



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1103564  
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

Form must be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

- New Well       Re-Entry       Workover
- Oil       WSW       SWD       SIOW
- Gas       D&A       ENHR       SIGW
- OG       GSW       Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic       Other (Core, Expl., etc.): \_\_\_\_\_

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

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

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

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

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE       NW       SE       SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx)      (e.g. -xxx.xxxxx)

Datum:  NAD27       NAD83       WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

Drilling Fluid Management Plan

*(Data must be collected from the Reserve Pit)*

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested  
Date: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_



1103564

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

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

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate				
<input type="checkbox"/> Protect Casing				
<input type="checkbox"/> Plug Back TD				
<input type="checkbox"/> Plug Off Zone				

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

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

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

TUBING RECORD:      Size: \_\_\_\_\_ Set At: \_\_\_\_\_ Packer At: \_\_\_\_\_ Liner Run:  Yes  No

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

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
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<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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Conservation Division  
Finney State Office Building  
130 S. Market, Rm. 2078  
Wichita, KS 67202-3802



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

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

Sam Brownback, Governor

December 04, 2012

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

Re: ACO1  
API 15-051-26400-00-00  
Larry 1  
NE/4 Sec.15-15S-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

**OPERATOR**

Company: HERTEL OIL COMPANY LLC  
 Address: 704 E 12TH STREET  
 HAYS, KANSAS 67601

Contact Geologist: MIKE HERTEL  
 Contact Phone Nbr:

Well Name: LARRY # 1

Location: N2 NE SE NE Sec.15-15s-18w

Pool: WILDCAT

State: KANSAS

API: 15-051-26,400-00-00  
 Field: UN NAMED  
 Country: USA

Scale 1:240 Imperial

Well Name: LARRY # 1  
 Surface Location: N2 NE SE NE Sec.15-15s-18w  
 Bottom Location:  
 API: 15-051-26,400-00-00  
 License Number: 33625  
 Spud Date: 10/2/2012 Time: 10:00 AM  
 Region: ELLIS COUNTY  
 Drilling Completed: 10/9/2012 Time: 1:07 AM  
 Surface Coordinates: 1635' FNL & 330' FEL  
 Bottom Hole Coordinates:  
 Ground Elevation: 2005.00ft  
 K.B. Elevation: 2013.00ft  
 Logged Interval: 2900.00ft To: 3700.00ft  
 Total Depth: 3700.00ft  
 Formation: LANSING-KANSAS CITY  
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude: Latitude:  
 N/S Co-ord: 1635' FNL  
 E/W Co-ord: 330' FEL

**LOGGED BY**

Company: SOLUTIONS CONSULTING  
 Address: 108 W 35TH  
 HAYS, KS 67601

Phone Nbr: (785) 639-1337

Logged By: Geologist

Name: HERB DEINES

**CONTRACTOR**

Contractor: DISCOVERY DRILLING INC  
 Rig #: 4  
 Rig Type: MUD ROTARY  
 Spud Date: 10/2/2012 Time: 10:00 AM  
 TD Date: 10/9/2012 Time: 1:07 AM  
 Rig Release: 10/9/2012 Time: 11:00 PM

**ELEVATIONS**

K.B. Elevation: 2013.00ft Ground Elevation: 2005.00ft  
 K.B. to Ground: 8.00ft

**NOTES**

RECOMMENDATION TO RUN PRODUCTION BASED ON POSITIVE STRUCTURE AND RESULTS OF DST # 1.

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

**LARRY # 1**

**1635' FNL & 330' FEL, NE/4**

**Sec. 15-15s-19w**

**2004' GL 2012' KB**

<u>FORMATION</u>	<u>SAMPLE TOPS</u>	<u>LOG TOPS</u>
Anhydrite	1212+ 800	1211+ 801
B-Anhydrite	1250+ 762	1247+ 765
Topeka	2976- 964	2984- 972
Heebner Shale	3250-1238	3253-1241
Toronto	3270-1258	3272-1260
LKC	3295-1283	3296-1284
BKC	3540-1528	3544-1532
Conglomerate Sand		3608-1596
Reworked Arbuckle		3636-1624
Arbuckle		3656-1644
RTD	3700-1688	
LTD		3701-1689

**SUMMARY OF DAILY ACTIVITY**

10-02-12	RU, Spud
10-03-12	1016', drilling, set 8 5/8" to 1219' w/ 450 sxs Common, 2%Gel, 3%CC, plug down 7:00PM, slope ¾ degree, WOC
10-04-12	1219', drill out plug
10-05-12	2292', drilling
10-06-12	2990', drilling
10-07-12	3335', drilling, short trip, DST # 1 3278'-3335' A-C, start DST # 2 3336'-3383' D-G
10-08-12	3409', finish DST # 2, drilling
10-09-12	3700', RTD @3700', short trip, logs, run production casing, RD

## DST # 1 TEST SUMMARY

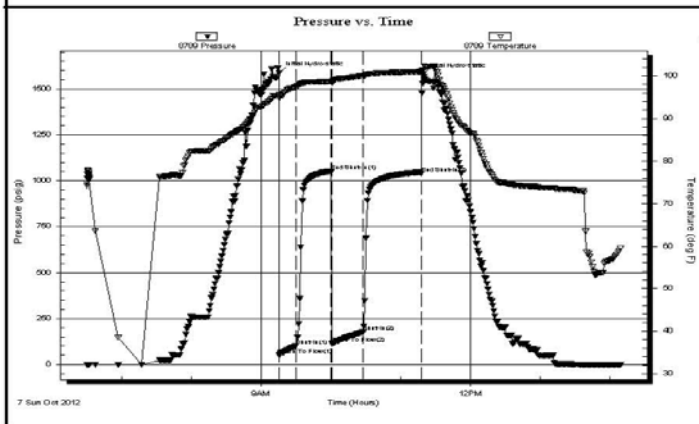
 <b>TRILOBITE TESTING, INC.</b>	<b>DRILL STEM TEST REPORT</b>	
	Hertel Oil Company LLC 704 E. 12TH St. Hays KS. 67601  ATTN: Herb	<b>15-15s-19w Ellis KS</b>  <b>Larry #1</b> Job Ticket: 51006 <b>DST#: 1</b> Test Start: 2012.10.07 @ 06:30:00

**GENERAL INFORMATION:**

Formation: <b>A-C</b>	Test Type: Conventional Bottom Hole (Initial)
Deviated: No Whipstock: ft (KB)	Tester: Cody Bloedorn
Time Tool Opened: 09:15:45	Unit No: 54
Time Test Ended: 14:09:45	Reference Elevations: 2012.00 ft (KB)
<b>Interval: 3278.00 ft (KB) To 3335.00 ft (KB) (TVD)</b>	2002.00 ft (CF)
Total Depth: 3335.00 ft (KB) (TVD)	KB to GR/CF: 10.00 ft
Hole Diameter: 7.88 inches	Hole Condition: Fair

<b>Serial #: 8789</b> <b>Outside</b>	Capacity: 8000.00 psig
Press@RunDepth: 177.64 psig @ 3317.00 ft (KB)	Last Calib.: 2012.10.07
Start Date: 2012.10.07      End Date: 2012.10.07	Time On Btm: 2012.10.07 @ 09:15:30
Start Time: 06:30:02      End Time: 14:09:45	Time Off Btm: 2012.10.07 @ 11:19:00

**TEST COMMENT:** 15 - IF- B.O.B. in 2 Minutes.  
 30 - ISI- 3" blow back in 18 Minutes, died back to a 1" blow.  
 30 - FF- B.O.B. in 45 Seconds  
 45 - FSI- B.O.B. in 4 Minutes. Died back to a 3" blow with G.T.S.



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1588.19	95.60	Initial Hydro-static
1	49.45	94.80	Open To Flow (1)
15	101.57	97.39	Shut-In(1)
45	1050.25	98.66	End Shut-In(1)
46	112.67	98.31	Open To Flow (2)
73	177.64	99.97	Shut-In(2)
123	1038.90	100.97	End Shut-In(2)
124	1578.25	101.21	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
124.00	GHOCM, 10%M, 40%G, 50%O	1.17
186.00	GMCO, 10%G, 20%M, 70%O	2.61
62.00	GHOCM, 30%M, 30%O, 40%G	0.87
31.00	GHOCM, 10%G, 30%O, 60%M	0.43
0.00	2883' of G.I.P.	0.00

Gas Rates			
	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

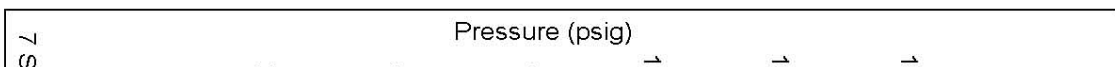
Trilobite Testing, Inc

Ref. No: 51006

Printed: 2012.10.07 @ 22:55:41

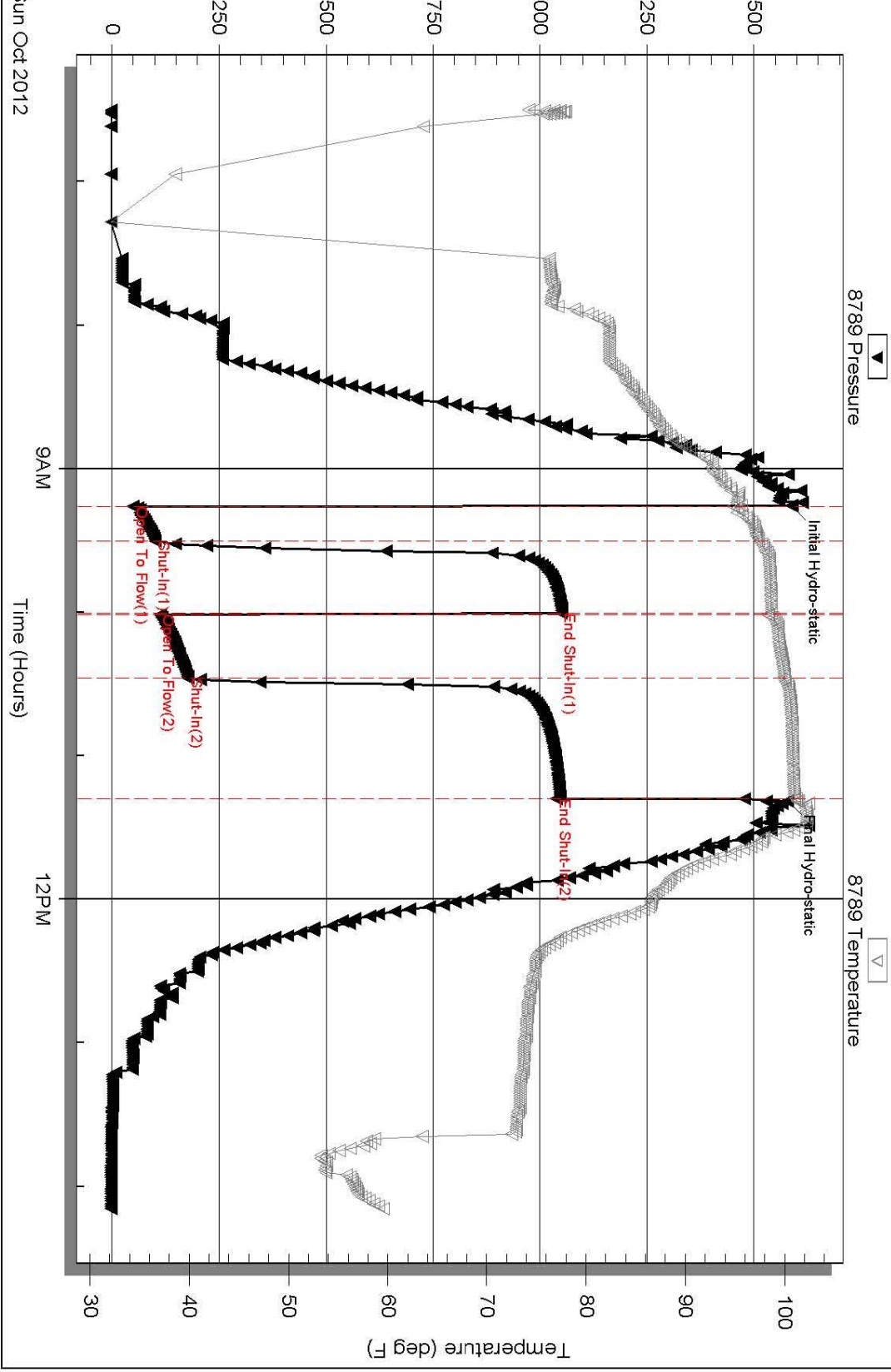
## DST # 1 EXPANDED CHART

Trilobite



Series

### Pressure vs. Time



### DST # 2 TEST SUMMARY

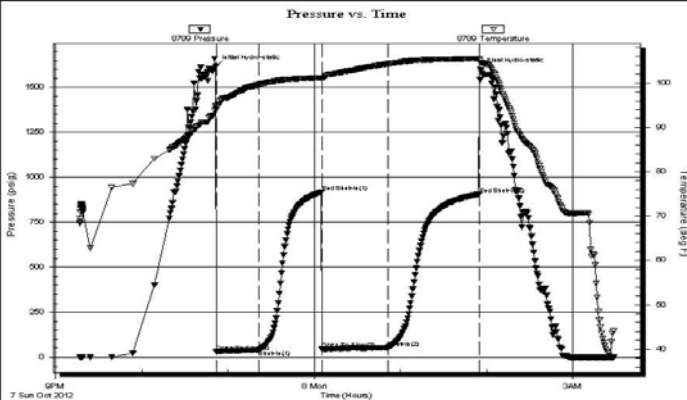
	<b>DRILL STEM TEST REPORT</b>	
	Hertel Oil Company LLC	<b>15-15s-19w Ellis KS</b>
	704 E. 12TH St. Hays KS, 67601	<b>Larry #1</b>
		Job Ticket: 51007
		<b>DST# 2</b>

**GENERAL INFORMATION:**

Formation: **KC "D-G"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 22:51:45  
 Time Test Ended: 03:28:45  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Cody Bloodorn  
 Unit No: 54  
 Interval: **3336.00 ft (KB) To 3383.00 ft (KB) (TVD)**  
 Total Depth: 3383.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Reference Elevations: 2012.00 ft (KB)  
 2002.00 ft (CF)  
 KB to GR/CF: 10.00 ft

**Serial #: 8789 Outside**  
 Press@RunDepth: 53.62 psig @ 3375.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2012.10.07 End Date: 2012.10.08 Last Calib.: 2012.10.08  
 Start Time: 21:17:02 End Time: 03:28:45 Time On Btm: 2012.10.07 @ 22:51:30  
 Time Off Btm: 2012.10.08 @ 01:55:45

**TEST COMMENT:** 30 - IF- 1 1/4" blow.  
 45 - IS- No blow back  
 45 - FF- 3/4" blow  
 60 - FSI- Noblow back

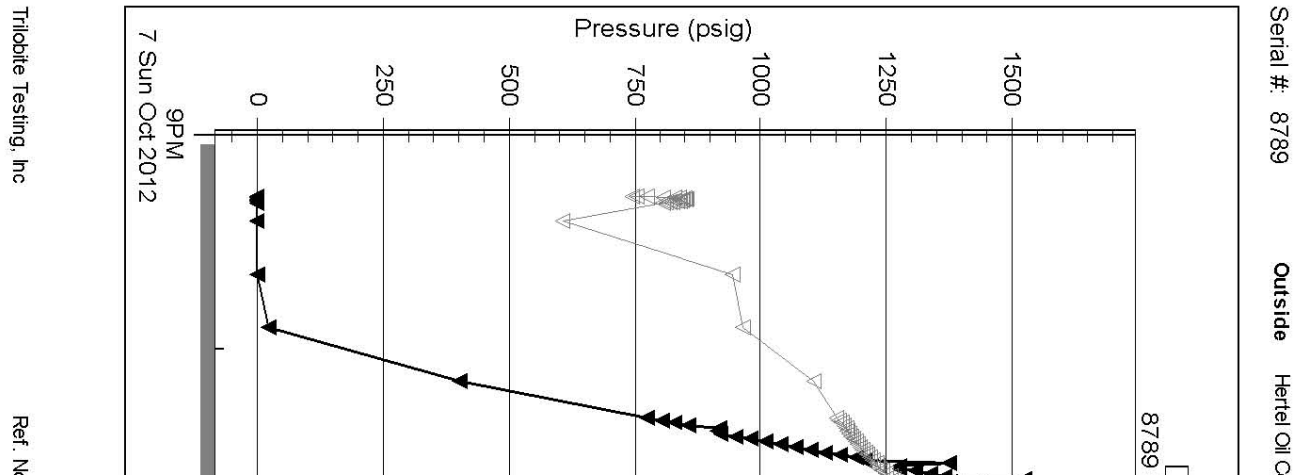


Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1618.11	94.87	Initial Hydro-static
1	30.73	94.07	Open To Flow (1)
30	40.71	99.57	Shut-In(1)
74	919.09	101.20	End Shut-In(1)
74	47.55	100.76	Open To Flow (2)
120	53.62	104.36	Shut-In(2)
184	906.39	105.57	End Shut-In(2)
185	1600.18	104.72	Final Hydro-static

Length (ft)	Description	Volume (bbl)
45.00	Mud - with show of oil	0.61

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

**DST # 2 EXPANDED CHART**

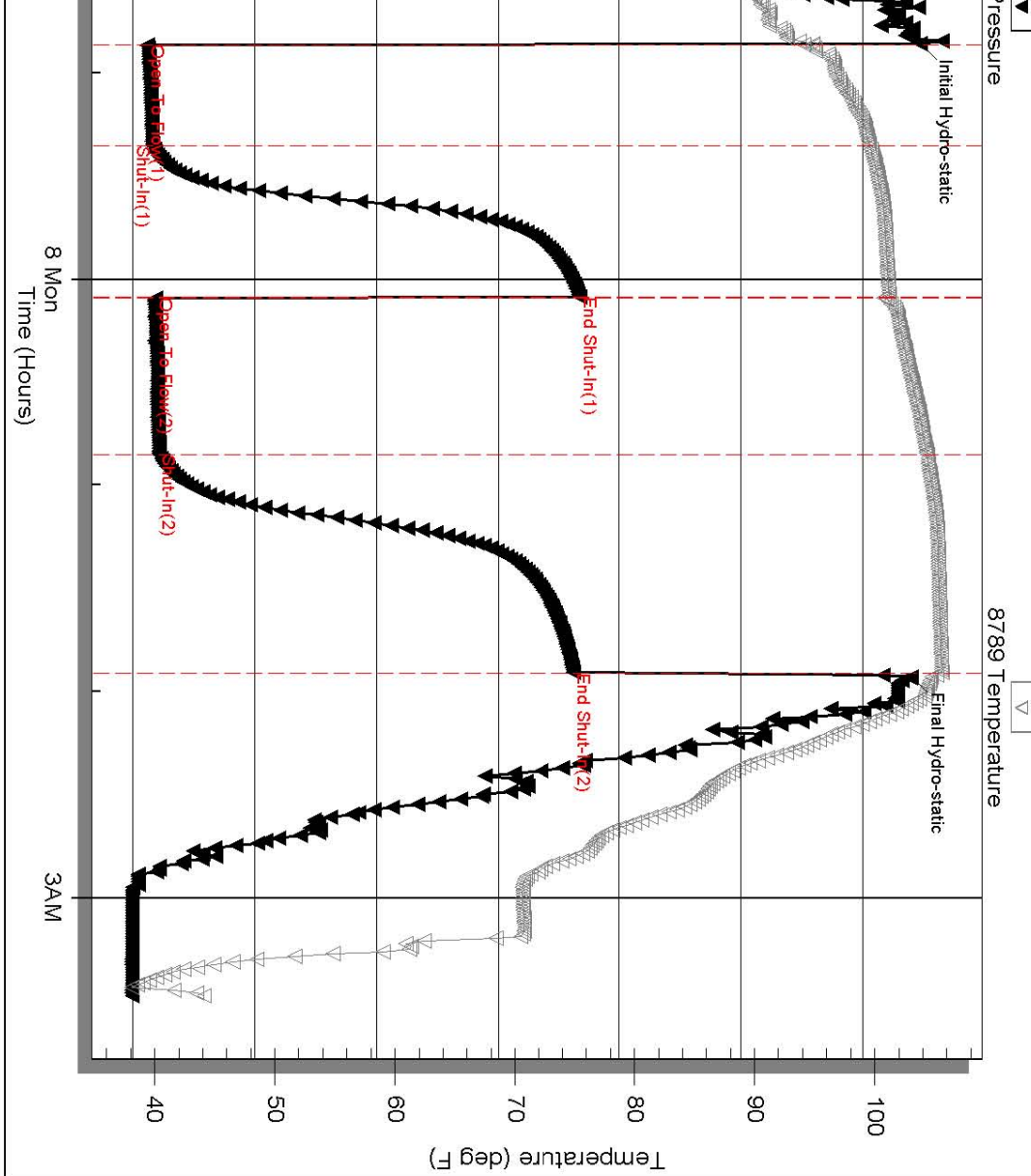


Trilobite Testing, Inc Ref. No

Serial #: 8789 Outside Herten Oil Co



# Pressure vs. Time



51007

Printed: 2012.10.08 @ 06:39:37

## ROCK TYPES

Clystgy	Dolsec	shale, gry	Calc Dol
Congl	Lmst fw<7	Carbon Sh	Dol Lime
Chtcongl	Lmst fw>7	shale, red	Lscongl
Dolprim	shale, grn	Ss	CglSandy

## ACCESSORIES

### MINERAL

- ▲ Chert, dark
- ≡ Nodules
- P Pyrite
- ◌ Varicolored chert
- △ Chert White

### FOSSIL

- Oolite
- ⊕ Oomoldic

## OTHER SYMBOLS

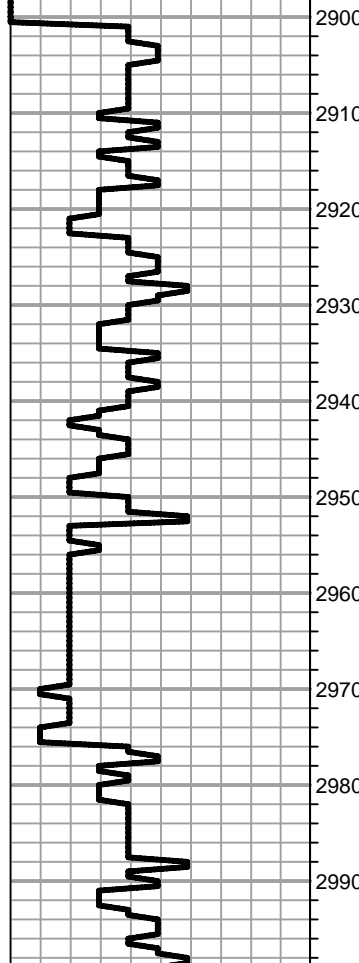
### DST

- DST Int
- DST alt
- Core

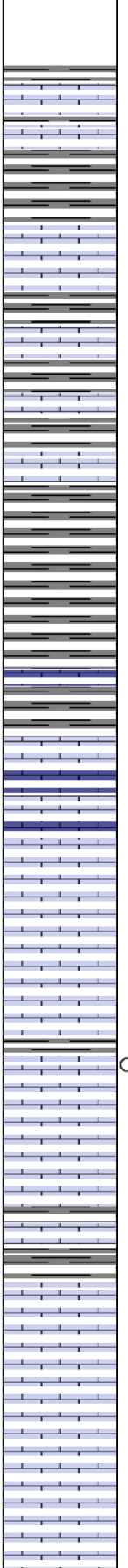
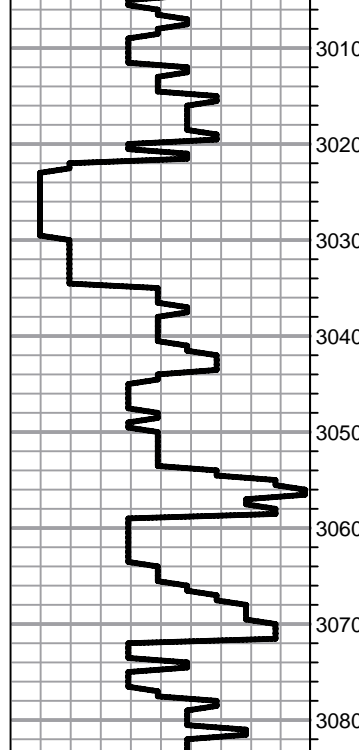
Depth   Intervals	DST	Lithology	Oil Show	Geological Descriptions	
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Cored Interval  
DST Interval

1:240 Imperial  
ROP (min/ft)



ROP (min/ft)



BEGIN 1' DRILL TIME FROM 2900' TO RTD  
 BEGIN 10' WET AND DRY SAMPLES FROM 2950' TO RTD

**ANHYDRITE SPL TOP 1211+801 ELog 1211+801**  
**ANHYDRITE SPL BASE 1250+762 ELog 1247+765**

Lime, brn-gray, fnxln, fossiliferous in brn lime. shaley in part

Lime, brn-gray, fnxln, scattered fusulinids

Lime, med-dark brn, fnxln, slightly fossiliferous

Lime, brn, fnxln, fossiliferous

Shale, lt-med gray, soft blocky

**TOPEKA SPL 2976-964 ELog 2984-972**

Lime, crm-med brn, fnxln, slightly fossiliferous

Lime, crm-lt brn, fnxln-granular in part, slightly fossiliferous, scattered bedded chalk in part

Lime, lt-med brn-grayish brn, fnxln, fossiliferous in part

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

Lime, brnsh gray, fnxln, slightly fossiliferous-fusulinids

Lime, tan-lt brn, granular grading into microoolitic lime with chalk Trace of light gassy oil noted in top of zone in a fine granular, med brn limestone with interxln porosity.

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

Shale, med gray, soft blocky

Lime, lt-med brn-grayish brn, fnxln-vfxln, slightly fossiliferous

Lime, lt-med brn, fnxln-granular, slight chalk in part, NS

Lime, lt-med brn, fnxln-granular, slightly fossiliferous

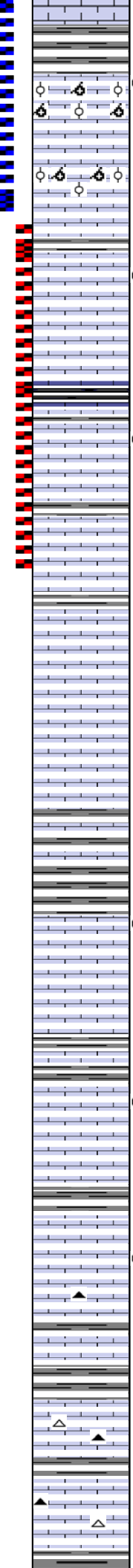
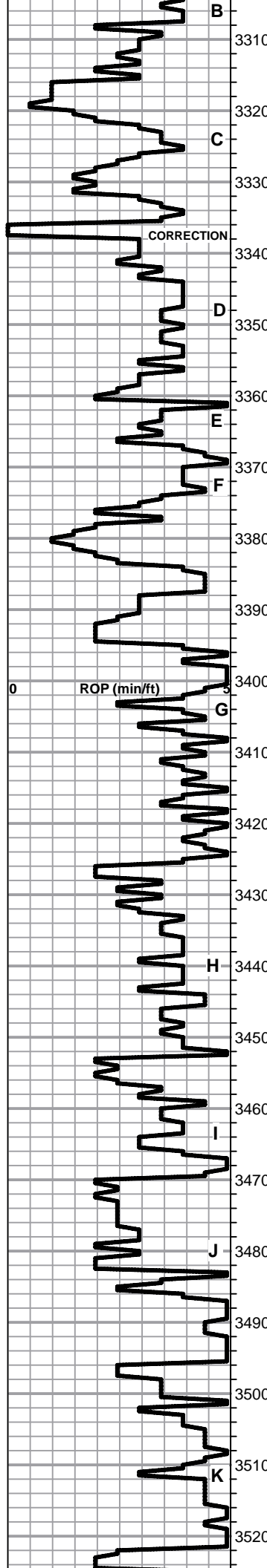
Lime lt-med brn-grayish brn, fnxln, slightly fossiliferous, fusulinids fossiliferous light gray chert

1:240 Imperial

8 5/8" SURFACE CASING SET TO 1219' W/ 450 SXS. COMMON, 2%GEL,3%CC PLUG DOWN 7:00 PM ON 10-03-2012

ZONE NOT PRODUCTIVE IN AREA AND IS LIKEY VERY THINLY DEVELOPED AND NON-COMMERICAL. LOCATED ON VERY TOP OF POROSITY BREAK





Lime, med brn, fnxln

Shale, med gray, calcareous with fossil fragments

Lime, oolitic/oolimoldic with saturated staining, fair odor with good development.

Lime, lt-med brn, fnxln-oolocastic/oolitic, increasing chalk content

Lime, crm-lt brn, mostly fnxln, slight chalk, few chips with lt scattered staining in pinpoint porosity, very lite odor

Lime, tan, fnln

Shale, gray to black carbonaceous

Lime, lt gray, fnxln

Lime, tan, fnxln with scattered pinpoint porosity with lite stain and very lite odor.

Lime, crm-tan, granular with chalky white wash, NS

Lime, crm-tan, fnxln-granular, slightly chalky, NS

Lime, crm-lt brn, fnxln-crypto xln

Lime, lt brn-lt gray, fnxln-crypto xln, chalk in part

Lime, lt brn grading to dark brn, fnxln

Shale, gray, soft blocky

Lime, lt-med brn, fnxln, trace of oil staining, very lite odor in interxln and scattered vuggy porosity

Lime, tan-lt brn, fn-vfxln, bedded chalk in part

Lime, lt brn, fnxln with scattered oolitic lime with scattered staining with interxln and scattered pinpoint vuggy porosity

Lime, lt-med brn, fn-vfxln, bedded chalk in part

Lime, crm-tan-lt brn, fnxln with few chips with dark oil stain, no odor, NFO

Lime, tan-lt brn, fnxln, chalk in part

Lime, crm-lt-med brn, fnxln

Shale, gray-black carbonaceous

Lime, crm-lt brn, fnxln-crypto xln, bedded chalk in part, NS

Lime, crm-lt brn, fnxln-crypto xln

Lime, med brn, fnxln

PERFORATE LOG INTERVAL 3319'-3326'. WATER HAS BEEN FOUND IN SECOND "C" BREAK AND WOULD NOT RECOMMEND PERFORATING INITIALLY

PIPE STRAP @ 3335'  
 STRAP 3341.92  
 BOARD 3340.54  
 DIFF 1.38

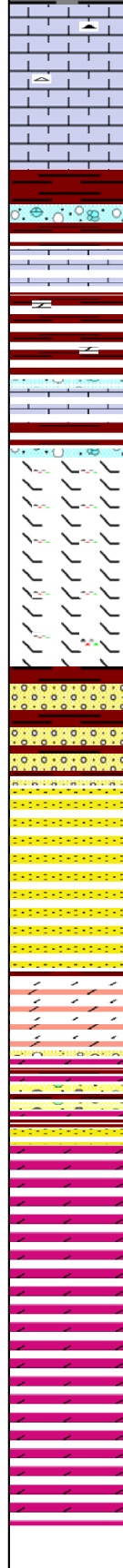
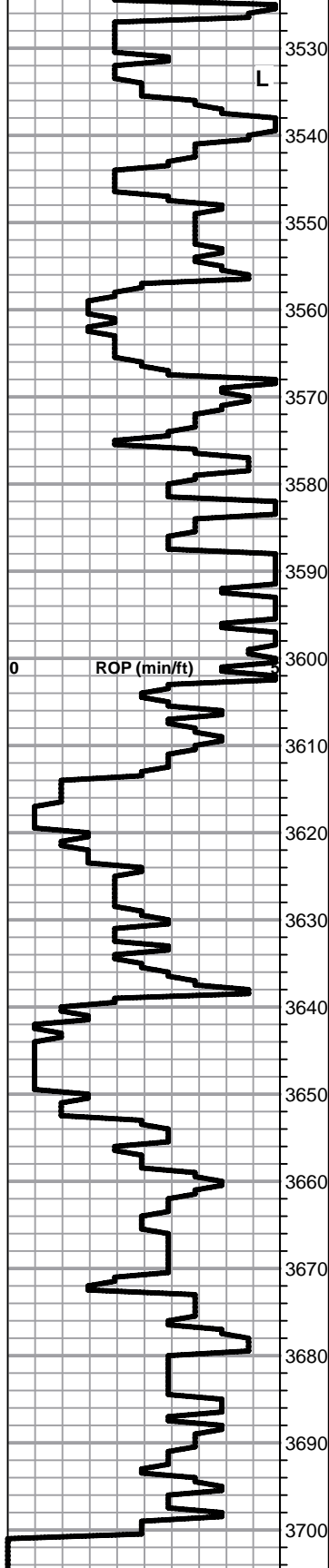
PERFORATE LOG INTERVAL 3344-46, LOG SHOWS ZONE MAY HAVE SOME PERMEABILITY RESTRICTION

DST # 2 3336' TO 3383' SEE HEADER FOR TEST SUMMARY  
 PERFORATE LOG INTERVAL 3367-69. ZONE THIN AND MAY HAVE SOME PERMEABILITY RESTRICTION

PERFORATE LOG INTERVAL 3434-36. ZONE THIN AND MAY HAVE SOME PERMEABILITY RESTRICTION

PERFORATE LOG INTERVAL 3458-60. ZONE THIN AND MAY HAVE SOME PERMEABILITY RESTRICTION

PERFORATE LOG INTERVAL 3482-84. ZONE THIN AND MAY HAVE SOME PERMEABILITY RESTRICTION



Lime, crm-lt brn, fnxln-crypto xln, brittle on break, NS

**BKC SPL 3540-1528 ELog 3544-1532**

Shale, reddish brn, soft blocky  
Clastic lime mix with red shale staining

Lime, lt-med brn, fnxln, bedded chalk

Shale, reddish brn-brn, blocky,  
Chert nodules, very lite red wash

Lime, med brn, fnxln

Lime, tan-lt brn, dolomitic in part, hard on crush, vari color  
cherts including orange, fresh, sharp chert

Lime, lt-med brn, fnxln, hard on crush, cherty

Sandstone, cemented, scattered staining in part, with mix  
of recrystallized dolomite becoming less with depth

● Sandstone, grading into fair sorted, subrounded, sand with  
saturated staining, lt odor, friable in part with SFO on break

Sandstone as above with increasing cementation with depth

**REWORKED ARBUCKLE 3636-1624**

Reworked dolomite mixed with cherts, sand and shale,  
scattered gilsonite with specks of hvy dark oil, no odor

**ARBUCKLE 3656-1644**

Dolomite, crm-lt brn, fnxln-granular, NS

Dolomite, lt brn, fnxln-granular, NS

Dolomite, ivory-crm, fnxln-granular

Dolomite, ivory-crm, fnxln-granular

Dolomite, fn-cxln, granular

PERFORATE LOG INTERVAL  
3616-22, SWAB TO  
DETERMINE IF ZONE WILL  
GIVE UP OIL NATURALLY.



P. O. Box 466  
 Ness City, KS 67560  
 Off: 785-798-2300



# Invoice

DATE	INVOICE #
10/9/2012	22901

BILL TO
Hertel Oil Company, LLC 704 East 12th Street Hays, KS 67601

- Acidizing
- Cement
- Tool Rental

TERMS	Well No.	Lease	County	Contractor	Well Type	Well Category	Job Purpose	Operator
Net 30	#1	Larry	Ellis	Discovery Drilling...	Oil	Development	5-1/2" LongString	Josh
PRICE REF.	DESCRIPTION				QTY	UM	UNIT PRICE	AMOUNT
575D	Mileage - 1 Way				15	Miles	6.00	90.00
578D-L	Pump Charge - Long String - 3698 Feet				1	Job	1,500.00	1,500.00
221	Liquid KCL (Clayfix)				2	Gallon(s)	25.00	50.00T
281	Mud Flush				500	Gallon(s)	1.25	625.00T
402-5	5 1/2" Centralizer				6	Each	70.00	420.00T
406-5	5 1/2" Latch Down Plug & Baffle				1	Each	250.00	250.00T
407-5	5 1/2" Insert Float Shoe With Auto Fill				1	Each	350.00	350.00T
419-5	5 1/2" Rotating Head Rental				1	Each	200.00	200.00T
325	Standard Cement				175	Sacks	13.50	2,362.50T
276	Flocele				50	Lb(s)	2.00	100.00T
283	Salt				900	Lb(s)	0.20	180.00T
284	Calseal				8	Sack(s)	35.00	280.00T
286	Halad-1 (Halad 9)				100	Lb(s)	7.50	750.00T
290	D-Air				2	Gallon(s)	35.00	70.00T
581D	Service Charge Cement				175	Sacks	2.00	350.00
583D	Drayage				366	Ton Miles	1.00	366.00
	Subtotal							7,943.50
	Sales Tax Ellis County						6.30%	355.16
<b>We Appreciate Your Business!</b>							<b>Total</b>	\$8,298.66

**PAID**  
 10-30-12  
 11229

OK



Services, Inc.

CHARGE TO: Hotel 0:1  
 ADDRESS  
 CITY, STATE, ZIP CODE

TICKET No. 22901

PAGE 1 OF 2

1. SERVICE LOCATIONS	WELL PROJECT NO. <u>1</u>	LEASE	COUNTY/PARISH	STATE	CITY	DATE	OWNER
<u>Hayes Ks</u>		<u>Larry</u>	<u>Ellis</u>	<u>Ks</u>	<u>Antinno</u>	<u>10-9-12</u>	
2. <u>Hayes Ks</u>	TICKET TYPE	CONTRACTOR	RIG NAME/NO.	SHIPPED VIA	DELIVERED TO	ORDER NO.	
	<input checked="" type="checkbox"/> SERVICE	<u>Discovery Orlg</u>	<u>4</u>	<u>CT</u>	<u>Location</u>		
3.	WELL TYPE	WELL CATEGORY	JOB PURPOSE	WELL PERMIT NO.	WELL LOCATION		
	<u>D:1</u>	<u>Develop</u>	<u>5 1/2 Longstrong</u>				
4. REFERRAL LOCATION	INVOICE INSTRUCTIONS						

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	MILEAGE	QTY.			UNIT PRICE	AMOUNT
		LOC	ACCT	DF			QTY.	UM	QTY.		
<u>575</u>						<u>15 mi</u>				<u>6.00</u>	<u>90.00</u>
<u>578</u>					<u>Pump Charge</u>	<u>1 JOB</u>			<u>3698 hr</u>	<u>1500.00</u>	<u>1500.00</u>
<u>221</u>					<u>Ground Key</u>	<u>2 GAL</u>				<u>25.00</u>	<u>50.00</u>
<u>281</u>					<u>MUDFLUSH</u>	<u>500 GAL</u>				<u>1.25</u>	<u>625.00</u>
<u>402</u>					<u>CATERPILLERS</u>	<u>6 EA</u>			<u>5 1/2 "</u>	<u>70.00</u>	<u>420.00</u>
<u>406</u>					<u>LATCH DOWN PUK - BATTER</u>	<u>1 EA</u>				<u>250.00</u>	<u>250.00</u>
<u>407</u>					<u>ROSSER FLOOR SHOE w/AUTO FEEL</u>	<u>1 EA</u>				<u>350.00</u>	<u>350.00</u>
<u>419</u>					<u>ROTAROE HEAD BASKET</u>	<u>1 JOB</u>				<u>200.00</u>	<u>200.00</u>

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions.

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS

DATE SIGNED 10-9-12 TIME SIGNED 1:00  P.M.

SWIFT OPERATOR Josh Brannen

APPROVAL

Thank You!

REMIT PAYMENT TO:  
 SWIFT SERVICES, INC.  
 P.O. BOX 466  
 NESS CITY, KS 67560  
 785-798-2300

SURVEY	AGREE	UNDECIDED	DISAGREE	PAGE TOTAL	AMOUNT
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?				<u>1</u>	<u>3485.00</u>
WE UNDERSTOOD AND MET YOUR NEEDS?					
OUR SERVICE WAS PERFORMED WITHOUT DELAY?					
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?					
ARE YOU SATISFIED WITH OUR SERVICE?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO			
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND					
TOTAL					<u>8,298.66</u>

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby accepts the materials and services provided on this ticket.





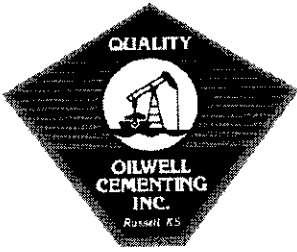
JOB LOG

SWIFT Services, Inc.

DATE 10-9-12 PAGE NO.

CUSTOMER Hertel Oil WELL NO. 1 LEASE Larry JOB TYPE, 5 1/2" Longstring TICKET NO. 22901

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	1600							On location Cmt. 175 sks EA-2 500 mud flush 20 bbl KCL Flush 5 1/2" 14" TD 3700 TP 3698 SJ 31' Cent. 1, 3, 5, 7, 9, 11
	1630							Start Casing
	1825							Drop Ball Break Circulation - Rotate
	1900							Plug A.H. 7 bbl MH, 5 bbl.
	1910	5	12			✓	200	200 Start MGD Flush
		5	20			✓	200	200 Start KCL Flush
	1915	5	30			✓	200	200 Start CMT 125 Sk = 15.4 PPG
	1923							Wash out Pump + Lines
	1923							Drop Plug
	1925	6	0			✓		Displace Plug
		6	79.5					800
	1938		89.5					1500 Plug Down Hold
	1940							OK Release PSI Dry
								Wash up Truck Pack up
	2030							Job Complete Thank You Josh, Wayne, Jon, Jeremy



**QUALITY OILWELL CEMENTING, INC.**  
 PO Box 32 - 740 West Wichita Ave, Russell KS 67665  
 Phone: 785-324-1041 fax: 785-483-1087  
 Email: cementing@ruraltel.net

Date: 10/8/2012  
 Invoice # 6020

P.O.#:

Due Date: 11/7/2012  
 Division: Russell

# Invoice

**Contact:**  
 Hertel Oil Company  
**Address/Job Location:**  
 Hertel Oil Company  
 704 E 12th  
 Hays Ks 67601

**Reference:**  
 LARRY 1

**Description of Work:**  
 LONG SURFACE JOB

*OP*

Services / Items Included:	Quantity	Price	Taxable
Labor		\$ 991.39	No
Common-Class A	450	\$ 6,126.69	Yes
Bulk Truck Matl-Material Service Charge	475	\$ 1,031.43	No
Calcium Chloride	16	\$ 827.92	Yes
Premium Gel (Bentonite)	9	\$ 159.08	Yes
Pump Truck Mileage-Job to Nearest Camp	13	\$ 140.86	No
8 5/8" Top Rubber Plug	1	\$ 115.09	Yes
Baffle Plate Aluminum, 8 5/8"	1	\$ 97.71	Yes
Bulk Truck Mileage-Job to Nearest Bulk Plant	13	\$ 82.43	No

Item                      Quantity                      Price                      Taxable

**PAID**  
 10-30-12  
 11225

**Invoice Terms:**

Net 30

SubTotal: \$ 9,572.59  
 Discount Available ONLY if Invoice is Paid & Received  
 within listed terms of invoice: \$ (1,435.89)

SubTotal for Taxable Items:	\$ 6,227.51
SubTotal for Non-Taxable Items:	\$ 1,909.19
<b>Total:</b>	<b>\$ 8,136.70</b>
<b>Tax:</b>	<b>\$ 392.33</b>

6.30% Ellis County Sales Tax

**Thank You For Your Business!**

**Amount Due: \$ 8,529.04**  
**Applied Payments:**  
**Balance Due: \$ 8,529.04**

Past Due Invoices are subject to a service charge (annual rate of 24%)  
 This does not include any applicable taxes unless it is listed.  
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# 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. 6020

Date	Sec.	Twp.	Range	County	State	On Location	Finish
10-3-12	15	15	19	ELLIS	KANSAS		7:00pm

Location ANTONIO LN - 2 1/4 S - W/INTO

Lease <u>LARRY</u>	Well No. <u>#1</u>	Owner <u>HETEL OIL</u>
Contractor <u>DISCOVERY #4</u>		To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cement and helper to assist owner or contractor to do work as listed.
Type Job <u>LONG SURFACE</u>		
Hole Size <u>12 1/4"</u>	T.D. <u>1219'</u>	Charge To <u>HETEL OIL</u>
Csg. <u>8 1/2"</u>	Depth <u>1219'</u>	Street <u>704 E 12TH ST.</u>
Tbg. Size	Depth	City <u>HAYS</u> State <u>KS, 671601</u>
Tool	Depth	The above was done to satisfaction and supervision of owner agent or contractor.
Cement Left in Csg.	Shoe Joint <u>30'</u>	Cement Amount Ordered <u>450com-3cc-2gel</u>

Meas Line Displace 75 1/2 BBLs

EQUIPMENT			Common
Pumptrk # <u>15</u>	No. Cementer		<u>450</u>
	Helper <u>NICK</u>		Poz. Mix
Bulktrk # <u>12</u>	No. Driver		<u>9</u>
	Driver <u>DOUG</u>		Gel.
Bulktrk <u>Plu</u>	No. Driver		<u>16</u>
	Driver <u>CISCO</u>		Calcium

JOB SERVICES & REMARKS		Hulls
Remarks: <u>HEAD &amp; MANIFOLD ON LOCATION</u>		Salt
Rat Hole		Flowseal
Mouse Hole		Kol-Seal
Centralizers		Mud CLR 48
Baskets		CFL-117 or CD110 CAF 38
D/V or Port Collar		Sand
		Handling <u>475</u>
<u>CEMENT DID NOT CIRCULATE!</u>		Mileage

FLOAT EQUIPMENT	
	Guide Shoe
	Centralizer
	Baskets
	AFU Inserts
	Float Shoe
	Latch Down
	<u>1- 8 5/8" RUBBER PLUG</u>
	<u>1- 8 5/8" BAFFLE PLATE</u>
	Pumptrk Charge <u>LONG SURFACE</u>
	Mileage <u>13</u>

THANK YOU

X Signature Michael Dredel

Tax
Discount
Total Charge