



GEOLOGIST'S REPORT

OPERATOR **MURFIN DRILLING COMPANY, INC.**

LEASE **DORZWEILER # 1-3**

LOCATION **1520 FSL & 500 FEL**

SEC. **3** TWSP **14S** RGE **19W**

COUNTY **ELLIS** STATE **KANSAS**

FIELD **STADELMAN**

CONTRACTOR Murfin Drilling Company RIG NO. 8

COMMENCED 14 Nov. 2011 COMPLETED 22 Nov. 2011

MUD DISPLACED 3012 MUD TYPE Chemical

DRILLING TIME KEPT FROM 3100 TO 3905

SAMPLES SAVED FROM 3100 TO 3905

SAMPLES EXAMINED FROM 3100 TO 3905

GEOLOGICAL SUPERVISION FROM 3059 TO 3905

GEOLOGIST ON WELL Paul Gunzelman

ELEVATIONS

KB **2191 Ft.**

GL **2186 Ft.**

ALL MEASUREMENTS FROM K.B.

CASING RECORD

Conductor None

Surface 8 5/8" @ 220'

Production 5 1/2" @ 3897'

ELECTRICAL SURVEYS:

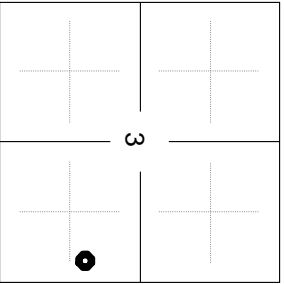
Log-Tech, Inc.

Comp. Neutron Density

Dual Induction

Micro-resistivity

Comp. Sonic



FORMATION NAME	LOG		SAMPLE	
	TOP	DATUM	TOP	DATUM
Stone Corral	1478	+713	1479	+712
Base/Anhydrite	1519	+672	1520	+671
Topoka	3199	-1008	3198	-1007
Heebner Shale	3444	-1253	3444	-1253
Toronto	3466	-1275	3467	-1276
Lansing	3495	-1304	3493	-1302
Base/Kansas City	3737	-1546	3735	-1544
Arbuckle	3847	-1656	3833	-1642
Total Depth	3906	-1715	3905	-1714

REMARKS

API 15-051-26205-00-00

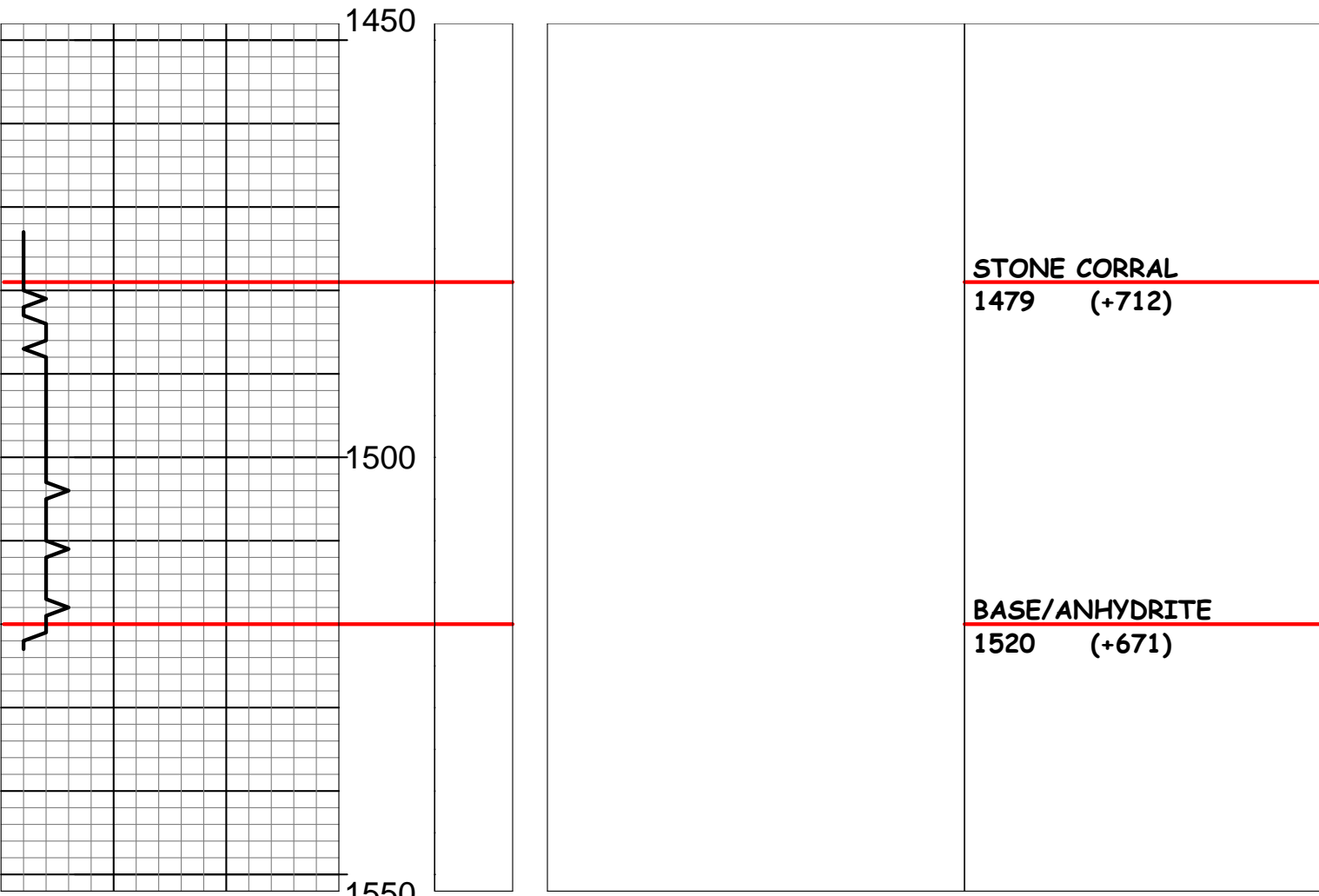
Drilling Fluids: Morgan Mud, Inc. (David Lines, engineer)

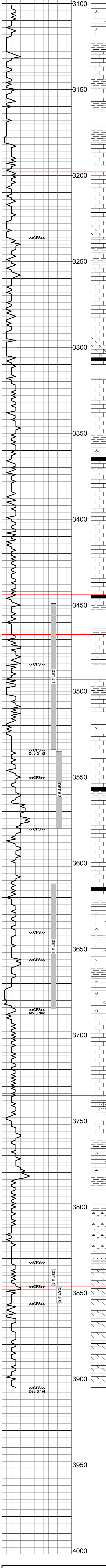
Drill Stem Testing: Trilobite Testing, Inc. (Brett Dickinson, tester)

Gas Trailer: No Gas Trailer

Reserve Pit Chlorides: 32,800 ppm

REMARKS	SAMPLE DESCRIPTIONS	SHOWS	LITHOLOGY	DEPTH	DRILL TIME (MIN/FT)
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Ls: Crm-tn, fxl, sli chky, foss (Fus) some intbd gy sh, n/s.

Ls: Gy-brn, fn-vfxln, arg, some dk gy sh inc, tr armor calc.

Sh: Gy & dk gy, fis, occ silty, tr gum.

Ls: Crm, mott w/dk gy sh fxl, sbchky, n.v.p.

Ls: Crm-lt gy, fxl, sli arg, bcm tn mott w/dk gy sh, fxl, foss, intbd gy & dk gy fis silty sh, some lt gy sil calc, slst.

Ls: Crm-tn, fxl, occ sbchky, sli foss, some arg, intbd dk gy fis sli pyr sh, n.v.p.

Sh: Gy & dk gy, fis, sli pyr, tr carb mat, some silty.

Sh: Gy dk gy & gy-brn, fis, occ carb, sli pyr, tr silty, some gy arg slst.

Slst: Dk gy, sli pyr, tr carb mat.

Ls: Crm-tn, fxl, some dk gy sh inc, sli foss, n.v.p.

Ls: Crm-tn, fxl, tr org rem, some arg, n/s.

Sh: Lt gn & gy-gn, fis, silty, gum in pt.

Ls: Crm, fxl, chky-sbchky, tr org rem some spr calc, n.v.p.

Ls: Crm-tn, fxl, sli foss (Brach) some dk gy sh inc, occ spr calc, n.v.p.

Ls: Tn-brn & dk gy-brn, fn-vfxln, smwt arg, r.org rem, n.v.p.

Sh: V.lt gn, blk, silty, calc, some gum.

Ls: Crm, tr crm-lt gy, gran sli dol, chky, some spr calc, fr-gd intrgran por, n/s.

Ls: Crm-lt gy, fxl, chky, sli foss, smwt arg, n.v.p.

Sh: Lt gy & gy-gn, blk, silty, some gum.

Ls: Gy-brn & tn, mott w/dk gy sh, intbd gy fis sh, n.v.p.

Ls: Crm, tr crm-lt gy, fxl, chky, sli pyr, tr org rem, n.v.p.

Ls: Crm-gy, fn-vfxln, sbchky, tr pyr & gy op-trnsi cht, some intbd lt gn-gy sh, n.v.p.

Ls: Tn, finly gran, rextzd, dol, gd v.fn oom por, fr intrgran por, n/s.

Ls: Crm-tn, some gy-brn, fxl, smwt arg, tr gy & brn op vit cht, n/s.

Ls: Crm, some crm-tn, gran, dol, chky, gd intrgran & pp por, n/s.

Ls: Tn, gran, chky, sli foss (Fus) wh crm & gy op vit cht, gd intrgran por, n/s.

Sh: Blk, thn fis, carb, bcm gy & gy-brn fis silty, sli mica, tr gy-brn mott arg Ls, n/s.

Ls: Crm-tn, fxl-gran, sli chky, smwt dol, tr pyr, wh crm & gy op vit cht, fr-gd intrgran por, n/s.

Ls: Wh-crm, vfxln, some sbchky, tr frac, dns, n/s.

Ls: Wh-crm, vfxln, tr sbchky, crm op vit cht, n.v.p.

Sh: Gy & gn-gy, fis, some silty.

Ls: Crm, fxl, foss (Fus) sbchky in pt, tr crm op vit cht & armor calc, n/s.

Sh: Blk, thn fis, carb.

Sh: Dk gy & gy-brn, fis, pyr, some lmy.

Ls: V.lt gy, fxl-gran, rextzd, pyr, fr intrgran & pp por, no odor, v.sli shw FO, tr lt spty stn, some barren por.

Ls: Crm, fxl, ool, sli withd, cons dk gy ool & sh inc, crm-brn mott foss cht, tr org rem, n/s.

Ls: Tn gy-brn, fn-vfxln, arg, tr org rem, some silic, intbd gy-gn lt gn & olv gn fis, sh, n/s.

Ls: Crm, fn-vfxln, sli chky, mott w/dk gy ool, tr org rem, pr pp por, tr gd intrgran por, sli odor (crush), no FO, tr lt spty stn.

Ls: Crm-lt gy, fxl, tr gran, sbchky, occ arg, fr intrgran por, n/s.

Ls: Crm, fxl, chky-sbchky, tr wh op vit cht, some spr calc, pr intxn por, sli odor, v.sli shw FO, tr lt stn.

Ls: Crm, fxl, sbchky, occ arg, tr lt gy-crm trnsi cht, n.v.p.

Ls: Crm, mott w/dk gy & brn inc, sli foss (Brach) tr armor calc, n.v.p.

Sh: Blk, thn fis, carb.

Sh: Gy-gn lt gy & lt gn, fis-blky, occ silty, some calc-lmy.

Sh: Lt gn & gy-gn, fis, occ gy-gn & lt gy v.sily sh, tr pyr.

Ls: Wh, fxl, ool, tr lt gn sh some spr calc, pr pp & intrfrag por, v.sli odor, v.sli shw FO, lt brn spty stn-sbsat.

Ls: Wh-crm, fn-vfxln, some sbchky, occ dk gy sh & frac, tr wh-crm op cht, n.v.p, n/s.

Sh: Gy-gn & lt gn, fis, sli pyr, occ silty, tr gum.

Ls: Crm-tn, fxl, sli pyr, occ arg, some sbchky, n.v.p.

Sh: Gn, fis, sli pyr, some lt rd-brn ea gum sh.

Ls: Wh-crm, fxl, occ sbchky, tr org rem, cons spr calc, pr intxn por, no odor, v.sli shw FO, tr lt spty stn.

Sh: Rd-brn, ea, occ gum intbd rd-brn & mar fxl v.arg Ls.

Ls: Wh, fxl, ool, cons sec calc, pr intool & pp por, sli odor, sli shw FO, lt stn-sbsat.

Ls: Crm, tr crm-lt gy, fn-vfxln, tr microxin, sli chky, some arg, n.v.p.

Sh: Gy-gn & med gy, fis, some calc, occ silty, tr pyr, r.org rem.

Ls: Crm-v.lt gy, fxl, occ withd-sbchky, tr org rem & spr calc, r.pyr, pr pp por, no odor, no FO, tr spty stn.

Ls: Lt gy, fxl, tr ool, occ lt gn-gy & arg, pr intxn por, fr pp por, fr odor, v.sli shw lt FO, lt spty stn, tr sbsat stn.

Sh: Blk, fis, carb, bcm gy & gy-gn.

Ls: V.lt gy, fxl, tr vfxln, some gy & tn trnsi cht, occ arg, pr intxn por, sli odor, v.sli shw lt film O, spty lt stn.

Ls: Crm, lt gy, fxl-frag, tr arg & pyr, some spr calc, fr pp & intrfrag por, pr intxn por, gd odor, sli shw v.lt bleed O, sli shw G, lt brn spty stn, tr sbsat stn.

Ls: Crm, fxl, tr medxin, ool, sbchky, tr org rem, pr oom por, no odor, no FO, spty lt stn.

Ls: Crm, tr v.lt gy, fxl-gran, rextzd, sli ool, gd oom por, fr intrgran por, n/s.

Ls: Crm, fxl, sbchky, cons crm-tn vfxln-microxin dns frac Ls, n/s.

Ls: Crm-tn, fn-vfxln, sbchky, some crm-gy microxin dns frac Ls, n/s.

Sh: Dk gy & blk, thn fis-v.thn fis, some carb, bcm rd-brn & brn ea occ silty sh.

Ls: Crm, fn-vfxln, sbchky, tr spr calc, lt gy & tn trnsi vit cht, r.pp por, sli odor (crush), no FO, tr lt stn.

Ls: Crm, occ crm-tn, fxl sbchky, tr armor calc, some lt gy trnsi cht, occ lt gn-gy & arg-shly, n.v.p.

Sh: Lt gn & lt gn-gy, fis, sli pyr, occ calc-lmy.

Ls: Crm, frag, ool, tr org rem, some dru calc, fr intool por, v.sli odor, sli shw FO, v.sli shw G, spty dk stn, tr sat stn.

Ls: Crm, fn-vfxln, sbchky, sli foss (Brach), n.v.p.

Sh: Lt gn, fis, calc, bcm rd-brn ea occ gum.

Ls: Crm-tn, fxl, some vfxln, sbchky, lt gy & tn trnsi cht, pr intxn por, fr shw dk brn bleed O/G, no odor, some dd blk O res.

Ls: Crm, fxl, tr gran, ool, tr org rem, occ spr calc, r.pyr, gd oom por, fr odor, fr shw FO, some bleed O, sli shw G, lt brn sbsat stn, cons barren por.

Ls: Crm-tn, fxl, sli ool, rextzd, v.chky, sli pyr, cons spr calc, fr oom por, n/s.

Sh: Dk gy, fis, tr pyr, some carb mat.

Ls: Crm-tn, fxl, sli ool, sbchky, occ sec calc, n.v.p.

Ls: Crm, tr wh-crm, fxl, tr vfxln, ool in pt, v.chky & sbchky, n.v.p, n/s.

Ls: Crm, fxl, sbchky, sli ool, tr spr calc, some lt gy vfxln sli arg Ls, n/s.

Ls: Crm, tr crm-tn, fxl, sbchky, occ spr calc, tr org rem, some dk gn fis sh, n.v.p.

Ls: Crm, some crm-tn, vfxln-microxin, tr org rem, occ sbchky, n/s.

Ls: Crm, fn-vfxln, sbchky, occ crm-v.lt gy arg sli sdy Ls, some armor calc, n/s.

Sh: Lt gn, fis, occ calc, tr silty, & rd-brn ea occ silty sh, some rd-brn v.arg Ls.

Ls: Crm-tn, microxin, dns, frac.

Sh: Gy-gn lt gn & olv gn, fis, sli pyr, some silty, tr calc, intbd rd-brn blk ea occ gum sh.

Ls: Crm-lt gy, fn-vfxln, some silic, occ withd-sbchky, pt arg, n.v.p.

Sh: Rd-brn brn tr yel w/gn & gy-gn sli pyr sh, cons rd-or gy-brn in & lt gy op-trnsi frac cht, n/s.

Sh: Gy-gn lt gn brn rd-brn purp & mar, intbd or rd-or & crm op-trnsi cht, some gy-tn fxl arg Ls, tr blk dd O res.

Sh: Lt gn gy-gn rd-brn & purp, tr yel, fis-blky, some gum, cons rd-or & amb trnsi vit cht, some dk mar v.arg slst.

Cht: Rd-or crm & tn op-trnsi vit & devit, abd lt gn & rd-brn gum sh, some v.lt gn-crm chky sli glauc Ls, n/s.

Cht: Rd-or tn mar amb lt gy & wh, vit op-trnsi, some ool abd rd-brn sh, tr lt gy vfn-fn ang wl-cmt qtz sd, tr Grl.

Sd: Lt gy vfn-med sbcmd fros, calc, sbfri, pr intrgran por, no odor, fr shw FO, v.dk stn, some dd O res.

Dol: Lt gy, vfxln dns, bcm gy fn-medxin, tr pyr & lt gn sh, lt gy ool op-trnsi cht, pr intxn por, v.sli odor (crush) sli shw v.dk FO, spty dk stn, some blk dd O res.

Dol: Lt gy & crm, fn-medxin, tr coxin, some chk & lt gn sh inc, tr pyr, fr-gd intrgran por, sli odor, gd shw FO, dk sat-sbsat stn, some barren por, tr blk dd O res.

Dol: V.lt gy, tr pnk, fn-medxin, sli pyr, tr wh op cht, fr-gd intrgran por, occ gd vug por, n/s.

Dol: Crm-v.lt gy, fxl, tr vfxln, some tn trnsi res cht, tr pyr, fr intxn por, cons blk asph res.

Dol: Crm, some lt gy & pnk, fn-medxin, tr arg, gd intrgran & vug por, n/s.

Dol: V.lt gy, tr crm, medxin, some coxin, tr lt gn sh & pyr, sli chky, gd intrgran & vug por, n/s.

Dol: Crm-pnk, med-coxin, some fn ang-sbrnd qtz sd, gd intrgran & vug por, n/s.

2:00 pm, 17 November 2011

TOPEKA
3198 (-1007)

DST # 1 3449 - 3534
30"-60"-45"-90"
IF: Weak blow, incr to 3 1/2 inches
FF: Weak blow, incr to 2 1/4 inches
RECOVERY:
30 Ft. Water Cut Mud
(35%Wtr, 65%Mud)
120 Ft. Water
(Chlor: 90,000 ppm.)
IHP: 1643 psi. FHP: 1614 psi.
IFP: 18-53 psi. ISIP: 1073 psi.
FFP: 61-99 psi. FSIP: 1048 psi.
BHT: 105 deg. F.

HEEBNER SHALE
3444 (-1253)

TORONTO
3467 (-1276)

LANSING
3493 (-1302)

Morgan Mud check @ 3525'
Vis: 67, Wt: 8.9, WL: 6.0
Chlor: 4,200 ppm, LCM: 2#

DST # 2 3535 - 3580
30"-60"-30"-60"
IF: Weak 3/4 inch blow
FF: No blow
RECOVERY:
5 Ft. Oil Spotted Mud
IHP: 1694 psi. FHP: 1666 psi.
IFP: 18-20 psi. ISIP: 598 psi.
FFP: 21-23 psi. FSIP: 515 psi.
BHT: 104 deg. F.

Morgan Mud check @ 3580'
Vis: 69, Wt: 8.9, WL: 5.6
Chlor: 7,900 ppm, LCM: 1.5#

Morgan Mud check @ 3685'
Vis: 60, Wt: 9.1, WL: 5.6
Chlor: 7,800 ppm, LCM: 1#

DST # 3 3612 - 3685
30"-60"-60"-90"
IF: Strong blow, BOB in 3 min.
ISI: 1 inch return blow
FF: Strong blow, BOB in 5 1/2 min.
FSI: 3 inch return blow
RECOVERY:
1030 Ft. Gas In Pipe
60 Ft. Gas and Mud Cut Oil
(20%Gas, 30%Mud, 50%Oil)
340 Ft. Heavy Gas and Mud Cut Oil
(60%Gas, 10%Mud, 30%Oil)
IHP: 1739 psi. FHP: 1720 psi.
IFP: 60-124 psi. ISIP: 677 psi.
FFP: 131-167 psi. FSIP: 679 psi.
BHT: 111 deg. F.

BASE/KANSAS CITY
3735 (-1544)

DST # 4 3836 - 3846
30"-60"-30"-60"
IF: Weak 1 inch blow
FF: Surface blow, died in 18 min.
RECOVERY:
1 Ft. Mud
2 Ft. Clean Oil
(27 grav. API)
IHP: 1923 psi. FHP: 1873 psi.
IFP: 14-15 psi. ISIP: 1189 psi.
FFP: 15-20 psi. FSIP: 1182 psi.
BHT: 115 deg. F.

ARBUCKLE
3846 (-1655)

Corrected to log

Morgan Mud check @ 3846'
Vis: 69, Wt: 9.2, WL: 5.6
Chlor: 7,200 ppm, LCM: 2#

TOTAL DEPTH
3905 (-1714)

3:15 AM, 22 November 2011

DST # 5 3846 - 3856
30"-60"-60"-90"
IF: Strong blow, BOB in 11 min.
FF: Strong blow, BOB in 11 min.
RECOVERY:
640 Ft. Water
(Chlor: 70,000 ppm)
IHP: 1921 psi. FHP: 1832 psi.
IFP: 21-160 psi. ISIP: 1217 psi.
FFP: 167-344 psi. FSIP: 1220 psi.
BHT: 123 deg. F.

Operator: MURFIN DRILLING COMPANY, INC.

Lease: DORZWEILER # 1-3

Location: 1520 FSL & 500 FEL SEC. 3 TWSP 14S RGE 19W

County: ELLIS State: KANSAS