

well file

CSO Hess "A" #1
 SE Walnut Area
 SE, SW, NW Section 33-28S-22E
 Elev. 958'
 Crawford County, Kansas

CH #1

- 0-10 - Top s il.
 10-75 - Shale, gray with very minor siltstone streaks.
 75-125 - "Pawnee Ls" - limestone, lt. gray-gray, dense w/only minor shale breaks.
 125 - Coal
 126-150 - Dk. gray shale, slight fossiliferous, fissile w/minor siltstone.
 150-175 - Gray-green claystone & siltstone, bentonitic or kaolinitic (?).
 175-180 - Gray-green fine grained sandstone, slight porous (at 12%) mica flakes common; no oil saturation.
 180-195 - Dk. gray fissile shale and five grained gray-tan sandstone lenses w/minor carbonaceous material and mica - appears non-porous (@5%).
 195-230 - "Ft. Scott Ls" - light gray dense limestone w/coal breaks @216' and 227'.
 230-340 - Shale, dk. gray predominates w/minor siltstone lenses and occasionally very thin beds of dense lt. gray limestone (1'). Coal break @ 330'.
 340-353 - Claystone, gray-green w/minor siltstone & fine grained sandstone.
 353-355 - Sandstone, light gray-green, fine and minor medium grained. Contains mica and is slight carbonaceous; mod. porosity (12-15%).

Cored 355 to 369'. (Upper Bartlesville Sandstone?)

Sandstone, fine & some med. grained from 355 to 361'. Low angle trough cross-bedding w/minor ripple laminations near top. Occasional thin claystone break. 361-369. Shale w/interlaminated siltstone and fine grained sandstone and coal break @ 360'.

- 370-390 - Claystone, lt. gray-green, and gray w/minor siltstone.
 390-395 - Fine grained sandstone, occasional medium grains becoming oil saturated near base.
 396 - Coal break.

Cored 397-409 (Lower Bartlesville Sandstone?)

Sandstone, overall lithology fines upward, from med. and occ. coarse grained @ base to fine grained & minor siltstone @ top. Grains are subangular to subrounded. Good oil saturation - bleeding from portions of core and small amount present in the pits. Best saturation (bleeding) from 400-403, good saturation (bleeding) from 403 to 405; 405.7-406.3, and slight bleeding from 397'. Sedimentary structures - medium scale trough cross-bedding prominent w/dk. conc. along cross-bedding planes. Dip from 15 to 35° (medium to high angle); set thicknesses from 1/2 to 1-1/2'. Charcoal wood fragments locally abundant, especially concentrated along cross-bed planes. Clay galls locally

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common, esp. @ 406'. Porosity - good - 15-18% @ base - 15% from middle to 3975, fair @ top, base of sandstone @ 407.5 - shale (claystone) below.

410-450 - Shale, dk. gray and fissile.

450-470 - Claystone, gray-green w/minor siltstone and occ. very thin sandstone beds.

470-510 - Shale, dk. gray w/minor gray-green siltstone.

510-520 - Claystone, gray-green w/minor siltstone.

520-569 - Shale, dk. gray w/minor siltstone.

569-571 - Sandstone, fine and occ. medium grained, w/thin shale break. Good oil saturation.

571-638 - Shale, drk. gray w/very minor siltstone.

638-639 - Pyritic shale.

639 (TD) - Mississippian - limestone, light gray, dense.

Gary Flesch, Geologist