

**2016 Annual Drinking Water Quality Report**  
Northwestern Lancaster County Authority Water System PWSID# 7360164  
Operated by Severn Trent North America

*Este informe contiene información muy importante sobre su agua de beber. Tradúzcalo ó hable con alguien que lo entienda bien.* (This report contains very important information about your drinking water. Translate it, or speak with someone who understands it.)

**WATER SYSTEM INFORMATION:** This report shows our water quality and what it means. If you have any questions about this report or concerning your water utility, please contact us at (717) 664-0746. We want you to be informed about your water utility. If you want to learn more, please attend any of our regularly scheduled authority meetings on the third Monday of each month. They are held at 7:00 p.m. at the Penn Township Office, 97 North Penryn Road, Manheim, PA 17545.

**SOURCES OF WATER:** The water sources for NWLCA's Doe Run Treatment Plant are Wells #2 and #3. Both Well #2 and #3 are groundwater wells located in Penn Township that have been determined to be under the direct influence of surface water. A Source Water Assessment of Well #2 was completed in May 2005. The Assessment determined that the well is potentially most susceptible to contaminants associated with agricultural activities. These contaminants may include microbial pathogens, nitrates, nitrites and chemicals found in pesticides and herbicides. Overall, the water source has a medium to high risk of significant contamination. A copy of the source water assessment is available for review at the DEP South-central Regional Office at 909 Elmerton Ave, Harrisburg, PA 17110. Well #3, put on line in September of 2014, potentially has the same risks of significant contamination. Please note that current treatment including membrane filtration and chlorine disinfection remove or inactivate 99.99% of microbial pathogens from the source water.

**NWLCA drinking water customers on Fruitville Pike, Lititz Road or Sun Valley Drive receive their drinking water through a connection with Lancaster City Water and should only refer to the "DETECTED SAMPLE RESULTS: DISTRIBUTION SYSTEM" on page 3 of this report. These customers should review the City of Lancaster's "2016 Annual Drinking Water Quality Report" for all other parameters.**

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 appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbiological contaminants are available from the *Safe Drinking Water Hotline* (800-426-4791).

**MONITORING YOUR DRINKING WATER:** We routinely monitor for contaminants in your drinking water according to federal and state laws. The following table shows the results of our monitoring for the period of January 1 to December 31, 2016. The State allows us to monitor for some contaminants less than once

per year because the concentrations of these contaminants do not change frequently. Some data could be from prior years in accordance with the Safe Drinking Water Act.

**DEFINITIONS:**

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

**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 using the best available treatment technology.

**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 that is 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 contaminants.

**Minimum Residual Disinfectant Level (MinRDL)** - The minimum level of residual disinfectant required at the entry point to the distribution system.

**Nephelometric Turbidity Unit (NTU)** - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**ppb** = parts per billion, or micrograms per liter (µg/L)

**ppm** = parts per million, or milligrams per liter (mg/L)

**Treatment Technique (TT)** - A required process intended to reduce the level of a contaminant in drinking water.

**DETECTED SAMPLE RESULTS:**

Chemical Contaminants								
Contaminant	MCL in CCR	MCLG	Level Detected	Range of Detections	Units	Sample date	Violation Y/N	Sources of Contamination
BARIUM	2	2	0.03	0.03	ppm	2015	N	Erosion of natural deposits
CHROMIUM	100	100	1	1	ppb	2015	N	Erosion of natural deposits
NITRATE	10	10	4	3 – 5	ppm	2016	N	Runoff from fertilizer use; leaching from septic tanks, sewage
GROSS ALPHA	15	0	6	6	pCi/L	2015	N	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation

Entry Point Disinfectant Residual							
Contaminant	Min RDL	Lowest Level Detected	Range of Detections	Units	Sample date	Violation Y/N	Sources of Contamination
CHLORINE	0.2	0.7	0.7 – 2.1	ppm	2016	N	Water additive to control microbes.

Turbidity							
Contaminant	Units	MCL	MCLG	Level Detected	Sample Date	Violation Y/N	Sources of Contamination
TURBIDITY	NTU	TT = 1 NTU for a single measurement	0	0.040	8/3, 8/4 & 11/11/2016	N	Soil runoff
		TT= at least 95% of monthly samples < 0.3 NTU		100%	January-December	N	

**DETECTED SAMPLE RESULTS: DISTRIBUTION SYSTEM**

Distribution Disinfectant Residual							
Contaminant	MRDL	Month of Highest Average Result	Highest Average Result	Range of Average Results	Units	Violation Y/N	Sources of Contamination
CHLORINE	4.0	March	1.4	0.6 – 1.4	ppm	N	Water additive to control microbes.

Contaminant	MCL in CCR	MCLG	Level Detected	Range of Detections	Units	Sample date	Violation Y/N	Sources of Contamination
HALOACETIC ACIDS	60	n/a	28.9	3.1 – 27.2	ppb	2016	N	By-product of drinking water chlorination
TRIHALOMETHANES	80	n/a	74.3	16.1 – 99.1	ppb	2016	N*	By-product of drinking water chlorination

\*Violation of MCL is based on Running Annual Average

2016 Lead and Copper							
Contaminant	Action Level (AL)	MCLG	90 <sup>th</sup> Percentile Value	Units	# of Sites Above AL of Total Sites	Violation Y/N	Likely Source of Contamination
COPPER	1.3	1.3	0.8	ppm	0 of 15	N	Corrosion of household plumbing
LEAD	15	0	8	ppb	1 of 15	N	Corrosion of household plumbing

**NOTICE OF VIOLATIONS:** NWLCA is required to report Fail to Monitor Violations for third quarter TTHM and HAA5 contaminants due to the operator collecting the samples a day before the required monitoring period. The samples were analyzed and the results were in compliance.

**EDUCATIONAL INFORMATION:** 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 human activity. Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water run-off, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water run-off and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water run-off and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to assure that tap water is safe to drink, EPA and DEP prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA and DEP regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

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 Environmental Protection Agency's *Safe Drinking Water Hotline* (800-426-4791).

**INFORMATION ABOUT NITRATES:** Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider. **Nitrate reduction facilities were online for the entire year of 2016.**

**INFORMATION ABOUT COPPER:** The likely sources of copper contamination are corrosion of household plumbing systems, erosion of natural deposits and leaching from wood preservatives. Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

**INFORMATION ABOUT LEAD:** If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. NWLCA 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 drinking water, testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>

**INFORMATION ABOUT TOTAL TRIHALOMETHANES (TTHM):** 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.

**INFORMATION ABOUT CRYPTOSPORIDIUM:** Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water. **Our current membrane filtration units remove at least 99.99% of cryptosporidium.**