



**Summary of Stratigraphic Units of Watchorn and McNeely-Spangler Well (no. 3)**  
 By Mary Hundhausen  
 From Examination of Insoluble Residues

Sample	Depth	Formation Indicated
1.	4810-4860	St. Louis limestone
2.	4860-5000	Spergen limestone
3.	5000-5069	Warsaw limestone
4.	5069-5170	Burlington and Keokuk limestones
5.	5170-5280	Possible equivalent of Gilmore City limestone of Iowa

**Summary of Results of Examination of Fossils from Cores of Wells in Western Kansas**  
 By George H. Girty

**Atlantic-Mark A-1**  
 (well no. 30, two miles from no. 3)

Sample	Depth	Formation Indicated
5.	4812-4814	St. Louis Lithostratigraphic bed
6.	4823-4880	Probably in part St. Louis
7.	4885-4895	Possibly Spergen
8.	4980-5097	Possibly Warsaw

**Carter-Everett no. 1 (no. 6)**

Sample	Depth	Formation Indicated
9.	5278-5283	Possibly Warsaw
10.	5306-5428	Possibly Warsaw

**Watchorn-Morrison no. 2**  
 (well no. 70 offsetting no. 7)

Sample	Depth	Formation Indicated
11.	5377-5736	No cores
12.	5745-5776	Probably Spergen
13.	5833-5850	Possibly Spergen
14.	5871-6065	Possibly Warsaw

**Bates-Nimocks no. 1 (no. 24)**

Sample	Depth	Formation Indicated
15.	4488-4516	Probably Spergen

**WELLS USED IN CROSS SECTION F-F'**

Index no.	Company	Form and well no.	Location
1.	I.T.I.O.	Strongways no. 1	Sec. 21, T. 25 S., R. 43 W. (in Colorado)
2.	Alma G. McNeely	Watchorn no. 1	Sec. 13, T. 15 S., R. 33 W.
3a.	Watchorn G. McNeely	Spangler no. 1	Sec. 23, T. 20 S., R. 33 W.
3b.	Watchorn G. McNeely	Mark no. A-1	Sec. 28, T. 20 S., R. 33 W.
4.	National	Wells no. 1	Sec. 13, T. 23 S., R. 30 W.
5.	Swain et al	Taylor no. 1	Sec. 21, T. 25 S., R. 24 W.
6.	Carter	Everett no. 1	Sec. 22, T. 25 S., R. 21 W.
7.	Watchorn G. Morrison no. 1	Morrison no. 1	Sec. 17, T. 32 S., R. 21 W.
7a.	Olson	Morrison no. 2	Sec. 20, T. 32 S., R. 21 W.
8.	Skelly	Temple no. 1	Sec. 13, T. 34 S., R. 15 W.
9.	Wierke no. 1	Wierke no. 1	Sec. 25, T. 34 S., R. 3 W.
10.	Amerado	Tuttle no. 1	Sec. 4, T. 34 S., R. 3 W.
11.	McCullough	Shriner no. 1	Sec. 29, T. 34 S., R. 1 W.
12.	Magnolia	Albright no. 1	Sec. 9, T. 33 S., R. 2 E.
13.	Phillips	Poor Farm no. 1	Sec. 6, T. 32 S., R. 1 W.
14.	Dye et al	Walschmidt no. 1	Sec. 34, T. 32 S., R. 1 W.
15.	McKnab	Foster no. 1	Sec. 18, T. 34 S., R. 9 E.
16.	Prairie	Foster no. 2	Sec. 13, T. 34 S., R. 9 E.
17.	Kansas Oil and Gas	Brown no. 9	Sec. 26, T. 34 S., R. 11 E.
18.	Union Gas	Wells no. 3	Sec. 14, T. 35 S., R. 12 E.
19.	Union Gas	Shouse no. 1-A	Sec. 2, T. 32 S., R. 12 E.
20.	Unknown	Hudson no. 3	Sec. 26, T. 32 S., R. 15 E.
21.	Unknown	Lynn no. 1	Sec. 10, T. 33 S., R. 17 E.
22.	St. Louis Sm. & Ref. Co.	Rutger no. 1	Sec. 9, T. 34 S., R. 20 E.
23.	Ballard no. 1	Nimocks no. 1	Sec. 10, T. 35 S., R. 24 E.
24.	Bates	Nimocks no. 1	Sec. 16, T. 16 S., R. 28 W.

No. 10 is no. 2 of cross section A-A'  
 No. 14 is no. 4 of cross section B-B'  
 No. 21 is no. 2 of cross section C-C' and no. 9 of cross section E-E'  
 No. 16 is no. 1 of cross section G-G' (Oklahoma)  
 No. 23 is no. 10 of cross section E-E'

PLATE 7.—A. Topographic map showing configuration of the deeper part of the pre-Cowley basin in southeastern Kansas and approximate limit of deposition of Cowley formation in western Kansas. Datum, top of Chattanooga shale. Contour interval 50 feet. Line of cross section F-F' of plate 1 and plate 8 is indicated. Interval from base of Cowley formation to top of Chattanooga shale shown at each well and on contour lines. Areas in which base of Cowley formation lies below top of Chattanooga are shaded. Positions of wells from which samples were examined are shown by dots.

B. Cross section of Mississippian rocks from northeast Colorado to southeast Kansas on line F-F' of plate 1 and plate 8, showing overlap of beds from Chattanooga to Burlington on pre-Chattanooga rocks in western Kansas; unconformity at base of Cowley formation; overlap of Meramec deposits on pre-Cowley rocks; and age determinations of some rocks by siliceous residues, and by examination of fossils from well cores in western Kansas. Wells east of No. 8 are correlated on top of Chattanooga shale; those between Nos. 2 and 8 on top of Warsaw limestone; No. 1 and No. 2 on top of dolomite bed of Burlington. Figures at left of well logs show depth (in feet) of Mississippian and other datum planes below the surface. Figures at right of well logs show thickness (in feet) of lithologic units.