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DEPARTMENT OF ENERGY AND NATURAL RESOURCES

Water-Level Trends, Pumpage, and Chemical Quality in the Carnbrian-Ordovician Aquifer in Illinois, 1971-1980

by ROBERT T. SASMAN, CURTIS R. BENSON, R. SCOTT LUDWIGS, and TAMARA L. WILLIAMS

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CONTENTS

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SUMMARY

'This report considers pumpage and water-level changes from 1971 through 1980, and 1980-1981 water quality, in deep sandstone wells penetrating the Cambrian-Ordovician aquifer, the most highly developed aquifer for large groundwater supplies in Illinois. Data from 43 counties, covering 27,000 square miles or 48 percent of the state, are discussed, with emphasis on the 8-county Chicago region in northeastern Illinois.

The Cambrian-Ordovician aquifer is encountered at depths ranging from less than 100 feet in areas of northwestern Illinois to an average of about 500 feet below land surface at Chicago, and as deep as 900 to 1100 feet below land surface in the extreme south of the area under consideration. It has an average thickness of 1000 feet and is composed chiefly of sandstones and dolomites. In the southwestern part of the region, the Cambrian-Ordovician aquifer is more than 2000 feet thick.

Production from deep wells in 20 northern counties of Illinois increased from 200,000 gallons per day (gpd) in 1864 to 239.0 million gallons per day (mgd) in 1971; approximately 63 percent of the 1971 pumpage was from wells in the Chicago area. As a result, piezometric levels in the Cambrian-Ordovician aquifer in Chicago have declined more than 850 feet since 1864. Production from deep wells in the Chicago region is concentrated in northwestern and western Cook County, eastern DuPage and eastern Kane Counties, and around Joliet in Will County. Large withdrawals from deep wells outside the Chicago region occur at Rockford, Belvidere, Freeport, DeKalb-Sycamore, Rochelle, Dixon, and Ottawa-Peru. Numerous other municipalities and self-supplied industries throughout northern Illinois pump small to large quantities of water from deep wells. Groundwater withdrawals in the southern portion of the study area are generally limited.

During the period from 1971 through 1980, production from deep wells in northern Illinois increased approximately 12 percent (28.4 mgd) to 267.5 mgd. In the Chicago region pumpage increased 22 percent to 183.7 mgd. These increases have resulted in excessive water-level declines in some deep wells. For the Chicago region, annual rates of water-level decline during the 5-year period 1975-1980 ranged from 1 foot per year in Kendall-County to 14 feet per year in Lake County and averaged about 9 feet per year. Water level changes in 10 selected observation wells outside the Chicago region ranged from a rise of 3.2 feet per year to a decline of 4.4 feet per year during the same period.

Withdrawals since 1971 within the Chicago region have exceeded the practical sustained yield of the Cambrian-Ordovician aquifer, as they have each year since 1958. As a result, groundwater users continue to mine water that will not be available for future generations. By the end of 1971, the upper and some of the middle units of the aquifer had already been dewatered in many areas, with some pumping levels exceeding 1000 feet. In 1975, at least 17 municipal and industrial wells had pumps set at 1000 feet or deeper. By 1980, there were at least 48 pumps set at a depth of 1000 feet or more. If the distribution of withdrawals remains the same and continues to increase as indicated by recent trends, the principal water-yielding units of the aquifer will be dewatered in many areas much sooner than previously anticipated (Suter et al. , 1959).

The chemical analyses of samples taken from the Cambrian-Ordovician aquifer between October 1980 and May 1981 indicate a general degradation of quality away from major aquifer recharge areas. This is based on the distributions of the following six constituents: iron, sodium, chloride, sulfate, hardness, and total dissolved solids (TDS). The water is of relatively good quality in northern Illinois (excluding the Chicago area), and becomes more highly mineralized to the south and east. The poorest quality waters are in the southwestern portion of the study area and the Chicago area. There is some indication of induced upwelling of highly mineralized Elmhurst-Mt. Simon water due to overpumping of the Cambrian-Ordovician wells in the Chicago area. The water quality changes are probably due to natural mineral sources, with no apparent degradation from surficial contaminants.

Increasing withdrawals, declining water levels, and objectionable chemical constituents of water from the Cambrian-Ordovician aquifer are major factors in the acute concern regarding the capability of the aquifer to continue to provide a major share of the water supply for northeastern Illinois.

INTRODUCTION

In May 1959 the State Water Survey and State Geological Survey published Cooperative Groundwater Report 1 (Suter et al., 1959), which discussed the geology and hydrology of the groundwater resources of the Chicago region, the yields of aquifers, and the possible consequences of future groundwater development. Special emphasis was placed on the deep aquifers which have been most widely used for large groundwater supplies. Cooperative Groundwater Report 1 indicated that pumpage from deep wells during 1958 approached the amount that could be continuously withdrawn without eventually dewatering the lowest and most productive formation of the deep aquifer. Future (1958-1980) water-level declines were predicted, ranging from 190 feet at Elgin to 300 feet at Chicago and Des Plaines. It was recognized that actual water-level declines would vary from the predicted declines if future distribution and rates of pumpage deviated from extrapolations of past groundwater use.

In 1959, as a result of the findings of Cooperative Groundwater Report 1, the State Water Survey's program of collecting and reporting water-level and pumpage data for deep wells in the Chicago region was expanded. The objectives of the program are: 1) to provide long-term continuous records of pumpage and water-level fluctuations, 2) to delineate problem areas, and 3) to report hydrologic information to facilitate the planning and development of the water resources of the Cambrian-Ordovician aquifer in the Chicago region. The importance of the program is pointed up by the increasing demands for water and the continuing decline of groundwater levels.

Six reports on water levels and pumpage from deep wells have been issued by the State Water Survey since the publication of Cooperative Groundwater Report 1. These are: Circular 79 (Walton et al., 1960), and Circulars 83, 85, 94, 113, and 124 (Sasman et al., 1961, 1962, 1967, 1973, and 1977, respectively). These reports summarized data for 1959, 1960, 1961, 1962-1966, 1966-1971,.and 1971-1975, respectively. In addition, Reports of Investigation 50 (Sasman, 1965) and 52 (Sasman and Baker, 1966) summarized data on groundwater pumpage in 17 counties of northern Illinois through 1962 and 1963, respectively. Report of Investigation 73 (Sasman et al., 1974) discussed groundwater pumpage in 20 counties of northern Illinois during the period 1960-1970. Report of Investigation 83 (Schicht et al., 1976) described the available groundwater and surface water resources for the Chicago region, predicted water shortages depending on various water use schemes, and offered alternatives for meeting projected water supply needs to the year 2010.

In response to the increasing expansion of urban development, the outward migration of deepening water levels, and increasing interest in regional water resources development, this report provides a detailed discussion of groundwater withdrawals and water-level trends in a 20-county area of northern Illinois. Particular emphasis has been given to the Chicago region because of the continuing increase in Cambrian-Ordovician pumpage and the corresponding decline in water levels in that area. Pumpage and water-level trends are presented for an additional 23 counties in the southern sector of the aquifer system. The total area covered includes essentially all of Illinois where water from deep sandstone wells is used for public or industrial water supplies. This report presents the first detailed investigation of Cambrian-Ordivician aquifer water levels in the 23 southern counties.

Figure 1 delineates three areas which are discussed separately in various sections of this report. The eight counties of the Chicago region, with the abbreviations used in this report, are:

Cook	COK	Kendall	KEN
DuPage	DUP	Lake	LKE
Grundy	GRY	McHenry	MCH
Kane	KNE	Will	WIL

The 12 northern counties outside the Chicago area included in this report are:

Boone	BNE	Lee	LEE
Carroll	CAR	Ogle	OGL
DeKalb	DEK	Rock Island	RIS
Jo Daviess	JDV	Stephenson	STE
Kankakee	KNK	Whiteside	WTS
LaSalle	LAS	Winnebago	WIN

The additional 23 counties in the southern sector of the study area are:

Adams	ADM	McLean	MCL
Brown	BRN	Marshall	MRS
Bureau	BUR	Mercer	MER
Ford	FRD	Peoria	PEO
Fulton	FUL	Pike	PKE
Hancock	HAN	Putnam	PUT
Henderson	HND	Schuyler	SCH
Henry	HRY	Stark	STK
Iroquois	IRO	Tazewell	TAZ
Knox	KNX	Warren	WAR
Livingston	LIV	Woodford	WDF
McDonough	MCD		

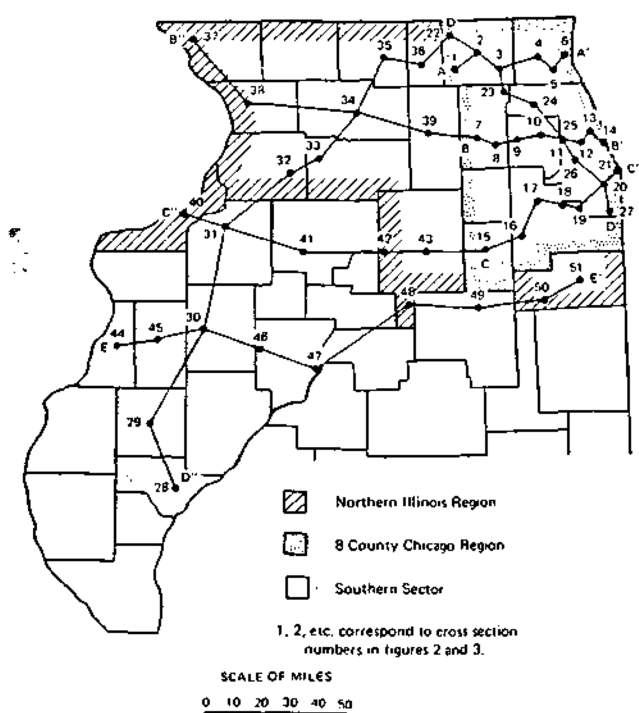

Figure 1. Study areas discussed in this report, and locations of geologic cross sections shown in figures 2 and 3

Acknowledgments

The authors wish to acknowledge the numerous individuals and organizations who have generously contributed information incorporated in this report. Operators of more than 75 percent of the public and industrial water supply systems reported their annual pumpage in response to mailed questionnaires. Water level data were largely obtained in visits of Illinois State Water Survey personnel to system operators. Numerous water levels, well construction records, and pump depth and capacity records were obtained from well contractors and consulting engineers. Representatives of the Wisconsin Department of Natural Resources and the U.S. Geological Survey in Madison, Wisconsin, provided water level and pumpage data for southeastern Wisconsin. These data were useful in interpretations of hydrology data along the Illinois-Wisconsin state line.

During the 1980 water-level inventory period, many of the water levels in the central and western sections of the region were obtained by Sue Richards and Frank Harbison, former employees of the State Water Survey. Water samples were collected by Robert Gilkeson of the Illinois State Geological Survey. Personnel of the Champaign, Illinois, Environmental Protection Agency Laboratory under the direction of Roy Frazier, and the State Water Survey laboratory personnel, under the direction of Jim Whitney, Assistant Head, Analytical Chemistry Laboratory Unit, performed the water quality analyses. Karen Vivian tabulated much of the pumpage and water-level data and typed numerous drafts of the text. Special acknowledgment goes to Adrian Visocky, of the Water Survey Groundwater Section, for his valuable review and suggestions during the preparation of the report, and to James Gibb, Head of the Water Survey Groundwater Section, for his review and coordination of the final report. The Survey's graphic arts staff, under the guidance of John W. Brother, Jr., prepared all of the final figures; Gail Taylor edited the final manuscript; and Pamela Lovett prepared the camera copy.

GEOLOGY AND HYDROLOGY

Groundwater resources in northern Illinois are developed from four aquifer systems: 1) sand and gravel deposits of the glacial drift; 2) shallow dolomite and limestone aquifers of Mississippian, Devonian, Silurian, and Ordovician age; 3) sandstone aquifers of Ordovician and Cambrian age, of which the Glenwood-St. Peter and Ironton-Galesville sandstones are the most productive formations; and 4) the Elmhurst-Mt. Simon aquifer, consisting of sandstones of the lower Eau Claire and Mt. Simon Formations of Cambrian age. The sequence, structure, and general characteristics of these rocks are shown in figures 2 and 3. Figure 4 is a geologic map of the bedrock surface of northern Illinois. Only the sand-stone aquifers are considered in the following descriptions.

The Glenwood-St. Peter sandstone is present throughout northern Illinois, except in an area including portions of southern Ogle and DeKalb Counties, eastern Lee County, and northern LaSalle County. In some

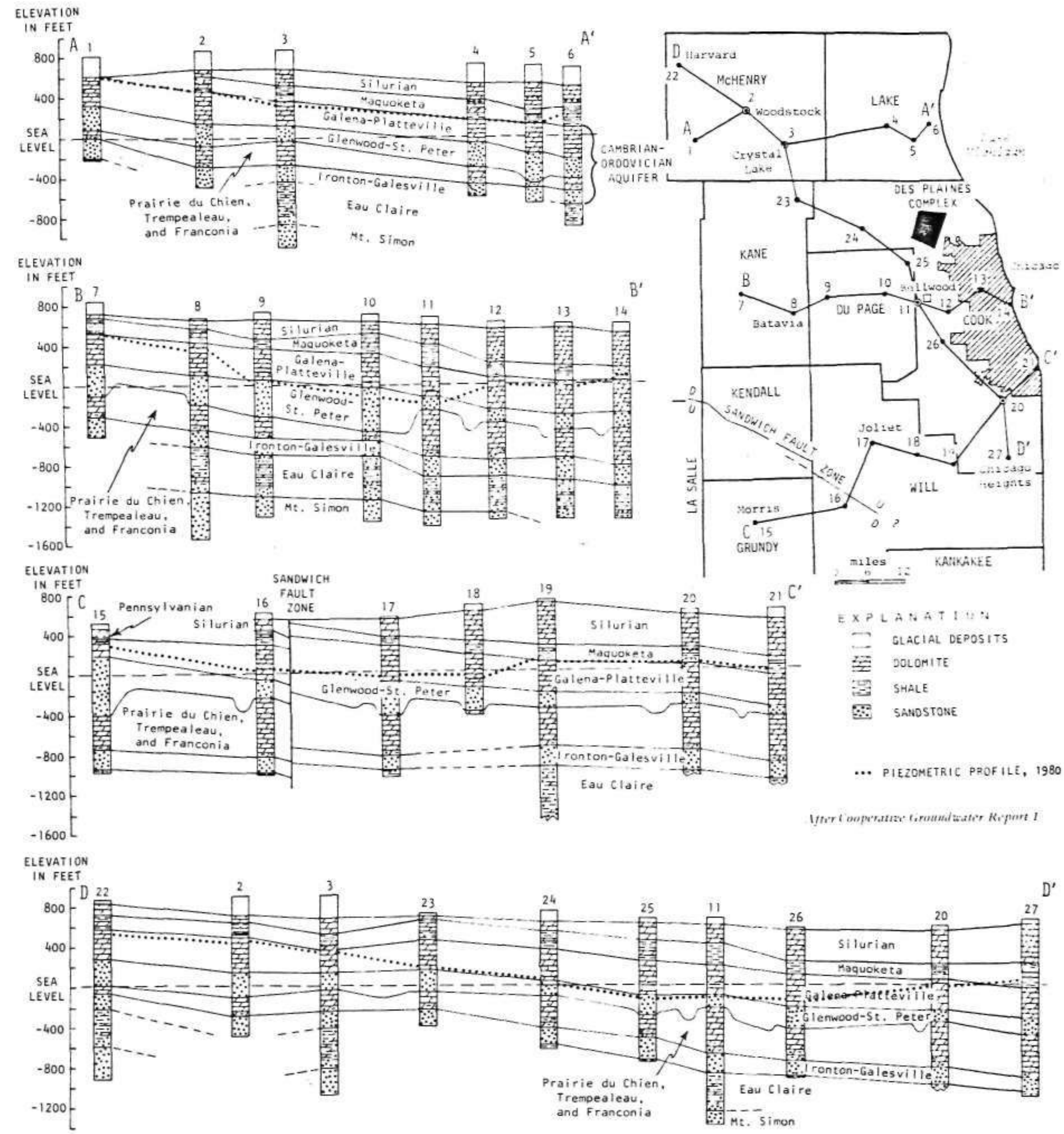

Figure 2. Cross sections of the structure and stratigraphy of the bedrock and piezometric profile of the Cambrian-Ordovician aquifer in the Chicago region

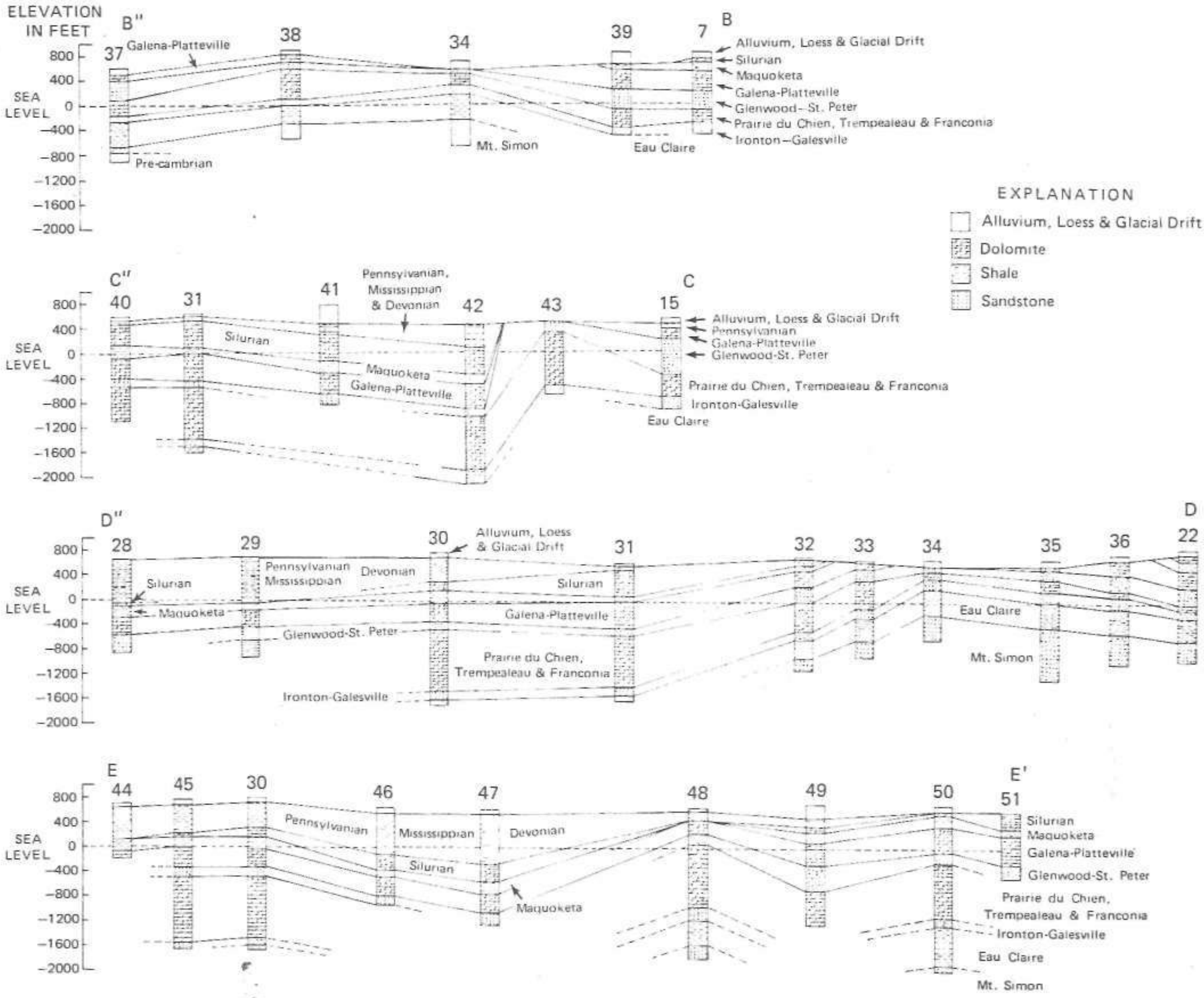

Figure 3. Cross sections of the structure and stratigraphy of the bedrock in northwestern Illinois and the southern sector of the aquifer system

sections of these same counties, this sandstone is immediately below the glacial drift. It exceeds 200 feet in thickness in some places, but is generally less than 200 feet thick in the southern part of the area. In some areas of western and north-central Illinois, primarily in DeKalb and Stevenson Counties, the Glenwood-St. Peter sandstone yields several hundred gallons per minute to wells and is the primary source of groundwater for municipal and industrial supplies.

The Ironton-Galesville sandstone underlies the Franconia Formation and overlies the Eau Claire Formation. It occurs throughout northern Illinois, except in the extreme southwestern part of the area. On a regional basis,

Figure 4. Areal geology of bedrock surface in northern Illinois

it is the most uniformly permeable and productive unit of the Cambrian-Ordovician aquifer. Many of the high-capacity municipal and industrial wells in northern Illinois obtain a major part of their yields from this formation.

Moderate to high yields are obtained from wells penetrating the Mt. Simon aquifer, particularly in northwestern Cook County and Kane County in the Chicago region, and farther west in Lee, Ogle, Whiteside, and Winnebago Counties.

The bedrock formations dip southward throughout northern Illinois. The Cambrian-Ordovician aquifer becomes very deep and overlain by thick sections of relatively low-permeability rocks toward the southern part of the region. Much of this rock material consists of Pennsylvanian shale and dolomite and limestone of the Mississippian, Devonian, Silurian, and Ordovician Systems, as shown in figure 4. Pennsylvanian, Mississippian, and Devonian rocks are generally absent in the northern part of the area. Most of the deep wells in the southwest penetrate only into the Glenwood-St. Peter sandstone at depths of 1300 to 1700 feet, similar to the depths of the Ironton-Galesville sandstone to the north and northeast.

The primary source of recharge to the sandstone aquifers is precipitation percolating through the glacial deposits where the Galena-Platteville dolomite or older rocks are the uppermost bedrock formation. This area is defined essentially by the western limits of the Maquoketa Formation of Ordivician age and encompasses major portions of north-central and northwestern Illinois. The shale of the Maquoketa Formation is the primary overlying confining material in the Chicago region. In extreme northwestern Illinois, primarily in Jo Daviess County, the Maquoketa Formation is present only at higher elevations. The control of recharge by this formation is evident by the close correlation between the piezometric surface contours and the boundary of the formation.

The principal area of recharge to the Cambrian-Ordovician aquifer of the Chicago region is in areas of Boone, DeKalb, Kane, Kendall, and McHenry Counties, Illinois, and in extreme southeastern Wisconsin. The continual lowering of water levels accompanying the large withdrawals of groundwater has established steep hydraulic gradients north, west, and southwest of Chicago and Joliet, so that large quantities of water from recharge areas in northern Illinois and minor quantities from southeastern Wisconsin are being transmitted toward pumping centers. Water derived from storage within the aquifer and from vertical leakage through the Maquoketa Formation also moves toward cones of depression (Walton, 1960). Lesser amounts of water are derived from the south in Illinois, from the southeast in Indiana, and from the northeast beneath Lake Michigan.

Natural discharge to rivers from the sandstone aquifer occurs where riverbeds are cut into the Galena-Platteville dolomite or older formations, and piezometric levels are higher than river levels. Rivers currently receiving water from the deep aquifer are the Mississippi north of Thompson, the Rock northeast of Sterling (along with its tributary, the Pecatonica), short reaches of the Illinois between LaSalle and Ottawa, the extreme southern reach of the Fox, and the Apple River.

PRODUCTION FROM CAMBRIAN-ORDOVICIAN WELLS

The first deep well in northern Illinois was drilled in Chicago in 1864 and had an artesian flow at ground surface estimated at 150 gallons per minute (gpm), or about 200,000 gpd. There were at least 75 deep wells in operation by 1900 and pumpage was estimated at 30-mgd. Production in the northern 20 counties of Illinois increased gradually at an average rate of 1.5 mgd per year during the first 40 years of this century and was 91.5

mgd in 1940, as shown in figure 5. During the next 15 years, the average increase rate was 2.7 mgd per year, with 131.7 mgd produced in 1955. Pumpage increased at a very rapid rate of 6.7 mgd per year during the next 16 years and was 239.0 mgd in 1971.

Chicago region Cambrian-Ordovician groundwater production increased rather irregularly from 23.2 mgd in 1900 to 75.6 mgd in 1955, as shown in figure 6. During the next 16 years, production nearly doubled, with an average increase of 4.7 mgd per year. In 1971, 150.7 mgd were withdrawn.

Historical production data are incomplete for the water supply systems in the southern sector of the study area that have wells finished in the Cambrian-Ordovician aquifer. •

Pumpage in the Northern Sector, 1971-1980

Withdrawals in each of four counties — Cook, Kane, Will, and Winnebago — were more than 28 mgd in 1971 and totaled 146.2 mgd, or 61 percent of the deep well production in the northern sector. Cook County pumpage, the highest pumpage of the 20 counties, was almost double that of Winnebago, which had the second highest pumpage. Other counties with high pumpage levels were DuPage and LaSalle Counties, in which the 1971 production exceeded 12 mgd. Pumpage from deep wells was least in Kankakee County, with less than 1.0 mgd in 1971.

During the 9-year period from 1971 through 1980, groundwater withdrawal from sandstone wells in the northern 20 counties of Illinois increased 12 percent, from 239.0 mgd to 267.5 mgd, an average increase of 3.2 mgd per year. Total production reached a record high of 271.6 mgd in 1979. The greatest annual increase in pumpage was -13.7 mgd in 1976. Production decreased from the previous years in 1975, 1977, and 1980; 1980 pumpage was 4.1 mgd less than 1979 pumpage. The distribution of pumpage from deep wells from 1971 through 1980 is shown in table 1.

Groundwater production increased in 13 counties during the period, with increases ranging from less than 0.1 mgd to 12.0 mgd, or from less than 1 to 162 percent. DuPage County had the greatest increase, followed by Cook County, both of which had increases greater than 10 mgd. Grundy, Lake, LaSalle, McHenry, and Ogle Counties had increases of 1.3 to 7.2 mgd. Grundy County had the greatest percentage increase in pumpage, 162 percent. Increases of 23 to 72 percent occurred in DuPage, Jo Daviess, Kendall, Lake, McHenry, and Ogle Counties.

Groundwater withdrawal in Boone, Stephenson, Will, and Winnebago Counties decreased between 1971 and 1980 by amounts ranging from 1.3 mgd in Boone County to 5.9 mgd in Winnebago County. The decreases in these four counties varied between 14 and 29 percent.

The distribution of pumpage subdivided into use categories is shown for 1900-1980 in figures 5 and 6 and for 1971-1980 in table 1. Production

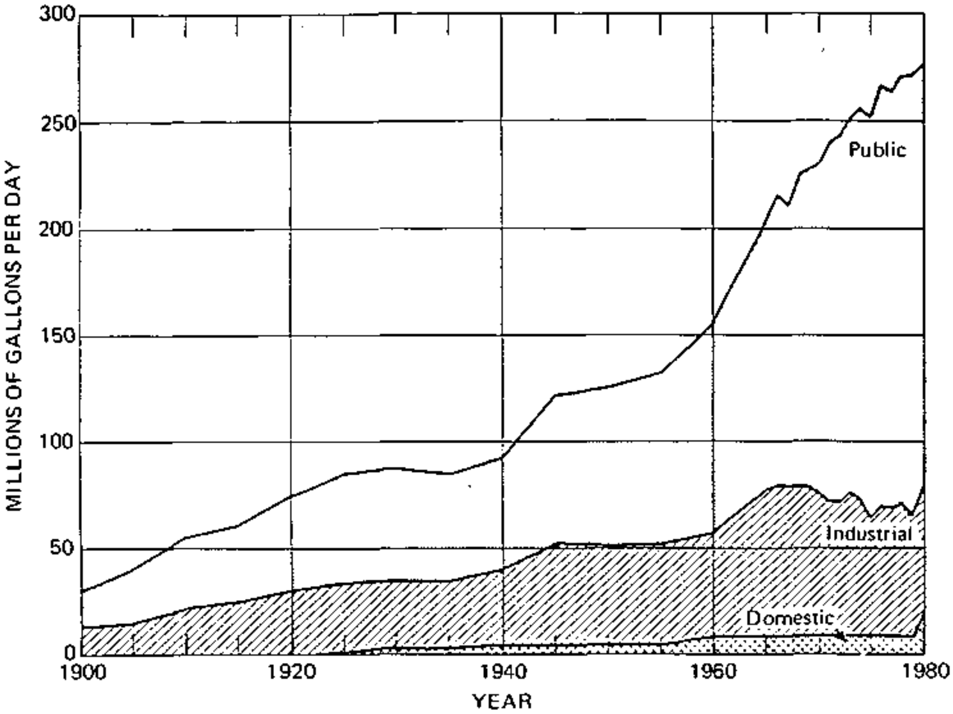

Figure 5. Production from the Cambrian-Ordovician aquifer in 20 northern Illinois counties, 1900-1980, subdivided by use

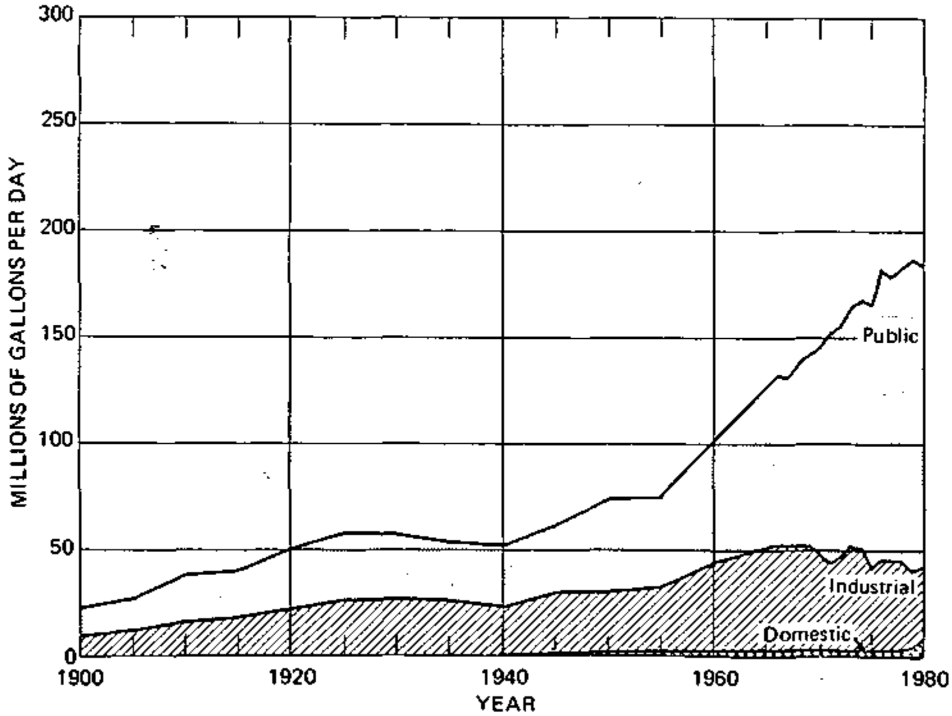

Figure 6. Production from the Cambrian-Ordovician aquifer in the Chicago region, 1900-1980, subdivided by use

Table 1. Distribution of Pumpage from Cambrian-Ordovician Wells in the Northern Sector, 1971-1980, Subdivided by Use

(Pumpage in millions of gallons per day)

	1971				1972				1973			
County	Public	Industrial	Rural	Total	Public	Industrial	Rural	Total	Public	Industrial	Rural	Total
Chicago Region												
COK	41.79	16.63	0.24	58.66	42.01	15.78	0.24	58.03	46.52	18.05	0.24	64.81
DUP	15.46	1.22	0.08	16.76	15.63	1.21	0.08	16.92	16.93	0.68	0.08	17.69
GRY	1.54	2.52	0.36	4.42	1.64	7.33	0.36	9.33	1.86	8.35	0.36	10.57
KNE	25.65	2.28	1.28	29.21	25.39	2.29	1.28	28.96	25.17	1.84	1.28	28.29
KEN	0.38	0.72	0.75	1.85	0.47	0.98	0.75	2.20	0.52	1.02	0.75	2.29
LKE	5.02	2.18	0.70	7.90	5.64	1.56	0.70	7.90	4.64	2.00	0.70	7.34
MCH	1.97	1.17	0.21	3.35	2.09	1.24	0.21	3.54	2.14	1.26	0.21	3.61
WIL	14.29	14.07	0.23	28.59	14.05	12.88	0.23	27.16	14.39	15.03	0.23	29.65
Subtotal	106.10	40.79	3.85	150.74	106.92	43.27	3.85	154.04	112.17	48.23	3.85	164.25
Counties outside Chicago Region												
BNE	4.20	0.52	0.53	5.25	5.00	0.22	0.53	5.75	4.01	0.23	0.53	4.77
CAR	1.69	0.16	0.12	1.97	1.58	0.27	0.12	1.97	1.60	0.31	0.12	2.03
DEK	7.16	0.29	1.02	8.47	7.32	0.21	1.02	8.55	7.39	0.29	1.02	8.70
JDV	1.98	0.05	0.13	2.16	1.94	0.19	0.13	2.25	1.95	0.13	0.13	2.21
KNK	0.10	--	--	0.10	0.10	--	--	0.10	0.11	--	--	0.11
LAS	6.59	5.44	0.45	12.48	7.00	4.59	0.45	12.04	6.89	5.20	0.45	12.54
LEE	3.16	0.71	0.57	4.44	3.21	0.66	0.57	4.44	3.47	0.64	0.57	4.68
OGL	5.35	1.11	0.53	6.99	6.16	1.10	0.53	7.79	6.20	1.14	0.53	7.87
RIS	0.35	2.23	0.09	2.67	0.54	2.41	0.09	3.04	0.63	2.09	0.09	2.81
STE	3.93	4.92	0.18	9.03	4.06	3.77	0.18	8.01	4.28	3.87	0.18	8.33
WTS	2.11	2.24	0.66	5.01	2.22	2.52	0.66	5.40	2.14	1.78	0.66	4.58
WIN	25.65	3.68	0.39	29.72	25.12	3.37	0.39	28.88	24.45	3.34	0.39	28.18
Subtotal	62.27	21.35	4.67	88.29	64.25	19.31	4.67	88.23	63.12	19.02	4.67	86.81
TOTAL	**168.37**	**62.14**	**8.52**	**239.03**	**171.17**	**62.58**	**8.52**	**242.27**	**175.29**	**67.25**	**8.52**	**251.06**

	1974				1975			
County	Public	Industrial	Rural	Total	Public	Industrial	Rural	Total
Chicago Region								
COK	46.62	16.36	0.24	63.22	51.54	14.53	0.24	66.31
DUP	18.63	0.55	0.08	19.26	20.30	0.61	0.08	20.99
GRY	1.89	9.23	0.36	11.48	1.97	4.62	0.36	6.95
KNE	26.93	1.80	1.28	30.01	27.39	1.62	1.28	30.29
KEN	0.55	0.77	0.75	2.07	0.63	0.80	0.75	2.18
LKE	5.33	1.67	0.70	7.70	5.85	1.49	0.70	8.04
MCH	2.56	1.11	0.21	3.88	2.48	1.08	0.21	3.77
WIL	14.62	15.07	0.23	29.92	13.91	13.05	0.23	27.19
Subtotal	117.13	46.56	3.85	167.54	124.07	37.80	3.85	165.72
Counties outside Chicago Region								
BNE	3.87	0.17	0.53	4.57	3.51	0.22	0.53	4.26
CAR	1.54	0.19	0.12	1.85	1.40	0.21	0.12	1.73
DEK	7.56	0.30	1.02	8.88	7.54	0.40	1.02	8.96
JDV	1.97	0.07	0.13	2.17	2.07	0.09	0.13	2.29
KNK	0.11	--	--	0.11	0.10	--	--	0.10
LAS	6.78	5.81	0.45	13.04	6.02	5.92	0.45	12.39
LEE	3.56	0.64	0.57	4.77	4.04	0.60	0.57	5.21
OGL	8.85	1.17	0.53	10.55	5.99	1.01	0.53	7.53
RIS	0.77	2.18	0.09	3.04	0.87	2.17	0.09	3.13
STE	4.17	3.39	0.18	7.74	4.27	3.16	0.18	7.61
WTS	2.13	1.71	0.66	4.50	1.98	1.39	0.66	4.03
WIN	24.39	2.86	0.39	27.64	26.11	2.93	0.39	29.43
Subtotal	65.70	18.49	4.67	88.86	63.90	18.10	4.67	86.67
TOTAL	**182.83**	**65.05**	**8.52**	**256.40**	**187.97**	**55.90**	**8.52**	**252.39**

Table 1. Concluded

County	1976 Public	1976 Industrial	1976 Rural	1976 Total	1977 Public	1977 Industrial	1977 Rural	1977 Total	1978 Public	1978 Industrial	1978 Rural	1978 Total
Chicago Region												
COK	55.20	13.30	0.24	68.74	53.72	13.13	0.24	67.09	54.19	13.85	0.05	68.09
DUP	27.94	0.77	0.08	28.79	23.91	0.25	0.08	24.24	25.29	0.22	0.04	25.55
GRY	2.01	10.28	0.36	12.65	2.03	10.74	0.36	13.13	2.10	11.50	0.32	13.92
KNE	26.47	1.75	1.28	29.50	26.85	1.39	1.28	29.52	26.29	1.80	0.94	29.03
KEN	0.66	0.98	0.75	2.39	0.72	0.93	0.75	2.40	0.75	0.93	0.79	2.47
LKE	6.33	2.14	0.70	9.17	6.67	2.43	0.70	9.80	8.15	2.10	0.53	10.78
MCH	2.97	1.28	0.21	4.46	3.05	1.42	0.21	4.68	3.02	1.60	0.26	4.88
WIL	14.59	10.88	0.23	25.70	16.63	11.58	0.23	28.44	16.94	10.37	0.37	27.68
Subtotal	136.17	41.38	3.85	181.40	133.58	41.87	3.85	179.30	136.73	42.37	3.30	182.40
Counties outside Chicago Region												
BNE	3.33	0.20	0.53	4.06	3.15	0.18	0.53	3.86	3.35	0.22	0.57	4.14
CAR	1.44	0.20	0.12	1.76	1.53	0.22	0.12	1.87	1.48	0.28	0.12	1.88
DEK	7.97	0.32	1.02	9.31	8.61	0.41	1.02	10.04	8.50	0.37	0.92	9.79
JDV	2.08	0.09	0.13	2.30	2.30	0.09	0.13	2.52	2.32	0.01	0.14	2.47
KNK	0.01	--	--	0.01	0.01	--	--	0.01	0.01	--	--	0.01
LAS	7.22	6.98	0.45	14.65	6.90	6.33	0.45	13.68	8.46	6.51	0.27	15.24
LEE	3.47	0.61	0.57	4.65	3.72	0.68	0.57	4.97	3.72	0.94	0.44	5.10
OGL	6.11	1.15	0.53	7.79	6.26	1.49	0.53	8.28	6.42	1.93	0.53	8.88
RIS	0.86	1.89	0.09	2.84	0.95	2.35	0.09	3.39	1.00	2.30	0.09	3.39
STE	4.21	3.19	0.18	7.58	3.93	2.82	0.18	6.93	4.24	2.83	0.17	7.24
WTS	2.27	1.66	0.66	4.59	2.32	1.32	0.66	4.30	2.47	1.23	0.69	4.39
WIN	21.84	2.92	0.39	25.15	20.98	3.25	0.39	24.62	21.24	3.93	0.57	25.74
Subtotal	60.81	19.21	4.67	84.69	60.66	19.14	4.67	84.47	63.21	20.55	4.51	88.27
TOTAL	196.98	60.59	8.52	266.09	194.24	61.01	8.52	263.77	199.94	62.92	7.81	270.67

County	1979 Public	1979 Industrial	1979 Rural	1979 Total	1980 Public	1980 Industrial	1980 Rural	1980 Total
Chicago Region								
COK	58.05	11.70	0.05	69.80	56.22	11.16	1.69	69.07
DUP	27.00	0.31	0.04	27.35	28.00	0.54	0.25	28.79
GRY	2.39	10.93	0.32	13.64	1.94	9.03	0.62	11.59
KNE	27.24	1.56	0.94	29.74	27.20	0.63	1.61	29.44
KEN	0.78	0.82	0.79	2.39	0.92	0.76	1.01	2.69
LKE	9.77	1.92	0.53	12.22	9.20	2.02	1.72	12.94
MCH	3.14	1.39	0.26	4.79	3.05	1.09	0.49	4.63
WIL	16.88	9.00	0.37	26.25	15.40	8.74	0.41	24.55
Subtotal	145.25	37.63	3.30	186.18	141.93	33.97	7.80	183.70
Counties outside Chicago Region								
BNE	3.41	0.23	0.57	4.21	2.72	0.58	0.63	3.93
CAR	1.35	0.26	0.12	1.73	1.38	0.16	0.18	1.72
DEK	8.37	0.50	0.92	9.79	7.46	0.80	1.53	9.79
JDV	2.04	0.19	0.14	2.37	2.31	0.18	0.16	2.65
KNK	0.01	--	--	0.01	0.01	--	--	0.01
LAS	8.33	5.61	0.27	14.21	7.91	6.28	0.49	14.68
LEE	3.68	0.56	0.44	4.68	3.37	0.33	0.81	4.51
OGL	6.69	2.12	0.53	9.34	5.71	1.60	1.53	8.84
RIS	0.94	2.20	0.09	3.23	0.48	2.43	0.09	3.00
STE	4.39	2.61	0.17	7.17	3.35	2.36	0.67	6.38
WTS	2.43	1.45	0.69	4.57	2.38	1.34	0.73	4.45
WIN	19.93	3.62	0.57	24.12	18.94	3.12	1.74	23.80
Subtotal	61.57	19.35	4.51	85.43	56.02	19.18	8.56	83.76
TOTAL	206.82	56.98	7.81	271.61	197.95	53.15	16.36	267.46

for public supplies increased 29.6 mgd or 18 percent during the period 1971-1980 and was 197.9 mgd in 1980. This represents 74 percent of the total deep well production in the northern 20 counties. Self-supplied industry produced 20 percent, and rural supplies 6 percent, of the total deep well pumpage. Industrial groundwater use decreased 9.0 mgd or 14.5 percent during the 9-year period to 53.1 mgd in 1980.

Between 1971 and 1980 there were 248 new deep wells drilled in the northern 20 counties of Illinois. Of these wells, 116 were drilled to augment existing municipal water-supply systems, 50 were for other public supplies, and 82 were for self-supplied industrial and commercial purposes; 159 of these new wells were located in the Chicago region. Most of the existing deep wells and pumps were rehabilitated to meet increased demands. Seven public supply systems and 37 industries discontinued withdrawing water from the deep sandstone during the period.

Figures 7, 8, and 9 show the pumpage for 1971, 1975, and 1980, respectively, for each of the 134 full or partial townships in the Chicago region. Records indicate that 1980 deep well production of more than 10,000 gpd occurred in 89 townships, and production of more than 1.0 mgd occurred in 42 townships. Eleven townships had pumpage of more than 5.0 mgd, and 2 had more than 10.0 mgd. Groundwater production continues to be concentrated in northwestern and western Cook Counties, eastern DuPage and Kane Counties, and the Joliet area of Will County.

In the 42 townships with more than 1.0 mgd pumpage in 1980 (7 more than in 1971), pumpage increased in 28 and decreased in 14 after 1971. Increases occurred in 9 of the 11 townships that pumped more than 5.0 mgd in 1980. Pumpage increases of 2.0 to 6.6 mgd occurred in 6 townships: COK 41N10E, COK 41N11E, COK 42N10E, DUP 38N11E, DUP 40N11E, and GRY 34N8E. Decreases of 2.6 and 2.5 mgd occurred in WIL 34N9E and WIL 35N10E, respectively. The major decreases in pumpage are primarily the result of decreases in industrial pumpage.

Public Pumpage

Public pumpage in the northern sector in 1980 was 197.9 mgd, an increase of 18 percent over that of 1971. Record high production of 206.8 mgd occurred in 1979. The annual rate of increase during 1971-1980 averaged 3.3 mgd. The greatest increases from 1971 to 1980 occurred in Cook and DuPage County, with 14.4 and 12.5 mgd, respectively. Increases of between 1.1 and 4.2 mgd occurred in Kane, Lake, LaSalle, McHenry, and Will Counties, while increases of 0.1 to 0.5 mgd occurred in 8 other counties. Public pumpage from deep wells decreased 6.7 mgd between 1971 and 1980 in Winnebago County as Rockford increased withdrawal from wells finished in sand and gravel aquifers. Pumpage in Boone, Carroll, Kankakee, and Stephenson Counties decreased from 0.1 to 1.5 mgd during the same period.

Public use includes use by municipalities, subdivisions, and institutions. No attempt has been made to determine the final use of water within

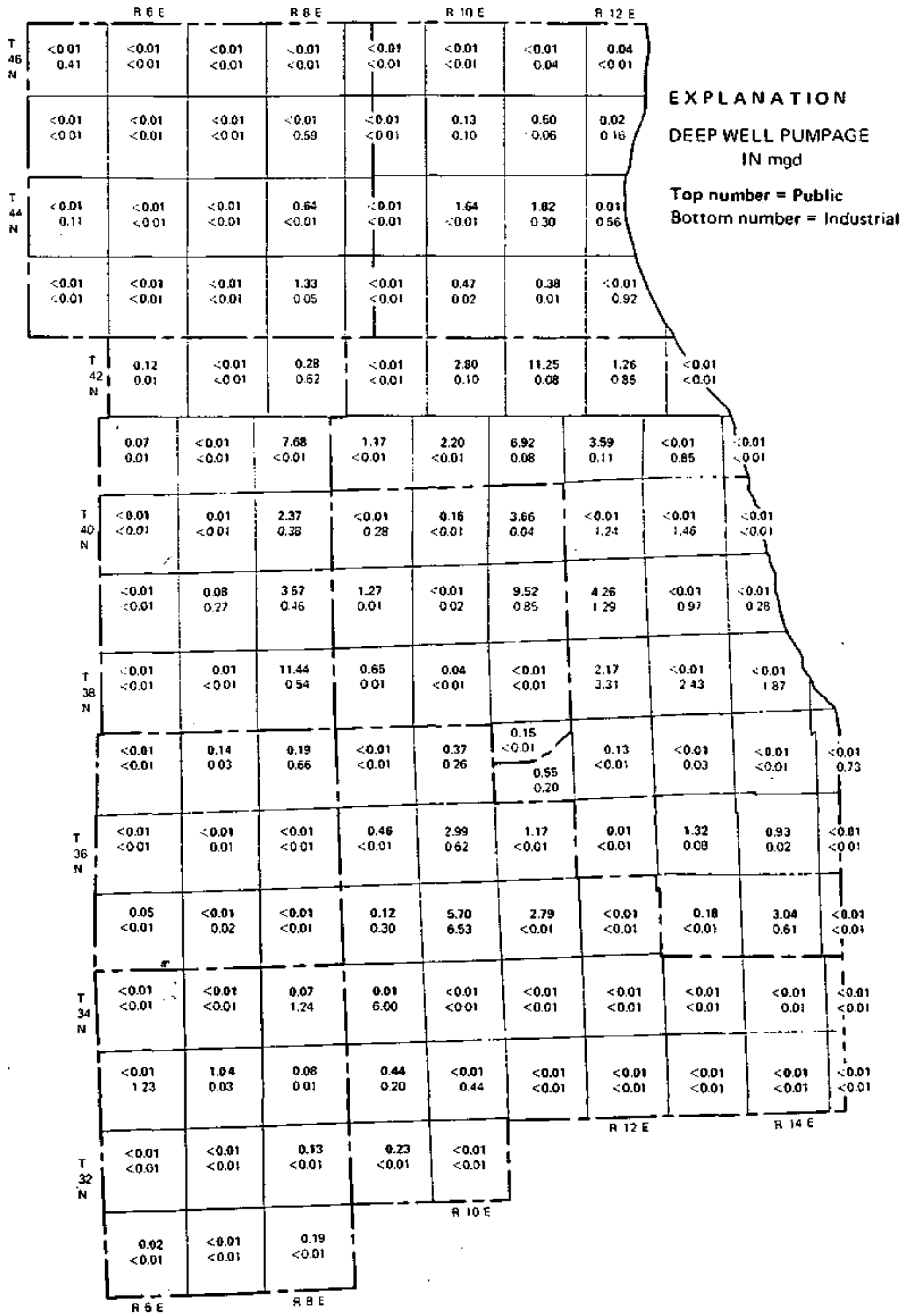

Figure 7. Distribution of pumpage from the Cambrian-Ordoviaian aquifer in the Chicago region, 1971

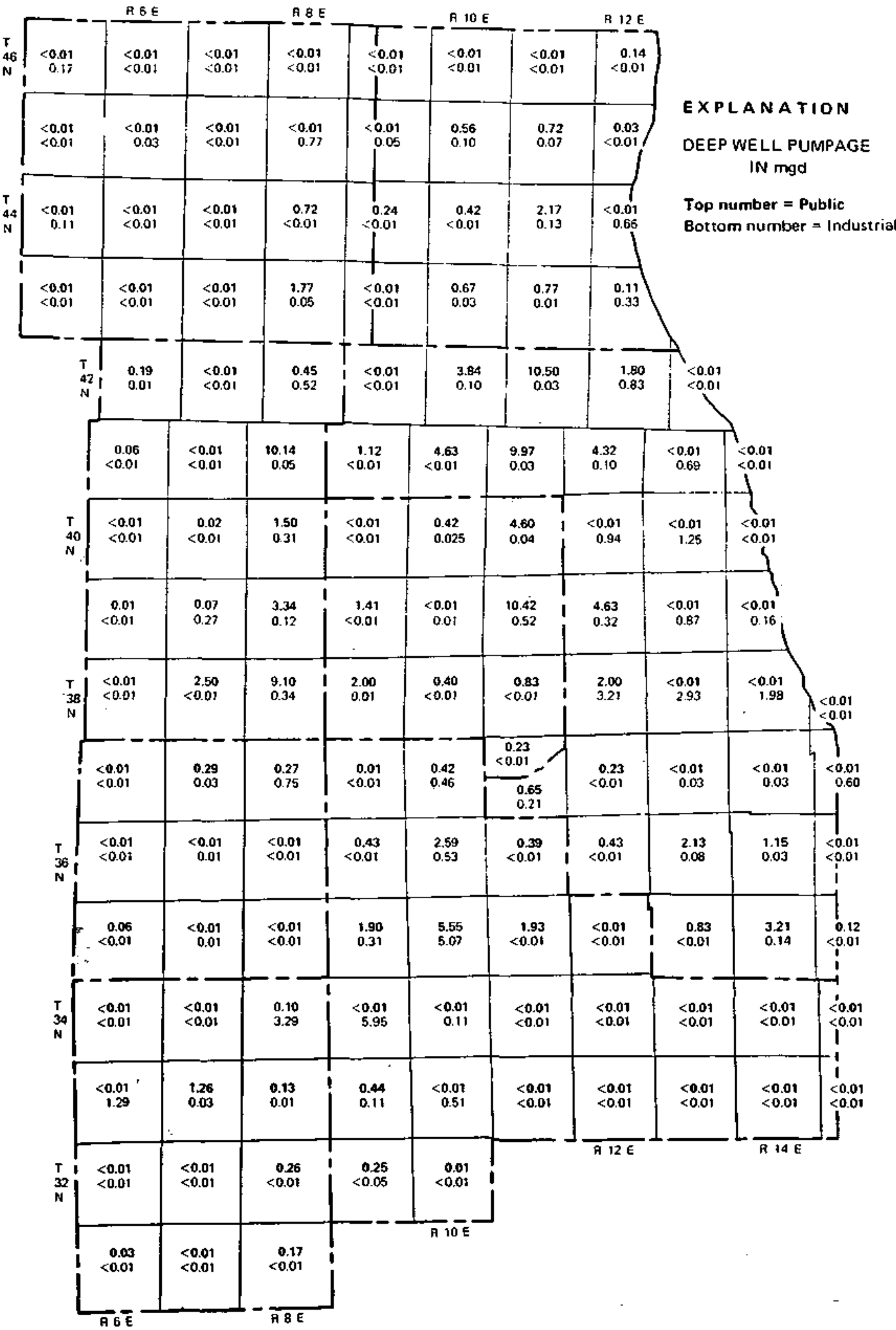

Figure 8. Distribution of pumpage from the Cambrian-Ordoviaian aquifer in the Chicago region, 1975

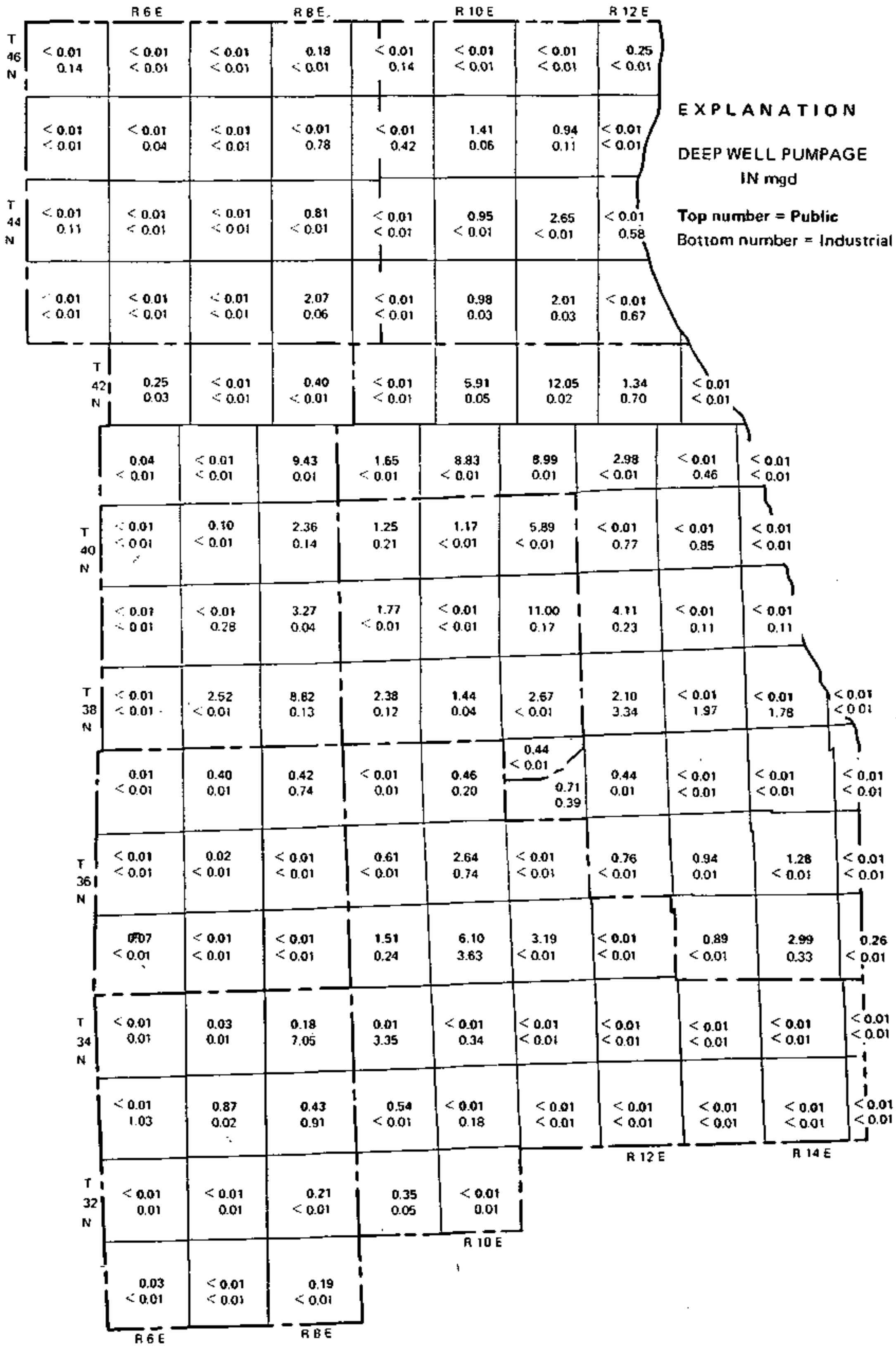

Figure 9. Distribution of pumpage from the Cambrian-Ordovioian aquifer in the Chicago region, 1980

these categories. Available records indicate that 177 municipalities and 166 subdivisions and institutions in the northern 20 counties of Illinois obtained water from deep wells in 1980. Forty-four percent of these public supply systems are located in Cook, LaSalle, Will, and Winnebago Counties. Fifty percent of the systems are located in the 8-county Chicago region.

Fifty-one public supply systems pumped more than 1.0 mgd from their deep wells during 1980 and had a combined production of 156.7 mgd. The pumpage for these 51 systems increased 17 percent after 1971. The 1980 production of these 51 systems accounted for 79 percent of the total deep well production for all public water supplies. Thirty-nine of these systems are located in the Chicago region.

The greatest increases in pumpage for public supplies since 1971 were for Elgin, Elk Grove, Lombard, Naperville, Oak Brook, Palatine, and Schaumburg, where increases of 1.7 to 3.6 mgd were recorded for the 9-year period. Pumpage at Elgin, Palatine, and Schaumburg increased more than 2.2 mgd. Seven other public supplies had increases of more than 1.0 mgd.

Of the 51 public supplies that pumped more than 1.0 mgd in 1980, production for 11 systems decreased by less than 0.1 to 8.9 mgd, with the largest decreases at Belvidere (1.5 mgd) and Rockford (8.9 mgd)..

Most of the public water supply systems, including most of those with large changes in pumpage, obtain water from both shallow and deep wells. Changes in the relative use of shallow and deep wells account for some of the indicated changes in deep well production.

Self-Supplied Industrial Pumpage

Cambrian-Ordovician groundwater withdrawal for self-supplied industrial use in the northern sector was 53.1 mgd in 1980, a decrease of 14.5 percent since 1971. The highest annual pumpage since 1971 was 67.3 mgd in 1973. The all-time high industrial pumpage from deep wells was 70.7 mgd in 1968. The 1980 pumpage was the lowest since 1966.

Between 1971 and 1980, pumpage increased in eight counties, seven of which had increases ranging from less than 0.1 to 0.8 mgd. Production in Grundy County increased 6.5 mgd. In six counties, pumpage decreased in amounts ranging from less than 0.1 mgd to 0.9 mgd. Production in Cook, Kane, Stephenson, and Will Counties decreased by 1.7 to 5.5 mgd. The greatest decreases were 5.5 mgd in Cook County and 5.3 mgd in Will County.

Twelve industries reported production greater than 1.0 mgd. This is one more industry than in 1971. The 12 industries pumped 24.4 mgd in 1980, which represented 45 percent of the total industrial pumpage from deep wells. Two of the 12 pumped more than 3.0 mgd. Of these 12 major industries, seven decreased their pumpage from 1971 to 1980 in amounts ranging from 0.1 to 2.3 mgd. Four industries increased pumpage by 0.2 to 1.8 mgd. One industry was under construction in 1971; its production has increased to more than 3.0 mgd. Seven of the largest water-using industries are located in the Chicago region and their combined pumpage was 15.9 mgd in 1980.

Some of the decrease in self-supplied industrial pumpage was due to the abandonment of inefficient wells or those with poor quality water. Many industries have reduced their demand by more efficient operations and various methods of water recirculation within the plant. Some of the decrease in pumpage for self-supplied industries has been offset by an increase in the purchase of water from municipalities. Part of the reported decrease in industrial pumpage is due to the shift of irrigation data to the rural category in 1980. Prior to 1980, irrigation use was included in the industrial-use category.

In the Chicago region, industrial pumpage increased from 40.8 mgd in 1971 to 48.2 mgd in 1973. Since then it has decreased, although irregularly, to a 15-year low of 34.0 mgd in 1980. Production declined in Cook, DuPage, Kane, and Will Counties, and increased only in Grundy County. Industrial pumpage in Kendall, Lake, and McHenry Counties remained about constant.

Rural Pumpage

In 1980 rural Cambrian-Ordovician wells produced 16.4 mgd, about 6 percent of the total production in the northern sector. This includes water for farms, individual residences remote from public water supplies, livestock, and irrigation systems. Irrigation systems include farm irrigation and other sprinkling systems, such as those for country clubs and golf courses, nurseries, and lawn watering at cemeteries. Residential pumpage was estimated from 1970 and 1980 U.S. Bureau of Census population data and the reported populations served by public water supplies. Live-stock populations are reported by the Illinois Cooperative Crop Reporting Service. Irrigation pumpage was based on reported and estimated acres irrigated, known sizes of some irrigation systems, and average amounts of moisture needed for optimum plant growth. Cambrian-Ordovician pumpage for irrigation was about 5.8 mgd in 1980. Consideration was given to the relative withdrawal from sandstone aquifers as compared to other aquifers throughout northern Illinois.

Pumpage in the Southern Sector

Twenty-three counties in the southern sector of the study area have one or more water supply systems with wells finished in the Cambrian-Ordovician aquifer. Some of the wells are also open to shallower aquifers. Historical production data are incomplete for these systems. Available records indicate that during 1980 deep wells were pumped in only 15 of these 23 counties.

Table 2. Distribution of Pumpage from Cambrian-Ordovician Wells in the Southern Sector, 1980, Subdivided by Use

(Pumpage in millions of gallons per day)

County	Public	Industrial	Total
ADM	0	0	0
BRN	0	0	0
BUR	1.58	0.02	1.60
FRD	0	0	0
FUL	0.5 3	0	0.53
HAN	0	0	0
HND	0.06	0	0.06
HRY	2.41	0.02	2.43
IRO	0	0	0
KNX	0.81	0	0.81
LIV	0. 14	0	0. 14
HCD	0.42	0	0.42
MCL	0. 14	0	0. 14
MRS	0.25	0	0.25
MER	0.38	0	0.38
PDO	0.87	0.36	1.23
PKE	0	0	0
PUT	0. 18	0	0. 18
SCH	0	0	0
STK	0.47	0	0.47
TAZ	0	0	0
WAR	3.00	0	3.00
WDF	0. 19	0	0. 19
TOTAL	11.43	0.40	11.83

The 1980 total withdrawal from deep wells in the 15 counties was approximately 11.8 mgd, as shown in table 2. Ninety-six percent was for public water supplies and 4 percent for non-public supplies. Pumpage for rural water supplies from deep wells is extremely limited. Total pumpage has probably not changed significantly since at least 1970.

Fifty-four public water supplies and three non-public supplies obtained water from deep wells in 1980. At least 10 systems have discontinued use of their deep wells. Much of the water from the Cambrian-Ordovician aquifer throughout this region is highly mineralized, which has led to some major efforts to obtain water from alternate sources.

Four counties — Bureau, Henry, Peoria, and Warren — produced 1.2 to 3.0 mgd in 1980. Pumpage in the other 11 counties ranged from less than

0.1 to 0.8 mgd. Only two systems, Kewanee in Henry County and Spring Valley in Bureau County, pumped more than 1.0 mgd in 1980.

Pumpage Related to the Practical Sustained Yield

In Cooperative Groundwater Report 1 (Suter et al., 1959), it was estimated that the practical sustained yield of the Cambrian-Ordovician aquifer in the Chicago region (46 mgd) would be developed when the total pumpage from deep wells was about 81 mgd. Vertical leakage from shallow aquifers and the Mt. Simon aquifer would contribute the other 35 mgd of water for deep well production. The practical sustained yield of the aquifer is the maximum amount of water that can be withdrawn without eventually dewatering the most productive water-yielding formation, the Ironton-Galesville sandstone. It is largely limited by the rate at which water can move from recharge areas eastward through the aquifer to pumping centers.

Estimates in Cooperative Groundwater Report 1, based on records of production and water levels, indicated that the practical sustained yield would be exceeded by 1965. However, pumpage from deep wells in every year since 1958 actually has exceeded the withdrawal rate anticipated for 1965. Thus, the estimated practical sustained yield of the aquifer has been exceeded each year since 1958. Sustained withdrawals at these excessive rates have already resulted in the dewatering of parts of the St. Peter sandstone in a considerable area of the Chicago region. They also have resulted in water levels approaching the Ironton-Galesville sandstone much sooner than anticipated in many areas. Revised predictions of the time when pumping levels will reach the top of the Ironton-Galesville sandstone were made by Schicht et al (1976). According to this report, by 1995 pumping levels will be at the top of the Ironton-Galesville sandstone in four townships: COK 41N10E, COK 41N11E, DUP 40N11E, and KNE 41N8E. Dewatering the Ironton-Galesville sandstone is not recommended because this will result in significant reductions in well yields.

WATER LEVELS IN CAMBRIAN-ORDOVICIAN WELLS

In 1864 the artesian pressure in the Cambrian-Ordovician aquifer was sufficient to cause wells to flow above the ground surface in many parts of the Chicago region. Numerous deep wells throughout north-central and northwestern Illinois had water levels above the ground surface during the late 1800's and early 1900's. There are a few wells that still flow in Bureau, Carroll, Fulton, Jo Daviess, La Salle, Peoria, and Stephenson Counties.

The original average elevation of water levels in deep wells at Chicago and Joliet was about 700 feet above mean sea level (msl). As a result of continued heavy pumpage, the non-pumping water levels in deep wells had declined by 1971 to elevations of 75 feet above msl to more than

100 feet below sea level at Bellwood, Elmhurst, and Joliet. From 1864 to 1971, the piezometric level at Chicago declined more than 850 feet.

Water-level measurements in deep wells are obtained by a variety of methods and under a wide range of operating conditions and reliability. A few wells are open holes and can be measured very accurately. However, most wells are equipped with pumps that limit or prevent access for measuring water levels. Water levels are affected by pumpage of the well to be measured or by pumpage of adjacent wells. The reliability of the water-level measuring equipment and the experience of the person taking the measurement are also important considerations.

Water-Level Changes

Water levels in 809 deep wells in northern Illinois were measured during October and November 1980. Data for these wells are given in Appendix A. Water levels for 460 of the wells, including 270 in the Chicago region, had been measured during the same period in 1971. Water levels for 529 of the 809 wells, including 349 in the Chicago region, had been measured during the same period in 1975.

Examples of changes in non-pumping water levels in selected wells in northern Illinois for the period 1971 through 1980 are shown in figure 10. Figure 11 shows the locations of the wells for which hydrographs are shown in figure 10. Hydrographs of selected wells reflect seasonal and long-term pumping trends. Steady declines of water levels generally indicate increasing rates of local and regional pumping.

Chicago Region

Table 3 shows average water-level changes in 11 observation wells in the Chicago region for periods of 3 to 14 years prior to 1971 and for the periods 1971-1975 and 1975-1980. Prior to 1971, average changes in these wells ranged from a rise of 3.7 feet per year south of Joliet to a decline of 10.6 feet per year at Des Plaines. Nine of the eleven wells showed average declines for the periods prior to 1971.

Water-level measurements recorded for both 1961 and 1971 are available for 153 individual wells in the Chicago region. All but 4 of these declined during the period, with declines ranging from less than 50 feet for 14 wells in Cook, Grundy, Kane, Lake, McHenry, and Will Counties to more than 200 feet for 6 wells in Cook, Lake, and Will Counties. Water levels in 78 wells in all counties except McHenry declined between 100 and 200 feet during this period. Water levels in 65 wells declined between 3 and 99 feet.

For the period 1971 to 1975, average changes in the 11 observation wells ranged from a rise of 10.5 feet per year at Geneva to a decline of 15.0 feet per year on the north side of Joliet. In addition to the rise in

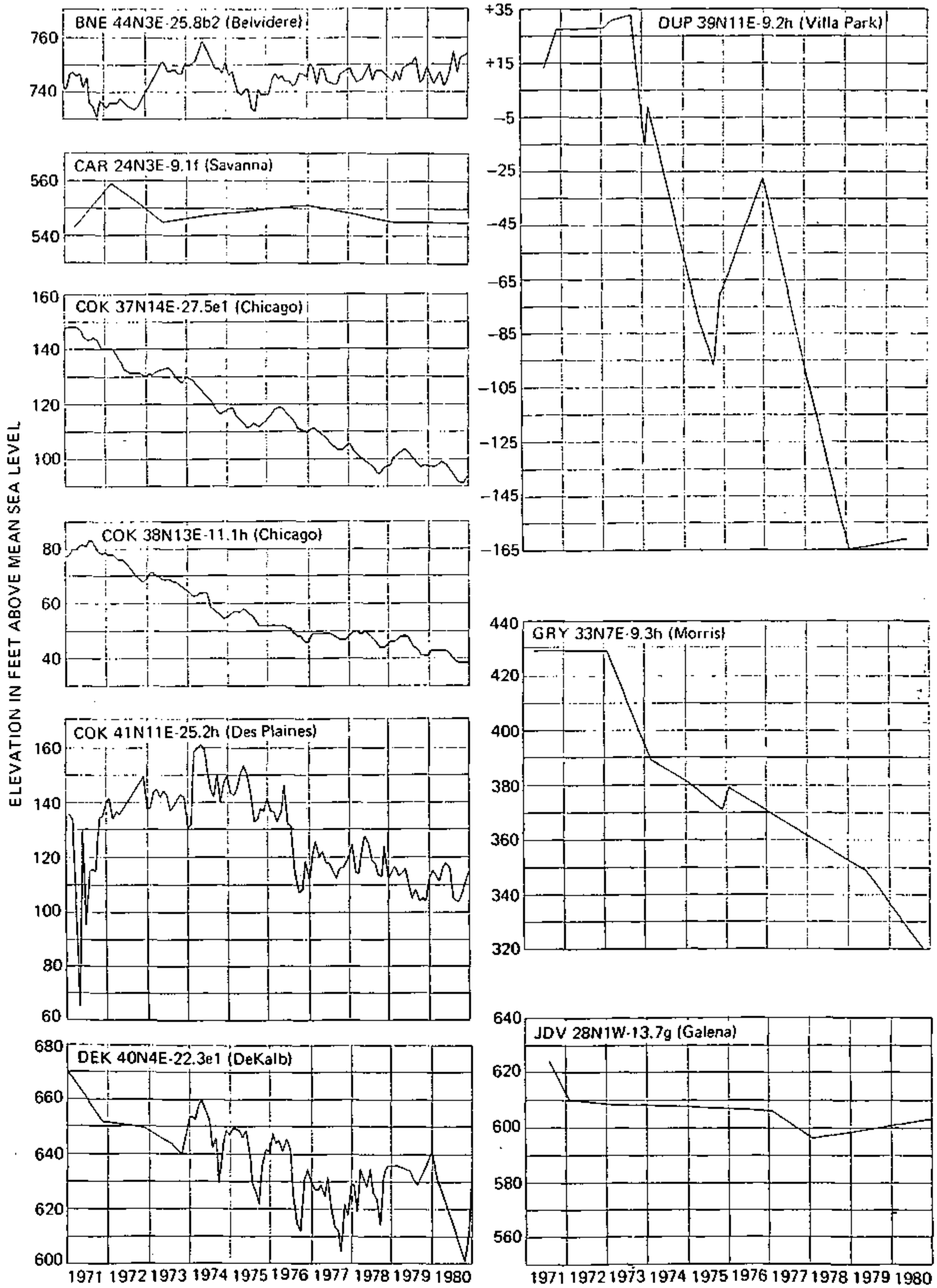

Figure 10. Water levels in selected wells in northern Illinois, 1971-1980

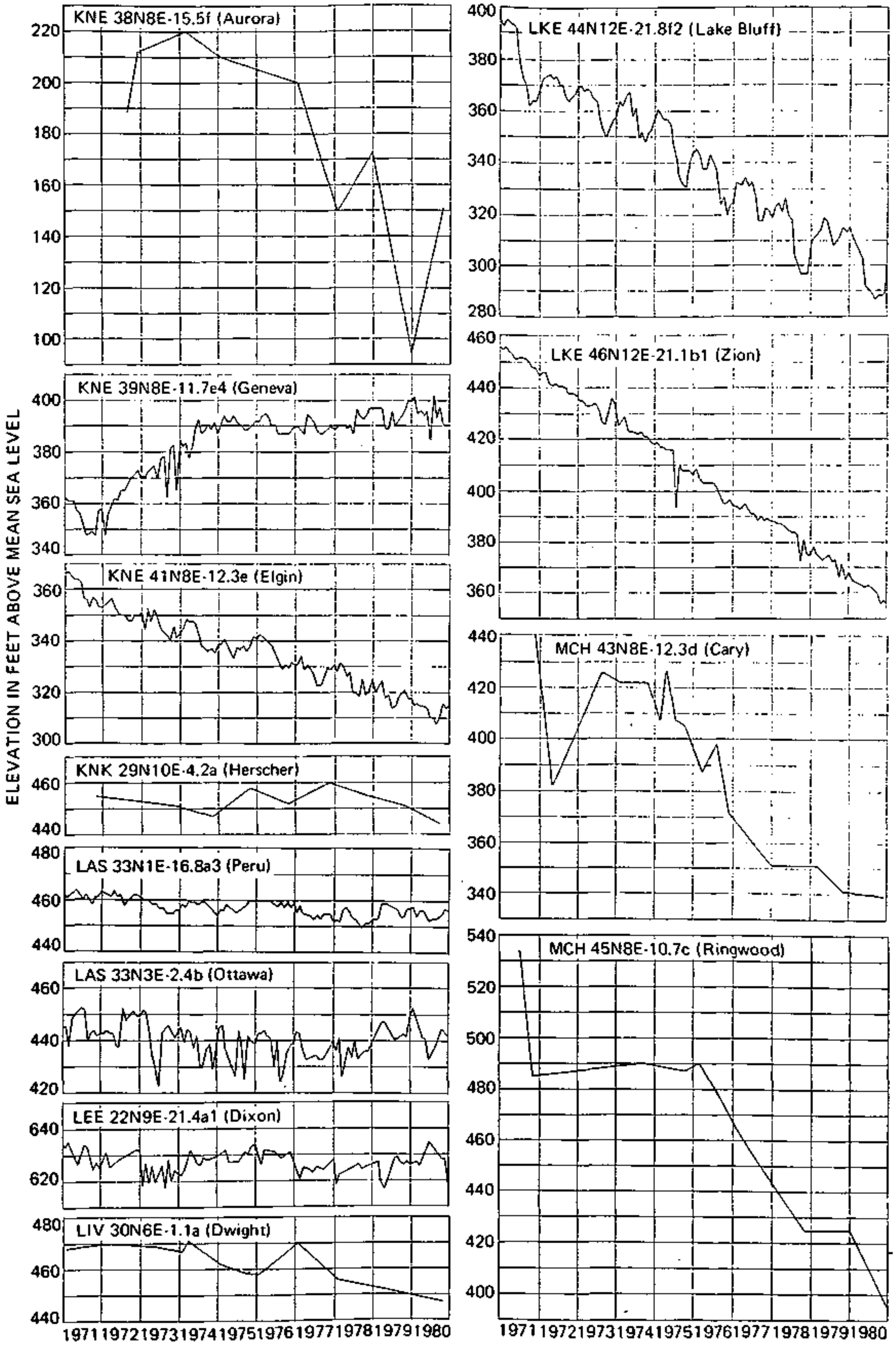

Figure 10. Continued

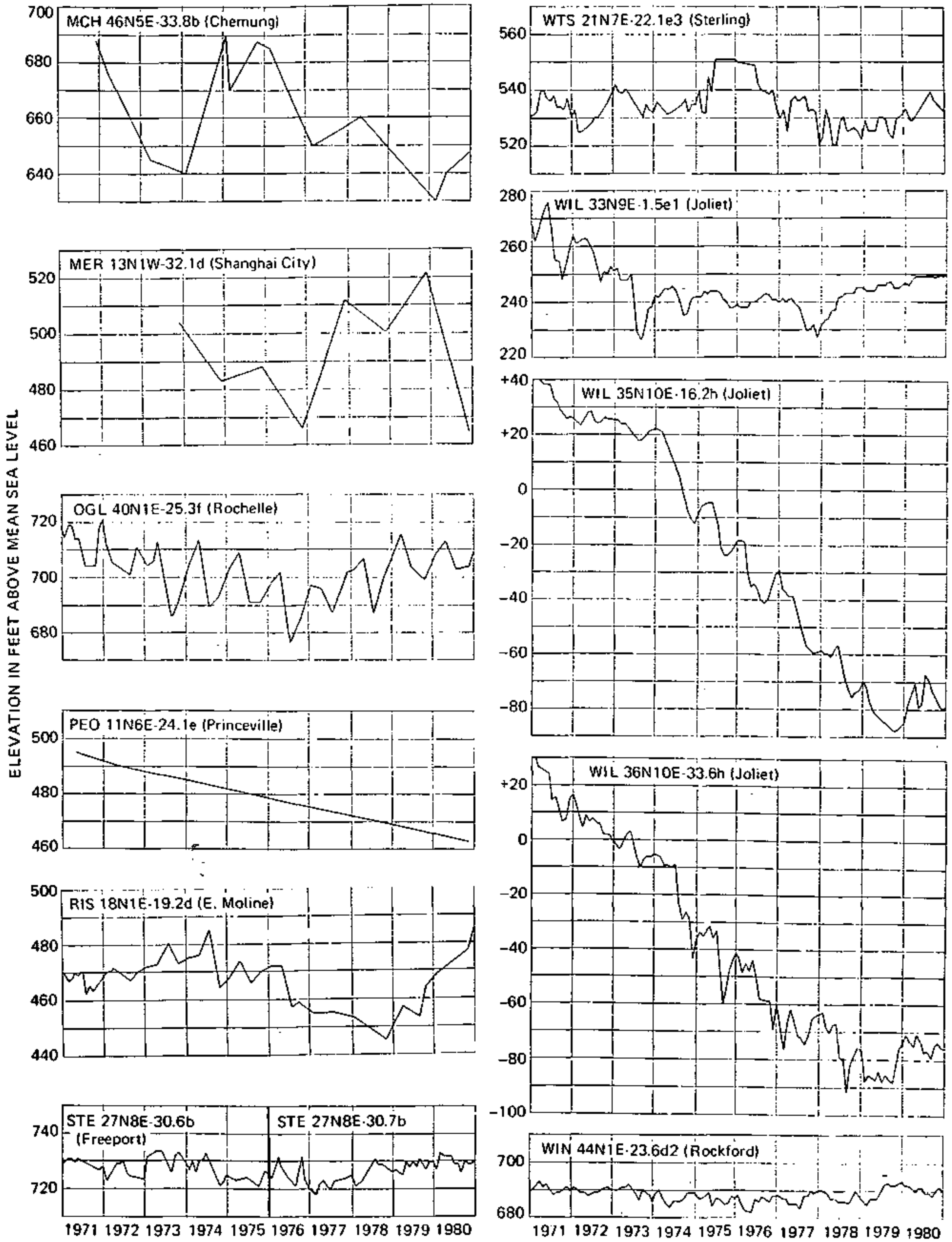

Figure 10. Concluded

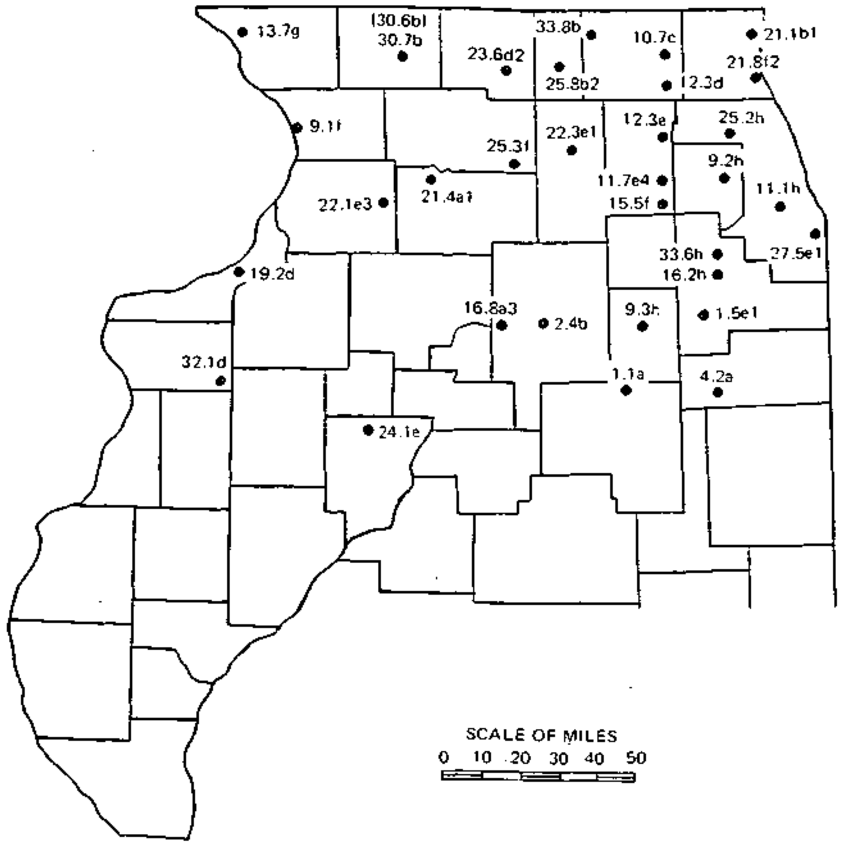

Figure 11. Locations of wells for which hydrographs are shown in figure 10

Table 3. Changes in Non-Pumping Water Levels in Selected Cambrian-Ordovician Observation Wells in the Chicago Region

Well number and location	Average change (ft/yr) Prior to 1971	1971-1975	1975-1980
COK 37N14E-27.5e1 (Chicago)	- 5.3	-7.3	- 4.4
COK 38N13E-11.1h (Chicago)	- 2.8	- 6.5	- 2.8
COK 39N12E-11.7f (Maywood)	- 7.9	- 6.7	-6.2
COK 41N11E-25.2h (DesPlaines)	-10.6	+ 0.7	- 4.4
KNE 39N8E-11.7e4 (Geneva)	+ 0.8	+10.5	+ 1.8
KNE 41N8E-12.3e (Elgin)	- 6.0	- 3.5	- 5.2
LKE 44N12E-21.8f2 (Lake Bluff)	- 8.2	-6.3	- 7.6
LKE 46N12E-21.1b1 (Zion)	- 8.4	-10.0	- 9.4
WIL 33N9E-1.5e1 (Joliet)	+ 3.7	- 3.5	+ 2.2
WIL 35N10E-16.2h (Joliet)	- 9.5	-11.7	-11.6
WIL 36N10E-33.6h (Joliet)	- 9.0	-15.0	- 6.0

water levels in the well at Geneva, the water levels in the observation well at Des Plaines showed a rise.

Water-level measurements for both 1971 and 1975 are available for 290 individual wells in the Chicago region. Water levels in 262 wells declined, levels in 28 rose, and levels in 4 showed no change. Declines of 50 to 162 feet occurred in 109 wells. Rises of 84 to 122 feet occurred in three wells in Cook County, and rises of 10 to 45 feet occurred in 13 wells in Cook, Kane, Lake, and Will Counties.

Since 1975, average water-level changes in the 11 observation wells have ranged from a rise of 2.2 feet per year south of Joliet to a decline of 11.6 feet per year in the center of Joliet. The water level at Geneva continued to rise.

Water levels in 8 of these 11 observation wells have shown continuous average declines since prior to 1971. Only the well at Geneva has shown a continuous rise since 1971. The fact that pumpage from this well decreased steadily since 1970 and ended in early 1978 probably accounts for this rise.

A total of 349 wells were measured in the Chicago region in both 1975 and 1980. In 306 wells water levels declined, in 40 they rose, and in 3 they showed no change. Declines of 50 to 149 feet were recorded in 148 wells. Water level rises of 52 to 80 feet occurred in four wells in Cook, Kane, and Will Counties. Rises of 10 to 47 feet occurred in 22 wells.

In 1980, nearly 80 percent of the deep wells in western Cook and eastern DuPage Counties and 90 percent within the city of Joliet had water-level elevations below mean sea level. More than 50 percent of the wells in these areas had water-level elevations lower than 50 feet below mean sea level.

Other indications of regional trends in the Chicago area are given by the average water-level measurements for the individual counties. Table 4 shows computed average water-level declines for each of the 8 counties for several periods of time between 1961 and 1980.

Prior to 1971, water levels declined an average of 11 feet per year and ranged from 2 feet per year in McHenry County to 15 feet per year in Lake County. During the period 1971-1975, declines averaged 12 feet per year and ranged from 6 feet per year in McHenry County to 16 feet per year in Grundy County. Since 1975, declines have averaged 9 feet per year and ranged from 1 foot per year in Kendall County to 14 feet per year in Lake County. Average declines have been at least 10 feet per year since 1961 in Cook, DuPage, and Lake Counties.

North Central and Northwestern Region

Regional water-level changes in areas of northern Illinois outside the Chicago region show less fluctuation. In these areas there are fewer and

Table 4. Average County Declines in Non-Pumping Water Levels in Cambrian-Ordovician Wells in the Chicago Region

County	Average decline (ft/yr) 1961-1971	1971-1975	1975-1980
Cook	11	11	10
DuPage	12	13	12
Grundy	3	16	5
Kane	9	9	7
Kendall	11	12	1
Lake	15	10	14
McHenry	2	6	8
will	11	14	6
Average	11	12	9

generally more widely-spaced wells. County or regional pumpage, and usually local pumpage, is considerably less. In addition, the difference in the geologic profile over much of the north-central and northwestern parts of the area, as described earlier, permits more rapid recharge to the sandstone aquifers.

Prior to 1971, average water-level changes for a period of 8 to 19 years in 10 selected observation wells outside the Chicago region ranged from no change to a decline of 9.2 feet per year as shown in table 5. During the period 1971-1975, changes in these 10 wells ranged from a rise of 3.5 feet per year at Sterling to a decline of 3.3 feet per year at Rochelle. Since 1975, changes have ranged from a rise of 3.2 feet per year at East Moline to a decline of 5.4 feet per year at DeKalb. Water levels at DeKalb and Peru have shown continuous average declines since at least 1960.

In 40 wells located in 9 counties, water levels recorded in 1961 and 1971 showed changes ranging from a rise of 36 feet in DeKalb County to a decline of 79 feet in Winnebago County. Five of these 40 wells showed a rise of water level and four showed no change of water level.

Water levels in 150 wells in 12 counties were recorded in both 1971 and 1975. During this period, changes ranged from rises of more than 25 feet in 11 wells to declines of more than 25 feet in 8 wells. Maximum recorded rises were 52 and 53 feet in two wells in LaSalle County. Maximum declines of 59 to 90 feet were recorded in four wells in DeKalb, Kankakee, LaSalle, and Lee Counties. Sixty-two wells showed a rise of water level, 76 showed a decline, and 12 showed no change.

In 1975 and 1980 water levels were measured in 168 wells in the same 12 counties. During this period, rises of water levels were recorded in 59 wells, including rises of more than 25 feet in 6 wells. The maximum rise

Table 5. Changes in Non-Pumping Water Levels in Selected Cambrian-Ordovician Observations Wells outside the Chicago Region

Well number and location	Average change (ft/yr) Prior to 1971	1971-1975	1975-1980
BNE 44N3E-25.8b2 (Belvidere)	-1.2	+0.8	+2.8
DEK 40N4E-22.3e1 (DeKalb)	-3.7	-1.7	-5.4
LAS 33N1E-16.8a3 (Peru)	-1.4	-0.7.	-0.6
LAS 33N3E-2.4b (Ottawa)	-1.8	-0.5	+0.6
LEE 22N9E-21.4a1 (Dixon)	-0.9	+0.5	-0.8
OGL 40N1E-25.3f (Rochelle)	-2.7	-3.3	+2.6
RIS 18N1E-19.2d (E. Moline)	-9.2	+1.3	+3.2
STE 27N8E-30.7b (Freeport)	-0.5	0	+0.6
WIS 21N7E-22. 1e3 (Sterling)	-2.7	+3.5	-2.0
WIN 44N1E-23.6d2 (Rockford)	0	-1.0	+0.8

was 48 feet in one well in LaSalle County. Declines were recorded in 101 wells, including declines of more than 25 feet in 22 wells. Maximum declines of 122 and 140 feet were recorded in two wells in LaSalle and Whiteside Counties. Eight of the 168 wells measured in 1975 and 1980 showed no water-level change.

Superimposed on the long-term trend of water-level changes in deep wells are seasonal fluctuations caused chiefly by changes in rates of pumping from wells and well fields. Water levels in deep wells generally drop during the summer and early fall when pumpage is greatest. Water levels may start to recover during late fall when pumpage is reduced. Minimum groundwater levels are usually recorded during September and October; maximum annual water levels usually occur during the late winter and early spring months. Short-term fluctuations reflect intermittent pumping, day-to-day variations in local pumping, or changes in atmospheric pressure.

PIEZOMETRIC SURFACE OF THE CAMBRIAN-ORDOVICIAN AQUIFER

The piezometric surface is an imaginary surface to which water will rise in artesian wells. Pumpage from individual wells and major pumping centers is an important factor influencing the surface configuration. This is especially significant in the Chicago region. Other contributing factors include natural recharge and discharge areas and the geologic and hydrologic characteristics of the aquifer and the overlying material. Changes in pumpage have been described in an earlier section, as has the geology and hydrology of the aquifer.

Several piezometric surface maps of areas of the Cambrian-Ordovician aquifer in northern Illinois have been published in previous reports. Maps of 1950 (Foley and Smith, 1954) and 1971 (Sasman et al., 1973) cover all of the northern part of the state. Other maps have generally been limited to northeastern Illinois. Previously published maps of 1971 and 1975 (Sasman et al., 1973 and 1977), modified with recent interpretations, are included in this report for comparison with the 1980 map.

Piezometric Surface, 1971

Figure 12 shows the piezometric surface of the Cambrian-Ordovician aquifer in October 1971. Data on water levels, presented in Appendix A, were used to prepare the map. The general features of the 1971 piezometric surface map for the Chicago region differ very little from those of the piezometric surface map for 1966 published in Circular 94 (Sasman et al., 1967).

The deepest cone of depression in the Chicago region in 1971 was in the vicinity of Bellwood where the lowest level was 149 feet below mean sea level. Pronounced cones of depression were apparent at Joliet, Elmhurst, Des Plaines, Aurora, and Elgin. The area of low water level (50 feet msl) included most of western Cook, eastern DuPage, and northwestern Will Counties, as well as a large area in north-central Cook County. Zero-foot

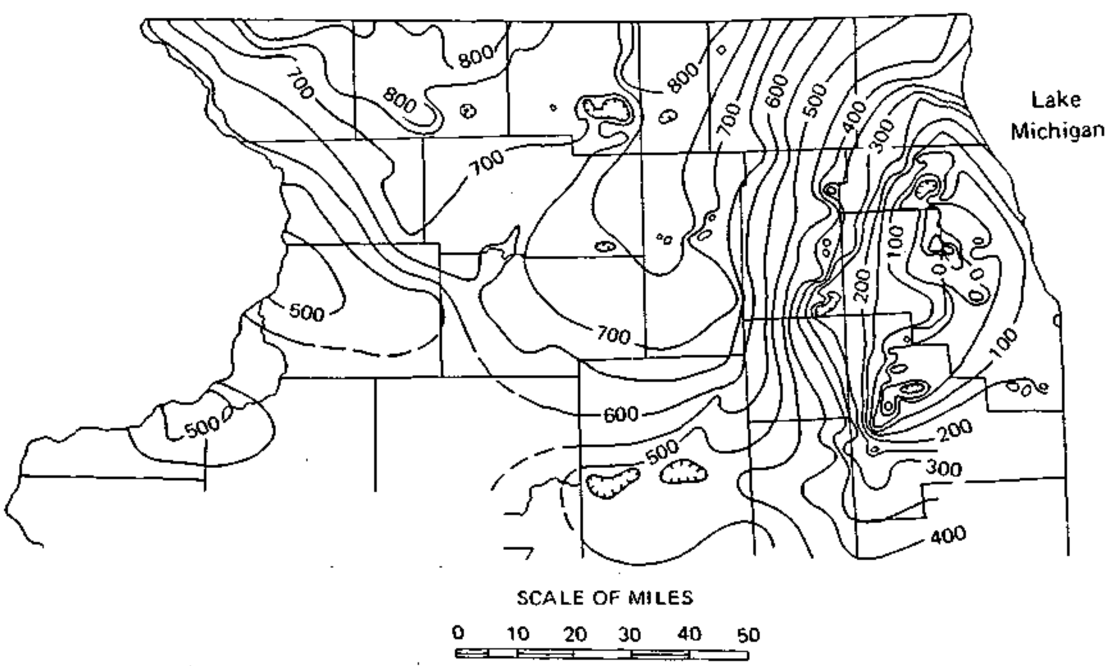

Figure 12. Elevation (in feet msl) of the piezometric surface of the Cambrian-Ordovician aquifer, October 1971

(msl) contours enclosed large areas of western Cook, northeastern DuPage, and western Will Counties. More than half of the deep wells within the city of Joliet and in western Cook County had water-level elevations below mean sea level. Other depressions in the piezometric surface in the Chicago region are also apparent in southern and northern Cook County, and at Geneva and Batavia. The piezometric surface was well below the top of the Galena-Platteville dolomite in large areas of the Chicago region, even as far west as eastern Kane County, and below the top of the St. Peter sandstone in the deepest cones of depression near Bellwood and Joliet.

The areas of highest piezometric levels in 1971 were in Boone, DeKalb, and Ogle Counties in north-central Illinois and in Stephenson and Jo Daviess Counties in northwestern Illinois. A significant depression in the piezometric surface is apparent at Rockford, with other depressions at Belvidere, Freeport, Rochelle, DeKalb-Sycamore, Ottawa, and LaSalle-Peru.

The general pattern of flow of water in the deep sandstone wells in 1971 was from all directions toward the deep cones of depression, primarily centered at Des Plaines, Elmhurst, Bellwood, and Joliet. Some of the water flowing toward these areas is intercepted by cones of depression at Elgin and Aurora. In addition, water from the recharge areas west of the Chicago region was being diverted into enlarging cones of depression at Belvidere, Rockford, Rochelle, and DeKalb.

Piezometric Surface, 1975

Figure 13 shows the piezometric surface of the Cambrian-Ordovician aquifer in October 1975. Water level data in Appendix A were used to prepare the map. The general features of the map for the Chicago region differ little from those of the piezometric surface map for 1971.

The deepest cones of depression in the Chicago region in 1975 were in the vicinities of Bellwood and Joliet, where levels were more than 150 feet below mean sea level. Pronounced cones of depression were apparent at Elmhurst, Mt. Prospect-Arlington Heights, Aurora, and Elgin. The area within the 50-foot piezometric surface contour included all of western Cook, most of eastern DuPage, and northwestern Will Counties, and a large area in north-central Cook County. Contours of -50 feet msl enclosed large areas of western Cook and eastern DuPage Counties, northeast DuPage and north-central Cook Counties, and the Joliet area in Will County. Other depressions in the piezometric surface in the Chicago region were apparent in southern and northern Cook County, in southeastern McHenry County, and at Naperville and Libertyville-Mundelein. The area of less than 400 feet msl included about three-fourths of Grundy County. The piezometric surface was below the middle of the Galena-Platteville dolomite in large areas of the Chicago region, as far west as eastern Kane County, and below the top of the St. Peter sandstone in the deepest cones of depression near Bell-wood, Elmhurst, and Joliet. More than half of the Galena-Platteville dolomite has been dewatered in most of Cook and DuPage Counties, and in eastern Kane and northern Will Counties.

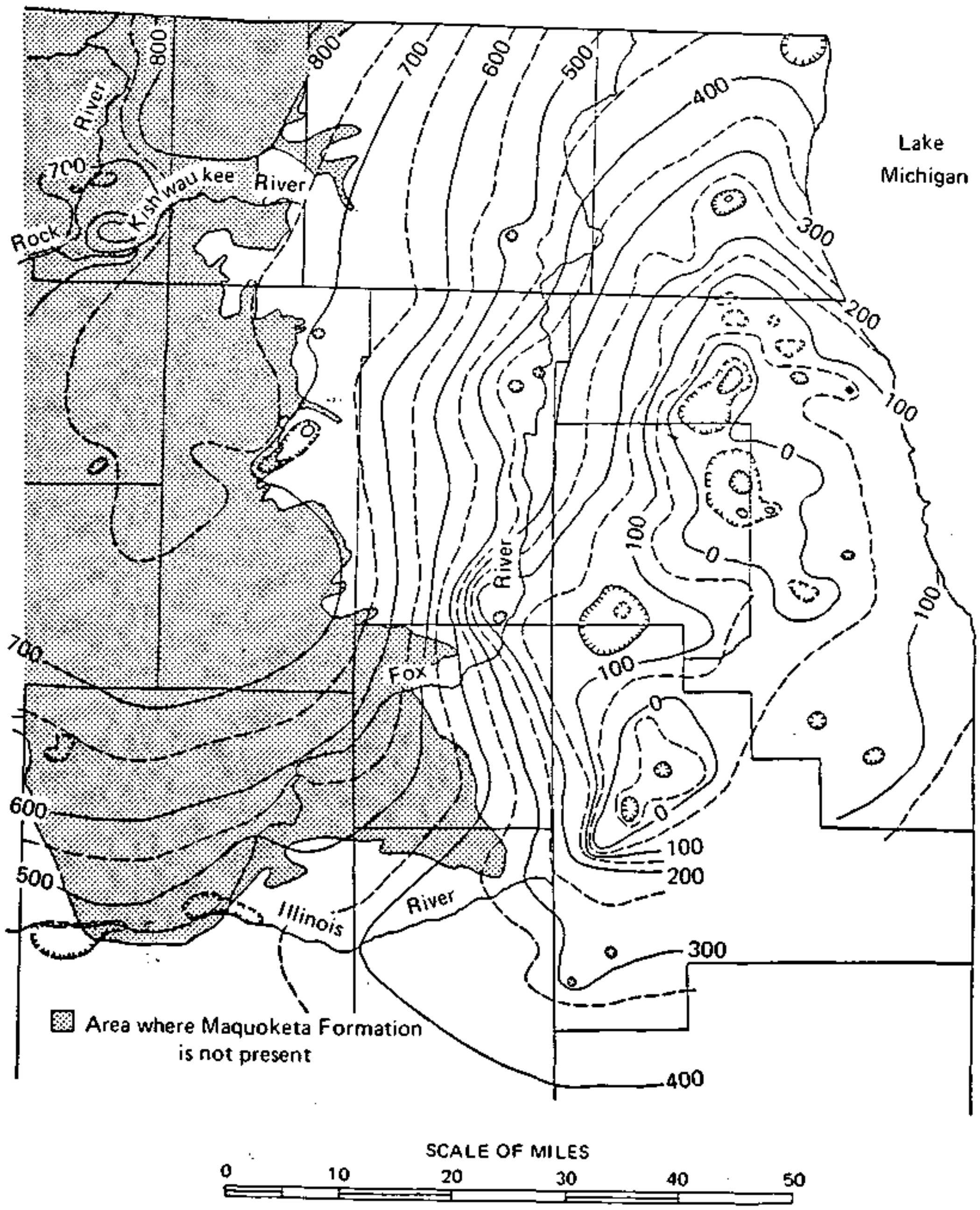

Figure 13. Elevation (in feet msl) of the piezometric surface of the Cambr-Lan-Ordovioian aquifer, October 1975

The 1975 piezometric surface map shows the areas of highest elevation in Boone, DeKalb, and Ogle Counties in north-central Illinois. Significant depressions in the piezometric surface were present at Rockford, Rochelle, DeKalb-Sycamore, Ottawa, and LaSalle-Peru. A new depression was evident in northwest LaSalle County.

The general pattern of flow of water in the deep sandstone wells in 1975 was from all directions toward the deep cones of depression, primarily centered at Mt. Prospect-Arlington Heights, Elmhurst, Bellwood, and Joliet. Some of the water flowing toward these areas was intercepted by enlarging cones of depression at Elgin, Aurora, Naperville, Libertyville-Mundelein, and other pumping centers. In addition, water from the recharge area west of the Chicago region was being diverted into expanding cones of depression at Rockford, Rochelle, DeKalb, Mendota, LaSalle-Peru, and Ottawa.

Piezometric Surface, 1980

Figure 14 shows the piezometric surface of the Cambrian-Ordovician aquifer in October 1980. Water level data in Appendix A were used to prepare the map. The general features of the 1980 piezometric surface map differ very little from those of the piezometric surface maps for 1971 and 1975. The piezometric surface map of the area between the Mississippi and Illinois Rivers is the first to be prepared for that area.

The deepest cones of depression in the Chicago region in 1980 were in the vicinity of Elk Grove, Elmhurst, and Joliet, where some levels were more than 200 feet below mean sea level (see Appendix A). Pronounced cones of depression were apparent at Arlington Heights, Mt. Prospect, Bensenville, Bellwood, Oakbrook, and Elgin (see figure 15). The zero-foot msl piezometric surface areas, centered around Joliet and Elmhurst, included almost all of western Cook, most of eastern DuPage, and a large area of northwestern Will Counties. Contours of -100 feet msl enclosed several square miles in northern Cook County, western Cook and eastern DuPage Counties, and the Joliet area in Will County. Other depressions in the piezometric surface in the Chicago region are also apparent in southern and northern Cook County, and at Libertyville-Mundelein and Minooka. The piezometric surface was below the middle of the Galena-Platteville dolomite in large areas of the Chicago region, as far west as central Kane County. The piezometric surface was below the top of the St. Peter sandstone in large areas of northern Cook and eastern DuPage Counties and in the Joliet area.

For the entire area of northern Illinois, the 1980 piezometric surface map shows the areas of highest elevation in Boone and DeKalb Counties in north-central Illinois and in Stephenson and Jo Daviess Counties in northwestern Illinois. A major depression in the piezometric surface is apparent at Rockford, with other depressions at Rochelle, DeKalb-Sycamore, LaSalle-Peru, Mendota, and Rock Island-Moline. In the southern part of the area, relatively few available water levels provide limited control for determination of the piezometric surface. The elevation of the piezometric

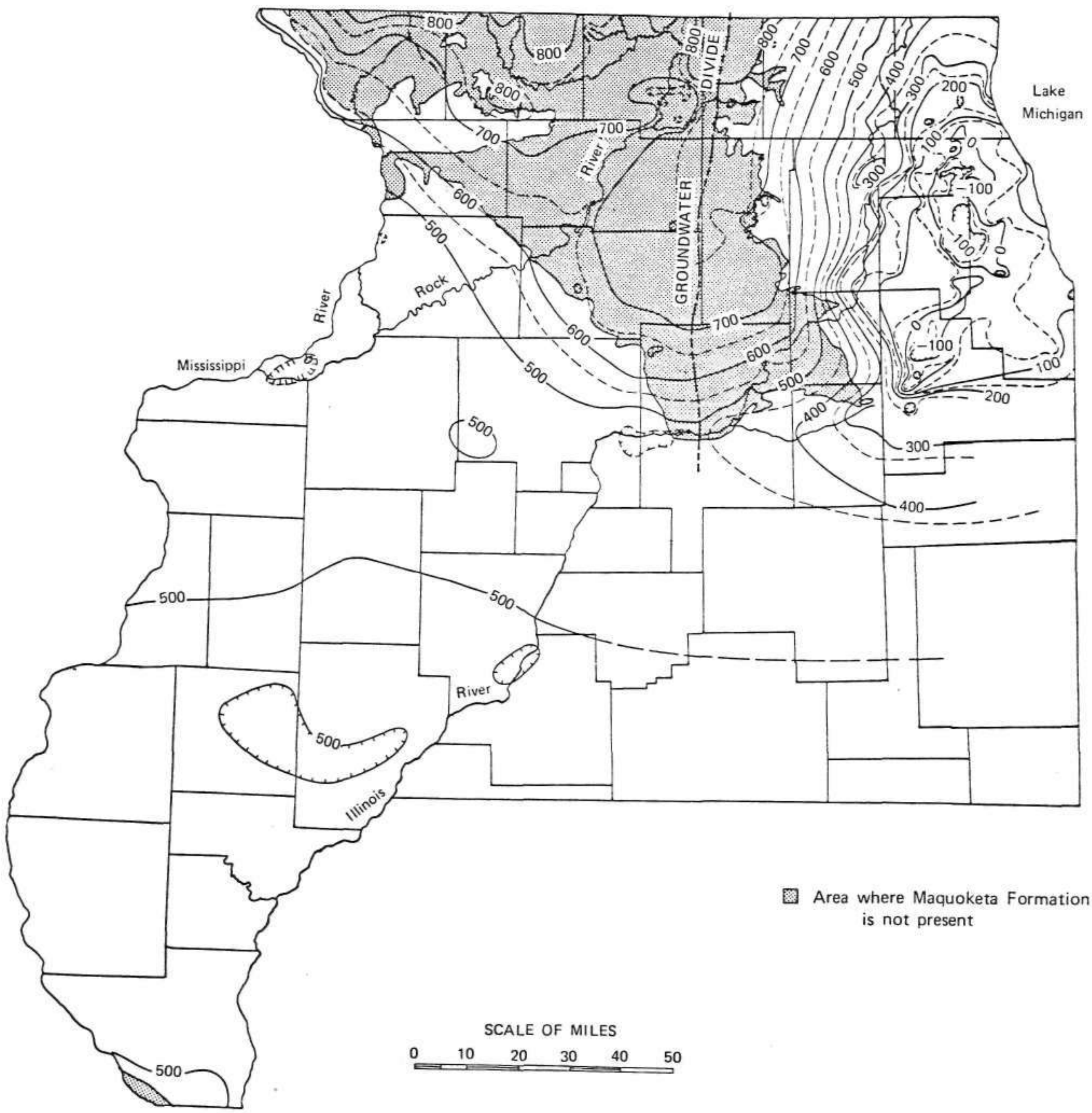

Figure 14. Elevation (in feet msl) of the piezometric surface of the Cambrian-Ordovician aquifer, October 1980

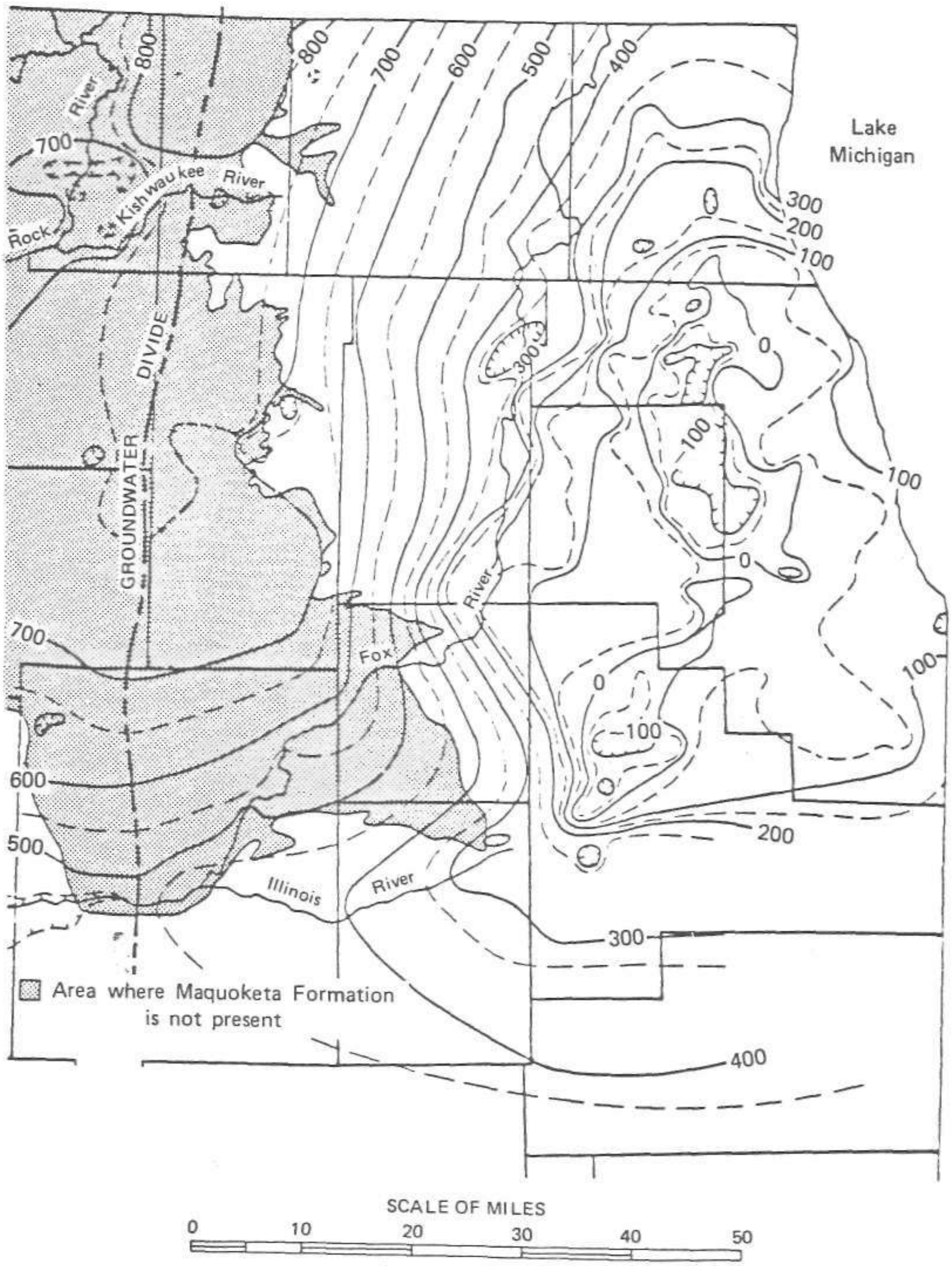

Figure 15 Elevation (in feet msl) of the piezometric surface of the Cambrian-Ordovician aquifer in the Chicago region, October 1980

surface generally slopes downward toward the south and southwest. A large shallow depression is present in much of Fulton and eastern McDonough Counties. A smaller shallow depression is present in the Peoria area.

The general pattern of flow of water in the deep sandstone wells in 1980 was from high elevations in north-central and northwestern Illinois towards the southeast, south, and southwest. Locally flow is toward the deep cones of depression, primarily centered in Arlington Heights-Elk Grove-Mt. Prospect, Bensenville-Elmhurst, Bellwood, and Joliet. Some of the water flowing toward these areas is intercepted by enlarging pumping centers at Elgin, Geneva-St. Charles, Aurora, Libertyville-Mundelein, Lake Zurich, Minooka, and other locations. In addition, water from the recharge area west of the Chicago region is being diverted into cones of depression at Rockford, Rochelle,. DeKalb-Sycamore, Mendota, and LaSalle-Peru. The approximate limits of diversion for the Cambrian-Ordovician aquifer west of the Chicago region are shown by the groundwater divide in figures 14 and 15.

Change in Piezometric Surface, 1971-1980

The piezometric surface maps for 1971 and 1980 and the computed changes for groundwater levels measured in those two years were used to prepare a piezometric surface change map (see figure 16).

The changes vary considerably, even within areas of heavy pumpage. In the Chicago region the piezometric surface declined more than 50 feet in nearly all of Cook, DuPage, and Lake Counties, as well as in most of Grundy, eastern Kane, northeastern Kendall, eastern McHenry, and Will Counties. In most of Lake County and in large areas of DuPage, northern

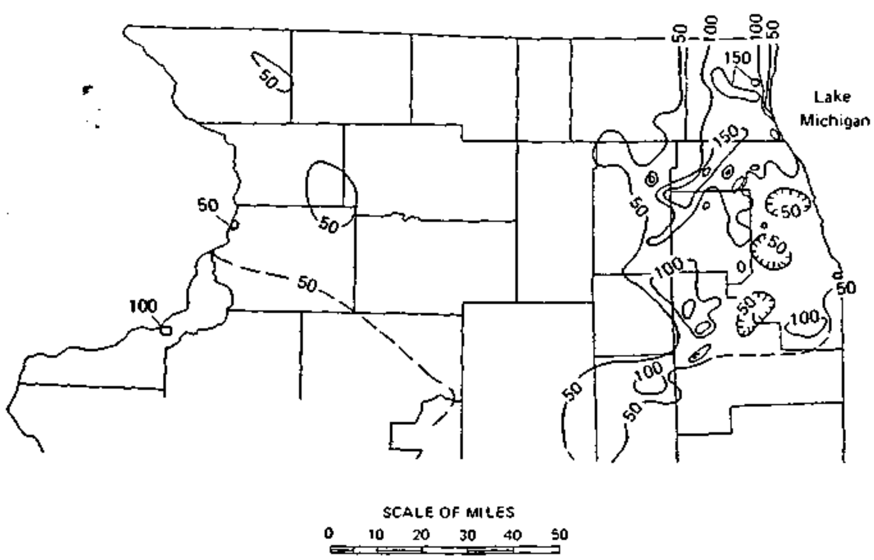

Figure 16. Decline Lin feet) in piezometric surface of the Cambrian-Ordovician aquifer in northern Illinois, 1971-1980

Cook, and northwestern Will Counties, the surface declined more than 100 feet. Declines of more than 150 feet occurred in several areas of Lake, northern Cook and DuPage, eastern Kane, and western Will Counties.

A comparison of the 1971 and 1980 water-level measurements for the area outside the Chicago region shows large areas of essentially no change and some areas of change up to 50 feet. In eastern LaSalle County there is an extension of the 50-foot decline westward from Grundy and Will Counties. Small areas of 50-foot decline also occur in eastern Jo Daviess and western Stephenson Counties and around the boundaries of Carroll, Ogle, Whiteside, and Lee Counties. A general decline of 50 feet appears to extend over most of the southwest part of the region. A small area of 100-foot decline appears to be present in the quad-cities area of Rock Island County.

Change in Piezometric Surface, 1975-1980

The piezometric surface maps for 1975 and 1980 and the computed changes for water levels measured in those two years were used to prepare the change map shown as figure 17. This map covers only northeastern Illinois, since no major effort was made in 1975 to obtain deep well water levels in the rest of northern Illinois. The computed average changes in non-pumping water levels from October 1975 to October 1980 for each county of the Chicago region are given in table 4. Water-level elevations are tabulated in Appendix A.

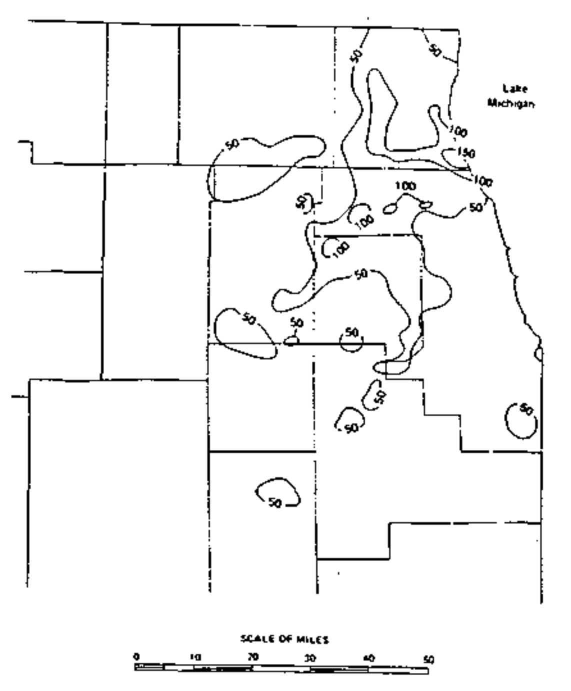

Figure 17. Decline (in feet) in piezometric surface of the Cambrian-Ordovician aquifer in northeastern Illinois, 1975-1980

As with the 1971-1980 change map, the change in piezometric surface from 1975-1980 varies considerably throughout the region. Declines of more than 100 feet occurred in areas of Lake and northern Cook Counties. Declines of 50 to 100 feet occurred in large areas of Lake, northern Cook, northern DuPage, northern Kane, and southern McHenry Counties, as well as in several other areas. Declines of less than 50 feet occurred in much of central and southern Cook, southern DuPage, northern McHenry, and central Kane Counties, and in Kendall, Grundy, and Will Counties.

WATER QUALITY

Between October 1980 and May 1981, the Illinois State Geological Survey sampled about 95 public and self-supplied industrial water supply wells in northern Illinois open to the Cambrian-Ordovician aquifer. Each sample was analyzed for the major dissolved inorganic chemical constituents by either the Illinois State Water Survey or the Illinois Environmental Protection Agency. For this study, data for total dissolved solids (TDS), hardness (as $CaCO_3$), sulfate, chloride, sodium, and iron were plotted and hand contoured. These data are tabulated in Appendix B.

There are many factors which can affect the chemical composition of a water sample collected from a particular well. Individual aquifer units and areas within the Cambrian-Ordovician aquifer have natural variations in quality. Samples collected from high capacity wells, such as most public and industrial water supply wells, represent an areally integrated quality of water, since the cone of influence may be quite large. Similarly, vertical integration of water quality occurs when a well is open to two or more water-yielding units containing water of different quality. It is important to understand, therefore, that although analytical data are treated as point values, they actually represent average concentrations for the volume of aquifer pumped. This volume depends primarily on the units tapped, the hydraulic conductivities of the units, and the rate and duration of pumping. When data from many wells are compared, an unknown amount of variability is introduced because of the different portions of the aquifer actually sampled. Despite this variability and uncertainty, the analytical data provide a valuable picture of the general areal variations in groundwater quality that currently exist.

Regional changes in groundwater quality in the Cambrian-Ordovician aquifer appear to be influenced primarily by proximity to the recharge source(s) and by residence time in the groundwater system. Wells in and near the major recharge area in northern Illinois where the Maquoketa shale is absent (figure 15) generally yield less mineralized water. Samples from wells downgradient from the recharge area show increasingly more mineralization with distance, as the water has had a longer time to dissolve minerals from the aquifer materials. The southern limit of the use of the Cambrian-Ordovician aquifer is primarily governed by water quality.

Overpumping of the Cambrian-Ordovician aquifer also can degrade the water quality of the aquifer by inducing upward migration of highly mineralized water from the underlying Elmhurst-Mt. Simon aquifer. There is some evidence of this in the Chicago area, where a deep cone has been created in the piezometric surface of the Cambrian-Ordovician aquifer. The piezometric surface has dropped below that of the Elmhurst-Mt. Simon, causing upwelling of the poorer quality water into the Cambrian-Ordovician aquifer. Water below an elevation of about 1300 feet below sea level is generally too salty for municipal or industrial use. Numerous wells in Cook, DuPage, and Kane Counties, originally drilled into the Mt. Simon aquifer, have been plugged above that formation to obtain water of better quality. Additional study is necessary to determine recommended depth limits, yield characteristics, and plugging methods for wells penetrating this formation.

The U.S. Geological Survey, Illinois State Geological Survey, and Illinois State Water Survey are preparing a report on the Cambrian and Ordovician aquifers in Illinois (Illinois State Geological Survey et al., 1982). Their study indicates that the groundwater in the recharge area is chemically homogeneous and is a calcium-magnesium-bicarbonate type. Vertical and areal changes in the water quality occur as the groundwater moves away from the recharge area. The study concludes that in the Cambrian-Ordovician aquifer, cation evolution, due to a decrease in redox potential, is from calcium-magnesium to calcium to sodium, and anion evolution is from bicarbonate to sulfate to chloride, with increasing distance and depth from the recharge area.

In addition to the influence of present hydraulic conditions on the water quality in the aquifer, water quality variations may still reflect the effects of glacial loading. In the western portion of the study area, it has been postulated that recharge from glacial sources may account for some of the anomalies in water quality distribution (Gilkeson et al., 1981).

In northern Illinois, the groundwater quality of the Cambrian-Ordovician aquifer generally is not influenced by surficial pollutant sources. However, if a well is not properly constructed, it can serve as a conduit for downward pollutant migration. This can result in both well and aquifer contamination. The quality changes discussed in this report are believed to be due to natural mineral sources, though pumping may be aggravating quality degradation in some areas.

The following subsections describe the variation and significance of the individual water quality parameters evaluated for this study.

Total Dissolved Solids

The total dissolved solids (TDS) in samples collected for this study ranged from 250 milligrams per liter (mg/L) in the north to 2930 mg/L in the southwest. The northern half of the area has TDS values less than 400 mg/L, with dramatic increases to the southwest and east, away from the recharge area (see figure 18). As described above, this may be partially due to the increase in mineralization with residence time in the aquifer. In the southwestern part of the area, beneath the Pennsylvanian rocks, recharge during glacial loading may have contributed to the current high TDS concentrations. In the Chicago area, upwelling of Elmhurst-Mt. Simon water may be partially responsible for the TDS increase.

The U.S. Environmental Protection Agency has suggested that TDS concentrations exceeding 500 mg/L may have undesirable effects on the aesthetic qualities of drinking water (USEPA, 1979). In the southwestern and eastern portions of the study area, groundwater in the Cambrian-Ordovician aquifer exceeds that level (see figure 18).

Hardness (as $CaCO_3$)

Hardness values in the Cambrian-Ordovician aquifer range from 94 to 1064 mg/L. The distribution of hardness concentrations is somewhat different from that of the other constituents, with relatively low hardness in the east-central and west-central areas (see figure 19). This is probably due to the variations in hardness of the different aquifer units within the Cambrian-Ordovician system and the units left open on a local scale, as well as the overall change in water quality with increase in residence time in the aquifer.

There is no primary standard for hardness in drinking water. However, various problems such as scaling and deposits on fixtures result from high levels of hardness.

Sulfate

Sulfate concentrations in the samples ranged from 2 mg/L in the north to 1562 mg/L in the southwestern part of the study area. The general distribution pattern is the same as that of TDS, with values increasing away from the major recharge areas (see figure 20).

A secondary drinking water standard for sulfate of 250 mg/L has been set by the USEPA, based on undesirable aesthetic effects above that level (USEPA, 1979). About one-third of the wells sampled had sulfate exceeding that limit. As shown in figure 20, those high sulfate levels are in the southwestern and southeastern parts of the study area. -

Chloride

The concentrations of chloride in samples from the Cambrian-Ordovician aquifer ranged from 1 mg/L in several samples in the northern sector to 874 mg/L at the southern tip. Chloride distribution is similar to that of TDS, with a large area of low chloride in the northern part of the state, increasing to the south and east (figure 21). Again, recharge areas and

Figure 18. Generalized total dissolved solids concentrations (mg/L) in the Cambrian-Ordovician aquifer, 1980-1981

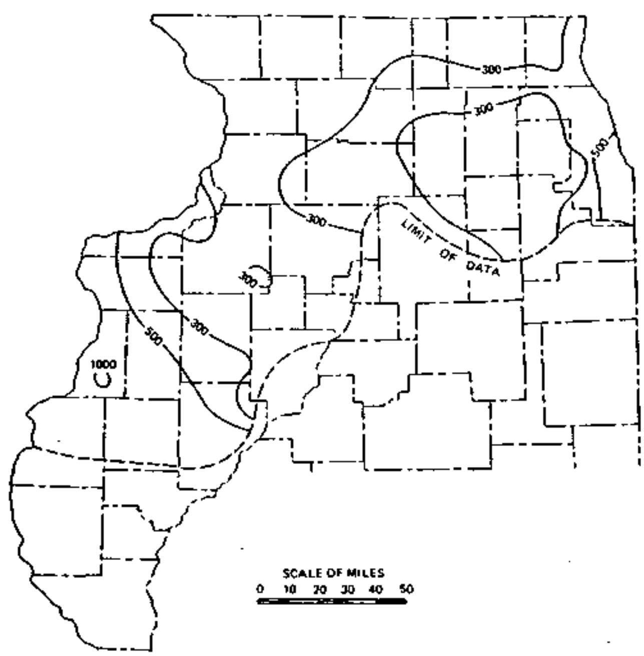

Figure 19. Generalized hardness concentrations (mg/L) in the Cambrian-Ordovician aquifer, 1980-1981

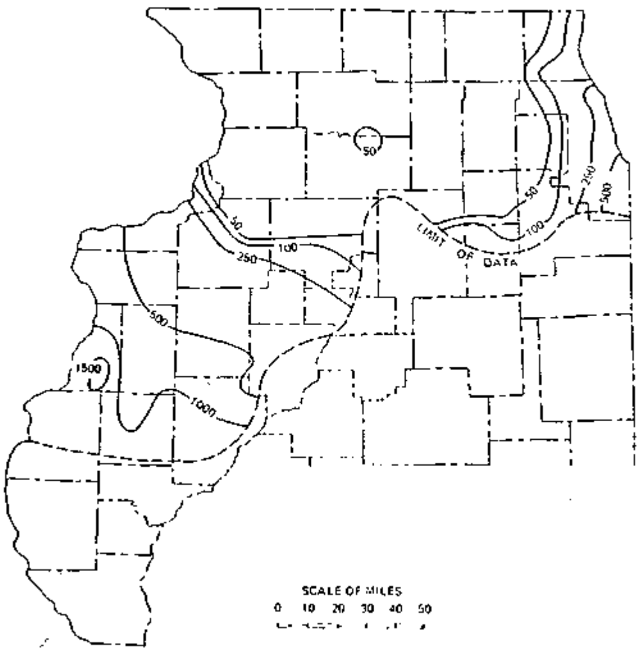

Figure 20. Generalized sulfate concentrations (mg/L) in the Carnbrian-Ordovician aquifer, 1980-1981

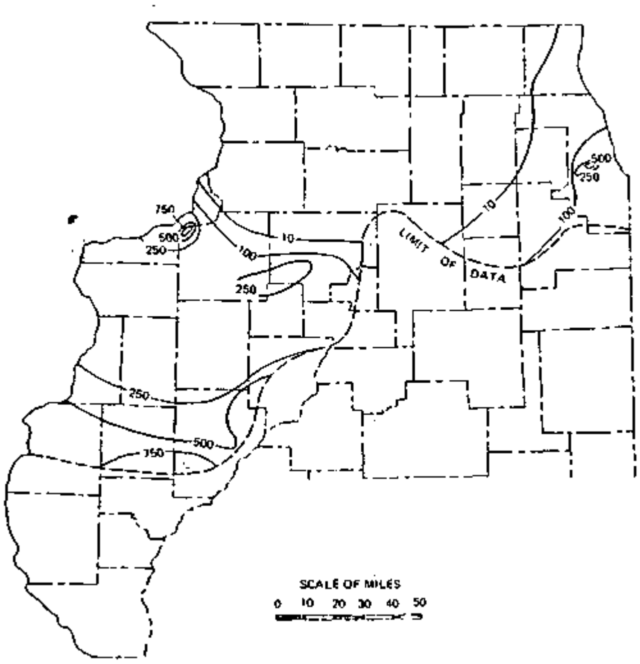

Figure 21. Generalized chloride concentrations (mg/L) ' in the Carnbrian-Ordovician aquifer, 1980-1981

flow patterns are probably responsible for most of the regional chloride changes. The small area of elevated chlorides in the Chicago region probably results from induced recharge from the underlying Elmhurst-Mt. Simon aquifer.

The USEPA has suggested that chloride in excess of 250 mg/L is aesthetically undesirable in drinking water (USEPA, 1979). This secondary drinking water standard is exceeded in the southern tip and two small areas in the west-central part of the study area, and in the vicinity of Chicago.

Sodium

Sodium concentrations in the Cambrian-Ordovician aquifer ranged from 2 mg/L in the northwestern corner of the state to 860 mg/L at the south-western tip of the southern sector (see figure 22). The increase in sodium content to the east and south reflects the increase in mineralization away from the recharge areas. There is a small local high in sodium content in the Chicago region, which may be due to upwelling of poor quality Elmhurst-Mt. Simon water-into the Cambrian-Ordovician aquifer.

Presently, there is no standard for sodium in drinking water. However, people on sodium-restricted diets should be aware of the sodium ingested daily via their water supply.

Iron

The concentrations of iron in the samples collected from the Cambrian-Ordovician aquifer ranges from <0.005 to 3.1 mg/L. Most of the samples were in the range of 0.1 to 1.0 mg/L total iron.

Figure 23 shows the distribution of iron in the samples taken from the Cambrian-Ordovician aquifer. The highest concentrations were found in Fulton County. High iron values also were found in Henderson, McDonough, Bureau, and Lee Counties. The fact that these areas are away from the major aquifer recharge areas may account for the increase in iron mineralization. However, it is important to note that the iron concentrations are affected by many chemical and physical variations within an aquifer and by the iron content of local aquifer material, resulting in a large range in the measured concentrations of iron in groundwater samples.

The maximum allowable concentration of total iron in treated samples from public water suppli es in Illinois is 1.0 mg/L (Illinois Pollution Control Board, 1979). Concentrations exceeding 0.3 mg/L may have an undesirable effect on the aesthetic qualities of drinking water (USEPA, 1979). Areas where the Cambrian-Ordovician water exceeds those limits are shown in figure 23.

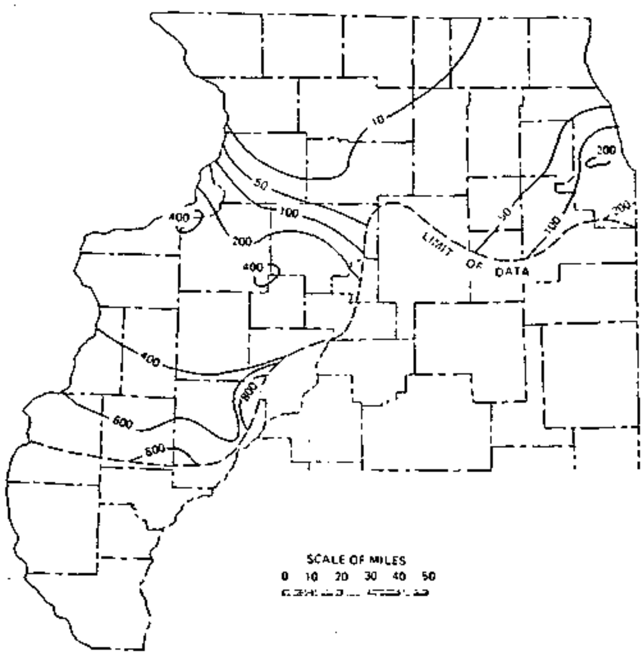

Figure 22. Generalized sodium concentrations (mg/L) in the Cambrian-Ordovician aquifer, 1980-1981

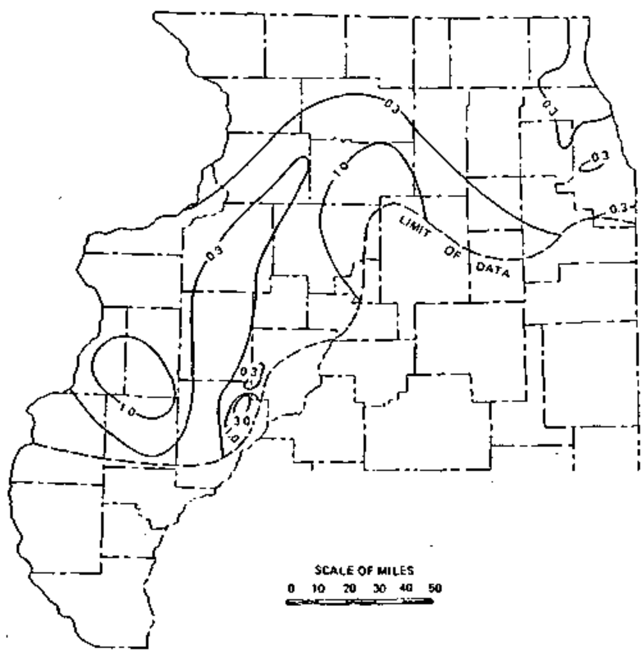

Figure 23. Generalized iron concentrations (mg/L) in the Cambrian-Ordovician aquifer, 1980-1981

Other Constituents

In addition to the six constituents described above, the barium and radium concentrations found in the samples deserve some discussion. Elevated levels of barium were noted in some samples from DeKalb, Boone, and McHenry Counties. Five of the samples analyzed showed barium concentrations exceeding the drinking water standard of 1.0 mg/L (USEPA, 1975). The occurrence of barium in Cambrian-Ordovician groundwater in northeastern Illinois has been studied by the Illinois State Geological Survey (Gilkeson et al., 1981). Because of the low solubility of barium sulfate, high barium concentrations normally are limited to areas where the dissolved sulfate concentration is low. In areas of high dissolved sulfate, barium in solution is quickly precipitated, taking available barium from solution.

The health effects of barium have not been identified, but the drinking water standard must be met by treatment or blending of low barium water. Regardless of health effects, precipitation of barium sulfate on pumping equipment in some wells has resulted in a drastic loss of pump operating efficiency and major maintenance problems.

Although not analyzed in the samples for this study, radium has been shown to exceed the USEPA limit of 5 picocuries/liter (pCi/L) in many wells in the Cambrian-Ordovician aquifer in northern Illinois (USEPA, 1975; Gilkeson et al., 1978). The source of radium and other radioisotopes in this area has not been identified, but high concentrations are possibly related to the aquifer rock, the groundwater chemistry (especially concentrations of sulfate and barium) and hydraulic stress on the aquifer, which may bring water with high levels of radiation out of fine-grained strata in the aquifer.

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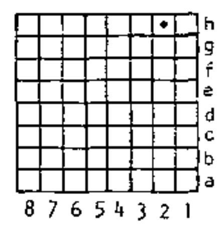
APPENDICES

The we11-numbering system used in this report is based on the location of the well, and uses the township, range, and section for identification. The well number consists of five parts: county abbreviation, township, range, section, and coordinates within the section. Sections are divided into rows of 1/8-mile squares. Each 1/8-mile square contains 10 acres and corresponds to a quarter of a quarter of a quarter section. A normal section of 1 square mile contains eight rows of 1/8-mile squares; an odd-sized section contains more or fewer rows. Rows are numbered from east to west and lettered from south to north as shown below.

The number of the well shown in sec. 25 at the right is as follows:
COK 41N11E-25.2h



Cook County
T41N, R11E
sec. 25

In the appendices, the well numbers given are those by which the wells are generally known, except in the case of 3- and 4-digit numbers, which were assigned for computer purposes. In those cases, the owners' numbers are identified in parentheses.

Appendix A presents water-level data for the following counties (in alphabetical order):

Adams	ADM	001	Kane	KNE	045	Ogle	OGL	071
Boone	BNE	004	Kankakee	KNK	046	Peoria	PEO	072
Bureau	BUR	006	Kendall	KEN	047	Pike	PKE	075
Carroll	CAR	008	Knox	KNX	048	Putnam	PUT	078
Cook	COK	016	Lake	LKE	049	Rock Island	RIS	081
DeKalb	DEK	019	LaSalle	LAS	050	Schuyler	SCH	085
DuPage	DUP	022	Lee	LEE	052	Stark	STK	088
Fulton	FUL	029	Livingston	LIV	053	Stephenson	STE	089
Grundy	GRY	032	McDonough	MCD	055	Warren	WAR	094
Hancock	HAN	034	McHenry	MCH	056	Whiteside	WTS	098
Henderson	HND	036	McLean	MCL	057	Will	WIL	099
Henry	HRY	037	Marshall	MRS	062	Winnebago	WIN	101
Iroquois	IRO	038	Mercer	MER	066	Woodford	WDF	102
Jo Daviess	JDV	043						

Appendix B presents water quality data for most of these counties.

Appendix A - Water-Level Elevations of the Cambrian-Ordovician Aquifer in Northern Illinois,1971-1980

County Location	Well no.	Owner	Depth ft.	Surface elevation	Water level elevation										Water level changes, ft.	
					1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1971-1975	1975-1980
Adams																
00101N06W344d	7	Camp Point	1150	697						536				520		
Boone																
00443N03E026h	1	Four Season Trailer Park	600	800	762				763					761	1	-2
00444N03E248a	6	Belvidere	870	784		715	739		709		738	738				
00444N03E256d	2	Dean Foods Co.	868	770			755		750		720	725		721		-29
00444N03E257c	2	Belvidere	1861	763		755		755	755	753	751	757	759			
00444N03E258b	3	Belvidere	1803	765	737	735	751	751	741	747	749	748	749	754	4	13
00444N03E261e	4	Belvidere	1800	778	694		709	709	726			721			32	
00444N03E342a	8	Belvidere	1393	780	697		700	685			695	650				
00444N03E351e	5	Belvidere	610	800	715	732	755	729	745			745	730	728	30	-17
00444N03E362g	7	Belvidere	967	840	680			708	666				700	688	-14	22
00445N04E117h	1	Capron	660	912	873	872	880	873	874	859	878	866	869	862	1	-12
00445N04E198f	1	McLay Grain Co.	570	892	838				840					839	2	-1
Bureau																
00615N06E107a	3	Neponset	1640	806										527		
00616N07E346b	2	Buda	1630	770										480		
00616N07E346c	5	Buda	1601	770										480		
00616N10E354a	3	DePue	1490	464										466		
00616N11E108e	1	Phillips Joanna Co.	1643	638									483	457		
00616N11E342e	10	Spring Valley	2696	570										430		
00616N11E346h	11	Spring Valley	2723	615						460				435		
00616N11E361a	1	St. Bede College	2300	592										464		
Carroll																
00823N05E025f	3	Chadwick	1210	790	607				600	595	600	600	600	598	-7	-2
00823N06E232a	3	Kraft Cheese Co.	1151	740		638	637		636	634				600		-36
00823N06E236b	3	Milledgeville	654	759	682									659		
00823N06E236b	4	Milledgeville	1146	759	625	629		627	629	629				610	4	-19
00824N03E042c	5	Savanna	1804	600	520		560	545		564		541	528	500		
00824N03E091f	3	Savanna	1852	583	559		545	547		551			545	545		
00824N03E103e	4	Savanna	1308	610	554		540	556		540			535	536		
00824N03E111a	6	Savanna	1300	625	542									503		
00824N04E122h	3	Mt. Carroll	1453	740	606						585	585		594		
00824N04E123h	2	Mt. Carroll	1457	718	611						610	610	613	618		
00824N06E055e	3	Lanark	1300	880	664		645		652				645	650	-12	-2
00824N06E056d	4	Lanark	1082	860	686									685		
00825N02E023d	12	Savanna Army Depot	1114	609	602	601		601	603	602	602	603	608	600	1	-3
00825N02E034d	2	Savanna Army Depot	1200	640	587		590		577	575	576	577		586	-10	9
00825N02E115h	1	Savanna Army Depot	1201	606	609		608	608	608	607	608	608	615	593	-1	-15
00825N07E196e	2	Shannon	704	945	742									695		
Cook																
01635N13E011d	602	Flossmoor (2A)	1764	674			126		74		68	64	42	32		-42
01635N13E023a	606	Flossmoor (6A)	1784	705	129	135	121	104	58		65	58	35	32	-71	-26
01635N13E123b	607	Flossmoor (7A)	1722	653	143	98	119	123	78		73	73	50	42	-65	-36
01635N14E033c	3	Glenwood	1776	618	138	158			130					11	-8	-119
01635N14E085e	32	Chicago Heights	1777	652	217	137		217	90	90	75		75	95	-127	5
01635N14E101g	5	Glenwood	1785	623	82									5		
01635N14E194c	22	Chicago Heights	1800	677		182		162	132	132	127	116	102	107		-25
01635N14E212h	2	Stauffer Chemical Co.	1800	640	160	190		140	133			123		72	-27	-61
01635N14E213h	2	Calumet Steel Div.	1805	638	177			141	142	101				92	-35	-50
01635N14E236e	3	East Chicago Heights	1858	667									127			
01635N15E075d	2	Lynwood	1827	615		220			177			175		145		-32
01636N12E025h	11	Orland Park	1683	712									53	14		
01636N12E035d	9	Orland Park	1706	705									34	73		
01636N12E131d	6	Orland Park	1809	732			61	52	42	44	57		64	31		-11
01636N12E151a	10	Orland Park	1718	720									85	-70		
01636N12E226b	3	Citizens Utility Co. Fernway	1712	720		106			76				82	38		-38
01636N13E012g	1	Blue Island Ind Term	1618	597					77					50		-27
01636N13E098b	1	Oak Forest	1701	672	92	82	82	22	71					47	-21	-24
01636N13E366b	12	Homewood	1713	660	130				47	25	54	48	32	27	-83	-20
01636N14E311f	11	Homewood	1735	627	137			122	54	57	61	52	43	27	-83	-27
01636N14E344d	4	Thornton	1785	617	142	156		117					-15	18		
01636N14E345g	5	Thornton	1724	612	130	151		112	74		46		-18	-40	-56	-114
01637N11E148c	3	N. American Car Corp.	1464	585	58					25		10	5	-15		
01637N11E283b	1	DeAndreis Seminary	1690	740	48	43	33	28	22	8	3	-7		-35	-26	-57
01637N11E291g	4	Lemont	1658	737								4	-13	-15		
01637N11E294b	3	Lemont	1723	743	51	49	40	36	24	2	0	-10	-23	-33	-27	-57
01637N12E028h	2	Hickory Hills	1608	685								-61		-28		
01637N13E127d	1	Evergreen Park High School	1637	622	78				66					83	-12	17
01637N13E325h	2	Palos Heights	1580	617	91				71					46	-20	-25
01637N14E275c	1118	Met. San. Dist. (TW1)	1683	590	141	131	130	117	112	111	103	94	97	91	-29	-21
01637N15E081b	3	Falstaff Brewing Co. (C)	1678	589	90			84				-11	-11			
01637N15E081c	1	Falstaff Brewing Co. (A)	1675	593		89								-67		
01637N15E081c	2	Falstaff Brewing Co. (B)	1627	592	107		75					92		-3		
01638N12E018g	2	Lyons	1750	621										-50		
01638N12E048d	8	LaGrange	1538	648								23		-42		
01638N12E058d	3	Western Springs	1258	673	-15	3	13	-3	-52	-80	-60	-45	-55	-95	-37	-43

Appendix A - Continued

County Location	Well no.	Owner	Depth ft.	Surface elevation	Water level elevation 1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	Water level changes, ft. 1971-1975	1975-1980
Cook Cont.																
01638N12E066b	4	Western Springs	1913	642	-19	6	-28	-28	-36	-43	-30	-28	-108	-8	-17	28
01638N12E121f	4816	Met. San. Dist. (81B)	826	592	31	29	26		22	17	19		13		-9	
01638N12E125c	6818	Met. San. Dist. (SW13A)	1193	600			25		28					-5		-33
01638N12E188f	3	Suburban Cook Co. T.B. San.	1540	689	72				58		46		46	39	-14	-19
01638N12E228g	4926	Met. San. Dist. (Q2)	846	613	66	64	60		58	57	53		48	45	-8	-13
01638N12E231h	11	CPC International, Inc.	1543	596		-75			-145	-126			-99			
01638N12E232g	13	CPC International, Inc.	1525	600	-70			-40	-80	-52		-82		-28	-10	52
01638N12E241g	12	CPC International, Inc.	1507	597	-73			-81	-75	-78		-101		-51	-2	24
01638N12E247h	14	CPC International, Inc.	1481	597	-15				-15			-113		-64	0	-49
01638N12E287d	2	Fisher Body Div.	1542	605	10	10	4	14	0						-10	
01638N12E291d	1	Fisher Body Div.	1517	605	27				10					-35	-17	-45
01638N13E057h	4806	Met. San. Dist. (80B)	876	604	37		32		28	24	23		24	23	-9	-5
01638N13E081f	4	Rose Packing Co.	1590	594	46		2	37	31			37	36	26	-15	-5
01638N13E111h	1	Bradshaw-Praeger & Co.	1224	597	78	69	66	56	52	66	56	52	41	38	-26	-14
01638N13E194e	2	Union Carbide Corp.	1550	619					-39		-39			-115		-76
01638N13E211f	2	Cracker Jack Co	1585	620	51	51	51		37	42	47	55	32	24	-14	-13
01638N13E275g	1	Tootsie Roll Industries	1565	617					22					2		-20
01638N14E076c	1	Fleischmann Malting Co.	1925	594	61	64	53	49				24	34	51		
01638N14E076d	2	Fleischmann Malting Co.	1964	594	53	56	44	44	29	34	24	19		6	-24	-23
01638N14E077g	1	Standard Brands Inc.	1637	602		70			62			41				
01638N14E077g	2	Standard Brands Inc.	1791	602	61							57				
01638N14E077g	3	Standard Brands Inc.	1740	602			51					49				
01639N12E085g	4	Bellwood	1960	645	-149	-90	-109		-65		15			-55	84	10
01639N12E093f	1	Bellwood	1952	636	-9	20	39		-4		-74		4	-153	5	-149
01639N12E095a	3	Bellwood	1428	624	-61	-36	-119		-153	-146	-66			-137	-92	16
01639N12E095d	2	Bellwood	1954	632	-63	-44	-33		-74		-115			-113	-11	-39
01639N12E117f	3	Maywood	1640	630	39	34	--		12			0		-19	-27	-31
01639N12E137g	2	Altenheim-German Home	1661	626	76			62	58					-11	-18	-69
01639N12E162f	5	Bellwood	1845	627	17	-131	-103		-8		-81	-38		-123	-25	-115
01639N12E255d	4	Riverside	2050	620	27	16	15	12	0	-7		-8		-31	-27	-31
01639N12E353h	2	Chicago Zoological Park	2081	615		30	7		4	-13	-12		-25	-46		-50
01639N12E368d	3	Riverside	2047	618	-19	3	-6	-8	-10	-19		-14		-35	9	-25
01639N13E216g	1	Kropp Forge Co.	1636	608	38		43		38				-87	-87	0	-125
01639N13E218f	3	C & W Enterprises	1515	608	33	22			25					30	-8	5
01639N13E334a	1	Incinerator Inc.	1650	589					-7					1		8
01639N14E055e	4526	Met. San. Dist. (52B)	922	591	119		109		101				88	88	-18	-13
01639N14E095c	4546	Met. San. Dist. (54B)	1010	589	118	112	108		-99	96	95		88		-19	
01639N14E095c	4548	Met. San. Dist. (54C)	1400	589	115	113	105		95	92	95		84		-20	
01639N14E166h	1	Ill. Bell Telephone Co.	1689	595	68				76					55	8	-21
01639N14E217b	1	Joanna Western Mills Co.	1610	593				56						46		
01640N12E186c	1	Nelson Wire Co.	1457	663	2	-27	-12	-64	-67					-127	-69	-60
01640N12E186c	2	Nelson Wire Co.	1456	663	9			33	-22					-187	-31	-165
01640N12E223e	4946	Met. San. Dist. (F2B)	798	618	108		105	105	99	96	93		91	90	-9	-9
01640N12E314c	2	Automatic Electric Co.	1468	655				-80	-105	-85	-135	-116	-123	-124		-19
01640N12E314d	1	Automatic Electric Co.	1470	655	-41	-33	-25	-53	-60	-55	-65	-110	-115	-105	-19	-45
01640N12E314d	3	Automatic Electric Co.	1487	655	-19	-8	-34	-49	-45					-53	-26	-8
01640N12E352f	3	Oak Park Country Club	1497	627	109				213		149		34	89	104	-124
01640N13E244e	4496	Met. San. Dist. (49B)	861	591	145	140	132		123	120	119		106	106	-22	-17
01640N13E314e	2	M&M/Mars Inc.	1978	653	22		-9		-15	-49	-47		-40	-25	-37	-10
01640N13E347d	4	NW Malt & Grain Co.	1500	612	64						86			58		
01640N14E307d	4506	Met. San. Dist. (50B)	886	592	140	135	125		116	109	117		103	100	-24	-16
01641N09E363f	2	Hanover Park	1429	828	212				194	176	143	136		98	-18	-96
01641N09E366b	4	Hanover Park	1310	820	231			223	210	208	197	135		140	-21	-70
01641N10E065b	10	Hoffman Estates	1357	810	285	255			201	200	195	180	176	138	-84	-63
01641N10E076d	11	Hoffman Estates	1380	812					232		197	157	175	106		-126
01641N10E087g	12	Hoffman Estates	1405	822			198		163		132	112	17	-8		-171
01641N10E097g	7	Hoffman Estates	1398	790							135		115	83		
01641N10E108c	16	Schaumburg	1615	780		215			126	130	160	150		0		-126
01641N10E141b	18	Schaumburg	1359	735			123		70	95	75		75	35		-35
01641N10E151f	2	Hoffman Estates	1391	753	148				101	99		75	78	42	-47	-59
01641N10E154h	4	Hoffman Estates	1382	774	127				154	124		114	121	131	27	-23
01641N10E182b	19	Schaumburg	1415	830						160	135	100	120	85		
01641N10E211f	20	Schaumburg	1440	800								65		30		
01641N10E313e	3	Hanover Park	1952	798	209			188	175			123		107	-34	-68
01641N10E348h	15	Schaumburg	1350	810					170		22	30	-40	15		-155
01641N10E364g	7	Elk Grove	1365	720	20	5	13	-25	-62	-35	14	-5	-75	-71	-82	-9
01641N10E368b	11	Elk Grove	1367	725						67	-10		-50	-65		
01641N11E071c	4	Rolling Meadows	1603	706	103	52	66		58	16		14	31	-127	-45	-185
01641N11E083a	6	Rolling Meadows	1602	694			-1		-44	-31	-50	-69	-141	-106		-62
01641N11E091h	8	Arlington Heights	1445	703	-51	16	-16	10		-104	-99	-137		-144		
01641N11E097g	1	U.S. Army	1812	712		205			161	190				143		-18
01641N11E103f	8	Mt. Prospect	1765	680	10	30	10	-40	-81	-40					-91	
01641N11E116c	11	Mt. Prospect	1446	660	-50		-115	-65	-140	-108	-89	-108	-155	-116	-90	24
01641N11E128h	3	Mt. Prospect	1935	670	-20			-100	-100	-75	-5	-32	-80	-125	-80	-25
01641N11E134a	5	Des Plaines	1800	655	4		-33	-33	-53	-43	-118	-113	-103		-57	
01641N11E145b	3	Citizens Wayenden Co.	1368	672	34		34	17	32	-120	-86			-136	-2	-168
01641N11E157b	15	Arlington Heights	1414	696			-21	-84	-94	-79	-204	-164	-224	-134		-40
01641N11E162h	12	Arlington Heights	1775	714	-8		44	4	-36	-76	-56	-61	-94	-91	-28	-55
01641N11E211b	1	Elk Grove	1415	717	-6	-36	-16	-46	-81		-93	-81	-173	-158	-75	-77
01641N11E237f	16	Mt. Prospect	1961	675		24			-85	-95	-90	-97		-130		-45

Appendix A - Continued

County Location	Well no.	Owner	Depth ft.	Surface elevation	Water level elevation 1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	Water level changes, ft 1971-1975	1975-1980
Cook Cont.																
01641N11E241g	2	Citizens Wavcinden Co.	1652	660	-20			-2	-52	-68		-65	-90		-32	
01641N11E252h	7	Des Plaines	1815	655	135	150	142	150	138	119	116	124	112	116	3	-22
01641N11E256b	3	Touhy Mobil Homes	1515	657					-1					-45		-44
01641N11E256b	4	Touhy Mobil Homes	940	657					113					112		-1
01641N11E256g	4966	Met. San. Dist. (F9B)	800	660	232	219	203		213	213	225				-19	
01641N11E256g	4968	Met. San. Dist. (F9C)	1220	660	52	51	25		-9	-50	-45				-61	
01641N11E268a	2	Elk Grove	1395	682	21	-6	-16	-18	-78		-188	-133	-167	-154	-99	-76
01641N11E273f	9	Elk Grove	1403	682	64		-47	-58				-110	-106	-153		
01641N11E276a	4	Elk Grove	1416	694	9	-3		-66	-93		-133	-146	-186	-201	-102	-108
01641N11E325g	3	Elk Grove	1408	705	43	40	-87				-122	-79	-122	-42		
01641N11E337b	5	Elk Grove	1403	680	67	1	-38	-35	-93		-106	-103	-132	-130	-160	-37
01641N11E358f	6	Elk Grove	1396	675	-40	-120	-158	-115			-125		-153	-150		
01641N12E127b	3	Domestic Utilities Co.	1423	661	86			31						-9		
01641N12E127d	2	Domestic Utilities Co.	1390	658	85			25	20						-65	
01641N12E128b	1	Domestic Utilities Co.	1342	662	77			42	-5					-107	-82	-102
01641N12E185a	1	Des Plaines	1735	652	102	112	82	92	92	62	92	72		82	-10	-10
01641N12E185d	6	Des Plaines	1840	644	77	32	37	42	37	27	-8	-13	-63	-18	-40	-55
01641N12E187a	2	Des Plaines	1813	652	23	45	-27	-12			93	63				
01641N12E195d	3	Des Plaines	1843	652	70	59	15	30	2		30	25	15		-68	
01641N12E195g	4	Des Plaines	1395	650		51		16	16	-60	-15	-20		-79		-95
01641N12E266e	1	Park Ridge Country Club	1355	643	79				49	33			8	-10	-30	-59
01641N13E086d	2	Glenview Club	1546	649	90		47	57	47		49	45	37	25	-43	-22
01641N13E121d	4336	Met. San. Dist. (33B)	891	612	202	196	188		175	167	163				-27	
01641N13E185g	1	Avon Products Inc.	1410	644	124	119	114	114	94		79	89		31	-30	-63
01614N13E196f	4076	Met. San. Dist. (76)	856	628	122	115	105		78	85	81				-44	
01641N13E207e	1	Baxter Lab.	1414	627	97		67	69	52	67	67		55	29	-45	-23
01641N13E224g	2	Evanston Country Club	1465	608				143	-30					-47		-17
01641N13E231a	4386	Met San Dist. (38B)	906	596	169	166	158		146	137	133				-23	
01641N13E261e	4396	Met. San. Dist. (39B)	896	600	166	163	155		143	134	129		119		-23	
01641N13E268d	4296	Met. San. Dist. (29B)	876	599	160		148		136	128	123		112	111	-24	-25
01641N13E298d	1	Pathfinder Autolamp	1465	624	9						54			16		
01642N09E347a	1	All-State Insurance Co	1250	850										300		
01642N09E351b	1	Rose Packing Co.	700	825		311								276		
01642N10E014h	907	Palatine (Ferndale Hts #7)	1609	745								140	95	15		
01642N10E018d	903	Palatine (Ferndale Hts #3)	1350	740	230				143	128	128	105	100	65	-87	-78
01642N10E018f	905	Palatine (Ferndale Hts #5)	1603	750				227		140	130	85	90	79		
01642N10E094b	9	Palatine	1960	780				270						78		
01642N10E114g	901	Palatine (Ferndale Hts #1)	1521	760		208			115		140	90	90			
01642N10E114h	902	Palatine (Ferndale Hts #2)	1550	755	285					155	130	110	110	57		
01642N10E125e	904	Palatine (Ferndale Hts #4)	1600	740		195			135	132	132	122	120	105		-30
01642N10E142c	1	Palatine	1380	738		148	118	68	98					33		-65
01642N10E146h	10	Palatine	1995	750						165				65		
01642N10E153f	7	Palatine	1350	750		185	130	130	115					40		-75
01642N10E194c	14	Hoffman Estates	1415	830								225	98	47		
01642N10E222a	8	Palatine	1950	735	210		160	125	130	105				103	-80	-27
01642N10E243h	2	Palatine	1350	732	161	177	147	115	87						-74	
01642N10E248a	1	Arlington Park Jockey Club	1815	730	205									65		
01642N10E251b	1	Rolling Meadows	1530	711	136		126		123	101	99	98	96	93	-13	-30
01642N10E256b	2	Rolling Meadows	1537	714	114	117	39		48	42	30	21	-31	-24	-66	-72
01642N10E258g	3	Arlington Park Jockey Club	1906	720	75									48		
01642N10E264h	5	Rolling Meadows	1555	733			93		121	89	88	80	33	51		-70
01642N10E297e	9	Hoffman Estates	1392	820	220				169	165		132	128	118	-51	-51
01642N10E344h	7	Rolling Meadows	1528	728								118		59		
01642N10E364d	3	Rolling Meadows	1585	717	139	121	157	47	34	40	20	-55	-45	-23	-105	-57
01642N11E033b	5	Wheeling	1355	650					65					-10		-75
01642N11E047a	4	Buffalo Grove	1355	685	105	97	100	40	71	70	57	66	35	27	-34	-44
01642N11E051g	3	Buffalo Grove	1340	686		96	85	76	39	52	42	51	15	-21		-60
01642N11E058e	1	Buffalo Grove	1335	725			118	52	50	51	35	2	-5	-32		-82
01642N11E066c	13	Arlington Heights	1795	730	188		120	140	110	105	62	64	30	30	-78	-80
01642N11E081a	11	Arlington Heights	1647	689	49	99	96	94	59	54	19	38	14	-6	10	-65
01642N11E107a	7	Wheeling	1350	661									46	1		
01642N11E111h	8	Wheeling	1350	647										-23		
01642N11E116e	3	Wheeling	1370	644					79					-21		-100
01642N11E118b	2	Ekco Products, Inc.	1320	650	82	80	80	50	30	30	25	0	0	-35	-52	-65
01642N11E127b	1	Plum Creek Apartments	1338	640								15	12	-26		
01642N11E128b	2	Plum Creek Apartments	1323	645								33		-37		
01642N11E167a	10	Arlington Heights	1778	684	136		108	89	64		58	53	44	44	-72	-20
01642N11E177e	9	Arlington Heights	1532	691	111		91	76	56	56	21	-8	-19	-29	-55	-85
01642N11E194a	14	Arlington Heights	1320	719		109	19	81	37	9	18	1	-26	-31		-68
01642N11E232e	6	Wheeling	1345	650					88					-10		-98
01642N11E243g	5	Citizens Suburban Util. Co.	1320	638	88	88	53		67	13		-57	-82	-80	-21	-147
01642N11E244d	4	Citizens Suburban Util. Co.	1323	642	104	104	55	57	35	30	-5	-19	-50		-69	
01642N11E245f	6	Citizens Suburban Util. Co.	1323	643	98	70		70				-52	-80			
01642N11E267d	2	Citizens Suburban Util. Co.	1468	661	98	98		56	-9	-24	-15			-59	-107	-50
01642N11E272a	6	Mt. Prospect	1468	668	-5		23	3	-2	-37	-7	-73	-107	-84	3	-82
01642N11E275h	17	Mt. Prospect	1947	663								20		-14		
01642N11E294h	7	Arlington Heights	1524	685	52	57		57	5		-62	-81		-72	-47	-77
01642N11E295a	5	Arlington Heights	1525	680	50	37	52	42	-12	-24	-48	-46			-62	
01642N11E301e	2	Arlington Heights	1345	713		48	10	68	-30	-34	-39	-32	-87	-113		-83
01642N11E303b	6	Arlington Heights	1490	707	42		62	27	12	32	18	-4			-30	

County Location	Well no.	Owner	Depth ft.	Surface elevation	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1971-1975	1975-1980
					Water level elevation										Water level changes, ft.	
Cook Cont.																
01642N11E303b	17	Arlington Heights	1323	708									-47	-74		
01642N11E317a	16	Arlington Heights	1810	698					-47	-67	-25	-43	-82	-92		-45
01642N11E333b	4	Mt. Prospect	1950	693	11		-117	-47	-97		-72	-78	-112	-115	-108	-18
01642N11E344g	5	Mt. Prospect	1822	670	40	55	15	15	-10		-45	-41	-101	-50	-50	-40
01642N11E352a	13	Mt. Prospect	1337	655		55	55	40	5	-12	-10	-34		-125		-130
01642N12E142a	4	Sunset Ridge Country Club	1410	655	100				55					20	-45	-35
01642N12E142c	1	Sunset Ridge Country Club	1385	655	130				85					45	-45	-40
01642N12E148e	1	St Ann's Home	1190	665					110					60		-50
01642N12E181e	1	Mission Brook San. Dist.	1399	685		250		60	50	37				-10		-60
01642N12E182b	1	Ill. Bell Telephone Co	1380	660		90			52	27				2		-50
01642N12E183a	1	Culligan, Inc	1380	652	100	17	22		64	62			-8	3	-36	-61
01642N12E183b	1	Intl. Mineral & Chemical Co.	1330	660								55		35		
01642N12E183e	3	Mission Brook San. Dist.	1400	660		80			25					2		-23
01642N12E191b	3	Allstate Insurance Co.	1401	662	84		91	41					29	31		
01642N12E191c	1	Allstate Insurance Co.	1400	663	137	68			39	16	1	11	1	-1	-98	-40
01642N12E191d	2	Allstate Insurance Co.	1404	663	90			45	41	25	-3	-5	4	-1	-49	-42
01642N12E192a	4	Allstate Insurance Co.	1400	655			75	50	39	23	-5	6	11	7		-32
01642N12E192c	2	Nielsen Co.	1400	657		67	47	52	45	47				-12		-57
01642N12E192h	2	Culligan, Inc.	1400	655	107				55	45			-35	-1	-52	-56
01642N12E193f	1	Nielsen Co.	1400	655	85	65	45	55	15					-35	-70	-50
01642N12E194e	1	Household Finance Corp.	1308	648						43				7		
01642N12E206d	1	Allstate Ins/Indian Ridge	1396	675									19	0		
01642N12E235f	3	Convent of the Holy Spirit	1451	648	166				120		72	65			-46	
01642N12E291a	4	Glenview	1405	677	19				27			-3		-11	8	-38
01642N12E291h	1	Glenbrook Hospital	1406	677							7			4		
01642N12E293d	3	Glenview	1366	682	102					52				-85		
01642N12E302d	1	Glenview	1286	654	84				62			19		19	-22	-43
01642N12E324f	1	Moore Business Forms	1450	670					109					52		-57
01642N12E326f	2	Zenith Radio Corp.	1368	662					67		41			-8		-75
01642N12E327f	1	Zenith Radio Corp.	1324	660					75		45					
01642N13E355g	4318	Met. San. Dist. (31C)	1330	593		178	165		150	139	131		120	113		-37
01642N13E356c	4326	Met. San. Dist. (32B)	898	603	196	189	171		168	159	153		143	141	-28	-27
DeKalb																
01937N05E321c	1	Somonauk	190	685	667			666	663	660				665	-4	2
01937N05E321c	2	Somonauk	502	685	669			666	669	660				665	0	-4
01937N05E367g	3	Sandwich	610	655										647		
01937N05E367h	1	Sandwich	600	667					648					649		1
01937N05E367h	2	Sandwich	600	667	644				647		639			636	3	-11
01938N05E144d	3	Hinckley	605	740	700			704	706	693	700		686	663	6	-43
01938N05E152a	2	Hinckley	708	740	725	728		726	722	722	718	720	720	727	-3	5
01939N04E036g	1	Wurlitzer Co.	1270	865	805			813	800					805	-5	5
01940N03E157c	2	Kishwaukee College	920	910	741				740					727	-1	-13
01940N03E236e	2	Malta	1254	915	743				739					733	-4	-6
01940N04E014e	7	Sycamore	1233	835								625		610		
01940N04E132h	11	DeKalb	1312	885	641	639	629	634	644	605	625	605	605	610	3	-34
01940N04E157a	6	DeKalb	1291	855			668	677	607	613		605	624	605		-2
01940N04E161g	1	DeKalb University Dev Corp	803	880	779				790					790	11	0
01940N04E162g	2	DeKalb University Dev Corp	970	883	763				760					746	-3	-14
01940N04E214f	10	DeKalb	1310	880	659	667	664	677	668	683		629	645	633	9	-35
01940N04E222d	1	DeKalb	1331	870	662	660	654	620	615	638		632	640	611	-47	-4
01940N04E223e	2	DeKalb	1306	860	649		653	649	642	635	629	632	634	610	-7	-32
01940N04E231g	9	DeKalb	1330	885	735	732	722	710	645	640		640	657	655	-90	10
01940N04E235d	4	DeKalb	1178	885	652	652	649					608	634	610		
01940N04E238d	8	DeKalb	949	875	643	650	632	651	633	628		618			-10	
01940N04E263g	1	Del Monte Corp.	1324	890	668	650	650	665	660	655	625	635		632	-8	-28
01940N04E263g	2	Del Monte Corp.	1345	890	658	680	660	660	650	632	625	630		624	-8	-26
01940N04E266e	7	DeKalb	1315	885	659	605	632	635	640			624	639	629	-19	-11
01940N04E331h	12	DeKalb	1200	862		672	707	700	700	695	695	666	679	664		-36
01940N05E055e	5	Sycamore	1227	872					592	609		596		597		5
01941N05E321g	3	Sycamore	932	845	807				811					805	4	-6
01941N05E323e	1	Sycamore	902	870	818				814	821				826	-4	12
01941N05E327g	6	Sycamore	1213	845	628				613	615				598	-15	-15
01942N03E263h	2	Kirkland	636	764	747				759					759	12	0
01942N05E194h	3	Genoa	732	830	717				730			730		740	13	10
01942N05E207a	4	Genoa	770	847	676			667	647			647		667	-29	20
DuPage																
02237N11E027d	1	Rosewood Trace	1610	710	68		43	41	32	29	17	13	13	-3	-36	-35
02237N11E038a	601	Argonne National Lab.(1A)	1595	670	117				100					77	-17	-23
02238N09E132b	7	Naperville	1445	680	158			131	72	75	38	50	38	54	-86	-18
02238N09E157d	1	J.S. Plastics Co.	1000	704	220				192					155	-28	-37
02238N09E295g	22	Aurora	1420	684			169		109				93	81		-28
02238N10E304d	16	Naperville	1478	690	145			103	95	80	80	70	25	23	-50	-72
02238N10E334h	20	Naperville	1572	748								57		63		
02238N11E037e	13	Westmont	1578	740								-10		-55		
02238N11E107e	11	Westmont	1604	751							67	51	72	51		
02238N11E115c	7	Clarendon Hills	1585	722		67	82	72	37	32	24	12	2	-38		-75
02238N11E235e	3	Willowbrook	1620	734				59	66	55			35	13		-53
02238N11E281c	4	Darien	1612	767	139					7	11			-29		

Appendix A - Continued

County Location	Well no.	Owner	Depth ft.	Surface elevation	Water level elevation										Water level changes, ft.	
					1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1971-1975	1975-1980
DuPage Cont.																
02239N09E041b	3	West Chicago	1378	762					217	212		199	176	171		-46
02239N09E055d	5	West Chicago	1376	751	343	339		331	293	337	308	202		173	-50	-120
02239N09E157h	4	West Chicago	1362	746	218	216		156	137	142	116	116	124	122	-81	-15
02239N09E196c	4	Fermi Nat. Accelerator Lab.	1432	756	241			231	211	200	193	177	176	178	-30	-33
02239N10E014d	1	ComEd-Lombard	1465	740	84		81	81	33		23			-16	-51	-49
02239N11E018f	1	Elmhurst	1475	678	-91	-106	-137									
02239N11E041f	7	Villa Park	1418	702	-6				-63	-78	-149	-192	-107	-140	-57	-77
02239N11E052c	9	Lombard	1431	710		80	85	75	-19					-116		-97
02239N11E063a	4	Lombard	1560	698	54	80	40		34	34	41	12	11	8	-20	-26
02239N11E091h	1	Villa Park	1441	694	-10	-30			-68	-57	-96		-125	-130	-58	-62
02239N11E092h	2	Villa Park	2125	699	28	29	34	-1	-71	-27	-102	-166		-171	-99	-100
02239N11E101h	4	Elmhurst	1390	669	-71	-69	-70	-106	-93	-151	-131		-141	-181	-22	-88
02239N11E103g	11	Ovaltine Food Products	1897	670						4	2	0	-6	2		
02239N11E104e	7	Ovaltine Food Products	1936	675	5		-23	-21	-40					-3	-45	37
02239N11E104g	9	Ovaltine Food Products	1987	670	-50		-57	-66	-95	-94				-200	-45	-105
02239N11E128c	5	Elmhurst	1480	677	-31	-178	-178	-83								
02239N11E133g	10	Elmhurst	1567	705	25	-15	-30	-115	-100	-110		-115	-115	-115	-125	-15
02239N11E161b	8	Villa Park	1485	705	17				-17	-59	-45				-34	
02239N11E178d	7	Lombard	1520	730	25		25	19	10	13	15	24			-15	
02239N11E207a	8	Lombard	1590	775	30		18		-25	-20	5	-34	-37	-57	-55	-32
02239N11E243b	5	Oakbrook	1503	680						-90	-50	-60	-155	-110		
02239N11E265h	1	Oakbrook	1521	685	32	-50			-31	-55	-37	-45	-50	-81	-63	-50
02239N11E277g	7	Oakbrook	1513	715							-35	-50	-107	-83		
02239N11E336h	6	Oakbrook	1522	695							10		-50	-30		
02240N09E116h	4	Bartlett	1985	770					250					114		-136
02240N09E138d	5	Hanover Park	1445	793							183			102		
02240N09E231e	5	Carol Stream	1357	775							130	95	52			
02240N10E093b	5	Roselle	1423	805								258		105		
02240N10E094a	7	Bloomingdale	1420	790					180		112	10		35		-145
02240N10E148c	2	Bloomingdale	1395	750	97	110	81	62	37		70	5		10	-60	-27
02240N10E204g	8	Bloomingdale	1415	765										22		
02240N10E321c	4	Carol Stream	1963	790					153				75	79		-74
02240N11E035e	8	Elk Grove	1445	700	35	53	-21	-50	-100	-62	-130	-165	-190		-135	
02240N11E104h	5	Wood Dale	1400	695		170		95	0	-103	-135	-231				
02240N11E112b	4	Bensenville	1490	675						-130	-125	-145	-149	-144		
02240N11E114d	7	Bensenville	1900	680									175	-95		
02240N11E114e	5	Bensenville	1450	672	82	62	32	2	2	42	-13	-93			-80	
02240N11E134b	6	C.,M., St.P. & P. RR	1440	671	107									83		
02240N11E138e	2	Bensenville	1442	676	-24		16	1	-69	-69	-39	-33	-172	-136	-45	-67
02240N11E144e	3	Bensenville	1445	670	-15	-20	-40	-60	-66	-90	-105	-100	-142	-142	-51	-76
02240N11E166g	7	Wood Dale	1356	693								-37		-97		
02240N11E261d	9	Elmhurst	1479	675	-80			-103	-113		-105		-185	-235	-33	-122
02240N11E262h	6	Bensenville	1900	684										148		
02240N11E315a	5	Lombard	1723	738	63	60	40		20		-3	-2	-10	-55	-43	-75
02240N11E355e	6	Elmhurst	1471	703	-52	-60	-69	-87	-102	-107	-107		-107	-137	-50	-35
Fulton																
02904N02E066b	1	Ipava	1324	650										492		
02905N01E328a	1	Table Grove	1635	720								490		480		
02905N03E082g	1	United Methodist Camp	2245	495	495	495	495	495	495	495	495	495	495	495	0	0
02906N03E206f	4	Cuba	1380	675										529		
02906N04E305a	1	Bryant	1282	619	496									497		
Grundy																
03231N08E041a	4	Gardner	1933	588	419		374	389	384	382	421	400		386	-35	2
03232N08E031e	4	Coal City	786	567	352				307			308		345	-45	38
03232N08E148e	1	EWR Co.	735	576					359					332		-27
03233N07E042a	3	Morris	865	523	445		398		373	343			328	323	-72	-50
03233N07E044c	5	Morris	1462	506	416	406	384	384	345	361			336	344	-71	-1
03233N07E063g	1	Heatherfield Subdivison	520	549	488				464				449		-24	
03233N07E093h	4	Morris	1492	519	429	429	389	381	371	379			349	321	-58	-50
03233N08E075d	2	ComEd-Collins	1477	525					360					287		-73
03233N08E075f	1	ComEd-Collins	1510	515			384		343					275		-68
03233N08E078d	4	ComEd-Collins	1495	520			378		362					288		-74
03233N08E341d	5	Coal City	1785	560								320	310	312		
03233N08E353a	1	Eileen	700	565					320				328	343		23
03233N08E353f	1	DeMert & Dougherty Inc.	805	560	380	363		360	360	340	345	310	349	349	-20	-11
03233N08E364b	2	Diamond	850	562										317		
03234N08E013c	3	Minooka	1508	610	337	316	308	295	298		231		260		-39	
03234N08E013e	4	Minooka	725	610			387	383	382	380		367	369	367		-15
03234N08E202e	1	Northern Petrochemical Co.	1453	524	350	294	294		290	288			181		-60	
03234N08E213f	2	Alumax Mill Products Inc.	1515	525	335	295	275	247	243		223			215	-92	-28
03234N08E213e	1	Alumax Mill Products Inc.	1540	525	385	305	285	247	246		223			235	-139	-11
03234N08E219a	3	Northern Petrochemical Co.	1463	523	378	288	268	220	216	186		140	159		-162	
03234N08E219c	2	Northern Petrochemical Co.	1470	523	360	274	246	213	206	168			146	181	-154	-25
03234N08E226e	2	NIGas Co.	1519	523			285	293	265	253	220		210	238		-27
03234N08E228e	1	NIGas Co.	1511	522		340		282	277	254	240		192	227		-50
03234N08E285f	5	Northern Petrochemical Co.	1455	503		374	263	249	275	271	235		202			
03234N08E345h	1	Reichhold Chemicals, Inc.	706	510	445	440			435			431		429	-10	-6
03234N08E347h	2	Reichhold Chemicals, Inc.	710	518								408	408	438		
03234N08E351c	2	ComEd-Dresden	1500	515	346	323	323		288	300	272			281	-58	-7
03234N08E351g	1	ComEd-Dresden	1499	519	339	314	279		275	264	243			256	-64	-19
03234N08E354d	2	General Electric Co.	788	533					341					323		-18

County Location	Well no.	Owner	Depth ft.	Surface elevation	Water level elevation 1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	Water level changes, ft. 1971-1975	1975-1980
Hancock																
03403N08W063e		Mulch Bros.	800	675							545			514		
03404N09W275g		Harry Rupp	768	662							529			514		
03405N07W13nd	3	Carthage	760	650							512					
03405N08W066g	2	Eastman Boy Scout Camp	1003	650		529								515		
03407N08W022e	1	Apple River Chemical Co.	745	530										502		
03407N06W214g		Jack R. Bardell	857	652										509		
Henderson																
03609N05W251e	1	Stronghurst	1009	685										627		
Henry																
03714N01E211f	2	Alpha	1209	800										496		
03714N02E303f	2	Woodhull	1369	815				668						668		
03714N04E278b	3	Galva	1524	845										450		
03714N04E278b	4	Galva	1687	845										457		
03714N05E042e	4	Kewanee	2501	845						498						
03715N03E073e	2	Cambridge	1377	802										481		
03715N03E073e	3	Cambridge	1410	802				475						455		
03715N05E335b	2	Kewanee	2438	848							487			471		
Iroquois																
03829N10E168c	807	Nat. Gas Pl Co (Wadleigh 2)	2812	721	647	651	646	634	626	622	625	606	601	600	-21	-26
Jo Daviess																
04326N01E105g	7	Savanna Army Depot	1078	594	599	606	622		-					613		
04326N02E193e	6	Savanna Army Depot	1180	631	632	659	656		643				640	630	11	-13
04326N02E333a	3	Savanna Army Depot	1200	623									633	607		
04327N04E114e	6	Stockton	1019	1010	766			670						678		
04327N04E115f	5	Stockton	922	1055	700		–							654		
04328N01W137g	5	Galena	1593	844	625	613	609	609			607	597		604		
04328N01W241f	3	Galena	1575	610	610				610					610	0	0
04328N01W242b	1	Interstate Light & Power Co.	1515	610								612		612		
04328N01E201g	4	Galena	1516	615	615				615					615	0	0
04328N02E186c	2	Galena Territory	355	810								740		736		
04328N02E307f	1	Galena Territory	470	900								762		715		
04328N03E151h	1	Apple Canyon Lake	1825	910	692							665		673		
04329N02E263b	2	Scales Mound	374	943	892	891	893	892	891	890		893	891	898	-1	7
04329N02E263b	3	Scales Mound	451	948	895	897	897	898	897	898		897	897	880	2	-17
04329N04E193g	3	Apple River	380	1005				961	961	961			961			
04329N04E242e	2	Warren	963	1010	832								865	846		
04329N04E244g	4	Warren	1030	1022								802				
Kane																
04538N07E052d	1	Waubonsee College	1323	703	484	479	473	475	472		446	482		465	-12	-7
04538N07E197e	4	Sugar Grove	1475	705								512		457		
04538N07E246h	21	Aurora	1447	670		327			230				224	127		-103
04538N07E255b	23	Aurora	1420	670			275	247	217				195	180		-37
04538N08E012c	20	Aurora	1400	715	225			170	188				170	173	-37	-15
04538N08E036g	5	North Aurora	1330	700								209	202	196		
04538N08E041f	2	North Aurora	1272	635	255				227	207		217	209	161	-28	-66
04538N08E043g	3	North Aurora	1305	675	271			263	231	210		261	257	241	-40	10
04538N08E048d	4	North Aurora	1325	689								248	239	225		
04538N08E083e	25	Aurora	1460	695				227		170			195	76		
04538N08E137b	2	Aurora Paperboard Co.	1787	696	180				165					100	-15	-65
04538N08E138b	1	Aurora Paperboard Co.	1397	696	180				165					135	-15	-30
04538N08E153h	612	Aurora (12A)	2251	669		379			300	335				309		9
04538N08E154g	12	Aurora	2253	644	199				204	189				204	5	0
04538N08E154h	11	Aurora	1434	635	200				160					160	-40	0
04538N08E155f	2	Aurora Bleachery Co.	1368	650		214	220	210	205		200	173	95	152		-53
04538N08E156f	1	Oberweiss Dairy	875	660		298	314	299	185		200	200		173		-12
04538N08E164d	17	Aurora	2152	685		295			145	176			155	210		65
04538N08E195a	19	Aurora	1424	687	227				160	185			210	240	-67	80
04538N08E215h	10	Aurora	2299	673										171		
04538N08E227b	8	Aurora	1380	628					153				150	120		-33
04538N08E247c	18	Aurora	1486	717	202	123		177	157	162			119	114	-45	-43
04538N08E274a	6	Aurora	2185	662		197							121	109		
04538N08E292h	15	Aurora	1719	665	150			182	174	222			197	157	24	-17
04538N08E324f	4	Montgomery	1333	642	205		167	180	147	102			177	67	-58	-80
04538N08E337c	3	Montgomery	1331	633	193			153	158	88		88	56	61	-35	-97
04538N08E347b	8	Montgomery	1378	668					158			93		129		-29
04538N08E348g	16	Aurora	2139	660		217			235	215			223	149		-86
04539N07E058f	1	Elburn	1350	850	516	510	496	510	508	505	510	510		514	-8	6
04539N07E063f	3	E.W. Kneip, Inc.	905	840							456	474		450		
04539N07E063f	4	E.W. Kneip, Inc.	1311	840			472				456	502		512		
04539N07E104g	1	Broadview Academy	1335	790								405				
04539N07E112h	1	National Electronics, Inc.	1060	780				455								
04539N08E024c	5	Geneva	2292	753	353				345					343	-8	-2
04539N08E031b	2	Geneva	2172	678	393				310					235	-83	-75
04539N08E032b	4	Geneva	2267	719	339				294			239	239		-45	
04539N08E035e	1	Burgess Norton Mfg. Co.	1308	760			389	350	365	366	351			340		-25

County Location	Well no.	Owner	Depth ft	Surface elevation	Water level elevation										Water level changes, ft.	
					1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1971-1975	1975-1980
Kane Cont.																
04539N08E038g	3	Geneva	1578	759	359				314			300			-45	
04539N08E098h	6	Geneva	1350	758	358			333						319		
04539N08E117e	7	Geneva (Ill Youth Ctr #4)	2001	730	347	373	385	392	389	390	390	397	400	398	42	9
04539N08E211f	2	Furnas Electric Co	620	722	512			362	357	352					-155	
04539N08E223e	2	Batavia	2200	667	324	324			324	279				253	0	-71
04539N08E223e	3	Batavia	2200	667	432	407			417	380				304	-15	-113
04539N08E238f	4	Batavia	1357	721	341	351			261	270				243	-80	-18
04539N08E266h	5	Batavia	1440	780								275	311	232		
04539N08E335g	2	Mooseheart	1485	704	306					267				240		
04539N08E335g	3	Mooseheart	1386	713		300	279		269					231		-38
04540N07E328b	3	Elburn	1393	900	538				507	500	495	491	490	490	-31	-17
04540N08E254a	8	St. Charles	1373	761								398		327		
04540N08E275a	3	St. Charles	1191	690	314	247			214	160	158		190	220	-100	6
04540N08E276b	4	St. Charles	1647	692	328	328			324	256	272		295	307	-4	-17
04540N08E316f	5	Ill. Youth Center-St. Charles	1292	763	422			455	413				403	378	-9	-35
04540N08E316h	4	Ill. Youth Center-St. Charles	1322	790	420			443	445					385	25	-60
04540N08E346c	5	St. Charles	1713	764						312	292		264	264		
04540N08E346e	6	St. Charles	1502	755	395	385		355	325	295	295				-70	
04541N06E091g	2	Burlington	1105	922	587	592			582					569	-5	-13
04541N09E113f	1	Elgin (Slade Ave #1)	1945	721	246	283	262		283	257					37	
04541N08E113f	2	Elgin (Slade Ave #2)	1935	723	253	285	234		267	258					14	
04541N08E113f	3	Elgin (Slade Ave #3)	1793	725	265		257		287	274					22	
04541N08E113f	4	Elgin (Slade Ave #4)	1880	720	250		238		268	263				148	18	-120
04541N08E113f	5	Elgin (Slade Ave #5)	1255	720	270		245		263	268				187	-7	-76
04541N08E113f	6	Elgin (Slade Ave #6)	1300	720	240		263		274	275					34	
04541N08E123e	1	Simpson Co	998	805	356	351	346	339	342	332	331	326	321	316	-14	-26
04541N08E162d	704	Elgin (4A)	1345	831		381			333	251				286		-47
04541N08E164c	701	Elgin (1A)	1268	858	395		369		294	293				278	-101	-16
04541N08E164d	702	Elgin (2A)	1353	861	383		383		240	276				191	-143	-49
04541N08E164d	703	Elgin (3A)	1378	866	389		379		291	300					-98	
04541N08E167c	705	Elgin (5A)	1310	815							291			175		
04541N08E233b	1	Elgin Mental Health Center	2000	748									346	360		
04541N08E241a	601	Elgin (Lavoie Ave)	1978	710	338		233				236					
04541N08E243b	603	Elgin (St. Chas. St. #3)	1255	718	341				337					256	-6	-81
04542N06E031e	2066	ILL. Tollway (M6)	962	910	665				653					643	-12	-10
04542N06E214b	5	Hampshire	804	878		701		638	643					588		-55
04542N08E211e	3	West Dundee	1203	790									360	370		
04542N08E227f	1	Spring Hill Mall	1227	790	375				365	390			383	380	-10	15
04542N08E227f	4	West Dundee	1209	795									355			
04542N08E255g	1	Material Service Co.	1335	840										278		
04542N08E271e	1	West Dundee	1200	725	361	320	371			257	332			235		
04542N08E295c	1	Sleepy Hollow	1334	895									398			
Kankakee																
04629N10E042a	803	Nat. Gas Pl (Holman #1)	1837	690	455	453	451	447	458	452	460	455	451	444	3	-14
04629N11W107e	1	DeYoung & Mercer	670	648							623			571		
04630N09E068a	1	Reddick	1188	612	402				407				374	401	5	-6
04630N10E085a	802	Nat. Gas Pl (Heimburger #1)	2582	628	449	438	436	431	431	432	431	429	435	428	-18	-3
04630N10E168c	804	Nat. Gas Pl (J Karcher #1)	1825	635	431	428	427	423	428	428	428	426	426	422	-3	-6
04630N10E193h	805	Nat. Gas Pl (Ruder #1)	1769	638		433	433	427	433	432	434	432	431	425		-8
04630N10E288h	6	Herscher	773	645	425	450	450	450	425	450		409	410	425	0	0
04630N10E292h	5	Herscher	789	648	513		433	433	429	432		428	428	457	-84	28
04630N10E301h	806	Nat. Gas Pl (Saffer #1)	1788	649	444	445	443	437	447	442	448	446	443	439	3	-8
04630N10E348f	801	Nat. Gas Pl (G.Clodr #1)	1881	670	447	452	450	444	458	455	455	452	450	450	11	-8
Kendall																
04735N06E056a	3	Newark	336	690			605	605	605	610	602	602	602	607		2
04735N06E062e	2	Newark	287	650	583				587	578		578	578	583	4	-4
04736N07E061g	1	Fox Lawn Development	719	665	516	526			484					494	-32	10
04736N07E165g	1	Ill. Division of Highways	750	725						516				509		
04737N07E218h	1	Model Industries	787	645			465							415		
04737N07E272b	1	Hide-A-Way Lakes	550	590		462								423		
04737N07E288b	4	Yorkville	1393	628					448	383						
04737N07E315b	1	Boy Scouts Of America	850	640					488					503		15
04737N07E321e	3	Yorkville	1335	584	410	423	392		405	407				365	-5	-40
04737N07E354g	1	Farm Colony Subd.	642	640								395	398	390		
04737N08E055i	1	Western Electric Co.	1332	640	196	190	180	155	155	170	170	165	175	155	-41	0
04737N08E056e	2	Aurora San. Dist.	1325	628	251				176	176			146	146	-75	-30
04737N08E059f	1	Caterpillar Tractor Co	1384	661	254	208		208	188	204		198			-66	
04737N08E062d	3	Caterpillar Tractor Co.	1352	661	263	255	240	231	209		232	225			-54	
04737N08E062f	2	Caterpillar Tractor Co.	1346	660	262	257	238	244	194		219	180			-68	
04737N08E172e	4	Oswego	1344	658	277	314	311	292	239	236		236		248	-38	9
04737N08E208h	3	Oswego	1378	640	305	300		274	254	267		266	255	240	-51	-14
Knox																
04809N04E115e	3	Yates City	1580	675										425		
04811N01E026d	5	Galesburg (Flor Ave)	2473	786										486		
04811N01E161h	3	Galesburg (Hndr St. #1)	2414	760										460		
04811N02E285d	2	Knoxville	2498	778										524		
04811N02E285d	3	Knoxville	2525	778										478		
04812N03E357h	1	Oak Run Golf Course	864	740										474		

County Location	Well no.	Owner	Depth ft.	Surface elevation	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	Water level changes, ft 1971-1975	Water level changes, ft 1975-1980
Lake																
04943N09E112a	2	Lake Barrington Shores	1305	815						283				195		
04943N10E147d	1	Kemper Insurance	1400	796					271					181		-90
04943N10E152d	2	Kemper Insurance	1402	796					261					145		-116
04943N10E164d	8	Lake Zurich	1373	868									178	146		
04943N10E184b	5	Lake Zurich	1345	822	254	252			257	212				203	3	-54
04943N10E215e	7	Lake Zurich	1333	846	276				220	156		206		150	-56	-70
04943N11E213g	1	Powernail Co.	1258	685										67		
04943N11E226d	3	Lincolnshire	1300	667	167			117	117	39				-43	-50	-160
04943N11E235f	1	Lincolnshire	1305	645	155	150		95	83	76		100		32	-72	-51
04943N11E328f	2	Buffalo Grove	1355	703	160	148	108	128	110		81	68		23	-50	-87
04943N11E331b	6	Buffalo Grove	1355	675								-25		-68		
04943N12E313c	1	Walgreen Co.	1465	680	125				70				13	11	-55	-59
04943N12E316e	1	Baxter Travenol Lab.	1456	685					81					30		-51
04943N12E335e	1	Kitchens of Sara Lee, Inc.	1350	690										31		
04944N09E245d	4	Wauconda	1264	792			394					321	321	316		
04944N10E328a	9	Mundelein	1380	830	305		275	306	299	310	286	260	267	190	-6	-109
04944N10E252c	10	Mundelein	1421	760							179		110	115		
04944N11E193c	6	Mundelein	1405	743	248		223	208	211	179	241	223	158	218	-37	7
04944N11E217f	11	Libertyville	1490	703	263		128	141	143	122	140			153	-120	10
04944N11E284e	12	Libertyville	1926	700			293		236		33	33		110		-126
04944N11E314h	8	Mundelein	1383	730	260		220	212	204	200	182	150	126	150	-56	-54
04944N11E326a	1	Vernon Hills	1912	725		297	275		225		210	170	255	175		-50
04944N11E333g	1	Hawthorne Melody Farms	1290	690	235				205					135	-30	-70
04944N11E335a	2	Vernon Hills	1870	685		330			230		200	183	155	150		-80
04944N12E183f	1	Ingrid Co.	1631	680										181		
04944N12E183f	2	Ingrid Co.	1600	680										192		
04944N12E218f	4	Lake Bluff	1804	680	365	370	358	359	340	324	322	309	315	302	-25	-38
04944N12E322c	1	Owentsia Golf Club	1250	660	220						195			158		
04945N09E366c	1	Baxter Travenol Lab.	2010	810		455			390	356	350	360	359			
04945N10E157e	6	Round Lake Beach	1287	790		432			400	375				264		-136
04945N10E204h	7	Round Lake Beach	2000	760						395				302		
04945N10E262b	4	Grayslake	1354	780			375		365	320				290		-75
04945N10E267c	2	Grayslake Gelatin Co.	1040	785									260	247		
04945N10E268b	1	Grayslake	1039	785	662			697	697	692	683	678	695	650	35	-47
04945N10E303d	3	Round Lake	1241	791				413				413				
04945N11E145a	1	Gurnee	1517	667	401	410		357	337	327	326	322	320	302	-64	-35
04945N11E162g	2046	IL Tollway (M4)	980	730	398				355						-43	
04945N11E252h	2	Park City Mobile Homes	1203	700			358							230		
04945N11E281e	2	Gurnee	1450	730								575				
04945N11E298a	2	Wildwood Subd	1845	785	442				435			249	219	205	-7	-230
04945N11E304g	4	Wildwood Subd	1320	795					330			315	305	280		-50
04945N11E367e	3	American Hospital Supply Co	1415	710								230	230	254		
04945N11E367d	1	American Hospital Supply Co.	1421	710	240						269	160		130		
04945N12E158e	1	Griess Pfleger Tannery	1670	588	368	398	462									
04946N12E081d	6	Winthrop Harbor	1500	690	430	380		380	364			390	390	313	-66	-51
04946N12E146g	1	U.S.G.S.	1250	585										370		
04946N12E211b	1	Zion	1100	633	448	438	436	421	408	396	390	381	371	361	-40	-47
LaSalle																
05031N01E246e	4	Lostant	1881	700	478		476	470		470	466		468	447		
05031N03E228h	1	Kangley	542	632	477				462					453	-15	-9
05031N05E161d	3	Ransom	280	700										626		
05031N05E161d	4	Ransom	812	700	469		450									
05032N01E047b	1	Cedar Point	1749	653			528					493		465		
05032N02E054h	2	Matthiessen State Park	304	640					488					488		0
05032N05E171a	2	ComEd-LaSalle	1620	711		461			437		432	428				
05032N05E172f	1	ComEd-LaSalle	1629	712				452	441		432	424		429		-12
05033N01E082f	8	Peru	2764	638				461						453		
05033N01E168a	4	Peru	1505	460	461	462	456	457	460	459	456	452	457	457	-1	-3
05033N01E168a	6	Peru	2665	540	423	404	385		400		409			410	-23	10
05033N01E201h	7	Peru	2591	460	366	424	374	364	419	300				297	53	-122
05033N01E366f	3	Oglesby	2812	630		446	403	390	401	390	390	387	390	397		-4
05033N01E366f	4	Oglesby	2747	630	445		405	392	404	414	404	393	420	399	-41	-5
05033N02E097b	2	Utica	1078	470										494		
05033N02E156a	1	U.S. Army Corps of Engrs.	228	464										465		
05033N02E212g	1	Starved Rock State Park	475	470	478				485					470	7	-15
05033N02E212g	2	Starved Rock State Park	401	470					479					476		-3
05033N02E298a	1	Matthiessen State Park	205	621										476		
05033N03E017c	11	Ottawa	1203	488			438		435					437		2
05033N03E018a	8	Ottawa	1180	489	431		399	423	434	421				433	3	-1
05033N03E024b	9	Ottawa	1220	495	444	452	444	439	442	439	440	436	450	445	-2	3
05033N03E032b	1	American Hoechst Film Div.	1225	490		385	413	418	414	417	412	401	420	422		8
05033N03E035a	2	American Hoechst Film Div.	1255	490	413	385	404	395	414	412	409	430	417	420	1	6
05033N03E162f	1	Naplate	420	488	413	428	428	433	426	428		433	423	430	13	4
05033N03E177c	2	Buffalo Rock State Park	480	542	455				454					450	-1	-4
05033N04E132a	2	National Biscuit Co.	546	483	454				439				424	427	-15	-12
05033N04E133c	2	Marseilles	850	498	470				453					432	-17	-21
05033N04E147a	1	Illini State Park	500	496	473				460					443	-13	-17
05033N04E157e	2	Borg-Warner Chemicals	1292	480	393	437	432	422	415	402	401	395	415	401	22	-14
05033N04E157f	1	Borg-Warner Chemicals	1253	480	432	434	433	422	411	405	409	374	394	384	-21	-27

County Location	Well no.	Owner	Depth ft.	Surface elevation	Water level elevation 1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	Water level changes, ft 1971-1975	1975-1980
LaSalle Cont.																
05033N04E158g	3	Borg-Warner Chemicals	1243	490		457	431	427	417	410	402	398	410	400		-17
05033N04E163g	1	Kerley Industries	442	480										420		
05033N05E076a	3	Marseilles	1466	688		457			423					416		-7
05033N05E204e	1	Ill. Nitrogen	360	496							421			417		
05033N05E215e	1	Beker Industries	575	490	381				433		410		404	420	52	-13
05033N05E248c	1	Seneca	700	510	425				412					434	-13	22
05033N05E248c	2	Seneca	700	510					410					408		-2
05034N01E051h	808	NIGas Co (Weldon #15)	1007	678	591	593	592	592	590	590	586	585	587	585	-1	-5
05034N01E052h	807	NIGas Co (Weldon # 9)	1022	676	589	590	590	590	588	587	584	583	585	583	-1	-5
05034N03E261a	1	LaSalle Co Farm Bureau	470	625	476									476		
05034N03E354a	1	Oaklane Subdivision	288	610					479					480		1
05034N03E354a	2	Oaklane Subdivision	504	610	461				445					446	-16	1
05034N04E252b	1	Ill. Prairie Estates	681	760					475					450		-25
05034N05E022i	1	AT&T	1348	770	511	522			452				512	500	-59	48
05034N05E023h	2	AT&T	1353	770	507	520				490			492	485		
05035N01E294e	801	NIGas Co (Amfahr # 3)	1196	688	596	597	595	596	593	592	590				-3	
05035N01E348g	802	NIGas Co (A. Engel # 1)	1292	675	599	600	598	599	596	595	593	592	594	594	-3	-2
05035N05E086b	1	Sheridan Correctional Ctr.	885	591	574	574	574	574	577	574	574	574	574	575	3	-2
05035N05E177h	3	Sheridan Correctional Ctr.	900	592	561	567	567	567	567	567	567	567	567	570	6	3
05036N01E274a	1	Del Monte Corp.	1384	730	601	605		605	590	598				585	-11	-5
05036N01E275b	2	Del Monte Corp.	1385	740	630	622		622		615				576		
05036N01E292d	6	Mendota	1400	771						621			621	595		
05036N01E321a	4	Mendota	1450	740	604				581	580	586			582	-23	1
05036N01E333h	3	Mendota	1377	740	594	606	610	600	607					576	13	-31
05036N01E334e	5	Mendota	522	745	650	651	654	654	652		636			645	2	-7
05036N03E184d	1	Earlville	625	703	668				668				677	674	0	6
05036N03E189a	3	Marathon Electric Co.	887	699	668	673	672		667	667			672	672	-1	5
Lee																
05219N10E013f	1	Woodhaven Lakes	1466	855	685									695		
05219N11E091a	2	Sublette	771	920	619	619		601	650					648	31	-2
05220N08E065h	2	National Mfg. Co.	360	655							635					
05220N08E151d	2	Harmon	950	675				645						602		
05220N09E135h	2	Green River Ind. Park	479	755										570		
05220N10E221g	3	Amboy	1105	750	676	675			660					662	-16	2
05220N10E222g	1	Amboy Sterile Packing	1120	750				694	703	685			689			
05224N08E083a	1	Sauk Valley College	1400	655	618									616		
05221N09E037c	8	Dixon	1872	790					640		662			578		-62
05221N09E055a	7	Dixon	1870	740	630			634	635		630			617	5	-18
05221N10E017g	3	Franklin Grove	769	800								761				
05222N09E214a	1	Dixon Developmental Center	1922	680	628	626			630	631	628	626	628	626	2	-4
05222N09E214a	2	Dixon Developmental Center	1780	680	629	620						625	630	630		
05222N09E217a	3	Dixon Developmental Center	1965	780	630		630	630	568	568	558	548	558	558	-62	-10
05222N09E293b	6	Dixon	1720	775	622		623	624	621		615			619	-1	-2
05222N09E296g	4	Dixon Country Club	375	783										643		
05222N09E321a	5	Dixon	1472	660			630	631	621		630			620		-1
05222N09E338a	3	Dixon	1700	656	626				626					621	0	-5
05222N11E277c	1	Ashton	545	810	669	676	670	680	685		680	670		712	16	27
05222N11E292e	1	Funk Seed Co.	300	825					800					808		8
05237N01E087d	4	West Brooklyn	676	945							826			706		
05237N01E088c	5	West Brooklyn	680	945									712	696		
05237N02E102b	2	Paw Paw	1018	928					728				713	728		0
05237N02E102c	1	Paw Paw	1055	945	715				750					761	35	11
05239N02E201h	2	Steward	400	822		778								771		
Livingston																
05329N06E108e	3	Odell	1935	715					487			493		487		0
05330N06E011a	2	Dwight Correctional Ctr.	1201	648	468	470	467	462	458	458	470	456		447	-10	-11
05330N06E012a	1	Dwight Correctional Ctr.	1203	645	484	459	463	453	445	488	467	510		475	-39	30
McDonough																
05506N03W148d	1	Macomb(Sprg Lke #1)	897	730								490		483		
05507N01W334e	1	Bushnell	1509	655										452		
McHenry																
05643N08E054g	2	Crystal Lake	1218	917		517			507					482		-25
05643N08E064a	6	Crystal Lake	1295	892	457	405			400	467		334		389	-57	-11
05643N08E082c	8	Crystal Lake	1300	900			476		466	411		436		404		-62
05643N08E123d	4	Cary	1350	855	440	382	426	422	405	398	371	351	341	339	-35	-66
05643N08E141e	6	Cary	1300	840									337	329		
05643N08E334h	4	Algonquin	955	870							455			435		
05643N08E341f	2	Algonquin	1265	860			523	397	413					401		-12
05644N05E355h	1	Arnold Engr. Co.	846	818	705	698	703	703	703	692				688	-2	-15
05644N08E335a	7	Crystal Lake	1400	930	465		480	490						382		
05645N08E107c	8	Morton Chemical Co.	1160	835				490	437	490	465	425	425	395		-42
05645N08E108a	1	Modine Mfg. Co.	1200	843	540				500					451	-40	-49
05645N08E108d	7	Morton Chemical Co.	1161	850	534								460	425		
05645N08E158h	2	Modine Mfg. Co.	1220	835					494					435		-59
05645N09E067b	1	Johnsburg High School	1220	860								480		480		
05646N05E338b	2	Dean Food Co	1775	880	688	645	640	690	688	650		655	630	648	0	-40

County Location	Well no.	Owner	Depth ft.	Surface elevation	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	Water level changes, ft. 1971-1975	1975-1980
McLean																
05726N04E018e	4	Chenoa	1914	705			489							498		
05726N04E022c	1	Chenoa	2035	715										497		
Marshall																
06229N01E055a	2	Toluca	1870	695										494		
06229N01E055e	3	Toluca	1842	688										478		
06230N01E242a	5	Wenona	1837	690					473							
Mercer																
06613N01W321d	801	Ill. Power Co (Johnson #1)	2283	732			504	483	488	466	512	501	522	464		-24
06613N01W336a	802	Ill. Power Co.(Johnston #1)	2210	664					493	470	528			459		-34
06614N03W174a	2	Aledo	1172	730										482		
06614N03W174a	3	Aledo	1213	730										475		
Ogle																
07122N10E051c	9	New Landing Subd.	675	800				730						696		
07123N08E094c	2	Polo	1165	830				676		660			605	603		
07123N08E094c	3	Polo	1260	830	670	659								659		
07123N09E081b	4	White Pines Forest State Pk.	255	785										723		
07123N10E036c	1	Oregon	1690	672	652		644	631	642	642					-10	
07123N10E036g	2	Oregon	1200	707	657		657	647	657	660		664	653	662	0	5
07123N10E037g	3	Oregon	1200	710	653		650	650	650	648		650	650	649	-3	-1
07124N09E268c	2	Mt. Morris	848	932								742				
07124N09E271a	4	Mt. Morris	1442	905	627									635		
07124N09E271f	3	Mt. Morris	1807	900	635									637		
07124N09E271g	2	Kable Printing Co.	1353	895	640	653	660							680		
07124N10E215a	1	Rockvale Corp-Indian Rdg/Hts	429	765				666						670		
07124N10E242h	1	ComEd-Byron	1500	875				690					669	651		
07124N10E244h	2	ComEd-Byron	1500	860				673						641		
07124N10E294h	2	Rockvale Corp-Indian Rdg/Hts	450	790							630					
07124N11E012b	1	Stillman Valley	300	725										690		
07124N11E013a	2	Stillman Valley	445	740										686		
07125N08E335e	2	Forreston	1200	940	721				700					709	-21	9
07125N09E365d	2	Leaf River	325	765	659								665	663		
07125N11E326g	3	Byron	715	720	666		658		672			667	672	670	6	-2
07140N01E232d	5	Rochelle	502	810					734			737		717		-17
07140N01E234b	2	Del Monte Corp.	404	793			750		749	748				730		-19
07140N01E245h	7	Rochelle	925	795					705		715		722	721		16
07140N01E247a	4	Rochelle	1450	793	730				703				683		-27	
07140N01E253f	6	Rochelle	867	800	704	711	691	693	691	685	702	700	699	704	-13	13
07140N01E362h	10	Rochelle	920	785	713				719			672		692	6	-27
07140N02E231c	1	Del Monte Corp.	452	840	782				778		781				-4	
07140N02E231f	2	Creston	737	905	772				771					770	-1	-1
07140N02E304c	8	Rochelle	935	793	700				711					669	11	-42
Peoria																
07207N06E228d	1	Glasford	1685	610	523									540		
07207N06E228d	2	Glasford	1790	610	501									485		
07207N06E258d	1	Kingston Mines	1560	482										502		
07208N05E021a	1	Trivoli	1193	760										518		
07208N07E261a	1	Peoria Mental Health Ctr.	1865	605										471		
07208N08E028f	601	Peoria (Grant St.)	1200	445	445				445					445	0	0
07209N05E088d	1	Elmwood	1428	620										545		
07210N06E167g	1	Peoria Correctional Ctr.	1500	670										547		
07210N07E117b	1	Dunlap	1690	722								484		482		
07210N08E316g	1	Alta School	1525	755										556		
07211N06E131a	1	Princeville	1600	740										466		
07211N06E131a	2	Princeville	1342	740										466		
07211N06E241e	3	Princeville	1680	740	495	490		484						463		
07211N08E186f	1	Edelstein Coop	1401	785										478		
Pike																
07505S05W018e		Bill Rinehart	651	660								602		521		
07507S03W295a		G. Watts	525	605										486		
Putnam																
07832N01W094g	1	Granville	1741	690				473								
07832N01W111e	2	Standard	1802	682						471				422		
Rock Island																
08116N03W363b	1	Reynolds	650	790		565				522				498		
08117N02W232f	2	Milan	1157	562	514							482		440		
08117N02W368h	4	Milan	1729	680	500						474	474		474		
08117N01E045f	1	Carbon Cliff	1150	575	479	480								460		
08117N01E056d	6	Silvis	1371	690						466				487		
08117N01E075d	1	Deere & Co.	1651	595	487				495	495		423	423	420	8	-75
08118N02W357e	1	Swiss Valley Farms	925	565	485							465				
08118N01W308c	51	Rock Island Arsenal	1603	581	479			484		483	478			476		
08118N01E192d	5	E. Moline Correctional Ctr.	1904	670	465	470	473	464	470	459	455	445	457	486	5	16
08118N01E303b	1	John Deere Foundry	1640	586	450		460			421		397		356		
08118N01E303b	2	John Deere Foundry	1653	586					421	421		406	391	336		-85
08118N01E327g	2	Silvis	1985	595	455											
08118N01E327g	3	Silvis	1640	590								450	422	417		

Appendix A - Continued

County Location	Well no.	Owner	Depth ft.	Surface elevation	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	Water level changes, ft. 1971-1975	Water level changes, ft. 1975-1980
							Water level elevation									
Schuyler																
08502N01W298e		Cal H. Hunter	1100	650										580		
Stark																
08813N06E197h	1	Toulon	1452	725										431		
Stephenson																
08926N06E082a	4	Pearl City	668	850	729									744		
08926N06E098f	3	Pearl City	770	820	746									705		
08926N07E032e	3	Highland College	509	879	822									828		
08926N07E083f	2	Heine Plastics Inc.	250	875										843		
08926N07E084f	3	Heine Plastics Inc	362	882								792		821		
08926N08E022b	2	Kelly Springfield Tire Co	459	775			725	705	705	711	713	695	683	720		15
08926N08E023b	1	Kelly Springfield Tire Co.	383	775	700				731	739	640	655	671	721	31	-10
08926N08E023b	4	Kelly Springfield Tire Co.	1405	776	636		626	627	632	632	623	616	686	645	-4	13
08926N08E024b	3	Kelly Springfield Tire Co.	400	780	705		725	725	725	725	725	720	685	720	20	-5
08926N08E168a	1	Freeport Airport	357	850										839		
08927N08E286a	3	King Seely Thermos	423	755	733									727		
08927N08E301f	1	Sundstrand Corp.	525	775		723	723	722	723	723		730	726	746		23
08927N08E301f	2	Sundstrand Corp.	406	775					723		723	730	743	749		26
08927N08E303a	1	Burgess Inc.	512	760	722	739	740		740	742					18	
08927N08E306b	3	Freeport	400	764			726	725	720		726	708		708		-12
08927N08E307b	4	Freeport	425	764	727		727	725	727	732	725	729	730	730	0	3
08927N08E307d	6	Freeport	472	764				740	730					729		-1
08927N08E308b	2	Freeport	415	763	726		717	717	713	711	720				-13	
08927N08E312g	1	W.T. Rawleigh Co.	957	772	722	728		722	724	735	735	735	735	735	2	11
08927N08E323c	1	Modern Plating Co.	488	780			745	742	740							
08928N06E337f	2	Kolb Lena Cheese Co.	384	960								905		918		
08928N06E338e	1	Lena	604	965	764									761		
08928N06E338e	2	Lena	998	965	754	765								754		
08928N08E365h	1	Dakota	516	940	801		801						801	801		
08928N08E366h	2	Dakota	480	930					804				804	800		-2
08928N09E018f	2	Otter Creek Utility	190	840							814			785		
08928N09E215f	1	Rock City	430	922	816								792			
08929N06E222b	3	Winslow	355	775	775	775	775	775	775	775	775	775	775	775	0	0
08929N07E363e	1	Orangeville	320	874	785							787				
Warren																
09410N03W173h	5	Kirkwood	1215	740										470		
09411N02W191a	7	Monmouth	2448	758				494								
09411N02W325g	8	Monmouth	2460	765				497								
09412N02W012h	2	Alexis	1215	700										489		
09412N01W034h	803	Ill. Power Co. (F-5A)	2157	715			506	513	482	453				459		-23
09412N01W051b	804	Ill. Power Co. (F-6)	2222	710	569				491	469	525	520	549	453	-78	-40
09412N01W078b	805	Ill. Power Co. (Anderson #1)	2640	701										466		
09412N01W094e	806	Ill. Power Co. (Mathers #2)	2230	719				491	489	456	529			457		-32
09412N01W101e	807	Ill. Power Co. (Lawless #1)	2252	736				478	488	472	514		517	459		-29
Whiteside																
09821N05E181g	4	Morrison	1769	710	615	590		530	600			483	487	460	-15	-140
09821N05E187f	1	General Electric Co.	1006	680		635								637		
09821N05E188c	2	Morrison	2048	623				523				507	509	487		
09821N05E188c	3	Morrison	1625	640	496	493	493	489	488	488	488	466	455		-8	
09821N06E257c	1	Armour Co.	1653	635										540		
09821N07E221e	1	N. Il Water Corp-Sterling	1434	645	533	534	527	527	528	541	534	527	523	529	-5	1
09821N07E221e	2	N. Il Water Corp-Sterling	1655	645	541	541	531	526	526	535	532	524	511	553	-15	27
09821N07E221e	3	N. Il Water Corp-Sterling	1830	645		536	532	535	547	533	523	526	524	537		-10
09821N07E221e	4	N. Il Water Corp-Sterling	1630	645	549	538	532	530	538	535	525	517	526	541	-11	3
09821N07E281g	1	Russell, Bardsall & Ward	1500	625			525	525		515	515		515	518		
09821N07E285e	1	NW Steel & Wire Co.(Plt. 4)	813	630	479								443			
09821N07E285g	2	NW Steel & Wire Co.(Plt. 4)	1580	625	475								524			
09821N07E291h	2	NW Steel & Wire Co.(Plt. 3)	1650	625										539		
09822N03E287d	3	Fulton	1943	600	480									417		
Will																
09932N09E056d	3	Braidwood	1733	560									323	296		
09932N09E085c	1	Braidwood	1050	575	293				235	265				250	-58	15
09932N09E085d	2	Braidwood	846	572	320				285	285				225	-35	-60
09932N09E193h	1	ComEd-Braidwood	1753	599				367		372				353		
09933N09E015e	5	Joliet Army Ammun Plt	935	570	253	253	244	242	239	241	232	245	247	250	-14	11
09933N09E048a	1	Ill. Conservation Dept.	775	517					293					287		-6
09933N09E254g	1	Diamond International Co	708	565	270				289				265	280	19	-9
09933N09E367h	3	Wilmington	1578	530	295				230			270	260	270	-65	40
09933N10E091f	802	Joliet Army Ammun Plt(2E)	1672	646	310	298	296	284	287	275	298				-23	
09933N10E094h	801	Joliet Army Ammun Plt(1W)	1614	641	296	293	284	279	284	277	291	286			-12	
09934N09E072f	1	Channahon School Dist	685	520										303		
09934N09E094a	1	Channahon	765	570								210		301		
09934N09E101h	2	AMOCO Chemical Corp.	1405	568					-50	-17		-27	-26	-34		16
09934N09E112d	2	Stepan Chemical Co.	1402	520	37	42	6		-18	1		-14	36	-43	-55	-25
09934N09E112e	3	Stepan Chemical Co.	1410	525			20		13	-5		-11	-11	-13		-26
09934N09E118f	3	AMOCO Chemical Co.	1400	575					-33					-80		-69

Appendix A - Continued

County Location	Well no.	Owner	Depth ft.	Surface elevation	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	Water level changes, ft. 1971-1975	1975-1980
Will Cont																
09934N09E212d	1	Mobil Chemical Co	1573	545	294	227	227	229	229	224	229			238	-65	9
09934N09E218b	2	Glidden Durkee	1555	530							238			240		
09934N09E227d	1	Mobil Oil Corp	1578	555					225		227			215		-10
09934N09E255a	8	Joliet Army Ammun Plt	1639	606	228	238	158		178					148	-50	-30
09934N09E255d	9	Joliet Army Ammun Plt	1602	590		106	61		96					76		-20
09934N09E255h	10	Joliet Army Ammun Plt	1569	591	243	248	161		223	213		258		236	-20	13
09934N09E285b	1	Dow Chemical Co	1605	534				254	237		216					
09934N09E292d	2	Dow Chemical Co	800	523										254		
09934N09E347d	1	Chicago Joliet Livestock Ctr	796	530	297				260					259	-37	-1
09934N09E347d	2	Chicago Joliet Livestock Ctr	1593	530		240								120		
09934N09E358a	2	Joliet Army Ammun Plt	1612	532		248			208	187				217		9
09934N09E365a	6	Joliet Army Ammun Plt	1648	578	213	128	85		98					178	-115	80
09934N09E365e	7	Joliet Army Ammun Plt	1649	601								268		248		
09934N10E071a	1	Liquid Carbonic Corp	1630	620							55			42		
09934N10E075a	1	Peoples Gas Co.	1581	609		130	148		76	49	38	40	44	68		-8
09934N10E076b	2	Peoples Gas Co	1597	609			139		76	44	42	40		45		-31
09935N09E013e	11	Joliet(11D,Romney Stez)	1623	619						-28				-106		
09935N09E093c	2	Will County Water Co	1499	605	208	145			140		55			25	-68	-115
09935N09E103a	2	Holiday Inn Motel	1556	570	150				172					192	22	20
09935N09E111b	10	Joliet(10D,Essington Rd)	1572	610			40		5	-20						
09935N09E251e	3	Caterpillar Tractor Co.	1556	547	7	-63	-15	-27	-28	-53	-43	-68		-74	-35	-46
09935N10E028b	4	Joliet(4D,Williamson Av)	1563	558				-62	-112	-102				-139		-7
09935N10E034e	3	Joliet Correctional Center	1518	560	-38	-43			-105			-170		-160	-67	-55
09935N10E035e	2	Joliet Correctional Center	1550	549	-43	-47						-81		-111		
09935N10E042h	1	Penn Dixie Steel	1595	553	31	-23	-24	-71	-73	-107	-115	-125		-121	-104	-48
09935N10E074b	9	Joliet(9D,Campbell St)	1671	647	-25			-40	-30	-55				-103	-5	-73
09935N10E091d	1	Joliet(1D,Ottawa)	1525	536	-12	-12		-94	-119	-124					-107	
09935N10E145d	1	Prairie State Paper Mills	1639	593	-2			-77	-77		-147	-167		-127	-75	-50
09935N10E146h	5	Joliet(5D,Washington D)	1609	564	-36			-46	-71	-70					-35	
09935N10E158e	2	Joliet(2D,Spruce Slip)	1565	529				-157	-231	-211						
09935N10E162h	604	Joliet(Des Plaines St)	1575	531	26	25	23	-8	-21	-30	-58	-69	-85	-79	-47	-58
09935N10E192b	4	ComEd-Joliet St 9,Units 7,8	1525	523	-63		-150		-149					-188	-86	-39
09935N10E214b	2	American Cyanamid Co.	1612	583	4		-2		-13	-15	-18			-47	-17	-34
09935N10E228g	1	Intl. Fabricare Institute	1608	569	85									83		
09935N10E298c	5	Olin Co.	1490	567			-158		-238		-343			-267		-29
09935N10E301c	4	Olin Co.	1555	583					-322		-365			-326		-4
09935N10E301e	1	Olin Co.	1520	548				-187	-152					-214		-62
09935N10E301e	2	Olin Co	1495	550										-218		
09935N10E302h	3	ComEd-Joliet St 9,Units 7,8	1525	510	-76		-110	-118	-113					-122	-37	-9
09935N10E303c	6	Olin Co.	1500	543			-335		-368							
09935N10E306c	2	Caterpillar Tractor Co.	1543	546	-32	-40	-48	-62	-69	-59	-57	-84		-81	-37	-12
09935N10E307f	1	Caterpillar Tractor Co	1560	544	-52	-56	-66	-56	-82	-52	-60	-86		-90	-30	-8
09935N11E057h	8	Joliet(8D,Rock 1,Warren 6)	1660	648				-12	-54	-82						
09936N09E044a	4	Plainfield	1443	620	233		151		76		71	46			-157	
09936N09E108d	3	Plainfield	1481	612	162	132	152	137	114	112	112	27		35	-48	-79
09936N09E256d	12	Joliet(12D,Homart)	1557	602						32				-8		
09936N10E027f	1	ComEd-Will Cty	1500	587	40	27	15	18	-5	-19	-30			-71	-45	-66
09936N10E028f	3	ComEd-Will Cty	1507	590	39	34	20	20	16	2	-17			-39	-23	-55
09936N10E028h	2	ComEd-Will Cty	1536	590	37	23	15	15	15	-5	-20			-37	-22	-52
09936N10E046g	4	Romeoville	1524	670	48	43	43		10	5	3	-38	-33	-38	-38	-48
09936N10E164d	3	Lewis College	1523	666	96				-64						-160	
09936N10E214a	6	Stateville Correctional Ctr	1611	642	-4	-36	-41	-40	-46		-131		-131	-120	-42	-74
09936N10E232f	4	Lockport	1572	650	15	0	0	-2	-17	-44	-50	-76	-73	-75	-32	-58
09936N10E236d	2	Lockport	1446	589	-13		-19		-41				-91	-111	-28	-70
09936N10E276b	1	U.S. Army	812	581	24				-49						-73	
09936N10E277a	1	Met San Dist.	852	547	36				-9					-61	-45	-52
09936N10E281b	1	Alcan Powder & Ingot Co.	1546	563										-47		
09936N10E286f	4	Stateville Correctional Ctr	1537	640	32				-60	-73	-70		-90	-90	-92	-30
09936N10E286h	3	Stateville Correctional Ctr	1527	643		33			-64		-67		-17	-43		21
09936N10E292g	5	Stateville Correctional Ctr	1570	645	-5			-25	-40		-51			-71	-35	-31
09936N10E311a	2	Crest Hill	1652	659					-64					-118		-54
09936N10E336h	1	Nash Brothers	1558	593	15	2	-5	-37	-45	-59	-63	-75	-73	-75	-60	-30
09937N09E128c	801	Naperville(Springbrook-WWTP)	1441	645					85					86		1
09937N10E253f	2	Lemont Mfg. Co.	1500	580	82	72	59		51	32	26	-10		-22	-31	-73
09937N10E331h	2	Romeoville	1520	640	70	61		36	26	-4	-4				-44	
09937N10E353c	1	Union Oil Co.	1460	585	55	50	45	-11	4	-16		-28		-44	-51	-48
09937N10E353c	2	Union Oil Co.	1460	585	60	50	45	0		-20	-19	-28	-32			
Winnebago																
10126N11E097g	3	Winnebago	835	885	696									701		
10126N11E098c	2	Winnebago	810	870	751									713		
10127N10E288c	1	Pecatonica	660	760	731	711								723		
10127N10E291d	2	Pecatonica	750	785	735	725								726		
10128N10E071g	1	Otter Creek Utility	277	789	789		774	764	777		769		785	789	-12	12
10143N01E032f	1	ComEd-Rockford	354	700	687	690	682	676	680						-7	
10343N01E032f	2	ComEd-Rockford	825	702	619	641		647								
10143N02E177h	36	Rockford(Unit Well 36)	1505	864		665		654	652					613		-39
10144N01E023b	3	Rockford(Unit Well 03)	1127	760	643	643		674	674					657	31	-17
10144N01E098c	20	Rockford(Unit Well 20)	1200	735	644	644		650	640					652	-4	12
10144N01E111d	1	Essex Wire Corp.	1150	740	692									692		

County Location	Well no.	Owner	Depth ft.	Surface elevation	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	Water level changes, ft. 1971-1975	1975-1980
					Water level elevation											
Winnebago Cont.																
10144N01E126b	1	Ingersoll Milling Machine Co.	750	746				697	700		688			690		-10
10144N01E127h	2	Ingersoll Milling Machine Co.	1204	745	683			697			691					
10144N01E136e	8	Rockford(Unit Well 08)	1500	724	594	644		644	614	639				618	20	4
10144N01E153c	1	Dean Milk Co.	1125	725	618			625					640	635		
10144N01E173d	22	Rockford(Unit Well 22)	1380	760	686	684		671	671					613	-15	-58
10144N01E207f	21	Rockford(Unit Well 21)	1205	820	672	672	670	670	677						5	
10144N01E218e	15	Rockford(Unit Well 15)	1355	810	655	655		649	648					662	-7	14
10144N01E225c	603	Rockford(Clay St Group Well 3)	1600	730	639	639		628	660					671	21	11
10144N01E236d	801	Rockford(Beattie Pk/Obs Well)	1300	708	691	691	689	698	687	689	690	690	693	691	-4	4
10144N01E237e	1	Rockford(Unit Well 01)	1530	711	674	674		679	674						0	
10144N01E271e	3	Barber-Coleman	450	705	628		624	626	676		620	622	620	620	48	-56
10144N01E285c	18	Rockford(Unit Well 18)	1380	820	643	658		643	643					670	0	27
10144N01E338f	1	Muller's Pinehurst Dairy	482	760	716				718				728	722	2	4
10144N01E338f	2	Muller's Pinehurst Dairy	465	759	716				720				727	727	4	7
10144N01E346h	4	Rockford(Unit Well 04)	1219	730	661	661		666	665						4	
10144N01E352f	2	National Lock Co.	1140	731					681					651		-30
10144N01E367f	7	Rockford(Unit Well 07)	1503	732	648	648		648						662		
10144N02E034c	30	Rockford(Unit Well 30)	1325	905	642	646		645	643					618	1	-25
10144N02E077c	2	Woodward Governor Co.	1227	725	603			588	587		592	592			-16	
10144N02E082g	29	Rockford(Unit Well 29)	1357	845							670					
10144N02E092a	25	Rockford(Unit Well 25)	1290	878	631	623		651	633					641	2	8
10144N02E162a	27	Rockford(Unit Well 27)	1280	840	612	626		620	622					628	10	6
10144N02E176g	17	Rockford(Unit Well 17)	1195	785	667	661		677	670					640	3	-30
10144N02E186a	5	Rockford(Unit Well 05)	1312	792	639	625		641	626	638					-13	
10144N02E196b	9	Rockford(Unit Well 09)	1600	809	685	685		681	678					677	-7	-1
10144N02E203e	13	Rockford(Unit Well 13)	1457	835	642	642		642	640					655	-2	15
10144N02E285g	26	Rockford(Unit Well 26)	1326	835	620	677		654	653					637	33	-16
10144N02E293a	10	Rockford(Unit Well 10)	1426	865	639	645		640	615	620					-24	
10144N02E317f	6	Rockford(Unit Well 06)	1372	790	691	690		694	696	689				692	5	-4
10144N02E324a	16	Rockford(Unit Well 16)	1310	840	670	670		649	646						-24	
10142N02E355c	3	Cherry Vale Mall	682	800						665				690		
10142N02E358e	1	Cherry Vale Mall	1201	800	664				648					666	-16	18
10145N02E347g	3	Loves Park	844	840	804		800							803		
10146N01E248a	6	Rockton	728	828	726				731				725	723	5	-8
10146N02E057d	3	Wis. Power & Light Co(S Beloit)	1190	745	735	735			735					721	0	-14
10146N02E155b	1	Colt Industries	301	820	779				772					771	-7	-1
Woodford																
10228N02E075c	1	Minonk	1850	755	525							469				

Appendix B - Water Quality Data, Cambrian-Ordovician Aquifer in Northern Illinois, 1980-1981

County Location	Well no.	Owner	Depth ft	Surface elevation	Lab no.	Sample date	Iron mg/l	Sodium mg/l	Chloride mg/l	Sulfate mg/l	Hardness mg/l	TDS mg/l
Boone												
00443N04E335b	2	Midwest Plating Co.	700	870	214822	11/24/80	<.05	10.3	5	17.1	340	374
Bureau												
00635N06E107a	3	Neponset	1640	806	B19490	10/15/80	0.63	350	310	200	201	980
00616N07E346h	2	Buda	1630	770	B19491	10/15/80	0.19	370	393	210	220	1100
00616N07E346c	5	Buda	1601	770	B19492	10/15/80	0.81	370	342	199	176	1050
00616N10E355a	2	DePue	1487	464	B19488	10/15/80	1.73	118	93	63	211	530
Carroll												
00825N02E115h	1	Savanna Army Depot	1201	606	214693	10/27/80	0.3	3.4	1	6.6	257	282
Cook												
01635N13E123b	607	Flossmoor (7A)	1722	653	B27927	12/03/80	0.47	240	203	554	566	1250
01636N12E131d	6	Orland Park	1809	732	214854	12/03/80	0.2	135	118	363	468	973
01636N13E366b	12	Homewood	1713	660	B21943	10/30/80	0.20	180	150	498	560	920
01636N13E366b	12	Homewood	1713	660	B19074	10/14/80	0.25	193	145	502	536	1040
01637N12E028h	2	Hickory Hills	1608	685	B18641	10/13/80	0.23	107	68	143	277	560
01638N12E018g	2	Lyons	1750	621	215576	04/15/81	0.2	198	190	126	276	817
01638N12E231h	11	CPC International, Inc.	1543	596	215578	04/15/81	0.1	175	190	177	336	863
01638N13E081f	4	Rose Packing Co.	1590	594	215580	04/15/81	0.3	382	660	334	684	1910
01638N13E211f	2	Cracker Jack Co.	1585	620	215579	04/15/81	0.5	167	170	479	606	1224
01639N14E217b	2	JoAnna Western Mills	1503	620	214895	12/15/80	0.6	218	250	609	711	1549
01640N12E186c	1	Nelson Wire Co.	1457	663	215581	04/15/81	0.3	116	95	175	364	712
01640N12E314d	1	Automatic Electric Co.	1470	655	215582	04/15/81	0.07	70.3	30	230	435	667
01641N09E366b	4	Hanover Park	1310	820	B21939	10/29/80	0.034	37	5.2	18	243	320
01641N10E313e	3	Hanover Park	1952	798	B21938	10/29/80	0.13	38	12	24	206	320
01641N13E185g	1	Avon Products Inc.	1410	644	214892	12/09/80	0.4	74.2	40	312	440	779
01641N13E207e	1	Baxter Lab.	1414	627	214891	12/09/80	0.7	43.6	18	201	370	580
DeKalb												
01940N03E236e	2	Malta	1254	915	B19489	10/14/80	0.08	33	1.5	<10	158	250
01940N04E014e	7	Sycamore	1233	835	214820	11/20/80	0.3	31.2	2	6	292	335
01940N04E132h	11	DeKalb	1312	885	B19495	10/14/80	0.006	19	1.3	12	280	350
01940N04E238d	8	DeKalb	949	875	B19493	10/14/80	0.20	17	1.0	11	273	330
01940N05E055e	5	Sycamore	1227	872	B042390	03/04/81	0.40	14	1.1	5	280	350
01941N05E327g	6	Sycamore	1213	845	214821	11/20/80	0.3	7.7	3	7.4	296	319
DuPage												
02237N11E027d	1	Rosewood Trace	1610	710	B25901	11/18/80	0.16	56	20	101	278	450
02239N11E101h	4	Elmhurst	1390	669	B21942	10/30/80	0.019	88	34	64	206	400
02239N11E133g	10	Elmhurst	1567	705	B21941	10/30/80	0.19	65	34	146	310	470
Fulton												
02904N02E066b	1	Ipava	1324	650	B22962	11/04/80	0.23	750	760	959	670	2630
02905N01E328a	1	Table Grove	1635	720	B22961	11/04/80	0.29	860	874	1051	698	2870
02906N03E206f	4	Cuba	1380	675	B22968	11/04/80	0.13	570	372	1064	663	2080
02906N04E305a	1	Bryant	1282	619	B22963	11/04/80	2.9	530	345	1078	663	2020
02906N04E305a	1	Bryant	1282	619	B043054	03/09/81	1.59	537	326	1052	627	2040
02908N03E331d	3	Fairview	1800	740	B33047	01/04/81	0.33	475	300	625	354	1540
02908N04E012a	1	Farmington	1710	790	B22965	11/05/80	0.19	870	741	288	60	2330
02908N04E111g	2	Farmington	1743	720	B22966	11/05/80	0.26	780	620	391	128	2120
02908N04E343b	1	Norris	1702	740	B22960	11/03/80	3.08	822	705	595	276	2460
Grundy												
03234N08E013e	3	Minooka	1508	610	214828	11/26/80	0.4	85.9	80	61.5	248	514
03234N08E212e	1	Northern Petrochemical Co.	1453	524	214829	11/26/80	<0.05	58.3	26	71	242	431
Hancock												
03405N07W136d	3	Carthage	760	650	214806	11/04/80	0.06	704	640	1040	681	2830
Henderson												
03609N05W251e	1	Stronghurst	1009	685	214794	11/11/80	1.7	500	270	1562	1064	2930
03610N04W171a	1	Biggsville	891	680	B23220	11/11/80	0.33	405	165	1000	675	1690
03610N04W171a	2	Biggsville	950	680	B23221	11/11/80	1.20	470	193	1200	717	1880
Henry												
03714N01E212c	1	Alpha	1364	800	B23217	11/11/80	0.054	275	164	245	159	920
03714N01E211f	2	Alpha	1209	800	B23218	11/11/80	0.096	275	91	252	109	830
03714N02E305g	1	Woodhull	1390	815	B23215	11/11/80	0.14	280	147	215	126	870
03714N02E303f	2	Woodhull	1369	815	B23216	11/11/80	0.021	280	110	187	102	830
03714N04E278b	3	Galva	1524	845	B20740	10/21/80	0.23	290	174	241	139	820
03714N04E278b	4	Galva	1687	845	B20736	10/21/80	0.08	287	141	217	114	820
03714N05E042c	4	Kewanee	2501	845	B23209	11/10/80	0.60	450	582	245	348	1630
03714N05E042c	4	Kewanee	2501	845	B20741	10/21/80	0.55	425	574	250	367	2110
03715N03E073e	3	Cambridge	1410	802	B23219	11/11/80	0.20	295	220	273	177	1020
03715N05E286c	3	Kewanee	2484	820	B23208	11/10/80	1.69	480	590	290	357	1670
03715N05E335b	2	Kewanee	2438	848	B23207	11/10/80	0.30	530	675	315	398	1840
03715N05E335h	1	Kewanee	2497	847	B19494	10/13/80	0.30	550	725	319	422	1790
03717N04E341g	1	Atkinson	1123	640	B23210	11/10/80	0.16	170	12	45	94	500

Appendix B - Concluded

County Location	Well no.	Owner	Depth ft	Surface elevation	Lab no.	Sample date	Iron mg/l	Sodium mg/l	Chloride mg/l	Sulfate mg/l	Hardness mg/l	TDS mg/l
Jo Daviess												
04328N01W137g	5	Galena	1593	844	B20739	10/22/80	0.20	2	1.1	22	247	260
04328N01W242h	1	Interstate Light & Power Co.	1515	610	214692	10/22/80	0.5	3.0	1	35	259	317
Kane												
04538N07E052d	1	Waubonsee College	1323	703	215414	03/25/81	0.1	21.8	1	12	267	339
Knox												
04809N04E115e	3	Yates City	1580	675	B22964	11/05/80	0.51	398	197	682	338	1370
Lake												
04943N10E147d	1	Kemper Insurance	1400	796	214903	12/11/80	0.2	45.8	21	190	357	557
04943N10E184h	5	Lake Zurich	1345	822	B28989	12/09/80	0.51	44	24	178	366	530
04943N12E316e	1	Baxter Travenol Lab.	1456	685	214897	12/10/80	0.6	27.2	10	116	317	450
04944N10E128a	9	Mundelein	1380	830	B27928	12/04/80	0.16	28	9.9	66	265	380
04944N11E193c	6A	Mundelein	1405	743	B27929	12/04/80	0.25	27	9	72	268	380
04944N11E284e	12	Libertyville	1926	700	B27930	12/04/80	0.58	30	28	105	300	440
04944N11E314h	8	Mundelein	1383	730	B055415	05/06/81	0.58	47	20	121	295	470
04945N11E145a	1	Gurnee	1517	667	214901	12/11/80	0.5	27.8	22	102	318	443
LaSalle												
05034N05E022i	1	AT&T	1348	770	214824	11/20/80	0.3	33.5	18	199	443	605
05035N05E177h	3	Sheridan Correctional Ctr	900	592	214823	11/21/80	0.6	15.7	2	8.2	286	323
Lee												
05220N10E221g	3	Amboy	1105	750	214691	10/20/80	3.6	10.6	3	8	362	360
05224N08E083a	1	Sauk Valley College	1400	655	214817	11/19/80	0.6	4.43	5	24	308	340
05222N11E277c	1	Ashton	545	810	214805	10/14/80	1.0	16	27	73	414	487
05222N11E277c	1	Ashton (field filtered)	545	810	214859	10/14/80	0.06	16	27	71	412	503
McDonough												
05506N03W151b	2	Macomb	1249	730	B041995	03/03/81	0.143	544	510	770	493	2020
05506N03W151b	2	Macomb	1249	730	B22969	11/06/80	0.21	590	520	814	526	2070
05507N01W017e	1	Prairie City	1375	668	B22970	11/06/80	0.57	550	317	1159	738	2060
05507N01W017e	1	Prairie City	1375	668	B33444	01/12/81	1.57	570	314	1200	769	2090
05507N01W017e	1	Prairie City	1375	668	B041499	03/02/81	1.121	525	327	1150	714	2060
McHenry												
05645N08E108a	1	Modine Mfg. Co.	1200	843	214857	12/05/80	0.1	21.9	1	2.4	219	283
Marshall												
06212N09E274a	5	Washburn	1773	640	B20738	10/21/80	0.40	350	211	381	160	980
06230N01W282d	2	Varna	1870	725	214690	10/20/80	0.9	1250	1600	194	151	3428
Ogle												
07123N10E037g	3	Oregon	1200	710	B25902	11/19/80	0.44	3.3	1	14	289	320
Peoria												
07209N05E076d	3	Elmwood	1572	640	214807	11/05/80	0.4	390	185	693	327	1524
07209N05E088d	1	Elmwood	1428	620	B22959	11/03/80	0.19	600	459	454	153	1810
Rock Island												
08117N02 232f	2	Milan	1157	562	B23212	11/10/80	< 0.005	18	4.1	23	340	410
08117N02W368h	4	Milan	1729	680	B23213	11/10/80	0.81	300	346	207	292	1140
08117N01E045f	1	Carbon Cliff	1150	575	214793	11/10/80	1.4	534	800	387	535	2090
08118N01E327g	3	Silvis	1640	590	B23214	11/10/80	0.33	400	487	297	349	1510
09821N06E256f	2	Armour Co.	1677		214819	11/19/80	0.4	3.3	4	14.5	300	323
Whiteside												
09821N07E291h	2	NW Steel & Wire Co.(Plt. 3)	1650	625	214818	11/19/80	0.2	3.5	5	18.8	300	318
Will												
09934N09E227d	1	Mobil Oil Corp	1578	555	214831	11/26/80	0.4	97.0	56	126	257	565
09934N09E365e	7	Joliet Army Ammun Plt	1649	601	214832	11/26/80	0.5	121	100	157	297	631
09936N09E044a	4	Plainfield	1443	620	214815	11/18/80	0.2	59.1	18	43.4	207	394
09936N10E232f	4	Lockport	1572	650	B25900	11/18/80	0.10	70	26	88	240	440
Winnebago												
10144N01E023b	3	Rockford(Unit Well 03)	1127	760	B25903	11/20/80	0.05	2.8	1.0	< 10	265	300
10144N01E346h	4	Rockford(Unit Well 04)	1219	730	B25905	11/20/80	0.17	6.7	7.6	23	304	350
10144N02E092a	25	Rockford(Unit Well 25)	1290	878	B25904	11/20/80	1.22	4	< 1.0	< 10	300	340