

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](mailto: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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Max R. Lovely

# GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOGS

COMPANY: **Richie Exploration, Inc**

LEASE #1: **Darrel Dirks**

FIELD: **Wildcat**

LOCATION: **829FNL 34FEEL**

SEC: **32** TWP: **5** RGE: **35W**

COUNTY: **Logan** STATE: **KS**

CONTRACTOR: **WV #10**

SURFACE ELEVATION: **3161**

RID: **4732** LTD: **4730**

MUD UP: **3473** TYPE: **MUD Chem**

FORMATION TOPS AND STRUCTURAL POSITIONS

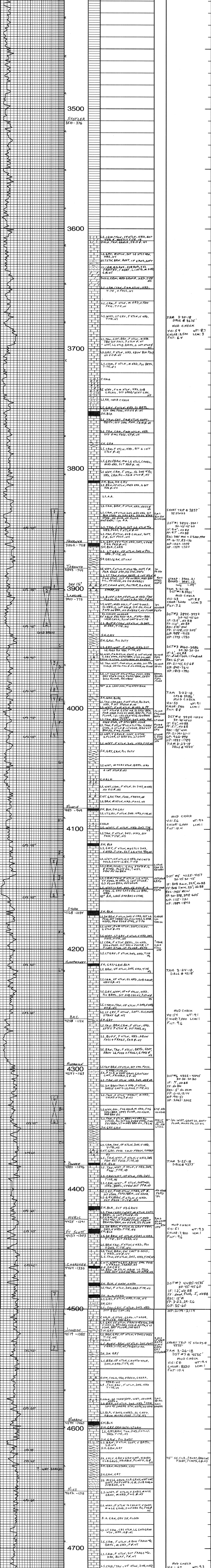
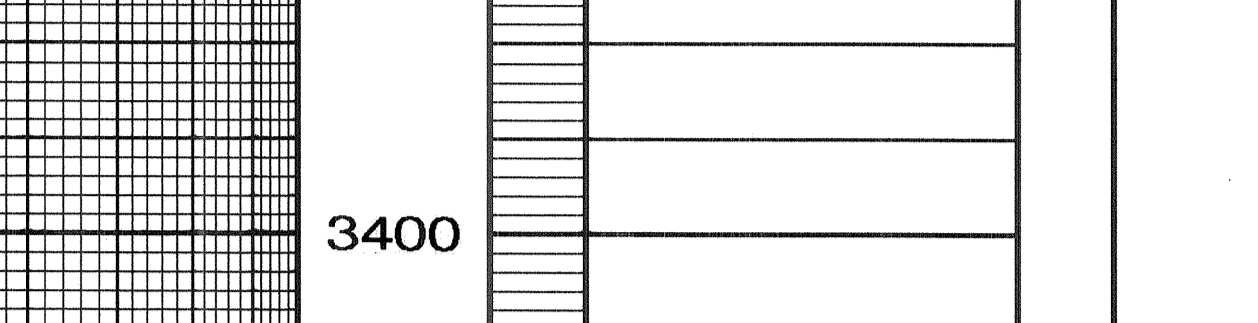
FORMATION	DEPTH	LOG TOP	LOG BOT	STRUCTURAL POSITION
Amhydrite	722	2410	712	728
Amhydrite	726	2430	705	718
Amhydrite	728	3508	392	359
Headner	728	3880	775	793
Headner	728	3909	801	775
Headner	728	3977	974	944
Muncie	949	4071	1162	1108
BKC	1124	4280	1160	1127
Marmaton	1163	4308	1224	1184
Marmaton	1246	4378	1272	1289
Pawnee	1246	4378	1272	1289
Cherokee	1303	4435	1301	1317
Cherokee	1303	4435	1308	1322
Morrow	1491	4922	1494	1491
Mississippian	1491	4922	1498	1491
Mississippian	1491	4922	1531	1502

REFERENCE WELLS FOR STRUCTURE

A Russell Oil #34 - Ken Baker, 1880FNL, 600FNL, 34-15-35W  
 B New Gulf #1 Howard, 2081FNL, 6-35W  
 C LeBaron #1 Howard Dirks, 2310FNL, 30FNL, 29-15-35W

REMARKS

## LEGEND



DIAMOND TESTING  
PIONEER LOGGING  
MUD CO



**#1 Darrel Dirks**

829' FNL & 374' FEL

161' N & 44' W of SE/4 NE/4 NE/4 Section 32-15S-35W

Logan County, Kansas

API# 15-109-21538-0000

Elevation: GL: 3129', KB: 3134'

Sample Tops			Ref. Well
Anhydrite	2413'	+721	+9
B/Anhydrite	2432'	+702	+10
Stotler	3510'	-376	+16
Heebner	3862'	-728	+27
Toronto	3883'	-749	+27
Lansing	3907'	-773	+28
Muncie	4083'	-949	+25
Stark	4168'	-1034	+35
Hush	4212'	-1078	+37
BKC	4258'	-1124	+38
Altamont	4315'	-1181	+43
Pawnee	4380'	-1246	+30
Myrick	4425'	-1291	+33
Fort Scott	4437'	-1303	+34
Cherokee	4464'	-1330	+31
Johnson	4519'	-1385	+40
Morrow	4594'	-1460	+34
Mississippian	4652'	-1518	+33
RTD	4732'	-1598	



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

No. 0536 P. 10

TICKET NUMBER 55081

LOCATION Oakley KS

FOREMAN Miles Shaw

**FIELD TICKET & TREATMENT REPORT  
 CEMENT**

**Invoice #812691**

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
3-16-18	7173	Narrel Dirks 1	32	15 S	35 W	Lusan
CUSTOMER R. Archie Exploration			Russell Spina			
MAILING ADDRESS P.O. BOX 783188			S to the			
CITY Wichita			Dakota Rd			
STATE KS			E to CR 240			
ZIP CODE 67278			2 1/2 S			
			W. S			
TRUCK #	DRIVER	TRUCK #	DRIVER			
753	VENUS W					
772/F127	Paul W					

JOB TYPE <u>Surface</u>	HOLE SIZE <u>12 1/4"</u>	HOLE DEPTH <u>220'</u>	CASING SIZE & WEIGHT <u>15 1/2" 23'</u>
CASING DEPTH <u>220'</u>	DRILL PIPE	TUBING	OTHER
SLURRY WEIGHT <u>14.8</u>	SLURRY VOL <u>1.36</u>	WATER gal/sk	CEMENT LEFT in CASING <u>20'</u>
DISPLACEMENT <u>12.5 bbls</u>	DISPLACEMENT PSI	MIX PSI	RATE

REMARKS: Safety markings and Rig up on NW drilling Rig #10 circulate casing  
Mix 165 sy Surface blend II Class A Cement w/ 32 column 28 gal displac  
12 1/2 bbls water Shut in Cement did circulate Cellac only

*Thanks Miles Shaw*

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
CE0471	1	PUMP CHARGE	1150.00	1150.00
CE0002	45	MILEAGE	7.15	321.75
CE0711	7.76 Ton	Ton Materials delivery	660.00	660.00
CC5871	165 sy	Surface blend II	24.00	3960.00
			Subtotal	6091.75
			less 30% discount	1827.53
			Sub total	4264.23
			SALES TAX	221.76
			ESTIMATED TOTAL	4485.99

Ravin 3737

AUTHORIZATION Archie TITLE \_\_\_\_\_ DATE \_\_\_\_\_

I acknowledge that the information provided hereon is true and correct and I hereby 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.

Received Time Mar. 19. 2018 3:42AM No. 2207

# GLOBAL OIL FIELD SERVICES, LLC

3310

REMIT TO 24 S. Lincoln  
Russell, KS 67665

SERVICE POINT:

Russell

DATE <u>3-27-18</u>	SEC <u>32</u>	TWP. <u>15</u>	RANGE <u>35W</u>	CALLED OUT	ON LOCATION <u>6:00pm</u>	JOB START	JOB FINISH <u>10:30pm</u>
LEASE <u>Darrel Dicks</u>	WELL # <u>1</u>	LOCATION <u>Leat. 18 N 9 E 15 S</u>			COUNTY <u>Logan</u>	STATE	
OLD OR <input checked="" type="radio"/> NEW (CIRCLE ONE)							

CONTRACTOR <u>W &amp; W</u>	OWNER
TYPE OF JOB <u>plug</u>	CEMENT
HOLE SIZE	AMOUNT ORDERED
CASING SIZE	<u>2900 6440 4 1/2 Gal to #10 Seal</u>
TUBING SIZE	
DRILL PIPE <u>4 1/2</u>	
TOOL	
PRES. MAX.	
MEAS. LINE	
CEMENT LEFT IN CSG.	
PERFS	
DISPLACEMENT	
EQUIPMENT	
PUMP TRUCK # <u>417</u>	CEMENTER <u>Bill</u>
BULK TRUCK #	HELPER <u>Jason</u>
BULK TRUCK #	DRIVER <u>Bullet</u>
BULK TRUCK #	DRIVER

COMMON <u>1.75</u>	@ <u>16.00</u>	
POZMIX <u>1.15</u>	@	
GEL <u>10</u>	@ <u>30.00</u>	
CHLORIDE	@	
ASC	@	
<u>Good</u>	@ <u>18.00</u>	
	@	
	@	
	@	
	@	
	@	
HANDLING <u>3.00</u>	@ <u>1.90</u>	
MILEAGE <u>22000</u>	@	
	TOTAL	

REMARKS:

1st plug c	4500	w/	500lb
2nd plug c	2425	w/	500lb
3rd plug c	1280	w/	100lb
4th plug c	270	w/	500lb
5th plug c	40	w/	100lb
30th R.H.			

DEPTH OF JOB	SERVICE
PUMP TRUCK CHARGE	
EXTRA FOOTAGE	
MILEAGE <u>pick up</u>	@ <u>1.50</u>
MANIFOLD <u>pump truck</u>	@ <u>3.50</u>
	@
	@
	TOTAL

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

PLUG & FLOAT EQUIPMENT

<u>1-8 1/2 plug</u>	@	
	@	
	@	
	@	
	TOTAL	

Global Oil Field Services, 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 Ricky Hillger  
SIGNATURE Ricky Hillger

SALES TAX (if Any) \_\_\_\_\_  
TOTAL CHARGES \_\_\_\_\_  
DISCOUNT \_\_\_\_\_ IF PAID IN 30 DAYS



# Company: Ritchie Exploration, Inc.

## Lease: Darrel Dirks #1

SEC: 32 TWN: 15S RNG: 35W  
 County: LOGAN  
 State: Kansas  
 Drilling Contractor: WW Drilling, LLC - Rig 10  
 Elevation: 3129 GL  
 Field Name: Wildcat  
 Pool: WILDCAT  
 Job Number: 130

<b>DATE</b>
March
<b>20</b>
2018

DST #1      Formation: Toronto      Test Interval: 3834 - 3901'      Total Depth: 3901'

Time On: 23:58 03/20      Time Off: 07:29 03/21  
 Time On Bottom: 02:30 03/21      Time Off Bottom: 05:30 03/21

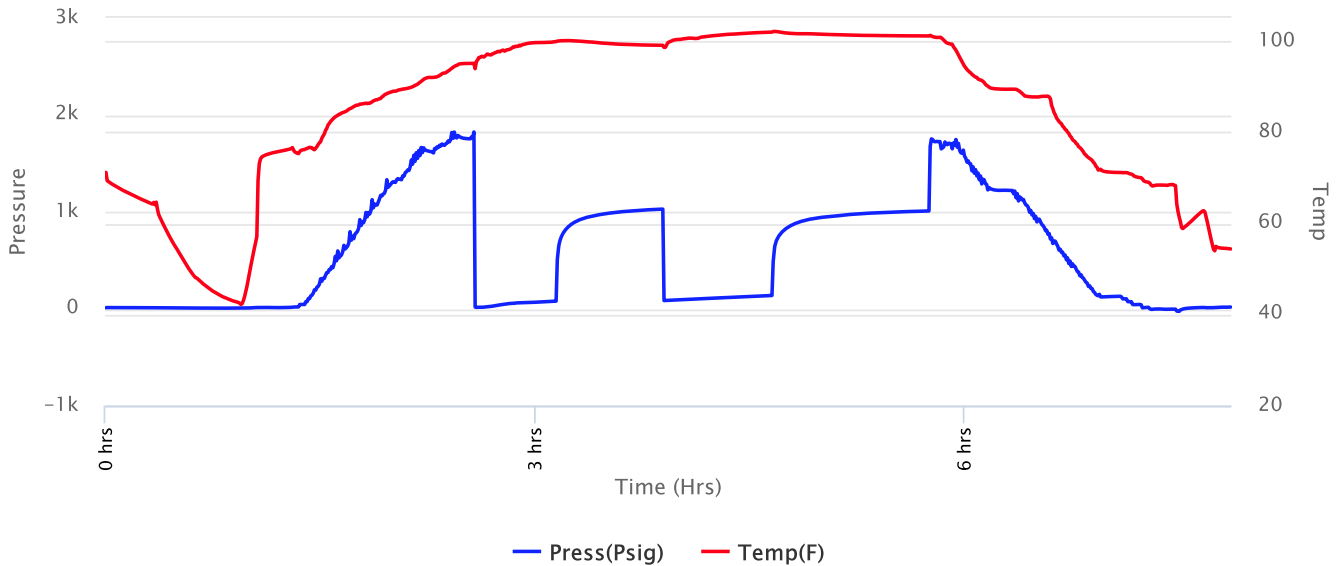
Electronic Volume Estimate:  
270'

1st Open  
Minutes: 30  
9.4" at 30 min

1st Close  
Minutes: 45  
0" at 45 min

2nd Open  
Minutes: 45  
9.7" at 45 min

2nd Close  
Minutes: 60  
0" at 60 min







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**DATE**  
 March  
**20**  
 2018

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Time On: 23:58 03/20      Time Off: 07:29 03/21  
 Time On Bottom: 02:30 03/21      Time Off Bottom: 05:30 03/21

Recovered

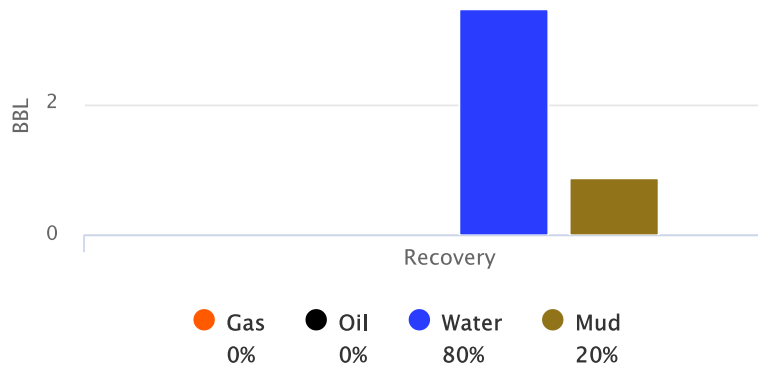
<u>Foot</u>	<u>BBLs</u>	<u>Description of Fluid</u>	<u>Gas %</u>	<u>Oil %</u>	<u>Water %</u>	<u>Mud %</u>
380	4.3346087	MCW	0	0	80	20

Total Recovered: 380 ft  
 Total Barrels Recovered: 4.3346087

Reversed Out  
 NO

Initial Hydrostatic Pressure	1759	PSI
Initial Flow	16 to 77	PSI
<b>Initial Closed in Pressure</b>	<b>1027</b>	<b>PSI</b>
Final Flow Pressure	83 to 136	PSI
<b>Final Closed in Pressure</b>	<b>1008</b>	<b>PSI</b>
Final Hydrostatic Pressure	1724	PSI
Temperature	103	°F
Pressure Change Initial Close / Final Close	1.9	%

### Recovery at a glance





**Company: Ritchie Exploration,  
Inc.**

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County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC -  
Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<p><b>DATE</b> March <b>20</b> 2018</p>
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**DST #1      Formation: Toronto      Test Interval: 3834 -      Total Depth: 3901'**  
**3901'**

Time On: 23:58 03/20      Time Off: 07:29 03/21  
Time On Bottom: 02:30 03/21      Time Off Bottom: 05:30 03/21

**REMARKS:**

Initial Flow: Blow building to 9.4 ins.  
Initial Shut-in: No blow.  
Final Flow: Blow building to 9.7 ins.  
Final Shut-in: No blow.

Tool Sample: 75% water, 25% mud

Chlorides: 24,000 ppm



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Elevation: 3129 GL  
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Job Number: 130

**DATE**  
March  
**20**  
2018

**DST #1**      **Formation: Toronto**      **Test Interval: 3834 - 3901'**      **Total Depth: 3901'**  
Time On: 23:58 03/20      Time Off: 07:29 03/21  
Time On Bottom: 02:30 03/21      Time Off Bottom: 05:30 03/21

### Down Hole Makeup

<b>Heads Up:</b> 28.2 FT	<b>Packer 1:</b> 3829.02 FT
<b>Drill Pipe:</b> 3714.42 FT <i>ID-3 1/2</i>	<b>Packer 2:</b> 3834.02 FT
<b>Weight Pipe:</b> FT <i>ID-2 7/8</i>	<b>Top Recorder:</b> 3818.44 FT
<b>Collars:</b> 115.23 FT <i>ID-2 1/4</i>	<b>Bottom Recorder:</b> 3899 FT
<b>Test Tool:</b> 33.57 FT <i>ID-3 1/2-FH</i> <i>Jars</i> <i>Safety Joint</i>	<b>Well Bore Size:</b> 7 7/8
<b>Total Anchor:</b> 66.98	<b>Surface Choke:</b> 1"
<u><b>Anchor Makeup</b></u>	<b>Bottom Choke:</b> 5/8"
<b>Packer Sub:</b> 1 FT	
<b>Perforations: (top):</b> 29 FT <i>4 1/2-FH</i>	
<b>Change Over:</b> 1 FT	
<b>Drill Pipe: (in anchor):</b> 31.98 FT <i>ID-3 1/2</i>	
<b>Change Over:</b> 1 FT	
<b>Perforations: (below):</b> 3 FT <i>4 1/2-FH</i>	



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Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<b>DATE</b> March <b>20</b> 2018
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**DST #1      Formation: Toronto      Test Interval: 3834 -      Total Depth: 3901'**  
**3901'**

Time On: 23:58 03/20      Time Off: 07:29 03/21  
Time On Bottom: 02:30 03/21      Time Off Bottom: 05:30 03/21

**Mud Properties**

**Mud Type:** Chemical      **Weight:** 8.9      **Viscosity:** 55      **Filtrate:** 5.7      **Chlorides:** 500 ppm



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Elevation: 3129 GL  
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<b>DATE</b>
March
<b>20</b>
2018

**DST #1      Formation: Toronto      Test Interval: 3834 - 3901'      Total Depth: 3901'**

Time On: 23:58 03/20      Time Off: 07:29 03/21  
Time On Bottom: 02:30 03/21      Time Off Bottom: 05:30 03/21

**Gas Volume Report**

1st Open

2nd Open

Time	Orifice	PSI	MCF/D
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Time	Orifice	PSI	MCF/D
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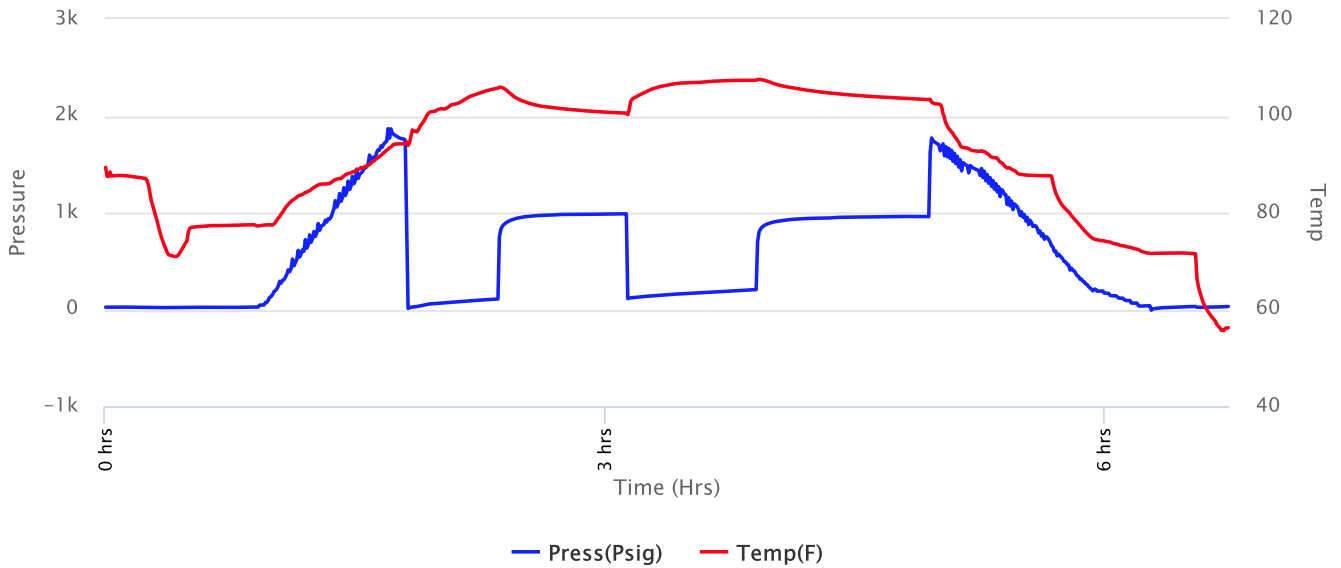
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 County: LOGAN  
 State: Kansas  
 Drilling Contractor: WW Drilling, LLC - Rig 10  
 Elevation: 3129 GL  
 Field Name: Wildcat  
 Pool: WILDCAT  
 Job Number: 130

<b>DATE</b>
March
<b>21</b>
2018

**DST #2**      **Formation: Lan A**      **Test Interval: 3899 - 3932'**      **Total Depth: 3932'**

Time On: 17:43 03/21      Time Off: 00:17 03/22  
 Time On Bottom: 19:30 03/21      Time Off Bottom: 22:30 03/16

Electronic Volume Estimate:	<u>1st Open</u> Minutes: 30	1st Close Minutes: 45	<u>2nd Open</u> Minutes: 45	2nd Close Minutes: 60
321'	12.5" at 30 min	0" at 45 min	11.2" at 45 min	0" at 60 min





**Company: Ritchie Exploration, Inc.**

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 County: LOGAN  
 State: Kansas  
 Drilling Contractor: WW Drilling, LLC - Rig 10  
 Elevation: 3129 GL  
 Field Name: Wildcat  
 Pool: WILDCAT  
 Job Number: 130

**DATE**  
 March  
**21**  
 2018

**DST #2**      **Formation: Lan A**      **Test Interval: 3899 - 3932'**      **Total Depth: 3932'**  
 Time On: 17:43 03/21      Time Off: 00:17 03/22  
 Time On Bottom: 19:30 03/21      Time Off Bottom: 22:30 03/16

Recovered

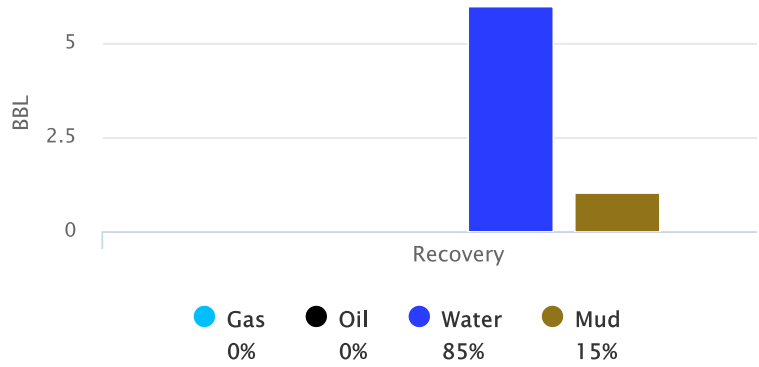
Foot	BBLs	Description of Fluid	Gas %	Oil %	Water %	Mud %
570	7.0383087	SLMCW	0	0	85	15

Total Recovered: 570 ft  
 Total Barrels Recovered: 7.0383087

**Reversed Out**  
 NO

Initial Hydrostatic Pressure	1773	PSI
Initial Flow	11 to 108	PSI
<b>Initial Closed in Pressure</b>	<b>988</b>	<b>PSI</b>
Final Flow Pressure	112 to 205	PSI
<b>Final Closed in Pressure</b>	<b>958</b>	<b>PSI</b>
Final Hydrostatic Pressure	1730	PSI
Temperature	108	°F
Pressure Change Initial Close / Final Close	3.0	%

**Recovery at a glance**





**Company: Ritchie Exploration,  
Inc.**

**Lease: Darrel Dirks #1**

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC -  
Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<p><b>DATE</b> March <b>21</b> 2018</p>
---

**DST #2      Formation: Lan A      Test Interval: 3899 -      Total Depth: 3932'**  
**3932'**

Time On: 17:43 03/21      Time Off: 00:17 03/22  
Time On Bottom: 19:30 03/21      Time Off Bottom: 22:30 03/16

**REMARKS:**

IF=Built to 12.5 BOB in 20 min

ISI=No Blow

FF=Built to 11.2

FSI=No Blow

Tool Sample=MCW 20%M 80%W

Chlorides: 32,000 ppm





# Company: Ritchie Exploration, Inc.

## Lease: Darrel Dirks #1

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC - Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<b>DATE</b> March <b>21</b> 2018
---

**DST #2**      **Formation: Lan A**      **Test Interval: 3899 - 3932'**      **Total Depth: 3932'**  
Time On: 17:43 03/21      Time Off: 00:17 03/22  
Time On Bottom: 19:30 03/21      Time Off Bottom: 22:30 03/16

### Down Hole Makeup

<b>Heads Up:</b> 27.07 FT	<b>Packer 1:</b> 3894 FT
<b>Drill Pipe:</b> 3778.27 FT <i>ID-3 1/2</i>	<b>Packer 2:</b> 3899 FT
<b>Weight Pipe:</b> FT <i>ID-2 7/8</i>	<b>Top Recorder:</b> 3883.42 FT
<b>Collars:</b> 115.23 FT <i>ID-2 1/4</i>	<b>Bottom Recorder:</b> 3930 FT
<b>Test Tool:</b> 33.57 FT <i>ID-3 1/2-FH</i> <i>Jars</i> <i>Safety Joint</i>	<b>Well Bore Size:</b> 7 7/8
<b>Total Anchor:</b> 33	<b>Surface Choke:</b> 1"
<b><u>Anchor Makeup</u></b>	<b>Bottom Choke:</b> 5/8"
<b>Packer Sub:</b> 1 FT	
<b>Perforations: (top):</b> 29 FT <i>4 1/2-FH</i>	
<b>Change Over:</b> FT	
<b>Drill Pipe: (in anchor):</b> FT <i>ID-3 1/2</i>	
<b>Change Over:</b> FT	
<b>Perforations: (below):</b> 3 FT <i>4 1/2-FH</i>	



**Company: Ritchie Exploration,  
Inc.**

**Lease: Darrel Dirks #1**

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC -  
Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<b>DATE</b> March <b>21</b> 2018
---

**DST #2**      **Formation: Lan A**      **Test Interval: 3899 - 3932'**      **Total Depth: 3932'**

Time On: 17:43 03/21      Time Off: 00:17 03/22  
Time On Bottom: 19:30 03/21      Time Off Bottom: 22:30 03/16

**Mud Properties**

**Mud Type:** Chemical      **Weight:** 8.8      **Viscosity:** 63      **Filtrate:** 7.2      **Chlorides:** 3200 ppm



# Company: Ritchie Exploration, Inc.

## Lease: Darrel Dirks #1

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC - Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<b>DATE</b>
March
<b>21</b>
2018

**DST #2**      **Formation: Lan A**      **Test Interval: 3899 - 3932'**      **Total Depth: 3932'**

Time On: 17:43 03/21      Time Off: 00:17 03/22  
Time On Bottom: 19:30 03/21      Time Off Bottom: 22:30 03/16

### Gas Volume Report

1st Open

2nd Open

Time	Orifice	PSI	MCF/D
------	---------	-----	-------

Time	Orifice	PSI	MCF/D
------	---------	-----	-------



# Company: Ritchie Exploration, Inc.

## Lease: Darrel Dirks #1

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC - Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

**DATE**  
March  
**22**  
2018

**DST #3**      **Formation: Lan D**      **Test Interval: 3960 - 3986'**      **Total Depth: 3986'**

Time On: 09:50 03/22      Time Off: 14:30 03/22  
Time On Bottom: 11:10 03/22      Time Off Bottom: 13:10 03/22

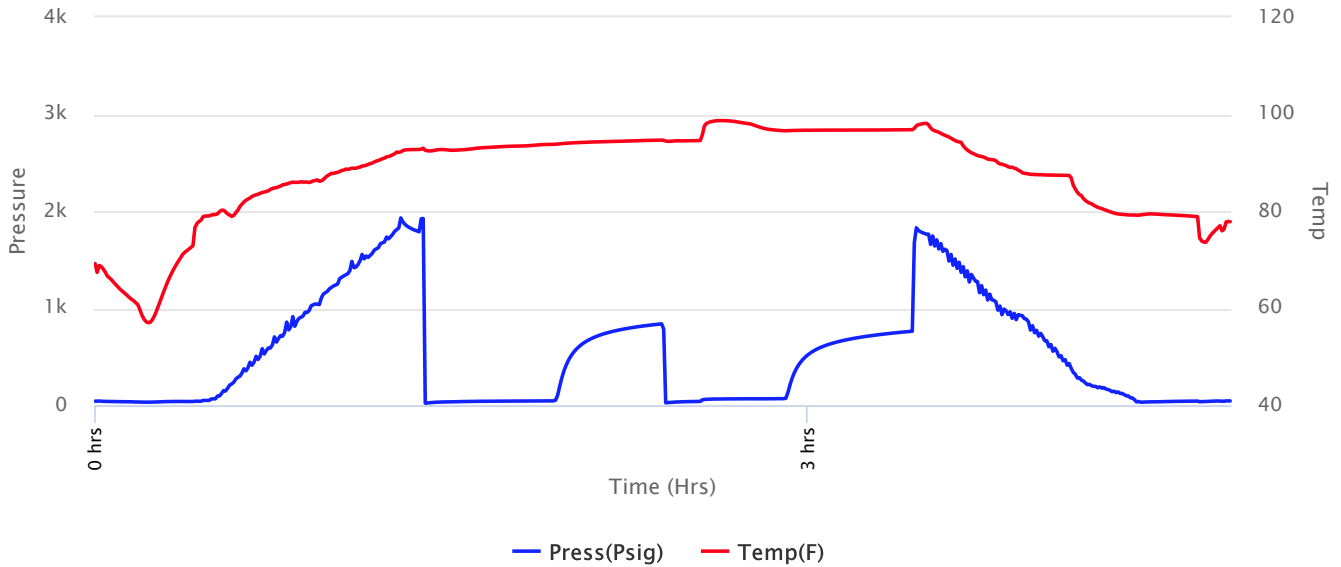
Electronic Volume Estimate:  
19'

1st Open  
Minutes: 30  
.6" at 30 min

1st Close  
Minutes: 30  
0" at 30 min

2nd Open  
Minutes: 30  
0" at 30 min

2nd Close  
Minutes: 30  
0" at 30 min





# Company: Ritchie Exploration, Inc.

## Lease: Darrel Dirks #1

SEC: 32 TWN: 15S RNG: 35W  
 County: LOGAN  
 State: Kansas  
 Drilling Contractor: WW Drilling, LLC - Rig 10  
 Elevation: 3129 GL  
 Field Name: Wildcat  
 Pool: WILDCAT  
 Job Number: 130

**DATE**  
 March  
**22**  
 2018

**DST #3**      **Formation: Lan D**      **Test Interval: 3960 - 3986'**      **Total Depth: 3986'**

Time On: 09:50 03/22      Time Off: 14:30 03/22  
 Time On Bottom: 11:10 03/22      Time Off Bottom: 13:10 03/22

Recovered

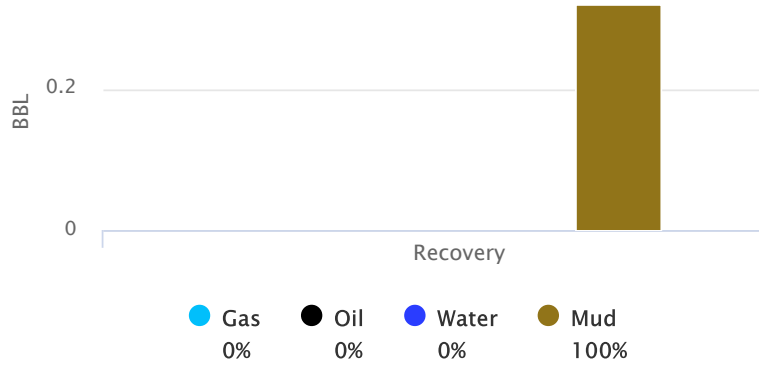
Foot	BBLs
65	0.3198

Description of Fluid	Gas %	Oil %	Water %	Mud %
M	0	0	0	100

Total Recovered: 65 ft  
 Total Barrels Recovered: 0.3198

Reversed Out  
 NO

### Recovery at a glance



Initial Hydrostatic Pressure	1813	PSI
Initial Flow	21 to 45	PSI
<b>Initial Closed in Pressure</b>	<b>840</b>	<b>PSI</b>
Final Flow Pressure	25 to 68	PSI
<b>Final Closed in Pressure</b>	<b>764</b>	<b>PSI</b>
Final Hydrostatic Pressure	1790	PSI
Temperature	99	°F
Pressure Change Initial Close / Final Close	9.1	%



**Company: Ritchie Exploration,  
Inc.**

**Lease: Darrel Dirks #1**

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC -  
Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<b>DATE</b> March <b>22</b> 2018
---

**DST #3      Formation: Lan D      Test Interval: 3960 -      Total Depth: 3986'**  
**3986'**

Time On: 09:50 03/22

Time Off: 14:30 03/22

Time On Bottom: 11:10 03/22

Time Off Bottom: 13:10 03/22

**REMARKS:**

IF=Built tp .6

ISI=No Blow

FF= No Blow in 10 Min Flushed tool blow started at 1.7 Died in 17 min

FSI=No Blow

Tool Sample=Mud



# Company: Ritchie Exploration, Inc.

## Lease: Darrel Dirks #1

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC - Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<b>DATE</b> March <b>22</b> 2018
---

**DST #3**      **Formation: Lan D**      **Test Interval: 3960 - 3986'**      **Total Depth: 3986'**  
Time On: 09:50 03/22      Time Off: 14:30 03/22  
Time On Bottom: 11:10 03/22      Time Off Bottom: 13:10 03/22

### Down Hole Makeup

<b>Heads Up:</b> 29.54 FT	<b>Packer 1:</b> 3955 FT
<b>Drill Pipe:</b> 3841.74 FT <i>ID-3 1/2</i>	<b>Packer 2:</b> 3960 FT
<b>Weight Pipe:</b> FT <i>ID-2 7/8</i>	<b>Top Recorder:</b> 3944.42 FT
<b>Collars:</b> 115.23 FT <i>ID-2 1/4</i>	<b>Bottom Recorder:</b> 0 FT
<b>Test Tool:</b> 33.57 FT <i>ID-3 1/2-FH</i> <i>Jars</i> <i>Safety Joint</i>	<b>Well Bore Size:</b> 7 7/8
<b>Total Anchor:</b> 26	<b>Surface Choke:</b> 1"
<u><b>Anchor Makeup</b></u>	<b>Bottom Choke:</b> 5/8"
<b>Packer Sub:</b> 1 FT	
<b>Perforations: (top):</b> 22 FT <i>4 1/2-FH</i>	
<b>Change Over:</b> FT	
<b>Drill Pipe: (in anchor):</b> FT <i>ID-3 1/2</i>	
<b>Change Over:</b> FT	
<b>Perforations: (below):</b> 3 FT <i>4 1/2-FH</i>	



**Company: Ritchie Exploration,  
Inc.**

**Lease: Darrel Dirks #1**

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC -  
Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<b>DATE</b> March <b>22</b> 2018
---

**DST #3      Formation: Lan D      Test Interval: 3960 -      Total Depth: 3986'**  
**3986'**

Time On: 09:50 03/22      Time Off: 14:30 03/22  
Time On Bottom: 11:10 03/22      Time Off Bottom: 13:10 03/22

**Mud Properties**

**Mud Type:** Chemical      **Weight:** 9.1      **Viscosity:** 55      **Filtrate:** 8.8      **Chlorides:** 5400 ppm





# Company: Ritchie Exploration, Inc.

## Lease: Darrel Dirks #1

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC - Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<b>DATE</b> March <b>22</b> 2018
---

DST #3      Formation: Lan D      Test Interval: 3960 - 3986'      Total Depth: 3986'  
Time On: 09:50 03/22      Time Off: 14:30 03/22  
Time On Bottom: 11:10 03/22      Time Off Bottom: 13:10 03/22

### Gas Volume Report

1st Open

2nd Open

Time	Orifice	PSI	MCF/D
------	---------	-----	-------

Time	Orifice	PSI	MCF/D
------	---------	-----	-------



# Company: Ritchie Exploration, Inc.

## Lease: Darrel Dirks #1

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC - Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

**DATE**  
March  
**23**  
2018

**DST #4**    **Formation: Lan E&F**    **Test Interval: 3989 - 4024'**    **Total Depth: 4024'**

Time On: 22:10 03/22    Time Off: 04:40 03/23  
Time On Bottom: 00:00 03/23    Time Off Bottom: 03:00 03/23

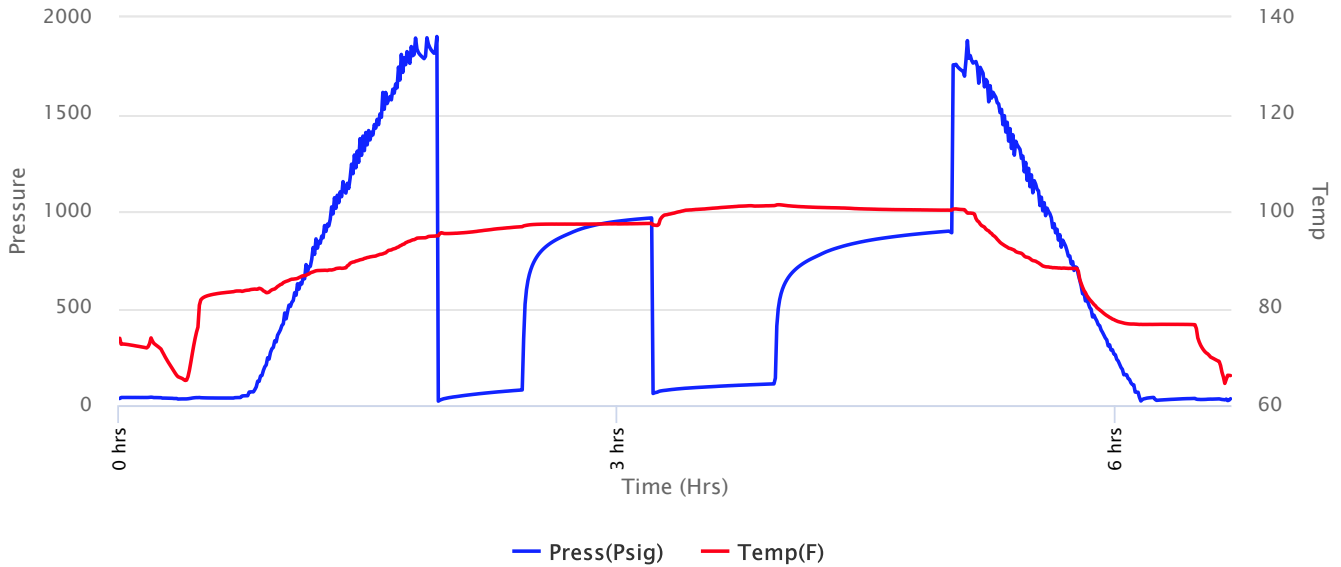
Electronic Volume Estimate:  
190'

1st Open  
Minutes: 30  
5.6" at 30 min

1st Close  
Minutes: 45  
0" at 45 min

2nd Open  
Minutes: 45  
5.1" at 45 min

2nd Close  
Minutes: 60  
0" at 60 min





# Company: Ritchie Exploration, Inc.

## Lease: Darrel Dirks #1

SEC: 32 TWN: 15S RNG: 35W  
 County: LOGAN  
 State: Kansas  
 Drilling Contractor: WW Drilling, LLC - Rig 10  
 Elevation: 3129 GL  
 Field Name: Wildcat  
 Pool: WILDCAT  
 Job Number: 130

**DATE**  
 March  
**23**  
 2018

**DST #4**    **Formation: Lan E&F**    **Test Interval: 3989 - 4024'**    **Total Depth: 4024'**

Time On: 22:10 03/22                      Time Off: 04:40 03/23  
 Time On Bottom: 00:00 03/23    Time Off Bottom: 03:00 03/23

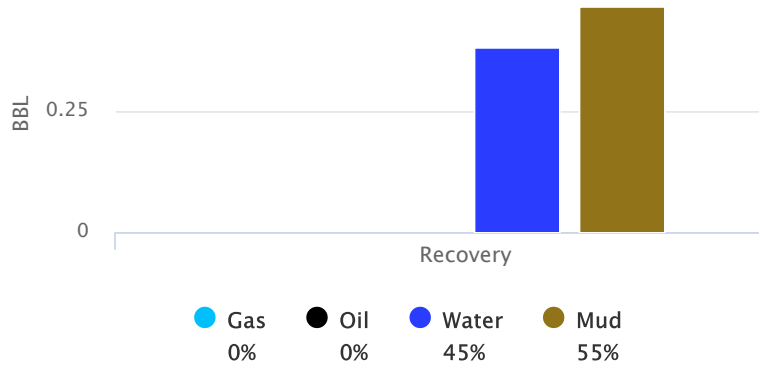
Recovered

Foot	BBLs	Description of Fluid	Gas %	Oil %	Water %	Mud %
135	0.8482587	HWCM	0	0	45	55

Total Recovered: 135 ft  
 Total Barrels Recovered: 0.8482587

Reversed Out  
 NO

### Recovery at a glance



Initial Hydrostatic Pressure	1832	PSI
Initial Flow	21 to 79	PSI
<b>Initial Closed in Pressure</b>	<b>966</b>	<b>PSI</b>
Final Flow Pressure	61 to 111	PSI
<b>Final Closed in Pressure</b>	<b>898</b>	<b>PSI</b>
Final Hydrostatic Pressure	1789	PSI
Temperature	102	°F
Pressure Change Initial Close / Final Close	7.1	%



**Company: Ritchie Exploration,  
Inc.**

**Lease: Darrel Dirks #1**

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC -  
Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<b>DATE</b> March <b>23</b> 2018
---

**DST #4      Formation: Lan E&F      Test Interval: 3989 -      Total Depth: 4024'**  
**4024'**

Time On: 22:10 03/22      Time Off: 04:40 03/23  
Time On Bottom: 00:00 03/23      Time Off Bottom: 03:00 03/23

**REMARKS:**

IF=Built to 5.6  
ISI=No Blow  
FF=Built to 5.1  
FSI=No Blow

Tool Sample=MCW 30%M 70%W

Chlorides: 29000 ppm



# Company: Ritchie Exploration, Inc.

## Lease: Darrel Dirks #1

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC - Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<b>DATE</b> March <b>23</b> 2018
---

**DST #4**    **Formation: Lan E&F**    **Test Interval: 3989 - 4024'**    **Total Depth: 4024'**

Time On: 22:10 03/22                      Time Off: 04:40 03/23  
Time On Bottom: 00:00 03/23    Time Off Bottom: 03:00 03/23

### Down Hole Makeup

<b>Heads Up:</b> 32.41 FT	<b>Packer 1:</b> 3984 FT
<b>Drill Pipe:</b> 3873.61 FT <i>ID-3 1/2</i>	<b>Packer 2:</b> 3989 FT
<b>Weight Pipe:</b> FT <i>ID-2 7/8</i>	<b>Top Recorder:</b> 3973.42 FT
<b>Collars:</b> 115.23 FT <i>ID-2 1/4</i>	<b>Bottom Recorder:</b> 4022 FT
<b>Test Tool:</b> 33.57 FT <i>ID-3 1/2-FH</i> <i>Jars</i> <i>Safety Joint</i>	<b>Well Bore Size:</b> 7 7/8
<b>Total Anchor:</b> 35	<b>Surface Choke:</b> 1"
<b>Anchor Makeup</b>	<b>Bottom Choke:</b> 5/8"
<b>Packer Sub:</b> 1 FT	
<b>Perforations: (top):</b> 31 FT <i>4 1/2-FH</i>	
<b>Change Over:</b> FT	
<b>Drill Pipe: (in anchor):</b> FT <i>ID-3 1/2</i>	
<b>Change Over:</b> FT	
<b>Perforations: (below):</b> 3 FT <i>4 1/2-FH</i>	



**Company: Ritchie Exploration,  
Inc.**

**Lease: Darrel Dirks #1**

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC -  
Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<p><b>DATE</b> March <b>23</b> 2018</p>
---

**DST #4      Formation: Lan E&F      Test Interval: 3989 -      Total Depth: 4024'**  
**4024'**

Time On: 22:10 03/22      Time Off: 04:40 03/23  
Time On Bottom: 00:00 03/23      Time Off Bottom: 03:00 03/23

### **Mud Properties**

**Mud Type:** Chemical      **Weight:** 9.1      **Viscosity:** 59      **Filtrate:** 8.8      **Chlorides:** 5400 ppm



# Company: Ritchie Exploration, Inc.

## Lease: Darrel Dirks #1

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC - Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<b>DATE</b> March <b>23</b> 2018
---

DST #4    Formation: Lan E&F    Test Interval: 3989 - 4024'    Total Depth: 4024'

Time On: 22:10 03/22    Time Off: 04:40 03/23  
Time On Bottom: 00:00 03/23    Time Off Bottom: 03:00 03/23

### Gas Volume Report

1st Open

2nd Open

Time	Orifice	PSI	MCF/D
------	---------	-----	-------

Time	Orifice	PSI	MCF/D
------	---------	-----	-------



# Company: Ritchie Exploration, Inc.

## Lease: Darrel Dirks #1

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC - Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

**DATE**  
March  
**23**  
2018

**DST #5**      **Formation: Lan I&J**      **Test Interval: 4125 - 4157'**      **Total Depth: 4157'**

Time On: 00:00 01/01      Time Off: 23:56 03/23  
Time On Bottom: 19:15 03/23      Time Off Bottom: 21:45 03/23

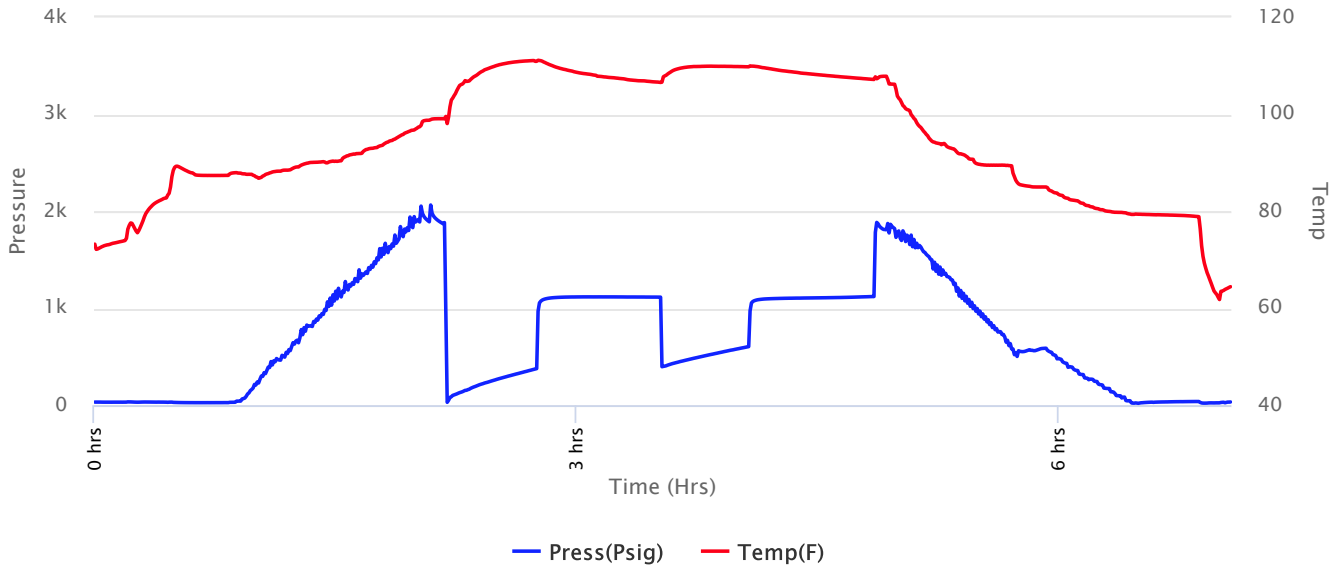
Electronic Volume Estimate:  
690'

1st Open  
Minutes: 30  
34.9" at 30 min

1st Close  
Minutes: 45  
0" at 45 min

2nd Open  
Minutes: 30  
22.0" at 30 min

2nd Close  
Minutes: 45  
0" at 45 min







# Company: Ritchie Exploration, Inc.

## Lease: Darrel Dirks #1

SEC: 32 TWN: 15S RNG: 35W  
 County: LOGAN  
 State: Kansas  
 Drilling Contractor: WW Drilling, LLC - Rig 10  
 Elevation: 3129 GL  
 Field Name: Wildcat  
 Pool: WILDCAT  
 Job Number: 130

<b>DATE</b>
March
<b>23</b>
2018

**DST #5**      **Formation: Lan I&J**      **Test Interval: 4125 - 4157'**      **Total Depth: 4157'**

Time On: 00:00 01/01      Time Off: 23:56 03/23  
 Time On Bottom: 19:15 03/23      Time Off Bottom: 21:45 03/23

Recovered

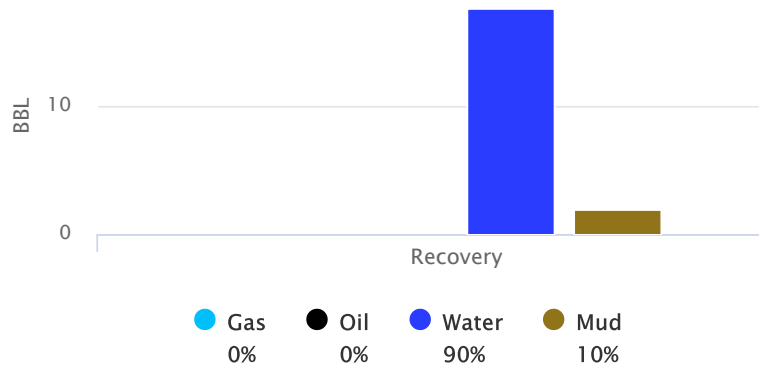
Foot	BBLs	Description of Fluid	Gas %	Oil %	Water %	Mud %
1450	19.5607087	SLMCW	0	0	90	10

Total Recovered: 1450 ft

Total Barrels Recovered: 19.5607087

Reversed Out
NO

### Recovery at a glance



Initial Hydrostatic Pressure	1889	PSI
Initial Flow	30 to 378	PSI
<b>Initial Closed in Pressure</b>	<b>1115</b>	<b>PSI</b>
Final Flow Pressure	398 to 605	PSI
<b>Final Closed in Pressure</b>	<b>1121</b>	<b>PSI</b>
Final Hydrostatic Pressure	1846	PSI
Temperature	112	°F
Pressure Change Initial Close / Final Close	0.0	%



**Company: Ritchie Exploration,  
Inc.**

**Lease: Darrel Dirks #1**

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC -  
Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<p><b>DATE</b> March <b>23</b> 2018</p>
---

**DST #5      Formation: Lan I&J      Test Interval: 4125 -      Total Depth: 4157'**  
**4157'**

Time On: 00:00 01/01      Time Off: 23:56 03/23  
Time On Bottom: 19:15 03/23      Time Off Bottom: 21:45 03/23

**REMARKS:**

IF= BOB in 3 min Built to 34.9  
ISI=No Blow  
FF= BOB in 11 min Built to 22.0  
FSI= No Blow

Tool Sample=MCW 2%M 98%W

Chlorides: 30000 ppm



**Company: Ritchie Exploration, Inc.**

**Lease: Darrel Dirks #1**

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC - Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

**DATE**  
March  
**23**  
2018

**DST #5      Formation: Lan I&J      Test Interval: 4125 - 4157'      Total Depth: 4157'**

Time On: 00:00 01/01      Time Off: 23:56 03/23  
Time On Bottom: 19:15 03/23      Time Off Bottom: 21:45 03/23

**Down Hole Makeup**

<b>Heads Up:</b> 55.29 FT	<b>Packer 1:</b> 4120 FT
<b>Drill Pipe:</b> 4032.49 FT <i>ID-3 1/2</i>	<b>Packer 2:</b> 4125 FT
<b>Weight Pipe:</b> FT <i>ID-2 7/8</i>	<b>Top Recorder:</b> 4109.42 FT
<b>Collars:</b> 115.23 FT <i>ID-2 1/4</i>	<b>Bottom Recorder:</b> 4155 FT
<b>Test Tool:</b> 33.57 FT <i>ID-3 1/2-FH</i> <i>Jars</i> <i>Safety Joint</i>	<b>Well Bore Size:</b> 7 7/8
<b>Total Anchor:</b> 32	<b>Surface Choke:</b> 1"
<b><u>Anchor Makeup</u></b>	<b>Bottom Choke:</b> 5/8"
<b>Packer Sub:</b> 1 FT	
<b>Perforations: (top):</b> 28 FT <i>4 1/2-FH</i>	
<b>Change Over:</b> FT	
<b>Drill Pipe: (in anchor):</b> FT <i>ID-3 1/2</i>	
<b>Change Over:</b> FT	
<b>Perforations: (below):</b> 3 FT <i>4 1/2-FH</i>	



**Company: Ritchie Exploration,  
Inc.**

**Lease: Darrel Dirks #1**

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC -  
Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<b>DATE</b> March <b>23</b> 2018
---

**DST #5      Formation: Lan I&J      Test Interval: 4125 -      Total Depth: 4157'**  
**4157'**

Time On: 00:00 01/01      Time Off: 23:56 03/23  
Time On Bottom: 19:15 03/23      Time Off Bottom: 21:45 03/23

### **Mud Properties**

**Mud Type:** Chemical      **Weight:** 9.2      **Viscosity:** 56      **Filtrate:** 10.4      **Chlorides:** 6000 ppm



# Company: Ritchie Exploration, Inc.

## Lease: Darrel Dirks #1

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC - Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<b>DATE</b>
March
<b>23</b>
2018

DST #5      Formation: Lan I&J      Test Interval: 4125 - 4157'      Total Depth: 4157'

Time On: 00:00 01/01      Time Off: 23:56 03/23  
Time On Bottom: 19:15 03/23      Time Off Bottom: 21:45 03/23

### Gas Volume Report

1st Open

2nd Open

Time	Orifice	PSI	MCF/D
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Time	Orifice	PSI	MCF/D
------	---------	-----	-------



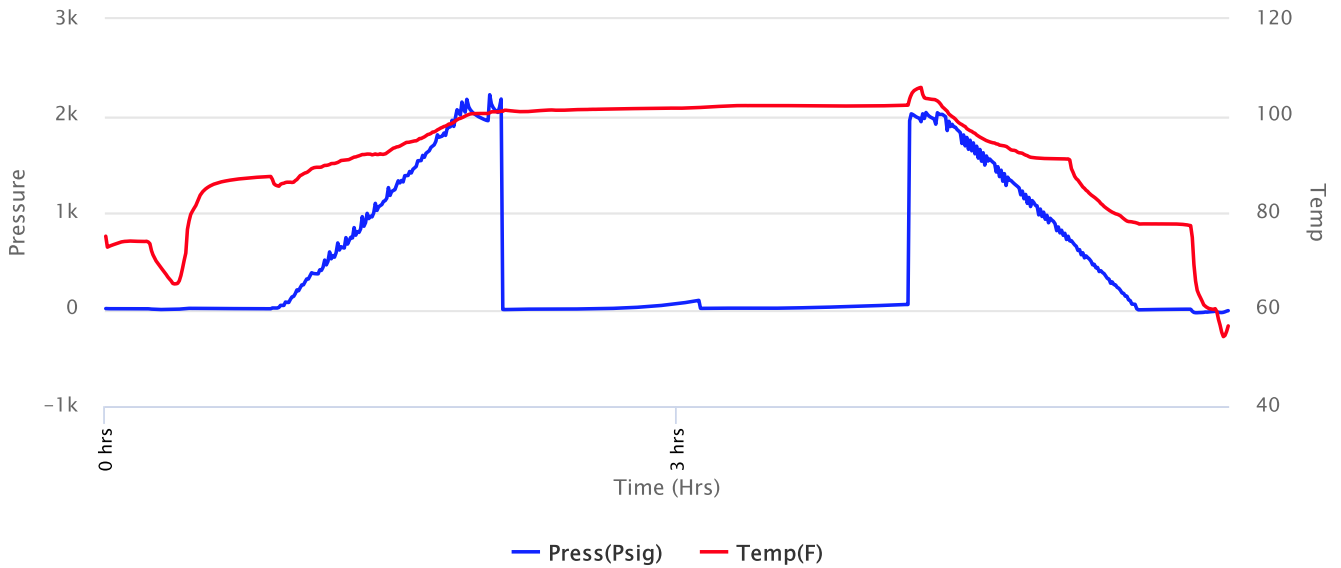
**Company: Ritchie Exploration, Inc.**  
**Lease: Darrel Dirks #1**

SEC: 32 TWN: 15S RNG: 35W  
 County: LOGAN  
 State: Kansas  
 Drilling Contractor: WW Drilling, LLC - Rig 10  
 Elevation: 3129 GL  
 Field Name: Wildcat  
 Pool: WILDCAT  
 Job Number: 130

<b>DATE</b>
March
<b>24</b>
2018

**DST #6 Formation: Altamont "B" Test Interval: 4322 - 4345' Total Depth: 4345'**  
 Time On: 18:50 03/24 Time Off: 00:33 03/25  
 Time On Bottom: 20:50 03/24 Time Off Bottom: 22:50 03/24

Electronic Volume Estimate:	1st Open Minutes: 30	1st Close Minutes: 30	2nd Open Minutes: 30	2nd Close Minutes: 30
30'	.9" at 30 min	0" at 30 min	0" at 30 min	0" at 30 min





**Company: Ritchie Exploration, Inc.**

**Lease: Darrel Dirks #1**

SEC: 32 TWN: 15S RNG: 35W  
 County: LOGAN  
 State: Kansas  
 Drilling Contractor: WW Drilling, LLC - Rig 10  
 Elevation: 3129 GL  
 Field Name: Wildcat  
 Pool: WILDCAT  
 Job Number: 130

**DATE**  
 March  
**24**  
 2018

**DST #6 Formation: Altamont "B" Test Interval: 4322 - 4345' Total Depth: 4345'**

Time On: 18:50 03/24 Time Off: 00:33 03/25  
 Time On Bottom: 20:50 03/24 Time Off Bottom: 22:50 03/24

Recovered

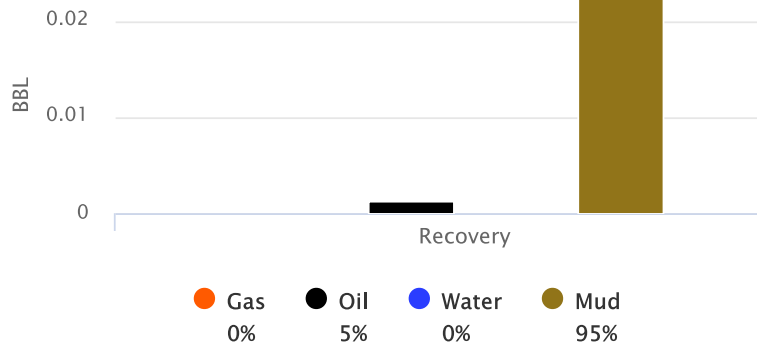
Foot	BBLs	Description of Fluid	Gas %	Oil %	Water %	Mud %
5	0.0246	SLOCM	0	5	0	95

Total Recovered: 5 ft  
 Total Barrels Recovered: 0.0246

**Reversed Out**  
 NO

Initial Hydrostatic Pressure	2065	PSI
Initial Flow	-0 to 10	PSI
<b>Initial Closed in Pressure</b>	<b>94</b>	<b>PSI</b>
Final Flow Pressure	12 to 14	PSI
<b>Final Closed in Pressure</b>	<b>51</b>	<b>PSI</b>
Final Hydrostatic Pressure	2002	PSI
Temperature	103	°F
Pressure Change Initial Close / Final Close	46.1	%

**Recovery at a glance**





**Company: Ritchie Exploration,  
Inc.**

**Lease: Darrel Dirks #1**

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC -  
Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<b>DATE</b> March <b>24</b> 2018
---

**DST #6      Formation: Altamont      Test Interval: 4322 -      Total Depth: 4345'**  
**"B"**      **4345'**

Time On: 18:50 03/24

Time Off: 00:33 03/25

Time On Bottom: 20:50 03/24

Time Off Bottom: 22:50 03/24

**REMARKS:**

Initial Flow: Blow building to .9 in.

Initial Shut-in: No blow.

Final Flow: No blow.

Final Shut-in: No blow.

Tool Sample: Mud w/heavy oil spots





# Company: Ritchie Exploration, Inc.

## Lease: Darrel Dirks #1

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC - Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<b>DATE</b> March <b>24</b> 2018
---

**DST #6**    **Formation: Altamont "B"**    **Test Interval: 4322 - 4345'**    **Total Depth: 4345'**  
Time On: 18:50 03/24    Time Off: 00:33 03/25  
Time On Bottom: 20:50 03/24    Time Off Bottom: 22:50 03/24

### Down Hole Makeup

<b>Heads Up:</b> 16.85 FT	<b>Packer 1:</b> 4317 FT
<b>Drill Pipe:</b> 4191.05 FT <i>ID-3 1/2</i>	<b>Packer 2:</b> 4322 FT
<b>Weight Pipe:</b> FT <i>ID-2 7/8</i>	<b>Top Recorder:</b> 4306.42 FT
<b>Collars:</b> 115.23 FT <i>ID-2 1/4</i>	<b>Bottom Recorder:</b> 4343 FT
<b>Test Tool:</b> 33.57 FT <i>ID-3 1/2-FH</i> <i>Jars</i> <i>Safety Joint</i>	<b>Well Bore Size:</b> 7 7/8
<b>Total Anchor:</b> 23	<b>Surface Choke:</b> 1"
<b><u>Anchor Makeup</u></b>	<b>Bottom Choke:</b> 5/8"
<b>Packer Sub:</b> 1 FT	
<b>Perforations: (top):</b> 19 FT <i>4 1/2-FH</i>	
<b>Change Over:</b> FT	
<b>Drill Pipe: (in anchor):</b> FT <i>ID-3 1/2</i>	
<b>Change Over:</b> FT	
<b>Perforations: (below):</b> 3 FT <i>4 1/2-FH</i>	



# Company: Ritchie Exploration, Inc.

## Lease: Darrel Dirks #1

SEC: 32 TWN: 15S RNG: 35W  
 County: LOGAN  
 State: Kansas  
 Drilling Contractor: WW Drilling, LLC - Rig 10  
 Elevation: 3129 GL  
 Field Name: Wildcat  
 Pool: WILDCAT  
 Job Number: 130

<b>DATE</b>
March
<b>24</b>
2018

**DST #6**    **Formation: Altamont "B"**    **Test Interval: 4322 - 4345'**    **Total Depth: 4345'**

Time On: 18:50 03/24                      Time Off: 00:33 03/25  
 Time On Bottom: 20:50 03/24    Time Off Bottom: 22:50 03/24

### Mud Properties

**Mud Type:** Chemical    **Weight:** 9.1                      **Viscosity:** 56                      **Filtrate:** 9.6                      **Chlorides:** 7,000 ppm





# Company: Ritchie Exploration, Inc.

## Lease: Darrel Dirks #1

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC - Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

**DATE**  
March  
**26**  
2018

**DST #7**      **Formation: Cherokee**      **Test Interval: 4485 - 4535'**      **Total Depth: 4535'**  
Time On: 02:49 03/26      Time Off: 09:17 03/26  
Time On Bottom: 04:40 03/26      Time Off Bottom: 07:40 03/26

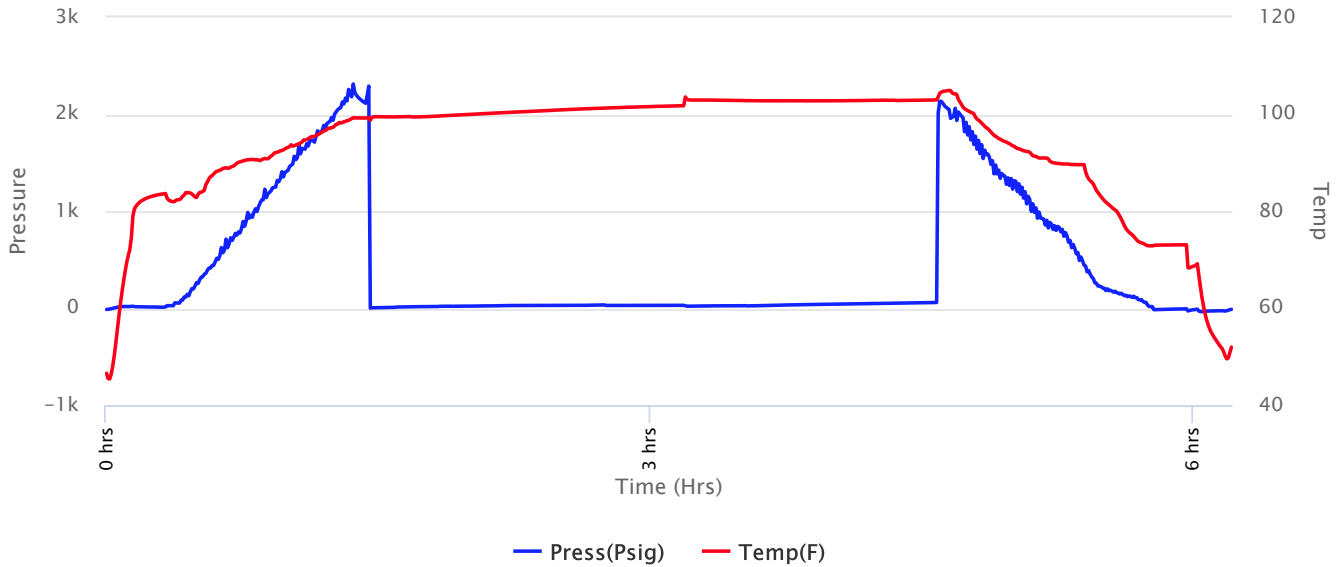
Electronic Volume Estimate:  
49'

1st Open  
Minutes: 30  
1.2" at 30 min

1st Close  
Minutes: 45  
0" at 45 min

2nd Open  
Minutes: 45  
.2" at 45 min

2nd Close  
Minutes: 60  
0" at 60 min





# Company: Ritchie Exploration, Inc.

## Lease: Darrel Dirks #1

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC - Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

**DATE**  
March  
**26**  
2018

DST #7

Formation:  
Cherokee

Test Interval: 4485 -  
4535'

Total Depth: 4535'

Time On: 02:49 03/26

Time Off: 09:17 03/26

Time On Bottom: 04:40 03/26

Time Off Bottom: 07:40 03/26

Recovered

Foot	BBLs
15	0.0738

Description of Fluid
M

Gas %
0

Oil %
0

Water %
0

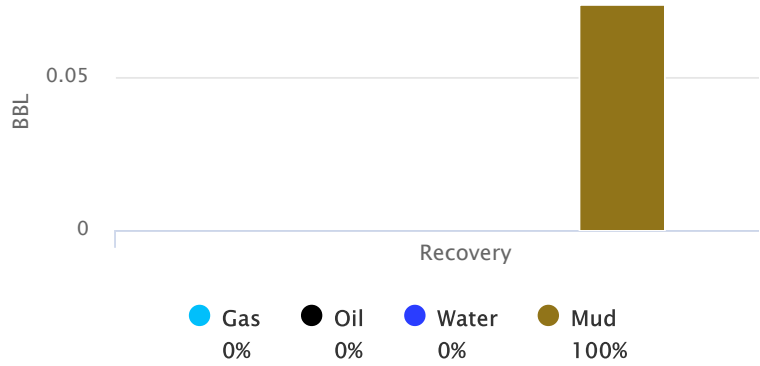
Mud %
100

Total Recovered: 15 ft

Total Barrels Recovered: 0.0738

Reversed Out  
NO

### Recovery at a glance



Initial Hydrostatic Pressure	2179	PSI
Initial Flow	3 to 22	PSI
<b>Initial Closed in Pressure</b>	<b>35</b>	<b>PSI</b>
Final Flow Pressure	29 to 26	PSI
<b>Final Closed in Pressure</b>	<b>60</b>	<b>PSI</b>
Final Hydrostatic Pressure	2114	PSI
Temperature	103	°F
Pressure Change Initial Close / Final Close	0.0	%



**Company: Ritchie Exploration,  
Inc.**

**Lease: Darrel Dirks #1**

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC -  
Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<b>DATE</b> March <b>26</b> 2018
---

<b>DST #7</b>	<b>Formation:</b> <b>Cherokee</b>	<b>Test Interval: 4485 -</b> <b>4535'</b>	<b>Total Depth: 4535'</b>
	Time On: 02:49 03/26	Time Off: 09:17 03/26	
	Time On Bottom: 04:40 03/26	Time Off Bottom: 07:40 03/26	

**REMARKS:**

IF=Built to 1.2

ISI=No Blow

FF= 0 in 30 min flushed tool at 30 min mark .8 to start died to .2

FSI=No Blow

Tool Sample= Mud with slight oil spots



# Company: Ritchie Exploration, Inc.

## Lease: Darrel Dirks #1

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC - Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<b>DATE</b> March <b>26</b> 2018
---

**DST #7**      **Formation:** Cherokee      **Test Interval:** 4485 - 4535'      **Total Depth:** 4535'  
Time On: 02:49 03/26      Time Off: 09:17 03/26  
Time On Bottom: 04:40 03/26      Time Off Bottom: 07:40 03/26

### Down Hole Makeup

<b>Heads Up:</b> 12.6 FT	<b>Packer 1:</b> 4480.13 FT
<b>Drill Pipe:</b> 4349.93 FT <i>ID-3 1/2</i>	<b>Packer 2:</b> 4485.13 FT
<b>Weight Pipe:</b> FT <i>ID-2 7/8</i>	<b>Top Recorder:</b> 4469.55 FT
<b>Collars:</b> 115.23 FT <i>ID-2 1/4</i>	<b>Bottom Recorder:</b> 4533 FT
<b>Test Tool:</b> 33.57 FT <i>ID-3 1/2-FH</i> <i>Jars</i> <i>Safety Joint</i>	<b>Well Bore Size:</b> 7 7/8
<b>Total Anchor:</b> 49.87	<b>Surface Choke:</b> 1"
<b><u>Anchor Makeup</u></b>	<b>Bottom Choke:</b> 5/8"
<b>Packer Sub:</b> 1 FT	
<b>Perforations: (top):</b> 12 FT <i>4 1/2-FH</i>	
<b>Change Over:</b> 1 FT	
<b>Drill Pipe: (in anchor):</b> 31.87 FT <i>ID-3 1/2</i>	
<b>Change Over:</b> 1 FT	
<b>Perforations: (below):</b> 3 FT <i>4 1/2-FH</i>	



**Company: Ritchie Exploration,  
Inc.**

**Lease: Darrel Dirks #1**

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC -  
Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<p><b>DATE</b> March <b>26</b> 2018</p>
---

<b>DST #7</b>	<b>Formation: Cherokee</b>	<b>Test Interval: 4485 - 4535'</b>	<b>Total Depth: 4535'</b>
	Time On: 02:49 03/26	Time Off: 09:17 03/26	
	Time On Bottom: 04:40 03/26	Time Off Bottom: 07:40 03/26	

**Mud Properties**

<b>Mud Type:</b> Chemical	<b>Weight:</b> 9.3	<b>Viscosity:</b> 56	<b>Filtrate:</b> 9.6	<b>Chlorides:</b> 7800 ppm
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# Company: Ritchie Exploration, Inc.

## Lease: Darrel Dirks #1

SEC: 32 TWN: 15S RNG: 35W  
County: LOGAN  
State: Kansas  
Drilling Contractor: WW Drilling, LLC - Rig 10  
Elevation: 3129 GL  
Field Name: Wildcat  
Pool: WILDCAT  
Job Number: 130

<b>DATE</b> March <b>26</b> 2018
---

**DST #7**      **Formation: Cherokee**      **Test Interval: 4485 - 4535'**      **Total Depth: 4535'**  
Time On: 02:49 03/26      Time Off: 09:17 03/26  
Time On Bottom: 04:40 03/26      Time Off Bottom: 07:40 03/26

### Gas Volume Report

1st Open

2nd Open

Time	Orifice	PSI	MCF/D
------	---------	-----	-------

Time	Orifice	PSI	MCF/D
------	---------	-----	-------