

Port Ewen Water District
Annual Water Quality Report for 2017
PWS ID#5503382

Dear Customer:

We are pleased to present a summary of the quality of the water provided to you during the past year. To comply with State regulations, Port Ewen 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, we conducted tests for over 140 contaminants. We detected 12 of those contaminants, and only found 1 of those contaminants at a level higher than the State allows. As stated in the letter provided to you at the time of violation, our water temporarily exceeded a drinking water standard and we rectified the problem by installing a new chlorine dioxide system. This report provides an overview of last year's water quality. Included are details about where our water comes from, what it contains, and how it compares to State standards. The Port Ewen Water District is committed to providing you with the safest and most reliable water supply. Informed consumers are our best allies in maintaining safe drinking water. If you have any questions about this report or concerning your drinking water, please contact: Donald F. Kiernan, Superintendent, at 845-331-5900 or write to Port Ewen Water District, 131 River Rd. Ulster Park NY 12487 This Report will also be available on the web at www.esopus.com. We encourage public interest and participation in our community's decisions affecting drinking water. Regular Water Board Meetings are held on the second Wednesday of every month at the Town of Esopus Town Hall. The public is welcome to attend.

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 and the FDA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

The Port Ewen Water District is supplied by surface water from the Hudson River. The Hudson River is our only source and during drought conditions, the consumers of the District have always had an ample supply of water to meet their needs. The Roger Mabie Water Treatment Plant is located at 131 River Road, Ulster Park, NY 12487. During 2017, our system did not experience any restriction of our water source. The Treatment Plant has the capability of producing 1 million gallons of drinking water per day. Prior to being pumped to District consumers, the Hudson River water undergoes several stages of water treatment. The water is first chlorinated by means of a Chlorine Dioxide injection system to ensure effective eradication of bacteria. The water is then subjected to the addition of Poly Aluminum Chloride (PAC), in order to start the process of removal of silt and fine particulates. Clarified water is then injected with lime for control of Ph and conventional filtration takes place. After filtering, post chlorination is done to provide residual chlorine levels in the distribution system. The water is pumped into the distribution system and a 2 million gallon water storage facility, located at the southern end of the District.

Facts and Figures

The Port Ewen Water District serves a population of around 4500 and has less than 1450 service connections. The total water produced in 2017 was **103,000,000** gallons. The daily average of water treated and pumped into the distribution system was 282,000 gallons per day. The amount of water delivered to customers was **80,000,000** gallons. Treated water used for backwashing filters and plant usage, and meter error accounted for 14,586,000 gallons. This leaves and unaccounted for total of 8,241,000 gallons. This water was used to flush mains, fight fires, leakage from water main breaks and unmetered leaks, meter inaccuracy and usage accounts for the remaining **8,241,000** gallons (**8.2** % of the total amount produced). In 2017, water customers were charged \$ 3.84 per 1,000 gallons of water.

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, copper, volatile organic compounds, total trihalomethanes (THM's), and synthetic organic compounds. In addition to the testing we are required to perform, our system conducts routine bacteriological testing of our finished water to make certain our water is safe and of a high quality. The tables below depict which compounds were detected in your drinking water. The State allows us to test for some contaminants less than

once per year, because the concentration 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. 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, people 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), or the Ulster County Health Department at (845)340-3010.

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

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 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 expected risk. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

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).

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

1. We test turbidity because it is a good indicator of the effectiveness of our filtration system. State regulations require that 95% of the turbidity samples collected have measurements below 0.3 NTU leaving the water plant.

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

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

Contaminant	Violation Yes/No	Date of Sample	Level Detected	Unit Measurement	MCLG	Regulatory Limit	Source of contamination
Turbidity	No	10/15/2017	0.8 NTU	NTU	N/A	TT=<1.0	Soil Runoff
Turbidity	No	Hourly	99%<0.3	NTU	N/A	TT=95% of samples <0.3	Soil Runoff
Distribution Turbidity	No	3/2017	.51	NTU	N/A	MCL > 5NTU	Soil Runoff

Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. Our highest single turbidity measurement for the year occurred on 10/15/17 (.80). State regulations require that turbidity must always be less than or equal to 1.0 NTU. The regulations require that 95% of the turbidity samples collected have measurements below 0.3 NTU.

Distribution Turbidity Results: mc/l 5 NTU

Turbidity	1/17	2/17	3/17	4/17	5/17	6/17	7/17	8/17	9/17	10/17	11/17	12/17
Average Monthly Value	<u>.49</u>	<u>.45</u>	<u>.51</u>	<u>.46</u>	<u>.37</u>	<u>.34</u>	<u>.44</u>	<u>.46</u>	<u>.34</u>	<u>.43</u>	<u>.42</u>	<u>.42</u>

Distribution Turbidity is a measure of the cloudiness of the water found in the distribution system. We monitor it because it is a good indicator of water quality. High Turbidity can hinder the effectiveness of disinfectants. Our highest average monthly distribution turbidity measurement detected during the year (.51) occurred in February 2017. This value is below the State's MCL.

Table of Detected Contaminants

Contaminant	Violation Yes/No	Date of Sample	Level Detected (Avg/Max) (Range)	Unit Measurement	MCLG	Regulatory Limit (MCL, TT or AL)	Likely Source of Contamination
Microbiological Contaminants							
Total Coliform	No	5/month		N/A	0	TT=2 or more positive samples	Naturally present in the environment.
E. Coli,	No	5/month		N/A	0	Any positive sample	Human and animal fecal waste.
Total Organic Carbon	No	Monthly		mg/l	N/A	TT	Naturally present in the environment
Radioactive Contaminants							
None Detected							
Inorganics							
Barium	No	6/1/17	0.0115	mg/l	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Chloride	No	5/30/17	36.4	mg/l	N/A	250	Naturally occurring or indicative of road salt contamination.
Copper	No	June 2015	0.03	mg/l	1.3	AL=1.316	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.
Lead	No	June 2015	.004	mg/l	0	AL=1516	Corrosion of household plumbing systems; Erosion of natural deposits.
Sodium	No	6/2/17	17.9	mg/l	N/A	(see should I take precautions)	Naturally occurring; Road salt; Water softeners; Animal waste.
Sulfate	No	5/30/17	8.97	mg/l	N/A	250	Naturally occurring.
Zinc	No	6/2/17	0.0070	mg/l	N/A	5	Naturally occurring; mining waste.
Inorganics- Nitrate and Nitrite18							
Nitrate	No	5/24/17	0.338	mg/l	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Disinfectants:							
Chlorine Residual	No	Hourly		mg/l	N/A	4 mg/l	Water additive used to control microbes.
Chlorine Dioxide Residual	No	Hourly		mg/l	N/A	0.8 mg/l	Water additive used to control microbes.

Table of Undetected Contaminants

(Tested for but not found)

Volatile Organic Chemicals:			
Benzene	Bromobenzene	Bromochloromethane	Bromomethane
N-Butylbenzene	Sec-Butylbenzene	Tert-Butylbenzene	Carbon Tetrachloride
Chlorobenzene	Chloroethane	Chloromethane	2-Chlorotoluene
4-Chlorotoluene	Dibromomethane	1,2-Dibromoethane	1,2-Dichlorobenzene
1,3-Dichlorobenzene	1,4-Dichlorobenzene	Dichlorodifluoromethane	1,1-Dichloroethane
1,2-Dichloroethane	1,1-Dichloroethane	Cis-1,2-Dichloroethene	Trans-1,2-Dichloroethene
1,2-Dichloropropane	1,3-Dichloropropane	Methyl Tert Butyl Ether	2,2-Dichloropropane
1,1-Dichloropropene	1,3-Dichloropropene (Total)	Ethylbenzene	Hexachlorobutadiene
Isopropylbenzene	P-Isopropyltoluene	Methylene Chloride	N-Propylbenzene
Styrene	1,1,1,2-Tetrachloroethane	1,2,2,2-Tetrachloroethane	Tetrachloroethene
Toluene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,1,1-Trichloroethane
1,1,2-Trichloroethane	Trichloroethene	Trichlorofluoromethane	1,2,3-Trichloropropane
1,2,4 Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl Chloride	M-Xylene
O-Xylene	P-Xylene		
Synthetic organic Chemicals:			
Alachlor	Aldrin	Atrazine	Benzo(a)pyrene
Di (2-ethylhexyl) adipate	Di (2-ethylhexyl) phthalate	<u>Butachlor</u>	<u>Endrin</u>
Heptachlor	<u>Heptachlor epoxide</u>	<u>Hexachlorobenzene</u>	<u>Hexachlorocyclopentadine</u>
Lindane	<u>Methoxychlor</u>	<u>Metolachlor</u>	<u>Metribuzin</u>
Propachlor	<u>Simazine</u>	<u>Dieldrin</u>	<u>Aldicarb</u>
Aldicarb Sulfoxide	<u>Carbofuran</u>	<u>Oxamyl</u>	<u>Methomyl</u>
3-Hydroxy Carbofuran	<u>Carbaryl</u>	1,2-Dibromoethane (EDB)	1,2 Dibromo-3-chloropropane
2,4,D	<u>Dalapon</u>	<u>Dicamba</u>	<u>Dinoseb</u>
Pentachlorophenol	<u>Pichloram</u>	2,4,5-TP	
Orgaohalide Pesticides & PCB's:	Aroclor 1016	Aroclor 1221	Aroclor 1232
Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260
Chlordane Total	Toxaphene	Aldrin	Endrin
Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Hexachlorocyclopentadine
Lindane	Methoxychlor	Dieldrin	
Inorganic Chemicals:	Arsenic	Cadmium	Chromium
Mercury	Selenium	Fluoride	Antimony
Beryllium	Nickel	Thallium	Cyanide`
Iron	Manganese	Silver	Color
Odor			

Lead

June 2015	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10
June 2015	Site 11	Site 12	Site 13	Site 14	Site 15	Site 16	Site 17	Site 18	Site 19	Site 20
					.001	.002	.002	.004	.008	.009

The range of detects was ND-0.009. There were no detects above the action Limit of 15. The 90th Percentile level of the 20 sample sites was 0.004. If the value is (less than or equal to) <0.015mg/l you are in compliance.

Lead. 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 Port Ewen 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>.

Copper

June 2015	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site10
June 2015	Site 11	Site 12	Site 13	Site 14	Site 15	Site 16	Site 17	Site 18	Site 19	Site 20
				.02	.02	.02	.03	.03	.04	.05

The range of detects was ND-.05. There were no detects above the action level of 1.3. The 90th percentile level of the 20 samples was 0.03. If the value is (less than or equal to) <1.3 mg/l you are in compliance.

Contaminants	Violation Yes/No	Date of Sample	Level Detected Ave/Max Ranges	Unit Measurement	MCLG	Regulatory Limit MCL, TT, AL	Likely Source of Contamination
Total Trihalomethanes	Yes	6/6/2017 8/22/2017 11/22/2017	92.3 97.3 99.5	ug/l	N/A	80	By-product of drinking water chlorination needed to kill harmful organisms. TTHM's are formed when source water contains large amounts of organic matter.

Total Trihalomethanes:

Total Trihalomethanes	2 nd Quarter 2016	3 rd Quarter 2016	4 th Quarter 2016	1 st Quarter 2017	2 nd Quarter 2017	3 rd Quarter 2017	4 th Quarter 2017
Site 1 175 Broadway	35.5	95.3	59	34.2	73.1	79.9	57.7
Site 2 182 Hasbrouck	61.1	108	91	58.2	112	128	99.6
Quarterly Ave.	48.3	102	75	46.2	92.6	103	77.7
Rolling Annual Ave.				67.9	79	79.2	79.9

The Highest Annual Trihalomethanes Average= 79.9

The Trihalomethanes Range= 34.2 - 128

Locational Running Annual Average: MCL= 80 ug/l

Total Trihalomethanes	2 nd Quarter 2016	3 rd Quarter 2016	4 th Quarter 2016	1 st quarter 2017	2 nd Quarter 2017	3 rd Quarter 2017	4 th Quarter 2017
175 Broadway				56	65.4	61.6	61.2
182 Hasbrouck				80	92.3	97.3	99.5

Compliance with the maximum contaminant levels for two groups of disinfection byproducts (TTHM and HAA5) will be calculated for each monitoring location in the distribution system. This approach, referred to as the locational running annual average (LRAA), differs from current requirements, which determine compliance by calculation the running annual average of samples from all locations across the system.

Contaminants	Violation Yes/No	Date of Sample	Level Detected Ave/max Ranges	Unit Measurement	MCLG	Regulatory Limit MCL, TT, AL	Likely Source of Contamination
Haloacetic Acids	No	Quarterly	38.7	ug/l	N/A	60	By-product of drinking water disinfection needed to kill harmful organisms.

Total Haloacetic Acids:

Total Haloacetic Acids	2 nd Quarter 2016	3 rd Quarter 2016	4 th Quarter 2016	1 st Quarter 2017	2 nd Quarter 2017	3 rd Quarter 2017	4 th Quarter 2017
Site 1 175 Broadway	27	36	30	24	33.4	45.5	46
Site 2 182 Hasbrouck	41	15	19	36	26.2	15.9	21
Quarterly Ave.	34	25.5	24.5	30	29.8	61.4	33.5
Rolling Annual Ave.				28.5	26.7	36.4	38.7

The Highest Annual Haloacetic Acids average= 38.7

The Haloacetic Range= 15.9 - 46

Locational Running Average: MCL= 60 ug/l

Total Haloacetic acids	2 nd Quarter 2016	3 rd Quarter 2016	4 th Quarter 2016	1 st Quarter 2017	2 nd Quarter 2017	3 rd Quarter 2017	4 th Quarter 2017
175 Broadway				29.3	30.9	33.2	37.2
182 Hasbrouck				27.7	24.1	24.3	24.8

What does this information mean?

The table shows that our system uncovered some problems this year with Trihalomethanes. *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 system, and may have an increased risk of getting cancer.* The Port Ewen Water District, with the assistance from the Ulster County Health Dept, has retained the services of a consultant to review the treatment processes of the Port Ewen Water District including the treatment plant and distribution system. District employees have routinely taken samples of the entry point to the distribution system at the plant and in the distribution system and have found Recent TTHMs readings to be well within acceptable levels. Tests performed at our standpipe and along the main distribution corridors have shown to be under the allowable limit as well. We have installed a new Chlorine Dioxide system at our plant and chlorine dioxide has proven to create less TTHMs as it interacts differently than chlorine. We are working to minimize the formation of TTHMs while ensuring an adequate level of disinfectant. Moving forward the district will take recommendations made by the consultant and with assistance from the Ulster County Health Dept. begin implementing those recommendations in a safe and timely manner ensuring that the customers of the Port Ewen Water District are informed of all action being taken.

Is our water System meeting other rules that govern operations?

During 2017 our system was in compliance with applicable State drinking water operating, monitoring and reporting requirements.

Do I need to take special precautions?

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. 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, people 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. Sodium: 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. 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), or the Ulster County Health Department at (845)340-3010.

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 operating and maintaining the water system;
- 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 firefighting 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 to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home 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.

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

The Port Ewen Water District is pleased to be affiliated with the following organizations:

- American Water Works Association
- New York Rural Water
- Hudson Valley Water Works
- Ulster County Water Superintendents Association

Port Ewen Water District Hudson River AWQR Summary (source water assessment).

The NYS DOH has completed a source water 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 could affect the source. 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. While nitrates were detected in our water, it should be noted that all drinking water, including bottled water, maybe reasonably expected to contain at least small amounts of some contaminants from natural sources. The presence of contaminants does not necessarily indicate that the water poses a health risk. See section "Are there contaminants in our drinking water?" for a list of contaminants that have been detected. The source water assessments provide resource managers with additional information for protecting source water into the future.

The Hudson River watershed is exceptionally large and too big for detailed evaluation in the Source Water Assessment program. General drinking water concerns for public water suppliers which use these sources include: storm generated turbidity, eutrophication (excessive nutrients and algae), wastewater and toxic sediments. In addition, salt water can enter the lower Hudson and impact drinking water quality during periods of low flow. The summary below is based on the analysis of the contaminant inventory compiled for the drainage area deemed most likely to impact drinking water quality at this PWS intake.

This assessment found an elevated susceptibility to contamination for this source of drinking water. The amount of agriculture land cover/pasture in the assessment area results in a high protozoa contamination. There is also a high density of sanitary wastewater discharges which results in elevated susceptibility for numerous contamination categories. Non-sanitary wastewater discharges may also contribute to contamination. There is also noteworthy contamination susceptibility associated with other discrete contaminant sources, and these facility types include: Inactive hazardous waste sites, mines and landfills. It should be noted that these types of facilities may typically be found with watersheds encompassing a large geographical area, such as the Hudson River Watershed.

Please note that our water is filtered and is disinfected to ensure that the finished water delivered into your home meets the New York State's drinking water standards for microbial contamination.

County and State Health Departments may use this information to direct future source water protection activities. This may include quality monitoring, resource management, planning and education programs.

A copy of this assessment, including a map of the assessment area, can be obtained by contacting us at (845) 331-5900.