water quality

SPRING 2006 REPORT

our mission: *To provide excellent water and wastewater services that promote the health and safety of the community.*

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 by-products 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.

Every day more than 100,000 citizens in Lynchburg and the surrounding communities can depend on clean, safe drinking water. The Lynchburg Department of Utilities is proud to present you with specific information about your drinking water because it demonstrates how hard work pays off. This report shows that your drinking water is even better than the federal and state standards for safety and purity. In fact, the City's water has always been in compliance with regulations.

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 from the U.S. Environmental Protection Agency's (EPA's) Safe Drinking Water Hotline at 1-800-426-4791 and www.epa.gov.

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.

In order to ensure that tap water is safe to drink, EPA prescribes regulations that 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.

Where does our water come from?

The City is fortunate to have two plentiful sources of good water. Lynchburg's primary water source is the 125-acre Pedlar Reservoir in Amherst County. The water from Pedlar flows 22 miles by gravity to the City's two filtration plants. At times, water is also drawn from the James River.

Both Pedlar and James River water are cleaned with the same treatment process, and both provide the clean, clear water that we are so lucky to have.

Source Water Assessment:

The Virginia Department of Health conducted a source waster assessment of our system in 2002 in accordance with the 1996 amendments to the Safe Drinking Water Act. Based upon the criteria developed by the state in its Source Water Assessment Program, both of our surface water sources were classified as highly susceptible to contamination as a result of land use activities and potential sources of contamination in the assessment areas. This does not mean that our sources have or will be impacted just that if there were to be a release of pollutants in the assessment area the source water could be impacted.

The assessment report consists of maps showing the source water assessment area, an inventory of known land use activities of concern, and documentation of any known contamination within the last five years. For questions or copies of the report contact Leslie Gryder in the Utilities Department at 455-4263.

What about water security?

Adapted from the EPA information fact sheet, "Water Security and You" via www.epa.gov/safewater/security.

Local drinking water and wastewater systems may be targets for terrorist and other would-be criminals wishing to disrupt and cause harm to your community water supplies or wastewater facilities.

Because utilities are often located in isolated areas, drinking water distribution and wastewater collection systems may cover large areas that are difficult to secure and patrol. Residents can help by noticing and reporting any suspicious activity in and around local water utilities. Any residents interested in protecting their water resources and community can join together with law enforcement, neighborhood watch groups, water suppliers, wastewater operators, and other local public health officials. If you witness suspicious activities, report them to your local law enforcement authorities.

Examples of suspicious activity might include:

- People dumping or discharging material into a water reservoir
- People climbing or cutting a utility fence
- Unidentified truck or car parked or loitering near waterway or facilities for no apparent reason
- Suspicious opening or tampering with manhole covers, buildings, or equipment
- People climbing on top of water tanks
- People photographing or videotaping utility facilities, structures, or equipment
- Strangers hanging around locks or gates

NOTE: Do not confront strangers. Instead, report suspicious activities to local authorities.

When reporting an incident:

- State the nature of the incident
- Identify yourself and your location
- Identify location of activity
- Describe any vehicle involved (color, make, model, plate number)
- Describe the participants (how many, sex, race, color of hair, height, weight, clothing)

For emergencies, dial 911.

What were this year's test results?

The City of Lynchburg constantly monitors for constituents in your drinking water in accordance with federal and state regulations. We're happy to inform you that your drinking water meets or exceeds all federal and state requirements. The table to the right shows what constituents were detected from January 2005 to December 2005. The EPA has determined that your water is completely safe at these levels.

Constituents/ Unit of Measure	Violation	Level Detected	AL	MCLG	MCL	MDRL	Likely Source of Contamination
Inorganic Contaminants:							
Chlorine, ppm	No	1.1 (highest average) 0 - 1.5 (range)	—	—	—	4	water additive to control microbes
Copper, ppm[1]	No	0.042 (90th percentile) 0 above action level	1.3	1.3	—	—	corrosion of household plumbing systems, erosion of natural deposits
Fluoride, ppm	No	0.90 (average) 0 - 1.4 (range)	—	4	4	—	erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Lead, ppb[1]	No	2.1 (90th percentile) 0 above action level	15	0	—	—	corrosion of household plumbing systems, erosion of natural deposits
Nitrate + Nitrite (as Nitrogen), ppm	No	0.15 - 0.17	—	10	10	—	runoff from fertilizer use; leaking from septic tanks, sewage; erosion of natural deposits
Microbiological Contaminants:							
Turbidity, NTU	No	0.1 (highest level) 100% < 0.3	—	N/A	TT	—	soil runoff
NOTE: No single sample can be greater than 1 NTU. At least 95% of the samples taken every month must be less than 0.3 NTU.							
Volatile Organic Contaminants:							
Trihalomethanes (TTHM), ppb	No	37 (highest average) 19 - 63 (range)	—	0	80	—	by-product of drinking water disinfection
Haloacetic Acids (HAA), ppb	No	29 (highest average) 15 - 33 (range)	—	0	60	—	by-product of drinking water disinfection
Radioactive Contaminants:							
Gross Alpha[1] Emitters, pCi/L	No	0.0 - 0.7	—	0	15	—	erosion of natural deposits
Gross Beta[1] Emitters, pCi/L	No	0.5 - 0.8	—	0	50	—	decay of natural and man-made deposits
Radium 228[1] Emitters, pCi/L	No	0.3 - 0.6	—	0	5	—	erosion of natural deposits
Disinfection By-Product Precursor Contaminants:							
Total Organic Carbon, ppm (TOC) Raw Water, ppm	No	1.6 (highest average) 1.0 - 1.9 (range of results)	—	N/A	TT	—	naturally present in the environment
Total Organic Carbon, ppm (TOC) Treated Water, ppm	No	0.92 (highest average) 0.7 - 1.8 (range of results)	—	N/A	TT	—	naturally present in the environment
NOTE: The Disinfectants and Disinfection By-Products Rule provides several alternative compliance criteria besides TOC removal ratios. We did not report TOC removal ratios because we met an alternative compliance criterion. The alternative compliance criterion that we use is §141.135(a)(2)(ii). Our treated water TOC levels are <2.0 ppm.							
Unregulated Contaminants[2]:							
Sulfate, ppm	No	7.83 (average) 6.93 - 8.73 (range of results)	—	N/A	250[3]	—	naturally present in the environment
Chloroform, ppb	No	8.8 (average) 8.3 - 9.3 (range of results)	—	N/A	N/A	—	by-product of drinking water disinfection
Bromodichloromethane, ppb	No	1.1 (average) 0.9 - 1.3 (range of results)	—	N/A	N/A	—	by-product of drinking water disinfection

[1] *Results from 2003.*

[2] *Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.*

[3] *Secondary contaminant level: non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water.*

Glossary of Terms:

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

Constituents and Contaminants: Any substances, whether naturally occurring or otherwise, that are found in a public water source. All water, including bottled water, contains certain levels of contaminants; however, the water is not considered unhealthy unless the contaminants exist in concentrations that surpass certain levels. Sometimes additives are present as by-products of the purification process or introduced to promote public health (e.g., fluoride, chlorine).

Maximum Contaminant Level (MCL): The "Maximum Allowed" 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 (MCLG): The "goal" 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.

Maximum Disinfection Residual Level (MDRL): The maximum level of disinfectant allowed in the water distribution sysytem.

Nephelometric Turbidity Unit (NTU): Measure of the clarity of water. Turbidity in excess of five NTUs is barely noticeable to the average person.

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

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

Parts per billion (ppb) or Micrograms per liter: Ratio that corresponds to one minute in 2,000 years or a single penny in $10 million.

Picocuries per liter (pCi/l): Measure of radioactivity in water.

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

Are some people more sensitive to contaminants?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as persons undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, and 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/Center for Disease Control (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: 1-800-426-4791.

Improving Your Water System

Lynchburg's water system is very historic, dating back to the early 1800's. Over the years the system has grown and currently includes the Pedlar Reservoir, two water filtration plants, 13 water tanks with over 36 million gallons of storage, several pump stations, and over 450 miles of water lines. As a result, continuous maintenance and upgrades are necessary.

Recent improvements to your water system include the development of a comprehensive water storage tank maintenance plan.

In 2005, all of the City's tanks were cleaned and inspected and three tanks were completely repainted and upgraded at a cost of $2,002,616. Also completed in 2005, were extensive improvements to the Abert Filtration Plant at a total cost of $1,822,000.

Currently, at the College Hill Filtration Plant, an alternate disinfection and chemical feed system is being constructed. Upon completion, the new system will disinfect the water using much safer sodium hypochlorite (bleach) instead of the current chlorine gas. This project is scheduled to be completed in December 2006 at a cost of $2,222,000. Also planned for College Hill in 2007 is a major upgrade of the filtration process, the first major upgrade in over 20 years. The total cost for this project is estimated to be nearly $5 million.

The Department of Utilities works diligently to continue to provide the excellent high quality water that we enjoy, now and for future generations.

What if I have questions?

If you have any questions or comments about this report or about your water, please contact Leslie Gryder at 455-4263.

Also, take a look at the City's website **www.lynchburgva.gov** for all sorts of information about water quality.

Public Meetings

The Department of Utilities will conduct public meetings over the next couple of months, in order to give citizens an opportunity to comment on this report and other water utility issues. The meeting dates will be advertised through the local media.