

OFFICE COPY

ISWS-74-BUL60(6)

BULLETIN 60-6

STATE OF ILLINOIS

DEPARTMENT OF REGISTRATION AND EDUCATION



*Public Groundwater Supplies*  
*in Boone County*

by DOROTHY M. WOLLER and ELLIS W. SANDERSON

ILLINOIS STATE WATER SURVEY

URBANA

1974

# PUBLIC GROUNDWATER SUPPLIES IN BOONE COUNTY

by Dorothy M. Woller and Ellis W. Sanderson

## Introduction

This publication presents all available information on production wells used for public groundwater supplies in Boone County. Bulletin 60, which is divided by county into separate publications, supersedes Bulletin 40 and its Supplements 1 and 2.

The definition of public water supply as contained in the Environmental Protection Act of 1970 was used to determine those water systems and wells to be included. Systems and wells described furnish water for drinking or general domestic use in: 1) incorporated municipalities; 2) unincorporated communities where 10 or more separate lots or properties are being served or are intended to be served; 3) state-owned parks and memorials; and 4) state-owned educational, charitable, or penal institutions.

This report includes separate descriptions for groundwater supplies of 3 municipalities in Boone County. These are preceded by brief summaries of the groundwater geology of the county and the development of groundwater sources for municipal use. An explanation of the format used in the descriptions is also given.

**Acknowledgments.** This report was prepared under the general direction of Dr. William C. Ackermann, Chief of the Illinois State Water Survey, and John B. Stall, head of the Hydrology Section. The work was done under the direct guidance of William H. Walker, Hydrologist. Special thanks are given to J. P. Gibb, Assistant Hydrologist, and R. T. Sasman, Hydrologist, who checked all of the data and reviewed the manuscript. Mrs. J. L. Ivens and Mrs. P. A. Motherway edited the manuscript and Suzi L. Scherbroeck typed the camera-copy. The chemical analyses, unless otherwise stated, were made by personnel of the Water Survey Chemistry Section under the supervision of Laurel M. Henley. The analyses made by personnel of the Environmental Protection Agency were under the supervision of John P. Anderson. Thanks are due M. L. Sargent of the Illinois State Geological Survey who prepared the generalized column of rock stratigraphic units and aquifers and, with R. D. Brower, reviewed the geological information in the manuscript. Grateful acknowledgment also is given to consulting engineers, well drillers, water superintendents, and municipal officials who have provided valuable information used in this report.

## Geology

The geology of Boone County is described generally in Illinois State Geological Survey Circular 207, *Groundwater in Northwestern Illinois*, and is illustrated on the Geologic Map of Illinois by H. B. Willman and others. The following brief discussion of geologic conditions in the county summarizes materials from these publications. For a more detailed definition of the geology in this portion of the state, the reader is referred to the State Geological Survey which is located on the University of Illinois campus, Urbana.

Sand and gravel deposits suitable for domestic supply wells are present in the unconsolidated materials throughout much of Boone County. Shallow deposits of glacial outwash with sand and gravel underlie the lowlands north and east of Belvidere and extend east to the high glacial mo-

raines in McHenry County. Many successful wells have been finished in sand and gravel at depths of less than 50 ft, and in many places a domestic supply can be developed with a driven sandpoint.

Deeper sand and gravel deposits occur north and southwest of Belvidere in and bordering the buried Troy Bedrock Valley, an ancient northeast to southwest drainageway carved into the underlying bedrock prior to deposition of the glacial materials. Glacial deposits are as much as 400 ft thick in the northern part of this valley and contain thick, extensive deposits of sand and gravel suitable for development of municipal water supplies.

Beneath the glacial deposits, the upper bedrock formations consist principally of beds of dolomite, shale, and

SYSTEM	SERIES	GROUP OR FORMATION	AQUIFER	LOG	THICKNESS (FT)	DESCRIPTION
QUATERNARY	PLEISTOCENE		Sands and Gravels		0-200±	Unconsolidated glacial deposits-pebbly clay (till), silt, sand and gravel Alluvial silts and sands along streams
		Fissure Fillings			Shale, sandy, brown to black	
ORDOVICIAN	CINCINNATIAN	Maquoketa			0-80	Shale, silty, dolomitic, greenish gray, weak (Upper unit) Dolomite and limestone, white, light gray, interbedded shale (Middle unit) Shale, dolomitic, brown, gray (Lower unit)
			CHAMPLAINIAN		Galena-Platteville	Galena
	Platteville	0-125				
	Glenwood-St. Peter	Glenwood			185-385	Sandstone, fine and coarse grained; little dolomite; shale at top Sandstone, fine to medium grained; locally cherty red shale at base
		St. Peter				
	CAMBRIAN	CROIXAN	Eminence-Potosi	Eminence		20-55
Potosi						
Ironton-Galesville			Franconia		140-165	Dolomite, sandstone and shale, glauconitic, green to red, micaceous
			Ironton			
			Galesville			
Eau Claire					380-485	Shale and siltstone, dolomitic, glauconitic; sandstone, dolomitic, glauconitic
Elmhurst-Mt. Simon			Elmhurst-Mt. Simon		1600±	Sandstone, coarse grained, white, red in lower half; lenses of shale and siltstone, red, micaceous
						Mt. Simon
PRE-CAMBRIAN						Granitic rocks

Figure 1. Generalized column of rock stratigraphic units and aquifers in Boone County  
(Modified from Illinois State Water Survey and State Geological Survey Cooperative Ground-Water Report 2)

sandstone which dip slightly southeasterly at about 20 ft per mile. The bedrock formations in Boone County range in age from Ordovician to Precambrian (see generalized stratigraphic sequence in figure 1).

In the southeast part (about 55 square miles) of the county, the uppermost bedrock is the Maquoketa Group of Ordovician age. These rocks are primarily nonwater-bearing shale that separate glacial drift aquifers from deeper lying water-bearing units. They range in thickness from a featheredge along the west to about 80 ft in the southeast part of the county (see figure 2). The Maquoketa rocks generally are not considered as a source for large municipal water supplies. However, locally, domestic supplies are obtained from minor systems of cracks and crevices in these rocks.

Below the Maquoketa Group is a thick sequence of hydrologically connected rocks that are referred to as the Cambrian-Ordovician aquifer in Boone County. This water-bearing unit consists in downward order of the Galena and Platteville Dolomite Groups, Glenwood-St. Peter Sandstone, Eminence-Potosi Dolomites, Franconia Formation, and Ironton-Galesville Sandstone.

The Galena-Platteville (Ordovician age) directly underlies the drift in most of Boone County, except where the Maquoketa is present in the southeast and in the deepest part of the buried Troy Valley where the Galena-Platteville is eroded and the underlying Glenwood-St. Peter Sandstone is exposed. The Galena-Platteville lies at depths from less than 50 ft in southwestern Boone County to over 300 ft in the northeast corner of the county. It usually varies in thickness from about 250 to 300 ft, except for the immediate vicinity of the Troy Valley. The yield capability of the Galena-Platteville rocks depends primarily upon the number, size, and degree of interconnection of water-filled cracks and crevices that are penetrated by the well bore. In some areas the Galena-Platteville rocks directly underlie permeable deposits of water-bearing sand and gravel. Under such geohydrologic conditions, formation of solution cracks and crevices and free exchange of water from the glacial drift to the bedrock are maximized thereby enhancing the yield capability of the Galena-Platteville. Although several hundred gallons per minute probably could be developed from wells finished in this rock unit, no municipal supplies in Boone County tap only this unit. Instead, they are extended into deeper units of the Cambrian-Ordovician aquifer.

The Glenwood-St. Peter Sandstone lies below the Galena-Platteville, at depths from about 300 to 400 ft in most of the county, and has a relatively uniform thickness of about 200 ft except in an area south of Belvidere where it is about 300 ft thick. The Glenwood-St. Peter is one of the principal water-yielding units of the Cambrian-Ordovician aquifer.

Below the Glenwood-St. Peter lie the Eminence-Potosi Dolomite and the Franconia Formation which consist of

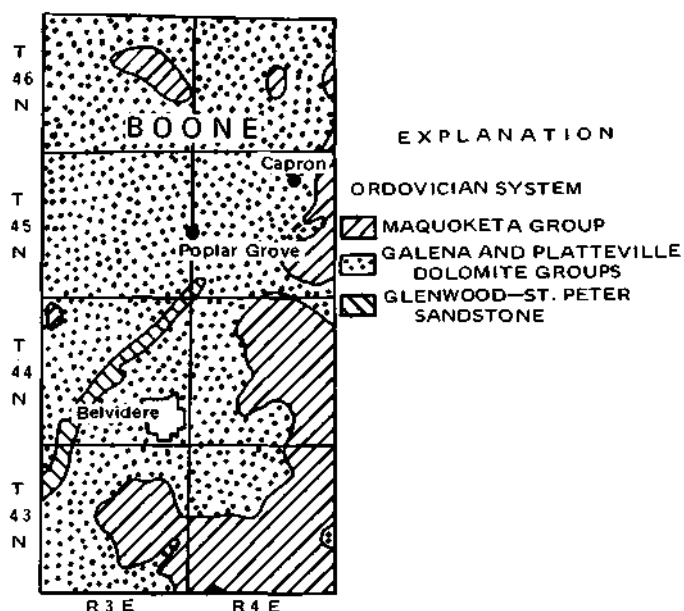


Figure 2. Areal geology of the bedrock surface (Modified from Geologic Map of Illinois, Willman and others, 1967)

interbedded sandstones, shales, and dolomites. These units have a total thickness of about 90 to 140 ft and usually contribute only small to moderate quantities of water to deep wells. Because of their limited water-yielding capabilities, wells tapping only these formations rarely are constructed.

The Ironton-Galesville Sandstone (Cambrian age) is the most consistently permeable and productive unit of the Cambrian-Ordovician aquifer in northern Illinois. In Boone County it lies at depths of about 725 ft near Belvidere to about 800 ft in the northeast portion of the county and has an average thickness of about 150 ft. This sandstone is the principal rock unit tapped for municipal supplies in Boone County and throughout northeastern Illinois.

Below the Ironton-Galesville Sandstone lies the Eau Claire Formation. The upper and middle parts of the Eau Claire are composed primarily of nonwater-bearing shales that separate the Cambrian-Ordovician aquifer from deeper water-bearing units. The Elmhurst Sandstone Member at the base of the Eau Claire Formation and the deeper lying Mt. Simon Sandstone are hydrologically connected and form the Elmhurst-Mt. Simon aquifer, the deepest fresh water aquifer in northern Illinois. In Boone County, this aquifer lies at depths of about 1000 to 1250 ft and ranges in thickness from about 1200 ft in the northwest part to about 1700 ft in the southeast part of the county. Water wells usually penetrate only a few hundred feet into this aquifer because the quality of the water deteriorates with depth. East of Boone County in the Chicago region, the water obtained below an elevation of about 1300 ft below sea level is too highly mineralized for most uses.

## Groundwater Development for Municipal Use

Unconsolidated sand and gravel deposits are tapped for municipal water supplies for all wells at the village of Poplar Grove, located just north of the center of the county, and for one of the wells at the city of Belvidere. There are presently three wells tapping these aquifers to depths ranging from 120 to 184 ft. Their reported yields range from 150 to 1935 gpm depending primarily on the type of well and the permeability, thickness, and areal extent of the sand and gravel unit tapped by each well. Analyses of water from these wells indicate that the iron content ranges from 0.0 to 0.5 mg/l, and the hardness from 292 to 352 mg/l. Water from all wells at Belvidere is chlorinated and fluoridated. Water for Poplar Grove is treated with polyphosphate to keep iron in solution.

The underlying bedrock units are tapped for water supplies at Capron, in the northeastern part of the county, and at Belvidere. In these wells, various combinations of water-bearing units in the Cambrian-Ordovician aquifer and the Elmhurst-Mt. Simon aquifer may be open to the hole, each contributing a portion of the water withdrawn.

At Belvidere one well penetrates the Glenwood-St. Peter Sandstone and is also open to the overlying Galena-Platteville. This well is 610 ft deep and is reportedly capable of yielding 600 to 735 gpm. Analyses of water indicate that the iron content ranges from 0.0 to 3.0 mg/l and the hardness from 308 to 425 mg/l.

Wells tapping the Cambrian-Ordovician aquifer are used for water supply at Capron and Belvidere. These wells range in depth from 868 to 969 ft. Their reported yields from these wells indicate that the iron content ranges from 0.0 to 1.3 mg/l, and the hardness from 316 to 380 mg/l. At Capron, about 10 to 12 percent of the water is aerated, passed through a carbon filter, chlorinated, and passed through a sand filter to remove iron. The remaining 88 to 90 percent of the water is zeolite softened and fluoridated and the water from both treatment systems is then blended and pumped to the distribution system and elevated tank.

The Elmhurst-Mt. Simon and the Cambrian-Ordovician aquifer are tapped by four wells at Belvidere. These wells range in depth from 1393 to 1861 ft. Their reported yields range from about 400 to 1580 gpm. Analyses of water from these wells indicate that the iron content ranges from 0.0 to 1.0 mg/l, and the hardness from 315 to 588 mg/l.

Total municipal supply pumpage in Boone County for 1972 was about 4,410,000 gallons each day. Estimated pumpage from municipal wells finished in sand and gravel aquifers was about 1 percent of this total (50,000 gpd) and the remaining 99 percent (4,360,000 gpd) was pumped from various combinations of units in the Cambrian-Ordovician and Elmhurst-Mt. Simon aquifer.

### Abbreviations Used

ft.....	foot (feet)
gpd.....	gallons per day
gpm.....	gallons per minute
hp.....	horsepower
hr.....	hour(s)
ID.....	inside diameter
in.....	inch(es)
Lab.....	laboratory
me/l.....	milliequivalents per liter
mg/l.....	milligrams per liter
min.....	minute(s)
No.(s).....	number(s)
OD.....	outside diameter
pc/l.....	picocuries per liter
R.....	range
rpm.....	revolutions per minute
T.....	township
TDH.....	total dynamic head

## Format

In this publication the descriptions of public ground-water supplies are presented in alphabetical order by place name as follows: Belvidere, Capron, and Poplar Grove. The U. S. Census of Population for 1970 is given at the beginning of each description.

The number of services and quantity of water distributed at each supply are given where available for the earliest and the latest reported values.

Individual production wells for each supply are described in the order of their construction. The description for each well includes the *aquifer or aquifers tapped, date drilled, depth, driller, legal location, elevation in feet above mean sea level, log, construction features, yield, pumping equipment, and chemical analyses.*

When available, sample study logs prepared by the Illinois State Geological Survey are presented. When these are not available, drillers logs are used as reported. Com-

monly used drillers terms such as clay, silt, or pebbly clay generally are synonymous with the glacial tills tabulated by the State Geological Survey. Similarly, limestones or dolomites reported by drillers usually are carbonate rocks which in most of northeastern Illinois including Boone County are dolomitic in composition. When stating the bedrock aquifers tapped by a well, the sample study log by the State Geological Survey and the casing record are used to determine the aquifer units open to the hole. If only a drillers log is available and the aquifer unit cannot be readily determined, only the principal rock type as described by the driller is given (dolomite, sandstone, etc.).

The screen sizes given in this publication are for continuous slot screens. Slot sizes given indicate the width of the slot openings in thousandths of an inch. For example, a 20 slot screen has slot openings 0.020 in. wide and a 100 slot screen has slots 0.100 in. wide.

## BELVIDERE

The city of Belvidere (14,061) installed a public water supply in 1891. Eight wells (Nos. 2-9) are in use. In 1951 there were 3250 services; the average and maximum daily pumpages were 1,250,000 and 1,750,000 gpd, respectively. In 1972 there were 4601 services, all metered; the average and maximum daily pumpages were 4,300,000 and 6,500,000 gpd, respectively. The water is chlorinated and fluoridated.

WELL NO. 1, open to the Cambrian-Ordovician and Elmhurst-Mt. Simon aquifers, was completed in 1891 to a depth of 1950 ft by S. B. Geiger & Co., Chicago. This well was abandoned prior to 1955 and reportedly sealed by the Layne-Western Co., Aurora, in July 1969. The well was located in the main pumping station at Meadow and Whitney Sts., approximately 1170 ft N and 320 ft E of the SW corner of Section 25, T44N, R3E. The land surface elevation at the well is approximately 763 ft.

A 16-in. diameter hole was drilled to a depth of 100 ft and finished 8 in. in diameter from 100 to 1950 ft. The well was cased with 16-in. OD pipe from land surface to a depth of 70 ft.

The well flowed over the top of the casing when completed and supplied demands for about a year before a pump was installed.

In September 1942, the well reportedly produced 300 gpm for 6 hr with a drawdown of 55 ft from a non-pumping water level of 15 ft below the pump base.

A mineral analysis of a sample (Lab. No. 108333) collected November 14, 1946, after pumping for 20 min at 200 gpm, showed the water to have a hardness of 483 mg/l, total dissolved minerals of 559 mg/l, and an iron content of 0.7 mg/l.

WELL NO. 2, open to the Cambrian-Ordovician and Elmhurst-Mt. Simon aquifers, was completed in 1901 to a depth of 1861 ft. The well is located between the railroad siding tracks about 1 block north of the main pumping station, approximately 1630 ft N and 760 ft E of the SW corner of Section 25, T44N, R3E. The land surface elevation at the well is approximately 763 ft.

Originally, a 15-in. diameter hole was drilled to a depth of 100 ft and finished 8 in. in diameter from 100 to 1861 ft. In 1951, I. B. Null & Sons, Winnebago, reamed the bore hole to 10 in. between 100 and 600 ft. The well is cased with 12-in. pipe from 1 ft above the floor of a 6-ft deep pit to a depth of 50 ft.

Upon completion, the nonpumping water level was reported to be 3 ft below land surface.

In 1941, the well reportedly produced 425 gpm with a drawdown of 20 ft from a nonpumping water level of 10 ft below the pump base.

After rehabilitation in 1951, the well produced 615 gpm over a 3-hr pumping period with a drawdown of 53.7 ft from a nonpumping water level of 15.8 ft below the pump base.

The pumping equipment presently installed is a 10-in., 3-stage Byron Jackson submersible pump set at 104 ft, rated at 500 gpm at about 120 ft TDH, and powered by a 25-hp 1750 rpm Byron Jackson submersible motor. The well is equipped with 104 ft of airline.

A mineral analysis made by the Environmental Protection Agency (Lab. No. 02973) of a sample collected November 30, 1971, showed the water to have a hardness of 528 mg/l, total dissolved minerals of 684 mg/l, and an iron content of 0.0 mg/l.

WELL NO. 3, open to the Cambrian-Ordovician and Elmhurst-Mt. Simon aquifers, was completed in July 1908 to a depth of 1803 ft by the J. P. Miller Artesian Well Co., Brookfield. The well is located about 60 ft S of Meadow St. and 80 ft E of Whitney St., approximately 1210 ft N and 370 ft E of the SW corner of Section 25, T44N, R3E. The land surface elevation at the well is approximately 765 ft.

An abbreviated sample study log of Well No. 3 furnished by the State Geological Survey follows:

<i>Strata</i>	<i>Thickness (ft)</i>	<i>Depth (ft)</i>
Glacial drift	46	46
Galena and Platteville Groups, gray dolomite	294	340
St. Peter Sandstone, white sandstone	185	525
Prairie du Chien Group, dolomites, and sandstones	120	645
Franconia Formation, old shale	80	725
Ironton-Galesville Sandstone, white sandstone	125	850
Eau Claire Formation, red gray and green shale sandstone	200	1050
Mt. Simon Sandstone, layers of colored shales and sandstones	753	1803

Originally, a 16-in. diameter hole was drilled to a depth of 90 ft, finished 8 in. in diameter from 90 to 1803 ft, and cased with 16-in. pipe from land surface to a depth of 70 ft. In 1951, I. B. Null & Sons, Winnebago, reamed the bore hole to 10 in. from 90 to 640 ft and replaced the 16-in. casing with 55 ft of 15-in. pipe.

Upon completion, the nonpumping water level was reported to be 8 ft below land surface.

On September 14, 1942, the well reportedly produced 497 gpm for 4.5 hr with a nonpumping water level of 90 ft below the pump base.

In February 1944, a nonpumping water level of 17 ft below the pump base was reported and 4 hr after pumping at rates of 400 to 425 gpm, the pump would break suction.

After rehabilitation in 1951, the well produced 540 gpm for 1 hr with a drawdown of 29.3 ft from a nonpumping water level of 26.5 ft below the pump base.

On December 6, 1966, the well reportedly produced 400± gpm for about 15 min with a drawdown of 66 ft from a nonpumping water level of 15 ft below land surface.

Monthly measurements of the nonpumping water levels during the period January 1961 to October 1972 ranged from about 12 to 34 ft below land surface.

The pumping equipment presently installed is a 10-in., 3-stage Byron Jackson submersible pump (No. 691C-2348) set at 148 ft, rated at 500 gpm at about 120 ft TDH. It is powered by a 20-hp 1750 rpm Byron Jackson submersible electric motor. The well is equipped with 148 ft of airline.

A mineral analysis made by the Environmental Protection Agency (Lab. No. 02970) of a sample collected November 30, 1971, showed the water to have a hardness of 588 mg/l, total dissolved minerals of 738 mg/l, and an iron content of 0.0 mg/l.

WELL NO. 4, open to the Cambrian-Ordovician and Elmhurst-Mt. Simon aquifers, was completed in September 1942 to a depth of 1801 ft by S. B. Geiger & Co., Chicago. The well is located at East Madison and North Main Sts., approximately 2310 ft S and 460 ft W of the NE corner of Section 26, T44N, R3E. The land surface elevation at the well is approximately 778 ft.

A sample study log of Well No. 4 furnished by the State Geological Survey follows:

<i>Strata</i>	<i>Thickness (ft)</i>	<i>Depth (ft)</i>
<b>PLEISTOCENE SERIES</b>		
Sand	45	45
<b>ORDOVICIAN SYSTEM</b>		
Galena Dolomite Group	163	208
Platteville Dolomite Group	110	318
Ancell Group		
Glenwood Formation		
Dolomite and sandstone	27	345
St. Peter Sandstone		
Sandstone, incoherent	210	555
Conglomerate of sandstone, chert and shale	45	600
<b>CAMBRIAN SYSTEM</b>		
Potosi Dolomite	43	643
Franconia Formation		
Sandstone, dolomite, and thin shale beds	67	710
Ironton-Galesville Sandstone		
Sandstone, partly dolomitic	115	825
Sandstone, incoherent	45	870
Eau Claire Formation		
Shale, siltstone, sandstone, some dolomite	380	1250
Mt. Simon Sandstone		
Sandstone	65	1315
Sandstone, thin shale beds	486	1801

A 24-in. diameter hole was drilled to a depth of 152 ft and finished 16 in. in diameter from 152 to 1801 ft. The well is cased with 16-in. OD wrought iron pipe from 1 ft above the pumphouse floor to a depth of 152 ft (cemented in).

Upon completion, the well reportedly produced from 780 to 1380 gpm for 21 hr with a drawdown of 72.6 ft from a nonpumping water level of 38.9 ft below land surface.

A production test was conducted by the State Water Survey on May 4, 1943. When pumping at rates of about 675 gpm for 1 hr, 850 gpm for the next 1.9 hr, 1010 gpm

for the next 1.2 hr, and 1285 gpm for the final 1.3 hr, the water level was lowered below the 100-ft airline, and the pump broke suction. Before the test a nonpumping water level of 40.9 ft below land surface was recorded.

On November 22, 1946, the nonpumping water level was reported to be 33 ft below the pump base.

On May 27, 1966, the well reportedly produced 1000 gpm for several hours with a drawdown of 150 ft from a nonpumping water level of 54 ft below land surface.

A production test was conducted by the driller on November 13, 1973. After 1 hr of pumping at rates of 1000 to 1050 gpm, the final drawdown was 231 ft from a nonpumping water level of 69 ft below the top of the casing.

The pumping equipment presently installed consists of a 100-hp Byron Jackson submersible electric motor, a 12-in., 5-stage Byron Jackson submersible pump (No. 280704) set at 300 ft, rated at 1000 gpm at about 286 ft TDH, and 300 ft of 8-in. column pipe. The well is equipped with 300 ft of airline. In 1970, this pump was pulled, repaired, and replaced.

The following mineral analysis made by the Environmental Protection Agency (Lab. No. B0011785) is for a water sample from the well collected April 2, 1972, after 1.5 hr of pumping at 1000 gpm.

WELL NO. 4, LABORATORY NO. B0011785					
	<i>mg/l</i>	<i>me/l</i>		<i>mg/l</i>	<i>me/l</i>
Iron	Fe	0.1	0.00	Silica	SiO <sub>2</sub> 13.2
Manganese	Mn	0.1	0.00	Fluoride	F 0.7 0.04
Ammonium	NH <sub>4</sub>	0.17	0.01	Boron	B 0.13
Sodium	Na	14	0.61	Nitrate	NO <sub>3</sub> 4.0 0.06
Potassium	K	3.0	0.08	Chloride	Cl 12.5 0.35
Calcium	Ca	74	3.69	Sulfate	SO <sub>4</sub> 25 0.52
Magnesium	Mg	35.5	2.92	Alkalinity (as CaCO <sub>3</sub> )	300 6.00
				Hardness (as CaCO <sub>3</sub> )	336
				Total dissolved	
				minerals	360
Barium	Ba	0.36		pH (asrec'd)	7.2
Copper	Cu	0.05		Radioactivity	
Cadmium	Cd	0.00		Alpha pc//	8.3
Chromium	Cr	0.0		±deviation	2.5
Lead	Pb	0.00		Beta pc//	12.0
Mercury	Hg	<0.0005		±deviation	1.7
Nickel	Ni	0.0			
Zinc	Zn	0.0			

WELL NO. 5, open to the Galena-Platteville and the Glenwood-St. Peter, was completed in October 1945 to a depth of 610 ft by S. B. Geiger & Co., Chicago. The well is located at Fifth and Pearl Sts., approximately 1980 ft S and 315 ft W of the NE corner of Section 35, T44N, R3E. The land surface elevation at the well is approximately 800 ft.

An 18-in. diameter hole was drilled to a depth of 152 ft and finished 12 in. in diameter from 152 to 610 ft. The well is cased with 18-in. OD pipe from 0.2 ft above land surface to a depth of 44.8 ft and a 12-in. ID pipe from 1.5 ft above the pumphouse floor to a depth of 151.8 ft (cemented in).



An abbreviated sample study log of Well No. 5 furnished by the State Geological Survey follows:

<i>Strata</i>	<i>Thickness (ft)</i>	<i>Depth (ft)</i>
<b>PLEISTOCENE SYSTEM</b>		
Glacial drift	45	45
<b>ORDOVICIAN SYSTEM</b>		
Galena Group, dolomite	185	230
Decorah Subgroup, dolomite and shale	9	239
Platteville Group, dolomite	111	350
Ancell Group		
Glenwood Formation, dolomite and sandstone	50	400
St. Peter Sandstone	210	610

A production test was conducted on October 15-16, 1945, by representatives of the driller, the city, and the State Water Survey. After 20 hr of pumping at a rate of 735 gpm, the drawdown was 31.5 ft from a nonpumping water level of 50.0 ft below the top of the casing.

In February 1956, when pumping at 600 gpm, the drawdown was 75 ft from a nonpumping water level of 57 ft.

The pumping equipment presently installed consists of a 100-hp 1750 rpm Byron Jackson submersible electric motor, a 10-in., 8-stage Byron Jackson submersible pump (Model No. ICKH, Serial No. 317627) set at 205 ft, rated at 650 gpm at about 368 ft head, and 205 ft of 6-in. column pipe. The well is equipped with 205 ft of airline.

A mineral analysis made by the Environmental Protection Agency (Lab. No. 02976) of a sample collected November 30, 1971, showed the water to have a hardness of 425 mg/l, total dissolved minerals of 475 mg/l, and an iron content of 0.0 mg/l.

WELL NO. 6, open to the Cambrian-Ordovician aquifer, was completed in August 1955 to a depth of 868 ft by the Layne-Western Co., Aurora. The well is located on the east side of McKinley Ave. north of Harrison St., approximately 440 ft N and 66 ft E of the SW corner of Section 24, T44N, R3E. The land surface elevation at the well is approximately 784 ft.

A 30-in. diameter hole was drilled to a depth of 10 ft, reduced to 25.2 in. between 10 and 112 ft, and finished 19.2 in. in diameter from 112 to 868 ft. The well is cased with 30-in. OD pipe from land surface to a depth of 10 ft, 26-in. OD pipe from land surface to a depth of 27.5 ft, and 20-in. OD pipe from land surface to a depth of 110 ft.

On June 15, 1955, when the well was 560 ft deep, a production test was conducted by representatives of the driller, the State Water Survey, and C. K. Willett, Consulting Engineer. After 6 hr of pumping at rates from 345 to 713 gpm, the final drawdown was 142 ft from a nonpumping water level of 34 ft below the top of the casing. Seven min after pumping was stopped, the water level had recovered to 56 ft.

On August 2, 1955, after the well was completed to its final depth, it was pumped intermittently at rates from 490 to 760 gpm for a period of 4.3 hr, after which it was

pumped at 1212 gpm for 3.5 hr resulting in a final pumping level of 124.5 ft from a nonpumping water level of 32 ft below land surface. Forty-five min after pumping was stopped, the water level had recovered to 55 ft.

A sample study summary log of Well No. 6 furnished by the State Geological Survey follows:

<i>Strata</i>	<i>Thickness (ft)</i>	<i>Depth (ft)</i>
<b>PLEISTOCENE SERIES</b>		
Till, silty, yellowish brown	5	5
Sand, gravelly, fine to very coarse, clean in upper 10 ft	20	25
<b>ORDOVICIAN SYSTEM</b>		
Galena Group		
Dolomite, yellowish to buff, extra fine to medium, crystalline	165	190
Decorah Subgroup		
Dolomite, buff to gray, extra fine to fine, crystalline	28	218
Platteville Group		
Dolomite, buff to gray, extra fine to fine, crystalline	107	325
Ancell Group		
Glenwood Formation		
Sandstone, gray to buff, very coarse to fine, incoherent to compact; dolomite, silty, sandy, light-greenish gray	55	380
St. Peter Sandstone		
Sandstone, white to light gray, very fine to coarse, rounded, incoherent	115	495
Sandstone, light buff, very fine to medium, little coarse, rounded, incoherent, little friable	55	550
Sandstone, light gray to light buff, very fine to coarse, incoherent, little shale at base	38	588
<b>CAMBRIAN SYSTEM</b>		
Potosi Dolomite		
Dolomite, pinkish buff to buff, extra fine to fine, crystalline	72	660
Franconia Formation		
Sandstone, reddish brown to buff, very fine to medium, incoherent to compact; little dolomite at top	57	717
Ironton Sandstone		
Sandstone, white to light gray, very fine to coarse, incoherent, little compact	83	800
Galesville Sandstone		
Sandstone, white to light gray, very fine to medium, little coarse, rounded, incoherent	65	865
Eau Claire Formation		
Shale red	3	868

On December 30, 1966, the well reportedly produced 1000 gpm for about 30 min with a drawdown of 147 ft from a nonpumping water level of 75 ft below land surface.

The pumping equipment presently installed consists of a 125-hp 1750 rpm Byron Jackson submersible electric motor, a 12-in., 6-stage Byron Jackson submersible pump (No. 313756) set at 263 ft, rated at 1000 gpm at about 370 ft TDH, and 263 ft of 8-in. column pipe. The well is equipped with 263 ft of airline.

A mineral analysis made by the Environmental Protection Agency (Lab. No. 02969) of a sample collected November 30, 1971, showed the water to have a hardness of 380 mg/l, total dissolved minerals of 400 mg/l, and an iron content of 0.0 mg/l.

WELL NO. 7, open to the Cambrian-Ordovician aquifer, was completed in November 1962 to a depth of 969 ft by the Wehling Well Works, Beecher. The well is located at the northeast corner of Prospect and Second Sts., approximately 1300 ft S and 800 ft W of the NE corner of Section 36, T44N, R3E. The land surface elevation at the well is approximately 840 ft.

A drillers log of Well No. 7 follows:

Strata	Thickness (ft)	Depth (ft)
Top soil	5	5
Clay	35	40
Mud and gravel	S3	93
Pea gravel	18	111
Mud	2	113
Mud and gravel	7	120
Brown limeland gravel	1	121
Sand	22	143
Mud, sand and gravel	9	152
Sand drive	5	157
Lime brown	16	173
Lime	231	404
Lime sandy	5	409
Shale and lime	4	413
Lime	3	416
Lime and shale	16	432
Lime and shale sandy	15	447
Sand	22	469
Sand and shale	23	492
Sand	101	593
White sand soft	10	603
Pink sand hard	13	616
Sand and shale	10	626
Pink sand	19	645
Lime white	10	655
Lime, shale, sandy	27	682
Lime	54	736
Lime, shale sand	36	772
Shale red and green	30	802
Lime	2	804
Lime, sandy hard	8	812
Green shale and sand	3	815
Sand limey and shale hard	11	826
Sand, limey hard	11	837
Sand hard	22	859
Sand green and red shale	16	875
Sand	29	904
Shale red and green	7	911
Sand	35	946
Shale green	2	948
Sand	10	958
Shale green and red	3	961
Shale gray	4	965
Shale gray and red	4	969

A 24-in. diameter hole was drilled to a depth of 163 ft, reduced to 23 in. between 163 and 193 ft, and finished 17.2 in. in diameter from 193 to 969 ft. The well is cased with 24-in. pipe from 0.8 ft above the pumphouse floor to a depth of 163 ft and 18-in. pipe from 0.8 ft above the pumphouse floor to a depth of 192 ft (cemented in).

A production test was conducted by the driller on November 15-16, 1962. After 24 hr of pumping at rates of 800 to 1500 gpm, the drawdown was 264 ft from a non-pumping water level of 92 ft below land surface.

The pumping equipment presently installed is a 12-in., 8-stage Byron Jackson oil-lubricated submersible turbine pump (Model No. 12CGM, Serial No. 661001071) set at

360 ft, rated at 1000 gpm at about 460 ft TDH, and powered by a 150-hp 1750 rpm Byron Jackson submersible electric motor. In 1969 the pump was pulled and repaired because of a split column pipe. The well is equipped with 360 ft of airline.

The following mineral analysis made by the Environmental Protection Agency (Lab. No. 02971) is for a water sample from the well collected November 30, 1971.

WELL NO. 7, LABORATORY NO. 02971

	mg/l	me/l		mg/l	me/l	
Iron	Fe	0.0	Silica	SiO <sub>2</sub>	11	
Manganese	Mn	0.0	Fluoride	F	0.25	0.01
Ammonium	NH <sub>4</sub>	0.8	Boron	B	0.25	
Sodium	Na	4.6	Nitrate	NO <sub>3</sub>	0.0	
Potassium	K	2.2	Chloride	Cl	8	0.23
Calcium	Ca	75	Sulfate	SO <sub>4</sub>	9	0.19
Magnesium	Mg	39	Alkalinity (as CaCO <sub>3</sub> )	328	6.56	
Barium	Ba	0.6	Hardness (as CaCO <sub>3</sub> )	356		
Copper	Cu	0.0	Total dissolved minerals	341		
Cadmium	Cd	0.00	pH (as rec'd)	7.9		
Chromium	Cr	0.0	Radioactivity			
Lead	Pb	0.00	Alpha pc//	2		
Mercury	Hg	< 0.0005	ideviation	1		
Nickel	Ni	0.0	Beta pc//	4		
Silver	Ag	0.0	ideviation	2		
Zinc	Zn	0.0				

WELL NO. 8, open to the Cambrian-Ordovician and Elmhurst-Mt. Simon aquifer, was completed in July 1964 to a depth of 1393 ft by the Wehling Well Works, Beecher. The well is located near U. S. Route 20 across from the Chrysler Corp., approximately 200 ft N and 1300 ft W of the SE corner of Section 34, T44N, R3E. The land surface elevation at the well is approximately 780 ft.

A 26-in. diameter hole was drilled to a depth of 27 ft, reduced to 25 in. between 27 and 362 ft, reduced to 19.2 in. between 362 and 994 ft, and finished 16 in. in diameter from 994 to 1393 ft. The well is cased with 26-in. pipe from land surface to a depth of 27 ft, 20-in. pipe from land surface to a depth of 362 ft (cemented in), and a 16-in. liner from 875 to 995 ft.

The following mineral analysis made by the Environmental Protection Agency (Lab. No. 02975) is for a water sample from the well collected November 30, 1971.

WELL NO. 8, LABORATORY NO. 02975

	mg/l	me/l		mg/l	me/l	
Iron	Fe	0.0	Silica	SiO <sub>2</sub>	9	
Manganese	Mn	0.0	Fluoride	F	0.3	0.02
Ammonium	NH <sub>4</sub>	0.9	Boron	B	0.0	
Sodium	Na	4.5	Nitrate	NO <sub>3</sub>	0.0	
Potassium	K	2.6	Chloride	Cl	7	0.20
Calcium	Ca	70	Sulfate	SO <sub>4</sub>	5	0.10
Magnesium	Mg	38	Alkalinity (as CaCO <sub>3</sub> )	316	6.32	
			Hardness (as CaCO <sub>3</sub> )	332		
Barium	Ba	0.8	Total dissolved minerals	368		
Copper	Cu	0.0	pH (as rec'd)	7.8		
Cadmium	Cd	0.00	Radioactivity			
Chromium	Cr	0.0	Alpha pc//	3		
Lead	Pb	0.00	ideviation	1		
Mercury	Hg	< 0.0005	Beta pc//	9		
Nickel	Ni	0.0	ideviation	2		
Silver	Ag	0.0				
Zinc	Zn	0.0				

A production test was conducted by the driller on July 20-21, 1964. After 19.5 hr of pumping at a rate of 1580 gpm, the drawdown was 128 ft from a nonpumping water level of 47 ft below land surface.

On May 29, 1966, the well reportedly produced 1550 gpm for 2.5 hr with a drawdown of 78 ft from a nonpumping water level of 140 ft below land surface.

The pumping equipment presently installed is a Johnston oil-lubricated turbine pump set at 230 ft, rated at 1500 gpm at about 160 ft head, and powered by a 200-hp 1800 rpm U. S. electric motor (Serial No. 1351818).

A drillers log of Well No. 8 follows:

Strata	Thickness (ft)	Depth (ft)
Black dirt	3	3
Gravel	4	7
Lime	310	317
Lime sand and shale	15	332
Lime and shale	13	345
Lime shale and sand	3	348
Sand (95 percent)	15	363
Sand	129	492
Sand red rock	65	557
Red rock and lime shell	14	571
Sand, dolomite, lime shells— red rock	15	586
Dolomite and red rock, hard shells	9	595
Lime	48	643
Shaley lime	11	654
Shaley lime with thin layers of green shale	14	668
Sandy lime	12	680
Red rock and sand	2	682
Shale and shells	15	697
Shaley sand	19	716
Sandstone	31	747
Sandstone hard	98	845
Red rock and sand	10	855
Sand	26	881
Shale	103	984
Lime	5	989
Shale	2	991
Lime caving shale	12	1003
Sandy lime	11	1014
Sandstone sharp	34	1048
Sandstone hard sharp layers of shale	12	1060
Sandy limestone sharp	11	1071
Limestone sandy	9	1080
Limestone	11	1091
Sandstone	4	1095
Limestone	2	1097
Limestone sand	28	1125
Sand hard sharp	10	1135
Sandstone	30	1165
White sand	17	1182
Sandstone, lime and shale hard shells	9	1191
Shale	5	1196
Sand sharp	34	1230
Lime and shale	4	1234
Shale and shells	7	1241
Sandstone	4	1245
Sand and shale	12	1257
Sandstone sharp pink	14	1271
Red sand and shale	13	1284
Sandstone with layers of red shale	13	1297
Sand	7	1304
Shale	5	1309
Sandstone	14	1323
Sand	15	1338
Sand lime shells	13	1351
Sandstone	19	1370
Sandstone and shale	21	1391
Sandstone	2	1393

WELL NO. 9, finished in sand and gravel, was completed in June 1969 to a depth of 120 ft by the Layne-Western

Co., Aurora. The well is located on Beloit Road near Hulstedt's corner, approximately 2540 ft S and 200 ft E of the NW corner of Section 23, T44N, R3E. The land surface elevation at the well is approximately 785 ft.

A drillers log of Well No. 9 follows:

Strata	Thickness (ft)	Depth (ft)
Black top soil	4	4
Yellow fine to coarse sand, some gravel	51	55
Gray fine to coarse sand and gravel, boulders	40	95
Brown clay with gravel intermixed	9	104
Brown sticky clay	1	105
Brown fine to medium sand, little gravel	8	113
Gray medium to coarse gravel and coarse sand	7	120
Brown clay and gravel and gray fine sand	2	122

A 48-in. diameter hole was drilled to a depth of 10 ft and finished 36 in. in diameter from 10 to 122 ft. The well is cased with 16-in. galvanized wrought iron pipe from 2 ft above land surface to a depth of 70 ft, 16-in. screen from 70 to 90 ft, 16-in. galvanized wrought iron pipe from 90 to 115 ft, and finished with 16-in. screen from 115 to 120 ft. The screened sections are both No. 90 slot Johnson stainless steel wire wound screens. The annulus is filled with torpedo sand and bentonite from 0 to 32 ft, with cement grout from 32 to 35 ft, and with 50 tons of No. 3 Muscatine gravel from 35 to 122 ft.

A production test was conducted by the driller on June 4, 1969. After 12 hr of pumping at a rate of 1574 gpm, the drawdown was 10.5 ft from a nonpumping water level of 23.0 ft below land surface.

In September 1970, the well reportedly produced 1935 gpm with a drawdown of 13 ft from a nonpumping water level of 22 ft.

The pumping equipment presently installed is a 13-in. Byron Jackson water lubricated line-shaft turbine pump (Serial No. 691C0245) set at 60 ft, rated at 1250 gpm at about 300 ft TDH, and powered by a 125-hp 1770 rpm General Electric motor (Model No. 5K6268XH3A, Serial No. GEJ702117). The well is equipped with 60 ft of airline.

The following mineral analysis made by the Environmental Protection Agency (Lab. No. 02974) is for a water sample from the well collected November 30, 1971.

WELL NO. 9, LABORATORY NO. 02974							
		mg/l	me/l		mg/l	me/l	
Iron	Fe	0.0		Silica	SiO <sub>2</sub>	17	
Manganese	Mn	0.0		Fluoride	F	0.2	0.01
Ammonium	NH <sub>4</sub>	0.3	0.02	Boron	B	0.0	
Sodium	Na	2.6	0.11	Nitrate	NO <sub>3</sub>	0.4	0.01
Potassium	K	0.7	0.02	Chloride	Cl	4.1	0.12
Calcium	Ca	66	3.29	Sulfate	SO <sub>4</sub>	29	0.60
Magnesium	Mg	31	2.55	Alkalinity (asCaCO <sub>3</sub> )		236	
				Hardness (asCaCO <sub>3</sub> )		296	
Barium	Ba	0.35					
Copper	Cu	0.0		Total dissolved			
Cadmium	Cd	0.00		minerals		304	
Chromium	Cr	0.0		pH(asrec'd)	7.8		
Lead	Pb	0.00		Radioactivity			
Mercury	Hg	<0.0005		Alpha pc/l	0		
Nickel	Ni	0.0		± deviation	0		
Silver	Ag	0.0		Beta pc/l	1		
Zinc	Zn	0.0		± deviation	1		

## CAPRON

The village of Capron (654) installed a public water supply in 1900. One well is in use. In 1951 there were 185 services, all metered; the average daily pumpage was 20,000 gpd. In 1972 there were 236 services, all metered; the average and maximum daily pumpages were 60,000 and 72,000 gpd, respectively. About 10 to 12 percent of the water is aerated, passed through a carbon filter, chlorinated, and passed through a sand filter to remove iron. The remaining 88 to 90 percent of the water is zeolite softened and fluoridated. The water from both treatment systems is blended and pumped to the distribution system and 28,000-gallon elevated tank.

WELL NO. 1, open to the Cambrian-Ordovician aquifer, was completed in 1900 to a depth of 880 ft. The well is located in the village hall on the east side of Fourth St., approximately 500 ft S and 1250 ft E of the NW corner of Section 11, T45N, R4E. The land surface elevation at the well is approximately 912 ft.

The well is cased with 10-in. pipe from land surface to a depth of 90 ft.

Nonpumping water levels below the pump base were reported to be 10 ft in 1900, 15 ft in 1917, and 26 ft in September 1945.

On November 21, 1946, the water level was 32 ft below the pump base after an idle period of 1 hr, and the drawdown was 12 ft after 17 min of pumping at a rate of 200 gpm.

On October 13, 1971, the well reportedly produced approximately 200 gpm after 5 min of pumping with a drawdown of 8 ft from a nonpumping water level of 39 ft.

The pumping equipment presently installed is a 7-in., 10-stage American Well Works turbine pump (No. 71473) set at 90 ft, rated at 150 gpm at about 200 ft head, and powered by a 10-hp. U. S. electric motor. A 10-ft section of 5-in. suction pipe and brass strainer is attached to the pump intake.

The following mineral analysis made by the Environmental Protection Agency (Lab. No. 00856) is for a water sample from the well collected August 10, 1971, after 20 min of pumping at 200 gpm.

WELL NO. 1, LABORATORY NO. 00856					
		mg/l	me/l		
Iron	Fe	0.1	0.00	Silica	SiO <sub>2</sub> 26
Manganese	Mn	0.0		Fluoride	F 0.3 0.02
Ammonium	NH <sub>4</sub>	0.5	0.04	Nitrate	NO <sub>3</sub> 0.0
Sodium	Na	7.0	0.30	Chloride	Cl 1 0.03
Potassium	K	0.8	0.02	Sulfate	SO <sub>4</sub> 0.0
Calcium	Ca	78.4	3.91	Alkalinity (asCaCO <sub>3</sub> )	340 6.80
Magnesium	Mg	36	2.96		
				Hardness (asCaCO <sub>3</sub> )	342
Barium	Ba	0.0		Total dissolved	
Copper	Cu	0.0		minerals	360
Cadmium	Cd	0.00		pH(as rec'd)	7.4
Chromium	Cr	0.0		Radioactivity	
Lead	Pb	0.00		Alpha pc//	0.4
Mercury	Hg	<0.0005		± deviation	0.6
Nickel	Ni	0.0		Beta pc//	0.8
Silver	Ag	0.0		± deviation	1.3
Zinc	Zn	0.0			

## POPLAR GROVE

The village of Poplar Grove (607) installed a public water supply in 1915. One well (No. 2) is in use and the Edenfruit Products Co. well is available for emergency use. In 1950 there were 127 services; the average daily pumpage was approximately 10,000 gpd. In 1972 there were 217 services, none metered; the estimated average and maximum daily pumpages were 50,000 and 60,700 gpd, respectively. The water is treated with polyphosphate to keep iron in solution.

WELL NO. 1, finished in sand and gravel, was completed in 1915 to a depth of 134.5 ft by Andrew Warren, Poplar Grove. This well was abandoned in 1940 and sealed with a hard wooden plug driven into the top of the casing. The well was located in back of the village hall about 65 ft S of the center line of the Chicago & North Western RR tracks and 40 ft S of Main St., approximately 1800 ft S and 65 ft E of the NW corner of Section 19, T45N, R4E. The land surface elevation at the well is approximately 892 ft.

The well was drilled in the bottom of an old dug well and cased with 6-in. pipe to a depth of 130 ft. The dug well was then filled to the floor of the pumping station which was about 11 ft below land surface. Because of sand entering the well, a 4-in. diameter screen about 6 ft in length was driven 4.5 ft below the casing and sealed to the casing.

In 1919, the nonpumping water level was reported to be 15 ft below land surface.

A mineral analysis of a sample (Lab. No. 40945) collected April 15, 1919, showed the water to have a hardness of 358 mg/l, total dissolved minerals of 387 mg/l, and an iron content of 0.3 mg/l.

WELL NO. 2, finished in sand and gravel, was completed in June 1940 to a depth of 184 ft by C. D. Ackly, Walworth, Wis. The well is located 10 ft N and 5 ft W of Well No. 1, approximately 1790 ft S and 60 ft E of the NW corner of Section 19, T45N, R4E. The land surface elevation at the well is approximately 892 ft.

An 8-in. diameter hole was drilled to a depth of 184 ft. The well is cased with 8-in. pipe to a depth of 165 ft followed by 19 ft of 8-in. screen.

The pumping equipment presently installed is a 5-stage Myers submersible pump set at 105 ft, rated at about 130 gpm at about 100 ft TDH, and powered by a 10-hp Myers electric motor.

The following mineral analysis made by the Environmental Protection Agency (Lab. No. 03439) is for a water sample from the well collected December 28, 1971, after pumping at 250 gpm.

WELL NO. 2, LABORATORY NO. 03439

		mg/l	me/l			mg/l	me/l
Iron	Fe	0.2	0.01	Silica	SiO <sub>2</sub>	20	
Manganese	Mn	0.0		Fluoride	F	0.2	0.01
Ammonium	NH <sub>4</sub>	0.1	0.01	Boron	B	0.0	
Sodium	Na	5.2	0.23	Nitrate	NO <sub>3</sub>	0.0	
Potassium	K	0.4	0.01	Chloride	Cl	9	0.25
Calcium	Ca	82	4.09	Sulfate	SO <sub>4</sub>	38	0.79
Magnesium	Mg	37	3.04	Alkalinity (as CaCO <sub>3</sub> )		284	5.68
				Hardness (as CaCO <sub>3</sub> )		352	
Barium	Ba	0.0		Total dissolved minerals		364	
Copper	Cu	0.0		pH (as rec'd)		8.2	
Cadmium	Cd	0.00		Radioactivity			
Chromium	Cr	0.0		Alpha pc//		0	
Lead	Pb	0.00		±deviation		1	
Mercury	Hg	<0.0005		Beta pc//		0	
Nickel	Ni	0.0		±deviation		2	
Silver	Ag	0.0					
Zinc	Zn	0.0					

An 8-hr production test was conducted on August 29, 1940. The well reportedly produced 150 gpm with a drawdown of 16 ft from a nonpumping water level of 12 ft below the pump base. After an additional 4 hr of pumping at a rate of 220 gpm, the final drawdown was 28 ft.

The EDENFRUIT PRODUCTS CO. well, finished in sand and gravel, was completed in April 1947 to a depth of 135 ft. This well is cross connected to the village for emergency use. The well is located in a brick building at the rear of the plant, about 300 ft E of the street, approximately 1950 ft S and 600 ft E of the NW corner of Section 19, T45N, R4E. The land surface elevation at the well is approximately 890 ft.

A 16-in. diameter hole was drilled to a depth of 135 ft. The well is cased with 16-in. pipe from 1.3 ft above land surface to a depth of 100 ft followed by 35 ft of 16-in. screen.

The pumping equipment presently installed is a Fairbanks-Morse Pomona turbine pump set at 55 ft, rated at 200 gpm, and powered by a 20-hp 1750 rpm General Electric motor.