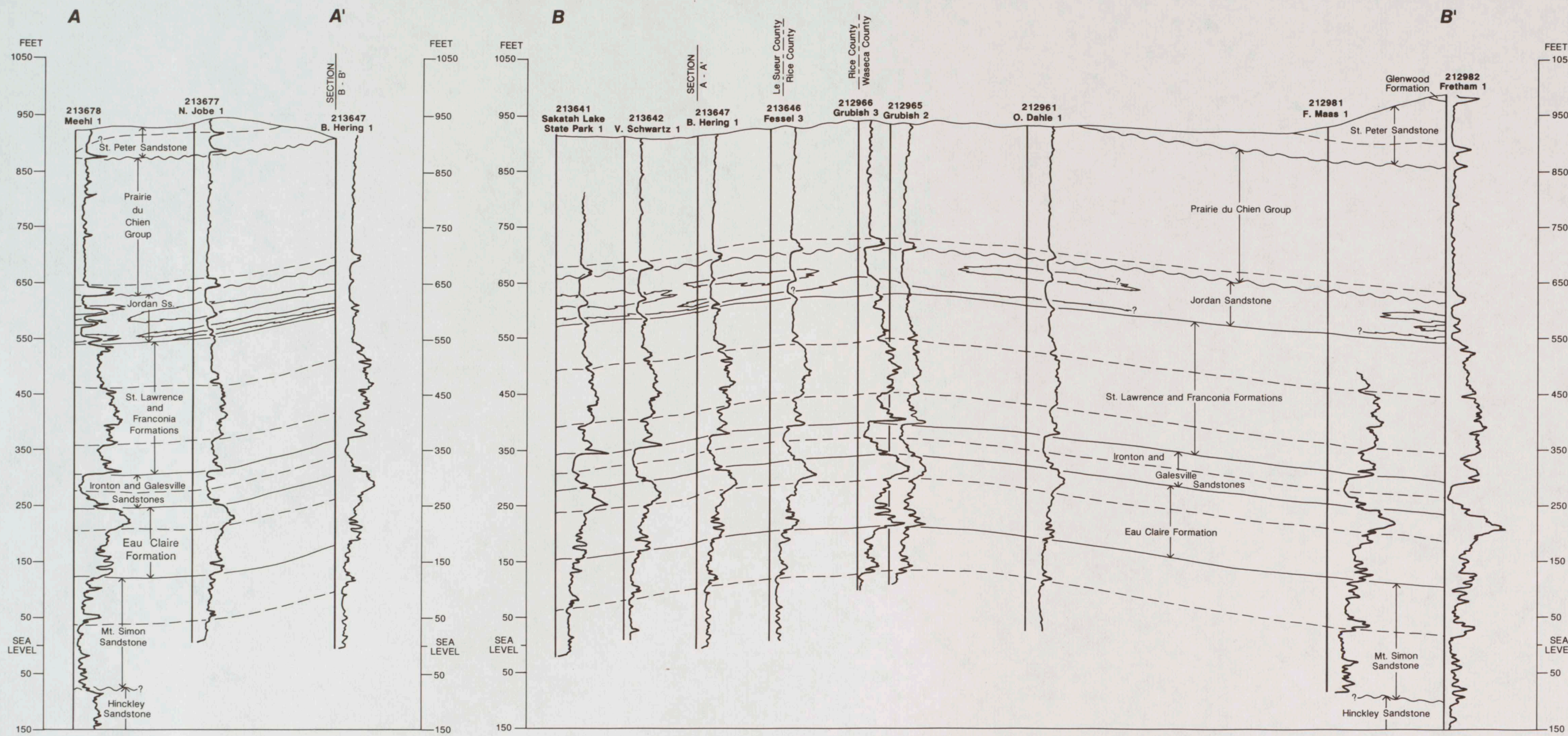
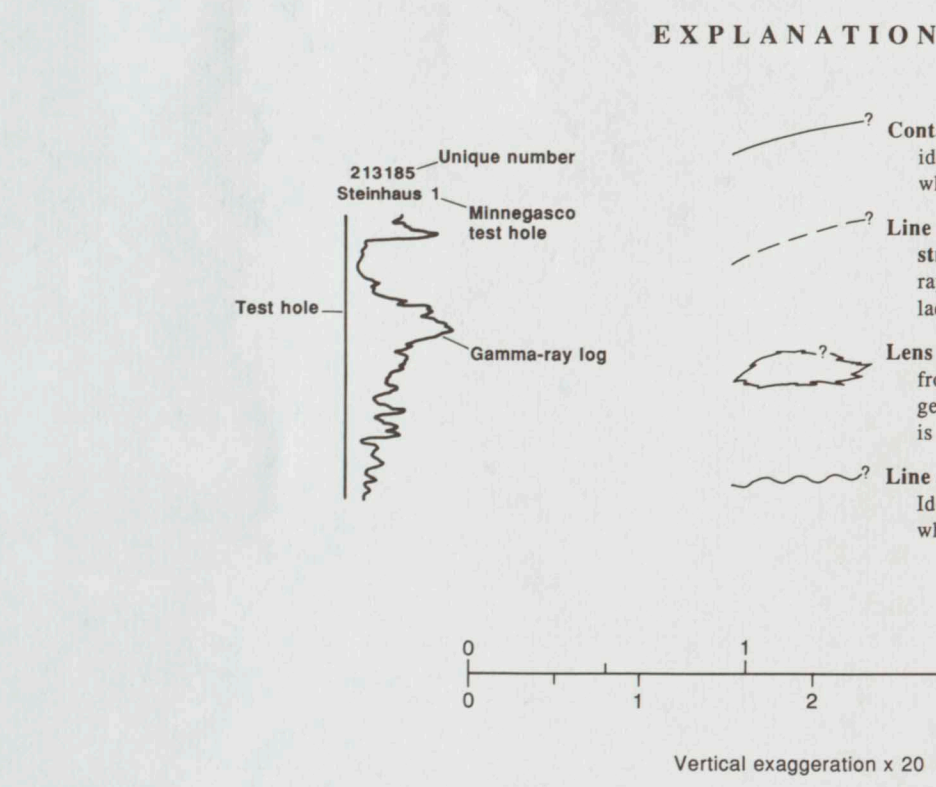


STRATIGRAPHIC CROSS SECTIONS

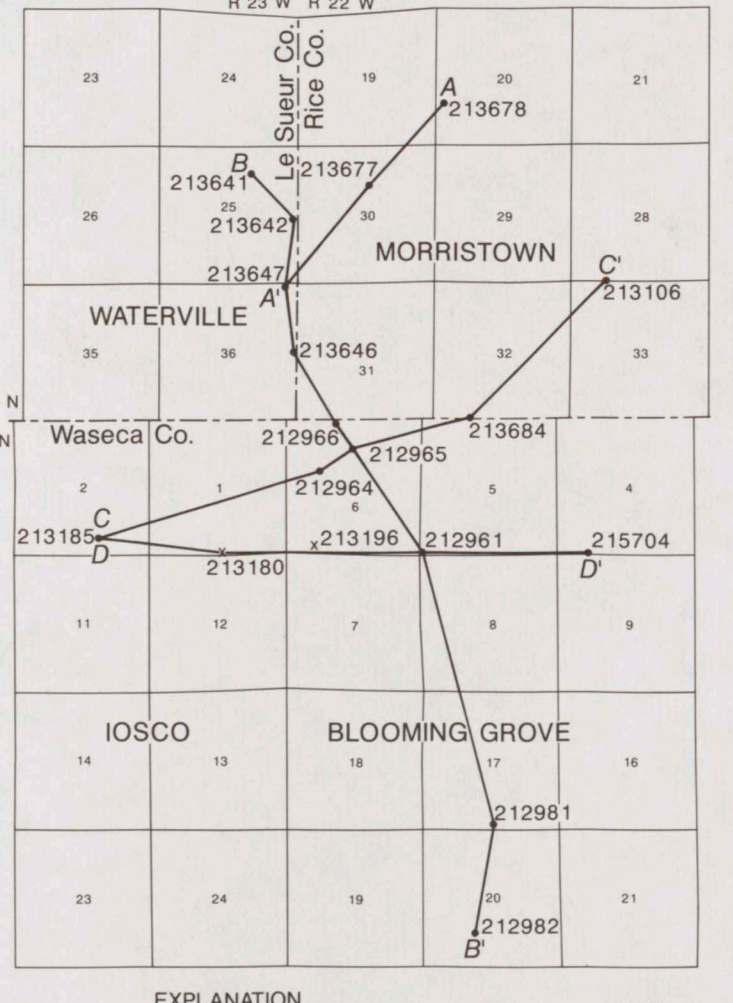


SECTION A-A' (NORTH TO SOUTH)

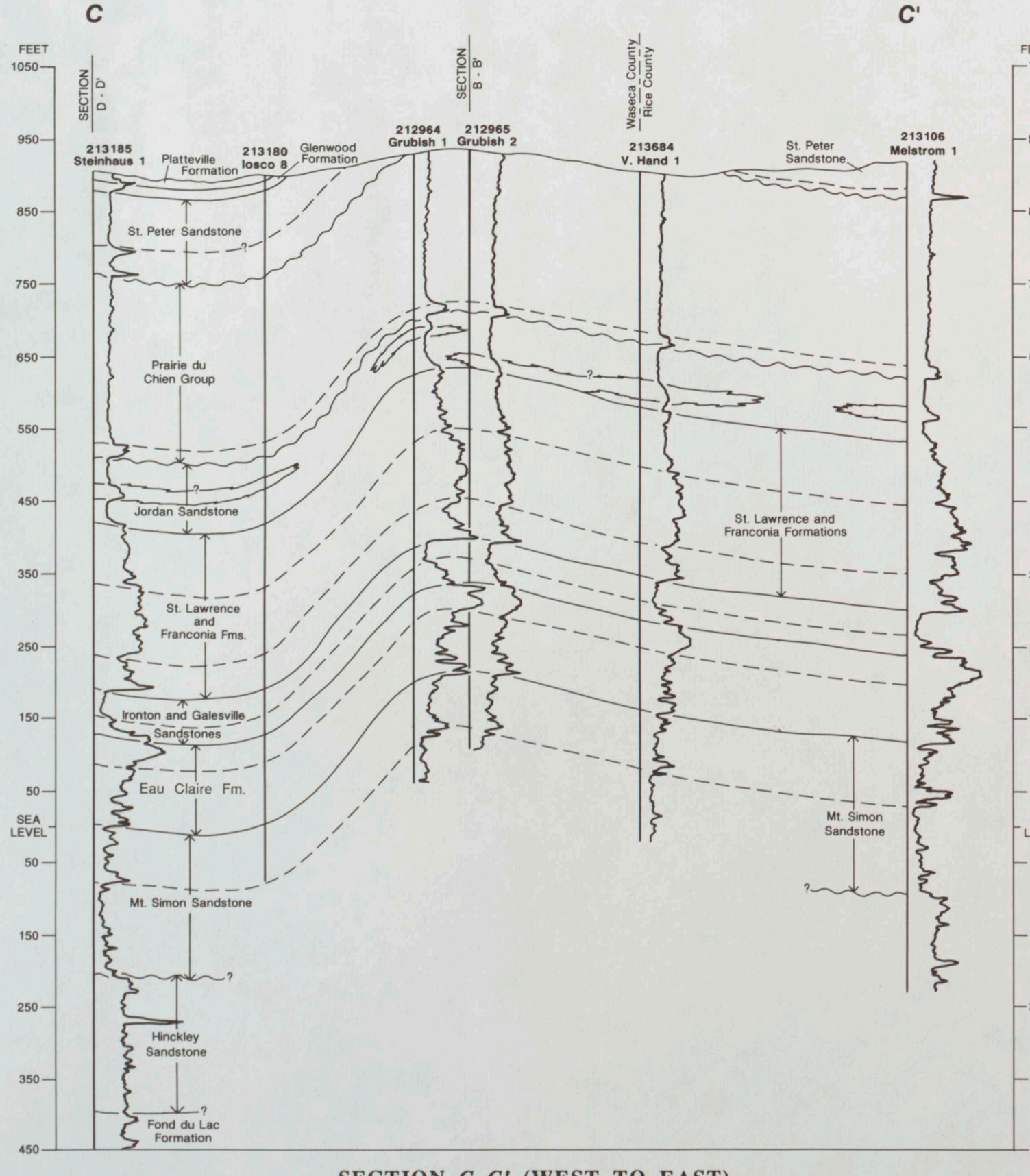
SECTION B-B' (NORTH TO SOUTH)



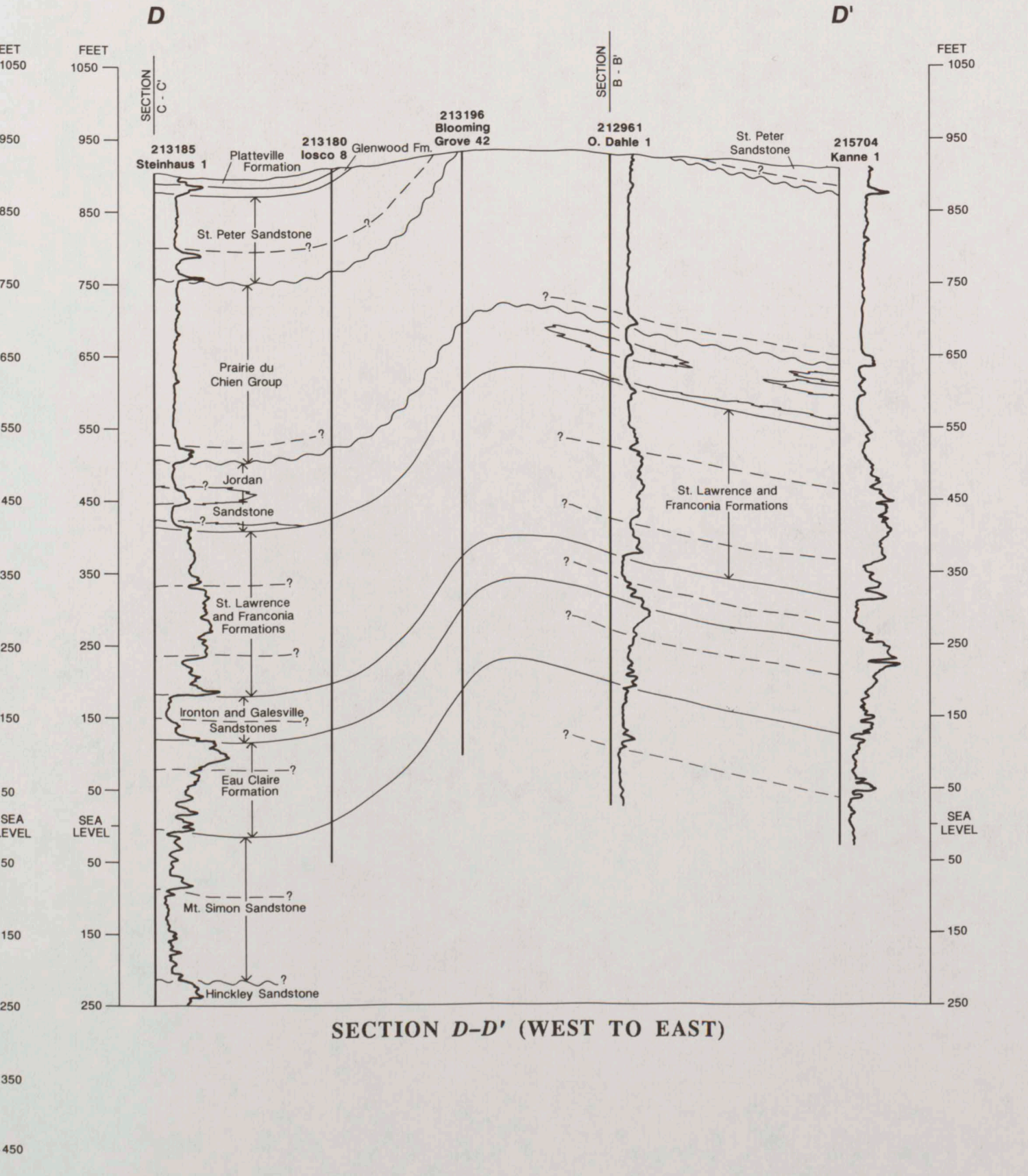
Notes: Glacial sediments omitted  
Stratigraphic units described on Plate 1



INDEX MAP SHOWING LOCATION OF STRATIGRAPHIC CROSS SECTIONS  
Northeastern Waseca County and Adjacent Areas of Le Sueur and Rice Counties

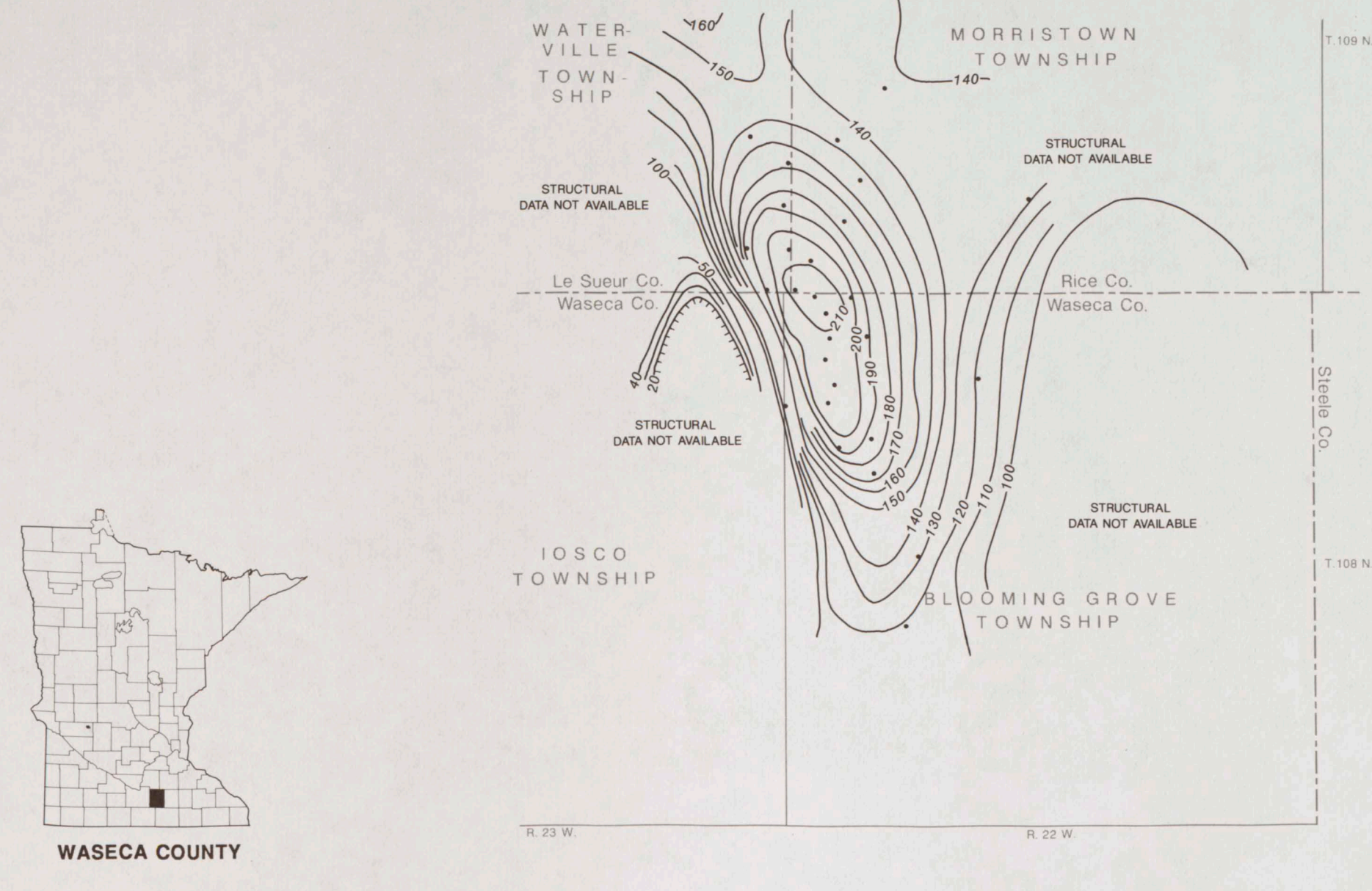


SECTION C-C' (WEST TO EAST)



SECTION D-D' (WEST TO EAST)

Every reasonable effort has been made to ensure the accuracy of the factual data on which this map interpretation is based; however, the Minnesota Geological Survey does not warrant or guarantee that there are no errors. Users may wish to verify critical information; sources include both the references listed here and information on file at the offices of the Minnesota Geological Survey in St. Paul. In addition, effort has been made to ensure that the interpretation conforms to sound geologic and cartographic principles. No claim is made that the interpretation shown is rigorously correct, however, and it should not be used to guide engineering-scale decisions without site-specific verification.

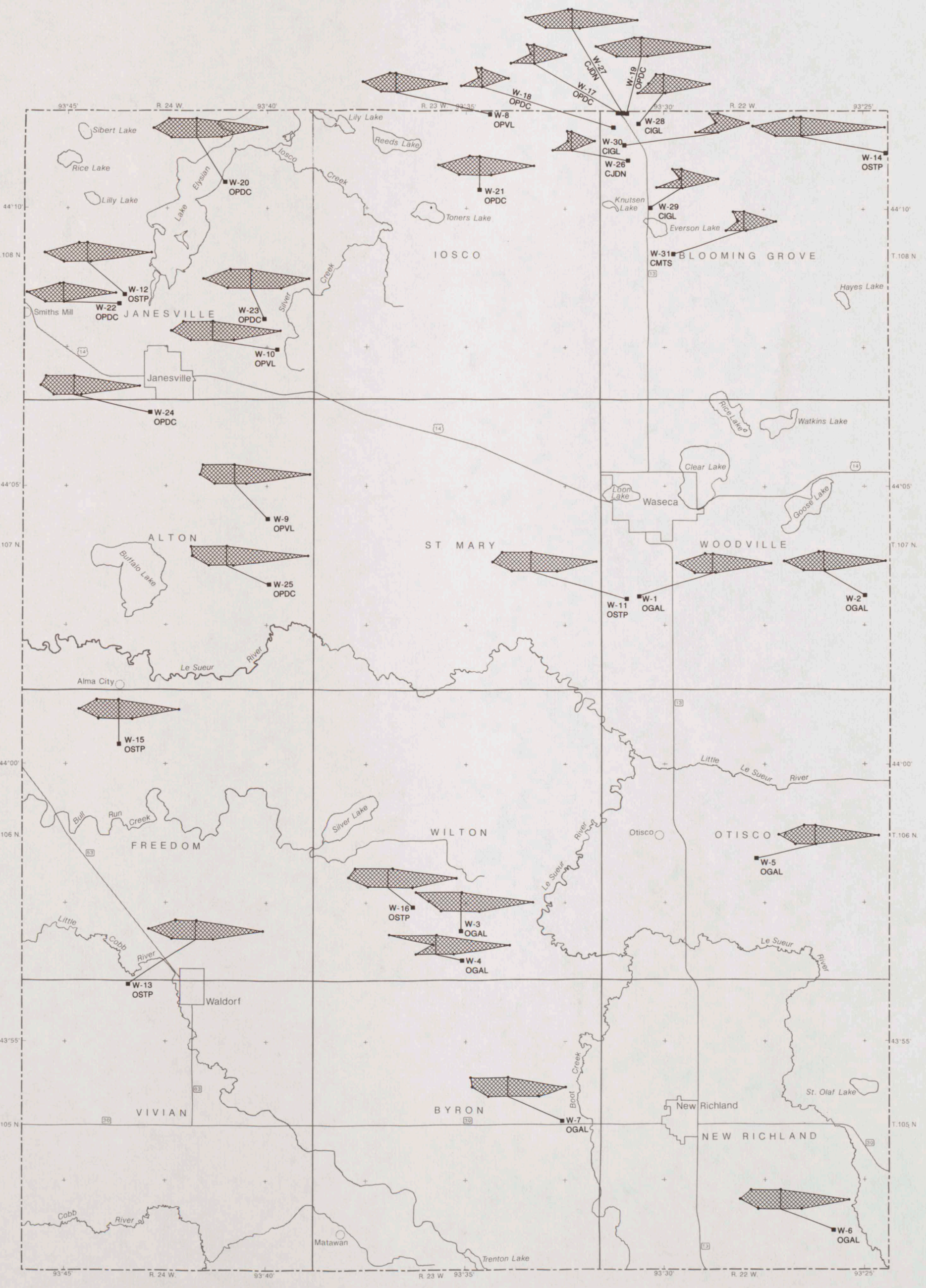


STRUCTURE MAP OF THE MT. SIMON SANDSTONE  
Northeastern Waseca County and Adjacent Areas of Le Sueur and Rice Counties

EXPLANATION  
Structure contours—Drawn on top of the Mt. Simon Sandstone; selected contours omitted in area of very steep gradient; hachures indicate area of lesser thickness. Contour interval 10 feet; datum is mean sea level.  
Water well or test hole used for control

LOCATION DIAGRAM

WATER QUALITY



Planimetric base by Minnesota Geological Survey; adapted from U.S. Geological Survey 1:24,000 topographic quadrangles listed on Plate 1  
Polyconic projection, 1927 North American datum

Table 1. Selected properties of and constituents in water from wells completed in bedrock units

TABLE 1. CONTINUED.

Sample Number	W-11	W-12	W-13	W-14	W-15	W-16	W-17	W-18	W-19	W-20	W-21
Unique Number	214674	214611	213764	213790	214629	213793	214647	215554	215566	215708	215622
Property or constituent <sup>1</sup>	210	230	190	190	214	233	209	223	190	200	240
Calcium as CaCO <sub>3</sub> (mg/L)	100	119	117	119	116	120	114	96	82	119	124
Magnesium (mg/L)	0.16	0.18	0.17	0.19	0.19	0.19	0.19	0.17	0.20	0.14	0.28
Potassium (mg/L)	<1	3.5	4	<1	5	7	7.8	2.9	5	4	1.7
Sulfate (mg/L)	18.27	11.61	11.63	12.96	28.24	26.29	26.29	26.29	16.18	11.87	17.53
Reactive Silica (mg/L)	23.11	18.11	24.68	26.02	18.78	18.68	21.04	14.96	24.12	23.19	18.62
Iron (mg/L)	10.093	2.308	3.127	4.303	3.866	3.475	2.698	8.893	1.802	1.393	8.347
Barium (mg/L)	180	910	100	79	360	45	96	190	170	78	110
Copper (mg/L)	23	0.2	4.2	0.5	0.3	5.8	1.2	0.4	3.7	0.8	11
Selenium (mg/L)	<1	3.5	4	<1	5	7	7.8	2.9	5	4	1.7
Total mercury in water (μg/L)	<0.1	0.196	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.113
Boron (mg/L)	0.17	0.26	0.37	0.38	0.12	0.14	0.23	0.08	0.17	0.33	0.24
Arsenic (μg/L)	4.5	10	9.2	11	3.7	3	8.3	0.96	2.8	7.2	1.7
Chromium (μg/L)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel (μg/L)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Zinc (μg/L)	420	65	130	170	450	31	210	370	96	42	390
Calcium (mg/L)	0.014	0.012	0.028	0.027	0.01	0.01	0.03	0.022	0.06	0.07	0.05
Lead (mg/L)	0.28	0.1	0.5	0.1	0.41	0.36	1.06	0.25	0.7	0.45	0.36
Silver (μg/L)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloride (mg/L)	0.03	0.05	1.96	1.46	0.3	1.4	1.39	0.32	0.5	0.96	1.01
NO <sub>3</sub> -N (mg/L)	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sulfide (mg/L)	17	0.58	100	100	5	100	175.87	14.38	8.8	96.31	100
Total phosphorus (mg/L)	0.02813	0.02005	0.0366	0.0261	0.02954	0.02482	0.04668	0.01208	0.02892	0.0302	0.0214
Hardness as CaCO <sub>3</sub> (mg/L)	318	391	307	309	339	362	319	270	313	364	366
Total alkalinity (mg/L)	340	380	420	430	370	400	340	290	440	390	386
Total fluoride (mg/L)	0.29	0.29	0.29	0.24	0.21	0.31	0.27	0.21	0.43	0.19	0.22
Ammonia nitrogen (mg/L)	0.9802	1.154	1.714	1.543	1.286	0.1	0.27	0.209	0.960	1.058	0.944
pH (unit)	7.8	7.6	7.4	7.8	7.4	7.4	7.2	7.7	8	7.7	7.4
Specific conductance (Sen at 25°C)	600	720	840	1000	600	800	960	840	860	860	860
Total calcium (microequiv/L)	7201	7947	11708	11708	8062	11962	10062	7192	6006	10904	10736
Total anions (microequiv/L)	7189	7344	10469	10676	7471	10654	10588	7177	6188	10167	10303
Total dissolved solids (mg/L)	1190	1390	1460	1460	1460	1460	1460	1460	1460	1460	1460
Total organic carbon (mg/L)	1.8	4.9	2.8	3.4	4	4.8	3.3	2.5	5.1	5.7	2.9
Total carbon in water (mg/L)	2.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Phenol (μg/L)	5.7	2	3.9	2	3.9	2	2	2	2	2	2
Oil and grease (mg/L)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

EXPLANATION  
[See Table 1 for selected properties and constituents of water samples]

CHEMICAL-CONSTITUENT DIAGRAM  
Scale: 10 mg/L to 100 mg/L

Legend:  
W-16 Water-sample number  
Bedrock unit from which water sample was collected: OGAL (Galena Group), OPVL (Plateville Formation), OSTP (St. Peter Sandstone), OPCG (Prairie du Chien Group), C-JCN (Jordan Sandstone), OGL (Iron and Galesville Sandstones), OMS (Mt. Simon Sandstone)

CHEMICAL-CONSTITUENT DIAGRAMS FOR WATER FROM WELLS COMPLETED IN BEDROCK UNITS

BEDROCK GEOLOGY OF WASECA COUNTY, MINNESOTA