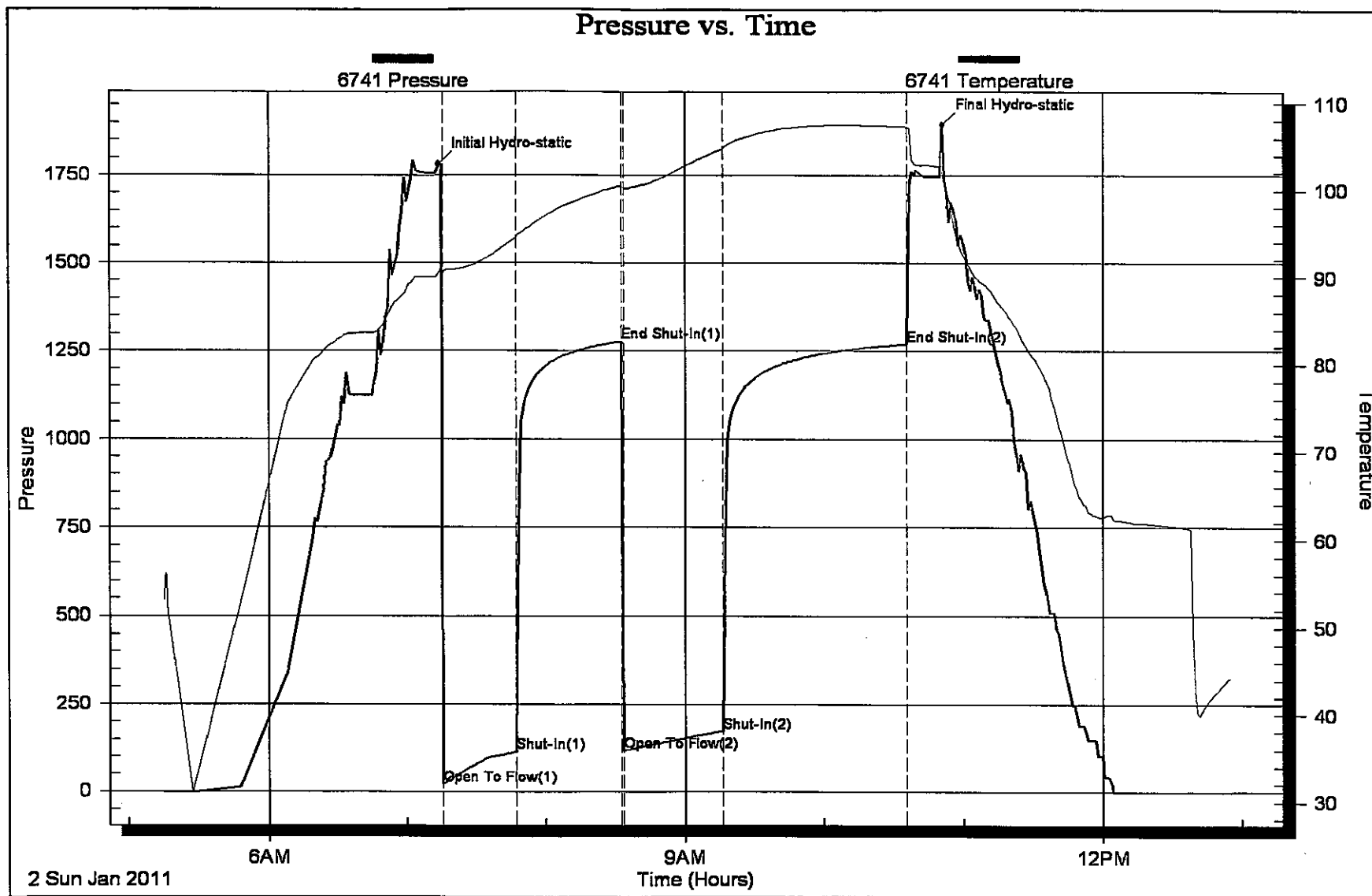
Length ft	Description	Volume bbl
179.00	w cm-10%m90%w	0.880
62.00	w cm-30%m70%w	0.870
62.00	gow cm-10%g10%o30%w 50%m	0.870
50.00	Hocmw -10%m10%w 80%o	0.701

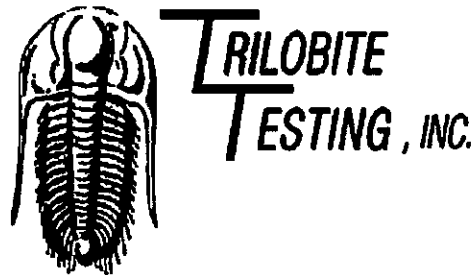
Total Length: 353.00 ft      Total Volume: 3.321 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments:





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

8100 E. 22nd st. #700  
Wichita KS 67278

ATTN: Bob Peterson

**32 5s 24w Norton KS**

**Slipke Unit #1**

Start Date: 2011.01.02 @ 18:45:00

End Date: 2011.01.03 @ 02:45:00

Job Ticket #: 040030      DST #: 6

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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

Ritchie Exploration

Slipke Unit #1

32 5s 24w Norton KS

DST # 6

LKC-J

2011.01.02





**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration  
 8100 E. 22nd st. #700  
 Wichita KS 67278  
 ATTN: Bob Peterson

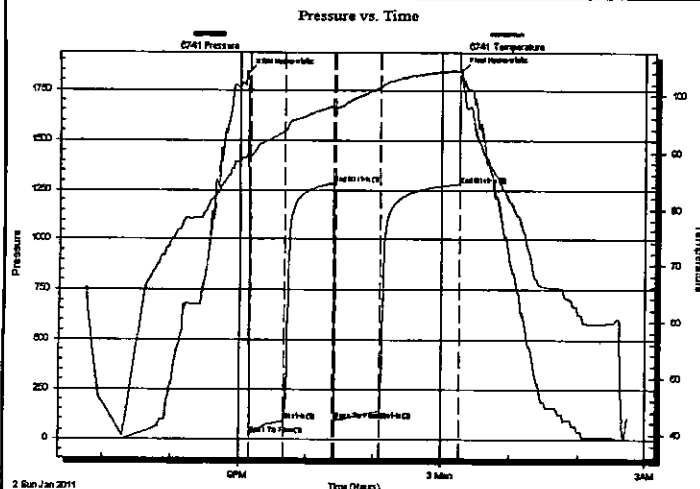
**Slipke Unit #1**  
**32 5s 24w Norton KS**  
 Job Ticket: 040030 DST#: 6  
 Test Start: 2011.01.02 @ 18:45:00

## GENERAL INFORMATION:

Formation: **LKC-J**  
 Deviated: **No Whipstock** ft (KB)  
 Test Type: **Conventional Bottom Hole**  
 Time Tool Opened: **21:09:30**  
 Tester: **Chuck Kreutzer Jr.**  
 Time Test Ended: **02:45:00**  
 Unit No: **36**  
 Interval: **3744.00 ft (KB) To 3770.00 ft (KB) (TVD)**  
 Reference Elevations: **2469.00 ft (KB)**  
 Total Depth: **3770.00 ft (KB) (TVD)**  
**2464.00 ft (CF)**  
 Hole Diameter: **7.88 inches** Hole Condition: **Good**  
 KB to GR/CF: **5.00 ft**

**Serial #: 6741** Inside  
 Press@RunDepth: **139.61 psig @ 3745.00 ft (KB)** Capacity: **8000.00 psig**  
 Start Date: **2011.01.02** End Date: **2011.01.03** Last Calib.: **2011.01.03**  
 Start Time: **18:45:01** End Time: **02:45:00** Time On Btm: **2011.01.02 @ 21:07:00**  
 Time Off Btm: **2011.01.03 @ 00:17:30**

**TEST COMMENT:** IF: Fair blow, Built to B.O.B in 15 mins.  
 IS: Weak surface blow back over 45 mins.  
 FF: Fair blow, Built to B.O.B in 10 mins.  
 FS: Weak surface blow back over 60 mins.



## PRESSURE SUMMARY

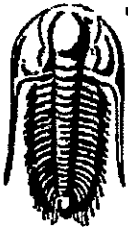
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1835.43	89.55	Initial Hydro-static
3	22.20	89.50	Open To Flow (1)
34	91.18	93.83	Shut-In(1)
78	1286.20	98.08	End Shut-In(1)
79	97.93	97.80	Open To Flow (2)
119	139.61	101.47	Shut-In(2)
189	1281.01	104.19	End Shut-In(2)
191	1844.32	103.90	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
179.00	go-30%g70%o	0.88
124.00	go-15%g85%o	1.74
31.00	go-10%g90%o	0.43
0.00	217-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

**Slipke Unit #1**

8100 E. 22nd st. #700  
Wichita KS 67278

**32 5s 24w Norton KS**

Job Ticket: 040030

**DST#: 6**

ATTN: Bob Peterson

Test Start: 2011.01.02 @ 18:45:00

### Tool Information

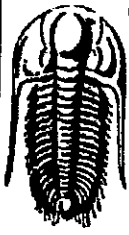
Drill Pipe:	Length: 3544.00 ft	Diameter: 3.80 inches	Volume: 49.71 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 28000.00 lb
Drill Collar:	Length: 179.00 ft	Diameter: 2.25 inches	Volume: 0.88 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: 50.59 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3744.00 ft			Final 51000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	26.00 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
------------------	-------------	------------	----------	------------	----------------

Shut In Tool	5.00			3721.00	
Hydraulic tool	5.00			3726.00	
Jars	5.00			3731.00	
Safety Joint	3.00			3734.00	
Packer	5.00			3739.00	28.00 Bottom Of Top Packer
Packer	5.00			3744.00	
Stubb	1.00			3745.00	
Recorder	0.00	6752	Inside	3745.00	
Recorder	0.00	6741	Inside	3745.00	
Perforations	22.00			3767.00	
Bullnose	3.00			3770.00	26.00 Bottom Packers & Anchor

**Total Tool Length: 54.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration  
8100 E. 22nd st. #700  
Wichita KS 67278  
ATTN: Bob Peterson

**Slipke Unit #1**  
**32 5s 24w Norton KS**  
Job Ticket: 040030      DST#: 6  
Test Start: 2011.01.02 @ 18:45:00

## Mud and Cushion Information

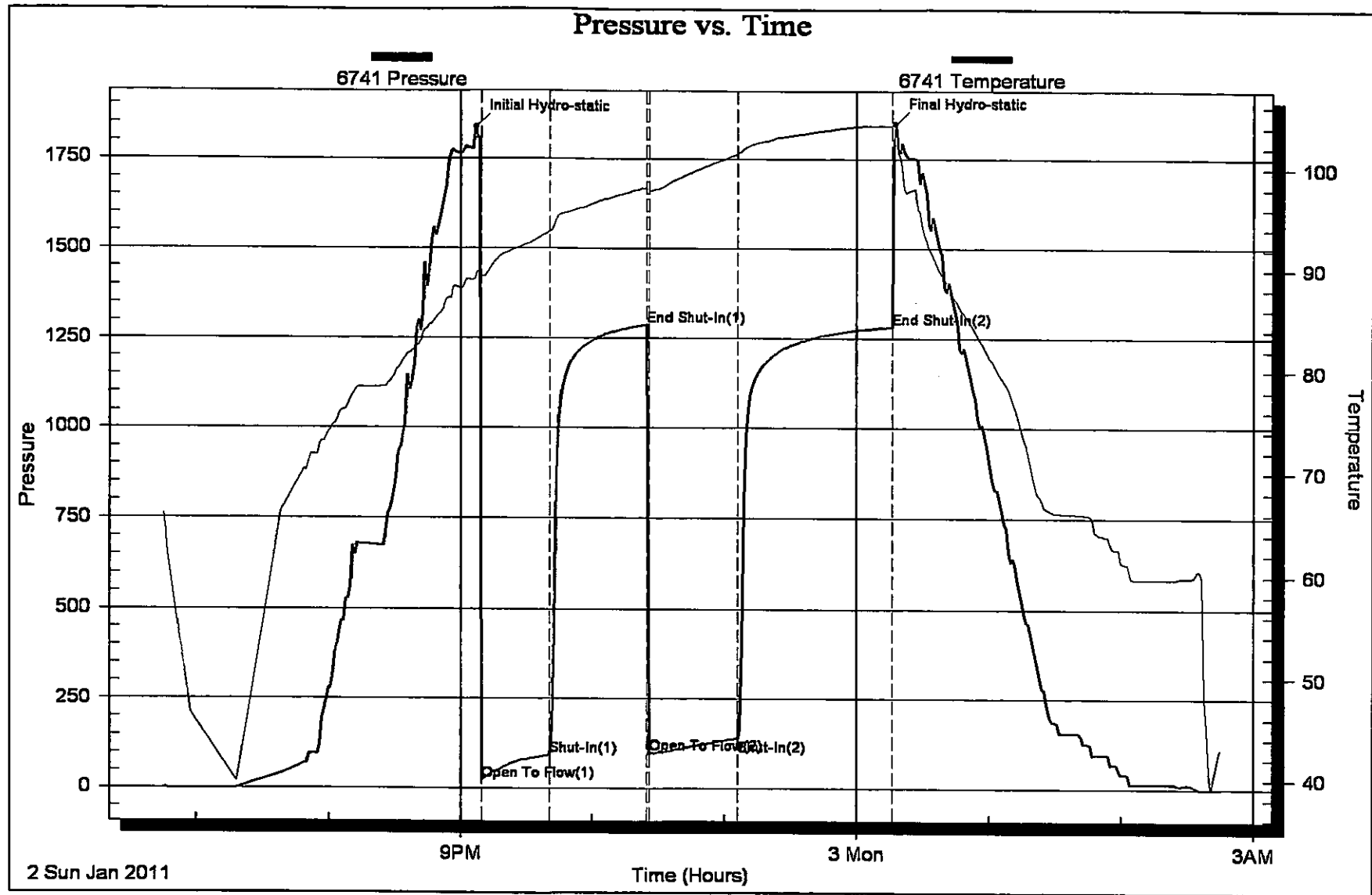
Mud Type: Gel Chem	Cushion Type:	Oil API:	30 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 49.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.79 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 2000.00 ppm			
Filter Cake: 2.00 inches			

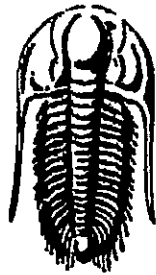
## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
179.00	go-30%g70%o	0.880
124.00	go-15%g85%o	1.739
31.00	go-10%g90%o	0.435
0.00	217-gas in pipe	0.000

Total Length: 334.00 ft      Total Volume: 3.054 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:





**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

8100 E. 22nd st. #700  
Wichita KS 67278

ATTN: Bob Peterson

**32 5s 24w Norton KS**

**Slipke Unit #1**

Start Date: 2011.01.03 @ 10:40:00

End Date: 2011.01.03 @ 18:06:30

Job Ticket #: 040031      DST #: 7

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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

Ritchie Exploration

Slipke Unit #1

32 5s 24w Norton KS

DST # 7

LKC-K,L

2011.01.03



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Ritchie Exploration  
8100 E. 22nd st. #700  
Wichita KS 67278  
ATTN: Bob Peterson

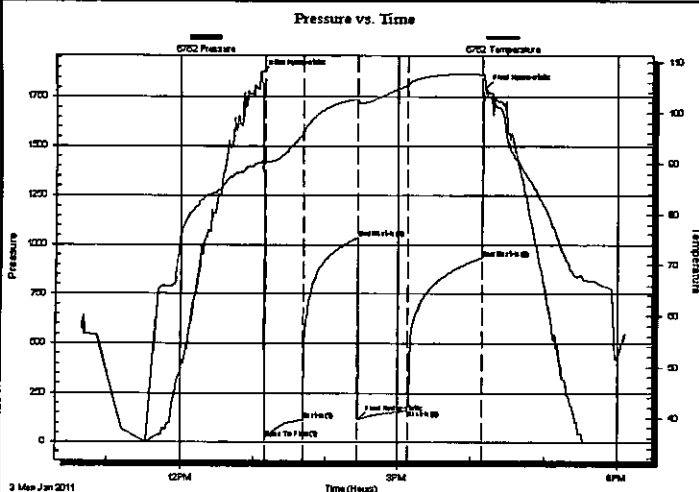
**Slipke Unit #1**  
**32 5s 24w Norton KS**  
Job Ticket: 040031      DST#: 7  
Test Start: 2011.01.03 @ 10:40:00

### GENERAL INFORMATION:

Formation: <b>LKC-K<sub>1</sub>L</b>	Test Type: Conventional Bottom Hole
Deviated: No Whipstock      ft (KB)	Tester: Chuck Kreutzer Jr.
Time Tool Opened: 13:09:30	Unit No: 36
Time Test Ended: 18:06:30	Reference Elevations: 2469.00 ft (KB)
Interval: <b>3767.00 ft (KB) To 3808.00 ft (KB) (TVD)</b>	2464.00 ft (CF)
Total Depth: <b>3808.00 ft (KB) (TVD)</b>	KB to GR/CF: 5.00 ft
Hole Diameter: 7.88 inches	Hole Condition: Good

<b>Serial #: 6752</b> Inside	Capacity: 8000.00 psig
Press@RunDepth: 113.86 psig @ 3770.60 ft (KB)	Last Calib.: 2011.01.03
Start Date: 2011.01.03      End Date: 2011.01.03	Time On Btm: 2011.01.03 @ 13:06:00
Start Time: 10:40:05      End Time: 18:06:29	Time Off Btm: 2011.01.03 @ 14:28:00

**TEST COMMENT:** IF: Strong blow, Built to B.O.B in 10 mins.  
 IS: No blow back over 45 mins.  
 FF: Fair blow, Built to B.O.B in 15 mins.  
 FS: No blow back over 60 mins.



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1868.91	90.18	Initial Hydro-static
4	21.85	90.14	Open To Flow (1)
35	113.86	95.67	Shut-In(1)
81	1034.57	102.74	End Shut-In(1)
82	118.25	102.26	Final Hydro-static
122	163.07	105.51	Shut-In(2)
184	934.55	107.62	End Shut-In(2)
186	1794.80	105.58	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
300.00	mcw-5% m95%w	2.58

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



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Ritchie Exploration  
8100 E 22nd st. #700  
Wichita KS 67278  
ATTN: Bob Peterson

**Slipke Unit #1**  
**32 5s 24w Norton KS**  
Job Ticket: 040031      DST#: 7  
Test Start: 2011.01.03 @ 10:40:00

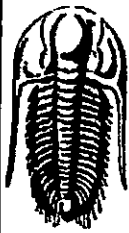
**Tool Information**

Drill Pipe:	Length: 3578.00 ft	Diameter: 3.80 inches	Volume: 50.19 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: 28000.00 lb
Drill Collar:	Length: 179.00 ft	Diameter: 2.25 inches	Volume: 0.88 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: 51.07 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3767.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	41.47 ft			
Tool Length:	69.47 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3744.00	
Hydraulic tool	5.00			3749.00	
Jars	5.00			3754.00	
Safety Joint	3.00			3757.00	
Packer	5.00			3762.00	28.00      Bottom Of Top Packer
Packer	5.00			3767.00	
Stubb	1.00			3768.00	
Perforations	2.00			3770.00	
Change Over Sub	0.60			3770.60	
Recorder	0.00	6752	Inside	3770.60	
Recorder	0.00	6741	Inside	3770.60	
Blank Spacing	31.27			3801.87	
Change Over Sub	0.60			3802.47	
Perforations	3.00			3805.47	
Bullnose	3.00			3808.47	41.47      Bottom Packers & Anchor

**Total Tool Length: 69.47**



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration

**Slipke Unit #1**

8100 E. 22nd st. #700  
Wichita KS 67278

**32 5s 24w Norton KS**

Job Ticket: 040031

DST#: 7

ATTN: Bob Peterson

Test Start: 2011.01.03 @ 10:40:00

### 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:

20000 ppm

Viscosity: 49.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.80 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.40 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbf
300.00	mcw -5% m95%w	2.578

Total Length: 300.00 ft      Total Volume: 2.578 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .4 @ 60F = 20000 ppm chlorides



