



2016

ANNUAL WATER QUALITY REPORT

TOWN OF MURRAY

Kendall 6 WD #NY3630096, Murray North WD #NY3622603, Murray South WD #NY3630012

DISTRICTS #3, 6, 7, 8, 9, 10, 11S, 13, 15S

INTRODUCTION

To comply with State regulations, the Village of Albion Water System, 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. Last year, your tap water met all State drinking water health standards. We are proud to report that our system did not violate a maximum contaminant level or any other water quality standard. 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. Last year we conducted tests for over 120 contaminants. We detected 15 contaminants and found none of those contaminants at a level higher than the State allows. This report provides an overview of last year's 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 Kevin Miller, Chief Operator at 682-3962 or Ed Morgan, Town of Murray Water Superintendent at 585-638-8507, ext. 103. We want you to be informed about your drinking water. If you want to learn more, please attend any of our regularly scheduled board meetings on the 2nd Tuesday of every 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, 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.

Our water source is Lake Ontario which is considered a surface water supply which is located in the Town of Carlton. During 2016, our system did not experience any restriction of our water source. Treatment consists of pre-treatment disinfection, up flow clarification, filtration, post disinfection, and fluoridation prior to distribution.

SOURCE WATER ASSESSMENT

The New York State Department of Health completed a Source Water Assessment Report for the Village of Albion Water System as a requirement of the Source Water Assessment Program (SWAP). The Executive Summary of the report states that the Great Lakes watershed is exceptionally large and too big for a detailed evaluation in the SWAP. General drinking water concerns for public water supplies which use these sources include: storm generated turbidity, waste water, toxic sediments, shipping related spills, and problems associated with exotic species (e.g. *Zebra* Mussels-intake clogging and taste and odor problems). The summary below is based on the analysis of the contaminant inventory compiled for the drainage area deemed most likely to impact the drinking water quality of the Village of Albion Water System.

The assessment found a moderate susceptibility to contamination for the source of supply of the Village of Albion Water System. The amount of agricultural lands in the assessment area results in elevated potential for Disinfection By-Product precursors, and pesticide contamination. While there are some facilities present, permitted discharges do not likely represent an important threat to source water quality based on their density in the assessment area. There is also noteworthy contamination susceptibility associated with other discrete contaminant sources, and these facilities include: mines/quarries.

FACTS AND FIGURES

Our water system serves approximately 15,000 people in the Village of Albion, Albion/Orleans Correctional Facility, and Towns of Albion, Barre, Carlton, Gaines, Murray and Ridgeway. The total water produced in 2016 was 524,537,000 gallons for an average daily production of 1,432,000 gallons a day. The maximum output for a single day was 2,530,000 gallons. The amount of water delivered to customers was 464,984,808 gallons. An additional 10,376,998 gallons were used in the treatment process and Village buildings. This leaves 49,175,194 gallons (9.4%) unaccounted for as a result of leaks, fires, and unmetered Village Buildings. Included in the total water delivered, Village residents used 151,675,979 gallons, the Albion/Orleans Correctional Facility 90,998,982 gallons, the Town of Albion 45,082,800 gallons, the Town of Barre 24,873,500 gallons, the Town of Carlton 67,342,440 gallons, the Town of Gaines 46,538,100 gallons, the Town of Murray 27,675,000 gallons, and the Town of Ridgeway 3,328,000 gallons.

In 2016, water customers in the Village of Albion were charged \$3.26/1,000 gallons and \$20.00 quarter administration fee for an average yearly charge of \$286. The Albion/Orleans Correctional Facility were charged \$4.10/1,000 gallons and \$5.00 quarter administration fee for an average yearly charge of \$180 per occupant. The Town of Albion charged \$15.00 for first 500 gallons then \$4.25/1,000 gallons afterwards, for an average yearly charge of \$310. The Town of Barre charged \$5.00/1,000 gallons for an average yearly charge of \$297. The Town of Carlton charged \$18.00 for the first 3,000 gallons and \$4.00/1,000 gallons after that for an average yearly charge of \$175. The Town of Gaines charged \$4.25/1,000 gallons for an average yearly charge of \$294. The Town of Murray charged \$4.25/1,000 gallons for an average charge of \$250 and the Town of Ridgeway charged \$16.00 for the first 4,000 gallons and \$3.75/1,000 gallons up to 20,000 gallons and \$3.35/1,000 gallons for amount used over 20,000 gallons for an average charge of \$166. These averages are based on total gallons purchased by the Towns and Correctional Facilities from the Village.

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, 19 inorganic compounds (including nitrate, lead and copper), disinfection and disinfection by products, 56 volatile organic compounds, 44 synthetic organic compounds and radiological. Most of the compounds we analyzed for were not detected in your drinking water.

The table presented 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.

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
TURBIDITY							
Finished Water ¹ (at entry point)	NO	Continuous	0.021-0.126	NTU	N/A	TT-95% <0.3 NTU MCL = 1.0 NTU	Soil Runoff
Distribution system (various locations)	NO	5 per week	0.048-0.189	NTU	N/A	5 NTU	Sediments in storage tanks and piping
INORGANICS							
Arsenic	NO	8/2/16	ND	ug/L	10	MCL = 10 ug/L	Erosion of mineral deposits, industry
Barium	NO	8/2/16	0.025	mg/L	2.0	MCL= 2.0 mg/L	Erosions of natural deposits runoffs from steel & pulp mill
Chromium	NO	8/2/16	ND	ug/L	100	MCL = 100 ug/L	Erosion of mineral deposits, industry
Nickel	NO	8/2/16	0.0015	mg/L	N/A	N/A	Erosion of mineral deposits
Nitrate	NO	8/2/16	0.4	mg/L	10	MCL = 10 mg/L	Runoff from fertilizer, septic tank leaching, erosion of natural deposits
Cyanide	NO	8/2/16	0.0064	mg/L	0.2	MCL = 0.2 mg/L	Discharge from steel, plastic, or fertilizer manufacture
Lead	NO	9/8/14 to 9/10/14	4.9³ (ND - 7.9)	ug/L	0	AL = 15	Corrosion of household plumbing, erosion of natural deposits
Copper	NO	9/8/14 to 9/10/14	0.098² (0.006 - 0.18)	mg/L	1.3	AL = 1.3	Corrosion of household plumbing, leaching of wood preservatives
Chloride	NO	Monthly	32 (29 - 39)	mg/L	N/A	MCL= 250 mg/L	Erosion and runoff, naturally occurring, road salt
Fluoride	NO	Daily	0.7 (0.4 - 0.8)	mg/L	N/A	MCL= 2.2 mg/L	Water additive, industrial waste
DISINFECTION AND DISINFECTION BYPRODUCTS							
Chlorine Residual (at entry point)	NO	Daily	1.6 (1.2- 2.3)	mg/L	N/A	MRDL=4.0 mg/L	Disinfectant
Chlorine Dioxide	NO	Daily	0.36 (0.19 - 0.59)	mg/L	N/A	MCL= 0.8 mg/L (800 ug/L)	Residual Chlorine Dioxide
Chlorite	NO	Daily	0.42 (0.19 - 0.96) ⁵	mg/L	0.8	MCL= 1.0 mg/L	Byproduct of drinking water disinfection
Trihalomethanes	NO	Quarterly	14⁴ (11 - 14)	ug/L	N/A	MCL= 80 ug/L	Byproduct of drinking water disinfection
Haloacetic Acids	NO	Quarterly	16⁴ (10 - 16)	ug/L	N/A	MCL= 60 ug/L	Byproduct of drinking water disinfection

PURCHASE SYSTEM DISINFECTION BYPRODUCTS - samples collected quarterly - (same MCLs as above)							
	T/ Albion WD	T/ Barre WD	T/ Carlton WD	T/ Gaines WD	Kendall 6 WD	Murray North WD	Murray South WD
Chlorine Residual (average) mg/L	.64	.55	1.02	.77	.26	.47	.33
Trihalomethanes ug/L	21⁴	29⁴ (18 - 42)	19⁴	32⁴	48⁴	57⁴	48⁴
Haloacetic Acids ug/L	15⁴	27⁴ (25 - 28)	14⁴	21⁴	9⁴	8⁴	31⁴

Notes:

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 (0.126 NTU) for the year occurred on 8/23/16. 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. The levels recorded were within the acceptable range allowed and did not constitute a treatment technique violation.

2 - The level presented represents the 90th percentile of 30 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 30 samples were collected at your water system and the 90th percentile value was 0.081 mg/L. The action level for copper was not exceeded at any of the sites tested.

3 - The level presented represents the 90th percentile of the 30 samples collected. In this case – 3.5 ug/L (0.0035 mg/L). The action level for lead was exceeded at one of the 30 sites tested.

4 - This level represents the annual quarterly average calculated from data collected for the Town of Barre. For the other purchase systems, which are now on reduced monitoring, one sample collected in August of 2016. For the village of Albion, which is also on reduced monitoring, it is the higher of 2 samples collected in August.

5 - The water leaving the treatment plant did not exceed the MCL for chlorite ion at any time in 2016. Samples were also collected from the distribution system each month – all were shown to be below the MCL for chlorite ion.

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).

Picocuries per liter fpCi/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 is longer than 10 micrometers.

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 Orleans County Health Department at (585)589-3252.

WHAT DOES THIS INFORMATION MEAN?

As you can see by the table, our system had no violations. We have learned through our testing that some contaminants have been detected; these contaminants were found to be below the level allowed by the State.

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 homes plumbing. The Village of Albion 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?

During 2016, our system was in full compliance with applicable State drinking water operating, monitoring and reporting requirements.

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 FLUORIDE ADDITION

Our system is one of the many drinking water systems in New York State that provides drinking water with a controlled, low level of fluoride for consumer dental health protection. Fluoride is added to your water by the Village of Albion Water Treatment Plant before it is delivered to you. Since most of the drinking water produced in the United States is now fluoridated, and we also take in some amount of fluoride from food and beverages that are prepared with that water, the US Department of Health and Human Services and the Environmental protection Agency has recently lowered the optimal level of fluoride in drinking water to 0.7 mg/L from the previous range of 0.8 to 1.1 mg/L. To ensure that the fluoride supplement in your water provides optimal dental protection, the State Department of Health requires that the Village of Albion Water Treatment Plant monitor fluoride levels on a daily basis. During 2016, fluoride levels ranged from 0.5 to 0.9 mg/L and at no time exceeded the MCL of 2.2.

INFORMATION FOR NON-ENGLISH SPEAKING RESIDENTS

Spanish Este informe contiene informacion muy importante sobre su agua beber. Traduzcalo o hable con alguien que lo entienda bien.

French Ce rapport contient des informations importantes sur votre eau potable. Traduisez-le ou parlez en avec quelqu'un qui le comprend bien.

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, and then check the meter after 15 minutes. If it moved, you have a leak

SYSTEM IMPROVEMENTS

In 2015 - a new operator was hired, several safety improvements were made at the plant, and pumps and valves were serviced. Some of the purchase system distribution systems have been expanded, and several automatic flushers have been installed. In 2016 with the hot dry summer – water usage was up by almost 8 million gallons from last year. We were able to keep up with demand by running two high service pumps in tandem for much of the summer. Our entire electrical system was evaluated and recommendations made. Our emergency generators are now under contract for maintenance and service. We have installed security systems at the two booster stations and more cameras at all three locations. Our clear well was inspected earlier in the year, we have consulted with engineers regarding future improvements, and our master meter was checked. The Village and all purchase systems now qualify for reduced monitoring of disinfection byproducts – largely in part to us using chlorine dioxide as our main disinfectant, turnover in the storage tanks and increased flushing in the distribution system.

CLOSING

Thank you for allowing us to continue to provide your family with quality drinking water this year. In an effort to monitor water loss, please contact our office if you see anything that may possibly be a water leak. If you have any questions, feel free to call:

Water Quality or report a leak- Village of Albion WTP	682-3962	
Customer Service: Village of Albion	589-9176	
Town of Carlton -	682-4358	(Dave Krull, Hwy. Supt.)
Town of Gaines -	589-5833	(Ron Manella, Hwy Supt.)
Town of Albion -	589-7048	(Michael Neidert, Hwy. Supt.)
Town of Barre -	589-5100	(Dale Brooks, Hwy. Supt.)
Town of Murray (and Kendall 6) -	638-8507	(Ed Morgan, Hwy. Supt.)
Town of Ridgeway -	798-3680	(Marc Goheen, Hwy. Supt.)