

# Special Announcement



National Aeronautics and  
Space Administration

**Goddard Space Flight Center**  
Wallops Flight Facility  
Wallops Island, Virginia 23337

No. *10-02*

Date: *June 30, 2010*

**Subject:** Annual Drinking Water Quality Report

The Wallops Flight Facility (WFF) operates public water systems regulated by the U.S. Environmental Protection Agency (EPA) and the Virginia Department of Health. These regulatory agencies require WFF to adhere to strict standards and to distribute a drinking water quality report, also known as a Consumer Confidence Report (CCR), to its customers.

The CCR is an annual report summarizing the quality of water that is provided to WFF employees, tenants and partners. It is written in an EPA required format and contains information including the levels of any contaminants detected in laboratory tests, explanation of any violations that occurred during the previous year, health related guidance, and sources to contact for additional information.

The top priority is to provide a safe and dependable supply of drinking water to all WFF employees, tenants, and partners. Annual testing for contaminants is conducted in pre-filtration locations. In calendar year (CY) 2009, laboratory results showed that elevated lead levels may still be present in the pre-filter water in some WFF buildings. The WFF Facilities Management Branch is continuing the operation of corrosion control systems to further reduce the pre-filter lead levels in WFF's drinking water. Additionally, activated carbon filters are installed and maintained on all water fountains and kitchen sinks. A filter maintenance program is in operation to ensure the filters are effective. After filtration, WFF's water has proven to be of the same quality as bottled water.

As a WFF employee and customer served by the water system, please take a minute to read the enclosed CY 2009 CCR. The report provides valuable information about the water you drink at the WFF Main Base. If you have any questions or concerns regarding this announcement, please contact Mr. Peter Laurin of the Environmental Office at extension 1327. Please contact WICC Customer Service at extension 4357 (HELP), for water filter service.

A handwritten signature in black ink, appearing to read "Caroline R. Massey". The signature is fluid and cursive.

Caroline R. Massey  
Assistant Director of Management Operations

Enclosure

Distribution: 100 200 400 500 600 700 800 Contractors



**GODDARD SPACE FLIGHT CENTER  
WALLOPS FLIGHT FACILITY  
MAIN BASE WATERWORKS**

## 2009 Drinking Water Quality Report

This Annual Drinking Water Quality Report for Calendar Year (CY) 2009 is designed to inform you about the drinking water quality on Wallops Flight Facility's (WFF) Main Base. Our goal is to provide a safe, dependable drinking water supply. The drinking water must meet Federal and State requirements as administered by the U.S. Environmental Protection Agency (EPA) and the Virginia Department of Health (VDH).

If you have questions about this report or wish to obtain additional information about any aspect of your drinking water, please contact: **Peter Laurin of the Environmental Office at (757) 824-1327 or Peter.J.Laurin@nasa.gov.**

### General Information

As water travels over the ground surface or through the soil, it dissolves naturally occurring minerals, and can pick up substances resulting from the presence of animals, or from human activities. All drinking water, including bottled drinking water, may reasonably be expected to contain very small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk.

The sources of all drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. Contaminants that may be present in source water include: (1) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. (2) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming. (3) Pesticides and herbicides, which may come from a variety of sources including agriculture, urban storm water runoff, and residential uses. (4) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and also from fueling stations, urban storm water runoff, and septic systems.

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. The EPA and the Centers for Disease Control and Prevention (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 at (800)-426-4791.**

In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants allowed in water provided by public water systems. The U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

### Sources and Treatment of Your Drinking Water

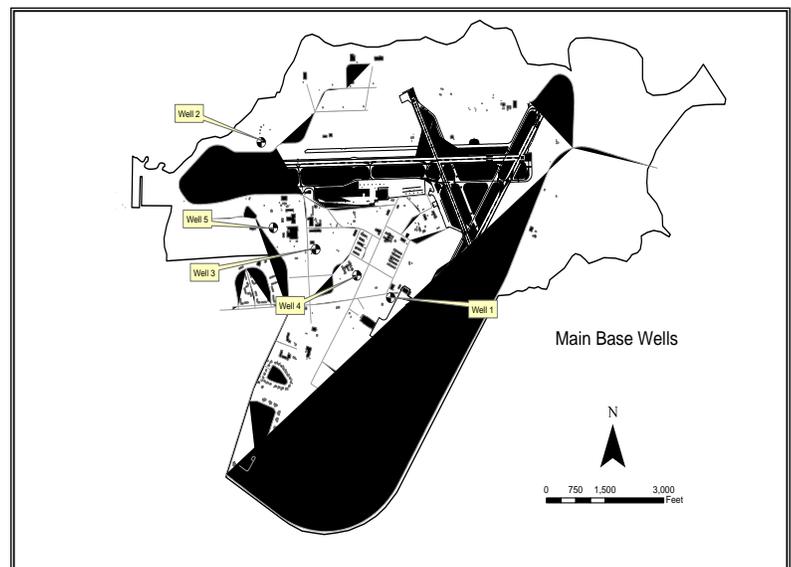
The sources of your drinking water are five groundwater wells on the Main Base, as described and shown in the map below:

- Well #1** – Between Buildings E134 and N159; this well is 260 feet deep.
- Well #2** – Between Bldg. D12 and runway 10-28; this well is 150 feet deep.
- Well #3** – Between Bldg. F157 and Storage Bldg.; this well is 253 feet deep.
- Well #4** – Between Bldg. F160 and Tennis Court; this well is 265 feet deep.
- Well #5** – Between Bldg. F10 and H-100; this well is 260 feet deep.

### How is our water treated?

The groundwater sources are not required to be chlorinated unless there is a potential source of contamination, the water fails to meet the bacteriological quality standards, or the supply is under the direct influence of surface water.

WFF chooses to treat its groundwater supply by chlorination, although it is not required. However, since WFF chooses to treat by chlorination, the VDH recommends that it maintain a residual chlorine level between 0.1-0.5 mg/L throughout the distribution system.



## DRINKING WATER MONITORING

Our drinking water is routinely monitored in accordance with Federal and State regulations. The table lists only those contaminants that have had some level of detection within the past 5 years. Many other contaminants have been analyzed, but they were either not present or were below the laboratory equipment detection limits. Contaminants below detection limits are not usually of concern.

State regulators allow WFF to monitor several contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data in the table to the right is more than one year old, but is still considered accurate for these contaminants. The table shows monitoring results from December 2004 through December 2009.

## Water Quality Data Summary

### How to Read This Table

Our water is tested to ensure its safe. The column marked **GOAL** shows the Maximum Contaminant Level Goal or **MCLG**. This 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 or safety.

The column marked **Maximum Allowed** is the Maximum Contaminant Level or **MCL**. This is the highest concentration 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 Residual Disinfectant Level (MRDL)** is the highest concentration of a residual disinfectant that is allowed in drinking water.

**Maximum Residual Disinfectant Level Goal (MRDLG)** is the concentration of residual disinfectant below which there is no known or expected risk to health. **MRDLGs** allow for a margin of safety.

**Non-detect (ND)** – the contaminant concentration was below the detection limit.

**Parts per million (ppm) or Milligrams per liter (mg/L)** 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.

**Total Trihalomethanes (TTHM)** – The sum of the four trihalomethane compounds that can form in drinking water by the addition of chlorine.

**Haloacetic Acid (HAA5)** – The sum of the five haloacetic acids that can form in drinking water by the addition of chlorine.

The column marked **DETECTED LEVEL** shows the concentration observed in our water during the most recent round of testing.

**SOURCE OF SUBSTANCE** Explains the typical natural or manmade origins of the contaminant.

**ACTION LEVEL (AL)** is the contaminant concentration which, if exceeded, triggers treatment or other requirements which a water system must follow.

Contaminants Regulated (Units)	Goal (MCLG)	Max. Allowed (MCL)	Detected Level	Range of Levels Tested	Violation	Date of Sample	Sources of Substance
TTHM <sup>1</sup> (ppb)	0	80	78	57-92	No	12/15/09	By-product of drinking water chlorination
HAA5 <sup>2</sup> (ppb)	0	60	29	4-47	No	12/15/09	By-product of drinking water chlorination
Chlorine (ppm)	4 MRDL	4 MRDLG	0.39	0.01-1.61	No	CY 2009	Water additive to control microbes
Copper <sup>3</sup> (ppm)	1.3	AL=1.3	0.270	ND-0.457	No	09/02/09	Corrosion of house-hold plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead, Pb <sup>4</sup> (ppb)	0	AL=15	17	ND-92.7	Yes	09/02/09	Corrosion of household plumbing systems; Erosion of natural deposits

### TABLE FOOTNOTES

<sup>1</sup>The Detected Level represents a running quarterly average. Although 1 sample was above the primary MCL, compliance was achieved as subsequent samples reduced the quarterly annual average.

<sup>2</sup>The Detected Level represents a running quarterly average. Samples collected CY 2009 were 29 ppb.

<sup>3</sup>The Detected Level represents the 90th percentile value. None of the 10 samples tested for copper exceeded the current Action Level of 1.3 ppm.

<sup>4</sup>The Detected Level represents the 90th percentile value. Two of the 10 samples tested for lead exceeded the current Action Level of 15 ppb.

**Note:** The results for lead (Pb) exceeded the action level for Lead and copper Rule during September 2009.

Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

WFF issued a notice to inform the consumers that some taps have elevated lead levels. Filters were placed on drinking water fountains and kitchen faucets to remove metals, including lead. Since August 2005, the WFF waterworks has been adding small amounts of zinc orthophosphate to the water distribution system. Zinc orthophosphate forms a protective lining inside pipes and plumbing fixtures to prevent metals such as lead and copper from leaching into drinking water. It is VDH approved, recognized as safe by the Food and Drug Administration, and is certified for use in drinking water treatment by NSF International. Additional information regarding lead and zinc orthophosphate in WFF's drinking water has been distributed to all employees and the documents are also posted on bulletin boards in all WFF buildings. To receive additional copies contact **Peter Laurin of the Environmental Office at (757) 824-1327 or Peter.J.Laurin@nasa.gov.**

**Additional Information of Interest:**

The Virginia Department of Health conducted a Source Water Assessment of the NASA Wallops Flight Facility Waterworks in 2002. Well #1, Well #2, Well #3, Well #4, and Well #5 were determined to be of low susceptibility to contamination using the criteria developed by the VDH in its approved Source Water Assessment Program. The assessment report consists of maps showing the Source Water Assessment area, an inventory of known Land Use Activity Sites in Zone 1, a Susceptibility Explanation Chart, and Definitions of Key Terms. The report is available by contacting **Peter Laurin of the Environmental Office at (757) 824-1327 or Peter.J.Laurin@nasa.gov.**

**Other drinking water constituents of interest are as follows:**

The 2009 test for iron in the water indicated a level of 0.139 mg/L. The Secondary MCL for iron is 0.3 mg/l. Iron can be an objectionable constituent in water supplies for domestic or industrial use. Iron may impart brownish discolorations to laundered goods. The taste it imparts to water may be described as bitter or astringent, and may adversely affect the taste of other beverages. Human diets contain 7 to 35 milligrams of iron per day, and average 16 milligrams per day. The allowable amount of iron in drinking water constitutes only a small fraction of the amount normally consumed and does not have toxicological significance.

The 2009 test for zinc in the water indicated a level of 0.719 mg/L. The Secondary MCL for zinc is 5 mg/L. Zinc is an essential and beneficial element in human metabolism and levels in water below the SMCL do not cause serious health effects. Above the SMCL, it may produce taste in water that is described as bitter or astringent. Zinc is naturally occurring in the environment; however, the level of 1.78 mg/L reported for the subject system is likely due to the addition of a corrosion inhibitor.

**Additional Health Information:**

Certain contaminants (such as Cryptosporidium, Radon, Arsenic, Nitrate, THM, and Lead), if present in your drinking water, may be of special concern to consumers.

**Trihalomethanes (THMs) are present.**

THMs are by-products of drinking water chlorination. **WFF is in compliance** with the primary MCL. However, it should be noted that some people who drink water containing THMs in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system and have an increased risk of cancer.

**Lead (Pb) is present.**

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. NASA Wallops Flight Center is 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 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>.

**Note: WFF personnel have equipped all drinking water sources, including fountains and kitchen faucets, with filters that have been proven to capture lead. Please make use of potable water sources equipped with filters for drinking, cooking, etc.**



**Water Conservation –**  
***Simple steps to save water and lower your bill:***

- Report leaks in faucets, toilets, and hoses by calling the WICC Help Desk @ extension 4357.
- Run your clothes washer and dishwasher only when full.
- Take shorter showers.
- Turn off the water while you brush your teeth, shave and shampoo your hair.

*Additional information on how you can help conserve water and protect your water supply can be found at the EPA's website <http://www.epa.gov/owm/water-efficiency/index.htm>.*

This Drinking Water Quality Report was prepared by:

