

**CONFIDENTIAL**

**KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION  
WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE**

8/11/13  
Form ACO-1  
June 2009  
**Form Must Be Typed**  
Form must be Signed  
All blanks must be Filled

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 # 5929  
Name: Duke Drilling Co., Inc.  
Wellsite Geologist: Adam Eldani  
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 #: \_\_\_\_\_

4/26/11	5/7/11	5/7/11
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 057-20724-00-00  
Spot Description: 75' S & 60' E  
N/2\_SW\_SE Sec. 19 Twp. 28 S. R. 22  East  West  
915 Feet from  North /  South Line of Section  
1,920 Feet from  East /  West Line of Section  
Footages Calculated from Nearest Outside Section Corner:  
 NE     NW     SE     SW  
County: Ford  
Lease Name: Copeland 19D Well #: 1  
Field Name: \_\_\_\_\_  
Producing Formation: \_\_\_\_\_  
Elevation: Ground: 2470 Kelly Bushing: 2482  
Total Depth: 5308 Plug Back Total Depth: \_\_\_\_\_  
Amount of Surface Pipe Set and Cemented at: 361 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: 32500 ppm Fluid volume: 1800 bbls  
Dewatering method used: evaporation  
Location of fluid disposal if hauled offsite: \_\_\_\_\_  
Operator Name: \_\_\_\_\_  
Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_  
Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ **CONFIDENTIAL**  East  West  
County: \_\_\_\_\_ Permit # 1 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: 8/09/11

**KCC Office Use ONLY**

Letter of Confidentiality Received  
Date: 8/11/11 - 8/11/13  
 Confidential Release Date: \_\_\_\_\_  
 Wireline Log Received  
 Geologist Report Received  
 UIC Distribution  
ALT  I  II  III Approved by: \_\_\_\_\_ Date: 8-22-11

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**AUG 11 2011**  
**KCC WICHITA**

Operator Name: Ritchie Exploration, Inc. Lease Name: Copeland 19D Well #: 1

Sec. 19 Twp. 28 S. R. 22  East  West County: Ford

**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.

<p>Drill Stem Tests Taken <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i></p> <p>Samples Sent to Geological Survey <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Cores Taken <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Electric Log Run <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Electric Log Submitted Electronically <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(If no, Submit Copy)</i></p> <p>List All E. Logs Run: <b>Dual Induction Log</b> <b>Compensated Density/Neutron Log</b></p>	<p><input type="checkbox"/> Log Formation (Top), Depth and Datum <input checked="" type="checkbox"/> Sample</p> <p>Name Top Datum</p> <p style="text-align: center; font-weight: bold;">SEE ATTACHED</p>
--	--

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	361	class A	250	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 <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD: Size: \_\_\_\_\_ Set At: \_\_\_\_\_ Packer At: \_\_\_\_\_ Liner Run:  Yes  No

Date of First, Resumed Production, SWD or ENHR. \_\_\_\_\_ Producing Method:  
 Flowing  Pumping  Gas Lift  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 <i>(If vented, Submit ACO-18.)</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-18.)</i> <input type="checkbox"/> Other (Specify) _____	PRODUCTION INTERVAL: _____
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AUG 11 2013  
 Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202  
**KCC**  
 AUG 11 2011  
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 KCC WICHITA

# ALLIED CEMENTING CO., LLC. 040193

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

SERVICE POINT:  
*Medicine Lodge, KS*

DATE <i>5-7-2011</i>	SEC. <i>19</i>	TWP. <i>28S</i>	RANGE <i>22W</i>	CALLED OUT <i>12:00 pm</i>	ON LOCATION <i>5:30pm</i>	JOB START <i>6:00 pm</i>	JOB FINISH <i>7:00 pm</i>
LEASE <i>Copied</i>	WELL # <i>1-19D</i>	LOCATION <i>Kingsdown, KS north on</i>			COUNTY <i>Forb</i>	STATE <i>Ks</i>	
OLD OR <u>NEW</u> (Circle one)		<i>BLK TO to Curve, 1/2 mi to house, n/line</i>					

CONTRACTOR *Duke #1*

TYPE OF JOB *Rotary Plug*

HOLE SIZE *7 7/8* T.D.

CASING SIZE \_\_\_\_\_ DEPTH \_\_\_\_\_

TUBING SIZE *4 1/2* DEPTH *1500*

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

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

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

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

CEMENT LEFT IN CSG. \_\_\_\_\_

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

DISPLACEMENT *3 bbls water, 12 bbls mud*

EQUIPMENT \_\_\_\_\_

PUMP TRUCK CEMENTER *Derin F*

# *471-265* HELPER *Ron G*

BULK TRUCK

# *421-252* DRIVER *Dustin E*

BULK TRUCK

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

OWNER *Ritchie Exploration*

CEMENT

AMOUNT ORDERED *290 sq 60' 40' 4 9/16 Gr*

*1/4 # Pluses*

COMMON <i>class A</i>	<i>144sq @ 16.25</i>	<i>2340.00</i>
POZMIX	<i>96sq @ 8.50</i>	<i>816.00</i>
GEL	<i>85sq @ 21.25</i>	<i>1796.25</i>
CHLORIDE	@	
ASC	@	
	@	
<i>Floesal</i>	<i>60# @ 2.70</i>	<i>162.00</i>
	@	
	@	
	@	
	@	
	@	
HANDLING <i>251</i>	@ <i>2.25</i>	<i>564.75</i>
MILEAGE <i>75/11/251</i>		<i>2070.00</i>
TOTAL		<i>6123.50</i>

REMARKS:

*1st plug - 1500' - 8 bbls water, choco, mix (600) ✓*

*Displace 3 bbls water, 12 bbls mud*

*2nd plug - 520' - 15 bbls water, choco, mix (600) ✓*

*Displace 3 1/2 bbls water*

*3rd plug - 350' - 8 bbls water, choco, mix (500) cement ✓*

*Displace 2 bbls water*

*4th plug - 60' - mix (200) cement ✓*

*Regrout - mix 200 cement*

*make hole - mix 200 cement*

SERVICE

DEPTH OF JOB *1500'*

PUMP TRUCK CHARGE \_\_\_\_\_ *1250.00*

EXTRA FOOTAGE @ \_\_\_\_\_

MILEAGE *150 @ 7.00* *1050.00*

MANIFOLD @ \_\_\_\_\_

*Light Vehicle 150 @ 4.00* *600.00*

TOTAL *2900.00*

CHARGE TO: *Ritchie Exploration*

STREET \_\_\_\_\_

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

PLUG & FLOAT EQUIPMENT

*None*

@ \_\_\_\_\_

@ \_\_\_\_\_

@ \_\_\_\_\_

@ \_\_\_\_\_

@ \_\_\_\_\_

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 *Mike Godfrey*

SIGNATURE *Mike Godfrey*

*Thank you!!!*

TOTAL \_\_\_\_\_

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

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

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

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KCC WICHITA

# ALLIED CEMENTING CO., LLC. 038799

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

SERVICE POINT:  
G-cant Bend Ws

DATE <u>4-27-11</u>	SEC. <u>19</u>	TWP. <u>28S</u>	RANGE <u>22W</u>	CALLED OUT	ON LOCATION	JOB START <u>2:00 AM</u>	JOB FINISH <u>2:30 AM</u>
LEASE <u>Capeland 190</u>	WELL# <u>1</u>	LOCATION <u>ford Ws South To w...ion</u>			COUNTY <u>ford</u>	STATE <u>KS</u>	
OLD OR <u>NEW</u> (Circle one)			RO <u>1/2 west North in To</u>				

CONTRACTOR Duke Rig 1 OWNER Ritchie Exploration

TYPE OF JOB Surface  
 HOLE SIZE 12 1/2 T.D. 365  
 CASING SIZE 8 3/4 DEPTH 365  
 TUBING SIZE DEPTH  
 DRILL PIPE DEPTH  
 TOOL DEPTH  
 PRES. MAX MINIMUM  
 MEAS. LINE SHOE JOINT  
 CEMENT LEFT IN CSG. 20  
 PERFS.  
 DISPLACEMENT 22 BBLs

CEMENT  
 AMOUNT ORDERED 2500y class A + 3% cc + 2% Gel

EQUIPMENT

PUMP TRUCK CEMENTER Wayne  
 # 366 HELPER Greg  
 BULK TRUCK  
 # 341 DRIVER Kevin  
 BULK TRUCK  
 # DRIVER

COMMON	<u>250</u>	@ <u>16.25</u>	<u>4062.50</u>
POZMIX		@	
GEL	<u>5</u>	@ <u>21.25</u>	<u>106.25</u>
CHLORIDE	<u>9</u>	@ <u>58.20</u>	<u>523.80</u>
ASC		@	
		@	
		@	
		@	
		@	
		@	
		@	
HANDLING	<u>264</u>	@ <u>2.25</u>	<u>594.00</u>
MILEAGE	<u>264 x 75 x .11</u>		<u>2178.00</u>
TOTAL			<u>7464.55</u>

REMARKS:

Pipe on bottom Break circulation  
with Rig mud shut down  
Hook up to cement line  
mix 2500y class A + 3% cc + 2% Gel  
shut down Release Plug  
Displace 22 BBLs fresh water

SERVICE

DEPTH OF JOB	<u>365</u>		
PUMP TRUCK CHARGE			<u>1125.00</u>
EXTRA FOOTAGE	<u>65</u>	@ <u>.95</u>	<u>61.75</u>
MILEAGE	<u>150</u>	@ <u>7.00</u>	<u>1050.00</u>
MANIFOLD		@	
<u>Light Truck</u>	<u>150</u>	@ <u>4.00</u>	<u>600.00</u>
		@	
TOTAL			<u>2836.75</u>

CHARGE TO: Ritchie Exploration  
 STREET \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

PLUG & FLOAT EQUIPMENT

		@	
<u>wooden Plug</u>		@ <u>64.00</u>	<u>64.00</u>
		@	
		@	
		@	
TOTAL			<u>64.00</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.

PRINTED NAME Mike Gaffney  
 SIGNATURE Mike Gaffney

SALES TAX (If Any) \_\_\_\_\_  
 TOTAL CHARGES \_\_\_\_\_  
 DISCOUNT \_\_\_\_\_

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EXPLORATION, INC.  
Wichita, Kansas

**#1 Copeland 19D**

915' FSL & 1920' FEL

75' S & 60' E of N/2 SW SE Section 19-28S-22W

Ford County, Kansas

API# 15-057-20724-0000

Elevation: 2470' GL: 2482' KB

<u>Sample Tops</u>			<u>Ref.</u>	<u>Well</u>
Anhydrite	1476'	+1006	-22	
B/Anhydrite	1516'	+966	-20	
Stotler	3642'	-1161	+13	
Heebner	4300'	-1818	+20	
Lansing	4448'	-1966	+29	
Muncie Shale	4654'	-2172	+4	
Stark Shale	4797'	-2315	+5	
Hush.	4837'	-2355	+10	
BKC	4873'	-2391	+11	
Pawnee	4998'	-2516	+12	
Cherokee Shale	5046'	-2564	+10	
Atoka Shale	5140'	-2658	+19	
Mississippian	5165'	-2683	+13	
RTD	5308'	-2826		

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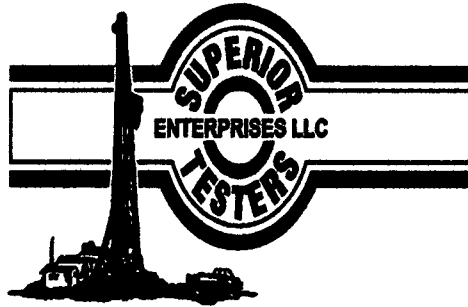
AUG 11 2011

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 East 22ND St North#700  
Wichita Kansas 67278 +3188  
P.O.Box 783188

ATTN: Mike Engelbracht

**19/28S/22W Ford Co.**

**#1 Copeland 19D**

Start Date: 2011.05.03 @ 09:30:00

End Date: 2011.05.03 @ 16:09:30

Job Ticket #: 16000                      DST #: 1

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

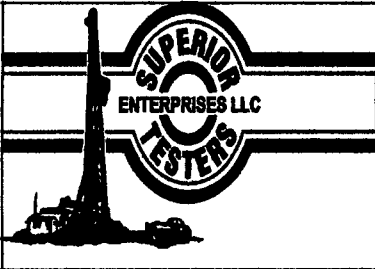
**CONFIDENTIAL**

AUG 11 2013

**KCC**

Printed: 2011.05.09 @ 13:59:50

Ritchie Exploration Inc. #1 Copeland 19D 19/28S/22W Ford Co. DST # 1 Pawnee 2011.05.03



# DRILL STEM TEST REPORT

Ritchie Exploration Inc.

#1 Copeland 19D

8100 East 22ND St North#700  
 Wichita Kansas 67278 +3188  
 P.O.Box 783188  
 ATTN: Mike Engelbracht

19/28S/22W Ford Co.

Job Ticket: 16000 DST#: 1

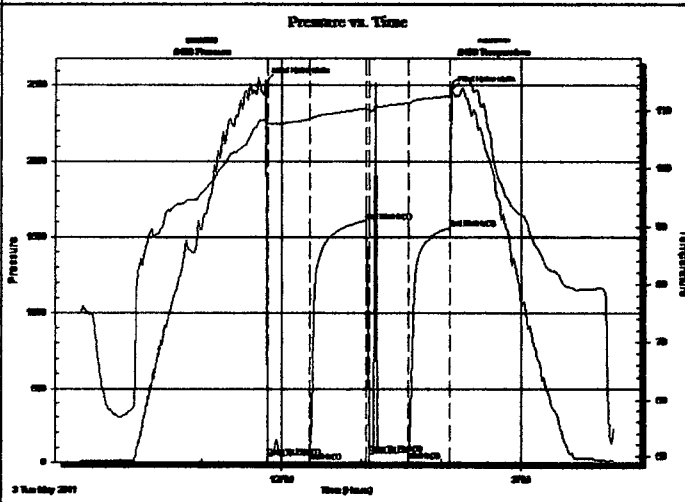
Test Start: 2011.05.03 @ 09:30:00

## GENERAL INFORMATION:

Formation: **Pawnee**  
 Deviated: **No Whipstock** ft (KB)  
 Time Tool Opened: **11:49:30**  
 Time Test Ended: **16:09:30**  
 Interval: **4993.00 ft (KB) To 5020.00 ft (KB) (TVD)**  
 Total Depth: **5020.00 ft (KB) (TVD)**  
 Hole Diameter: **7.88 inches** Hole Condition: **Fair**  
 Test Type: **Conventional Bottom Hole (Initial)**  
 Tester: **Dylan E. Ellis**  
 Unit No: **3345/Great Bend/192**  
 Reference Elevations: **2482.00 ft (KB)**  
**2470.00 ft (CF)**  
 KB to GR/CF: **12.00 ft**

**Serial #: 8400** **Outside**  
 Press@RunDepth: **75.33 psia @ 5017.00 ft (KB)** Capacity: **5000.00 psia**  
 Start Date: **2011.05.03** End Date: **2011.05.03** Last Calib.: **2011.05.04**  
 Start Time: **09:30:10** End Time: **16:09:30** Time On Btm: **2011.05.03 @ 11:48:30**  
 Time Off Btm: **2011.05.03 @ 14:08:00**

**TEST COMMENT:** 1ST Opening 30 Minutes very weak blow /blow blew to 0.75 inches into bucket of water  
 1ST Shut-in 45 Minutes no blow back  
 2ND Opening 30 Minutes opened tool/blow dead/flushed tool/good surge/blow dead  
 2ND Shut-in 30 Minutes no blow back



## PRESSURE SUMMARY

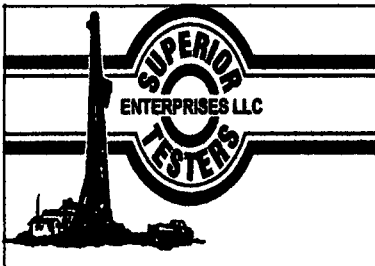
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2525.13	108.25	Initial Hydro-static
1	44.87	107.79	Open To Flow (1)
33	69.73	108.49	Shut-in(1)
76	1607.20	110.47	End Shut-in(1)
78	60.63	110.07	Open To Flow (2)
107	75.33	111.32	Shut-in(2)
138	1561.47	112.56	End Shut-in(2)
140	2468.34	114.48	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
62.00	Drilling Mud 100%	0.87

## Gas Rates

	Choke (Inches)	Pressure (psia)	Gas Rate (Mcf/d)



# DRILL STEM TEST REPORT

Ritchie Exploration Inc.  
 8100 East 22ND St North#700  
 Wichita Kansas 67278 +3188  
 P.O.Box 783188  
 ATTN: Mike Engelbracht

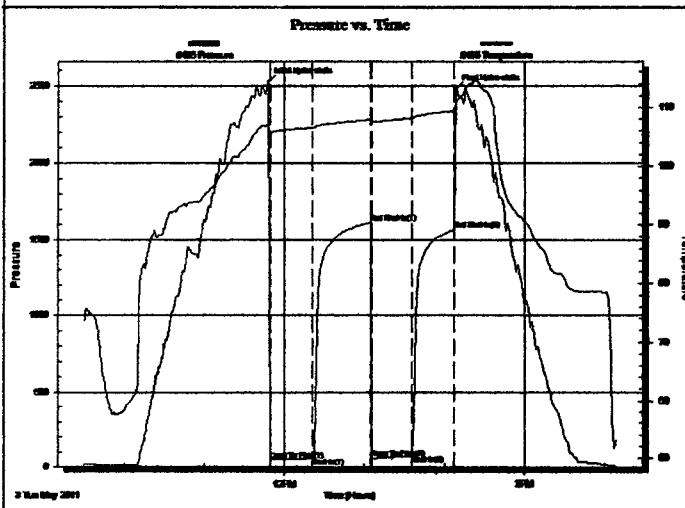
#1 Copeland 19D  
 19/28S/22W Ford Co.  
 Job Ticket: 16000 DST#: 1  
 Test Start: 2011.05.03 @ 09:30:00

## GENERAL INFORMATION:

Formation: **Pawnee**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 11:49:30 Tester: Dylan E. Ellis  
 Time Test Ended: 16:09:30 Unit No: 3345/Great Bend/192  
 Interval: 4993.00 ft (KB) To 5020.00 ft (KB) (TVD) Reference Elevations: 2482.00 ft (KB)  
 Total Depth: 5020.00 ft (KB) (TVD) 2470.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 12.00 ft

Serial #: **8405** Inside  
 Press@RunDepth: 1563.85 psia @ 5016.00 ft (KB) Capacity: 5000.00 psia  
 Start Date: 2011.05.03 End Date: 2011.05.03 Last Calib.: 2011.05.04  
 Start Time: 09:30:01 End Time: 16:09:00 Time On Btrr: 2011.05.03 @ 11:48:00  
 Time Off Btrr: 2011.05.03 @ 14:08:30

TEST COMMENT: 1ST Opening 30 Minutes very weak blow/blow blew to 0.75 inches into bucket of water  
 1ST Shut-in 45 Minutes no blow back  
 2ND Opening 30 Minutes opened tool/blow dead/flushed tool/good surge/blow dead  
 2ND Shut-in 30 Minutes no blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2528.53	106.46	Initial Hydro-static
1	49.41	105.23	Open To Flow (1)
33	60.25	106.54	Shut-in(1)
77	1609.08	107.87	End Shut-in(1)
78	62.83	107.57	Open To Flow (2)
108	82.01	108.13	Shut-in(2)
139	1563.85	109.32	End Shut-in(2)
141	2479.72	110.74	Final Hydro-static

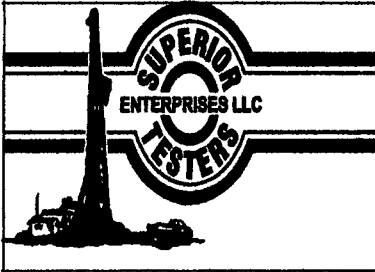
## Recovery

Length (ft)	Description	Volume (bbl)
62.00	Drilling Mud 100%	0.87

## Gas Rates

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





# DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc.  
 8100 East 22ND St North#700  
 Wichita Kansas 67278 +3188  
 P.O.Box 783188  
 ATTN: Mike Engelbracht

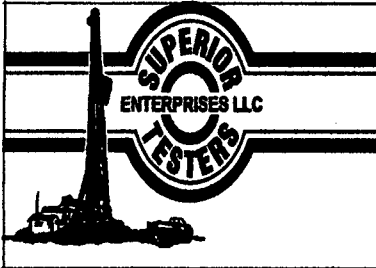
#1 Copeland 19D  
 19/28S/22W Ford Co.  
 Job Ticket: 16000 DST#: 1  
 Test Start: 2011.05.03 @ 09:30:00

## Tool Information

Drill Pipe:	Length: 4984.00 ft	Diameter: 3.80 inches	Volume: 69.91 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: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 24000.00 lb
			<u>Total Volume: 69.91 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4993.00 ft			Final 62000.00 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

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			4970.00	
Hydraulic Tool	5.00			4975.00	
Jars	6.00			4981.00	
Safety Joint	2.00			4983.00	
Packer	5.00			4988.00	28.00 Bottom Of Top Packer
Packer	5.00			4993.00	
Perforations	22.00			5015.00	
Recorder	1.00	8405	Inside	5016.00	
Recorder	1.00	8400	Outside	5017.00	
Bull Plug	3.00			5020.00	27.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>55.00</b>				



# DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc.  
 8100 East 22ND St North#700  
 Wichita Kansas 67278 +3188  
 P.O.Box 783188  
 ATTN: Mike Engelbracht

#1 Copeland 19D  
 19/28S/22W Ford Co.  
 Job Ticket: 16000      DST#: 1  
 Test Start: 2011.05.03 @ 09:30:00

## 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: 46.00 sec/qt	Cushion Volume: bbl		
Water Loss: 11.18 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psia		
Salinity: 8600.00 ppm			
Filter Cake: 1.00 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	Drilling Mud 100%	0.870

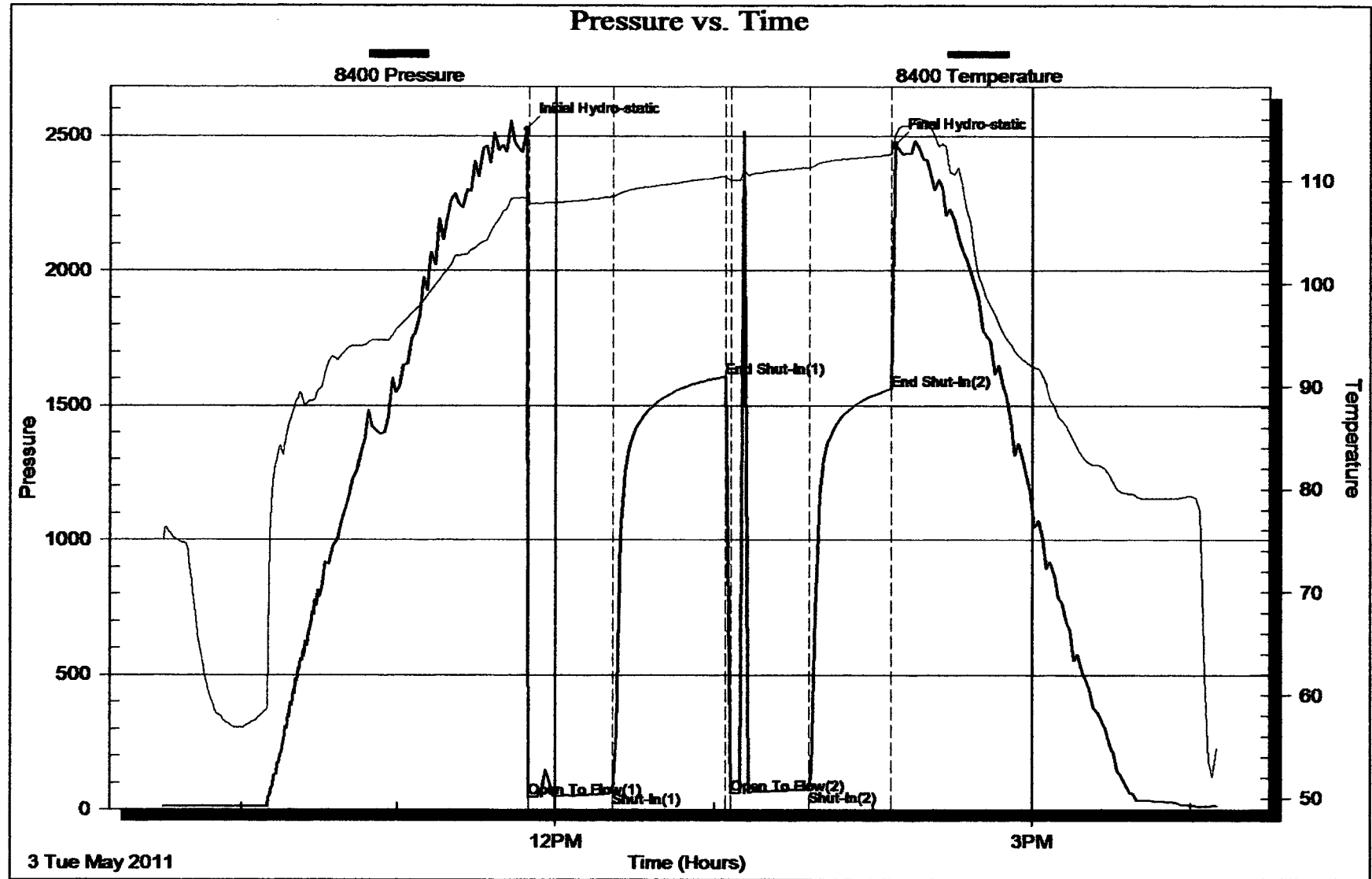
Total Length: 62.00 ft      Total Volume: 0.870 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

Serial #: 8400

Outside Ritchie Exploration Inc.

19/28S/22W Ford Co.

DST Test Number: 1



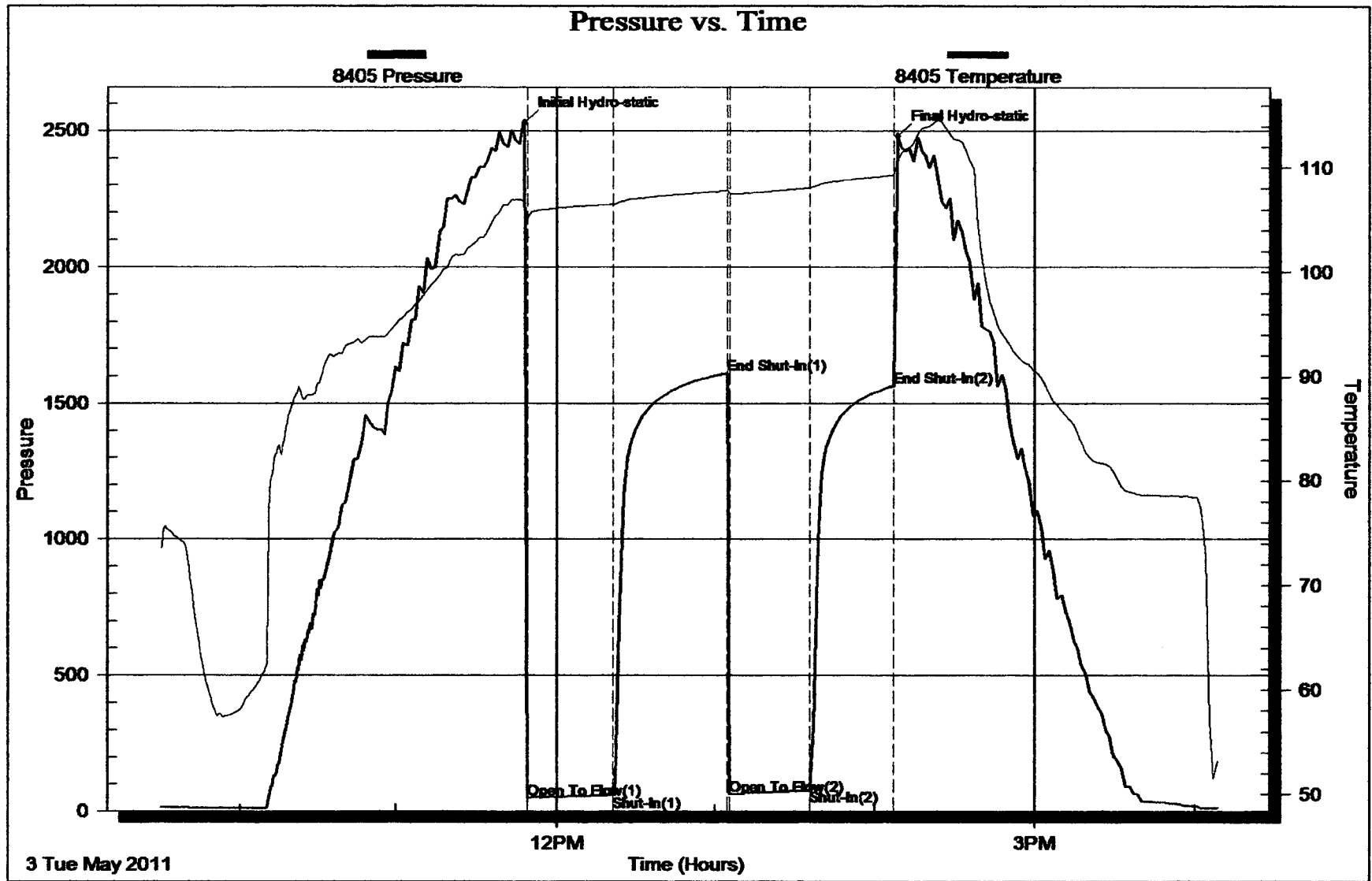
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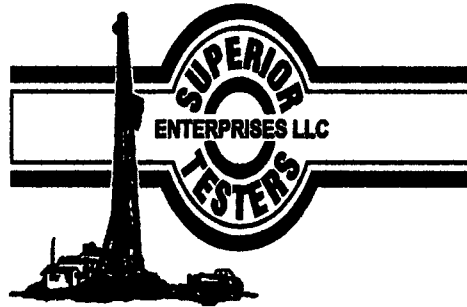
Inside

Ritchie Exploration Inc.

19/28S/22W Ford Co.

DST Test Number: 1





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc.**

8100 East 22ND St North#700  
Wichita Kansas 67278 +3188  
P.O.Box 783188

ATTN: Mike Engelbracht

**19/28S/22W Ford Co.**

**#1 Copeland 19D**

Start Date: 2011.05.05 @ 11:02:00

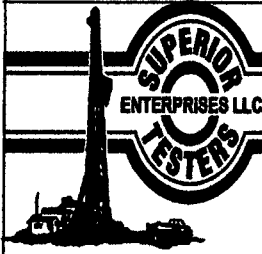
End Date: 2011.05.05 @ 00:00:00

Job Ticket #: 16526                      DST #: 2

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

Printed: 2011.05.09 @ 13:59:40

Ritchie Exploration Inc. #1 Copeland 19D 19/28S/22W Ford Co. DST # 2 C 2011.05.05



# DRILL STEM TEST REPORT

Ritchie Exploration Inc.

#1 Copeland 19D

8100 East 22ND St North#700  
Wichita Kansas 67278 +3188  
P.O.Box 783188  
ATTN: Mike Engelbracht

19/28S/22W Ford Co.

Job Ticket: 16526

DST#: 2

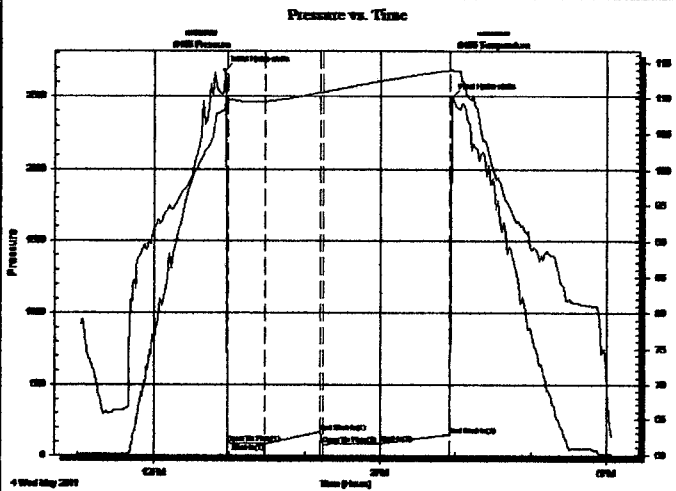
Test Start: 2011.05.05 @ 11:02:00

## GENERAL INFORMATION:

Formation: C  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 00:00:00  
Time Test Ended: 00:00:00  
Interval: 5060.00 ft (KB) To 5167.00 ft (KB) (TVD)  
Total Depth: 5167.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Dylan E Ellis  
Unit No: 3345/Great Bend/192  
Reference Elevations: 2482.00 ft (KB)  
2470.00 ft (CF)  
KB to GR/CF: 12.00 ft

Serial #: 8405 Inside  
Press@RunDepth: 147.44 psia @ 5162.42 ft (KB) Capacity: 5000.00 psia  
Start Date: 2011.05.04 End Date: 2011.05.04 Last Calib.: 2011.05.05  
Start Time: 11:02:01 End Time: 18:05:00 Time On Btrr: 2011.05.04 @ 12:56:00  
Time Off Btrr: 2011.05.04 @ 15:57:00

TEST COMMENT: 1ST Opening 30 Minutes fair blow/blow built to 3 inches into bucket of water  
1ST Shut-in 45 Minutes no blow back  
2ND Opening 45 Minutes fair blow/blow built to 3 inches into bucket of water  
2ND Shut-in 60 Minutes no blow back



## PRESSURE SUMMARY

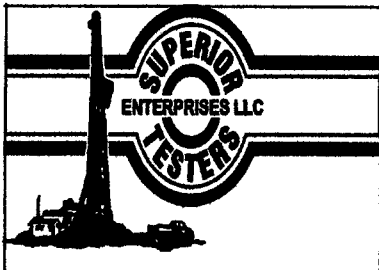
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2684.08	108.29	Initial Hydro-static
2	85.22	109.73	Open To Flow (1)
32	83.43	109.50	Shut-in(1)
77	164.90	110.83	End Shut-in(1)
79	81.08	110.88	Open To Flow (2)
124	87.08	112.41	Shut-in(2)
180	147.44	113.98	End Shut-in(2)
181	2493.57	114.04	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
30.00	Slightly Oil cut Mud	0.42
0.00	Oil 2% Mud 98%	0.00

## Gas Rates

	Choke (Inches)	Pressure (psia)	Gas Rate (Mcf/d)



# DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc.

#1 Copeland 19D

8100 East 22ND St North#700  
 Wichita Kansas 67278 +3188  
 P.O.Box 783188  
 ATTN: Mike Engelbracht

19/28S/22W Ford Co.

Job Ticket: 16526

DST#: 2

Test Start: 2011.05.05 @ 11:02:00

## Tool Information

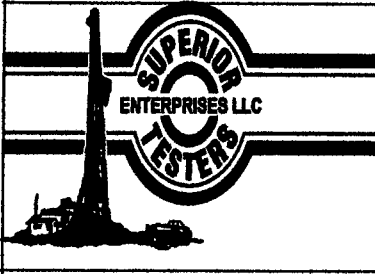
Drill Pipe:	Length: 5045.00 ft	Diameter: 3.80 inches	Volume: 70.77 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 20000.00 lb
			<u>Total Volume: 70.77 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 63000.00 lb
Depth to Top Packer:	5060.00 ft			Final 63000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	106.42 ft			
Tool Length:	134.42 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			5037.00	
Hydraulic Tool	5.00			5042.00	
Jars	6.00			5048.00	
Safety Joint	2.00			5050.00	
Packer	5.00			5055.00	28.00 Bottom Of Top Packer
Packer	5.00			5060.00	
Perforations	5.00			5065.00	
Change Over Sub	0.75			5065.75	
Drill Pipe	62.92			5128.67	
Change Over Sub	0.75			5129.42	
Perforations	32.00			5161.42	
Recorder	1.00	8405	Inside	5162.42	
Recorder	1.00	8400	Outside	5163.42	
Bull Plug	3.00			5166.42	106.42 Bottom Packers & Anchor

**Total Tool Length: 134.42**



# DRILL STEM TEST REPORT

## FLUID SUMMARY

Ritchie Exploration Inc.

#1 Copeland 19D

8100 East 22ND St North#700  
Wichita Kansas 67278 +3188  
P.O.Box 783188

19/28S/22W Ford Co.

Job Ticket: 16526

DST#: 2

ATTN: Mike Engelbracht

Test Start: 2011.05.05 @ 11:02:00

### 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: 55.00 sec/qt	Cushion Volume: bbl		
Water Loss: 12.78 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psia		
Salinity: 12300.00 ppm			
Filter Cake: 1.00 inches			

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	Slightly Oil cut Mud	0.421
0.00	Oil 2% Mud 98%	0.000

Total Length: 30.00 ft      Total Volume: 0.421 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



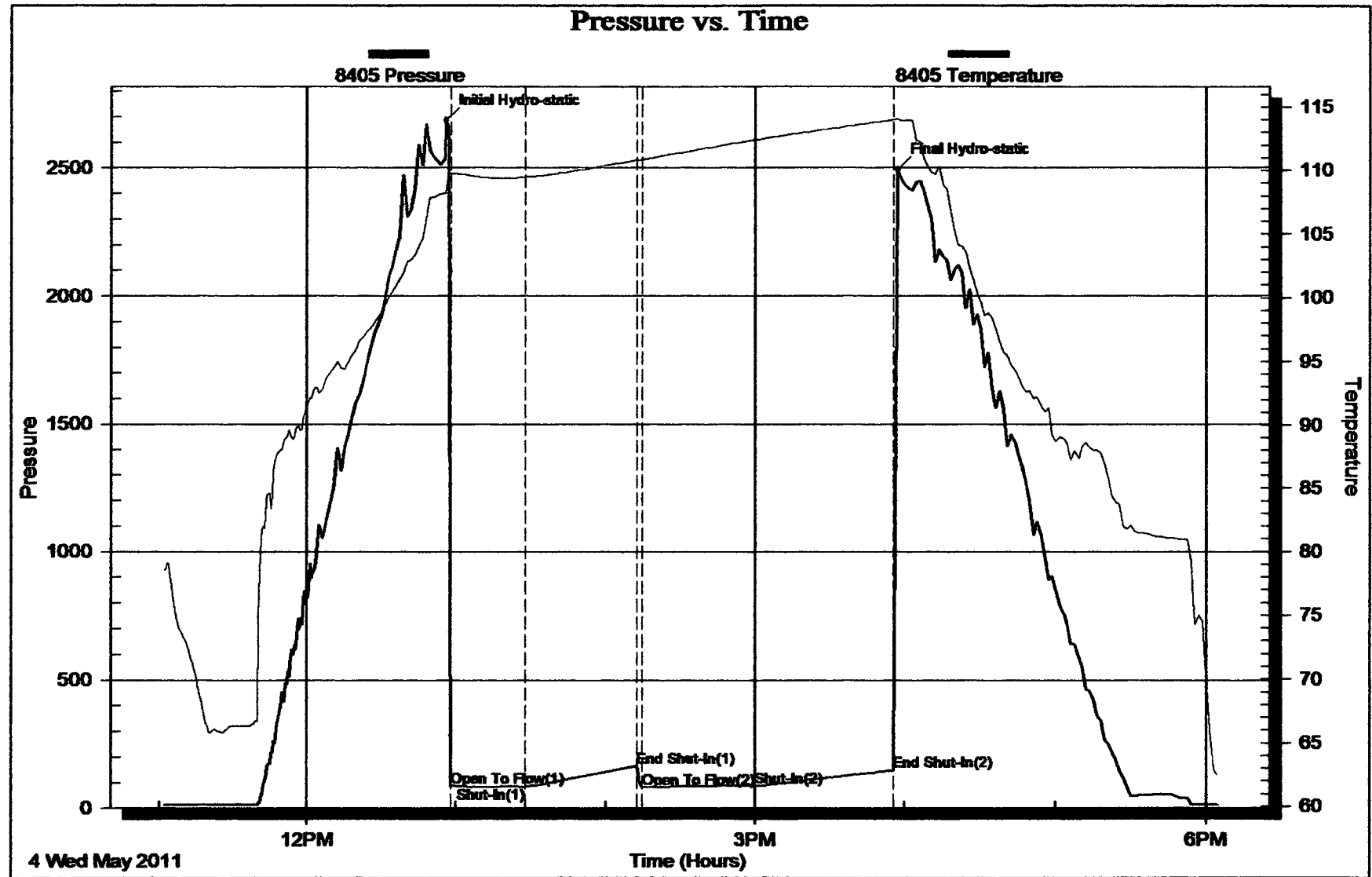
Serial #: 8405

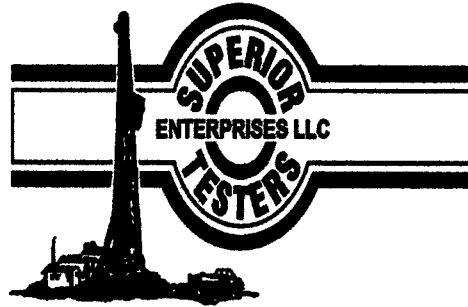
Inside

Ritchie Exploration Inc.

19/28S/22W Ford Co.

DST Test Number: 2





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc.**

8100 East 22ND St North#700  
Wichita Kansas 67278 +3188  
P.O.Box 783188

ATTN: Mike Engelbracht

**19/28S/22W Ford Co.**

**#1 Copeland 19D**

Start Date: 2011.05.05 @ 04:51:00

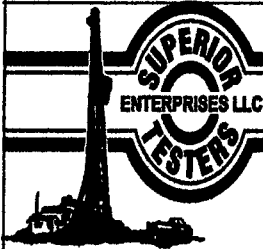
End Date: 2011.05.05 @ 12:11:13

Job Ticket #: 16527                      DST #: 3

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

Printed: 2011.05.09 @ 13:59:27

Ritchie Exploration Inc. #1 Copeland 19D 19/28S/22W Ford Co. DST # 3 Mississippi 2011.05.05



# DRILL STEM TEST REPORT

Ritchie Exploration Inc.

#1 Copeland 19D

8100 East 22ND St North#700  
Wichita Kansas 67278 +3188  
P.O.Box 783188  
ATTN: Mike Engelbracht

19/28S/22W Ford Co.

Job Ticket: 16527

DST#: 3

Test Start: 2011.05.05 @ 04:51:00

## GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:58:43

Time Test Ended: 12:11:13

Test Type: Conventional Bottom Hole (Initial)

Tester: Dylan E Ellis

Unit No: 3345/Great Bend/192

Interval: **5138.00 ft (KB) To 5206.00 ft (KB) (TVD)**

Total Depth: 5206.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2482.00 ft (KB)

2470.00 ft (CF)

KB to GR/CF: 12.00 ft

Serial #: **8400** Outside

Press@RunDepth: 78.64 psia @ 5202.73 ft (KB)

Start Date: 2011.05.05

End Date:

2011.05.05

Capacity: 5000.00 psia

Last Calib.: 2011.05.06

Start Time: 04:51:10

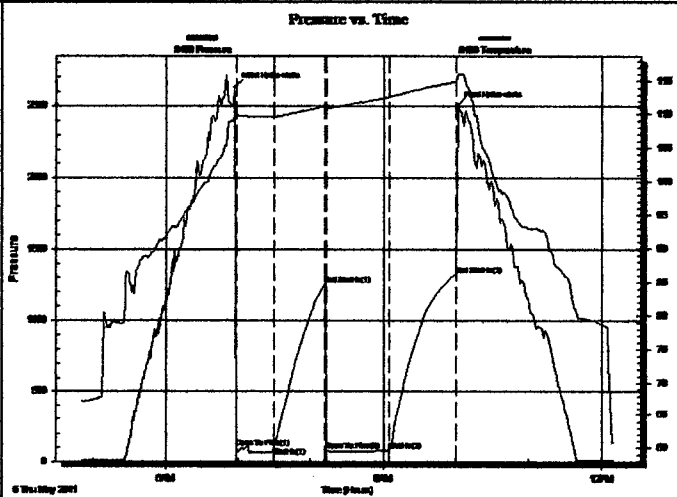
End Time:

12:11:12

Time On Btm: 2011.05.05 @ 06:57:13

Time Off Btm: 2011.05.05 @ 10:01:43

**TEST COMMENT:** 1ST Opening 30 Minutes good blow/blow blew to bottom in 8 minutes  
1ST Shut-in 45 Minutes no blow back  
2ND Opening 45 Minutes very strong blow/blow blew bottom of bucket instantly  
2ND Shut-in 60 Minutes yes blow back



## PRESSURE SUMMARY

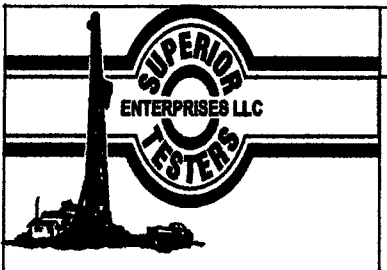
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2631.97	110.03	Initial Hydro-static
2	96.32	109.70	Open To Flow (1)
32	98.06	109.65	Shut-in(1)
75	1256.91	111.19	End Shut-in(1)
76	77.79	110.93	Open To Flow (2)
128	78.64	112.58	Shut-in(2)
183	1325.93	114.83	End Shut-in(2)
185	2509.26	115.89	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)

## Gas Rates

	Choke (Inches)	Pressure (psia)	Gas Rate (Mcf/d)
First Gas Rate	0.13	9.00	3.37
Last Gas Rate	0.13	10.25	3.84



# DRILL STEM TEST REPORT

Ritchie Exploration Inc.  
 8100 East 22ND St North#700  
 Wichita Kansas 67278 +3188  
 P.O.Box 783188  
 ATTN: Mike Engelbracht

#1 Copeland 19D  
 19/28S/22W Ford Co.  
 Job Ticket: 16527      DST#: 3  
 Test Start: 2011.05.05 @ 04:51:00

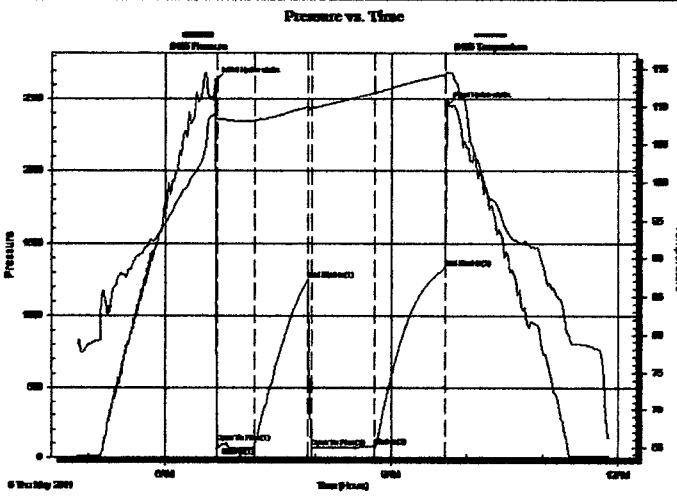
### GENERAL INFORMATION:

Formation: **Mississippi**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 06:58:43  
 Time Test Ended: 12:11:13  
 Interval: **5138.00 ft (KB) To 5206.00 ft (KB) (TVD)**  
 Total Depth: **5206.00 ft (KB) (TVD)**  
 Hole Diameter: **7.88 inches** Hole Condition: Fair

Test Type: Conventional Bottom Hole (Initial)  
 Tester: Dylan E Ellis  
 Unit No: 3345/Great Bend/192  
 Reference Elevations: 2482.00 ft (KB)  
 2470.00 ft (CF)  
 KB to GR/CF: 12.00 ft

**Serial #: 8405** Inside  
 Press@RunDepth: 1329.42 psia @ 5201.73 ft (KB) Capacity: 5000.00 psia  
 Start Date: 2011.05.05 End Date: 2011.05.05 Last Calib.: 2011.05.06  
 Start Time: 04:51:01 End Time: 11:54:00 Time On Btm: 2011.05.05 @ 06:40:00  
 Time Off Btm: 2011.05.05 @ 09:44:00

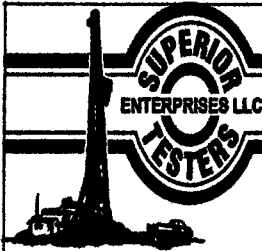
**TEST COMMENT:** 1ST Opening 30 Minutes good blow/blow blew to bottom in 8 minutes  
 1ST Shut-In 45 Minutes no blow back  
 2ND Opening 45 Minutes very strong blow/blow blew bottom of bucket instantly  
 2ND Shut-In 60 Minutes yes blow back



PRESSURE SUMMARY			
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2630.56	108.72	Initial Hydro-static
2	105.76	108.29	Open To Flow (1)
31	74.50	108.13	Shut-In(1)
74	1252.65	109.92	End Shut-In(1)
77	75.17	109.76	Open To Flow (2)
127	77.98	111.76	Shut-In(2)
183	1329.42	114.20	End Shut-In(2)
184	2456.10	114.64	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)

Gas Rates			
	Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)
First Gas Rate	0.13	9.00	3.37
Last Gas Rate	0.13	10.25	3.84



# DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc.  
 8100 East 22ND St North#700  
 Wichita Kansas 67278 +3188  
 P.O.Box 783188  
 ATTN: Mike Engelbracht

#1 Copeland 19D  
 19/28S/22W Ford Co.  
 Job Ticket: 16527      DST#: 3  
 Test Start: 2011.05.05 @ 04:51:00

## Tool Information

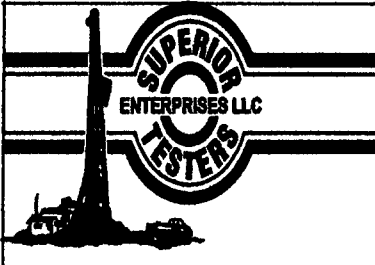
Drill Pipe:	Length: 5131.00 ft	Diameter: 3.80 inches	Volume: 71.97 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 26000.00 lb
			Total Volume: 71.97 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	5138.00 ft			Final 66000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	67.73 ft			
Tool Length:	89.73 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			5121.00	
Hydraulic Tool	5.00			5126.00	
Safety Joint	2.00			5128.00	
Packer	5.00			5133.00	22.00      Bottom Of Top Packer
Packer	5.00			5138.00	
Perforations	5.00			5143.00	
Change Over Sub	0.75			5143.75	
Drill Pipe	31.23			5174.98	
Change Over Sub	0.75			5175.73	
Perforations	25.00			5200.73	
Recorder	1.00	8405	Inside	5201.73	
Recorder	1.00	8400	Outside	5202.73	
Bull Plug	3.00			5205.73	67.73      Bottom Packers & Anchor

**Total Tool Length: 89.73**



# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration Inc.

**#1 Copeland 19D**

8100 East 22ND St North#700  
 Wichita Kansas 67278 +3188  
 P.O.Box 783188

**19/28S/22W Ford Co.**

Job Ticket: 16527

**DST#: 3**

ATTN: Mike Engelbracht

Test Start: 2011.05.05 @ 04:51:00

## 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: 49.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psia

Salinity: 13000.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl

Total Length:

ft

Total Volume:

bbl

Num Fluid Samples: 0

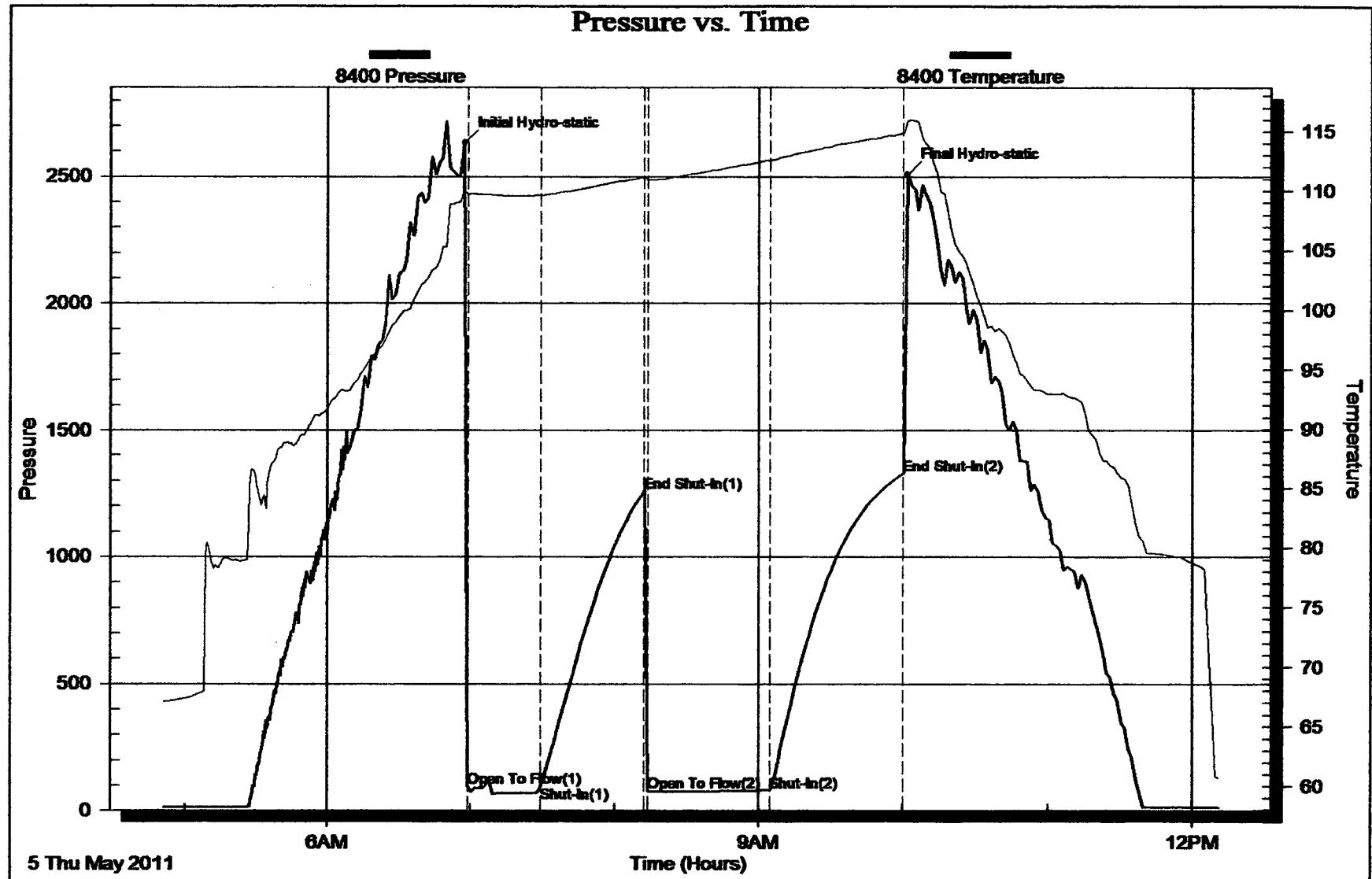
Num Gas Bombs: 0

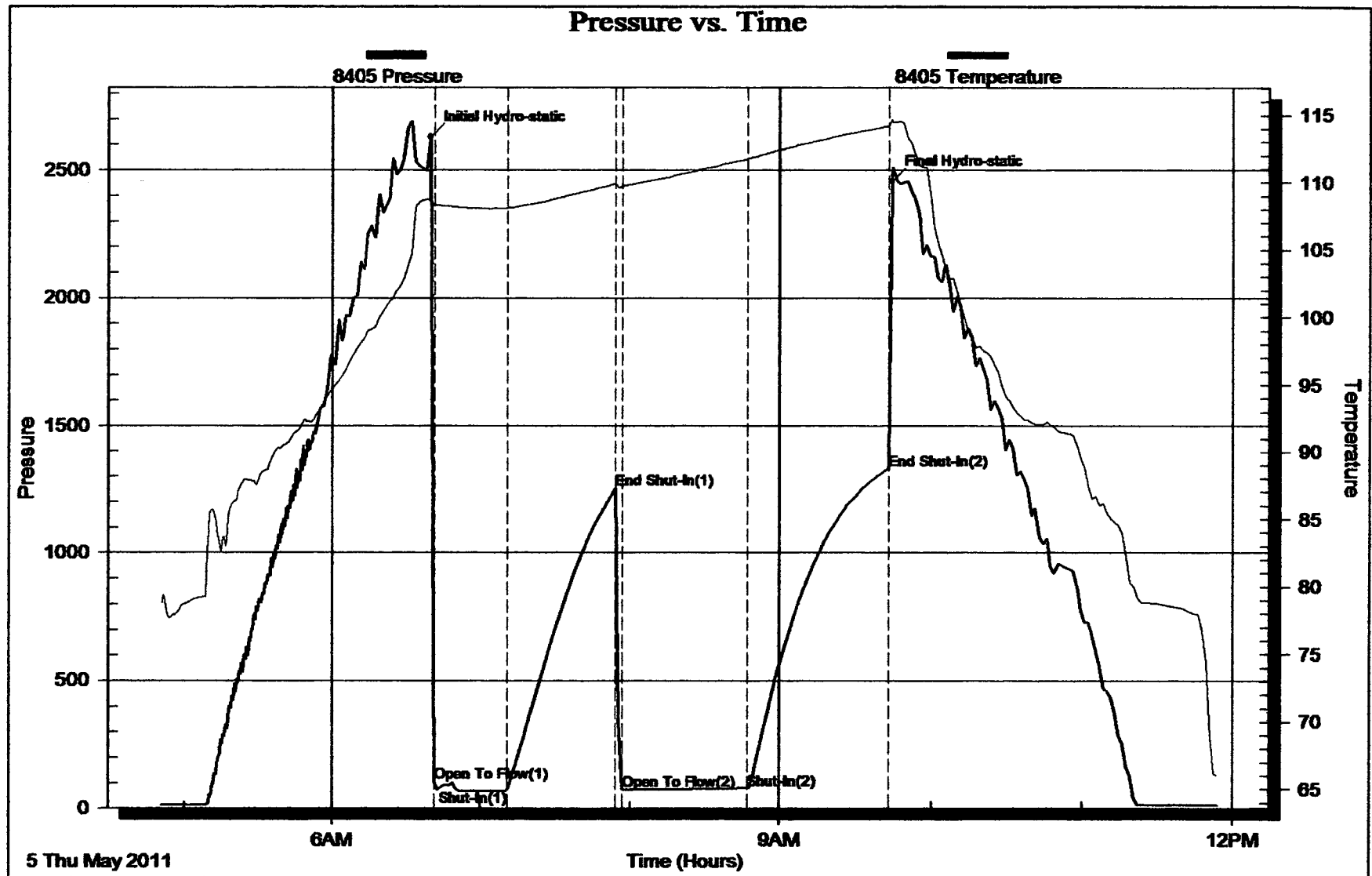
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:









## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc.**

8100 East 22ND St North#700  
Wichita Kansas 67278 +3188  
P.O.Box 783188

ATTN: Mike Engelbracht

**19/28S/22W Ford Co.**

**#1 Copeland 19D**

Start Date: 2011.05.06 @ 08:17:00

End Date: 2011.05.06 @ 15:24:30

Job Ticket #: 16528                      DST #: 4

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

Printed: 2011.05.09 @ 13:51:46

Ritchie Exploration Inc.

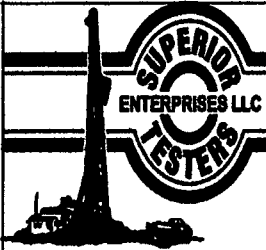
#1 Copeland 19D

19/28S/22W Ford Co.

DST # 4

Mississippi

2011.05.06



# DRILL STEM TEST REPORT

Ritchie Exploration Inc.  
 8100 East 22ND St North#700  
 Wichita Kansas 67278 +3188  
 P.O.Box 783188  
 ATTN: Mike Engelbracht

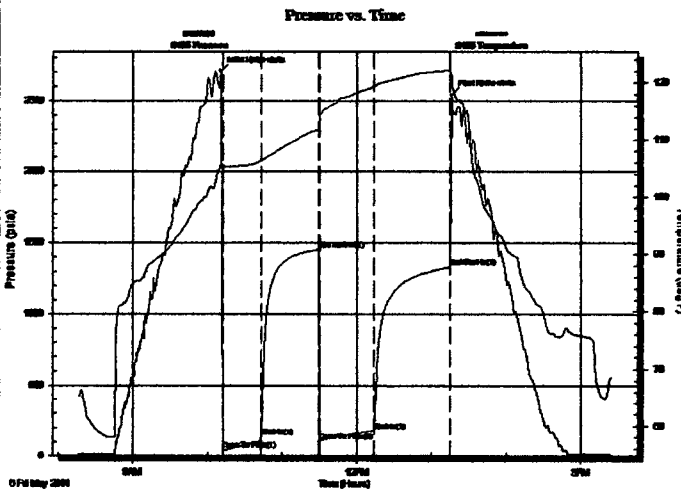
#1 Copeland 19D  
 19/28S/22W Ford Co.  
 Job Ticket: 16528 DST#: 4  
 Test Start: 2011.05.06 @ 08:17:00

## GENERAL INFORMATION:

Formation: **Mississippi**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 10:12:00 Tester: Dylan E Ellis  
 Time Test Ended: 15:24:30 Unit No: 3345/ Dodge City/50  
 Interval: **5207.00 ft (KB) To 5220.00 ft (KB) (TVD)** Reference Elevations: 2482.00 ft (KB)  
 Total Depth: 5220.00 ft (KB) (TVD) 2470.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 12.00 ft

**Serial #: 8405** Inside  
 Press@RunDepth: 181.23 psia @ 5216.00 ft (KB) Capacity: 5000.00 psia  
 Start Date: 2011.05.06 End Date: 2011.05.06 Last Calib.: 2011.05.06  
 Start Time: 08:17:01 End Time: 15:24:30 Time On Btm: 2011.05.06 @ 10:10:30  
 Time Off Btm: 2011.05.06 @ 13:16:00

**TEST COMMENT:** 1ST Opening 30 Minutes good blow/blow blew to bottom of bucket in 19 minutes  
 1ST Shut-in 45 Minutes yes surface blow back  
 2ND Opening 45 Minutes good blow/blow blew bottom of bucket in 30 minutes  
 2ND Shut-in 60 Minutes yes surface blow back



## PRESSURE SUMMARY

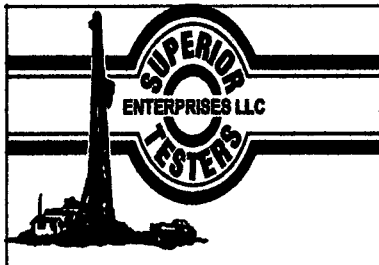
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2708.71	105.85	Initial Hydro-static
2	45.62	105.55	Open To Flow (1)
33	136.58	106.31	Shut-in(1)
79	1450.90	111.97	End Shut-in(1)
80	108.40	114.32	Open To Flow (2)
123	181.23	119.39	Shut-in(2)
184	1330.95	122.23	End Shut-in(2)
186	2545.32	121.00	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Oil cut Mud	0.07
0.00	10% Oil 90% Mud	0.00
62.00	Oil cut Watery Mud	0.87
0.00	Oil 10% 15% Water 75% Mud	0.00
62.00	Slight Oil cut Muddy Water	0.87
0.00	Skim Oil 30% Mud 70% Water	0.00

## Gas Rates

	Choke (Inches)	Pressure (psia)	Gas Rate (Mcf/d)



# DRILL STEM TEST REPORT

Ritchie Exploration Inc.  
 8100 East 22ND St North#700  
 Wichita Kansas 67278 +3188  
 P.O.Box 783188  
 ATTN: Mike Engelbracht

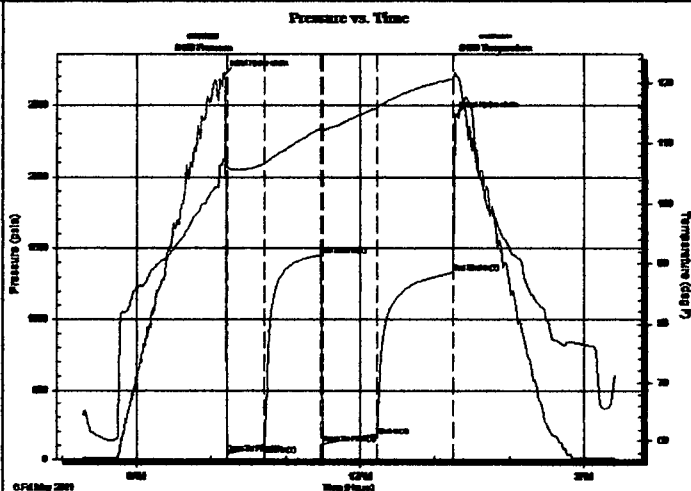
#1 Copeland 19D  
 19/28S/22W Ford Co.  
 Job Ticket: 16528 DST#: 4  
 Test Start: 2011.05.06 @ 08:17:00

## GENERAL INFORMATION:

Formation: **Mississippi**  
 Deviated: **No Whipstock** ft (KB)  
 Time Tool Opened: **10:12:00**  
 Time Test Ended: **15:24:30**  
 Interval: **5207.00 ft (KB) To 5220.00 ft (KB) (TVD)**  
 Total Depth: **5220.00 ft (KB) (TVD)**  
 Hole Diameter: **7.88 inches** Hole Condition: **Fair**  
 Test Type: **Conventional Bottom Hole (Initial)**  
 Tester: **Dylan E Ellis**  
 Unit No: **3345/ Dodge City/50**  
 Reference Elevations: **2482.00 ft (KB)**  
**2470.00 ft (CF)**  
 KB to GR/CF: **12.00 ft**

**Serial #: 8400** Outside  
 Press@RunDepth: **1332.62 psia @ 5217.00 ft (KB)** Capacity: **5000.00 psia**  
 Start Date: **2011.05.06** End Date: **2011.05.06** Last Calib.: **2011.05.06**  
 Start Time: **08:17:10** End Time: **15:25:00** Time On Btrr: **2011.05.06 @ 10:10:30**  
 Time Off Btrr: **2011.05.06 @ 13:16:00**

**TEST COMMENT:** 1ST Opening 30 Minutes good blow /blow blew to bottom of bucket in 19 minutes  
 1ST Shut-in 45 Minutes yes surface blow back  
 2ND Opening 45 Minutes good blow /blow blew bottom of bucket in 30 minutes  
 2ND Shut-in 60 Minutes yes surface blow back



## PRESSURE SUMMARY

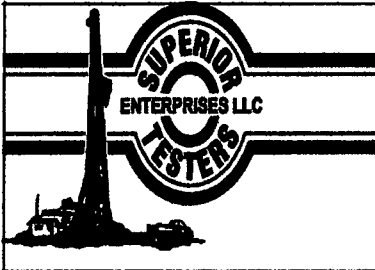
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2713.01	107.51	Initial Hydro-static
2	45.55	106.06	Open To Flow (1)
33	99.73	106.65	Shut-in(1)
78	1450.56	112.42	End Shut-in(1)
79	112.29	111.94	Open To Flow (2)
123	176.86	115.89	Shut-in(2)
185	1332.62	120.72	End Shut-in(2)
186	2424.21	121.76	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Oil cut Mud	0.07
0.00	10% Oil 90% Mud	0.00
62.00	Oil cut Watery Mud	0.87
0.00	Oil 10% 15% Water 75% Mud	0.00
62.00	Slight Oil cut Muddy Water	0.87
0.00	Skim Oil 30% Mud 70% Water	0.00

## Gas Rates

	Choke (Inches)	Pressure (psia)	Gas Rate (Mcf/d)



# DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc.  
 8100 East 22ND St North#700  
 Wichita Kansas 67278 +3188  
 P.O.Box 783188  
 ATTN: Mike Engelbracht

**#1 Copeland 19D**  
**19/28S/22W Ford Co.**  
 Job Ticket: 16528      DST#: 4  
 Test Start: 2011.05.06 @ 08:17:00

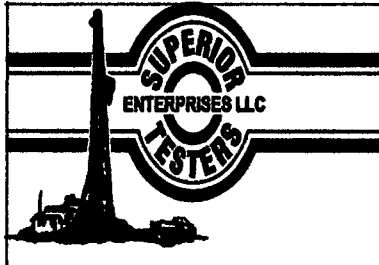
### Tool Information

Drill Pipe:	Length: 5203.00 ft	Diameter: 3.80 inches	Volume: 72.98 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: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 21000.00 lb
			<u>Total Volume: 72.98 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 66000.00 lb
Depth to Top Packer:	5207.00 ft			Final 69000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	13.00 ft			
Tool Length:	35.00 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			5190.00	
Hydrolic Tool	5.00			5195.00	
Safety Joint	2.00			5197.00	
Packer	5.00			5202.00	22.00      Bottom Of Top Packer
Packer	5.00			5207.00	
Perforations	8.00			5215.00	
Recorder	1.00	8405	Inside	5216.00	
Recorder	1.00	8400	Outside	5217.00	
Bull Plug	3.00			5220.00	13.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>35.00</b>				



# DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc.  
 8100 East 22ND St North#700  
 Wichita Kansas 67278 +3188  
 P.O.Box 783188  
 ATTN: Mike Engelbracht

#1 Copeland 19D  
 19/28S/22W Ford Co.  
 Job Ticket: 16528 DST#: 4  
 Test Start: 2011.05.06 @ 08:17:00

## 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: 70.00 sec/qt	Cushion Volume: bbl		
Water Loss: 12.39 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psia		
Salinity: 9000.00 ppm			
Filter Cake: 1.00 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Oil cut Mud	0.070
0.00	10% Oil 90% Mud	0.000
62.00	Oil cut Watery Mud	0.870
0.00	Oil 10% 15% Water 75% Mud	0.000
62.00	Slight Oil cut Muddy Water	0.870
0.00	Skim Oil 30% Mud 70% Water	0.000
126.00	Muddy Water// 20% Mud 80% Water	1.767
63.00	Lightly Oil spotted Muddy Water	0.884
0.00	Skim Oil 35% Mud 65% Water	0.000
0.00	Chlorides were 100,000.0	0.000
0.00	Resistivity was 0.09 @ 68 degrees	0.000

Total Length: 318.00 ft      Total Volume: 4.461 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

