Confidentiality Requested:
☐ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1165696

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 # 33625
Name: Hertel Oil Company LLC
Address 1: 704 E 12TH ST
Address 2:
City: HAYS State: KS Zip: 67601 + 3440
Contact Person: Dave Hertel
Phone: ( 785 ) 628-2445
CONTRACTOR: License # 31548
Name: Discovery Drilling
Wellsite Geologist: Herb Deines
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 #:

| 08/01/2013 | 08/06/2013 | 08/07/2013 |
|---|---|---|
| Spud Date or Recompletion Date | Date Reached TD | Completion Date or Recompletion Date |

API No. 15 - 15-051-26572-00-00
Spot Description:
N2 - NW - SW - SE Sec. 14 Twp. 15 S. R. 19 ☐ East ☑ West
1150 Feet from ☐ North / ☑ South Line of Section
2310 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: Ellis
Lease Name: Werth-Pfannenstiel Unit Well #: 2
Field Name: Martina North
Producing Formation: None
Elevation: Ground: 2002 Kelly Bushing: 2010
Total Vertical Depth: 3616 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 1199 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: 24000 ppm Fluid volume: 400 bbls
Dewatering method used: Evaporated

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: 10/31/2013
☑ **Confidential Release Date:** 10/31/2015
☑ **Wireline Log Received**
☑ **Geologist Report Received**
☐ **UIC Distribution**
**ALT** ☑ **I** ☐ **II** ☐ **III** **Approved by:** NAOMI JAMES **Date:** 11/04/2013

1165696

Operator Name: Hertel Oil Company LLC Lease Name: Werth-Pfannenstiel Unit Well #: 2

Sec. 14 Twp. 15 S. R. 19 ☐ East ☑ West County: Ellis

**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 ☑ Yes ☐ No
*(Attach Additional Sheets)*

Samples Sent to Geological Survey ☐ Yes ☑ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

List All E. Logs Run:

Compensated Density Neutron
Dual Induction
Micro Resistivity

☑ Log Formation (Top), Depth and Datum ☐ Sample

| Name | Top | Datum |
|---|---|---|
| Anhydrite | 1200 | 810 |
| Topeka | 2994 | -984 |
| Heebner Shale | 3259 | -1249 |
| Lansing K C | 3304 | -1294 |
| Base K C | 3550 | -1540 |

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 Pipe | 12.25 | 8.625 | 23 | 1199 | Common | 450 | 2% Gel - 3% CC |
| | | | | | | | |
| | | | | | | | |

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 | - | | | |
| | - | | | |

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 *(Amount and Kind of Material Used)* | 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:
☐ Vented ☐ Sold ☐ Used on Lease
*(If vented, Submit ACO-18.)*

METHOD OF COMPLETION:
☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*
☐ Other *(Specify)* _____

PRODUCTION INTERVAL:
_____
_____

**Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202**

# QUALITY OILWELL CEMENTING, INC.

**Federal Tax I.D.# 20-2886107**

**Phone 785-483-2025** **Home Office P.O. Box 32 Russell, KS 67665** **No.** 7282

**Cell 785-324-1041**

| Date | Sec. | Twp. | Range | County | State | On Location | Finish |
|---|---|---|---|---|---|---|---|
| 8-7-13 | 14 | 15 | 19 | Ellis | KS | | 11:30 PM |

Location Antonino 3S 1/4 W N Into

Lease Werth-Pfannenstiel Well No. #2

Contractor Discovery #3

Type Job Plug

Hole Size 7 1/4 T.D. 3616

Csg. Drill Pipe Depth

Tbg. Size Depth

Tool Depth

Cement Left in Csg. Shoe Joint

Meas Line Displace

**EQUIPMENT**

Pumptrk 5 No. Cementer Helper David

Bulktrk 12 No. Driver Driver Lonnie M

Bulktrk PU No. Driver Driver Brett

**JOB SERVICES & REMARKS**

Remarks: Werth-Pfannenstiel #2

Rat Hole 30 sk

Mouse Hole 15 sk

Centralizers

Baskets

D/V or Port Collar

1st plug @ 1250 - 40 sk
2nd plug @ 450 - 80 sk
3rd plug @ 40 - 10 sk

Owner

To Quality Oilwell Cementing, Inc.
You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Charge To Hertel Oil

Street

City State

The above was done to satisfaction and supervision of owner agent or contractor.

Cement Amount Ordered 175 60/40 4% Gel 1/4 flow

| | |
|---|---|
| Common | 105 |
| Poz. Mix | 70 |
| Gel. | 6 |
| Calcium | |
| Hulls | |
| Salt | |
| Flowseal | 50# |
| Kol-Seal | |
| Mud CLR 48 | |
| CFL-117 or CD110 CAF 38 | |
| Sand | |
| Handling | 183 |
| Mileage | |

8 5/8 **FLOAT EQUIPMENT**

| | |
|---|---|
| Guide Shoe | |
| Centralizer | |
| Baskets | |
| AFU Inserts | |
| Float Shoe | |
| Latch Down | |
| | Wood Plug - 1 |
| Pumptrk Charge | plug |
| Mileage | 14 |
| Tax | |
| Discount | |
| Total Charge | |



X Signature Adam Jaeger

## OPERATOR

| | | | |
|---|---|---|---|
| Company: | HERTEL OIL COMPANY, LLC | | |
| Address: | 704 E 12TH ST.<br>HAYS, KANSAS 67601 | | |
| Contact Geologist: | MIKE HERTEL | | |
| Contact Phone Nbr: | 785-628-2445 | | |
| Well Name: | WERTH-PFANNENSTIEL UNIT # 2 | | |
| Location: | N2 NW SW SE Sec.14-15s-19w | API: | 15-051-26,572-00-00 |
| Pool: | INFIELD | Field: | MARTINA NORTH |
| State: | KANSAS | Country: | USA |

Scale 1:240 Imperial

| | | | |
|---|---|---|---|
| Well Name: | WERTH-PFANNENSTIEL UNIT # 2 | | |
| Surface Location: | N2 NW SW SE Sec.14-15s-19w | | |
| Bottom Location: | | | |
| API: | 15-051-26,572-00-00 | | |
| License Number: | 33625 | | |
| Spud Date: | 8/1/2013 | Time: | 3:30 PM |
| Region: | ELLIS COUNTY | | |
| Drilling Completed: | 8/7/2013 | Time: | 7:34 AM |
| Surface Coordinates: | 1150' FSL & 2310' FEL | | |
| Bottom Hole Coordinates: | | | |
| Ground Elevation: | 2002.00ft | | |
| K.B. Elevation: | 2010.00ft | | |
| Logged Interval: | 2900.00ft | To: | 3616.00ft |
| Total Depth: | 3616.00ft | | |
| Formation: | LANSING-KANSAS CITY | | |
| Drilling Fluid Type: | CHEMICAL/FRESH WATER GEL | | |

## SURFACE CO-ORDINATES

| | | | |
|---|---|---|---|
| Well Type: | Vertical | | |
| Longitude: | -99.4014258 | Latitude: | 38.7434431 |
| N/S Co-ord: | 1150' FSL | | |
| E/W Co-ord: | 2310' FEL | | |

## LOGGED BY

| | | | |
|---|---|---|---|
| Company: | SOLUTIONS CONSULTING, INC. | | |
| Address: | 108 W 35TH<br>HAYS, KS 67601 | | |
| Phone Nbr: | (785) 639-1337 | | |
| Logged By: | Geologist | Name: | HERB DEINES/CHRIS NEELY |

## CONTRACTOR

| | | | |
|---|---|---|---|
| Contractor: | DISCOVERY DRILLING INC. | | |
| Rig #: | 3 | | |
| Rig Type: | MUD ROTARY | | |
| Spud Date: | 8/1/2013 | Time: | 3:30 PM |
| TD Date: | 8/7/2013 | Time: | 7:34 AM |
| Rig Release: | 8/8/2013 | Time: | 12:45 AM |

## ELEVATIONS

K.B. Elevation: 2010.00ft Ground Elevation: 2002.00ft
K.B. to Ground: 8.00ft

**NOTES**

RECOMMENDATION TO PLUG AND ABANDON WELL BASED ON NEGATIVE RESULTS OF TWO DSTS AND LACK OF RESERVOIR DEVELOPMENT. THE # 2 WELL WAS VERY SIMILIAR TO THE # 1 WELL IN STRUCTURE AND RESERVOIR DEVELOPMENT.

OPEN HOLE LOGS BY GEMINI WIRELINE: DUAL INDUCTION LOG, COMPENSATED DENSITY NEUTRON LOG, MICRO RESISTIVITY LOG.

DRILL STEM TESTS BY TRILOBITE TESTING INC: ONE(1) CONVENTIONAL TEST AND ONE (1) STRADDLE TEST

**FORMATION TOPS SUMMARY AND CHRONOLOGY OF DAILY ACTIVITY**

| | **WERTH-PFANNENSTIEL # 2**<br>**1150' FSL & 2310' FWL, SW/4**<br>**Sec. 14-15s-19w**<br>**2002' GL 2010' KB** | | **WERTH-PFANNENSTIEL # 1**<br>**1150'FSL & 1505'FEL**<br>**Sec 14-15s-19w**<br>**Reference Well** |
|---|---|---|---|
| **FORMATION** | **SAMPLE TOPS** | **LOG TOPS** | **LOG TOPS** |
| **Anhydrite** | 1192+ 818 | **1200+ 810** | *+ 809* |
| **B-Anhydrite** | 1240+ 770 | **1238+ 772** | *+ 774* |
| **Topeka** | 2996- 986 | **2994- 984** | - 988 |
| **Heebner Shale** | 3261-1251 | **3259-1249** | *-1250* |
| **Toronto** | 3280-1270 | **3279-1269** | *-1269* |
| **LKC** | 3306-1296 | **3304-1294** | *-1294* |
| **BKC** | 3550-1540 | **3550-1540** | *-1542* |
| **Marmaton** | 3601-1591 | | *-1593* |
| **Congl. Sand** | 3614-1604 | | *-1607* |
| **RTD** | 3616-1606 | | |
| **LTD** | | **3616-1606** | |

**SUMMARY OF DAILY ACTIVITY**

| | |
|---|---|
| **8-01-13** | **RU, spud 5:30 PM,** |
| **8-02-13** | **545', drilling 12 ¼" surface casing hole** |
| **8-03-13** | **1200', set 8 5/8" surface pipe to 1199' w/ 450 sxs common 2% gel, 3% CC, plug down 3:00 AM, slope ¾ degree, WOC 12 hrs** |
| **8-04-13** | **2125', drilling** |
| **8-05-13** | **2880', drilling** |
| **8-06-13** | **3410', drilling, short trip in Toronto, start DST # 1 3608' to 3616' Conglomerate sand @11:15PM** |

8-07-13 **3616', finished DST # 1 at 6:41AM, logged behind DST # 1, straddle test # 2 3314' to 3386' A-F benches LKC, finished DST #2 at 5:00PM, decision to P&A due to negative results. Plug down 11:30PM**

**DST # 1 CONGLOMERATE SAND 3608' TO 3616'**

TRILOBITE TESTING, INC.

# DRILL STEM TEST REPORT

Hertel Oil Company LLC

704 E 12th st
Hays Ks 67601-3440

ATTN: Mike Hertel

**14-15s-19w Ellis**

**Werth-Pfannestiel#1**

Job Ticket: 54265 **DST#: 1**

Test Start: 2013.08.07 @ 01:15:06

## GENERAL INFORMATION:

Formation: **Congl Sd**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 03:26:01
Time Test Ended: 06:41:30

Test Type: Conventional Bottom Hole (Initial)
Tester: Ray Schwager
Unit No: 70

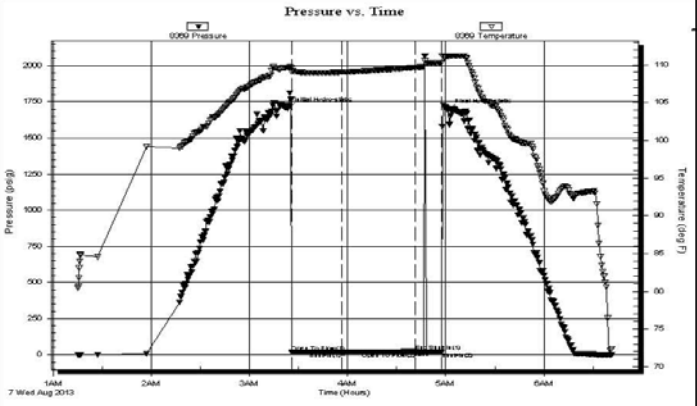
**Interval: 3608.00 ft (KB) To 3616.00 ft (KB) (TVD)**
Total Depth: 3616.00 ft (KB) (TVD)
Hole Diameter: 7.85 inches Hole Condition: Fair

Reference Elevations: 2010.00 ft (KB)
2002.00 ft (CF)
KB to GR/CF: 8.00 ft

**Serial #: 8369** **Inside**
Press@RunDepth: 16.40 psig @ 3609.00 ft (KB)
Start Date: 2013.08.07 End Date: 2013.08.07
Start Time: 01:15:06 End Time: 06:41:30

Capacity: 8000.00 psig
Last Calib.: 2013.08.07
Time On Btm: 2013.08.07 @ 03:23:16
Time Off Btm: 2013.08.07 @ 05:01:31

TEST COMMENT: 30-IFP-vy w k surface bl died in 4min
45-ISIP-no bl
15-FFP-no bl , flushed tool no help




## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|---|---|---|---|
| 0 | 1703.60 | 109.64 | Initial Hydro-static |
| 3 | 18.58 | 109.05 | Open To Flow (1) |
| 33 | 16.40 | 109.03 | Shut-In(1) |
| 78 | 21.92 | 109.67 | End Shut-In(1) |
| 79 | 16.69 | 109.67 | Open To Flow (2) |
| 95 | 17.23 | 110.29 | Shut-In(2) |
| 99 | 1694.56 | 111.15 | Final Hydro-static |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|---|---|---|
| 3.00 | Mud | 0.01 |
| | | |
| | | |
| | | |
| | | |
| | | |

## Gas Rates

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

## DST # 2 STRADDLE TEST 3314' TO 3386' "C" TO "F" LKC BOTTOM PACKER HELD

TRILOBITE TESTING, INC.

# DRILL STEM TEST REPORT

Hertel Oil Company LLC

704 E 12th st
Hays Ks 67601-3440

ATTN: Mike Hertel

**14-15s-19w Ellis**

**Werth-Pfannestiel#1**

Job Ticket: 54266 **DST#: 2**

Test Start: 2013.08.07 @ 10:25:15

## GENERAL INFORMATION:

Formation: **LKC C-F**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 12:06:10
Time Test Ended: 17:00:09

Test Type: Conventional Straddle (Reset)
Tester: Ray Schwager
Unit No: 70

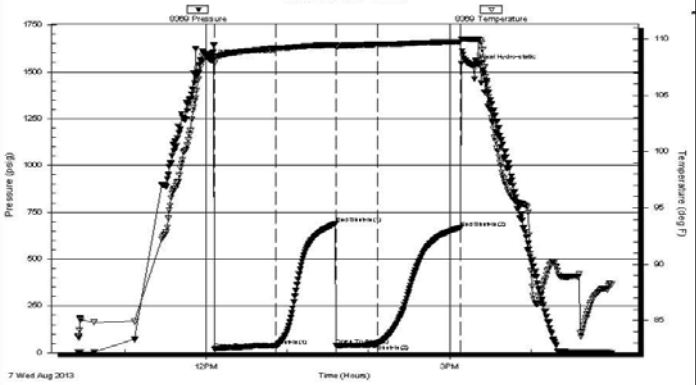
**Interval: 3314.00 ft (KB) To 3386.00 ft (KB) (TVD)**
Total Depth: 3616.00 ft (KB) (TVD)
Hole Diameter: 7.85 inches Hole Condition: Fair

Reference Elevations: 2010.00 ft (KB)
2002.00 ft (CF)
KB to GR/CF: 8.00 ft

**Serial #: 8369** **Inside**
Press@RunDepth: 43.46 psig @ 3325.00 ft (KB)
Start Date: 2013.08.07 End Date: 2013.08.07
Start Time: 10:25:15 End Time: 17:00:09

Capacity: 8000.00 psig
Last Calib.: 2013.08.07
Time On Btm: 2013.08.07 @ 12:03:55
Time Off Btm: 2013.08.07 @ 15:16:54

TEST COMMENT: 45-IFP-w k bl thru-out 1/4"to 1/2"bl
45-ISIP-no bl
30-FFP-surface bl thru-out
60-FSIP-no bl




### PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|---|---|---|---|
| 0 | 1559.60 | 108.71 | Initial Hydro-static |
| 3 | 18.18 | 107.83 | Open To Flow (1) |
| 48 | 37.31 | 109.16 | Shut-In(1) |
| 92 | 690.70 | 109.47 | End Shut-In(1) |
| 93 | 39.68 | 109.29 | Open To Flow (2) |
| 123 | 43.46 | 109.51 | Shut-In(2) |
| 185 | 666.69 | 109.74 | End Shut-In(2) |
| 193 | 1531.31 | 109.97 | Final Hydro-static |

### Recovery

| Length (ft) | Description | Volume (bbl) |
|---|---|---|
| 45.00 | SOCM 1%O99%M | 0.36 |
| | | |
| | | |
| | | |
| | | |
| | | |

* Recovery from multiple tests

### Gas Rates

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

Trilobite Testing, Inc Ref. No: 54266 Printed: 2013.08.08 @ 07:54:36

## ROCK TYPES

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Clystgy | | shale, grn | | shale, red | | Dol Lime |
| | Lmst fw<7 | | shale, gry | | Shcol | | Lscongl |
| | Lmst fw7> | | Carbon Sh | | Ss | | CglSandy |

## ACCESSORIES

**MINERAL**
- Chert, dark
- Pyrite
- Varicolored chert

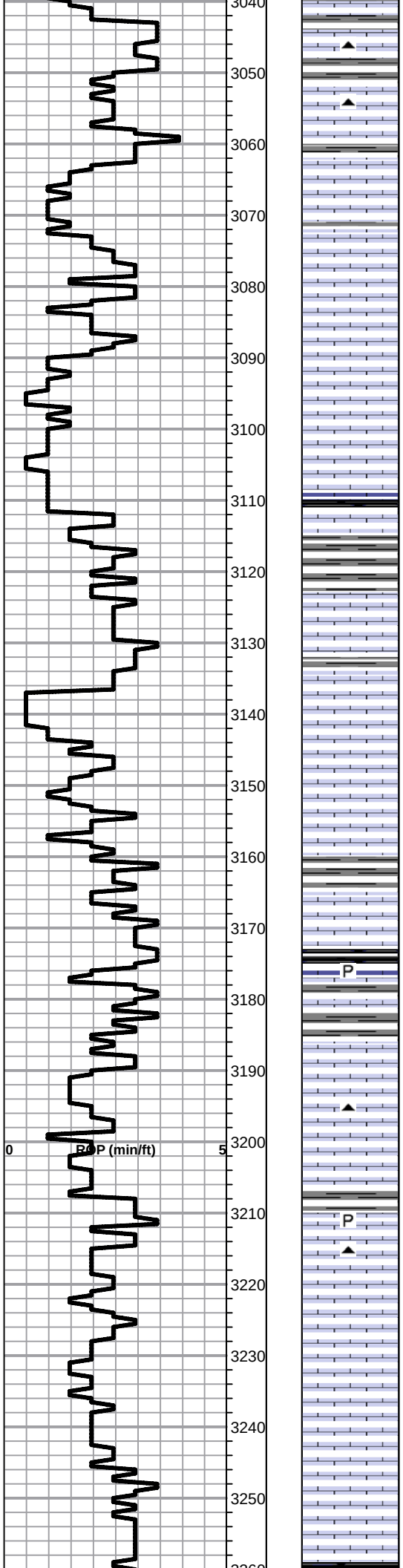
**FOSSIL**
- Oolite
- Oomoldic

## OTHER SYMBOLS

**DST**
- DST Int
- DST alt
- Core



| Curve Track #1<br>ROP (min/ft)<br>1:240 Imperial | Depth \| Intervals<br>Cored Interval<br>DST Interval | DST | Lithology | Oil Show | Geological Descriptions | TG, C1 - C5<br>1:240 Imperial |
|---|---|---|---|---|---|---|
| 0 ROP (min/ft) 5 | 2900 | | | | BEGIN 1' DRILL TIME FROM 2900' TO RTD<br>BEGIN 10' WET AND DRY SAMPLES FROM 3000' TO RTD | **8 5/8" SURFACE CASING SET TO 1199' W/ 450 SXS COMMON 2%GEL, 3%CC WOC 12 HRS** |
| | 2910 | | | | **ANHYDRITE TOP ELog 1200+810**<br>**ANHYDRITE BASE ELog 1238+772** | |
| | 2920 | | | | | |
| | 2930 | | | | | |
| | 2940 | | | | | |
| | 2950 | | | | | |
| | 2960 | | | | | |
| | 2970 | | | | | |
| | 2980 | | | | Lime, lt-dark brn, fn-med xln, sparry calcite cementation in pt<br>Lime, gray-dark brn, fnxln, fossil fragments, mottling in part | |
| | 2990 | | | | **<u>TOPEKA ELog 2994-984</u>** | |
| 0 ROP (min/ft) 5 | 3000 | | | | Lime, lt brn, fnxln, dense, fossiliferous-crimoids, fusulinids, sponges | |
| | 3010 | | | | Lime, lt gray, fnxln, mottling in part, granular in part | |
| | 3020 | | | | Lime, lt brn-lt grayish brn, fnxln-microxln in part, fossiliferous | |
| | 3030 | | | ◑ | Lime, tan, fnxln grading into granular, sucrosic with fn interxln porosity, few chips with spotty stain, specks of free oil on crush, chalk in lower section with sticky clumps | |
| | 3040 | | | | | |




Lime, brn, fn-vfxln, fossiliferous in part

Lime, tan-gray, fnxln-granular in part, fossiliferous, traces of sparry calcite in part

Lime, tan, fnxln grading into granular, slightly fossiliferous, NS

Lime, lt brn, fnxln, slight chalk in part

Lime, lt brn, fnxln-granular in part, bedded chalk with scattered lt mottling in part

Lime, tan-lt gray, granular, chalk in part with lt mottling

Shale, black carbonaceous

Shale, grayish green, soft sticky clumps in part

Lime, tan-brn, fn-vfxln, lithographic and very clean

Lime, tan-lt brn, fn-vfxln grading into granular, NS,

Lime, tan-lt brn, fnxln

Lime, tan-lt brn, fnxln

Lime, tan, fnxln, fossiliferous in part

Shale, black carbonaceous
Lime, dark gray, vfxln

Shale, gray, soft blocky

Lime, tan-brn, fnxln-granular in part, bedded chalk in part

Lime, tan, fn-vfxl, fossiliferous in part

Lime, lt-grayish brn, fnxln, dense, slightly fossiliferous

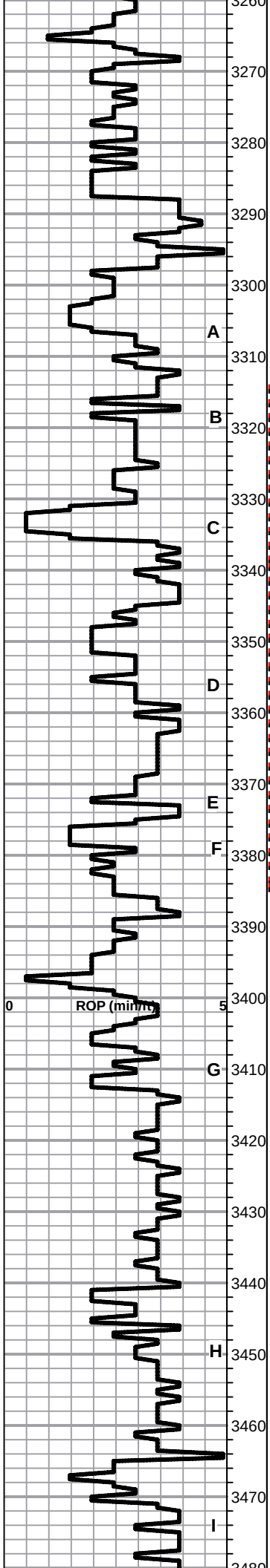
Lime, tan, fn-vfxln, NS

Lime, crm-tan, fnxln-granular

Lime, tan, fnxln-granular, fossilifeorus

Lime, brn, fn-vfxln

**HEEBNER SHALE ELog 3259-1249**




Shale, black carbonaceous, fissile, blocky

Shale, lime green, soft blocky to soft mud

**TORONTO ELog 3279-1269**

Lime, crm, fnxln, NS

Lime, crm-tan, fn-vfxln, bedded chalk NS

Shale, reddish brn, soft with lt red wash

**LKC ELog 3304-1294**

Lime, crm-tan, fnxln-granular in part, slight chalk, NS

Lime, tan, fnxln, hard on crush

Lime, tan, fnxln

Lime, tan, oolitic/oomoldic, few chips with spotty stain, SFO on crush

Lime, tan-grayish lt brn, fn-vfxln

DST # 2 STRADDLE TEST 3214'-3386' SEE HEADER FOR TEST SUMMARY

Lime,tan, fnxln-granular, spotty staining, No Odor, NFO

Lime, tan, fn-vfxln

Shale, gray-black carbonaceous

Lime, tan-lt brn, oolitic/oomoldic, spotting staining

Lime, tan-lt brn, fn-vfxln

Lime, tan-lt gray, fn-vfxln,

Lime, tan, fnxln-granular in part, NS

Lime, tan, fn-vfxln

Lime, crm-tan, fn-vfxln, clean appearance

Lime, crm, fnxln grading to gray trashy near shale boundary

Shale, black carbonaceous

Lime, tan-lt brn, fn-vfxln, hard on crush

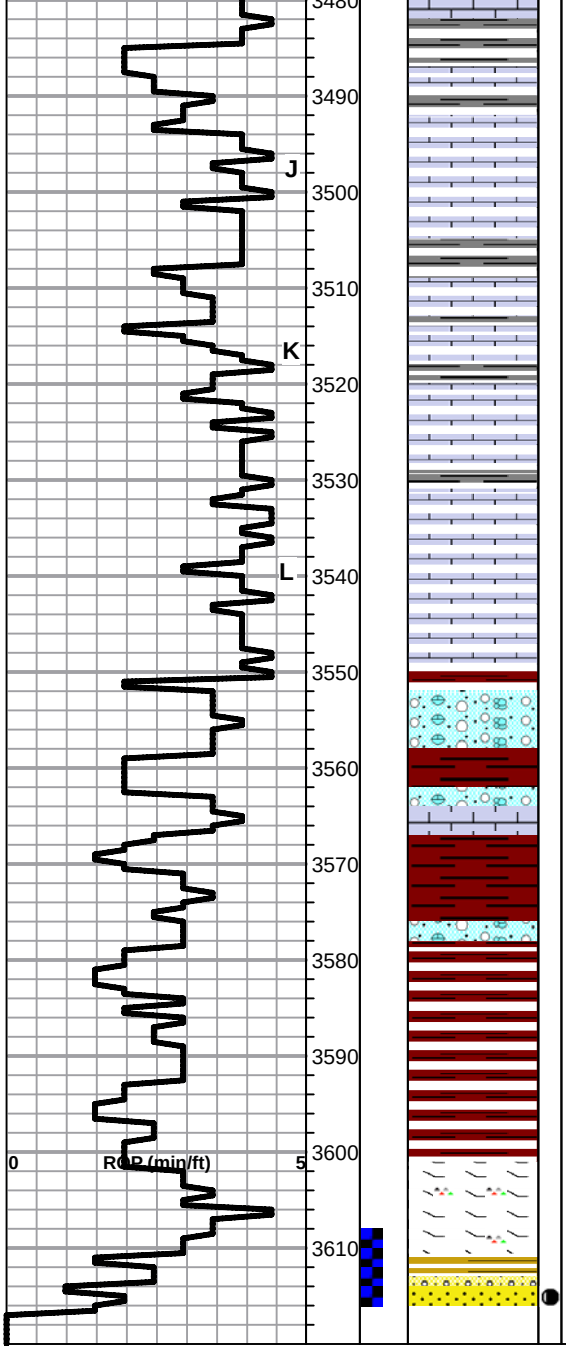
Lime, tan, fnxln, spotty stain, NFO, appears poorly developed

Lime, tan, fn-vfxln

Lime, tan-lt brn, oolitic/oomoldic in part, spotty stain

The microlog shows no permeability thru this interval

Lime, tan-lt brn, fn-vfxln




Shale,lt-med gray, soft blocky

Lime, crm, fnxln, granular in part, bedded chalk, NS

Lime, off white-tan, fn-vfxln, NS

Lime, crm, fn-vfxln, bedded chalk with chalky matrix in part

Lime, crm-tan-lt grayish brn, fn-vfxln

Lime, crm-lt grayish brn, fn-vfxln, hard on crush

Lime, tan, fn-vfrxln, bedded chalk in part

Lime, tan, fn-vfxln, bedded chalk, hard on crush

**BKC ELog 3550-1540**

Shale, dark reddish brn, sandy, firm-hard on crush
Lime, clastic mix in part grading to tan, fnxln

Shale, varicolored, firm, blocky

Shale, reddish brn-deep brn, soft blocky

Shale, reddish brn-deep brn, soft blocky

Shale, reddish brn-deep brn, soft blocky

**MARMATON SPL 3601-1591**

Lime, crm-lt brn, fnxln, dolomitic in part, orange chert

**CONGLOMERATE SAND SPL 3614-1604**

SS, quartz-recrystallized dolomite, poor sort, sat stain, lt odor, specks of free oil

**1st plug @1250' w/ 40sxs**
**2nd plug @ 450' w/ 80 sxs**
**3rd plug @ 40' w/ 10 sxs**
**Rathole w/ 30 sxs**
**Mousehole w/ 15 sxs**
**Used 175 sxs 60/40 poz 4%gel, 1/4 # flocele per sx**

**DST # 1 3608' TO 3616' SEE HEADER FOR TEST SUMMARY**

**Zone similiar to # 1 well which was tested and recovered oil and a lot of salt water. Top of zone not a clean sand with permeability**

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

Kansas
Corporation Commission

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



October 31, 2013

Dave Hertel
Hertel Oil Company LLC
704 E 12TH ST
HAYS, KS 67601-3440

Re: ACO1
API 15-051-26572-00-00
Werth-Pfannenstiel Unit 2
SE/4 Sec.14-15S-19W
Ellis 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,
Dave Hertel