2024 Consumer Confidence Report on Water Quality for 2023

Annual Water Quality Report

Merrick Operations District

Public Water Supply ID# NY2902840

Liberty

Message from the President

Dear Liberty Customers,

At Liberty, our priority is providing you with safe, quality drinking water every single day. We pride ourselves on the investments we make to accomplish this – from improving infrastructure to enhancing our operations – we work around the clock to ensure your drinking water meets and exceeds all Safe Drinking Water Act (SDWA) standards established by the United States Environmental Protection Agency (EPA) and New York State Department of Health (NYSDOH).

We invest responsibly in our water infrastructure because strong infrastructure is a key factor in delivering quality water. Additionally, we have a rigorous water quality program that ensures the water delivered to your home or business is tested by independent laboratories. We send the data from those tests to our local regulators to verify compliance with all applicable SDWA and NYSDOH water regulations.

In this Water Quality Report (Consumer Confidence Report), you will find detailed information regarding the quality of water we provided during the calendar year 2023. The report includes information about the source of your water, the areas we serve, substances found in your drinking water with a detailed description on their source and need for removal. In addition, it outlines our intricate production process and distribution system.

If you have questions about this report, please contact us at 1-877-426-6999 TDD:711. We encourage you to visit our website at www.libertyenergyandwater.com to stay up-to-date and receive tips about water conservation which can help preserve this natural resource for future generations.

Along with the entire Liberty family, I thank you for being a valued customer. We are proud to be your water provider and look forward to serving you for years to come.

Sincerely,
Deborah Franco
President, Liberty New York Water

To request a printed copy of this report, please call us at 1-877-426-6999 TDD:711. This report can also be found at www.libertyenergyandwater.com.

Where Does My Water Come From?

The Merrick water system serves approximately 135,000 people through 45,018 connections. Our water source is groundwater wells located in the aquifer system beneath the land surface. The water is treated as prior to distribution in five ways. Sodium hypochlorite is added to the water bacteriological disinfection. Caustic Soda (Sodium Hydroxide) is used to raise pH and minimize corrosivity to water mains and household plumbing. Calciquest (Phosphate compound) is used to maintain optimum treatment and inhibit the corrosion of plumbing materials; and to stabilize naturally occurring iron and manganese that can cause discolored water conditions. Filtration to remove iron at three well locations. Granular Activated Carbon (GAC) to remove organics at one well location (US Navy / Northrop-Grumman plume site).

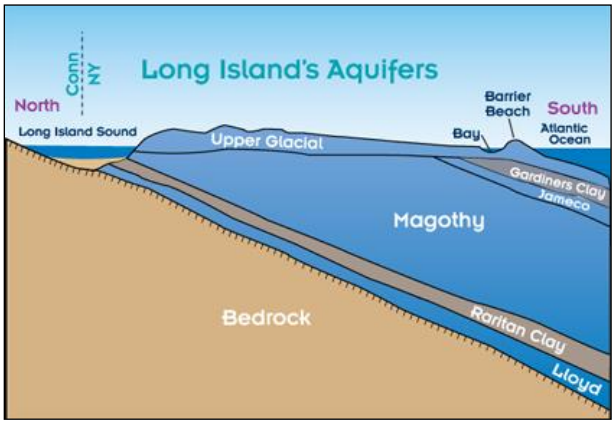
Communities Served

Bellmore	North Bellmore
East Massapequa*	Massapequa*
Merrick	North Merrick
North Seaford	Seaford
North Wantagh	Wantagh
Levittown*	

*community partially served

The Aquifers

The aquifers are water-bearing geologic deposits of sand and clay that absorb and store about 45 percent of the rain and snow that fall on Long Island. Merrick Operations Center has wells in the Magothy aquifer.



Not to scale

If you have a private well which is unregulated and untested, you should not use the water for drinking or cooking. (Source: NCDOH)

Be Water Smart – Think Conservation

The New York State Department of Environmental Conservation (NYSDEC) requested that all Long Island water suppliers reduce their peak pumpage by 15 percent to ensure the long-term sustainability of the Long Island aquifer. Our customers must conserve water to help us achieve this goal. When our customers conserve, not only do they reduce their water bill, but Liberty is able to defer infrastructure investment projects that are needed to meet peak water demand, which can reach as high as 50 million gallons of water a day in the summer.

The following suggestions will help you make your home "water efficient" without sacrificing comfort or changing lifestyles:

- Install smart irrigation technology on your irrigation system to irrigate as efficiently as possible.
- Install a moisture sensor on your irrigation system to prevent wasteful watering during or just after a rain.
- Use native, drought-resistant shrubs, trees, plants, and grasses in your landscape.
- Run dishwashers and washing machines only with full loads.
- Turn off the tap when brushing your teeth or shaving.
- Check every faucet for leaks. Even a slow drip can waste 15 to 20 gallons a day, or about 6,000 gallons a year.
- If you suspect that you have a water leak, order our free Leak Detection Kit. The kit contains information, hints, and dye tablets to help you determine if you have a wasteful water loss.
- Replace older devices with water-saving showerheads, faucets, or low flush toilets. A normal showerhead uses 5 to 7 gallons a minute. Switching to a low-flow model that uses 1.5 gallons a minute can save a family thousands of gallons of water a year.

Source Water Assessment

The NYSDOH, with assistance from the local health department and the CDM consulting firm, 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 source water assessment includes a susceptibility rating based on the risk posed by each potential source of contamination and how rapidly contaminants can move through the subsurface to the wells. The susceptibility of a water supply well to contamination is dependent upon both the presence of potential sources of contamination within the well's contributing area and the likelihood that the contaminant can travel through the environment to reach the well. 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 section "Are there contaminants in our drinking water?" for a list of the contaminants that have been detected (if any). The source water assessments provide resource managers with additional information for protecting source waters into the future.

Drinking water is derived from 16 wells. The source water assessment has rated most of the wells as having a very high susceptibility to nitrates. The elevated susceptibility to industrial solvents is due primarily to point sources of contamination related to transportation routes and commercial/ industrial facilities and related activities in the assessment area. The high susceptibility to nitrate contamination is attributable to residential, commercial, and institutional land use and related practices in the assessment area, such as fertilizing lawns.

What are Drinking Water Standards?

Drinking water standards are the regulations set by the USEPA to control the level of contamination in the nation's drinking water. The USEPA and the NYSDOH are the agencies responsible for establishing drinking water quality standards in New York. This approach includes assessing and protecting drinking water sources; protecting wells

and surface water; making sure water is treated by qualified operators; ensuring the integrity of the distribution system; and making information about water quality available to the public. The water delivered to your home meets the standards required by the USEPA and the NYSDOH.

This report describes those contaminants that have been detected in the analyses of almost 200 different potential contaminants, nearly 100 of which are regulated by the USEPA and the NYSDOH. Liberty is proud to tell you that there have been no contaminants detected that exceed any federal or state drinking water standards. Hundreds of samples are analyzed every year by a NYS certified laboratory. Sample results are available on the Table in this report. This report is intended to provide information for all water users. If received by an absentee landlord, a business, or a school, please share the information with tenants, employees, or students. We are happy to make additional copies of this report available; please call Liberty's Water Quality Manager at 516-273-5670. You may also access this report on the Liberty web page at www.libertyenergyandwater.com.

Substances That Could be in Water

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 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 byproducts 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, the USEPA and the NYSDOH prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration (USFDA) also establishes limits for contaminants in bottled water that 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 USEPA Safe Drinking Water Hotline at 1-800-426-4791. For information on bottled water visit the USFDA website at www.fda.gov

Do I Need to Take Special Precautions?

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. The USEPA and Centers for Disease Control (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 at 1-800-426-4791.

Cryptosporidiosis & Giardiasis

Although there have been no cases of Cryptosporidiosis in Nassau County attributable to the water supply, we thought you should be aware of the risks to people with severely weakened immune systems. Cryptosporidiosis and Giardiasis are intestinal illnesses caused by microscopic parasites that can be transmitted several ways including through drinking water. Cryptosporidiosis can be very serious for people with weak immune systems, such as transplant patients; individuals receiving chemotherapy or dialysis, and people with Crohn's disease or HIV infection. Individuals who think they may have been exposed to

Cryptosporidiosis or Giardiasis should contact their health care providers immediately.

Immuno-compromised patients who may have been advised by their health care provider that they may be at risk, especially when traveling, should observe the following:

- One minute of boiling water at a rolling boil will kill *Cryptosporidium parvum* and *Giardia lamblia*.
- Drinking bottled water does not guarantee that the water is free from Cryptosporidiosis or Giardiasis.

Contact your health care provider about your options. If you have questions, contact the NCDOH at 516-227-9692.

Lead & Copper Rule Statements

The Lead and Copper Rule requires sampling for lead and copper at the tap. In 1992, the first-year testing was required; tap water was sampled in compliance with EPA regulations. Test results were excellent: at least 90 percent of the lead tests were well below 10 parts per billion, and for copper, below 0.3 parts per million, indicating that the company's corrosion control treatment processes continue to be effective. The same tests were done roughly every three years from 1997 through 2023 with similar results. The next round of homeowner monitoring for the Lead and Copper Rule will be completed semiannually in 2024.

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. Liberty Utilities 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, 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 at 1-800-426-4791 or at http://www.epa.gov/safewater/lead.

System Improvements

In 2023, we continued to make significant upgrades to our system and infra-structure. These improvements include:

- Replaced 2,498 water meters.
- Replaced 12 fire hydrants.
- Replaced 60 service lines and added 25 new service lines
- Started construction of a new iron removal facility at Charles Plant in Merrick.
- Started construction on 6-Million-Gallon-Per-Day Advanced Oxidation Plant for removal of 1,4-Dioxane at the Seaman's Neck Treatment Plant in Levittown.
- Replaced Well pumps and motors for Seamans Neck Road 3A and 4.
- Replaced iron filter media at Seaman's Neck Road Plant.
- Demolished old wellhouse at Jefferson Plant in Merrick.
- Installed the Duck Pond Road Booster Station.
- Installed interconnections between Massapequa and South Farmingdale Water Districts.
- Replaced well pumps at Jerusalem and Old Mill.

Improvements planned for 2024 include:

- Replace approximately 9,600 water meters.
- Replace 15 fire hydrants.
- Replace 70 service lines and add 20 new service lines.
- Complete the new iron removal facility at Charles Plant in Merrick.
- Complete construction of the 6-Million-Gallon-Per-Day Advanced Oxidation Plant for removal of 1,4-Dioxane at the Seaman's Neck Treatment Plant in Levittown.

- Install new pH optimization system at the Seaman's Neck Road Iron Treatment Plant.
- Install the Alken Road Booster Station.
- Rehabilitate wells at Old Mill, Newbridge, and Massapequa 8.
- Replace the 100,000-gal Backwash Waste Tank at Newbridge.

2023 STATISTICS AT-A-GLANCE

Wells Closed/Restricted	1
Violations of Standards	None
Typical Well Depth	500 Feet
Aquifers	Magothy
Pumping Stations	12
Service Area	20 Square Miles
Total Water Withdrawn	5,086,900,000 Gal.
Total Water Sales	4,895,386,500 Gal.
Population Served (approx.)	135,000
Customers Served (accounts)	44,800
Miles of Mains	433

Average Residential Usage & Cost

In 2023, the average customer usage (commercial and residential) used approximately 109,272 gallons of water at a cost of about $781, or $2.14 a day. With an average of 3.0 persons per household, the cost of water was about 71¢ a day per person.

Important Health Information

Lead

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. Merrick Water System is responsible for providing high quality drinking water and removing lead pipes but cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute accredited certifier to reduce lead in drinking water. If you are concerned about lead in your water and wish to have your water tested, contact Liberty NY Water at 1-877-426-6999 TDD:711.

Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at http://www.epa.gov/safewater/lead.

1,4 dioxane

Laboratory studies show that 1,4 dioxane caused liver cancer in animals exposed at high levels throughout their lifetime. Whether 1,4 dioxane causes cancer in humans is unknown. The United States Environmental Protection Agency considers 1,4 dioxane as likely to be carcinogenic to humans based upon studies of animals exposed to high levels of this chemical over their entire lifetimes.

Is Our Water System Meeting Other Rules *That Govern Our Operations?*

During 2023, Merrick water system was in compliance with applicable State drinking water operating, monitoring and reporting requirements.

How Might I Become Actively Involved?

Customers can participate in decisions that may affect the quality of water by:

- Reading the information provided in bill inserts and special mailings
- Contacting the company directly with questions or to discuss issues
- Responding to survey requests
- Attending presentations by the company made to local community and civic associations. Dates in 2024 TBD.
- Contacting agencies such as the Nassau County Health Department (NCDOH) at 516-227-9692.

Testing Results

During the year, Liberty collects water samples to determine the presence of any radioactive, biological, inorganic, or organic contaminants. All of the substances listed in the table below tested under the Maximum Contaminant Level (MCL). Liberty believes it is important you know what was detected, and how much of the substance was present. The state allows the monitoring of certain substances less than once a year because the concentrations of these substances do not change frequently. If a substance was tested and there was no detection, it is not listed in this table. You can find Definitions, Terms and Abbreviations related to this Table in the next section for easy reference.

Merrick 2023 Annual Water Quality Report

PRIMARY STANDARDS - Health Based

DISTRIBUTION SYSTEM

Disinfectant Residuals	Violation? (Yes/No)	Date of Sample	MRDL/ MCL	MCLG	Average/ Range	Typical Source of Constituent
Chlorine (ppm) [1]	No	09/2023	4	N/A	1.37 0.04 – 2.12	Drinking water disinfectant added for treatment.
Total Coliform	No	12/2023	TT ≥ 5% samples positive	N/A	1 positive sample	Naturally present in the environment.
E. coli [2]	No	01/18/2023 & 02/01/2023	1 or more positive samples	N/A	2 positive samples	Human and animal fecal waste

Disinfection By-Products [3]	Violation? (Yes/No)	Date of Sample	Primary MCL	MCLG	Detection	Typical Source of Constituent
TTHMs (ppb)	No	09/2023	80	N/A	ND – 4.4 RAA- 1.47	Byproduct of drinking water disinfection.

Lead & Copper [4]	Violation? (Yes/No)	Date of Sample	AL	MCLG	Sample Data	Range of Detection	90th % Level	Typical Source of Constituent
Copper (ppm)	No	07-12/ 2023	1.3	1.3	0 of the 101 samples collected exceeded the action level.	ND – 0.56	0.23	Internal corrosion of household plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Lead (ppb)	No		15	0		ND – 1.3	ND	

RAW WELLS

Radiological Constituents [5]	Violation? (Yes/No)	Date of Sample	Primary MCL	MCLG	Range of Detections	Typical Source of Constituent
Combined Radium-226 & 228 (pCi/L)	No	11/2023	5	0	ND – 2.03	Erosion and decay of natural deposits.
Gross Beta (pCi/L)	No	11/2023	50 [a]	0	0.78 – 4.47	
Uranium (ppb)	No	11/2023	30 [b]	0	0.04 – 0.09	
Gross Alpha activity (pCi/L)	No	11/2023	15	0	0.02 – 4.13	

Inorganic Constituents	Violation? (Yes/No)	Date of Sample	Primary MCL	MCLG	Range of Detections	Typical Source of Constituent
Barium (ppm)	No	03/2023	2	2	ND – 0.01	Erosion of natural deposits; runoff from orchards, glass and electronics production wastes.
Nitrate (ppm)	No	01/2023	10	10	ND – 0.19	Erosion of natural deposits, fertilizers, sanitary waste systems.
Copper (ppm)	No	02/2023	1.3	1.3	ND – 0.08	Erosion of natural deposits.
Lead (ppb) [6]	No	05/2023	15	0	Avg- 34.78 ND – 135	Erosion of natural deposits.

Thallium (ppb)	No	04/2023	2	0.5	Avg- 0.40 ND – 0.56	Leaching from ore processing sites; Discharge from electronics, glass, and drug factories.
Chloride (ppm)	No	01/2023	250	N/A	Avg- 9.7 3.0 – 22.2	Natural occurring or indicative of road salt contamination.
Selenium (ppb)	No	11/2023	50	50	ND – 0.002	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.
Sulfate (ppm)	No	03/2023	250	N/A	ND – 28.2	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories.
Turbidity (NTU)	No	05/2023	5	N/A	ND – 1.8	Soil runoff.
Zinc (ppm)	No	01/2023	5	N/A	ND – 0.09	Naturally occurring.

Organic Constituents	Violation? (Yes/No)	Date of Sample	Primary MCL	MCLG	Range of Detection	Typical Source of Constituent
1,4 dioxane (ppb) [7]	No	10/2023	1	N/A	ND – 2.3	Released into the environment from commercial and industrial sources and is associated with inactive and hazardous waste sites.
Trichloroethene (TCE) (ppb) [8]	No	10/2023	5	0	ND – 23.6	Discharges from metal degreasing sites and other factories.
Perfluorooctanoic acid (PFOA) (ppt) [9]	No	10/2023	10	0	ND – 32	Released into the environment from widespread use in commercial and industrial applications.

SECONDARY STANDARDS - Aesthetics

RAW WELLS

Constituent	Violation? (Yes/No)	Date of Sample	Secondary MCL	MCLG	Average/ Range	Typical Source of Constituent
Sodium (ppm) [10]	No	11/2023	N/A	N/A	2.0 – 42.9	Naturally occurring; Road salt; Water softeners.
Iron (ppm) [11]	No	01/2023	0.3	N/A	ND – 3.1	Naturally occurring.
Manganese (ppm) [12]	No	01/2023	0.3	N/A	ND – 0.5	Naturally occurring.
Color (units)	No	11/2023	15	N/A	ND - 40	Natural color may be caused by decaying leaves, plants, and soil organic matter.
Odor (units) [13]	No	01/2023	3	N/A	ND - 4	Organic or inorganic pollutants originating from municipal and industrial waste discharges; natural sources.

UNREGULATED CHEMICAL MONITORING

RAW WELLS

Constituent	Violation? (Yes/No)	Date of Sample	Notification Level	Range of Detection	Typical Source of Constituent
Nickel (ppm)	N/A	01/2023	N/A	ND – 0.01	Naturally occurring.
Alkalinity (ppm)	N/A	01/2023	N/A	ND – 60.7	N/A
Calcium Hardness (ppm)	N/A	01/2023	N/A	ND – 10.6	N/A
Calcium (ppm)	N/A	01/2023	N/A	ND – 4.2	N/A
Corrosivity (LSI) [14]	N/A	01/2023	N/A	(-6.71) – (-1.86)	N/A
Total Hardness (ppm)	N/A	01/2023	N/A	1.2 – 17.5	N/A
Magnesium (ppm)	N/A	11/2023	N/A	ND – 1.9	N/A
pH (units) [15]	N/A	01/2023	N/A	4.40 – 7.10	N/A
TDS (ppm)	N/A	11/2023	N/A	ND - 171	N/A
Germanium (ppb)	N/A	06/2018	N/A	0.41	N/A
Perchlorate (ppb) [16]	N/A	11/2023	N/A	ND – 14.1	N/A
Lithium (ppb)	N/A	04/2023	N/A	ND – 139	N/A

6:2-Fluorotelomersulfonic acid (6:2 FTS) (ppt)	N/A	01/2023	N/A	ND – 90.1	See footnote 17.
Perfluorobutanesulfonic acid (PFBS) (ppt)	N/A	10/2023	N/A	ND – 1.4	
Perfluoropentanoic Acid (PFPeA) (ppt)	N/A	08/2023	N/A	ND – 1.8	
4,8-dioxa-3H-perfluorononanoic acid (ADONA) (ppt)	N/A	05/2023	N/A	ND – 26.9	
Perfluorobutanoic acid (PFBA) (ppt)	N/A	10/2023	N/A	ND – 55.0	

Notes:

1- Chlorine residual results in the table above represent averages of samples taken at the treatment plant Point-of-Entry location to the distribution system.

2- The Merrick Operations Water district detected *E. coli* but has not violated the *E. coli* MCL. Chlorine residuals are sufficient to ensure disinfection, and all resamples were ND.

3- The Highest Level Detected from the table above for TTHM's and HAA's represent the highest level from the three distribution locations sampled. TTHMs (trihalomethanes) include chloroform, bromodichloromethane, dibromochloromethane, and bromoform. HAA5 (haloacetic acids) include mono-, di-, and trichloroacetic acid, and mono- and di-bromoacetic acid). HAA5's were not detected.

4- The levels presented represents the 90th percentile of 101 sites tested. The "action level" for copper and lead was not exceeded at any of 101 sites tested. Merrick is on standard monitoring where 100 samples are being collected semiannually.

5- Radiological results are from raw water wells, and not distribution locations, as required by the NCDOH. (a) The State considers 50 pCi/L to be the level of concern for beta particles. (b) 30 µg/l of uranium is approximately 20.1 pCi/L

6- Lead was detected in one of the wells at 135 ppb. The well was immediately removed from service and sampled twice after. All resamples were ND.

7- On August 26, 2020, New York State adopted new drinking water standards for public water systems that set maximum contaminant levels (MCLs) of 10 parts per trillion (10 ppt) each for perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), and 1 part per billion (1 ppb) for 1,4-dioxane. One plant in the Merrick Operations district has 1,4 dioxane levels above the MCL. NYSDOH granted Merrick Operations District a deferral. Please see public notification on last page of this report.

8- TCE-Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer. Please note that the raw wells with detections of TCE are treated with Granular Activated Carbon (GAC). The water being distributed to the customers does not contain TCE.

9- The PFOA detection of 32 ppt was in one well. The well was removed from service. The sample was reanalyzed at the lab and was ND but unfortunately was reanalyzed out of hold time. The well was resampled three times immediately after, and all samples came back ND.

10- Sodium (mg/l): Water containing more than 20 mg/l of sodium should not be used for drinking by people on a severely restricted sodium diet. Water more than 270 mg/l of sodium should not be used for drinking by people on a moderately restricted diet.

11- Higher levels of iron (up to 1,000 ppb) may be allowed by the state when justified by the water supplier, as is the case with Merrick Operations district. The Total of iron and manganese should not exceed 500 ppb, unless allowed by the state, as is the case with Merrick Operations district. The maximum level detected above is on a well that has iron removal filtration prior to distribution. Iron is essential for maintaining good health. However, too much iron can cause adverse health effects. Drinking water with very large amounts of iron can cause nausea, vomiting, diarrhea, constipation and stomach pain. These effects usually diminish once the elevated iron exposure is stopped. A small number of people have a condition called hemochromatosis, in which the body absorbs and stores too much iron. People with hemochromatosis may be at greater risk for health effects resulting from too much iron in the body (sometimes called "iron overload") and should be aware of their overall iron intake.

12- Manganese is an essential nutrient that is necessary to maintain good health. However, exposure to too much manganese can cause adverse health effects. There is some evidence from human studies that long-term exposure to manganese in drinking water is associated with nervous system effects in adults (e.g., weakness, stiff muscles and trembling of the hands) and children (learning and behavior). The results of these studies only suggest an effect because the possible influences of other factors were not adequately assessed. There is supporting evidence that manganese causes nervous system effects in humans from occupational studies of workers exposed to high levels of manganese in air, but the relevance of these studies to long term drinking water exposure is less clear because the exposures were quite elevated and by inhalation, not by ingestion.

13- The odor result of 4 units was in one well. That well was removed from service and resampled. There was 2 units of odor in the resample.

14- The NCDOH recommends that the Langelier Saturation Index (for corrosivity) be as close to zero as possible.

15- NCDOH guidelines recommend a pH range of 7.5 – 8.5. The running annual average of all pH readings in the distribution system was 7.41 units in 2023.

16- The perchlorate detection of 14.1 ppb was detected in one well. The well was resampled and perchlorate was ND.

17- These chemicals are part of a larger group of chemicals referred to as perfluoroalkyl substances (PFASs). PFAS are manmade chemicals that have been widely used in various consumer, commercial, and industrial products since the 1950s. These chemicals' unique properties make them resistant to heat, oil, stains, grease, and water and useful in a wide variety of everyday products. The numbers reported here is the range of detections of the quarterly samples taken at each raw water source.

Definitions, Terms and Abbreviations

90th %: For Lead and Copper testing. 10% of test results are above this level and 90% are below this level.
AL: Action Level, or the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow.
HAA5: Haloacetic Acids (mono-, di- and tri-chloracetic acid, and mono- and di- bromoacetic acid) as a group.
MCLG: Maximum Contaminant Level Goal, or 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.
MCL: Maximum Contaminant Level, or 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.
MRDL: Maximum Residual Disinfectant Level, or the highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for control of microbial contaminants.
MRDLG: Maximum Residual Disinfectant Level Goal, or 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.
NA: not applicable.
ND: not detectable at testing limits.
NTU: Nephelometric Turbidity Unit, used to measure cloudiness in drinking water.
pCi/L: picocuries per liter, a measure of radioactivity.
ppb: parts per billion or micrograms per liter.
ppm: parts per million or milligrams per liter.
ppt: parts per trillion or nanograms per liter.
TTHM: Total Trihalomethanes (chloroform, bromodichloromethane, dibromochloromethane, and bromoform) as a group.

What Does This Information Mean?

As you can see by the table, our system had no sample limit violations in 2023. We have learned through our testing that some contaminants have been detected; however, these contaminants were detected below New York State requirements.

Why Save Water? How To Avoid Wasting It.

Although our system has an adequate amount of water to meet present and future demands, there are several 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 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. More efficient water use protects our valuable natural resource and conservation is easy. Useful tips for conserving include:

- Turn off the tap when brushing your teeth.
- Consider water and energy-efficient appliances. Upgrade to EPA certified Energy Star and WaterSense appliances to save both on water and energy without sacrificing performance. The USEPA reports that EPA-certified Energy Star washing machines may use 35% less water per load.

- Check every faucet, toilet, and showerhead in your home for leaks - 10 percent of homes have leaks that waste 90 gallons or more per day; don't be part of the 10%.

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 save more than 30,000 gallons a year. More conservation tips and leak detection tools can be found at www.libertyenergyandwater.com.

Closing

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. For questions concerning this report call Liberty Customer Service at 1-877-426-6999 TDD:711; or on the web at www.libertyenergyandwater.com.

Liberty - New York Water
60 Brooklyn Avenue
Merrick, NY 11566

Spanish Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó 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.
Korean 이 보고는 귀하께서 드시는 식수에 대한 중요한 정보가 포함되어 있습니다. 번역을 하시든지 아니면 이 보고를 읽고 이해하시는 분과 말씀하시기를 바랍니다.	***Chinese*** 這份報告含有非常重要有關您喝的水的資料，請找懂得這份報告的人翻譯或解釋給您聽。

Listing of Non-Detected (ND) Contaminants – 2023 (Merrick Operations)

None of the following compounds that we analyzed for were detected in your drinking water at the respective method detection levels:

Inorganics & Physical:
Ammonia as N
Nitrite as N
Surfactants (as MBAS)

Metals:
Antimony
Arsenic
Beryllium
Cadmium
Chromium
Mercury
Silver
Fluoride
Cyanide

Miscellaneous:
Asbestos fibers

Volatile Organic Compounds (VOC's):
Benzene
Bromobenzene
Bromochloromethane
Bromomethane
n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
Carbon Tetrachloride
Chlorobenzene
Chloroethane
Chloromethane
Chlorodifluoromethane
2-Chlorotoluene
4-Chlorotoluene
Dibromomethane
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4- Dichlorobenzene (Meta)
Dichlorodifluormethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethane
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene
1,2-Dichloropropane
1,3-Dichloropropane
2,2-Dichloropropane
1,1-Dichloropropene
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Ethylbenzene
Hexachlorobutadinene
Isopropylbenzene
4-Isopropyltoluene
Methyl Tert Butyl Ether (MTBE)
Methylene Chloride (Dichloromethane)
n-Propylbenzene
Styrene
1,1,2-trichloro 1,2,2-trifluoroethane
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethene (PCE)
Toluene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichlorofluoromethane
1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
M-Xylene
O-Xylene
P-Xylene
Vinyl Chloride

Synthetic (Specific) Organic Compounds (SOC's)
Regulated Group #1:
Alachlor
Aldicarb
Aldicarb Sulfone
Aldicarb Sulfoxide
Atrazine
Carbofuran
Chlordane, Total
1,2-Dibromo-3-Chloropropane (DBCP)
2,4-D
Endrin
1,2-Dibromomethane (EDB)
Heptachlor
Heptachlor Epoxide
Lindane
Methoxychlor
PCB's
Pentachlorophenol
Toxaphene
2,4,5-TP (Silvex)

Regulated Group #2:
Aldrin
Benzo(a)pyrene
Butachlor
Carbaryl
Dalapon
Di (2-Ethylhexyl) adipate
Di (2-Ethylhexyl) phthalalte
Dicamba
Dieldrin
Dinoseb
Diquat
Endothall
Glyphosate
Hexachlorobenzene
Hexachlorocyclopentadiene
3-Hydroxycarbofuran
Methomyl
Metolachlor
Metribuzin
Oxamyl (Vydate)
Picloram
Propachlor
Simazine
2,3,7,8-TCDD (Dioxin)

Newly regulated compounds
Perfluorooctanesulfonic acid (PFOS)

Unregulated compounds:
Perfluoronononoic Acid (PFNA)
Perfluorodeconoic Acid (PFDA)
Perfluorohexanoic Acid (PFHxA)
Perfluoroheptanoic Acid (PFHpA)
Perfluorododecanoic Acid (PFDoA)
Perfluorohexanesulfonic acid (PFHxS)
Perfluorotridecanoic Acid (PFTrDA)
Perfluorotetradecanoic Acid (PFTA)
Perfluoroundecanoic Acid (PFUnA)
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
4:2 Fluorotelomer sulfonic acid (4:2 FTS)
8:2 Fluorotelomer sulfonic acid (8:2 FTS)
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)
HFPO-DA (Gen-X)
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
Perfluoro(2-ethoxyethane)sulphonic acid (PFEESA)
Perfluoroheptane sulfonic acid (PFHpS)
Perfluoro-4-methoxybutanoic acid (PFMBA)
Perfluoro-3-methoxypropanoic acid (PFMPA)
Perfluoropentanoic acid (PFPeA)
Perfluoropentane sulfonic acid (PFPeS)
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
Perfluorobutanoic acid (PFBA)
Perfluoro(2-ethoxyethane)sulphonic acid (PFEESA)
Perfluoroheptane sulfonic acid (PFHpS)
Perfluoro-4-methoxybutanoic acid (PFMBA)
Perfluoro-3-methoxypropanoic acid (PFMPA)
Perfluoropentane sulfonic acid (PFPeS)

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER
Deferral Renewal Issued for 1,4-Dioxane to Liberty New York Water
Merrick Operations District

Why are you receiving this notice/information?

You are receiving this notice because testing of our public water system found the chemical 1,4 Dioxane in your drinking water above New York State's maximum contaminant level (MCL) of 1 ppb for 1,4-dioxane. The MCLs are set well below levels known to cause health effects in animal studies. Therefore, consuming water with 1,4-dioxane at the level detected does not pose a significant health risk. Your water continues to be acceptable for all uses.

The Liberty New York Water Merrick Operations District has submitted, and the New York State Department of Health (Department) has issued, a deferral to Liberty. When a public water system is issued a deferral, the water system agrees to a schedule for corrective action and compliance with the new MCLs. In exchange, the Department agrees to defer enforcement actions, such as assessing fines, if the water system is meeting the established deadlines. We are required to update the Department and the Nassau County Department of Health each calendar quarter on the status of our projects. If we do not meet the agreed upon deadlines, the Department can resume enforcement.

What are the health effects of 1,4-dioxane?

Laboratory studies show that 1,4-dioxane caused liver cancer in animals exposed at high levels throughout their lifetime. Other types of cancer have also been reported, although less consistently than liver cancer. There is no evidence of 1,4-dioxane cancer effects in humans. The United States Environmental Protection Agency considers 1,4dioxane a likely human carcinogen based upon studies of animals exposed to high levels of this chemical over their entire lifetimes.

At the level of 1,4-dioxane detected in your water, exposure from drinking water and food preparation is well below 1,4-dioxane exposures associated with health effects.

What is New York State doing about 1,4-Dioxane in public drinking water?

The New York State Department of Health (NYS DOH) has adopted a drinking water regulation that requires all public water systems to test for 1,4-dioxane. If found above the MCLs, the water supplier must take steps to lower the level to meet the standard. Exceedances of the MCL signal that steps should be taken by the water system to reduce contaminant levels.

What is being done to remove these contaminants?

Liberty New York Water is in the process of finalizing the contract for the construction of an advanced oxidation process (AOP) facility at its Seamans Neck Road Wells 3A and
4 facility. Iron Removal Facility (IRF) improvements are also being implemented at this well station, which are required in order for AOP treatment to be implemented. Regulatory review of two (2) booster pumping facilities needed to satisfy pressure requirements in the Seamans Neck Road vicinity is underway.

Liberty New York Water will operate the impacted wells in the Merrick Operations District in a last on first off sequence to the greatest extent practicable to minimize exposure to 1,4-Dioxane. Additional information will be shared as further testing and progress occurs. This process is similar for any chemical detected in public drinking water that requires mitigation. The compliance timetable will ensure that your drinking water will meet the MCL as rapidly as possible. The deferral is effective until August 25, 2023.

Where can I get more information?

For more information, please contact Liberty New York Water at (877) 426-6999 or 60 Brooklyn Avenue, Merrick, NY 11566. You can also contact the Nassau County Health Department at (516) 227-9697.

If you have additional questions about these contaminants and your health, talk to your health care provider who is most familiar with your health history and can provide advice and assistance about understanding how drinking water may affect your personal health.

Public Water System ID# NY2902840
Date September 22, 2022

The Liberty Merrick Water System has received an exemption from the New York State Department of Health for the new 1,4-Dioxane Maximum Contamination Level (MCL) in order to meet the changes in potable water requirements. The Liberty Merrick Water System was granted an MCL exemption for 1,4-dioxane on August 25th, 2023, because it has been proactive in its efforts to establish and implement an action plan for managing the above-referenced compound. When a public water system (PWS) is issued an exemption, mandatory compliance strategies which include control measures required by the State Health Department are to be included. In exchange, the Department agrees to defer enforcement actions, such as assessing fines, if the water district is meeting the established deadlines. The Liberty Merrick Water System is required to update the State and the Nassau County Department of Health each calendar quarter on the status of our projects. If they do not meet the mandated compliance strategies, enforcement actions can be resumed. (https://new-york-water.libertyutilities.com/uploads/Exemption PN Liberty New York Water Merrick - Liberty 9.11.23_updated.pdf).