



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1073449  
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<br>Recompletion Date | Date Reached TD | Completion Date or<br>Recompletion Date |
|-----------------------------------|-----------------|---|

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: \_\_\_\_\_

1073449

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

| 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<br><input type="checkbox"/> Protect Casing<br><input type="checkbox"/> Plug Back TD<br><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<br>Specify Footage of Each Interval Perforated | Acid, Fracture, Shot, Cement Squeeze Record<br><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 |
|-----------------------------------|-----------|---------|-------------|---------------|---------|
|                                   |           |         |             |               |         |

|  |   |   |
|--|---|---|
| <b>DISPOSITION OF GAS:</b><br><input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease<br><i>(If vented, Submit ACO-18.)</i> | <b>METHOD OF COMPLETION:</b><br><input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled<br><i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____<br><i>(Submit ACO-4)</i> | <b>PRODUCTION INTERVAL:</b><br>_____<br>_____ |
|--|---|---|

|           |                        |
|-----------|------------------------|
| Form      | ACO1 - Well Completion |
| Operator  | Mikol Oil LLC          |
| Well Name | Haberer 1-27           |
| Doc ID    | 1073449                |

All Electric Logs Run

|                             |
|-----------------------------|
|                             |
| Sonic Log                   |
| Dual Induction              |
| Micro Resistivity           |
| Compensated Density Neutron |
| Cement Bond                 |

|           |                        |
|-----------|------------------------|
| Form      | ACO1 - Well Completion |
| Operator  | Mikol Oil LLC          |
| Well Name | Haberer 1-27           |
| Doc ID    | 1073449                |

Tops

| Name              | Top   | Datum  |
|-------------------|-------|--------|
| Base Anhydrite    | 1268' | +781'  |
| Topeka            | 2975' | - 926' |
| Heebner Sh.       | 3207' | -1158' |
| Toronto LS        | 3230' | -1181' |
| Lansing Gp.       | 3251' | -1202' |
| G Zone Porosity   | 3347' | -1298' |
| StarkShale        | 3452' | -1403' |
| Base KS City Gp   | 3501' | -1452' |
| Conglomerate Zn.  | 3531' | -1482' |
| Simpson Sandstone | 3595' | -1546' |
| Arbuckle          | 3619' | -1570' |



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Mkol Oil LLC  
1407 Washington Ave.  
Hays, Ks 67601  
ATTN: Bob Stolzle

**27-10-16 Rooks, Ks**  
**Haberer 1-27**  
Job Ticket: 44736 **DST#: 1**  
Test Start: 2011.11.28 @ 03:27:58

## GENERAL INFORMATION:

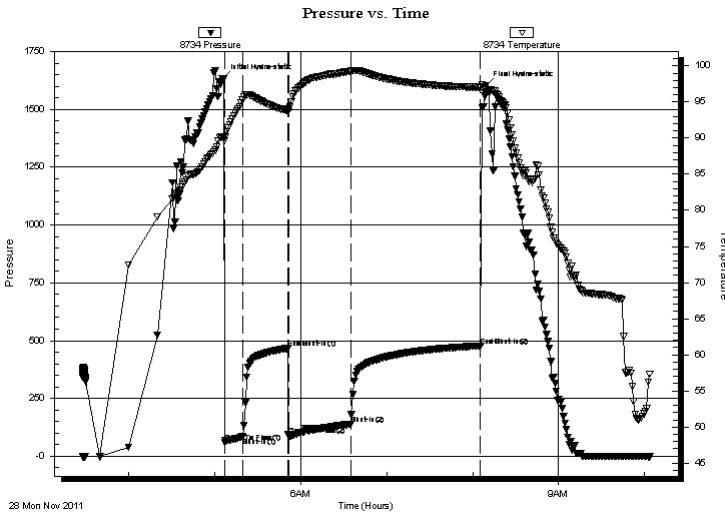
Formation: **LKC "B-F"**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 05:06:58  
Time Test Ended: 10:03:28  
Interval: **3256.00 ft (KB) To 3348.00 ft (KB) (TVD)**  
Total Depth: 3348.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Good  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Brian Fairbank  
Unit No: 41  
Reference Elevations: 2049.00 ft (KB)  
2042.00 ft (CF)  
KB to GR/CF: 7.00 ft

## Serial #: 8734 Outside

Press @ Run Depth: 137.04 psig @ 3262.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2011.11.28 End Date: 2011.11.28 Last Calib.: 2011.11.28  
Start Time: 03:27:59 End Time: 10:03:28 Time On Btm: 2011.11.28 @ 05:05:58  
Time Off Btm: 2011.11.28 @ 08:09:28

TEST COMMENT: IFP - BOB 4 1/2 min  
ISI - sur blow back - died 7 min  
FFP - BOB 4 min  
FSI - BOB 14 min

## PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1633.65         | 90.14        | Initial Hydro-static |
| 1           | 59.19           | 89.66        | Open To Flow (1)     |
| 14          | 84.03           | 95.26        | Shut-In(1)           |
| 45          | 466.23          | 93.80        | End Shut-In(1)       |
| 46          | 88.62           | 94.06        | Open To Flow (2)     |
| 89          | 137.04          | 99.24        | Shut-In(2)           |
| 180         | 477.45          | 97.04        | End Shut-In(2)       |
| 184         | 1602.12         | 96.73        | Final Hydro-static   |

## Recovery

| Length (ft) | Description            | Volume (bbl) |
|-------------|------------------------|--------------|
| 15.00       | SGOCM 55%G, 20%O, 26%M | 0.07         |
| 45.00       | GOCM 25%, 30%O, 45%M   | 0.49         |
| 75.00       | GHOCM 5%G, 40%O, 55%M  | 1.05         |
| 105.00      | FREE OIL 95%O, 5%M     | 1.47         |
| 0.00        | 1055 GIP               | 0.00         |

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Mkol Oil LLC  
1407 Washington Ave.  
Hays, Ks 67601  
ATTN: Bob Stolzle

**27-10-16 Rooks, Ks**  
**Haberer 1-27**  
Job Ticket: 44736      **DST#: 1**  
Test Start: 2011.11.28 @ 03:27:58

## Mud and Cushion Information

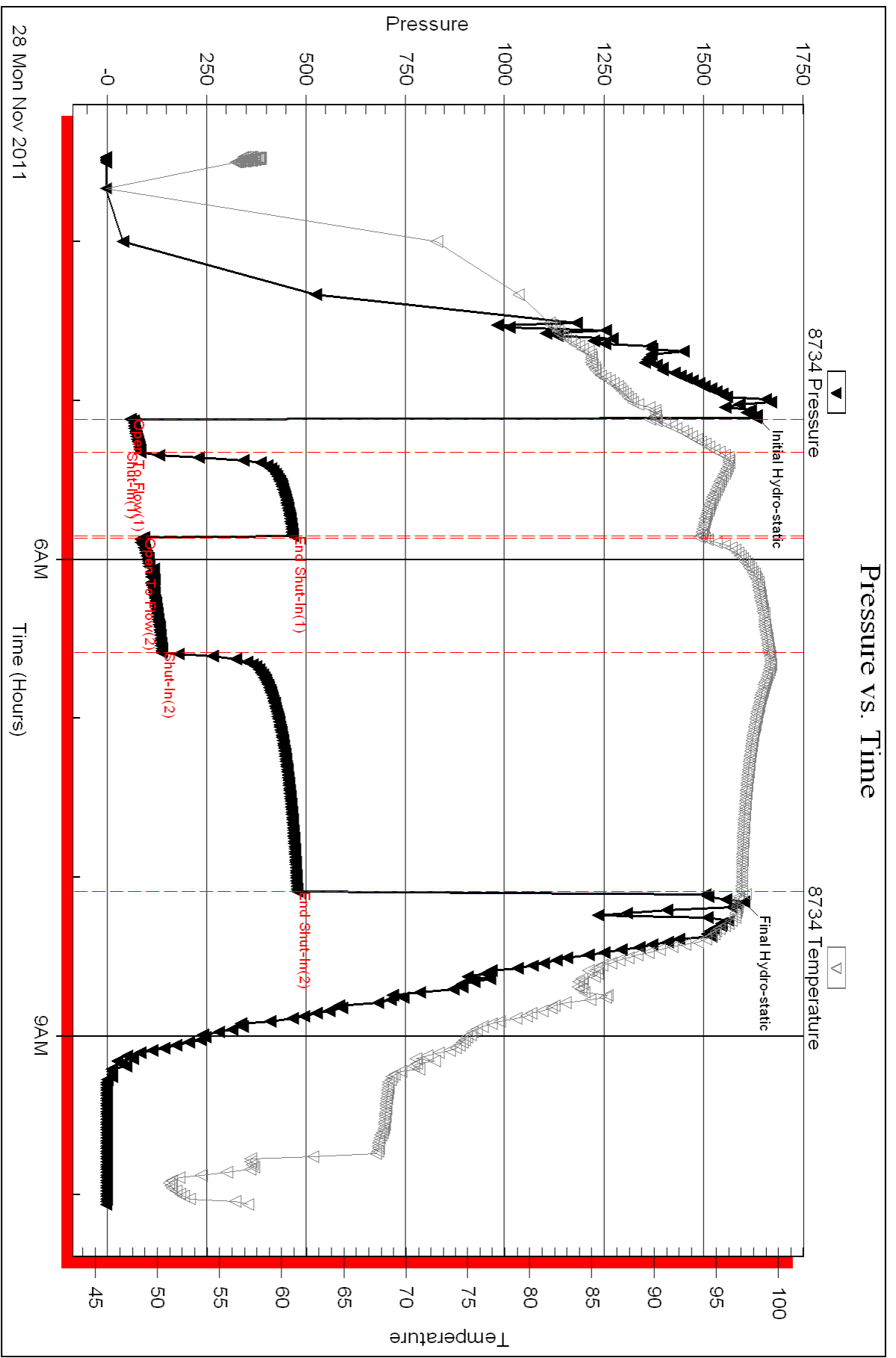
|                                  |                            |                     |
|----------------------------------|----------------------------|---------------------|
| Mud Type: Gel Chem               | Cushion Type:              | Oil API: 43 deg API |
| Mud Weight: 9.00 lb/gal          | Cushion Length: ft         | Water Salinity: ppm |
| Viscosity: 76.00 sec/qt          | Cushion Volume: bbl        |                     |
| Water Loss: 6.39 in <sup>3</sup> | Gas Cushion Type:          |                     |
| Resistivity: ohm.m               | Gas Cushion Pressure: psig |                     |
| Salinity: 2000.00 ppm            |                            |                     |
| Filter Cake: inches              |                            |                     |

## Recovery Information

Recovery Table

| Length<br>ft | Description            | Volume<br>bbl |
|--------------|------------------------|---------------|
| 15.00        | SGOCM 55%G, 20%O, 26%M | 0.074         |
| 45.00        | GOCM 25%, 30%O, 45%M   | 0.485         |
| 75.00        | GHOCM 5%G, 40%O, 55%M  | 1.052         |
| 105.00       | FREE OIL 95%O, 5%M     | 1.473         |
| 0.00         | 1055 GIP               | 0.000         |

Total Length: 240.00 ft      Total Volume: 3.084 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Mkol Oil LLC  
1407 Washington Ave.  
Hays, Ks 67601  
ATTN: Bob Stolzle

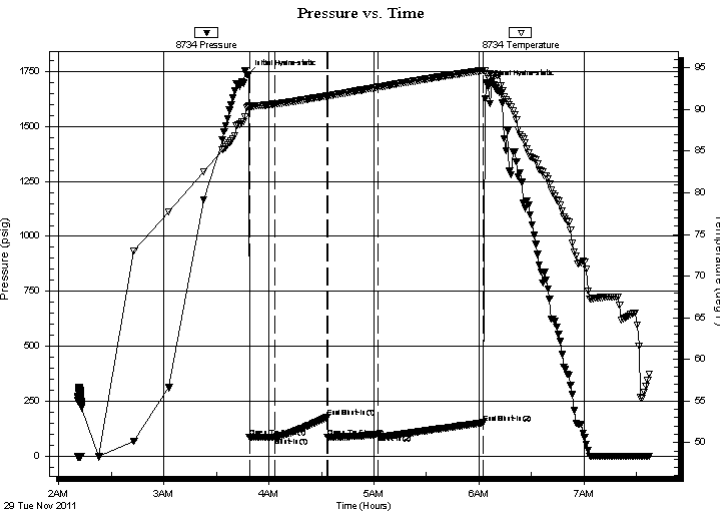
**27-10-16 Rooks, Ks**  
**Haberer 1-27**  
Job Ticket: 44737      **DST#: 2**  
Test Start: 2011.11.29 @ 02:10:52

## GENERAL INFORMATION:

Formation: **LKC "H-L"**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 03:48:52  
Time Test Ended: 07:37:52  
Interval: **3370.00 ft (KB) To 3510.00 ft (KB) (TVD)**  
Total Depth: 3510.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Good  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Brian Fairbank  
Unit No: 41  
Reference Elevations: 2049.00 ft (KB)  
2042.00 ft (CF)  
KB to GR/CF: 7.00 ft

**Serial #: 8734      Outside**  
Press @ Run Depth: 101.97 psig @ 3373.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2011.11.29      End Date: 2011.11.29      Last Calib.: 2011.11.29  
Start Time: 02:10:53      End Time: 07:37:52      Time On Btm: 2011.11.29 @ 03:47:52  
Time Off Btm: 2011.11.29 @ 06:04:52

**TEST COMMENT:** IFP - weak blow throughout 1"  
ISI - no blow back  
FFP - no blow  
FSI - no blow back



## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1734.97         | 90.37        | Initial Hydro-static |
| 1           | 85.45           | 90.33        | Open To Flow (1)     |
| 16          | 87.57           | 90.67        | Shut-In(1)           |
| 45          | 176.23          | 91.64        | End Shut-In(1)       |
| 46          | 86.98           | 91.63        | Open To Flow (2)     |
| 75          | 101.97          | 92.70        | Shut-In(2)           |
| 135         | 153.06          | 94.71        | End Shut-In(2)       |
| 137         | 1687.88         | 94.24        | Final Hydro-static   |

## Recovery

| Length (ft) | Description  | Volume (bbl) |
|-------------|--------------|--------------|
| 10.00       | DRL MUD 100% | 0.05         |
|             |              |              |
|             |              |              |
|             |              |              |
|             |              |              |

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Mkol Oil LLC  
1407 Washington Ave.  
Hays, Ks 67601  
ATTN: Bob Stolzle

**27-10-16 Rooks, Ks**  
**Haberer 1-27**  
Job Ticket: 44737      **DST#: 2**  
Test Start: 2011.11.29 @ 02:10:52

**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: | ppm     |
| Viscosity: 75.00 sec/qt          | Cushion Volume: bbl        |                 |         |
| Water Loss: 7.60 in <sup>3</sup> | Gas Cushion Type:          |                 |         |
| Resistivity: ohm.m               | Gas Cushion Pressure: psig |                 |         |
| Salinity: 4500.00 ppm            |                            |                 |         |
| Filter Cake: inches              |                            |                 |         |

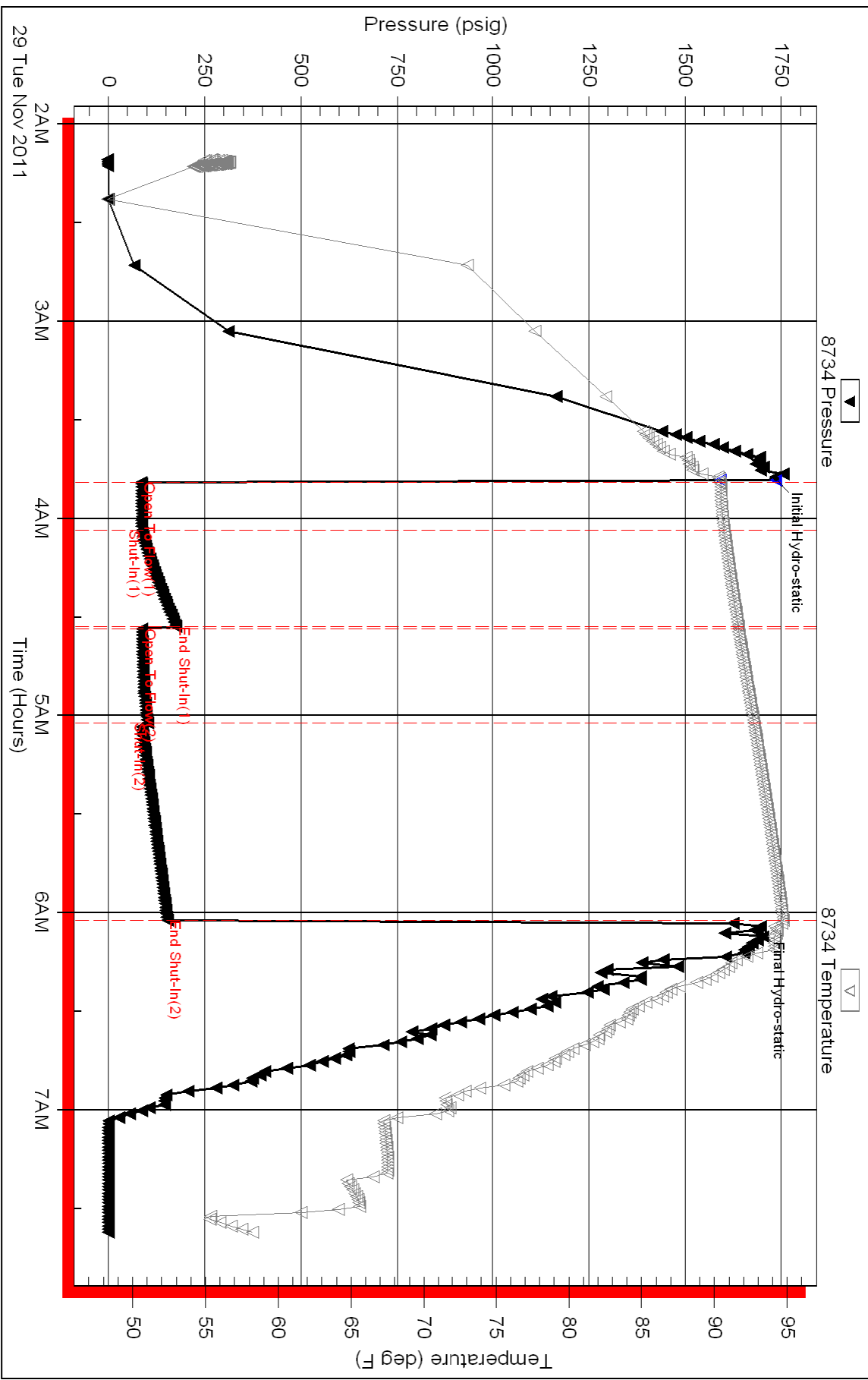
**Recovery Information**

Recovery Table

| Length<br>ft | Description  | Volume<br>bbl |
|--------------|--------------|---------------|
| 10.00        | DRL MUD 100% | 0.049         |

Total Length: 10.00 ft      Total Volume: 0.049 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

### Pressure vs. Time







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Mkol Oil LLC  
1407 Washington Ave.  
Hays, Ks 67601  
ATTN: Bob Stolzle

**27-10-16 Rooks, Ks**  
**Haberer 1-27**  
Job Ticket: 44738      **DST#: 3**  
Test Start: 2011.11.29 @ 21:36:30

## 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: | ppm     |
| Viscosity: 76.00 sec/qt          | Cushion Volume: bbl        |                 |         |
| Water Loss: 7.60 in <sup>3</sup> | Gas Cushion Type:          |                 |         |
| Resistivity: ohm.m               | Gas Cushion Pressure: psig |                 |         |
| Salinity: 6000.00 ppm            |                            |                 |         |
| Filter Cake: inches              |                            |                 |         |

## Recovery Information

Recovery Table

| Length<br>ft | Description                   | Volume<br>bbl |
|--------------|-------------------------------|---------------|
| 124.00       | 30%Gas/30%Oil/20%Water/20%Mud | 1.457         |
| 496.00       | 20%Gas/20%Oil/20%Water/40%Mud | 6.958         |
| 124.00       | 2%Oil/98%Mud                  | 1.739         |

Total Length: 744.00 ft      Total Volume: 10.154 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments:

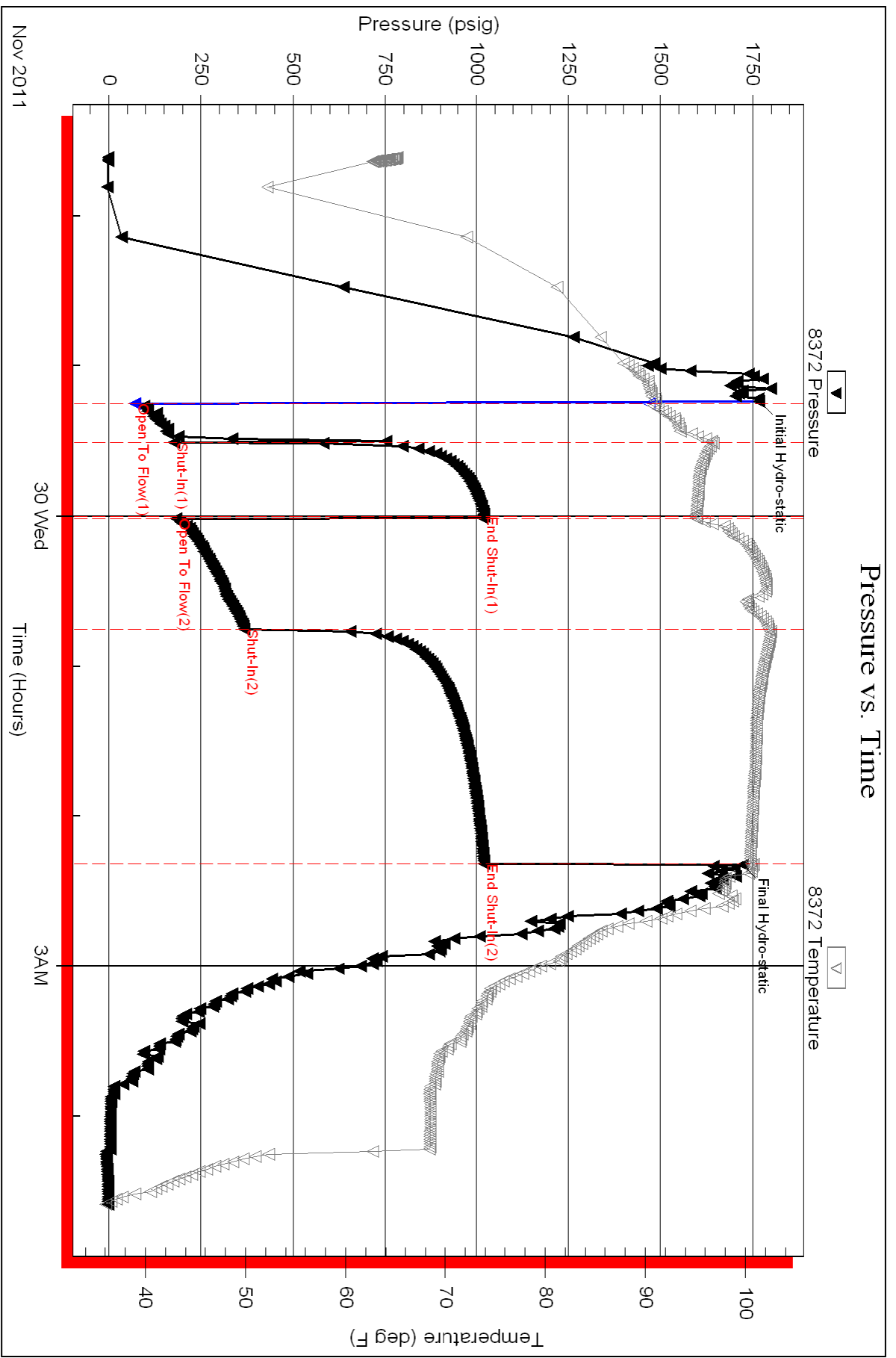
Serial #: 8372

Inside

Mkol Oil LLC

Haberer 1-27

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 44738

Printed: 2011.11.30 @ 09:07:53

# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025

Home Office P.O. Box 32 Russell, KS 67665

No. 080

Cell 785-324-1041

|                     |             |          |                |      |  |       |    |  |      |       |    |             |  |        |           |
|---------------------|-------------|----------|----------------|------|--|-------|----|--|------|-------|----|-------------|--|--------|-----------|
| Date                | 11-24-11    | Sec.     | 27             | Twp. | 10   | Range | 16 | County   | Rock | State | KS | On Location |  | Finish | 2:00 P.M. |
| Lease               | Haberer     | Well No. | 1-27           |      | Location Natoma W Coline 5to CED 3/4 W Sinto                                     |       |    |  |      |       |    |             |  |        |           |
| Contractor          | Discover #4 |          |                |      |  |       |    | Owner  |      |       |    |             |  |        |           |
| Type Job            | Surface     |          |                |      |  |       |    | To Quality Oilwell Cementing, Inc.<br>You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed. |      |       |    |             |  |        |           |
| Hole Size           | 12 1/4      |          | T.D. 223       |      |  |       |    |  |      |       |    |             |  |        |           |
| Csg.                | 8 5/8       |          | Depth 222      |      |  |       |    |  |      |       |    |             |  |        |           |
| Tbg. Size           |             |          | Depth          |      |  |       |    |  |      |       |    |             |  |        |           |
| Tool                |             |          | Depth          |      |  |       |    |  |      |       |    |             |  |        |           |
| Cement Left in Csg. | 15'         |          | Shoe Joint     |      | The above was done to satisfaction and supervision of owner agent or contractor. |       |    |  |      |       |    |             |  |        |           |
| Meas Line           |             |          | Displace 13BCL |      | Cement Amount Ordered 150 com 3eloc 2eloc  |       |    |  |      |       |    |             |  |        |           |

**EQUIPMENT**

|         |   |     |          |       |          |     |
|---------|---|-----|----------|-------|----------|-----|
| Pumptrk | 5 | No. | Cementer | Chris | Common   | 150 |
|         |   |     | Helper   |       |          |     |
| Bulktrk |   | No. | Driver   | Steve | Poz. Mix |     |
|         |   |     | Driver   |       |          |     |
| Bulktrk | 8 | No. | Driver   | Brian | Gel.     | 3   |
|         |   |     | Driver   |       |          |     |

**JOB SERVICES & REMARKS**

|                                 |                         |
|---------------------------------|-------------------------|
| Remarks:                        | Hulls                   |
| Rat Hole                        | Salt                    |
| Mouse Hole                      | Flowseal                |
| Centralizers                    | Kol-Seal                |
| Baskets                         | Mud CLR 48              |
| D/V or Port Collar              | CFL-117 or CD110 CAF 38 |
| 8 5/8 on bottom Est Circulation | Sand                    |
| M. x 150 SK + D space           | Handling 158            |
|                                 | Mileage                 |

*Cement Circulated*

**FLOAT EQUIPMENT**

|             |  |
|-------------|--|
| Guide Shoe  |  |
| Centralizer |  |
| Baskets     |  |
| AFU Inserts |  |
| Float Shoe  |  |
| Latch Down  |  |

|                |         |
|----------------|---------|
| Pumptrk Charge | Surface |
| Mileage        | 34      |

|                                   |              |  |
|-----------------------------------|--------------|--|
|                                   | Tax          |  |
|                                   | Discount     |  |
| X Signature <i>Michael D. ...</i> | Total Charge |  |

# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025  
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 187

Date 12-1-11 Sec. 27 Twp. 10 Range 16 County Rooks State KS On Location \_\_\_\_\_ Finish 2:45 AM

Lease Haberer Well No. 1-27 Location Natoma, KS - W to C.M., S to CCRd

Contractor Discovery #4 Owner 1/2 W, 3/4 Into

Type Job Production To Quality Oilwell Cementing, Inc.  
You are hereby requested to rent cementing equipment and furnish

Hole Size 7 7/8" T.D. 3700' cementer and helper to assist owner or contractor to do work as listed.

Csg. 5 1/2" Depth 3702.39' Charge To MIKOL oil

Tbg. Size \_\_\_\_\_ Depth \_\_\_\_\_ Street \_\_\_\_\_

Tool Port Collar Depth 1222' City \_\_\_\_\_ State \_\_\_\_\_

Cement Left in Csg. 20.62' Shoe Joint 20.62' The above was done to satisfaction and supervision of owner agent or contractor.

Meas Line \_\_\_\_\_ Displace 87 3/4 BLS Cement Amount Ordered 200 sx Common 10% Salt

**EQUIPMENT**

Pumptrk 1 No. C/500 Cementer Helper \_\_\_\_\_ Common 200

Bulktrk 14 No. Douglas Driver \_\_\_\_\_ Poz. Mix \_\_\_\_\_

Bulktrk piu No. Rick Driver \_\_\_\_\_ Gel. \_\_\_\_\_

**JOB SERVICES & REMARKS**

Remarks: \_\_\_\_\_ Calcium \_\_\_\_\_

Rat Hole 30 sx \_\_\_\_\_ Halls \_\_\_\_\_

Mouse Hole 15 sx \_\_\_\_\_ Salt 18

Centralizers 14 7 10 13, 16, 62 \_\_\_\_\_ Flowseal \_\_\_\_\_

Baskets 159 tk 57 \_\_\_\_\_ Kol-Seal 800 #

D/V or Port Collar 1222' - 60th Jt. \_\_\_\_\_ Mud CLR 48 500 gal

pipe on bottom, break Circulation \_\_\_\_\_ CFL-117 or CD110 CAF 38

pump 500 gal Mud Clear 48 \_\_\_\_\_ Sand \_\_\_\_\_

plug Rathole w/ 30 sx \_\_\_\_\_ Handling 226

plug Mousehole w/ 15 sx \_\_\_\_\_ Mileage \_\_\_\_\_

**FLOAT EQUIPMENT**

Hook to Casing + Mix 155 sx \_\_\_\_\_ Guide Shoe \_\_\_\_\_

Common 10% Salt 5% Gilsomite \_\_\_\_\_ Centralizer 7 Regular

Shut down wash pump + lines \_\_\_\_\_ Baskets 1

Released plug + Disphred with \_\_\_\_\_ AFU Inserts \_\_\_\_\_

87 3/4 BLS of water, Released + \_\_\_\_\_ Float Shoe 1

held. \_\_\_\_\_ Latch Down 1

Lift pressure 700 # \_\_\_\_\_ 18- Recip. Scratcher's

Land plug to 1200 # \_\_\_\_\_ 1- Port Collar

\_\_\_\_\_ Pumptrk Charge prod Long String

\_\_\_\_\_ Mileage 34

\_\_\_\_\_ Tax \_\_\_\_\_

\_\_\_\_\_ Discount \_\_\_\_\_

\_\_\_\_\_ Total Charge \_\_\_\_\_

X Signature [Signature]

# QUALITY OILWELL CEMENTING, INC.

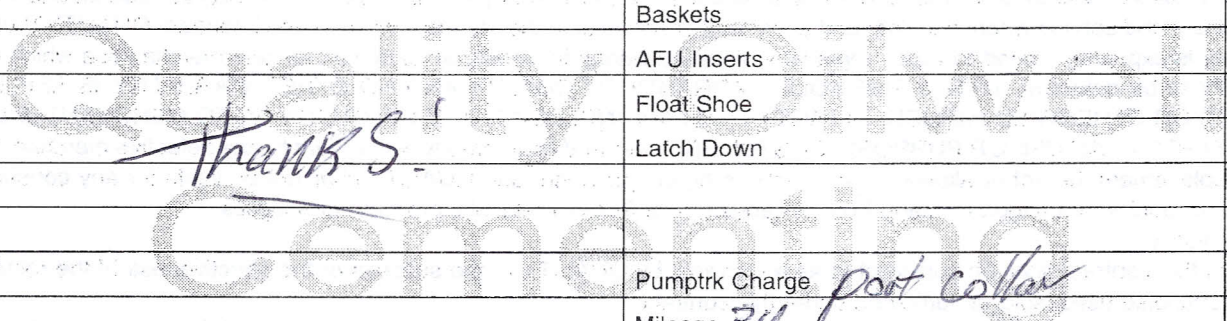
Federal Tax I.D.# 20-2886107

Phone 785-483-2025  
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 089

| Date                                 | Sec.          | Twp. | Range  | County   | State | On Location | Finish |
|--------------------------------------|---------------|------|--|--|-------|-------------|--------|
| 12-6-11                              |               |      |  | Rooks  | KS    |             | 2:00pm |
| Lease Haberer                        | Well No. 1-27 |      | Location Victoria W Coline Stoll RD 1/2 W Sinto                                  |  |       |             |        |
| Contractor Chito's                   |               |      |  | Owner  |       |             |        |
| Type Job Port collar                 |               |      |  | To Quality Oilwell Cementing, Inc.<br>You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed. |       |             |        |
| Hole Size 2 7/8                      | T.D.          |      | Charge To Milk Oil   |  |       |             |        |
| Csg. 5 1/2                           | Depth         |      | Street   |  |       |             |        |
| Tbg. Size 2 7/8                      | Depth         |      | City State   |  |       |             |        |
| Tool Expert Tools Ben                | Depth 1216    |      | The above was done to satisfaction and supervision of owner agent or contractor. |  |       |             |        |
| Cement Left in Csg.                  | Shoe Joint    |      | Cement Amount Ordered 250 QMDC 1/4 FF10  |  |       |             |        |
| Meas Line                            | Displace 63L  |      | Cement Amount Ordered 250 QMDC 1/4 FF10  |  |       |             |        |
| <b>EQUIPMENT</b>                     |               |      |  | USED 1304C   |       |             |        |
| Pumptrk 5 No. Cementer Craig         | Helper        |      | Common 130   |  |       |             |        |
| Bulktrk No. Driver Steve             | Driver        |      | Poz. Mix   |  |       |             |        |
| Bulktrk 10 No. Driver Doug           | Driver        |      | Gel.   |  |       |             |        |
| <b>JOB SERVICES &amp; REMARKS</b>    |               |      |  | Calcium  |       |             |        |
| Remarks:                             |               |      |  | Hulls  |       |             |        |
| Rat Hole                             |               |      |  | Salt   |       |             |        |
| Mouse Hole                           |               |      |  | Flowseal 62#   |       |             |        |
| Centralizers                         |               |      |  | Kol-Seal   |       |             |        |
| Baskets                              |               |      |  | Mud CLR 48   |       |             |        |
| D/V or Port Collar                   |               |      |  | CFL-117 or CD110 CAF 38  |       |             |        |
| Test 5 1/2 to 1000# Held open        |               |      |  | Sand   |       |             |        |
| Tool & Mix 1304C Cement Circulated   |               |      |  | Handling 250   |       |             |        |
| Displace 63L close tool test         |               |      |  | Mileage  |       |             |        |
| to 1000# Held Run 5 joints           |               |      |  | <b>FLOAT EQUIPMENT</b>   |       |             |        |
| Reverse out.                         |               |      |  | Guide Shoe   |       |             |        |
|                                      |               |      |  | Centralizer  |       |             |        |
|                                      |               |      |  | Baskets  |       |             |        |
|                                      |               |      |  | AFU Inserts  |       |             |        |
|                                      |               |      |  | Float Shoe   |       |             |        |
|                                      |               |      |  | Latch Down   |       |             |        |
|                                      |               |      |  | Pumptrk Charge port collar   |       |             |        |
|                                      |               |      |  | Mileage 34   |       |             |        |
|                                      |               |      |  | Tax  |       |             |        |
|                                      |               |      |  | Discount   |       |             |        |
|                                      |               |      |  | Total Charge   |       |             |        |
| X Signature <i>M. D. [Signature]</i> |               |      |  |  |       |             |        |



THANKS!



# ROBERT STOLZLE

## CONSULTING PETROLEUM GEOLOGIST

6214 S. 291st ST., W. Olathe, KS 67022 - 0200 (913) 704-9400  
 AAPG Cert. # 3224

### DRILLING TIME AND SAMPLE LOG

OPERATOR: Mikro Oil LLC  
 LEASE: Haberer WELL NO.: 1-27  
 FIELD: Unamed  
 LOCATION: NE 1/4, SE 1/4, SW 1/4, SE 1/4 (580' 158')  
 SEC.: 27 TWP.: 10S RANGE: 16W  
 COUNTY: Rooks STATE: KS  
 API NO.: 15-163-23990

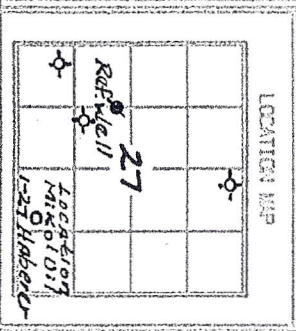
CONTRACTOR: Discovery Drilling, Rig # 4  
 COMMENCED: Nov. 23, 2011 COMPLETED: 12/1/11  
 ROTARY TOTAL DEPTH: 3700' LOG TOTAL DEPTH: 3700'  
 GEOLOGICAL SUPERVISION FROM: 2900' to: T.D.  
 MUD-UP DEPTH: 2802' MUD TYPE: Chemical/Polymer

| FORMATION         | SAMPLE       |        | LOG          |        | STRUCTURAL DEPRESSION |
|-------------------|--------------|--------|--------------|--------|-----------------------|
|                   | TOP          | SCREEN | TOP          | SCREEN |                       |
| Stone Arch/Anth.  | 1236'(4813)  |        | 1235'(4814)  |        | N/A.                  |
| Base Anhydrite    | 1271'(4778)  |        | 1268'(4781)  |        | N/A.                  |
| Topoka Fm         | 2975'(926.)  |        | 2975'(926.)  |        | +4'                   |
| Haberer Sh.       | 3201'(1158.) |        | 3201'(1158.) |        | +6'                   |
| Toronto Ls        | 3230'(1181)  |        | 3230'(1181)  |        | +5'                   |
| Lansing Gp.       | 3252'(1203)  |        | 3251'(1202)  |        | +6'                   |
| G. Zone Porosity  | 3350'(1301)  |        | 3347'(1298)  |        | +12'                  |
| Stank Shale       | 3453'(1404)  |        | 3452'(1403)  |        | +8'                   |
| Basak's City Gp.  | 3503'(1454)  |        | 3501'(1452)  |        | +10'                  |
| Comglomate Zn.    | 3528'(1479)  |        | 3531'(1482)  |        | +39'                  |
| Simpson Sandstone | 3596'(1547)  |        | 3595'(1546)  |        | +20'                  |
| Abuckle Fm.       | 3619'(1570)  |        | 3619'(1570)  |        | +14'                  |
| Total Depth       | 3700         |        | 3700         |        |                       |

ELEVATIONS  
 KB 2049'  
 CL 2041'  
 Measurements are all from KB

CASING RECORD  
 SURFACE: 8 5/8" @  
222' KB, Circ.  
 PRODUCTION: 5 1/2" 1550#  
@ 3699' W/1555X,  
PC @ 1222'

WIRELINE SURVEYS  
 The Parformers LLC  
 Compensated Density  
 - Heist for log, Dual  
 Induction, BHC  
 Sonic and Mikro  
 Resistivity Logs



Reference Well for Structural Comparison: Paterson #1 Nelson NE 1/4 SW 1/4 27  
 Comments and Recommendations: Recommendations: Completions as Oil Product

DST # 1 ZONE: Lansing B'-F' Zones  
 INTERVAL: 3256'-3348'

| Pressures:              | Time | Press.   | RECOVERY                |
|-------------------------|------|----------|-------------------------|
| 1. Initial Hydrostatic  |      | 1634 psi | 1055' Gas in Pipe       |
| 2. Initial Flow: Start  | 0    | 59 psi   | 105' Clean Oil (5% Mud) |
| 3. Initial Flow: End    | 15   | 84 psi   | 75' Gas + Oil / Cut Mud |
| 4. Initial Shut-in: End | 30   | 466 psi  | (5% gas, 40% oil)       |
| 5. Final Flow: Start    | 0    | 89 psi   | 45' Gas + Oil / Cut Mud |
| 6. Final Flow: End      | 45   | 137 psi  | (25% gas, 30% oil)      |
| 7. Final Shut-in: End   | 90   | 478 psi  | 15' gas + oil / cut mud |
| 8. Final Hydrostatic    |      | 1602 psi | (55% gas, 20% oil)      |

BHT: 97°F  
 Rv: Strap .28' long, deviation 1 1/4°

Blows: I.F. - BOB 4 1/2 min.  
 I.S.I. - died in 7 min.  
 F.F. - BOB - 4 min.  
 F.S.I. - BOB 14 min.

DST # 1 8734 Chart  
 Interval: 3256'-3348' Depth: 3262'

DST # 2 ZONE: LKC "H"-L" Zones  
 INTERVAL: 3370'-3510'

| Pressures:              | Time | Press.   | RECOVERY         |
|-------------------------|------|----------|------------------|
| 1. Initial Hydrostatic  |      | 1735 psi | 10' Drilling Mud |
| 2. Initial Flow: Start  | 0    | 86 psi   |                  |
| 3. Initial Flow: End    | 15   | 88 psi   |                  |
| 4. Initial Shut-in: End | 30   | 176 psi  | Blows:           |
| 5. Final Flow: Start    | 0    | 87 psi   | I.F. - 1" blow   |
| 6. Final Flow: End      | 30   | 102 psi  | I.S.I. - No blow |
| 7. Final Shut-in: End   | 60   | 153 psi  | F.F. - No blow   |
| 8. Final Hydrostatic    |      | 1688 psi | F.S.I. - No blow |

BHT: 95°F  
 Rv: \_\_\_\_\_

DST # 2 8734 Chart  
 Interval: 3370'-3510' Depth: 3373'

IF ISI FF FSI

DST # 3 ZONE: Conglomerate - Arbuckle Frn.

DST # 3

8372 Chart

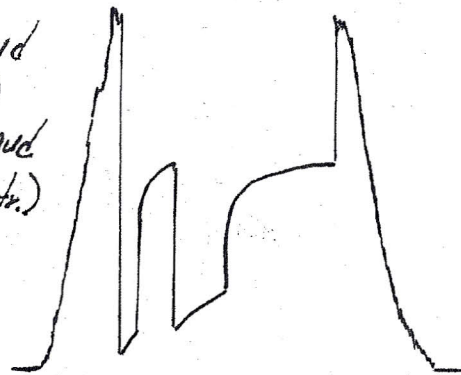
INTERVAL: 3498'-3628'

Interval: 3498'-3628'

Depth: 3505'

| Pressures:              | Time | Press.   | RECOVERY                     |
|-------------------------|------|----------|------------------------------|
| 1. Initial Hydrostatic  |      | 1767 psi | 124' v. sl. oil cut Mud      |
| 2. Initial Flow: Start  | 0    | 71 psi   | (2% oil)                     |
| 3. Initial Flow: End    | 15   | 177 psi  | 496' Gas Oil w/ cut Mud      |
| 4. Initial Shut-in: End | 30   | 1021 psi | (20% gas, 20% oil, 20% wtr.) |
| 5. Final Flow: Start    | 45   | 183 psi  | 124' Gas Oil cut w/ wtr. Mud |
| 6. Final Flow: End      | 45   | 367 psi  | (30% gas, 30% oil, 20% wtr.) |
| 7. Final Shut-in: End   | 90   | 1020 psi | 744' total fluid             |
| 8. Final Hydrostatic    |      | 1722 psi |                              |

2.



BHT: N.A.

Rv: \_\_\_\_\_

Blow Desc.  
 Z.F. - BOB 3 min.  
 I.S.I. - W.K. Surf. blow  
 F.F. - BOB 4 min.  
 F.S.I. - No blow

### ABBREVIATIONS USED

#### ROCK TYPES:

- Lo - Limestone
- Sh - Shale
- Sd - Sandstone
- Slt - Siltstone
- Cg - Conglomerate
- Ch - Chert
- Qtz - Quartzite
- Grn - Granite
- Dol - Dolomite
- Chk - chalky

#### COLOR:

- Vh - White
- Crm - Cream
- Clr - Clear
- Rd - Red
- Grn - Green
- Gry - Gray
- Blk - Black
- Mot - Mottled

#### HARDNESS:

- Sft - Soft
- M.Sft - Moderately soft
- Hrd - Hard
- V.Hrd - Very hard

#### FABRIC:

- Fn.grn - Finegrained
- VFG - Very fine grained
- Med - Medium
- Cr - Coarse
- Det - Detrital
- Foss - Fossiliferous
- Xln - Crystalline
- Mxln - Microcrystalline
- Ool - Oolitic
- Op - Opaloid
- Mat - Matrix

#### OTHER TERMS:

- Fl - Fluorescence (of oil)
- min fl - mineral fluorescence
- pyr - pyritic
- gluc - glauconitic
- carb - carbonaceous
- stn - stain (of oil)
- cut - oil cut
- AA - as above
- por - porosity
- NSFOC - no stain, fluorescence, odor, or cut (of oil)
- amp - sample
- perm - permeability
- F.O. - Free oil
- vug - vugular
- tr - trace
- w/ - with

#### MODIFIERS:

- gd - Good
- fr - fair
- pr - Poor
- ex - excellent
- v - very
- w - well
- tr - trace
- occ - occasional
- vis - visible
- N - no
- gran - granular
- intergran - intergranular
- pp - pinpoint
- dd - dead
- goy - gassy

#### OIL SHOWS

- Weak Oil Show
- ⊙ Fair Oil Show
- ⊕ Good Oil Show
- ⊗ Excellent Oil Show

#### TEXTURE:

- Dns - Dense
- Cly - Clayey
- Fri - Friable
- Earth - Earthy
- Hack - Hackly
- Fiss - Fissile
- Vit - Vitreous
- Vug - Vugular
- Mic - Micritic

## ROCK TYPE SYMBOLS

SHALE



CARBONACEOUS SHALE



QUARTZITE



SANDSTONE



LIMESTONE



SALT



OLIGITIC LIMESTONE



DOLomite



ANhydrite



Chert



GRANITE



### DRILLING TIME

0 1 2 3 4 5

GAS SHOWS

TOTAL GAS UNITS  
CHARTOGRAPH UNITS

Oil Shows

SAMPLE DESCRIPTIONS

REMARKS

1200

Stone Corral  
Anhydrite  
(+813')

Base of  
Anhydrite  
(+778')

start 1' drilling time at  
2900'

start 10' wet + dry samples  
at 3,000'

Topeka Frm.  
(-926')

Ls: gry, m, hrd, dns, vfg xln, occ  
foss, tr. sdy, N @ NSFOC

Ls: gry - crm, hrd, dns, vfg xln,  
occ foss, tr. sh. std, tr.  
sdy, N @ NSFOC

Sh: dk gry, m, hrd, dns, hazy  
Ls: crm - gry, m, hrd - fnd, dns,  
vfg xln, occ foss, tr. vfg,  
no ldic, vug.  $\phi$ , 1 ga. stn. + odor,  
tr. cut + fl. ? perm.

Weak Show

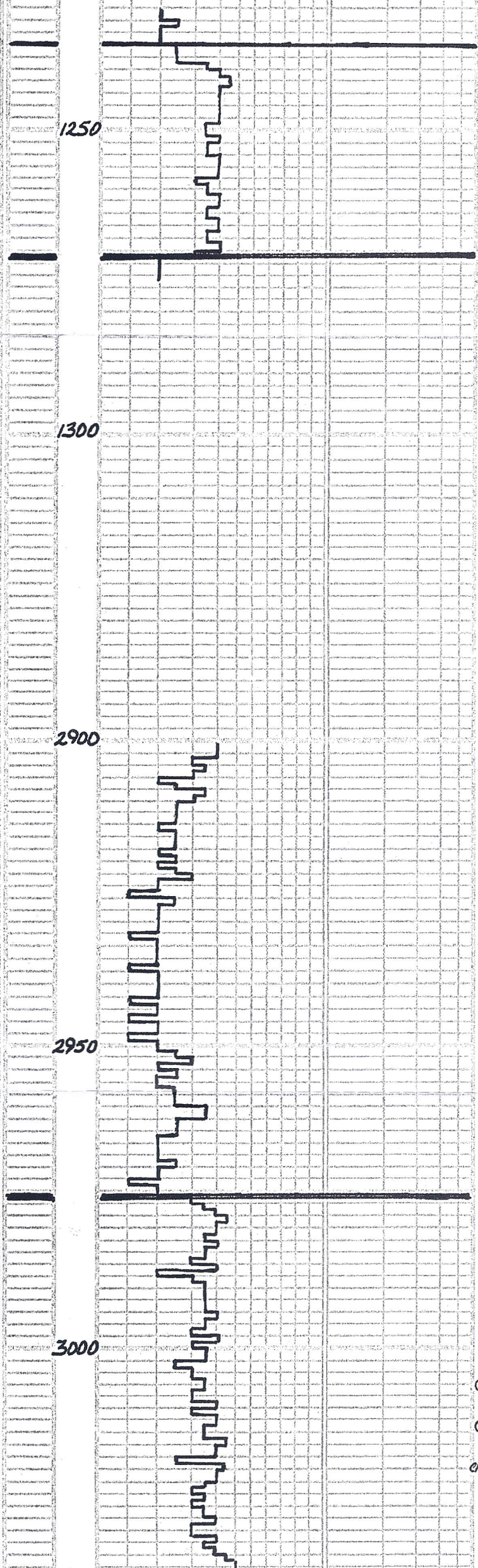
Ls: P, A, mod. - udif. str. ite.  
bldg gas + oil, tr. F, O, 1 ga.  
cu + fl., vfg. moldic  $\phi$ ,  
? perm.

Fair Show

Sh: gry - dk gry, m, stf, dns,  
earthy - stfy, tr. carb.

Ls: crm - gry, m, hrd, dns, vfg xln,  
occ foss. + sh. std. N @ NSFOC

Ls: crm - tan, hrd, dns, vfg - mxln,  
mic, occ foss. + sh. std, tr.  
chky N @ NSFOC



3050

Ls: A.A. NΦ NSFOL  
 Fr. ss. gray, hrd., dns., VEG, W/C.M.Y.D., pr. s.t.d., sh. s.t.d., mic.A. NΦ NSFOL  
 Ls. crm.-gray, hrd., dns., VEG-mxln., mic., occ. ph. g.y., occ. foss. sh. s.t.d. NΦ NSFOL  
 Ls. crm.-gray, hrd., dns., VEG, xln. foss., sh. s.t.d., tr. ch. NΦ NSFOL

3100

Ls: crm.-tan-gray, hrd., dns., VEG, xln., foss., abun., sh. s.t.d., 1-2 pc. w/ wk. cut & fl., no vis. φ v. v. wk. show  
 sh. bik., m. hrd., dns., heavy-fiss.  
 Ls: crm.-dk. gray, hrd., dns., VEG-mxln., mic., tr. foss. NΦ NSFOL  
 sh. m. sst.-m. hrd., dns., carb., earthy  
 Ls: crm.-tan, hrd., m. sst., dns., VEG-mxln., tr. mic., tr. ch., occ. foss., tr. sh. s.t.d., NΦ NSFOL  
 Ls: wh.-tan, hrd., dns., VEG-mxln., mic., tr. foss., tr. sh. s.t.d., tr. ch. NΦ NSFOL

**Kung Hill Shale (-1032')**

3150

Ls: A.A., abun. gray, ch. occ. m. sst., sh. s.t.d., tr. chiky. tr. foss. NΦ NSFOL  
 Ls: crm.-tan-gray, m. sst., chik.-hrd., dns., mxln., mic., occ. sh. s.t.d., tr. foss. NΦ NSFOL  
 sh. gray, sst., stly., earthy  
 sh. A.A.  
 Ls: A.A., 1-2 pc. w/ gd. vug. φ lt. brn. s.t.d., tr. cut & fl., wk. odor, no F.O. v. thin zone v. wk. show  
 sh. dk. gray-bik., m. hrd., dns., carb., earthy, occ. dk. gray, ch.

**Queen Hill Shale (-1088')**

3200

Ls: crm.-gray, m. sst., hrd., mxln.-mxln., tr. v. xid., sh. s.t.d., NΦ NSFOL  
 Ls: crm.-tan-gray, m. sst.-hrd., dns., VEG-mxln., mic., abun. sh. s.t.d., foss., tr. chik. NΦ NSFOL  
 Ls: crm.-tan-gray, hrd.-m. sst., chik., VEG-mxln., occ. foss., abun. sh. s.t.d., tr. pyr. NΦ NSFOL  
 Ls: crm.-tan, m. hrd., dns., VEG xln., foss., sh. s.t.d., tr. tr. int. part. vug. φ, lt. brn. s.t.d., bldg. gas, gd. cut & fl., thin zone, ? perm.  
 Ls: crm.-gray, hrd., dns., VEG-mxln., mic., sh. s.t.d., occ. foss. NΦ NSFOL

**Mud Check at 3170'**  
 M.W. 8.7 lb./gal  
 Vis. 76 sec./qt.  
 Wk. 6.4 ml./30 min  
 Chl. 2000 ppm  
 Solids 2.2 %  
 LCM 2 lbs./bbl.

Weak Show

3250

Ls: crm.-tan-gray, hrd.-m. sst., dns., tr. chik., VEG-mxln., tr. ch., abun. sh. s.t.d., tr. foss. NΦ NSFOL  
 Ls: A.A., less. sh. s.t.d., occ. ch. NΦ NSFOL  
 sh. gray-tr. bik., m. sst.-m. hrd., dns., earthy, tr. carb.  
 sh. dk. gray-bik., hrd., dns., carb., earthy-hackly  
 Ls: crm.-gray, hrd., dns., VEG-mxln., sh. s.t.d. NΦ NSFOL  
 sh. gray, m. sst.-m. hrd., dns., earthy  
 Ls: crm.-gray, m. sst.-m. hrd., dns., VEG-mxln., occ. chik., abun. sh. s.t.d. NΦ NSFOL  
 Ls: crm., hrd.-m. sst., chik., tr. xln.-mxln., mic., occ. sh. s.t.d., tr. foss. NΦ NSFOL

**Hecbner Shale (-1158')**

**Toronto Ls. (-1181')**

3300

Ls: crm.-gray, hrd., dns., VEG-mxln., mic., sh. s.t.d. NΦ NSFOL  
 sh. gray, gray-dk. gray, m. hrd., dns., occ. stly., earthy-hackly  
 Ls: crm., hrd., dns., VEG-mxln., mic., rare foss. NΦ NSFOL  
 sh. mar., m. sst., dns., m. sst., dns., earthy  
 Ls: crm., hrd., dns., VEG-mxln., mic., tr. foss., tr. pt.-v. pg., vug. moldic φ w/ lt. brn. s.t.d., 2-3 pc., wk. cut & fl., v. wk. show  
 Ls: crm.-tan-gray, hrd., dns., VEG xln., tr. mic., sh. s.t.d., foss. NΦ NSFOL

**Lansing Group (-1203')**

**DST #1 3256'-3348'**  
 REC. 240' GUSMCO  
 strap .28' long  
 Dev. 1 1/4"

sh. gray, gray-dk. gray, m. sst., occ. stly., earthy  
 Ls: crm.-tan, hrd., dns., VEG-mxln., occ. foss., sh. s.t.d., NΦ NSFOL  
 Ls: A.A., rare pc. w/ pp. fr. pp. vug. φ, lt. brn. s.t.d., tr. wk. cut & fl., no odor, no F.O. v. ? perm. v. wk. show  
 Ls: crm., m. hrd.-hrd., dns., tan-VEG xln., occ. foss., pool. w/ tr. fr. pr. oom. vug. φ, lt. brn. s.t.d., wk. odor. tr. pyr. v. ? perm. NΦ NSFOL

Weak Show

3350

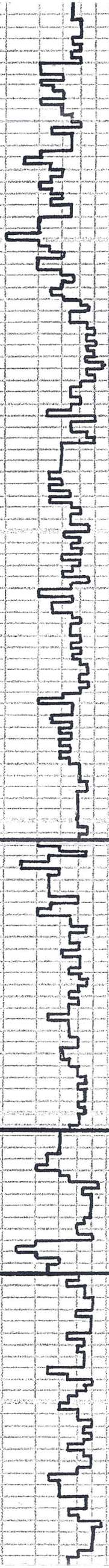
2

3400

3450

3500

3550



Ls: wh. crm., hrd. - sft. + chik,  
 fr. foss. + ool. w/ pr. oom.  $\phi$ ,  
 lt. brn. stn., wk. - fr. cut + fl.,  
 fr. odor., No F.O., V. ? perm. **Weak Show**

Ls: crm. - wh., hrd., dns. - sft. + chik  
 vfg. mxln., tr. foss. + ool. w/ pr.  
 int part. + oom.  $\phi$ , lt. brn. stn.  
 wk. odor., wk. cut + fl., V. ? perm **Weak Show**

Ls: A. A., tr.  $\phi$  + shows A, A.  
 Sh: dk. gry. - blk., m. hrd., dns., earthy  
 Ls: crm., hrd., dns., sft. - vfg. mxln., tr. fr.  
 - pr. vug.  $\phi$ , w/ lt. brn. stn., fr. odor., No F.O. **Weak Show**

Ls: A. A. sft. - vfg. vug. + pr. vug.  $\phi$   
 gp. unit. stn., fr. - gp. cut + fl.,  
 fr. odor., No F.O., ? perm. **Fair Show**

Ls: crm., hrd., vfg. mxln., ool. w/  
 fr. - gp. oom.  $\phi$ , gp. odor., lt.  
 brn. stn., fr. - gp. cut + fl., No F.O.  
 some barren  $\phi$  v. pr. - No perm. **Weak Show**

Ls: crm. - gry., hrd., dns., vfg. - mxln.  
 mic., occ. sft. + chik. + pr.  
 foss. + ool., tr. pr. oom.  $\phi$   
 NSFOC **Mud Check @ 3366'**  
 M.W. 8.8  
 Vis. 75  
 W.L. 7.6  
 Chl. 4500 ppm  
 Solids 3.3%  
 L.C.M. 1.5#

**DST # 2**  
**3370' - 3510'**  
**Rec. 10' Mud**

Ls: crm. - tan - lt. gry., hrd., dns.,  
 vfg. - mxln., mic., tr. chit., tr.  
 sft. + chik. **Weak Show**

Sh: dk. gry. - blk., m. sft., dns., pack.  
 Ls: crm. - lt. gry., hrd., dns., vfg.  
 - mxln., mic., occ. foss. + ool.,  
 tr. pr. vug.  $\phi$ , tr. v. H. oil stn.,  
 wk. cut + fl., some barren  $\phi$  v. **Weak Show**

Ls: crm. - tan - lt. gry., hrd., dns.,  
 vfg. - mxln., mic., occ. chik.  
 tr. pyr., occ. foss. **Weak Show**

Sh: dk. gry., m. sft., dns., earthy  
 Ls: crm. - tan - lt. gry., hrd., dns.  
 vfg. - mxln., occ. foss. + ool., 1-2  
 pr. w/ pr. int part. vug.  $\phi$  - vfg.  
 lt. brn. stn., wk. cut + fl., v. **Weak Show**

Ls: crm. - tan - lt. gry., hrd., dns., vfg.  
 - mxln., mic., occ. chik., tr. foss.  
 tr. pyr. **Weak Show**

Sh: dk. gry. - blk., m. sft. - m. hrd.,  
 dns., occ. carb., earthy - hacky  
 Ls: crm. - lt. gry., hrd., dns., vfg.  
 - mxln., mic., occ. chik. **Weak Show**

Sh: gry. - rd. brn., m. sft., earthy  
 Ls: crm. - tan - gry., m. sft., hrd., dns.,  
 vfg. - mxln., chik., tr. ool. w/ oom.  $\phi$   
 fr. - 1-2 pc. oil stn., v. ? perm **Weak Show**

Ls: A. A. crm. - gry., sft. chik. -  
 hrd., dns., occ. foss. + ool.  
 NSFOC

Sh: dk. gry. - blk., m. sft. - m. hrd., dns.  
 carb., earthy  
 Ls: crm. - gry., hrd. - sft., dns., vfg.  
 - mxln., mic. - chik. **Weak Show**

Ls: crm. - tan - gry., hrd., dns., vfg. - mxln.  
 mic., tr. sft. + chik., occ. foss. + ool.  
 w/ tr. pr. int part. vug.  $\phi$ , lt. brn. stn.,  
 wk. odor., tr. cut + fl., thin zone **Weak Show**

Ls: A. A., 1-2 pc. w/  $\phi$  + stn. A. A.

Sh: dk. gry. - tr. rd. brn., m. sft.,  
 earthy. - sily **Base of**  
**Kansas City**  
**Group (-1454')**

Sh: gry. - rd. dk. gry. - rd. brn.,  
 pyr., occ. sily, sandy, earthy  
 Ls: crm. - tan, hrd., dns., mxln.,  
 mic., rare foss. **Weak Show**

Sh: gry. - rd. - ylw - rd. brn., m. sft.,  
 sily - sandy, earthy  
 tr. ss: gry. - wp., hrd., dns., vfg.  
 mod. sft., v. w. cond. **Weak Show**

Ls: crm. - tan, hrd., dns., vfg. -  
 mxln., mic., occ. chit., pr.  
 foss., occ. ls. + chit. pebb. **Weak Show**

Sh: A. A. **Weak Show**  
 Sh: gry. - rd. - rd. brn., m. sft.,  
 sily - earthy

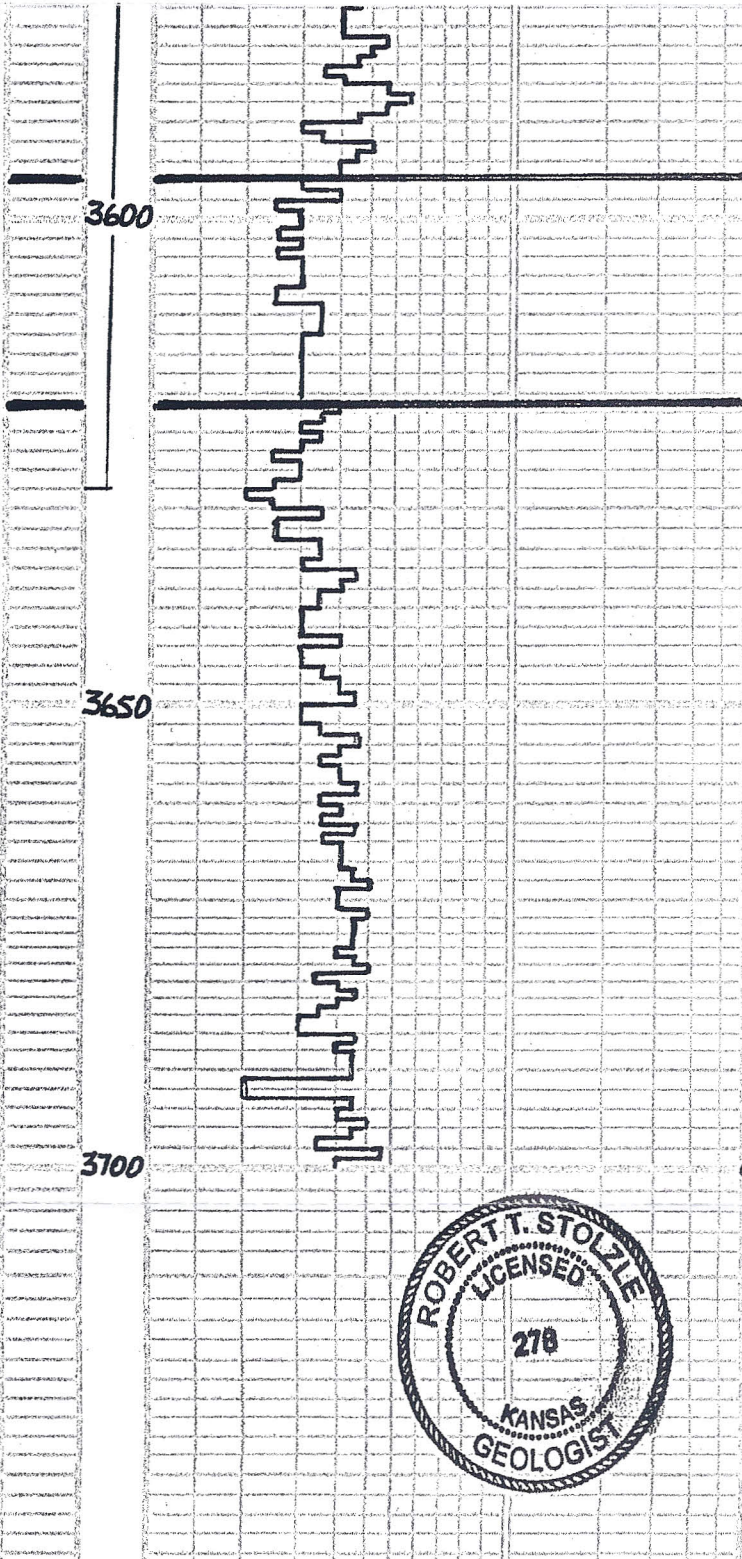
Ls: wh - rd. sh. stnd., hrd., dns.  
 occ. chit., occ. pebb. **Weak Show**

Cg: sh: chit. ls. pebb. A. A. **Mud Check @ 3510'**  
 tr. ss - rd. stnd. **Weak Show**  
 Ls: crm. - gry., hrd., dns., mxln.,  
 mic. **Weak Show**

Cg: sh: A. A. **Weak Show**  
 Ls: crm., hrd., dns., vfg. - mxln.,  
 mic., occ. pebb. surf., occ.  
 sh. stnd. **Weak Show**

Cg: ls: sh: chit. vlg. chit. pebb.,  
 wh. hrd. dns. ls., rd. - gry. sh.  
 earthy. **Weak Show**

05183  
3498-3628'  
REC. 744'  
O+GCWM



Cg: Sh. mar.-gray.-rd. brn. m. st. dms. sandy, earthy  
ls. + ch. wh.-ylw. hrd. dms  
S.A. stnd. ppbb. surf. NSFOC  
Cg: Sh. rd. st. clayey, ls. chl.  
A.A. occ. ss. gray, hrd dms.,  
fr. - VEG. w. cmtd. tr. fr. A. No  
Vis. NSFOC

Sh: A. A. fr. blu-grn. waxy simp. sh.  
ss. pt. brn. m. hrd. tr. fr. A. med.  
fr. grnd. sub ang. sub rhd. w. cmtd.  
V. pr. Vis. 0. 1-2 pt. fr. cut + fl. No odor V. weak show

○ tr. ss. A. A. tr. stn. tr. F.O. in  
fr. A. smpls. No odor  
Weak Show

Sh: tr. blu-grn. waxy simp. sh.  
mar. rd. brn. m. st. dms. hrd.

Dol: crm.-tan. m. hrd. fr. xln. occ. fr. -  
gd. vug. 0. tr. fr. grnd. int.  
xln. 0. gd. od. fr. F.O. on break  
fr. - wk. cut + fl. tr. ool. ch. Fair Show

○ Dol: crm. m. hrd. fr. xln. dms. occ.  
fr. - pt. vug. moldic 0. 7 in xln.  
0. fr. stn. fr. odor. wk. cut  
+ fl. No. F. 0. Abun. carings  
Weak Show

○ Dol: crm. m. hrd. fr. - VEG. xln. dms.  
fr. fr. vug. 0. some pom. pr.  
No int xln. 0. wk. od. fr. F.O.  
on break. fr. - wk. cut + fl. looks wet  
Weak Show

Dol: crm. m. hrd. - hrd. dms. fr. -  
VEG xln. occ. gd. vug. 0. + fr. int.  
xln. 0. fr. od. 0. 1 stn. V. wk. cut  
+ fl. No odor. No. F. V. weak show

Dol: crm.-tan. hrd. fr. - VEG xln. )  
occ. gd. vug. 0. - some pom. tr.  
pr. int xln. 0. tr. gd. gilsonite  
stn. V. wk. cut + fl. V. wk. show

Dol: crm.-tan.-pink. hrd. dms.  
fr. - VEG xln. pr. - No int xln. 0  
fr. fr. vug. 0. fr. rexed. Abun.  
carings. tr. ch. NSFOC

Dol: crm.-tan.-pink. m. st. - hrd.  
dms. fr. - VEG xln. pr. int xln. 0.  
fr. - pt. vug. 0. Abun. ch. tr.  
rexed. NSFOC

Dol: wh.-tan.-pink. fr. - VEG xln. occ.  
fr. A. w. lg. - ex. int xln. 0. fr. vug. 0.  
fr. ch. tr. pyr. tr. rexed.  
NSFOC

Simpson Ss.  
(-1550')

Weak Show

Arbuckle Fm.  
(-1570')

Fair Show

Weak Show

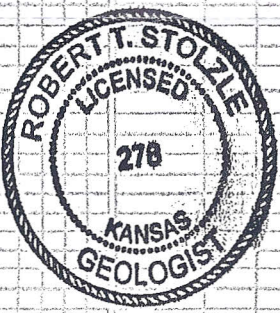
Weak Show

Mud Crack @ 3667'  
M. w. 9.0  
Vis. 67  
W.L. 8.0  
Chi. 6,000 PPM  
Solids 4.6%  
L.C.M. 1.5#

D.T.D. 3700'  
L.T.D. 3700'

Deviation 2°

Robert Stolzle  
11/30/11



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  
Ward Loyd, Commissioner  
Thomas E. Wright, Commissioner

Sam Brownback, Governor

February 04, 2012

Larry Denning  
Mikol Oil LLC  
1407 WASHINGTON AVE  
HAYS, KS 67601

Re: ACO1  
API 15-163-23990-00-00  
Haberer 1-27  
SE/4 Sec.27-10S-16W  
Rooks 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,  
Larry Denning