

2003

**ANNUAL CONSUMER CONFIDENCE REPORT ON THE QUALITY OF
TAP WATER**

**U.S. ARMY GARRISON, ABERDEEN PROVING GROUND
EDGEWOOD AREA**

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1.0 INTRODUCTION

This is an annual report on the quality of water delivered to the Edgewood Area of U.S. Army Garrison, Aberdeen Proving Ground. Under the "Consumer Confidence Reporting Rule" of the Federal Safe Drinking Water Act (SDWA), community water systems are required to report this water quality information to the consuming public. Presented in this report is information on the source of our water, its constituents and the health risks associated with any contaminants detected in quantities exceeding a drinking water regulatory maximum contaminant level (MCL), action level (AL), or treatment techniques (TT). **During calendar year 2003, no contaminants were detected in the Edgewood Area drinking water distribution system in quantities exceeding regulatory limits.**

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. The drinking water being delivered to you is pumped from Winters Run and treated by the Van Bibber Water Treatment Plant. Winters Run is a surface water source in Harford County.

As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive materials. Water can also 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 occur naturally 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 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.

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations, which limit the amount of certain contaminants in water provided to consumers by public water systems. The Food and Drug Administration (FDA) is responsible for establishing regulations which set 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 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 (800 - 426 - 4791).

We continually monitor the drinking water for contaminants. Our water is safe to drink; however, 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 can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA 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).

2.0 MONITORING OF YOUR DRINKING WATER

Our water system uses only EPA approved laboratory methods to analyze your drinking water. Our personnel collect water samples from selected points throughout the distribution system and from the Van Bibber Water Treatment Plant. Samples are then shipped to an accredited laboratory where a full spectrum of water quality analyses are performed. The results are then reported to the Maryland Department of the Environment (MDE).

In the Edgewood Area, we monitor for the contaminant groups listed in Table 1 using EPA approved methods. Table 1 also lists the monitoring frequencies for these contaminant groups.

TABLE 1 - Analyte Groups and Monitoring Frequency Table

CONTAMINANT GROUP	MONITORING FREQUENCY
Inorganic Contaminants (IOC)	Annually
Lead and Copper (L&C)	Triennially (Once Every 3 Years)
Microorganisms and Turbidity (M&T)	Daily
Radionuclides (RAD)	Once Every 4 Years
Synthetic Organic Compounds (SOC)	Semiannually (Twice Per Year)
Total Coliform (TC)	Monthly
Unregulated Contaminants (UNREG)	Once Every 5 Years
Volatile Organic Compounds (VOC)	Annually
Total Organic Carbon (TOC)	Monthly

3.0 DEFINITIONS OF KEY TERMS

To gain a better understanding of the content of this report, several key terms must be defined. They are as follows:

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. Please note that MCLGs are goals and not regulatory limits. Public drinking water systems are not required to meet MCLGs.

Maximum Contaminant Level (MCL): 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. Contaminants in drinking water, if detected, must be present in levels below the MCLs in order for the system to be in compliance with state and federal regulations.

Monitoring Waivers: State or EPA permission to discontinue monitoring for a particular contaminant or contaminant group. Often, the state or EPA will grant monitoring waivers for systems that have consistently met regulatory limits. In the Edgewood Area, MDE has granted monitoring waivers for cyanide, nitrite, and asbestos, because the system has consistently exhibited concentrations well below regulatory MCLs.

In addition to monitoring for contaminants regulated by MCLs, our water system analyzes for contaminants (including lead and copper) governed by action levels (ALs) and those (such as turbidity) subject to treatment techniques. Therefore, the following definitions of these terms are provided below.

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

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

Turbidity: A measurement of the “cloudiness” of water.

4.0 ACRONYMS/TERMS USED IN THIS REPORT

Below is a listing of additional acronyms and terms (with explanations) used in this Consumer Confidence Report:

- ALAction Level
- CCR.....Consumer Confidence Report
- DBP.....Disinfection By-Products
- EPA.....Environmental Protection Agency
- FDA.....Food and Drug Administration
- HAA5Haloacetic Acids
- IOC.....Inorganic Contaminants
- L&CLead and Copper
- Level DetectedLaboratory analytical result for a contaminant; this value is evaluated against an MCL or Action Level to determine compliance.
- MCL.....Maximum Contaimiant Level

MCLG.....	Maximum Contaminant Level Goal
MDE.....	Maryland Department of the Environment
M&T	Microorganisms and Turbidity
NTU	Nephelometric turbidity unit – a measure of turbidity
ppm	Parts per million - a unit of measure analogous to a single penny in \$10,000
ppb.....	Parts per billion - a unit of measure analogous to a single penny in \$10,000,000
ppt	Parts per trillion – a unit of measure analogous to a single penny in \$10,000,000,000
pCi/L	Picocuries per liter – a measure of radioactivity in water
RAD	Radionuclides
Range	The range of the highest and lowest analytical values of a reported contaminant. For example, the range of reported analytical detections for an unregulated contaminant may be 10.1 ppm (lowest value) to 13.4 ppm (highest value). EPA requires this range to be reported.
SDWA.....	Safe Drinking Water Act - Federal law which sets forth drinking water regulations
SOC.....	Synthetic Organic Contaminants
TC	Total Coliform
TOC.....	Total Organic Carbon
TTHMs.....	Total Trihalomethanes - byproducts of drinking water disinfection
TT.....	Treatment Techniques
UNREG.....	Unregulated Contaminants
VOC	Volatile Organic Contaminants

5.0 DETECTED CONTAMINANTS

We routinely monitor for a number of contaminants in the water supply to meet regulatory drinking water compliance requirements. Table 2 lists the contaminants which were detected in the Edgewood Area drinking water distribution system during calendar year 2003 or, in some cases, during the most recent sampling period. The tables list only those contaminants that had some level of detection. Many other contaminants were also analyzed for, but were not detected in the Edgewood Area drinking water distribution system. In accordance with CCR regulations, we are required to report to you the contaminants detected in the water. **Note that none of the contaminants detected were present in levels greater than drinking water regulatory MCLs, ALs, or TTs.**

TABLE 2 – Contaminants Detected in the Edgewood Water Distribution System During Calendar Year 2003

CONTAMINANT (GROUP)	LEVEL DETECTED	MCL	RANGE	EXCEEDED STANDARD?	MCLG*	LIKELY SOURCE(S) OF CONTAMINANT
Barium (IOC)	0.031 ppm	2 ppm	NA	NO	2 ppm	Erosion of natural deposits.
Fluoride (IOC)	0.6 ppm	4 ppm	0.57 – 0.6 ppm	NO	4 ppm	Erosion of natural deposits; Water additive which promotes strong teeth.
Sodium (IOC)	30 ppm	20,000 ppm**	21.6 – 30 ppm	NO	NA	Erosion of natural deposits; runoff from road de-icer.
Nitrate (IOC)	3.2 ppm	10 ppm	2.3 – 3.2 ppm	NO	10 ppm	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Sulfate (IOC)	25.5 ppm	250 ppm	NA	NO	NA***	Erosion of natural deposits.
Atrazine (SOC)	0.0001 ppm	0.003 ppm	NA	NO	0.003 ppm	Runoff from herbicides used on crops.
Dalapon (SOC)	0.0001 ppm	0.2 ppm	NA	NO	0.2 ppm	Runoff from herbicide used on rights of way.
Pentachlorophenol (SOC)	0.00001 ppm	0.001 ppm	NA	NO	0 ppm	Discharge from wood preserving factories.
2,4,5 – TP (Silvex) (SOC)	0.00012ppm	0.05 ppm	NA	NO	0.05 ppm	Residue of banned herbicide.
Lead (L&C)	0.0027 ppm (90 th percentile value from the most recent round of sampling)	15 ppm (AL)	1 (# of sites that exceeded action level)	NO	15 ppm (AL)	Corrosion of household plumbing systems; erosion of natural deposits.
Copper (L&C)	0.110 ppm (90 th percentile value from the most recent round of sampling)	1.3 ppm (AL)	0 (# of sites that exceeded action level)	NO	1.3 ppm (AL)	Corrosion of household plumbing systems; Erosion of natural deposits.
Turbidity (M&T)	0.1 NTU (highest level detected in any single measurement)	At least 95% of monthly samples must be < 0.5 NTU (TT)	100% (lowest monthly percentage of samples meeting the limit)	NO	NA	Soil runoff.
Total Coliform (% of positive samples)	0%	<5%	0%	NO	0%	Naturally present in the environment.
Ethylene dibromide (SOC)	0.01 ppb	0.05 ppb	NA	NO	0 ppb	Discharge from petroleum refineries.
Gross Alpha (RAD)	2 pCi/L	15 pCi/L	NA	NO	0 pCi/L	Erosion of natural deposits.

CONTAMINANT (GROUP)	LEVEL DETECTED	MCL	RANGE	EXCEEDED STANDARD?	MCLG*	LIKELY SOURCE(S) OF CONTAMINANT
Nickel (UNREG)	0.0014 ppm	80 ppm	NA	NA	NA	Erosion of natural deposits.
TTHMs (VOC)	67.2 ppb	80 ppb (effective 2004)	2.2 – 97 ppb	NO	NA	By-product of drinking water chlorination.
HAA5 (VOC)	55.3 ppb	60 ppb (effective 2004)	Not Detected – 169.2 ppb	NO	NA	By-product of drinking water disinfection.
Chlorine	2.6 ppm	4 ppm	0.4 – 2.6 ppm	NO	4 ppm	Water additive to control microbes. Average was 1.7.

NA = not applicable

* Note that MCLG refers to a goal, not a regulatory limit. Contaminants detected must meet MCLs, Als, or TTs, not MCLGs.

** Note that the MCL for sodium is a Guidance Level only and is not enforceable.

*** Note that Sulfate is listed as a secondary contaminant and is regulated for aesthetic purposes only.

The EPA and the MDE require various reporting methodologies for different contaminants. A brief explanation of our reporting methodologies for the detected contaminants is provided below:

Barium, fluoride, sodium, sulfate, and nitrate are regulated under the inorganic contaminants (IOC) group. *Dalapon, atrazine, pentachlorophenol, silvex* and *ethlyene dibromide* are synthetic organic contaminants (SOC). *Gross alpha* is regulated under the RAD group. *Nickel* is included in the unregulated contaminants (UNREG) group. *TTHM* and *HAA5* are regulated under the Disinfection By-products Rule. CCR reporting regulations for all of these contaminants require us to report the highest detected concentration in the “Level Detected” column of Table 2 and the range of detected levels in the “Range” column, if applicable.

Lead and *copper* are regulated under the lead and copper (L&C) group. CCR reporting regulations for the L&C group require us to report the 90th percentile value of the most recent round of sampling in the “Level Detected” column of Table 2. In the Edgewood Area, a minimum of twenty (20) sites are required by EPA and MDE to be sampled for lead and copper during each sampling round. During the 2003 round of sampling, we sampled twenty-three (23) sites within the Edgewood Area drinking water distribution system. The 90th percentile value represents the concentration of lead and copper that ninety (90) percent of the sites (not values) were below. CCR regulations also require that the number of individual sites exceeding the action level be reported in the “Range” column of Table 2.

Turbidity is a measurement of the “cloudiness” of water. It is monitored because it is a good indicator of the effectiveness of our filtration system, which is a treatment technique for the removal of turbidity. High turbidity can also hinder the effectiveness of disinfectants. At least 95% of the turbidity measurements each month must be less than or equal to 0.5 NTU for our system to be in compliance with the regulatory treatment technique requirements. CCR reporting regulations require that we list the highest single turbidity reading obtained in the “Level Detected” column of Table 2. We are also required to report the lowest monthly percentage of samples meeting the turbidity limit in the column marked “Range”.

Total coliform is monitored to ensure that the treatment system is performing properly and that the drinking water we supply is free of microbial contamination. At least 95% of the samples each month must test negative for the presence of total coliform for our system to be in compliance with the regulatory treatment technique requirements. In accordance with CCR Regulations, the highest monthly number of samples testing positive for the presence of coliform must be reported in the “Level Detected” column of the reporting tables. We also report the lowest monthly percentage of samples meeting the treatment technique in the column marked “Range”.

6.0 CONTACT INFORMATION

This Consumer Confidence Report was prepared by Mr. Rich Wiggins of the Environmental Compliance Division (ECD) of the Directorate of Safety, Health and Environment (DSHE). For additional information regarding this report, please contact the following:

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