

*Annual Drinking Water Quality Report for 2016*  
*City of Hornell – PWS # NY5001215*  
*Hornell, NY 14843*  
*Purchase Systems:*  
*Village of North Hornell NY5001216*  
*Hornellsville Water District # 1 NY5030110*  
*Hornellsville Water District # 3 NY5030111*

## **INTRODUCTION**

To comply with State regulations, the City of Hornell, annually issues a report describing the quality of your drinking water. The purpose of this report is to raise your understanding of drinking water and awareness of the need to protect our drinking water sources. Included are details about where your water comes from, what it contains, and how it compares to State standards.

If you have any questions about this report or concerning your drinking water, please contact Mr. Leonard Fucci, Chief Operator WTP, at 607-324-3469. We want you to be informed about your drinking water. If you want to learn more, please attend any of our regularly scheduled village board meetings. The meetings are held the 2<sup>nd</sup> and 4<sup>th</sup> Monday of every month at 7:00 pm in Council Chambers at 83 Main Street, Hornell, NY.

## **WHERE DOES OUR WATER COME FROM?**

In general, the sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. 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 from human activities. Contaminants that may be present in source water include: microbial contaminants; inorganic contaminants; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants. In order to ensure that tap water is safe to drink, the State and the EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department's and the FDA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

The Hornell Public Water Supply consists of three upland reservoirs. Reservoir # 1 was constructed in 1882 to serve as the source of supply water for the City of Hornell. This reservoir was destroyed by flood and replaced with the existing reservoir in 1936. It has a capacity of 114 million gallons. Reservoir # 2 was constructed in 1910 and has a capacity of 110 million gallons. Reservoir # 3 was constructed in 1932 and has a capacity of 146 million gallons. The total capacity of the reservoir system is more than adequate to supply the demand of the users of the system. A supplemental water supply is available from two ground wells located in the Town of Hornellsville. These wells have a combined capacity of 2,000,000 gallons per day.

Our water treatment includes the following: Aeration – To remove gases and certain solids from the water by contact with air through the process of oxidation. Coagulation and Sedimentation – To settle out any solids in the water. Alum and a polymer are added to the clarifier with very vigorous mixing to help form a floc so that small particles can become large enough to settle out. Filtration – To remove any suspended solids left over from the settling process. The solids are caught up in the filter media as water passes into the clearwell. The multiwash system with air and water causes a violent collision between the sand and anthracite during the backwash process to remove the solids that are plugging up the filter media. Chlorination – Chlorine gas is a disinfectant that is used to kill off any bacteria that is left in the water after filtration. Corrosion Control – We add an ortho-phosphate to the final process in the clearwell to help prevent corrosion in the plant and in the distribution system. We add liquid potassium permanganate during the summer months to remove iron and manganese that cause discolored water.

## **SOURCE WATER ASSESSMENT**

A Source Water Assessment Summary will be included when the data is available from the New York State Department of Health.

## FACTS AND FIGURES

Our water system serves (approximately) the following number of residents: Hornell City-8,590 residents through approximately 3,500 service connections; North Hornell-688 residents through 313 service connections; Hornellsville, water district #1 –300 residents and businesses through 80 service connections; Hornellsville, water district #3 (South Hornell)- has 14 residents through 8 service connections and 2 commercial service connections. Total served: 9,592 residents through 3897 service connections.

The total amount of water produced from the plant in 2016 was 819,418,000 gallons. The daily average of water treated and pumped into the distribution system was 2,244,980 gallons per day. Our highest single producing day was on January 6, 2016 with 3,488,870 gallons. The amount of water delivered to customers from the plant was 804,751,000 gallons (final effluent) leaving an unaccounted for total of 26,708,344 gallons. This unaccounted water was due to filter washing and service water for the plant and represents approximately 3.3% of the total water produced from the plant. We also pumped a total of 17,615,520 gallons from our well system for an average of 48,261 gallons per day from the wells in 2016. Due to the fact that we pumped 17,615,520 gallons of water from the wells in the year 2016, we estimate that there is an additional 2.2% loss. We estimate that the total amount of water that is unaccounted for to be 5.5%. The City of Hornell does not meter its residential water customers. Therefore, we are not able to provide an accurate account for the water lost in the system due to leaks in transmission, fire-fighting, flushing of hydrants or any other types of high usage activity. Last year, the average individual cost of water for the city of Hornell residents, the Town of Hornellsville, and the village of North Hornell was \$369.69.

## ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

As the State regulations require, we routinely test your drinking water for numerous contaminants. These contaminants include: total coliform, turbidity, inorganic compounds, nitrate, nitrite, lead and copper, volatile organic compounds, total trihalomethanes, haloacetic acids, radiological and synthetic organic compounds. In 2016, we took 136 samples for coliform bacteria and all of them were negative for the bacteria.

The table presented below depicts which compounds were detected in your drinking water. The State allows us to test for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

It should be noted that all drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791) or the New York State Department of Health – Hornell District Office at 607-324-8371.

<i>Table of Detected Contaminants</i>							
Contaminant	Violation Yes / No	Date of Sample	Level Detected (Avg/Max) (Range)	Unit of Measure	MCLG	Regulatory Limit (MCL, AL or TT)	Likely Source of Contamination
<b>Lead<sub>2</sub></b> <u>Hornell City</u>	No	6/7/14 - 6/11/14	90% = 1.0 Range: ND-2.3	ug/L	0	AL = 15	Corrosion of household plumbing systems; Erosion of natural deposits.
<u>North Hornell</u>	No	8/26/15	90% = 1.0 Range: ND-1.1				
<b>Copper<sub>2</sub></b> <u>Hornell City</u>	No	6/7/14 - 6/11/14	90% = 0.29 Range: 0.0101-0.612	mg/L	1.3	AL = 1.3	Corrosion of household plumbing systems; Erosion of natural deposits; leaching from wood preservatives.
<u>North Hornell</u>	No	8/26/15	90% = 0.4 Range: .091 - .52				
<b>Barium</b>							Discharge of drilling wastes;

Surface Water Well TP-002	No	10/19/16 3/12/14	0.046 0.100	mg/L	2	2	Discharge from metal refineries; Erosion of natural deposits.
Fluoride	No	3/13/13	0.34	mg/L	2.2	N/A	Erosion of natural deposits
Nitrate Surface Water Well TP-002	No	7/13/16 7/13/16	0.725 2.18	mg/L	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Sulfate Surface Water Well TP-002	No	5/9/12 5/11/11	28.2 27.9	mg/L	N/A	250	Naturally Occurring
Arsenic Surface Water Well TP-002	No No	6/13/11 5/11/11	.0286 .0007	ug/L	N/A	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Iron	No	7/6/11	30.0	ug/L	N/A	300	Naturally occurring.
Manganese	No	7/6/11	17.0	ug/L	N/A	300	Naturally occurring. Indicative of landfill contamination.
Turbidity <sub>1</sub>	No	1/13/16	Highest Single Measure: 0.22	NTU	N/A	TT = < 1 NTU	Soil runoff
Turbidity <sub>1</sub>	No	Monthly	Lowest monthly % of samples meeting prfm. std. of .3 NTU: 100 %	NTU	N/A	TT=95% of samples ≤ 0.3 NTU	Soil Runoff
Radium 226 Surface Wells 1 & 2	No	5/14/14	0.35 1.5	pCi/L	0	5 (Combined with 228)	Erosion of natural deposits.
Radium 228 Surface Wells 1 & 2	No	5/14/14	0.20	pCi/L	0	5 (Combined with 226)	Erosion of natural deposits.
* Trichloroethene Well # 1 Raw Water Well #2 Raw Water Blend #1 & #2 (Jan - July)	No No No	Monthly Monthly Monthly	Avg: 5.19 Range: 4.0 - 6.43 Avg: 0.09 Range: <0.5 - 0.61 Avg: 3.43 Range: 2.87 - 3.86	ug/L	0	5	Discharge from metal degreasing sites and other factories.
Carbon - Total Organic	No	Monthly	Finished: Average: 2.71 Range: 2.19- 3.8	mg/L	TT	N/A	Naturally present in the environment
Carbon - Dissolved Organic (July - December)	No	Monthly	Average: 2.7 Range: 2.0- 3.75	mg/L	TT	N/A	
Alkalinity (Raw water)	No	Monthly	Average: 84 Range: 66- 117	mg/L	TT	N/A	
Total Trihalomethanes (TTHMs) Hornell City	No No	Quarterly Dennis Av W. Main	Avg: 45.5 Range: 22.8 - 54 Avg: 46.8 Range: 25.1 - 65	ug/L	N/A	80	By-product of drinking water chlorination needed to kill harmful organisms. TTHMs are formed when source water contains large amounts of organic matter.
Haloacetic Acids (HAA5s)	No	Quarterly Dennis Av	Avg: 43.5				By-product of drinking water

<u>Hornell City</u>	No	W. Main	Range: 33 – 51 Avg: 38.5 Range: 22 – 52	ug/L	N/A	60	Chlorination needed to kill harmful organisms.
<b>Total Trihalomethanes (TTHMs)</b>							
<u>North Hornell Rural Ave</u>	No	Quarterly	Avg: 52.2 Range: 25.4 – 78	ug/L	N/A	80	By-product of drinking water chlorination needed to kill harmful organisms. TTHMs are formed when source water contains large amounts of organic matter.
<u>Hornellsville # 1</u>	No	Quarterly	Avg: 64.6 Range: 26.1 – 83				
<b>Haloacetic Acids (HAA5s)</b>							
<u>North Hornell Rural Ave</u>	No	Quarterly	Avg: 47.8 Range: 44 – 52				By-product of drinking water Chlorination needed to kill harmful organisms.
<u>Hornellsville # 1</u>	No	Quarterly	Avg: 58.3 Range: 42 – 81	ug/L	N/A	60	
<b>Xylenes (total)</b>	No	8/10/16	Ave: 2.1 Range: 2.0 – 2.2	ug/L	N/A	5	Leaks form gasoline tanks; Discharge from petroleum factories. Leaching of solvent from lining of potable water tanks.

\*Trichloroethene – Health Effects: Some people who drink water containing trichloroethene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

1 – Turbidity is a measure of the cloudiness of the water. We test it because it is a good indicator of the effectiveness of our filtration system. Our highest single turbidity measurement (0.1 NTU) for the year occurred on 10/22/15. State regulations require that turbidity must always be below 1 NTU. The regulations require that 95% of the turbidity samples collected have measurements below 0.3 NTU. We met this level 100% every month.

2 – The level presented represents the 90th percentile of the sites tested. A percentile is a value on a scale of 100 that indicates the percent of a distribution that is equal to or below it. The 90th percentile is equal to or greater than 90% of the copper or lead values detected at your water system. The action level for lead or copper was not exceeded at any of the sites tested.

## Definitions:

**Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible.

**Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

**Action Level (AL):** The concentration of a contaminant which, if 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.

**Non-Detects (ND):** Laboratory analysis indicates that the constituent is not present.

**Nephelometric Turbidity Unit (NTU):** A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**Milligrams per liter (mg/l):** Corresponds to one part of liquid in one million parts of liquid (parts per million - ppm).

**Micrograms per liter (ug/l):** Corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb).

**Nanograms per liter (ng/l):** Corresponds to one part of liquid to one trillion parts of liquid (parts per trillion - ppt).

**Picograms per liter (pg/l):** Corresponds to one part per of liquid to one quadrillion parts of liquid (parts per quadrillion – ppq).

**Picocuries per liter (pCi/L):** A measure of the radioactivity in water.

**Millirems per year (mrem/yr):** A measure of radiation absorbed by the body.

**Million Fibers per Liter (MFL):** A measure of the presence of asbestos fibers that are longer than 10 micrometers.

## **WHAT DOES THIS INFORMATION MEAN?**

Last year, we conducted tests for over 80 contaminants. We detected elevated levels of trichloroethene in Well # 1. Well # 1 and Well # 2 are back up water sources for the City of Hornell. At this time, additional testing is being conducted and the levels of trichloroethene are being monitored quarterly. The new carbon treatment plant at the well site location was completed and put on-line on July 28, 2016. The carbon system is working as designed and the removal of the trichloroethene is complete. Since August of 2016, the finished water trichloroethene levels have been reduced to <0.500 ug/L, which is non-detectable.

## **General Information on Lead in Drinking Water**

If present, elevated levels of lead can cause serious health problems, especially for pregnant women, infants, and young children. 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 home's plumbing. The City of Hornell is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

## **IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?**

Last year, our system was in compliance with applicable State drinking water operating, monitoring and reporting requirements. We continue to monitor the levels of trichloroethene in our well water sources.

## **DO I NEED TO TAKE SPECIAL PRECAUTIONS?**

Although our drinking water met or exceeded state and federal regulations, some people may be more vulnerable to disease causing microorganisms or pathogens 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 from their health care provider about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia and other microbial pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

## **INFORMATION ON UNREGULATED CONTAMINANTS**

The United States Government of Interior completed a geological survey sampling of the City's wells in November, 2008. If you wish to review these results, please contact Mr. Leonard Fucci, Chief Operator WTP, at 607-324-3469, USGS in Ithaca, NY at 607-266-0217 or the NYS Department of Health at 607-324-8371.

## **WHY SAVE WATER AND HOW TO AVOID WASTING IT?**

Although our system has an adequate amount of water to meet present and future demands, there are a number of reasons why it is important to conserve water:

- ◆ Saving water saves energy and some of the costs associated with both of these necessities of life;
- ◆ Saving water reduces the cost of energy required to pump water and the need to construct costly new wells, pumping systems and water towers; and
- ◆ Saving water lessens the strain on the water system during a dry spell or drought, helping to avoid severe water use restrictions so that essential fire fighting needs are met.

You can play a role in conserving water by becoming conscious of the amount of water your household is using, and by looking for ways to use less whenever you can. It is not hard to conserve water. Conservation tips include:

- ◆ Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- ◆ Turn off the tap when brushing your teeth.
- ◆ Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- ◆ Check your toilets for leaks by putting a few drops of food coloring in the tank, watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from one of these otherwise invisible toilet leaks. Fix it and you save more than 30,000 gallons a year.
- ◆ Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances, then check the meter after 15 minutes. If it moved, you have a leak.

### **TRANSMISSION SYSTEM IMPROVEMENTS FOR 2016**

- 700 lineal feet of 8-inch polyvinyl chloride watermain was installed on Pine street.
- Replaced five fire hydrants.
- Repaired 18 water leaks.
- Replaced thirty  $\frac{3}{4}$  inch service lines on Pine street.

### **WATER TREATMENT PLANT IMPROVEMENTS FOR 2016**

- A new aluminum sulfate feed system has been added.
- A new motor was installed on one of our polymer pumps.
- We added 86 bags of anthracite to our number 3 filter.
- The filter media has been inspected in all of our filters.
- Replaced all vacuum lines on our chlorine system.
- Rebuilt the chlorine regulators at the plant and at the well site.
- Rebuilt the pump heads on the chlorine pumps at the water storage tank sites. Meeks hill and west street.
- A blow-off has been installed on the dormant water line from Reservoir No.3.

### **CLOSING**

Thank you for allowing us to continue to provide your family with quality drinking water this year. We ask that all of our customers help us protect our water sources, which are the heart of our community. Please call our office if you have questions.