Annual Water Consumer Confidence Report

Dix Drinking Water System on
Joint Base McGuire-Dix-Lakehurst
Public Water System ID No. 0325001

Monitoring Period:
January 1, 2011 – December 31, 2011

Is my water safe?

Yes. Last year, the tap water in the Dix water system did not violate any maximum contaminant levels (MCL)s of primary water quality standards. This report is being distributed to you, the consumer, to provide you with information to allow you to make personal health-based decisions regarding drinking water consumption. The report will provide you with definitions so you understand the material presented. Additionally, this report will provide you with the sampling data for the water system and discuss the health concerns for each contaminant detected in the system.

Where does my water come from?

The water for the Dix system is pumped from the Rancocas Creek and the Potomac-Raritan-Magothy (PRM) Aquifer System. Water from the Rancocas Creek is classified by the State of New Jersey, Bureau of Safe Drinking Water, as Fresh Waters, Category Two (FW-2) Non-Trout. Dix is currently permitted to divert groundwater from groundwater wells located within the Dix cantonment area. The US Geological Survey Dept operates a stream gauging station at the point of entry from Rancocas Creek to monitor stream flows and water quality parameters. This real-time monitoring ensures any potential health risks from low stream flow and pollution sources are prevented by informing the water plant operations.

The Dix Water Filtration Plant is a conventional rapid sand filter plant consisting of the following unit operations: rapid mixing, flocculation (a process where solids in water aggregate through chemical action so they can be separated from water), sedimentation (solids settling by gravity), and multimedia filtration. The water is treated at the Water Filtration Plant with aluminum sulfate for flocculation and clarification. The main source of raw water for the Water Filtration Plant is the Rancocas Creek. If a shutdown is required for filtration plant maintenance or the stream flow falls below the specified limit, the facility production can be supplemented with groundwater from wells to maintain an adequate water supply.

Source Water Assessments

The New Jersey Department of Environmental Protection (NJDEP) has prepared Source Water Assessment Reports and Summaries for all public water systems. Further information on the Source Water Assessment Program can be obtained by logging onto NJDEP's source water assessment web site at www.state.nj.us/dep/swap or by contacting NJDEP's Bureau of Safe Drinking Water at

(609) 292-5550. You may also contact your public water system through the Joint Base Public Affairs office, 87 ABW/PA, at (609) 754-2104.

Sources of Drinking Water Contamination

Sources of drinking water (both tap water and bottled water) may 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. Regulated substances 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 compounds, including synthetic and volatile organic compounds, which are by-products 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.

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

The Safe Drinking Water Act regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for asbestos, radiological, volatile organic compounds, and synthetic organic compounds. Our system received monitoring waivers for asbestos, radiological, and synthetic organic compounds because prior samplings have demonstrated that these substances were not detected in our source 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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791).

Source Water Assessment Summary

A NJ state review of potential contamination sources near Joint Base McGuire-Dix-Lakehurst has assessed a low rating for: pathogens, nutrients, pesticides, volatile organic compounds, inorganics, radon, disinfection byproduct precursors. Radionuclides were rated medium to low potential.

Do I need to take special precautions?

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. EPA/Centers 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 Water Drinking Hotline (800-426-4791).

Additional Information for Lead

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. Joint Base McGuire-Dix-Lakehurst (JB MDL) 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 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

Water Quality Data Table

The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently.

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Range Low	Range High	Sample Date	Violation	Typical Source
Disinfectants & Disinfectant By-Products								
(There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants)								
Chlorine (as Cl2)	4	4	1.53	0.90	2.50	2011	No	Water additive used to control microbes
TTHMs [Total Trihalomethanes] (ppb)	NA	80	39.18	10.70	67.40	2011	No	By-product of drinking water disinfection

Total Organic Carbon(% Removal)	NA	TT	75.18	NA		2011	No	Naturally present in the environment
Haloacetic Acids (HAA5) (ppb)	NA	60	25.98	6.14	40.02	2011	No	By-product of drinking water chlorination
Inorganic Contaminants								
Barium (ppm)	2	2	0.025	NA		2011	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Sodium (optional) (ppm)		50	5.4	NA		2011	No	Erosion of natural deposits; Leaching
Cadmium (ppb)	5	5	0.00005	NA		2011	No	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; runoff from waste batteries and paints
Fluoride (ppm)	4	4	0.62	NA		2011	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Lead and Copper								
Lead	0	15 ppb	12.7 ppb	NA		2009	No	Corrosion of household plumbing systems
Copper	1.3 ppm	1.3 ppm	0.497 ppm	NA		2009	No	Corrosion of household plumbing systems. Erosion of natural deposits.
Microbiological Contaminants								
Total Coliform (positive samples/month)	0	0	0	NA		2011	No	Naturally present in the environment
Turbidity (NTU)	NA	0.3	99	NA		201	No	Soil runoff
99% of the samples were below the TT value of 0.3. A value less than 95% constitutes a TT violation. The highest single measurement was 1. Any measurement in excess of 1 is a violation unless otherwise approved by the state.								

Unit Descriptions	
Term	**Definition**
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
positive samples	positive samples/yr: The number of positive samples taken that year
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.

Important Drinking Water Definitions	
Term	**Definition**
MCLG	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	MCL: Maximum Contaminant Level: 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.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Variances and Exemptions	Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	MRDLG: Maximum residual disinfection level goal. 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.
MRDL	MRDL: Maximum residual disinfectant level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

Additional Information about Iron in Drinking Water

During 2011 and first quarter of 2012 the Dix system experienced issues with iron corrosion of old drinking water lines in the 5400 and 5600 blocks of the Dix base area. Iron is not a primary contaminant because it is not toxic as defined by the EPA. Iron has a secondary drinking water standard because even though we need iron as a nutrient, it is not desirable to drink it due to the color, taste and odor. That's why the EPA does not enforce it as a primary rule but sets the goal limit for aesthetic quality. Iron discoloration was present in tap samples and base Bioenvironmental and Civil Engineering took action to address concerns from residents near that area. Civil Engineering fixed hydrants and valves to increase water flow and has a renovation plan to replace the iron water distribution lines. Please see the EPA's site about iron corrosion here: http://www.epa.gov/nrmrl/wswrd/cr/corr_res_iron.html

How can I get Involved?

The Consumer Confidence Report was prepared by Joint Base Water Working Group members from the 87th Medical and Mission Support Groups and United Communities Housing Office. We welcome your questions and comments about the water quality from the Dix system. Any questions regarding this report or the quality of Dix tap water should be directed to the Public Affairs office at 754-2104, Bioenvironmental Engineering at 754-9057 or Civil Engineering at 562-2189. Copies of this report are available in the following locations: Base Library, United Communities Housing Office, Warfighter and Family Readiness Center, Medical Group's Bioenvironmental Office and Civil Engineering Offices.

The public website for the JBMDL installation posted links to the reports here:
http://www.jointbasemdl.af.mil/consumerconfidencereports.asp