

## Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish 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 these contaminants does not necessarily indicate that the water poses a health risk.

The sources of drinking water (both tap water and bottled water) 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 substances resulting from the presence of animals or from human activity. 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 operation, or wildlife;

**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may result from urban stormwater 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 stormwater runoff and residential uses;

**Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and may also come from gas stations, urban stormwater runoff and septic systems;

**Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

### CAMP LEJEUNE WATER DISTRIBUTION ZONES



## 2009 Annual Water Quality Report

### Courthouse Bay Water Treatment System



PWSID# 04-67-047



## Water Conservation

You can play a role in conserving water by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water (Indoor savings are based on a family of two adults and one child). Here are a few tips;

- Run only full loads in dishwasher and washing machine. Saves 300-800 gallons per month
- Turn off the tap when brushing your teeth. Saves three gallons each day
- Check every faucet in your home for leaks. Just a slow drip can waste 15-20 gallons a day
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak
- Don't use your toilet as an ashtray or wastebasket. Saves 400-600 gallons per month
- Don't run the hose while washing your car. Use a bucket of water and a quick hose rinse at the end. Saves 150 gallons each time
- Adjust your sprinklers so that water lands on your lawn or garden where it belongs – and only there. Saves 150 gallons per month
- Water your lawn during the cool parts of the day. Saves 300 gallons

## Questions?

For more information about this report, or for any questions relating to your drinking water, please call Brynn Ashton (EMD) at (910) 451-9385

## Supplementary Constituents Sampling

As part of our commitment to ensure that we are providing the safest, most reliable drinking water possible to our Base population, Marine Corps Base (MCB) Camp Lejeune has monitored drinking water for compounds found in explosives (nitroaromatics, nitramines, nitrate esters) and perchlorate, in finished water since 2004. These compounds, commonly known as "munitions constituents," are used in the manufacture of explosives or are the breakdown products of compounds used in explosives. Routine monthly sampling in 2009 detected a trace of one munition's constituent at the Courthouse Bay water treatment system.

Additionally, MCB Camp Lejeune sampled finished water monthly for Volatile Organic Contaminants (VOCs) and some Synthetic Organic Contaminants (SOCs), including herbicides. This sampling was done in addition to that required by current regulations. Detections of these constituents were well below the maximum contaminant levels (MCLs) at the Courthouse Bay water treatment system in 2009.

## Lead and 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. USMC Camp Lejeune – Courthouse Bay is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has settled for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes 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 the EPA website <http://www.epa.gov/safewater/lead>.

## Meeting the Challenge

Marine Corps Base (MCB) Camp Lejeune is committed to providing you with drinking water that is safe and reliable. We believe that providing you with accurate information about your water is the best way to assure you that your water is safe. This 2009 Water Quality Report for the Courthouse Bay water treatment system is a snapshot of last year's water quality. Included are details about where your water comes from and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and to providing you with this information, because informed customers are our best allies. In 2009, the Courthouse Bay water treatment system met all U.S. Environmental Protection Agency (EPA) and State drinking water health standards.

## Important Health Information

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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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.

## Sampling Results

We routinely monitor for more than 150 contaminants in your drinking water according to federal and State laws. The tables below, Regulated and Unregulated Substances, lists all the drinking water contaminants that we detected for the particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. Unless otherwise noted, the data presented in these tables are from testing done January 1 through December 31, 2009. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Although it is not required, in order to ensure the safety of your drinking water, MCB Camp Lejeune sampled finished water each month for Volatile Organic Contaminants (VOCs), some Synthetic Organic Contaminants (SOCs) including herbicides, and munitions constituents. There was a trace amount of one regulated contaminant and one unregulated contaminant, as indicated below.

### REGULATED SUBSTANCES

Substance (Unit of Measure)	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low-High	Violation	Typical Source
Fluoride (ppm)	2009	4	4	0.12	NA	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids <sup>1</sup> [HAA] (ppb)	2009	60	NA	34.6	24-57	No	By-product of drinking water disinfection
Total Trihalomethanes <sup>1</sup> [TTHMs] (ppb)	2009	80	NA	58.6	42-97	No	By-product of drinking water disinfection

Tap Water Samples were collected from 10 sample sites throughout the community for Copper and Lead. Results are shown in the table below

Substance (Unit of Measure)	Year Sampled	Action Level	MCLG	Amount Detected 90th Percentile	Sites Above Action Level	Violation	Typical Source
Copper (ppm)	2008	1.3	1.3	0.24	0	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2008	15	0	5	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

### Synthetic Organic Contaminants including Herbicides

Substance (Unit of Measure)	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low-High	Violation	Typical Source
Dalapon <sup>2</sup> (ppb)	2009	200	200	0.91J	0.90 - 0.91J	No	Runoff from herbicide used on rights of way

### UNREGULATED SUBSTANCES

Substance (Unit of Measure)	Year Sampled	Amount Detected	Range Low-High	Typical Source
1,3,5-Trinitrobenzene (ppb)	2009	0.19	Only value	Munitions Constituent

#### Footnote:

<sup>1</sup> This is a running average

<sup>2</sup> "J" indicates an estimated value, which is a value below reporting limit but above method detection limit (MDL)

## Definitions

### Amount Detected (90th percentile):

Indicates that at least 90% of all of the samples tested were equal to, or below, the amount detected.

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

**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.

**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.

**MDL (Method Detection Limit):** The lowest concentration of a contaminant detectable in drinking water utilizing an approved method.

**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.

**MRDLG (Maximum Residual Disinfectant 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.

NA: Not applicable

**ND (Not Detected):** Indicates that a substance was not found by laboratory analysis.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

**ppm (parts per million):** One part substance per million part water (or milligrams per liter).

## Source Water Assessment Program (SWAP) Results

The North Carolina Department of Environment and Natural Resources (NCDENR), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (Well or surface water intake) to Potential Contaminant Sources (PCSs). The results of the assessment are available in SWAP reports that include maps, background information, and a relative susceptibility rating of Higher, Moderate or Lower. The relative susceptibility rating of each source for Courthouse Bay water treatment system was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area). The assessment findings based on SWAP report completed on March 15, 2010, are summarized in the table below:

Courthouse Bay Drinking Water Supply Wells	
Source Name	Susceptibility Rating
BB 44	Lower
BB 47	Moderate
BB 218	Lower
BB 220	Higher
BB 221	Lower
BB 280	Lower
BB 281	Moderate

The complete SWAP report for the Courthouse Bay water treatment system may be viewed on the Web at <http://www.deh.enr.state.nc.us/pws/swap>. Please note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this Web site may differ from the results that were available at the time this report was prepared. To obtain a printed copy of this report, please mail a written request to Source Water Assessment Program Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email request to [swap@ncmail.net](mailto:swap@ncmail.net). Please indicate your system name, PWSID, and provide your name, mailing address, and phone number. If you have any questions about the SWAP report please contact the Source Water Assessment staff by phone at (919) 715-2633.

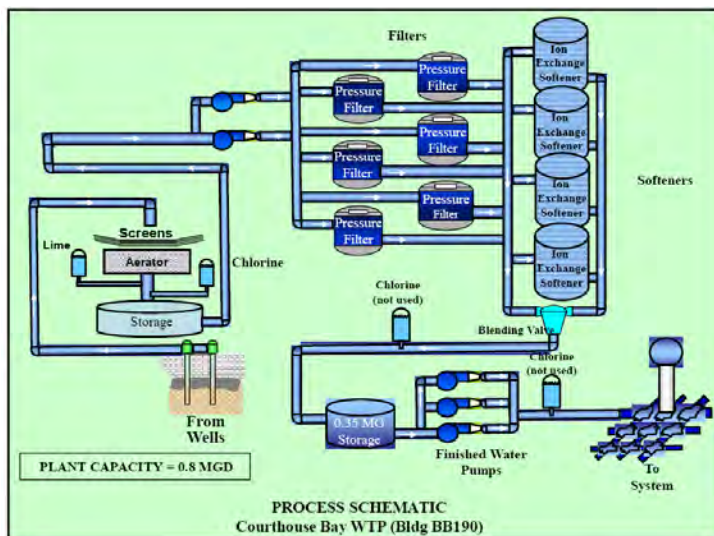
**It is important to understand that a susceptibility rating of "higher" does not imply poor water quality, only the system's potential to become contaminated by PCSs in the assessment area.**

### When You Turn on Your Tap, Consider the Source

The Courthouse Bay community water system obtains water from seven (7) groundwater wells. Groundwater is pumped from the Castle Hayne aquifer approximately 180 feet below the ground.

## Water Treatment Process

Groundwater is pumped from the wells to a detention basin (storage) located at the Courthouse Bay Water Treatment Plant. As the water enters the detention basin, air is forced (aeration) into the cascading water, then hydrated lime is added to raise the pH of the water, along with sodium hypochlorite, which is used to protect against microbial contamination. This water is then pumped to a series of pressure filters to remove particles. After filtration, the water passes through a set of softening units to remove minerals and then is stored in a large tank called a reservoir. When water is needed by customers, it is pumped from the reservoir and distributed throughout the Courthouse Bay community water system.





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**Pesticides and Herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses;

**Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and may also come from gas stations, urban stormwater runoff and septic systems;

**Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

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### CAMP LEJEUNE WATER DISTRIBUTION ZONES



## 2009 Annual Water Quality Report

### MCAS New River Water Treatment System



PWSID# 04-67-042



## Water Conservation

You can play a role in conserving water by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water (Indoor savings are based on a family of two adults and one child). Here are a few tips;

- Run only full loads in dishwasher and washing machine. Saves 300-800 gallons per month
- Turn off the tap when brushing your teeth. Saves three gallons each day
- Check every faucet in your home for leaks. Just a slow drip can waste 15-20 gallons a day
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak
- Don't use your toilet as an ashtray or wastebasket. Saves 400-600 gallons per month
- Don't run the hose while washing your car. Use a bucket of water and a quick hose rinse at the end. Saves 150 gallons each time
- Adjust your sprinklers so that water lands on your lawn or garden where it belongs – and only there. Saves 150 gallons per month
- Water your lawn during the cool parts of the day. Saves 300 gallons

## Questions?

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## Supplementary Constituents Sampling

As part of our commitment to ensure that we are providing the safest, most reliable drinking water possible to our Base population, Marine Corps Base (MCB) Camp Lejeune has monitored drinking water for compounds found in explosives (nitroaromatics, nitramines, nitrate esters) and perchlorate, in finished water since 2004. These compounds, commonly known as "munitions constituents," are used in the manufacture of explosives or are the breakdown products of compounds used in explosives. Routine monthly sampling in 2009 did not detect any munitions constituents at the MCAS New River water treatment system.

Additionally, MCB Camp Lejeune sampled finished water monthly for Volatile Organic Contaminants (VOCs) and some Synthetic Organic Contaminants (SOCs), including herbicides. This sampling was done in addition to that required by current regulations. Detections of these constituents were well below the maximum contaminant levels (MCLs) at the MCAS New River water treatment system in 2009.

## Lead and 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. USMC Camp Lejeune – MCAS New River is responsible for providing high quality drinking water, but cannot control the variety of materials in plumbing components. When your water has settled 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 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 the EPA website <http://www.epa.gov/safewater/lead>.

## Meeting the Challenge

Marine Corps Base (MCB) Camp Lejeune is committed to providing you with drinking water that is safe and reliable. We believe that providing you with accurate information about your water is the best way to assure you that your water is safe. This 2009 Water Quality Report for the MCAS New River water treatment system is a snapshot of last year's water quality. Included are details about where your water comes from and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and to providing you with this information, because informed customers are our best allies. In 2009 the MCAS New River water treatment system met all U.S. Environmental Protection Agency (EPA) and State drinking water health standards.

## Important Health Information

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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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.

# Sampling Results

We routinely monitor for more than 150 contaminants in your drinking water according to federal and State laws. The table below, Regulated Substances, lists all the drinking water contaminants that we detected for the particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. Unless otherwise noted, the data presented in these tables are from testing done January 1 through December 31, 2009. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Although it is not required, in order to ensure the safety of your drinking water, MCB Camp Lejeune sampled finished water each month for Volatile Organic Contaminants (VOCs), some Synthetic Organic Contaminants (SOCs) including herbicides, and munitions constituents. There was a trace amount of one contaminant, as indicated below.

## REGULATED SUBSTANCES

Substance (Unit of Measure)	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low-High	Violation	Typical Source
Beta/Photon Emitters <sup>1</sup> (pCi/L)	2008	50	0	8.5	NA	No	Decay of natural and man-made deposits
Fluoride (ppm)	2009	4	4	0.34	NA	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids <sup>2</sup> [HAA] (ppb)	2009	60	NA	23.3	19-32	No	By-product of drinking water disinfection
Total Trihalomethanes <sup>2</sup> [TTHMs] (ppb)	2009	80	NA	36.3	29-41	No	By-product of drinking water disinfection
Total Coliform Bacteria (No. of positive samples)	2009	One positive sample per month <sup>3</sup>	0	2*	NA	No	Naturally present in the environment

Tap Water Samples were collected from 60 sample sites throughout the community for Copper and Lead. Results are shown in the table below.

Substance (Unit of Measure)	Year Sampled	Action Level	MCLG	Amount Detected 90th Percentile	Sites Above Action Level	Violation	Typical Source
Copper (ppm)	2009	1.3	1.3	0.425	0	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2009	15	0	6	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

## Synthetic Organic Contaminants including Herbicides

Substance (Unit of Measure)	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low-High	Violation	Typical Source
Dalapon <sup>1</sup> (ppb)	2009	200	200	0.36J	Only value	No	Runoff from herbicide used on rights of way

**Footnote:**  
<sup>1</sup> The USEPA considers 50 pCi/L to be the level of concern for beta particles  
<sup>2</sup> This is a running average  
<sup>3</sup> For a system collecting fewer than 40 samples/month. If 40 or more samples/month collected, up to 5% total coliform positive samples allowed  
<sup>4</sup> J indicates an estimated value, which is a value below reporting limit but above method detection limit (MDL)  
 \* Both in the same month, however, 48 total samples were collected for that month; 2 positives are less than 5% maximum allowable rate

# Definitions

**Amount Detected (90th percentile):** Indicates that at least 90% of all of the samples tested were equal to, or below, the amount detected.

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**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.

**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.

**MDL (Method Detection Limit):** The lowest concentration of a contaminant detectable in drinking water utilizing an approved method.

**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.

**MRDLG (Maximum Residual Disinfectant 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.

NA: Not applicable

ND (Not Detected): Indicates that a substance was not found by laboratory analysis.

pCi/L (picocuries per liter): A measure of radioactivity

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million part water (or milligrams per liter).

# Source Water Assessment Program (SWAP) Results

The North Carolina Department of Environment and Natural Resources (NCDENR), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (well or surface water intake) to Potential Contaminant Sources (PCSs). The results of the assessment are available in SWAP reports that include maps, background information, and a relative susceptibility rating of Higher, Moderate or Lower. The relative susceptibility rating of each source for MCAS New River water treatment system was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area). The assessment findings based on the SWAP report completed on March 15, 2010, are summarized in the table below:

MCAS, New River Drinking Water Supply Wells	
Source Name	Susceptibility Rating
AS 190	Moderate
AS 191	Moderate
AS 5001	Moderate
TC 1253	Moderate
TC 600	Moderate
VL 101	Moderate
VL 102	Moderate
VL 103	Moderate
VL 104	Moderate
VL 105	Lower

The complete SWAP report for the MCAS New River water treatment system may be viewed on the web at <http://www.deh.enr.state.nc.us/pws/swap>. Please note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this Web site may differ from the results that were available at the time this report was prepared. To obtain a printed copy of this report, please mail a written request to Source Water Assessment Program Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email the request to [swap@ncmail.net](mailto:swap@ncmail.net). Please indicate your system name, PWSID, and provide your name, mailing address, and phone number. If you have any questions about the SWAP report please contact the Source Water Assessment staff by phone at (919) 715-2633.

It is important to understand that a susceptibility rating of "higher" does not imply poor water quality, only the system's potential to become contaminated by PCSs in the assessment area.

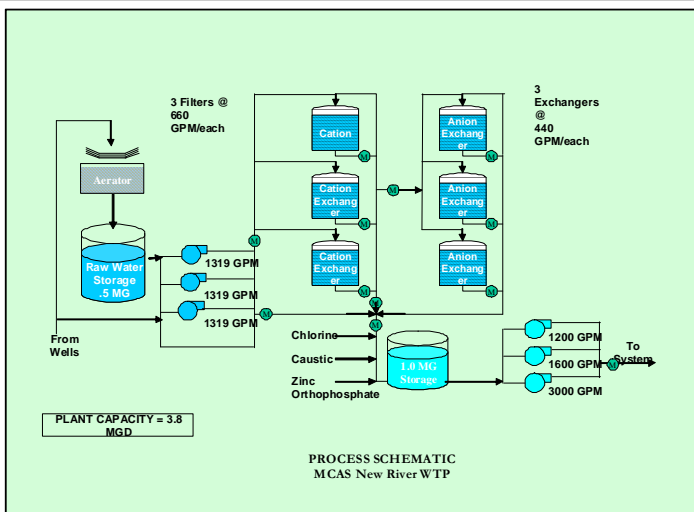
## When You Turn on Your Tap, Consider the Source

The MCAS New River community water system obtains water from 10 groundwater wells located in the MCAS New River and Verona Loop area. Groundwater is pumped from the Castle Hayne freshwater aquifer approximately 180 feet below the ground.

# Water Treatment Process

Since January 2008, a new 3.8 million gallons per day (MGD) ion exchange water treatment plant has been in operation, which replaced an older water treatment plant. This improved service and drinking water quality.

Groundwater is pumped from the drinking water supply wells to a detention basin (reservoir) located at the MCAS New River Water Treatment Plant. Water is pumped to the top of the reservoir and cascades down providing aeration. This water is then pumped to a series of cation and anion exchange (softeners) to remove particles. Chlorine, caustic and zinc orthophosphate are added to the water before it enters the finished water reservoir. When water is needed by customers, it is pumped from the reservoir and distributed throughout the MCAS New River community water system.





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**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may result from urban stormwater 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 stormwater runoff and residential uses;

**Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and may also come from gas stations, urban stormwater runoff and septic systems;

**Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

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### CAMP LEJEUNE WATER DISTRIBUTION ZONES



## 2009 Annual Water Quality Report

### Holcomb Boulevard Water Treatment System



PWSID# 04-67-043



## Water Conservation

You can play a role in conserving water by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water (Indoor savings are based on a family of two adults and one child). Here are a few tips;

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- Don't use your toilet as an ashtray or wastebasket. Saves 400-600 gallons per month
- Don't run the hose while washing your car. Use a bucket of water and a quick hose rinse at the end. Saves 150 gallons each time
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## Supplementary Constituents Sampling

As part of our commitment to ensure that we are providing the safest, most reliable drinking water possible to our Base population, Marine Corps Base (MCB) Camp Lejeune has monitored drinking water for compounds found in explosives (nitroaromatics, nitramines, nitrate esters) and perchlorate, in finished water since 2004. These compounds, commonly known as "munitions constituents," are used in the manufacture of explosives or are the breakdown products of compounds used in explosives. Routine monthly sampling in 2009 did not detect any munitions constituents at the Holcomb Boulevard water treatment system.

Additionally, MCB Camp Lejeune sampled finished water monthly for Volatile Organic Contaminants (VOCs) and some Synthetic Organic Contaminants (SOCs), including herbicides. This sampling was done in addition to that required by current regulations. Detections of these constituents were well below the maximum contaminant levels (MCLs) at the Holcomb Boulevard water treatment system in 2009.

## Lead and 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. USMC Camp Lejeune – Holcomb Boulevard is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has settled 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 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 the EPA website <http://www.epa.gov/safewater/lead>.

## Meeting the Challenge

Marine Corps Base (MCB) Camp Lejeune is committed to providing you with drinking water that is safe and reliable. We believe that providing you with accurate information about your water is the best way to assure you that your water is safe. This 2009 Water Quality Report for the Holcomb Boulevard water treatment system is a snapshot of last year's water quality. Included are details about where your water comes from and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and to providing you with this information, because informed customers are our best allies. In 2009, the Holcomb Boulevard water treatment system met all U.S. Environmental Protection Agency (EPA) and State drinking water health standards.

## Important Health Information

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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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.

## Sampling Results

We routinely monitor for more than 150 contaminants in your drinking water according to federal and State laws. The table below, Regulated Substances, lists all the drinking water contaminants that we detected for the particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. Unless otherwise noted, the data presented in these tables are from testing done January 1 through December 31, 2009. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Although it is not required, in order to ensure the safety of your drinking water, MCB Camp Lejeune sampled finished water each month for Volatile Organic Contaminants (VOCs), some Synthetic Organic Contaminants (SOCs) including herbicides, and munitions constituents. There was a trace amount of one contaminant, as indicated below.

### REGULATED SUBSTANCES

Substance (Unit of Measure)	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low-High	Violation	Typical Source
Fluoride (ppm)	2009	4	4	0.92	NA	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids <sup>1</sup> [HAA] (ppb)	2009	60	NA	30	18-41	No	By-product of drinking water disinfection
Total Trihalomethanes <sup>1</sup> [THMs] (ppb)	2009	80	NA	43.6	27-56	No	By-product of drinking water disinfection
Total Coliform Bacteria <sup>2</sup> (No. of positive samples)	2009	1 positive monthly sample allowed	0	1	NA	No	Naturally present in the environment

Tap Water Samples were collected from 30 sample sites throughout the community for Copper and Lead. Results are shown in the table below.

Substance (Unit of Measure)	Year Sampled	Action Level	MCLG	Amount Detected 90th Percentile	Sites Above Action Level	Violation	Typical Source
Copper (ppm)	2007	1.3	1.3	0.052	0	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2007	15	0	4	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

### Synthetic Organic Contaminants including Herbicides

Substance (Unit of Measure)	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low-High	Violation	Typical Source
Dalapon <sup>3</sup> (ppb)	2009	200	200	0.78J	0.50 -1.2J	No	Runoff from herbicide used on rights of way

**Footnote:**  
<sup>1</sup> This is a running average  
<sup>2</sup> One positive sample detected for the year. One detection per month allowed per standard. Number of sample sites determined by system size  
<sup>3</sup> "J" indicates an estimated value, which is a value below reporting limit but above method detection limit (MDL)

## Definitions

**Amount Detected (90th percentile):** Indicates that at least 90% of all of the samples tested were equal to, or below, the amount detected.

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

**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.

**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.

**MDL (Method Detection Limit):** The lowest concentration of a contaminant detectable in drinking water utilizing an approved method.

**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.

**MRDLG (Maximum Residual Disinfectant 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.

NA: Not applicable

ND (Not Detected): Indicates that a substance was not found by laboratory analysis.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million part water (or milligrams per liter).

## Source Water Assessment Program (SWAP) Results

The North Carolina Department of Environment and Natural Resources (NCDENR), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (well or surface water intake) to Potential Contaminant Sources (PCSs). The results of the assessment are available in SWAP reports that include maps, background information, and a relative susceptibility rating of Higher, Moderate or Lower. The relative susceptibility rating of each source for Holcomb Boulevard water treatment system was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area). The assessment findings based on the SWAP report completed on March 15, 2010, are summarized in the table below:

Holcomb Boulevard Drinking Water Supply Wells	
Source Name	Susceptibility Rating
557	Lower
558	Lower
584	Lower
617	Lower
618	Lower
619	Lower
643	Moderate
644	Moderate
646	Moderate
647	Moderate
648	Moderate
650	Higher
698	Moderate
699	Moderate
700	Moderate
701	Moderate
703	Higher
704	Higher
705	Higher
708	Moderate
LCH 4009	Higher

The complete SWAP report for Holcomb Boulevard water treatment system may be viewed on the Web at <http://www.deh.enr.state.nc.us/pws/swap>. Please note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this Web site may differ from the results that were available at the time this report was prepared. To obtain a printed copy of this report, please mail a written request to Source Water Assessment Program Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email the request to [swap@ncmail.net](mailto:swap@ncmail.net). Please indicate your system name, PWSID, and provide your name, mailing address, and phone number. If you have any questions about the SWAP report please contact the Source Water Assessment staff by phone at (919) 715-2633.

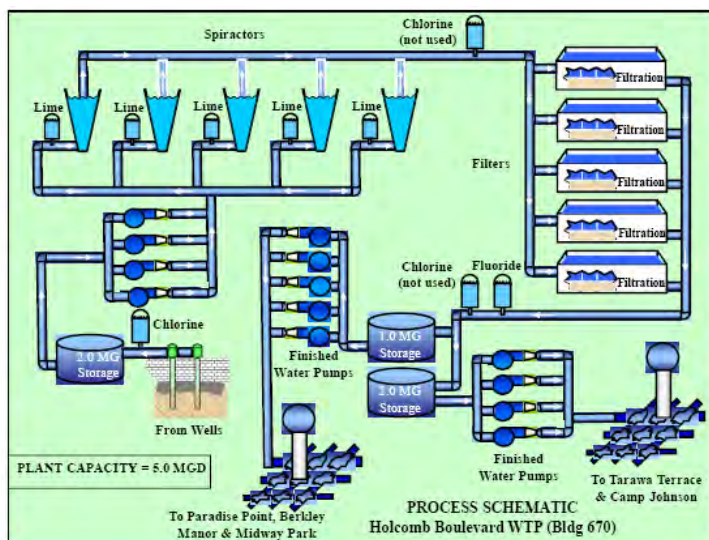
It is important to understand that a susceptibility rating of "higher" does not imply poor water quality, only the system's potential to become contaminated by PCSs in the assessment area.

### When You Turn on Your Tap, Consider the Source

The Holcomb Boulevard community water system obtains water from 21 groundwater wells located on Base. Groundwater is pumped from the Castle Hayne freshwater aquifer approximately 180 feet below the ground, and then it is pumped from the wells to a water treatment plant located near the main gate of the Base.

## Water Treatment Process

As the water enters the water treatment plant, sodium hypochlorite is added to protect against microbial contamination, and the water is placed into a storage reservoir. From the storage reservoir the water is moved to a set of large, cone-shaped devices called spirators. The spirators are used to soften the water by removing minerals. Lime is added at the bottom of the spirators to aid the softening process. The water is then passed through a set of filters, which contain layers of sand and carbon, to remove particles through a process called filtration. Fluoride (to prevent tooth decay) is added to the water, and then the clean water is placed in a large storage tank called a reservoir. When water is needed by customers, it is pumped from the reservoirs and distributed throughout the Holcomb Boulevard community water system.





## Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish 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 these contaminants does not necessarily indicate that the water poses a health risk.

The sources of drinking water (both tap water and bottled water) 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 substances resulting from the presence of animals or from human activity. 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 operation, or wildlife;

**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may result from urban stormwater 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 stormwater runoff and residential uses;

**Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and may also come from gas stations, urban stormwater runoff and septic systems;

**Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

### CAMP LEJEUNE WATER DISTRIBUTION ZONES



## 2009 Annual Water Quality Report

### Hadnot Point Water Treatment System



PWSID# 04-67-041



## Water Conservation

You can play a role in conserving water by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water (Indoor savings are based on a family of two adults and one child). Here are a few tips;

- Run only full loads in dishwasher and washing machine. Saves 300-800 gallons per month
- Turn off the tap when brushing your teeth. Saves three gallons each day
- Check every faucet in your home for leaks. Just a slow drip can waste 15-20 gallons a day
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak
- Don't use your toilet as an ashtray or wastebasket. Saves 400-600 gallons per month
- Don't run the hose while washing your car. Use a bucket of water and a quick hose rinse at the end. Saves 150 gallons each time
- Adjust your sprinklers so that water lands on your lawn or garden where it belongs – and only there. Saves 150 gallons per month
- Water your lawn during the cool parts of the day. Saves 300 gallons

## Questions?

For more information about this report, or for any questions relating to your drinking water, please call Brynn Ashton (EMD) at (910) 451-9385

## Supplementary Constituents Sampling

As part of our commitment to ensure that we are providing the safest, most reliable drinking water possible to our Base population, Marine Corps Base (MCB) Camp Lejeune has monitored drinking water for compounds found in explosives (nitroaromatics, nitramines, nitrate esters) and perchlorate, in finished water since 2004. These compounds, commonly known as "munitions constituents," are used in the manufacture of explosives or are the breakdown products of compounds used in explosives. Routine monthly sampling in 2009 did not detect any munitions constituents at the Hadnot Point water treatment system.

Additionally, MCB Camp Lejeune sampled finished water monthly for Volatile Organic Contaminants (VOCs) and some Synthetic Organic Contaminants (SOCs), including herbicides. This sampling was done in addition to that required by current regulations. Detections of these constituents were well below the maximum contaminant levels (MCLs) at the Hadnot Point water treatment system in 2009.

## Lead and 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. USMC Camp Lejeune – Hadnot Point is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has settled for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes 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 the EPA website <http://www.epa.gov/safewater/lead>.

## Meeting the Challenge

Marine Corps Base (MCB) Camp Lejeune is committed to providing you with drinking water that is safe and reliable. We believe that providing you with accurate information about your water is the best way to assure you that your water is safe. This 2009 Water Quality Report for the Hadnot Point water treatment system is a snapshot of last year's water quality. Included are details about where your water comes from and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and to providing you with this information, because informed customers are our best allies. In 2009, the Hadnot Point water treatment system met all U.S. Environmental Protection Agency (EPA) and State drinking water health standards.

## Important Health Information

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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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.

## Sampling Results

We routinely monitor for more than 150 contaminants in your drinking water according to federal and State laws. The table below, Regulated Substances, lists all the drinking water contaminants that we detected for the particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. Unless otherwise noted, the data presented in these tables are from testing done January 1 through December 31, 2009. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Although it is not required, in order to ensure the safety of your drinking water, MCB Camp Lejeune sampled finished water each month for Volatile Organic Contaminants (VOCs), some Synthetic Organic Contaminants (SOCs) including herbicides, and munitions constituents. There was a trace amount of two contaminants, as indicated below.

### REGULATED SUBSTANCES

Substance (Unit of Measure)	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low-High	Violation	Typical Source
Fluoride (ppm)	2009	4	4	0.79	NA	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids <sup>1</sup> [HAA] (ppb)	2009	60	NA	19.6	13-23	No	By-product of drinking water disinfection
Total Trihalomethanes <sup>1</sup> [TTHMs] (ppb)	2009	80	NA	28.4	26-31	No	By-product of drinking water disinfection
Total Coliform Bacteria (No. of positive samples)	2009	2 positive monthly samples allowed	0	3*	NA	No	Naturally present in the environment

Tap Water Samples were collected from 30 sample sites throughout the community for Copper and Lead. Results are shown in the table below.

Substance (Unit of Measure)	Year Sampled	Action Level	MCLG	Amount Detected 90th Percentile	Sites Above Action Level	Violation	Typical Source
Copper (ppm)	2007	1.3	1.3	0.118	0	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2007	15	0	4	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

### Synthetic Organic Contaminants including Herbicides

Substance (Unit of Measure)	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low-High	Violation	Typical Source
2,4-D (ppb)	2009	70	70	21	Only value	No	Runoff from herbicide used on row crops
Dalapon <sup>2</sup> (ppb)	2009	200	200	0.60J	0.39 - 0.88J	No	Runoff from herbicide used on rights of way

Footnote:  
<sup>1</sup> This is a running average  
<sup>2</sup> "J" indicates an estimated value, which is a value below reporting limit but above method detection limit (MDL)  
 \* One positive sample detected in 3 separate months. Two detections per month allowed due to sampling quantity which is based on system size

## Definitions

**Amount Detected (90th percentile):** Indicates that at least 90% of all of the samples tested were equal to, or below, the amount detected.

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

**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.

**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.

**MDL (Method Detection Limit):** The lowest concentration of a contaminant detectable in drinking water utilizing an approved method.

**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.

**MRDLG (Maximum Residual Disinfectant 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.

NA: Not applicable

ND (Not Detected): Indicates that a substance was not found by laboratory analysis.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million part water (or milligrams per liter).

## Source Water Assessment Program (SWAP) Results

The North Carolina Department of Environment and Natural Resources (NCDENR), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (well or surface water intake) to Potential Contaminant Sources (PCSs). The results of the assessment are available in SWAP reports that include maps, background information, and a relative susceptibility rating of Higher, Moderate or Lower. The relative susceptibility rating of each source for Hadnot Point water treatment system was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area). The assessment findings based on the SWAP report completed on March 15, 2010, are summarized in the table below:

Hadnot Point Drinking Water Supply Wells	
Source Name	Susceptibility Rating
585	Not rated
595	Lower
596	Lower
606	Moderate
607	Moderate
611	Lower
612	Lower
614	Lower
621	Moderate
622	Moderate
627	Moderate
628	Moderate
629	Moderate
632	Lower
640	Moderate
641	Higher
642	Moderate
652	Lower
654	Lower
661	Moderate
662	Lower
663	Lower
709	Moderate
710	Moderate
711	Moderate
5186	Higher

The complete SWAP report for Hadnot Point water treatment system may be viewed on the web at <http://www.deh.enr.state.nc.us/pws/swap>. Please note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this Web site may differ from the results that were available at the time this report was prepared. To obtain a printed copy of this report, please mail a written request to Source Water Assessment Program Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email the request to [swap@ncmail.net](mailto:swap@ncmail.net). Please indicate your system name, PWSID, and provide your name, mailing address, and phone number. If you have any questions about the SWAP report please contact the Source Water Assessment staff by phone at (919) 715-2633.

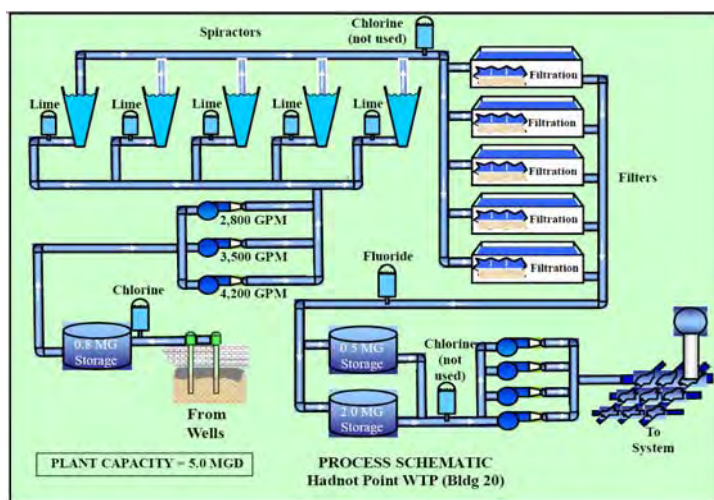
It is important to understand that a susceptibility rating of "higher" does not imply poor water quality, only the system's potential to become contaminated by PCSs in the assessment area.

### When You Turn on Your Tap, Consider the Source

The Hadnot Point community water system obtains water from 26 groundwater wells located on Base. Groundwater is pumped from the Castle Hayne aquifer approximately 180 feet below the ground.

## Water Treatment Process

As the raw water enters the water treatment plant, sodium hypochlorite is added to protect against microbial contamination, and the water is placed into a storage reservoir. From the storage reservoir the water is pumped to a set of large, cone-shaped devices called spiractors. The spiractors are used to soften the water by removing minerals. Lime is added at the bottom of the spiractors to aid the softening process. The water is then passed through a set of filters, which contain layers of sand and carbon, to remove particles through a process called filtration. Fluoride (to prevent tooth decay) is added to the water, and then the clean water is placed in a large storage tank called a reservoir. When water is needed by customers, it is pumped from the reservoirs and distributed throughout the Hadnot Point community water system.





## Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish 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 these contaminants does not necessarily indicate that the water poses a health risk.

The sources of drinking water (both tap water and bottled water) 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 substances resulting from the presence of animals or from human activity. 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 operation, or wildlife;

**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may result from urban stormwater 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 stormwater runoff and residential uses;

**Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and may also come from gas stations, urban stormwater runoff and septic systems;

**Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

### CAMP LEJEUNE WATER DISTRIBUTION ZONES



## 2009 Annual Water Quality Report

### Rifle Range Water Treatment System



PWSID# 04-67-046



## Water Conservation

You can play a role in conserving water by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water (Indoor savings are based on a family of two adults and one child). Here are a few tips;

- Run only full loads in dishwasher and washing machine. Saves 300-800 gallons per month
- Turn off the tap when brushing your teeth. Saves three gallons each day
- Check every faucet in your home for leaks. Just a small drip can waste 15-20 gallons a day
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak
- Don't use your toilet as an ashtray or wastebasket. Saves 400-600 gallons per month
- Don't run the hose while washing your car. Use a bucket of water and a quick hose rinse at the end. Saves 150 gallons each time
- Adjust your sprinklers so that water lands on your lawn or garden where it belongs – and only there. Saves 150 gallons per month
- Water your lawn during the cool parts of the day. Saves 300 gallons

## Questions?

For more information about this report, or for any questions relating to your drinking water, please call Brynn Ashton (EMID) at (910) 451-9385

## Supplementary Constituents Sampling

As part of our commitment to ensure that we are providing the safest, most reliable drinking water possible to our Base population, Marine Corps Base (MCB) Camp Lejeune has monitored drinking water for compounds found in explosives (nitroaromatics, nitramines, nitrate esters) and perchlorate, in finished water since 2004. These compounds, commonly known as "munitions constituents," are used in the manufacture of explosives or are the breakdown products of compounds used in explosives. Routine monthly sampling in 2009 did not detect any munitions constituents at the Rifle Range water treatment system.

Additionally, MCB Camp Lejeune sampled finished water monthly for Volatile Organic Contaminants (VOCs) and some Synthetic Organic Contaminants (SOCs), including herbicides. This sampling was done in addition to that required by current regulations. Detections of these constituents were well below the maximum contaminant levels (MCLs) at the Rifle Range water treatment system in 2009.

## Lead and 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. USMC Camp Lejeune – Rifle Range is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has settled for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes 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 the EPA website <http://www.epa.gov/safewater/lead>.

## Meeting the Challenge

Marine Corps Base (MCB) Camp Lejeune is committed to providing you with drinking water that is safe and reliable. We believe that providing you with accurate information about your water is the best way to assure you that your water is safe. This 2009 Water Quality Report for the Rifle Range water treatment system is a snapshot of last year's water quality. Included are details about where your water comes from and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and to providing you with this information, because informed customers are our best allies. In 2009, the Rifle Range water treatment system met all U.S. Environmental Protection Agency (EPA) and State drinking water health standards.

## Important Health Information

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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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.

## Sampling Results

We routinely monitor for more than 150 contaminants in your drinking water according to federal and State laws. The table below, Regulated Substances, lists all the drinking water contaminants that we detected for the particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. Unless otherwise noted, the data presented in these tables are from testing done January 1 through December 31, 2009. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Although it is not required, in order to ensure the safety of your drinking water, MCB Camp Lejeune sampled finished water each month for Volatile Organic Contaminants (VOCs), some Synthetic Organic Contaminants (SOCs) including herbicides, and munitions constituents. There was a trace amount of one contaminant, as indicated below.

### REGULATED SUBSTANCES

Substance (Unit of Measure)	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low-High	Violation	Typical Source
Beta/Photon Emitters <sup>1</sup> (pCi/L)	2006	50	0	6.18	NA	No	Decay of natural and man-made deposits
Fluoride (ppm)	2006	4	4	0.8	NA	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids <sup>2</sup> [HAA] (ppb)	2009	60	NA	26.4	20-32	No	By-product of drinking water disinfection
Total Trihalomethanes <sup>2</sup> [TTHMs] (ppb)	2009	80	NA	44.9	40-50	No	By-product of drinking water disinfection

Tap Water Samples were collected from 10 sample sites throughout the community for Copper and Lead. Results are shown in the table below

Substance (Unit of Measure)	Year Sampled	Action Level	MCLG	Amount Detected 90th Percentile	Sites Above Action Level	Violation	Typical Source
Copper (ppm)	2007	1.3	1.3	0.205	0	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2007	15	0	ND	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

Synthetic Organic Contaminants including Herbicides

Substance (Unit of Measure)	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low-High	Violation	Typical Source
Dalapon <sup>3</sup> (ppb)	2009	200	200	1.10J	0.59 - 1.6J	No	Runoff from herbicide used on rights of way

Footnote:

<sup>1</sup> The USEPA considers 50 pCi/L to be the level of concern for beta particles

<sup>2</sup> This is a running average

<sup>3</sup> J indicates an estimated value, which is a value below reporting limit but above method detection limit (MDL)

## Source Water Assessment Program (SWAP) Results

The North Carolina Department of Environment and Natural Resources (NCDENR), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (well or surface water intake) to Potential Contaminant Sources (PCSs). The results of the assessment are available in SWAP reports that include maps, background information, and a relative susceptibility rating of Higher, Moderate or Lower. The relative susceptibility rating of each source for the Rifle Range water treatment system was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area). The assessment findings based on the SWAP report completed on March 15, 2010, are summarized in the table below:

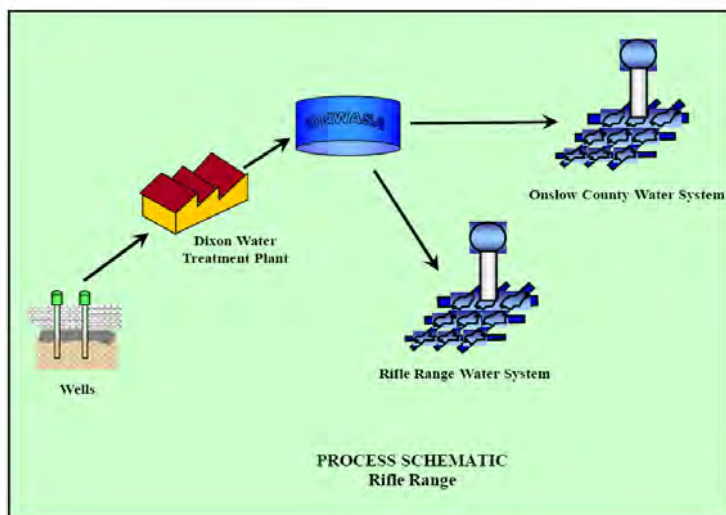
ONWASA (Rifle Range) Drinking Water Supply Wells	
Source Name	Susceptibility Rating
Dixon Well 1	Lower
Dixon Well 2	Lower
Dixon Well 3	Lower
Dixon Well 5	Lower
Dixon Well 6	Lower
Dixon Well 7	Lower
Hubert Well 1	Moderate
Hubert Well 2	Moderate
Hubert Well 3	Moderate
Hubert Well 4	Moderate
Hubert Well 6	Higher
Hubert Well 7	Not rated
Hubert Well 8	Not rated
Hubert Well 9	Not rated
Hubert Well 10	Not rated

The complete SWAP report for the Rifle Range water treatment system may be viewed on the Web at <http://www.deh.enr.state.nc.us/pws/swap>. Please note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this Web site may differ from the results that were available at the time this report was prepared. To obtain a printed copy of this report, please mail a written request to Source Water Assessment Program Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email the request to [swap@ncmail.net](mailto:swap@ncmail.net). Please indicate your system name, PWSID, and provide your name, mailing address, and phone number. If you have any questions about the SWAP report please contact the Source Water Assessment staff by phone at (919) 715-2633.

It is important to understand that a susceptibility rating of "higher" does not imply poor water quality, only the system's potential to become contaminated by PCSs in the assessment area.

### When You Turn on Your Tap, Consider the Source

The MCB, Camp Lejeune Rifle Range system is supplied with drinking water from the Onslow Water and Sewer Authority (ONWASA). This system consists of a series of groundwater wells that are used to pump raw water from the Castle Hayne groundwater aquifer, of which several of these wells source the ONWASA Dixon Water Treatment Plant.



## Definitions

**Amount Detected (90th percentile):** Indicates that at least 90% of all of the samples tested were equal to, or below, the amount detected.

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

**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.

**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.

**MDL (Method Detection Limit):** The lowest concentration of a contaminant detectable in drinking water utilizing an approved method.

**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.

**MRDLG (Maximum Residual Disinfectant 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.

**NA:** Not applicable

**ND (Not Detected):** Indicates that a substance was not found by laboratory analysis.

**pCi/L (picocuries per liter):** A measure of radioactivity.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

**ppm (parts per million):** One part substance per million part water (or milligrams per liter).

## Water Treatment Process

Water from the Rifle Range is purchased from the Onslow Water and Sewer Authority (ONWASA). ONWASA has installed Granular Activated Carbon (GAC) filters that will assist in reducing TTHM levels. The Rifle Range water treatment system met all U.S. Environmental Protection Agency (EPA) and State drinking water health standards in 2009.

The ONWASA Consumer Confidence Report can be viewed at <http://www.onwasa.com>.