

## **CITY OF FREEPORT**

# **2010 WATER QUALITY REPORT**

The Freeport Water & Sewer Commission is pleased to present to you this year's Water Quality Report. This report is a summary of the quality of water that we provided last year. Included in the report are details about where your water comes from, what it contains and how it compares to Environmental Protection Agency (EPA) and state health standards. We are committed to providing you with information because informed customers are our best allies. For more information about this report, please feel free to visit our web page at [http://www.ci.freeport.il.us/departments/water\\_sewer.htm](http://www.ci.freeport.il.us/departments/water_sewer.htm) or contact Craig Joesten at 815-233-0111.

During the 2009 calendar year the Water & Sewer Commission conducted tests for 100 drinking water contaminants. We are pleased to report that no drinking water quality violations were recorded during 2009. We have learned through our monitoring and testing that some constituents have been detected. The EPA has determined that your water "is safe" at these levels. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Safe Drinking Water Hotline (800-426-4791).

In order to ensure that tap water is safe to drink, USEPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. The Water & Sewer Commission monitored for EPA's list of unregulated contaminants in May and December of 2003. Results are available by visiting our web page or by calling our water office at 815-233-0111.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on the appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Freeport obtains its drinking water from wells. Other sources of drinking water (including both tap and bottled water) include rivers, lakes, streams, reservoirs and springs. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or human activity. Possible contaminants of source water include: microbial contaminants such as viruses and bacteria, inorganic contaminants such as salts and metals, pesticides and herbicides from residential uses or agricultural runoff, synthetic and volatile organic chemicals from industrial sources and radioactive contaminants from mining or naturally occurring sources.

The Freeport Water Treatment Plant has been in operation since 1882. Through 11,800 services connections, the Water & Sewer Commission supplies an average of 3.0 million gallons per day of treated drinking water to the local population. Most of Freeport's groundwater is obtained from five municipal wells drilled around the water treatment plant. Two wells are drilled into the glacial and alluvial deposits above the bedrock while the other three wells are in a shallow bedrock aquifer called the Saint Peter Sandstone. A fourth well that was located in the Saint Peter Sandstone was abandoned and sealed according to Illinois Department of Public Health regulations. Raw well water is pumped to the water treatment plant where it undergoes several treatment processes including aeration, chlorination, filtration and fluoridation. An air stripping facility is designed to remove volatile organics from the water supply on an as needed basis.

The most recent well (No. 8) added to the City's water distribution system was in October 2000. This well obtains water from the St. Peter Sandstone aquifer and the much deeper Ironton-Galesville aquifers. Because the source water is lower in manganese and iron, only the chlorination and fluoridation treatment processes are needed.

To determine Freeport's susceptibility to groundwater contamination the Illinois Rural Water Association conducted a well site survey in January 2003. The survey identified 33 potential sources of ground water contamination that could pose a hazard to

the groundwater utilized by the City of Freeport. Based upon this information, the Illinois EPA determined that Freeport's source water supply for wells numbers 2 through 7 is susceptible to contamination. The study also determined that the source water for well No. 8 is not susceptible to contamination. As such, the Illinois EPA has provided 5-year recharge area calculations for wells number 2 through 7. The land use within the recharge areas of the wells was analyzed as part of this susceptibility determination. This land use includes residential, commercial and agricultural properties. Additional information on the Source Water Assessment Summary and source water protection efforts recommended by EPA can be found on our web page or by calling our water office at 815-233-0111.

In addition to the informational section of this report, we have included a water quality data table for your review. The table will give you a better picture of the contaminants that were detected in Freeport's water. A complete listing of the contaminants that were tested for, but not detected can be obtained from our web page. If you would like to learn more about your water utility, please feel free to attend any of our regularly scheduled Board meetings. The meetings are held on the last Tuesday of every month at 5:00 PM. in the City Council Chambers at 230 West Stephenson Street in Freeport, Illinois.

## City of Freeport - 2009 Water Quality Data

**Definitions:** *Maximum Contaminant Level Goal (MCLG):* The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety. *Maximum Contaminant Level (MCL):* The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology. *Action Level (AL):* The concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow. *Treatment Technique (TT):* A required process intended to reduce the level of a contaminant in drinking water.

**Abbreviations:** *ND.:* Not detected at testing limits. *N/A:* Not applicable. *ppm:* Parts per million or milligrams per liter. *ppb:* Parts per billion or micrograms per liter. *ppt:* Parts per trillion or nanograms per liter. *pCi/l:* picocuries per liter is a measure of the radioactivity in water. *# of positives/month:* Number of positive samples per month.

The table below lists all the drinking water contaminants that were detected during the period of January 1 to December 31, 2009. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. In most cases, the **Level Found** column represents an average of sampling data collected during the calendar year. The **Range of Detections** column represents a range of individual sampling results, from lowest to highest that were collected during the calendar year. If a date appears in the **Date of Sample** column, the Illinois EPA requires monitoring for this contaminant less than once per year. This is because the concentrations do not frequently change. *If no date appears* in the column, monitoring for this contaminant was conducted during the 2009 calendar year.

TEST RESULTS - DETECTED CONTAMINANTS							
Contaminant (units)	MCLG	MCL	Level Found	Range of Detections	Violation Y/N	Date of Sample	Likely Source of Contamination
<b>Radioactive Contaminants</b>							
Alpha Emitters (pCi/L)	0	15	5.5	5.5	N		Erosion of natural deposits.
Combined Radium (pCi/L)	0	5	4.9	4.9	N		Erosion of natural deposits.
Radium 226 (pCi/L)	N/A	N/A	3.1	3.1	N		Erosion of natural deposits.
Radium 228 (pCi/L)	N/A	N/A	1.8	1.8	N		Erosion of natural deposits.
<b>Inorganics Contaminants</b>							
Arsenic (ppb)	N/A	10	0.539	ND. to 0.539	N		Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium (ppm)	2	2	0.360	0.123 to 0.360	N		Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Copper (ppm)	1.3	AL= 1.3	0.200	0 exceeding AL	N	2007 Data	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.

Fluoride (ppm)	4	4 State	1.09	0.97 to 1.2	N		Water additive which promotes strong teeth.
Iron (ppb)	N/A	1000 State	150	ND. to 150	N		Erosion from naturally occurring deposits.
Lead (ppb)	0	AL= 15	6.3	1 exceeding AL	N	2007 Data	Corrosion of household plumbing systems, erosion of natural deposits.
Nitrate (As Nitrogen) (ppm)	10	10	0.06	0.06	N	4-21-08	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Sodium (ppm)	N/A	N/A	30.5	5.87 to 30.5	N		Erosion of naturally occurring deposits; used as a water softener.
Sulfate (ppm)	N/A	N/A	43.0	15.6 to 43.0	N		Erosion of naturally occurring deposits.

### Disinfectants/Disinfection By-Products

TTHM [Total Trihalomethanes] (ppb)	N/A	80	49.7	5.3 to 64.0	N		By-product of drinking water chlorination.
Bromodichloromethane (ppb)	N/A	N/A	13.1	1.6 to 17.9	N		By-product of drinking water chlorination.
Bromoform (ppb)	N/A	N/A	0.72	ND. to 1.16	N		Discharge from manufacturing plants; used to dissolve dirt and grease.
Chloroform (ppb)	N/A	N/A	28.6	2.5 to 35	N		Used as a solvent for fats, oils, rubber, resins; A cleansing agent; found in fire extinguishers.
Dibromochloromethane (ppb)	N/A	N/A	7.3	0.7 to 9.96	N		Used as a chemical reagent; an intermediate in organic synthesis.
Total Haloacetic Acids (ppb)	N/A	60	12.5	ND. to 21.1	N		By-product of drinking water chlorination.
Dichloroacetic Acid (ppb)	N/A	N/A	4.65	ND. to 9.72	N		By-product of drinking water chlorination.
Trichloroacetic Acid (ppb)	N/A	N/A	6.5	ND. to 9.41	N		By-product of drinking water chlorination.
Dibromoacetic Acid (ppb)	N/A	N/A	1.35	ND. to 3.28	N		By-product of drinking water chlorination.
Chlorine (free) (ppm)	4	4	1.04	0.20 to 1.80	N		Water additive used to control microbes.

### About The Data

**Arsenic:** Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

**Disinfectants/Disinfection By-Products:** Not all sample results were used for calculating the level found because some results were part of an evaluation to determine where compliance sampling should occur in the future.

**Fluoride:** Fluoride is added to the water supply to help promote strong teeth. The Illinois Department of Public Health recommends an optimal fluoride range of 0.9 mg/L to 1.2 mg/L.

**Iron:** This contaminant is not currently regulated by USEPA. However, the state has set an MCL for this contaminant for supplies serving a population of 1000 or more.

**Lead:** Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your homes plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and you should flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

**Sodium:** There is not a state or federal MCL for sodium. Monitoring is required to provide information to consumers and health officials that are concerned about sodium intake due to dietary precautions. If you are on a sodium restricted diet, you should consult a physician about this level of sodium in the water.

**Trihalomethanes:** Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys or central nervous systems and may have an increased risk of getting cancer.

**Unregulated Contaminants:** A maximum contamination level (MCL) for this contaminant has not been established by either state or federal regulations, nor has mandatory health effects language. The purpose for monitoring this contaminant is to assist USEPA in determining the occurrence of unregulated contaminants in drinking water, and whether future regulation is warranted.

TEST RESULTS - UNDETECTED CONTAMINANTS							
Contaminant (units)	MCLG	MCL	Level Found	Range of Detections	Violation Y/N	Date of Sample	Likely Source of Contamination
<b>Microbiological Contaminants</b>							
Total Coliform Bacteria (# positive samples/month)	0	>1	ND.	ND	N	2009 Data	Naturally present in the environment.
Fecal coliform and <i>E.coli</i>	0	>1	ND.	ND.	N	2009 Data	Human and animal fecal waste.
<b>Inorganic Contaminants</b>							
Antimony (ppb)	6	6	ND.	ND.	N	10-21-09	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.
Beryllium (ppb)	4	4	ND.	ND.	N	10-21-09	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries.
Cadmium (ppb)	5	5	ND.	ND.	N	10-21-09	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints.
Chromium (ppb)	100	100	ND.	ND.	N	10-21-09	Discharge from steel and pulp mills; erosion of natural deposits.
Cyanide (ppb)	200	200	ND.	ND.	N	10-21-09	Discharge from steel/metal factories; discharge from plastic and fertilizer factories.
Manganese (ppb)	N/A	150 State	ND.	ND.	N	10-21-09	Erosion of naturally occurring deposits.
Mercury (inorganic) (ppb)	2	2	ND.	ND.	N	10-21-09	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland.
Nickel (ppb)	N/A	100	ND.	ND.	N	10-21-09	Erosion from naturally occurring sources; discharges from nickel plating, storage batteries, magnets, electrodes and spark plugs.
Nitrate & Nitrite (As Nitrogen) (ppm)	10	10	ND.	ND.	N	4-08-09	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Nitrite (ppm)	1	1	ND.	ND.	N	4-24-06	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits.
Selenium (ppb)	50	50	ND.	ND.	N	10-21-09	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
Thallium (ppb)	0.5	2	ND.	ND.	N	10-21-09	Leaching from ore-processing sites; discharge from electronics, glass and drug factories.
Zinc (ppb)	N/A	5000 State	ND.	ND.	N	10-21-09	Naturally occurring; discharge from metal factories.
<b>Synthetic Organic Contaminants including Pesticides and Herbicides</b>							
2,4-D (ppb)	70	70	ND.	ND.	N	4-08-09	Runoff from herbicide used on row crops.
2,4,5-TP (Silvex) (ppb)	50	50	ND.	ND.	N	4-08-09	Residue of banned herbicide.
Alachlor (ppb)	0	2	ND.	ND.	N	4-08-09	Runoff from herbicide used on row crops.
Aldrin (ppb)	N/A	1.0 State	ND.	ND.	N	4-08-09	Runoff from use as an insecticide, not uses since 1987.
Atrazine (ppb)	3	3	ND.	ND.	N	4-08-09	Runoff from herbicide used on row crops.
Benzo(a)pyrene (PAH) (ppt)	0	200	ND.	ND.	N	4-08-09	Leaching from linings of water storage tanks and distribution lines.
Carbofuran (ppb)	40	40	ND.	ND.	N	4-08-09	Leaching of soil fumigant used on rice and alfalfa.
Chlordane (ppb)	0	2	ND.	ND.	N	6-01-09	Residue of banned termiticide.
Dalapon (ppb)	200	200	ND.	ND.	N	4-08-09	Runoff from herbicide used on rights of way.

DDT (ppb)	N/A	50.0 State	ND.	ND.	N	4-08-09	Runoff from use as a contact insecticide.
Di(2-ethylhexyl)adipate (ppb)	400	400	ND.	ND.	N	4-08-09	Discharge from chemical factories.
Di(2-ethylhexyl)phthalate (ppb)	0	6	ND.	ND.	N	4-08-09	Discharge from rubber and chemical factories.
Dibromochloropropane (ppt)	0	200	ND.	ND.	N	4-08-09	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards.
Dieldrin (ppb)	N/A	1.0 State	ND.	ND.	N	4-08-09	Runoff from use as an insecticide; not used since 1987.
Dinoseb (ppb)	7	7	ND.	ND.	N	4-08-09	Runoff from herbicide used on soybeans and vegetables.
Diquat (ppb)	20	20	ND.	ND.	N	4-08-09	Runoff from herbicide use.
Endothall (ppb)	100	100	ND.	ND.	N	4-08-09	Runoff from herbicide use.
Endrin (ppb)	2	2	ND.	ND.	N	4-08-09	Residue of banned insecticide.
Ethylene dibromide (ppt)	0	50	ND.	ND.	N	4-08-09	Discharge from petroleum refineries.
Glyphosate (ppb)	700	700	ND.	ND.	N	4-24-06	Runoff from herbicide use.
Heptachlor (ppt)	0	400	ND.	ND.	N	4-08-09	Residue of banned termiticide.
Heptachlor epoxide (ppt)	0	200	ND.	ND.	N	4-08-09	Breakdown of heptachlor.
Hexachlorobenzene (ppb)	0	1	ND.	ND.	N	4-08-09	Discharge from metal refineries and agricultural chemical factories.
Hexachlorocyclopentadiene (ppb)	50	50	ND.	ND.	N	4-08-09	Discharge from chemical factories.
Lindane (ppt)	200	200	ND.	ND.	N	4-08-09	Runoff/leaching from insecticide used on cattle, lumber, gardens.
Methoxychlor (ppb)	40	40	ND.	ND.	N	4-08-09	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock.
Oxamyl [Vydate] (ppb)	200	200	ND.	ND.	N	4-08-09	Runoff/leaching from insecticide used on apples, potatoes and tomatoes.
PCBs [Polychlorinated biphenyls] (ppt)	0	500	ND.	ND.	N	4-08-09	Runoff from landfills; discharge of waste chemicals.
Pentachlorophenol (ppb)	0	1	ND.	ND.	N	4-08-09	Discharge from wood preserving factories.
Picloram (ppb)	500	500	ND.	ND.	N	4-08-09	Herbicide runoff.
Simazine (ppb)	4	4	ND.	ND.	N	4-08-09	Herbicide runoff.
Toxaphene (ppb)	0	3	ND.	ND.	N	4-08-09	Runoff/leaching from insecticide used on cotton and cattle.

### **Volatile Organic Contaminants-**

Benzene (ppb)	0	5	ND.	ND.	N	1-20-09	Discharge from factories; leaching from gas storage tanks and landfills.
Carbon tetrachloride (ppb)	0	5	ND.	ND.	N	1-20-09	Discharge from chemical plants and other industrial activities.
Chlorobenzene (ppb)	100	100	ND.	ND.	N	1-20-09	Discharge from chemical and agricultural chemical factories.
Cis-1,2-Dichloroethylene (ppb)	70	70	ND.	ND.	N	1-20-09	Discharge from industrial chemical factories.
o-Dichlorobenzene (ppb)	600	600	ND.	ND.	N	1-20-09	Discharge from industrial chemical factories.
p-Dichlorobenzene (ppb)	75	75	ND.	ND.	N	1-20-09	Discharge from industrial chemical factories.
1,2 - Dichloroethane (ppb)	0	5	ND.	ND.	N	1-20-09	Discharge from industrial chemical factories.
1,1 - Dichloroethylene (ppb)	7	7	ND.	ND.	N	1-20-09	Discharge from industrial chemical factories.
trans - 1,2 Dichloroethylene (ppb)	100	100	ND.	ND.	N	1-20-09	Discharge from industrial chemical factories.
Dichloromethane (ppb)	0	5	ND.	ND.	N	1-20-09	Discharge from pharmaceutical and chemical factories.

1,2-Dichloropropane (ppb)	0	5	ND.	ND.	N	1-20-09	Discharge from industrial chemical factories.
Ethylbenzene (ppb)	700	700	ND.	ND.	N	1-20-09	Discharge from petroleum refineries.
Styrene (ppb)	100	100	ND.	ND.	N	1-20-09	Discharge from rubber and plastic factories; leaching from landfills.
Tetrachloroethylene (ppb)	0	5	ND.	ND.	N	1-20-09	Leaching from PVC pipes; discharge from factories and dry cleaners.
1,2,4 -Trichlorobenzene (ppb)	70	70	ND.	ND.	N	1-20-09	Discharge from textile-finishing factories.
1,1,1 - Trichloroethane (ppb)	200	200	ND.	ND.	N	1-20-09	Discharge from metal degreasing sites and other factories.
1,1,2 -Trichloroethane (ppb)	3	5	ND.	ND.	N	1-20-09	Discharge from industrial chemical factories.
Trichloroethylene (ppb)	0	5	ND.	ND.	N	1-20-09	Discharge from metal degreasing sites and other factories.
Toluene (ppm)	1	1	ND.	ND.	N	1-20-09	Discharge from petroleum factories.
Vinyl Chloride (ppb)	0	2	ND.	ND.	N	1-20-09	Leaching from PVC piping; discharge from plastics factories.
Xylenes (ppm)	10	10	ND.	ND.	N	1-20-09	Discharge from petroleum factories; discharge from chemical factories.

### Additional Contaminants

Aldicarb (ppb)	N/A	N/A	ND.	ND.	N	4-08-09	Insecticide
Aldicarb Sulfone (ppb)	N/A	N/A	ND.	ND.	N	4-08-09	
Aldicarb Sulfoxide (ppb)	N/A	N/A	ND.	ND.	N	4-08-09	
Butachlor (ppb)	N/A	N/A	ND.	ND.	N	4-08-09	
Carbaryl (ppb)	N/A	N/A	ND.	ND.	N	4-08-09	
Dicamba (ppb)	N/A	N/A	ND.	ND.	N	4-08-09	Herbicide
3-Hydroxycarbofuran (ppb)	N/A	N/A	ND.	ND.	N	4-08-09	
Methomyl (ppb)	N/A	N/A	ND.	ND.	N	4-08-09	Insecticide
Metolachlor (ppb)	N/A	N/A	ND.	ND.	N	4-08-09	Herbicide
Metribuzin (ppb)	N/A	N/A	ND.	ND.	N	4-08-09	Herbicide
Propachlor (ppb)	N/A	N/A	ND.	ND.	N	4-08-09	Herbicide
Monobromoacetic Acid (ppb)	N/A	N/A	ND.	ND.	N	2009 Data	By-product of drinking water chlorination.
Monochloroacetic Acid (ppb)	N/A	N/A	ND.	ND.	N	2009 Data	By-product of drinking water chlorination.

### Unregulated Contaminants

2,4-Dinitrotoluene (ppb)	N/A	N/A	ND.	ND.	N	12-09-03	Used in the production of isocyanate and explosives.
2,6-Dinitrotoluene (ppb)	N/A	N/A	ND.	ND.	N	12-09-03	Used as a mixture with 2,4-dinitrotoluene (similar uses).
4,4'-DDE (ppb)	N/A	N/A	ND.	ND.	N	12-09-03	Degradation product of DDT, a general insecticide.
EPTAM (EPTC) (ppb)-	N/A	N/A	ND.	ND.	N	12-09-03	Herbicide used on annual grasses, weeds, in potatoes and corn.
Terbacil (ppb)	N/A	N/A	ND.	ND.	N	12-09-03	Herbicide used with sugarcane, alfalfa and some fruit.
Acetochlor (ppb)	N/A	N/A	ND.	ND.	N	12-09-03	Herbicide used with cabbage, citrus, coffee and corn crops.
Molinate (Ordam) (ppb)	N/A	N/A	ND.	ND.	N	12-09-03	Selective herbicide used with rice, controls watergrass.
Dacthal (DCPA) (ppb)	N/A	N/A	ND.	ND.	N	12-09-03	An herbicide used on grasses and weeds with fruit and vegetable crops.

Methyl tert-butyl ether (MTBE) (ppb)	N/A	N/A	ND.	ND.	N	12-09-03	Octane enhancer in unleaded gasoline.
Nitrobenzene (ppb)	N/A	N/A	ND.	ND.	N	12-09-03	Used in the production aniline, which is used to make dyes, herbicides and drugs.
Perchlorate (ppb)	N/A	N/A	ND.	ND.	N	12-09-03	Oxygen additive in solid fuel propellant for rockets, missiles and fireworks.