GEOLOGISTS REPORT

MURFIN DRILLING COMPANY, INC.
250 N. WATER, STE. 300
WICHITA, KS 67202-1251

OPERATOR	MURFIN DRILLING COMPANY, INC.
LEASE	HANEKE INV # 1-18
LOCATION	2550 FNL & 1100 FWL
SEC. 18	TWP. 11S	RGE. 20W
COUNTY	ELLIS	STATE	KANSAS
CONTRACTOR	Murfin Drilling Company	RIG NO. 16
COMMENCED	2-Nov.-2012	COMPLETED 10-Nov.-2012
DRILLING TIME/FT FROM	3095	TO 3814
SAMPLES SAVED FROM	3095	TO 3814
GEOLOGICAL SUPERVISION FROM	3095	TO 3814
GEOLOGIST ON WELL	Paul Gunderson	

FORMATION TOPS				
NAME	TOP	DATUM	TOP	DATUM
Stone Corral	1583	+997		
Base Anhydrite	1625	+955		
Topeka	3183	-1043		
Heebner	3396	-1256		
Toronto	3417	-1277		
Lansing	3433	-1293		
Muncie Creek	3580	-1440		
Stark	3658	-1518		
Base Kansas City	3725	-1585		
Marmaton	3735	-1595		
Arbuckle	3741	-1601		
Total Depth	3814	-1674		

ELECTRICAL SURVEYS
Pioneer Energy Services
Dual Induction
Comp. Sonic

CASING RECORD
Surface 8 5/8" @ 217'
Production None
Conductor None

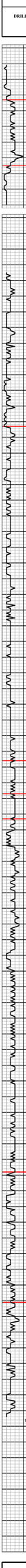
ELEVATIONS
KB 2140 FL.
GL 2135 FL.

ALL MEASUREMENTS FROM KB

REMARKS

API 15-051-26418-00-00
Drilling Fluids: Morgan Mud, Inc. (Cade Lines, engineer)
Drill Stem Testing: Tribolite Testing, Inc. (Jim Svaty, tester)
Gas Trailer: No Gas Trailer
Reserve Pit Chlorides: 34,000 ppm.

DRILL TIME (MIN/FT)	DEPTH	LITHOLOGY	SHOWS	SAMPLE DESCRIPTIONS	REMARKS



Lx: Crm, fxln-grsn, cons org rem, some stichky, tr pyr, spr calc & fr gn sh inc, fr fluor, v.s.p. n.s.

Ls: Dgn-mot, fxln, fr-mdn grsn, arg, dns, some fr gn sil pyr pum sh.

Lx: Crm-tn, fxln, chky, some org rem, tr tn tmsl chl, intbd gy fis sh.

Sh: Gy-dk gy, fis-blky, sty, some fr gy sily pyr gum sh, tr gn fis sh.

Lx: Crm-tn mott w/dk gy sh inc, cons org rem, stichky, pr intfrag pcr, n.fs.

Lx: Tn & gy-brn, fxln, fines, arg some glauc, n.v.p.

Sh: Gy-dk gy, fis, occ blk carb sh, intbd gy-brn fis sily sh.

Sh: Gy, fis, sily gum, intbd gy & lt gy v/f-fn arg sd, some dk gy fis sh & fr gn sil pyr sh.

Lx: Crm occ mott w/dk gy sh, fxln, sil fines, n.v.p.

Sh: Gy, fis, sily, occ mica, tr carb mat, cons fr-mod gy micac slst.

Lx: Crm, fxln-grsn, sil fines (Fus) tr stichky, occ arg, n.fs.

Lx: Crm-tn, fn-sfln, tr org rem, occ stichky, some mott w/dk gy sh, n.v.p. n.fs.

Lx: Tn-gy, fxln, fines, stichky, some arg, intbd dk gray fis sh, n.fs.

Lx: Wh-crm, fxln, some stichky, r arg, n.v.p.

Lx: Crm mot w/dk gy sh, grsn dol, some chk, tr org rem, fr-gd intgran pcr, n.fs.

Dol: Tn, v.frg, grsn, pr intgran pcr, no odor, tr tt bm FO, r.stead sh.

Ls: Tn, fxln, fines (Bracb, Fus) stichky-chky, dns.

Sh: Gy & gy-brn, fis, tr foss & pyr, some intbd dk gy-brn v.sily fis sh, some Ls, tr bk carb sh.

Ls: Crm, gran-fxln, stichky, foss, tr ool, occ dol, tr intgran pcr, n.s.

Ls: Crm-tn, fxln, tr gran, foss, occ dol, some spr calc, pr fr intgran pcr, n.s.

Lx: Crm, some crm-gy, gran chky, dol, occ ch gy sh inc, sil foss, fr-gd intgran pcr, n.fs.

Lx: Crm-tn, fxln, v.chky, sil foss, tr amor calc, occ ch gy sh inc, some gy & gy-brn v.sil sh.

Ls: Tn & lt brn mott, fxln, v.chky & gum, foss, tr amor calc & tn v.sil chk, occ dk gy sh inc, n.s.

Sh: Blk, fnn fis, carb.

Sh: Gy & gy-gn, fis, occ sity, tr pyr, intbd lt gy & lt gy sil calc v.arg pyr sltst, some tr-trg fsln pyr Ls.

Lx: Wh, fn-sfln, stichky, r arg rem, tr spr calc, pres, bcm fr gn-yel fluor, dol, cons amor calc, fr intgran por, n.fs.

Lx: Crm, fxln, sil fines (Fus) occ stichky, tr spr calc, n.v.p.

Lx: Crm, fxln, sil, amor chky, cons spr calc, tr pyr, some trn crm & gy v.sil chk, n.fs.

Sh: Gy-gn & lt gn, fis, occ sity & gum.

Sh: Blk, fnn fis, carb.

Lx: Crm, some crm-tn, fxln, sil chky, foss (Fus) tr pyr, some tr fr & gy v.sil chk, n.fs.

Lx: Crm, some crm-gy, gran chky, dol, occ ch gy sh inc, sil foss, fr-gd intgran pcr, n.fs.

Lx: Crm-tn, fxln, v.chky, sil foss, tr amor calc, occ ch gy sh inc, some gy & gy-brn v.sil chk, n.fs.

Lx: Tn & lt brn mott, fxln, v.chky & gum, foss, tr amor calc & tn v.sil chk, occ dk gy sh inc, n.fs.

Sh: Blk, fnn fis, carb.

Sh: Gy & gy-gn, fis, occ sity, tr pyr, intbd lt gy & lt gy sil calc v.arg pyr sltst, some tr-trg fsln pyr Ls.

Lx: Wh, fn-sfln, stichky, r arg rem, tr spr calc, pres, bcm fr gn-yel fluor, dol, cons amor calc, fr intgran por, n.fs.

Lx: Crm, fxln, sil foss (Fus) occ stichky, tr spr calc, n.v.p.

Lx: Crm, fxln, sil, amor chky, cons spr calc, tr pyr, some trn crm & gy v.sil chk, n.fs.

Sh: Gy-gn & lt gn, fis, occ sity & gum.

Sh: Blk, fnn fis, carb.

Lx: Crm, some crm-tn, fxln, sil chky, foss (Fus) tr pyr, some tr fr & gy v.sil chk, n.fs.

Lx: Tn, frg, gran, tr ool, dol, tr intgran por, gd fluor, no odor, sl stain fr bm O, slow fr bm cut

Lx: Gy & tn-gy, fxln, tr org rem, tr gy & crm v.lt chk, some arg, n.v.p. n.fs.

Lx: Wh-crm, gran, tr fxln-gran, sil chky, some dol, tr org rem, pr-fr intgran pcr, n.s.

Lx: Crm-gy, fxln, mott w/dk gy sh inc, chky, tr org rem, pr intxln pcr, n.fs.

Lx: Crm mott w/dk & dk gy sh inc, v.chky, fxln, tr foss (Bracb) some pyr & fr gn sh, n.fs.

Lx: Crm-tn, fxln, cons chk, tr pyr, some gy & gy-brn sp chk, occ arg, n.fs.

Lx: Gy, fxln, foss, some arg, dns.

Sh: Gn & gy-gn, fis-blky, pyr, sity, some calc, v.sl gum.

Sh: Rd-brn, blky, ea, occ gum, tr rd-brn v.arg Ls.

Lx: Wh-crm, fn-sfln, stichky, tr sol r dk gy sol & amor calc, n.v.p. n.fs.

Sh: Gy-gn, fis-blky, sil pyr, occ sity, some Ls inc.

Lx: Lt gy, frag, sol, tr pyr, cons sec calc, pr intxtl por, fr odor, no FO, spty sts.

Lx: Crm, frty gram-suc, dol, some amor calc, abdt gy v/f & crm sp fns chk, tr gd intgran por, n.fs.

Lx: Wh-crm, fn-sfln, tr ool, cons gy crm & lt gy or sp chk, occ amor calc, n.fs.

Sh: Blk, fnn fis, carb, some gn & dk gy fis sh, pyr, tr org rem, some intbd gy fsln sil foss & pyr Ls.

Lx: Wh-crm, fxln, sch, stichky, sil fiss (Bracb) tr ool, some pyr & spr calc, pr scat vug por, no odor, sl stain fr bm O, r.ds sh, tr bk carb sh

Lx: Lt gn & gy-gn, fis, some calc, tr gum , bcm dk gy-gn fis sh, n.v.p.

Lx: Wh-crm, fn-sfln, some stichky, pr pp por, v.sl odor, sl stain fr bm O, spty ds sh.

Lx: Wh-crm, fxln, tr pyr & spr calc, n.v.p. n.fs.

Sh: Gy-dk gn & dk gy, fis, some mott, intbd gy & gy-gn fsln sm sil sh, tr bk carb

Lx: Crm, fxln, chky-stichky, r org rem, tr wh-crm sp chk, pr ool, dol odor, v.sl stain dk bm FO, tr dk sply sts, some bk bar O.

Dol: Crm, frty gray, v.sily, tr lt gy-gray-crm chk, some amor calc, fr-gd intgran por, n.fs.

Lx: Crm, fxln, sil w/ spr calc, intbd gy & gy-gn fis sh, n.v.p.

Lx: Crm, gran-v/fxln, gray, dol, tr pyr & amor calc, some crm-tn & lt gy-crm v.sil chk, pr-fr intgran por, n.fs.

Lx: Wh-lt gy, fxln, mott stichky, tr foss (Fus) some wh-lt gy & tn sp-tmsl chk, r pyr, occ arg, n.v.p.

Lx: Crm-lt gy, fn-sfln, stichky, tr org rem, some chk, occ arg, dns.

Sh: Blk & v.dk gy, fis, some carb, bcm gy-gn dk sh gn & gy fis tr pyr, some intbd bm Ls.

Lx: Crm-lt gy, fxln, tr ool, some lt gy-crm tmsl chk, tr pp por, v.sl odor (crude), no FO, v.lt sply sts.

Lx: Crm, fxln, some ool, stichky, tr pyr, some lt gy-crm tmsl chk, n.v.p.

Sh: Gn & gy-gn, fis, occ calc, tr pyr, some mott wh-brn sh, tr lt-brn gum sh.

Lx: Tn, fn-sfln, tr org rem & pyr, some fr & lt gy mod chk, pr pp por, v.sl odor, no FO, v.lt sply sts, some bk bar O.

Lx: Crm-tn, lt-gy, v/xln, occ stichky, r pyr, dns, n/s.

Sh: Dk gy, fis.

Lx: Wh-crm, fxln, sil foss (Fus) some stichky, tr spr calc, bcm tn v/xln-mod ss, dns, tr pyr, pr sil odor (crude) sl sfer FO, tr v.lt sply sts.

Lx: Wh-crm, fxln, stichky-chky, n.v.p. n.fs.

Sh: V.dk gy-blk, fis, some carb, bcm gn v.sil sh.

Lx: Crm, fxln, occ stichky, tr foss (Crm) some amor calc, pr intgran por, tr pp vug por, sl odor, sl sfer FO, mod fm stead sln.

Lx: Lt gy & gn-gy, fn-fxln, dns, arg, some gn fsln stichky, n/s.

Sh: V.dk gy, fis, sil pyr, some carb, bcm gn-gy fis sil calc.

Lx: Crm-lt gy, some tn, fn-sfln, ool, cons sec calc, tr lt gn sh inc, n.v.p.

Sh: Gy-dk gy & gy-gn, fis, some calc-tmy, tr foss (Bracb) & pyr, cons rd-brn sa sh some mott w/lt gn sh, tr gy v.glauc slty sd.

Sh: Rd-brn, fis-blky, occ v.sily, some crm fsln Ls mod w/rd-brn sh.

Lx: Lt gy, some lt gy-gyr yel & pnk, fsln ool, chky, occ arg, n.v.p.

Sh: Dk gy, fis, sil pyr, gy-gn & lt gn fis-blky occ v.sily, some v.lt gn v.sil sh, tr gn sh, tr gn v.sily sh, tr gn v.sil sh.

Lx: Crm-lt gy, fxln, tr ool, occ glauc & arg, some cr tmsl chk, cons intbd sh, some blk dol O mrs, n.v.p.

Lx: Crm-lt gy, fxln, tr ool & v.dol-rm, fs, some mtl, cons v.tr-v.r pr wel & lt gn v.sil chk, some gy-blk v.silc Ls & dend chk wpr por, no odor, v.pr stw bleed O, bk sal stn

Lx: Wh-lt gy, fxln, lt gran, occ arg, cons wh-crm & lt gy-ap tmsl v.sil chk, tr lt yel & or chk, some lt gy-vug por in chk wth stw FO, no sal stn

Lx: Lt-bn & v.dkbn lt yel, v.lt gy, occ sity, mch gum some blk fis carb sh.

Sh: Gy brn yel gn v/dkrn & purp, some sity, cons wh lt gy v.sil sh, tr v.sil sh.

Dol: Crm-v.lt gy frty gran bcm crm fsln, tr chk, pr intgran por, some tr vug & pp por, mach dns, sting odor, fr bln FO, salt stn, bk bar O.

Dol: Crm-tn, fxln, wh & crm-ap v.lt, pr intxln por, mach dns, gd odor, fr sha bln O, sply sts

Dol: 3764'-70', Crm-tn-lt gy, fxln-suc, tr ool, tr chk, tr v.lt gn v.sil sh, tr v.lt gn v.sil tmsl stmd ppr, ab pr intxln & intergran por, tr gd vug por, fr odor, sl sha ble bm O, sply sts, no sal stn

Dol: 3764'-67', Crm-v.lt gn v.sil sh, tr mod chk, cons v.tr-v.r pr wel & lt gn v.sil chk, some gy-blk v.silc Ls & dend chk wpr por, no odor, v.pr stw bleed O, bk sal stn

Ls: Wh-v.lt gy, fxln, lt gran, occ arg, cons wh-crm & lt gy-ap tmsl v.sil chk, tr lt yel & or chk, some lt gy-vug por in chk wth stw FO, no sal stn

Lx: Lt-bn & v.dkbn lt yel, v.lt gy, occ sity, mch gum some blk fis carb sh.

Sh: Gy brn yel gn v/dkrn & purp, some sity, cons wh lt gy v.sil sh, tr v.sil sh.

Dol: Crm-v.lt gy frty gran bcm crm fsln, tr chk, pr intgran por, some tr vug & pp por, mach dns, sting odor, fr bln FO, salt stn, bk bar O.

Dol: Crm-tn, fxln, wh & crm-ap v.lt, pr intxln por, mach dns, gd odor, fr sha bln O, sply sts

Dol: 3784'-87', Crm-tn-lt gy, fxln-suc, tr ool, tr chk, tr v.lt gn v.sil sh, tr v.lt gn v.sil tmsl stmd ppr, ab pr intxln & intergran por, tr gd vug por, fr odor, sl sha ble bm O, sply sts, no sal stn

Dol: 3787'-90', Crm-v.lt gn v.sil sh, tr mod chk, tr v.lt gn v.sil sh, tr v.lt gn v.sil tmsl stmd ppr, ab pr intxln & intergran por, tr gd vug por, fr odor, sl sha ble bm O, sply sts, no sal stn

Lx: Crm-lt gy, occ pink, fn & v/xln, dns, chky, some crm mod-v.tr fldsh w/gd intxln & vug por, wh crm & lt gy-ap tmsl v.sil chk, tr sal stn, fr gd odor

Dol: Crm-lt gy, fn-mxln, tr cuson, sil chky, some silic, cons fr gy crm & wh ap-tmsl chk, tr sal stn, fr gd intxln & vug por, n/s

Lx: Crm, fxln-grsn, cons org rem, some stichky, tr pyr, spr calc & fr gn sh inc, fr fluor, v.s.p. n.s.

Ls: Dgn-mot, fxln, fr-mdn grsn, arg, dns, some fr gn sil pyr pum sh.

Lx: Crm-tn, fxln, chky, some org rem, tr tn tmsl chl, intbd gy fis sh.

Sh: Gy-dk gy, fis-blky, sty, some fr gy sily pyr gum sh, tr gn fis sh.

Lx: Crm-tn mott w/dk gy sh inc, cons org rem, stichky, pr intfrag pcr, n/s.

Lx: Tn & gy-brn, fxln, fines, arg some glauc, n.v.p.

Sh: Gy-dk gy, fis, occ blk carb sh, intbd gy-brn fis sily sh.

Sh: Gy, fis, sily gum, intbd gy & lt gy v/f-fn arg sd, some dk gy fis sh & fr gn sil pyr sh.

Lx: Crm occ mott w/dk gy sh, fxln, sil fines, n.v.p.

Sh: Gy, fis, sily, occ mica, tr carb mat, cons fr-mod gy micac slst.

Lx: Crm, fxln-grsn, sil foss (Fus) tr stichky, occ arg, n/s.

Lx: Crm-tn, fn-sfln, tr org rem, occ stichky, some mott w/dk gy sh inc, n.v.p. n/s.

Lx: Tn-gy, fxln, foss, stichky, some arg, intbd dk gray fis sh, n/s.

Lx: Wh-crm, fxln, some stichky, r arg, n.v.p.

Lx: Crm mot w/dk gy sh, grsn dol, some chk, tr org rem, fr-gd intgran pcr, n/s.

Dol: Tn, v.frg, grsn, pr intgran por, no odor, tr tt bm FO, r.stead sln.

Lx: Tn, fxln, foss (Bracb, Fus) stichky-chky, dns.

Sh: Gy & gy-brn, fis, tr foss & pyr, some intbd dk gy-brn v.sily fis sh, some Ls, tr bk carb sh.

Lx: Crm, gran-fxln, stichky, foss, tr ool, occ dol, tr intgran por, n/s.

Lx: Crm-tn, fxln, tr gran, foss, occ dol, some spr calc, pr fr intgran por, n/s.

Lx: Crm, some crm-gy, gran chky, dol, occ ch gy sh inc, sil foss, fr-gd intgran por, n/s.

Lx: Crm-tn, fxln, v.chky, sil foss, tr amor calc, occ ch gy sh inc, some gy & gy-brn v.sil chk, n/s.

Lx: Tn & lt brn mott, fxln, v.chky & gum, foss, tr amor calc & tn v.sil chk, occ dk gy sh inc, n/s.

Sh: Blk, fnn fis, carb.

Sh: Gy & gy-gn, fis, occ sity, tr pyr, intbd lt gy & lt gy sil calc v.arg pyr sltst, some tr-trg fsln pyr Ls.

Lx: Wh, fn-sfln, stichky, r arg rem, tr spr calc, pres, bcm fr gn-yel fluor, dol, cons amor calc, fr intgran por, n/s.

Lx: Crm, fxln, sil foss (Fus) occ stichky, tr spr calc, n.v.p.

Lx: Crm, fxln, sil, amor chky, cons spr calc, tr pyr, some trn crm & gy v.sil chk, n/s.

Sh: Gy-gn & lt gn, fis, occ sity & gum.

Sh: Blk, fnn fis, carb.

Lx: Crm, some crm-tn, fxln, sil chky, foss (Fus) tr pyr, some tr fr & gy v.sil chk, n/s.

Lx: Tn, frg, gran, tr ool, dol, tr intgran por, gd fluor, no odor, sl stain fr bm O, slow fr bm cut

Lx: Gy & tn-gy, fxln, tr org rem, tr gy & crm v.lt chk, some arg, n.v.p. n/s.

Lx: Wh-crm, gran, tr fxln-gran, sil chky, some dol, tr org rem, pr-fr intgran por, n/s.

Lx: Crm-gy, fxln, mott w/dk gy sh inc, chky, tr org rem, pr intxln pcr, n/s.

Lx: Crm mott w/dk & dk gy sh inc, v.chky, fxln, tr foss (Bracb) some pyr & fr gn sh, n/s.

Lx: Crm-tn, fxln, cons chk, tr pyr, some gy & gy-brn sp chk, occ arg, n/s.

Lx: Gy, fxln, foss, some arg, dns.

Sh: Gn & gy-gn, fis-blky, pyr, sity, some calc, v.sl gum.

Sh: Rd-brn, blky, ea, occ gum, tr rd-brn v.arg Ls.

Lx: Wh-crm, fn-sfln, stichky, tr sol r dk gy sol & amor calc, n.v.p. n/s.

Sh: Gy-gn, fis-blky, sil pyr, occ sity, some Ls inc.

Lx: Lt gy, frag, sol, tr pyr, cons sec calc, pr intxtl por, fr odor, no FO, spty sts.

Lx: Crm, frty gram-suc, dol, some amor calc, abdt gy v/f & crm sp fns chk, tr gd intgran por, n/s.

Lx: Wh-crm, fn-sfln, tr ool, cons gy crm & lt gy or sp chk, occ amor calc, n/s.

Sh: Blk, fnn fis, carb, some gn & dk gy fis sh, pyr, tr org rem, some intbd gy fsln sil foss & pyr Ls.

Lx: Wh-crm, fxln, sch, stichky, sil fiss (Bracb) tr ool, some pyr & spr calc, pr scat vug por, no odor, sl stain fr bm O, r.ds sh, tr bk carb sh

Lx: Lt gn & gy-gn, fis, some calc, tr gum , bcm dk gy-gn fis sh, n/s.

Lx: Wh-crm, fn-sfln, some stichky, pr pp por, v.sl odor, sl stain fr bm O, spty ds sh.

Lx: Wh-crm, fxln, tr pyr & spr calc, n.v.p. n/s.

Sh: Gy-dk gn & dk gy, fis, some mott, intbd gy & gy-gn fsln sm sil sh, tr bk carb

Lx: Crm, fxln, chky-stichky, r org rem, tr wh-crm sp chk, pr ool, dol odor, v.sl stain dk bm FO, tr dk sply sts, some bk bar O.

Dol: Crm, frty gray, v.sily, tr lt gy-gray-crm chk, some amor calc, fr-gd intgran por, n/s.

Lx: Crm, fxln, sil w/ spr calc, intbd gy & gy-gn fis sh, n.v.p.

Lx: Crm, gran-v/fxln, gray, dol, tr pyr & amor calc, some crm-tn & lt gy-crm v.sil chk, pr-fr intgran por, n/s.

Lx: Wh-lt gy, fxln, mott stichky, tr foss (Fus) some wh-lt gy & tn sp-tmsl chk, r pyr, occ arg, n.v.p.

Lx: Crm-lt gy, fn-sfln, stichky, tr org rem, some chk, occ arg, dns.

Sh: Blk & v.dk gy, fis, some carb, bcm gy-gn dk sh gn & gy fis tr pyr, some intbd bm Ls.

Lx: Crm-lt gy, fxln, tr ool, some lt gy-crm tmsl chk, tr pp por, v.sl odor (crude), no FO, v.lt sply sts.

Lx: Crm, fxln, some ool, stichky, tr pyr, some lt gy-crm tmsl chk, n.v.p.

Sh: Gn & gy-gn, fis, occ calc, tr pyr, some mott wh-brn sh, tr lt-brn gum sh.

Lx: Tn, fn-sfln, tr org rem & pyr, some fr & lt gy mod chk, pr pp por, v.sl odor, no FO, v.lt sply sts, some bk bar O.

Lx: Crm-tn, lt-gy, v/xln, occ stichky, r pyr, dns, n/s.

Sh: Dk gy, fis.

Lx: Wh-crm, fxln, sil foss (Fus) some stichky, tr spr calc, bcm tn v/xln-mod ss, dns, tr pyr, pr sil odor (crude) sl sfer FO, tr v.lt sply sts.

Lx: Wh-crm, fxln, stichky-chky, n.v.p. n/s.

Sh: V.dk gy-blk, fis, some carb, bcm gn v.sil sh.

Lx: Crm, fxln, occ stichky, tr foss (Crm) some amor calc, pr intgran por, tr pp vug por, sl odor, sl sfer FO, mod fm stead sln.

Lx: Lt gy & gn-gy, fn-fxln, dns, arg, some gn fsln stichky, n/s.

Sh: V.dk gy, fis, sil pyr, some carb, bcm gn-gy fis sil calc.

Lx: Crm-lt gy, some tn, fn-sfln, ool, cons sec calc, tr lt gn sh inc, n.v.p.

Sh: Gy-dk gy & gy-gn, fis, some calc-tmy, tr foss (Bracb) & pyr, cons rd-brn sa sh some mott w/lt gn sh, tr gy v.glauc slty sd.

Sh: Rd-brn, fis-blky, occ v.sily, some crm fsln Ls mod w/rd-brn sh.

Lx: Lt gy, some lt gy-gyr yel & pnk, fsln ool, chky, occ arg, n.v.p.

Sh: Dk gy, fis, sil pyr, gy-gn & lt gn fis-blky occ v.sily, some v.lt gn v.sil sh, tr gn sh, tr gn v.sily sh, tr gn v.sil sh.

Lx: Crm-lt gy, fxln, tr ool, occ glauc & arg, some cr tmsl chk, cons intbd sh, some blk dol O mrs, n.v.p.

Lx: Crm-lt gy, fxln, tr ool & v.dol-rm, fs, some mtl, cons v.tr-v.r pr wel & lt gn v.sil chk, some gy-blk v.silc Ls & dend chk wpr por, no odor, v.pr stw bleed O, bk sal stn

Lx: Wh-v.lt gy, fxln, lt gran, occ arg, cons wh-crm & lt gy-ap tmsl v.sil chk, tr lt yel & or chk, some lt gy-vug por in chk wth stw FO, no sal stn

Lx: Lt-bn & v.dkbn lt yel, v.lt gy, occ sity, mch gum some blk fis carb sh.

Sh: Gy brn yel gn v/dkrn & purp, some sity, cons wh lt gy v.sil sh, tr v.sil sh.

Dol: Crm-lt gy frty gran bcm crm fsln, tr chk, pr intgran por, some tr vug & pp por, mach dns, sting odor, fr bln FO, salt stn, bk bar O.

Dol: Crm-tn, fxln, wh & crm-ap v.lt, pr intxln por, mach dns, gd odor, fr sha bln O, sply sts

Dol: 3764'-70', Crm-tn-lt gy, fxln-suc, tr ool, tr chk, tr v.lt gn v.sil sh, tr v.lt gn v.sil tmsl stmd ppr, ab pr intxln & intergran por, tr gd vug por, fr odor, sl sha ble bm O, sply sts, no sal stn

Dol: 3764'-67', Crm-v.lt gn v.sil sh, tr mod chk, tr v.lt gn v.sil sh, tr v.lt gn v.sil tmsl stmd ppr, ab pr intxln & intergran por, tr gd vug por, fr odor, sl sha ble bm O, sply sts, no sal stn

Dol: 3767'-70', Crm-v.lt gn v.sil sh, tr mod chk, tr v.lt gn v.sil sh, tr v.lt gn v.sil tmsl stmd ppr, ab pr intxln & intergran por, tr gd vug por, fr odor, sl sha ble bm O, sply sts, no sal stn

Dol: Crm pink & lt tyel, fn & v/xln, dns, chky, some crm mod-v.tr fldsh w/gd intxln & vug por, wh crm & lt gy-ap tmsl v.sil chk, n/s

Dol: Crm-v.lt gy, occ pink, fn & v/xln, some mach, chky, tr wh cp dth & gyr, gen dns, w some gry-gd intxln por, n/s.

Dol: Crm-lt gy, fn-mxln, tr cuson, sil chky, some silic, cons fr gy crm & wh cp-tmsl chk, tr sal stn, fr gd intxln & vug por, n/s

STONE CORRAL	
1583	(+997)
BASE/ANHYDRITE	
1625	(+515)
TOPEKA	
3183	(-1043)
HEEBNER SHALE	
3396	(-1256)
TORONTO	
3417	(-1277)
LANSING	
3433	(-1293)
BASE/KANSAS CITY	
3658	(-1518)
ARBUCKLE	
3741	(-1601)
TOTAL DEPTH	
3814	(-1674)

5:28 AM, 5 November 2012

Morgan Mud check @ 3248'
Vis: 50, Wt: 8.8, WL: 6.4
Chlor: 2,500 ppm, LCM: 0#

DST #1 3336 - 3370
30"-60"-30"-60"
IF: Weak surging blow incr to 1 inch
FF: Weak surface blow after 11 min.

RECOVERY:
1 FT. Muddy Water
(Chlor: 31,000 ppm.)

IHP: 1625 psi FHP: 1514 psi
IFP: 29-34 psi ISIP: 846 psi
FFP: 37-47 psi FSIP: 823 psi
BHT: 104 deg. F

Morgan Mud check @ 3414'
Vis: 52, Wt: 9.2, WL: 7.2
Chlor: 4,700 ppm, LCM: 0#

DST #2 3400 - 3420
30"-60"-30"-60"
IF: Weak surface blow after 11 min.
FF: Surface blow incr to 1 1/4 inch

RECOVERY:
70 Ft. Gas In Pipe
40 Ft. Clean Oil
70 Ft. Oil Cut Mud
(20% Oil, 80% Mud)

IHP: 1760 psi FHP: 1668 psi
IFP: 23-34 psi ISIP: 1126 psi
FFP: 37-51 psi FSIP: 1116 psi
BHT: 108 deg. F

Morgan Mud check @ 3523'
Vis: 56, Wt: 9.2, WL: 6.8
Chlor: 4,500 ppm, LCM: 0#

DST #3 3500 - 3523
30"-60"-30"-60"
IF: Weak 1 1/4" blow
FF: Weak surface blow

RECOVERY:
44 Ft. Mud

IHP: 1767 psi FHP: 1634 psi
IFP: 12-23 psi ISIP: 312 psi
FFP: 25-30 psi FSIP: 305 psi
BHT: 107 deg. F

DST #4 3600 - 3640
30"-60"-30"-60"
IF: Surface blow incr to 1 1/4 inch
FF: Surface blow incr to 3 1/4 inch

RECOVERY:
70 Ft. Gas In Pipe
40 Ft. Clean Oil
70 Ft. Oil Cut Mud
(20% Oil, 80% Mud)

IHP: 1768 psi FHP: 1668 psi
IFP: 23-34 psi ISIP: 1126 psi
FFP: 37-51 psi FSIP: 1116 psi
BHT: 108 deg. F

Morgan Mud check @ 3646'
Vis: 54, Wt: 9.1, WL: 6.8
Chlor: 9,000 ppm, LCM: 1#

DST #5 3716 - 3764
30"-60"-30"-60"
IF: Weak 3/4 inch blow
FF: Weak surface blow after 12 min.

RECOVERY:
62 Ft. Mud

IHP: 1839 psi FHP: 1757 psi
IFP: 22-31 psi ISIP: 1127 psi
FFP: 23-28 psi FSIP: 1092 psi
BHT: 108 deg. F

Morgan Mud check @ 3764'
Vis: 51, Wt: 9.3, WL: 7.2
Chlor: 9,900 ppm, LCM: 2#

Operator: MURFIN DRILLING COMPANY, INC.
Lease: HANEKE INV # 1-18
Location: 2550 FNL & 1100 FWL SEC. 18 TWSP 11S RGE. 20W
County: ELLIS State: KANSAS