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Annual Drinking Water Quality Report

Lakewood Township Municipal Utilities Authority

For the Year 2013, Results from the Year 2012

We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources.

Some people may be more vulnerable to contaminants 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 about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Lakewood Township Municipal Utilities Authority 2012 Test Results PWS ID# NJ1514002						
Contaminant	Violati on Y/N	Level Detected	Units of Measureme nt	MC LG	MCL	Likely Source of Contamination
Radioactive Contaminants:						
Gross Alpha Test results yr. 2011	N	6.2	pCi/l	0	15	Erosion of natural deposits
Combined Radium 228 & 226 Test results Yr. 2011	N	1.5	pCi/l	0	5	Erosion of natural deposits
Uranium Test results Yr. 2011	N	9	ppb	0	30	Erosion of natural deposits
Inorganic Contaminants:						
Copper Test results Yr. 2010 Result at 90 th Percentile	N	0.1 No samples exceeded the action level.	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead Test results Yr. 2010 Result at 90 th Percentile	N	< 1 No samples exceeded the action level.	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Nitrate (as Nitrogen) Test results Yr. 2012	N	Range = ND – 1.4 Highest detect = 1.4	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Disinfection Byproducts:						
Disinfection Byproducts Stage-1						
TTHM Total Trihalomethanes Test results Yr. 2012	N	Range = 6 - 17 Annual Average = 16	ppb	N/A	80	By-product of drinking water disinfection
HAA5 Haloacetic Acids Test results Yr. 2012	N	Range = 3 - 18 Annual Average = 11	ppb	N/A	60	By-product of drinking water disinfection
Disinfection Byproducts Stage-2						
TTHM Total Trihalomethanes Test results yr. 2012	N	Range = 12 - 41	ppb	N/A	80	By-product of drinking water disinfection
HAA5 Haloacetic Acids Test results Yr. 2012	N	Range = 10 - 34	ppb	N/A	60	By-product of drinking water disinfection
Volatile Organic Contaminants:						
Methyl tertiary butyl ether (MTBE) Test results Yr. 2012	N	Range = ND – 13.5 Highest detect = 13.5 Highest Average = 11.9	ppb	70	70	Leaking underground gasoline and fuel oil tanks. Gasoline and fuel oil spills.
Secondary Contaminants	Level Detected		Recommended Upper Limit (RUL)*		Likely Source	
Manganese	Range = ND - 0.4 ppm		0.05 ppm		Erosion of natural deposits	
Regulated Disinfectants	Level Detected		MRDL		MRDLG	
Chlorine	Average = 0.4 ppm		4.0 ppm		4.0 ppm	

* The Recommended Upper Limit for manganese is based on staining of laundry. Manganese is an essential nutrient, and toxicity is not expected from high levels which would be encountered in drinking water.

The Lakewood Township MUA (Authority) and the New Jersey American Water Company (NJAW) routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables show the results of ours and New Jersey American's monitoring for the period of January 1st to December 31st, 2012. The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old. The Safe Drinking Water Act 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 asbestos and synthetic organic contaminants.

A new Disinfection Byproduct Rule called Stage II took effect for these systems in 2012. The first compliance calculations for these systems will be available after the first quarter of 2013 once a full year of monitoring has been completed. After the first quarter of 2012, Stage I was phased out. Stage II HAA5 and TTHM compliance is based on the Locational Running Annual Average (LRAA), calculated at each monitoring location. The LRAA for Stage II HAA5s and TTHMs is not included in this report since Stage II monitoring began in the second quarter of 2012, so there were only three quarters of results for 2012 and the LRAA calculation is based on four completed quarters of results.

New Jersey American Water – Coastal North System 2012 Test Results						
PWSID # NJ1345001						
Contaminant	Violati on Y/N	Level Detected	Units of Measureme nt	MC LG	MCL	Likely Source of Contamination
Microbiological Contaminants:						
Turbidity	N	Range = 0.05 – 0.28 100% < 0.3 NTU	NTU	N/A	TT 95% Of monthly samples < 0.3 NTU	Soil runoff
Total Organ Carbon (TOC)	N	Range = 1.11 – 2.75	ppm	N/A	TT % of removal	Soil runoff
Radioactive Contaminants:						
Gross Alpha	N	Range = 0.15 – 13.1 Highest detect = 13.1	pCi/1	0	15	Erosion of natural deposits
Combined Radium 228 & 226	N	Range = 0.9 – 2.5 Highest detect = 1.1	pCi/1	0	5	Erosion of natural deposits
Inorganic Contaminants:						
Barium	N	Range = ND – 0.07 Highest detect = 0.07	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper Test results Yr. 2011 Result at 90 th Percentile	N	0.18 No samples exceeded the action level.	Ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Fluoride	N	Range = 0.4 – 0.7 Highest detect = 0.7	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Lead Test results Yr. 2011 Result at 90 th Percentile	N	3 2 samples exceeded the action level.	Ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Nickel	N	Range = ND – 1 Highest detect = 1	ppb	N/A	N/A	Erosion of natural deposits
Nitrate (as Nitrogen)	N	Range = ND – 1.4 Highest detect = 0.4	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Disinfection Byproducts:						
Disinfection Byproducts Stage-1						
TTHM Total Trihalomethanes	N	Range = 1.4 – 83.0 Annual Average = 56	ppb	N/A	80	By-product of drinking water disinfection
HAA5 Haloacetic Acids	N	Range = ND – 33.9 Annual Average = 15	ppb	N/A	60	By-product of drinking water disinfection
Disinfection Byproducts Stage-2						
TTHM Total Trihalomethanes	N	Range = 23.7 – 114.7	ppb	N/A	80	By-product of drinking water disinfection
HAA5 Haloacetic Acids	N	Range = 3.1 – 62.4	ppb	N/A	60	By-product of drinking water disinfection
Volatile Organic Contaminants:						
Xylenes	N	Range = ND – 0.6 Highest detect = 0.6	ppm	1	1	Discharge from petroleum factories; discharge from chemical factories
Regulated Disinfectants		Level Detected		MRDL		MRDLG
Chlorine		Range = 0.06 – 1.8 ppm		4.0 ppm		4.0 ppm
Chlorite		Range = ND – 0.51 ppm		MCL = 1		MCLG = 0.8
Chlorine Dioxide		Range = ND – 710 ppb		800		800
Secondary Contaminant		Level Detected	Units of Measurement			RUL
Iron		Range = ND - 900	ppb			300

The Authority services the eastern portion of Lakewood Township (approx. 11 square miles). The Authority's water sources include eleven wells, which draw from several aquifers, including the Cohansey, Englishtown, and Potomac-Raritan-Magothy (P-R-M). Water from the wells (except for some of the smaller and/or seasonal wells) is treated at one of the Authority's two treatment plants, on New Hampshire Avenue and on Shorrock Street. We also purchase water from NJAW. This system's water comes from a blend of sources that may include: groundwater from the Potomac-Raritan-Magothy Aquifer System (PRM) and surface water from the Glendola Reservoir, the Manasquan River / Reservoir, the Shark River and the Swimming River / Reservoir.

NJAW exceeded the secondary Recommended Upper Limit (RUL) for iron which is based on unpleasant taste of the water and staining of laundry. Iron is an essential nutrient, but some people who drink water with iron levels well above the RUL could develop deposits of iron in a number of organs in the body. Iron is a naturally occurring element in soil, groundwater, and some surface waters. Iron bacteria are considered harmless to health, however, they may give water an off taste or color, cause splotchy yellow stains on laundry, and clog water systems.

The New Jersey Department of Environmental Protection (NJDEP) has completed and issued the Source Water Assessment Report and Summary for this public water system and the NJAW system, which are 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 your public water system to obtain information regarding your water system's Source Water Assessment. The Authority's source water susceptibility ratings and a list of potential contaminant sources is included.

Cryptosporidium (For NJAW only)

Cryptosporidium is a microbial pathogen found in surface water throughout the United States. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100% removal. Our monitoring indicates the presence of these organisms in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants and small children, and the elderly are at a greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

NJAW participated in monitoring for unregulated contaminants with the Unregulated Contaminant Monitoring Rule (UCMR). Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether regulation is warranted. Our results are available upon request. For testing conducted in the Coastal North System we found the substances listed.

Unregulated Contaminant	Level Detected	Units of Measurement	NJDEP Guidance Level
Perfluorooctanoic Acid (PFOA)	Range = ND – 0.014 Highest detect = 0.014	Ppb	0.04
Hexavalent Chromium	Range = ND – 0.30 Highest detect = 0.30	Ppb	N/A

PFOA

PFOA is a man-made industrial chemical used in the manufacture of fluoropolymers. With non-stick and stain resistant properties, fluoropolymers have wide application in common household products such as cookware, carpet and all-weather clothing. There is no regulatory limit established for PFOA in drinking water. However, in February 2007 the NJ Department of Environmental Protection (NJDEP) issued a preliminary guidance level of 0.04 ppb. In order to assist the NJDEP in assessing the occurrence of this substance in NJ, NJAW began to monitor for PFOA in some of its systems. We are sharing the results in this report because we want to educate our customers about the quality of their drinking water. This proactive approach reinforces our continuing commitment to protect public health and provide quality drinking water and reliable service. For more information about PFOA, contact the NJDEP Bureau of Safe Drinking Water at 609-292-5550.

Hexavalent Chromium

Major sources of Hexavalent Chromium (Chromium-6) in drinking water are discharges from steel and pulp mills, and erosion of natural deposits of chromium-3. Hexavalent Chromium is not currently regulated as an individual substance. NJAW voluntarily performed this monitoring based on a recommendation from the USEPA. For more information on Hexavalent Chromium (Chromium-6), please visit the NJAW website.

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 storm water 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 storm water 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 storm water runoff, and septic systems.
- Radioactive contaminants which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. 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 contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Lead - If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Authority and NJAW 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 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 is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

DEFINITIONS

In the following table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

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

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Action Level - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

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

Maximum Contaminant Level - The "Maximum Allowed" (MCL) is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal -The "Goal"(MCLG) is 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.

Secondary Contaminant- Substances that do not have an impact on health. Secondary Contaminants affect aesthetic qualities such as odor, taste or appearance. Secondary standards are recommendations, not mandates.

Recommended Upper Limit (RUL) - Recommended maximum concentration of secondary contaminants. These reflect aesthetic qualities such as odor, taste or appearance. RUL's are recommendations, not mandates.

Maximum Residual Disinfectant Level (MRDL) - best 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) - 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

Total Organic Carbon - Total Organ Carbon (TOC) has no health effects. However, TOC provides a medium for the formation of disinfection byproducts. The *Treatment Technique* for TOC requires that 35% - 45% of the TOC in the raw water is removed through the treatment processes.

Turbidity - Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium microbial growth. Turbidity is measured as an indication of the effectiveness of the filtration process. The *Treatment Technique* for turbidity requires that no individual sample exceeds 1 NTU and 95% of the samples collected during the month must be less than 0.3 NTU.

The table below provides a summary of susceptibility ratings for the system's water sources. The source column of the table provides the number of ground water and surface water sources and the number of ground water under the direct influence of surface water (GUDI) wells in the system. The other columns provide the total number of sources that rated high (H), medium (M), and low (L) for each of the contaminant categories.

	Pathogens			Nutrients			Pesticides			Volatile Organic Compounds			Inorganics			Radionuclides			Radon			Disinfection Bi-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 = 11		6	5	6		5			11	6		5	6	3	2	2	5	4		6	5		11	
GUDI = 0																								
Surface water intakes = 0																								

If the drinking sources susceptibility is high, it does not necessarily mean the water is contaminated. High susceptibility is a vulnerability rating, not a factor determining whether or not the water is or is not meeting State Federal Safe Drinking Water Standards. 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, DEP may customize (change existing) monitoring schedules based on the susceptibility ratings.

We want our valued customers to be informed about their water utility. The Authority also continues to be vigilant in protecting the security of our water system, and looks for the assistance of the public in protecting our most valuable assets. Please contact Robyn Gaynor at (732) 363-4422 if you have any questions about this report or concerning your water utility. For additional information, you are welcome to attend our monthly Board of Commissioner's Meeting (open to the public) at the Authority's Office, 390 New Hampshire Avenue. Meetings are usually held on the first Tuesday of each month at 10:00 AM. Please call (732) 363-4422 for details or visit our website at www.lakewoodmua.com.