

CITIES SERVICE OIL COMPANY
 #2 Rutherford A - TWIN
 C NW Section 4-28S-24E
 Crawford County, Kansas

Core Hole #20

Contractor: Exploration Inc.
 GL Elev.: 974 T.D. 292
 Drlg. Comm.: 9-11-74
 Drlg. Comp.: 9-13-74



- 0-2 - Top soil, clay.
- 2-8 - Ls, tan-brown, mottled, fine-coarse xln, very poor porosity, fossil, no shows.
- 8-40 - Sh, dark gray-black, slightly silty, w/thin streaks of ls, fossil, pelletal, fine xln, no shows.
- 40-50 - Sh, light gray, soft.
- 50-78 - Sh, dark gray-gray, silty, mica w/small particles of black flaky dead oil, pyrite present.
- 78-94 - Ls, brown-tan, mottled, fine-coarse, xln, poor porosity, no shows. Fossil (cork, bryozowns, shell frag.).
- 94-96 - Sh, black pyritic and coal.
- 96-98 - Sh, dark gray-gray, slightly silty, pyritic.
- 98-105 - Ls, brown-tan, fossil, very fine xln, very poor porosity, no shows.
- 105-106 - Sh, black-dark gray.
- 106-108 - Ls, brown, fine xln, silty, very poor porosity, no show.
- 108-110 - Sh, black-dark gray, pyritic.
- 110-115 - Sd, fine grain, light gray, silty, mica, pyritic poor porosity, no show.
- 115-190 - Sh, dark gray, silty to sandy, very fine grain, mica, w/particles of dead flaky oil, poor porosity, no shows.
- 190-200 - Sh, gray, slightly silty.
- 200-208 - Sh, black, w/white fossil ls particles, and thin partings of silty ls, brown, fine xln, poor porosity, no shows, pyritic.
- 208-210 - Ls, brown-tan mottled w/white fossil particles poor porosity, fine medium xln, no shows.
- 210-212 - Sh, black, pyritic.
- 212-216 - Ls, brown-tan mottled, w/white fossil particles, fine xln, poor porosity, no shows.
- 216-224 - Sh, black-dark gray slightly silty, pyritic.
- 224-226 - Ls, brown-tan, mottled, fine xln, very poor porosity, no shows.
- 226-230 - Sh, black, dense, pyritic.
- 230-242 - Sandy, silty shale, light gray-gray, fine grain, mica, poor porosity, no shows.

CORE #1

- 242-255 - Rec. = 12.5 ft.
- 242-246.75 - Sh, silty-sandy, gray-dark gray, very poor porosity, mica, no shows.



- 246.75-247.5 - Sd, brown to tan, very fine grain, silty, mica, w/thin streaks of dark gray shale, poor porosity, faint oil odor no show.
- 247.5-249.75 - Sh, dark gray w/streaks of brown fine grain sand, poor porosity no shows, also bleeding salt water.
- 249.75-254.5 - Sd, fine-medium grain, brown-light brown, mica, poor porosity, no shows, faint oil odor, core saturated w/salt water.

Trip and Ream

CORE #2

- 256-260 - Rec. 4 ft.
- 256-256.75 - Sd, fine grain silty, brown, mica, w/thin laminations of dark gray-black shale, core bleeding salt water, very poor porosity no shows, faint oil odor.
- 256.75-257.25 - Sh, dark gray, silty, mica.
- 257.25-260 - Sd, fine-medium grain, brown, mica, silty, bleeding and saturated w/salt water, no shows, faint oil odor, poor porosity.

Trip and Ream

CORE #3

- 260-272 - Rec. 12 ft.
- 260-261.5 - Sd, brown-light brown, fine-medium grain, mica, silty, poor porosity, saturated w/salt water, strong oil odor, no shows.
- 261.5-265 - Sh, dark gray-gray, mica, silty, w/laminations of sand, brown, fine grain, faint oil odor, poor porosity, no shows, also interclasts of tan silty shale.
- 265-268.5 - Sd, brown, fine grain, silty, mica, w/particles of dead flaky oil, poor porosity, no shows, bleeding salt water.
- 268.5-272 - Sd, brown-black, silty, mica, fine grain w/abundant dead flaky oil, poor porosity, no shows, interclasts of tan, silty, shale and salt water bleeding from core.

CORE #4

- 272-280 - Rec. 7.6 ft.
- 272-272.5 - Sh, dark gray, silty.
- 272.5-273.5 - Sd, light brown-tan, w/thin laminations of dead flaky oil and tarry oil, strong oil odor, poor porosity, very fine grain, silty, mica.
- 273.5-279.5 - Sd, tan-brown, mica, fine grain, w/particles of dead flaky oil, poor porosity, no shows, bleeding salt water.

CORE #5

- 280-292 - Rec. 12 ft.
- 280-283.5 - Sd, brown, fine grain, mica, silty, w/particles of dead flaky oil, very poor porosity, no shows.
- 283.5-283.6 - Sh, gray, silty.
- 283.6-285.5 - Sd, fine grain, silty, mica, brown, w.particles of dead flaky oil and some traces of tarry oil, faint oil odor, and bleeding of water. Also interclasts of tan silty shale in lower portion.
- 285.5-286 - Coal seam.
- 286-287.5 - Sd, brown, silty, mica, w/particles of black dead flaky oil, poor porosity, faint oil odor. Saturated w/water. No shows.
- 287.5-290.75 - Sd, very fine grain, silty, mica, shaly, w/particles of dead flaky oil, interclasts of tan-brown silty shale, streaks of coal and black shale. Poor porosity, no shows, faint oil odor pyritic.

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290.75-292 - Sd, silty, shaly, mica, very fine grain, very poor porosity,
light brown, interclasts of tan, gray-brown shale, silty,
w/abundant pyrite and some coal streaks, no shows, no odor.

T.D. - 292		
Log Depth:	SP	- 289
	Resistivity	- 290
	GR	- 291



Mark York, Geologist