

Geological Report

Computer Inventoried

OXY USA, INC.
 Chesney "A" No. 231
 1320' FSL, 1310' FEL
 Sec. 21-T25S-R5E
 Butler Co., Kansas
 El Dorado Field
 AP1 #15-015-23416

Contractor: Allen Drilling Co., Rig #3.

Commenced: 7:30 PM August 22, 1994.

Reached R.T.D. 2378' at 8 AM August 26, 1994.

Completed:

Elevations: K.B. 1393', G.L. 1388'

Casing: Surface-8 5/8" at 241' with 200 sacks cement.

Production: 5 1/2" at 2376' with 275 sacks cement.

Logging Program: Cased hole log.

Testing Program: None.

Samples: 10' wet and dry from 500' to 700'; 10' dry from 700' to 1350'; 10' wet and dry from 1350' to 2350'; 5' wet and dry from 2350' to 2378'.

Total Depth: 2378 -985.

Drilling Time: One minute from 500' to 2378'.

Geologist: Herbert R. Johnson

Vertical Deviation Surveys

1/2	degree	at	242'
1/2	"	"	764'
3/4	"	"	1255'
1	"	"	1778'
3/4	"	"	2378'

Formation Tops

Admire	609 +784
Burlingame	762 +631
White Cloud	862 +531
Topeka	900 +493
Oread	1331 + 62
Heebner	1370 + 23
Toronto	1382 + 11
Lansing	1624 -231
Base Lansing	1767 -374
Kansas City	1919 -526
Base Kansas City	2076 -683
Checkerboard	2146 -753
Hepler Sand	2160 -767
Altamont	2195 -802
Pawnee	2232 -839
Cherokee	2275 -882
Chert Conglomerate	2358 -965
Arbuckle	2374 -981
R.T.D.	2378 -985

STATE CORPORATION COMMISSION

DEC 16 1994

CONSERVATION DIVISION
 WICHITA, KANSAS

Sample Description

- 500-581 Interbedded limestone and shale, NS.
581-590 Sandstone, white, gray, very fine grained, friable, poor to fair porosity with trace stain and fluorescence.
590-600 Shale, gray.
600-602 Limestone, white, fine crystalline, dense.
602-609 Shale, gray, green.

Admire Sand 609 +784

- 609-627 Sandstone, gray, tan, very fine grained, friable, poor to fair porosity, stain and fluorescence. Sample catcher noted chemical odor, possibly polymer.
627-630 Shale, gray, silty.

Circulated for samples 10 minutes at 630'.

- 630-635 Shale, gray, green.
635-648 Sandstone, white, gray, very fine grained, friable, poor to fair porosity, well stained, fluorescence, fair show free oil.
648-650 Limestone, white, fine crystalline, dense.
650-658 Sandstone, white, very fine grained, silty, poor porosity, trace stain and fluorescence.
658-673 Shale, gray.
673-762 Interbedded limestone and shale, NS.

Burlingame 762 +631

- 762-776 Limestone, white, cream, fine crystalline, dense.
776-782 Limestone, white, cream, vugular, NS.
782-800 Limestone, white, fine crystalline, dense.
800-809 Shale, gray, green.
809-813 Limestone, white, fine crystalline, dense.
813-862 Interbedded limestone and shale, NS.

White, Cloud 862 +531

- 862-870 Sandstone, gray, very fine grained, poor porosity, light stain, fluorescence, trace bleeding oil.
870-890 Siltstone, gray.
890-900 Shale, gray, silty.

Topeka 900 +493

- 900-960 Limestone, gray, grayish brown, fine crystalline, dense.
960-966 Shale, gray, grayish green.
966-970 Limestone, white, fine crystalline, dense.
970-985 Sandstone, gray, very fine grained, micaceous, poor porosity, NS.
985-1000 Sandstone, AA with interbedded gray shale.
1000-1020 Shale, gray, pyritic.
1020-1030 Limestone, white, fine crystalline, chalky, poor to fair porosity, trace stain.
1030-1056 Limestone, white, fine crystalline, chalky, dense.
1056-1132 Interbedded shale and limestone, NS.
1132-1142 Sandstone, white, fine crystalline, calcareous cement, dense, trace poor porosity with stain.

1142-1155 Limestone, tan, fine crystalline, dense.
1155-1165 Shale, gray.
1165-1178 Limestone, tan, fine crystalline, fossiliferous,
chalky, poor porosity, trace stain and fluorescence.
1178-1331 Interbedded limestone and shale, NS.

Oread 1331 +62

1331-1370 Limestone, tan, cream, fine crystalline, chalky, dense.

Heebner 1370 +23

1370-1373 Shale, black, carbonaceous.

1373-1375 Limestone, brownish gray, fine crystalline, dense.

1375-1382 Shale, gray.

Toronto 1382 +11

1382-1404 Limestone, tan, fine crystalline, trace poor porosity,
trace fluorescence.

1404-1465 Shale, gray with thinly interbedded gray, tan limestone.

1465-1470 Limestone, tan, fine crystalline, dense.

1470-1500 Shale, gray, sandy, grading to sandstone, gray, very
fine grained, poor porosity, NS.

1500-1540 Shale, gray.

1540-1543 Sandstone, white, gray, very fine grained, poor por-
osity, light stain and fluorescence.

1543-1549 Limestone, tan, reddish brown, fine crystalline, dense,
fluorescence.

1549-1570 Sandstone, gray, very fine grained, dense.

1570-1573 Sandstone, tan, very fine grained, friable, poor por-
osity with stain and fluorescence.

1573-1578 Limestone, cream, tan, fine crystalline, dense.

1578-1600 Shale, gray, sandy.

1600-1624 Shale, gray.

Lansing 1624 -231

1624-1630 Limestone, white, fine crystalline, poor porosity
with stain and fluorescence (70%).

1630-1649 Limestone, off white, buff, fine crystalline, dense,
trace fluorescence.

1649-1656 Shale, gray.

1656-1665 Limestone, cream, off white, fine crystalline, trace
stain, fluorescence.

1665-1676 Limestone, buff, fine crystalline, dense; trace chert,
white, gray.

1676-1688 Limestone, tan, brown, fine crystalline, oolitic, fair
to good porosity, well saturated, fluorescence, good
odor, trace free oil.

1688-1700 Limestone, brown, fine crystalline, poor to fair
porosity, well stained, strong odor, trace free oil.

1700-1767 Limestone, off white, tan, buff, fine crystalline,
dense.

Base Lansing 1767 -374

1767-1919 Shale, gray.

Kansas City 1919 -526

- 1919-1925 Limestone, off white, gray, fine crystalline, dense.
1926-1938 Limestone, tan, fine crystalline, 30% poor porosity with stain and fluorescence, fair odor.
1938-1950 Limestone, white, cream, tan, fine crystalline, partly oolitic, dense.
1950-1964 Limestone, tan, fine crystalline, 20% poor porosity with stain and fluorescence, good odor.
1964-1974 Limestone, white, tan, fine crystalline, dense.
1974-1990 Limestone, off white, tan, buff, fine crystalline, 30% fluorescence and stain, trace free oil.
5% Chert, white.
1990-2018 Limestone, white, tan, buff, fine crystalline, poor porosity, scattered stain and fluorescence.
2018-2021 Shale, black, carbonaceous.
2021-2032 Limestone, white, cream, fine crystalline, chalky, poor porosity, trace fair porosity with stain, fluorescence, trace free oil, fair odor; 20% Chert, white, partly vugular with stain & fluorescence.
2032-2039 Limestone, white, buff, fine crystalline, partly chalky, trace poor to fair porosity with S & F, fair show free oil.
2039-2041 Shale, black, carbonaceous.
2041-2048 Limestone, brown, fine crystalline, dense.
2050-2060 Limestone, white, gray, fine crystalline, dense, trace fluorescence.
2060-2070 Siltstone, gray.
2070-2076 Limestone, tan, fine crystalline, oolitic, dense.

Base Kansas City 2076 -683

- 2076-2120 Shale, gray, pyritic.
2120-2146 Shale, gray, silty.

Checkerboard 2146 -753

- 2146-2156 Limestone, tan, buff, fine crystalline, fossiliferous, dense.
2156-2160 Shale, green.

Hepler Sand 2160 -767

- 2160-2172 Sandstone, gray, very fine grained, partly friable, poor to fair porosity, well stained, fluorescence, fair odor.
2172-2180 Limestone, tan, coarse crystalline, fossiliferous, peletoid, dense.
2180-2191 Sandstone, gray, fine grained, friable, fair porosity, well stained with fluorescence.
2191-2195 Shale, light grayish green.

Altamont 2195 -802

- 2195-2203 Limestone, white, tan, fine crystalline, dense.
2203-2232 Shale, reddish brown, gray, grayish green.

Pawnee 2232 -839

- 2232-2256 Limestone, tan, buff, fine crystalline, dense.

2256-2258 Shale, black, carbonaceous.
2258-2262 Shale, grayish green.
2262-2275 Limestone, tan, fine crystalline, dense.

Cherokee 2275 -882

2275-2277 Shale, black, carbonaceous.
2277-2279 Limestone, tan, brown, fine crystalline, dense.
2279-2281 Shale, black, carbonaceous.
2281-2312 Shale, grayish green, gray, reddish brown.
2312-2317 Siltstone, gray, micaceous.
2317-2339 Shale, dark gray, pyritic.
2339-2348 Limestone, tan, fine crystalline, pyritic, dense.
2348-2350 Shale, black, carbonaceous.
2350-2358 Siltstone, gray, pyritic.

Circulated for samples 15 minutes at 2356'

Chert Conglomerate 2358' -965

2358-2370 Chert, white, gray, partly oolitic, gray siltstone matrix. Trace stain and free oil near base.

Circulated for samples 30 minutes at 2370'.

2370-2374 Chert, AA, abundant pyrite. Few loose, well rounded quartz grains.

Arbuckle 2374 -981

2374-2375 Dolomite, off white, buff, tan, fine crystalline, poor porosity with stain and fluorescence, trace free oil. 10% Chert, white.
2377-2378 Dolomite, white, tan, medium crystalline, vugular, fair porosity with stain and fluorescence, good odor.

Circulated for samples 45 minutes at 2378'.

R.T.D. 2378' -985

Strap	2394.75'
Board	2392.28'
Strap long to board	<u>2.47'</u>