KOLAR Document ID: 1471713

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 # 4184
Name: Chris Batchman Inc.
Address 1: 244 SE 120 AVE
Address 2:
City: ELLINWOOD State: KS Zip: 67526 + 9200
Contact Person: Chris Batchman
Phone: ( 620 ) 566-7111
CONTRACTOR: License # 33350
Name: Southwind Drilling, Inc.
Wellsite Geologist: Jim Musgrove
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 #:

| 07/24/2019 | 07/28/2019 | 07/28/2019 |
|---|---|---|
| Spud Date or Recompletion Date | Date Reached TD | Completion Date or Recompletion Date |

API No.: 15-009-26261-00-00
Spot Description:
SE - SW - NW - NW Sec. 16 Twp. 20 S. R. 11 ☐ East ☑ West
1090 Feet from ☑ North / ☐ South Line of Section
400 Feet from ☐ East / ☑ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☐ NE ☑ NW ☐ SE ☐ SW
GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Barton
Lease Name: MILLER Well #: 4
Field Name:
Producing Formation: Arbuckle
Elevation: Ground: 1767 Kelly Bushing: 1776
Total Vertical Depth: 3296 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 269 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: 59000 ppm Fluid volume: 640 bbls
Dewatering method used: Hauled to Disposal
Location of fluid disposal if hauled offsite:
Operator Name: Chris Batchman Inc
Lease Name: Miller 2 (SWD) License #: 4184
Quarter NW Sec. 16 Twp. 20 S. R. 11 ☐ East ☑ West
County: Barton Permit #: 15-009-25904-00-00

**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:** Karen Ritter **Date:** 09/17/2019

Operator Name: Chris Batchman Inc. Lease Name: MILLER Well #: 4

Sec. 16 Twp. 20 S. R. 11 ☐ East ☑ West County: Barton

**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 *(Attach Additional Sheets)* | ☑ Yes | ☐ No | ☐ Log | Formation (Top), Depth and Datum ☑ Sample |
| Samples Sent to Geological Survey | ☑ Yes | ☐ No | Name: Attached | Top: Attached Datum: Attached |
| Cores Taken | ☐ Yes | ☑ No | | |
| Electric Log Run | ☐ Yes | ☑ No | | |
| Geologist Report / Mud Logs | ☑ Yes | ☐ No | | |
| List All E. Logs Run: | | | | |

CASING RECORD ☐ New ☑ Used

Report all strings set-conductor, surface, intermediate, production, etc.

| Purpose of String | Size Hole Drilled | Size Casing Set (In O.D.) | Weight Lbs. / Ft. | Setting Depth | Type of Cement | # Sacks Used | Type and Percent Additives |
|---|---|---|---|---|---|---|---|
| Surface | 12.75 | 8.625 | 23 | 269 | 640 poz | 325 | 3% cc 2% gel |
| | | | | | | | |
| | | | | | | | |

ADDITIONAL CEMENTING / SQUEEZE RECORD

| Purpose: | Depth Top Bottom | Type of Cement | # Sacks Used | Type and Percent Additives |
|---|---|---|---|---|
| ☐ Perforate<br>☐ Protect Casing<br>☐ Plug Back TD<br>☐ 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: ☐ Flowing ☐ Pumping ☐ Gas Lift ☐ Other *(Explain)* | | | | |
|---|---|---|---|---|---|
| Estimated Production Per 24 Hours | Oil Bbls. | Gas Mcf | Water Bbls. | Gas-Oil Ratio | Gravity |
| | | | | | |

| DISPOSITION OF GAS: | METHOD OF COMPLETION: | PRODUCTION INTERVAL: |
|---|---|---|
| ☐ Vented ☐ Sold ☐ Used on Lease<br>*(If vented, Submit ACO-18.)* | ☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)* | Top / Bottom |
| | | |

| Shots Per Foot | Perforation Top | Perforation Bottom | Bridge Plug Type | Bridge Plug Set At | Acid, Fracture, Shot, Cementing Squeeze Record *(Amount and Kind of Material Used)* |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

TUBING RECORD: Size: Set At: Packer At:

**Mail to: KCC - Conservation Division, 266 N. Main, Suite 220, Wichita, Kansas 67202**

| | |
|---|---|
| Form | ACO1 - Well Completion |
| Operator | Chris Batchman Inc. |
| Well Name | MILLER 4 |
| Doc ID | 1471713 |

Tops

| Name | Top | Datum |
|---|---|---|
| Anhydrite | 498 | +1278 |
| B.Anhydrite | 523 | +1253 |
| Heebner | 2915 | (-1140) |
| Toronto | 2932 | (-1156) |
| Douglas | 2948 | (-1172) |
| Brown Line | 3039 | (-1263) |
| Lansing | 3057 | (-1281) |
| BKC | 3281 | -(1505 |
| Arbuckle | 3292 | (-1516) |
| RTD | 3296 | (-1520) |

| | |
|---|---|
| Form | ACO1 - Well Completion |
| Operator | Chris Batchman Inc. |
| Well Name | MILLER 4 |
| Doc ID | 1471713 |

Casing

| Purpose Of String | Size Hole Drilled | Size Casing Set | Weight | Setting Depth | Type Of Cement | Number of Sacks Used | Type and Percent Additives |
|---|---|---|---|---|---|---|---|
| Surface | 12.75 | 8.625 | 23 | 269 | 640 poz | 325 | 3% cc 2% gel |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

...id & Cement

NEW WELL

**FIELD ORDER** № C 47054

BOX 438 • HAYSVILLE, KANSAS 67060
316-524-1225

DATE 7-2-4 20 14

IS AUTHORIZED BY: Casino Petroleum
(NAME OF CUSTOMER)

Address _____ City _____ State _____

To Treat Well As Follows: Lease Miller Well No. #4 Customer Order No. _____

Sec. Twp. Range _____ County Barton State KS

CONDITIONS: As a part of the consideration hereof it is agreed that Copeland Acid Service is to service or treat at owners risk, the hereinbefore mentioned well and is not to be held liable for any damage that may accrue in connection with said service or treatment. Copeland Acid Service has made no representation, expressed or implied, and no representations have been relied on, as to what may be the results or effect of the servicing or treating said well. The consideration of said service or treatment is payable. There will be no discount allowed subsequent to such date. 6% interest will be charged after 60 days. Total charges are subject to correction by our invoicing department in accordance with latest published price schedules.

The undersigned represents himself to be duly authorized to sign this order for well owner or operator.

THIS ORDER MUST BE SIGNED BEFORE WORK IS COMMENCED _____ By _____
Well Owner or Operator Agent

| CODE | QUANTITY | DESCRIPTION | UNIT COST | AMOUNT |
|---|---|---|---|---|
| 2 | 10 | Mileage Pump Truck | 4.00 | 40.00 |
| 2 | | Pump Charge - Surface Pipe | | 1100.00 |
| 2 | 325 | Sacks 60/40 2% Gel | 11.25 | 3656.25 |
| 2 | 17 | Calcium Chloride | 40.00 | 680.00 |
| | 342 | Bulk Charge | 1.25 | 427.50 |
| | | Bulk Truck Miles 15.048T x 10miles = 150.48T/M | 1.10 | 165.53 |
| | | Process License Fee on _____ Gallons | | |
| | | TOTAL BILLING | | 6069.28 |

I certify that the above material has been accepted and used; that the above service was performed in a good and workmanlike manner under the direction, supervision and control of the owner, operator or his agent, whose signature appears below.

4855.42

Copeland Representative Greg C.

Station 61

Chris Batchman
Well Owner, Operator or Agent

Remarks _____

**NET 30 DAYS**

# DRILL STEM TEST REPORT

TRILOBITE TESTING, INC.

Chris Batchman Inc

244 SE 120 AVE
Ellinwood, Kansas
67526+9200
ATTN: Jim Musgrove

**16/20S/11W/Barton**

**Miller #4**

Job Ticket: 66285 **DST#: 1**

Test Start: 2019.07.27 @ 22:10:00

## GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 23:36:17
Time Test Ended: 04:48:02

Test Type: Conventional Bottom Hole (Initial)
Tester: Ken Swinney
Unit No: 72 Great Bend/ 30

**Interval: 3261.00 ft (KB) To 3296.00 ft (KB) (TVD)**
Total Depth: 3296.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Fair

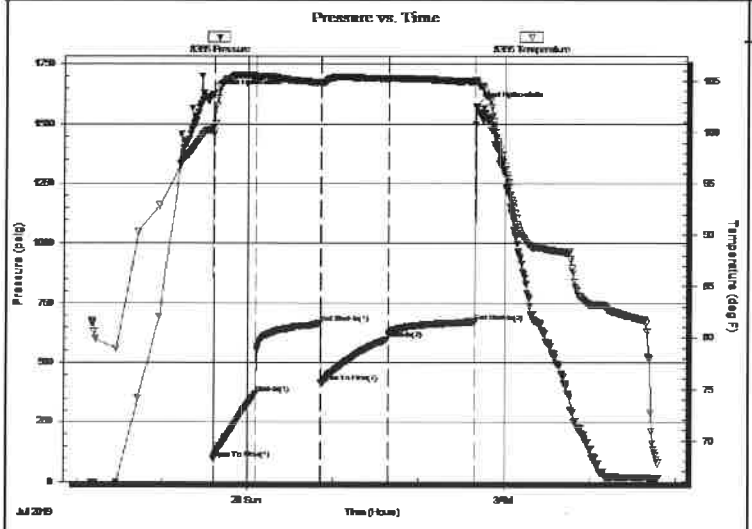
Reference Elevations: 1777.00 ft (KB)
1769.00 ft (CF)
KB to GR/CF: 8.00 ft

**Serial #: 8365** **Inside**

Press@RunDepth: 598.47 psig @ 3262.00 ft (KB)
Start Date: 2019.07.27 End Date: 2019.07.28
Start Time: 22:10:01 End Time: 04:48:02

Capacity: psig
Last Calib.: 2019.07.28
Time On Btm: 2019.07.27 @ 23:36:02
Time Off Btm: 2019.07.28 @ 02:40:02

TEST COMMENT:
IF 30 Minutes/ Blow to BOB in 2 1/2 minutes/ total build 132 inches
ISI 45 Minutes/ No blow back
FF 45 Minutes/ Blow to BOB in 3 1/2 minutes/ total build 95 inches
FSI 60 Minutes/ No blow back




## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|---|---|---|---|
| 0 | 1624.02 | 100.38 | Initial Hydro-static |
| 1 | 97.52 | 99.85 | Open To Flow (1) |
| 30 | 369.39 | 105.53 | Shut-In(1) |
| 75 | 665.53 | 104.88 | End Shut-In(1) |
| 76 | 415.89 | 104.86 | Open To Flow (2) |
| 123 | 598.47 | 105.28 | Shut-In(2) |
| 183 | 671.08 | 104.99 | End Shut-In(2) |
| 184 | 1575.96 | 105.06 | Final Hydro-static |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|---|---|---|
| 930.00 | MCW / M 5% W 95% | 13.05 |
| 310.00 | VSOCMW / O 1% M 30% W 69% | 4.35 |
| 77.00 | VSOCMW/ O 3% M 35% W 62% | 1.08 |
| | | |
| | | |
| | | |

## Gas Rates

| | Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|---|---|---|---|

TRILOBITE TESTING, INC.

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Chris Batchman Inc

244 SE 120 AVE
Ellinwood, Kansas
67526+9200
ATTN: Jim Musgrove

**16/20S/11W/Barton**

**Miller #4**

Job Ticket: 66285 **DST#: 1**

Test Start: 2019.07.27 @ 22:10:00

## Mud and Cushion Information

| | | | | | |
|---|---|---|---|---|---|
| Mud Type: | Gel Chem | Cushion Type: | | Oil API: | deg API |
| Mud Weight: | 9.00 lb/gal | Cushion Length: | ft | Water Salinity: | 20000 ppm |
| Viscosity: | 43.00 sec/qt | Cushion Volume: | bbl | | |
| Water Loss: | 7.99 in³ | Gas Cushion Type: | | | |
| Resistivity: | ohm.m | Gas Cushion Pressure: | psig | | |
| Salinity: | 6000.00 ppm | | | | |
| Filter Cake: | 1.00 inches | | | | |

## Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|---|---|---|
| 930.00 | MCW / M 5% W 95% | 13.045 |
| 310.00 | VSOCMW / O 1% M 30% W 69% | 4.348 |
| 77.00 | VSOCMW/ O 3% M 35% W 62% | 1.080 |

Total Length: 1317.00 ft Total Volume: 18.473 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: Recovery Resistivity .315 ohms @ 73 deg.

Musgrove PETROLEUM CORPORATION
Claflin, Kansas

# GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY Chris Batchman, Inc.

LEASE Miller #4

FIELD

LOCATION SE-SW-NW-NW

SEC 16 TWSP 20S RGE 11W

COUNTY Barton STATE Kansas

CONTRACTOR Southwind Drilling co. (Rig #3)

SPUD 07/24/2019 COMP 07/28/2019

RTD 3296' LTD N/A

MUD UP 2658' TYPE MUD Chemical

ELEVATIONS

KB 1776'

DF

GL 1767'

Measurements Are All From KB

CASING

SURFACE 8 5/8"@ 269'

PRODUCTION

ELECTRICAL SURVEYS

-none-

SAMPLES SAVED FROM 2800' TO RTD

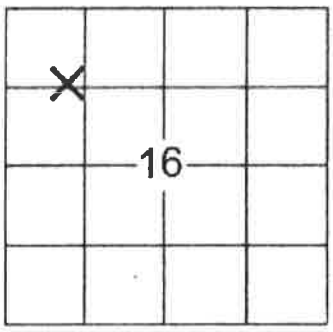
DRILLING TIME KEPT FROM 2800' TO RTD

SAMPLES EXAMINED FROM 2800' TO RTD

GEOLOGICAL SUPERVISION FROM 2950' TO RTD

GEOLOGIST ON WELL Jim Musgrove

| FORMATION TOPS | ~~LOG~~ | SAMPLES | |
|---|---|---|---|
| Anhydrite | | 498 | +1278 |
| B. Anhydrite | | 523 | +1253 |
| Heebner | | 2915 | (-1140) |
| Toronto | | 2932 | (-1156) |
| Douglas | | 2948 | (-1172) |
| Brown Lime | | 3039 | (-1263) |
| Lansing | | 3057 | (-1281) |
| BKC | | 3281 | (-1505) |
| Arbuckle | | 3292 | (-1516) |
| RTD | | 3296 | (-1520) |



TRILOBITE TESTING, INC

# DRILL STEM TEST REPORT

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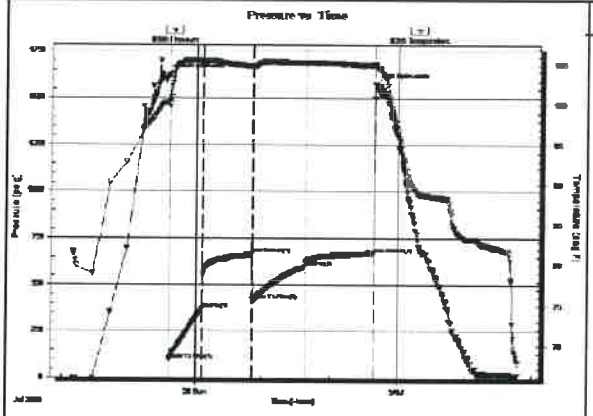


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| 123 | 598.47 | 105.28 | Shut-In(2) |
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| 184 | 1575.96 | 105.06 | Final Hydro-static |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|---|---|---|
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| 77.00 | VSOCMW/ O 3% M 35% W 62% | 1.08 |
| | | |
| | | |
| | | |

## Gas Rates

| | Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|---|---|---|---|



## ROCK TYPES

Dolprim
Lmst fw<7
shale, grn
shale, gry
Carbon Sh
shale, red
Ss

## ACCESSORIES

**STRINGER**
Sandstone

## OTHER SYMBOLS

**Oil Show**

**DST**

- Good Show
- Fair Show
- Poor Show
- Spotted or Trace
- Questionable Stn
- Dead Oil Stn
- Fluorescence
- Gas

- DST tst
- DST alt
- Core
- tail pipe



Curve Track #1
ROP (min/ft)
Gamma (API)
Cal (in)
1:240 Imperial

Depth | Intervals
Cored Interval
DST Interval

DST

Lithology

Oil Show

Geological Descriptions

TG, C1 - C5
Total Gas (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
1:240 Imperial

0 ROP (min/ft) 7
0 Gamma (API) 150
6 Cal (in) 16

0 Total Gas (units) 100
0 C1 (units) 100
0 C2 (units) 100
0 C3 (units) 100
0 C4 (units) 100

2820
2840
2860
2880
2900
2920
2940

O LS, tan, foss, f- medxln foss , dk brn/ brn stain , nsfo, no odor

LS, tan, cream, fxl, foss. in pt, chalky in pt, no shows

LS, a/a, tr. gry chert

**HEEBNER 2916.0 (-1140.0)**

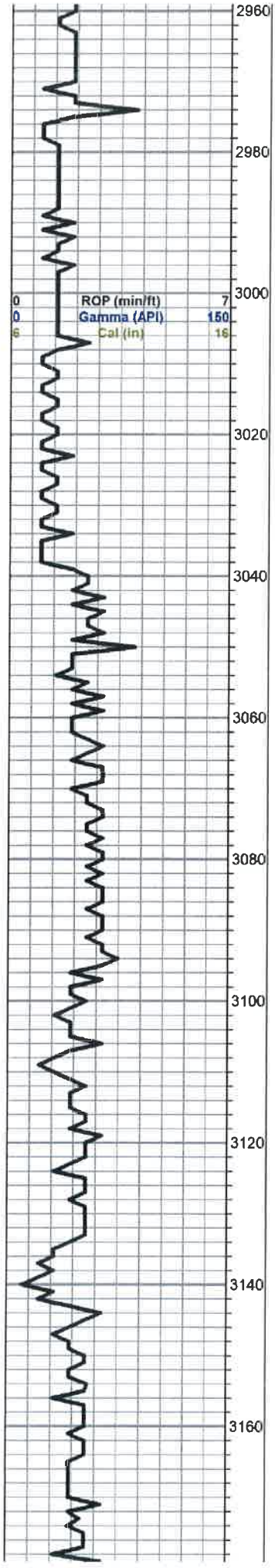
Sh. Black carb

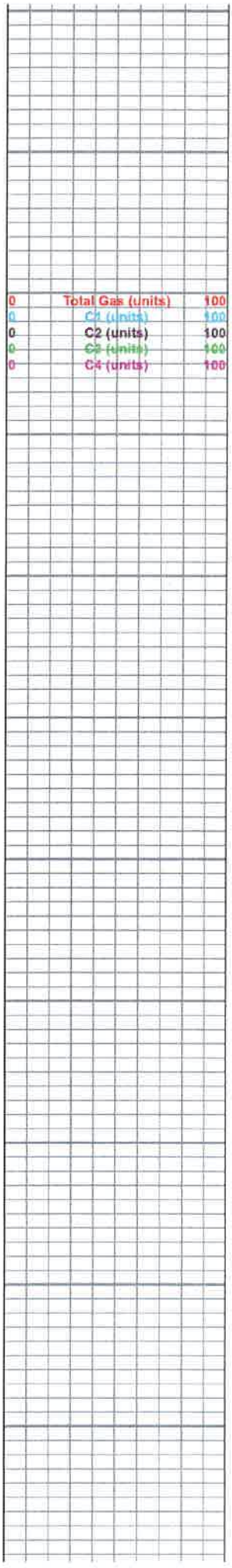
**TORONTO 2932.0 (-1156.0)**

LS, white, cream, fxl, chalky, "crumbly" poor vis. porosity, no shows

**DOUGLAS 2948.0 (-1172.0)**

Sh, gry, green, rusty brn, maroon, silty




Tr. sd., gry, green, silty in pt, tr. brn, dk brn stain, nsfo, no odor

Sh, gry/ greenish silty

Sh, gry, greenish, silty

**BROWN LIME 3039.0 (-1263.0)**

LS, tan brn, fxl, slightly cherty

Sh, gry, green shale

**LANSING 3057.0 (-1281.0)**

LS, tan, fxl, foss, iun pt, poor vis. porosity, dk brn stain, nsfo, Ft. odor

Tr. gry, sh

LS, tan, ool, f- med xln , chalky, poor vis. porosity, poor/ light brn sptty stain , nsfo, no odor

Sh, gry, green

LS, tan, ool, f- med xln, chalky, poor vis. porosity, poor / lt. brn sptty stain , nsfo, no odor

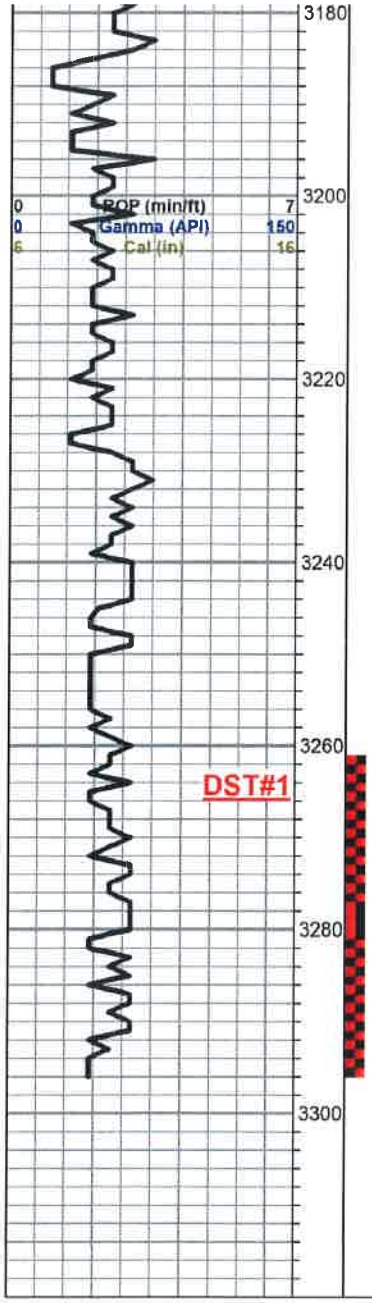
Sh, gry/ blk

LS, white, gry, ool/ foss, chalky, poor porosity, no shows

LS, tan, white, cream, ool, sub oom, brown-dk brn stain, nsfo, no odor

LS, tan, sub oom, fr. porosity, chalky in pt, no shows

LS, white, gry, chlky, dense




Sh, black carb

LS, gry, crm, fxl, slightly ool, few sub oom , poor vis. porosity, no shows

LS, tan, white, oolitic in pt, slightly cherty, poor porosity, tr. brn stain , nsfo, ??? odor

Sh, gry, grayish, green sh.

LS, gry, white, fxl, ool, sub oom,, chalky, tr. poor stain, nsfo, no odor

LS, white, gry, cream, chlky, few few cherty, no shows

Tr. blk carb sh.

LS, white, gry, chalky, no shows, no odor

LS, tan, cream, f- med xln, slighty chalky, poorly developed porosity, no shows

**BASE KC 3281.0 (-1505.0)**

LS, white, cream, med xln, chalky, tr. brn stain , nsfo, ft. odor .

**ARBUCKLE 3292.0 (-1516.0)**

Dol, white, cream, med xln , fair - good in xln vuggy porosity in few, brn stain, sfo, & sour odor,

3296'-Dol, white, cream, suc.,no shows

**RTD 3296.0 (-1520.0)**

DST#1 3261-3296

30-45-45-60

1st Open:

BOB 2.5 mins.

2nd Open:

BOB 3.5 mins.

Recovery:

77' very slight oil cut muddy water (3%O, 62%W, 35% M)

310' SLOCMW (1%O, 69%W, 30% M)

930' MUDDY WATER (95%W, 5%M)

Pressures:

ISIP 665 psi

FSIP 571 psi

IFP 97-369 psi

FFP 415-598 psi

HSH 1624-1575 psi

...id & Cement

NEW WELL

**FIELD ORDER** № C 47054

BOX 438 • HAYSVILLE, KANSAS 67060
316-524-1225

DATE 7-2-4 20 14

IS AUTHORIZED BY: Casino Petroleum
(NAME OF CUSTOMER)

Address _____ City _____ State _____

To Treat Well As Follows: Lease Miller Well No. #4 Customer Order No. _____

Sec. Twp. Range _____ County Barton State KS

CONDITIONS: As a part of the consideration hereof it is agreed that Copeland Acid Service is to service or treat at owners risk, the hereinbefore mentioned well and is not to be held liable for any damage that may accrue in connection with said service or treatment. Copeland Acid Service has made no representation, expressed or implied, and no representations have been relied on, as to what may be the results or effect of the servicing or treating said well. The consideration of said service or treatment is payable. There will be no discount allowed subsequent to such date. 6% interest will be charged after 60 days. Total charges are subject to correction by our invoicing department in accordance with latest published price schedules.

The undersigned represents himself to be duly authorized to sign this order for well owner or operator.

THIS ORDER MUST BE SIGNED BEFORE WORK IS COMMENCED _____ By _____
Well Owner or Operator Agent

| CODE | QUANTITY | DESCRIPTION | UNIT COST | AMOUNT |
|---|---|---|---|---|
| 2 | 10 | Mileage Pump Truck | 4.00 | 40.00 |
| 2 | | Pump Charge - Surface Pipe | | 1100.00 |
| 2 | 325 | Sacks 60/40 2% Gel | 11.25 | 3656.25 |
| 2 | 17 | Calcium Chloride | 40.00 | 680.00 |
| | 342 | Bulk Charge | 1.25 | 427.50 |
| | | Bulk Truck Miles 15.048T x 10miles = 150.48T/M | 1.10 | 165.53 |
| | | Process License Fee on _____ Gallons | | |
| | | TOTAL BILLING | | 6069.28 |

I certify that the above material has been accepted and used; that the above service was performed in a good and workmanlike manner under the direction, supervision and control of the owner, operator or his agent, whose signature appears below.

4855.42

Copeland Representative Greg C.

Station 61

Chris Batchman
Well Owner, Operator or Agent

Remarks _____

**NET 30 DAYS**

# DRILL STEM TEST REPORT

TRILOBITE TESTING, INC.

Chris Batchman Inc

244 SE 120 AVE
Ellinwood, Kansas
67526+9200
ATTN: Jim Musgrove

**16/20S/11W/Barton**

**Miller #4**

Job Ticket: 66285 **DST#: 1**

Test Start: 2019.07.27 @ 22:10:00

## GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 23:36:17
Time Test Ended: 04:48:02

Test Type: Conventional Bottom Hole (Initial)
Tester: Ken Swinney
Unit No: 72 Great Bend/ 30

**Interval: 3261.00 ft (KB) To 3296.00 ft (KB) (TVD)**
Total Depth: 3296.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Fair

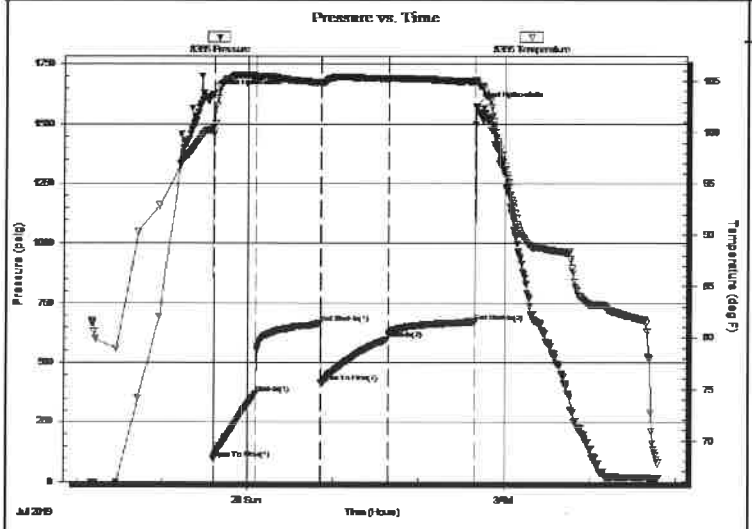
Reference Elevations: 1777.00 ft (KB)
1769.00 ft (CF)
KB to GR/CF: 8.00 ft

**Serial #: 8365** **Inside**

Press@RunDepth: 598.47 psig @ 3262.00 ft (KB)
Start Date: 2019.07.27 End Date: 2019.07.28
Start Time: 22:10:01 End Time: 04:48:02

Capacity: psig
Last Calib.: 2019.07.28
Time On Btm: 2019.07.27 @ 23:36:02
Time Off Btm: 2019.07.28 @ 02:40:02

TEST COMMENT:
IF 30 Minutes/ Blow to BOB in 2 1/2 minutes/ total build 132 inches
ISI 45 Minutes/ No blow back
FF 45 Minutes/ Blow to BOB in 3 1/2 minutes/ total build 95 inches
FSI 60 Minutes/ No blow back




## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|---|---|---|---|
| 0 | 1624.02 | 100.38 | Initial Hydro-static |
| 1 | 97.52 | 99.85 | Open To Flow (1) |
| 30 | 369.39 | 105.53 | Shut-In(1) |
| 75 | 665.53 | 104.88 | End Shut-In(1) |
| 76 | 415.89 | 104.86 | Open To Flow (2) |
| 123 | 598.47 | 105.28 | Shut-In(2) |
| 183 | 671.08 | 104.99 | End Shut-In(2) |
| 184 | 1575.96 | 105.06 | Final Hydro-static |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|---|---|---|
| 930.00 | MCW / M 5% W 95% | 13.05 |
| 310.00 | VSOCMW / O 1% M 30% W 69% | 4.35 |
| 77.00 | VSOCMW/ O 3% M 35% W 62% | 1.08 |
| | | |
| | | |
| | | |

## Gas Rates

| | Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|---|---|---|---|

TRILOBITE TESTING, INC.

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Chris Batchman Inc

244 SE 120 AVE
Ellinwood, Kansas
67526+9200
ATTN: Jim Musgrove

**16/20S/11W/Barton**

**Miller #4**

Job Ticket: 66285 **DST#: 1**

Test Start: 2019.07.27 @ 22:10:00

## Mud and Cushion Information

| | | | | | |
|---|---|---|---|---|---|
| Mud Type: | Gel Chem | Cushion Type: | | Oil API: | deg API |
| Mud Weight: | 9.00 lb/gal | Cushion Length: | ft | Water Salinity: | 20000 ppm |
| Viscosity: | 43.00 sec/qt | Cushion Volume: | bbl | | |
| Water Loss: | 7.99 in³ | Gas Cushion Type: | | | |
| Resistivity: | ohm.m | Gas Cushion Pressure: | psig | | |
| Salinity: | 6000.00 ppm | | | | |
| Filter Cake: | 1.00 inches | | | | |

## Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|---|---|---|
| 930.00 | MCW / M 5% W 95% | 13.045 |
| 310.00 | VSOCMW / O 1% M 30% W 69% | 4.348 |
| 77.00 | VSOCMW/ O 3% M 35% W 62% | 1.080 |

Total Length: 1317.00 ft Total Volume: 18.473 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: Recovery Resistivity .315 ohms @ 73 deg.

Musgrove PETROLEUM CORPORATION
Claflin, Kansas

# GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY Chris Batchman, Inc.

LEASE Miller #4

FIELD

LOCATION SE-SW-NW-NW

SEC 16 TWSP 20S RGE 11W

COUNTY Barton STATE Kansas

CONTRACTOR Southwind Drilling co. (Rig #3)

SPUD 07/24/2019 COMP 07/28/2019

RTD 3296' LTD N/A

MUD UP 2658' TYPE MUD Chemical

ELEVATIONS

KB 1776'

DF

GL 1767'

Measurements Are All From KB

CASING

SURFACE 8 5/8"@ 269'

PRODUCTION

ELECTRICAL SURVEYS

-none-

SAMPLES SAVED FROM 2800' TO RTD

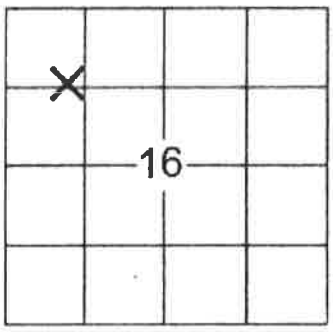
DRILLING TIME KEPT FROM 2800' TO RTD

SAMPLES EXAMINED FROM 2800' TO RTD

GEOLOGICAL SUPERVISION FROM 2950' TO RTD

GEOLOGIST ON WELL Jim Musgrove

| FORMATION TOPS | ~~LOG~~ | SAMPLES | |
|---|---|---|---|
| Anhydrite | | 498 | +1278 |
| B. Anhydrite | | 523 | +1253 |
| Heebner | | 2915 | (-1140) |
| Toronto | | 2932 | (-1156) |
| Douglas | | 2948 | (-1172) |
| Brown Lime | | 3039 | (-1263) |
| Lansing | | 3057 | (-1281) |
| BKC | | 3281 | (-1505) |
| Arbuckle | | 3292 | (-1516) |
| RTD | | 3296 | (-1520) |



TRILOBITE TESTING, INC

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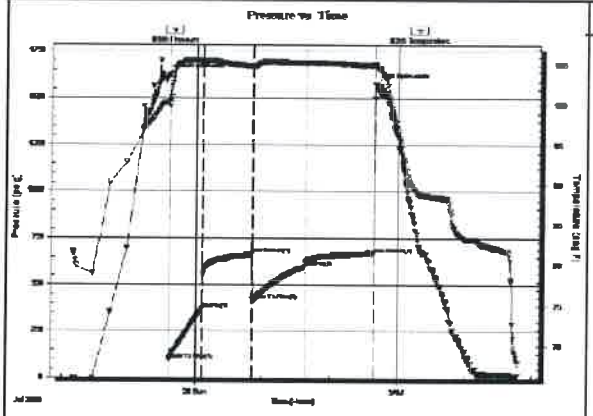


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| | | |
| | | |
| | | |

## Gas Rates

| | Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|---|---|---|---|



## ROCK TYPES

Dolprim
Lmst fw<7
shale, grn
shale, gry
Carbon Sh
shale, red
Ss

## ACCESSORIES

**STRINGER**
Sandstone

## OTHER SYMBOLS

**Oil Show**

**DST**

- Good Show
- Fair Show
- Poor Show
- Spotted or Trace
- Questionable Stn
- Dead Oil Stn
- Fluorescence
- Gas

- DST tst
- DST alt
- Core
- tail pipe



Curve Track #1
ROP (min/ft)
Gamma (API)
Cal (in)
1:240 Imperial

Depth | Intervals
Cored Interval
DST Interval

DST

Lithology

Oil Show

Geological Descriptions

TG, C1 - C5
Total Gas (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
1:240 Imperial

0 ROP (min/ft) 7
0 Gamma (API) 150
6 Cal (in) 16

0 Total Gas (units) 100
0 C1 (units) 100
0 C2 (units) 100
0 C3 (units) 100
0 C4 (units) 100

2820
2840
2860
2880
2900
2920
2940

O LS, tan, foss, f- medxln foss , dk brn/ brn stain , nsfo, no odor

LS, tan, cream, fxl, foss. in pt, chalky in pt, no shows

LS, a/a, tr. gry chert

**HEEBNER 2916.0 (-1140.0)**

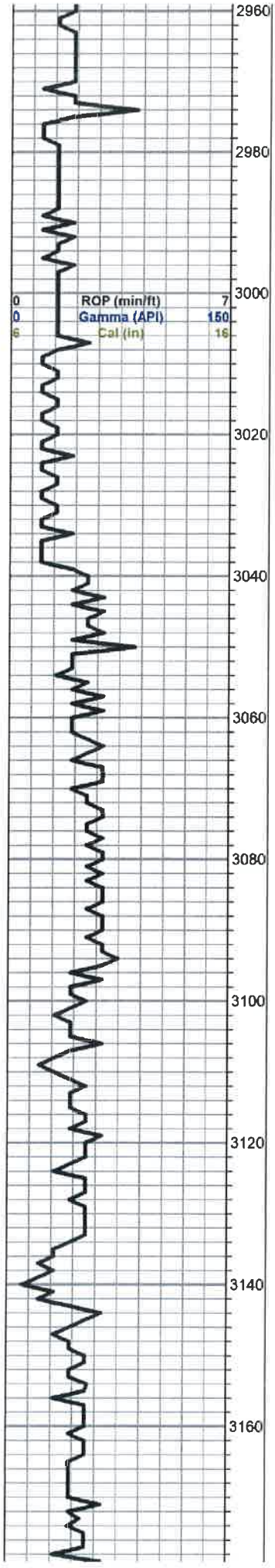
Sh. Black carb

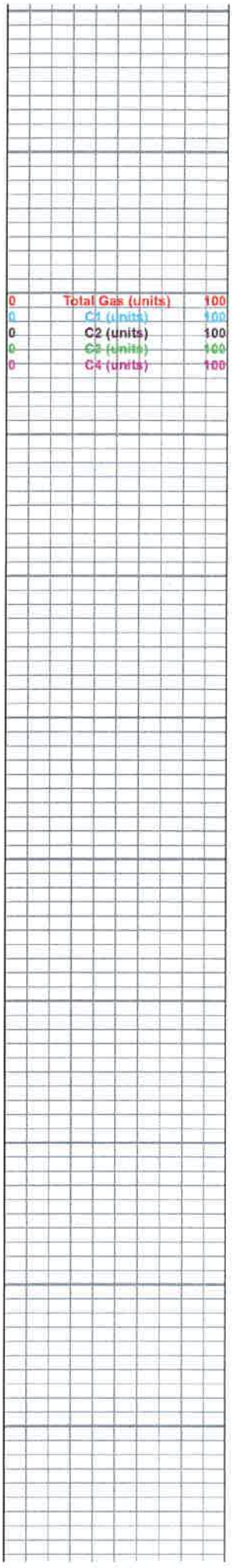
**TORONTO 2932.0 (-1156.0)**

LS, white, cream, fxl, chalky, "crumbly" poor vis. porosity, no shows

**DOUGLAS 2948.0 (-1172.0)**

Sh, gry, green, rusty brn, maroon, silty




Tr. sd., gry, green, silty in pt, tr. brn, dk brn stain, nsfo, no odor

Sh, gry/ greenish silty

Sh, gry, greenish, silty

**BROWN LIME 3039.0 (-1263.0)**

LS, tan brn, fxl, slightly cherty

Sh, gry, green shale

**LANSING 3057.0 (-1281.0)**

LS, tan, fxl, foss, iun pt, poor vis. porosity, dk brn stain, nsfo, Ft. odor

Tr. gry, sh

LS, tan, ool, f- med xln , chalky, poor vis. porosity, poor/ light brn sptty stain , nsfo, no odor

Sh, gry, green

LS, tan, ool, f- med xln, chalky, poor vis. porosity, poor / lt. brn sptty stain , nsfo, no odor

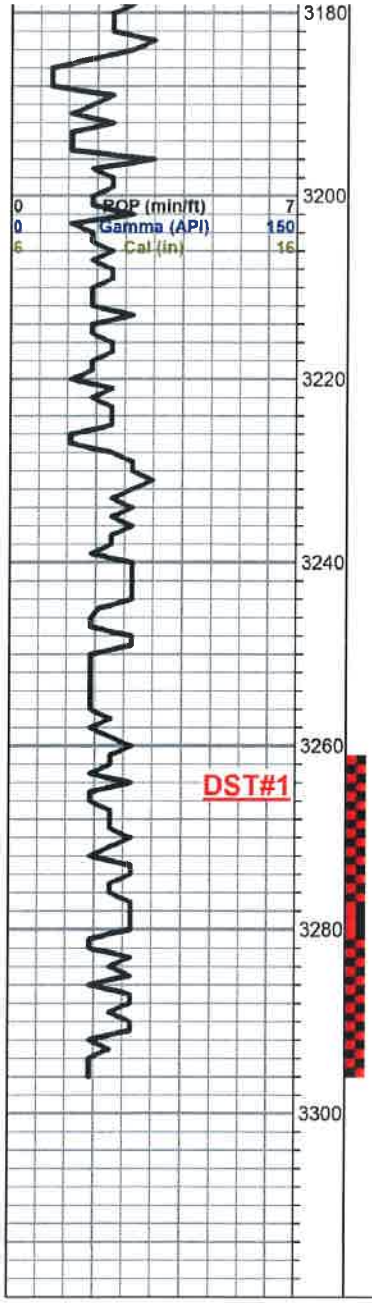
Sh, gry/ blk

LS, white, gry, ool/ foss, chalky, poor porosity, no shows

LS, tan, white, cream, ool, sub oom, brown-dk brn stain, nsfo, no odor

LS, tan, sub oom, fr. porosity, chalky in pt, no shows

LS, white, gry, chlky, dense




Sh, black carb

LS, gry, crm, fxl, slightly ool, few sub oom , poor vis. porosity, no shows

LS, tan, white, oolitic in pt, slightly cherty, poor porosity, tr. brn stain , nsfo, ??? odor

Sh, gry, grayish, green sh.

LS, gry, white, fxl, ool, sub oom,, chalky, tr. poor stain, nsfo, no odor

LS, white, gry, cream, chlky, few few cherty, no shows

Tr. blk carb sh.

LS, white, gry, chalky, no shows, no odor

LS, tan, cream, f- med xln, slighty chalky, poorly developed porosity, no shows

**BASE KC 3281.0 (-1505.0)**

LS, white, cream, med xln, chalky, tr. brn stain , nsfo, ft. odor .

**ARBUCKLE 3292.0 (-1516.0)**

Dol, white, cream, med xln , fair - good in xln vuggy porosity in few, brn stain, sfo, & sour odor,

3296'-Dol, white, cream, suc.,no shows

**RTD 3296.0 (-1520.0)**

DST#1 3261-3296

30-45-45-60

1st Open:

BOB 2.5 mins.

2nd Open:

BOB 3.5 mins.

Recovery:

77' very slight oil cut muddy water (3%O, 62%W, 35% M)

310' SLOCMW (1%O, 69%W, 30% M)

930' MUDDY WATER (95%W, 5%M)

Pressures:

ISIP 665 psi

FSIP 571 psi

IFP 97-369 psi

FFP 415-598 psi

HSH 1624-1575 psi