005-00023

STATE: MISSOURI	COMPANY: WM. GRUENERWALD & ASSOCIATES, INC.
COUNTY: ATCHISON	FARM: WATKINS — WELL NO. 1
BLOCK	SURVEY: C SW NW
SEC. 32	TOTAL DEPTH: 3310
T. 65N. R. 39W.	CONTRACTOR: Shira Drlg. Co.
32	COMMENCED: 6-10-60
	COMPLETED: 6-28-60
ALTITUDE: 1078 RB	REMARKS: 1070 GR.
PRODUCTION: D&A	GEOL. H. Wright

CASING RECORD

8 5/8" 405	10"	
20"	8¼"	
15½"	6¼"	
12½"	5½"	

SHOT — QUARTS — BETWEEN

TIME RATE SCALE: 1/10" = MINUTES

FORM 450

TIME RATE: 1/10" SQUARES — 5 10 15 20

NOTE: ELECTRIC LOG TOPS BELOW.

400
- Samples Start
- Tan Fsyl. Ls.
- HB 440 — HEEBNER 442 (+736)
- Sh. gry-grn calc.
- 460
- Interbedded gry-grn calc. sh & tan Ls.
- 480
- Gry. marly Ls.
- 500 Red shale.
- 520 Soft gry-grn silty sh.
- 540 Sh. gry. mic
- 560 Gry. mic sh.
- 580
- 600
- L — LANSING 613 (+465)
- Ls. buff to gry & brn. dns. fsyl.
- Ls. tan dns. fsyl. to wht. chlky
- 640 Blk. calc. sh. - dns. dk. Ls.
- 660 Sh. dk. gry soft, mic
- 680 Ls. dk. earthy to xyl.
- Sh. gry mic
- Earthy gry. Ls. - sh. strks.
- 700 Interbedded gry Fsl. Ls. & gry. sh.
- 720 Ls. wht. to tan m-xyl. to dns.
- Ls. tan to gry. m-xyl.
- 740 Sh. dk. gry to black
- 760 Ls. tan to gry. m-xyl.
- 780 Sh. gry to blk.
- 800 Dns Ls. - thin sh.
- 820 Ls. dns tan to buff
- Blk. sh.
- Trip KWV 840 Ls. dns tan to gry
- Ls. wht. m-xyl. to tan dns.
- 860 As above
- 880 Ls. wht. m-xyl. to tan dns.
- Gry. sh. - thin gry Ls.
- 900 Ls. tan to buff m-xyl to dns.
- BKC 920 — BASE KANSAS CITY 922 (+156)
- Ls. gry. m-xyl. - thin blk. sh.
- 940 Sh. gry-grn. silty
- Sh. gry-grn to maroon - thin marly Ls.
- 960 Soft gry-grn. sh.
- 980 Gry marly Ls. - pyritic
- Ls. buff dns - thin shaley Ls.
- 1000
- 1020 Sh. dk. gry mic
- 1040 Interbedded gry marly Ls. & grnish sh.
- Sh. gry. to grnish compact
- Ls. buff xyl. fsl.
- Ch 1060 — CHEROKEE 1064 (+14)
- Sh. soft, gry-grn to maroon
- Ls. gry to grnish mod. grnd. tightly cemented
- 1080 Sh. soft muddy gry to grnish
- 1100
- Gry. muddy Ss. - thin gry cemented Ss.
- 1120
- Gry. sdy. sh.
- 1140
- 1160 Gry. med. grnd. lime cemtd. Ss. - sdy Ls. - thin sh.
- 1180 Sh. gry. to grnish - strks sdy Ls.
- 1200 Sh. gry to grnish gritty
- 1220 SAND 1220-97
- Ss. fine to med. fine ang. mic. some clean porous, N.S.
- 1260 Ss. fine to med. coarse, ang. to subrd. loosely cemented porous N.S.
- 1280 Trip OSC
- Ss. med. grnd. - gry to wht. clustered, friable porous, N.S.
- 1300
- 1320 Gry. sh.
- 1340 Sh. gry mic. silty — Vis 32
- 1st zone
- Sh. dk. gry to blk.
- Ss. med. fine - loosely cemtd. dk. oil stn.
- 2nd zone — Gry. sh. - Ls. gry. earthy
- Ss. med. grnd. clean, ang. clustered. Good por. Good oil stn. - Excell. in wet sample. Good odor.
- 1400 Gry. mic silty sh. - thin fine tight oil stnd. Ss.
- Sh. dk. gry to blk. carbonaceous coal.
- 3rd zone — Ss. med fine clean to shaley - scattered dk. oil stn - good por. in part - fair oil sat. - much water.
- 1440
- 1460 Ss. fine ang. loose, porous N.S.
- 1480 Ss. wht. to gry med. fine loosely cemented shaley stks. Porous N.S.
- 1500 Sh. gry. to grnish mic
- 1520
- 1540 Vis 34, Wt. 9.3
- 4th zone — Brn. lmy Ss. Some clustered, clean Ss. - oil stain - fair por. - well strd. with dk. oil.
- 1580 Porous gry. Ss. N.S.
- 1600 Vis 32, Wt. 9.7
- 1620 Gry. sh.
- C. ang. clustered porous Ss. N.S.
- 1640 Ss. as above - some rounded. Pyritic - N.S.
- 1680 Loose clean med. grained Ss. - ang. to rd. porous N.S.
- 1700
- 1720 Ss. as above
- 1740
- 1760
- 1780 Few coal. Gry. sh. Sh. gry. to grn & brn. compact
- Trip Wt. Dol. tan Fxyl. to sucr.
- 1800 Sh. gry to grnish compact - marly stks.
- 1820 Dns. buff Ls. - Gry. grnish sh. marl
- M — Miss Lm. 1829 (-751)
- Dol. buff Fxyl. - cht. wht. opaque
- Ls. wht. chlky to Fxyl. - much cht.
- Ls. wht. mixed to tan Cxyl.
- 1860 Cxyl. tan Ls. - Ls. Cxyl. tan to buff dns. - buff cht.
- Trip Wt. Ls. Cxyl. tan to buff
- 1880 Dol. buff to gry Fxyl. to sucrose. Some good cht. por. xyls. - Gry. fsl. cht.
- 1900 Ls. gry. mott. Cxyl. Much gry fsl. cht. Ls. tan Cxyl. - much cht. Mott. to tan fsl.
- Ls. wht. to tan & gry mott. Cxyl. — Vis 35, Wt. 9.5
- 1920 As above - much mott. tan. wht & dk. gry cht.
- 1940 Ls. wht. chlky to Cxyl.
- Trip Wt. V. Cxyl. Ls. - chky
- Cht. wht. to lt. gry. - gry. buff Fsl. Ls.
- 1960 Vis 34, Wt. 9.5
- Dol. tan Fxyl. - much lt. gry cht.
- 1980 Ls. tan to gry. & oolitic
- Ls. tan Fxyl. to gran. fsl. Ls.
- Ls. wht. Fsyl.
- Trip Wt. 2000 Ls. gry. to buff
- Dns buff Ls.
- 2020 Buff gran. fsl. Ls.
- 2040 Ls. Cxyl. buff to gry. mod. fsl.
- K — KINDERHOOK 2052 (-974)
- Sh. red & red hematitic pellets - pyritic
- 2060 Sh. gry. to gry-grn.
- Red sh. & hematite — Vis 37, Wt. 9.5
- 2080
- 2100 Sh. red & gry-grn.
- silty
- 2120 Sh. gry. to grnish
- Trip Wt. 2140 Sh. gry. marly gry Ls.
- 2160 Gry. muddy Ls. - gry. sh.
- 2180
- 2200 Gry. calc. sh. & gry marly Ls.
- 2220 Gry. gran. earthy Ls. - gry. gran. Ss. - spores.
- 2240 Ls. gry. gran. impure - thin sh.
- 2260
- 2280 Ls. gry. gran. impure - sh. gry. op. to trans.
- Gry. gran. earthy, gritty Ls. - spores
- 2300 Pyritic - more xyl. than above, dolomitic - lt. gry cht.
- H — HUNTON 2313 (-1235)
- Dol. brn. Vfs. buff to brn. Fxyl. cht. - minor Fxyl. por. N.S. — Vis 35, Wt. 9.6
- Dol. brn. to gry Fxyl. - Strks. of cht. por. N.S.
- 2340 Brn. gry dns. dol. — Dol. tan Fxyl. tight
- Dol. tan Cxyl. druzy - Fcad. por. N.S.
- Trip Wt. Dol. tan Fxyl.
- 2380 Dol. buff to brn. Fxyl. tight
- Dol. buff to gry Fxyl. to sucr.
- 2400 Dol. brn. sucr. Strks fair por. N.S. — Vis 36, Wt. 9.6
- Dol. tan to buff Fxyl. to sucr.
- Dol. brn. xyl. strks. fair por.
- 2440 Excellent cav. por. - brn. dol.
- Gry brn. dol.
- Dol. gry. to tan Fxyl. to suc.
- 2460 Good cav. por. - Cxyl. tan dol. — Vis 36, Wt. 9.6
- Dol. tan suc. - gry op. cht.
- 2480 Dol. tan suc. - porous
- Dol. tan to lt. gry. sucrosic.
- 2500 Dol. wht. & Cxyl. rhombic - Good suc. por. N.S.
- Trip Wt. 2520 Ls. dns buff to gry & wht. chlky
- Cxyl. buff Ls.
- 2540 Dol. tan Cxyl. Good cav. por.
- Dol. buff to brn. dns.
- Dol. brn. xyl.
- Dol. tan to buff Cxyl. to suc. — Vis 35, Wt. 9.4
- 2560 Strk. por. in brn. Cxyl. dol.
- Sil — SILURIAN 2570 (-1492)
- Dol. & Ls. Fxyl. to wht. & lt. gry. — 2590
- 2580 Dol. wht. to lt. gry Cxyl. - excellent cav. por. N.S.
- Rhombic dol. - Exc. por. — Vis 37, Wt. 9.6
- 2600 Rhombic dol. as above
- Extremely porous
- 2620 Rhombic dol.
- 2640 Vis 36, Wt. 9.5
- Trip Wt. Dol. wht. to lt. gry Cxyl. - extremely porous.
- 2660 Vis 38, Wt. 9.7
- 2680 Dol. darker - less porous
- Dol. wht. Cxyl. - very porous
- 2700 Dns. strks. — Lt. gry. xyl. dol.
- Dol. wht. to lt. gry. - Cxyl. porous strks.
- 2740 Dol. as above - darker - less porous.
- 2760 Dol. lt. gry. Cxyl. extremely porous
- Scatt. wht. fresh & trip. cht.
- 2780 Dol. buff Cxyl. Good cav. por.
- Cht. wht. translucent — Vis 37, Wt. 9.6
- Dol. tan to buff chky Cxyl. - porous
- 2800 Dol. tan to buff Fxyl. Good por.
- Dol. buff to gry. suc. dol. por. N.S.
- Ma — MAQUOKETA 2829 (-1751)
- Sh. red, gry-grn & hematitic pellets
- Sh. gry. grn. dol. to green dolomitic
- 2840 Dolomitic sh. - gry. grn. & grnish gry. dol.
- Primarily gry. op. cht.
- 2860 Gry. Fxyl. earthy dol. - gry. cht.
- Dol. dk. gry. to brn. Fxyl. to dns. - gry cht.
- Trip Wt. 2880 Dol. wht. to gry. mott. Cxyl. Excell. cav. por. N.S.
- Dol. as above cht. wht. to gry speckled
- Dol. buff to gry Mxyl. Inc. in cht.
- 2900 Cht. lt. gry. devitrified - dol. buff Mxyl.
- 2920 Cht. lt. gry.
- Dol. Ls. buff to tan Mxyl. to gran.
- 2940 Primarily gry. devitrified cht. - minor dol.
- Dol. gry. Fxyl. siliceous - scatt. cht.
- Vi — VIOLA 2957 (-1879)
- Dol. brn. to gry. mott. Mxyl.
- Dol. tan to buff Cxyl. Excell. por. N.S. Cht. lt. gry. fsl.
- 2960 Dol. tan to buff Mxyl. - much wht. cht.
- 2980 Dol. buff sucr. - cht. wht. to gry.
- 3000 Dol. wht. V. Cxyl. Excellent por. N.S. Circ.
- Dol. wht. V. Cxyl. - porous
- Dol. wht. to tan M to Cxyl. por. strks.
- 3020 Much wht. cht. — Vis 41, Wt. 9.6
- Dol. as above only darker. - gry. cht.
- Trip Wt. 3040 Dol. gry to buff - gran to suc. - gry. cht.
- 3060 Dol. wht. gry. mottled V. Cxyl. Excell. por. N.S.
- Dol. buff dns to Mxyl. - much dolitic gry cht.
- 3080 Primarily gry. cht.
- Dol. buff gran. - gry. cht.
- 3100 Cht. tan to gry. - minor xyl. dol.
- Much tan trip. cht.
- Dol. buff to brn. dns.
- 3120 Dol. brn. Mxyl. - good por. N.S.
- Dol. buff to brn. M to Cxyl. - Strks. good cav. por. Tr. glauconite — Vis 37, Wt. 9.4
- 3140 Dol. buff to brn. Mxyl. Strks. por.
- Grn. sh. - gry-grn. dol.
- Interbedded brn. dol.
- 3160 Dol. buff to brn. Mxyl. porous
- Clean wht. F. Ss.
- Dol. buff to brn. M to Cxyl. Good cav. por. N.S.
- 3180
- Sp — SIMPSON 3185 (-2107)
- Trip Wt. Dol. buff to grnish - dirty - gry. grn. dol. sh.
- Impure dol. & dk. dy. gry to grnish
- 3200 Dol. buff to brn. dns to Mxyl. Some good intxyl. por. N.S.
- 3220 Dol. dk. - blk. sh. - Faint oil odor
- Dirty gry. to brn. dol.
- 3240 Grd. sd. gry. in xyl. buff to brn. dol. Inc. in rd. sd.
- Grd. sd. loose to dol. cemtd. — Vis 38, Wt. 9.6
- StP — ST. PETER SD. 3255 (-2177)
- Dol. gry dns. Mxyl.
- 3260 Dol. brn. to gry. Mxyl. to dns. F. wht. Ss.
- Ss. clean rd. loose to loosely cemtd. Good por. N.S. Tr. glauconite
- 3280 — ARBUCKLE 3291 (-2213)
- Arb — Dol. buff to tan M to Cxyl. Strks. good cav. por. N.S. Tr. glauconite
- 3300
- 3310 TD
- 3320

HOLE LOGGED BY SCHLUMBERGER TO 3315

NO DST'S