

CONFIDENTIAL

ORIGINAL

8/11/13

KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION

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

OPERATOR: License # 4767  
Name: Ritchie Exploration, Inc.  
Address 1: P.O. Box 783188  
Address 2: \_\_\_\_\_  
City: Wichita State: KS Zip: 67278 + 3188  
Contact Person: Peter Fiorini  
Phone: (316) 691-9500  
CONTRACTOR: License # 30606  
Name: Murfin Drilling Co., Inc.  
Wellsite Geologist: Tom Funk  
Purchaser: \_\_\_\_\_

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 #: \_\_\_\_\_

4/28/11    5/6/11    5/6/11  
Spud Date or    Date Reached TD    Completion Date or  
Recompletion Date       Recompletion Date

API No. 15 - 063-21907-00-00  
Spot Description: 165' N & 10' W  
N/2\_NW\_SE    Sec. 21 Twp. 12 S. R. 31  East  West  
2,475 Feet from  North /  South Line of Section  
1,990 Feet from  East /  West Line of Section  
Footages Calculated from Nearest Outside Section Corner:  
 NE     NW     SE     SW  
County: Gove  
Lease Name: W&E 21AD Unit Well #: 1  
Field Name: \_\_\_\_\_  
Producing Formation: \_\_\_\_\_  
Elevation: Ground: 2888 Kelly Bushing: 2898  
Total Depth: 4660 Plug Back Total Depth: \_\_\_\_\_  
Amount of Surface Pipe Set and Cemented at: 216 Feet  
Multiple Stage Cementing Collar Used?  Yes  No  
If yes, show depth set: \_\_\_\_\_ Feet  
If Alternate II completion, cement circulated from: \_\_\_\_\_  
feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

Drilling Fluid Management Plan  
(Data must be collected from the Reserve Pit)  
Chloride content: 10000 ppm Fluid volume: 865 bbls  
Dewatering method used: evaporation  
Location of fluid disposal if hauled offsite:  
Operator Name: \_\_\_\_\_  
Lease Name: \_\_\_\_\_  
Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. AUG 13 2013 East  West  
County: \_\_\_\_\_ Permit #: \_\_\_\_\_  
**KCC**

CONFIDENTIAL

AUG 13 2013

KCC

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: Development/Production Geologist Date: 8/10/11

KCC Office Use ONLY

Letter of Confidentiality Received  
Date: 8/11/11 - 8/11/13 RECEIVED  
 Confidential Release Date: \_\_\_\_\_  
 Wireline Log Received  
 Geologist Report Received  
 UIC Distribution  
ALT  I  II  III Approved by: KCC WICHITA 11  
AUG 11 2011

Operator Name: Ritchie Exploration, Inc. Lease Name: W&E 21AD Unit Well #: 1  
 Sec. 21 Twp. 12 S. R. 31  East  West County: Gove

**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 <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Attach Additional Sheets)  Samples Sent to Geological Survey <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  Cores Taken <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Electric Log Run <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Submitted Electronically <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (If no, Submit Copy)  List All E. Logs Run: <b>Dual Induction Log</b> <b>Compensated Density/Neutron Log</b>	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input checked="" type="checkbox"/> Sample  Name Top Datum  SEE ATTACHED
---	--

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	216	common	185	3% cc, 2% gel

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

TUBING RECORD:	Size:	Set At:	Packer At:	Liner Run: <input type="checkbox"/> Yes <input type="checkbox"/> No
----------------	-------	---------	------------	---

Date of First, Resumed Production, SWD or ENHR.	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (Explain) _____
Estimated Production Per 24 Hours	Oil Bbls.      Gas Mcf      Water Bbls.      Gas-Oil Ratio      Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease (If vented, Submit ACO-18.)	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled (Submit ACO-5) (Submit ACO-4) <input type="checkbox"/> Other (Specify) _____	PRODUCTION INTERVAL: _____
--	---	-------------------------------

RECEIVED  
 AUG 11 2011  
 KCC WICHITA

# ALLIED CEMENTING CO., LLC. 043355

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

SERVICE POINT:  
Oakley, Ks

DATE <u>5-2-11</u>	SEC. <u>21</u>	TWP. <u>12</u>	RANGE <u>31</u>	CALLED OUT	ON LOCATION	JOB START <u>8:30 am</u>	JOB FINISH <u>7:00 am</u>
WE <u>21 AD</u>	WELL # <u>1</u>	LOCATION <u>Oakley 115, 4E, 3N, 12E</u>			COUNTY <u>Gove</u>	STATE <u>Ks</u>	
OLD OR NEW (Circle one) <u>NEW</u>				<u>Sinto</u>			

CONTRACTOR Martin #14

TYPE OF JOB PTA

HOLE SIZE 7 7/8" T.D.

CASING SIZE 8 7/8" DEPTH 216'

TUBING SIZE DEPTH

DRILL PIPE 4 1/2" DEPTH 2415'

TOOL DEPTH

PRES. MAX MINIMUM

MEAS. LINE SHOE JOINT

CEMENT LEFT IN CSG.

PERFS.

DISPLACEMENT 30.78

OWNER same

CEMENT

AMOUNT ORDERED 220 sks 6490 479 gal

1/4 # flo seal

COMMON	<u>132 sks @ 16.25</u>	<u>2145.00</u>
POZMIX	<u>88 sks @ 8.50</u>	<u>748.00</u>
GEL	<u>8 sks @ 21.25</u>	<u>170.00</u>
CHLORIDE	@	
ASC	@	
<u>Flo seal 85 #</u>	<u>@ 2.70</u>	<u>148.50</u>
	@	
	@	
	@	
	@	
	@	
HANDLING	<u>230 sks @ 2.25</u>	<u>517.50</u>
MILEAGE	<u>118 sk/mile</u>	<u>379.50</u>
TOTAL		<u>4108.50</u>

REMARKS:

Mix 25 sks at 2415'

Mix 100 sks at 1540'

Mix 40 sks at 365'

Mix 10 sks out top of wooden plug

Mix 20 sks mouse hole

Mix 30 sks rat hole

SERVICE

DEPTH OF JOB	<u>2415'</u>	
PUMP TRUCK CHARGE		<u>1250.00</u>
EXTRA FOOTAGE	@	
MILEAGE	<u>15 X 2</u>	<u>@ 7.80 117.00</u>
MANIFOLD	@	
<u>light vehicle mileage</u>	<u>@ 4.00</u>	<u>120.00</u>
	@	

CHARGE TO: Ritahrie

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

TOTAL 1594.00

PLUG & FLOAT EQUIPMENT

<u>1-Top wooden Plug 8 7/8"</u>		<u>82.00</u>
	@	
	@	
	@	
	@	
TOTAL		<u>82.00</u>

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.

SALES TAX (If Any) \_\_\_\_\_

TOTAL CHARGES \_\_\_\_\_

DISCOUNT \_\_\_\_\_ IF PAID IN 30 DAYS

PRINTED NAME Greg Umek

SIGNATURE Greg Umek

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KCC WICHITA

# ALLIED CEMENTING CO., LLC. 043349

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

SERVICE POINT:  
Oakley Ks.

DATE <u>4-28-11</u>	SEC <u>21</u>	TWP <u>12</u>	RANGE <u>31</u>	CALLED OUT	ON LOCATION	JOB START <u>12:30 P</u>	JOB FINISH <u>12:00 m</u>
LEASE <u>WE-21-AD Unit</u>	WELL # <u>#1</u>	LOCATION <u>Oakley 115-4E-3 N-1/2E-5th</u>			COUNTY <u>Gove</u>	STATE <u>Ks.</u>	
OLD OR <input checked="" type="radio"/> NEW (Circle one)							

CONTRACTOR Murfin Rig 14

TYPE OF JOB Surface

HOLE SIZE 12 1/4 T.D. 219

CASING SIZE 8 5/8 DEPTH 216

TUBING SIZE \_\_\_\_\_ DEPTH \_\_\_\_\_

DRILL PIPE \_\_\_\_\_ DEPTH \_\_\_\_\_

TOOL \_\_\_\_\_ DEPTH \_\_\_\_\_

PRES. MAX \_\_\_\_\_ MINIMUM \_\_\_\_\_

MEAS. LINE \_\_\_\_\_ SHOE JOINT \_\_\_\_\_

CEMENT LEFT IN CSG. 15 ft.

PERFS. \_\_\_\_\_

DISPLACEMENT 12.75 bbl

EQUIPMENT \_\_\_\_\_

PUMP TRUCK CEMENTER LaRene

# 431 HELPER Darren

BULK TRUCK \_\_\_\_\_

# 404 DRIVER Wes

BULK TRUCK \_\_\_\_\_

# \_\_\_\_\_ DRIVER \_\_\_\_\_

OWNER Same

CEMENT AMOUNT ORDERED 185 SKS Com 3% CC 2% Gel

COMMON	<u>185 SKS</u>	@ <u>16.25</u>	<u>3006.25</u>
POZMIX		@	
GEL	<u>3 SKS</u>	@ <u>21.25</u>	<u>63.75</u>
CHLORIDE	<u>6 SKS</u>	@ <u>58.20</u>	<u>349.20</u>
ASC		@	
		@	
		@	
		@	
		@	
		@	
		@	
		@	
HANDLING	<u>194 SKS</u>	@ <u>2.25</u>	<u>436.50</u>
MILEAGE	<u>116 SKS mile</u>		<u>320.10</u>
TOTAL			<u>4175.80</u>

REMARKS:  
Mix 185 Com 3+2  
Displace with water  
Cement Circulated

*Thank You*

CHARGE TO: Ritchie Exploration

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

SERVICE

DEPTH OF JOB	<u>216</u>		
PUMP TRUCK CHARGE	<u>1125.00</u>		<u>1125.00</u>
EXTRA FOOTAGE	@		
MILEAGE	<u>15 X 2</u>	@ <u>7.00</u>	<u>210.00</u>
MANIFOLD <u>Sweda</u>	@		<u>325.00</u>
Light Vehicle Mileage	@ <u>4.00</u>		<u>120.00</u>
	@		
TOTAL			<u>1780.00</u>

PLUG & FLOAT EQUIPMENT

	@		
	@		
	@		
	@		
	@		
TOTAL			_____

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.

PRINTED NAME Craig Shank

SIGNATURE Craig Shank

SALES TAX (If Any) \_\_\_\_\_

TOTAL CHARGES \_\_\_\_\_

DISCOUNT \_\_\_\_\_ IF PAID IN 30 DAYS

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KCC WICHITA



# RITCHIE

EXPLORATION, INC.  
Wichita, Kansas

## #1 W&E 21AD Unit

2475' FSL & 1990' FEL

165' N & 10' W of N/2 NW SE Section 21-12S-31W

Gove County, Kansas

API# 15-063-21907-0000

Elevation: 2888' GL: 2898' KB

<u>Sample Tops</u>			<u>Ref.</u>	<u>Well</u>
Anhydrite	2399'	+499	-11	
B/Anhydrite	2415'	+483	-1	
Heebner	3919'	-1021	-7	
Lansing	3966'	-1068	-12	
Muncie Shale	4107'	-1209	-20	
Hush	4223'	-1325	-15	
BKC	4255'	-1357	-21	
Marmaton	4290'	-1392	-25	
Altamont	4321'	-1423	-23	
Myrick	4418'	-1520	-18	
Fort Scott	4440'	-1542	-17	
Cherokee Shale	4465'	-1567	-16	
Johnson	4516'	-1618	-18	
Morrow Sand	absent			
Mississippian	4537'	-1639	-19	
RTD	4660'	-1762		

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**KCC WICHITA**

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

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

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



**DRILL STEM TEST REPORT**

Prepared For: **Ritchie Exploration, Inc.**

8100 E. 22nd St. N #700  
Box 783188  
Wichita, KS 67278

ATTN: Tom Funk

**21 12s 31w Gove,KS**

**W&E 21 AD Unit #1**

Start Date: 2011.05.02 @ 03:33:00

End Date: 2011.05.02 @ 09:30:00

Job Ticket #: 042124      DST #: 1

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

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Printed: 2011.05.11 @ 15:14:50 Page 1

API-15.063.21907.00.00

Ritchie Exploration, Inc.

W&E 21 AD Unit #1

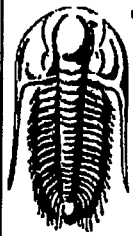
21 12s 31w Gove,KS

DST # 1

Lansing E,F

2011.05.02





**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration, Inc.

**W&E 21 AD Unit #1**

8100 E. 22nd St. N#700  
Box 783188  
Wichita, KS 67278  
ATTN: Tom Funk

**21 12s 31w Gove, KS**

Job Ticket: 042124

**DST#: 1**

Test Start: 2011.05.02 @ 03:33:00

### Tool Information

Drill Pipe:	Length: 3469.00 ft	Diameter: 3.80 inches	Volume: 48.66 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 557.00 ft	Diameter: 2.25 inches	Volume: 2.74 bbl	Weight to Pull Loose: 81000.00 lb
			<u>Total Volume: 51.40 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4027.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	28.00 ft			
Tool Length:	49.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

### Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4007.00	
Shut In Tool	5.00			4012.00	
Hydraulic tool	5.00			4017.00	
Packer	5.00			4022.00	21.00 Bottom Of Top Packer
Packer	5.00			4027.00	
Stubb	1.00			4028.00	
Recorder	0.00	8360	Outside	4028.00	
Recorder	0.00	8652	Inside	4028.00	
Perforations	24.00			4052.00	
Bullnose	3.00			4055.00	28.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>49.00</b>				





**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Ritchie Exploration, Inc.  
8100 E. 22nd St. N#700  
Box 783188  
Wichita, KS 67278  
ATTN: Tom Funk

W&E 21 AD Unit #1  
21 12s 31w Gove,KS  
Job Ticket: 042124      DST#: 1  
Test Start: 2011.05.02 @ 03:33:00

### Mud and Cushion Information

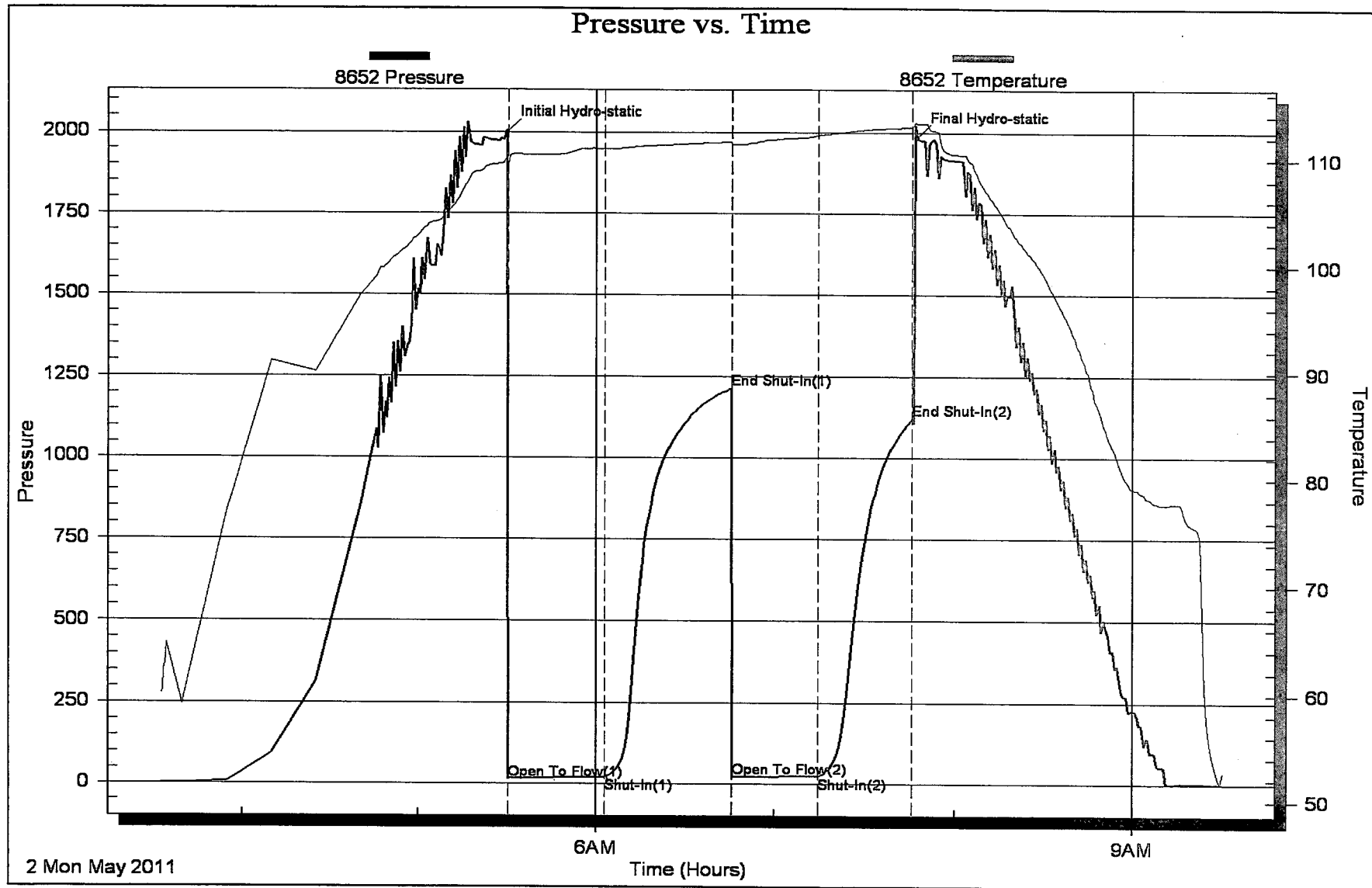
Mud Type: Gel Chem	Cushion Type:	Oil API:	0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	0 ppm
Viscosity: 52.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.38 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 1400.00 ppm			
Filter Cake: 1.00 inches			

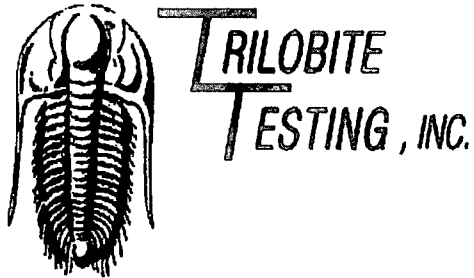
### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	ocm 2o 98m	0.098

Total Length: 20.00 ft      Total Volume: 0.098 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration, Inc.**

8100 E. 22nd St. N #700  
Box 783188  
Wichita, KS 67278

ATTN: Tom Funk

**21 12s 31w Gove,KS**

**W&E 21 AD Unit #1**

Start Date: 2011.05.02 @ 19:02:00

End Date: 2011.05.03 @ 00:57:15

Job Ticket #: 43176                      DST #: 2

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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





**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration, Inc.

**W&E 21 AD Unit #1**

8100 E. 22nd St. N#700  
Box 783188  
Wichita, KS 67278  
ATTN: Tom Funk

**21 12s 31w Gove,KS**

Job Ticket: 43176

**DST#: 2**

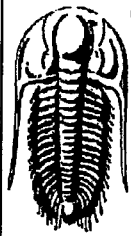
Test Start: 2011.05.02 @ 19:02:00

### Tool Information

Drill Pipe:	Length: 3530.00 ft	Diameter: 3.80 inches	Volume: 49.52 bbl	Tool Weight: 1500.00 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: 557.00 ft	Diameter: 2.25 inches	Volume: 2.74 bbl	Weight to Pull Loose: 82000.00 lb
			<u>Total Volume: 52.26 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4100.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	32.00 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
Change Over Sub	1.00			4080.00	
Shut In Tool	5.00			4085.00	
Hydraulic tool	5.00			4090.00	
Packer	5.00			4095.00	21.00 Bottom Of Top Packer
Packer	5.00			4100.00	
Stubb	1.00			4101.00	
Recorder	0.00	8360	Outside	4101.00	
Recorder	0.00	8652	Inside	4101.00	
Perforations	28.00			4129.00	
Bullnose	3.00			4132.00	32.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>53.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration, Inc.

**W&E 21 AD Unit #1**

8100 E 22nd St. N#700  
Box 783188  
Wichita, KS 67278  
ATTN: Tom Funk

**21 12s 31w Gove,KS**  
Job Ticket: 43176      **DST#: 2**  
Test Start: 2011.05.02 @ 19:02:00

## Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 53.00 sec/qt  
Water Loss: 6.38 in<sup>3</sup>  
Resistivity: 0.00 ohm.m  
Salinity: 2000.00 ppm  
Filter Cake: 1.00 inches

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

Oil API: 0 deg API  
Water Salinity: 0 ppm

## Recovery Information

Recovery Table

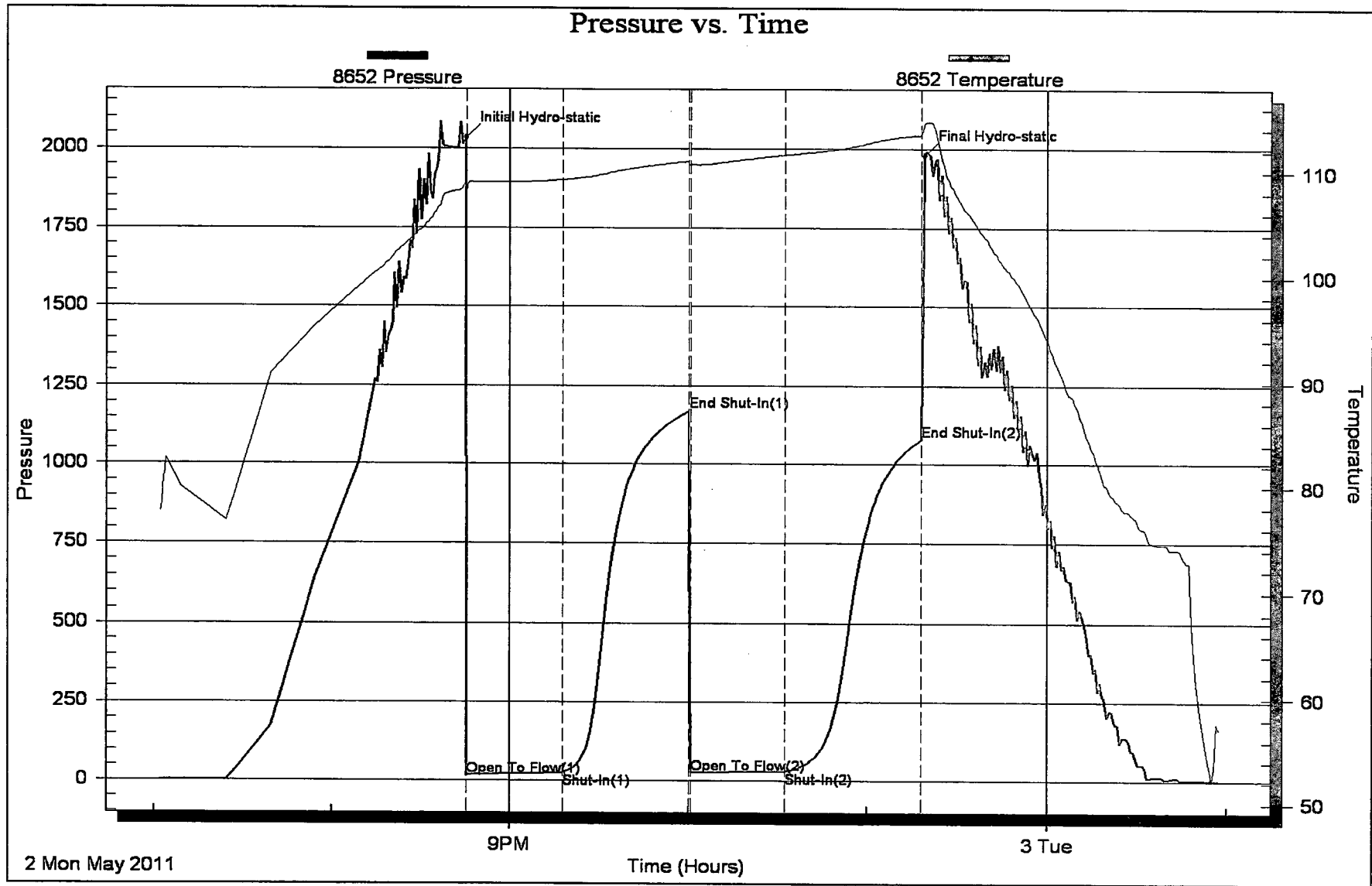
Length ft	Description	Volume bbl
10.00	Mud 100m (oil specs)	0.049

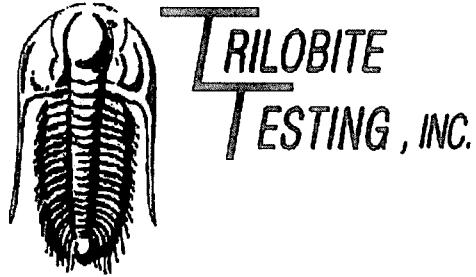
Total Length: 10.00 ft      Total Volume: 0.049 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments:





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration, Inc.**

8100 E. 22nd St. N #700  
Box 783188  
Wichita, KS 67278

ATTN: Tom Funk

**21 12s 31w Gove,KS**

**W&E 21 AD Unit #1**

Start Date: 2011.05.03 @ 15:52:00

End Date: 2011.05.03 @ 21:40:30

Job Ticket #: 43177                      DST #: 3

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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

Ritchie Exploration, Inc.

W&E 21 AD Unit #1

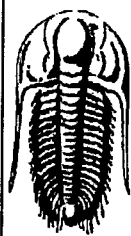
21 12s 31w Gove,KS

DST # 3

Lansing K,L

2011.05.03





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Ritchie Exploration, Inc.  
 8100 E. 22nd St. N#700  
 Box 783188  
 Wichita, KS 67278  
 ATTN: Tom Funk

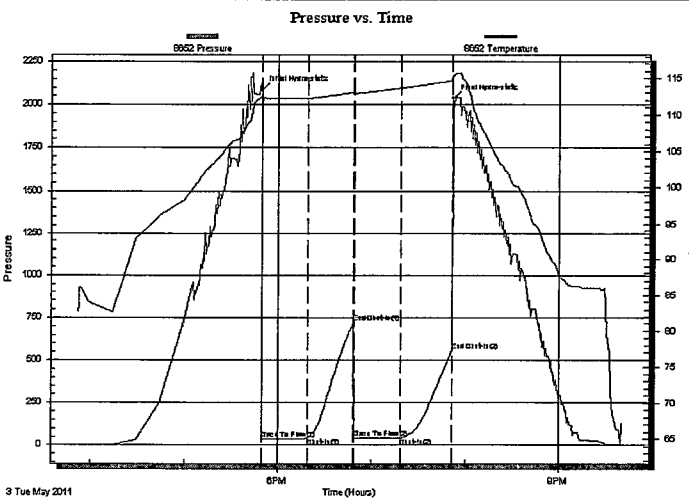
**W&E 21 AD Unit #1**  
**21 12s 31w Gove, KS**  
 Job Ticket: 43177      DST#: 3  
 Test Start: 2011.05.03 @ 15:52:00

## GENERAL INFORMATION:

Formation: **Lansing K,L**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole  
 Time Tool Opened: 17:49:45      Tester: Bradley Walter  
 Time Test Ended: 21:40:30      Unit No: 28  
 Interval: **4185.00 ft (KB) To 4258.00 ft (KB) (TVD)**      Reference Elevations: 2898.00 ft (KB)  
 Total Depth: **4055.00 ft (KB) (TVD)**      2888.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair      KB to GR/CF: 10.00 ft

**Serial #: 8652**      Inside  
 Press@RunDepth: 41.34 psig @ 4186.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2011.05.03      End Date: 2011.05.03      Last Calib.: 2011.05.03  
 Start Time: 15:52:05      End Time: 21:40:29      Time On Btm: 2011.05.03 @ 17:49:30  
 Time Off Btm: 2011.05.03 @ 19:51:45

**TEST COMMENT:** IF: Surface blow.  
 IS: No return blow.  
 FF: No blow.  
 FSI: No return blow.



## PRESSURE SUMMARY

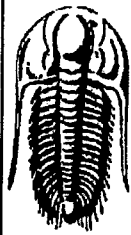
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2083.81	112.68	Initial Hydro-static
1	35.72	111.50	Open To Flow (1)
30	44.82	112.25	Shut-In(1)
59	723.56	113.08	End Shut-In(1)
60	39.67	112.86	Open To Flow (2)
89	41.34	113.67	Shut-In(2)
122	554.84	114.72	End Shut-In(2)
123	2036.71	115.41	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100m	0.02

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration, Inc.

**W&E 21 AD Unit #1**

8100 E. 22nd St. N#700  
Box 783188  
Wichita, KS 67278  
ATTN: Tom Funk

**21 12s 31w Gove,KS**

Job Ticket: 43177

**DST#: 3**

Test Start: 2011.05.03 @ 15:52:00

## Tool Information

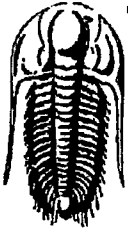
Drill Pipe:	Length: 3625.00 ft	Diameter: 3.80 inches	Volume: 50.85 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 557.00 ft	Diameter: 2.25 inches	Volume: 2.74 bbl	Weight to Pull Loose: 82000.00 lb
			<u>Total Volume: 53.59 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 74000.00 lb
Depth to Top Packer:	4185.00 ft			Final 74000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	73.00 ft			
Tool Length:	94.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4165.00	
Shut In Tool	5.00			4170.00	
Hydraulic tool	5.00			4175.00	
Packer	5.00			4180.00	21.00 Bottom Of Top Packer
Packer	5.00			4185.00	
Stubb	1.00			4186.00	
Recorder	0.00	8360	Outside	4186.00	
Recorder	0.00	8652	Inside	4186.00	
Perforations	11.00			4197.00	
Change Over Sub	1.00			4198.00	
Drill Pipe	32.00			4230.00	
Change Over Sub	1.00			4231.00	
Perforations	24.00			4255.00	
Bullnose	3.00			4258.00	73.00 Bottom Packers & Anchor

**Total Tool Length: 94.00**



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration, Inc.

W&E 21 AD Unit #1

8100 E 22nd St. N#700  
Box 783188  
Wichita, KS 67278  
ATTN: Tom Funk

21 12s 31w Gove,KS

Job Ticket: 43177

DST#: 3

Test Start: 2011.05.03 @ 15:52:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.19 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2800.00 ppm

Filter Cake: 1.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	mud 100m	0.025

Total Length:

5.00 ft

Total Volume:

0.025 bbl

Num Fluid Samples: 0

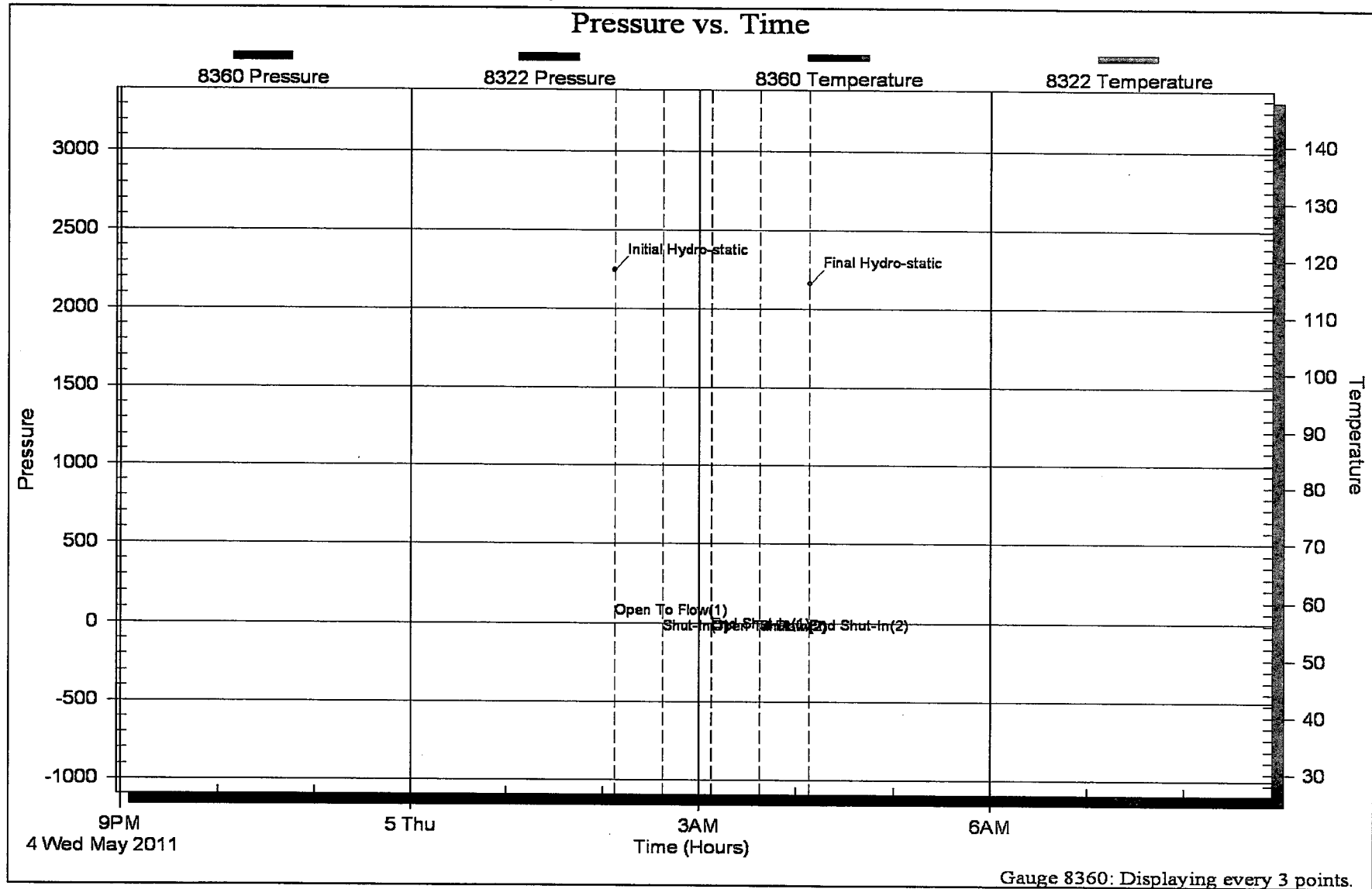
Num Gas Bombs: 0

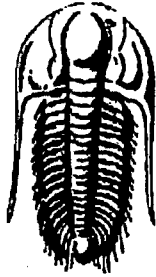
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





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

## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration, Inc.**

8100 E. 22nd St. N #700  
Box 783188  
Wichita, KS 67278

ATTN: Tom Funk

**21 12s 31w Gove,KS**

**W&E 21 AD Unit #1**

Start Date: 2011.05.04 @ 23:52:00

End Date: 2011.05.05 @ 06:00:00

Job Ticket #: 43178                      DST #: 4

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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

Ritchie Exploration, Inc.

W&E 21 AD Unit #1

21 12s 31w Gove,KS

DST # 4

Johnson

2011.05.04





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration, Inc.

W&E 21 AD Unit #1

8100 E 22nd St. N#700  
Box 783188  
Wichita, KS 67278  
ATTN: Tom Funk

21 12s 31w Gove,KS

Job Ticket: 43178

DST#: 4

Test Start: 2011.05.04 @ 23:52:00

## Tool Information

Drill Pipe:	Length: 3910.00 ft	Diameter: 3.80 inches	Volume: 54.85 bbl	Tool Weight: 1500.00 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: 557.00 ft	Diameter: 2.25 inches	Volume: 2.74 bbl	Weight to Pull Loose: 100000.0 lb
			<u>Total Volume: 57.59 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial 80000.00 lb
Depth to Top Packer:	4462.00 ft			Final 80000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	65.00 ft			
Tool Length:	86.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4442.00	
Shut In Tool	5.00			4447.00	
Hydraulic tool	5.00			4452.00	
Packer	5.00			4457.00	21.00 Bottom Of Top Packer
Packer	5.00			4462.00	
Stubb	1.00			4463.00	
Recorder	0.00	8322	Inside	4463.00	
Recorder	0.00	8360	Outside	4463.00	
Perforations	9.00			4472.00	
Change Over Sub	1.00			4473.00	
Drill Pipe	32.00			4505.00	
Change Over Sub	1.00			4506.00	
Perforations	18.00			4524.00	
Bullnose	3.00			4527.00	65.00 Bottom Packers & Anchor

**Total Tool Length: 86.00**



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Ritchie Exploration, Inc.  
8100 E. 22nd St. N#700  
Box 783188  
Wichita, KS 67278  
ATTN: Tom Funk

**W&E 21 AD Unit #1**  
**21 12s 31w Gove,KS**  
Job Ticket: 43178      DST#: 4  
Test Start: 2011.05.04 @ 23:52:00

### Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	0 ppm
Viscosity: 63.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.99 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 2500.00 ppm			
Filter Cake: 1.00 inches			

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud 100m	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:



