

COMMUNITY SYSTEMS
2011 ANNUAL

Drinking Water Quality Report

FOR THE YEAR ENDING 2010

Loudoun Water is pleased to present your annual drinking water quality report. The information in this report represents data collected and reported in 2010, unless otherwise noted. The Safe Drinking Water Act of 1974 (SDWA) sets the limits for contaminants in drinking water. These limits are represented in this report as MCLs, or Maximum Contaminant Levels. The SDWA was amended most significantly in 1986 and 1996.

The tables you see in this report provide the actual data collected on your water throughout the year. Please contact us at any time to obtain our latest data. If your question or concern is not answered here, please let us know so we can get the answer for you. You may find your answers at www.loudounwater.org or you may call Customer Relations during business hours Monday through Friday at 571.291.7880. For after hours emergencies, call 571.291.7878.

You are always welcome to attend our monthly Loudoun Water Board Meetings, usually held the second Thursday of each month at 3 p.m. in the Boardroom of our Administration Building at 44865 Loudoun Water Way, Ashburn, VA 20147.

Who Provides Your Water?

The Loudoun County Sanitation Authority, doing business as Loudoun Water, is a state-chartered authority, formed in 1959 by resolution by the Loudoun County Board of Supervisors under the Virginia Water and Waste Authorities Act.

Headquartered in Ashburn, Virginia, Loudoun Water provides water and wastewater service to residents and businesses in the unincorporated areas of Loudoun County, including community systems like yours.

At last count, Loudoun Water serves more than 186,000 people in our Central Service Area, and more than 2,300 people in our Community Systems – which includes one of your communities.

Loudoun Water is a public body politic and corporate, which means that it does not make a profit and it operates under guidance of a nine-member Board appointed to four-year staggered terms by the County Board of Supervisors. Loudoun Water is a public agency, but its operations and finances are independent of the County's tax-supported services. Loudoun Water operates on the income provided through water and wastewater user fees. Water and wastewater lines created to serve new developments in Loudoun are paid for by the developers themselves. This ensures that current customers do not fund the development of new lines.



How to Contact Us

Customer Relations
571.291.7880

After Hours Emergencies
571.291.7878

Website
www.loudounwater.org

Dear Loudoun Water Customers:



As Chairman of the Loudoun Water Board of Directors, I am pleased to present our 2011 Annual Drinking Water Quality Report, intended to provide information to you about the quality of your drinking water. I encourage you to read this report carefully to learn more about the water delivered to your home, including details about sources for drinking water and how your water is treated and tested before delivery to you.

I hope you find the report useful and informative. It provides a detailed list of what we test for in your water and information on the specific treatment used to ensure its safety and maintain compliance with EPA and Virginia Department of Health Standards.

Our first community water system came on line more than a decade ago; today, we operate seven such systems within the county. As we support current operations and respond to needs for new facilities, please remain assured the people of Loudoun Water will continue to deliver on our mission to provide you with sustainable water resources to protect and maintain health, the environment and our quality of life.

Thank you for taking the time to read the Loudoun Water 2011 Annual Drinking Water Quality Report. For additional information about Loudoun Water and how we deliver high quality drinking water to your home, I encourage you to visit our website at www.loudounwater.org.

Sincerely,

Fred E. Jennings
Chairman
Loudoun Water Board of Directors

Dear Loudoun Water Customers:



Every day, Loudoun Water delivers drinking water to nearly 200,000 people in our Central Service and Community System areas. Fulfilling this important health and safety role for you, our customer and neighbor, is extremely important to the dedicated staff of Loudoun Water. As you will read in this report, the drinking water delivered to your homes and businesses is of high quality. I can assure you that we will continue to deliver this level of service while addressing long-term demand and environmental issues.

This report was prepared in accordance with the requirement of the Safe Drinking Water Act. The information in this report contains data collected and reported in 2010, unless otherwise noted. The quality of your drinking water must meet stringent state and federal standards developed by the EPA and administered by the Virginia Department of Health. I am pleased to report that your drinking water has, once again, met all federal and state drinking water quality standards.

I, too, hope you will find the Loudoun Water 2011 Annual Drinking Water Quality Report useful and informative. As always, we are interested in your opinions and encourage you to relay your comments by phone, through the mail, via email or by way of our website, www.loudounwater.org. Our website also provides you with an opportunity to learn more about our rate structure and how you can conserve water to the benefit of both you and your community.

Sincerely,

Dale C. Hammes
General Manager

Source Water Assessment

A Virginia Department of Health source water assessment for all groundwater systems served by Loudoun Water determined them to be highly susceptible to contamination using the state source water assessment program criteria. This assessment report consists of maps showing the source water area, an inventory of known land use activities of concern and documentation of any known contaminants. For more information about this report, contact our Community Systems Manager at 571.291.7700.

What's In Your Water?

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 (EPA) Safe Drinking Water Hotline at 800.426.4791.

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and radioactive material and can pick up substances resulting from the presence of animals or human activity. Contaminants that may be present in the water include:

- Microbes (viruses or bacteria), from septic systems, agricultural livestock operations, wildlife and wastewater treatment plants
- Inorganics, such as salts and metals, which can occur naturally or result from storm water



runoff; industrial or domestic wastewater discharges; oil and gas production; mining or farming

- Pesticides and herbicides, from agriculture, urban runoff and residential uses
- Organics, like 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, either naturally occurring or the result of oil and gas production or mining activities

What Do We Test For?

The Safe Drinking Water Act of 1974 (SDWA), which has been amended most significantly in 1986 and 1996, governs drinking water quality. It sets the limits for contaminants in drinking water. These limits are represented in this report as MCLs, or the Maximum Contaminant Levels. The Food and Drug Administration (FDA) establishes limits for contaminants in bottled water, which must provide the same protection for public health as tap water.

Under the SDWA, Loudoun Water is required to test for the presence of a number of organisms and chemicals. We submit the results to the Virginia Department of Health.

- Bacteriological analysis of the treated water is a monthly monitoring requirement. The analysis is reported based on the presence or absence of total and *Escherichia coli* form. Total coliform bacteria may not be present in more than one monthly sample and *E.coli* may not be present in any sample.
- Bacteriological analysis of the untreated water (raw water) varies from a monthly to yearly monitoring requirement. This analysis is an important indicator of raw water quality and can trigger additional treatment requirements.
- Volatile Organic Compounds is a test for 56 different chemicals such as fuel derivatives and solvents. The analysis is initially per-

formed quarterly and is reduced to annually and eventually every three years as repeated results show no detections of the chemicals.

- Radiological analyses are performed for alpha and beta emitters, as well as for radium 226 and 228. Samples are initially conducted quarterly and may eventually be reduced to once every six years after sufficient data shows low levels of results.
- Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5) are disinfection byproducts that can form in the water supply as chlorine reacts with organic matter. When ingested in large quantities, these chemicals are suspected human carcinogens, so we monitor for them closely. The legal limit for TTHMs is an annual average of 80 parts per billion (ppb). For HAA5 the limit is 60 ppb. They are initially measured annually in small groundwater systems and eventually reduced to every three years.
- Lead and copper are measured at the point of use (generally a homeowner's kitchen sink). In small community water systems, five to 10 homes are sampled initially every six months. This is then reduced first to annually and then three years based upon consistently meeting the action limit.
- Nitrite and nitrate analysis is performed annually. The combined concentration of nitrate and nitrite may not exceed 10 ppm.
- Inorganics and metals are analyzed every three years in groundwater systems to assure that none of the parameters exceed the respective MCLs.

Lead in Drinking Water

What is the EPA standard for lead in drinking water?

EPA has established an Action Level for lead in water of 15 parts per billion. When lead testing is performed as required by EPA, 90 percent of the samples must contain less than 15 ppb. This is usually referred to as the 90th percentile results being less than 15 ppb. The Action Level was not designed to measure health risks from water represented by individual samples. Rather, it is a statistical trigger value that, if

exceeded, may require more treatment, public education, and possibly lead service-line replacement where such lines exist. (Loudoun Water does not have any lead service lines in its system.)

Where does lead in drinking water come from?

Loudoun Water's raw water sources do not contain lead. In 1986, lead was banned from being used in pipe and solder in home construction. In older homes, where lead is present in pipe and solder connections, it may dissolve into the water after the water sits for long periods of time.

What can I do in my home to reduce exposure to lead in the drinking water?

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. Loudoun Water is responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components in home construction. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 15 to 30 seconds, or until it becomes cold or reaches a steady temperature before using the water for drinking or cooking. Use only cold water for cooking and making baby formula.



If you are concerned about lead in your water, you may wish to have your water tested. Information about lead in drinking water, testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at www.epa.gov/safewater/lead or 800.426.4791, TTY 711.

Some people choose to install filters in their homes. If you choose to use a water filter, follow these three rules:

1. Choose one designed for the specific filtration desired (chlorine, lead, *Cryptosporidium*, etc.).
2. Make sure the filter is approved by the National Sanitation Foundation (www.nsf.org).
3. Maintain the filter as directed.

How can Loudoun Water assist in having the water in my house tested?

For information on having a lead-level test conducted, call our Customer Relations Department at 571.291.7880. The charge for lead-level testing of your home's water is \$33 per faucet.

Are You Vulnerable to Contaminants?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer who are 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/Centers for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infections by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at 800.426.4791.

Water Quality Analysis and Results

We constantly monitor for various contaminants in the water supply to meet all regulatory requirements. The following tables list only those contaminants that are regulated and had some level of detection. If you have a question about a component not seen here, call us at 571.291.7880.

How is Your Water Treated?

Your water is treated with chlorine for disinfection. Iron and manganese treatment occurs at Beacon Hill and Selma Estates due to the natural presence of iron and manganese in these ground water supplies. Corrosion control with zinc orthophosphate is applied at Raspberry Falls and Selma Estates, and fluoride is added to the Selma Estates and Village Green at Elysian Heights water systems.

Where Does Your Water Come From?

Groundwater is supplied by wells located in the development:

- Beacon Hill – two wells
- Raspberry Falls – two wells (Well PW-1 taken off-line in November 2011; water supplied by one well the remainder of the year)
- Lenah Run – three wells
- Rokeby – four wells
- Village Green – five wells, one of which is an emergency well if needed
- Selma – two wells; ultimately plan to have four wells total

Water Quality in Beacon Hill					
Microbials	Highest Result	MCL	MCLG	Typical Source	Violation
Total Coliform Bacteria	All Absent	Cannot be detected in more than one monthly sample	0	Naturally present in environment	No
Fecal Coliform Bacteria	All Absent	A routine sample and repeat sample are Total Coliform positive, and one is also Fecal Coliform or <i>E. Coli</i> positive	0	Human and animal fecal waste	No
Organics	Highest Quarterly Running Annual Average	Action Level	MCLG	Typical Source	Violation
Total Trihalomethanes (ppb)	6.77	80	N/A	By-product of drinking water disinfection	No
Haloacetic Acids (ppb)	2.97	60	N/A	By-product of drinking water disinfection	No
Component	Highest Quarterly Running Annual Average	MRDL	MRDLG	Typical Source	Violation
	Range				
Chlorine (ppm)	1.56	4	4	Water additive used to control microbes	No
	0.9–2.1				
Inorganics and Metals	Highest Result	MCL	MCLG	Typical Source	Violation
Barium ¹ (ppm)	0.29	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	No
Fluoride ¹ (ppm)	0.22	4.0	4.0	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories	No
Nitrate/Nitrite [as Nitrogen] (ppm)	3.8	10	10	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits	No

¹Samples taken in 2008. Next required testing is 2011.

Metal Components	90th Percentile Level	Action Level	MCLG	Number Of Sites Above Action Level	Typical Source	Violation
Copper ² (ppm)	0.056	1.3	0	0	Corrosion of household plumbing	No
Lead ² (ppb)	2.2	15	0	0	Corrosion of household plumbing	No

² Samples taken in 2008. Next required testing is 2011.

Water Quality in Village Green at Elysian Heights

Inorganics and Metals	Average Level	MCL	MCLG	Typical Source	Violation
	Range				
Nitrate/Nitrite [as Nitrogen] (ppm)	3.8	10	10	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits	No
Barium (ppm)	0.13	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	No
Fluoride (ppm)	0.78	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories	No
	<0.5 – 1.9				
Microbials	Highest Result	MCL	MCLG	Typical Source	Violation
Total Coliform Bacteria	All absent	Cannot be detected in more than one monthly sample	0	Naturally present in environment	No
Fecal Coliform Bacteria	All absent	A routine sample and repeat sample are Total Coliform positive, and one is also Fecal Coliform or <i>E. Coli</i> positive	0	Human and animal fecal waste	No
Organics	Highest Quarterly Running Annual Average	Action Level	MCLG	Typical Source	Violation
Total Trihalomethanes (ppb)	6.62	80	N/A	By-product of drinking water disinfection	No
Haloacetic Acids (ppb)	1.35	60	N/A	By-product of drinking water disinfection	No
Component	Highest Quarterly Running Annual Average	MRDL	MRDLG	Typical Source	Violation
Chlorine (ppm)	1.09	4	4	Water additive used to control microbes	No
	0.5–1.5				
Radiologicals	Highest Result	MCL	MCLG	Typical Source	Violation
Radium 226 and 228 (pCi/L)	ND	5	0	Erosion of natural deposits	No
Alpha emitters (pCi/L)	7.4	15	0	Erosion of natural deposits	No
Beta/photon emitters' (pCi/L)	4.4	4	0	Decay of natural and man-made deposits	No

The MCL for Beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for Beta particles.

Metal Components	90th Percentile Level	Action Level	MCLG	Number Of Sites Above Action Level	Typical Source	Violation
Copper (ppm)	0.14	1.3	0	0	Corrosion of household plumbing	No
Lead (ppb)	1	15	0	0	Corrosion of household plumbing	No

September 19, 2011

Dear Lenah Run Resident:

Enclosed in this mailing is an insert containing revisions of your 2011 Community Systems Water Quality Report. After further review by the Virginia Department of Health (VDH), two results were found to be inaccurate due to data entry errors. VDH has also requested Loudoun Water expand on two sets of results to include ranges.

It is important to note that these revisions did not involve any violations of water quality. The items that were revised are also shown below in bold.

Inorganics and Metals	Level Detected	MCL	MCLG	Typical Source	Violation
Arsenic ¹ (ppb)	5.0– 6.1	10	0	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes	No
Barium ² (ppm)	0.16– 0.27	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	No
Fluoride ³ (ppm)	0– 0.1	4	4	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories	No
Radiologicals	Highest Range	MCL	MCLG	Typical Source	Violation
Radium 226 and 228 (pCi/L)	0.3–2.6	5	0	Erosion of natural deposits	No
Alpha emitters (pCi/L)	2.2–5.3	15	0	Erosion of natural deposits	No

¹Sample taken in 2008 of 5 ppb. While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the cost of removing arsenic from drinking water. 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.

²Sample taken in 2008 of 0.27 ppm.

³Sample taken in 2008 of 0.10 ppm.

We apologize for the errors found in our report and we are taking steps to ensure similar mistakes are not made in the future. If you have any questions regarding these revisions, please email me at mmcgill@loudounwater.org or call me at (571) 291-7969.

Sincerely,



Mike McGill

Manager of Community Relations

Water Quality in Lenah Run					
Inorganics and Metals	Level Detected	MCL	MCLG	Typical Source	Violation
	Range				
Nitrate/Nitrite [as Nitrogen] (ppm)	2.05 1.6-2.5	10	10	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits	No
Arsenic ¹ (ppb)	5.0–6.1	10	0	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes	No
Barium ² (ppm)	0.16–0.27	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	No
Fluoride ³ (ppm)	0–0.1	4	4	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories	No
Microbials	Highest Result	MCL	MCLG	Typical Source	Violation
Total Coliform Bacteria	All absent	Cannot be detected	0	Naturally present in environment	No
Fecal Coliform Bacteria	All Absent	A routine sample and repeat sample are Total Coliform positive, and one is also Fecal Coliform or <i>E. Coli</i> positive	0	Human and animal fecal waste	No
Organics	Highest Quarterly Running Annual Result	MCL	MCLG	Typical Source	Violation
Total Trihalomethanes (ppb)	8.74	80	N/A	By-product of drinking water disinfection	No
Haloacetic Acids (ppb)	2.23	60	N/A	By-product of drinking water disinfection	No
Component	Highest Quarterly Running Annual Average	MRDL	MRDLG	Typical Source	Violation
Chlorine (ppm)	0.94	4	4	Water additive used to control microbes	No
	0.2–1.24				
Radiologicals	Highest Range	MCL	MCLG	Typical Source	Violation
Radium 226 and 228 (pCi/L)	0.3–2.6	5	0	Erosion of natural deposits	No
Alpha emitters (pCi/L)	2.2–5.3	15	0	Erosion of natural deposits	No
Beta/photon emitters ⁴ (pCi/L)	ND	50	0	Decay of natural and man-made deposits	No

¹Sample taken in 2008 of 5 ppb. While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the cost of removing arsenic from drinking water. 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.

²Sample taken in 2008 of 0.27 ppm.

³Sample taken in 2008 of 0.10 ppm.

⁴The MCL for Beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for Beta particles.

Water Quality in Lenah Run continued						
Metal Components	90th Percentile Level	Action Level	MCLG	Number Of Sites Above Action Level	Typical Source	Violation
Copper ² (ppm)	0.56	1.3	0	0	Corrosion of household plumbing	No
Lead (ppb)	ND	15	0	0	Corrosion of household plumbing	No

²Samples taken in 2008. Next required testing is 2011.

Lenah Run: Raw Water Quality Results (Untreated groundwater)

Loudoun Water conducts bacteriological testing of the untreated water for each well. One of Lenah Run's wells (Well LFW-B2) tested positive for *E. Coli* on July 13, 2010 and July 21, 2010. *E. Coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely-compromised immune systems.

Loudoun Water has always provided disinfection treatment and water system testing. Loudoun Water has never detected bacteriological presence in the treated drinking water. In accordance with Virginia Department of Health regulations, Loudoun Water provided corrective action by chlorinating Well LFW-B2 on August 19, 2010, and implementing operational changes, including the installation of a sampling station, to confirm 4-log virus inactivation of water from Well LFW-B2.

Number of Positive <i>E. Coli</i> Samples in Untreated Groundwater	MCL	MCLG	Typical Source	Violation
2	TT	0	Human and animal fecal waste	No

TT – Treatment Technique, as defined under the Ground Water Rule for source water monitoring and corrective actions.

Water Quality in Raspberry Falls					
Inorganics and Metals	Highest Result	MCL	MCLG	Typical Source	Violation
Nitrate/nitrite [as nitrogen] (ppm)	0.75	10	10	Runoff from fertilizer; leaching from septic tanks, erosion of natural deposits	No
Barium (ppm)	0.065	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	No
Microbials	Highest Result	MCL	MCLG	Typical Source	Violation
Total Coliform Bacteria	All absent	Cannot be detected in more than one monthly sample	0	Naturally present in environment	No
Fecal Coliform Bacteria	All Absent	A routine sample and repeat sample are Total Coliform positive, and one is also Fecal Coliform or <i>E. Coli</i> positive	0	Human and animal fecal waste	No
Component	Highest Quarterly Running Annual Average	MRDL	MRDLG	Typical Source	Violation
	Range				
Chlorine (ppm)	1.83	4	4	Water additive used to control microbes	No
	1.1–2.7				
Organics	Highest Quarterly Running Annual Average	MCL	MCLG	Typical Source	Violation
Total Trihalomethanes (ppb)	0.73	80	N/A	By-product of drinking water disinfection	No
Haloacetic Acids (ppb)	ND	60	N/A	By-product of drinking water disinfection	No

Metal Components	90th Percentile Level	Action Level	MCLG	Number Of Sites Above Action Level	Typical Source	Violation
Copper ¹ (ppm)	0.16	1.3	0	0	Corrosion of household plumbing	No
Lead ¹ (ppb)	ND	15	0	0	Corrosion of household plumbing	No

¹Samples taken in 2008. Next required testing is 2011.

Raspberry Falls: Raw Water Quality Results
(Untreated groundwater)

Loudoun Water conducts bacteriological testing of the untreated water for each well a minimum of one time a week, four times the frequency required by VDH. One of Raspberry Falls’ wells (Well PW-1) tested positive for *E. Coli* on January 5, 7; March 16–18, 22, 23; August 22; September 7; October 5–7, 10, 11, 19, 21, 26; and November 3, 2010. *E. Coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely-compromised immune systems.

In 2010, Loudoun Water has provided 4-log virus inactivation through disinfection treatment and water system testing. Loudoun Water has never detected bacteriological presence in the treated drinking water.

Throughout 2010, Loudoun Water, in consultation with VDH, extensively tested PW-1 to determine if it was groundwater under the direct influence of surface water or GUDI. On November 16, 2010, Loudoun Water was informed that the results of a six-month series of tests showed a GUDI determination was possible on PW-1. Loudoun Water immediately took PW-1 out of service. On November 23, 2010, Loudoun Water was officially informed by VDH that the PW-1’s untreated water is considered GUDI.

In its letter notifying Loudoun Water of its GUDI determination, VDH stated, “We acknowledge the actions Loudoun Water has taken at Raspberry Falls to protect public health prior to this determination

and to provide water quality information requested by this office necessary to make this determination.”

It is important to note that ALL treated drinking water samples taken during the six-month timeframe showed no bacteria. In its GUDI determination letter, VDH stated, “Our records indicate there has never been a positive distribution system coliform sample since establishment of this public waterworks. In addition, [Loudoun Water] improved the disinfection process at Well PW-1 in the Fall of 2009 by ensuring that 4-log inactivation of viruses was achieved in accordance with the recently established Groundwater Rule.”

More information about the GUDI determination can be found on the Raspberry Falls page of our website, www.loudounwater.org. Click on the Community Systems link found on our homepage then on the Raspberry Falls link.

In response to the GUDI determination, Loudoun Water staff began conducting technically based studies of several potential long-term solutions. These options include: a water treatment plant for Raspberry Falls; a water treatment plant to serve Selma Estates; a water treatment plant for both Raspberry Falls and Selma Estates; and a pipeline extension for Leesburg Town Water. These studies were not completed before the publishing deadline for this report. Information on the status of these studies can be found by visiting our Raspberry Falls webpage.

Also, a new well, Well F, was approved in March 2011 for use as a drinking water source by VDH to replace Well PW-1. Construction of the well was not completed prior to the publishing deadline for this report. The latest information on Well F can also be found by visiting our Raspberry Falls webpage.

Number of Positive <i>E. Coli</i> Samples in Untreated Groundwater	MCL	MCLG	Typical Source	Violation
18	TT	0	Human and animal fecal waste	No

TT – Treatment Technique, as defined under the Ground Water Rule for source water monitoring and corrective actions.

Water Quality in The Reserve at Rokeby					
Inorganics and Metals	Level Detected	MCL	MCLG	Typical Source	Violation
Nitrate/nitrite [as nitrogen] (ppm)	3.1	10	10	Runoff from fertilizer; leaching from septic tanks, erosion of natural deposits	No
Barium ¹ (ppm)	0.13	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	No
Fluoride	0.1	4.0	4.0	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories	No
Microbials	Highest Result	MCL	MCLG	Typical Source	Violation
Total Coliform Bacteria	All absent	Cannot be detected in more than one monthly sample	0	Naturally present in environment	No
Fecal Coliform Bacteria	All Absent	A routine sample and repeat sample are Total Coliform positive, and one is also Fecal Coliform or <i>E. Coli</i> positive	0	Human and animal fecal waste	No
Organics	Highest Quarterly Running Annual Average	Action Level	MCLG	Typical Source	Violation
Total Trihalomethanes ² (ppb)	18.6	80	N/A	By-product of drinking water disinfection	No
Haloacetic Acids (ppb)	ND	60	N/A	By-product of drinking water disinfection	No
Component	Highest Quarterly Running Annual Average	MRDL	MRDLG	Typical Source	Violation
	Range				
Chlorine (ppm)	0.93	4	4	Water additive used to control microbes	No
	0.6-1.2				

¹Samples taken in 2008. Next required testing is 2011.

²Samples taken in 2009. Next required testing is 2012.

Water Quality in The Reserve at Rokeby continued

Radiologicals	Highest Result	MCL	MCLG	Typical Source	Violation
	Range				
Radium 226 and 228 ³ (pCi/L)	0.21 ND-0.6	5	o	Erosion of natural deposits	No
Alpha emitters ³ (pCi/L)	1.8 1.6-2.1	15	o	Erosion of natural deposits	No
Beta/photon emitters ^{3,4} (pCi/L)	3.1 2.4-3.5	4	o	Decay of natural and man-made deposits	No

³Samples taken in 2006. Next required testing is 2012.

⁴The MCL for Beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for Beta particles.

Metal Components	90th Percentile Level	Action Level	MCLG	Number Of Sites Above Action Level	Typical Source	Violation
Copper ⁵ (ppm)	0.059	1.3	o	o	Corrosion of household plumbing	No
Lead ⁵ (ppb)	ND	15	o	o	Corrosion of household plumbing	No

⁵Samples taken in 2008. Next required testing is 2011.

Water Quality in Selma

Inorganics and Metals	Average Level	MCL	MCLG	Typical Source	Violation
	Range				
Nitrate/nitrite [as nitrogen] (ppm)	2.4	10	10	Runoff from fertilizer; leaching from septic tanks, erosion	No
Barium ¹ (ppm)	0.042	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	No
Fluoride (ppm)	0.74	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories	No
	ND-1.5				
Microbials	Highest Result	MCL	MCLG	Typical Source	Violation
Total Coliform Bacteria	All absent	Cannot be detected in more than one monthly sample	0	Naturally present in environment	No
Fecal Coliform Bacteria	All Absent	A routine sample and repeat sample are Total Coliform positive, and one is also Fecal Coliform or <i>E. Coli</i> positive	0	Human and animal fecal waste	No
Organics	Highest Quarterly Running Annual Average	Action Level	MCLG	Typical Source	Violation
Total Trihalomethanes ¹ (ppb)	16.6	80	N/A	By-product of drinking water disinfection	No
Haloacetic Acids (ppb)	5.8	60	10,000	By-product of drinking water disinfection	No
Organics	Result	Action Level	MCLG	Typical Source	Violation
Chloroform (ppb)	0.69	No Regulatory Limit	No Regulatory Limit	By-product of drinking water disinfection	No

¹Samples taken in 2008. Next required testing is 2011.

Water Quality in Selma continued					
Component	Highest Quarterly Running Annual Average	MRDL	MRDLG	Typical Source	Violation
Chlorine (ppm)	1.36	4	4	Water additive used to control microbes	No
	0.11–2.0				
Radiologicals	Highest Result	MCL	MCLG	Typical Source	Violation
	Range				
Radium 226 and 228 ² (pCi/L)	0.60	5	0	Erosion of natural deposits	No
	ND-1.8				
Alpha emitters ² (pCi/L)	1.95	15	0	Erosion of natural deposits	No
Beta/photon emitters ^{2,3} (pCi/L)	1.35	4	0	Decay of natural and man-made deposits	No

²Samples taken in 2009. Next required testing is 2015.

³The MCL for Beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for Beta particles.

Metal Components	90th Percentile Level	Action Level	MCLG	Number Of Sites Above Action Level	Typical Source	Violation
Copper (ppm)	0.076	1.3	0	0	Corrosion of household plumbing	No
Lead (ppb)	ND	15	0	0	Corrosion of household plumbing	No

Helpful Definitions

Action Level | The concentration of a contaminant which, if exceeded, triggers a treatment or other requirement that a water system must follow.

Maximum Contaminant Level (MCL) | The highest level of a contaminant that EPA allows in drinking water. MCLs are set as close to the MCLGs as possible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) | The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (MRDL) | The maximum permissible level of disinfectant residual in drinking water, based on a running annual average.

Maximum Residual Disinfectant Level Goal (MRDLG) | The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

mrem/s/year | Millirems per year. A measurement of radiation absorbed by the body.

ND | Non-detect, below the detection level.

Ninetieth (90th) Percentile | Represents the highest value found out of 90 percent of the samples taken in a representative group. If the 90th percentile is greater than the action level, it will trigger a treatment or other requirement that a water system must follow.

NRL | No regulatory limit.

NTU | Nephelometric Turbidity Unit.

PCi/L | Picocuries per liter.

ppb | Parts per billion. One ppb is equal to one microgram per liter. (ug/L)

ppm | Parts per million. One ppm is equal to one milligram per liter. (mg/L)

Total Coliform | Bacteria that indicate whether other potentially harmful bacteria may be present.

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



Non-regulated Results						
	Beacon Hill	Lenah Run	Raspberry Falls	Rokeby	Selma	Village Green
Copper						0.0014
Total Dissolved Solids (mg/L)	220 ^a	180	150 ^a	170 ^a	130 ^a	240 ^b
Chloride (mg/L)	17 ^a	15.2	7 ^a	6 ^a	5.6 ^a	12 ^b
Sulfate (mg/L)	21 ^a	6.52	ND ^a	10 ^a	7.5 ^a	18 ^b
Sulfide (mg/L)	<0.1 ^a	ND	ND ^a	ND	ND ^b	ND ^b
Calcium (mg/L as CaCO ₃)	130 ^a				27 ^a	52 ^b
Total Hardness (mg/L as CaCO ₃)	160–200 ^a	121–165 ^b	170 ^a	86–132 ^b	120 ^a	180–205 ^b
Bicarbonates (mg/L as CaCO ₃)		36	100 ^a	120 ^a	105 ^a	190 ^b
Alkalinity (mg/L as CaCO ₃)	145 ^a	150	100	100–150 ^b	100 ^a	190 ^b
Conductance (umho/cm)	370 ^a	410	270 ^a	300 ^a	250 ^a	440 ^b
pH(standard units)	7.3–7.64 ^a	7.0–7.8	6.5–8.2	7.6–7.8 ^b	8.16 ^a	7.9 ^b
Magnesium (mg/L)	16 ^a	18	3.8	12.1 ^a	13 ^a	12 ^b
Sodium (mg/L)	11 ^a	13	4.9	9.7 ^a	6.8 ^a	26
Potassium (mg/L)	5.1 ^a	0.84	0.85	1.5 ^a	2.5 ^a	0.86 ^b
Zinc (mg/L)	0.021 ^a	ND	ND	ND	0.17 ^a	0.0099
Silver mg/L	ND	0.0022	ND	ND		

^aParameters analyzed in 2008.

^bParameters analyzed in 2009.

Did You Get Our Email?

Our bill stuffer, called the NewsLeak, is now available as a quarterly newsletter by email. Responding to hundreds of requests from you to do so, we have replaced the bill stuffer that used to come with your bill with this electronic format. Sign up to receive news and information related to your water and sewer service. Just visit our website and type in your email address on our home page under “Sign up for our quarterly E-newsletter.” You’ll receive the newsletter in March, June, September and December.

You can also sign up to receive RSS feeds from us and our News You Can Use blog by clicking on “Register for Web Alerts” on our homepage.



Can the Grease

Sewer overflows and backups are commonly found to be caused by fats, oils and grease (FOG). Grease gets into the sewer from household drains and neglected grease interceptors at businesses such as restaurants. The grease blocks sewer pipes, causing health hazards and leading to expensive fixes. It also damages the environment.

FOG includes items like cooking oils, butter, margarine, lard, shortening, food scraps, baking goods, gravy, sauces, mayonnaise, salad dressings and dairy products.

Here are some tips to help keep your drains FOG-free:

- Don't pour grease down your sink or toilet.
- Pour used grease into a container and take it out with the trash.
- Scrape food particles on dishes and cooking utensils into the trash or compost bin before placing them in the sink or dishwasher.
- Place strainers in your drains and empty the catch in the trash. Garbage disposals only shred discards into smaller pieces.

Water You Thinking?®

If you have an irrigation system, please check out our tips for wise water use and consider following our staggered schedule. This schedule helps keep peak days low and distributes the water use more evenly over the course of the week.

- **odd home addresses: Wednesday and Saturday**
- **even home addresses: Thursday and Sunday**
- **avoid watering from 10:00 am–4:00 pm**

Overall, Community Systems are still part of a rural environment, which means care must be taken with every water-using activity to ensure your beautiful surroundings and their natural resources exist for generations to come. Irrigation systems, while initially allowed in some communities, are now prohibited in many. However, we do want homeowners with systems to be knowledgeable of our water savings programs.

Learn more ways you can save water on our website.



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