

Saman Sharifaie

Petroleum Geologist

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY: **Murfin Drilling Co., Inc.**
 LEASE: **Butler #1-9**

FIELD: **Wildcat**
 LOCATION: **2280 FSL & 1650 FWL**
 SEC: **9** TWP: **17S** RGE: **19W**
 COUNTY: **Rush** STATE: **Kansas**
 CONTRACTOR: **Murfin Drilling #16**

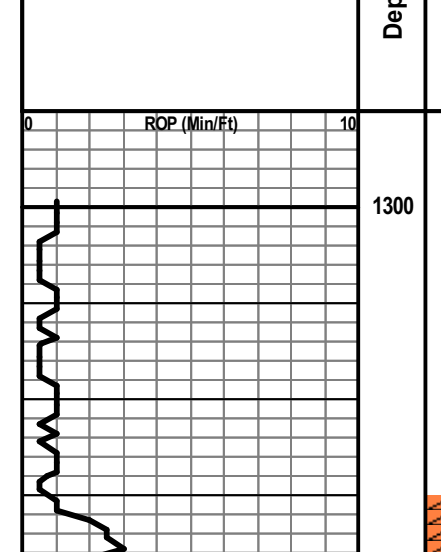
SPUD: **05/14/14** COMP: **05/21/14**
 RTD: **40/30'** LTD: **40/30'**
 MUD UP: **2900'** TYPE MUD: **Chemical**

SAMPLES SAVED FROM: **3070'** TO RTD
 DRILLING TIME KEPT FROM: **3070'** TO RTD
 SAMPLES EXAMINED FROM: **3070'** TO RTD

GEOLOGICAL SUPERVISION FROM: **2770'**
 REFERENCE WELL: **Gear Petro - Moran - A #1**

CONDUCTOR: **8-5/8" at 217'**
 SURFACE: **8-5/8" at 217'**
 PRODUCTION: **N/A**
ELECTRICAL SURVEYS
 CND: **D.L. MELI, SAIRC**
Fluor/ Hydroline

Formation	Sample Tops	E-log Tops	Strat Pos.
Anhydrite	1332 (+806)	1331 (+807)	-7
Base Anhydrite	1369 (+769)	1368 (+770)	-9
Trilobes	3172 (+1034)	3170 (+1032)	-4-2
Heubler	3455 (+1320)	3456 (+1318)	-4-5
Landing	3476 (+1338)	3472 (+1337)	-4-6
Leaning	3502 (+1364)	3501 (+1365)	-4-5
Sinks	3531 (+1393)	3528 (+1395)	-4-3
BKC	3774 (+1636)	3770 (+1632)	-4-3
Arbuckle	3923 (+1785)	3930 (+1792)	-1-2



REMARKS: Due to poor shows of oil in multiple potential pay zones and negative DST results, it is recommended and agreed upon by all parties that this well be plugged and abandoned.

Respectfully Submitted,
 API #15-165-22072
 Saman Sharifaie
 Petroleum Geologist

*Tops have been adjusted to electric logs

Depth (ft)	Geological Descriptions	Engineering Data
1300 - 1368	Anhydrite 1331 (+807)	
1368 - 1370	Base 1368 (+770)	
2941	DAILY PENETRATION @ 7:00 AM 05/14/14 - Spudded at 2:45 PM 05/15/14 - Drilling at 4:25' 05/16/14 - Drilling at 4:25' 05/17/14 - Drilling at 2:45' 05/18/14 - Testing at 3:54' 05/19/14 - Drilling at 3:54' 05/20/14 - Testing at 3:54' 05/21/14 - Plugging at 4:30'	K.D.T. @ 2941' Wt: 8.7 Vis: 63 WI: 6.4 ChI: 1,000 LCM: 2#
3070 - 3170	Ls., crm/bn/gr, fn xin, foss, pr vis por, calc IP; hd to chky, bily IP, n/s Sh., gry, sil stly, pyrc Ls., aa, Oolc IP Ls., crm/tan, mott, fn xin, Tr pr intfoss por, dns, bily, calc IP, chky, pred gry Sh, n/s Sh., gry/gn, sil stly to gmy, mica IP, pyrc Ls., brn/gr/crm, fn xin, Tr pr intfoss por, pred NVP, dns, calc, chky, n/s Sh., gry/gn, sil fss, pyrc Sh., gry, gmy Ls., tan/bn/gr, mott IP, v-fn xin, foss, pr vis por, calc IP, hd to chky, bily IP, pyrc, n/s Topeka 3170 (-1032) Ls., gry/bn/crm, fn xin, Oolc IP, Tr pr intfoss por, calc, dns, pred bily, hd, n/s Ls., gry/bn, v-fn xin, v pr intbn por, dns, bily, hd, n/s Sh., gry, fss, pyrc Ls., gry/crm, v fn, foss IP, v pr vis por, sil fri, dns cmt, ang, rr dd brn spltd stn, no odr, NSLO Sh., gry/gn, brit, stly IP Deer Creek 3226 (-1088) Ls., gry/tan, fn xin, sil foss, pr vis por, pt dns, calc IP, hd to chky, n/s Ls., aa, incr dns, NVP Sh., gry, sil stly, fss IP, pyrc IP Ls., crm/gry/tan, fn xin, foss, pr por, dns, calc cmt, sbang to bily, chly, n/s Ls., aa, chky IP Sh., gry/gn, stly IP, fss IP, rr dk gry mica pcs Ls., tan, fn xin, foss, Tr pr Oolc por, calc, fri to chky, Tr dk gry ChI, n/s Sh., dk gry/gn, fss, stly IP Sh., gry/gn, sil fss LeCompton 3299 (-1161) Ls., crm/tan, v fn xin, NVP, dns, bily, pyrc IP, n/s Sh., gry/gn, mica IP, pyrc & sil stly IP Ls., crm/tan/gry, mott IP, v-fn xin, pr intfoss por, pt dns, calc, chky, n/s Ls., brn, sing, v fn xin, NVP, dns, hd, bily, n/s Sh., gry/gn, stly & pyrc IP Ls., aa, gry IP Sh., dk gry/bly, mica Oread 3362 (-1224) Ls., tan/crm, fn xin, foss, Tr pr micr Oolc por, dns, calc cmt, hd, sbang, n/s Ls., crm/tan/gry, fn-med xin, foss IP, pr vis por, pt dns, bily IP, sil pyrc, Tr frs ChI, n/s Ls., aa, Tr pr Oolc por, chky Sh., gry, fss Ls., crm/tan/gry, fn xin, foss, fr-gd Oolc por, vuggy IP, fri, chly, n/s Sh., gry/gn, sil stly Ls., tan, fn xin, pr-fr intfoss & Oolc por, sil dolc IP, calc IP, chky, n/s Ls., aa, gry IP Ls., tan/gry, fn xin, foss, fr Oolc por, vuggy IP, fri, calc IP, v chly, n/s Heebner 3456 (-1318) Sh., blk carb Sh., dk gry/gn, stly IP, sil carb Toronto 3474 (-1336) Ls., crm/tan, fn xin, foss IP, pr-fr intbn & foss por, pt dns, sil fri to chky, bily IP, Tr ChI, Tr pyrc, n/s Sh., dk gry/bly, stly IP Lansing 3502 (-1364) Ls., crm/tan, v-fn xin, foss IP, pr-fr intbn & intbn por, sil dolc, calc IP, sbang to bily, rr it brn stn, no odr, Tr dl yel fluor, NSFO Sh., gry/gn/bly, pyrc IP Ls., crm/tan, fn xin, foss, fr-gd Oolc & vug por, sil fri, calc IP, chly, Tr it brn stn, rr pp FO & G Butls, v fnt odr, Tr dl yel fluor, VSSFO Ls., crm/tan/gry, mott IP, v-fn xin, Oolc IP, pr intfoss por, dns, fri IP, shly, chly, n/s Ls., crm, sing, fn xin, sil foss, pr vis por, pt dns, calc, sil fri, n/s Sh., blk carb Sh., gry/varic, pyrc IP Ls., crm/tan/gry, mott IP, fn xin, foss IP, pr intOolc & xin por, calc cmt, dns, hd, sil chky, n/s Ls., tan, sing, fn xin, Tr fr intbn por, dolc, dns, calc IP, suc, sbang to bily, chly, n/s Dol., tan/crm, fn-med xin, pr intbn por, dns, sil fri, sbang, suc, chky, calc IP, Tr ChI, n/s Ls., crm/tan, fn xin, foss, gd Oolc por, vuggy, fri, calc IP, 20-30% dolc aa, scat Chk, n/s Ls., aa, deer por abund Sh., dk gry, fss, mica IP Ls., crm/tan, v-fn xin, foss IP, Tr Oolc por, pt dns, calc, dolc IP, chly, n/s Ls., aa, incr chky, pyrc IP Sh., gry/bly carb, sil stly, pyrc Ls., crm/tan, fn xin, foss, pr intpart por, Tr gd Oolc por, calc IP, chly, n/s Sh., gry/gn, fss, mica IP Ls., crm/tan, fn xin, foss, fr-gd Oolc por, vuggy, calc IP, chly, pyrc, n/s Ls., crm, v fn xin, v pr intbn por, dns, calc, bily, chly, n/s Stark 3728 (-1590) Sh., gry/gn/bly, fss, pyrc IP Ls., crm/tan, v-fn xin, foss IP, pr vis por, pt dns, calc, sil chky, n/s Ls., aa, incr chky Sh., gry, fss Ls., crm/tan, v-fn xin, foss IP, pr vis por, dns, calc, chly, Tr transl ChI, n/s BKC 3770 (-1632) Sh., gry/gn/bly/bn, fss, pyrc IP, stly IP Ls., crm, fn xin, NVP, dns, calc, sil chly, chly, n/s Sh., varic, fss IP, pyrc, stly IP Ls., aa, scat pcs w/ fr-gd Oolc por Pawnee 3811 (-1673) Ls., crm/gry, fn xin, Tr pr intfoss por, calc, chky IP, sbang to bily, n/s Sh., gry/gn/bn, fss, stly, pyrc Ls., crm, sing, v-fn xin, sil foss IP, v pr intbn por, dns to chky, calc, ang, n/s ChI., org/tan, sil withd, Tr micr foss por, hd, calc IP transl to op, n/s Ls. & ChI., aa, incr shily w/ dept, rr dolc pcs Sh., gry/bly carb Ft Scott 3870 (-1732) Ls., crm, sing, fn-med xin, Tr foss, rr intpart & xin por, dolc IP, calc, hd to chky, chly, n/s Sh., gry/bn, fss, pyrc, stly IP Sh., varic/bly, scat crm Ls aa Sh., brn/gry, sndy IP Sat., cir, fr-lg fr, pr srted, xized, pr intbn & frac por, calc, sil cong, vit, li, fri, chly IP, scat blk spltd stn, Tr it brn/ldr pp FO, no odr, VSSFO Sat., aa, deer Shw abund, pred Sh & Ls Sat., cr, fr-med, med srted, fr intgran por, fri, conal, calc, scat sing lg grs, stly, n/s Arbuckle 3930 (-1792) Dol., crm, sing, fn xin, pr intbn por, dns, calc, sil fri, sbang, sil chly, n/s Dol., aa, deer Sd abund Dol., crm/tan, sing, fr-med xin, fr intbn por, dns, calc, fri, sbang, chly, n/s Dol., aa, deer Chk, bily Dol., crm/tan, sing, fr-med xin, pr intbn por, dns, calc, sil fri, ang to bily, pyrc IP, n/s Dol., aa, Tr foss, scat Lmy pcs Dol., crm, sing, fr-med xin, pr-fr intbn por, dns, calc, sil fri, sbang, n/s RTD 4030 (-1892)	K.D.T. @ 3540' Wt: 8.9 Vis: 53 WI: 8.0 ChI: 4,000 LCM: 1.5# Pipe Strap @ 3540': 0.02 Short to Board Deviation Survey: 1/2' DST #1 (LKC B) 3516'-3540' 30-60-60-90 IF: Blow built to 4 1/2" ISI: No return FF: Blow built to 8" FS: No return Rec: 5' FO (100%O), 115' MCW (30%M, 70%W) IFP: 17 - 38 FF: 45 - 63 ISIP: 723 FSIP: 632 FHP: 1737 FHP: 1747 BHT: 110° K.D.T. @ 3910' Wt: 9.2 Vis: 52 WI: 8.0 ChI: 5,000 LCM: 1.5# DST #2 (Cong Sd) 3858'-3910' 30-60-60-90 IF: BOB in 2 mins ISI: No return FF: BOB in 2 mins FS: No return Rec: 10' FO (100%O), 335' OCMW (10%O, 50%W, 40%M), 930' OCMW (10%O, 80%W, 10%M), 868' W (100%W) IFP: 209 - 692 FF: 713 - 992 ISIP: 1082 FSIP: 1075 FHP: 1940 FHP: 1839 BHT: 121° Deviation Survey @ 4030: 1/2'