

Qui

$$\left. \begin{array}{l} \text{Sw } 1/4 \\ \text{1/2 E } 1/4 \\ \text{S } 1/2 \text{ S } 1/2 \text{ NW } 1/4 \end{array} \right\} 280$$

$$- \text{GSP Sec } 4$$

$$+ \text{S } 1/2 \text{ Sw } 1/4 = \text{Sec } 3 \quad 80$$

$$\text{Total } 360 \text{ ac}$$

Contractor: Slawson Drlg.
Drilling Commenced: December 13, 1982
Drilling Completed: December 23, 1982
Surface Casing: 8 5/8" @ 395'

Elevations: 1131 G.L. 1138 K.B.

Electric Logging Program: ✓ Schlumberger
Dual Induction-SFL
Compensated Neutron ✓
Litho Density
Borehole Compensated Sonic Log
Computer Processed Log

Samples: Collected from 1620' to 4574'
Quality: fair to good

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4-35-1W

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Formations	Log Tops	Sample Tops
Neva	1199 (-61)	1204 (-66)
Tarkio	1714 (-576)	1717 (-579)
Topeka	2080 (-942)	2082 (-944)
Heebner	2482 (-1344)	2492 (-1354)
Iatan	2816 (-1678)	2821 (-1683)
Layton	3272 (-2134)	3293 (-2155)
Kansas City	3451 (-2313)	3480 (-2342)
Base Kansas City	3561 (-2423)	3576 (-2438)
Marmaton	3634 (-2496)	3644 (-2506)
Cherokee	3778 (-2640)	3788 (-2630)
Mississippian	4003 (-2865)	4013 (-2875)
Kinderhook	4288 (-3150)	4296 (-3158)
Simpson	4358 (-3220)	-4368 (-3230)
Arbuckle	4492 (-3354)	-4504 (-3366)
RTD	4574	4574
LTD	4565	4565

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Sample Descriptions

All samples, tops and tests are correlated to electric log tops.

Circulated for samples at: 3122, 2766, 2876, 2916, 3293, 3336, 3784,
3994, 4011, 4021, 4041, 4102, 4292, 4356, 4365, 4505, 4565.

1600-1714 Shale, varicolored (red, green, gray), calcareous,
pyritic. Interbedded thin sandstones, light gray,
medium grained, very micaceous, fair porosity, no show.

Tarkio 1714 (-576)

1714-1744 Limestone, brown, coarsely crystalline, slightly dolo-
mitic, poor porosity grading to limestone, pinkish tan
oolitic, fossiliferous, slightly chalky, fair porosity,
no show.

1744-1783 Shale, gray, micaceous, slightly silty. Interbedded sand-
stones, light gray, fine grained, poorly sorted, micace-
ous, argillaceous, poor to fair porosity, no show

1783-1826 Alternating limestones and shales; Limestone, gray, fine
crystalline, slightly sucrosic, very argillaceous in part,
micaceous, fossiliferous, poor to fair porosity, no show
Shale, varicolored (red, gray, green) mottled in part,
fossiliferous, shale clast bearing.

1826-1830 Limestone, light tan to cream, medium to coarsely crystal-
line, pissolitic, very fossiliferous, poor porosity, no show.

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1830-1901 Shale, varicolored (red, green, gray-green) calcareous, micaceous, fossiliferous in part.

1901-1912 Limestone, cream, fine crystalline, slightly fossiliferous, dolomitic in part, poor to fair porosity, no show.

1912-2027 Alternating limestone and shale; Limestone, cream, fine crystalline, slightly fossiliferous, arenaceous, poor to fair porosity, no show. Shale, varicolored (red, gray), micaceous, silty.

2027-2060 Sandstone, white to light gray, fine grained, micaceous, poor to fair porosity, no show.

2060-2080 Shale, varicolored (red, gray-green, gray) mottled in part, calcareous, micaceous.

Topeka 2080 (-942)

2080-2104 Limestone, light gray, very fine crystalline, very fossiliferous, slightly arenaceous, dense, poor porosity, slight mineral fluorescence, no show.

2104-2128 Limestone, light gray, fine to medium crystalline, oolitic in part, slightly dolomitic, chalky in part, slightly vuggy, fair to good porosity, conchoidal in part, mineral fluorescence, no show.

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- 2128-2201 Limestone as above, poor to fair porosity, no show, circulated for samples at 2132 for 30 minutes.
- 2201-2264 Limestone as above, thin shales, varicolored (red, green, black)
- 2264-2340 Limestone, white to cream, fine to medium crystalline, slightly fossiliferous, pinpoint vugs, slightly cherty: opaque, slightly fossilifeours; poor to fair porosity, no show; with shale as above, fossiliferous in part, mottled.
- 2340-2462 Shale, med gray, blocky, slightly micaceous, slightly calcareous with limestone as above. Grading to varicolored shale (red, green, gray) slightly fossiliferous, calcareous.
- ⁶
2462-2489 Limestone, brown, very fine crystalline, fossiliferous, dense, poor porosity, no show.
- ⁷
2464-2476 Shale, med gray, calcareous, blocky.
- 2476-2482 Limestone, medium gray to light brown, medium crystalline, very fossiliferous (fusulinids), poor porosity, no show.

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Heebner 2482 (-1344)

- 2482-2489 Shale, dark gray to black, micaceous, carbonaceous, blockly.
- 2489-2552 Alternating shale and limestone; shale, varicolored (gray, gray-green, red) slightly fossiliferous, silty. Limestone, cream to brown, fine to medium crystalline, fossiliferous, argillaceous, poor porosity, no show.
- 2552-2581 Shale, as above, with dolomite, white to cream, very fine crystalline, fossiliferous, chalky in part, poor porosity, no show.
- 2581-2604 Sandstone, white, fine grained, slightly fossiliferous, pyritic, fair to good porosity, no show.
- 2604-2618 Shale, medium gray, slightly sandy, laminated in part.
- 2618-34 Sandstone, as above, increasingly argillaceous, fair to good, porosity, no show.
- 2634-2658 Shale, as above.
- 2658-2678 Limestone, cream, medium to coarsely crystalline, very fossiliferous, arenaceous in part, poor porosity, no show.

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2678-2684 Shale, as above.

2684-2692 Limestone, brown, medium crystalline, poor porosity,
no show.

2692-2704 Sandstone, as above, good porosity, no show.

2704-2720 Shale, medium to dark gray, micaceous, silty, with sand-
stone, as above.

2720-2725 Limestone, brown, medium to coarsely crystalline, fossi-
liferous, poor porosity, no show.

2725-2816 Shale, medium gray, silty, micaceous, arenaceous in part,
circulated for samples at 2766 for 30 minutes.

Iatan 2816 (-1678)

2816-2819 Limestone, brown, medium crystalline, fossiliferous, poor
porosity, no show.

2819-2901 Siltstone and shale, siltstone, white, micaceous, poor po-
rosity. Shale, medium gray to greenish gray, blocky, cir-
culated for samples at 2876 for 30 minutes.

2901-2932 Sandstone, white to light gray, fine grained, micaceous, lam-
inated in part, fair to good porosity, no show, circulated
for samples at 2916 for 30 minutes.

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2932-2938 Shale, as above.

³⁸
2928-2976 Sandstone, as above, fair to good porosity, no show.

2976-3006 Limestone, tan fine to medium crystalline, slightly dolomitic, poor porosity, no show.

3006-3029 Dolomite, brown, medium crystalline, very argillaceous, poor porosity, no show.

3029-3262 Shale, medium to dark gray, micaceous, with thin sandstone lenses, light gray, very fine grained micaceous, poor porosity, no show.

3262-3266 Lignite.

3266-3272 Shale, as above

Layton 3272 (-2134)

3272-3300 Sandstone, white to light gray, slightly glauconitic, slightly micaceous, gilsonite bearing, dolomitic, poor to good porosity, faint fluorescence, no stain, no cut, no odor, circulated for samples at 3293 for 45 minutes.

3300-3315 Shale, varicolored (red, green-gray, and medium gray), gummy, shale intraclast bearing.

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3315-3351 *sl. dolomitic* Sandstone, light gray, fine to medium grained, glauconitic, gilsonite bearing, micaceous, poor to good porosity. Show of free oil, fair fluorescence, poor cut, possible light stain, no odor, circulated for samples at 3336 for 60 minutes.

3351-3370 Shale, green to medium gray slightly micaceous, pyritic in part.

3370-3410 Dolomite, tan to cream, fine to coarsely crystalline, fossiliferous, very argillaceous, slightly cherty, slightly oolitic, poor porosity, no show.

3410-3451 Shale, medium gray, micaceous, thin limestone streaks; gray, fine crystalline, argillaceous.

Kansas City 3451 (-2313)

3451-3469 *extensive interbedding* Limestone, tan to light brown, oolitic, slightly chalky in part, slightly fossiliferous, slightly dolomitic, fair to good oomoldic porosity, poor to fair intercrystalline porosity, good mineral fluorescence, no cut, no stain, possible light odor.

3469-3490 Limestone, tan to light gray, fine crystalline, chalky, slightly fossiliferous, poor to fair porosity, no show.

3490-3527 Shale, light to medium gray, micaceous, slightly carbonaceous, silty.

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3527-3561 Alternating limestones and shales. Limestones, tan, fine crystalline, dark gray to white chert, fossiliferous, poor porosity, no show, with shale, as above.

Base Kansas City 3561' (-2423')

3561-3567 Shale, as above.

✓ 3567-3592 Sandstone, light green, fine grained, glauconitic, very fossiliferous (crinoids), argillaceous, fair porosity, weak fluorescence, poor cut, no odor, no free oil.

3592-3634 Shale, light gray, silty, micaceous, slightly arenaceous in part.

Marmaton 3634 (-2496)

3634-3644 Limestone, white to tan, fine to medium crystalline, chalky in part, oolitic in part, poor porosity, mineral fluorescence no cut.

3644-3649 Shale, dark gray, slightly carbonaceous, silty.

⁴⁹
3694-3673 Limestone, tan to cream, fine crystalline, fossiliferous in part, poor porosity, no show. Some shale stringers.

Lenox

3673-84 Shale, gray, slightly carbonaceous, slightly calcareous.

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- Altener:
- 3684-3696 Limestone, tan, fine crystalline, slightly chalky, poor porosity, No show.
- 3696-3705 Limestone, as above, chalky, fair porosity, no show.
- 3705-3711 Shale, as above.
- 3711-3720 Limestone, cream, fine to medium crystalline, slightly fossiliferous, poor porosity, no show.
- 3720-3730 Shale, medium gray to black, carbonaceous, silty, slightly calcareous.
- 3730-3744 Limestone, as above, poor porosity, no show.
- Pepper:
- 3744-3750 Limestone, cream, fine to medium crystalline, slightly fossiliferous, poor porosity, possible fractures, good fluorescence along fractures, very weak cut, possible light odor no free oil.
- 3750-3756 Limestone, cream to light brown, fine crystalline, very argillaceous, fossiliferous in part, interbedded with shale, as above.
- Ft. Scott:
- 3764-3778 Limestone, light brown to medium gray, fine crystalline, slightly fossiliferous, argillaceous, poor porosity, no show, interbedded with gray shale, as above.

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Cherokee 3778 (-2640)

- 3778-3782 Shale, black, carbonaceous, silty, hard.
- 3782-3851 Interbedded shale and limestone. Shale, medium to dark gray and green, micaceous, silty, calcareous; Limestone, cream to light brown, fine crystalline, fossiliferous, argillaceous, poor to fair porosity, slight mineral fluorescence in part, no show. Circulated for samples at 3784 for 45 minutes.
- 3851-3889 Interbedded shale, sandstone and limestone. Shale, medium to dark gray, fossiliferous in part, calcareous; Sandstone medium gray, fine grained, micaceous, argillaceous, heavy mineral bearing, poor to fair porosity, no show; Limestone, as above.
- 3889-3958 Interbedded shale, siltstone, sandstone and limestone. Shale, as above; siltstone, green, micaceous, argillaceous, no show; sandstone, as above; limestone, medium gray to tan, fine to medium crystalline, poor porosity, no show.
- 3958-4003 Interbedded shale, limestone and sandstone. Shale, varicolored, green, red and gray, slightly calcareous, micaceous, silty; limestone, tan, fine crystalline, cherty: White to green; argillaceous, poor porosity, no show; Sandstone, medium grained, loose sand, no show, circulated for samples at 3994 for 45 minutes.

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Mississippian 4003 (-2865)

4003-4010 Chert, white to tan, fossiliferous, tripolitic in part,
→ weathered, poor to good porosity, show of free oil,
spotted stain and saturation, good fluorescence, weak
cut, faint odor, circulated for samples at 4011 fo 60
minutes.

DST #1 4006-4011
30-60-30-60
Rec. 3' oil specked mud
FP 1-4/2-2
SIP 1310/114 ←
HH 1999/1894

4010-4020 Chert, white to cream, tripolitic in part, non weathered
in part, poor to good porosity, show of free oil, spotted
stain and saturation, good fluorescence, weak to good stream-
ing cut, good odor, circulated for samples at 4021 for 60
minutes.

DST #2 4007-4021
30-60-60-120
Rec. 65' O&SGCM ←
FP 2-3/4-4
SIP 863/1133
HH 2020/1915

4020-4042 Chert, white to cream, mottled, fossiliferous, with thin
limestone streaks, white, fine crystalline, oolitic, slightly
fossiliferous, poor to fair porosity, slight fluorescence, no
cut, no odor. Circulated for samples at 4041 for 45 minutes.

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17' Chert
22' Limestone
5' shale
5' Δ
23' Dolo
10' Δ LS
11' Δ Dolo
24' Dolo Δ
36' Δ Dolo
8' shale

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- 4042-4092 Limestone, cream, fine crystalline, slightly cherty; non weathered, slightly dolomitic, poor porosity, no show, with some shale, light gray, light brown, reddish brown, mottled, silty, glauconitic in part.
- 4092-4126 Chert, white to cream, mottled, tripolitic in part, wheathered chert, poor to good porosity, slight fluoresece, no cut, no odor, no stain, circulated for samples at 4102 for 45 minutes.
- 4126-4138 Chert, white to cream and light brown. Translucent, fresh, poor porosity, no show.
- 4138-4163 Limestone, light to medium brown, sucrosic, slightly glauconitic, slightly silicious, slightly cherty, pin point vugs; slightly dolomitic, poor porosity, no show.
- 4163-4168 Chert, white to tan, weathered, vuggy, fair porosity, fair fluoresece, weak cut, slight show free oil, slight odor.
- 4168-4191 Dolomite, brown, sucrosic, silicious, cherty, dense, poor porosity, no show.
- 4191-4201 Limestone, tan to light brown, sucrosic, dolomitic, slightly chalky, silicious, cherty, pin point vugs, fair porosity, no show.
- 4201-4212 Dolomite, tan to cream, sucrosic, slightly glauconitic, very cherty: Translucent in part, fossilifeous (sponge spicules), poor porosity, no show.

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- 4212-4238 Chert, medium brown, slightly dolomitic, poor porosity with shale, light to medium gray, silty, hard, blocky.
- 4238-4274 Dolomite, tan to light gray, sucrosic, silicious, very glauconitic, cherty: translucent, very fossiliferous (sponge spicules); pin point vugs, poor to fair porosity, no show.
- 4274-4282 Shale, varicolored, red, green-gray and medium gray to dark gray, discontinuously laminated, slightly dolomitic, pyritic.
- 4282-4288 Dolomite, tan, fine crystalline, slightly sucrosic, silicious, fossiliferous (silicious sponge spicules), very dense, poor porosity, no show.
- Kinderhook 4288 (-3150)
- 4288-4326 Shale, Med. to dark gray, silty, blocky, circulated for samples at 4292 for 45 minutes.
- 4326-4358 Shale, dark gray to black, carbonaceous, pyritic, spore bearing, blocky. Circulated for samples at 4356 for 60 minutes.

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Simpson 4385 (-3220)

4358-4362 Sandstone, white to light gray, fine grained, well rounded, moderately well sorted, silica cemented,, slightly dolomitic, poor porosity, slight fluorescence, no cut.

4362-4365 Sandstone, as above, fair to good porosity, slight show free oil, good fluorescence in part, weak cut, faint odor, slight stain, circulated for samples at 4365 for 60 minutes.

DST #3 4285-4365
 30-60-30-60
 Red. 20'mud + 62'muddy SW +
 186' GCSW
 FP 41-266/277-359
 SIP 1669/1669
 HH 2145/2145

4365-4375 Sandstone, as above, poor porosity, slight stain in part, weak fluorescence in part, poor cut, no free oil, slight odor.

4375-4404 Sandstone, as above, fair porosity, slight stain in part, slight fluorescence in part, slight odor. ✓

4404-4423 Shale, green, gray green and light gray, silty, sandy in part, blocky.

4423-4435 Dolomite, cream, fine to medium crystalline, argillaceous, very cherty: white to yellow; poor porosity, no show.

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4435-4446 Shale, as above, with Limestone, tan, fine crystalline, slightly cherty, slightly dolomitic, poor porosity, no show.

4446-4482 Interbedded sandstone and shale, Sandstone, white to cream, fine grained, well rounded moderately well sorted, slightly glauconitic, slightly phosphatic, argillaceous in part, poor to good porosity, no show; shale, as above.

4482-4492 Sandstone, medium grained, loose sand grains, well rounded, no show, with some shale as above, with dolomite pebbles.

Arbuckle 4492 (-3354)

4492-4512 Dolomite, cream, oolitic, sucrosic in part, cherty, white to translucent in part, poor to fair porosity, slight mineral fluorescence, no cut, circulated for samples at 4505 for 60 minutes.

4512-4532 Dolomite, tan to cream, fine crystalline, cherty; as above, sucrosic in part, dolomite filling vugs, poor porosity, no show, interbedded with shale, med. gray, blocky, and sandstone, white to cream, fine grained, well rounded, dolomitic, poor porosity, no show.

4532-4560 Dolomite, cream, fine to medium crystalline, sucrosic, cherty as above, sandy in part, slight vuggy porosity in part, poor to fair porosity, no show.

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4560-4565 Dolomite, cream, oolitic, oomoldic porosity in part, fair to good porosity no show; circulated for samples at 4565 for 60 minutes.

Report Submitted By,

Richard Robinson Geologist
Anne Kremer Geologist

SB

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