



Scale 1:240 Imperial

Well Name: DERRICK UNIT #1
Surface Location: SE SE SE SE 4-15S-18W
Bottom Location:
API: 15-059-26317-0000
License Number: 4787
Spud Date: 7/2/2012 Time: 3:34 PM
Region: ELLIS
Drilling Completed: 7/8/2012 Time: 4:27 AM
Surface Coordinates: 100' FSL & 230' FEL
Bottom Hole Coordinates:
Ground Elevation: 2027.00ft
K.B. Elevation: 2037.00ft
Logged Interval: 213.00ft To: 3743.00ft
Total Depth: 3750.00ft
Formation: ARBUCKLE
Drilling Fluid Type: FRESH WATER/CHEMICAL GEL

OPERATOR

Company: TDI, INC.
Address: 1310 BISON RD.
HAYS, KS 67601
Contact Geologist: TOM DENNING
Contact Phone Nbr: (785) 628-2593
Well Name: DERRICK UNIT #1
Location: SE SE SE SE 4-15S-18W API: 15-059-26317-0000
Pool: DINGES
State: KANSAS Country: USA

SURFACE CO-ORDINATES

Well Type: Vertical
Longitude: -99.3196032 Latitude: 38.7697467
N/S Co-ord: 100' FSL
E/W Co-ord: 230' FEL

LOGGED BY



Company: SOLUTIONS CONSULTING
Address: 108 W 35TH
HAYS, KS 67601
Phone Nbr: (785) 259-3737
Logged By: Geologist Name: JEFF LAWLER

CONTRACTOR

CONTRACTOR

Contractor: SOUTHWIND DRILLING, INC.
 Rig #: 1
 Rig Type: MUD ROTARY
 Spud Date: 7/2/2012
 TD Date: 7/8/2012
 Rig Release: 7/9/2012

Time: 3:34 PM
 Time: 4:27 AM
 Time: 12:00 PM

ELEVATIONS

K.B. Elevation: 2037.00ft
 K.B. to Ground: 10.00ft

Ground Elevation: 2027.00ft

NOTES

NOTE - THERE IS AN APPROXIMATE 11' UPHOLE CORRECTION MADE TO CORRELATE DRILL TIME WITH LOG CURVES


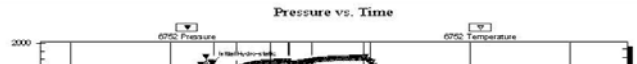
DUE TO STRUCTURAL POSITION, LOG AND SAMPLE ANALYSIS, AND DRILLSTEM TEST RESULTS DECISION WAS MADE TO SET PRODUCTION CASING AND FURTHER EVALUATE THE ARBUCKLE.

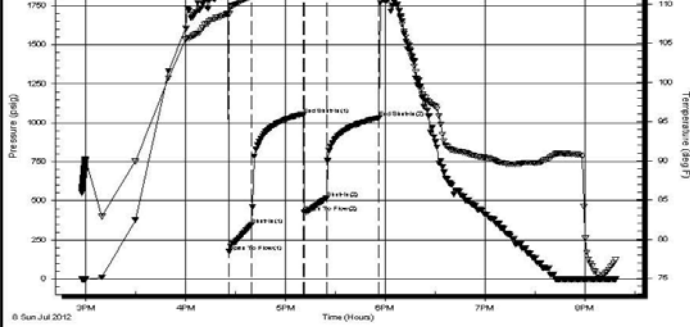
RESPECTFULLY SUBMITTED,
 JEFF LAWLER

WELL COMPARISON SHEET

FORMATION	DERRICK UNIT #1										FRONTEIR OIL CO.				P&A JULY, 1957							
	RICHARD #2										WERTH-DINGES UNIT #1				FRONTIER OIL CO.							
	SW NW NE NW 10-15-18										NE/4 9-15-18				SE SE SE 4-15-18							
	NE NE NE 9-15-18										NE NE NE 9-15-18				NE NE NE 9-15-18							
DERRICK UNIT #1										DERRICK UNIT #1				DERRICK UNIT #1								
2037										2034				2031				2032				
LOG TOPS										LOGS				LOGS				LOGS				
DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	CORR.	CORR.	SMPL.	SMPL.	DEPTH	DATUM	CORR.	CORR.	SMPL.	SMPL.	DEPTH	DATUM	CORR.	CORR.	SMPL.	SMPL.	
ANHYDRITE TOP	1207	830	1218	819	1209	825	+ 5	- 6	1193	838	- 8	- 19	1210	821	+ 9	- 2	1210	822	+ 8	- 3		
BASE	1247	790	1255	782	1246	788	+ 2	- 6	1238	793	- 3	- 11										
TOPEKA	3001	-964	3017	-980	3004	-970	+ 6	- 10	2996	-965	+ 1	- 15										
HEEBNER SHALE	3280	-1243	3290	-1253	3281	-1247	+ 4	- 6	3271	-1240	- 3	- 13	3286	-1255	+ 12	+ 2	3275	-1243	+ 0	- 10		
TORONTO	3301	-1264	3311	-1274	3301	-1267	+ 3	- 7	3290	-1259	- 5	- 15										
LKC	3335	-1298	3338	-1301	3327	-1293	- 5	- 8	3319	-1288	- 10	- 13	3340	-1309	+ 11	+ 8	3326	-1294	- 4	- 7		
BKC	3557	-1520	3566	-1529	3553	-1519	- 1	- 10	3550	-1519	- 1	- 10	3553	-1522	+ 2	- 7	3545	-1513	- 7	- 16		
CONGLOMERATE													3611	-1580								
ARBUCKLE	3623	-1586	3635	-1598	3638	-1604	+ 18	+ 6	3618	-1587	+ 1	- 11	3675	-1644	+ 58	+ 46	3625	-1593	+ 7	- 5		
RTD			3750	-1713	3750	-1716		+ 3	3730	-1699		- 14	3688	-1657		- 56	3636	-1604		- 109		
LTD	3743	-1706			3751	-1717	+ 11		3728	-1697	- 9											

DST #1 (STRADDLE) ARBUCKLE 3603' - 3645'

 <p>TRILOBITE TESTING, INC.</p>	DRILL STEM TEST REPORT		
	TDI 1310 Bison Rd Hays, Ks 67601 ATTN: Jeff Lawler	4-15-18 Ellis, Ks Derrick Unit #1 Job Ticket: 47414 DST#: 1 Test Start: 2012.07.08 @ 14:57:33	
GENERAL INFORMATION:			
Formation: Arbuckle Deviated: No Whipstock: ft (KB) Time Tool Opened: 16:26:03 Time Test Ended: 20:18:33 Interval: 3603.00 ft (KB) To 3645.00 ft (KB) (TVD) Total Depth: 3645.00 ft (KB) (TVD) Hole Diameter: 7.88 inches Hole Condition: Good	Test Type: Conventional Straddle (Initial) Tester: Brian Fairbank Unit No: 41 Reference Elevations: 2037.00 ft (KB) 2027.00 ft (CF) KB to GR/CF: 10.00 ft		
Serial #: 6752 Inside Press@RunDepth: 518.67 psig @ 3620.00 ft (KB) Start Date: 2012.07.08 End Date: 2012.07.08 Start Time: 14:57:34 End Time: 20:18:33	Capacity: 8000.00 psig Last Calib.: 2012.07.08 Time On Btm: 2012.07.08 @ 16:24:33 Time Off Btm: 2012.07.08 @ 17:59:03		
TEST COMMENT: IFP - BOB 1 min ISI - 1 1/2" blow back FFP - BOB 1 1/2 min FSI - 2" blow back			
		PRESSURE SUMMARY	
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation



0	1873.39	108.74	Initial Hydro-static
2	176.87	108.74	Open To Flow (1)
15	348.09	111.07	Shut-In(1)
46	1052.09	112.49	End Shut-In(1)
47	427.69	112.28	Open To Flow (2)
60	518.67	112.45	Shut-In(2)
92	1033.03	112.91	End Shut-In(2)
95	1784.23	112.46	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
45.00	V SOCM 5%O, 95%M	0.63
140.00	GHOCM 20%G, 30%O, 50%M	1.96
965.00	FREE OIL 95%O, 5%M	13.54
90.00	OCM 20%O, 80%M	1.26
0.00	60' GIP	0.00

Gas Rates

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

Trilobite Testing, Inc

Ref. No: 47414

Printed: 2012.07.08 @ 20:53:07

ROCK TYPES

Cht	Dolprim	shale, grn	shale, red
Cht vari	Dolsec	shale, gry	Shcol
Congl	Lmst fw7>	Carbon Sh	Ss

ACCESSORIES

MINERAL
 .* Sandy

OTHER SYMBOLS

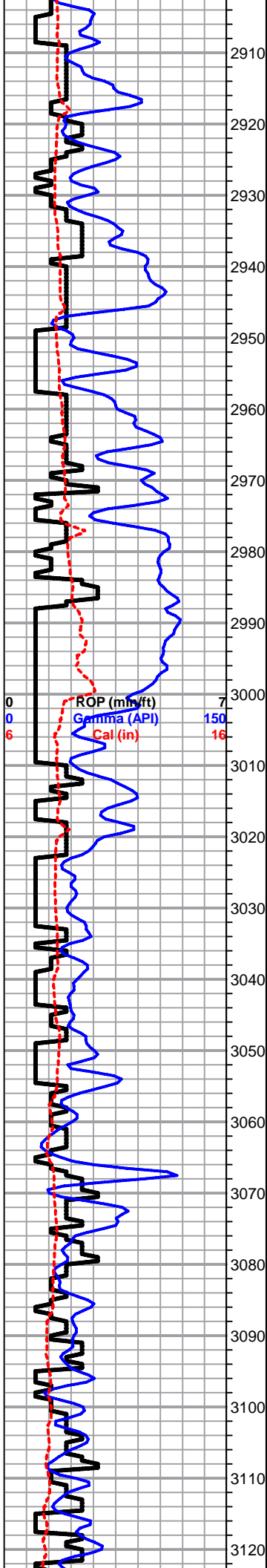
DST
 DST Int
 DST alt
 Core

Printed by GEOstrip VC Striplog version 4.0.7.0 (www.grsi.ca)

Curve Track #1	Depth Intervals	DST	Lithology	Oil Show	Geological Descriptions	TG, C1 - C5
ROP (min/ft) — Gamma (API) — Cal (in) - - -	Cored Interval DST Interval					Total Gas (units) — C1 (units) — C2 (units) — C3 (units) — C4 (units) —
1:240 Imperial 0 ROP (min/ft) 7 0 Gamma (API) 150 6 Cal (in) 16	2870 2880 2890 2900				ANHYDRITE TOP 1218' (+819) E-LOG 1207' (+830) BASE 1255' (+782) E-LOG 1247' (+790)	1:240 Imperial 0 Total Gas (units) 00 0 C1 (units) 100 0 C2 (units) 100 0 C3 (units) 100 0 C4 (units) 100
						8 5/8" @ 213' w/ 150 sxs Cmn SLOPE 1/2 dgr. DISPLACE @ 2897'

1' DRILL TIME THROUGH ANHYDRITE FROM 1200' - 1260'
 1' DRILL TIME FROM 2900' - RTD
 10' WET/DRY SAMPLES FROM 3000' - RTD
 GEOLOGICAL SUPERVISON BY JEFF LAWLER FROM 3000' - RTD

LITHOLOGY REPRESENTATIVE OF SAMPLES
 APPROXIMATE 11' CORRECTION MADE TO MATCH DRILL TIME TO LOGS



Sh/Ss- Gray, mix of smooth slivers, gray wash & fn. grn. well consolidated friable clusters, speckled w/ glauconite

Sh- Gray Lm Green, A/A, soft, gritty sl. sandy lime, clusters A/A

Sh- A/A w/ red gritty & earthy

TOPEKA 3017' (-980) E-LOG 3001' (-964) Lm- Cream, Fn grn., chalky in part, sl. fsl, few visible grains

Lm- Cream Tan, FXLN, fsl w/ fusulinids, mostly tight w/ minimal sctrd porosity, clean & barren

Lm- Cream Tan, A/A, few gritty & grainy w/ ppt porosity, fsl, chalky in part

Lm- Cream Buff Gray, mix of FXLN dense, crypto XLN w/o visible grains, 1-2 chips of pearl spherical shaped oolite clusters, soft sl. chalky, and interbedded shales & white wash lime

Lm/Ss- Drk Gray Buff, mix of vf gr. calcareous cemented Ss & trashy high energy bio-clasts w/ fsl. fragments

Lm- Cream Tan, mix of crypto XLN & moderately developed fsl w/ sctrd ppt porosity, fusulinids, interbedded various colored shales and gummy clumps of chalk

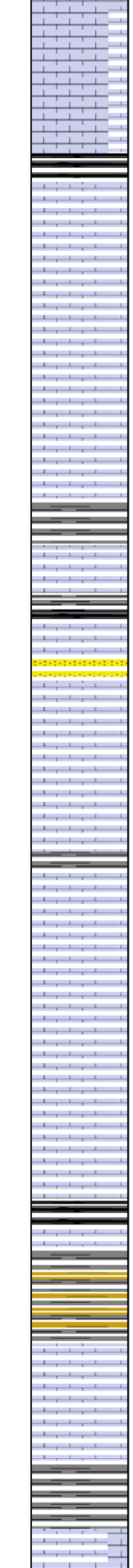
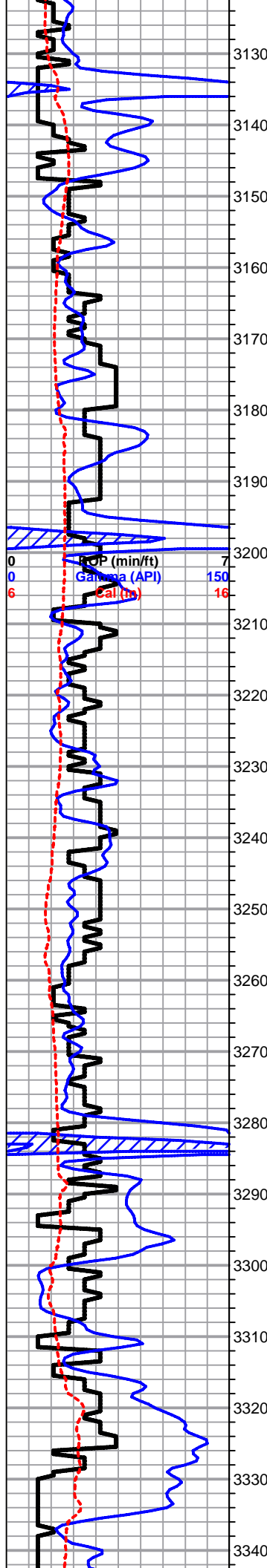
Sh- Drk Gray Drk Brown, abundant waxy slivers & brown wash

Lm- Cream Tan, VF-FXLN, fsl, some trashy w/ fsl fragments, few chips of fusulinid biomicrite, tight w/ dense clean cementation, mostly w/ sctrd ppt porosity, fsl, moderately well developed, clean & barren

Sh- Black Gray Lm Green, soft smooth

Lm- Cream Tan Gray, mix of dense, very well cemented w/ few visible grains, FXLN fsl. w/ sctrd secondary porosity, & cream granular gritty & grainy, moderately well developed, sl.

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



sctrd secondary porosity, & cream granular gritty & grainy, moderately well developed, sl. chalky & crumbly, fsl, all clean & barren

Lm- Cream Tan, gritty & granular, fsl., loosely cemented, few w/ mud supported matrix, few chips of argillaceous Ls w/o visible grains, few chips of bedded chert

Sh- Black Gray Maroon Lm Green, soft carbonaceous, soft, thin, slatey, lm grn sl. unconsolidated & pebbly,

Lm- Cream Tan, F-Med XLN, most granular, well developed w/ consistant fine ppt porosity, abundant dense secondary porosity, few chips of VF XLN w/ dense secondary micro XLN porosity, clean & barren, mottled, few w/ mud supported matrix

Lm- Cream Tan, VFXLN, most very well cemented, brittle & semi-siliceous crypto XLN w/o visible grains or porosity, porcelain like, few pcs of FXLN, gritty, sl. dolomitic w/ sctrd vry fine ppt porosity, clean & barren

Lm- Tan, FXLN, gritty & grainy, sl. granular, moderately developed w/ consistant vry fn ppt porosity, oolitic & fsl, clean & barren

Lm- Cream Tan, VF-FXLN, tight, well cemented, minimal primary porosity, some sctrd secondary XLN porosity, clean & barren

Sh- Drk Gray Lm Green, soft, smooth,

Lm- Cream, FXLN, well cemented, poorly developed, sl. fsl, few w/ sctrd micro pyrite inclusions, sctrd fine ppt porosity, clean & barren

Sh- Black Gray Lm Green, fissile, carbonaceous, soft smooth slivers, sl. grainy soft limes, Dove Gray fn grn. consolidated & sorted, well cemented Ss

Lm- Cream Tan Gray, FXLN, dense, most semi-brittle, tight w/ minimal visible porosity, several chips of cream, mud supported matrix, tight w/ vry sctrd find ppt porosity, sl fsl, SCTRDRK STN, 1-2 CHIPS W/ VSSFO, FNT ODR, DULL FLOR. W/ VRY SLW STRM WET CUT

Lm- Cream Tan, FXLN, sl. fsl, semi-brittle, mostly tight w/ minimal development, dense XLN porosity, clean & barren

Sh- Gray Lm Green Maroon Brown, soft, some gray wash, few sl. sandy lime

Lm- Cream, FXLN, sl. fsl, tight w/ minimal visible porosity, chalky in part

Lm- A/A, tan smokey gray fsl. bedded chert

Lm- Cream, Fn grn., mottled, mostly mud supported matrix, chalky

HEEBNER 3290' (-1253) E-LOG 3280' (-1243) Sh- Black Gray Lm Green Maroon, soft, carbonaceous, thin slivers

Sh- Gray Brown Cream, gritty & earthy, soft calcareous & chalky

TORONTO 3311' (-1274) E-LOG 3301' (-1264) Lm/Chert- Cream Tan, FXLN, chalky in part, crumbly, some sl. granular, clean, pristine clean bedded chert

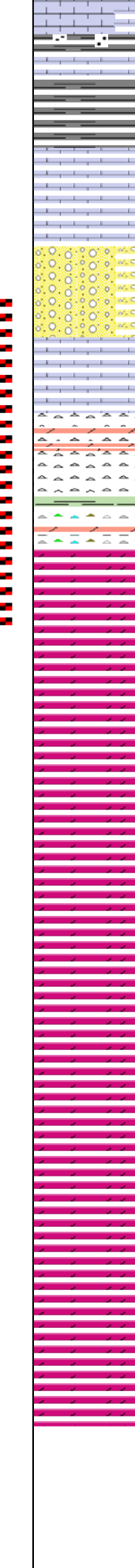
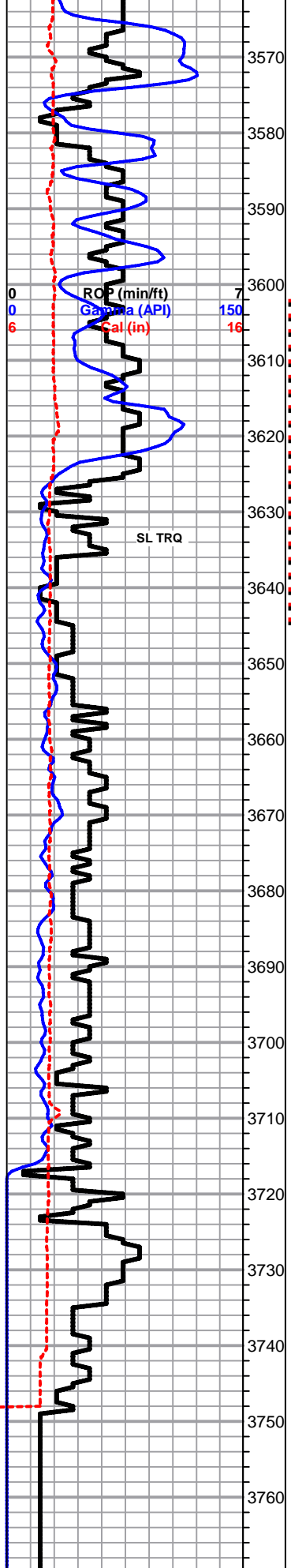
Lm- White Cream, Fn grn., soft crumbly, pristine clean & barren, chalky in part

Sh- Gray Maroon Brown Lm Green, gritty & earthy, sl. argillaceous

Sh- A/A w/ soft gray wash

LKC 3338' (-1307) E-LOG 3335' (-1298) Lm- Cream Tan, FXLN, mostly well cemented, poorly cemented w/ minimal visible porosity, few small chips w/ dense secondary porosity,

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



& barren

BKC 3566' (-1529) E-LOG 3557' (-1520) Sh- Gray Lm Green Brown Maroon, soft, gritty & earthy, few med grn, consolidated & sorted Ss clusters speckled w/ glauconite

Sh- Gray Lm Green Maroon, waxy & massive lm green, gritty & earthy

Lm- Cream Lt Gray, mix of fine grn, semi-soft, mix of sl. chalky mud supported matrix & some dense algal Ls and FXLN, tight w/ minimal porosity, 1 chips w/ sctrd ppt porosity, SCTRD STN, GSY SHEEN UPON CRUSH, VSSFO, NO ODR (probably carryover) & interbedded shale lenses

Conglomerate- Mix of various dark colored conglomerate shales, sl. unconsolidated & pebbly, Off white Ls conglomerate mottled w/ shale & few chips of dense cherty Ls

Lm- Off White Cream, VF-FXLN, tight, sl. oolitic & fsl., no development, minimal visible porosity, clean & barren

Chert- Orange, mix of sl. cherty Ls, & sl. gritty lt tan dolomitic chert, bedded

Chert- Tan Buff, gritty FXLN, sl. dolomitic chert

Sh/Chert- Mint Green, thin, waxy, brittle, well compacted, tan buff gritty mix of cherty dolomite & dolomitic chert

ARBUCKLE 3635' (-1598) E-LOG 3623' (-1586) Dolomite- Off White, Med XLN, well developed w/ good visible euhedral rhombs, loosely cemented, good interstitial porosity, GOOD SCTRD STN, GSY FO, FR GSY ODR

Dolomite- A/A, F-Med XLN, few w/ sl. siliceous cementation, fine ppt porosity, STN A/A, well cemented

Dolomite- White Buff, F-Med XLN, development begins to deplete to constant ppt porosity, few sl. sandy, sctrd barren porosity, well cemented & sorted, SCTRD STN, GOOD SFO, FR ODR

Dolomite- Off White Salmon Buff, VF-Med XLN, mix of sl. cherty dolomite, gritty & grainy, FXLN well cemented & consolidated, mostly barren porosity, few chips of lm green soft lime

D Dolomite- Off White, Med-Coarse XLN, consolidated & well cemented, sl. euhedral med XLN rhombs & euhedral coarse XLN mix, 1-2 chps w/ large vuggy porosity, DRK DO STN

Dolomite-Off White, FXLN, very well cemented w/ constant ppt porosity, few loosely cemented, barren

Dolomite- VFXLN, tight, very well cemented, fine ppt - XLN porosity, clean & barren

Dolomite- Med XLN, sl. sandy & sl. unconsolidated, mixed w/ sctrd visible euhedral rhombs in tight matrix, clean & barren

Dolomite- VF-FXLN, unconsolidated, mixed w/ large euhedral rhombs & round qtz inclusions in tight clear cementation, few oolitic chips, few coarse XLN w/ green glauconite stain, few chips of large euhedral pyrite

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

**DST #1
STRADDLE
ARBUCKLE
3603' - 3645'**

**TD 3750', CFS
SHORT TRIP
SLOPE 1 1/2 dgr.**

RTD 3750' (-1713) LTD 3743' (-1706) @ 04:37 7/8/2012

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. **891**

Date	Sec.	Twp.	Range	County	State	On Location	Finish
12-3-12	4	15	13	WALTON	KANSAS		4:30 AM
Lease		Well No. #1		Location			
Contractor				Owner			
Type Job				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.			
Hole Size		T.D.		Charge To			
Csg.		Depth		Street			
Tbg. Size		Depth		City			
Tool		Depth		State			
Cement Left in Csg.		Shoe Joint		The above was done to satisfaction and supervision of owner agent or contractor.			
Meas Line		Displace		Cement Amount Ordered			
EQUIPMENT							
Pumptrk #	No.	Cementer	Helper	Common			
Bulktrk #	No.	Driver	Driver	Poz. Mix			
Bulktrk #	No.	Driver	Driver	Gel.			
JOB SERVICES & REMARKS							
Remarks:				Calcium			
Rat Hole				Hulls			
Mouse Hole				Salt			
Centralizers				Flowseal			
Baskets				Kol-Seal			
D/V or Port Collar				Mud CLR 48			
CEMENT ONLY CIRCULATE! THANK YOU!				CFL-117 or CD110 CAF 38			
				Sand			
				Handling			
				Mileage			
FLOAT EQUIPMENT							
				Guide Shoe			
				Centralizer			
				Baskets			
				AFU Inserts			
				Float Shoe			
				Latch Down			
				Pumptrk Charge			
				Mileage			
				Tax			
				Discount			
				Total Charge			
X Signature							

