Circular 90

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DEPARTMENT OF REGISTRATION AND EDUCATION

Mineral Content of Public Ground-Water Supplies in Illinois

by T. E. LARSON

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Illinois State Water Survey

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NOTE OF CORRECTION: Circular 90

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Because of an IBM printout error (pages 10,11,12) for cities from Allerton to Buffalo Rock State Park, inclusive, all letters and numbers under the 10 columns headed Source to Boron, inclusive, should be moved down opposite the next analysis number below.

The data in these 10 columns for Buffalo Rock State Park should be inserted in the corresponding place for Allerton, to the right of Analysis Number 144820.

Other significant errors have been noted for isolated data:

Ambpy, chloride	8.	instead of	80
Arcola, calcium	88.0	instead of	8.8
Chrisman, calcium	67.0	instead of	6.7
El Paso, iron	1.0	instead of	0.1

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INTRODUCTION

This circular provides a ready tabulation of mineral constituents in public ground-water supplies in Illinois. Analyses of 770 ground-water supplies, serving 2,486,200 people, are included in this report. The tabulations are presented alphabetically according to the municipality or public institution at which the sample was collected. Brief discussions of sampling procedure, analytical methods, and the interpretation and significance of the minerals precede the tabulated data.

With few exceptions, the samples were collected during the time that physical and engineering data were obtained for Water Survey Bulletin 40, "Public Ground-Water Supplies in Illinois" (1950), and its Supplement 1 (1958) and Supplement 2 (1961), and most of the analyses are duplicated in those publications.

Analyses for surface water supplies have not been included since, with the exception of Lake Michigan, the quality of streams and reservoirs varies seasonally and in some cases from year to year. Public surface supplies in Illinois are clarified and chlorinated, and most sources come within a range from 50 to 450 ppm hardness.

Acknowledgments. This report was prepared by Dr. T. E. Larson, Assistant Chief and Head of the Chemistry Section of the State Water Survey. Data were developed by the staff of the analytical laboratory of the Chemistry Section. The number of individuals concerned during the years is too great to permit personal acknowledgment; however, the major portion of the analyses were made under the direct supervision of Laurel Henley. Appreciation also is extended for the administrative support of William C. Ackermann, Chief, Illinois State Water Survey.

PROCEDURES

Sampling

Wherever possible, samples were collected from a tap at the pump discharge, and the temperature and pH were determined at that time. Each analysis reported herein has been selected as representative of the general quality of the water for the particular municipality. At certain locations the supply is derived from alluvial or outwash deposits adjacent to streams, so that a certain amount of variation in the quality may be expected throughout the year. At places where the supply is derived from rock wells that penetrate more than one exposed aquifer the quality may vary throughout any particular pumping period since the quality from each aquifer is generally distinctive. The quality at any time may therefore depend upon the duration of the previous idle period, the relative nonpumping pressures of the water in the aquifer, and the capacities of the aquifers to yield water.

In many cases the indicated source of the water is not necessarily definite. For example, in one instance a well penetrating the St. Peter Sandstone actually derives drift water by way of crevices in the intervening limestone between the bottom of the casing (which was pressure grouted through the drift) and the top of this sandstone. Unless the origin of the water in the well has been definitely determined, the source is generally indicated to be the formation at the bottom of the well.

Analytical Methods

Data on color, odor, and turbidity are not reported. As a general rule (in the absence of iron) the turbidity of ground-water supplies is negligible; odor, when present, is normally caused by hydrogen sulfide, which has been indicated; and only a very few supplies have any appreciable color. Nevertheless, taste, odor, and color are each significant in that, if objectionable in a bacteriologically safe supply, any one of the three may cause the consumer to turn to a more palatable but unsafe supply.

All analyses were made according to Standard Methods of Water Analysis, 9th and 10th editions.

All samples were carbonated with dry ice prior to filtration and analysis. In general, the following procedures were used. Where two procedures are named, the second (shown in parentheses) was used on laboratory numbers above 148000.

Determination	*Symbol*	*Procedure*
Iron	Fe	Ortho phenathroline
Manganese	Mn	Periodate
Ammonium	NH_4	Distillation and Nesslerization
Sodium	Na	Difference
Calcium	Ca	Permanganate titration (or EDTA)
Magnesium	Mg	Pyrophosphate (or difference)
Silica	SiO_2	Molybdate
Boron	B	Carmine (or curcumin)
Fluoride	F	Scott-Sanchis
Nitrate	NO_3	Reduction
Chloride	Cl	Mohr
Sulfate	SO_4	Gravimetric
Alkalinity	(as $CaCO_3$)	Methyl orange
Hardness	(as $CaCO_3$)	Calculation (or EDTA)
Total dissolved minerals	TDM	Evaporation
Carbon dioxide	CO_2	Calculation

The results are expressed in parts per million (ppm). Parts per million refers to pounds per million pounds of water or milligrams per liter (mg/1) of water. Such results can be converted to grains per gallon (gpg) by dividing by the factor 17.2. The parts per million results can be converted to equivalents per million by dividing by the equivalent weight of the particular ion. The results for hardness and alkalinity are expressed in equivalent terms of calcium carbonate. Since the pH of nearly all samples was less than 8, no carbonate alkalinity existed and the alkalinity exists actually as bicarbonate. Bicarbonate as (HCO_3) may be calculated from alkalinity (as $CaCO_3$) by multiplying alkalinity by 1.22.

INTERPRETATION AND SIGNIFICANCE

The interpretation of any water analysis must of necessity depend on the intended use of this water. In general the following discussions pertain largely to the use of water for general household purposes.

It is assumed that the water is of unimpeachable sanitary quality, as judged by a sanitary survey indicating the absence of any possible source of entrance of contamination, and as established by bacteriological tests for purity. Such considerations are the function of the Illinois State Department of Public Health, located at Springfield, Illinois, and any questions concerning this primary factor must be directed to that office.

Total Dissolved Minerals

The total mineral content includes all the mineral ingredients in the water. These ingredients originated by the solution of the chloride, nitrate, sulfate, and carbonate salts of calcium, magnesium, ammonium, and sodium. On solution of each or any of these ingredients, however, the component parts of each salt exist in the water as separate entities and bear no relation to the original combination.

Water with a high mineral content may have a salty or brackish taste, of an intensity that depends on the concentration and kind of minerals in solution.

The Public Health Service Drinking Water Standards for Interstate Carriers (1961) states that water should not contain more than 500 ppm total dissolved minerals. This is a recommended limit, suggesting a quality guide which does not cause undue discomfort to the user. Mineralization of more than 500 ppm can be faintly tasted. Several municipalities in Illinois use waters of 1500 to 2000 ppm mineral content. Waters of 3000 and 4000 ppm can hardly be called palatable, and at 5000 or 6000 ppm even livestock do not do very well, although they can get used to it and live. At about 15,000 ppm, or 1.5 per cent, the water is injurious and would cause death if used continuously. Sea water contains 3.4 per cent dissolved minerals. In the range of 500 to 2000 ppm the taste factor is one to which the public may become accustomed; in fact, if a change from 1500 to 500 ppm water is experienced, it is again necessary to become accustomed to the 500 ppm water.

Equipment is available to demineralize limited quantities of mineralized water. These units are relatively costly when compared with ordinary zeolite softeners, and the cost of chemicals for regeneration seriously limits the extensive use of such equipment. However, for small quantities of water as for drinking or cooking purposes, there is a field of application. The cost of the original installation will depend on the quality of the raw. water and the quantity of demineralized water required. The cost of regenerating chemicals is from $1 to $2 for each 1000 ppm of mineral content per 1000 gallons. The cost of chemicals to demineralize 100 gallons of water containing 5000 ppm total dissolved minerals would be about $1. This, of course, would be expensive water for sprinkling purposes, but water for 16 cups of coffee would cost 1 cent.

Statistical data on mineralization and population served for the 770 public supplies are given in table 1.

1. TOTAL DISSOLVED MINERALS

Concentration (ppm) greater than	*Number of supplies*	*Per cent of total supplies*	*Population served*
2000	10	1.3	7,600
1500	31	4.0	50,600
1000	73	9.5	126,300
750	130	16.9	279,000
500	325	42.3	1,011,100
400	497	64.7	1,521,700
300	703	91.4	2,334,800
200	766	99.5	2,465,300
150	770	100.	2,486,200

More than 40 per cent of the Illinois public ground-water supplies, serving over a million people, exceed 500 ppm in total dissolved minerals. No public ground-water supply contains less than 150 ppm minerals.

Hardness

Calcium and magnesium in water cause it to be hard, that is, to cause scale deposits on heating and to require special additives for producing clean laundry, and so forth.

The distinction between hard and soft water is relative. Municipalities accustomed to water of 250 ppm hardness consider Lake Michigan water (130 ppm) to be soft, whereas those supplied by softened water of 50 to 75 ppm hardness consider Lake Michigan water to be hard. In turn, individuals who are accustomed to home zeolite softened water of 0 to 10 ppm hardness or to rain water consider 50 to 75 ppm to be hard water.

The effects of hard water are numerous, and very few of these effects are advantageous. Hard water is responsible for the formation of scale in boilers or hot water heaters. The formation of scale due to hardness results from the fact that the solubility of the calcium carbonate and sulfate salts and magnesium hydroxide is lower at increased temperatures.

If an appreciable proportion of the hardness is noncarbonate hardness, the scale will be very hard and difficult to remove. The noncarbonate hardness may be calculated by subtracting the alkalinity from the hardness value. If little or none of the hardness is noncarbonate, that is, if all of the hardness is present as carbonate hardness, the scale may be either soft and sludgy or moderately hard. In either case, the scale formed in furnace coils or in hot water coils is a distinct nuisance, and may reduce the rate of heat transfer to such an extent that the metal can become "burned" by overheating.

Chemical treatment of water used in boilers for the production of steam and power is a common practice and is in most cases an economic necessity.

The effect of hard water on soap and soap products is well known to everyone. The insoluble calcium and magnesium soaps which are formed with hard water combine with the dirt removed from laundry, and this is redeposited with the eventual result that clothes appear gray rather than white. Rinsed dishes and glassware do not drain clear; hard water leaves an accumulating white deposit on them which can be unsanitary as well as unsightly. Hair washed and rinsed with hard water becomes sticky and stiff.

Highly mineralized water of 2000 ppm or more mineral content, which may be soft with respect to calcium and magnesium content, often behaves as hard water with soap as used for detergency purposes. The salt content prevents sufficient solution of soap to provide an . effective cleaning concentration.

2. HARDNESS

	Natural supplies			*Treated supplies*		
Concentration (ppm) greater than*	*Number of supplies*	*Per cent of total supplies*	*Population served*	*Number of supplies*	*Per cent of classification*	*Popula-Hon served*
1000	3	0.4	2,900	1	33	2,800
800	8	1.0	22,500	3	37	18,300
600	46	6.0	88,300	16	35	46,000
400	201	26.2	713,000	62	31	202,800
300	448	58.3	1,387,900	116	26	389,900
200	681	88.5	2,326,700	151	22	651,400
100	746	97.0	2,474,100	155	21	663,300

* as $CaCO_3$

In 88.5 per cent of the public ground-water supplies hardness (see table 2) is over 200 ppm; in 58.3 per cent it is greater than 300 ppm; and in 26.2 per cent, greater than 400 ppm. Only 22 per cent of the supplies with more than 200 ppm hardness have a treatment plant to reduce the hardness to 100 ppm or less, and with hardness greater than 400 ppm only 31 per cent provide treatment for reducing the hardness. Of the 770 supplies, 20.2 per cent or 155 supplies have treatment plants that produce water with 100 ppm hardness or less. (Of these, 115 use the zeolite or the base-exchange method and 40 use the lime or lime-soda method.) This is an increase in both number and percentage since 1950 when the percentage of treatment plants for reducing hardness was 14.9 per cent of the 532 total supplies.

Twenty-seven per cent of the population (675,400 persons) served with ground water are provided with water of 100 ppm hardness or less.

The State Water Survey conducted a survey on the effect of water hardness on the domestic use of detergents in 1958-59 at three municipalities. The results, published in 1961, showed the purchase of detergents to increase by 11.7 cents per 100 ppm of hardness per 1000 gallons of water used for household purposes such as cleaning, laundry, bathing, etc. On the basis of 27 gallons use per person per day for these purposes, or about 10,000 gallons per year, the additional cost of detergents with hard water was about $1.15 per person per year for each 100 ppm hardness. In general, the cost of municipal treatment for reducing the hardness was found to be favorably competitive to the cost of home treatment using synthetic detergents, or of home-owned or serviced softening. Other economic and convenience benefits that accrue from low hardness water are in cleanliness, fewer maintenance problems with facilities, and extended life of clothes and linens, as well as economic benefits to industries and other establishments that use water for processing, heating, and air conditioning.

Iron

Iron as it exists in natural ground water is in the soluble (ferrous) state and gives the water a faint green tinge. On exposure to air it is converted into the insoluble ferric state and separates from the water to form fine to fluffy reddish-brown particles. This constitutes "red water." If allowed to stand long enough these particles will gather together and settle to the bottom of a container. The presence of red water is responsible for red stains on laundry, and may cause clogging in pipes in distribution systems and in service lines to homes.

In some cases the presence of iron supports the growth of "iron bacteria" which accumulate and eventually clog the distribution system pipes and mains. The presence of appreciable quantities of iron is sometimes responsible for clogging in zeolite softeners, although some types of exchange materials are more resistant to this type of clogging than others. Much depends on the quantity and the form of the iron as the water is applied to the zeolite, or exchange bed, and much also depends on the rate and the manner of backwashing and regeneration of these exchange units. The U. S. Public Health Service Drinking Water Standards recommends a limit of 0.3 ppm iron to avoid staining of laundry and porcelain ware.

Three of every four public ground-water supplies in Illinois contain more than 0.3 ppm iron. Of these, 38.8 per cent or 227 supplies serving a population of 640,600 treat the water for iron removal, as shown in table 3. In

3. IRON

	Natural supplies			*Treated supplies*		
Concentration (ppm) greater than	*Number of supplies*	*Per cent of total supplies*	*Population served*	*Number of supplies*	*Per cent of classification*	*Population served*
10	13	1.7	24,200	12	92.4	23,900
5	47	6.1	52,300	33	70.3	44,300
3	97	12.6	136,700	68	70.0	123,500
2	175	22.8	402,800	106	60.6	260,100
1	356	46.3	815,400	177	49.8	491,500
0.5	458	59.6	1,145,100	218	47.6	586,400
0.3	586	76.0	1,635,000	227	38.8	640,600

Per cent of total supplies served		*Per cent of population*
76.1	need treatment	66
23.9	need no treatment	34
29.5	treat	26
53.4	total iron free	60
46.6	still need treatment	40

4. MANGANESE

Concentration (ppm) greater than	Natural supplies: Number of supplies	Per cent of total supplies	Population served	Treated supplies: Number of supplies	Per cent of classification	Population served
1.0	8	1.1	10,200	7	88	9,600
0.3	38	5.2	88,000	22	58	64,000
0.2	55	7.6	153,100	34	62	110,600
0.1	101	13.9	241,400	64	*64*	152,600
Tr	223	30.7	843,600	123	55	514,600

1950, only 27 per cent of the supplies with more than 0.3 ppm iron received treatment.

Combining the 640,600 population with the 851,200 served by ground-water that required no iron removal treatment provides a total representing 60 per cent of the population that receive iron free water. However, 47 per cent of the ground-water supplies still have an undesirable iron content and serve 40 per cent of the population.

Manganese

Manganese in water can cause brownish or black stains in laundered goods, and in even very low concentrations can eventually cause black deposits that clog water mains and household service lines. To avoid such problems, the U. S. Public Health Service Drinking Water Standards recommends a limit of 0.05 ppm.

The available data for 726 public ground-water supplies show 223 supplies or 30.7 per cent to contain 0.1 ppm or more manganese (see table 4). Of these, 55 per cent serving a population of 514,600 are treated. A remaining population of 329,000 are served by 100 supplies that still require treatment to reduce the manganese content to less than 0.1 ppm, of which 37 supplies provide water with 0.2 ppm or more manganese.

Fluoride

The fluoride content of water has been shown to be associated with both the incidence of dental caries and mottled tooth enamel or dental fluorosis. The incidence of dental caries decreases with increasing concentrations of fluoride, and the degree and incidence of fluorosis (darkened, or mottled teeth) increases with fluoride concentrations above 1.0 ppm. The 1961 Public Health Service Drinking Water Standards recommends that the optimum concentration be 1.0 ppm where the annual average of maximum daily air temperatures is 58.4 to 63.8°F and 0.9 ppm where this average temperature is 63.9 to 70.6 F. Concentrations greaterthan twice either of these optimum concentrations are grounds for rejection of the water supply.

Nine of the public ground-water supplies serving 24,700 people contain more than 3.5 ppm fluoride, as indicated in table 5. Forty-three supplies, which serve 454,900 people, contain natural fluoride in concentrations ranging from 0.9 to 1.1 ppm. About 75 per cent of the supplies contain 0.5 ppm of fluoride or less. Of these, 23 add fluoride for a population of 279,200. Thus the total population served with 0.9 to 1.1 ppm fluoride is 734,100, and about 1.3 million people are served with water containing 0.0 to 0.5 ppm fluoride.

Nitrate

Excessive nitrate concentrations in water may cause "blue babies" when such water is used in the preparation of infant feeding formulas. The Public Health Service Drinking Water Standards recommends that the nitrate content of drinking water not exceed 45 ppm (as NO_3).

Four of the present public ground-water supplies in Illinois contain more than 45 ppm nitrate, and have been in use for a number of years with no reported difficulty

5. FLUORIDE

Concentration (ppm) greater than	Natural supplies: number of supplies	Per cent of 755 supplies	Population served	Treated supplies: Number of supplies	Per cent of classification	Population served
3.5	9	1.2	24,700	0		
1.5	49	6.5	115,300	0		
1.1	70	9.3	179,100	0		
0.8	113	15.0	634,000	0		
0.5	190	25.2	858,300	0		
0.2	446	59.2	1,310,900	9	2.3	29,600
0.0	755	100.	2,427,000	23	3.0	279,200

6. NITRATE

Concentration (ppm) greater 'than	Number of supplies	Per cent of 754 supplies	Population served
45	4	.5	2,400
10	60	8.0	142,200
2	232	30.8	793,300
1	355	47.1	1,222,700

from this cause. However, there have been a great number of cases of "blue babies" associated with shallow rural supplies where this concentration has been exceeded.

Statistical data concerning nitrate for 754 public ground-water supplies are shown in table 6. Fifty-three per cent of these 754 supplies contain 1.0 ppm NO_3 or less. Ten per cent of the supplies obtained from drift or unconsolidated formations contain 10 to 123 ppm nitrate, whereas 10 per cent of the limestone supplies contain 7 to *44* ppm and 10 per cent of the sandstone supplies contain 3 to 34 ppm NO_3.

Chloride and Sulfate

High chloride and sulfate concentrations are direct indications of high total mineral content. Chloride and sulfate salts are generally quite soluble in water at normal temperatures, although the solubility of calcium sulfate at temperatures approaching boiling reduces to the point where all of the calcium and sulfate are not compatible in solution. The scale-forming tendency of calcium and sulfate at elevated temperatures is not as great as the scale-forming tendency of calcium and carbonate.

The presence of high chloride and sulfate content producing waters of high mineral content is responsible for greater electrical conductivity. This in turn enhances corrosive properties of water, particularly with respect to iron, and greatly accelerates the galvanic corrosive effect on iron when coupled with copper-bearing metals.

Chlorides are reported to be detectable by taste when present in concentrations above 250 ppm.

The Public Health Service Drinking Water Standards recommends a limit of 250 ppm chloride or sulfate, in conjunction with its recommendation of 500 ppm for total dissolved minerals. However, it is also recognized that a considerable number of supplies in use exceed these limits in one or more respects with no obvious ill effects.

More than 5 per cent of the public ground-water supplies, serving 70,800 people, exceed 250 ppm in chloride content (table 7); and more than 12 per cent of 725 supplies that serve 304,400 people exceed 250 ppm in sulfate (table 8). The median chloride content is about 10 ppm and the median sulfate content, 50 ppm.

7. CHLORIDE

Concentration (ppm) greater than	Number of supplies	Per cent of total supplies	Population served
1000	2	0.3	200
500	15	2.0	28,000
250	42	5.5	70,800
100	81	10.5	171,700
50	128	16.6	247,500
25	204	26.5	630,200
10	369	47.9	1,191,100
5	522	67.8	1,611,500

8. SULFATE

Concentration (ppm) greater than	Number of supplies	Per cent of 725 supplies	Population served
1000	8	1.1	13,600
500	28	3.9	38,100
250	92	12.7	304,400
100	258	35.6	1,095,200
50	376	51.9	1,397,600
25	463	64.0	1,636,000
10	549	76.0	2,036,700
5	579	80.0	2,079,400

Sodium

The data for sodium were calculated by difference. Although potassium is included with sodium by this calculation, many specific determinations have shown the potassium content to be only a small fraction of the total, seldom exceeding a few ppm. Interest in sodium results from occasional requirements for "salt-free" diets.

Statistical data concerning sodium for 711 public

9. SODIUM

	Natural supplies			Treated supplies		
Concentration* (ppm) greater than	Number of supplies	Per cent of 711 supplies	Population served	Number of supplies	Per cent of 711 supplies	Population served
500	15	2.1	16,000	16	3.0	18,800
200	77	10.8	174,100	115	16.2	259,600
100	137	19.3	274,300	220	31.0	458,700
50	260	36.6	733,000	331	46.5	909,500
25	377	53.0	1,372,600	429	60.4	1,494,100

* *includes potassium*

ground-water supplies serving a population of 2,403,400 are given in table 9. About 37 per cent of the population served by these 711 ground-water supplies receive water with less than 25 ppm sodium, and about 11 per cent receive more than 200 ppm sodium.

Alkalinity

In most ground waters in Illinois the alkalinity is in the range of 200 to 400 ppm, and in general is associated with 20 to 50 ppm free carbon dioxide. The free carbon dioxide in the water is usually not more than that necessary to maintain the solubility of calcium in these waters. The exact concentration of free carbon dioxide has been calculated from the bicarbonate alkalinity and from the pH* for such analyses where the pH determination was made. Only a few waters contain a free carbon dioxide content greater than 50 ppm. In such cases the waters have a tendency to be excessively corrosive to pumping equipment and to hot water facilities.

Alkalinity is normally present almost entirely in the form of bicarbonates. On heating, bicarbonates are converted to carbonates by loss of carbon dioxide. Such loss occurs when free carbon dioxide in the water escapes to the air, even on standing exposed to air; and, when the temperature is elevated, the rate of loss of free carbon dioxide gas to air is accelerated. The carbonates thus formed, being incompatible with calcium, form a precipitate or scale of lime or calcium carbonate.

Waters softened by zeolite will produce excessive quantities of carbon dioxide in steam, and the resultant corrosion in condensate return lines can be a major problem. The removal of carbon dioxide by aeration is of limited benefit for Illinois waters since the removal of some carbon dioxide only causes the formation of an additional quantity of free carbon dioxide as bicarbonates are converted to carbonates.

Free carbon dioxide when disproportionate in balance with calcium and bicarbonate alkalinity may cause corrosion or scale formation depending upon whether its concentration is greater or less than that required to maintain calcium carbonate in solution. Almost without exception, CO_2 in ground water is in balance with the solubility of $CaCO_3$ at the ground-water temperature.

Hydrogen Sulfide

Hydrogen sulfide when present in water in concentrations greater than 0.2 ppm causes the water to have a mild to strong odor of rotten eggs. Ordinary aeration procedures are usually sufficient to remove this gas from the water. Chlorine also reacts readily with this gas. It has been noted that the waters in which this gas has been found have usually been obtained from one of the bedrock limestone formations.

* *pH is a measure of the intensity of acidity and basicity. A pH of 7.0 is considered to be neutral wherein the basicity is equal to the acidity; then, a pH of 6 is 10 times as acidic, and a pH of 8 is one-tenth as acidic, a pH of 9 is one-hundreth as acidic, etc.*

Methane

Methane gas is present in a number of ground-water supplies and on several occasions has caused severe explosions. This gas is colorless, odorless, and tasteless; it is lighter than air and inflammable. When released from the water and mixed in concentrations of 5 to 15 per cent with air, the resultant mixture is highly explosive on ignition. If water containing this gas is passed through a pressure tank, it is possible for the air cushion to contain a high proportion of methane. In such cases the vent for the release of accumulated gas in the pressure tank should extend outdoors and never inside a building. An inside vent can easily lead to the 5 to 15 per cent explosive mixture with air in the room. Methane gas can readily be removed from water by standard aeration procedures.

The occurrence of methane in ground waters appears to be limited to supplies which obtain water from the unconsolidated beds above the bedrock. On a few occasions such gas has been obtained from wells yielding water from limestone where the limestone presumably has been fed from the overlying unconsolidated deposits.

Nitrogen and Oxygen

Nearly all ground waters and surface waters in Illinois contain approximately 2½ cubic feet of nitrogen per thousand gallons. The presence of this gas has no particular significance for general household purposes.

Illinois ground waters rarely contain dissolved oxygen as originally pumped from the ground. However, in the process of treatment, either for gas removal or for iron removal, 6 to 10 ppm of oxygen may be added to the water. At plants where the water is stored in ground reservoirs or in elevated tanks, oxygen again may be dissolved in the water to a small extent. Oxygen is also added to water at any time that water is withdrawn from a tap.

The effects of oxygen are numerous. If iron is present in the water, only 0.14 ppm oxygen is required to convert 1 ppm soluble ferrous iron to the insoluble ferric iron, thereby causing a reddish cast or tinge to the water. The presence of oxygen in water accelerates corrosion and affects the suitability of water for specific purposes. However, aerated water usually tastes better since minor traces of other volatile substances are thereby removed. Oxygen has no taste or odor in itself.

It is pertinent to keep in mind that all analyses of treated water quoted herein were made on samples of water as delivered to the particular distribution system. The quality obtained at the consumer's tap, however, is not always identical with that delivered to the system, but this is not surprising in view of the many changes in handling that ensue.

In specific cases the water passes upward through an elevated storage tank, through miles of cast iron or asbestos or cement-lined pipe, through valves or constrictions, and around bends and turns. It is subjected to sudden changes in pressure and velocity, which on occasion may result in water hammer. The velocity of flow through the pipes and the service lines varies from zero to the very high velocity required when water is used for fire fighting. Low flow rates promote the deposition of any suspended matter, whereas high flow rates tend to disturb and resuspend these deposits, often in a greater concentration than was originally present.

In many cases perfectly good water leaving a treatment plant must come in contact with accumulations or deposits of oxidized iron or corrosion products or slime deposits, particularly in old mains,, and will carry these to the household tap.

In the household the water may come in contact with many junctions of dissimilar metals, such as brass and iron, or copper and steel; and the resulting galvanic corrosion causes the solution of some iron. In some cases a deposition of accumulating scale occurs, thereby restricting the opening and reducing the pressure at the tap and the rate of flow of water.

In other cases the water may contain ingredients that promote the growth of bacteria to form a slime on the pipe walls. Such slime-producing organisms are not considered harmful to humans, but prove to be a nuisance when bacteria may be present in the water to convert sulfates to hydrogen sulfide which in turn reacts with soluble iron to form ferrous sulfide, a black substance.

Still another change may be temperature. Since the distribution system and mains are only a few feet below the ground surface, the temperature of the water as it passes through the distribution system may change considerably seasonally. It is not unusual for well water with a constant temperature of about 55° to vary from 40° to 70°F seasonally at home taps.

Such temperature changes may cause changes in chemical equilibria in the water, which in turn on occasion may cause a pickup of a few parts per million hardness from old hardness deposits in the mains. These same changes in chemical equilibria also may be responsible for certain increases in iron as the water passes through the distribution system. Since odors are more pronounced at higher temperatures, they are more frequently noticed during warm seasons when the temperature of the water may be high.

Often times in home basements the cold water pipes may be adjacent to a furnace pipe, and the cold water thereby becomes heated. On heating, any appreciable gases present in the water become less soluble and can produce a milky water as it is drawn at the tap. The effect of temperature changes on water properties is particularly emphasized at hot water heaters or furnace coils, where scale or corrosion or both may occur depending on the original mineral character of the water.

It is therefore evident that the quality of water as delivered to the consumer is dependent not only on the quality of the water as obtained from its source but also on the method of handling and the effects of the various physical changes to which it is subjected in transportation.

TABULATED DATA

Tabulated data of mineral content for public ground-water supplies in Illinois are presented on the pages that follow.

Symbols used in the tabulations are:

Source

D - unconsolidated materials above the bedrock
L - limestone deposits
S - sandstone deposits

Treatment

I - iron removal
A - aeration
L - lime or lime-soda softening
Z - zeolite (or ion-exchange) softening
Cl - chlorination
F - fluoridation

Methane and Hydrogen Sulfide

X - present

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City	Laboratory Number	Source	Treatment	Iron	Manganese	Ammonium	Sodium	Calcium	Magnesium	Silica	Boron	Fluoride	Nitrate	Chloride	Sulfate	Alkalinity	Total Hardness	Total Dissolved Minerals		Carbon Dioxide	Methane	Hydrogen Sulfide	Temperature
				Fe	Mn	NH_4	Na	Ca	Mg	SiO_2	B	F	NO_3	Cl	SO_4	(as $CaCO_3$)			pH	CO_2	CH_4	H_2S	°F
Abingdon	109796	S		.7	.0	1.1	320	84.4	33.4	14		3.5	.9	160	566	232	349	1324					71.5
Adams Hts.	148256	L	Cl	1.6	Tr	.1	13	98.3	47.9	13	.1	.2	.5	4	64	400	443	489					52.0
Addison	146504	L	Cl	1.1	Tr	Tr	22	98.0	44.3	16	.3	.3	.8	10	112	344	427	525					51.0
Albany	144664	D		.4	.0	.1	5	67.7	29.8	27	.1	.2	8.9	5	16	272	292	317					53.5
Albers	144259	D		3.6	.0	1.8	41	79.0	24.7	19	.2	.2	.7	5	1	380	299	394					59.5
Aledo	108244	S	Cl	.1	.0	1.2	325	61.5	17.6	12		2.4	.3	176	401	272	227	1158					62.5
Alexis	127954	S		2.3	.0	2.2	288	48.1	18.9	12		1.6	1.5	104	360	308	198	1034	7.1	60			59.8
Algonquin	110959	D		.9	.0	.8	1	68.5	39.5	26		.3	.9	4	14	316	334	360	7.6	24			50.5
Allendale	144605	S		3.2	Tr	.6	71	66.5	29.6	27	.0	.2	1.1	10	1	428	288	496					
Allerton	144820	L		2.7	.1	.5	183	62.3	22.9	16		.3	1.2	4	45	312	339	374					54.0
Alpha	120516	L	I	.3	.0	.8	348	12.1	2.8	15		.9	6.5	36	155	432	251	754					
Altona	125063	L	ILCl	2.8	.0	Tr	6	85.5	37.5	16	.0	2.8	.7	159	39	536	42	920				X	61.0
Amboy	153626		ILClF	.1								.2	7.6	1	10	364	368	389					53.0
(treated)	112901	L		.2	.0	.1	6	77.0	31.8	20	.0			80		34	50	123					
Andalusia	144667	L		.8	.0	2.6	95	41.5	18.6	9	.8	.3	1.8	3	7	324	324	342					54.0
Andover	144676	L	LCl	.1	Tr	Tr	26	103.7	8.1	18		.6	1.7	10	56	384	181	477					57.6
Anna	113381		LCl	.1								.1	21.5	27	37	256	293	389	7.2	40			59.5
(treated)	114107	L	Cl	.1	.0	Tr	5	83.8	7.6	27		.3		30		26	77	163	9.6				
Anna St. Hosp.	113441	L		.4	.0	3.5	35	57.2	26.4	17		.2	3.9	6	15	224	241	277	7.2	36			53.5
Annawan	110512	D		.6	Tr	Tr	52	39.5	26.0	19	.3	.2	.5	1	4	332	252	351				X	
Antioch	146791	S		.2	.1	.1	1	58.7	30.2	16		.8	3.2	4	64	244	206	351					51.4
Apple River	108581	L		.1								.3	1.9	6	21	242	272	292	7.2	41			50.6
Apple River Canyon St. Pk.	88415	L		.9	Tr									1		344	347	381					
Arbury Hills	152064	D	IZ	4.1	.3	15.1	113	67.6	29.3	26		.4	.0	2		308	1130	1581					
Arcola	139371	D		.2	.1	Tr	1	8.8	32.5	23		.2	4.8	21	1	356	232	390	6.9	159			55.0
Arenzville	114564	D	IZCl	1.4	.0	2.0	97	70.5	36.5	15	.2	.1	35.8	12	54	252	354	391					57.0
Argenta	144135	D		1.0	Tr	.1	6	82.3	37.6	23		.4	2.4	77	1	432	327	572					55.0
Arlington	136762	S		.2	Tr	.8	56	71.2	22.7	11	.2	.1	.5	9	45	312	348	372					51.4
Arlington Hts.	146375	D	I	1.1							.2	1.2	2.8	12	76	270	268	385	7.1	65			58.0
Armington	144266	L	ZCl	.2	.0	.1	24	84.3	43.1	8	.4	.0		3	1	346	296	336					56.0
Aroma Park	143470	D		.2	.0	3.6	92	37.6	18.2	23		.3	3.1	27	124	272	388	483					54.2
Arrowsmith	130071	D	IZ	1.2	.0	1.1	101	59.5	28.6	24		.9	.0	6	1	372	169	407					54.0
Arthur	153284	L	I	1.2	.1	2.2	51	55.0	37.2	12		.3	1.0	4	1	552	421	557	7.4	48	X	X	55.7
Ashkum	110440	D	IZCl	1.6	.2	Tr	23	110.0	47.9	19		.4	1.1	50	76	256	291	444	7.3	33			53.5
Ashland	114562	D	I	2.0	.1	Tr	10	93.4	43.8	16	.1	.2	1.7	43	89	368	472	574					49.5
Ashmore	153661	L		Tr	.0	Tr	3	88.9	47.7	19		.2	3.5	16	70	336	414	478					52.5
Ashton	113129	D	IZCl	1.9	.3	Tr	9	91.1	29.4	19		.1	42.9	18	78	284	419	470					52.2
Assumption	154964	D	IZClF	Tr								.3	.7	7	125	162	204	272					54.0
(treated)	115514	D		16.4	.1	2.3	13	95.1	37.9	21				6		204	74	344	8.0	5			65.0

Athens	118446	S	Cl	.2	.0	1.7	170	20.1	9.9	14		.1	.1	7	56	360	394	448					
Atkinson	108417	D	IZCl	5.0	.1	7.1	14	85.9	43.1	28		.7	1.6	9	34	416	92	512					54.6
Atlanta	115838	D	IZCl	1.6	.0	2.2	22	111.8	34.4	30		.2	1.4	1	1	440	393	455	7.3	55			56.0
Atwood	152920	D	IZCl	.2								.4	.5	2	3	468	379	470	7.3	59			56.0
(treated)	115180	S		.7	Tr	Tr	59	59.9	20.4	9	.3	.1		4		456	96	475	7.7	22			59.0
Aurora	149496	L		2.9	Tr	.0	24	118.3	40.7	16	.1	1.1	2.6	46	29	264	234	386					64.4
Austin Acres	150612	S	IZCl	.7	.2	Tr	35	98.1	48.3	16		.4	1.5	8	156	340	463	579					53.8
Ava	113844	D	I	2.8	.1	1.3	68	76.5	26.2	18	Tr	.1	.2	7	137	368	444	580	7.1	72			57.5
Aviston	144258	S		.4	Tr	Tr	19	82.8	38.7	12	.2	.1	.8	39	2	392	299	481					57.5
Balmoral Hts.	146506	L		.3	.1	.4	13	58.1	41.9	24		.5	1.6	1	19	384	366	424					52.0
Barrington	106280	L		.7								.4	1.1	2	76	264	318	385					51.3
Barrington Woods Subdn.	133506	D	Cl	.3								.7	.3	45		168	424	659					52.2
Barry	141043	L	Cl	1.0	.0	.5	1	83.1	53.0	21		.1	.2	9		340	348	363					55.0
Bartlett	106281	S		1.1	Tr	.9	44	61.7	24.8	10		.3	.3	4	41	380	426	435					51.0
Batavia	132088	L		.1	Tr	.3	136	5.6	1.5	10	.8	1.0	.5	7	47	294	257	380					53.5
Baylis	148580	D		.6	.3	Tr	26	97.4	.3	16	.3	1.6	1.9	51	1	242	20	360				X	59.0
Beardstown	152606	L		1.0	.1	5.1	29	60.9	21.4	16		.2	1.2	39	124	260	388	512					
Beaverville	119060	LS		1.0	.0	.3	83	115.6	80.6	16		.3	.2	29	4	272	241	302					53.9
Bedford Pk. Dist.	107219	L	Cl	.4	.0	.8	50	162.1	49.0	13		.5	1.3	28	516	224	621	1007					58.6
Beecher	107893	D	I	3.7	.2	Tr	18	75.1	23.1	19		.7	.0	3	456	240	607	870	7.2	39			52.5
Beecher City	124146	L		.2	.1	.1	4	97.6	42.2	19		.3	10.6	6	50	252	283	338					55.2
Belmont Highwood Wtr. Dist.	110602	D		1.4	.0	Tr	15	69.5	35.1	14	.3	.2	.5	7	128	284	418	471	7.6	19			50.3
Bellflower	144164	S		Tr	Tr	.2	284	2.1	1.5	9	.2	.4	1.2	5	18	324	318	352					54.0
Bellmont	144603	S	Cl	.5	.1	.4	188	31.9	7.1	22		1.0	1.1	63	1	539	12	696					60.5
Bellwood	125513	L	Cl	.3	.0	.4	4	78.0	36.0	11	.1	4.0	.0	106	63	304	109	617					65.0
Belvidere	153623	D	IZCl	.4	.1	2.3	49	69.4	35.9	23		.2	2.4	3	30	316	343	354					53.0
Bement	115722	S		.1	.1	Tr	38	56.6	22.7	18	.3	.3	.1	22	2	400	321	444					55.2
Bensenville	146498	D		7.1	.2	.6	8	118.9	55.8	21		.9	2.0	28	73	200	235	367					59.5
Benson	109421	L		.6	.0	.7	27	94.3	56.2	13		.2	.2	25	144	364	527	610					
Berkeley	106311	D	IZ	.6	.5							.4	2.8	4	164	348	467	579	7.2	59			50.6
Bethalto	150348	D	IZ	1.7	.2	Tr	42	77.0	33.2	26		.1	1.5	17		324	450	524					55.0
Bethany	115188	L	IZ	.2								.3	10.1	9	1	400	329	432	7.2	63	X	X	55.5
(treated)	115176	L		.3	Tr	1.8	454	178.8	69.2	14				12		424	74	470	7.7	21			57.8
Biggsville	108143	L	IZ	2.7	.1	Tr	25	142.4	39.4	21	.2	5.5	.2	195	1192	208	732	2287					65.0
Black Hawk Hts.	147067	L		1.3	.1	Tr	15	106.8	49.6	11	.2	.3	2.6	3	206	352	518	696					53.0
Blue Crest Subdn.	147020	D	IZ	.7	.2	Tr	6	74.4	33.3	22		.2	.5	18	187	284	471	565					51.4
Blue Mound	115619	D	IZCl	.1								.3	.7	19	81	224	323	365					55.0
(treated)	115782	D		2.7	.2	Tr	26	128.0	.2	14	.1	.2		19		232	85	369					57.5
Bluffs	152613	D	ILCl	.2								.2	1.0	16	198	376	550	679					
(treated)	113691	L		.9	.1	.1	3	83.4	39.9	17		.2		27		140	216	474					
Bourbonnais	112688	D	I	3.2								.0	2.4	3	43	328	373	401					52.7
Bowen	128639	LS		.4	.0	1.0	399	76.0	31.0	11		.1	.4	1		416	357	434					54.5
Bradford	108719	S	Cl	.2	.0	.7	257	116.3	59.3	11		1.4	3.9	500	249	220	318	1428					68.5
Bradley	112689	S	ICl	.2	Tr	1.0	267	86.7	44.8	11		1.4	13.3	270	446	240	535	1354	7.3	30			58.0
Braidwood	107909	L		.3	.0	Tr	67	50.0	29.7	12	.4	1.2	.1	250	362	256	401	1199	7.4	25		X	58.6
Brickman Manor Subdn.	152022	L		.9	.0	Tr	49	127.2	70.7	13	.4	.3	1.9	7	195	176	247	458					51.3
Bridgeview	147975	D	I	1.0	Tr	1.7	68	51.0	18.3	21	1.7	.3	.5	23	401	264	608	879					52.0
Broadlands	144123	L		2.9	Tr	Tr	21	143.8	53.1	16	.2	.7	.4	4	4	344	203	368					54.5
Brookhaven Manor	146606	D		.4	.1	Tr	4	66.9	8.9	15		.1	.9	8	207	396	578	729					51.2
Brookport	113289	D	ICl	Tr	Tr	.2	114	85.7	33.0	23		.3	Tr	4	22	184	204	238					60.0

City	Laboratory Number	Source	Treatment	Iron Fe	Manganese Mn	Ammonium NH_4	Sodium Na	Calcium Ca	Magnesium Mg	Silica SiO_2	Boron B	Fluoride F	Nitrate NO_3	Chloride Cl	Sulfate SO_4	Alkalinity (as $CaCO_3$)	Total Hardness (as $CaCO_3$)	Total Dissolved Minerals	pH	Carbon Dioxide CO_2	Methane CH_4	Hydrogen Sulfide H_2S	Temperature °F
Brownstown	114770	L		.5	.1	.4	97	33.2	18.7	15		.1	.3	45	178	348	350	678					58.0
Buckingham	112780	D	IZ	1.4	.2	3.3	56	188.4	73.2	26		.6	Tr	22	51	288	160	398	7.7	15			53.3
Buckley	116414	D	IZ	.1								.3	.4	4	531	344	772	1149	7.1	70			54.3
(treated)	116648	D		2.4	Tr	1.1	34	59.1	36.5	14	.4	.2		6		340	21	1088	7.5	27			55.0
Buda	153663	LS		.3	Tr	.5	46	87.0	21.5	7	.3	.6	2.3	1	1	372	298	375					53.0
Buffalo Grove	148334	S		.2								.8	.5	18	119	258	306	449					57.9
Buffalo Rock St. Pk.	110855	D		1.4	.1	Tr	12	75.0	36.9	15	.2			59	78	316	437	514					53.2
Bureau	108163	L		.4	.0	.2	783	13.5	4.7	11		5.5	.0	770	176	488	54	2062	8.0	12			55.5
Burlington	111400	D	I	3.1	.0	.4	12	78.2	34.7	34		.3	10.8	5	4	344	338	385	7.5	29			51.0
Bushnell	113769	S	Cl	.3	.0	1.3	506	100.8	41.2	14		3.5	.2	400	649	236	422	1874				X	
Byron	112656	S	Cl	.4	.0	Tr	1	50.2	33.6	12		.1	.4	2	16	244	264	256					55.0
Cabery	152585	L		.2	.0	Tr	254	150.8	64.0	10	1.0	1.0	9.0	21	923	196	640	1619					54.0
Camargo	154790	D		14.0								.4	6.0	13		632	332	661				X	55.0
Cambridge	108415	S		.2	.0	3.2	168	45.2	18.8	13		.8	1.7	50	139	348	190	640					59.7
Campbell Hill	108603	S	IZ	2.1	.1	.7	18	142.0	41.9	17			1.0	9	167	380	525	617					60.1
Camp Point	152607	D	ILCl	.1	1.7	Tr	13	146.0	54.7	24	.1	.1	3.0	12	184	408	590	708					57.5
(treated)	113931	D		Tr								.1		7		408	310	882					
Campus	110183	D	IZCl	1.0	.0	2.7	140	59.1	25.0	15		.5	.2	82	211	228	251	692					
Capron	108435	L	IZ	.9	.0	.4	1	80.1	37.1	27		.2	1.1	2	5	348	353	376	7.2	56			51.2
Carbon Cliff	126200	S	A	.6	.0	2.8	413	101.9	47.4	12			.0	630	310	216	450	1707					60.0
Carbon Hill	112612	S	Cl	.3										272	342	244	421	1224	7.3	30		X	56.6
Carol Stream	147510	L		.9	Tr						.2	.5	.3	3		260	304	366					51.0
Carpentersville	111396	S	ILCl	.1	.0	.5	40	51.8	20.2	14		.8	.6	10	14	272	213	309	7.2	43		X	55.7
Carrollton	116393	L	LCl	.1	Tr	Tr	4	82.7	25.9	20		.2	11.5	5	32	272	314	355					58.0
Carthage	144582	D		.7	.0	4.6	65	70.5	25.4	13	.9	.2	1.1	10	4	416	281	437					55.0
Cary	155186	L		1.3	.0	.9	8	73.5	40.5	18	.1	.4	1.1	7	73	284	351	396					52.0
Casey	149499	D	ILCl	2.3	.1	5.3	83	65.2	29.7	16	.1	.5	.1	48	1	412	285	498					55.0
(treated)	155736	D		Tr				18.7	16.3					49		244	114	320	10.3				
Caterpillar Trails Pub. Wtr. Dist.	142070	D	I	.9	.1							.1	.2	4		328	300	336					54.8
Catlin	118847	S	Cl	.5	.0	.8	121	115.1	48.6	26		Tr	3.2	74	264	372	490	892					
Cedar Point	110703	LS		3.6	.0	1.1	297	53.7	22.1	15		1.1	1.7	308	183	248	225	1023					
Cedarville	117974	L		2.9	.2	.2	12	137.3	56.6	23		.1	.3	14	64	516	576	628	7.0	139			50.6
Cerro Gordo	147646	D	IZCl	.8	Tr	Tr	16	85.5	35.7	14		.3	1.0	21	108	244	320	382	7.1	62			55.0
Chadwick	108716	S	A	.4	.0	.7	1	89.2	39.5	17		.2	.8	2	2	384	386	377	7.1	92			
Chain O'Lakes St. Pk.	146793	L		1.6	Tr	.1	31	46.0	31.0	20	.2	.7	1.7	6	9	292	243	320				X	51.8
Champaign-Urbana	142030	D	ILCl	.2	.1	.5	31	54.3	28.0	14	.2	.2	1.5	5	1	312	251	312					
Chandlerville	114560	D	L	Tr	.2	Tr	18	115.8	44.1	18		.1	57.8	23	176	248	471	592					
(treated)	114559	D		.1								.1		23		36	137	355					
Chapin	106883	S	ICl	.8	Tr	.5	75	62.3	38.2	30			.4	6	8	460	315	521	7.2				56.3

Chatsworth	119574	D	IZ	1.9	Tr	1.0	30	96.4	40.8	19		.5	.4	3	162	304	409	503					54.0
Chautauqua	129053	L	Cl	.1	.0	Tr	8	84.0	16.6	23		.1	9.3	5	35	244	278	325					56.0
Chebanse	152589	L		.1	.0	1.0	60	68.2	31.5	9	.8	.6	1.0	6	168	248	300	501					54.0
Chenoa	144494	D	IZCl	2.2										490		340	238	1238				X	62.6
(blended)	116033	D	IZCl	.6								.5		149		484	142	770	7.5	41			60.0
Cherry	111311	D	AIZ	1.8	.1	Tr	1	72.6	28.5	16		.2	.9	5	69	220	299	324					53.0
Chicago Hts.	108579	L	ICl	2.2	.1	.6	24	105.9	53.3	20			1.7	3	157	368	484	587	7.1	77			51.5
Chillicothe	119774	D	Cl	Tr		Tr	4	80.5	30.5	21		.3	10.8	14	95	208	327	381					57.1
Chrisman	114991	D	ICl	2.5	.0	15.5	109	6.7	25.2	26		.3	Tr	51		480	271	549	7.8	19			55.0
Cisco	123280	D	I	12.0	.0	24.2	68	100.7	43.5	35		.1	.0	2	7	636	432	657					54.8
Cisne	115273	S	I	1.5	.1	1.2	83	90.0	27.0	34		.1	.2	22	35	432	336	570					57.4
Cissna Park	152586	D		.9	.1	2.1	23	82.8	37.2	15	.2	.2	.8	3	25	384	360	424					54.5
Citizens Bluett Co.																							
Subdn.	152021	L		.4	.0	Tr	58	55.0	33.2	14	.3	.4	1.7	4	183	204	274	475					
Claremont	144602	S		Tr	Tr	.1	280	46.5	22.9	12	.2	.7	2.4	10	200	596	210	950					59.0
Claredon Hills	110351	L	IZF	.5	.0	.8	26	145.2	46.3	23		.3	.7	5	215	380	554	687	7.0	100			51.5
(treated)	110888	L		.1								.3		5		352	36	673	7.7	20			53.0
Clifton	116365	L	I	.8	Tr	2.5	53	105.2	44.2	12		.5	.4	4	243	308	445	664	7.1	71			53.0
Clinton	137291	D	AIClZ	3.1	.3	2.9	83	71.6	35.8	15	.4	.3	.1	56	1	436	326	523					55.5
Coal City	112573	LS		1.2	.0	1.4	328	112.2	51.2	11		.6	.5	225	517	352	491	1470	7.3	52			52.7
Coal Valley	112248	L	I	.6	.0	Tr	95	45.4	19.7	15		.3	11.8	6	21	364	195	428				X	53.0
Cobden	113372	S	IZ	.1	.0	Tr	20	69.4	6.8	17		.1	2.4	9	44	180	202	295	6.0	111			58.0
Colchester	113831	D	IZCl	2.3	.4	1.1	104	190.1	64.2	17		.1	Tr	10	480	456	740	1132					48.5
(treeted)	113830	D		Tr								.2		13		468	173	1172					
Colfax	115949	D	ILCl	1.8	.0	13.3	104	91.1	36.3	31		.3	.4	59	1	556	377	664	7.1	127			53.7
(treated)	116037	D		.2								.3		66		208	76	374	10.2				58.0
Collinsville	138478	D	L	.8	.4	Tr	4	87.4	35.9	35	.1	.3	.7	7	47	316	366	412					57.0
Compton	153621	D		1.2	.0	.1	34	48.2	21.0	16	.3	.6	.9	1	1	280	207	309					52.5
Cornell	132423	D		.5	.1	.8	305	54.3	27.9	22		.6	.7	230	41	548	251	1038					53.5
Country Club Hts.	150130	L	L	1.2								.1	.7	24		380	670	847					
Country Club Highlands	146383	L	Z	.8	Tr	Tr	52	89.4	52.3	20	.5	.5	.9	6	237	296	439	678					53.5
Country Club Hills	149638	L	ZCl	.3	Tr	.6	48	117.0	68.0	8	.8	.1	.7	6	309	348	572	791					
Cowden	115229	D		.1	Tr	Tr	3	87.3	34.5	20		.1	9.5	7	62	284	361	420	7.0	61			
Creal Springs	130823	S	A	1.9	Tr	4.4	67	55.8	22.4	20		.3	.5	8	14	364	232	405	6.9	113			59.5
Crescent City	152591	D		.9	.1	Tr	31	85.8	35.6	17	.3	.2	4.8	5	94	320	361	479					55.0
Creston	112799	LS		1.8	.0	.7	24	43.9	28.0	16		.5	.2	2	1	276	225	300					53.8
Crete	107892	L	Cl	.3	.0	.3	3	99.0	44.0	19		.1	Tr	3	41	388	429	452	7.1	81			51.7
Creve Coeur	152390	D		.1	Tr	.1	27	121.8	50.2	18	.2	.2	2.7	22	175	356	511	640					56.0
~~Crossville~~	~~147487~~	~~D~~	~~IZ~~	~~.3~~	~~.2~~	~~Tr~~	~~6~~	~~98.8~~	~~29.7~~	~~14~~	~~.0~~	~~.4~~	~~1.5~~	~~28~~	~~33~~	~~308~~	~~369~~	~~407~~					~~59.0~~
(treated)	114110	D		.1								.1		383		352	132	614	7.6	25			55.0
Crystal Lake	110907	S	L	.3	Tr	.3	11	53.2	26.3	14		.3	1.0	5	21	236	241	292	7.4	23			61.2
Cuba	152615	L	AIZ	.6	.0	1.8	544	169.8	68.0	10	.7	2.8	.8	370	1109	216	704	2482					
Cullom	111683	LS	AICl	3.6	.1	.1	141	187.9	69.3	19		.8	8.1	14	888	112	755	1438	7.4	11		X	53.3
Cutler	113695	S		.7	Tr	.6	53	49.0	15.4	14		.1	.5	25	14	252	186	313	7.5	19			63.2
Dakota	153352	S		1.1	.0	Tr	1	62.1	33.0	10	.0	.2	.6	1	12	280	291	292					
Dalton City	141404	D	AICl	6.0								.3	.5	25		604	412	661					56.0
Dalzell	111333	D	Z	.3	.0	Tr	11	102.8	45.8	21		.1	4.5	11	117	328	445	535					
Danforth	152828	L	Cl	.5	.0	.6	329	9.1	4.0	12		1.8	.8	290	4	420	48	969	8.0	12			55.0
Danvers	115974	D	AIClZ	1.8	Tr	11.2	140	65.5	30.8	22		.1	.4	54	1	548	322	656	7.3	81	X		55.5
(treated)	116041	D		1.3								.0		55		564	104	672	7.7	45			60.5

City	Laboratory Number	Source	Treatment	Iron Fe	Manganese Mn	Ammonium NH_4	Sodium Na	Calcium Ca	Magnesium Mg	Silica SiO_2	Boron B	Fluoride F	Nitrate NO_3	Chloride Cl	Sulfate SO_4	Alkalinity (as	Total Hardness $CaCO_3$)	Total Dissolved Minerals	pH	Carbon Dioxide CO_2	Methane CH_4	Hydrogen Sulfide H_2S	Temperature °F
Davis	144365	LS		.2	.0	.1	6	63.7	33.2	11	.3	.1	2.1	2	9	296	296	298					52.0
Decatur	138932	D		2.6	.1	1.4	38	74.1	33.6	15	.4	.1	.5	14	3	388	324	404					55.0
Deer Creek	109235	D		.6	Tr	.2	9	73.2	28.2	20		.1	1.2	1	4	312	299	323					
DeKalb	153624	S		.2	.0	.5	21	58.2	29.3	8	.3	.5	.7	1	4	308	266	307					55.0
Deland	152582	D	AIClZ	2.4	.0	17.9	80	106.0	51.1	29	.2	.4	.6	17	1	624	475	655					56.0
(treated)	115781	D		.3								.2		16		688	66	738					57.0
Delavan	109277	D		.2	Tr	1.5	3	77.0	29.6	26		.2	.8	2	1	320	314	328					54.5
Depue	111363	LS	I	.7	.0	1.1	119	53.2	22.5	14		.7	.9	88	64	296	226	546					65.0
Des Plaines	132361	L	ILCl	.4	.1	.7	76	73.7	32.3	9		1.0	.0	19	247	200	317	614					60.0
(treated)	106432	L		Tr										36		50	104	328					66.0
Diamond	153729	S		Tr	.0	1.6	267	80.3	44.5	7	.8	.8	.5	245	349	260	384	1188					57.1
Dickson Mounds St. Pk.	144394	L		3.3	.0	1.3	1282	32.0	15.0	9	2.1	1.6	1.2	1480	286	546	142	3514					60.0
Dieterich	144608	D	AIZ	2.0	.2	.1	73	131.5	55.7	19	.1	.3	2.1	34	273	384	558	863					59.0
Dise Subdn.	146024	L	Z	.9	.0	Tr	99	158.4	34.0	12	.2	.1	1.0	20	326	384	536	882					52.0
Dixon	113127	S	Cl	.6	Tr	.1	4	66.9	34.0	14		.3	Tr	2	13	300	307	308					57.4
Dixon St. Hosp.	128882	S	Cl	.5	.0	.1	9	62.9	34.6	10		.6	.3	7	20	288	300	314					57.0
Dongola	145897	L		.4	Tr	Tr	8	77.0	8.0	14	.0	.1	6.3	12	16	204	226	267					56.5
Donovan	116417	D		2.3	.0	.7	64	40.0	9.0	17		.7	.2	30	1	236	137	315	7.7	12			54.0
Downers Grove	148181	L	Cl	.8	.1	Tr	12	90.7	35.2	13	.1	.1	1.8	9	115	264	372	432				X	51.8
Downs	144163	D	AICl	2.6	.0	8.4	45	95.0	40.0	23	.6	.4	1.1	5	1	508	402	514					56.0
Durand	153357	LS	I	Tr	.0	Tr	1	68.7	36.0	14	.0	.2	10.5	2	15	296	320	332					
Dwight	110368	D		1.4	.0	3.6	154	108.5	43.1	16		.6	.6	50	407	300	449	995					
Earlville	110626	S		.5	.0	Tr	13	56.3	26.5	16		.4	2.5	4	4	268	250	279					52.5
East Alton	116786	D	Cl	.2	.3	Tr	24	108.7	30.5	34		.4	11.5	27	171	224	398	538					
East Dubuque	108575	S		.3	Tr	.1	2	54.3	32.2	13		.2	1.0	3	20	248	269	272	7.3	33			61.6
East Dundee	111398	D	Cl	1.6	.0	5.6	3	5.7	38.2	23		.3	1.2	6	42	340	372	414	7.5	28			52.6
E. Moline St. Hosp.	113406	LS		.8	Tr	1.8	174	88.8	38.3	17		.3	Tr	210	106	356	380	868	7.3	44			59.2
Easton	153764	DI		2.1	.2	Tr	3	63.1	28.2	18	.1	.2	1.0	1	24	252	274	284					55.0
East Peoria	122549	D		.3	.0	Tr	17	104.6	37.9	19		.1	17.9	29	129	264	418	536					53.0
Eastwood Manor Subdn.	148179	L		.4	Tr	Tr	7	60.1	33.9	20	.1	.3	1.4	2	10	292	290	300					51.0
Edgewood Acres	146379	L	Z	2.2	.1	Tr	148	177.8	94.2	16	.1	.1	.7	330	319	356	832	1331					52.0
Edinburg	107923	D	AIZ	22.5	.9	1.7	21	63.3	26.0	38			.4	6	3	304	266	353	6.6	196		X	53.8
Edwardsville	146647	D	IZCl	2.1	.2	.5	7	63.8	18.2	35	.0	.1	1.2	6	51	188	235	315					58.5
Elburn	111420	D	IA	1.8	Tr	2.5	35	53.9	28.8	23		.3	1.0	2	2	332	254	350					51.5
Elgin	124959	S	IALZCl	.1	.0	.5	34	65.0	21.9	11		1.0	.2	5	12	308	253	339					57.0
(treated)	112421	S		.0								.4		7		96	86	155	9.0	1			57.5
Elgin St. Hosp.	132090	LS	Cl	.7	Tr	Tr	27	114.5	56.1	15		.0	10.9	51	199	288	518	673					53.7
Elizabeth	108630	L		.7	.0	.1	2	74.0	39.9	12		.1	1.3	3	39	310	351	361	7.0	81			52.5
Elk Grove	146377	LS		.1	.0	.6	47	39.4	26.5	9	.4	.9	.5	21	124	276	332	481					
Elkhart City	115818	D	IA	2.4	.0	.8	35	89.8	38.1	30		.1	.2	17	3	432	381	462	7.1	97			55.0

Elliott	121726	D		1.1	.0	.8	51	60.0	24.8	19		.7	.1	1	61	300	252	408				54.1
Ellis Grove	140960	D		5.4								.1	.2	8		324	332	365				
Elmhurst	133385	S		.4	.0	Tr	57	76.7	26.8	2		.9	2.7	21	109	280	302	474				58.2
Elmwood	125277	LS		.5	.0	1.6	390	84.9	31.0	15		2.8	.2	215	648	216	340	1513				76.8
El Paso	109423	D	AIClZ	.1	Tr	4.9	30	86.2	34.9	25		.2	1.4	6	4	424	359	435				53.0
(treated)	109424	D		Tr						24		.6		9		420	11	467				
El Vista Subdn.	151182	S		1.9								.7	1.1	184		272	530	1155				
Elwood	147722	L		.7	.0	Tr	40	69.3	34.7	15	.3	.3	2.6	5	48	344	316	410				54.0
Emden	115827	D	IA	4.1	.0	2.8	19	76.2	32.8	34		.1	4.7	4	1	364	325	384	7.4	35		
Emroy Howard Subdn.	146389	L		1.4	Tr	Tr	36	87.9	51.5	17	.3	.5	1.4	4	130	368	432	579				52.2
Enfield	117248	S		.6	.0	.8	487	23.5	14.5	12		3.0	1.6	144	161	808	127	1330	8.0	20		59.6
Equality	123085	S		.0		2.0	196	14.1	5.4	19		.3	.9	14	1	468	57	529				59.1
Erie	153619	L		Tr	.4	Tr	2	45.7	15.4	22	.1	.2	22.9	2	28	132	178	246				53.5
Eugenia Subdn.	147068	S		.2	Tr	Tr	74	91.9	42.3	9	.3	.2	2.8	35	251	252	404	696				57.2
Fair Acres Estates	149558	L		7.5	Tr	3.7	66	61.3	27.4	11	.0	.3	.3	5	39	372	266	434			X	52.0
Fairbury	110259	D	AICl	.4	.2	3.8		86.5	36.0			.2	10.9	6	116	240	365	410				52.0
(treated)	110260	D		.0								.2		8		40	104	211				
Fairmount	121864	S	I	1.0	.1	.3	20	86.8	37.7	24		.2	Tr	22	86	296	372	471				54.4
Fairview	127314	S		3.5	.2	1.5	388	94.1	38.5	12		3.5	.2	210	670	248	394	1584				71.8
Farina	149873	S		.2	.1	Tr	61	72.8	28.9	25	.0	.3	2.4	26	6	390	301	458				58.5
Farmer City	152583	D		.8	.0	4.6	170	69.3	27.1	16	.2	.3	.7	84	1	536	285	712				55.0
Farmersville	144804	D	I	1.1	.0	Tr	23	74.3	31.9	16	.0	.3	.3	7	67	288	317	381				58.0
Farmington	146687	S		.5	Tr	Tr	634	43.9	18.7	11	1.0	2.4	.8	530	462	420	187	1965				74.0
Fayetteville	149494	D	AICl	5.3	.2							.1	.2	4		396	355	392				58.5
Fernway Subdn.	152020	L	Z	.5	.0	.2	193	46.0	15.3	20	.1	.5	.3	2	208	380	178	695				
Findlay	115228	D	IZCl	4.8	.0	11.3	148	58.9	27.9	23		.3	.4	82	1	500	263	642		62		57.8
(treated)	115512	D		.4								.3		85		500	111	673	7.4	48		59.2
Fisher	116783	D	AIZ	1.9	Tr	14.0	8	92.9	34.9	29		.2	.3	2	91	336	376	461	7.3	49		54.5
(treated)	116784	D		.2										83		364	84	640	7.6	23		55.0
Fithian	144125	D		.1	Tr	Tr	8	78.0	27.3	13	.2	.2	3.4	12	83	220	308	369				56.5
Flanagan	110150	D		.2	.0	2.8	157	25.0	14.1	18		.5	.2	15	121	396	121	614				54.0
Flat Rock	141547	D		.3								.1	.3	11		244	228	268				
Flossmoor	147271	L	Cl	.2	Tr	.5	51	164.3	72.7	10	.7	.5	.5	4	469	328	710	994				52.7
Forest Homes--Maple Pk. Pub. Wtr. Dist.	157707	D		9.2	.5	3.0	28	55.2	17.5	23	.1	.2	1.2	2	2	272	210	295				57.0
Forest Lake Addn.(treated)	151194	D	Z	.1	Tr							.4	1.2	7		116	1	1168				50.1
Forrest	110083	D	ICl	2.1	.0	3.6	14	72.1	35.3	22		.5	.2	3	1	360	326	358				53.0
Forreston	153353	S	I	.4	.0	Tr	1	63.2	33.2	12	.0	.2	.5	1	27	268	295	286				
Fox Lake	107552	D	I	.9	.0	.0	5	85.1	42.2	27		.1	.4	10	31	352	387	402				51.6
Fox Ridge St. Pk.	149506	D		3.1	.4	2.7	196	14.1	7.9	11	.4	1.8	.1	6	1	492	68	562				58.0
Fox River Grove	146280	L		2.1	.0	.1	9	78.8	43.2	17	.1	.3	.3	9	75	304	375	433				51.5
Frankfort	107859	L	Cl	1.1	.0	.5	6	101.2	49.4	22		.4	.0	7	90	368	456	495	7.1	77		51.4
Franklin Grove	153618	LS	ICl	1.6	.1	Tr	3	68.4	32.6	11	.1	.2	.4	1	13	296	305	377				51.5
Freeport	154515	D	AICl	2.4	.1	.5	17	107.0	44.4	14	.1	.2	.5	25	113	336	450	530				
Fulton	112156	S		.1	.0	Tr	2	59.6	31.0	12		.4	2.2	5	22	248	277	308				58.0
Galena	108526	S	IA	.2	.0	.1	3	49.0	31.6	12		.1	3.9	1	19	236	253	265	6.9	82		57.6
Galesburg	145738	D	ClF	.5	.2	1.2	298	55.7	21.3	13		.2	.1	3	364	172	184	210				53.5
Galva	112718	S	A	.1	.0	1.1	281	29.2	13.0	12		3.0	.1	148	220	304	127	898				65.0
Gardner	124726	S		5.1	.0	.9	323	27.2	12.1	15		3.5	.0	245	142	328	118	975				59.3

City	Laboratory Number	Source	Treatment	Iron Fe	Manganese Mn	Ammonium NH_4	Sodium Na	Calcium Ca	Magnesium Mg	Silica SiO_2	Boron B	Fluoride F	Nitrate NO_3	Chloride Cl	Sulfate SO_4	Alkalinity (as $CaCO_3$)	Total Hardness	Total Dissolved Minerals	pH	Carbon Dioxide CO_2	Methane CH_4	Hydrogen Sulfide H_2S	Temperature °F
Gary Ave. Gardens	148125	L		.2							.1	.5		1		264	292	340					51.5
Geneseo	111087	D	ICl	1.5	.2	Tr	25	154.4	66.5	22		Tr	.7	49	272	360	660	840	7.0	95			52.0
Geneva	146774	S	ICl	.7	Tr	Tr	40	55.6	21.6	9	.3	1.1	2.7	25	27	248	224	335					60.3
Genoa	153622	S		1.0	.0	Tr	19	65.6	34.0	14	.1	.4	2.5	3	11	328	304	407					52.0
Germantown	145463	D		Tr	.0	.0	42	75.3	28.7	16	.1	.4	15.4	17	103	254	307	465					58.0
Giant City St. Pk.	152304	S		5.9	.1	.1	18	82.4	16.9	16	.0	.1	1.5	13	50	244	276	355					62.0
Gibson City	119440	D		1.0	.0	.1	6	64.7	33.9	18		.2	3.5	2	27	280	301	341	7.2	45			
Gilman	129689	D	IZ	2.4	Tr	2.1	79	143.0	59.2	19		.4	.2	24	411	316	601	964	7.7				54.2
(treated)	116353	D		.2			359	3.8	6.8			.4		23	436	332	38	1036	8.0	8			55.0
Glasford	109096	S	A	1.0	.0	1.6	586	57.5	18.9	14		4.0	.1	450	565	276	222	1866				X	70.0
Glen Carbon	146493	D	Z	.4	.2	Tr	23	119.2	52.7	20	.2	.3	1.9	17	252	276	515	666					57.5
Glendale Addn.	149637	S	Cl	1.1	Tr	Tr	86	55.8	25.7	11	.3	.3	11.8	8	34	376	245	452				X	55.5
Glen Ellyn	146388	L		.5		.1	52	54.5	35.3	16	.4	.7	1.4	5	118	264	282	456					51.5
Glen Ellyn Hts. Subdn.	153024	L		.3	.0	.4	211	31.2	12.6	10	.6	4.0	.8	10	180	388	130	697					53.6
Glen Ridge Subdn.	154744	L	ZCl	1.0	Tr							.3	.4	5		356	650	822					52.0
Glenview Countryside	147069	LS		.5	Tr	Tr	91	96.0	33.0	9	.3	.7	1.8	37	254	256	376	693					56.5
Golden	118658	D		.7	.4	.2	51	84.3	26.5	36	.0	.4	.1	1	60	368	320	487	6.8	147			54.8
Golf-Greenwood Subdn.	149544	S		1.2	Tr	1.1	187	84.3	37.5	10	.8	.1	.2	130	334	240	365	949					60.5
Goodfield	148061	D	AICl	1.4								.6		1		312	218	311					54.5
Gorham	152730	D	I	28.0	.9							.1	.2	5		288	285	301					
Grand Ridge	110769	D		.4	Tr	1.7	102	21.4	11.6	12		1.3	6.0	8	1	312	101	358					53.0
Grand Tower	126019	D	Z	.1	Tr	.0	25	103.9	10.7	21	.2	.0	7.8	8	46	292	304	408					58.0
Grant Park	117118	L	Cl	4.1	.1	.4	18	116.9	45.8	25		.1	.2	21	98	388	481	567					
Granville	109928	S	Cl	.1	Tr	.4	316	61.8	23.2	14		1.1	4.8	375	150	248	250	1091					67.0
Grays Lake	151192	L	Cl	Tr	.0	Tr	92	25.2	16.1	10	.5	.9	.9	6	212	100	129	424					52.2
Grayville	118846	D		.5	.3	Tr		93.1	21.6	18		.0	.9	10	48	256	322	354					
Greenfield	150645	D	IZCl	4.9	.4	.1	24	86.3	40.9	17	.0	.2	2.2	18	125	280	384	485					55.5
Greenup	149508	D		.4	.1	Tr	11	68.1	28.8	15	.2	.1	9.3	5	60	236	289	345					54.0
Green Valley	124958	D	Z	1.9	.1	.1	4	76.1	32.1	22		.1	.0	7	51	268	323	365	7.5			X	54.0
Greenview	121406	D		2.9	.1	Tr	1	74.1	30.9	21		.3	.4	7	57	244	312	351					54.5
Greenville	116363	D	ClF	.1	Tr	Tr	44	139.9	47.9	27		.1	4.5	42	201	372	547	776					58.0
Gridley	132431	D		.9	.1	Tr	181	42.9	24.0	17		.5	11.4	16	238	320	207	726					56.0
Griggsville	114728	D	Cl	.0	.0	Tr	1	92.7	31.3	20		.1	11.9	6	26	316	361	369					53.0
Hammond	150542	L	IZCl	9.4	Tr	8.9	46	82.9	38.2	19	.3	.4	.6	32	1	444	364	500					
(treated)	115786	L		.5								.2		31		432	142	505					64.0
Hampshire	148811	L		.6	.1	1.2	29	54.6	27.7	17	.1	.3	.6	5	1	310	250	315					51.3
Hampton Park	149965	S		.4	Tr	.9	115	47.2	13.9	8	.3	1.1	1.2	47	81	274	175	478					59.0
Hamel	144528	D	I	2.8	.0	5.9	138	55.0	26.9	14	.4	.9	1.1	60	1	476	248	594					56.0
Hanna City	127945	S		2.0	.0	1.8	420	68.9	27.8	14	1.0	3.5	.7	233	619	232	287	1543	6.9				76.0
Hanover	108631	S		.8	.0	.1	1	47.4	32.9	16		.1	1.0	2	22	228	254	263	7.5	18			58.6

Hardin	146385	D		Tr	.1	.2	15	102.0	41.9	21	.1	.3	1.1	23	68	356	428	501				58.0
Harmon	112899	D		2.5	.1	.3	16	120.2	55.8	20		.1	.1	36	218	288	530	682				53.0
Hartford	116680	D	ILCl	10.3	.6	.3	12	131.6	32.9	36		.2	.5	13	115	352	464	566				57.0
(treated)	126791	D		.1				51.8	31.1			.2		17		136	259	309				
Hartsburg	118251	D	ZCl	.1	.0	Tr	22	126.2	55.8	32		.1	123.0	32	131	312	545	694				58.0
(treated)	118391	D		Tr								.2	75.8	33		320	58	640				
Harvard	111090	D		.1	Tr	Tr	4	119.0	52.3	20		.0	10.6	38	1415	312	513	589	7.2	52		51.3
Harvel	144805	D	IA	4.2	.2	Tr	28	92.1	25.1	20	.2	.2	1.0	18	57	308	334	417				57.0
Harvest Homes--Waukegan Countryside	148235	D		.2							.5	.7		13	231	88	118	453				51.1
Hatlen Hts.	151697	S		.9	.0	Tr	48	80.0	22.7	10	.3	1.0	1.9	15	100	272	293	441				59.3
Havana	130814	D		.4	.1	Tr	2	44.9	15.6	19		.1	.2	3	25	152	177	197				
Hebron	146784	D		1.2	.1	.6	12	53.2	34.3	14	.1	.3	.4	3	1	296	274	297				51.1
Hecker	144699	S		.2	Tr	.1	247	5.5	9.0	10	2.7	4.8	2.7	20	42	480	18	640				59.0
Hennepin	153589	D		.1	.1	Tr	10	81.6	34.3	16	.2	.2	14.8	5	61	284	345	425				53.1
Henry	108854	D		Tr	.0	Tr	13	82.3	35.6	22		.2	36.2	16	58	268	353	436				55.0
Herscher	152587	S	IZ	.2	.0	1.0	358	87.7	44.0	8	.4	1.6	.9	365	399	252	400	1442				57.0
Heyworth	115894	D	IA	3.3	.0	5.2	107	71.6	29.3	21		.3	.4	96	3	408	300	590	7.4	42		53.5
Highland Hills Subdn.	146025	L		4.6	Tr	Tr	13	124.5	49.4	17	.2	.1	1.4	8	167	356	514	622				
Highland Shores Subdn.	146790	D		1.4	.1	Tr	6	69.2	35.1	20	.0	.1	.9	4	26	296	318	332				51.1
Hillside	106442	LS	Cl	.4			24	109.1	59.2					9	196	352	520	604	7.1	83		52.5
Hinckley	112097	S		1.0	.0	Tr	13	55.8	36.0	25		.3	3.3	3	6	304	288	325	7.7	16		51.5
Hindsboro	144126	D	I	1.6	Tr	.7	131	48.0	20.4	20	.4	.5	.1	36	1	440	204	523				56.0
Hinsdale	110514	L	IL	1.6	.0	.1	21	136.9	39.7	24		.1	3.3	6	181	352	506	631	7.1	69		
(treated)	110885	L		.1								.2		5		40	107	293	9.5	1		53.5
Hoffman Estates	146381	S		1.1	.0	.6	42	70.7	22.8	10	.4	1.0	.5	12	33	312	271	392				57.5
Homer	152174	D	I	.4	Tr	2.3	80	64.7	25.2	18	.5	.5	.1	28	6	400	265	478				
Homewood	125331	L	IZ	Tr	.0	.6	43	100.9	47.2	23		.5	.2	7	161	364	447	605				51.5
(treated)	107221	L		.1				11.0	3.5					54	305	352	42	884	7.3	50		54.8
Hoopeston	116551	D		2.1	.0	1.8	24	66.5	34.9	19		.3	.5	2	6	356	310	361	7.5	29		54.5
Hopedale	152388	D	ICl	2.9	.0	1.6	118	70.4	35.0	18	.2	.2	.8	155	3	360	320	627				56.0
Hudson	153665	D	IZ	2.3	.0	8.2	86	91.7	46.8	18	.2	.5	.9	5	1	624	422	644				54.2
Hull	114127	D	IA	5.5	2.7	.1	21	69.7	17.6	41		.8	.2	24	83	172	247	358				56.0
Hume	144129	D	IA	1.7	.1	.1	10	73.5	28.1	13	.0	.1	1.2	11	74	228	300	355				56.0
Huntley	148164	D	Cl	1.4	Tr	.1	6	86.8	43.2	24	.0	.3	1.9	12	68	346	440	437	7.4	34	X	52.0
Hutsonville	114507	D	Cl	.1	.0	Tr	10	100.6	19.4	19		.1	33.6	10	63	248	332	394	7.5	21		51.5
Illinois Beach St. Pk.	144672	S		.6	.0	Tr	123	23.8	12.4	48	1.0	.8	.4	27	223	120	123	525				52.7
Ill. Indus. Sch.--Boys	144427	S		.6	Tr	.7	21	64.7	25.0	7	.5	.7	.4	5	5	300	265	319				57.0
Ill.-Mich. Canal St. Pk.	93438	L		.9	.0	1.5	29	61.1	29.4	7			.2	14	30	290	274	358	7.1	43	X	53.3
Ill. Soldiers--Sailors Childrens Home	146495	D	Cl	1.3	.2	Tr	25	73.7	34.2	14	.2	.5	3.3	4	30	340	325	401				
Ill. St. Game Refuge	142388	D		5.8	.2	.1	8	86.1	23.8	26	.0	.2	.7	4	10	316	314	354				
Ill. St. Pk.	153218	S		1.9	.0	.5	76	77.5	37.0	7	.4	.6	1.2	93	82	296	346	555				55.0
Ill. St. Pen., Joliet	115477	S	Cl	1.9	.1	.9	8	61.3	20.7	12		1.4	.2	52	100	276	239	520	7.2	43		59.6
Ill. St. Pen., Stateville	147723	S		.3	.0	Tr	73	61.8	14.9	10	.5	1.2	3.5	24	75	260	216	417				61.8
Ill. St. Training Sch.--Girls	145323	L		.3	.0	.8	31	117.8	53.4	13	.0	.3	.1	76	147	324	514	675				52.0
Illiopolis	147417	D	ILCl	15.0	.1	.2	6	98.5	38.4	22		.1	4.4	14	94	460	408	479	7.0	73		59.0
(treated)	115783	D		.1								.1		8		24	123	161	9.6			64.5
Indianhead Pk. Subdn.	151557	L		.3								.1	4.3	68	300	404	700	956				

City	Laboratory Number	Source	Treatment	Iron Fe	Manganese Mn	Ammonium NH_4	Sodium Na	Calcium Ca	Magnesium Mg	Silica SiO_2	Boron B	Fluoride F	Nitrate NO_3	Chloride Cl	Sulfate SO_4	Alkalinity (as	Total Hardness $CaCO_3$)	Total Dissolved Minerals	pH	Carbon Dioxide CO_2	Methane CH_4	Hydrogen Sulfide H_2S	Temperature °F
Indianaola	144127	D		4.0	.7	Tr	19	177.0	48.2	13	.0	.2	4.2	16	293	350	641	773					
Industry	125205	L	A	.1	.0	.7	262	14.6	7.1	20		.6	.2	100	1	496	61	693				X	56.2
Ipava	113373	S	Cl	.3	.0	1.9	771	158.4	60.8	13		4.0	Tr	780	968	220	646	2953					69.5
Island Lake	150133	S		.2	.1	.4	32	63.9	20.6	10	.1	.6	1.2	8	3	300	244	335				X	56.1
Itasca	110328	L		.6	.0	.6	28	79.9	41.2	21		.4	.8	2	211	208	370	527	7.1	43			52.0
Jacksonville	136877	D	LClF	3.6				88.0	19.0			Tr	.5	7		280	300	314					57.0
(treated)	142805	D		Tr				20.0	12.2	3				10	63	33	100	153	8.6				
Jerseyville	152184	D		.5	Tr	Tr	8	70.9	22.4	9	.0	.2	1.2	7	42	232	269	295					58.0
Joliet	122795	D	AICl	1.7	.1	.0	21	138.0	57.9	23		.1	.0	3	277	336	583	736					51.8
Jonesboro	113348	L	AIClZ	.6	.0	Tr	28	98.3	19.4	25		.1	11.2	67	18	264	326	432	6.5	205			58.0
Joppa	128488	L		1.6	1.3	.5	9	70.4	16.7	17		.3	1.0	4	2	256	245	283					59.0
Joy	113403	L		.8	Tr	1.3	180	39.2	17.4	13		.8	Tr	48	92	400	169	664	7.1	20		X	55.7
Justice	146026	L	ZCl	2.6	.1	.7	41	28.3	201.6	25	.3	.2	.4	10	1079	488	1536	2025					52.0
Kampsville	150648	D	I	1.9	.2	.0	9	94.6	40.2	21	.0	.2	1.0	6	42	368	402	430					55.5
Kangley	148369	S		.3								.7	.8	600		196	324	1401					
Kankakee River St. Pk.	153486	L		.1	.0	Tr	1	99.0	60.4	11	.0	.2	26.2	13	148	304	496	573					55.8
Kansas	115045	D	AIZ	3.1	Tr	8.1	21	93.1	34.9	28		.1	Tr	6	9	428	377	423	7.2	68	X		55.0
Karnak	132201	D	I	2.6	.2	Tr	15	22.7	8.4	27	.4	.1	3.0	10	75	28	91	170					58.0
Keensburg	149509	D	AICl	1.8	.2	Tr	12	81.3	24.2	17	.0	.1	.4	42	55	212	303	376					56.0
Keithsburg	119408	D		.5	.2	.2	2	47.7	16.3	28		.3	6.0	4	34	144	187	234		13			54.4
Kempton	116251	D		2.1	.1	1.6	241	162.4	79.6	12		.9	.5	21	1049	140	734	1688	7.6	9			54.6
Kenney	141754	D	AICl	1.5								.4	.2	52		424	316	522					55.0
Kewanee	108625	S	Cl	.3	.0	2.1	474	96.9	35.5	14		.8	.9	640	278	232	389	1700					70.0
Kinderhook	152745	D	Cl	.1	.0	.1	17	68.0	20.7	20	.0	.2	18.1	24	54	188	255	355					
Kingston	153625	L		1.3	.0	Tr	7	85.6	47.5	18	.1	.4	2.2	12	75	328	410	487					
Kinsman	112586	S	A	.7	.1	.9	215	55.3	32.1	20		.6	.1	184	162	312	271	854				X	53.0
Kirkland	112033	S		.6	.0	.1	2	84.3	39.0	21		.2	1.8	3	13	356	372	381	7.1	74			51.1
Kirkwood	115995	L	IZCl	1.7	Tr	1.9	666	70.7	30.0	12		2.5	.2	285	876	440	300	2201					
Knoxville	109760	S		.7	.0	1.2	307	49.0	23.0	14		2.6	.9	190	375	228	217	1101					68.5
Lacon	108928	D		.1	.0	Tr	15	86.7	36.4	24		.2	24.8	21	51	296	367	457					55.7
Ladd	120668	S		.5	.0	1.1	41	74.4	29.6	24		.4	.0	36	17	332	308	414					
La Grange	106408	L	ILZClF	2.0	.1	.3	10	206.2	83.9	18		.2	Tr	16	458	384	861	1038	6.8	174			56.3
(treated)	106441	L		Tr										18		64	87	734					56.5
Lake Bluff	148037	S		2.8	.0	.3	31	110.5	19.9	9	.2	.9	.2	10	157	248	358	510					63.5
Lake Co. Pub. Wtr. Dist.	150131	D		.6	Tr							.2	1.0	8	25	124	152	182					
Lake In The Hills	144251	D		1.1	.0	2.4	20	61.5	30.9	21	.2	.6	6.3	9	21	292	281	337					58.0
Lakeland Park Subdn.	146785	D		1.3	.1	Tr	6	89.5	44.6	20	.1	.1	.5	6	76	332	407	469					50.3
Lake Villa	107531	D		.4	.0	.1	51	29.5	21.9	21		1.0	.0	5	91	172	164	324	7.4	28			51.5
Lakewood Shores Subdn.	152393	S		.2	.0	Tr	11	76.0	36.0	16	.1	.3	.4	12	70	272	338	385					53.9
Lake Zurich	125969	L		1.1	.0	.4	119	176.0	104.3	25		.8	.0	6	1003	76	869	1514					

La Moille	111801	D	I	1.9	.0	Tr	23	50.8	22.8	25		.5	4.7	1	1	264	221	291				53.0
Lanark	153354	S	F	.5	.0	Tr	1	68.1	33.2	11	.0	.2	.6	1	28	276	307	323				
La Salle	110982	D	ClF	.1	.4	2.2	25	140.1	51.9	21		.4	11.0	24	263	308	564	751				55.0
Latham	152621	D	IA	1.2	.0	Tr	77	58.2	32.7	14	.2	.8	3.3	64	3	352	280	473				55.5
Lawrenceville	114409	D	ClF	.3	Tr	Tr	1	61.3	11.6	16		.1	11.6	7	27	156	201	227	7.1	35		56.0
Leaf River	112651	S		Tr	Tr	Tr	13	58.8	25.2	22		.1	9.4	2	5	264	251	291				51.0
Lebanon	130205	D	ILClF	5.6	1.0	.4	29	114.9	33.1	20		.4	.4	36	127	304	424	553				55.0
(treated)	116487	D		.1										12		76	132	193				
Lee	112126	D		.4	.0	.4	39	29.5	18.1	15		.6	.8	2	3	228	149	240	7.8	10		52.0
Leland	118247	L		.9	.0	Tr	3	75.4	30.0	19		.1	2.5	1	7	308	312	328				54.5
Lemont	146786	L		.5	Tr	.2	21	135.0	77.6	22	.2	.3	.7	6	233	452	657	788				51.7
Lena	112579	LS		.0	.0	Tr	5	103.7	49.9	17		.1	.1	18	82	364	465	528				51.8
Leonore	110702	D		.7	.0	1.4	26	74.9	42.7	20		.5	1.8	6	80	392	363	433				
LeRoy	115895	D	IZF	6.0	.0	9.5	14	101.0	42.2	34		.3	1.2	5	3	472	426	473	7.0	136		53.5
(treated)	116035	D		.1								.3		3		468	66	491	8.1	9		54.5
Lewistown	152608	D	Cl	1.2	.6	Tr	5	84.3	36.7	14	.0	.2	7.5	12	97	248	362	424				55.0
Lexington	116020	D	L	1.2	Tr	Tr	41	76.4	26.8	25		.5	10.8	1	41	340	301	416	7.3	50		54.0
(treated)	116038	D		.2								.5		2		152	113	228	9.1			57.0
Liberty Pk. Subdn.	141147	L		.7								.4	.6	7		364	512	539				
Libertyville	124509	L	Cl	.1	.0	.6	94	71.7	41.6	25		.8	.0	7	421	108	301	736				
Lidice	104564	S	Cl	.9	.0	1.0	60	62.0	19.0	12			1.5	24	77	252	233	413				61.4
Lincoln	118252	D	IZCl	1.0	.3	Tr	1	76.4	29.4	9		.1	1.3	9	62	236	312	323				
Lincolnshire	145347	S		1.4								1.4	.1	33		280	328	539				
Lisle	151315	L		1.1	Tr	Tr	12	97.7	47.1	15	.1	.3	.9	8	112	336	438	491				
Little York	108056	L		3.1	Tr	4.1	77	96.2	31.7	15		.1	Tr	16	26	500	371	580				53.8
Livingston	132274	D	ICl	15.8										26		168	596	740				55.0
Lockport	141338	S	Cl	.1	.1	.5	72	62.3	20.2	8	.2	1.1	1.9	29	79	272	239	458				59.7
Lockport Hts. Subdn.	146279	L		1.3	.0	Tr	19	201.5	95.1	17	.3	.4	.5	7	487	420	895	1119				52.3
Loda	152588	D	IZ	1.4	.1	1.2	56	123.2	68.6	18	.5	.2	.9	5	338	356	590	866				55.0
Log Cabin Arbor	112386	S		.1	.0	Tr	1	82.4	40.6	23		.1	16.2	7	25	324	373	386				53.0
Lombard	110414	S		.3	Tr	.6	71	61.3	17.1	12		1.8	1.2	24	70	272	224	439	7.3	33		61.0
Lombard Hts.	148200	L		1.6							.1	.3		14		326	480	574				51.7
London Mills	155053	D		.1	.0	.1	6	81.5	27.0	18	.1	.1	19.1	8	74	224	315	385				51.2
Lone Tree Subdn.	147973	S		.5	.0	.4	81	106.5	27.3	7	.2	1.3	1.3	37	229	264	378	670				56.8
Longview	144124	D		1.4	Tr	2.4	51	62.5	26.9	18	1.5	.5	.3	11	1	368	267	404				55.0
Loraine	144581	L		.7	Tr	.1	243	31.0	17.4	9	.3	1.1	12.5	164	1	436	149	778				55.0
Lostant	133654	S		3.6	.0	1.9	428	80.1	42.2	9	.5	1.4	.2	570	225	252	374	1539				
Loves Park	144366	D	L	1.2	.0	.1	6	73.4	32.3	15	.2	.2	2.6	3	12	312	317	326				53.0
Lovington	137649	D	AIZ	1.3	.0	8.7	59	101.3	46.1	24	.4	.0	.8	28	1	556	443	590				55.0
Lowpoint	109511	D		.2	.0	Tr	23	75.3	38.1	20		.3	7.5	8	44	332	345	417				
Ludlow	151840	D		1.0	Tr							.5	.4	1		352	248	358			X	
Lyons	84547	S		Tr	.0	Tr	157	68.5	31.0	11			1.9	141	149	286	299	753				
McHenry	110958	D		.1	.0	Tr	1	76.8	36.8	20		.2	9.5	8	77	244	344	373			X	51.9
McLean	152267	D		2.4	.0	4.5	105	67.3	30.5	16	.1	.3	.4	84	1	416	293	550				
McNabb	109927	D		1.6	.0	6.5	59	81.6	31.3	30		.5	.5	7	1	468	333	494				53.5
Mackinaw	152313	D	Z	Tr	.1	Tr	66	145.6	64.4	17	.1	.2	18.3	215	108	344	629	842				53.0
Macon	144786	D	IZ	10.0	Tr	10.2	66	116.5	45.7	30	.9	.3	38.9	19	43	548	480	715				55.5
(treated)	115787	D		.1								.1		23		684	9	752				57.5
Magnolia	153590	D		.2	.0	10.9	75	77.3	31.7	23	.2	.2	.9	12	1	500	324	522				54.5
Mahomet	116781	D	IA	2.6	.1	.1	9	116.4	51.2	20		.1	.6	21	100	388	502	545	7.1	97		53.5

City	Laboratory Number	Source	Treatment	Iron Fe	Manganese Mn	Ammonium NH_4	Sodium Na	Calcium Ca	Magnesium Mg	Silica SiO_2	Boron B	Fluoride F	Nitrate NO_3	Chloride Cl	Sulfate SO_4	Alkalinity (as $CaCO_3$)	Total Hardness (as $CaCO_3$)	Total Dissolved Minerals	pH	Carbon Dioxide CO_2	Methane CH_4	Hydrogen Sulfide H_2S	Temperature °F
Malta	130237	S		.3	Tr	.3	27	36.8	21.0	9		.5	.6	1	3	232	178	245					53.0
Manhattan	107912	L		.4	Tr	.0	12	93.0	45.4	21		.3	.1	4	58	380	420	469	7.1	89			52.0
Manito	152611	D	Z	1.1	.2	Tr	5	64.4	22.9	13	.0	.2	3.4	4	63	192	255	320					59.0
(treated)	83303	D		.0	.0	Tr	82	23.2	9.4	15			8.8	5	73	184	97	339					
Manlius	153662	D	I	1.9	.3	1.0	7	96.1	33.9	25	.1	.2	.7	.1	1	396	380	411					54.2
Mansfield	133136	D		1.1	.0	1.0	53	72.0	28.6	21		.3	.2	12	2	396	298	426					54.0
Manteno	112779	L	Cl	.2	.1	Tr	16	106.6	50.8	13		.1	8.7	14	165	312	476	392	7.2	52			52.5
Maple Hill																							
Improvement Assn.	153759	L	Cl	7.4	.0	.1	21	101.0	48.0	10	.1	.1	9.1	30	148	292	450	574					51.0
Maple Park	111419	D		2.4	.0	Tr	11	68.0	38.2	28		.4	4.3	2	1	344	327	351					51.3
Maquon	130138	L		.5	.0	.9	694	9.5	4.5	11		3.5	.2	490	213	640	43	1822					61.9
Marengo	127064	S		.7	.2	.5	8	70.3	33.1	11		.3	.4	1	1	328	312	320					54.5
Marine	144262	D	I	3.9	Tr	4.8	71	65.0	29.5	17	.4	.5	4.7	46	1	500	284	571					56.0
Maroa	115662	D	AIL	.8	.0	2.9	74	63.7	40.4	16		.3	.5	60	5	404	326	522			X		55.5
(treated)	115785	D		Tr								.1		61		144	58	371					58.5
Marquette Hts.	114771	D	Z	Tr	.0	Tr	21	139.1	55.5	22		.1	7.0	7	321	272	576	734					
Marseilles	110856	S	Cl	.1	.0	Tr	56	70.3	31.8	12		.1	2.5	57	59	284	307	449					
Marshall	114961	D	Cl	.1	Tr	Tr	2	80.7	22.5	13		.1	6.0	8	40	240	295	338	7.4	24			56.2
Martinsville	120394	D	AIClZ	1.5			70	61.5	30.6			.6	.0	37	1	380	281	472					54.8
Martinton	149533	L		1.4	Tr							.4	.1	35		324	256	387					
Mason City	113474	D		.7	.8	Tr	12	81.2	32.8	16		.3	10.0	13	44	292	338	381					55.2
Matherville	125377	L		1.4	.0	1.7	343	49.8	26.4	13		1.5	.0	320	266	256	233	1174					57.2
Matteson	146780	L	ClF	.5	Tr	Tr	37	108.6	47.3	13	.5	.5	2.2	1	264	268	466	661					51.5
Mattoon	115070	D	ILCl	3.8	Tr	5.9	2	93.6	37.0	22		.2	1.6	4	58	340	386	440	7.4	34	X		55.6
May Street Subdn.	147932	L		1.9	.3	Tr	7	156.0	99.7	18	.0	.1	1.4	5	426	364	800	991					
Mazon	112585	D		.2	.2	Tr	2	64.1	27.7	16		.2	8.0	2	110	156	275	324					54.5
Meadowdale Subdn.	146387	D		1.8	.1	Tr	6	87.4	44.8	19	.0	.3	.7	6	61	344	403	448					50.9
Mechanicsburg	154071	D		1.9	.1							.2	.9	6		288	330	341					56.0
Media	107984	L		.0	.0	Tr	5	61.9	24.5	18		.3	9.5	5	49	200	256	290					
Melvin	116241	D		.6	.0	2.0	33	77.6	34.3	24		.6	.4	2	21	388	335	427	7.3	49			55.0
Mendon	144579	D	AICl	.3	.0	Tr	3	45.0	8.7	17	.0	.2	5.8	9	6	136	149	181					58.0
Mendota	110767	S	IA	1.7	Tr	1.3	24	69.2	22.1	24		.4	3.1	4	1	312	264	325					52.5
Meredosia	144578	D		1.6	.2	Tr	1	75.0	35.2	14	.0	.2	.9	4	24	304	332	349					57.5
Metamora	151554	D	IZ	3.7	.1	.8	4	89.7	37.2	22		.4	1.1	12	10	484	350	503					53.4
Metcalf	144128	D	I	1.9	.1	3.4	113	76.0	23.5	24	.2	.4	1.0	97	4	400	286	589					
Metropolis	145940	D		.3	Tr	Tr	2	67.0	10.9	11	.0	.2	.1	8	17	188	213	233					59.0
Middletown	115828	D	IA	1.6	.0	1.3	12	62.9	24.8	31		.0	.4	8	1	276	260	294	7.4	28			55.6
Milan	149562	L		.3	Tr	Tr	15	81.1	33.7	17	.1	.1	3.4	5	4	360	341	385				X	54.5
Milford	116471	D	ICl	2.5	Tr	.8	23	99.1	47.6	20		.2	.1	7	165	316	444	575	7.2	56			55.0
Milledgeville	108672	S		.1	Tr	.1	2	70.1	34.4	14		.2	1.0	1	22	296	317	324	7.3	38			53.0

Millstadt	116488	S		.4	.1	2.0	20	72.0	25.6	14		.4	.3	4	5	324	285	343				58.5
Mineral	144669	L	A	.1	.0	.1	246	11.0	3.3	13	.8	.7	3.5	11	65	488	41	665				54.6
Minier	109155	D	I	4.1	.0	2.5	8	75.4	35.1	25		.2	.9	5	1	348	333	372				54.5
Minonk	109530	S		.2	.0	1.7	560	59.5	21.9	15		2.4	.3	685	202	284	239	1703				71.5
Minooka	112587	S	I	.6	Tr	.8	167	44.8	19.5	17		.8	Tr	186	41	252	193	643	7.6	18		54.7
Miss. Palisades St. Pk.	126751	L		.5	.0	.1	7	54.9	34.3	12		.3	Tr	3	2	288	279	287				56.0
Modesto	134671	LS	AICl	4.7	.3	.5	139	74.4	23.8	20	.3	.2	.4	58	11	496	284	670				56.0
Mokena	107915	L		1.5	.0	.5	19	107.7	54.2	23		.3	1.2	2	117	408	492	567				51.5
Moline Sch. Dist. No. 40	135892	L		.3	.1	.0	16	70.4	30.0	11	.2	.2	.7	2	11	320	300	327				53.0
Momence	112720	L	Cl	Tr	.0	.1	13	63.5	34.2	12		.1	5.1	6	85	228	300	362	7.3	42		54.2
Monee	107911	L	Z	.5	Tr	.8	24	167.3	47.4	19		.3	1.5	2	311	340	614	776	7.1	80		52.0
(treated)	108816	L		.5								.3		13		388	40	852	7.4			52.7
Monmouth	144206	S	Cl	.4	.0	.1	274	80.0	32.3	10	.7	2.0	4.7	143	477	228	333	1167				68.0
Montgomery	147410	S	Cl	Tr	.0	.9	64	66.6	25.0	8	.4	.7	.5	23	111	264	270	466				57.0
Monticello	153660	D	IZ	1.6	.1	.5	34	58.0	29.2	12	.4	.2	1.3	5	1	332	265	356				55.5
(treated)	115784	D		.1								.1		6		304	66	322				57.3
Mooseheart	144685	L		1.0	.0	Tr	42	74.0	34.1	22	.3	.8	1.2	62	53	272	325	466				59.7
Morris	112558	S	A	1.3	.1	.7	50	64.5	25.4	13		.4	Tr	38	35	288	266	411	7.4	31	X	61.0
Morrison	112154	S		.5	.0	Tr	2	64.6	32.7	14		.1	.8	8	23	264	296	292				65.0
Morrisonville	115383	D	IA	1.7	.1	.1	20	65.0	20.5	21		.2	1.9	8	41	236	247	336	7.2	42		54.5
Morton	109234	D	AIClZ	2.9	.0	4.0	35	76.1	37.9	22		.2	.9	12	1	416	347	443				54.5
(treated)	109236	D		.6								.1		12		420	58	466				
Mound City	113261	L	Cl	1.0	Tr	.2	35	48.0	12.9	14		.5	.1	55	15	156	173	278	7.7	7		62.0
Mounds Pub. Wtr. Dist.	147294	D	IZ	3.8								.1	.3	5		352	495	525				
Mounds	113262	L	I	.1	Tr	.3	47	37.7	10.7	12		.9	Tr	65	14	136	139	269	7.5	10		63.5
Mt. Auburn	115421	D	IZ	2.5	.3	.7	2	96.4	33.0	18		.3	.2	14	37	324	377	417	7.1	65		54.6
Mt. Carroll	153361	S		.9	Tr	Tr	2	86.0	43.3	11	.1	.2	.6	7	34	352	393	409				
Mt. Morris	153359	S		Tr	.0	Tr	4	59.0	37.1	9	.1	.7	2.9	4	23	276	300	312				
Mt. Prospect	146788	S	Cl	.6	Tr	Tr	55	72.2	19.8	8	.3	1.1	1.6	16	135	216	262	453				60.7
Mt. Pulaski	152584	D		Tr	.0	Tr	13	119.2	61.5	19	.0	.2	40.5	30	138	360	551	630				57.0
Moweaqua	115263	D	IZCl	1.5	.2	.4	1	96.5	34.8	15		.2	.4	5	115	260	385	435	7.0	65		54.7
Muddy	148016	L		.4	.2	Tr	162	98.0	68.0	25	.1	.3	3.1	78	179	578	524	969				59.5
Mulberry Grove	145462	D	ICl	29.0	1.5	1.4	27	88.0	29.7	22	.0	.1	.8	14	186	192	342	501				57.5
Mulfords Subdn.	144291	S		.7								.2	.7	3		320	318	330				51.5
Mundelein	151197	D		2.5	Tr		55	45.2	37.2	21	.2	.7	2.3	7	201	164	266	465				51.0
Naperville	147979	S	IZCl	.3	.1	.4	69	70.0	28.1	8	.3	1.0	.5	23	103	302	290	482				56.2
(treated)	110889	S		.2								.5		10		272	136	504	7.7	16		52.1
Nebo	131066	D	IA	7.0	1.5	.3	23	102.2	21.3	16		.5	.5	64	104	196	343	449				55.0
Neoga	114926	D	IZCl	1.5	.2	.3	89	83.7	23.8	27		.2	.1	117	46	288	308	547	7.2	51		54.8
(treated)	115177	D		.2								.1		126		276	81	586	7.2	49		55.0
Neponset	153664	S		.6	.0	.1	267	21.4	9.8	8	1.0	.8	5.7	40	145	464	94	793				62.0
New Baden	149495	D	I	6.9	.5	Tr	16	37.5	14.8	16	.0	.1	1.6	10	33	140	155	219				57.0
New Canton	128851	D		Tr	.0	Tr	15	48.1	8.5	19		.1	7.4	5	27	148	156	216				56.0
New Haven	113566	D	ZCl	2.6	.3	Tr	6	82.3	25.1	24		.1	.4	4	32	284	309	335	7.2			
New Holland	115830	D		.3	.0	.0	15	129.4	59.6	30		.0	66.0	33	136	360	569	708	6.8	143		55.0
New Lenox	124594	L	Cl	2.9	.4	.0	33	193.0	55.4	20		.3	2.2	3	453	304	710	976				52.0
New Windsor	132155	L		1.8	.2	1.6	25	96.7	32.2	27		.3	.3	1	4	428	375	435				54.0
Newman	132251	D	IL	1.1	.1	1.3	33	69.4	26.2	22		.5	.0	5	2	348	281	379				54.4
(treated)	118848	D		.6								.1		460		388	144	1110				50.0
Niantic	152610	D	IZ	1.8	Tr	Tr	22	84.1	28.9	16	.1	.2	4.7	14	18	336	330	416				59.0
(treated)	115788	D		Tr								.1		12		272	189	329				61.5

City	Laboratory Number	Source	Treatment	Iron Fe	Manganese Mn	Ammonium NH_4	Sodium Na	Calcium Ca	Magnesium Mg	Silica SiO_2	Boron B	Fluoride F	Nitrate NO_3	Chloride Cl	Sulfate SO_4	Alkalinity (as $CaCO_3$)	Total Hardness (as $CaCO_3$)	Total Dissolved Minerals	pH	Carbon Dioxide CO_2	Methane CH_4	Hydrogen Sulfide H_2S	Temperature °F
Noble	152272	S	I	.1	Tr	Tr	98	72.8	47.9	26	.1	.2	1.1	20	68	492	379	619					
Nokomis	126205	D	ILCl	5.8	.2	.5	55	110.6	27.4	29		.4	.0	47	225	208	389	632					54.5
(treated)	115508	D		.1								.2		59		24	111	459	10.4				58.0
Normal	152268	D	IZClF	11.0	.3	.8	10	185.6	52.5	14	.1	.1	.3	13	224	452	680	789					
(treated)	116352	D		.3										15		396	94	474	7.7	20			55.5
North Aurora	147411	S		.2	Tr	.7	52	59.2	26.3	8	.4	.1	.8	10	59	292	256	385					54.8
North Chillicothe	126311	D		.1	Tr	.0	19	72.1	29.4	17		.1	6.7	19	91	216	302	389					60.5
North Henderson	145801	L		.7	.0	.7	303	10.0	1.4	8	.7	1.9	17.0	77	52	528	31	777					
North Pekin	144267	D		Tr							.1	.1		27	157	300	460	585					56.0
Northbrook W. Subdn.	148282	L		.1							.5	.1		15		100	319	710					53.0
Northern Aire Estates	148238	L		2.0								1.2	2.5	10		172	244	647					52.5
Northfield Woods	147273	S		.1	.1	Tr	54	46.0	27.2	10	.9	.3	.8	22	144	164	227	413					52.5
Northlake	146605	S	Cl	.1	Tr	Tr	63	83.7	31.0	13	.2	.7	2.3	27	156	272	337	558					58.0
N. Tazewell Pub. Wtr. Dist.	152274	D	I	3.0	.1	.2	16	84.9	33.8	15	.1	.2	.2	8	1	376	351	411					54.0
Oak Forest	147154	L		2.0	.1	.1	29	117.1	53.0	18	.1	.1	.5	12	216	332	510	679					54.0
Oakview Ave. Subdn.	152394	L		.1	.0	Tr	13	106.2	50.0	11	.1	.3	14.4	21	141	312	471	557					52.8
Oakview Subdn.	146277	L		.3	.0	Tr	12	115.6	60.3	16	.1	.1	.5	24	235	284	537	646					51.0
Oakwood	119115	D	I	3.1	Tr	1.7	49	83.2	34.1	21		.3	.3	25	18	404	348	465					55.0
Oakwood Shores Subdn.	151002	D		1.3	.0							.6	.8	1		300	220	305					51.0
Oblong	114506	D	ZCl	.1	.0	Tr	16	82.4	11.8	19		.1	14.8	10	46	216	255	336	7.2	38			57.3
Odell	125147	S	A	.2	.1	1.1	384	66.9	28.3	15		1.5	.1	490	149	276	284	1321				X	70.3
Ogden	129966	D	I	1.8	Tr	1.0	12	89.2	36.9	25		.3	.0	30	26	336	375	426					55.7
Oglesby	153216	S	IZ	1.3	.0	1.1	219	72.2	23.7	10	.7	1.0	.7	265	85	296	278	880					74.0
Ohio	111798	D		2.3	.0	1.5	46	37.2	17.1	19		.0	1.6	1	1	264	164	288					54.0
Okawville	113887	D	ILCl	4.8	.4	.3	32	140.4	34.2	26		.1	.2	19	206	320	492	674	7.1	72			56.2
(treated)	114108	D		.5								.1		16		184	265	467	8.3	3			58.0
Olmsted	113337	L	A	.5	Tr	.2	31	40.3	11.8	14		.3	Tr	52	14	128	150	257	7.7	6			66.0
Olympia Fields	107162	L	LCl	.2	.0	.6	28	130.6	50.6	15		.5	.9	1	244	340	535	681					51.6
Omaha	155845	L	Cl	2.6	Tr	3.4	333	13.6	8.8	9	.7	.8	2.0	169	3	560	70	883					60.0
Onarga	116359	D	ICl	2.0	.1	1.6	56	151.0	55.0	20		.3	.5	8	398	304	604	891	7.4	35			54.0
Oneida	104729	L	I	1.0	.0	.7	307	11.3	7.9	12		1.8	3.0	110	50	532	61	842	7.8				62.2
Oneida Hts. Subdn.	149559	L	Cl	3.5	Tr	2.2	53	60.2	26.8	11	.2	.3	5.1	3	26	348	261	394				X	57.5
Ophiem	108505	L		2.4	Tr	1.9	139	36.0	18.6	14		.8	1.3	16	77	372	167	517				X	54.0
Oquawka	108142	D		.0	.0	.0	2	61.6	16.7	35		.0	43.2	8	38	140	223	281					55.0
Orangeville	153358	L		Tr	.0	Tr	2	61.2	34.3	11	.1	.1	.4	1	10	288	294	311					
Oreana	147332	D	I	9.1	Tr							.3	.4	18		540	372	594					54.5
Oregon	112800	S		.3	.0	.1	1	60.0	34.5	12		2.0	Tr	6	15	268	292	286					57.3
Orient	113652	S	Cl	1.1	Tr	2.4	77	85.3	29.4	20		.1	5.7	31	18	436	335	518	7.8	17			57.3
Orion	108553	L	F	.3	.0	2.8	108	43.6	17.1	13		.4	.4	1	20	400	180	463				X	56.5

Orland Park	146510	L		.4	Tr	.2	21	91.9	53.3	19	.2	.5	1.2	1	113	376	449	563				52.4
Osco	108555	D	IZ	.1	Tr	.1	88	58.6	25.6	12		.6	2.3	1	22	416	252	479				
Oswego	147412	S		.3	Tr	1.1	83	51.2	24.9	8	.5	1.0	.6	22	114	264	230	467				58.0
Ottawa	111050	S		.1	Tr	Tr	42	72.9	28.1	13		.7	2.9	76	11	268	298	429				59.0
Palatine	148814	S		.2	Tr	.5	45	74.5	21.5	8	.2	.9	.7	15	77	272	274	414				56.5
Palestine	114506	D	ZC1	.1	.0	Tr	16	82.4	11.8	19		.1	14.8	10	46	216	255	336	7.2	38		57.3
Palmyra	125586	D	I	3.3	.3	.2	10	98.7	36.9	16		.1	1.3	7	113	292	399	476				49.7
Palos Hts.	152396	S		.5	Tr	Tr	136	137.2	38.2	8	.2	.9	2.6	133	348	244	500	973				60.3
Palos Highlands	145962	L		1.1	Tr	Tr	35	113.0	44.4	18	.5	.5	3.3	4	235	288	465	640				52.0
Park Forest	144154	L	LC1F	1.2	.0	Tr	4	118.5	54.2	15	.5	.2	3.0	4	184	372	520	629				52.0
(treated)	140351	L		Tr			73				.5			10		124	140	358				
Paw Paw	113131	S	ZF	.2	.0	.6	20	43.0	23.2	15		.4	.1	1	2	236	196	238				54.2
Paxton	152590	D		1.7	Tr	Tr	16	86.6	32.5	18	.3	.2	3.6	1	21	360	350	418				55.0
Payson	113934	L		.1	.0	Tr	12	71.1	14.6	20		.1	43.8	24	25	168	239	296				55.8
Pearl	114727	L	C1	.0	.0	Tr	1	62.5	12.0	32		.1	9.1	4	19	176	206	236				54.5
Pearl City	112577	S	I	.6	.0	Tr	13	93.8	47.3	15		.1	3.2	13	59	376	429	472				53.5
Pecatonica	153364	S	C1	.5	.0	Tr	1	64.7	38.9	9	.0	.2	1.6	2	22	296	322	309				
Pekin	152374	D	C1	.3	.0	Tr	36	104.0	37.7	17	.3	.1	8.9	29	151	288	415	567				57.0
Peoria	152391	D	C1F	Tr	.0	Tr	38	123.8	45.8	19	.2	.1	8.5	50	153	344	498	658				58.0
Peoria Hts.	156332	D		.1	.1							.5	5.9	18		412	316	498				53.0
Peotone	107858	L		.8	.0	.6	23	117.5	37.6	16		.4	.0	2	194	296	449	605	7.3	43		52.5
Pere Marquette St. Pk.	116056	D	AIC1Z	4.0	.1	.8	90	95.9	48.9	25		.1	.3	146	54	376	441	684				58.0
(treated)	116054	D		.1								.1		149		68	76	465				
Percy	113728	S		.3	Tr	.4	40	60.5	14.9	14		.1	.1	18	18	256	213	322	7.2	39		61.3
Perry	114584	D		2.7	Tr	.2	9	84.0	41.8	20	Tr	.3	.5	24	30	336	382	405				54.5
Peru	153214	S	ILC1	.2	.0	.3	190	82.8	22.4	10	.5	.9	3.4	245	65	300	299	816				74.0
(treated)	145149	S		.1				15.0	17.1					255		120	108	627				
Pesotum	144573	D	I	1.0	.0	Tr	85	58.5	22.6	20	.6	.5	7.6	10	1	404	240	465				57.0
Petersburg	113599	D	ZC1	.4	.3	.2	28	105.0	40.0	18		.2	14.2	34	169	252	427	582				59.5
(treated)	113598	D		.1								.2		41		298	50	626				
Philo	116746	D	I	1.9	.1	.1	4	72.7	27.2	16		.1	.6	7	82	208	294	351	7.2	34		53.7
Piper City	133032	D		2.1	1.0	4.4	37	73.9	32.7	19		.3	.1	6	1	404	319	405				54.0
Pistakee Highlands	146794	D		1.2	Tr	Tr	7	66.7	38.3	20	.1	.3	1.2	4	40	292	325	366				52.4
Plainfield	146278	S	C1	.1	.0	Tr	66	55.6	18.2	9	.4	1.1	2.7	20	50	276	214	379				58.2
Plano	112159	D		Tr	Tr	Tr	5	79.2	34.3	22		.0	11.4	6	62	268	339	384	7.5	22		52.2
Pleasant Hill	114725	D	I	.9	1.5	Tr	2	73.3	21.8	39		.6	3.5	13	35	220	274	322				56.5
Pleasant Plains	144803	D	I	7.4	1.1	Tr	11	103.1	46.7	21	.0	.3	2.5	14	47	404	450	491				59.5
Pleasant Valley Pub. Wtr. Dist.	145497	D		.0	.0	.1	14	108.5	44.0	12	.1	.3	1.0	12	128	332	453	532				55.5
Pocahontas	144207	D	AIC1	18.0	.6	Tr	14	37.5	13.3	24	Tr	.2	2.8	12	20	140	149	211				
Polo	112654	S		.3	Tr	.1	4	66.4	33.3	15		.1	Tr	1	17	292	303	309				55.0
Poplar Grove	108433	D		.5	.0	.1	3	80.2	34.7	21		.2	1.3	7	49	288	344	360				50.5
Port Byron	149560	L		1.4	Tr	.5	15	41.5	17.5	10	.1	.6	.7	4	1	204	176	212				53.5
Potomac	144936	D	IZ	2.2	.3	Tr	69	161.9	62.0	17	1.3	.2	3.6	19	490	270	660	1042				56.5
Prairie City	144577	S		5.8	Tr	1.7	490	177.0	91.6	9	1.5	3.5	1.7	318	1173	216	819	2473				65.0
Prairie Du Rocher	152229	D	IZ	15.0	.4	2.1	12	116.4	41.3	43	.1	.2	1.3	6	1	476	461	505				58.0
(treated)	114109	D		.1						74		.2		5		440	66	462	7.1	86		57.0
Preston Hts. Subdn.	152066	L		1.8	Tr							.2	1.2	2		352	405	467				
Princeton	135745	D	ILC1	2.4	.0	.8	45	52.9	24.9	14	Tr	.6	.8	4	1	328	235	339				
(treated)	111591	D		.2										7		148	92	182				
Princeville	109020	S		.7	.0	1.2	412	82.3	32.2	14		2.4	2.7	185	730	216	339	1604			X	68.0

City	Laboratory Number	Source	Treatment	Iron	Manganese	Ammonium	Sodium	Calcium	Magnesium	Silica	Boron	Fluoride	Nitrate	Chloride	Sulfate	Alkalinity	Total Hardness	Total Dissolved Minerals		Carbon Dioxide	Methane	Hydrogen Sulfide	Temperature
				Fe	Mn	NH_4	Na	Ca	Mg	SiO_2	B	F	NO_3	Cl	SO_4	(as $CaCO_3$)			pH	CO_2	CH_4	H_2S	°F
Prophetstown	112155	L		.3	.3	Tr	1	70.9	25.9	28		.1	1.5	1	3	280	284	306					52.0
Prospect Meadows	148234	L		.9							.3	.3		6	134	256	304	434					51.1
Quad City Airport	131329	L		.3	.0	3.2	79	56.5	23.2	12		.2	.3	6	32	376	237	437					54.2
Ramsey	114758	D	I	1.6	.2	Tr	15	181.1	65.4	20		.1	1.4	17	412	300	722	901	7.7	15			55.7
Rankin	116552	D	F	1.8	Tr	2.3	35	71.6	30.5	21			.4	10	1	372	305	395	7.4	37			55.0
Ransom	110857	S		.3	.0	.3	214	39.8	9.2	22		.3	.9	35	8	544	137	645			X		54.5
Rantoul	116797	D	ALCl	2.8	.1	2.8	14	59.8	36.6	17		.3	.1	2	3	332	300	322	7.3	43	X		54.0
(treated)	142427	D		Tr				12.0	20.0					6		168	112	204	9.2				
Raymond	115294	D		Tr	.0	Tr	28	76.1	23.5	25		.1	.4	11	35	296	287	374	7.1	60			54.0
Red Bud	147734	D		2.0	.0	.3	20	68.2	22.2	8	.1	.1	.2	10	12	280	262	304					59.0
Reddick	144572	S	I	.7	Tr	1.2	332	59.0	29.6	33	1.0	1.8	1.8	293	255	315	269	1216				X	62.5
Reynolds	128329	L		.2	.0	1.1	138	33.2	17.7	12		.7	.4	10	39	404	156	499				X	58.8
Richland Subdn.	126480	L		1.7								.3	2.0	10	95	324	378	440					52.0
Richmond	146783	D	I	.8	.1	.4	2	82.4	39.4	21	.1	.3	.5	1	8	364	361	382					51.0
Richton Park	147811	L		.1	.0	.6	32	125.1	40.3	11	.9	.5	.2	2	199	340	479	633					52.1
Ridge Farm	116583	D		.6	.1	.2	3	78.8	32.7	18		.3	.2	15	44	272	332	347	7.3	35			54.0
Ridgewood Homes	147019	S		3.1	Tr	Tr	12	145.9	67.7	13	.3	.3	.7	14	340	296	644	842					51.8
Ridgewood Subdn.	146499	L		3.7	.1	.2	17	305.5	120.1	13	.1	.2	1.3	17	824	412	1258	1614					51.2
Ridgewood Wtr. Assn.	147934	L		.1	.0	Tr	21	149.0	89.3	13	.1	.1	11.0	27	360	364	739	955					53.6
Ridgeway	113567	D	AIZ	3.7	.1	2.8	33	71.7	28.8	18		.1	.1	7	1	368	298	384	7.4	36			59.3
(treated)	114102	D		.1								.3		10		380	52	418	7.9	11			60.0
Rio	148358	L	A	.2	Tr	.5	310	25.4	11.7	8	.8	2.0	.6	84	69	595	112	860					59.5
Riverside	106407	S	Cl	.1			185	72.7	29.1			1.4	.8	162	146	324	303	828	7.1	63			61.2
Roanoke	109531	D	AIClZ	.6	.1	.7	36	11.4	42.7	17		.1	1.5	14	79	440	462	567					54.0
Robert Allerton Pk.	144134	D	I	1.0	.0	1.1	35	67.0	33.3	18	.5	.3	.4	5	1	376	305	387					54.5
Roberts	116240	D		2.3	.0	2.4	46	11.3	38.0	23		.4	.2	5	230	300	440	632	7.4	31			54.2
Robinson	114506	D	ZCl	.1	.0	Tr	16	82.4	11.8	19		.1	14.8	10	46	216	255	336	7.2	38			57.3
Rochelle	153356	S	I	.9	.0	Tr	1	70.8	34.8	13	.1	.2	2.6	2	9	308	320	326					
Rock City	153351	S		Tr	.0	Tr	1	58.2	30.5	14	.0	.2	8.1	1	9	256	271	268					
Rock Falls	156201	D	AICl	.8	.1							.2	10.7	8		236	297	335					
Rockdale	107987	S	Cl	.2	.0	.9	85	61.4	20.4	12		1.1	Tr	34	104	268	238	473	7.3	36			60.6
Rockford	147386	S	Cl	Tr	.0	Tr	4	60.1	33.6	11	.0	.0	.7	4	12	280	289	314					56.3
Rockton	153365	D	Cl	Tr	.0	Tr	1	68.2	31.0	15	.1	.2	18.8	5	31	244	298	320					
Rolling Meadows	146781	S		.5	Tr	Tr	51	70.2	20.2	8	.3	1.1	3.0	15	82	260	258	410					58.3
Roodhouse	116394	L	Cl	.1	Tr	Tr	10	87.1	28.2	20		.2	3.4	7	31	312	334	389					54.5
Roselle	151193	L		.7	Tr	Tr	39	66.2	35.4	19	.2	.4	2.3	4	155	228	311	447					51.5
Roseville	107559	D		.2	Tr	.2	5	32.9	15.9	31		.2	53.8	11	46	52	148	235	6.6	33			54.8
Rossville	116584	D		2.9	Tr	1.4	17	70.8	42.3	21		.2	.2	3	12	376	351	384	7.3	48			54.0
Round Lake	107669	L		.1	.0	.4	69	34.2	19.3	18		1.2	Tr	4	207	96	165	434	7.8	3			53.0
Round Lake Beach	144671	L		.2	.0	.1	70	36.5	26.2	20	.6	1.0	1.8	10	134	198	199	426					53.0
Roundlake Park	107780	L		.4	.0	.5	68	39.6	21.9	16		1.1	Tr	5	214	108	189	426					53.0

Roxana	116651	D	IZ	4.8	.5	.1	8	87.0	25.0	31		.6	.2	19	106	200	321	410				57.5
Rushville	152612	D	IC1	5.6	.1	Tr	6	94.8	37.2	21	.0	.2	2.1	6	25	368	390	430				56.0
Rutland	153213	D	IZ	2.9	.2	1.6	133	188.0	66.9	13	1.4	.7	.3	14	806	180	745	1397				54.0
St. Anne	112697	L		1.8	.0	Tr	46	100.6	41.8	15		.3	4.2	5	281	220	423	659	7.3	28		53.5
St. Augustine	152185	L	AIC1	9.5	.0							.4	.1	1		444	304	427				54.0
St. Charles	146378	S		.4	Tr	Tr	37	45.5	24.4	11	.2	.9	1.3	36	30	212	215	302				59.7
St. David	152422	D		2.6	.1							.3	1.3	2		364	368	394			X	54.5
St. Francisville	149505	S		1.1	.4	Tr	7	72.3	22.6	19	.1	.2	.1	13	57	212	274	335				60.0
St. Jacob	144261	S		.1	.0	3.4	107	57.0	30.6	22	Tr	.5	1.1	28	1	468	269	538				62.5
St. Joseph	116713	D	I	2.0	Tr	1.8	23	78.5	31.1	29		.2	.6	4	1	372	325	388	7.1	76		54.5
St. Marie	133026	D	IA	8.3	.0	.6	18	76.9	14.8	19		.2	.1	8	21	260	253	295				56.0
Sandwich	112145	S	IZC1	1.3	.0	Tr	1	89.8	42.9	23		.1	.3	11	51	332	401	437	7.3	43		52.9
San Jose	152609	D	IC1	4.6	.1	Tr	4	74.9	34.7	21	.0	.2	1.6	3	16	316	330	352				
Sauk Village	146508	L	ZC1	.4	.0	Tr	64	74.7	45.4	12	.8	.7	.8	4	99	404	374	554				52.4
Saunemin	110182	D		1.2	.0	4.9	142	20.0	11.7	14			.7	12	2	400	98	474				54.0
Savana	131834	S	C1	.6	.1	.1	4	50.5	34.7	11		.1	.3	2	19	256	270	286				63.5
Saybrook	115950	D		.1	.1	Tr	17	124.0	46.7	19		.1	28.7	24	133	344	502	620	7.0	99		53.0
Sayre Ave. Subdn.	157810	L		2.4	.0	.4	19	128.0	71.7	17	.3	.3	.8	41	275	312	615	780				
Scots Plains Subdn.	153371	L		.5	.0							.6	1.1	3		284	298	339				51.3
Seaton	108248	L	AC1	.1	.0	3.3	187	27.3	8.3	13		.7	.9	29	16	460	103	562				
Secor	109422	D	IC1	5.5	Tr	11.9	10	106.2	46.5	31		.3	.6	1	3	508	457	493				
Seneca	118246	S	I	2.1	Tr	.7	98	73.2	35.8	13		.4	.1	100	124	276	330	628			X	
Shabbona	153620	D		1.4	.0	.1	7	74.6	37.3	20	.2	.4	3.0	1	1	352	340	375				51.5
Shannon	153355	S	C1	.2	.0	.6	4	70.8	37.2	8	.1	.2	.6	1	1	340	330	348				
Shawneetown	113565	D	IC1	2.3	.1	.1	5	86.3	35.9	28		.1	.1	3	12	358	364	373	7.1	75		52.2
Sheffield	111807	D		2.2	Tr	.1	17	111.8	58.0	26		.4	4.9	22	155	360	518	603				54.0
Shelbyville	137848	D	C1	.1	.4	.5	1	117.6	43.7	17	.0	.1	2.2	24	87	348	474	508				55.0
Sheldon	116416	D		.9		.6	56	42.2	14.3	18		.8	.2	3	4	280	165	302	7.6	20		54.0
Sherrard	108242	L		3.9	.0	4.4	106	56.0	19.3	13		.3	.5	38	66	340	220	508				56.3
Sibley	116216	D		.8	.0	.7	12	62.2	28.5	20		.4	.5	2	9	288	273	310	7.4	29		53.5
Sidell	117635	D	C1	.1	Tr	.0	1	66.0	24.4	15		.2	4.7	2	56	200	255	302	7.4	20		53.0
Sidney	152155	D	IZ	7.0	.1	5.8	87	54.1	20.7	18	.5	.5	.4	28	1	384	220	455				
Sigel	144606	D		2.7	Tr	.3	59	49.5	22.6	17	.1	.5	.4	17	5	316	217	372				56.5
Silvis	149561	IS	C1	.4	Tr	.1	404	77.7	37.1	9	.7	1.1	5.6	453	338	230	347	1456				65.0
Silvis Hts.	130858	L	A	.5	.0	3.5	42	54.8	24.6	12		.3	.0	8	7	320	238	338				54.0
Smithton	144225	S		Tr	.0	Tr	126	29.0	11.5	12	.1	1.6	8.6	37	26	308	120	431				57.0
Somonauk	112144	L		1.4	.0	Tr	1	79.8	35.9	22		.2	1.5	4	14	328	347	343	7.3	49		52.7
Southlands Subdn.	136174	L		1.4								.4	1.9	4		304	728	824				
S. Beliot	112321	S	C1	.2	.5	Tr	8	59.4	36.8	18		.1	14.2	2	9	292	300	311	7.5	24		53.2
S. Chicago Hts.	146509	L		.4	.0	Tr	17	93.4	51.1	16	.2	.3	.6	3	57	416	444	503				52.5
S. Elgin	111558	S	IZ	.7	.0	.6	22	66.4	26.2	13		.6	.9	4	23	292	274	343	7.6	18	X	54.6
S. Pekin	109276	D		.1	Tr	Tr	9	100.9	34.8	21		.2	8.6	17	157	220	396	496				55.2
S. Wilmington	121959	S	C1	.4	.2	1.5	311	84.3	39.8	12		2.5	.0	295	361	264	375	1304				60.2
Sparland	108853	D	Z	.0	.0	.1	17	125.0	77.3	17		.3	7.2	11	356	276	631	797				54.0
(treated)	82550	D		.4	.0	Tr	330	4.7	7.0	18			17.3	9	428	282	40	975				
Spring Valley	111560	D	LC1	.2	1.8	.1	41	168.6	71.0	20		1.0	2.7	34	412	324	714	973				56.0
Standard-Mark	109929	S		2.2	.0	.2	1188	57.0	22.9	13		1.5	1.1	1675	143	312	237	3279				62.5
Stanford	115979	D	AIC1Z	2.3	.1	8.7	77	84.2	37.8	26		.2	.6	55	1	480	366	578	7.4	51		54.5
Starved Rock St. Pk.	153217	L	C1	2.4	.0	Tr	25	89.1	33.4	9	.3	.4	2.5	52	12	328	361	424				53.0
St. Reformatory--Women	117372	S		.2	.0	1.0	403	72.8	36.0	14		.8	.1	545	166	268	330	1402			X	59.1
(treated)	156304	S	AZC1	.3			434	18.0	9.0	14				365	232	272	84	1258	8.1			

City	Laboratory Number	Source	Treatment	Iron Fe	Manganese Mn	Ammonium NH_4	Sodium Na	Calcium Ca	Magnesium Mg	Silica SiO_2	Boron B	Fluoride F	Nitrate NO_3	Chloride Cl	Sulfate SO_4	Alkalinity (as $CaCO_3$)	Total Hardness (as $CaCO_3$)	Total Dissolved Minerals	pH	Carbon Dioxide CO_2	Methane CH_4	Hydrogen Sulfide H_2S	Temperature °F
St. Training Sch.-- Sheridan	111093	S	Cl	.2	Tr	Tr	12	75.6	30.2	16		.2	2.1	8	3	324	313	339					55.5
Steeleville	113726	S	IZF	.1	Tr	.6	57	47.7	13.7	15		.1	.1	22	13	256	176	342	7.5	20			59.0
Steger	107861	L		.6	.0	.5	7	90.2	45.5	15		.2	.4	2	51	372	413	432	7.2	62			52.0
Sterling	124667	S	Cl	.3	.0	.0	11	63.8	31.9	15		.1	.5	23	24	256	296	325					62.0
Steward	112900	D		.8	.0	.2	5	65.3	25.3	25		.2	.1	2	8	268	267	292					
Stewardson	144609	D	I	.0	Tr	Tr	36	65.5	23.6	18	.0	.1	1.2	3	32	300	261	376					56.5
Stillman Valley	153360	S		.9	Tr	Tr	4	63.0	30.3	11	.0	.2	.6	1	6	284	282	294					
Stockton	142534	S		.2	.0	.1	10	72.6	36.0	11	.1	.2	1.4	2	7	340	330	346					
Stonefort	152355	S		1.2	.0	Tr	153	50.1	15.2	17	.1	.2	2.6	14	273	216	188	669					63.0
Stone Park	106699	L	Cl	1.3	.1	.3	59	158.4	74.5	14		.1	2.6	44	395	356	702	959	7.0	94			51.2
Stonington	115422	D	IZCl	1.6	.2	Tr	33	99.6	33.1	23		.3	5.3	44	91	296	385	505	7.2	53			55.5
(treated)	115509	D		.1								.2		41		296	37	489	8.2	5			59.5
Strawn	110082	D		6.6	Tr	.2	8	88.9	38.8	17		.5	.2	13	105	272	382	444					54.5
Streamwood	147272	D	ZCl	2.9	.1	.1	13	103.7	55.7	24	.0	.1	.4	3	139	368	489	583					51.5
Stronghurst	107985	L	IZ	2.1	.0	1.1	6	72.8	31.0	19		.1	.3	4	24	296	310	333					53.0
Sturms Subdn.	146911	L		.5	Tr	Tr	74	97.5	60.4	18	.3	.5	2.4	3	504	124	493	877					54.5
Sublette	112898	S		2.5	.0	1.1	60	62.6	28.8	19		.2	.1	1	2	288	275	306					53.6
Sugar Grove	151911	D		.2	.1	Tr	18	97.2	45.2	15	.1	.1	.8	16	124	316	429	503					52.0
Sullivan	115142	D	ILClF	3.2	Tr	.4	10	78.4	33.7	20		.1	3.4	5	4	344	335	349	7.3	49			55.5
(treated)	142527	D						13.0	23.0							86	128	175					
Suncrest Highlands	146507	S	Cl	.1	Tr	.2	60	64.7	29.5	7	.5	1.3	1.9	14	83	308	284	439					53.3
Sunnyland Subdn.	147644	L	Cl	1.8	.2	Tr	11	102.0	46.5	16	.0	.2	.5	24	122	308	446	508					53.7
Sunnyside Estates Subdn.	146789	L		.4	Tr	.1	8	46.5	35.6	20	.1	.5	1.3	2	1	276	263	289					53.8
Swedona	144064	L		1.0	Tr	Tr	97	55.5	21.5	12	.5	.5	9.6	2	7	420	227	462				X	56.3
Sycamore	111944	S		1.4	Tr	Tr	8	72.2	37.7	25		.4	2.1	6	17	316	336	352	7.7	17			52.5
Sycamore-Greengold Subdn.	147933	L		.7	.0	Tr	20	78.5	38.4	15	.2	.4	2.3	4	68	320	353	443					52.7
Table Grove	144395	S	AICl	3.0	.0	1.5	834	156.0	69.3	9	2.1	4.0	1.2	835	1013	260	675	3106					68.0
Tallula	158685	D		.1	1.0		13	121.0	54.0	20	.1	.2	2.2	10	59	474	524	569					56.0
Tampico	112513	D	IZ	.3	.2	Tr	15	64.0	21.7	16		.2	6.5	4	84	184	250	334					53.5
Tamms	125368	D	I	.9	.1	.0	12	99.4	29.8	17		.1	.2	17	62	308	371	418					
Taylorville	125602	D	LClF	.6	.1	.0	34	32.9	10.9	19		.1	14.3	4	33	148	126	234					55.5
Teutopolis	145466	D	ILCl	1.8	.1	.4	39	88.5	29.6	19	.1	.4	1.0	23	99	292	343	466					56.0
(treated)	114786	D		.4				.1	21.3			.2		24		128	91	268	9.7				57.7
Thawville	122612	D		1.3	.1	Tr	61	115.7	50.3	27		.5	7.2	1	294	316	497	748					54.0
Thomasboro	152067	D	AICl	1.4	.1							.3	.4	1		344	286	360				X	54.5
Thomson	153362	D	I	1.4	.1	Tr	6	43.6	14.1	22	.0	.2	20.7	6	29	124	167	227					
Thornton	146633	S	Cl	2.1	Tr	.1	285	198.0	56.8	8	.8	1.2	3.0	275	706	224	729	1715					
Tinley Park	106885	L	Cl	.5	.0	.1	4	103.1	49.7	17		.3	1.2	5	72	388	463	501	6.9	135			52.5
Tinley Pk. St. Hosp.	144431	L		.5	.0	.1	9	109.0	51.9	11	.4	.5	1.3	3	109	388	486	564					54.0
Tiskilwa	111943	D		2.3	Tr	.1	27	82.0	36.5	29		.5	7.6	7	43	352	355	455					53.5

Toledo	149503	D	IZC1	1.3	.1	Tr	44	52.5	21.8	14	.1	.5	3.7	24	27	252	221	333					54.0
(treated)	115175	D		.2								.1		15		260	74	328	7.8	10			59.0
Tolono	139406	D	IZC1	4.1		4.0	115	93.4	32.8	27	.4	.3	1.1	6	1	620	369	640					
Toluca	153666	S		1.2	.0	1.8	500	50.6	21.5	10	.8	1.6	.4	580	224	256	215	1550					75.0
Tonica	153215	D		1.5	.0	1.9	128	44.9	25.7	9	1.0	.8	8.3	75	1	388	218	534					53.5
Toulon	145322	L	A	4.0	.0	1.5	659	24.3	11.3	8	1.0	2.0	.1	600	225	464	108	1812					60.0
Tower Hill	144607	S		2.9	.1	.6	44	62.5	16.4	24	.0	.3	.0	24	2	284	224	376					
Towner Subdn.	151196	L		.1	Tr		117	81.0	59.0	17	.4	.5	2.8	8	573	88	445	961					54.5
Tremont	118659	D	AIZ	1.3	.0	.9	27	69.7	50.3	25		.3	7.6	3	1	432	382	457	7.4	43			54.5
Trenton	145464	S		Tr	.0	.6	386	4.5	3.1	8	.5	1.0	1.1	215	1	562	24	950					58.5
Tri-State Village	146607	L		1.8	Tr	Tr	25	98.0	38.5	20	.2	.4	4.0	3	132	316	404	526					51.0
Troy	144046	D		.1	.1	Tr	9	102.5	44.4	25	.3	.1	1.3	7	149	292	438	517					56.5
Tuscola	117920	L	AZC1	.6	.0	.5	98	58.6	23.5	15		.3	Tr	66	12	352	243	498	7.2	55		X	57.0
Ullin	152302	D	I	4.8	.2	Tr	5	72.6	17.9	18	.0	.2	2.3	6	1	256	255	290					57.0
Union	111047	L		.1	.1	.9	26	42.3	25.3	14		.4	1.0	2	1	264	210	280	7.5	22			52.3
Utica	110852	S		.2	.0	.5	91	98.0	34.4	15		.5	1.2	170	21	324	387	627					55.5
Valley View Subdn.	146912	L		.9	Tr	Tr	32	72.4	33.2	17	.3	.3	2.9	3	74	304	318	408					51.4
Valmeyer	113886	D	IZC1	6.8	.4	Tr	40	134.0	23.9	35		.2	2.3	91	113	272	433	594	7.0	67			57.5
Van Orin	111799	D		1.6	.0	.6	23	55.1	25.3	25		.5	.3	2	1	288	242	310					52.5
Varna	108900	D	I	.7	Tr	.6	81	72.0	28.8	24		.4	.3	6	126	336	299	532					54.5
Vermilion	141306	D	IA	3.1								.2	.5	13		412	380	429					55.8
Versailles	132473	D		.1	.1	.1	37	84.4	45.8	18		.1	14.5	19	41	348	399	457					53.0
Victoria	144665	L		.7	Tr	Tr	537	15.2	7.4	10	1.8	1.8	2.7	410	123	528	69	1448					63.5
Villa Grove	152579	L	ALC1	.1	.0	.5	118	51.4	25.9	10	.1	.4	.9	83	12	364	235	529					64.0
(treated)	115183	L		.1								.1		95		168	74	381					66.2
Villa Park	146384	S	C1	.2	.0	.5	95	80.3	38.5	8	.6	.6	1.3	33	239	272	360	665					55.4
Viola	108243	S		.1	.0	1.7	317	50.4	20.4	13		2.4	.2	260	298	228	210	1104					61.2
Waggoner	144971	D	I	6.1		Tr	2	66.2	21.7	19	.1	.5	5.3	5	1	296	255	318					55.0
Walnut	126678	D	I	4.2	.1	.8	6	77.2	27.5	26		.3	.4	4	1	316	306	320					53.0
Wapella	144611	D	I	5.0	.1	4.0	13	84.0	35.0	21	Tr	.3	1.0	2	1	392	357	410					53.5
Warren	153363	S		.1	.0	.1	1	78.0	43.0	12	.0	.2	.4	4	22	344	372	374					
Warrensburg	152577	D	IZ	3.1	.0	5.6	66	72.4	34.0	21	.4	.5	.7	6	1	472	321	504					55.5
(treated)	115789	D		.5								.2		8		452	38	482					58.5
Warrenville	147701	L		.5	.0	Tr	75	85.5	40.6	14	.4	.6	.6	77	115	316	381	609					52.2
Washburn	109512	D	I	1.8	.0	2.4	37	69.5	32.3	24		.6	1.0	17	2	368	307	416					54.0
Washington	152727	D	IZ	1.5	Tr	Tr	7	69.5	30.2	17	.0	.2	2.5	1	1	308	298	317					56.0
Washington Estates Subdn.	708070	D		3.8	.0	5.8	74	85.6	28.2	26		.4	2.8	3	3	496	330	526	7.6				
Wataga	144661	L		.6	.0	.1	391	10.0	3.3	9	1.3	1.9	3.5	180	57	572	39	1024					62.0
Waterman	112084	S		.8	Tr	.1	4	56.4	37.7	24		.4	2.8	1	4	296	296	307	7.5	28			55.0
Watseka	128960	D	IC1	.4	.0	3.5	70	39.2	13.8	16		.3	.5	7	5	300	155	342					55.0
Wauconda	107499	L		1.3	.0	.9	1	68.1	48.2	40		.4	.4	3	13	356	369	382	7.3	46		X	52.5
Waycinden Park	152023	S		.2	.0	.5	66	75.9	36.4	8	.3	.3	1.2	26	172	268	339	537				X	56.0
Waynesville	115702	D		3.3	.0	4.3	67	95.6	52.6	28		.2	.2	4	16	592	456	634					54.6
Wedron	111092	S		1.5								.1		6	147	296	465	490					54.0
Weldon	115683	D		1.8	.0	3.1	62	68.1	23.9	23		.5	.1	6	1	404	269	445			X		55.3
Weldon Springs St. Pk.	152601	D		2.6	.2	.2	6	68.5	31.0	14	.0	.2	4.7	2	22	284	299	338					55.0
Wenona	108901	S	I	1.5	.0	1.7	439	61.0	25.1	15		1.4	.6	490	253	260	256	1437					70.0
Wenninger Subdn.	708072	D		1.9	.0	2.4	52	76.0	31.6	22		.2	1.9	12	2	420	320	453	7.9				57.0
W. Brooklyn	113202	D		1.6	Tr	1.1	19	71.7	27.7	27		.3	Tr	1	1	336	294	338					
W. Chicago	110809	L	IC1	1.4	.0	Tr	20	105.4	54.4	17		.5	1.0	38	158	312	487	600					51.6

City	Laboratory Number	Source	Treatment	Iron Fe	Manganese Mn	Ammonium NH_4	Sodium Na	Calcium Ca	Magnesium Mg	Silica SiO_2	Boron B	Fluoride F	Nitrate NO_3	Chloride Cl	Sulfate SO_4	Alkalinity (as $CaCO_3$)	Total Hardness (as $CaCO_3$)	Total Dissolved Minerals	pH	Carbon Dioxide CO_2	Methane CH_4	Hydrogen Sulfide H_2S	Temperature °F
West Dundee	111399	S	Cl	Tr	.0	Tr	3	73.7	38.3	21		.1	15.1	9	72	248	342	387	8.1	5			51.0
Western Springs	142088	D	ILCl	.2	Tr	.8	74	97.6	38.7	8	.4	.7	.1	30	214	296	403	664					54.4
(treated)	106409	D		.0										20		56	195	978					55.0
Westfield	114982	S	I	2.5	.0	1.3	81	18.1	12.1	14		.9	Tr	7	1	264	96	282	8.2	4			57.0
Westmont	110352	L	IZ	1.5	.0	.8	27	138.6	37.3	23		.4	.3	3	178	372	500	620	7.2	59			51.8
(treated)	110884	L		.3								.4		4		340	25	610	7.5	26			56.5
Wheaton	150615	L	A.	1.1	.1	.0	20	102.9	43.7	14	.1	.2	.6	14	165	288	437	528					51.6
Wheaton Farms	110604	L		1.2	.0	Tr	15	82.9	39.2	25		.3	2.5	6	141	244	369	456		17			50.5
Wheeling	106248	L	Cl	.1	Tr	.4	63	44.2	33.2	16		.5	1.0	7	179	188	247	460					52.7
White Pines Forest St. Pk.	112652	S		.2	Tr	Tr	9	59.9	25.3	17		.1	.1	2	22	248	254	277					
Wildwood Subdn.	125913	S	ICl	2.0	.0	.3	26	80.4	19.0	15		1.0	.2	11	59	260	279	360					62.0
Williams Field	107735	L	A	5.4	.2	1.1	700	21.7	6.8	14		4.0	.4	570	176	620	83	1882				X	63.5
Williamsville	108197	D	I	.4	.1	.1	2	85.7	36.3	17		.2	.1	3	84	276	364	405					
Willisville	145895	S	Cl	.4	.0	.5	40	59.4	17.4	11	.1	.1	.2	19	8	274	220	313				X	62.0
Willowick Estates	151277	L		1.4	.1	.6	37	117.0	52.8	17	.5	.5	.4	2	225	356	510	669					
Wilmington	107910	S	Cl	.1	Tr	1.0	251	110.2	39.7	12		1.2	.7	295	323	236	439	1188	7.4	26			59.5
Winchester	113693	D	ILCl	2.9	.1	.9	8	82.2	33.9	23		.3	.3	9	20	332	345	367					55.0
(treated)	113694	D		.3								.3		9		80	72	117					
Windsor	145470	D	ICl	6.0	.0	8.2	35	72.5	39.5	18	.5	.7	5.5	5	1	432	344	446					56.0
Winfield	148010	L	Cl	.5	.0	Tr	16	98.0	53.8	17	.1	.3	1.4	7	158	326	466	580				X	51.0
Winnebago	119055	S		.4	.1	Tr	15	93.6	41.6	21		.1	34.1	25	80	292	405	519					51.5
Winslow	112584	S		.1	.0	Tr	2	61.2	40.0	15		.1	Tr	2	15	304	318	311				X	52.4
Winthrop Harbor	148586	L		.1	.0	.1	55	23.1	9.0	20	.3	.5	2.3	8	56	152	110	235	7.5	38			51.7
Witt	115293	D	IZ	5.3	.2	.1	44	69.3	20.0	26		.2	Tr	15	61	268	256	388	7.1	60			55.0
Wooded Shores Subdn.	148175	D		Tr							.0	.1		11		402	490	521					51.3
Woodhull	114636	S		1.6	.0	.2	273	35.4	14.7	12		1.2	4.3	149	243	276	149	901	7.5	21			62.6
Woodland	116472	D	Cl	.5	Tr	7.9	39	96.8	38.2	20		.3	2.1	10	34	456	399	498	7.5				
Wood River	146646	D	Cl	1.1	.5	Tr	39	122.3	40.6	23	.0	.1	2.0	11	176	308	473	626					58.2
Woodstock	111019	D	ILCl	1.3	Tr	1.8	1	78.0	42.2	31		.3	1.1	4	8	360	369	382	7.5	34			51.2
(treated)	112417	D		.1								.3		3		70	75	102	9.6	1			54.5
Worden	152183	D	I	.9	Tr	2.4	207	36.4	17.0	8	.1	.5	.1	90	71	416	161	715					58.0
Wyanet	111809	D	I	6.0	.6	2.8	16	87.3	36.0	33		.5	.6	7	2	396	367	414					53.0
Wyoming	109136	L		.1	.0	1.7	341	42.8	18.1	14		2.4	.6	270	303	232	182	1136	7.6	14		X	66.4
Yates City	109798	D	ZF	Tr	.0	Tr	1	74.8	29.2	22		.1	16.5	6	33	252	307	329					53.8
(treated)	109795	D		.1								.3		6		264	37	339					
York Center	146496	L	Z	1.9	Tr	Tr	14	105.0	48.4	17	.1	.3	1.6	15	133	332	462	572					
Yorkville	145958	D	Cl	.1	.0	Tr	1	91.5	45.5	11	.0	.1	10.7	13	124	262	416	488					47.0
Zion	107588	S	Z	.9	.0	.1	56	92.0	21.7	12		1.6	.5	23	151	252	320	520	7.2	39			59.4
Zurich Hts. San. Dist.	146914	L		.5	Tr	Tr	129	142.4	93.1	16	.5	.3	3.5	18	872	84	739	1378					53.2