

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	Mull Drilling Company, Inc.
Well Name	DIREWOLF 1-28
Doc ID	1388485

All Electric Logs Run

CDL/CNL/PE
DIL
MEL
SONIC

Form	ACO1 - Well Completion
Operator	Mull Drilling Company, Inc.
Well Name	DIREWOLF 1-28
Doc ID	1388485

Tops

Name	Top	Datum
Anhydrite	1805	+ 1564
B/Anhydrite	1886	+ 1483
Heebner Shale	3795	- 426
Lansing	3843	- 474
Marmaton	4483	- 1114
Ft. Scott	4656	- 1287
Cherokee Shale	4666	- 1297
Atoka	4865	- 1496
Morrow Shale	5077	- 1708
Keyes Lime	5309	- 1941
Mississippian	5387	- 2018



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

FIELD TICKET & TREATMENT REPORT
 CEMENT

TICKET NUMBER 54915
 LOCATION Oakley Ks
 FOREMAN Jerry Y

Invoice # 811690 Ks

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY	
11-2-17	5654565	Dire wolf 1-28	28	26 S	40 W	Hamilton	
CUSTOMER		Syracuse		TRUCK #	DRIVER	TRUCK #	DRIVER
MAILING ADDRESS		145 + 13		731	Cory D		
700 N. Wakefront Bldg. Bldg. 1200		125 + 5		460	AD W		
CITY	STATE	ZIP CODE					
Wichita	KS	67206-6637					

JOB TYPE concrete HOLE SIZE 17 1/2 HOLE DEPTH 100' CASING SIZE & WEIGHT 13 3/8 54.5#
 CASING DEPTH _____ DRILL PIPE _____ TUBING _____ OTHER _____
 SLURRY WEIGHT 15.2 SLURRY VOL. 1.24 WATER gal/sk _____ CEMENT LEFT in CASING 20'
 DISPLACEMENT 12 bbl DISPLACEMENT PSI _____ MIX PSI _____ RATE _____

REMARKS: Safety meeting & rig upon Duke 5 circulate casing mix 90sk's com
3+2 wash up & displace with 12 bbl fresh water & set in put 1 bbl to set

Cement did
circulate
 Thank you
 Jerry's crew

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
CE0471	1	PUMP CHARGE	1150.00	1150.00
CE0002	75	MILEAGE	7.15	536.25
CE0711	4.23	ton mileage delivery	660.00	660.00
CE5871	90sk's	surface blend II	24.00	2160.00
			Subtotal	4506.25
			-308	1351.88
			Subtotal	3154.58

SCANNED

Ravin 3737 AUTHORIZATION Kameel M. Lane TITLE Rig Supervisor SALES TAX 113.40
 ESTIMATED TOTAL 3267.78 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.



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

9/19/09

TICKET NUMBER 54916
LOCATION Oakley KS
FOREMAN Jerry Y

FIELD TICKET & TREATMENT REPORT
CEMENT

Invoice # 811703

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY	
11-4-17	5654-110	Dire wolf 1-28	28	265	40W	Hamilton	
CUSTOMER		MAILING ADDRESS		TRUCK #	DRIVER	TRUCK #	DRIVER
Mull		1700 N. Waterfront Parkway, Bldg 1200		731	Cory D		
CITY	STATE	ZIP CODE		566	PDW		
Wichita	KS	67206-6637		772-T-127	Seth O		

Jerry
5 to 35
5 to 5
1200
25
Winte

JOB TYPE Surface HOLE SIZE 12 1/4 HOLE DEPTH 1790 CASING SIZE & WEIGHT 8 5/8 23 #
CASING DEPTH 1790 DRILL PIPE _____ TUBING _____ OTHER _____
SLURRY WEIGHT 12.5/14.8 SLURRY VOL 198 / 1.24 WATER gal/sk _____ CEMENT LEFT in CASING 41'
DISPLACEMENT 11 1/2 DISPLACEMENT PSI _____ MIX PSI _____ RATE _____

REMARKS: Safety meeting on rig up on Duke 5 centralizers on 1, 3, 5 circulate casing mix 560 sks 6.5/35 6% gel 3% CC 1/4 # floccul lead & teiled in with 160 sks corn 38 CC 22 gel shut down rebarob plug washup & displaced with 112 bbl fresh water final lift 600 # plug landed @ 800 # released back & float leaked a little bit press back to 500 # & shut in

Cement did Circulate

Thank you

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
CE0451	1	PUMP CHARGE	1900.00	1900.00
CE0002	76	MILEAGE	7.15	536.25
CE0710	32.35	ton mileage & delivery	1.75	4245.94
CC6075	175 #	floccul	3.00	525.00
CC5828	560 sks	lite blend IV	19.50	10725.00
CC5871	160 sks	surfactant blend II	24.00	3600.00
CP8280	1	8 5/8 guide shoe	650.00	650.00
CP8203	1	8 5/8 bottom rubber plug	300.00	300.00
CP8435	1	8 5/8 insert float	380.00	380.00
CP8556	3	8 5/8 centralizers	110.00	330.00
			5466.61	23192.19
			-30%	6957.66
			5466.61	16234.53

Jerry's crew

Ravin 3737

AUTHORIZATION Kenneth Milne TITLE Rig supervisor

SALES TAX 8166.78
ESTIMATED TOTAL 17101.32
DATE 11-4-17

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9/19/09

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LOCATION Oakley KS
FOREMAN Jerry Y

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CEMENT

Invoice # 811703

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Mull		1700 N. Waterfront Parkway, Bldg 1200		731	Cory D		
CITY	STATE	ZIP CODE		566	PDW		
Wichita	KS	67206-6637		772-T-127	Seth O		

Jerry
5 to 35
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**Company: Mull Drilling
Company, Inc**
Lease: Direwolf #1-28

SEC: 28 TWN: 26S RNG: 40W
County: HAMILTON
State: Kansas
Drilling Contractor: Duke Drilling
Company, Inc - Rig 1
Elevation: 3358 GL
Field Name: Wildcat
Pool: Infield
Job Number: 79

DATE
November
11
2017

DST #1 **Formation: Morrow Sand** **Test Interval: 5030 - 5135'** **Total Depth: 5135'**
Time On: 05:16 11/11 Time Off: 13:32 11/11
Time On Bottom: 08:54 11/11 Time Off Bottom: 10:29 11/11

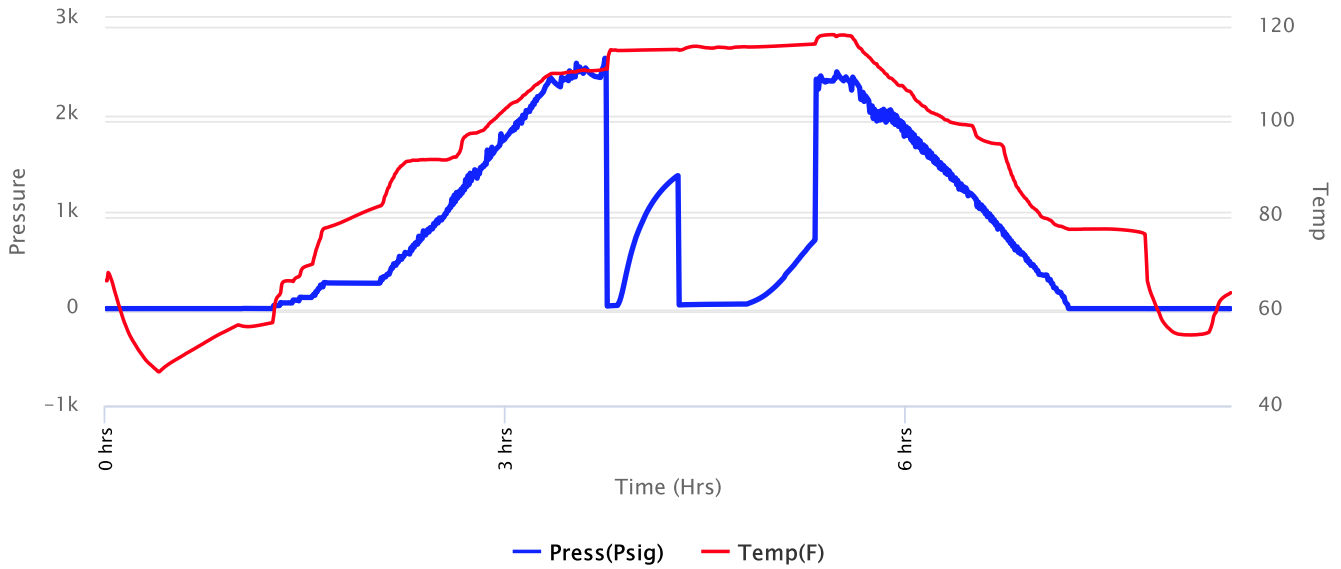
Electronic Volume
Estimate:
47'

1st Open
Minutes: 5
1.2" at 5 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: Mull Drilling
Company, Inc**
Lease: Direwolf #1-28

SEC: 28 TWN: 26S RNG: 40W
County: HAMILTON
State: Kansas
Drilling Contractor: Duke Drilling
Company, Inc - Rig 1
Elevation: 3358 GL
Field Name: Wildcat
Pool: Infield
Job Number: 79

DATE
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11
2017

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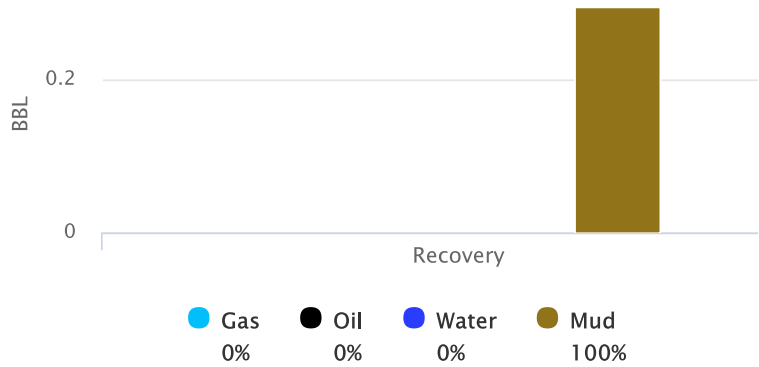
Recovered

<u>Foot</u>	<u>BBLs</u>	<u>Description of Fluid</u>	<u>Gas %</u>	<u>Oil %</u>	<u>Water %</u>	<u>Mud %</u>
60	0.2952	M	0	0	0	100

Total Recovered: 60 ft
Total Barrels Recovered: 0.2952

Reversed Out
NO

Recovery at a glance



Initial Hydrostatic Pressure	2384	PSI
Initial Flow	27 to 33	PSI
Initial Closed in Pressure	1372	PSI
Final Flow Pressure	39 to 48	PSI
Final Closed in Pressure	710	PSI
Final Hydrostatic Pressure	2372	PSI
Temperature	117	°F
Pressure Change Initial Close / Final Close	48.3	%



**Company: Mull Drilling
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State: Kansas
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Company, Inc - Rig 1
Elevation: 3358 GL
Field Name: Wildcat
Pool: Infield
Job Number: 79

DATE November 11 2017
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DST #1	Formation: Morrow Sand	Test Interval: 5030 - 5135'	Total Depth: 5135'
	Time On: 05:16 11/11	Time Off: 13:32 11/11	
	Time On Bottom: 08:54 11/11	Time Off Bottom: 10:29 11/11	

REMARKS:

Initial Flow: 1/2 in. blow increasing to 1 1/4 ins.

Initial Shut-in: No blow back.

Final Flow: Surface blow lasting 13 mins.

Final Shut-in: No blow back.

Tool Sample: Trace oil, 100% mud



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Company, Inc - Rig 1
Elevation: 3358 GL
Field Name: Wildcat
Pool: Infield
Job Number: 79

<p>DATE November 11 2017</p>
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DST #1 **Formation: Morrow Sand** **Test Interval: 5030 - 5135'** **Total Depth: 5135'**

Time On: 05:16 11/11 Time Off: 13:32 11/11
Time On Bottom: 08:54 11/11 Time Off Bottom: 10:29 11/11

Down Hole Makeup

Heads Up: 18.78 FT	Packer 1: 5025.2 FT
Drill Pipe: 4782.8 FT <i>ID-3 1/2</i>	Packer 2: 5030.2 FT
Weight Pipe: 0 FT <i>ID-2 7/8</i>	Top Recorder: 5014.62 FT
Collars: 233.61 FT <i>ID-2 1/4</i>	Bottom Recorder: 5100 FT
Test Tool: 33.57 FT <i>ID-3 1/2-FH</i> <i>Jars</i> <i>Safety Joint</i>	Well Bore Size: 7 7/8
Total Anchor: 104.8	Surface Choke: 1"
<u>Anchor Makeup</u>	Bottom Choke: 5/8"
Packer Sub: 1 FT	
Perforations: (top): 3 FT <i>4 1/2-FH</i>	
Change Over: 1 FT	
Drill Pipe: (in anchor): 62.8 FT <i>ID-3 1/2</i>	
Change Over: 1 FT	
Perforations: (below): 36 FT <i>4 1/2-FH</i>	



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Company, Inc - Rig 1
Elevation: 3358 GL
Field Name: Wildcat
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DATE November 11 2017
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DST #1	Formation: Morrow Sand	Test Interval: 5030 - 5135'	Total Depth: 5135'
	Time On: 05:16 11/11	Time Off: 13:32 11/11	
	Time On Bottom: 08:54 11/11	Time Off Bottom: 10:29 11/11	

Mud Properties

Mud Type: Chemical **Weight:** 9.1 **Viscosity:** 58 **Filtrate:** 7.2 **Chlorides:** 2,500 ppm



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County: HAMILTON
State: Kansas
Drilling Contractor: Duke Drilling
Company, Inc - Rig 1
Elevation: 3358 GL
Field Name: Wildcat
Pool: Infield
Job Number: 79

DATE
November
12
2017

DST #2 **Formation: Morrow Sand** **Test Interval: 5135 - 5320'** **Total Depth: 5320'**
Time On: 11:48 11/12 Time Off: 17:54 11/12
Time On Bottom: 15:24 11/12 Time Off Bottom: 15:25 11/12

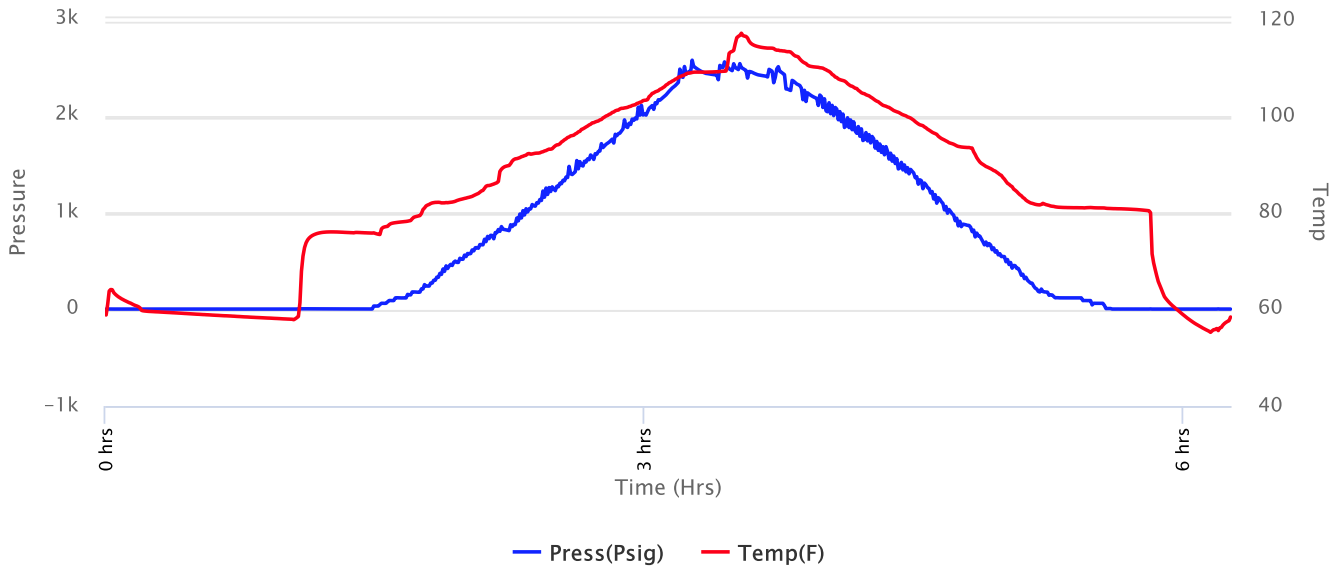
Electronic Volume
Estimate:
0'

1st Open
N/A

1st Close
N/A

2nd Open
N/A

2nd Close
N/A





**Company: Mull Drilling
Company, Inc**
Lease: Direwolf #1-28

SEC: 28 TWN: 26S RNG: 40W
County: HAMILTON
State: Kansas
Drilling Contractor: Duke Drilling
Company, Inc - Rig 1
Elevation: 3358 GL
Field Name: Wildcat
Pool: Infield
Job Number: 79

DATE
November
12
2017

DST #2 **Formation: Morrow Sand** **Test Interval: 5135 - 5320'** **Total Depth: 5320'**
Time On: 11:48 11/12 Time Off: 17:54 11/12
Time On Bottom: 15:24 11/12 Time Off Bottom: 15:25 11/12

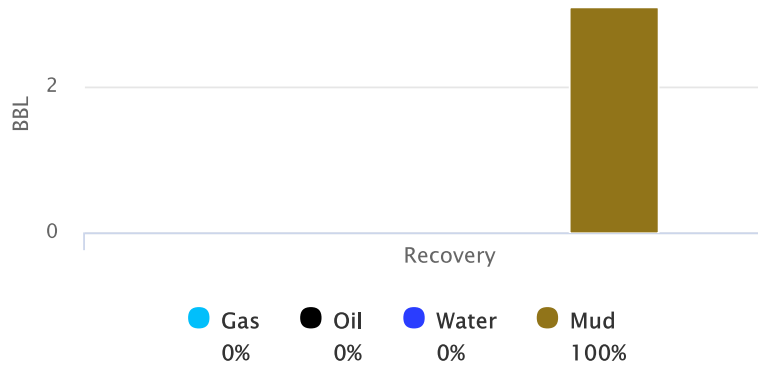
Recovered

<u>Foot</u>	<u>BBLs</u>	<u>Description of Fluid</u>	<u>Gas %</u>	<u>Oil %</u>	<u>Water %</u>	<u>Mud %</u>
370	3.0901909	M	0	0	0	100

Total Recovered: 370 ft
Total Barrels Recovered: 3.0901909

Reversed Out
NO

Recovery at a glance



Initial Hydrostatic Pressure	0	PSI
Initial Flow	0	PSI
Initial Closed in Pressure	0	PSI
Final Flow Pressure	0	PSI
Final Closed in Pressure	0	PSI
Final Hydrostatic Pressure	0	PSI
Temperature	0	°F
Pressure Change Initial Close / Final Close	0.0	%



**Company: Mull Drilling
Company, Inc
Lease: Direwolf #1-28**

SEC: 28 TWN: 26S RNG: 40W
County: HAMILTON
State: Kansas
Drilling Contractor: Duke Drilling
Company, Inc - Rig 1
Elevation: 3358 GL
Field Name: Wildcat
Pool: Infield
Job Number: 79

<p>DATE November 12 2017</p>
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DST #2	Formation: Morrow Sand	Test Interval: 5135 - 5320'	Total Depth: 5320'
	Time On: 11:48 11/12	Time Off: 17:54 11/12	
	Time On Bottom: 15:24 11/12	Time Off Bottom: 15:25 11/12	

REMARKS:

PACKER FAILURE!



**Company: Mull Drilling
Company, Inc
Lease: Direwolf #1-28**

SEC: 28 TWN: 26S RNG: 40W
County: HAMILTON
State: Kansas
Drilling Contractor: Duke Drilling
Company, Inc - Rig 1
Elevation: 3358 GL
Field Name: Wildcat
Pool: Infield
Job Number: 79

<p>DATE November 12 2017</p>
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DST #2 **Formation: Morrow Sand** **Test Interval: 5135 - 5320'** **Total Depth: 5320'**

Time On: 11:48 11/12 Time Off: 17:54 11/12
Time On Bottom: 15:24 11/12 Time Off Bottom: 15:25 11/12

Down Hole Makeup

Heads Up: 11.81 FT	Packer 1: 5129.68 FT
Drill Pipe: 4880.31 FT <i>ID-3 1/2</i>	Packer 2: 5135.18 FT
Weight Pipe: 0 FT <i>ID-2 7/8</i>	Top Recorder: 5119.1 FT
Collars: 233.61 FT <i>ID-2 1/4</i>	Bottom Recorder: 5300 FT
Test Tool: 34.07 FT <i>ID-3 1/2-FH</i> <i>Jars</i> <i>Safety Joint</i>	Well Bore Size: 7 7/8
Total Anchor: 184.82	Surface Choke: 1"
<u>Anchor Makeup</u>	Bottom Choke: 5/8"
Packer Sub: 1 FT	
Perforations: (top): 3 FT <i>4 1/2-FH</i>	
Change Over: 1 FT	
Drill Pipe: (in anchor): 157.82 FT <i>ID-3 1/2</i>	
Change Over: 1 FT	
Perforations: (below): 21 FT <i>4 1/2-FH</i>	



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	Time On: 11:48 11/12	Time Off: 17:54 11/12	
	Time On Bottom: 15:24 11/12	Time Off Bottom: 15:25 11/12	

Mud Properties

Mud Type: Chemical	Weight: 9.2	Viscosity: 55	Filtrate: 7.2	Chlorides: 2,500 ppm
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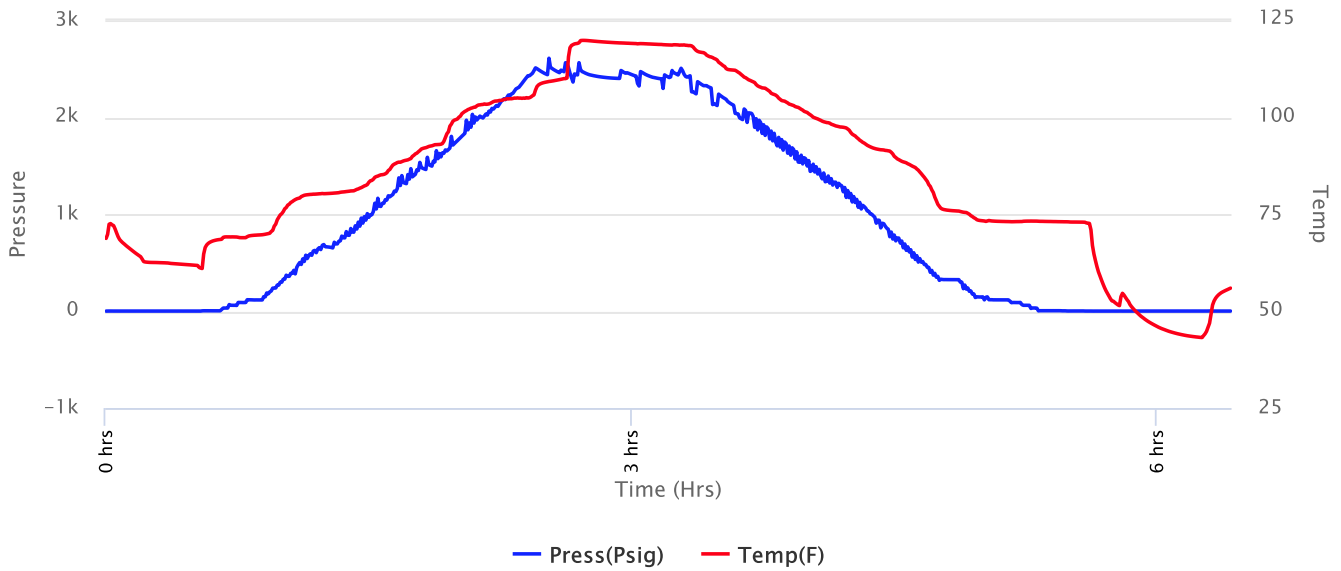
**Company: Mull Drilling
Company, Inc
Lease: Direwolf #1-28**

SEC: 28 TWN: 26S RNG: 40W
County: HAMILTON
State: Kansas
Drilling Contractor: Duke Drilling
Company, Inc - Rig 1
Elevation: 3358 GL
Field Name: Wildcat
Pool: Infield
Job Number: 79

DATE
November
12
2017

DST #3 **Formation: Morrow Sand** **Test Interval: 5145 - 5320'** **Total Depth: 5320'**
Time On: 18:21 11/12 Time Off: 00:35 11/13
Time On Bottom: 21:19 11/12 Time Off Bottom: 21:20 11/12

Electronic Volume Estimate: 0' 1st Open N/A 1st Close N/A 2nd Open N/A 2nd Close N/A





**Company: Mull Drilling
Company, Inc**
Lease: Direwolf #1-28

SEC: 28 TWN: 26S RNG: 40W
County: HAMILTON
State: Kansas
Drilling Contractor: Duke Drilling
Company, Inc - Rig 1
Elevation: 3358 GL
Field Name: Wildcat
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DATE
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12
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DST #3 **Formation: Morrow Sand** **Test Interval: 5145 - 5320'** **Total Depth: 5320'**
Time On: 18:21 11/12 Time Off: 00:35 11/13
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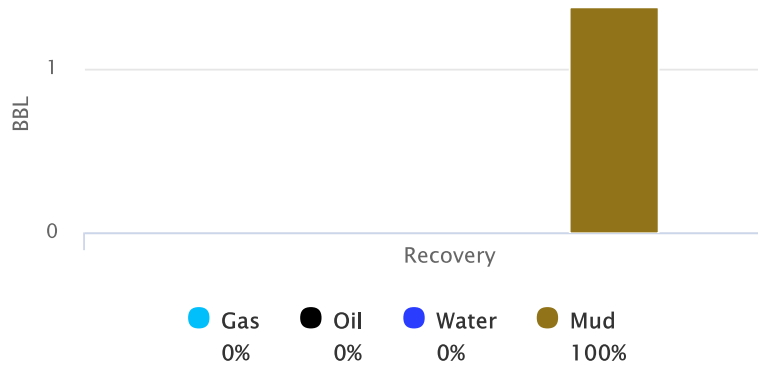
Recovered

<u>Foot</u>	<u>BBLS</u>	<u>Description of Fluid</u>	<u>Gas %</u>	<u>Oil %</u>	<u>Water %</u>	<u>Mud %</u>
250	1.3825909	M	0	0	0	100

Total Recovered: 250 ft
Total Barrels Recovered: 1.3825909

Reversed Out
NO

Recovery at a glance



Initial Hydrostatic Pressure	0	PSI
Initial Flow	0	PSI
Initial Closed in Pressure	0	PSI
Final Flow Pressure	0	PSI
Final Closed in Pressure	0	PSI
Final Hydrostatic Pressure	0	PSI
Temperature	0	°F
Pressure Change Initial Close / Final Close	0.0	%



**Company: Mull Drilling
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Company, Inc - Rig 1
Elevation: 3358 GL
Field Name: Wildcat
Pool: Infield
Job Number: 79

<p>DATE November 12 2017</p>
--

DST #3	Formation: Morrow Sand	Test Interval: 5145 - 5320'	Total Depth: 5320'
	Time On: 18:21 11/12	Time Off: 00:35 11/13	
	Time On Bottom: 21:19 11/12	Time Off Bottom: 21:20 11/12	

REMARKS:

PACKER FAILURE!



**Company: Mull Drilling
Company, Inc
Lease: Direwolf #1-28**

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State: Kansas
Drilling Contractor: Duke Drilling
Company, Inc - Rig 1
Elevation: 3358 GL
Field Name: Wildcat
Pool: Infield
Job Number: 79

<p>DATE November 12 2017</p>
--

DST #3 Formation: Morrow Sand Test Interval: 5145 - 5320' Total Depth: 5320'

Time On: 18:21 11/12 Time Off: 00:35 11/13
Time On Bottom: 21:19 11/12 Time Off Bottom: 21:20 11/12

Down Hole Makeup

Heads Up: 33.51 FT	Packer 1: 5139.68 FT
Drill Pipe: 4912.01 FT <i>ID-3 1/2</i>	Packer 2: 5145.18 FT
Weight Pipe: 0 FT <i>ID-2 7/8</i>	Top Recorder: 5129.1 FT
Collars: 233.61 FT <i>ID-2 1/4</i>	Bottom Recorder: 5310 FT
Test Tool: 34.07 FT <i>ID-3 1/2-FH</i> <i>Jars</i> <i>Safety Joint</i>	Well Bore Size: 7 7/8
Total Anchor: 174.82	Surface Choke: 1"
<u>Anchor Makeup</u>	Bottom Choke: 5/8"
Packer Sub: 1 FT	
Perforations: (top): 3 FT <i>4 1/2-FH</i>	
Change Over: 1 FT	
Drill Pipe: (in anchor): 157.82 FT <i>ID-3 1/2</i>	
Change Over: 1 FT	
Perforations: (below): 11 FT <i>4 1/2-FH</i>	



**Company: Mull Drilling
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Company, Inc - Rig 1
Elevation: 3358 GL
Field Name: Wildcat
Pool: Infield
Job Number: 79

DATE November 12 2017
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DST #3	Formation: Morrow Sand	Test Interval: 5145 - 5320'	Total Depth: 5320'
	Time On: 18:21 11/12	Time Off: 00:35 11/13	
	Time On Bottom: 21:19 11/12	Time Off Bottom: 21:20 11/12	

Mud Properties

Mud Type: Chemical	Weight: 9.2	Viscosity: 55	Filtrate: 7.2	Chlorides: 2,500 ppm
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**Company: Mull Drilling
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Lease: Direwolf #1-28**

SEC: 28 TWN: 26S RNG: 40W
County: HAMILTON
State: Kansas
Drilling Contractor: Duke Drilling
Company, Inc - Rig 1
Elevation: 3358 GL
Field Name: Wildcat
Pool: Infield
Job Number: 79

DATE
November
13
2017

DST #4 **Formation: Keyes Sand** **Test Interval: 5320 - 5365'** **Total Depth: 5365'**
Time On: 12:52 11/13 Time Off: 22:37 11/13
Time On Bottom: 16:12 11/13 Time Off Bottom: 19:47 11/13

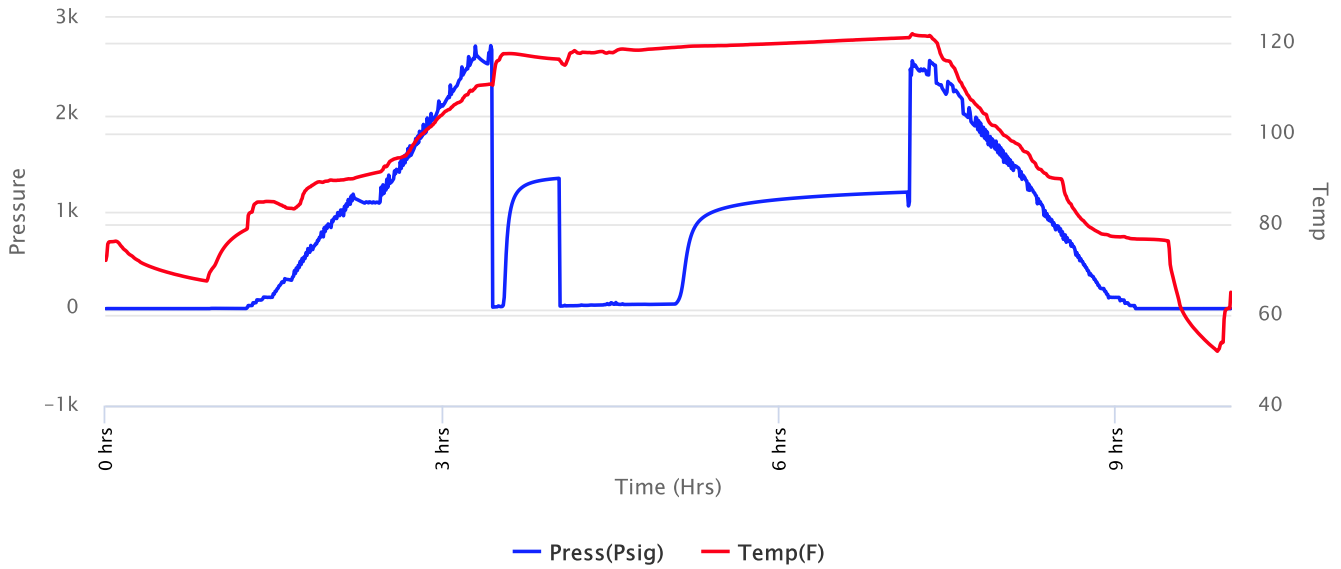
Electronic Volume
Estimate:
4'

1st Open
Minutes: 5
.1" at 5 min

1st Close
Minutes: 30
0" at 30 min

2nd Open
Minutes: 60
0" at 60 min

2nd Close
Minutes: 120
0" at 120 min





**Company: Mull Drilling
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SEC: 28 TWN: 26S RNG: 40W
County: HAMILTON
State: Kansas
Drilling Contractor: Duke Drilling
Company, Inc - Rig 1
Elevation: 3358 GL
Field Name: Wildcat
Pool: Infield
Job Number: 79

DATE
November
13
2017

DST #4 **Formation: Keyes Sand** **Test Interval: 5320 - 5365'** **Total Depth: 5365'**
Time On: 12:52 11/13 Time Off: 22:37 11/13
Time On Bottom: 16:12 11/13 Time Off Bottom: 19:47 11/13

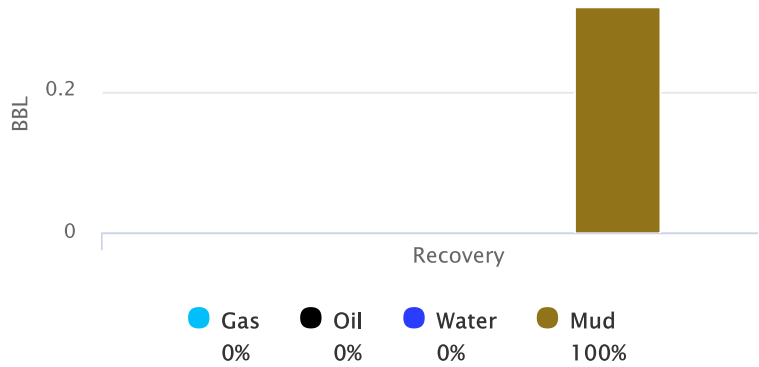
Recovered

<u>Foot</u>	<u>BBLs</u>	<u>Description of Fluid</u>	<u>Gas %</u>	<u>Oil %</u>	<u>Water %</u>	<u>Mud %</u>
65	0.3198	M	0	0	0	100

Total Recovered: 65 ft
Total Barrels Recovered: 0.3198

Reversed Out
NO

Recovery at a glance



Initial Hydrostatic Pressure	2525	PSI
Initial Flow	16 to 22	PSI
Initial Closed in Pressure	1345	PSI
Final Flow Pressure	26 to 49	PSI
Final Closed in Pressure	1202	PSI
Final Hydrostatic Pressure	2503	PSI
Temperature	122	°F
Pressure Change Initial Close / Final Close	10.6	%



**Company: Mull Drilling
Company, Inc
Lease: Direwolf #1-28**

SEC: 28 TWN: 26S RNG: 40W
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State: Kansas
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Company, Inc - Rig 1
Elevation: 3358 GL
Field Name: Wildcat
Pool: Infield
Job Number: 79

<p>DATE November 13 2017</p>
--

DST #4	Formation: Keyes Sand	Test Interval: 5320 - 5365'	Total Depth: 5365'
	Time On: 12:52 11/13	Time Off: 22:37 11/13	
	Time On Bottom: 16:12 11/13	Time Off Bottom: 19:47 11/13	

REMARKS:

Initial Flow: 1/2 in. blow.
Initial Shut-in: No blow back.
Final Flow: Surface blow.
Final Shut-in: No blow back.

Tool Sample: 100% mud



**Company: Mull Drilling
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Lease: Direwolf #1-28**

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State: Kansas
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Company, Inc - Rig 1
Elevation: 3358 GL
Field Name: Wildcat
Pool: Infield
Job Number: 79

<p>DATE November 13 2017</p>
--

DST #4	Formation: Keyes Sand	Test Interval: 5320 - 5365'	Total Depth: 5365'
	Time On: 12:52 11/13	Time Off: 22:37 11/13	
	Time On Bottom: 16:12 11/13	Time Off Bottom: 19:47 11/13	

Down Hole Makeup

Heads Up: 16.12 FT	Packer 1: 5314.74 FT
Drill Pipe: 5069.68 FT <i>ID-3 1/2</i>	Packer 2: 5320.24 FT
Weight Pipe: 0 FT <i>ID-2 7/8</i>	Top Recorder: 5304.16 FT
Collars: 233.61 FT <i>ID-2 1/4</i>	Bottom Recorder: 5358 FT
Test Tool: 34.07 FT <i>ID-3 1/2-FH Jars Safety Joint</i>	Well Bore Size: 7 7/8
Total Anchor: 44.76	Surface Choke: 1"
<u>Anchor Makeup</u>	Bottom Choke: 5/8"
Packer Sub: 1 FT	
Perforations: (top): 2 FT <i>4 1/2-FH</i>	
Change Over: 1 FT	
Drill Pipe: (in anchor): 31.76 FT <i>ID-3 1/2</i>	
Change Over: 1 FT	
Perforations: (below): 8 FT <i>4 1/2-FH</i>	



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Company, Inc - Rig 1
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Pool: Infield
Job Number: 79

DATE November 13 2017
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DST #4	Formation: Keyes Sand	Test Interval: 5320 - 5365'	Total Depth: 5365'
	Time On: 12:52 11/13	Time Off: 22:37 11/13	
	Time On Bottom: 16:12 11/13	Time Off Bottom: 19:47 11/13	

Mud Properties

Mud Type: Chemical	Weight: 9.1	Viscosity: 55	Filtrate: 8.0	Chlorides: 3,400 ppm
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**Company: Mull Drilling
Company, Inc
Lease: Direwolf #1-28**

SEC: 28 TWN: 26S RNG: 40W
County: HAMILTON
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Company, Inc - Rig 1
Elevation: 3358 GL
Field Name: Wildcat
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Job Number: 79

DATE November 13 2017
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DST #4 **Formation: Keyes Sand** **Test Interval: 5320 - 5365'** **Total Depth: 5365'**

Time On: 12:52 11/13 Time Off: 22:37 11/13
Time On Bottom: 16:12 11/13 Time Off Bottom: 19:47 11/13

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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KEVIN L. KESSLER

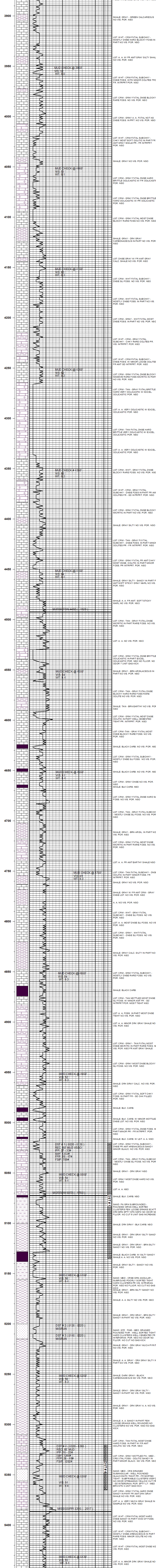
CONSULTING PETROLEUM GEOLOGIST

(316) 522 - 7338

OPERATOR : MULL DRILLING CO. INC.		ELEVATION	
LEASE : DIREWOLF	WELL # : 1 - 28	KB: 3369'	
LOCATION : 1996' FSL & 656' FEL		GL: 3358'	
SEC : 28	TWP : 26 S	RGE : 40 W	MEASUREMENTS FROM:
COUNTY : HAMILTON	STATE : KANSAS		KB
CONTRACTOR: DUKE DRILLING RIG # 5		CASING RECORD:	
COMM: 11 - 02 - 2017	COMP: 11 - 14 - 2017	SURFACE:	
RTD: 5450'	LTD: 5449'	8 5/8" @ 1798'	
GEOLOGICAL SUPERVISION FROM: 3750'	TO: RTD	PRODUCTION:	
SAMPLES SAVED FROM: 3750'	TO: RTD	NONE	

FORMATION:	TOP	LOG DATUM	SAMPLE TOP	SAMPLE DATUM	COMP.	ELECTRICAL SURVEYS:
HEEBNER	3796	- 427	3796	- 427	+ 23	DIL
LANSING	3850	- 481	3850	- 481	+ 21	CNL / CDL
MARMATON	4492	- 1123	4492	- 1123	+ 01	MICRO
MORROW	5072	- 1703	5072	- 1703	+ 09	SONIC
MISSISSIPPI	5386	- 2017	5386	- 2017	+ 185	

REFERENCE WELL FOR STRUCTURAL COMPARISON:
ABERCROMBIE #1-35 LAKE 35-26S-40W HAMILTON CO. KS.



COMMENTS :

DUE TO NEGATIVE DST RESULTS THIS WELL WAS PLUGGED AND ABANDONED

KEVIN L. KESSLER