

Annual Drinking Water Quality for 2015 - Pine Bush Water District
121 RTE 302, Pine Bush, N.Y. 12566
Public Water Supply ID# 3503553

To comply with State and Federal regulations, the Pine Bush Water District will be annually issuing 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. Last year, your tap water met all State drinking water health standards. We are proud to report that our system has never violated a maximum contaminant level or any other water quality. Last year, we conducted 1,113 tests for over 72 contaminants, and found none of those contaminants at a level higher than the State allows.

This report provides an overview of last year's water quality. 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 Tom McKelvey, Superintendent of Water and Sewer, at 744-2515. We want you to be informed about your drinking water. If you want to learn more, please attend any of our regularly scheduled Town Board meetings. The meetings are held at 7:30 pm on the third Thursday of the month.

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 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.

Our water source is entirely a ground water (well) supply consisting of five wells. During 2015 the water was pumped from the wells and treated with chlorine to destroy microorganisms and injected with phosphates to control iron and manganese prior to delivery to the customers. An average volume of approximately 157,754 gallons per day was withdrawn from the wells. This supply served a population of approximately 2,100 plus a central school system of approximately 5,650. Some water loss can be attributed to water main breaks, flushing and normal system losses. The annual average charged for water during 2015 was \$5.00 per 1000 gallons.

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, inorganic compounds, nitrate, nitrite, lead and copper, volatile organic compounds, total trihalomethanes, and synthetic organic compounds. Table I 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. A supplement containing all the test results is available for viewing by contacting Tom McKelvey at the Water Department. Please call 845-744-2515. You may request a copy of the supplement containing these results.

What Does This Information Mean?

The table shows that our system uncovered some problems this year. In October of 2015 we had three positive coliform results. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems. It should be noted that we collected all the required repeat coliform samples and all samples were negative for coliform. Additionally, all samples collected since that time have been negative for coliform.

We have learned through our testing that some other contaminants have been detected; however, these contaminants were detected below New York State requirements. Although we did not exceed the action level for lead at any of our sample sites. We are required to present the following information on lead in drinking water:

“Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure” 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 Pine Bush Water District 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>.

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 Orange County Health Department at 845-291-2331.

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).

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 up 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.

There are presently three New York State Department of Health certified water operators employed by the Pine Bush Water District. Each operator must receive continuing education throughout the year. We at the Pine Bush Water Department work around the clock to provide top quality water at every tap. We ask that all of our customers help us protect our water sources, which are the heart of our community, our way of life, and our children’s future.

PLEASE CALL MY OFFICE IF YOU HAVE ANY QUESTIONS. 845-744-2515.

Tom McKelvey, Superintendent, Water & Sewer

Footnotes:

1. If iron or manganese are present, the total concentration of both should not exceed 0.5 Mg/L. Higher levels may be allowed by the State when justified by the supplier of water.
2. Iron has no health effects. At 1,000 ug/l a substantial number of people will note the bitter astringent taste of iron. Also, at this concentration, it imparts a brownish color to laundered clothing and stains plumbing fixtures with a characteristic rust color. Staining can result at levels of 50 ug/l, lower than those detectable to taste buds. Therefore, the MCL of 300 ug/l represents a reasonable compromise as adverse aesthetic effects are minimized at this level. Many multi-vitamins may contain 3000 or 4000 ug/l of iron per capsule.
3. The Food and Nutrition Board of the National Research Council determined an estimated safe and adequate daily dietary intake of manganese to be 2000-5000 ug/l for adults. However, many people's diets lead them to consume even higher amounts of manganese, especially those who consume high amounts of vegetable or are vegetarian. The infant population is of greatest concern. It would be better if the drinking water were not used to make infant formula since it already contains iron and manganese.
4. Excess manganese produces a brownish color in laundered goods and impairs the taste of tea, coffee, and other beverages. Concentrations may cause a dark brown or black stain on porcelain plumbing fixtures. As with iron, manganese may form a coating on distribution pipes. These may slough off, causing brown blotches on laundered clothing or black particles in the water.
5. Water containing more than 20 mg/L of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 mg/L of sodium should not be used for drinking by people on moderately restricted sodium diets.
6. The level presented represents the 90th percentile of the 11 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 values detected at your water system. In this case, 11 samples were collected at your water system and the 90th percentile value was the second highest value. The action level for copper was not exceeded at any of the sites tested.
7. The level presented represents the 90th percentile of the 11 sites tested. A percentile is a value of 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 lead values detected at your water system. In this case, 11 samples were collected at your water system and the 90th percentile value was the second highest value. The action level for lead was not exceeded at any of the sites tested.

Pine Bush W.D.
NY3503553
Source Water Assessment Report Summary

The NYS DOH has completed a source assessment for this system, based on available information. Possible and actual threats to this drinking water source were evaluated. The state source water assessment includes a susceptibility rating based on the risk posed by each potential source of contamination and how easily contaminants can move through the subsurface to the wells. The susceptibility rating is an estimate of the potential for contamination of the source water, it does not mean that the water delivered to consumers is, or will become contaminated. See “Table of Detected Contaminants” for a list of the contaminants that have been detected. The source water assessments provide resource managers with additional information for protecting source waters into the future.

As mentioned before, our water is derived from five drilled wells. The source water assessment has rated these wells as having a medium-high to susceptibility to microbials, nitrates, industrial solvents, and other industrial contaminants. These ratings are due primarily to the close proximity of SPDES permitted discharge facilities (industrial/commercial facilities that discharge wastewater into the environment and are regulated by the state and/or federal government), the low-level residential activity and the pasture that are located in the assessment area. In addition, the wells draw from an unconfined aquifer of high hydraulic conductivity and the overlying soils may not provide adequate protection from potential contamination. While the source water assessment rates our well as being susceptible to microbials, please note that our water is disinfected to ensure that the finished water delivered into your home meets New York State’s drinking water standards for microbial contamination.

A copy of the assessment, including a map of the assessment area, can be obtained by contacting us, as noted in this report.

Glossary of Terms

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

Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Conversion Factor - Multiply	By	To Obtain
Mg/L(ppm)	Multiply detected Level by 1,000	Ug/L(ppb)
Divide	By	To Obtain
UG/L(ppb)	Divide detected Level by 1,000	MG/L(ppm)

Hardness - Measured in grains (1 grain=17.1 mg/L) or mg/L, any water over 10 grains is considered very hard. (CaCo₂) Pine Bush water averages 222 mg/l and is from erosion of natural deposits.

Maximum Contaminant Level - The "Maximum Allowed" (MCL) is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology. MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

Maximum Contaminant Level Goal - The "Goal" (MCLG) is 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.

Parts per million (ppm) or Milligrams per liter (mg/l) - One part per million corresponds to one part of liquid in one million parts of liquid (parts per million - ppm)

Parts per billion (ppb) or Micrograms per liter - One part per billion corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb)

TABLE OF DETECTED CONTAMINANTS 2015

Organic/Inorganic Contamination Chemical	Violation Of Sample Yes/No	Date of Sample	Level Detected Avg. Range	Unit Measure	MCLG	Regulatory Limit MCL	Likely Source of Contamination
Barium	NO	4/15	MAX = 0.24 Range = 0.07 to 0.24	Mg/L	2	2	Erosion of natural deposit
Arsenic	No	4/15	Max 1.9 Range = ND-1.9	Ug/L	N/A	10	Naturally occurring
Nickel	NO	4/15	Max = 4 Range = 2.4 - 4	Ug/l	100	MCL = 100	Naturally occurring
Sodium	No	4/15	MAX = 110 Range = 29.0- 110	Mg/L	N/A	N/A (see foot-notes) #5	Naturally occurring
Uranium	No	7/26/11	Max = 1.7 Range = N.D.-1.7	pci/L	0	20	Erosion of natural deposit
Iron	No	Jan-Dec 288 Samples	Avg. = 120 Range = <20 to 1000	Ug/L	N/A	300 (see foot-notes) #1 & #2	Naturally occurring
Manganese	No	Jan-Dec 288 Samples	Avg. = 320 Range = 0 to 630	Ug/L	N/A	300 (see foot-notes) #3 & #4	Naturally occurring

Table of Detected Contaminants 2015 Con't

Organic/Inorganic Contamination Chemical	Violation Of Sample Yes/No	Date of Sample	Level Detected Avg. Range	Unit Measure	MCLG	Regulatory Limit MCL	Likely Source of Contamination
Radium-226 and Radium-228	No	7/8/14	MAX = 0.975 Range = 0.303 to 0.975	pci/l	0	MCL = 5	Erosion of natural deposits
Copper	No	4/15	90 th %tile = 220 Range = ND - 250	Ug/l	0	1300 (footnote # 6)	Corrosion of household plumbing systems
Total Phosphate	No	Jan-Dec 120 Samples	Avg. = 1.6 Range = <0.22 to 7.6	Mg/L	N/A	NSF MAX = 29	Water additive for iron and Manganese control
Gross Alpha	No	7/26/11	Max=5.9 Range = ND -5.9	pci/L	0	15	Erosion of Natural Deposits
Total (TTHMs) Trihalomethanes	No	7/15	6.5	Ug/l	N/A	MCL=80	Byproduct of drinking water chlorination
Nitrate/ Nitrate	No	4/15	Avg = 0.29 Range = <0.05-0.52	Mg/L	0	10	Erosion of naturally occurring deposits
Lead	No	4/15	90 th % = 2.7 (ND-14)	Ug/L	0	1500 (F.N.# 7)	Corrosion of household plumbing systems
Total Coliform Bacteria	YES	10/7/15	3 positive sample	N/A	0	MCL = 2 positive samples/ month	Naturally present in the environment

Pine Bush Water Facts

1. Pine Bush water services 2,000 residents in addition to 5,650 students from 4 schools, grades 1-12.
2. The average daily flow ranges from a low of 93,100 gallons per day to a high of 332,000 gallons per day.
3. Water is supplied by 5 wells. The dates of approval of the wells are: Main Well 1960, Black Hawk Well 1985, Kelly Well 1986, Finneran Well 2004, and DeWitt Well 2009.
4. These 5 wells are all in the ground (4 from one aquifer) and very hard (minerals), ex: Total Hardness = 307 ppm, Calcium Hardness = 222ppm, Iron and manganese = 1 ppm, plus other minerals. This means that each day wells deliver approximately 300 lbs of minerals or one pound for every 150 foot of pipe.
5. Safe yield of the wells are: Kelly 73gpm, Main 63gpm, Finneran 53gpm, DeWitt 50 gpm ,and Black Hawk 33gpm.(Black Hawk needs to be redeveloped every 1-2 years to maintain the 33gpm).
6. Chlorine is used for disinfection by all the wells since 1960.
7. The wells are turned on and off by the water level in the elevation tanks or by a timer.
8. A sequestering agent (total phosphate) was approved for use in 1993 at each existing well and latter when additional wells came on line to help prevent the minerals from settling in the water mains.
9. The distribution system dates back to the 1930's. There is approximately 8 miles total of water mains consisting of 6 inch through 10 inch pipe. There are 127 main valves (over 100 of these valves are cast iron with lead seals), 106 fire hydrants with 106 fire hydrant valves, (41 are hydrants with lead seals and 41 with lead seal hydrant valves). There are approximately 4 miles of cast iron pipe with over 2,000 lead seal bell joints. Approximately 1 mile of transite pipe (asbestos cement pipe), ¼ mile of PVC pipe (plastic), and 3 miles of ductile iron pipe. There are 600 service line connections consisting of galvanized, plastic, and copper pipes.
10. Pressure (range 53-83 lbs depending on elevation) and storage is provided by 2 tanks. One is a riveted steel tank 100 feet tall by 20 feet wide built in the 1930's. It supplies 235,000 gallons. The second is a bolted steel tank that is 97 feet tall and 25 feet wide. It was built in 1996 and supplies 356,000 gallons.
11. The operation and maintenance of this system is accomplished by 2 full time and 1 part time operators certified for Water Plant operations and distribution operations by New York State (half their work time is shared with operation and maintenance of the Sewer Dept.). Along with a meter reader (part time) and a Billing Clerk (shared with other Town of Crawford Departments) One utility truck with tools are the only equipment (that is also shared with the Sewer Dept.) Additional machinery, equipment, labor, traffic and pedestrian safety are supplied by the Town of Crawford Highway Dept., Town of Crawford Police Dept., and private plumbing and excavating contractors.

