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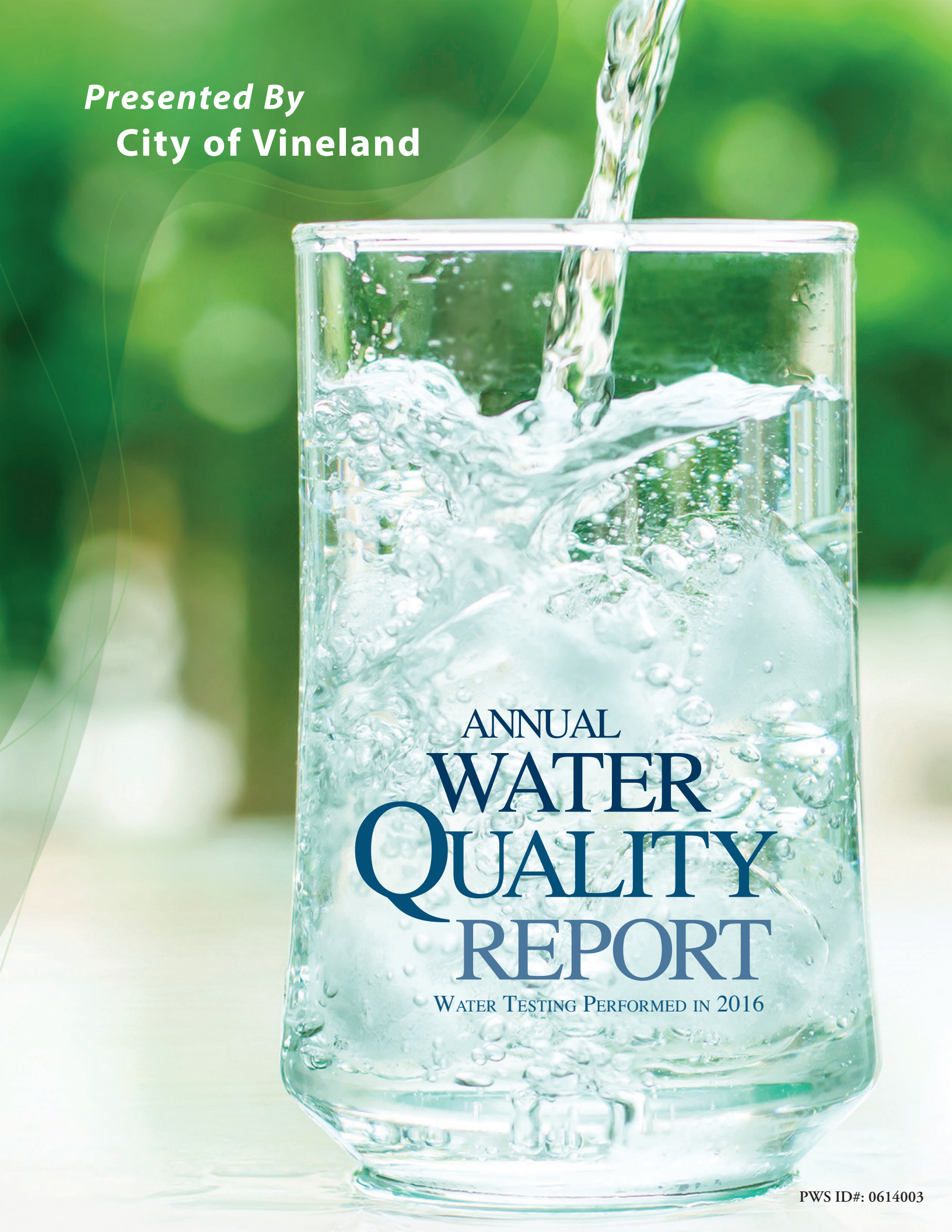
City of Vineland



ANNUAL WATER QUALITY REPORT

WATER TESTING PERFORMED IN 2016

PWS ID#: 0614003

We've Come a Long Way

Once again we are proud to present our annual water quality report covering the period between January 1 and December 31, 2016. In a matter of only a few decades, drinking water has become exponentially safer and more reliable than at any other point in human history. Our exceptional staff continues to work hard every day—at any hour—to deliver the highest quality drinking water without interruption. We feel that by relentlessly investing in customer outreach and education, new treatment technologies, system upgrades, and training, the payoff will be reliable, high-quality tap water delivered to you and your family.

Protecting Your Water

Bacteria are a natural and important part of our world. There are around 40 trillion bacteria living in each of us; without them, we would not be able to live healthy lives. Coliform bacteria are common in the environment and are generally not harmful themselves. The presence of this bacterial form in drinking water is a concern, however, because it indicates that the water may be contaminated with other organisms that can cause disease.

In 2016, the U.S. EPA passed a new regulation called the Revised Total Coliform Rule, which requires additional steps that water systems must take in order to ensure the integrity of the drinking water distribution system by monitoring for the presence of bacteria like total coliform and E. coli. The rule requires more stringent standards than the previous regulation, and it requires water systems that may be vulnerable to contamination to have in place procedures that will minimize the incidence of contamination. Water systems that exceed a specified frequency of total coliform occurrences are required to conduct an assessment of their system and correct any problems quickly. The U.S. EPA anticipates greater public health protection under the new regulation due to its more preventive approach to identifying and fixing problems that may affect public health.

Although we have been fortunate to have the highest quality drinking water, our goal is to eliminate all potential pathways of contamination into our distribution system, and this new rule helps us to accomplish that goal.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration 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 these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may 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 may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Protecting Your Water Source: What is SWAP?

SWAP (Source Water Assessment Plan) is a program of the New Jersey Department of Environmental Protection (NJDEP) for the study of existing and potential threats to the quality of public drinking water sources throughout the state. Sources are rated depending upon their contaminant susceptibility.

The New Jersey Department of Environmental Protection has completed and issued the Source Water Assessment Report and Summary for this public water system, which is available at www.state.nj.us/dep/swap/ or by contacting NJDEP's Bureau of Safe Drinking Water at (609) 292-5550. You may also contact Michael S. Lawler at (856) 794-4056.

Vineland Water Utility is a public water system consisting of 13 wells with source water coming from Kirkwood-Cohasey aquifer

	PATHOGENS			NUTRIENTS			PESTICIDES			VOLATILE ORGANIC COMPOUNDS			INORGANICS			RADIONUCLIDES			RADON			DISINFECTION BY-PRODUCT PRECURSORS		
Sources	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L
Wells – 13		4	9	11	2			9	4	12		1	7	6		13				13		1	12	

If a system is rated highly susceptible for a contaminant category, it does not mean a customer is or will be consuming contaminated drinking water. The rating reflects the potential for contamination of source water, not the existence of contamination. Public water systems are required to monitor for regulated contaminants and to install treatment if any contaminants are detected at frequencies and concentrations above allowable levels. As a result of the assessments, NJDEP may customize (change existing) monitoring schedules based on the susceptibility ratings.

Source water protection is a long-term dedication to clean and safe drinking water. It is more cost effective to prevent contamination than to address contamination after the fact. Every member of the community has an important role in source water protection. NJDEP recommends controlling activities and development around drinking water sources whether it is through land acquisition, stormwater drain protection, or hazardous waste collection programs.

Where Does My Water Come From?

The City of Vineland Water Utility's customers are fortunate because we enjoy an abundant water supply from ground water. Our ground water supply is not exposed to air and is not subject to direct pollution and contamination like a river or reservoir. In fact, ground water is the highest quality water available to meet public health demand of water intended for human consumption.

All 13 municipal wells draw water from the Kirkwood-Cohansey aquifer at depths ranging from 160 feet to 200 feet. This aquifer holds an estimated 17 trillion gallons of water beneath the pristine Pinelands, a million-acre protected reserve. Combined, our pumping and treatment facilities can provide roughly 3.3 billion gallons of drinking water every year.

How Is My Water Treated and Purified?

The treatment process consists of a series of steps. First, raw water is drawn from the Kirkwood-Cohansey aquifer by vertical turbine well pumps and is sent to an aerator, which oxidizes the iron levels that are present in the water and raises the pH. Some wells pass the raw water through filters on the way to the aerator to remove iron and radium, and some pass raw water through an air stripper to remove volatile organic compounds. The water then goes to a mixing tank where lime, chlorine, and a corrosion inhibitor (used to protect distribution system pipes) are added before the water is pumped to sanitized water towers and into your home or business.

Water Main Flushing

Distribution mains (pipes) convey water to homes, businesses, and hydrants in your neighborhood. The water entering distribution mains is of very high quality; however, water quality can deteriorate in areas of the distribution mains over time. Water main flushing is the process of cleaning the interior of water distribution mains by sending a rapid flow of water through the mains.

Flushing maintains water quality in several ways. For example, flushing removes sediments like iron and manganese. Although iron and manganese do not pose health concerns, they can affect the taste, clarity, and color of the water. Additionally, sediments can shield microorganisms from the disinfecting power of chlorine, contributing to the growth of microorganisms within distribution mains. Flushing helps remove stale water and ensures the presence of fresh water with sufficient dissolved oxygen, disinfectant levels, and an acceptable taste and smell.

During flushing operations in your neighborhood, some short-term deterioration of water quality, though uncommon, is possible. You should avoid tap water for household uses at that time. If you do use the tap, allow your cold water to run for a few minutes at full velocity before use and avoid using hot water, to prevent sediment accumulation in your hot water tank.

Please contact us if you have any questions or if you would like more information on our water main flushing schedule.

Lead in Home Plumbing

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. We are 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/lead.

Questions?

For more information about this report, or for any questions relating to your drinking water, please call Michael S. Lawler, Superintendent, at (856) 794-4056.

Test Results

Our water is monitored for many different kinds of contaminants on a very strict sampling schedule. The information below represents only those substances that were detected; our goal is to keep all detects below their respective maximum allowed levels. The State recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

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

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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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 (800) 426-4791.

REGULATED SUBSTANCES [1]

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
1,1-Dichloroethane (ppb)	2016	50	NA	0.1	ND–0.1	No	Discharge from metal degreasing sites and other factories
1,2,4-Trichlorobenzene (ppb)	2016	9	9	0.2	ND–0.2	No	Discharge from textile-finishing factories
Alpha Emitters (pCi/L)	2016	15	0	4.96	ND–4.96	No	Erosion of natural deposits
Arsenic (ppb)	2016	5	0	4	ND–4	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Chlorine (ppm)	2016	[4]	[4]	0.3	0.02–0.76	No	Water additive used to control microbes
Combined Radium (pCi/L)	2016	5	0	3.3	ND–3.3	No	Erosion of natural deposits
Dichloromethane (ppb)	2016	5	0	0.5	ND–0.5	No	Discharge from pharmaceutical and chemical factories
Ethylene Dibromide (ppt)	2016	50	0	34	ND–55	No	Discharge from petroleum refineries
Haloacetic Acids [HAA] (ppb)	2016	60	NA	0.4	ND–1	No	By-product of drinking water disinfection
Methyl tert-Butyl Ether [MTBE] (ppb)	2016	70	NA	1.3	ND–1.3	No	Leaking underground gasoline and fuel tanks, gasoline and fuel oil spills
Naphthalene (ppb)	2016	300	NA	0.2	ND–0.2	No	Discharge from industrial chemical factories, exposure to mothballs
Nitrate[2] (ppm)	2016	10	10	8.75	ND–8.75	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2016	80	NA	11.5	1.2–11.5	No	By-product of drinking water disinfection
Tetrachloroethylene (ppb)	2016	1	0	0.16	ND–0.16	No	Discharge from factories and dry cleaners
Trichloroethylene (ppb)	2016	1	0	0.9	ND–0.9	No	Discharge from metal degreasing sites and other factories
Vinyl Chloride (ppb)	2016	2	0	0.1	ND–0.1	No	Leaching from PVC piping;Discharge from plastics factories
Xylenes [total] (ppb)	2016	1,000	1,000	0.5	ND–0.5	No	Discharge from petroleum factories; Discharge from chemical factories

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	RUL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Aluminum (ppb)	2015	200	NA	147	ND–147	No	Erosion of natural deposits; Residual from some surface water treatment processes
Chloride (ppm)	2015	250	NA	3.34	ND–3.34	No	Runoff/leaching from natural deposits
Foaming agents (ppb)	2015	500	NA	33	ND–33	No	Municipal and industrial waste discharges
Hardness [as CaCO3] (ppm)	2015	250	NA	7.73	ND–7.73	No	Naturally occurring
Iron (ppb)	2016	300	NA	75	ND–75	No	Leaching from natural deposits; Industrial wastes
Manganese (ppb)	2016	50	NA	7.4	ND–7.4	No	Leaching from natural deposits
pH (Units)	2015	6.5-8.5	NA	7.68	6.75–7.86	No	Naturally occurring
Sulfate (ppm)	2015	250	NA	5.98	ND–5.98	No	Runoff/leaching from natural deposits; Industrial wastes
Zinc (ppm)	2015	5	NA	0.0044	ND–0.0044	No	Runoff/leaching from natural deposits; Industrial wastes

UNREGULATED CONTAMINANT MONITORING RULE - PART 3 (UCMR3)

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
1,4-Dioxane (ppb)	2013	0.12	0.1–0.14	Cyclic aliphatic ether; Used as a solvent or solvent stabilizer in manufacture and processing of paper, cotton, textile products, automotive coolant, cosmetics, and shampoos
Chlorate (ppb)	2013	1900	NA	Agricultural defoliant or desiccant; Disinfection by-product; Used in production of chlorine dioxide
Chromium (Total) (ppb)	2013	2.2	1.2–3.2	Naturally occurring element; Used in making steel and other alloys; Chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation
Chromium-6 (ppb)	2013	1.5	1.1–1.9	Naturally occurring element; Used in making steel and other alloys; Chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation
Cobalt (ppb)	2013	4.2	NA	Naturally occurring element found in the earth's crust and at low concentrations in seawater, and in some surface and ground water; Cobaltous chloride was formerly used in medicine and as a germicide
Molybdenum (ppb)	2013	1.5	NA	Naturally occurring element found in ores and present in plants, animals, and bacteria
Strontium (ppb)	2013	43.5	41–46	Naturally occurring element; Historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions
Vanadium (ppb)	2013	0.5	NA	Naturally occurring elemental metal; Used as vanadium pentoxide, which is a chemical intermediate and a catalyst

[1] Under a waiver granted on December 30, 1998, by the State of New Jersey Department of Environmental Protection, our system does not have to monitor for synthetic organic chemicals/pesticides because several years of testing have indicated that these substances do not occur in our source water. The SDWA regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for asbestos, volatile organic chemicals, and synthetic organic chemicals. Our system received monitoring waivers for synthetic organic chemicals and asbestos.

[2] Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

Definitions

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

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as LRAAs.

MCL (Maximum Contaminant Level): 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.

MCLG (Maximum Contaminant Level Goal): 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.

MRDL (Maximum Residual Disinfectant Level): 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.

MRDLG (Maximum Residual Disinfectant Level Goal): 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 detected): Indicates that the substance was not found by laboratory analysis.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

ppt (parts per trillion): One part substance per trillion parts water (or nanograms per liter).

RUL (Recommended Upper Limit): RULs are established to regulate the aesthetics of drinking water like appearance, taste and odor.

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