STRATIGRAPHY AND STRUCTURAL DEVELOPMENT OF THE SALINA BASIN AREA

STATE GEOLOGICAL SURVEY OF KANSAS

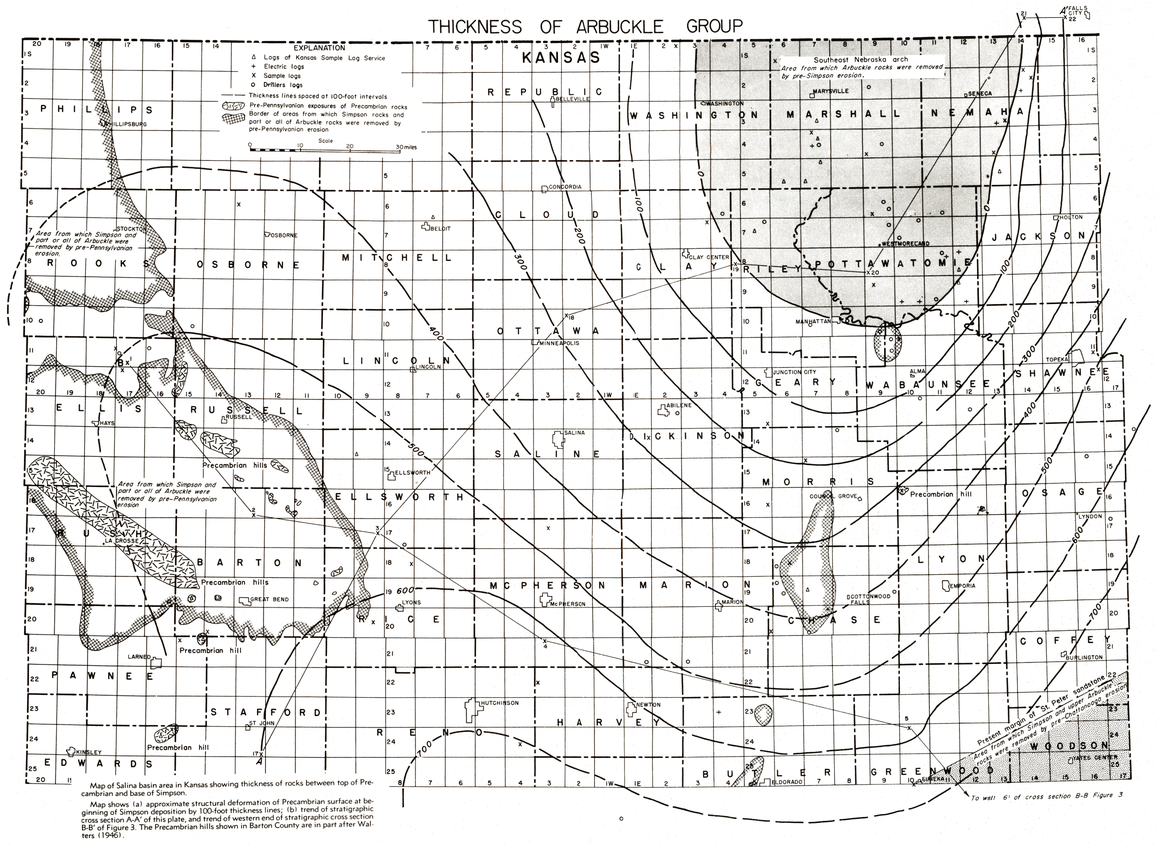
by

WALLACE LEE

BULLETIN 121, PANEL 1

PLATE 3

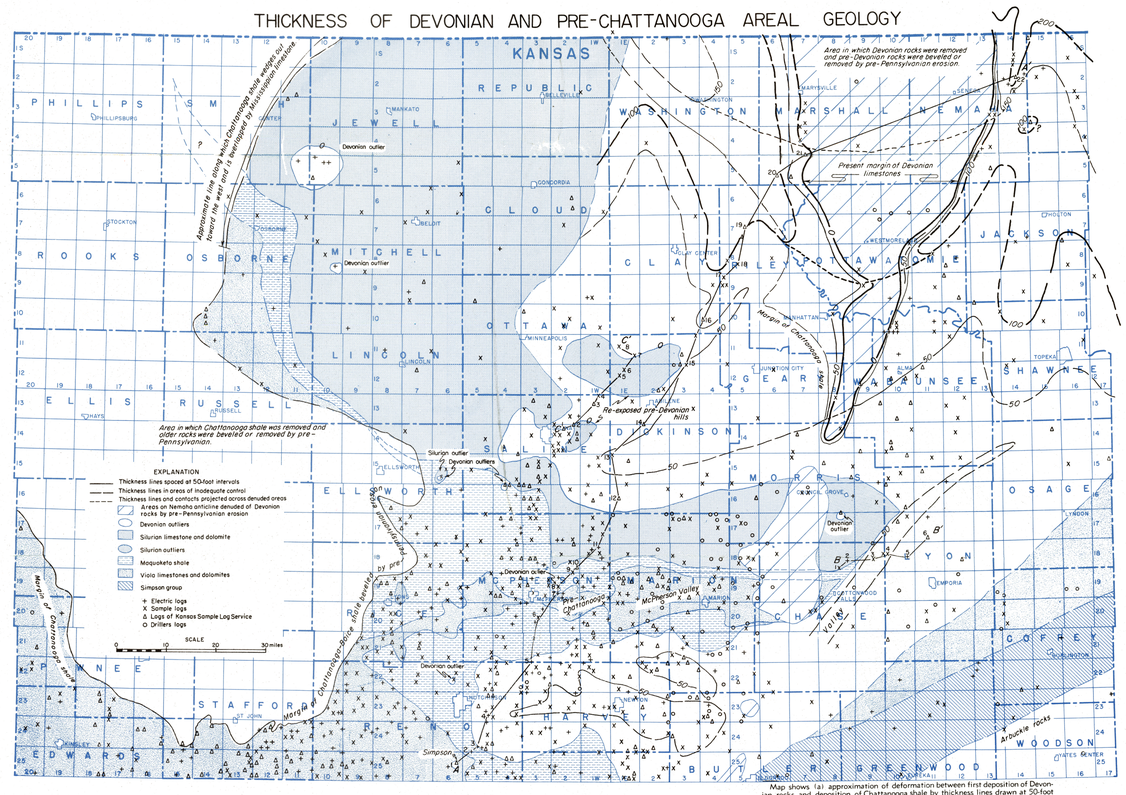
THICKNESS OF ARBUCKLE GROUP



Map of Salina basin area in Kansas showing thickness of rocks between top of Precambrian and base of Simpson.

Map shows (a) approximate structural deformation of Precambrian surface at beginning of Simpson deposition by 100-foot thickness lines; (b) trend of stratigraphic cross section A-A' of this plate, and trend of western end of stratigraphic cross section B-B' of Figure 3. The Precambrian hills shown in Barton County are in part after Walters (1946).

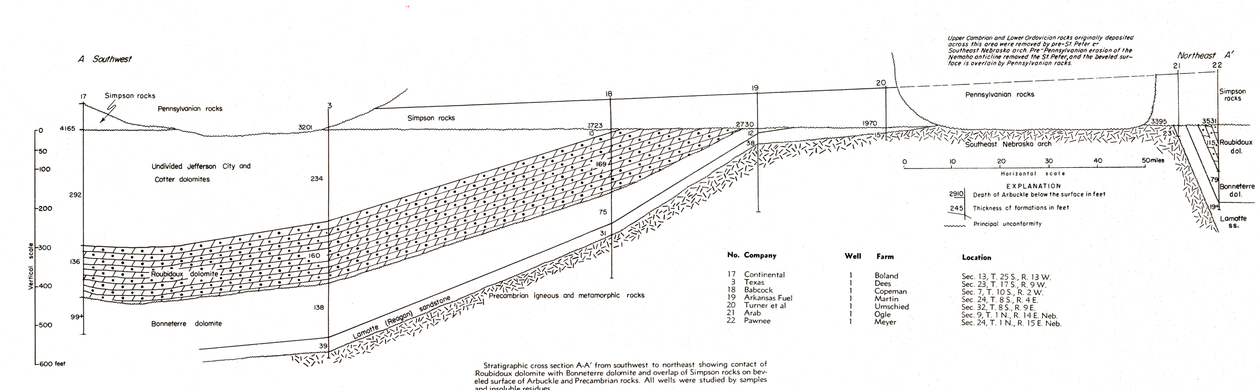
THICKNESS OF DEVONIAN AND PRE-CHATTANOOGA AREAL GEOLOGY



Map shows (a) approximation of deformation between first deposition of Devonian rocks and deposition of Chattanooga shale by thickness lines drawn at 50-foot intervals; (b) pre-Chattanooga areal geology; (c) trend of diagrammatic cross section A-A' of this plate; (d) trend of diagrammatic cross section C-C' of Figure 9 in Saline and McPherson Counties.

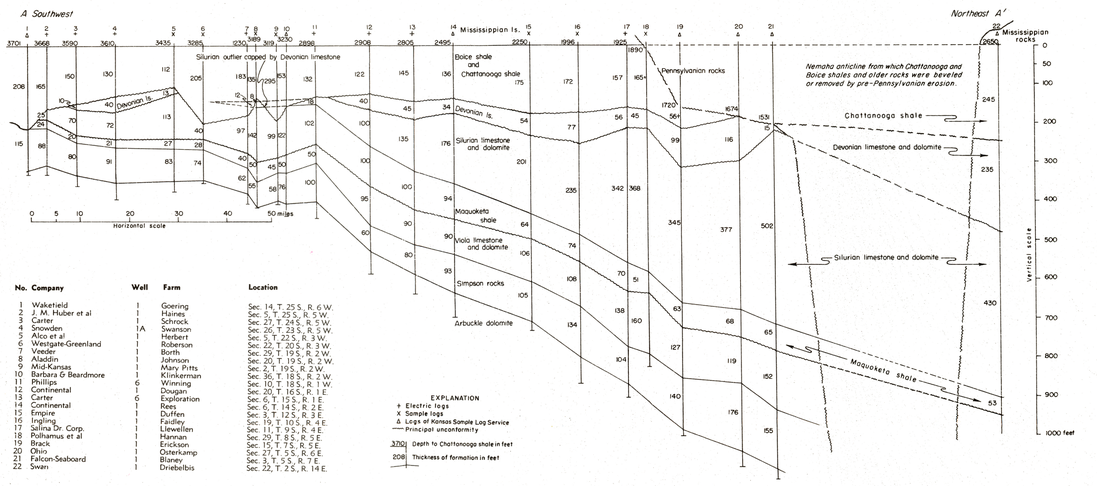
The expression of structural movement by thickness lines is modified by topographic relief at top and bottom of Devonian rocks.

Diagrammatic cross section A-A' from Reno County northeast to Nemaha County showing (a) unconformable surfaces at bottom and top of Devonian limestones and dolomites, (b) overlap of Devonian from Silurian dolomite to Maquoketa shale, and (c) irregular thickening of Devonian toward North Kansas basin.



No.	Company	Well	Farm	Location
17	Continental	1	Boland	Sec. 13, T. 25 S., R. 13 W.
3	Texas	1	Dees	Sec. 23, T. 17 S., R. 9 W.
18	Babcock	1	Copeman	Sec. 7, T. 10 S., R. 2 W.
19	Arkansas Fuel	1	Martin	Sec. 24, T. 8 S., R. 4 E.
20	Turner et al	1	Umschied	Sec. 32, T. 8 S., R. 9 E.
21	Arab	1	Ogle	Sec. 9, T. 1 N., R. 14 E. Neb.
22	Pawnee	1	Meyer	Sec. 24, T. 1 N., R. 15 E. Neb.

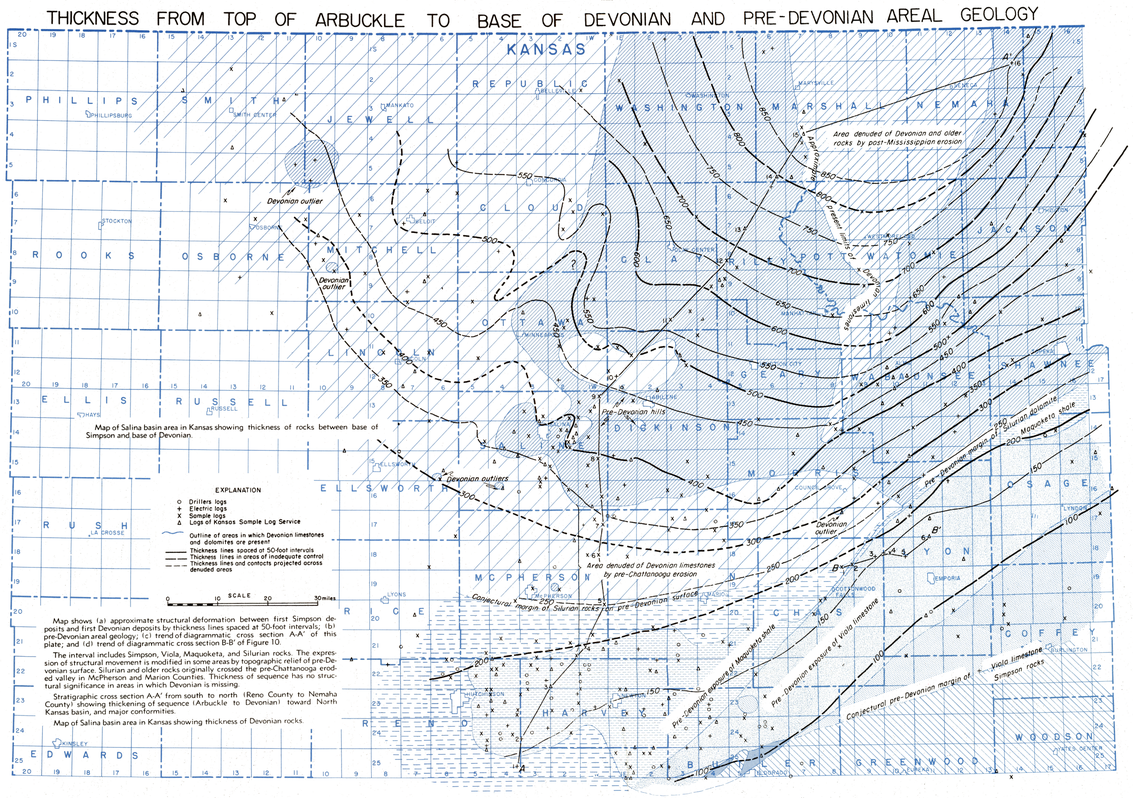
Stratigraphic cross section A-A' from southwest to northeast showing contact of Roubidoux dolomite with Bonneterre dolomite and overlap of Simpson rocks on beveled surface of Arbuckle and Precambrian rocks. All wells were studied by samples and insoluble residues.



No.	Company	Well	Farm	Location
1	Wakefield	1	Goering	Sec. 14, T. 25 S., R. 6 W.
2	J. M. Huber et al	1	Haines	Sec. 5, T. 25 S., R. 5 W.
3	Carter	1	Schrock	Sec. 27, T. 24 S., R. 5 W.
4	Snowden	1A	Swanson	Sec. 26, T. 23 S., R. 5 W.
5	Alco et al	1	Herbert	Sec. 5, T. 22 S., R. 3 W.
6	Westgate-Greenland	1	Roberson	Sec. 22, T. 20 S., R. 3 W.
7	Veader	1	Borth	Sec. 29, T. 19 S., R. 2 W.
8	Aladdin	1	Johnson	Sec. 20, T. 19 S., R. 2 W.
9	Mid-Kansas	1	Mary Pitts	Sec. 2, T. 19 S., R. 2 W.
10	Barbara & Beardmore	1	Klinkerman	Sec. 36, T. 18 S., R. 2 W.
11	Phillips	6	Winning	Sec. 10, T. 18 S., R. 1 W.
12	Continental	1	Dougan	Sec. 20, T. 16 S., R. 1 E.
13	Carter	6	Exploration	Sec. 6, T. 15 S., R. 1 E.
14	Continental	1	Rees	Sec. 6, T. 14 S., R. 2 E.
15	Empire	1	Duffen	Sec. 3, T. 12 S., R. 3 E.
16	Ingling	1	Faidley	Sec. 19, T. 10 S., R. 4 E.
17	Salina Dr. Corp.	1	Llewellen	Sec. 11, T. 9 S., R. 4 E.
18	Polhamus et al	1	Hannan	Sec. 29, T. 8 S., R. 5 E.
19	Brack	1	Erickson	Sec. 15, T. 7 S., R. 5 E.
20	Ohio	1	Osterkamp	Sec. 27, T. 5 S., R. 6 E.
21	Falcon-Seaboard	1	Blaney	Sec. 3, T. 5 S., R. 7 E.
22	Swan	1	Driebelbis	Sec. 22, T. 2 S., R. 14 E.

PLATE 2

THICKNESS FROM TOP OF ARBUCKLE TO BASE OF DEVONIAN AND PRE-DEVONIAN AREAL GEOLOGY



Map shows (a) approximate structural deformation between first Simpson deposits and first Devonian deposits by thickness lines spaced at 50-foot intervals; (b) pre-Devonian areal geology; (c) trend of diagrammatic cross section A-A' of this plate; and (d) trend of diagrammatic cross section B-B' of Figure 10.

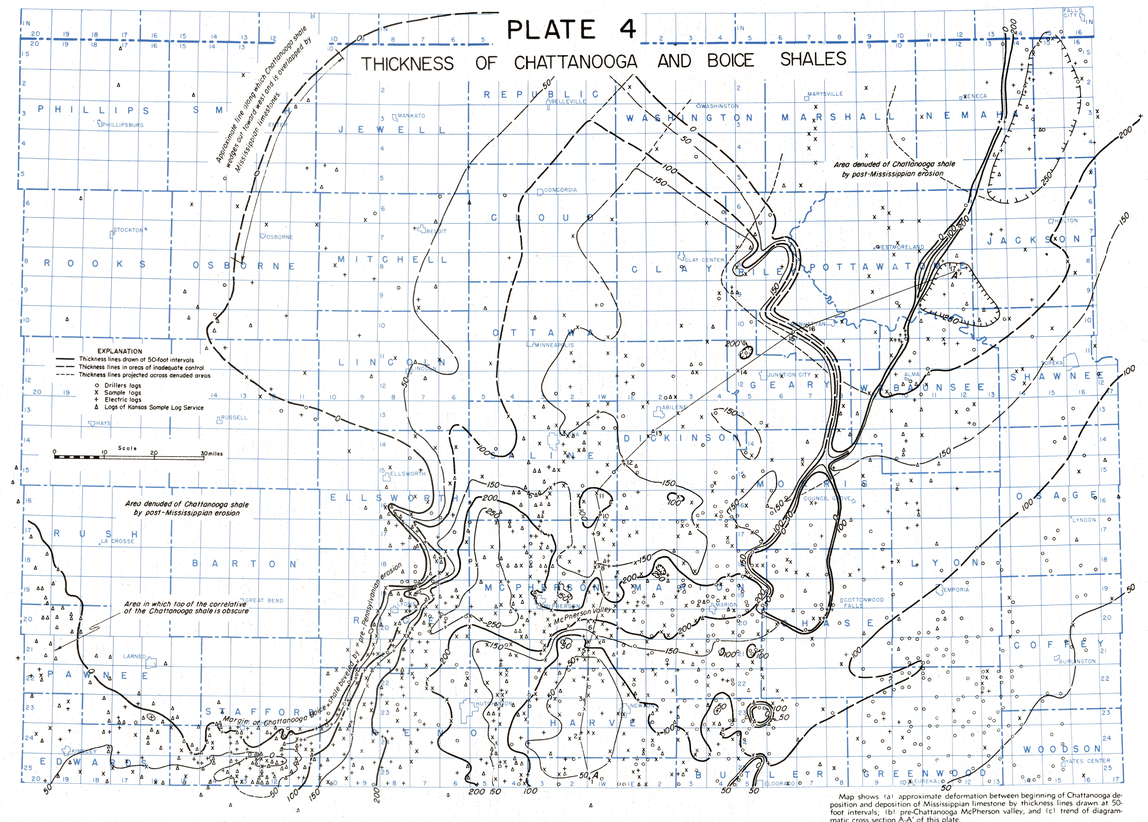
The interval includes Simpson, Viola, Maquoketa, and Silurian rocks. The expression of structural movement is modified in some areas by topographic relief of pre-Devonian surface. Silurian and older rocks originally crossed the pre-Chattanooga eroded valley in McPherson and Marion Counties. Thickness of sequence has no structural significance in areas in which Devonian is missing.

Stratigraphic cross section A-A' from south to north (Reno County to Nemaha County) showing thickening of sequence (Arbuckle to Devonian) toward North Kansas basin, and major conformities.

Map of Salina basin area in Kansas showing thickness of Devonian rocks.

PLATE 4

THICKNESS OF CHATTANOOGA AND BOICE SHALES

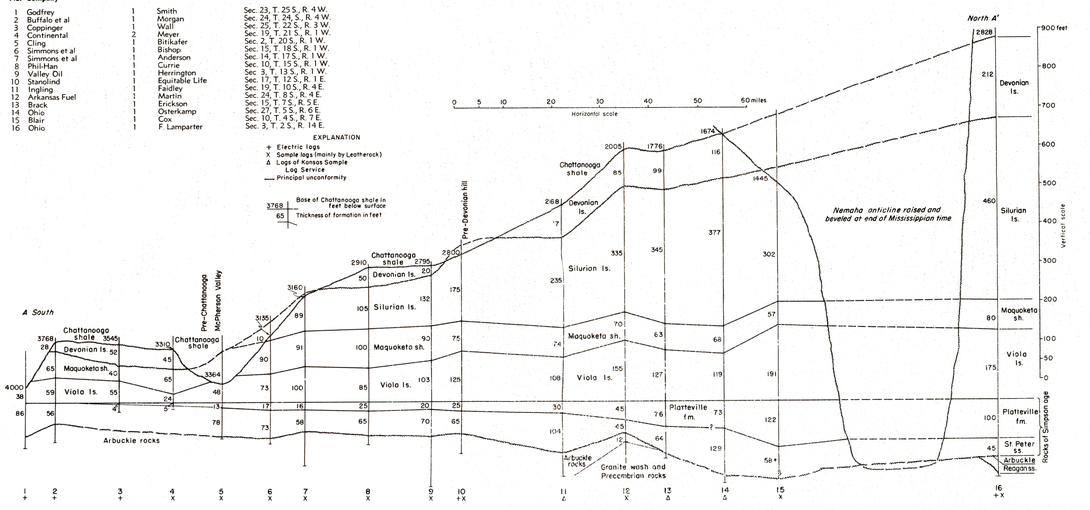


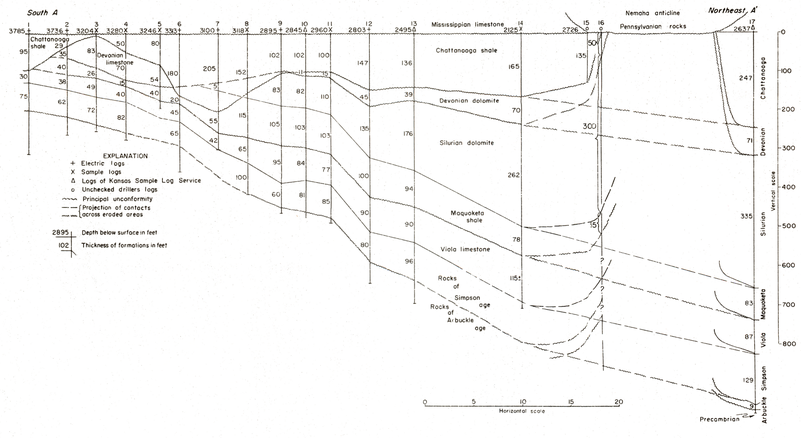
Map shows (a) approximate deformation between beginning of Chattanooga deposition and deposition of Mississippian limestone by thickness lines drawn at 50-foot intervals; (b) pre-Chattanooga McPherson valley, and (c) trend of diagrammatic cross section A-A' of this plate.

The expression of structural movement by thickness lines was destroyed in erosional basin in Marion, McPherson, and Reno Counties.

Diagrammatic cross section A-A' from Sedgwick County northwest to Pottawatomie County showing irregular thickening of shale sequence toward North Kansas basin.

No.	Company	Well	Farm	Location
1	Godfrey	1	Smith	Sec. 23, T. 25 S., R. 4 W.
2	Buffalo et al	1	Morgan	Sec. 24, T. 24 S., R. 4 W.
3	Coppinger	1	Wall	Sec. 25, T. 22 S., R. 3 W.
4	Continental	2	Meyer	Sec. 19, T. 21 S., R. 1 W.
5	Cling	1	Bitikofer	Sec. 2, T. 20 S., R. 1 W.
6	Simmons et al	1	Bishop	Sec. 15, T. 18 S., R. 1 W.
7	Simmons et al	1	Anderson	Sec. 14, T. 17 S., R. 1 W.
8	Phil-Han	1	Currie	Sec. 10, T. 15 S., R. 1 W.
9	Valley Oil	1	Herrington	Sec. 3, T. 13 S., R. 1 W.
10	Stanolind	1	Equitable Life	Sec. 17, T. 12 S., R. 1 E.
11	Ingling	1	Faidley	Sec. 19, T. 10 S., R. 4 E.
12	Arkansas Fuel	1	Martin	Sec. 24, T. 8 S., R. 4 E.
13	Brack	1	Erickson	Sec. 15, T. 7 S., R. 5 E.
14	Ohio	1	Osterkamp	Sec. 27, T. 5 S., R. 6 E.
15	Blair	1	Cox	Sec. 10, T. 4 S., R. 7 E.
16	Ohio	1	F. Lamparter	Sec. 3, T. 2 S., R. 14 E.





No.	Company	Well	Farm	Location
1	Carlock	1	Basore	Sec. 25, T. 25 S., R. 2 W.
2	Derby	1	Webster	Sec. 15, T. 24 S., R. 2 W.
3	McPherson Oil Co.	1	Ruth	Sec. 14, T. 23 S., R. 2 W.
4	Gypsy	1	Hege	Sec. 13, T. 22 S., R. 2 W.
5	Allison et al	1	Rupp	Sec. 13, T. 21 S., R. 2 W.
6	H. & H. Dr. Co.	1	Otte	Sec. 30, T. 20 S., R. 1 W.
7	T. C. Johnson	3	Shaw	Sec. 21, T. 19 S., R. 1 W.
8	Marileen Oil Co.	1	Decker	Sec. 20, T. 18 S., R. 1 W.
9	Westgate-Greenland	2	Henne	Sec. 18, T. 17 S., R. 1 W.
10	Williams	1	Karber	Sec. 28, T. 16 S., R. 1 W.
11	Stanolind	1	Karber	Sec. 5, T. 16 S., R. 1 W.
12	Carter	6	Exploration	Sec. 6, T. 15 S., R. 1 E.
13	Continental	1	Rees	Sec. 6, T. 14 S., R. 2 E.
14	Transcontinental	1	Acker	Sec. 1, T. 12 S., R. 4 E.
15	Pawnee	1	Marks	Sec. 26, T. 10 S., R. 6 E.
16	Welton Oil Co.	1	Thierer	Sec. 20, T. 10 S., R. 7 E.
17	Rezac	1	Siegel	Sec. 7, T. 9 S., R. 12 E.