

City of Danville 2011 Water Quality Report

Each year, the City of Danville compiles and distributes this report to comply with one of many state and federal requirements. The purpose of this report is to provide you an overview of last year's (2011) drinking water quality. It includes details about where your water comes from and what it contains. We hope the report will provide the facts and perspective you need to make an informed evaluation of your tap water.

In this report, you will find a table showing the City of Danville had zero violations of water quality standards during the 2011 calendar year. The substances detected were all well below the levels allowed. This does not happen by chance. Your drinking water is carefully protected from its source, the Dan River, through our treatment plant, and to your tap. Under the Safe Drinking Water Act, the U.S. Environmental Protection Agency (EPA) is responsible for setting national limits for hundreds of substances in drinking water and for specifying treatment processes to remove them. State-certified water quality labs perform over 4,000 tests of water samples each month. Our treatment and distribution facilities are periodically inspected by the State.

We hold ourselves accountable to the public. Opportunities for increased understanding and involvement in water-related decision and policy making include attendance at the Danville Utility Commission Meetings, held at 4:00 p.m. on the fourth Monday of each month on the fourth floor at City Hall, and the Danville City Council Meetings held at 7:00 p.m. on the first and third Tuesday of each month at City Hall. City Council meetings are also broadcast on River City TV (Comcast cable TV channel 10). If you have questions about this Water Quality Report or want more information about your drinking water, contact the Water Treatment Plant on Monday through Friday between 8:00 a.m. and 5:00 p.m. at 434-799-6473. To report leaks or tank over flows please call 799-5284 at any time, day or night. For customer service, please call 799-5155. If you have billing questions, please call 799-5159. Tours of our facilities are scheduled during business hours.

Lead in Drinking Water – Although we regularly test lead levels in your drinking water, it is possible that lead and/or copper levels at your home are higher because of materials used in your 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. The City of Danville is responsible for providing high quality drinking water, but cannot control the variety of materials used in the plumbing components. 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 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 <http://www.epa.gov/safewater/lead> (also listed below)

Cryptosporidium Information – Cryptosporidium are microscopic organisms that may enter surface waters from runoff containing animal wastes. If ingested, Cryptosporidium may cause diarrhea, fever and other gastrointestinal symptoms. The City tested for cryptosporidium from April 2008 – March 2010 and none were found.

TREATED WATER CHARACTERISTICS	
PARAMETER	TYPICAL VALUES
pH, standard units	7.3
Alkalinity, mg/L	24
Calcium, mg/L	13
Total Hardness, mg/L	79
Sodium, mg/L	4.55*
Zinc, mg/L	<0.01
Aluminum, mg/L (SMCL=0.05-0.2)	<0.05
Iron, mg/L (SMCL=0.3)	<0.05
Manganese, mg/L (SMCL=0.05)	<0.01
Water temperature, °F Winter	37 – 70
Summer	63 – 86
Annual average daily production – 5.36 MGD	
SMCL-Secondary Maximum Contaminant Level * Varies with type of post pH adjustment used	

Source Water – Danville's drinking water comes from what is classified as a surface water source, the Dan River. The Virginia Office of Drinking Water conducted a source water assessment on the Dan River in 2002. 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. The report is available by contacting the Water Treatment Plant. The river was determined to be "highly susceptible" to contamination using the criteria developed by the State in its approved Source Water Assessment Program. The sources of substances in the Dan River come from surface runoff as water travels over the surface of the land and dissolves naturally occurring minerals and substances resulting from the presence of animals and 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; and radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities. The presence of these substances in pretreated water does not necessarily indicate that the treated water is unsafe. 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. Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as 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/Center for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline 1-800 426-4791 or EPA web page: www.epa.gov/ow.

Water Quality Summary: In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water produced by public water systems. The Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health. We constantly monitor for various compounds in the water supply to meet all regulatory requirements. The table on the following page lists only those compounds that had some level of detection. Many other compounds have been analyzed, but were not present or were below the detection limits of the lab equipment. For more information about the City of Danville Water Treatment Plant or any other Divisions within the City of Danville organization, please visit www.danvilleutilities.com

The levels of total trihalomethanes (TTHMs) in some samples collected during 2011 were greater than the PMCL of 80 ppb but were not a violation of the drinking water standard. Compliance with the PMCL is based on a running annual average (4 quarters) of the quarterly samples collected and you will note the water supply did not exceed the drinking water limits on this basis. TTHMs are formed when trace amounts of naturally occurring organic compounds in the raw water source combine with chlorine that is used to disinfect the treated water. All locations do not have the same levels of TTHMs. Higher levels are expected in the areas with highest residence time (generally the furthest points in the system) and during the warmer months of the year. Some people who drink water-containing TTHMs in excess of the PMCL over many years could experience problems with their liver, kidneys or central nervous system and may have increased risk of getting cancer. This water system will continue to be monitored for TTHMs. We intend to maintain compliance with the drinking water contaminants.

REGULATED COMPOUNDS

Contaminant & Unit of Measurement ¹	MCLG	MCL	Level Detected And / or Range	Violation	Date of Sample	Sources of Substance or Compound
Gross Alpha ² pCi/L	0	15	ND	NO	April 2008 Every 6 Yrs.	Erosion of natural deposits
Combined Radium ² pCi/L	0	5	0.1	NO	April 2008 Every 6 Yrs.	Erosion of natural deposits
Beta Emitters ² pCi/L	0	50	1.5	NO	April 2008 Every 6 Yrs	Decay of natural and man-made deposits
Total Coliform Bacteria	0	Presence of coliform bacteria in no more than 5% samples per month	1.4% samples total coliform present during Sept 2011 (one of 72 samples)	NO	Minimum 50 distribution system samples each month	Naturally present in the environment
E. coli	0	0	1 sample detected during year	NO*	September 2011	Human and animal fecal waste
Barium ppm	2	2	0.018	NO	May 2011 Annually	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Turbidity NTU	N/A	TT = 1 NTU max	0.31 Range: 0.01 – 0.31	NO	Tested continuously at plant	Soil runoff
		TT = at least 95% of the monthly samples <0.3 NTU	100%		N/A	
Trihalomethanes TTHM ppb	N/A	80	Max 4 qtr. Avg. 69 Range: 25 – 137	NO	Tested quarterly at four locations in distribution	By-product of drinking water chlorination
Fluoride ppm	4	4	Avg. 0.72 ppm Range: 0.38 – 1.11	NO	Tested daily at plant and minimum of 50 locations in distribution	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories; desired level 0.9
Nitrate ppm	10	10	0.21	NO	May 2011 Annually	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Lead ³ ppb	0	AL = 15	90 th % = 4 <2– 29 One of 33 exceeded AL	NO	Sept.2009 Every 3 Yrs.	Corrosion of household plumbing systems; erosion of natural deposits
Copper ³ ppm	1.3	AL = 1.3	90 th % = 0.107 <0.02 – 0.192 None of 33 exceeded AL	NO	Sept.2009 Every 3 Yrs.	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Chlorine ppm	MRDLG = 4	MRDL = 4	Highest Qtrly Avg.0.97 Range: ND -1.98	NO	Tested monthly at a minimum of 50 locations in distribution	Water additive used to control microbes.
Haloacetic Acids - HAA ppb	N/A	60	Max 4 qtr Avg. 23 Range 6 – 35	NO	Tested quarterly at four locations in distribution	By-product of drinking water disinfection
Total Organic Carbon - TOC ppm	N/A	TT – Based on the percentage of TOC removed during the treatment process; ratio must be greater than or equal to 1.00	Lowest Running Avg. 1.25 Range: 1.00 – 1.73	NO	Tested monthly at raw and treated water.	Naturally present in the environment.

*exceed MCL when routine sample is present for total coliform / E.coli followed by any repeat sample which is present for either total coliform or E.coli—no total coliform nor E.coli detected in repeat samples collected during September 2011

Definitions & Table Key: (1) Detected Compounds - Listed are 14 parameters detected in Danville's drinking water, nine (9) parameters during calendar year 2011. The State allows us to monitor for some compounds less than once per year because the concentrations of these compounds do not change frequently. Therefore, data marked with a **(2)** is the latest available. The SDWA requires that the highest value/lowest removal ratio detected during the calendar year be provided in this report. Not listed are the hundreds of other compounds for which we tested that were not detected. **(3)** Compliance based on 90% of samples being below action level. **NA** – Not Applicable. **ND** – Non Detect. **<** - Less than. **Trihalomethanes** – Compounds formed during the chlorination (disinfection) of drinking water. **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. **MCL** - (Maximum Contaminant Level) – The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the Maximum Contaminant Level Goals as feasible using the best available treatment technology. **pCi/L** – Picocuries per Liter, a measure of radioactivity. **MRDLG** - Maximum Residual Disinfectant Level Goal, the highest level of a disinfectant allowed in drinking water. MRDLGs do not reflect benefits of use of disinfectants to control microbial contaminants. **MRDL** – Maximum Residual Disinfectant Level, level of a drinking water disinfectant below which there is no known or expected risk to health. **NTU** - Nephelometric Turbidity Unit, a measure of very small particulate matter in drinking water. **Sources** – The major sources of the compounds detected in the finished water. **ppb** – one part per billion; the equivalent of 1¢ in \$10,000,000. **ppm** – one part per million, the equivalent of 1¢ in \$10,000. **AL** - Action Level, the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. **TT** - Treatment Technique, a required process intended to reduce the level of a contaminant in drinking water. **Unregulated contaminants** are those for which EPA has not established drinking water standards. The purpose of the **Unregulated Contaminant Monitoring Rule, UCMR**, is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. The results of our UCMR monitoring are available by contacting the waterworks representative noted elsewhere in this report.