

# Saman Sharifaie

## Petroleum Geologist

### GEOLOGIST'S REPORT

#### DRILLING TIME AND SAMPLE LOG

COMPANY: **Martin Drilling Co., Inc.**  
 LEASE: **Cidwell "C" #2-10**

FIELD: **Jones Canyon Southeast**  
 LOCATION: **2000 FSL & 2080 FWL**  
 SEC: **10 TWP 1S RGE 37W**  
 COUNTY: **Cheyenne STATE Kansas**  
 OPERATOR: **Martin Drilling #2**  
 RUD: **03/09/15 COMP 03/17/15**  
 SPUD: **4/6/15** TYPE MUD: **Chemical**  
 MUD UP: **3200'**

ELEVATIONS: **KB 3152'**  
 DE: \_\_\_\_\_  
 GL: **3141'**  
 Measurements Are All From Kelly Bushing

CASING: \_\_\_\_\_  
 CONDUCTOR: \_\_\_\_\_  
 SURFACE: **8-5/8" at 222'**  
 PRODUCTION: **5-1/2" at 464'**

SAMPLES SAVED FROM: **3450'** TO RTD  
 DRILLING TIME KEPT FROM: **3450'** TO RTD  
 SAMPLES EXAMINED FROM: **3450'** TO RTD  
 GEOLOGICAL SUPERVISION FROM: **3150'**

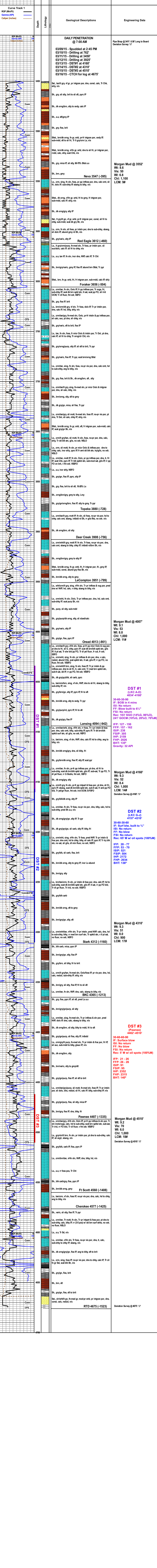
REFERENCE WELL: **MDC1 - Cidwell "C" #3-10**  
 CND: **D.L. MELI, Somic**  
**Pioneer Pipeline**

Formation	Sample Tops	E-log Tops	Strat Pos.
Anhydrite	3097 (-55)	3092 (+60)	-8
Base Anhydrite	3128 (-24)	3124 (+28)	-6
Neva	3348 (-306)	3347 (-305)	-4
TOPEKA	3382 (-220)	3380 (-220)	-4
Oread	4012 (-860)	4013 (-861)	-3
Stark	4092 (-940)	4094 (-942)	-2
Stark	4310 (-1158)	4312 (-1160)	FH1
Pawnee	4487 (-1335)	4487 (-1335)	-1
Cherokee	4574 (-1422)	4577 (-1425)	-2

REMARKS: Due to poor to fair shows of oil in multiple pay zones and positive DST results, it is recommended and agreed upon by all parties that production casing be set to further evaluate this well.

Respectfully Submitted,  
 API #15-023-21423  
 Saman Sharifaie  
 Petroleum Geologist

\*Tops have been adjusted to electric logs



**Engineering Data**

**Anhydrite 3092 (+60)**

**Base Anhydrite 3124 (+28)**

**DAILY PENETRATION @ 7:00 AM**

03/09/15 - Spudded at 2:45 PM  
 03/10/15 - Drilling at 7:45  
 03/12/15 - Drilling at 3:25  
 03/13/15 - DST#1 at 4160'  
 03/14/15 - DST#2 at 4310'  
 03/15/15 - DST#3 at 4510'  
 03/16/15 - CTCH for log at 4675'

Stat., tan/lt gry, vf gr, pr intran por, dns, consl, calc, Tr Chk, shly, n/s  
 Sh., gry, sil stly, brit to sil stf, pyrc IP  
 Sh., dk orgn/brn, stly to sndy, calc IP  
 Sh., aa, stf/gmy IP  
 Sh., gry, fss, brit  
 Stst., brn/dk orgn, fn gr, srt, pr-fr intran por, sndy IP, sub-rndd, sft to sil fri, Tr fr gycrm Ls, n/s  
 Stst., brn/dk orgn, vf-n gr, srt, dns to sil fri, pr intran por, rndd, calc, shly, scat Chk, n/s  
 Sh., gry, mica IP, sil stly, 60-70% Stst aa  
 Sh., brn, gmy  
**Neva 3547 (-395)**  
 Ls., crm, sing, fn xln, foss, pr pp intfoss por, dns, calc cmt, sil fri, dolc IP, sub-chly IP, sbang to bily, n/s  
 Stst., dk orgn, vf-n gr, srt, fri to gmy, fr intran por, sub-rndd, calc IP, shly, n/s  
 Sh., dk orgn/gry, stly IP  
 Stat., lt gry/lt gn, vf gr, srt, pr-fr intran por, consl, sil fri to chly, sub-rndd, scat dk gry Sh, n/s  
 Ls., crm, fn xln, sil foss, pr intbn por, dns to sub-chly, sbang, sil dolc IP, abund gmy rd Sh, n/s  
 Sh., gry/varic, stly IP  
**Red Eagle 3612 (-460)**  
 Ls., lt gry/crm/purp, fn-med xln, Tr foss, pr intbn por, sil suodolc, calc IP, sil fri to chly, n/s  
 Ls., aa, tan IP, fn xln, incr dns, NWP, calc IP, Tr Cht  
 Sh., brn/gry/varic, gmy IP, fss IP, abund brn Stst, Tr pyr  
 Stst., brn, fn gr, srt, fri, fr intran por, sub-rndd, calc IP, shly  
**Foraker 3656 (-504)**  
 Ls., crm/tan, fn xln, Oolc IP, fr pp intfoss por, Tr vugs, fri, sub-chly IP, scat dk brn spkld stn, lt sat, scat pp FO, sil frid OOW, Tr dl fluor, fnt odr, VSSFO  
 Sh., gry, fss, brit  
 Ls., brn/crm/dk gry, vf xln, Tr foss, dolc IP, Tr pr intbn por, dns, calc IP, hd, bily, shly, n/s  
 Ls., crm/tan/gry, fn-med xln, Oolc, fr intbn & pp intfoss por, sil calc, suc, pt dns, sil chly, n/s  
 Sh., gry/varic, sft to brit, fss IP  
 Ls., tan, fn xln, foss, fr micr Oolc & intbn por, Tr Dol, pt dns, calc IP, sil fri to chly, Tr orgn/dr Cht, n/s  
 Sh., gry/orgn/purp, stly IP, sil sft to brit, Tr pyr  
 Sh., gry/varic, fss IP, Tr pyr, scat brn/orgn Stst  
 Ls., crm/tan, sing, fn xln, foss, no-pr vis por, dns, calc cmt, hd to sub-chly, ang to bily, n/s  
 Sh., gry, fss, brit & Sh., dk orgn/brn, sft, stly  
 Ls., crm/tan/lt gry, sing, fn-med xln, pr micr Oolc & intran por, dns, sil calc, bily, n/s  
 Sh., brn/orgn, stly, sft to gmy  
 Sh., dk gry/gn, mica, sil fss, Tr pyr  
 Ls., crm/tan/gry, sil mott, fn-med xln, foss IP, no-pr vis por, pt dns, Tr Dol, sil calc, chly IP, shly, n/s  
 Stst., brn/dk orgn, fn gr, srt, sft, fr intran por, sub-rndd, calc IP, scat gry/gn Sh, n/s  
 Ls., crm/lt gry/tan, sil mott, fn xln, foss, no-pr por, dns, calc, shly, Tr dd blk stn, gils, no odr, NSLO  
 Ls., crm, sil mott, fn xln, pr micr Oolc & intbn por, dns to chly, calc, int, shly, pyrc IP, fr amt dk blk stn, try/gils, no odr, NSLO  
 Ls., crm/tan, mott IP, fn xln, Oolc, pr pp intfoss por, dns, ti, fri IP, scat Chk, pyrc IP, Tr blk spkld stn, sub-mod sat, gils IP, rr pp FO on blk, v fnt odr, VSSFO  
 Ls., aa, incr shly, NSFO  
 Sh., gry/gn, fss IP, pyrc, stly IP  
 Sh., gry, fss, brit to sil stf, 10-20% Ls  
 Sh., orgn/brn/gry, gmy to stly, Lmy  
 Sh., gry/gn/orgn/brn, fss IP, stly to gmy, Tr pyr  
**Topeka 3880 (-728)**  
 Ls., crm/tan/lt gry, mott IP, fn xln, sil foss, no-pr vis por, hd to chly, calc cmt, sbang, intbdd rd Sh, rr gils flks, no odr, n/s  
 Sh., dk orgn/brn, sil stly  
**Deer Creek 3908 (-756)**  
 Ls., crm/wh/lt gry, mott IP, fn xln, Tr foss, no-pr vis por, dns, calc cmt, sbang to bily, chly IP, intbdd rd/brn Sh, n/s  
 Sh., orgn/brn/gry, gmy to stly IP  
 Stst., brn/dk orgn, fn gr, srt, fri, fr intran por, fri, gmy IP, sub-rndd, consl, abund gry fss Sh, n/s  
 Sh., brn/dk orgn, stly to gmy  
**LeCompton 3951 (-799)**  
 Ls., wh/lt gry, sing, vf-n xln, Tr pr intfoss & vug por, pred dns w/ NWP, hd, calc, v chly, sbang to bily, n/s  
 Ls., crm/wh/lt, fn xln, Oolc, Tr pr intfoss por, dns, hd, calc cmt, sub-chly IP, scat purp Sh, n/s  
 Sh., purp, sil stly, sub-rndd  
 Sh., gry/purp/dk orgn, stly, sil xzcd/calc  
 Sh., gry/varic, stly IP  
 Sh., gry/gn, fss, pyrc IP  
**Oread 4013 (-861)**  
 Ls., crm/tan/lt gry, vf-n xln, foss, pr-fr pp micr Oolc & vug por, pt dns to fri, sil ti, chly, pyrc IP, scat dk brn/bk spkld stn, gils IP, lt sat, Tr shw bid pp FO, Tr dl yel fluor, fr cat, f odr, VSSFO  
 Ls., crm/wh/lt, sing, fn xln, pr intfoss & xln por, dns, v calc, rexdz, abund Chk, scat spkld stn, lt sat, gils IP, rr pp FO, no fluor, fnt odr, VSSFO  
 Ls., crm/wh/lt brn, sing, fn xln, foss IP, Tr pr intbn & pp intfoss por, dns to sil fri, li, calc cmt, Tr med brn spkld stn, sub-t sat, dd IP, rr pp FO, fnt odr, VSSFO  
 Sh., dk gry/gry/bk, sil carb, pyrc  
 Ls., tan/crm/brn, sing, vf xln, NWP, dns to sil fri, sbang to bily, shly, n/s  
 Sh., gry/brn/gn, stly IP, pyrc, fri to sft  
 Sh., brn/dk orgn, stly to sndy, Tr pyr  
 Sh., gry/purp/d, pyrc IP, fri to sft  
 Sh., dk gry/gry, fss IP  
**Lansing 4094 (-942)**  
 Ls., crm/tan/wh/lt, sing, vf-n xln, Tr foss, Tr pr intbn & foss por, dns, calc cmt, bily, sub-chly IP, pyrc IP, Tr dk brn/bk spkld surf stn, sil gils, no odr, NSFO  
 Ls., tan/crm, sing, vf xln, NWP, dns, calc IP, hd to chly, ang to bily, n/s  
 Sh., brn/dk orgn/gry, dns, sil bily, fri  
 Sh., gry/brn/dk orgn, fss IP, stly IP, scat pyr  
 Ls., crm/tan, fn xln, pr-fr pp intfoss por, pt dns, sil fri to sub-chly, scat dk brn/bk spkld stn, sub-rt sat, fr amt pp FO, Tr dl yel fluor, rr G Bubbles, fnt odr, VSSFO  
 Sh., dk orgn/gry, stly  
 Ls., crm/lt gry, fn xln, pr-fr pp intpart & foss por, pt dns, sil fri, pyrc IP, sbang, scat dk brn/bk spkld stn, sub-rt sat, fr amt pp FO bld, Tr yel/gn fluor, fnt odr, irid OOW, SFSFO  
 Sh., gry/bk/dk orgn, stly IP  
 Ls., crm/tan, fn xln, Tr foss, no-pr vis por, dns, bily, calc, hd to sub-chly, pred Sh aa, n/s  
 Sh., dk orgn/gry/gn, stly IP, Tr pyr  
 Sh., dk gry/gry/gn, sil carb, stly IP, bily, fri  
 Ls., crm/wh/lt, sing, vf-n xln, Tr foss, pred NWP, Tr pr intbn & frac por, dns cmt, hd to chly, bily, sil calc IP, pyrc IP, Tr try blk stn, no sat, sil gils, dl min fluor, no odr, NSFO  
 Sh., gry/bk, sil carb, fss, brit  
 Sh., brn/dk orgn, stly to gmy IP, incr Ls abund  
 Sh., brn/gry, stly  
 Ls., brn/tan/crm, fn xln, pr intbn & foss por, dns, calc IP, hd to sub-chly, scat dk brn/bk spkld stn, gils IP, lt sat, rr pp FO bld, Tr dl fluor, Tr irid, no odr, VSSFO  
 Sh., gry/bk carb  
 Sh., brn/dk orgn, sft to gmy  
 Sh., brn/gry/gn, stly, sft  
 Ls., crm/wh/lt, vf-n xln, Tr pr intbn, pred NWP, calc, dns, hd to sub-chly, bily, rr med brn surf stn, Tr spkld stn, v lt sat, no fluor, no odr, NSFO  
**Stark 4312 (-1160)**  
 Sh., blk carb, mica, pyrc IP  
 Sh., brn/gry/gn, stly, fss IP  
 Sh., gry/brn, sil bily, fri to brit  
 Ls., crm/lt gry/tan, fn-med xln, Oolc/foss IP, pr vis por, dns, hd, calc, rexdz, sub-chly IP, shly, n/s  
 Sh., brn/gry, sil stly, fss IP, fri to sil sft  
 Ls., crm/tan, fn xln, NWP, dns, calc, sbang to bily, n/s  
**BKC 4365 (-1213)**  
 Sh., gry, fss, pyrc IP, sil sft, pred Ls aa  
 Sh., brn/gry/purp, sil stly  
 Ls., crm/tan, sing, fn-med xln, Tr pr intfoss & xln por, pred NWP, dolc IP, dns, calc, sbang to bily, n/s  
 Sh., dk orgn/brn, sil stly, bily to rndd, fri to sft  
 Ls., gry/purp, sil fss, stly IP, intbn  
 Ls., crm/gry/lt purp, fn-med xln, Tr pr intbn & frac por, fri IP, sil suc, sub-rndd to bily, glauc IP, n/s  
 Sh., dk orgn/brn, stly  
 Sh., brn/varic, stly to gmy/sft  
 Sh., gry/gn/purp, fss IP, sil sft to brit  
 Ls., crm/tan/gry/purp, sil mott, fn-med xln, foss IP, Tr pr intbn por, sil dolc, dns, rexdz, sil fri, calc IP, bily, sub-chly IP, n/s  
 Sh., gry/gn/purp, fss, sil stly, mica IP  
 Sh., brn/gry, fss IP, dns, bily, fri  
**Pawnee 4487 (-1335)**  
 Ls., crm/tan/gry, vf-n xln, Oolc IP, pr-fr pp intfoss & xln por, Tr xln incla/vugs, calc, hd to sub-chly, scat brn spkld stn, sub-sat, Tr irid, rr FO bld, Tr dl fluor, v fnt odr, VSSFO  
 Ls., gry/ol/lt brn, fn xln, pr intbn por, pt dns to sub-chly, calc IP, sil argil, sbang, n/s  
 Sh., gry/bk, carb IP, fss, pyrc IP  
 Ls., crm/brn/tan, vf-n xln, NWP, dns, bily, hd, n/s  
 Ls., aa, rr foss pos, Tr Cht  
 Sh., blk carb/gry, fss, pyrc IP  
 Sh., brn/dk orgn, gmy  
**Ft Scott 4560 (-1408)**  
 Ls., tan/crm, vf xln, foss IP, no-pr vis por, dns, calc, hd to chly, ang to bily, n/s  
**Cherokee 4577 (-1425)**  
 Sh., varic, sil stly, fss IP, Tr pyr  
 Ls., crm/tan, Tr mott, fn xln, Tr pr intpart & foss por, pt dns to sub-chly, calc, bily IP, rr (3-5 pcs) w/ dd brn surf strks, no odr, no fluor, NSLO  
 Ls., aa, Tr Sd, n/s  
 Ls., crm, vf-n xln, Tr foss, no-pr vis por, dns, ti, calc, sub-chly to chly IP, sbang, n/s  
 Sh., dk orgn/gry/gn, fss IP, ang to bily, sft to brit  
 Ls., crm, sing, foss IP, no-pr vis por, dns to chly, calc IP, Tr dr fr gr Set, scat blk Sh, n/s  
 Sh., gry/gn, fss, brit  
 Sh., brn, sft  
 Sh., gry/gn, fss, sft to brit  
 Stat., crm/wh/lt gn, fn-med gr, mod-pr srt, pr intran por, dns, consl, calc, rexdz, n/s  
**RTD 4675 (-1523)**

**Engineering Data**

Pipe Strap @ 3411': 0.56' Long to Board  
 Deviation Survey: 1/2

**Morgan Mud @ 3552'**  
 Wt: 8.6  
 Vis: 50  
 WI: 6.8  
 Chl: 1,100  
 LCM: 9#

**Morgan Mud @ 4007'**  
 Wt: 9.1  
 Vis: 53  
 WI: 8.0  
 Chl: 1,000  
 LCM: 11#

**DST #1 (LKC A-D) 4034'-4160'**  
 30-60-30-90  
 IF: BOB in 4 mins  
 IS: No return  
 FF: Blow built to 6%  
 FSI: No return  
 Rec: 103' SGO (14%G, 86%O), 241' GOCM (10%G, 20%O, 70%M)

IFP: 127 - 150  
 FFP: 157 - 162  
 ISIP: 238  
 FSI: 305  
 IHP: 2130  
 FHT: 2026  
 BHT: 135°  
 Gravity: 32 API

**Morgan Mud @ 4160'**  
 Wt: 9.3  
 Vis: 52  
 WI: 8.4  
 Chl: 1,000  
 LCM: 14#  
 Deviation Survey @ 4160': 1/2

**DST #2 (LKC G-J) 4157'-4310'**  
 30-60-30-60  
 IF: Surf blw, built to 1/2"  
 IS: No return  
 FF: No blow  
 FSI: No return  
 Rec: 65' M w/ oil spots (100%M)

IFP: 28 - 77  
 FFP: 53 - 70  
 ISIP: 521  
 FSI: 504  
 IHP: 2172  
 FHT: 2034  
 BHT: 136°

**Morgan Mud @ 4310'**  
 Wt: 9.3  
 Vis: 51  
 WI: 8.0  
 Chl: 900  
 LCM: 17#

**DST #3 (Pawnee) 4462'-4510'**  
 30-60-60-90  
 IF: Surface blow  
 IS: No return  
 FF: No blow  
 FSI: No return  
 Rec: 5' M w/ oil spots (100%M)

IFP: 21 - 26  
 FFP: 26 - 26  
 ISIP: 91  
 FSI: 95  
 IHP: 2352  
 FHT: 2315  
 BHT: 140°

**Morgan Mud @ 4510'**  
 Wt: 9.2  
 Vis: 70  
 WI: 6.0  
 Chl: 1,000  
 LCM: 18#  
 Deviation Survey @ 4510': 1/2