City of Corning

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City of Corning
Department of Public Works
2003 Water Quality Consumer Confidence Report
Public Water System Number 5210001

This report states the chemical analysis of our drinking water and the progress accomplished in modernizing our Drinking Water Distribution System. The City of Corning diligently strives towards operation of one of the finest state of the art Drinking Water Distribution Systems in the North State through continual improvements and upgrades.

How to reach us with questions and concerns:

For more information regarding your drinking water or this report, contact Lisa Linnet at (530) 824-7029.

Este informe contiene informacion muy importante sobre su agua beber. Traduzalo o hable con alguien que lo entienda bien.

City Well locations:

City water originates from ten (10) well locations consisting of deep well turbine pumps pumping ground water from the deep-water aquifer located beneath the City. Three well sites are currently off-line and not supplying water into the City system.

In 1998 the City took one well off line when well samples taken showed it contained an organic chemical commonly know as PCE. The technical name for PCE is "Tetrachloroethylene". The PCE detected measured 1 part per billion in the well; Federal EPA and State limits are 5 parts per billion. Although State and Federal standards do not consider this well hazardous, it remains out of service to insure the quality of our City drinking water. Additionally, two other wells remain off line due to possible future contamination of Methy Tert Butyl Ether (MTBE), an additive used to boost the octane level of gasoline. These wells currently are not contaminated, however monitoring of private wells in the vicinity of these well sites confirm that the MTBE plume is heading in the general direction of the City wells. Prior to resuming use of these wells, testing and approval by a State Certified Laboratory is required.

California Department of Health Services completed a Drinking Water Source Assessment Program (DWSAP) in March of 2002 on seven (7) of the ten (10) City wells, the results are as follows:

Source Name	Vulnerability Summary
Well 001	Well 001 is considered to be most vulnerable to contamination from the agricultural/irrigation wells located in the general vicinity around the well.
Well 002	Well 002 is considered to be most vulnerable to contamination from nearby airport activities, historic waste dumps and landfills, metal plating, finishing, or fabricating, and septic tank/leach field systems located in the general vicinity around the well.
Well 003	Well 003 is considered to be most vulnerable to contamination from the historic gas stations and metal plating, finishing, and fabricating facilities located in the general vicinity around the well.
Well 005 Well 005 (Continued)	Well 005 is considered to be most vulnerable to contamination from the historic gas stations and metal plating, finishing, and fabricating facilities located in the general vicinity around the well.
Well 008	Well 008 is considered to be most vulnerable to contamination from injection wells or dry wells located in the general vicinity around the well.

Source Name	Vulnerability Summary
Well 009	Well 009 is considered to be most vulnerable to contamination from the grazing activities located in the general vicinity around the well.
Well 010	Well 010 is considered to be most vulnerable to contamination from the high-density septic tank and leach field disposal systems in the vicinity around the well.

The City has upgraded five (6) of our ten (10) well sites by adding Variable Frequency Drive Systems (VFD's). These VFD's are computer controlled and operate the pumps on a preset pressure demand. VFD's control the electric pump at start up by not allowing the pump to operate at full Revolutions Per Minute (RPM). The pump starts at a low RPM then gradually increases speed to meet the systems pressure demand. These VFD's have dramatically reduced electrical costs as pump motors need only to run at reduced speed to maintain water line pressure demand. A computerized control panel remotely monitors and controls the functions of the water storage tower and these five well sites. An auto dialer system can dial the Fire Department 24 hours a day reporting any system failures, which are then reported to the Public Works Department.

Other improvements include installation of four (4) diesel powered standby generators that operate automatically within minutes of a power failure, shutting down and resetting automatically after the power is restored. One generator, located in the South Avenue area supplies the emergency power needed to operate the well, the flashing traffic signal, and also the sewer lift station. One of the wells can be operated by a standby gear drive system that has a diesel-powered engine. It is operated by a drive shaft between the diesel engine and the electric pump motor. This system can be put into operation within one-half hour of a power failure. For security purposes, motion sensitive alarm systems have been installed at City Wells.

Another important Public Works project was the replacement of antiquated water and sewer lines throughout the City. Many of these lines have been in operation since 1912. The City Council, recognizing the efficiency and cost effectiveness of updating the infrastructure system, authorized the application for a Rural Economic and Community Development Loan to fund the replacement of these lines. The total replacement of 52,750 feet or nearly ten (10) miles of water trunk line was completed at an estimated cost of $3,609,000 in December 1999.

Definitions of some of the terms used in this report:

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. The California Environmental Protection Agency sets PHGs.
Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. The Federal Environmental Protection Agency (USEPA) sets the standards for MCLGs.
Maximum Contaminant Level (MCL): The highest level of a contaminant allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is technologically and economically feasible.
Primary Drinking Water Standards (PDWS): MCLs for contaminates that affect health along with their monitoring and reporting requirements, and surface water treatment requirements.
NTU: Nephelometric Turbidity Unit (a measurement of water clarity).
pCi/L: Picocuries per liter (a measure of radiation).
ppb: Parts per billion or micrograms per liter.
ppm: Parts per million or milligrams per liter.
nd: Non detectable at testing limit.

Microbiological Water Quality:

Testing for bacteriological contaminates in the distribution system is required by State regulations. An improperly treated or unprotected water supply may contain microorganisms that are capable of producing diseases such as those responsible for typhoid or dysentery.

As required by the Total Coliform Rule, each month one water sample is taken from each sampling station with a minimum of two stations being sampled each week, and three sites sampled on the last week of the month for a total of nine samples monthly.

Water is generally analyzed for the presence of Coliform bacteria, an "indicator" organism. This bacteria can generally be divided into a fecal or non-fecal group. Coliform bacteria occur naturally in soils and on plants, Fecal Coliform bacteria occur normally in the intestines of humans and other warm-blooded animals. Fecal Coliform bacteria are discharged in great numbers in human and animal waste.

Lead and Copper Testing Results:

Lead and copper testing of water from individual taps in the distribution system is required by State Regulations. The table below summarizes the most recent monitoring for these constituents in milligrams per liter (mg/L).

	Year Tested	Number of samples collected	Number of samples required	90% Percentile Result (ppb)	Action Level (ppb)
Lead	2001	20	20	nd	15
Copper	2001	20	20	.179	1.30

Detected Contaminates in our water:

When thinking about detectable levels, consider the following as a way to put it all in perspective.

One Part Per Million (1ppm):

I. 1 inch in 16 miles.
II. 1 cent in $10,000.
III. 1 minute in 2 years.
IV. 1 postage stamp on the surface of a baseball diamond.

One Part Per Billion (1 ppb):

I. 1 inch in 16,000 miles
II. 1 cent in $10 million.
III. 1 minute in 2000 years

The following table lists all detected chemicals in our water during the most recent sampling period. Please note, not all sampling is required annually, in some cases our results are more than one year old. Milligrams per liter are equivalent to parts per million (ppm). The values shown in the table are expressed in ppm unless otherwise stated.

Chemical Detected	Source	Year Tested	Range Detected	MCL	PHG	Origin
Perchlorate	All Operating Wells	01	ND			
Boron	All Operating Wells	03	ND		None	Naturally occurring
Vanadium	All Operating Wells	01 - 02	2 - 14		None	Naturally occurring
Chrome 6	All Operating Wells	03	ND – 7.8			
Chromium (total)	All Operating Wells	01	ND - 7	50	2.5	Naturally occurring
MTBE	All Operating Wells	02 - 03	ND	5	None	Chemically caused
1,2 Dichloroethane (1, 2-DCA)	All Operating Wells Except 6th St. Well	01 - 02	ND			
Aluminum	All Operating Wells	02	ND	1,000	None	Naturally occurring
Chloride	All Operating Wells	01 -03	4.86 – 11.5	600	None	Naturally occurring
Iron	All Operating Wells	01 - 03	ND - 344	300	None	Naturally occurring
Manganese	All Operating Wells	01 - 03	ND	50	None	Naturally occurring
Sulfate	All Operating Wells	00 - 03	6.88 – 20.1	600	None	Naturally occurring
Total Dissolved Solids	All Operating Wells	00 - 01	154 - 220	1,500	None	Naturally occurring
PH Laboratory	All Operating Wells	01 - 03	6.92 – 8.03	None	None	Naturally occurring
Gross Alpha	All Operating Wells	00 - 03	ND - 1.0	15	None	Naturally occurring
Antimony	All Operating Wells	01 - 03	ND	6.0	None	Naturally occurring
Arsenic	All Operating Wells	01 - 03	ND - 4.0	10	None	Naturally occurring
Barium	All Operating Wells	01 - 03	ND - <100	1,000	None	Naturally occurring
Beryllium	All Operating Wells	01 - 03	ND	4.0	None	Naturally occurring
Cadmium	All Operating Wells	01 - 03	ND	5.0	None	Naturally occurring
Fluoride (Temp. Dependent)	All Operating Wells	01 - 03	ND - <12	1.4	None	Erosion of Natural deposits
Mercury	All Operating Wells	01 - 03	ND	2.0	None	Naturally occurring

Chemical Detected	Source	Year Tested	Range Detected	MCL	PHG	Origin
Nickel	All Operating Wells	01 – 03	ND	100	None	Naturally occurring
Selenium	All Operating Wells	01 - 03	ND	50	None	Naturally occurring
Thallium	All Operating Wells	01 - 03	ND	2.0	None	Naturally occurring
Nitrate	All Operating Wells	03	3.1 – 15.8	45	None	Naturally occurring
Nitrite	All Operating Wells	01 - 03	ND	1000	None	Naturally occurring
1, 2, 3 - TCP	All Operating Wells	03	ND			

General Information on Drinking Water:

Drinking water is a "hidden" source of water stored in underground geologic formations through which water passes slowly. Ground water can be pumped from two primary types of geologic formations or aquifers, sediments and fractured rock. Sediments are composed of layers of sand, rock and clay that can store vast quantities of water and are found in valley and coastal areas. Fractured rock aquifers yield smaller amounts of water and occur near mountain ranges that were fractured by volcanic eruptions or movements of the earth's crust.

Water from precipitation or irrigation that is not absorbed by the soil or used by vegetation finds its way into the groundwater basin. Water percolates through the sediment until it reaching material it cannot penetrate. Water accumulates here creating an aquifer, or saturated zone. The water table is located at the top of the saturated zone.

What is a Well?

Simply put, a well is a hole drilled into an aquifer by a water supplier. A pump pulls water from the well into a pipe that ties into a grid loop of water main pipes throughout the City. The typical depth of wells in the Corning water system range from 200 to 800 feet and are the sole source of our drinking water supply.

Protecting our groundwater supply:

To insure high quality water for years to come, here are a few things you can do to protect our water supply:

1. Get involved in water education.
2. Limit the amount of fertilizers you use.
3. Dispose of chemicals properly.
4. Recycle used oil so it cannot be allowed to enter our water system.
5. Properly dispose of hazardous household waste.

City water meters:

All residential and commercial customers within the City service area have a water meter that measures the amount of water transferred from the City water main into the customer's plumbing system. The water meter is usually located in a meter box or small concrete vault near the street side curb or in your alleyway. Your meter registers water used in gallons and is read monthly. The previous reading is subtracted from the current reading to determine the amount of water you have used. In addition to the monthly fixed meter rate that includes the first 4,000 gallons of water used, you are billed $.99 cents per each thousand gallons consumed over the base 4,000 gallons. The monthly water costs paid to the City fund the operation/maintenance and any future expansion/upgrades to the water system.

The water distribution system is the essential link between the water supply and the consumer. This is a conveyance system that allows water to be moved through miles of piping before reaching your tap. Pumps allow water to move through the system supplying water to your home, fire hydrants, sprinkler systems, and backflow devices located throughout the City.

Public Works has developed a Water Capital Improvement Program that envisions plans for long-range improvements to our City water system. This program will allow the City to maintain our current system plus allow for necessary upgrades to the system to support future City growth.