

3940 Dover Street
Wheatridge, Colorado
March 31, 1952

Mr. E. A. Smith
Service Drlg. Co.
Kennedy Bldg.
Tulsa, Oklahoma

8-35-38W

Dear Sir:

Attached herewith are a descriptive sample log, drilling time record, core and drill-stem-test data and bit record from your No. 1 Beeson, Cheyenne County, Kansas. The formations penetrated and other data are as follows:

SERVICE DRLG. CO., NO. 1 BEESON
NE NE NW Sec. 8, T.3S., R.38W.
Cheyenne County, Kansas

Elev: 3492.5' grd.; 3505' K.B.
Comm: Febr. 19, 1952.
Comp: March 31, 1952.
Contr: Service Drlg. Co.
Csg: 10 3/4" @ 184'.

OWLL

Top Pierre sh	320'	(corr to Schlumb depths)
" Niobrara sh	1385	"
" Ft. Hays ls	1820	"
" Carlile	1875	"
" Greenhorn ls	2110	"
" Dakota ss group	2251	"
" Morrison sh	2782	"
" Permian (Blaine)	3150	(from samples & drillers depths)
" Stone Corral	3358	"
Base Council Grove	4015	"
Top Shawnee	4239	"
" Lansing	4488	"
Base Kansas City-Top Des Moines	4726	"
Top Cherokee ?	4962	"
" Mississippian (Sper-Wars)	5189	"
" Osage (Burl-Keok)	5232	"
" Kinderhook	5263	"
" Arbuckle (Bonnetterre)	5375	"
T.D. in Arbuckle	5392	"

As is usual in this northwestern Kansas province, numerous shows of dead oil and hydrocarbon residue were encountered in Wabaunsee, Shawnee and Lansing-Kansas City limestones that also had very low porosity and permeability. The best show occurred between 4632 and 4642 feet with the top 4 feet from 4632 to 4636 feet having fair staining with medium to low porosity. Cuttings from this interval had a slight oil odor but lacked the live odor a good show would have had. It yielded only a little muddy water

or watery mud on a drill-stem-test. The zone which yielded a little oil at the No. 1 Judy in SE SE NW 26-1S-39W, was found at 4840 feet but no reservoir rock was developed at the No. 1 Beeson and only a trace of spotted stain was found in the dense limestone at 4870 feet which is about 30 feet below the No. 1 Judy zone.

The samples from the No. 1 Beeson were excellent except for the interval from 2270 to 2735 feet where lost circulation difficulties caused poor sample quality. Even though the sample record here is poor, enough of the formation cuttings from this interval were recovered so that we can be sure that no shows occurred between 2270 and 2735 feet. The electric log of that interval likewise does not exhibit anomalous curves. Good porosity and permeability was encountered in the lower Mississippian and Arbuckle dolomites from 5360 to 5392 feet. After drilling ceased and the hole was circulated clean at 5392 feet in preparation for Schlumbergering, circulation was lost when starting out of the hole. Efforts to regain circulation and recondition the hole for Schlumbergering were unsuccessful.

With the excellent samples, drill-stem-test data and Baroid logging service, it is ascertained that the No. 1 Beeson had no shows of oil or gas meriting further testing and it was recommended for abandonment in the Arbuckle formation, March 30, 1952.

Very truly yours

Karl M. Buehler, geologist

SERVICE DRILL CO., NO. 1 BEESON
NE NE NW Sec. 8, T.39., R.38W.
Cheyenne County, Kansas

DESCRIPTIVE SAMPLE LOG

Samples examined from 1400 feet to T.D. by Karl M. Buehler,
geologist on location. Formation contacts from 184 to 2900
feet corrected to Schlumberger measurements.

TERTIARY (OGALLALA) 0 to 320'.

TOP PIERRE 320'.

1400 to 1420' Sh, blk, w few fish fragments.

TOP NIOBRARA 1385'.

-1520 Sh, lt to m gr, v calc speck.

-1665 Sh, v lt to m gr, v calc speck.

-1848 Sh, v lt cr-gr, v calc speck, chalky.

TOP FT. HAYS 1820'.

-1878 Chalk, pure white, foram.

TOP CODELL 1875'.

-1895 Ss, gr-wh, f, a, s&p, sl glauc, 30%; sh, dk gr, 70%.

-1910 Ss, gr-wh, f, a, s&p, sl glauc, w med-low por & perm.

-40 Ss, gr, f, a, s&p, glauc, w v low por & perm.

-70 Sh, m gr, muddy.

-2000 Sh, blk, sl calc speck; tr cr Inoc prism ls.

-50 Sh, blk, calc speck; tr Inoc prism ls.

-60 Sh, blk, pt calc speck.

-90 Sh, dk gr & blk, calc speck.

-2120 Sh, gr, v calc, 60%; ls, gr, f x, arg, & amb-cr, Inoc pr, 40%.

TOP GREENHORN 2110'.

-60 Sh, m gr, v calc speck, 70%; ls, gr-wh, chalky, 30%.

-70 Sh, m gr, v calc speck, 60%; ls, gr-wh, chalky & foram, 40%.

-80 Sh, m gr, v calc speck, & blk, sl calc speck.

-90 Sh, m to dk gr, v calc speck.

-2200 Sh, same, 60%; ls, m gr, v f x & cr-gr, v foram, 40%.

-10 Sh, m gr, v calc speck & blk, 80%; ls, same, 20%.

-30 Sh, dk gr, calc speck & blk.

-40 Sh, blk.

TOP BROWN LS MARKER 2236'.

-50 Sh, blk, 80%; ls, amb-brn, m x, comp of Inoc pr, 20%.

TOP "D" (1st) SAND 2251'.

-60 Ss, wh, f, sa, glauc, & m, sr, friable, pyr, some w m por & perm.

-60 (cire 15 min) Ss, wh, f to m, sr, pt v glauc, pt carb, w low
por & perm; no stain, odor or fluor.

-60 (cire 1/2 hr) Same.

-70 Ss, same; lost cire @ 2271'.

-2360 All lost cire fiber from 2270 to 2360'; no samp returns.

-70 Ss, wh, m-f, sa, friable, w m-gd por & perm; 99% Tert sd cvg.

-80 All Tert sd cvg.

-84 (cire 1/2 hr) Ss, gr to wh, m-f, sa, w gd por & perm; 99% Tert sd cv

-90 All Tert sd cvg.

DST No. 1, 2376-2390'. See DST records.

TOP "J" SAND 2384' ?

-2410 Ss, wh, v f, a, sug, pt glauc & m-f, a, w med por & perm; 99%
Tert sd cvg.

-30 All Tert sd cvg.

-40 Ss, wh, f, a, sug, w med por & perm, some sl glauc; 95% Tert sd cv

- 2445' Sltst, wh, mica & sid; 99% Tert sd cvg.
-50 Sid, brn, sdy, abd; ss, wh, m, a, w med por & perm; sid spheres
abd; pyr ss common.
-2500 All Tert sd cvg.
-05 Sh, v lt gr, w sid spheres abd; 99% Tert sd cvg.
-20 Sh, m gr, fiss; some v lt gr & rusty red sh w sid spheres abd;
ss, m-f, a, friable, sid cem, w med-gd por & perm.
-35 Same, but mostly Tert sd cvg.
-40 Sh, m gr, fiss; much Tert sd cvg; smp better.
-50 Sh, m gr, fiss; cons v lt gr & red sh.
-55 All lost circ fiber.
TOP SKULL CREEK 2552'.
-60 Sh, m to dk gr; mostly lost circ fiber.
-65 Ss, wh, f, a, friable, w gd p or & perm.
-70 Sh, m to dk gr.
-75 Sh, m gr; ltl gr, glauc, v f sltst.
-85 Sh, m to dk gr.
-90 Sh, m gr; cons gr, s&p, glauc sltst.
-95 Sh, m gr; some gr, s&p, glauc sltst.
-2600 Sh, m gr; sltst & f ss, gr to wh, s&p, glauc.
-10 Sh, m to dk gr, 60%; sltst & v f ss, lt gr, s&p, v glauc, 40%.
-15 Sh, m gr, 70%; ss cvg; lost circ @ 2617'.
-30 Sh, m gr, 80%; sltst, gr, s&p, glauc, 20%.
-35 Same.
-2735 No samples 2635 to 2735'; lost circ & no smp returns.
TOP "M" SAND 2636 or 2672'; prefer 2672'.
-45 Ss, cr to wh, v f, sr, calc cem, sl carb; 98% Tert sd cvg.
-55 Same.
-65 Ss, wh, f, sr, calc cem; ltl brn sdy sid; 95% Tert sd cvg.
-75 Ss, wh, f, sa, friable, w few blk g, gd por & perm.
-85 Same.
TOP MORRISON 2782'.
-95 Clay sh, pale grn-wh, sdy, waxy.
-2805 Same.
-15 Sh, maroon & grn-wh, sdy, waxy, mottled.
-25 Same.
-35 Clay sh, pale grn-wh, sdy.
-45 Sh, pale grn, waxy, sdy; ltl wh, f, sr, calc cem ss; some wh cly.
-55 Sh, pale grn, waxy; sdy.
-75 Sh, pale grn & maroon, 95%; ls, wh, 05%.
-85 Same, 60%; ss, wh, f, r, calc, 40% (72-78).
-2905 Dol ls, brn, nod, f x, sdy, 30%; ss, wh, m, r, calc, por, 40%;
sh, grn & mar, 30%.
-15 Same, but more grn & mar sdy sh.
-25 Same; more ss 2901-15. (2872-2915' a congl of ss, sh & dol nod).
-35 Sh, mar-red, sdy. (top @ 15).
-65 Sh, mar & grn, sdy, waxy.
-75 Sh, same, 60%; ss, wh, m-f, sa-sr, friable, w gd por & perm, 40%;
(ss 48-70).
-85 Sh, grn, slty, 80%; ls, wh, 20%.
-95 Ls, wh, dns, 70%; sh, grn, 30%.
-3005 Ls, gr-wh, dns, 80%; sh, grn, 20%.
-15 Same, but sh, 40%.
-18 (circ 45 min) Dol & ls, cr-wh, v f tex, dns, 70%; sh, grn, 30%.
Schlumbergered @ 3018', only got to 2904'.
-30 Dol, lt gr-wh, slty, 70%; sh, grn, 30%.

Service Drilg. Co., No. 1 Beeson, NE NE NW 8-3S-38W, Cheyenne Co., Kans.

- 3030 to 3040' Dol & ls, lt gr-wh, 60%; sh, grn, 40%.
 -50 Dol & ls, lt gr-wh, slty, 60%; sh, grn, 40%.
 -60 Same; some ool ls.
 -70 Ls, lt gr-wh, slty.
 -80 Ls, lt gr-cr, v slty, 60%; sltst, lt gr, calc, 30%; chert, blue-wh, transl & drusy, 10%.
 -90 Same; chert, blue-wh, transl, 20%.
 -3110 Ls, lt gr, dns & wh, f x, sug, 90%; chert, wh, se transl & drusy.
 -20 Ls, same, 60%; sh, grn & m gr, 40%; ltl chert as above.
 -30 Sh, m gr (PS cvg?).
 -40 Same; ltl pk-red, shy sltst & slty sh.
 -50 Sltst, pk, calc. (mostly m gr sh cvg).
 TOP PERMIAN (BLAINE) 3150'.
 -70 Dol & ls, gr, pk & cr, f x, dns.
 -90 Ls, wh, dns, & dol, pk, f x, sl vug; ltl pk & wh chalc chert.
 -3200 Sh, br red, w ltl red arg dol.
 -20 Sh, br red, dns, slty, dol.
 -30 Dol, cr, m-f x, dns, anhy; ltl pk, chalc chert.
 -40 Dol, cr, m to f x, dns, 30%; anhy, cr-wh, f to m x, dns, 40%; ss, pk, m, sr, dol, 30%.
 -60 Ss, pk-red, m, r, porous.
 -80 Ss, wh & red, m, r, porous.
 -90 Ss, pk, m-f, r, dol cem.
 -3300 Sltst, br red, mica, v f, shy.
 -60 Sltst, br red, mica, pt shy.
 TOP STONE CORRAL 3358'.
 -80 Anhy, pk-wh, f x, dns.
 -90 Anhy, pk-wh, crs x, dns.
 -3400 Anhy, same, 75%; dol, pk-bf, dns, 25%.
 -20 Sltst, red, mica, 60%; sh, red, 40%.
 -30 Sltst, red & wh, sl anhy.
 -40 Sh, br red.
 -50 Sltst, red & wh, sl anhy.
 -60 Sltst, br red.
 -70 Sh & sltst, br red.
 -90 Dol, pk & cr, v dns, sl slty, v f glauc, 50%; sltst, br red, 50%.
 -3520 Sh, br red, v slty or shy, v f sltst.
 -40 Sltst, br red, sl anhy.
 -50 Sltst, br red & wh.
 -70 Sltst, br red & wh.
 TOP WRETFORD ? 3570'.
 -80 Dol, cr, lith.
 -90 Dol, bf & brn, f x, dns, mott, 80%; sltst, wh, 20%.
 -3610 Sltst, br red & wh, sl anhy.
 -20 Anhy, wh, m x, 20%; dol, pk, dns, slty, 30%; sltst, wh, dns, dol.
 -30 Sltst, br red & wh, 50%; sh, br red, 50%.
 -40 Anhy, wh, m x, dns.
 -60 Sltst, br red, sug, anhy.
 -70 Sltst, gr-wh, mica, dns, dol.
 -80 Sltst, br red & wh, sl anhy.
 -90 Sh, br red, slty, sl anhy.
 -3705 Sltst, br red, sug, mica, 80%; dol, red, m x, 20%.
 -10 Sltst, br red & wh, sl anhy.
 -20 Sltst, br red, sl anhy.
 -30 Sltst, br red, shy, sl anhy, 80%; dol, pk, dns, slty, 20%.

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- 3730 to 3750' Sltst, lt red, dol, & wh, w anhy blebs common.
- 60 Sltst, pk-red & wh.
 - 70 Same, 60%; sh, br red, slty, 40%; ltl anhy.
 - 75 Sltst, red, anhy, 70%; sh, red, slty, 30%.
 - 80 Sltst, br red, shy, dol, anhy.
 - 90 Sltst, red, shy, 80%; dol, cr-wh, dns & pk, slty, 20%.
- 3800 Sh, br red, v slty, w anhy blebs common.
- 10 Sltst, br red, shy.
 - 20 Sh, br red, v slty, w anhy blebs common.
 - 35 Sltst, pk & gr-wh, mica, sug.
 - 40 Sltst, lt red, sug.
- TOP NEVA ? 3840'.
- 45 Ls, cr-bf, m-crs x, dol, dns.
 - 50 Ls, cr, m x, dol, 70%, & dol, cr, f x, sug, sl por, 30%.
 - 65 Dol, cr-wh, f x, sug, slty, f glauc, sl anhy, w low por & perm.
 - 75 Sh, red, 60%; sltst, red, v f, 40%.
 - 90 Sh, br red.
 - 95 Sh, same, 70%; sltst, red, v f, mica, shy, 30%.
- 3900 Sh, br red & dk gr.
- 10 Sltst, pk & wh, mica, sug.
 - 15 Ls, cr-wh, foss, dol; tr crin & brach frgs.
 - 20 Dol & ls, cr-wh, sug, sl anhy, sl por; few pk anhy phenocrysts.
 - 25 Dol, pk to wh, v f x, sucr, 80%; chert, pk, op, chalc, 20%.
 - 30 Ls, lt gr, cr & bf, foss, dns, f x.
 - 35 Sh, red & dk gr, fiss.
 - 40 Sh, br red, 60%; sltst, red, mica, 40%.
 - 44 Sh, br red; ltl wh, crs x anhy & ltl red sltst.
 - 55 Sh & sltst, red, mica, shy. (PS after trip @ 44).
 - 65 Sltst, dk red, mica, v f, shy, or slty sh.
 - 70 Sh, dk red; some crs x any & red chalc chert.
- TOP FORAKER 3968'.
- 75 Ls, gr-cr & mar, v f x, dol, 80%; chert, red, chalc, 20%.
 - 80 Ls, same, 20%; chert, same, 30%; sh, v dk gr or blk, 50%.
 - 85 Ls, gr-brn, m-crs x, dns, v foss, sl glauc, 85%; chert, gr-red-bf, mott, foss, stip, se op, 15%; brachs abd & tr fus.
 - 90 Ls, lt gr-cr, dns, sl slty, foss, 75%; ch, cr-pk, se op, 25%.
 - 95 Ls, cr, sl ool, foss, 90%; chert, as above, 10%.
- 4000 Ls, cr, v f x, dol; ltl chalc chert.
- 05 Ls, cr-wh, v f x, 70%; sh, dk gr, 30%; ltl anhy.
 - 10 Ls, cr-wh, v f x, dns, w crs anhy phenocrysts.
 - 15 Ls, cr-gr, v f x, arg, foss, 60%; chert, pk-wh, chalc, 10%; sh, m gr, calc, 30%.
- BASE COUNCIL GROVE 4015'.
- 20 Ls, dk gr, foss, 40%; sh, dk gr to blk, 60%; erin common.
 - 25 Ls, 25%; sh, red & dk gr, 75%.
 - 30 Sh, lt red; ltl red ls.
 - 35 Sh, lt red, soft, 50%; sltst, wh & pk, f v, v calc, 50%.
 - 40 Sh, red & dk gr, fiss.
 - 45 Ls, cr-wh, foss, ps ool, 90%; chert, pk-wh, se op, 10%.
 - 50 Ls, yel-gr, v slty, mica, arg, dns, 40%; sh, red & gr, 60%.
 - 60 Ls, yel, gr & ma r, slty, arg, 30%; sh, dk gr, 70%.
 - 65 Sh, br red, soft, 70%; sltst, red, v f, shy, 30%.
 - 70 Dol, cr, v f x, sucr, dns, 60%; red sh washes out.
 - 75 Sh, br red, soft; washes out.
 - 90 Sh, br red, v soft, washes out, 70%; dol nod, cr-pk, slty, 30%.

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- 4090 to 4095' Dol, wh to pk, v f x, sucr, sl por; red sh washes out.
- 4100 Ls, gr-bf, m-crs x, v foss, w blk sh ptings, 80%; sh, blk, fiss, 20
 - 05 Sh, m gr, mica, v slty, or shy sltst.
 - 10 Same, 50%; sh, red, slty, 50%.
 - 15 Sh, red, soft, washes out.
 - 20 Ls, pk, yel & lt gr-wh, v foss, f to m x; tr pk chalc chert.
 - 25 Ls, cr-wh, m x, v foss, dns; tr fus.
 - 30 Ls, same, w some red ls, 50%; sh, red, washes out, 50%.
 - 35 Sh, lt red, v f slty, w ltl blk, fiss sh; red sh washes out.
 - 40 Ls, cr-wh, m x, foss; few fus.
 - 45 Ls, wh, m x, foss, w fusu com; 5% of frgs bleeding blk, viscous, dead oil from pin-point spots; v low or no por & perm, no odor (dead oil show in ls 4139-44').
 - 50 Sh, red; sample washes out red.
 - 50 (circ 20 min) Same.
 - 50 (circ 40 min) Ls, wh, m x w fus com, 75%; sh, red, 25%; pin-point spotted blk oil stain as above on 5% of frgs.
 - 55 Same, but red sh, 50%; smp washes red.
 - 65 Ls, cr, m to crs x, glauc.
 - 75 Ls, cr, m to crs x. (ls 56-71)
 - 80 Sh, red (71-79).
 - 90 Ls, cr to grn-wh, nod, pis, ool, w 50% frgs w blk, dead oil st; v low, sl vug, foss por; no odor. (blk, dead oil show 79-89).
 - 4202 Sh, br red; washes out.
 - 02 (circ 20 min) Same.
 - 02 (circ 40 min) Ls, pk to cr, f ool, w rare frg w blk oil st.
- CORE NO. 1, 4202-4217'. See core records.
- 17-25 (drlg) Ls, wh & pk, f to m x, w pk ool, 50%; sh, red & dk gr, 50%.
 - 30 Ls, wh, m x, 70%; ss, pk & wh, v f, a, sug, v calc, or sdy ls, 30%.
 - 35 Ss, wh, v f, aa, sug, dns, pt calc, 50%; sh, br red, soft, 50%.
 - 40 Sh, red, v soft.
- TOP SHAWNEE 4239'.
- 44 (circ 40 min) Ls, wh, soft, chalky to m x, sl ps ool, sl por.
 - 50 Ls, wh, soft, chalky to m x, foss, w low foss por; fus common.
 - 55 Ls, wh, f tex, dns, w few fus.
 - 58 Ls, lt gr-wh, v f x, dns. (ls 39-62).
 - 70 Sh, br red, soft.
 - 72 (circ 20 min) Sh, red & grn, fiss.
 - 72 (circ 1 hr) Sltst, red, sug, mica, sl por.
 - 90 Sh, mar & blk, fiss, 70%; sltst, red, 30%.
 - 95 Sltst, red, mica, sug, sl por. (sltst 70-94).
 - 4300 Sh, red, gr & blk, fiss, 70%; ls, wh, m x, 30%.
 - 05 Sh, dk red, grn-gr & blk, fiss.
 - 10 Ls, cr-wh, f to m x, dns.
 - 15 Ls, wh, v f x, sucr, w few pk foss spots.
 - 20 Ls, wh to mar, v f x, sucr, dns. (ls 02-22)
 - 25 Ls, lt gr, pk & cr, v f x, dns, arg, to m x, foss, 70%; sh, red, 30
 - 30 Ls, wh, v f x, & pk, dns, 40%; sh, red & grn-gr, 60%.
 - 35 Ls, cr-gr, dns, 25%; sh, red & gr-blk, 75%; fus common.
 - 40 Ls, lt gr-cr, f x, grainy, v slty, dns, w tr dead HC residue.
 - 45 Ls, cr-gr, v algal, w tr dead HC residue. (ls 36-45).
 - 50 Sh, lt-dk red; tr pk chert.
 - 52 (circ 20 min) Sh, red; ltl pk ls.
 - 52 (circ 40 min) Ls, cr, algal, m x, w abd blk, dead HC residue.
 - 55 Ls, cr-wh, f to m x, w sl por; tr dead, blk HC residue. (ls 50-92)

- 4355 to 4370' Ls, lt gr, cr to bf, dns, lith.
- 75 Ls, cr, m x, dns.
 - 80 Ls, cr-bf, dns, lith; tr blk, dead HC residue.
 - 90 Ls, bf to cr, dns, lith; rare spt'd blk dead oil st.
 - 95 Ls, wh to cr, dns, 70%; sltst, wh, f, sug, dns, 30%; tr blk, dead oil st in ls.
 - 97 (circ 20 min) Sh, red & dk gr, 50%; sltst, wh, calc, 50%; ltl. brn, m x ls w blk, dead oil st.
 - * -97 (circ 40 min) Ss, wh, v f, cr sltst, sug, sl por, w blk, dead, HC residue abd.
 - 4400 Same; ltl wh-cr, dns, lith ls.
 - 05 Sh, red, grn & dk gr, fiss, 75%; sltst, gr-wh, w some blk, dead oil residue, 25%.
 - 10 Sltst, red, mica, dns, 60%; sh, red & dk gr, 40%.
 - 15 Sltst, red, mica, f, dns, 40%; sh, red, 60%.
 - 20 (circ 20 min) Sh, red & grn-gr.
 - * -20 (circ 40 min) Ls, cr-wh, sl ool, w med-low por & perm, w blk dead oil solid when smp wet & cold, but melts when smp heated. No odor, sl fluor ringing blk oil st on ls.
 - 25 Same; 30% of ls frgs stained; no odor. (por & show 19-21).
 - 45 Ls, cr-bf, dns, lith. (ls 19-60).
 - 60 Ls, lt gr, cr, wh to pk, lith.
 - 65 Sltst, grn-wh, sug, sl mica, w sl yel oil stain; v low por & perm.
 - 70 Sh, dk red, grn-gr & blk, fiss.
 - 80 Sh, red.
 - 83 (circ 50 min) Sh, red, slty, w pk ls nodules.
 - 90 Sh, dk red & grn-gr; rare frg of red chalc chert.
 - TOP LANSING 4488'.
 - 94 Ls, yel, pk & cr-wh, dns, v ool; no shows.
 - 94 (circ 50 min) Ls, wh, yel & pk, dns, w red sh ptings; tr fus.
 - 4500 Ls, lt gr-wh, v f x, dns.
 - 05 Ls, wh, v sl ool, dns.
 - 20 Ls, wh, f x, dns, 95%; chert, pk-wh, op, 05%; few fus.
 - 25 Ls, wh, f x, vug, sl por, 60%; sh, red, 40%.
 - 30 Sh, dk red.
 - 35 Ls, wh, f x, vug, sl por, 50%; chert, pk, op, fus, 05%; sh, red, 45
 - 40 Sh, red.
 - 45 Ls, pk, algal or f ool. (ls 38-67)
 - * -50 Ls, wh, v f ool or algal w sl pin-point por; 30% of frgs w brn oil stain & fluor but v low or no por & perm; no odor; show dead blk oil 43-48, porosity slight from 43 to 51.
 - 55 Ls, wh, v f x, dns, suer; tr pk, op, spic chert.
 - 60 Ls, m gr, mar & wh, v dns, arg, 75%; sh, m gr & red, 25%; fus abd.
 - 65 Ls, m gr, v dns, arg, 60%; sh, red & gr, 40%; tr pk chalc chert.
 - 70 Ls, m gr to wh, v f x, dns; fus common.
 - 75 Ls, m gr-brn, v foss, slty, w blk spks, 50%; sltst, gr, v f, 25%; sh, blk, carb, 25%.
 - 80 Sltst, lt gr, v f, v calc, 60%; sh, red & gr, 40%.
 - 85 Ls, lt gr-cr, dns, lith, 40%; sh, red & blk, 60%.
 - 90 Ls, cr-wh, m x, foss, ps ool, dns. (ls starts @ 83).
 - * -92 Ls, cr-wh, m-cr x, foss, w sl foss vug per; rare frg w brn oil st
 - 95 Ls, cr-wh, m x, vug, w sl por; few frgs w brn oil st; no odor.
 - 95 (circ 30 min) Ls, wh, m x, foss, w few fus; no show.
 - 95 (circ 1 hr) Same.
 - DST NO. 2, 4540 to 4595'. See DST records.
 - 4600 Ls, same as above; ltl red sh.

Service Drlg. Co., No. 1 Beeson NE NE NW 8-38-38W, Cheyenne Co., Kans.

- 4600 to 4605' Ls, wh to yel, m x, sl slty, 30%; sh, red & gr, slty, 50%;
 sltst, gr, v f, calc, 20%.
- 10 Sh, red & blk, 60%; sltst, pk-red, v f, calc, 40%.
 - 15 Sh, red, slty, 70%; sltst, red, v f, 30%.
 - 30 Sh, red.
 - 34 (circ 30 min) Sh, red, 70%; ls, cr-bf, ool, w sl por & perm & spt'd brn oil stain.
 - * -34 (circ 50 min) Ls, cr-bf, ool, foss, fus, w m-low por & perm, w 50% w spt'd brn oil stain; v sl oil odor.
 - 40 Same. (ls w m-low por & oil stain 32-42, best 32-36).
 - 40 (circ 20 min) Ls, cr, ool, pis, fus, w m-low por & perm, 25% w spt'd brn oil st.
 - 40 (circ 50 min) Ls, cr-wh, algal, ool, foss, w rare spt'd stain, v low por & perm.
 - 45 Ls, lt gr-wh, dns; some ls as above.
 - 50 Ls, cr-wh, dns, lith.
 - 50 (circ 1 hr) Ls, wh, dns, lith.
- DST No. 3, 4598 to 4650'. See DST records.
- 60 Ls, same, 60%; sh, red & grn-gr, 40%.
 - 63 (circ 50 min) Sh, red, 70%; sltst, pk & wh, mica, 30%.
 - 70 Same.
 - 72 Sh, dk red, 60%; sltst, pk, calc, mica, 40%.
 - 80 Sh, dk red & dk gr.
 - 85 Ls, wh, m x, algal-ool, sl por.
 - 95 Ls, wh, chalky to m x.
- 4700 Sh, red, grn-gr & dk gr, sl slty.
- 05 Same, 70%; ls, cr, m x, ps ool, dns, 30%.
 - 15 Ls, wh to cr, f to m x, dns.
 - 20 Ls, same, 40%; sh, red, 60%.
 - 25 Ls, cr-bf, v ool.
- BASE KANSAS CITY--TOP DES MOINES 4726'.
- 30 Ls, same, 30%; sh, red, w ls nodules, 70%.
 - 40 Sh, red & grn-gr; ltl pk, slty ls.
 - 45 Coralline ls, comp of Chaetetes, w gd por & perm, 80%; chert, pk, coralline, 20%.
 - 50 Sh, red & dk gr.
 - 55 Sh, red & m gr, 50%; ls, lt gr-wh, dns, 30%; chert, pk, grainy, 20%; Cha etetes common.
 - 60 Same, but sh, 70%.
 - 70 Sh, red, grn-gr & dk gr.
 - 80 Sh, red & grn-gr.
 - 81 (circ 30 min) Same; tr cr ool ls.
 - 81 (circ 50 min) Sh, red slty, 60%; ls, pk, nod, v slty, 40%.
 - 85 Same, but ls only 25%.
 - 90 Sh, red & grn-gr.
- 4800 Sh, red & grn-gr, 75%; sltst, pk to wh, mica, calc, 25%.
- 05 Ls, gr to cr, pt ool, w Chaetetes abd; sl por.
 - 10 Ls, m gr, v dns, arg, v f x, 60%; sh, red & m gr, 40%.
 - 20 Ls, v f x, lt gr to wh to cr, v dns, arg, 50%; sh, m gr & red, 50%
 - 25 Ls, m gr, dns, arg, 30%; sh, m gr & blk, 70%.
 - 30 Ls, gr & brn, dns, a rg, 40%; sh, red & m gr, 60%.
 - 35 Sh, red & m gr.
 - 40 Sh, dk red & grn-gr.
 - 45 Ls, cr-gr, dns ps ool.
 - 50 Ls, cr to lt gr, dns, 80%; sh, red & grn-gr, 20%; tr pk chert.
 - 55 Ls, cr-gr, m x, pt ool, dns, 40%; sh, red & m gr, 60%; fus com.

- 4855 to 4860' Ls, cr-wh, pt ool, dns, fus, 70%; sh, 30%.
- 65 Ls, gr, v f x, dns, 30%; sh, red & m'gr, 70%.
- 70 Sh, v blk, carb.
- 75 Ls, gr-brn, m-crs x, v foss, dns, w several spts of oil stain; no por or perm; fus common.
- 80 Ls, cr to brn, m x, foss, 50%; sh, red, dk gr & blk, 50%.
- 90 Ls, cr-wh, f x, soft, chalky, 90%; chert, gr-wh, se transl, spic, mott, 10%.
- 95 Sh, v blk, carb.
- 4900 Sh, blk, carb, m gr & dk red.
- 02 (circ 50 min) Ls, lt gr-wh, v f x, nod, congl, w ls frgs.
- 15 Ls, wh, v f x, dns, 60%; chert, wh, se transl & se op, 10%; sh, dk red & grn-gr, 30%.
- 20 Ls, wh, v f x, dns, 90%; chert, wh, se op w fus, 10%.
- 25 Sh, dk red & grn-gr, w blk ls nod imb.
- 30 Ls, wh, cr & bf, m x & chalky, foss, pt ool.
- 35 Ls, cr-wh, dns, se lith.
- 40 Ls, cr to wh, f x, dns.
- 45 Ls, wh to cr, m x, sl foss, w tr glauc.
- 60 Ls, wh to cr, f to m x; tr pk chert.
- 65 Ls, wh, f tex, w tr pk chert, 80%; sh, red & grn-gr, 20%.
- LOWER PENN SH UNIT (CHEROKEE OR MORROW?) 4962'.
- 75 Sh, red & grn-gr, fiss, flky, w ls nod.
- 80 Ls, wh, f tex, dns, 40%; sh, red & grn-gr, 40%; ss, yel, pk to wh, v limy or sdy ls, 20%.
- 90 Sh, red & grn-gr, 40%; ss, yel, grn to wh, v limy, & m, a, qtzie.
- 5000 Sh, red & grn-gr, 70%; ss, as above, 30%.
- 05 Ls, wh, f tex, dns, 50%; chert, wh to pk, se op, 05%; sh, grn-gr, 35%; ss, as above, 10%.
- 10 Ls, wh, f tex, v dns, 90%; chert, cr-wh & pk, se op, 10%.
- 15 Ls, cr-wh, dns, 50%; sh, 50%.
- 20 Ss, wh, m-f, a, qtzie, sl calc, w low por & perm, 50%; sh, grn-gr.
- 30 Ss, same, 40%; sh, dk red & grn-gr, 60%.
- 45 Ss, wh & red, v f, a, qtzie, glauc, 40%; sh, dk red & grn-gr, 60%.
- 50 Ls, wh, f tex, dns, 40%; sh, red, mar & grn-gr, 60%.
- 55 Ss, yel, f, a, qtzie, 30%; sh, red, mar & grn-gr, 60%.
- 65 Ss, red & yel, m-f, a, qtzie, 30%; sh, br red & grn-gr, 70%.
- 70 Ls, yel, pk & wh, f tex, dns, 40%; chert, pk & yel, se op, 20%; sh, dk red, 40%.
- 75 Sdy ls or limy ss, yel to wh, f tex, w crs, a, yel, sd g imb, 40%; sh, dk red, 60%.
- 80 Sh, dk red & grn-gr.
- 85 Ls, cr & gr-wh, f tex, dns, 60%; sh, grn-gr & gr, 40%.
- 90 Sh, dk mar & grn-gr, 70%; ss, wh, m-f, a, qtzie, 20%; coal, 10%.
- 5120 Sh, red-mar & grn, var, w ltl wh, f, a, qtzie ss.
- 25 Ls, wh, yel & pk, sdy, 30%; sh, mar, red & grn-gr, 70%.
- 30 Sh, mar, red, grn-gr & blk; ltl wh, m-f, a, qtzie ss.
- 35 Sh, same, 70%; ss, grn-gr, f, a, shy, glauc, 30%.
- 40 Sh, blk, fiss, 70%; ss, wh, m to f, a, qtzie, dns, glauc, 30%.
- 45 Sh, blk; cons pyr & coal.
- 60 Sh, ma r, yel, grn & blk, variegated.
- 65 Sh, dk red & grn-gr, fiss.
- 70 Sh, red, grn & blk, fiss; ltl grn, v glauc, v f ss or sltst.
- 90 Ss, v f, lt gr-wh, v glauc, qtzie, dns, sl carb, sug.
- TOP MISSISSIPPIAN (SPRINGFIELD-WARSAW) 5189'.
- 95 Chert, wh to cr, stip, spic, se op, & qtz druse; ltl crs x, cr ls.

- 196 to 5210' Ls, cr-wh, crs x, foss, crin, sl glauc, 90%; chert, cr-wh, v foss, stip, se op, 10%.
- 15 Ls & chert, as above, but chert, 20%; dol, cr-wh, v f x, sucr, trip, 25%.
- 20 Ls, cr-wh, crs x, foss, sl glauc, 90%; chert, cr. & lt gr-wh, foss, mott, 10%.
- 25 Chert, gr-wh, foss, se transl, 20%; ls, cr, sl glauc, crs x, 60%; dol, cr-bf, v f x, sucr, trip, 20%.
- 30 Same; some pk, se transl chert.
- 35 Chert, gr, se op-se transl, stip, 20%; dol, gr & cr, v f x, arg, 80%.

TOP BURLINGTON-KEOKUK 5232'.

- 40 Chert, lt gr-wh, op, trip, 30%; dol, cr, lt gr-wh, v f x, sucr, 70
- 45 Chert, wh, op & gr-wh, se op, v spic, 40%; dol, cr-wh, f x, sucr, 60%.
- 60 Chert, wh, op & gr-wh, se op, spic, 40%; dol, cr, v f x, sucr, 60%
- 65 Chert, wh, op & gr, v spic, v glauc, 50%; dol, cr, v f x, v glauc, w med por, 50%.

TOP KINDERHOOK 5263'.

- 70 Ls, bf to brn, f x, dns, w few blk sh partings.
- 75 Ls, bf to brn, ps ool, sl por; tr brn, se op chert.
- 80 Ls, bf dns, lith; tr chert as above.
- 85 Ls, cr, dns, lith; tr wh, qtzose chert.
- 90 Ls, cr to bf, lith, 95%; chert, brn, qtzose, 05%.
- 95 Ls, bf to brn, dns, f ps ool; ltl cr-wh, qtzose chert.
- 5300 Ls, cr, bf to brn, dns, lith; tr m-crs, r sd g imb.
- 15 Ls, bf, dns, algal or ps ool; sl vug por.
- 20 Same; some brn se lith ls.
- 30 Ls, lt gr to wh, v ool, some w sl vug por.
- 45 Ls, cr-wh, m x & v ool, sl per.
- 55 Ls, cr-wh, v ool, dns.
- 60 Ls, as above, 60%; dol, dk gr & brn, m-f x, w m vug por, 40%.
- 75 Dol, dk gr, f x, w med vug por. (lost mud @ 5360').

TOP ARBUCKLE (BONNETERRE) 5375'.

- 80 Dol, lt gr to wh, m to crs x, f glauc, v sdy, w m, r sd g imb.
- 85 Dol, m gr to wh, m to crs x, v glauc, sdy, w med vug por.
- 90 Dol, m to lt gr, v sdy, v glauc, w m to gd por & perm; m r sd g imb.
- 92 (circ $\frac{1}{2}$ hr) Dol, gr-wh, m x, sdy, v glauc, w vug por.
- 92 (circ 1 hr) Same. (lost circ when ready to Schlumb).
- 5392' T.D., D & A in Arbuckle formation, March 30, 1952.

CORE RECORD

- Core No. 1, 4202 to 4217'. Rec 13.3'. No stain, odor or show of oil or gas.
- Top 1.5' Sh, red & grn, soft, crumbly, w wh & pk ls nodules imbedded.
- Bot 11.8' Ls, wh to grn-wh & pk, dns, se lith to m x; all brecciated & filled with red & grn shale partings; all dns w no por or perm. No stain, odor or shows.

Karl M. Buehler, geologist
March 30, 1952.