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2017

ANNUAL DRINKING WATER QUALITY REPORT

EAST ROCKHILL

PWSID#1090141

This report is being mailed to you as a requirement of the Federal Safe Drinking Water Act.

"A dedicated, professional workforce committed to providing the community with a safe, reliable, and economical water supply."



NORTH PENN WATER AUTHORITY

2017 ANNUAL DRINKING WATER QUALITY REPORT

North Penn Water Authority – PWSID # 1090141

Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, ó hable con alguien que lo entienda.

Owners of multiple family dwellings, commercial businesses, public housing, or similar situations, are encouraged to post and/or distribute this report. Additional copies are available and can be obtained at North Penn Water Authority's operations center or by calling (215) 855-3617.

This report is also available online at www.npwa.org.

Water System Information



This brochure is a snapshot of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and Pennsylvania Department of Environmental Protection (PA DEP) state standards. North Penn Water Authority (NPWA) is committed to providing you with information because

informed customers are our best allies. The Authority's staff of professionals is dedicated to ensuring that our customers receive a safe, economical, and continuous supply of water.

It is important for our valued customers to be informed about their water quality. If you have any questions about this report or regarding your water utility, please contact Lindsay Hughes, Community Relations Coordinator, at **(215) 855-3617** or visit our website at www.npwa.org. If you want to learn more about NPWA, please attend any of our regularly scheduled Board of Directors meetings. Meetings are held on **the fourth Tuesday of every month at the Authority's operations center located at 300 Forty Foot Road, near the intersection of Forty Foot and Allentown Roads in Towamencin Township. Meetings begin at 7:30 p.m.**

Sources of Water

From January 1, 2016 through September 26, 2016, all of the water that was delivered to our customers in our East Rockhill Satellite System came from two groundwater supply wells. The water from these wells was chlorinated before it was pumped into customers' homes. Starting on September, 26, 2016 – present, East Rockhill's Satellite System source of water comes from Perkasie Regional Authority. Perkasie's water source is comprised of several municipal wells in the Borough of Perkasie as well as East Rockhill Township. A Source Water Assessment of Perkasie's sources was completed in 2005 by the PA Department of Environmental Protection (PA DEP). The Assessment found that the sources have a high sensitivity because of the detection of Volatile Organic Compounds (VOCs) and the presence of naturally occurring arsenic. However, they are potentially most susceptible to contamination from transportation corridors and agricultural activities. Overall, Perkasie's sources have little risk of significant contamination. A summary report of the Assessment is available on the Source Water Assessment Summary Reports eLibrary web page: <http://www.elibrary.dep.state.pa.us/dsweb/View/Collection-10045>. Complete reports were distributed to municipalities, water supplier, local planning agencies and PA DEP offices. Copies of the complete report are available for review at the PA DEP Southeast Regional Office, Records Management Unit at **(484) 250-5910**. The East Rockhill Satellite System is physically separated from the NPWA main system. Water from the two systems does not ever mix.

MONITORING YOUR WATER

NPWA routinely monitors for contaminants in your drinking water according to federal and state laws. The following tables show 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 of our data is from prior years in accordance with the Safe Drinking Water Act. The date has been noted on the sampling results table.

PEOPLE WITH SPECIAL HEALTH CONCERNS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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

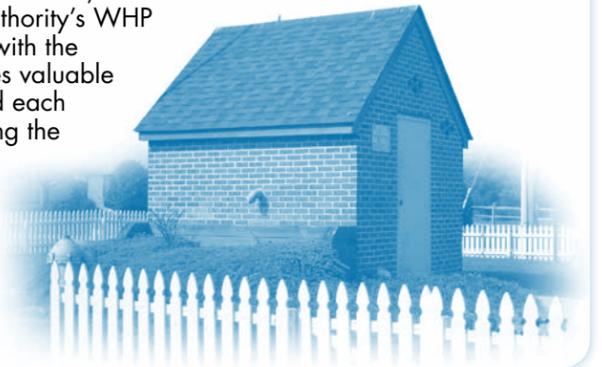
particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

HOW NPWA IS PROTECTING THE WATER YOU DRINK



To enhance water quality, NPWA performs an annual hydrant flushing program which takes place in the spring of each year. This flushing program helps improve water quality by removing any possible build-up of mineral deposits from the inside of water distribution pipes. NPWA also has an aggressive water main replacement program to improve the quality of water that we deliver to our customers. Old unlined cast iron mains, that can affect water quality and restrict flow, are replaced on a regular basis. These projects are scheduled when Penn DOT or our member municipalities are doing work on the roads to reduce inconvenience to the community.

The Authority continues to work proactively to protect its sources of water. In 2009, NPWA's Wellhead Protection (WHP) Program was approved by the PA DEP. The Authority's WHP Program meets the requirements for a local WHP Program in accordance with the Pennsylvania Safe Drinking Water Regulations. The WHP Program provides valuable information to the Authority such as: identifying the protection zone around each well, identifying potential sources of contamination for each well, identifying the land areas around our wells, and the underground geologic layers, that are within the pumping zones of influence. This information will greatly assist the Authority in dealing with an emergency response in case of a hazardous spill event that could threaten the well, so that remedial measures could be put in place. Also, implementation of contingency planning could involve revisions to local land use practices, if necessary, to protect the integrity of the groundwater supply.



- safe
- quality
- tested
- economical

Below is a list of parameters which NPWA monitored for in 2016 but **DID NOT DETECT**:

Coliform Bacteria	Volatile Organic Chemicals (VOCs)		
E. Coli	1,1,1-Trichloroethane	o-Dichlorobenzene	Styrene
Total Coliform Bacteria	1,1,2-Trichloroethane	Benzene	Tetrachloroethylene
Inorganic Chemicals (IOCs)	1,1-Dichloroethylene	Carbon tetrachloride	Toluene
Nitrite	1,2,4-Trichlorobenzene	Chlorobenzene	trans-1,2-Dichloroethylene
Perfluorinated Compounds (PFCs)	p-Dichlorobenzene	cis-1,2-Dichloroethylene	Trichloroethylene
Perfluorononanoic acid (PFNA)	1,2-Dichloroethane	Dichloromethane	Vinyl Chloride
	1,2-Dichloropropane	Ethylbenzene	Xylenes, total

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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 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 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 stormwater runoff, 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 stormwater runoff, 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 stormwater runoff 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 ensure that tap water is safe to drink, EPA and DEP prescribe 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 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 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. North Penn Water Authority 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 or at www.epa.gov/safewater/lead.

INFORMATION ABOUT ARSENIC

While your drinking water meets EPA's standard for arsenic, it does contain levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues

to research the health effects of low levels of arsenic which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

INFORMATION ABOUT FLUORIDE

While your water meets EPA's standards for fluoride, it does contain low levels of fluoride. Perkasie Regional Authority does not use fluoride as an additive, the fluoride that is detected is from the erosion of natural deposits; or discharge from fertilizer and manufacturing. The EPA warns that while low levels of fluoride can help prevent cavities, children under nine years of age may develop cosmetic discoloration of their permanent teeth (dental fluorosis) by drinking water that contains more than 2 parts per million. Dental fluorosis, in its moderate or severe forms, may result in brown staining and or pitting of the permanent teeth. This problem occurs only in developing teeth,

before they erupt from the gums. Drinking water containing more than 4 parts per million of fluoride (the U.S. Environmental Protection Agency's drinking water standard) can increase your risk of developing bone disease. Perkasie Regional Authority has reported forty-three samples for fluoride in the past 5 years, forty of those samples have been a non-detection. The highest of the three samples that had detectable levels was 1.4 ppm, below the risk & actionable limits. The Department of Environmental Protection has set the actionable limit at 2 ppm and the Environmental Protection Agency has set the actionable limit at 4 ppm.



DETECTED SAMPLE RESULTS

North Penn Water Authority – East Rockhill – PWSID # 1090141

CHEMICAL CONTAMINANTS

Contaminant	MCL	MCLG	Highest Level Detected	Range of Detections	Units	Sample Date	Violation Yes/No	Sources of Contamination
Chlorine (In distribution system)	MRDL=4	MRDLG=4	1.10	0.60 – 1.10	ppm	2016	No	Water additive used to control microbes
Arsenic	10	0	2	2 – 2	ppb	2015	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Chromium	100	100	2	1 – 2	ppb	2015	No	Discharge from steel and pulp mills; Erosion of natural deposits
Fluoride	2	2	0.114	0 – 0.114	ppm	2015	No	Erosion of natural deposits; Discharge from fertilizer and aluminum factories
Nitrate	10	10	0.733	0.382 – 0.733	ppm	2016	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Haloacetic Acids (HAAs)	60	N/A	4.08*	3.54 – 4.61	ppb	2016	No	By-product of drinking water disinfection
Total Trihalomethanes (TTHMs)	80	N/A	18.0*	14.8 – 21.2	ppb	2016	No	By-product of drinking water chlorination
Alpha Emitters	15	0	3.31	2.89 – 3.31	pCi/L	2012 and 2015	No	Erosion of natural deposits
Combined Radium	5	0	0.50	0.14 – 0.50	pCi/L	2015	No	Erosion of natural deposits
Uranium	30	0	5.56	2.98 – 5.56	µg/L	2012 and 2015	No	Erosion of natural deposits
Gross Beta	50	0	2.11	2.11	pCi/L	2015	No	Decay of natural and man-made deposits

*Since compliance is based on a running annual average, this value represents the highest running annual average result.

ENTRY POINT DISINFECTANT RESIDUAL

Contaminant	Minimum Disinfectant Residual	Lowest Level Detected	Range of Detections	Units	Sample Date	Violation Yes/No	Sources of Contamination
Chlorine	0.4	0.34*	0.34 – 1.12	ppm	2016	No	Water additive used to control microbes

*Chlorine levels did not drop below the minimum residual level required for more than 4 hours.

LEAD AND COPPER

Contaminant	Action Level (AL)	MCLG	90th Percentile Value	Units	# of Sites Above AL of Total Sites	Sample Date	Violation Yes/No	Sources of Contamination
Lead	15	0	4	ppb	0 out of 10	2016	No	Corrosion of household plumbing
Copper	1.3	1.3	0.279	ppm	0 out of 10	2016	No	Corrosion of household plumbing

Perfluorinated Compounds (PFCs):

Testing of public groundwater wells for perfluorinated compounds (PFCs) was done as part of the Federal Unregulated Contaminant Monitoring Rule (UCMR 3). As such, these compounds are not currently regulated by the Government and there are no drinking water standards established for compliance. Rather, there is only a health advisory level (HAL) established which, as the name implies, is advisory only. Because of the small size of the East Rockhill system which serves 194 residential customers, NPWA was not required by the UCMR 3 to test these wells for PFCs. However, due to the recent detections of PFOA and PFOS in nearby communities, in an abundance of caution, the Authority voluntarily sampled the wells in order to be proactive.

NPWA received laboratory data on September 12, 2016 confirming that levels of PFCs were found at slightly elevated levels. The health advisory level (HAL) for the combination of perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA), collectively known as PFCs, is 70 parts per trillion (ppt). NPWA measured a level of 117 ppt in our well NP74 and a level of 65 ppt in our well NP73 in East Rockhill. A public notice was sent to customers on September 21, 2016 alerting them of the PFC levels detected and actions the Authority took regarding the detection levels.

These chemicals are among a family of manmade chemicals that have been used for decades as an ingredient to make products that resist heat, oil, stains, grease and water, and are used in foam products for firefighting. They are extremely resistant to breaking down in the environment.

Studies indicate that exposure to PFOS and PFOA over certain levels may result in adverse effects, including developmental effects, such as low birth weight, to fetuses during pregnancy or breastfed infants, testicular and/or kidney cancer, liver tissue damage, immune and thyroid effects and other effects such as cholesterol changes.

WELL NP73 RESULTS

Contaminant	Average Level Detected	Range of Detections	Units	Sample Date
Perfluorooctanesulfonic acid (PFOS)	57	57 – 57	ppt	Aug. and Sept. 2016
Perfluorooctanoic acid (PFOA)	7.6	7.1 – 8.0	ppt	Aug. and Sept. 2016
PFOS + PFOA*	64.6	64.1 – 65.0	ppt	Aug. and Sept. 2016

***PFOS + PFOA have a combined HAL (Health Advisory Level) of 70 ppt**

Perfluorohexanesulfonic acid (PFHxS)	25.5	21 – 30	ppt	Aug. and Sept. 2016
Perfluoroheptanoic acid (PFHpA)	4.0	3.9 – 4.0	ppt	Aug. and Sept. 2016
Perfluorobutanesulfonic acid (PFBS)	2.7	0 – 5.3	ppt	Aug. and Sept. 2016

WELL NP74 RESULTS

Contaminant	Average Level Detected	Range of Detections	Units	Sample Date
Perfluorooctanesulfonic acid (PFOS)	104	98 – 110	ppt	Aug. and Sept. 2016
Perfluorooctanoic acid (PFOA)	6.9	6.7 – 7.1	ppt	Aug. and Sept. 2016
PFOS + PFOA*	110.9	104.7 – 117.1	ppt	Aug. and Sept. 2016

***PFOS + PFOA have a combined HAL (Health Advisory Level) of 70 ppt**

Perfluorohexanesulfonic acid (PFHxS)	34.5	31 – 38	ppt	Aug. and Sept. 2016
Perfluoroheptanoic acid (PFHpA)	5.3	5.2 – 5.3	ppt	Aug. and Sept. 2016
Perfluorobutanesulfonic acid (PFBS)	2.1	0 – 4.2	ppt	Aug. and Sept. 2016

DETECTED SAMPLE RESULTS

Perkasie Regional Authority – PWSID # 1090046

CHEMICAL CONTAMINANTS

Contaminant	MCL	MCLG	Highest Level Detected	Range of Detections	Units	Sample Date	Violation Yes/No	Sources of Contamination
Antimony	6	6	0.23	0 – 0.23	ppb	2012	No	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic	10	0	8.4	2.3 – 9.5	ppb	2013 & 2015	No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium	2	2	0.11	0.0059 – 0.11	ppm	2012	No	Discharge from drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Cadmium	5	5	0.11	0 – 0.11	ppb	2012	No	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; Runoff from waste batteries and paints
Chlorine	4 MRDL	4 MRDLG	1.35	0.520 – 1.19	ppm	2016	No	Water additive used to control microbes
Chromium	100	100	3.6	0.87 – 3.6	ppb	2012	No	Discharge from steel and pulp mills; Erosion of natural deposits
Combined Radium	5	0	0.466	0.452 – 2.122	pCi/L	2014	No	Erosion of natural deposits
Uranium	30	0	5.761	1.776 – 5.982	µg/L	2012	No	Erosion of natural deposits
Fluoride	2	2	1.4	0 – 1.4	ppm	2016	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Alpha Emitters	15	0	4.92	2.52 – 4.92	pCi/L	2014	No	Erosion of natural deposits
Haloacetic Acids (HAAs)	60	N/A	5.7	2.8 – 5.7	ppb	2016	No	By-product of drinking water disinfection
Nitrate	10	10	0.555	0 – 0.555	ppm	2016	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Selenium	50	50	5	0 – 5	ppb	2012	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
Thallium	2	0.5	0.24	0 – 0.24	ppb	2012	No	Leaching from ore-processing sites; Discharge from electronics, glass, and drug factories
Total Trihalomethans (TTHMs)	80	N/A	35.2	28.4 – 35.2	ppb	2016	No	By-product of water chlorination

LEAD AND COPPER

Contaminant	Action Level (AL)	MCLG	90th Percentile Value	Units	# of Sites Above AL of Total Sites	Sample Date	Violation Yes/No	Sources of Contamination
Lead	15	0	1.5	ppb	0 out of 30	2016	No	Corrosion of household plumbing
Copper	1.3	1.3	0.501	ppm	0 out of 30	2016	No	Corrosion of household plumbing

PFOA & PFOS TEST RESULTS

Well #4	Well #7	Well #10	Well #11
PFOA – 3.5 ppt	PFOA – 2.8 ppt	PFOA – 6.3 ppt	PFOA – 2.2 ppt
PFOS – 11 ppt	PFOS – 3.4 ppt	PFOS – 6.4 ppt	PFOS – 2.1 ppt
TOTAL – 14.5 ppt	TOTAL – 6.2 ppt	TOTAL – 12.7 ppt	TOTAL – 4.3 ppt

DEFINITIONS

In the above tables you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms, we've provided the following 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 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.
- **Minimum Residual Disinfectant Level (MinRDL):** The minimum level of residual disinfectant required at the entry point to the distribution system.
- **N/A:** Not Applicable
- **pCi/L:** picocuries per liter (a measure of radioactivity)
- **ppm:** parts per million, or milligrams per liter (mg/L)
- **ppb:** parts per billion, or micrograms per liter (µg/L)
- **ppt:** parts per trillion, or nanograms per liter (ng/L)