

Confidentiality Requested:

Yes No

**KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION**

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

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

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

Gas DH EOR

OG GSW

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 EOR Conv. to SWD

Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ 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: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

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.

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops 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.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input 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

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				

1. Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
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-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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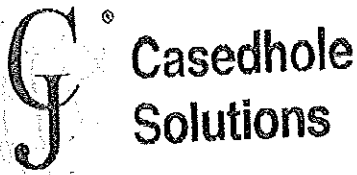
Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Ritchie Exploration, Inc.
Well Name	Wing Trust 23D 1
Doc ID	1306614

Tops

Name	Top	Datum
Anhydrite	2522	+736
B/Anhydrite	2541	+717
Stotler	3585	-327
Heebner	3956	-698
Toronto	3970	-712
Lansing	3992	-734
Muncie Shale	4178	-920
Stark Shale	4279	-1021
Hush	4321	-1063
Marmaton	4398	-1140
Altamont	4409	-1151
Pawnee	4490	-1232
Myrick	4528	-1270
Fort Scott	4546	-1288
Cherokee	4573	-1315
Johnson	4655	-1397
Morrow Shale	4707	-1449
Mississippian	4782	-1524



Please Remit To:
 P.O. Box 267
 Weatherford, OK 73096
 Phone: (580) 772-3100
 Fax: (580) 772-3105

FIELD TICKET No.

30996

DELIVERED FROM _____

DATE 4-4-16

www.casedhole-solutions.com

INVOICE NO.	P.O. NO.	AFE NO.
CUSTOMER NO.	LEASE <i>Wing Trust 230 #1</i>	WELL NO.
CUSTOMER <i>Ritchie Exploration</i>	FIELD	STATE <i>KS</i> COUNTY <i>Logan</i>
ADDRESS	LOCATION <i>Sec 23 - Twp 15s - Rsc 36w</i>	
CITY	CASING SIZE & WT. <i>5 1/2</i>	TBG. SIZE
STATE	ZIP	TYPE OF JOB <i>Perf</i>
ORDERED BY	TITLE	SERVICE SUPV.

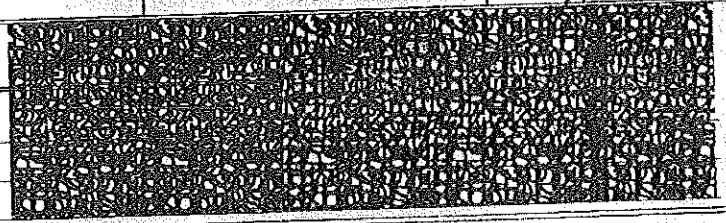
PART NO.	DESCRIPTION	REV. CODE	QTY.	UNIT PRICE	AMOUNT
40-70-210-1000	Setup				500
40-75-805-0065	3/8 Slick Gun Deep shots		40		1450
40-75-805-0065	3/8 Slick Gun Deep shots		80		
40-75-805-0065	3/8 Slick Gun Deep shots		80	33.1 @ 30	10,020
40-75-805-0065	3/8 Slick Gun Deep shots		64		
40-75-805-0065	3/8 Slick Gun Deep shots		80		
	<i>Perf 5212-22</i>				
	<i>5189-5209</i>				
	<i>5168-88</i>				
	<i>5150-66</i>				
	<i>5126-46</i>				

CALLED OUT _____ Time _____ Date	ON LOCATION _____ Time _____ Date	COMPLETED _____ Time _____ Date	TOTAL SERVICE & MATERIALS DISCOUNT TAX TOTAL CHARGES	11,970 4788 7182
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*ACCIDENT REPORT MUST BE ATTACHED WHEN NOT SIGNED

WITH MY INITIALS, I CONFIRM THAT THE TIME SHOWN IN THE "HOURS" COLUMN, ACCURATELY REFLECTS MY COMPENSABLE TIME.

Employee Name (Print)	Hours	Initials
<i>Jeremy Seib</i>	7.75	
<i>Paul Brangardt</i>	7.75	



CUSTOMER AGREES to pay Nabors Completion & Production Services Co. (the "Company") on a net 30 day basis from date of invoice. If Customer disputes any item invoiced, Customer shall, within 20 days after receipt of invoice, notify the Company of the item(s) disputed, specifying the reason(s) therefor; payment of the disputed item(s) may be withheld until settlement of dispute, but payment of undisputed portion of invoice shall be made without delay. All payments shall be made at the address shown on the reverse side of this document. In the absence of a separate written contract, CUSTOMER REPRESENTATIVE REPRESENTS AND WARRANTS THAT HE/SHE IS AUTHORIZED TO ENTER INTO THIS AGREEMENT ON BEHALF OF CUSTOMER AND ACCEPTS ALL TERMS AND CONDITIONS AS PRINTED ON THE REVERSE SIDE OF THIS DOCUMENT (WHICH INCLUDES INDEMNITY LANGUAGE THAT ALLOCATES RISKS RELATED TO THE ABOVE DESCRIBED SERVICES). Pricing and extensions, if shown above, are subject to verification and correction at time of invoicing.

[Signature]
 NABORS COMPLETION & PRODUCTION SERVICES CO.

[Signature]
 CUSTOMER REPRESENTATIVE
 Gary Rowe

White - Main Canary - Customer Pink - Field



CONSOLIDATED
Oil Well Services, LLC

5437
5343

TICKET NUMBER 49659
LOCATION Oakley Ks
FOREMAN Jerry V
Leah

Invoice # 807214

PO Box 884, Chanute, KS 66720
620-431-9210 or 800-467-8676

FIELD TICKET & TREATMENT REPORT
CEMENT

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
3-7-16	7173	Wing Trust 23 D #1	23	15	36w	Logan
CUSTOMER		Leak: N to Dukota 3E S&E into				
MAILING ADDRESS		TRUCK #		DRIVER		TRUCK #
CITY		STATE		ZIP CODE		DRIVER
		731 -		Cory D		
		028-7129		Rob S		
		691				
		714				

JOB TYPE Port Collar HOLE SIZE _____ HOLE DEPTH _____ CASING SIZE & WEIGHT 5 1/2 15.5
 CASING DEPTH _____ DRILL PIPE _____ TUBING _____ OTHER PC @ 2488
 SLURRY WEIGHT 12.5 SLURRY VOL 1.89 WATER gal/sk _____ CEMENT LEFT In CASING _____
 DISPLACEMENT 14 bbl DISPLACEMENT PSI _____ MIX PSI _____ RATE _____

REMARKS: Start meeting & rig up on Altam well test plug @ 1200 #
take injection rate 4 1/2 bbl/ph @ 400# mix 350 sks to 40 8% log # 1/2 1/2
seal washup & displace with 14 bbl fresh water shut down close tool press to 1200#
& 50# 10 min release & tool held run 5 jts & reverse clean with 40 bbl

Thank you
Jerry & crew

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
CE 0451	1	PUMP CHARGE	1900.00	1900.00
CE 0002	45	MILEAGE	7.12	321.25
CE 0710	15.05	ton mileage delivery	17.5	1185.19
CC 5830	350 sks	Lite blend VII	10.50	6125.00
CC 6075	88 #	flo seal	2.00	176.00
CC 6080	500 #	Cotton seed hulls	50	250.00
			subtotal	9957.94
			-35%	3485.28
			subtotal	6472.66
			SALES TAX	340.65
			ESTIMATED TOTAL	6813.31

Ravin 3737

AUTHORIZATION [Signature] TITLE _____ DATE _____

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form



CONSOLIDATED
Oil Well Services, LLC

PO Box 884, Chanute, KS 66720
620-431-9210 or 800-467-8676

5422
5328
INVOICE # 801197

FIELD TICKET & TREATMENT REPORT
CEMENT

TICKET NUMBER 49658
LOCATION Okley, Ks
FOREMAN Jerry V. Welt

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
3-1-16	7173	Wing Trust 23D#1	23	15	36w	Logan
CUSTOMER			TRUCK # DRIVER TRUCK # DRIVER			
MAILING ADDRESS			TRUCK # DRIVER TRUCK # DRIVER			
CITY STATE ZIP CODE			TRUCK # DRIVER TRUCK # DRIVER			

Ritchie Exp
Leoti W to Dakota 3E 5E into
753 - Cory D
526 - Rob S
74
67

JOB TYPE long string HOLE SIZE 7 7/8 HOLE DEPTH 5260 CASING SIZE & WEIGHT 5 1/2 15.5
CASING DEPTH 5297 DRILL PIPE _____ TUBING P.C. serial # 150693 OTHER @@ 2488
SLURRY WEIGHT 14.2 SLURRY VOL. 1.42 WATER gal/sk _____ CEMENT LEFT in CASING 21'
DISPLACEMENT 12 1/2 DISPLACEMENT PSI _____ MIX PSI _____ RATE _____

REMARKS: Safety meeting & rig upon 12W 2 run float equip. Turbos on 1, 12, 22, 25, 30, 66, 83 baskets on 20, 66, 83, 102, 108 Port Collar top of 67 @ 2488 run cassy to bottom pump ball thru circulate 45 min pump 5 bbl H₂O, mud flush, 5 H₂O plug Rot hole - mix 2.75 sks OWC w/ #1 seal pr & shut down release plug clean pump & liner & displace with 12.5 bbl fresh water plug loaded @ 2000# psi w/ 1500# lift released back - float held press to 500# & shut in

*Thank you
Jerry & Crew*

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
CE0454	1	PUMP CHARGE	3900 ⁰⁰	3900 ⁰⁰
CE0002	45	MILEAGE	7 ¹⁵	321 ²⁵
CE0710	14.34	ton mileage delivery	175	1129 ²⁸
7939 CC5862	305 sks	OWC	26 ⁰⁰	7930 ⁰⁰
CC6077	1525 #	Kol Seal	50	762 ⁵⁰
CC6000	76 #	CDI-26	785	596 ⁶⁰
CC6155	43	CAF-38	10 ⁵⁰	438 ⁶⁰
CC6125	500 gal	mud flush	65	325 ⁰⁰
CP8485	1	5 1/2 AF4 Float stop	585 ⁰⁰	585 ⁰⁰
CP8254	1	5 1/2 latch down assy	400 ⁰⁰	400 ⁰⁰
CP8576	8	5 1/2 turbalizer crs	110 ⁰⁰	880 ⁰⁰
CP8629	5	5 1/2 baskets	385 ⁰⁰	1925 ⁰⁰
CP876	1	5 1/2 Port Collar	2850 ⁰⁰	2850 ⁰⁰
			Sub total	22043 ²⁵
			- 35%	7715 ³⁰
			Sub total	14328 ⁴⁰
			SALES TAX	868.02
			ESTIMATED TOTAL	15196 ⁴⁵

Revin 3737

AUTHORIZATION JLAAA TITLE _____ DATE _____

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form.



DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 East 22nd Street North Suite 700
P.O.Box 783188
Wichita, Kansas 67278-3188

ATTN: John Goldsmith

23-1s-36w Logan

Start Date: 2016.02.25 @ 05:05:00

End Date: 2016.02.25 @ 11:30:00

Job Ticket #: 01214 DST #: 1

Eagle Testers
1309 Patton Road Great Bend, Kansas 67530
620-791-7394

Printed: 2016.02.26 @ 00:17:45



DRILL STEM TEST REPORT

Ritchie Exploration Inc

23-1s-36w Logan

8100 East 22nd Street North Suite 700 P.O.Box
783188
Wichita, Kansas 67278-3188
ATTN: John Goldsmith

Job Ticket: 01214

DST#: 1

Test Start: 2016.02.25 @ 05:05:00

GENERAL INFORMATION:

Formation: **Kansas City H-I-J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:00:00

Time Test Ended: 11:30:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Gene Budig

Unit No: 1

Interval: 4174.00 ft (KB) To 4242.00 ft (KB) (TVD)

Reference Elevations: 3258.00 ft (KB)

Total Depth: 4242.00 ft (KB) (TVD)

3253.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 9139

Outside

Press@RunDepth: 1225.29 psia @ 4236.72 ft (KB)

Capacity: 5000.00 psia

Start Date: 2016.02.25

End Date: 2016.02.25

Last Calib.: 2016.02.26

Start Time: 17:05:00

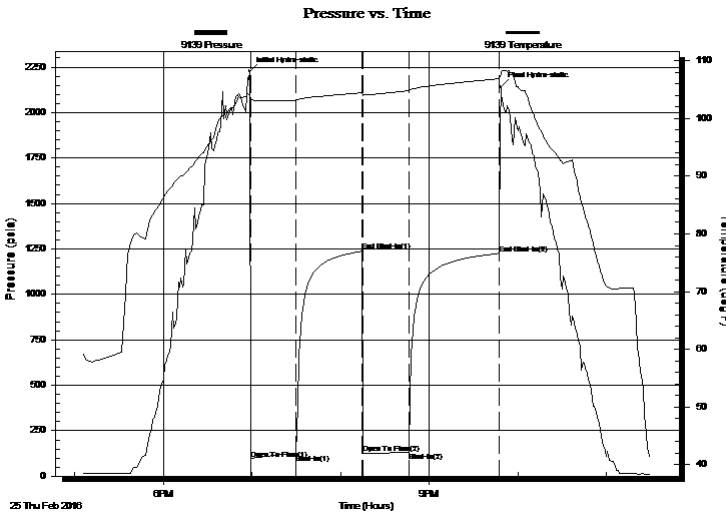
End Time: 23:30:30

Time On Btm: 2016.02.25 @ 18:58:30

Time Off Btm: 2016.02.25 @ 21:48:30

TEST COMMENT: 1st Opening 30 MINUTES-Weak building blow built to 2 inches into the water
1st Shut-IN 45 Minutes-No blow back
2nd Opening 30 Minutes-Weak building blow built to 2 inches into the water
2nd Shut-IN 60 Minutes- No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2227.08	104.19	Initial Hydro-static
1	95.38	103.45	Open To Flow (1)
32	121.42	103.15	Shut-In(1)
76	1237.29	104.47	End Shut-In(1)
77	123.33	104.01	Open To Flow (2)
108	132.28	104.83	Shut-In(2)
169	1225.29	106.89	End Shut-In(2)
170	2141.13	107.68	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
125.00	Drilling Mud	0.69

Gas Rates

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



DRILL STEM TEST REPORT

Ritchie Exploration Inc

23-1s-36w Logan

8100 East 22nd Street North Suite 700 P.O.Box
783188
Wichita, Kansas 67278-3188
ATTN: John Goldsmith

Job Ticket: 01214

DST#: 1

Test Start: 2016.02.25 @ 05:05:00

GENERAL INFORMATION:

Formation: **Kansas City H-I-J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:00:00

Time Test Ended: 11:30:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Gene Budig

Unit No: 1

Interval: 4174.00 ft (KB) To 4242.00 ft (KB) (TVD)

Reference Elevations: 3258.00 ft (KB)

Total Depth: 4242.00 ft (KB) (TVD)

3253.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 9119

Inside

Press@RunDepth: 1225.91 psia @ 4236.72 ft (KB)

Capacity: 5000.00 psia

Start Date: 2016.02.25

End Date:

2016.02.25

Last Calib.:

2016.02.26

Start Time: 17:05:00

End Time:

23:30:30

Time On Btm:

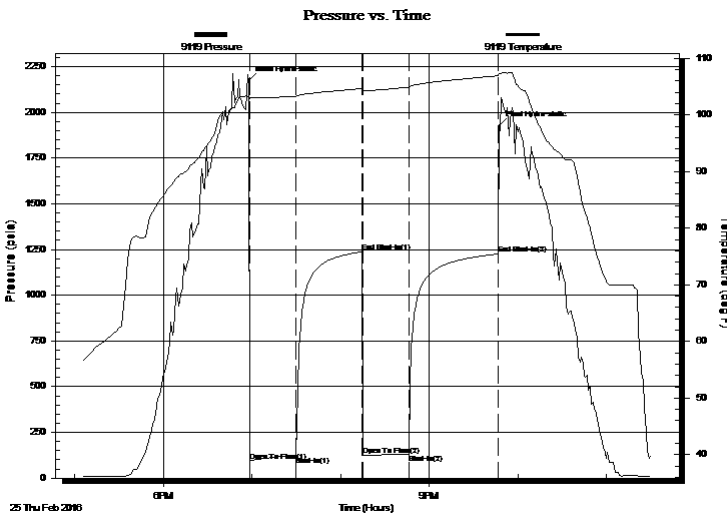
2016.02.25 @ 18:58:00

Time Off Btm:

2016.02.25 @ 21:47:30

TEST COMMENT: 1st Opening 30 MINUTES-Weak building blow built to 2 inches into the water
1st Shut-IN 45 Minutes-No blow back
2nd Opening 30 Minutes-Weak building blow built to 2 inches into the water
2nd Shut-IN 60 Minutes- No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2173.32	103.46	Initial Hydro-static
1	93.40	102.89	Open To Flow (1)
32	121.12	103.25	Shut-In(1)
77	1236.55	104.66	End Shut-In(1)
77	123.91	104.37	Open To Flow (2)
108	132.70	104.91	Shut-In(2)
169	1225.91	106.92	End Shut-In(2)
170	1923.92	107.32	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
125.00	Drilling Mud	0.69

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc

23-1s-36w Logan

8100 East 22nd Street North Suite 700 P.O.Box
783188
Wichita, Kansas 67278-3188
ATTN: John Goldsmith

Job Ticket: 01214

DST#: 1

Test Start: 2016.02.25 @ 05:05:00

Tool Information

Drill Pipe:	Length: 4045.00 ft	Diameter: 3.80 inches	Volume: 56.74 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: 117.00 ft	Diameter: 2.25 inches	Volume: 0.58 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 57.32 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4174.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	67.72 ft			
Tool Length:	96.72 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			4150.00	
Hydraulic tool	5.00			4155.00	
Jars	7.00			4162.00	
Safety Joint	2.00		Fluid	4164.00	
Top Packer	5.00			4169.00	
Packer	5.00			4174.00	29.00 Bottom Of Top Packer
Anchor	5.00			4179.00	
Change Over Sub	0.75			4179.75	
Drill Pipe	31.22			4210.97	
Change Over Sub	0.75			4211.72	
Anchor	25.00			4236.72	
Recorder	0.00	9119	Inside	4236.72	
Recorder	0.00	9139	Outside	4236.72	
Bullnose	5.00			4241.72	67.72 Anchor Tool

Total Tool Length: 96.72



DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc

23-1s-36w Logan

8100 East 22nd Street North Suite 700 P.O.Box
783188
Wichita, Kansas 67278-3188
ATTN: John Goldsmith

Job Ticket: 01214

DST#: 1

Test Start: 2016.02.25 @ 05:05:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 59.00 sec/qt
Water Loss: 8.00 in³
Resistivity: ohm.m
Salinity: 6000.00 ppm
Filter Cake: 1.00 inches

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

Oil API: deg API
Water Salinity: ppm

Recovery Information

Recovery Table

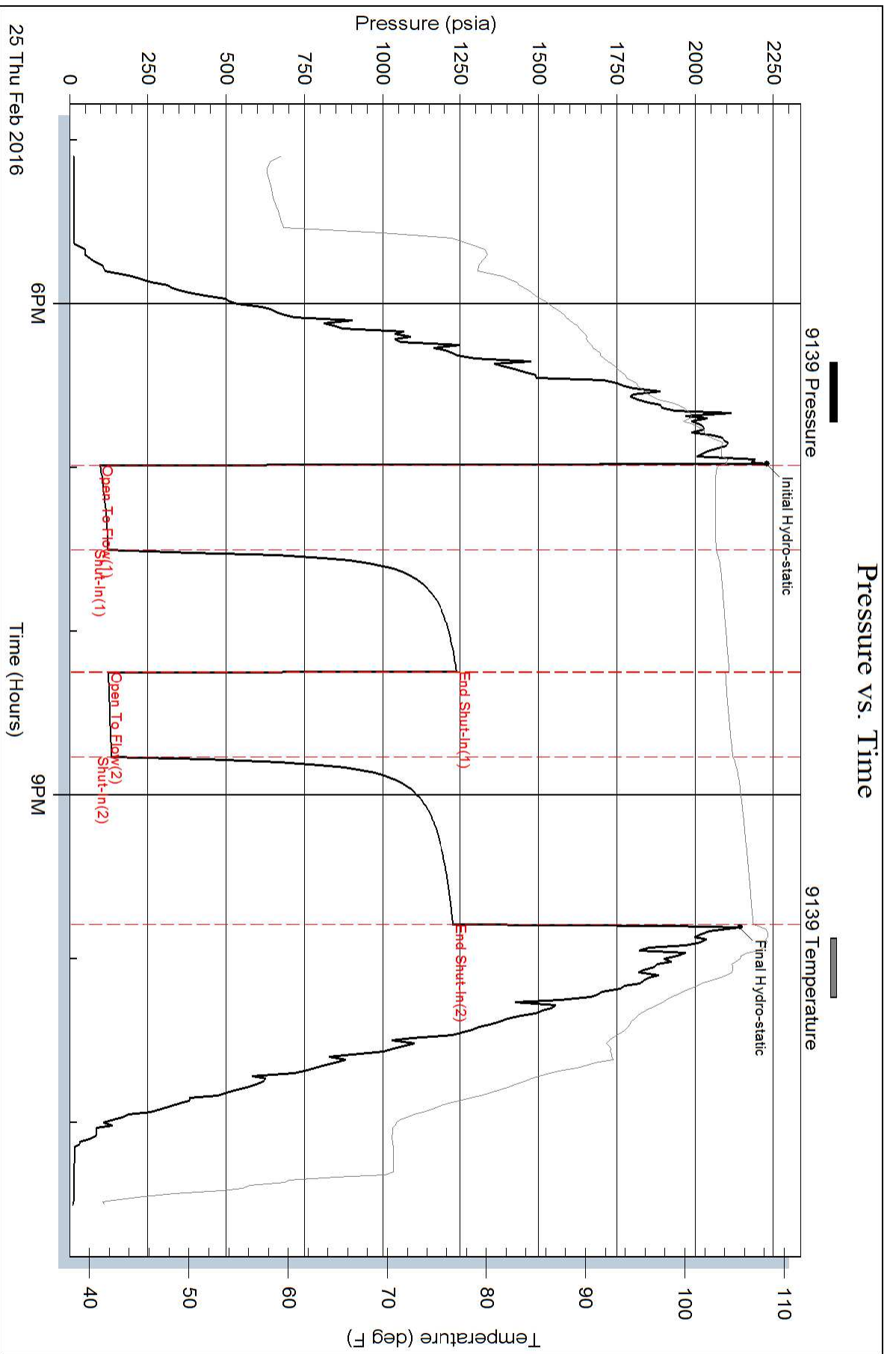
Length ft	Description	Volume bbl
125.00	Drilling Mud	0.688

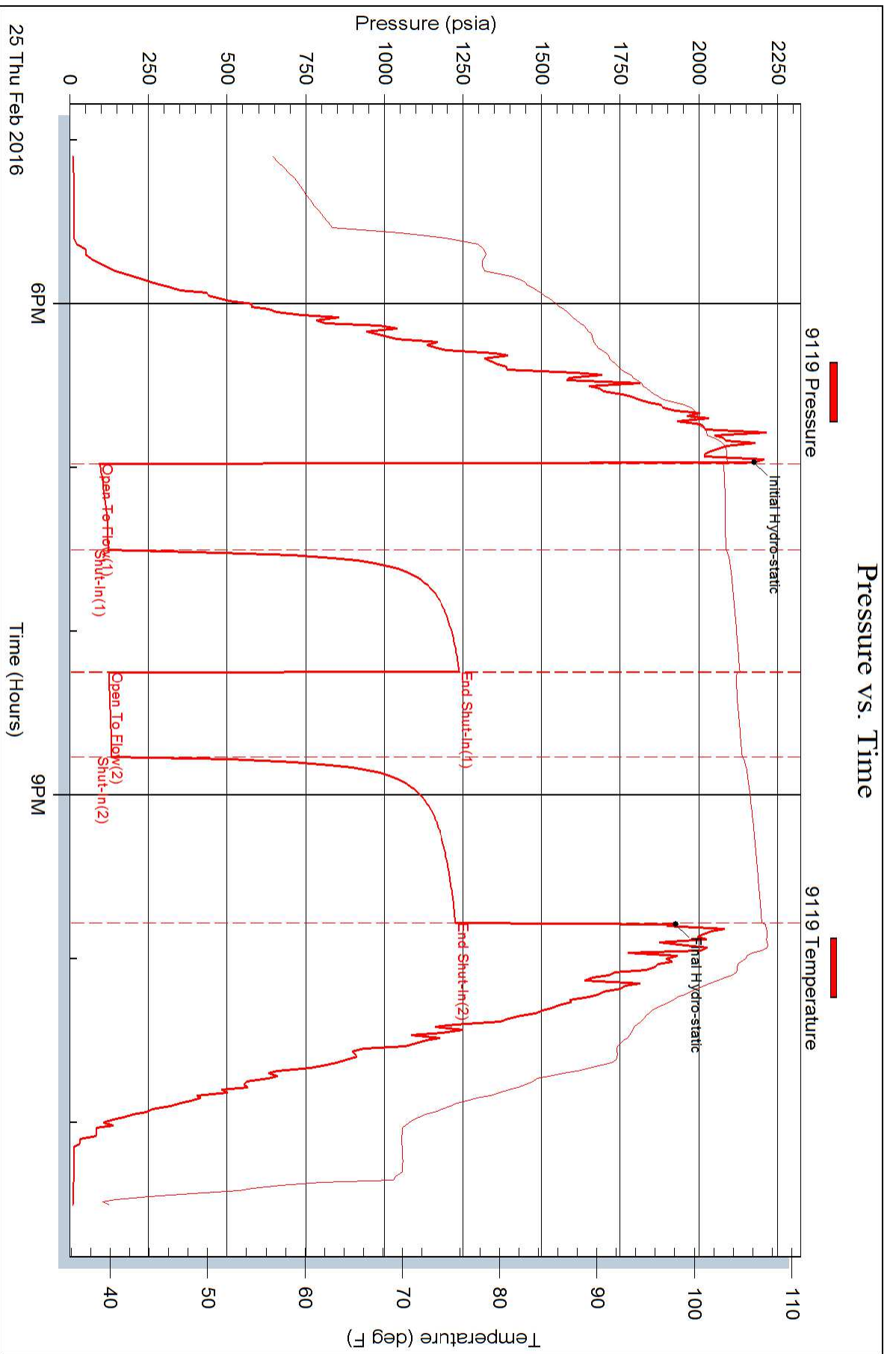
Total Length: 125.00 ft Total Volume: 0.688 bbl

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 Street North Suite 700
P.O.Box 783188
Wichita, Kansas 67278-3188

ATTN: John Goldsmith

23-15s-36w Logan

Start Date: 2016.02.26 @ 16:52:00

End Date: 2016.02.26 @ 11:31:00

Job Ticket #: 01215 DST #: 2

Eagle Testers
1309 Patton Road Great Bend, Kansas 67530
620-791-7394

Printed: 2016.02.26 @ 23:51:47



DRILL STEM TEST REPORT

Ritchie Exploration Inc

23-15s-36w Logan

8100 East 22nd Street North Suite 700 P.O.Box
783188
Wichita, Kansas 67278-3188
ATTN: John Goldsmith

Job Ticket: 01215

DST#: 2

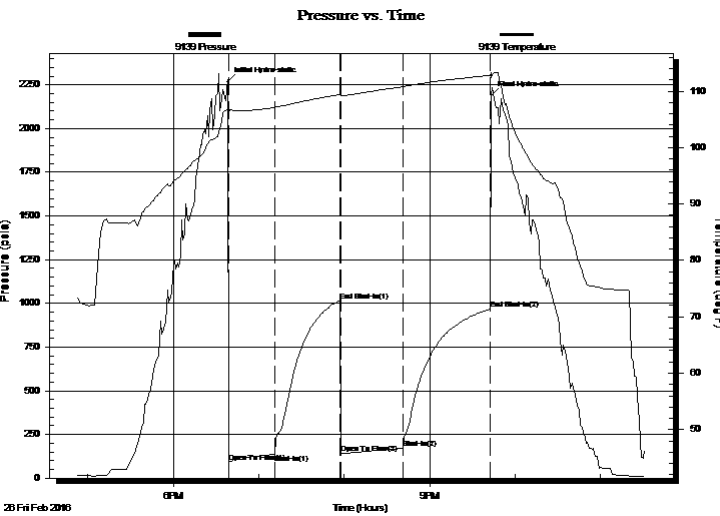
Test Start: 2016.02.26 @ 16:52:00

GENERAL INFORMATION:

Formation: **Altamont**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 19:41:00
 Time Test Ended: 11:31:00
 Interval: **4371.00 ft (KB) To 4435.00 ft (KB) (TVD)**
 Total Depth: 4435.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Gene Budig
 Unit No: 1
 Reference Elevations: 3258.00 ft (KB)
 3253.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 9139 Outside
 Press@RunDepth: 966.38 psia @ 4429.78 ft (KB) Capacity: 5000.00 psia
 Start Date: 2016.02.26 End Date: 2016.02.26 Last Calib.: 2016.02.26
 Start Time: 16:52:00 End Time: 23:31:30 Time On Btm: 2016.02.26 @ 18:38:30
 Time Off Btm: 2016.02.26 @ 21:43:30

TEST COMMENT: 1st Opening 30 Minutes Weak building blow built to 9 1/2 inches into the water
 1st Shut-In 45 Minutes-No blow back
 2nd Opening 45 Minutes-Weak building blow built to 10 1/2 inches into the water
 2nd Shut-In 60 Minutes-Very slight blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2266.29	107.24	Initial Hydro-static
1	89.32	106.07	Open To Flow (1)
33	136.48	107.13	Shut-In(1)
79	1014.77	109.40	End Shut-In(1)
79	141.46	109.17	Open To Flow (2)
123	170.71	110.79	Shut-In(2)
184	966.38	112.79	End Shut-In(2)
185	2190.78	112.48	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	MUDDY OIL 55 OIL 45 MUD	0.30
60.00	MUDDY OIL 30 OIL 79 MUD	0.32
60.00	MUDDY OIL 45 OIL 55 MUD	0.84
90.00	MUDDY OIL 60 OIL 40 MUD	1.26
0.00	GAS IN THE PIPE	0.00

Gas Rates

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



DRILL STEM TEST REPORT

Ritchie Exploration Inc

23-15s-36w Logan

8100 East 22nd Street North Suite 700 P.O.Box
783188
Wichita, Kansas 67278-3188
ATTN: John Goldsmith

Job Ticket: 01215

DST#: 2

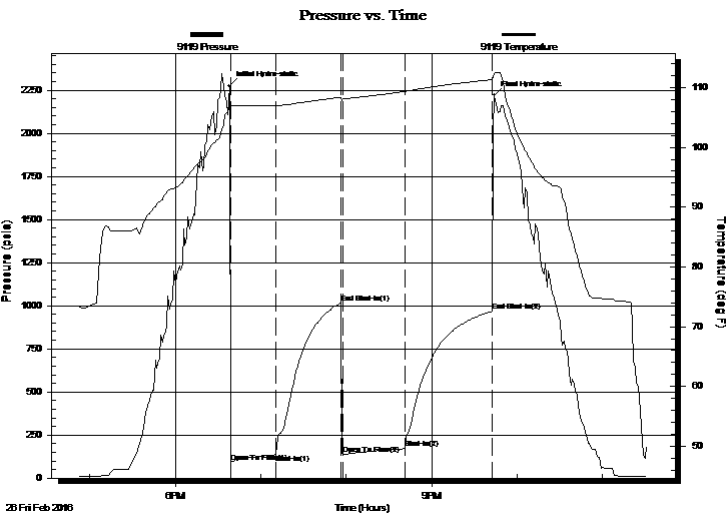
Test Start: 2016.02.26 @ 16:52:00

GENERAL INFORMATION:

Formation: **Altamont**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 19:41:00
 Tester: Gene Budig
 Time Test Ended: 11:31:00
 Unit No: 1
 Interval: **4371.00 ft (KB) To 4435.00 ft (KB) (TVD)**
 Reference Elevations: 3258.00 ft (KB)
 Total Depth: 4435.00 ft (KB) (TVD)
 3253.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 KB to GR/CF: 5.00 ft

Serial #: 9119 Inside
 Press@RunDepth: 967.47 psia @ 4429.78 ft (KB) Capacity: 5000.00 psia
 Start Date: 2016.02.26 End Date: 2016.02.26 Last Calib.: 2016.02.26
 Start Time: 16:52:00 End Time: 23:31:30 Time On Btm: 2016.02.26 @ 18:38:00
 Time Off Btm: 2016.02.26 @ 21:44:00

TEST COMMENT: 1st Opening 30 Minutes Weak building blow built to 9 1/2 inches into the water
 1st Shut-In 45 Minutes-No blow back
 2nd Opening 45 Minutes-Weak building blow built to 10 1/2 inches into the water
 2nd Shut-In 60 Minutes-Very slight blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2276.46	107.18	Initial Hydro-static
1	90.27	106.81	Open To Flow (1)
33	136.51	106.94	Shut-In(1)
79	1017.72	108.37	End Shut-In(1)
80	140.72	108.16	Open To Flow (2)
124	171.14	109.33	Shut-In(2)
185	967.47	111.32	End Shut-In(2)
186	2221.11	112.33	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	MUDDY OIL 55 OIL 45 MUD	0.30
60.00	MUDDY OIL 30 OIL 79 MUD	0.32
60.00	MUDDY OIL 45 OIL 55 MUD	0.84
90.00	MUDDY OIL 60 OIL 40 MUD	1.26
0.00	GAS IN THE PIPE	0.00

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc

23-15s-36w Logan

8100 East 22nd Street North Suite 700 P.O.Box
783188
Wichita, Kansas 67278-3188
ATTN: John Goldsmith

Job Ticket: 01215

DST#: 2

Test Start: 2016.02.26 @ 16:52:00

Tool Information

Drill Pipe:	Length: 4233.00 ft	Diameter: 3.80 inches	Volume: 59.38 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: 117.00 ft	Diameter: 2.25 inches	Volume: 0.58 bbl	Weight to Pull Loose: 72000.00 lb
			Total Volume: 59.96 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4371.00 ft			Final 66000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	63.78 ft			
Tool Length:	92.78 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			4347.00	
Hydraulic tool	5.00			4352.00	
Jars	7.00			4359.00	
Safety Joint	2.00		Fluid	4361.00	
Top Packer	5.00			4366.00	
Packer	5.00			4371.00	29.00 Bottom Of Top Packer
Anchor	5.00			4376.00	
Change Over Sub	0.75			4376.75	
Drill Pipe	31.28			4408.03	
Change Over Sub	0.75			4408.78	
Anchor	21.00			4429.78	
Recorder	0.00	9119	Inside	4429.78	
Recorder	0.00	9139	Outside	4429.78	
Bullnose	5.00			4434.78	63.78 Anchor Tool

Total Tool Length: 92.78



DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc

23-15s-36w Logan

8100 East 22nd Street North Suite 700 P.O.Box
783188
Wichita, Kansas 67278-3188
ATTN: John Goldsmith

Job Ticket: 01215

DST#: 2

Test Start: 2016.02.26 @ 16:52:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 63.00 sec/qt
Water Loss: 8.79 in³
Resistivity: ohm.m
Salinity: 7700.00 ppm
Filter Cake: 1.00 inches

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

Oil API: deg API
Water Salinity: ppm

Recovery Information

Recovery Table

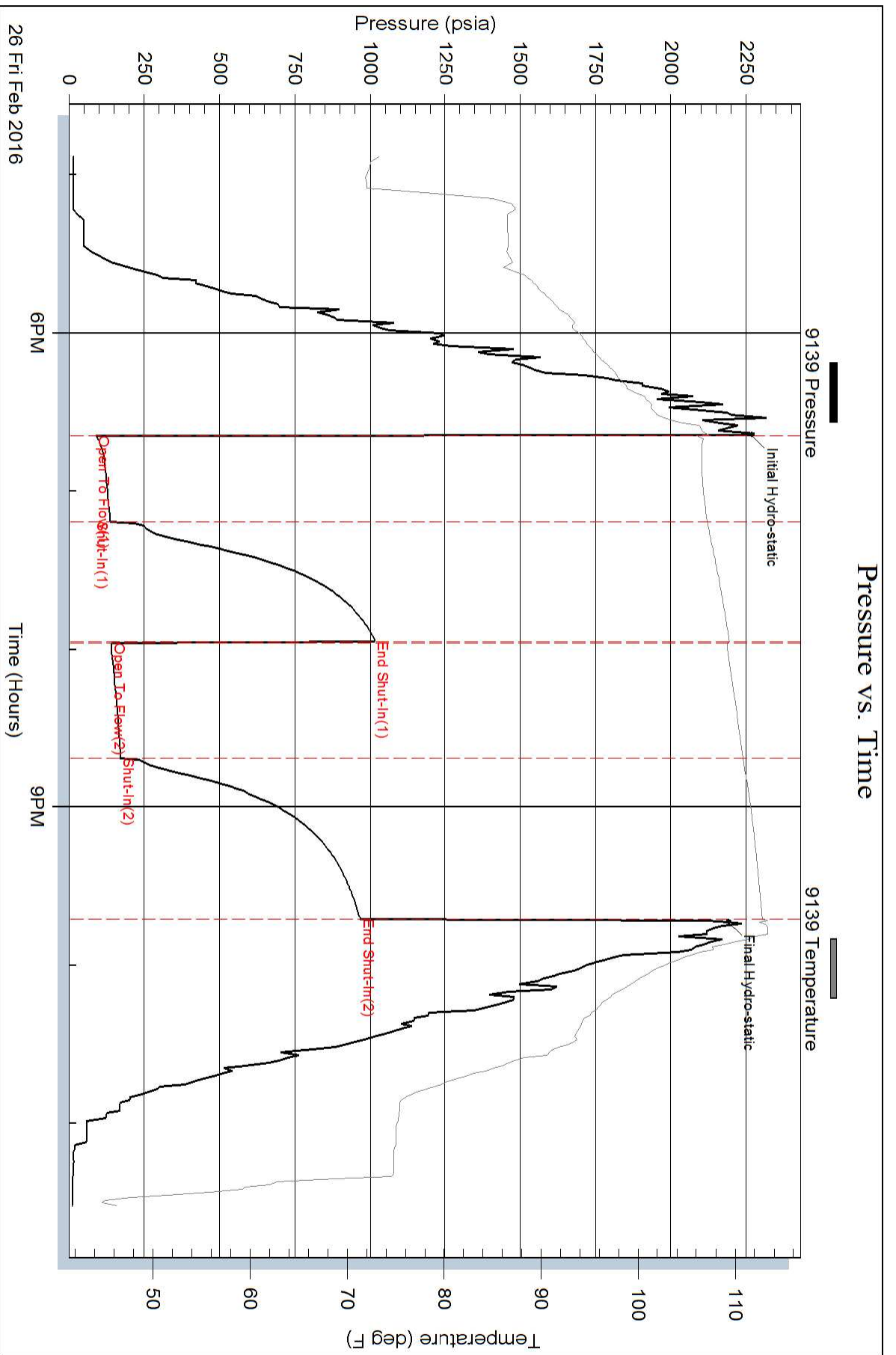
Length ft	Description	Volume bbl
60.00	MUDDY OIL 55 OIL 45 MUD	0.295
60.00	MUDDY OIL 30 OIL 79 MUD	0.322
60.00	MUDDY OIL45 OIL 55 MUD	0.842
90.00	MUDDY OIL 60 OIL 40 MUD	1.262
0.00	GAS IN THE PIPE	0.000

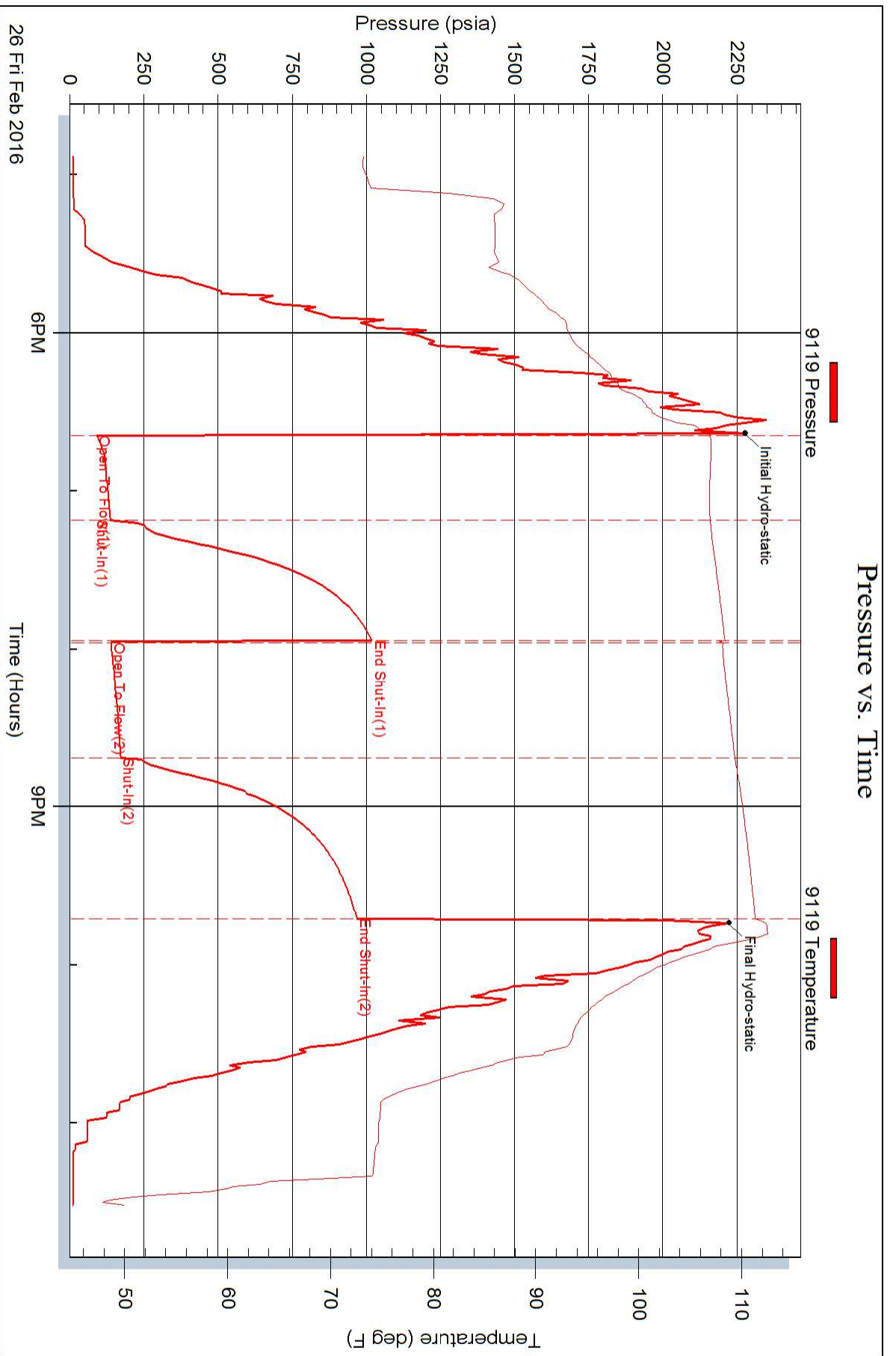
Total Length: 270.00 ft Total Volume: 2.721 bbl

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 Street North Suite 700
P.O.Box 783188
Wichita, Kansas 67278-3188

ATTN: John Goldsmith

23-15s-36w Logan

Start Date: 2016.02.27 @ 09:12:00

End Date: 2016.02.27 @ 14:16:00

Job Ticket #: 01216 DST #: 3

Eagle Testers
1309 Patton Road Great Bend, Kansas 67530
620-791-7394

Printed: 2016.02.27 @ 14:35:00



DRILL STEM TEST REPORT

Ritchie Exploration Inc

23-15s-36w Logan

8100 East 22nd Street North Suite 700 P.O.Box
783188
Wichita, Kansas 67278-3188
ATTN: John Goldsmith

Job Ticket: 01216

DST#: 3

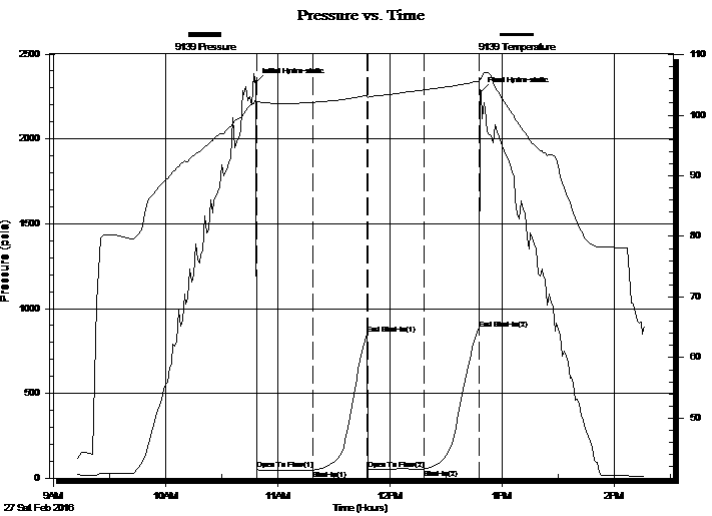
Test Start: 2016.02.27 @ 09:12:00

GENERAL INFORMATION:

Formation: **Altamont B**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:43:00
 Time Test Ended: 14:16:00
 Interval: **4434.00 ft (KB) To 4465.00 ft (KB) (TVD)**
 Total Depth: 4465.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: GeneBudig
 Unit No: 1
 Reference Elevations: 3258.00 ft (KB)
 3253.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 9139 Outside
 Press@RunDepth: 879.65 psia @ 4460.00 ft (KB) Capacity: psia
 Start Date: 2016.02.27 End Date: 2016.02.27 Last Calib.: 2016.02.27
 Start Time: 09:12:00 End Time: 14:16:00 Time On Btm: 2016.02.27 @ 10:48:00
 Time Off Btm: 2016.02.27 @ 12:48:30

TEST COMMENT: 1st Opening 30 Minutes-Very weak surface blow for 13 minutes and died
 1st Shut-In 30 Minujtes- No blow back
 2nd Opening 30 Minutes-Very weak surface blow for 12 minutes and died flushed tool weak blow for 7 minutes
 2nd Shut In 30 Minutes-No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2332.61	102.69	Initial Hydro-static
1	49.63	102.08	Open To Flow (1)
31	45.85	102.11	Shut-In(1)
60	851.82	103.27	End Shut-In(1)
60	52.79	102.84	Open To Flow (2)
90	53.28	104.15	Shut-In(2)
120	879.65	105.58	End Shut-In(2)
121	2278.96	106.10	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OIL CUT MUD 10 OIL 90 MUD	0.05

Gas Rates

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



DRILL STEM TEST REPORT

Ritchie Exploration Inc

23-15s-36w Logan

8100 East 22nd Street North Suite 700 P.O.Box
783188
Wichita, Kansas 67278-3188
ATTN: John Goldsmith

Job Ticket: 01216

DST#: 3

Test Start: 2016.02.27 @ 09:12:00

GENERAL INFORMATION:

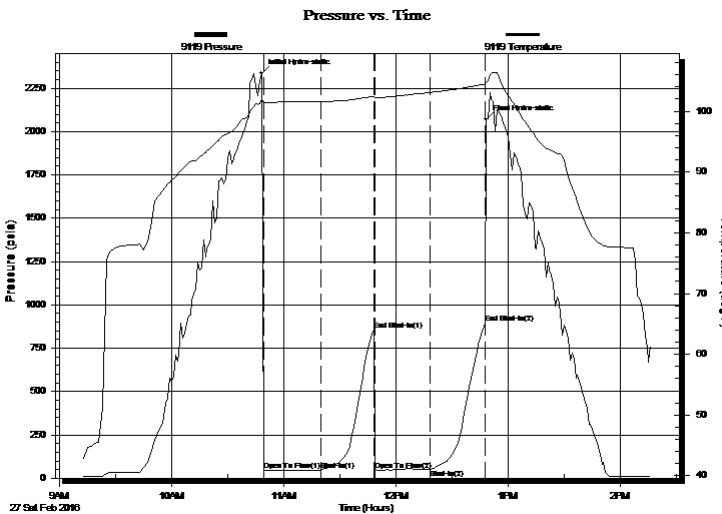
Formation: **Altamont B**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:43:00
 Time Test Ended: 14:16:00
 Interval: **4434.00 ft (KB) To 4465.00 ft (KB) (TVD)**
 Total Depth: 4465.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: GeneBudig
 Unit No: 1
 Reference Elevations: 3258.00 ft (KB)
 3253.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 9119

Inside

Press@RunDepth: 896.09 psia @ 4460.00 ft (KB) Capacity: 5000.00 psia
 Start Date: 2016.02.27 End Date: 2016.02.27 Last Calib.: 2016.02.27
 Start Time: 09:12:00 End Time: 14:16:00 Time On Btm: 2016.02.27 @ 10:48:00
 Time Off Btm: 2016.02.27 @ 12:48:00

TEST COMMENT: 1st Opening 30 Minutes-Very weak surface blow for 13 minutes and died
 1st Shut-In 30 Minutes- No blow back
 2nd Opening 30 Minutes-Very weak surface blow for 12 minutes and died flushed tool w weak blow for 7 minutes
 2nd Shut In 30 Minutes-No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2336.06	101.90	Initial Hydro-static
1	43.36	101.42	Open To Flow (1)
32	48.15	101.57	Shut-In(1)
60	856.95	102.43	End Shut-In(1)
61	47.94	102.23	Open To Flow (2)
90	52.21	103.08	Shut-In(2)
120	896.09	104.47	End Shut-In(2)
120	2068.50	104.77	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OIL CUT MUD 10 OIL 90 MUD	0.05

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc

23-15s-36w Logan

8100 East 22nd Street North Suite 700 P.O.Box
783188
Wichita, Kansas 67278-3188
ATTN: John Goldsmith

Job Ticket: 01216

DST#: 3

Test Start: 2016.02.27 @ 09:12:00

Tool Information

Drill Pipe:	Length: 4294.00 ft	Diameter: 3.80 inches	Volume: 60.23 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: 117.00 ft	Diameter: 2.25 inches	Volume: 0.58 bbl	Weight to Pull Loose: 100000.0 lb
			<u>Total Volume: 60.81 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4434.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	31.00 ft			
Tool Length:	60.00 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			4410.00	
Hydraulic tool	5.00			4415.00	
Jars	7.00			4422.00	
Safety Joint	2.00		Fluid	4424.00	
Top Packer	5.00			4429.00	
Packer	5.00			4434.00	29.00 Bottom Of Top Packer
Anchor	26.00			4460.00	
Recorder	0.00	9119	Inside	4460.00	
Recorder	0.00	9139	Outside	4460.00	
Bullnose	5.00			4465.00	31.00 Anchor Tool
Total Tool Length:	60.00				



DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc

23-15s-36w Logan

8100 East 22nd Street North Suite 700 P.O.Box
783188
Wichita, Kansas 67278-3188
ATTN: John Goldsmith

Job Ticket: 01216

DST#: 3

Test Start: 2016.02.27 @ 09:12:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 58.00 sec/qt
Water Loss: 7.20 in³
Resistivity: ohm.m
Salinity: 8000.00 ppm
Filter Cake: 1.00 inches

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

Oil API: deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	OIL CUT MUD 10 OIL 90 MUD	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:

