



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1154573
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

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 SIOW
- Gas D&A ENHR SIGW
- OG GSW Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

- Deepening Re-perf. Conv. to ENHR Conv. to SWD
- Plug Back Conv. to GSW Conv. to Producer
- Commingled Permit #: _____
- Dual Completion Permit #: _____
- SWD Permit #: _____
- ENHR Permit #: _____
- GSW Permit #: _____

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - _____

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
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: _____ Date: _____



1154573

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

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				

Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 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)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD: Size: _____ Set At: _____ Packer At: _____ Liner Run: Yes No

Date of First, Resumed Production, SWD or ENHR. _____ Producing Method:
 Flowing Pumping Gas Lift Other *(Explain)* _____

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Mull Drilling Company, Inc.
Well Name	Hempler 1-18
Doc ID	1154573

All Electric Logs Run

CDL/CNL
DIL
MEL
Sonic

Form	ACO1 - Well Completion
Operator	Mull Drilling Company, Inc.
Well Name	Hempler 1-18
Doc ID	1154573

Tops

Name	Top	Datum
Anhydrite	2090	+ 629
B/Anhydrite	2120	+ 599
Heebner Shale	3953	- 1234
Lansing	3994	- 1274
Stark Shale	4270	- 1551
B/KC	4349	- 1630
Marmaton	4380	- 1661
Pawnee	4461	- 1742
Ft. Scott	4520	- 1801
Cherokee Shale	4544	- 1825
Johnson	4583	- 1864
Mississippian	4617	- 1898

Conservation Division
Finney State Office Building
130 S. Market, Rm. 2078
Wichita, KS 67202-3802



Phone: 316-337-6200
Fax: 316-337-6211
<http://kcc.ks.gov/>

Mark Sievers, Chairman
Thomas E. Wright, Commissioner
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

August 07, 2013

Mark Shreve
Mull Drilling Company, Inc.
1700 N WATERFRONT PKWY
BLDG 1200
WICHITA, KS 67206-6637

Re: ACO1
API 15-101-22436-00-00
Hempler 1-18
SW/4 Sec.18-18S-27W
Lane County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,
Mark Shreve



258423

TICKET NUMBER 39927
 LOCATION Oakley
 FOREMAN Fuzzy

PO Box 884, Chanute, KS 68720
 620-431-9210 or 800-467-8676

FIELD TICKET & TREATMENT REPORT
CEMENT

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
4.30.13	5659	Hemplet 1-18	18	185	27w	lane
CUSTOMER Mull Oils			DISK# 6E N4E 2W			
MAILING ADDRESS			TRUCK#	DRIVER	TRUCK#	DRIVER
CITY			463	TRAVIS W		
STATE			693	MIKE P		
ZIP CODE				JACK J		

JOB TYPE Surf Ace HOLE SIZE 12 1/4 HOLE DEPTH 225' CASING SIZE & WEIGHT 8 5/8
 CASING DEPTH 225' DRILL PIPE _____ TUBING _____ OTHER _____
 SLURRY WEIGHT 14.7 SLURRY VOL 36 WATER gal/ck 6.5 CEMENT LEFT in CASING 20'
 DISPLACEMENT 13 BBL DISPLACEMENT PSI _____ MIX PSI _____ RATE _____

REMARKS: Safety meeting on Duke #4, Rig up and circulate
Mix 165 SRS CLASS A' 3% cc 2% gel, Drop plug and displace
13 BBL and shut in. Cement did circulate approx 2 BBL
to pit.

Thanks Fuzzy & crew

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
5405	1	PUMP CHARGE	1150 ⁰⁰	1150 ⁰⁰
5406	25	MILEAGE	522	13125
5407	7.8 ton	Ten mileage Delivery (min)	122	430 ⁰⁰
11045	165 SRS	Class A' cement	18 ⁵²	3060 ⁷⁵
1118B	510 #	Bentonite	.27	93 ³⁰
1102	465 #	Calcium Chloride	.94	437 ¹⁰
4432	1	8 5/8 wood cup plug	100 ²⁵	100 ²⁵
		subtotal		5393 ³²
		less 10%		539 ³⁶
		subtotal		4854 ¹⁹
		SALES TAX		208.79
		ESTIMATED TOTAL		5062.98

Rev 6/3/07

AUTHORIZATION Rick Wheeler TITLE TT 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.

DIAMOND TESTING LLC

ROGER D. FRIEDLY

CELL # 620-793-2043

General Information

Company Name MULL DRILLING, INC
Contact ERNIE MORRISON
Well Name HAMPLER #1-18
Unique Well ID DST #1 LANS. K 4268-4295
Surface Location SEC 18-18S-27W LANE CNTY, KS
Field WILDCAT
Well Type Vertical

Job Number BOO1
Representative ROGER D. FRIEDLY
Well Operator DUKE DRILLING RIG #4
Prepared By ROGER D. FRIEDLY
Qualified By PHIL ASKEY
Test Unit NO. 6

Test Information

Test Type CONVENTIONAL
Formation DST #1 'K' 4,268' - 4,295'
Well Fluid Type 01 Oil
Test Purpose (AEUB) Initial Test

Representative ROGER D. FRIEDLY
Well Operator DUKE DRILLING RIG #4
Report Date 2013/05/06 YYYY/MM/DD
Prepared By ROGER D. FRIEDLY

Start Test Date 2013/05/05 YYYY/MM/DD Start Test Time 20:11:00 HH:mm:ss
Final Test Date 2012/05/06 YYYY/MM/DD Final Test Time 05:19:00 HH:mm:ss

Test Results

RECOVERED: 463' GAS IN PPE
83' CLEAN OIL GRAVITY 35.4 @ 60 deg.
72' G&OCM 5% GAS, 40% OIL, 55% MUD
124' OCMW 3% OIL, 80% WTR, 17% MUD
279' TOTAL FLUID

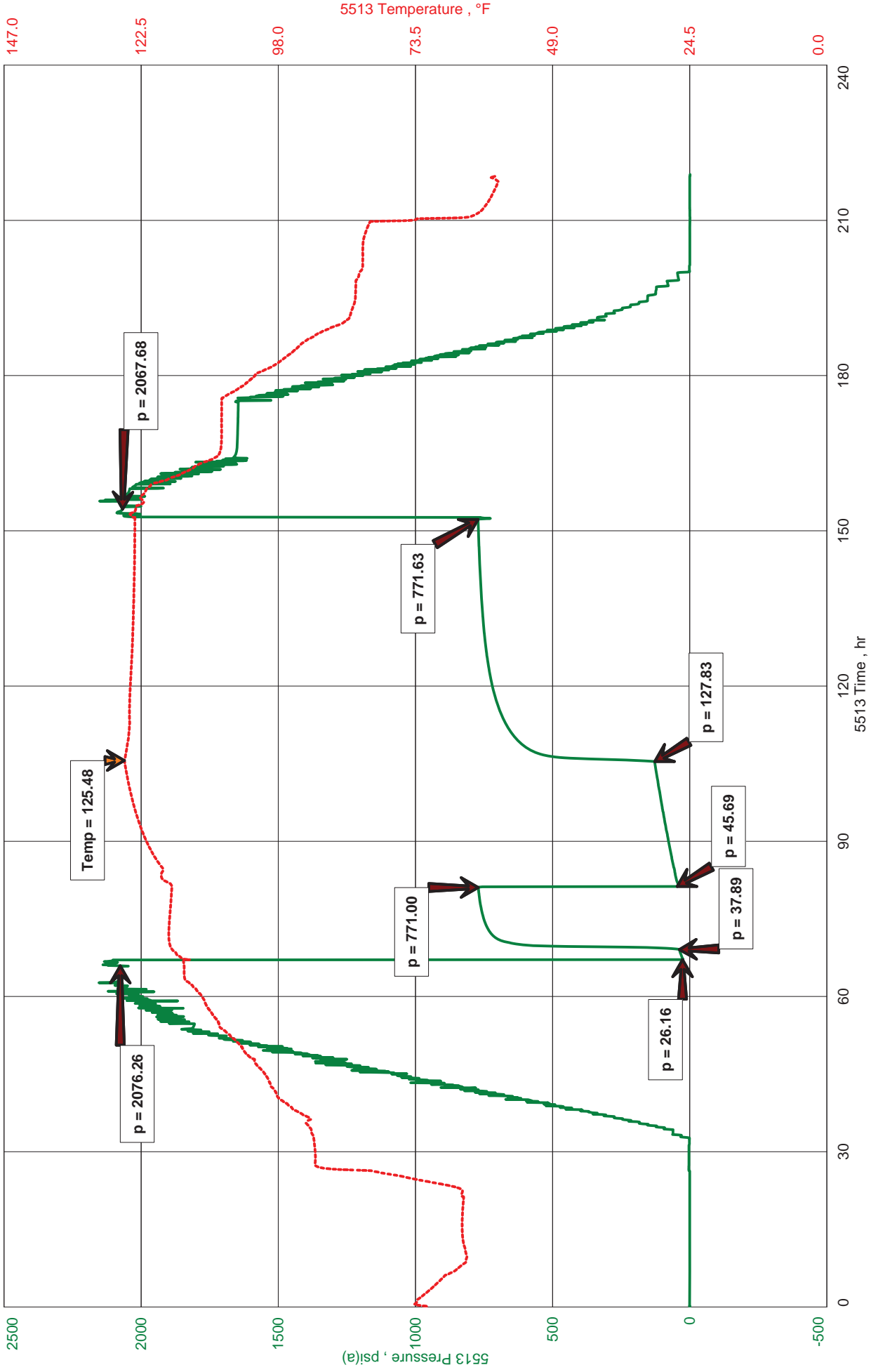
TOOL SAMPLE: 1% OIL, 99% WTR

CHLORIDES:39Ppm
PH: 7.0
RW: .28 @ 45 deg.

MULL DRILLING, INC
DST #1 LANS. K 4268-4295
Start Test Date: 2013/05/05
Final Test Date: 2012/05/06

HAMPLER #1-18
Formation: DST #1 'K' 4,268' - 4,295'
Job Number: BOO1

HAMPLER #1-18





DIAMOND TESTING
P.O. Box 157
HOISINGTON, KANSAS 67544
(800) 542-7313
DRILL-STEM TEST TICKET
FILE: HEMPLER1-18DST1

TIME ON: 20:11 (5-5)
TIME OFF: 05:19N (5.6)

Company MULL DRILLING, INC Lease & Well No. HEMPLER #1-18
Contractor DUKE RIG #4 Charge to MULL DRILLING, INC
Elevation 2,710 (EST GL) Formation LANSING 'K' Effective Pay _____ Ft. Ticket No. BOO1
Date 05-05-13 Sec. 18 Twp. 18 S Range 18 W County LANE State KANSAS
Test Approved By PHIL ASKEY Diamond Representative BOB HAMEL

Formation Test No. 1 Interval Tested from 4,268 ft. to 4,295 ft. Total Depth 4,295 ft.
Packer Depth 4,263 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.
Packer Depth 4,268 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.

Depth of Selective Zone Set _____

Top Recorder Depth (Inside) 4,256 ft. Recorder Number 5513 Cap. 10,000 P.S.I.
Bottom Recorder Depth (Outside) 4,292 ft. Recorder Number 6249 Cap. 4,950 P.S.I.
Below Straddle Recorder Depth _____ ft. Recorder Number _____ Cap. _____ P.S.I.

Mud Type CHEMICAL Viscosity 45 Drill Collar Length 0 ft. I.D. 2 1/4 in.
Weight 9.2 Water Loss 7.2 cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in.
Chlorides 3,400 P.P.M. Drill Pipe Length 4,242 ft. I.D. 3 1/2 in.
Jars: Make STERLING Serial Number N/A Test Tool Length 26 ft. Tool Size 3 1/2-IF in.
Did Well Flow? NO Reversed Out NO Anchor Length 27 ft. Size 4 1/2-FH in.
Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

Blow: 1st Open: FAIR 1" BLOW INCREASING TO 6" (NObb)
2nd Open: FAIR 1" BLOW ICREASING TO BOTTOM OF BUCKET IN 12.5 MIN (F 3.5"bb)

Recovered <u>463</u> ft. of <u>GAS IN PIPE</u>		
Recovered <u>83</u> ft. of <u>CLEAN OIL 35.4 GRAVITY @ 60 deg.</u>		
Recovered <u>72</u> ft. of <u>G&OCM 5%GAS, 40% OIL, 55% MUD</u>		
Recovered <u>124</u> ft. of <u>OCMW 3% OIL, 80% WTR, 17% MUD</u>		
Recovered <u>279</u> ft. of <u>TOTAL FLUID</u>	<u>CHLORIDES 39,000 Ppm</u>	Price Job
Recovered _____ ft. of _____	<u>PH 7.0</u>	Other Charges
Remarks: _____	<u>RW: .28 @ 45 deg</u>	Insurance
<u>TOOL SAMPLE: 1% OIL, 99% WTR</u>		Total

Time Set Packer(s) 10:59 P.M. A.M. P.M. Time Started Off Bottom 2:33 A.M. A.M. P.M. Maximum Temperature 125

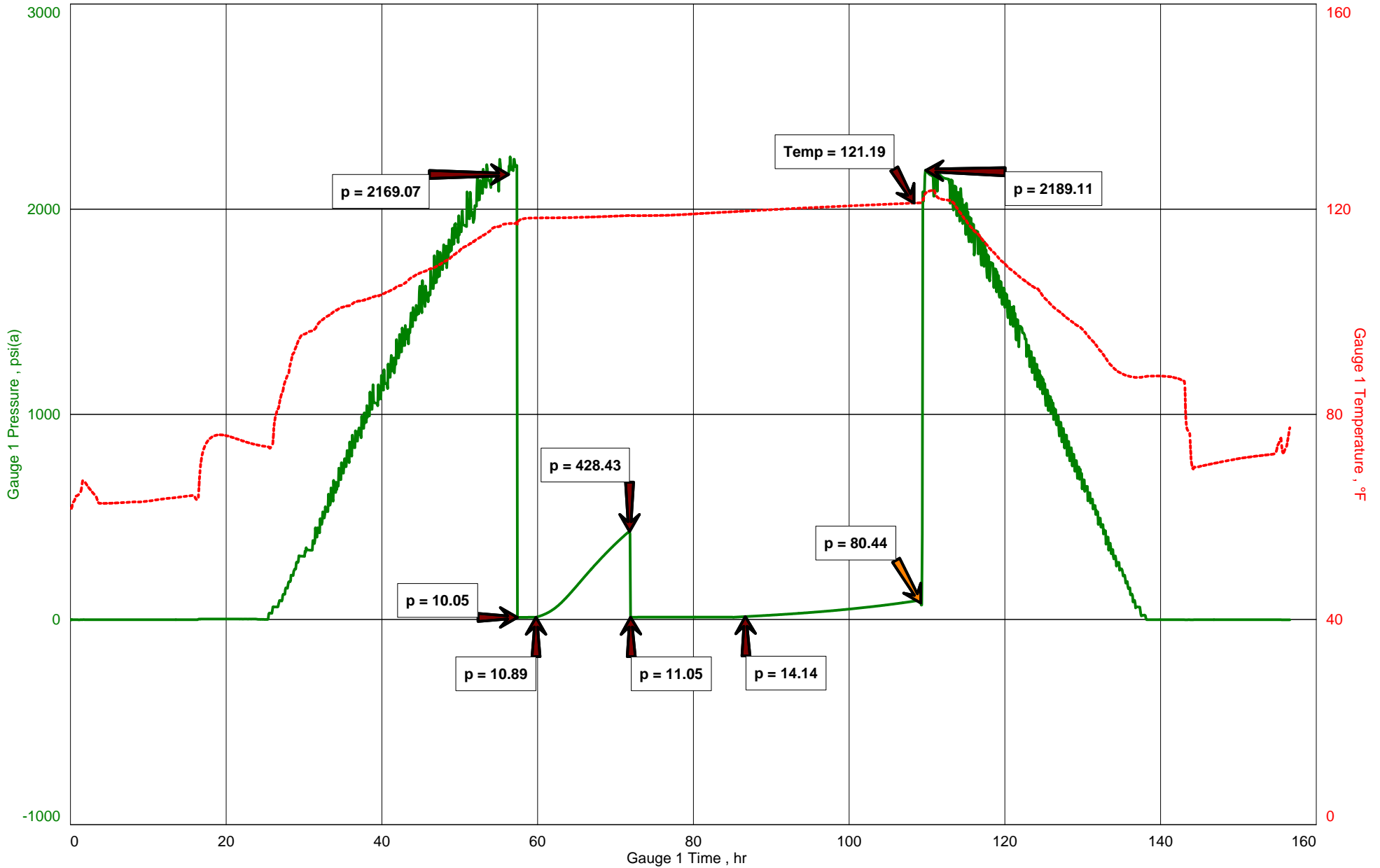
Initial Hydrostatic Pressure..... (A) 2,076 P.S.I.
Initial Flow Period..... Minutes 5 (B) 26 P.S.I. to (C) 38 P.S.I.
Initial Closed In Period..... Minutes 30 (D) 771 P.S.I.
Final Flow Period..... Minutes 60 (E) 46 P.S.I. to (F) 128 P.S.I.
Final Closed In Period..... Minutes 120 (G) 772 P.S.I.
Final Hydrostatic Pressure..... (H) 2,068 P.S.I.

Diamond Testing shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statement or opinion concerning the result of any test. Tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.

MULL DRILLING
DST#2 PAWN-Ft.SCOTT 4440-4549
Start Test Date: 2013/05/07
Final Test Date: 2013/05/07

HEMPLER 1-18
Formation: DST#2 PAWN-Ft.SCOTT 4440-4549
Pool: WILDCAT
Job Number: BOO2

HEMPLER 1-18



DIAMOND TESTING LLC

ROGER D. FRIEDLY

CELL # 620-793-2043

General Information

Company Name	MULL DRILLING	Job Number	BOO2
Contact	ERNIE MORRISON	Representative	ROBERT HAMEL
Well Name	HEMPLER 1-18	Well Operator	MULL DRILLING
Unique Well ID	DST#2 PAWN-FT.SCOTT 4440-4549	Prepared By	ROBERT HAMEL
Surface Location	SEC. 18-18S-27W LANE COUNTY	Qualified By	PHIL ASKEY
Field	WILDCAT	Test Unit	6
Well Type	Vertical		

Test Information

Test Type	Drill Stem Test	Representative	ROBERT HAMEL
Formation	DST#2 PAWN-FT.SCOTT 4440-4549	Well Operator	MULL DRILLING
Well Fluid Type	01 Oil	Report Date	2013/05/07 YYYY/MM/DD
Test Purpose (AEUB)	Initial Test	Prepared By	ROBERT HAMEL
Start Test Date	2013/05/07 YYYY/MM/DD	Start Test Time	08:12:00 HH:mm:ss
Final Test Date	2013/05/07 YYYY/MM/DD	Final Test Time	14:42:00 HH:mm:ss

Test Results

RECOVERED" 10' SLTOCM 1% OIL, 99% MUD
10' TOTAL FLUID

TOOL SAMPLE: 100% DM FEW OIL SPECKS



DIAMOND TESTING
P.O. Box 157
HOISINGTON, KANSAS 67544
(800) 542-7313
DRILL-STEM TEST TICKET
FILE: _____

TIME ON: _____
TIME OFF: _____

Company _____ Lease & Well No. _____
Contractor _____ Charge to _____
Elevation _____ Formation _____ Effective Pay _____ Ft. Ticket No. _____
Date _____ Sec. _____ Twp. _____ S Range _____ W County _____ State **KANSAS**
Test Approved By _____ Diamond Representative _____

Formation Test No. _____ Interval Tested from _____ ft. to _____ ft. Total Depth _____ ft.
Packer Depth _____ ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.
Packer Depth _____ ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.
Depth of Selective Zone Set _____

Top Recorder Depth (Inside) _____ ft. Recorder Number _____ Cap. _____ P.S.I.
Bottom Recorder Depth (Outside) _____ ft. Recorder Number _____ Cap. _____ P.S.I.
Below Straddle Recorder Depth _____ ft. Recorder Number _____ Cap. _____ P.S.I.

Mud Type _____ Viscosity _____ Drill Collar Length _____ ft. I.D. 2 1/4 in.
Weight _____ Water Loss _____ cc. Weight Pipe Length _____ ft. I.D. 2 7/8 in.
Chlorides _____ P.P.M. Drill Pipe Length _____ ft. I.D. 3 1/2 in.
Jars: Make STERLING Serial Number _____ Test Tool Length _____ ft. Tool Size 3 1/2-IF in.
Did Well Flow? _____ Reversed Out _____ Anchor Length _____ ft. Size 4 1/2-FH in.
Main Hole Size 7 7/8 Tool Joint Size 4 1/2 in. Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

Blow: 1st Open: _____
2nd Open: _____

Recovered _____ ft. of _____	Price Job Other Charges Insurance Total
Recovered _____ ft. of _____	
Recovered _____ ft. of _____	
Recovered _____ ft. of _____	
Recovered _____ ft. of _____	
Recovered _____ ft. of _____	
Remarks: _____	

Time Set Packer(s) _____ A.M. P.M. Time Started Off Bottom _____ A.M. P.M. Maximum Temperature _____
Initial Hydrostatic Pressure..... (A) _____ P.S.I.
Initial Flow Period..... Minutes _____ (B) _____ P.S.I. to (C) _____ P.S.I.
Initial Closed In Period..... Minutes _____ (D) _____ P.S.I.
Final Flow Period..... Minutes _____ (E) _____ P.S.I. to (F) _____ P.S.I.
Final Closed In Period..... Minutes _____ (G) _____ P.S.I.
Final Hydrostatic Pressure..... (H) _____ P.S.I.

Diamond Testing shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statement or opinion concerning the result of any test. Tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



PHIL ASKEY

PETROLEUM GEOLOGIST



GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY Mull Drilling Company, Inc.

LEASE Hempler # 1-18

FIELD Wildcat

LOCATION 699' FSL & 2104' FWL

SEC 18 TWSP 18 S RGE 27 W

COUNTY Lane STATE Kansas

CONTRACTOR Duke Drilling Rig #4

SPUD 4-30-13 COMP 5-8-13

RTD 4675' LTD 4676'

MUD UP 3461' TYPE MUD Chemical-Mud Co

SAMPLES EXAMINED FROM 3700' TO RTD

DRILLING TIME KEPT FROM 3700' TO RTD

GEOLOGICAL SUPERVISION FROM 3750' TO RTD

GEOLOGIST ON WELL Phil Askey, R.G.

ELEVATIONS

KB 2719'

GL 2710'

Measurements Are From KB

API# 15-101-22436-0000

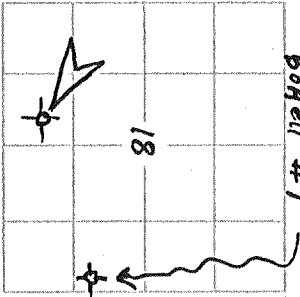
CASING SURFACE 8578' @ 219' w/ losses

ELECTRICAL SURVEYS

Nabors: Col/enc; Oil; micro; Sonic

FORMATION TOPS	LOG	SAMPLES	%
Anhydrite	2090 +629	2092	+5
Heckner	3953 -1234	3953	+2
Lansing	3993 -1274	3992	+1
Stackshale	4270 -1551	4269	+3
Blc	4348 -1629	4348	+1
Marmaton	4380 -1661	4379	-5
Parnee	4460 -1741	4460	+3
Ft Scott	4520 -1801	4520	+4
Cherokee Sh	4544 -1825	4544	+5
Johnson Zn	4583 -1864	4583	+6
Mississippian	4616 -1897	4615	+4
LTD/RTD	4676 -1957	4675	+4

REFERENCE WELL Rains and Williamson Oil Co. Borell #1



REMARKS

The Mull Drilling Co, Hempler #1-18, ran structurally high (except Marmaton) to one of the reference wells, Rains and Williamson Oil Co, Borell #1. The two sample shows that were observed were ASD with noncommercial oil/gas reserves.

After review of all E-logs, it was determined that the Lansing 'K' ^{pay} zone did not develop sufficient thickness and porosity. Therefore, it was decided to plug and abandon this well.

Phil Askey, R.G.

LEGEND

Anhydrite	Salt	Sandstone	Shale	Carb sh	Limestone	Ool. Limo	Chert	Dolomite

SCALE " = 100'

DRILLING TIME IN MINUTES

PER FOOT
Rate of Penetration Increases

DEPTH

5" 10" 15" 20" 25"

LITHOLOGY

SAMPLE DESCRIPTIONS

REMARKS

2050

Anhydrite 2092 (+627)

E-log 2090 (+629)

2100

Bl/Anhy 2124 (+595)

E-log 2120 (+599)

3700

LS, tan qy offsh, brn, dms,
micro-fxlw, tr fss, sme shchky
scat xln φ, NS

some m-deqy LS, plus arg
dk-bss

LS, tan, frm, fxlw-v fxlw, fss
xln φ, NS

some qy-deqy, frm, dms, cpts-
micro-fxlw, fss, tr shchky, NS

sh, qy, tr sh

LS, tan qy offsh, frm, fxlw,
sme ph-ppt-vngqy-xln φ, NS
scat offsh, shchky-chn

sh, dkqy, blk, qy sme calc
tr sh

LS, qy-qy brn, brn, dms, minor
fxlw, sme arg, tr bss, dk-bss,
tr shchky, nvis φ, NS

LS, tan frm, fxlw w/xln φ, NS

LS, qy-qy brn, dms, micro-fxlw
fss, p φ, NS

LS, cream-tan, qy, frm, v.f. fxlw

Samples: 10' wet & dry 3700'-RTD
good samples

Mud-Co data @ 3732'

WT 8.6 VIS 48 WL 7.6 Solids 2%
pH 10.5 CL 3,400ppm LCM 1# YP 12

Rig data:

WOB 38K PP 950 #
SPM 60 RPM 80

Bit data:

7 7/8" Varel (45 ft/hr)
219'-4675' 98 3/4 hrs

50

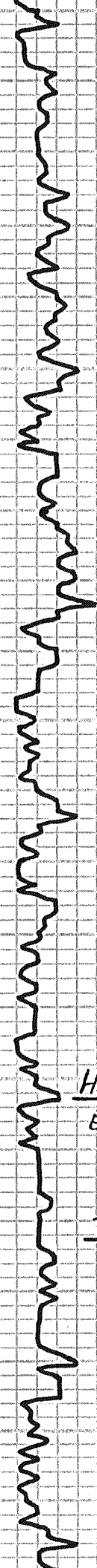
3800

50

3900

50

4000



Hebna 3953 (-1234)

E-log 3953 (-1234)

Toronto 3973 (-1254)

E-log 3973 (-1254)

Lansing 3992 (-1273)

E-log 3993 (-1274)



st, dkgy-blk, carb
 LS, brown tan qybrn, dms, blk, cpts, microwln, trng, fr fss, N vs ϕ , NS

st, blk, carb dkgy-gy
 LS, tan crm offsh, firm, muc-vf-fxlw, sme shckly fr fss, scat-x/w ϕ , NS
 2pc qtz grains

LS, tan offsh lgy, firm, fxlw w/ fr intx/w ϕ , NS
 sme wh chky

LS, tan gy qybrn, firm-dms, cpts microwln, sme fxlw p/w fss, 2pc cat, gy-tan blk carb st dkgy

LS, crm wh-offsh, firm, vf-fxlw sme fss, sme shckly-chky, fr intx/w ϕ fr crm tan ch

LS, tan crm firm-dms, qybrn arg, scat gy-dkgy st, rubn-gygrn 2pc py

LS, tan offsh crm lgy, firm-dms vf-fxlw, shckly-chky, scat fr intx/w ϕ , NS

LS, crm tan, firm, vf-fxlw, fxlw ϕ p/s sme chky-shckly

st, blk, fs, carb
 LS, gy tan crm, vf-fxlw w/x/w ϕ , NS

st, m dkgy gygrn-grn

LS, offsh tan lgy, firm, vf-fxlw, much wh chky-shckly, scat x/w ϕ , NS fr brn-tan, firm, fxlw w/x/w ϕ , NS

st, dkgy-gygrn sme rdbrn

LS, offsh lgy l-tan, firm vf-fxlw, sme wh-chky, sme fss fr l-tan dolomite?, scat x/w ϕ , NS
 scat ch, offsh lgy tan fresh

LS, tan, lgy, firm, sme chky, scat blk ϕ , NS fr ch al

Dev Surveys

3/4" @ 219' 1/4" @ 2556'
 3/4" @ 970' 1/2" @ 3055'
 3/4" @ 1467' 3/4" @ 4295'
 1/2" @ 1963' 3/4" @ 4675'

Pipe Strap @ 4295'

Board 4268.76
 strap 4267.95
 pipe short .81' (no corr made)

DSTs: 2 by Diamond Testing

50

4100

50

4200

Muncie Ck Sh. 4167
E-log 4168 (-1449)

LS, 6cm gy-gy brn, dns, micro-fxlw

sh, dkgy blk to rd brn-shy

LS, tan crm frm, fxlw, sme shcky-
chky, scat fr intxlal φ, NS
tr pdev. vugs, scat chrt, tan Hgy, fss NS

LS, crm, frm, fxlw - sme sol. vuggy φ
tr fss w/ fr φ, NS tr oolitic NS
scat chrt, wh tan semitrn lamber, shy

LS, tan Hgy, frm-dns, fxlw-mc-xbl,
truh-chky, tr tan-chlshcky, plly
pxlw φ, NS

LS, tan, frm, uf-fxlw, scat xbl φ, NS
sme wh/crm, shcky-chky, tr chrt, ala

LS, crm tan Hgy, frm, fr ooc φ,
tr vuggy φ, mostly dns, NS
sme wh shcky-chky 3pc, wh chrt

LS, crm Hgy tan, frm, micro-fxlw
sme wh shcky-chky, tr xlw-ooc-pp φ, NS
tr chrt, afa

LS, brn tan gy, dns, blk, micro-fxlw-
cpptoxal, wh vis φ, NS 3pc gy chrt

LS, tan, frm, uf-fxlw, scat vuggy-
ooc φ, sme intxlal φ, NS
tr fss w/ fr φ, NS tr chrt, q/a

LS, 6cm gy-gy brn, micro-fxlw, dns, NS
sh, blk carb

LS, gy tan gy brn, frm-dns, fxlw
foss, sme arg. tr shcky, scat xbl φ, NS
tr tan-gy chrt, fss
sh, dkgy gy-gy brn, tr sdgy

LS, crm tan sme offsh-ltgy, frm, micro-
fxlw, tr fss, more wh-chky,
tr xlw-fr φ, NS

LS, tan Hgy offsh, sme gy-gy brn,
frm-dns, micro-fxlw, tr fss
sme shcky-chky, tr brn-blkgy-cty
N vis φ, NS

sh, gy gy brn dk grn fr rd brn

LS, tan gy brn-gy, frm, sme dns, wt 9.2 vis 45 wl 7.2 solido 6.3
fxlw, sme fss, sme offsh-shcky-chky
scat xlw φ, NS
Mud-Co data @ 4257'
pH 10.5 cl 3,400ppm lcm tr YP 14

50

Stark Sh. 4269 (-1550)

E-log 4270 (-1551)

Hushpuckery Sh. 4305

E-log 4305 (-1586)

BlkC 4348 (-1629)

e-log 4348 (-1629)

Marmaton 4379 (-1660)

E-log 4380 (-1661)

4400

50

Pawnee 4460 (-1741)



LS, yellow tan, das, micro-fels, fss, NS
 some SH, qy-dkgy, some mushy

LS, tan-crm, some qy, fm-das,
 v. g ooc ϕ , NS
 scat chcky

CFS: LS, alq, exc ooc ϕ , NS

LS, tan offsh, qy-gubon, das,
 microxld, some fss, N vis ϕ , NS

SH, blk h/c carb

LS, crm, frm, f-mxld, some fld,

scat fr intxld ϕ , tr pdev ool-ooc-
 vuggy-fc ϕ , some throstn, IFO,
 ftr, fr odor much wh-chky

CFS: LS, crm, tan, frm, v-f-fald, some
 wh-chky, scat xln-ool-ooc-fc-
 vuggy ϕ , hidden IFO, fr odor
 5% bl show, tr wh ch

LS, tan qy offsh, das, micro-fald,
 ftr, some wh-chky, p xln ϕ , NS

SH, blk h/c carb

LS, tan qy offsh, das, crpt-microxld

LS, tan qy, das, crpt-v-f-fald,
 some wh-chky, some ftr, scat pthy-
 blkcy, some p xln ϕ , NS

CFS: LS, Hgy-qy, das, crpt-
 microxld, fr v-f-fald, some wh-chky,
 sb chky, N vis ϕ , NS

tr crm, frm-das, v-f-xln ϕ , NS

LS, alq, some yellow tan, das, some arg,
 N vis ϕ , ftr ch, qy-blue,
 fresh

SH, blk dkgy

LS, qy-qybrn-brown, tan, mostly das,
 micro-fald, some fss, sl arg, dermat,
 tr xln ϕ , NS 5pc ch, qy-brn

SH, qy qygrn, dk sh 5pc ch, qy wh, NS

some ss, lgy/wh, frm, v-f-gran,
 slty, shrd, msh, fr gran ϕ , NS

LS, tan Hgy, das-chky, crpt-
 micro-v-f-xln, tr fss, some shchky-chky,
 N vis ϕ , NS scat ch, Htan, Hgy

much SH, dkgy-qy qygrn brn some slty

LS, tan offsh Hgy, frm-das, micro-
 fald, trchtyngt, some offsh shchky-chky,
 some rdbrn sh, frm-das, microxld

scat rdbrn SH

some LS, frm-das, crm, coral fss w/
 fc ϕ , NS

scat ch, tan amber col, tr fss

scat ody ls fss, wh/crm, f-gran, frm,
 shng-shrd, f-mset, some gran ϕ , NS

LS, wh offsh, Htan, frm das,
 micro-fald, tr fss, fr chky,
 tr crm, coral fss w/ fc ϕ , NS

3pc ss, ch/crm, f-gran, int gran ϕ , NS

tr qy-qybrn, das, chky, crptxld

LS, tan Hgy, das, some chky, pty,
 3pc coral fss, crpt-microxld,
 N vis ϕ , tr ftr, sl odor

2pc ss, ls, frm, wh gran, NS

tr some ch, tan semitransl, fresh
 NS

DST #1 4268'-4295'

Times: 5"-30"-60"-120"

1st open: blow built to 6 inches
 (no blowback)

2nd open: BOB in 12"
 (blow back to 3 1/2 inches)

Rec: 463' 61P

83' CO 35.4 grav corr

72' 6.0cm (5% gas 40% oil
 55% mud)

124' OCMW (3% oil 80% wtr
 17% mud)

Total fluid 279'
 cl 39,000
 Rw .28 @ 45'

IFP 26-38 # 151P 771 #

FFP 46-128 # FSIP 772 #

HP 2076-2068 # BHT 125' P

DST #2 4440'-4549'

Times: 5"-30"-30"-60"

Short trip 20 ft into 4300

E-log 4460 (-1741)

4500

Ft. Scott 4520 (-1801)

E-log 4520 (-1801)

Cha Sh. 4544 (-1825)

E-log 4544 (-1825)

50

Johnson Zn 4583 (-1864)

E-log 4583 (-1864)

4600

Miss 4615 (-1896)

E-log 4616 (-1897)

50

RTD 4675 (-1956)

LTD 4676 (-1957)

2

LS, tan offsh. Htg, mostly das
cryst-microcrk, tr. sbckky, p. ally,
chky, tr. dk. foss, n. vis. p, NS

LS, tan gy. qy-bow, tan-bow, das,
micro-tr. sbckky, dk. foss, some p. ally,
n. vis. p, NS
Sh, blk carb

LS, tan das blkky
gy. tan offsh. Htg, fm, microcrk
tr. tan, some foss, n. vis. p, NS
some offsh, sbckky

LS, tan Htg qy, das, micro-offsh,
some offsh-sbckky, n. vis. p, NS

Sh, blk carb

LS, tan offsh. Horn-gy-bow,
fm-das, micro-foss, some foss
2 pc. ool. p, 3 pc. crm. coral. foss, sbckky
3 pc. chky, NS

LS, offsh-Htg, fm, sbckky, NS
much qy-bow, tan-bow, qy, das,
chky, tr. tan, microcrk, tr. foss,
n. vis. p, NS 3 pc coral foss, p. NS

Sh, blk carb
CF: LS, ala, n. vis. p, NS

LS, tan qy. crm, fm-das,
microcrk, some tan sbckky, chky
tr. tan-crystal, das, n. vis. p, NS
tr. ch. tan. v. lty. opp. fresh, NS

LS, qy-bow-bow-dk-bow, das, chky
arg. foss, blkky, extop-microcrk
n. vis. p, NS
Sh, blk carb
3 pc. ss, some fm-sbckky, fm-gran, sbowd,
tr. lty. tan-gy-bow p. foss, tr. intgran p, NS

Sh, blk carb like qy-bow sm. lty
tr. ss, offsh-Htg, das, v. tan, sbowd, most,
higher v. p, NS

LS, offsh. Htg. Htan tan-bow qy,
das, v. tan, scat. rd-bow, das, v. tan,
scat-sbckky-chky, p. foss, NS
3 pc. ss, w. Htg, v. tan, das, n. vis. p, NS

scat. ch. w. Htg, fresh, NS

Sh qy rd-bow qy-bow tr. lty
4 pc. ss, wh. chr, fm, tan, sbowd, most
tr. intgran p, NS

DOL, tan, fm-das, p. succ. p, NS
tr. scat. ss, chr. wh, fm, tan, sbowd,
scat. wh. chr, tr. tan p, NS

DOL, tan, fm, tr. vng, some succ-
vnggy p, NS

scat. ss. chr, fm-das, tan, sbowd, most
tr. intgran p, NS 20% ss

DOL, crm. Htg. Htan, fm. sm. das,
chky, some fm. succ. p, tr. vng, NS
tr. chr. wh, tr. tan p, NS
3 pc. g. tan

DOL, tan bow matt, qy-bow, mostly das, miss-spergen
tr. vng, p. succ. p, NS

fresh ch. chr

tr. ss, Htg. chr, fm-das, tan, scat. p, NS
CF: 85% DOL

1st open: blow built to 1 inch

2nd open: No blow

Rec: 10' 510cm (1901L 99% mu)

IFP 10-11# 151P 428#

FPP 11-14# 151P 80#

HP 2169-2189# BHT 121.0° F

Mud-Co data @ 4549'

WT 9.4 VIS 60 WL 6.8 Solids 7.7%

pH 11.0 CL 2,500ppm LCM 1# YP -23

4700

5% 9729 grains
5% ss
5% chd

5" 10" 15" 20" 25"
DEPTH DRILLING TIME Minutes/Foot

Rate of Penetration Increases

LITHOLOGY

SAMPLE DESCRIPTIONS

REMARKS

COMPANY

Mull Drilling Co., Inc.

LEASE

Hempler #1518

ELEVATION:

2719' KB

LOCATION

699' FSL & 210' FWL SEC 18 TWP 18S RNG 27W

COUNTY

Lane

STATE

Kansas