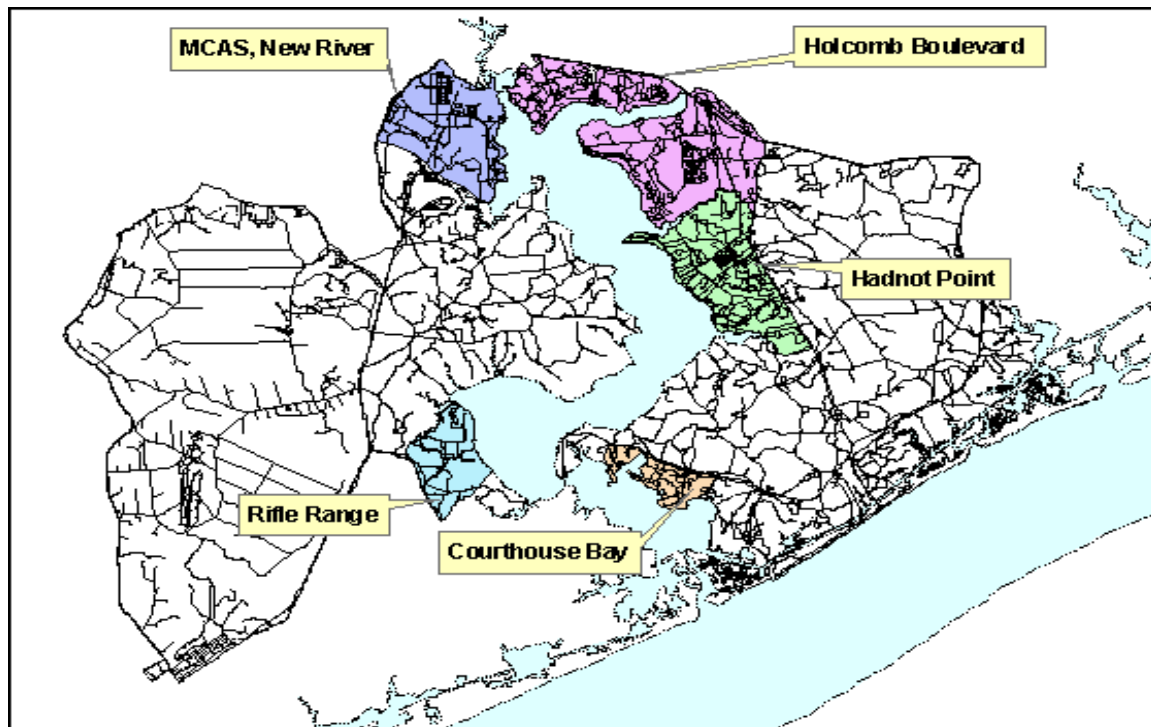


2003 Water Quality Report for Courthouse Bay Water Treatment System

(PWS ID: 04-67-047)



For more information

Courthouse Bay Water Treatment
Attn: Brynn Ashton
Marine Corps Base, Camp Lejeune
PSC Box 20004
Camp Lejeune, NC 28542-0004

Phone: 910-451-5068
Fax: 910-451-5997
E-mail: ashtonbt@lejeune.usmc.mil

Web Address: www.lejeune.usmc/emd

2003 Water Quality Report for Courthouse Bay Water Treatment System

Is my water safe?

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 2003 Water Quality Report for the Courthouse Bay Water Treatment System explains where your water comes from and lists all of the contaminants detected in your drinking water. We routinely test your water for over 80 different EPA regulated chemical and microbiological contaminants. In January of 2003, Carbon Tetrachloride was detected at the Courthouse Bay water treatment plant, however, follow up samples tested negative. In 2003, the Courthouse Bay water system met all U.S. Environmental Protection Agency (EPA) and State drinking water health standards.

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).

Where does my water come from?

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. This water is relatively free of contaminants. It is pumped from the wells to a detention basin located at the Courthouse Bay Water Treatment Plant. At the detention basin air is bubbled through the water, calcium carbonate is added (to raise the pH of the water), and chlorine is added to the water to protect against microbial contamination. This water is then pumped to a series of pressure filters to remove particles. After filtration, the water is passed through a set of softening units to remove minerals and then is stored in a large reservoir called a clearwell. When you open a faucet or turn on a water hose, treated drinking water from the clearwell is pumped through the distribution system to your taps.

How do contaminants get into drinking 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).

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 can pick up substances resulting from the presence of animals or from human activity. Microbial contaminants, such as viruses and bacteria, 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 stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming and pesticides and herbicides that 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 can, also come from gas stations, urban stormwater runoff, and septic systems. Radioactive contaminants 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 that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Educational Statement for Lead

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to flush your tap for at least 60 seconds before using tap water. You may also wish to have your home's water tested. Additional information is available from Safe Drinking Water Hotline (800-426-4791).

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 (units)	MCLG	MCL	Your Water	Range		Sample Date	Violation	Typical Source
<u>Volatile Organic Contaminants</u>								
				Low	High			
TTHMs [Total Trihalomethanes] (ppb)	NA	100	82.9	36.9	157.4	----	No	By-product of drinking water disinfection
Carbon Tetrachloride (ppb)	0	5	0.5	----	----	1/2003	No	Discharge from chemical plants and other industrial activities

Contaminant(s) (units)	MCLG	AL	Your Water	# of Samples >AL	Sample Date	Exceeds AL	Typical Source
<u>Inorganic Contaminants</u>							
Copper (ppm)	1.3	1.3	0.635	0	2002 Data	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	0	15	5	1	2002 Data	No	Corrosion of household plumbing systems; Erosion of natural deposits

Units Description:

NA: Not applicable

ND: Not detected

NR: Not reported

MNR: Monitoring not required, but recommended.

ppm: parts per million, or milligrams per liter (mg/L)

ppb: parts per billion, or micrograms per liter (µg/L)

Potential Health Effects:

Carbon Tetrachloride – Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

Lead – 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.

THM – Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Important Drinking Water Definitions:

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

Contaminant: Any natural or man-made physical, chemical, biological, or radiological substance or matter in water, which is at a level that may have an adverse effect on public health, and which is known or anticipated to occur in public water systems.

Coliform: A group of bacteria commonly found in the environment. They are an indicator of potential contamination of water. Adequate and appropriate disinfection effectively destroys coliform bacteria.

Disinfection: A process that effectively destroys coliform bacteria.

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.

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: Maximum residual disinfectant level. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Nitrates: A dissolved form of nitrogen found in fertilizers and sewage by-products that may leach into groundwater and other water sources. Nitrates may also occur naturally in some waters.

NTU: (Nephelometric turbidity unit) A measure of the clarity of water.

Pathogens: (Disease-causing pathogens, waterborne pathogens) A pathogen is a bacterium, virus, or parasite that causes or is capable of causing disease. Pathogens may contaminate water and cause waterborne disease.

pCi/L: (picocuries per liter) A measurement of radiation released by a set amount of a certain compound.

pH: A measure of the acidity or alkalinity of water.

ppb, ppm: (Part per billion, part per million) Measurements of the amount of contaminant per unit of water. A part per million is like one cent in \$10,000 and a part per billion is like one cent in \$10,000,000.

THM: (Trihalomethanes) Four separate compounds (chloroform, dichlorobromomethane, dibromochloromethane, and bromoform) that form as a result of disinfection.

2003 Annual Drinking Water Quality Report Onslow County Water System

04-67-035

April 2004

Introduction

We're pleased to present to you this year's Annual Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. 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. Our water source is groundwater: We have 13 wells located throughout the county which draw from the Black Creek Aquifer and 8 wells that draw from the Castle Hayne Aquifer. I'm glad to report that our drinking water is safe and meets Federal and State requirements.

It's important to note that all sources of drinking water are subject to potential contamination by substances that are naturally occurring or man made. As water travels over the land or underground it can pick up substances or contaminants such as microbes, inorganic and organic chemicals, and radioactive substances. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily pose a health risk.

More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791. Please remember that the presence of these contaminants does not necessarily pose a health risk.

Consumer Confidence Report Tables

The Onslow County Water Department routinely monitors for contaminants in your drinking water according to Federal and State laws. The Consumer Confidence Report Tables included in this report show the results of our monitoring for the period of January 1st to December 31st, 2003 and the last test results of contaminants that were not due to be tested in 2003.

The table 2 lists the monitoring results of unregulated contaminants. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. If you would like more information on unregulated chemicals you may call the EPA Hot Line at 1-800-426-4791.

Contamination levels are measured using Maximum Contaminant Levels (MCL's), which are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

Onslow County is required to report to you that in September 2003 the system received a monitoring violation. Enclosed you will find the Public Notice. The lead action level was exceeded for the 2002 monitoring period. This requires the system to install corrosion control treatment, which Onslow County anticipates completion of in 2005. We are also required to distribute public education material annually for as long as the action level is exceeded.

Glossary of Terms

As you examine the tables, you may find many terms and abbreviations you might not be familiar with. We've provided the following definitions to help you better understand these terms.

Non-Detects (ND) - laboratory analysis indicates that the constituent is not present.

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years.

Parts per trillion (ppt) or Nanograms per liter (nanograms/l) - one part per trillion is equal to one minute in 2,000,000 years.

Parts per quadrillion (ppq) or Picograms per liter (picograms/l) - one part per quadrillion corresponds to one minute in 2,000,000,000 years.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

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

Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Maximum Contaminant Level - The "Maximum Allowed" (MCL) is 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.

Maximum Contaminant Level Goal - The "Goal" (MCLG) 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 of safety.

Summary

Please understand in our continuing efforts to maintain a safe and dependable water supply, it may be necessary to make improvements in your water system for the benefit of all customers. The costs of these improvements may be reflected in the rate structure. Rate adjustments may be necessary in order to address these improvements.

If you have any questions or comments regarding this report or concerning your water utility, please contact Karen Wallace at (910) 455-0722. We want our customers to be informed about their water utility. If you want to

learn more, please attend any of our regularly scheduled meetings held on the second Tuesday of the month at 6:30 p.m. We would also like to encourage our customers to visit our web site at http://co.onslow.nc.us/public_utilities for more information on water audits, the conservation plan and more public education.

This year we are also using this report as a reminder that Onslow County is under a Stage I water shortage condition to increase public awareness of the importance to conserve water.

Potential Health Effects from Contaminated Drinking Water

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/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Microbiological Contaminants:

- (1) Total Coliform. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.
- (2) Fecal coliform/E.Coli. Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.
- (3) Turbidity. Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

Radioactive Contaminants:

- (4) Beta/Photon emitters. Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.
- (5) Alpha emitters. Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
- (6) Combined Radium 226/228. Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.

Inorganic Contaminants:

- (7) Antimony. Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.
- (8) Arsenic. Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
- (9) Asbestos. Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.
- (10) Barium. Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
- (11) Beryllium. Some people who drink water containing beryllium well

in excess of the MCL over many years could develop intestinal lesions.

- (12) Cadmium. Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.
- (13) Chromium. Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.

- (14) Copper. Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

- (15) Cyanide. Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.

- (16) Fluoride. Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Children may get mottled teeth.

- (17) Lead. 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.

- (18) Mercury (inorganic). Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.

- (19) Nitrate. Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.

- (20) Nitrite. Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.

- (21) Selenium. Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.

- (22) Thallium. Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.

Synthetic organic contaminants including pesticides and herbicides:

- (23) 2,4-D. Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.

- (24) 2,4,5-TP (Silvex). Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.

- (25) Acrylamide. Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.

- (26) Aalachlor. Some people who drink water containingalachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.

- (27) Atrazine. Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.

- (28) Benzo(a)pyrene [PAH]. Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.

- (29) Carbofuran. Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.

- (30) Chlordane. Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.

- (31) Dalapon. Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.

- (32) Di (2-ethylhexyl) adipate. Some people who drink water containing di (2-ethylhexyl) adipate well in excess of the MCL over many years could experience general toxic effects or reproductive difficulties.

- (33) Di (2-ethylhexyl) phthalate. Some people who drink water containing di (2-ethylhexyl) phthalate in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.

(34) Dibromochloropropane (DBCP). Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.

(35) Dinoseb. Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.

(36) Dioxin (2,3,7,8-TCDD). Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.

(37) Diquat. Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.

(38) Endothall. Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.

(39) Endrin. Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.

(40) Epichlorohydrin. Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.

(41) Ethylene dibromide. Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.

(42) Glyphosate. Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.

(43) Heptachlor. Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.

(44) Heptachlor epoxide. Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.

(45) Hexachlorobenzene. Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.

(46) Hexachlorocyclopentadiene. Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.

(47) Lindane. Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.

(48) Methoxychlor. Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.

(49) Oxamyl [Vydate]. Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.

(50) PCBs [Polychlorinated biphenyls]. Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.

(51) Pentachlorophenol. Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.

(52) Picloram. Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.

(53) Simazine. Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.

(54) Toxaphene. Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.

Volatile Organic Contaminants:

(55) Benzene. Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.

(56) Carbon Tetrachloride. Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of

getting cancer.

(57) Chlorobenzene. Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.

(58) o-Dichlorobenzene. Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.

(59) p-Dichlorobenzene. Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.

(60) 1,2-Dichloroethane. Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.

(61) 1,1-Dichloroethylene. Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

(62) cis-1,2-Dichloroethylene. Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

(63) trans-1,2-Dichloroethylene. Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.

(64) Dichloromethane. Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.

(65) 1,2-Dichloropropane. Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.

(66) Ethylbenzene. Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.

(67) Styrene. Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.

(68) Tetrachloroethylene. Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.

(69) 1,2,4-Trichlorobenzene. Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.

(70) 1,1,1,-Trichloroethane. Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.

(71) 1,1,2-Trichloroethane. Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.

(72) Trichloroethylene. Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

(73) TTHMs [Total Trihalomethanes]. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

(74) Toluene. Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.

(75) Vinyl Chloride. Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.

(76) Xylenes. Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.

Regulated Contaminants 2003

Table 1

Contaminant	Violation Y/N	Level Detected	Unit Measurement	Test Results		Likely Source of Contamination
				MCLG	MCL	
Microbiological Contaminants, 2003						
1. Total Coliform Bacteria	N	Positive 2 out of 960 samples tested positive. 0 out of 2 retest samples tested positive.	N/A	0	presence of coliform bacteria in 5% of monthly samples	Naturally present in the environment
2. Fecal coliform and E. coli	N	ND	N/A	0	a routine sample and repeat sample are total coliform positive, and one is also fecal coliform and E. coli positive	Human and animal fecal waste
Radioactivity Contaminants, December 2001						
4. Beta/Photon emitters	N	6.31	pCi/l	0	50	Decay of natural and manmade deposits
5. Alpha emitters	N	0.34	pCi/l	0	15	Erosion of natural deposits
6. Combined radium	N	N/A	pCi/l	0	5	Erosion of natural deposits
Inorganic Contaminants, November 2003						
7. Antimony	N	ND	ppb	6	6	Discharge from petroleum refineries, fire retardants, ceramics, electronics solder
8. Arsenic	N	ND	ppb	n/a	10	Erosion of natural deposits, runoff from orchards, runoff from glass and electronics production wastes
9. Asbestos	N	NA	MFL	7	7	Decay of asbestos cement water mains, erosion of natural deposits
10. Barium	N	ND	ppm	2	2	Discharge of drilling wastes, discharge from metal refineries, erosion of natural deposits
11. Beryllium	N	ND	ppb	4	4	Discharge from metal refineries and coal-burning factories, discharge from electrical, aerospace, and defense industries
12. Cadmium	N	ND	ppb	5	5	Corrosion of galvanized pipes, erosion of natural deposits, discharge from metal refineries, runoff from waste batteries and paints
13. Chromium	N	ND	ppb	100	100	Discharge from steel and pulp mills, erosion of natural deposits
14. Copper	N	1.043	ppm	13	AL=1.5	Corrosion of household plumbing systems, erosion of natural deposits, leaching from wood preservatives
15. Cyanide	N	ND	ppb	200	200	Discharge from steel/metal factories, discharge from plastic and fertilizer factories
16. Fluoride	N	3.6	ppm	4	4	Erosion of natural deposits, water additives which promote strong teeth, discharge from fertilizer and aluminum factories
17. Lead	N	16	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
18. Mercury (inorganic)	N	ND	ppb	2	2	Erosion of natural deposits, discharge from refineries and factories, runoff from landfills, runoff from cropland
19. Nitrate	N	ND	ppm	10	10	runoff from fertilizer use, leaching from septic tanks, sewage, erosion of natural deposits
20. Nitrite	N	N/A	ppm	1	1	runoff from fertilizer use, leaching from septic tanks, sewage, erosion of natural deposits
21. Selenium	N	ND	ppb	50	50	Discharge from petroleum and metal refineries, erosion of natural deposits, discharge from mines
22. Thallium	N	ND	ppb	0.5	2	Leaching from ore-processing sites, discharge from electronics, glass, and drug factories
Synthetic Organic Contaminants including Pesticide and Herbicides, 2002						
23. 2,4-D	N	ND	ppb	70	70	Runoff from herbicide used on row crops
24. 2,4,5-TP (Silvex)	N	ND	ppb	50	50	Residue of banned herbicide
25. Acrylamide	N	ND		0	TT	Added to water during sewage/wastewater treatment
26. Alachlor	N	ND	ppb	0	2	Runoff from herbicide used on row crops
27. Atrazine	N	ND	ppb	3	3	Runoff from herbicide used on row crops
28. Benzo(a)pyrene (PAH)	N	ND	nanograms/l	0	200	leaching from linings of water storage tanks and distribution lines
29. Carbofuran	N	ND	ppb	40	40	leaching of soil fumigant used on rice and alfalfa
30. Chlordane	N	ND	ppb	0	2	Residue of banned herbicide
31. Dalapon	N	ND	ppb	200	200	Runoff from herbicide used on rights-of-way
32. Di(2-ethylhexyl)adipate	N	ND	ppb	400	400	discharge from chemical factories
33. Di(2-ethylhexyl)phthalate	N	ND	ppb	0	6	discharge from rubber and chemical factories
34. Dibromochloropropane	N	ND	nanograms/l	0	200	runoff/leaching from soil fumigant on soybeans, cotton, pineapples, and orchards
35. Dinoseb	N	ND	ppb	7	7	Runoff from herbicide used on soybeans and vegetables
36. Diquat	N	ND	ppb	20	20	Emissions from waste incineration and other combustion, discharge from chemical factories
37. Dioxin [2,3,7,8-TCDD]	N	ND	picograms/l	0	30	Emissions from waste incineration and other combustion, discharge from chemical factories
38. Endothal	N	ND	ppb	100	100	Runoff from herbicide use
39. Endrin	N	ND	ppb	2	2	Residue of banned insecticide
a	N	ND		0	TT	Discharge from industrial chemical factories, an impurity of some water treatment chemicals
41. Ethylene dibromide	N	ND	nanograms/l	0	50	Discharge from petroleum refineries
42. Glyphosate	N	ND	ppb	700	700	Runoff from herbicide use
43. Heptachlor	N	ND	nanograms/l	0	400	Residue of banned termiticide
44. Heptachlor epoxide	N	ND	nanograms/l	0	200	Breakdown of Heptachlor
45. Hexachlorobenzene	N	ND	ppb	0	1	Discharge from metal refineries and agricultural chemical factories
46. Hexachlorocyclopentadiene	N	ND	ppb	50	50	Discharge from chemical factories
47. Lindane	N	ND	nanograms/l	200	200	Runoff/leaching from insecticide used on cattle, lumber, and gardens

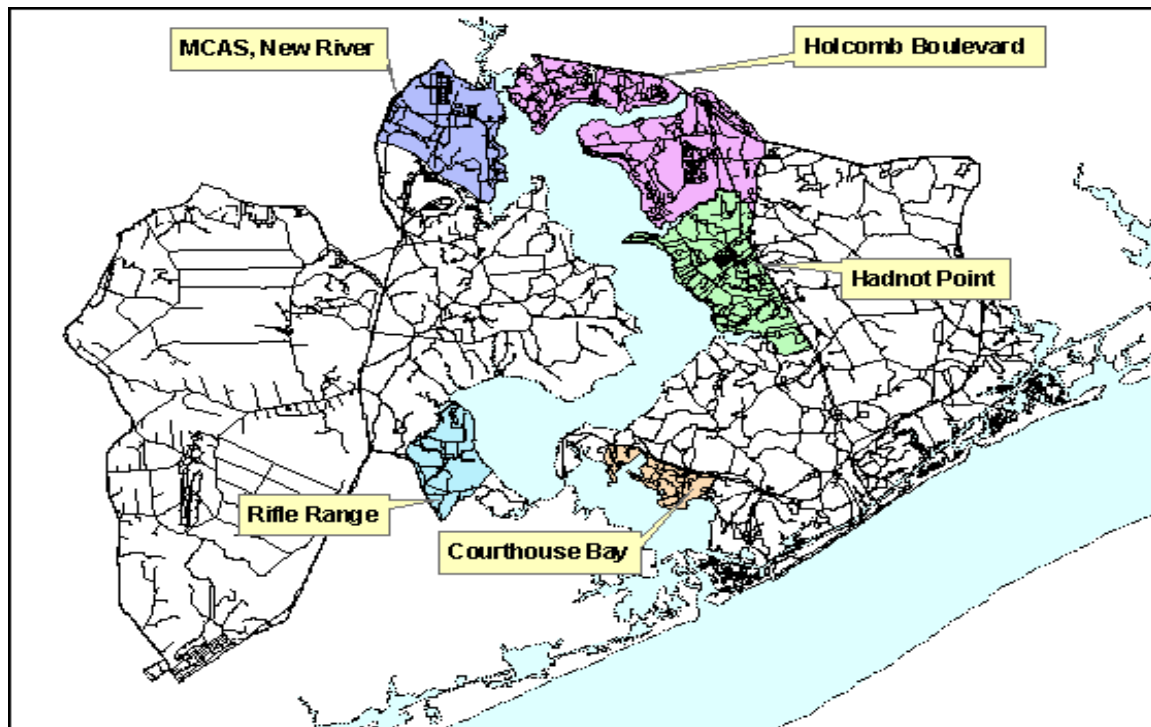
Regulated Contaminants 2003

48. Methoxychlor	N	ND	ppb	40	40	Runoff/leaching from insecticide use on fruits, vegetables, alfalfa, and livestock.
49. Oxamyl (Vydate)	N	ND	ppb	200	200	Runoff/leaching from insecticide used on apples, potatoes, and tomatoes.
50. PCB's [Polychlorinatedbiphenyls]	N	ND	nanograms/l	0	500	Runoff from landfills; discharge of waste chemicals.
51. Pentachlorophenol	N	ND	ppb	0	1	Discharge from wood preserving factories.
52. Picloram	N	ND	ppb	500	500	Herbicide runoff
53. Simazine	N	ND	ppb	4	4	Herbicide runoff
54. Toxaphene	N	ND	ppb	0	3	Runoff/leaching from insecticide used on cotton and cattle.
Volatile Organic Contaminants July 2003						
55. Benzene	N	ND	ppb	0	5	Discharge from factories; leaching from gas storage tanks and landfills.
56. Carbon tetrachloride	N	ND	ppb	0	5	Discharge from chemical plants and other industrial activities.
57. Chlorobenzene	N	ND	ppb	100	100	Discharge from chemical and agricultural chemical factories.
58. O-Dichlorobenzene	N	ND	ppb	600	600	Discharge from industrial chemical factories.
59. P-Dichlorobenzene	N	ND	ppb	75	75	Discharge from industrial chemical factories.
60. 1,2-Dichloroethane	N	ND	ppb	0	5	Discharge from industrial chemical factories.
61. 1,1-Dichloroethylene	N	ND	ppb	7	7	Discharge from industrial chemical factories.
62. Cis-1,2-Dichloroethylene	N	ND	ppb	70	70	Discharge from industrial chemical factories.
63. Trans-1,2-Dichloroethylene	N	ND	ppb	100	100	Discharge from industrial chemical factories.
64. Dichloromethane	N	ND	ppb	0	5	Discharge from pharmaceutical and chemical factories.
65. 1,2-Dichloropropane	N	ND	ppb	0	5	Discharge from industrial chemical factories.
66. Ethylbenzene	N	ND	ppb	700	700	Discharge from petroleum refineries.
67. Styrene	N	ND	ppb	100	100	Discharge from rubber and plastic factories; leaching from landfills.
68. Tetrachloroethylene	N	ND	ppb	0	5	Leaching from PVC pipes; discharge from factories and dry cleaners.
69. 1,2,4-Trichlorobenzene	N	ND	ppb	70	70	Discharge from textile-finishing factories.
70. 1,1,1-Trichloroethane	N	ND	ppb	200	200	Discharge from metal degreasing sites and other factories.
71. 1,1,2-Trichloroethane	N	ND	ppb	3	5	Discharge from industrial chemical factories.
72. Trichloroethylene	N	ND	ppb	0	5	Discharge from metal degreasing sites and other factories.
73. THM (Total Trihalomethanes)	N	53	ppb	0	80	By-product of drinking water chlorination.
74. Toluene	N	ND	ppm	1	1	Discharge from petroleum factories.
75. Vinyl Chloride	N	ND	ppb	0	2	Leaching from PVC piping; discharge from plastics factories.
76. Xylenes	N	ND	ppm	10	10	Discharge from petroleum factories; discharge from chemical factories.

Unregulated Contaminants
Table II

Test Results				
Unregulated Synthetic Organic Chemicals 2002				
Chemical Detect	MCL Violation	Average	Range	Unit of Measurement
	Y/N			
Aldicarb	N	ND	N/A	ppb
Aldicarb sulfone	N	ND	N/A	ppb
Aldicarb sulfoxide	N	ND	N/A	ppb
Aldrin	N	ND	N/A	ppb
Butachlor	N	ND	N/A	ppb
Carbaryl	N	ND	N/A	ppb
Dicamba	N	ND	N/A	ppb
Dieldrin	N	ND	N/A	ppb
3-Hydroxycarbofuran	N	ND	N/A	ppb
Methomyl	N	ND	N/A	ppb
Metolachlor	N	ND	N/A	ppb
Metribuzin	N	ND	N/A	ppb
Propachlor	N	ND	N/A	ppb
Unregulated Volatile Organic Chemicals 2003				
Chloroform	N	8.9	4.2-11	ppb
Bromodichloromethane	N	5.9	1.4-7.9	ppb
Bromoform	N	2.4	1.6-3.8	ppb
Chlorodibromomethane	N	5.3	0.9-7.4	ppb
Bromobenzene	N	ND	N/A	ppb
Bromochloromethane	N	ND	N/A	ppb
Bromomethane	N	ND	N/A	ppb
n-Butylbenzene	N	ND	N/A	ppb
sec-Butylbenzene	N	ND	N/A	ppb
tert-Butylbenzene	N	ND	N/A	ppb
Chloroethane	N	ND	N/A	ppb
Chloromethane	N	4.5	1.0-8.0	ppb
o-Chlorotoluene	N	ND	N/A	ppb
p-Chlorotoluene	N	ND	N/A	ppb
Dibromomethane	N	ND	N/A	ppb
m-Dichlorobenzene	N	ND	N/A	ppb
Dichlorodifluoromethane	N	ND	N/A	ppb
1,1-Dichloroethane	N	ND	N/A	ppb
1,3-Dichloropropane	N	ND	N/A	ppb
2,2-Dichloropropane	N	ND	N/A	ppb
1,1-Dichloropropene	N	ND	N/A	ppb
1,3-Dichloropropene	N	ND	N/A	ppb
Flourotrichloromethane	N	ND	N/A	ppb
Hexachlorobutadiene	N	ND	N/A	ppb
Isopropylbenzene	N	ND	N/A	ppb
p-Isopropyltoluene	N	ND	N/A	ppb
Naphthalene	N	ND	N/A	ppb
n-Propylbenzene	N	ND	N/A	ppb
1,1,2,2-Tetrachloroethane	N	ND	N/A	ppb
1,2,3-Trichlorobenzene	N	ND	N/A	ppb
1,2,3-Trichloropropane	N	ND	N/A	ppb
1,2,4-Trimethylbenzene	N	ND	N/A	ppb
1,3,5-Trimethylbenzene	N	ND	N/A	ppb

2003 Water Quality Report for MCAS, New River Water Treatment System
(PWS ID: 04-67-042)



For more information

**MCAS, New River Water Treatment
Attn: Brynn Ashton
Marine Corps Base, Camp Lejeune
PSC Box 20004
Camp Lejeune, NC 28542-0004**

**Phone: 910-451-5068
Fax: 910-451-5997
E-mail: ashtonbt@lejeune.usmc.mil**

Web Address: www.lejeune.usmc.mil/emd

2003 Water Quality Report for MCAS, New River Water Treatment System

Is my water safe?

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 2003 Water Quality Report for the MCAS, New River Water Treatment System explains where your water comes from and lists all of the contaminants detected in your drinking water. We routinely test your water for over 80 different EPA regulated chemical and microbiological contaminants. In July of 2003, Carbon Tetrachloride was detected at the MCAS, New River water treatment plant, however, follow up samples tested negative. In 2003, the MCAS, New River water system met all U.S. Environmental Protection Agency (EPA) and State drinking water health standards.

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).

Where does my water come from?

The Marine Corps Air Station, New River community water system obtains water from 13 groundwater wells located on Base. Groundwater is pumped from the Castle Hayne freshwater aquifer approximately 180 feet below the ground. This water is relatively free of contaminants. It is pumped from the wells to a water treatment plant located on the air station. The water enters the water treatment plant and is pumped into a set of cone-shaped devices called spiractors. The spiractors are used to soften the water by removing minerals. 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. The clean water is then placed in a large storage tank called a clearwell. When water is needed by customers, the water is pumped from the clearwell; chlorine is added (to protect against microbial contamination) and distributed throughout the MCAS New River community water system.

How do contaminants get into drinking 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).

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 can pick up substances resulting from the presence of animals or from human activity. Microbial contaminants, such as viruses and bacteria 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 stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming. Pesticides and herbicides 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 that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems. Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Educational Statement for Lead

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to flush your tap for at least 60 seconds before using tap water. You may also wish to have your home's water tested. Additional information is available from Safe Drinking Water Hotline (800-426-4791).

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 (units)	MCLG	MCL	Your Water	Range		Sample Date	Violation	Typical Source
Low	High							
Volatile Organic Contaminants								
TTHMs [Total Trihalomethanes] (ppb)	NA	100	67.6	44	102.9	----	No	By-product of drinking water disinfection
Carbon Tetrachloride (ppb)	0	5	1	----	----	7/2003	No	Discharge from chemical plants and other industrial activities
Contaminant(s) (units)	MCLG	AL	Your Water	# of Samples >AL	Sample Date	Exceeds AL	Typical Source	
Inorganic Contaminants								
Copper (ppm)	1.3	1.3	0.074	0	2001 Data	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives	
Lead (ppb)	0	15	15	5	2001 Data	No	Corrosion of household plumbing systems; Erosion of natural deposits	

Units Description:

NA: Not applicable

ND: Not detected

NR: Not reported

MNR: Monitoring not required, but recommended.

ppm: parts per million, or milligrams per liter (mg/L)

ppb: parts per billion, or micrograms per liter (µg/L)

Potential Health Effects:

Carbon Tetrachloride – Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

Lead – 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.

THM – Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Important Drinking Water Definitions:

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

Contaminant: Any natural or man-made physical, chemical, biological, or radiological substance or matter in water, which is at a level that may have an adverse effect on public health, and which is known or anticipated to occur in public water systems.

Coliform: A group of bacteria commonly found in the environment. They are an indicator of potential contamination of water. Adequate and appropriate disinfection effectively destroys coliform bacteria.

Disinfection: A process that effectively destroys coliform bacteria.

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.

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: Maximum residual disinfectant level. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Nitrates: A dissolved form of nitrogen found in fertilizers and sewage by-products that may leach into groundwater and other water sources. Nitrates may also occur naturally in some waters.

NTU: (Nephelometric turbidity unit) A measure of the clarity of water.

Pathogens: (Disease-causing pathogens, waterborne pathogens) A pathogen is a bacterium, virus, or parasite that causes or is capable of causing disease. Pathogens may contaminate water and cause waterborne disease.

pCi/L: (picocuries per liter) A measurement of radiation released by a set amount of a certain compound.

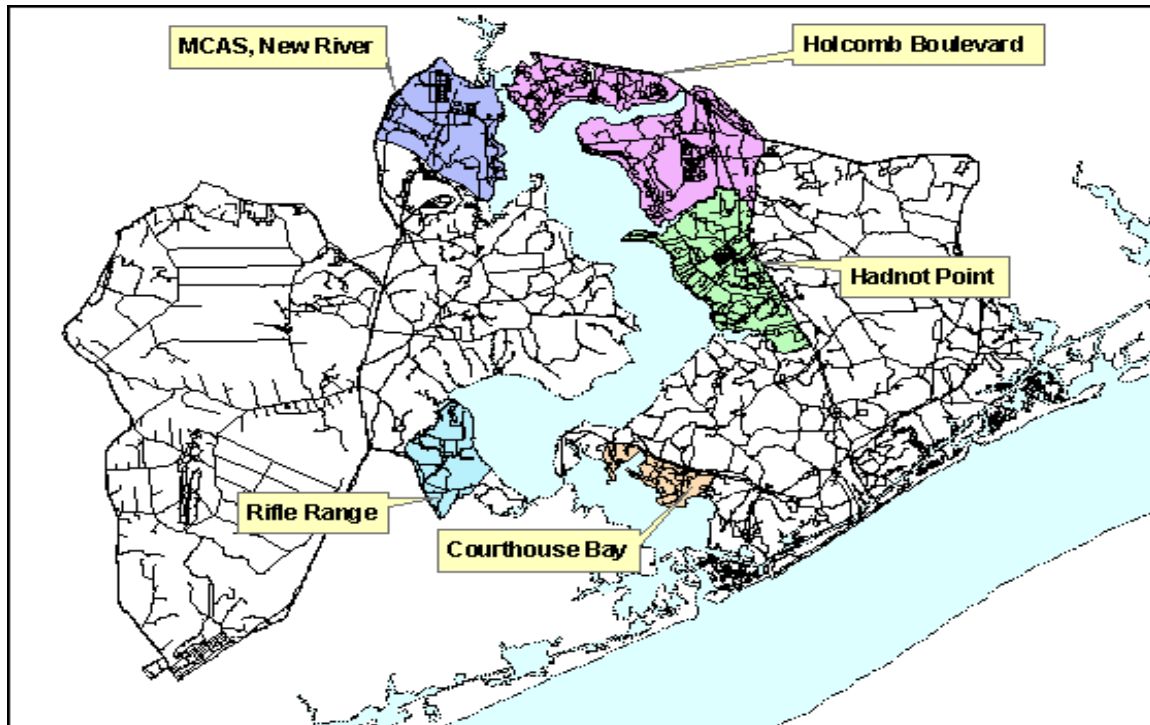
pH: A measure of the acidity or alkalinity of water.

ppb, ppm: (Part per billion, part per million) Measurements of the amount of contaminant per unit of water. A part per million is like one cent in \$10,000 and a part per billion is like one cent in \$10,000,000.

THM: (Trihalomethanes) Four separate compounds (chloroform, dichlorobromomethane, dibromochloromethane, and bromoform) that form as a result of disinfection.

2003 Water Quality Report for Hadnot Point Water Treatment System

(PWS ID: 04-67-041)



For more information

Hadnot Point Water Treatment
Attn: Brynn Ashton
Marine Corps Base, Camp Lejeune
PSC Box 20004
Camp Lejeune, NC 28542-0004

Phone: 910-451-5068
Fax: 910-451-5997
E-mail: ashtonbt@lejeune.usmc.mil

Web Address: www.lejeune.usmc.mil

2003 Water Quality Report for Hadnot Point Water System

Is my water safe?

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 2003 Water Quality Report for the Hadnot Point Water Treatment System explains where your water comes from and lists all of the contaminants detected in your drinking water. We routinely test your water for over 80 different EPA regulated chemical and microbiological contaminants. In July of 2003, 2 sites tested positive for total coliform, however, follow up samples tested negative. In August and September of 2003, Chloromethane was detected at the Hadnot Point water treatment plant, however, follow up samples tested negative. In 2003, the Hadnot Point water system met all U.S. Environmental Protection Agency (EPA) and State drinking water health standards.

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).

Where does my water come from?

The Hadnot Point community water system obtains water from 31 groundwater wells located on Base. Groundwater is pumped from the Castle Hayne aquifer, approximately 180 feet below the ground. This water, which is relatively free of contaminants, is pumped from the wells to a water treatment plant located on the main portion of the Base. As the raw water enters the storage reservoir, chlorine is added to protect against microbial contamination. Raw water pumps are used to move the water from the reservoir 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 assist in 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 as it is placed in a large storage tank called a clearwell. When customers need water, treated water is pumped from the clear well and distributed throughout the Hadnot Point community water system.

How do contaminants get into drinking 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).

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 can pick up substances resulting from the presence of animals or from human activity. Microbial contaminants, such as viruses and bacteria, 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 stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming. Pesticides and herbicides 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 can also come from gas stations, urban stormwater runoff, and septic systems. Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Educational Statement for Lead

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's

plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to flush your tap for at least 60 seconds before using tap water. You may also wish to have your home's water tested. Additional information is available from Safe Drinking Water Hotline (800-426-4791).

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.

<u>Contaminants (units)</u>	<u>MCLG</u>	<u>MCL</u>	<u>Your Water</u>	<u>Range</u>		<u>Sample Date</u>	<u>Violation</u>	<u>Typical Source</u>
				<u>Low</u>	<u>High</u>			

Volatile Organic Contaminants

TTHMs [Total Trihalomethanes] (ppb)	NA	100	28.9	14.8	43.4	----	No	By-product of drinking water disinfection
-------------------------------------	----	-----	------	------	------	------	----	---

<u>Contaminant(s) (units)</u>	<u>MCLG</u>	<u>AL</u>	<u>Your Water</u>	<u># of Samples >AL</u>	<u>Sample Date</u>	<u>Exceeds AL</u>	<u>Typical Source</u>
-------------------------------	-------------	-----------	-------------------	----------------------------	--------------------	-------------------	-----------------------

Inorganic Contaminants

Copper (ppm)	1.3	1.3	0.074	0	2001 Data	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	0	15	15	5	2001 Data	No	Corrosion of household plumbing systems; Erosion of natural deposits

<u>Contaminants (units)</u>	<u>MCLG</u>	<u>MCL</u>	<u>Your Water</u>	<u>Range</u>		<u>Sample Date</u>	<u>Violation</u>
				<u>Low</u>	<u>High</u>		

Unregulated Volatile Organic Contaminants

Chloromethane (ppm)	NA	NA	0.00345	0.001	0.059	08/2003, 09/2003	No
---------------------	----	----	---------	-------	-------	---------------------	----

<u>Contaminants (units)</u>	<u>MCLG</u>	<u>MCL</u>	<u>Your Water</u>	<u>Range</u>		<u>Sample Date</u>	<u>Violation</u>	<u>Typical Source</u>
				<u>Low</u>	<u>High</u>			

Microorganisms

Total Coliform	0	5.0%*	----	NA	NA	7/2003	No	Naturally present in the environment
----------------	---	-------	------	----	----	--------	----	--------------------------------------

Two sites tested positive for total coliform in July of 2003, however, follow up samples tested negative.

*The water system is in violation if more than 5% of the sites tested positive for total coliform.

Units Description:

NA: Not applicable

ND: Not detected

NR: Not reported

MNR: Monitoring not required, but recommended.

ppm: parts per million, or milligrams per liter (mg/L)

ppb: parts per billion, or micrograms per liter (µg/L)

Potential Health Effects:

Lead – 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.

TTHM – Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Total Coliform – Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

Important Drinking Water Definitions:

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

Contaminant: Any natural or man-made physical, chemical, biological, or radiological substance or matter in water, which is at a level that may have an adverse effect on public health, and which is known or anticipated to occur in public water systems.

Coliform: A group of bacteria commonly found in the environment. They are an indicator of potential contamination of water. Adequate and appropriate disinfection effectively destroys coliform bacteria.

Disinfection: A process that effectively destroys coliform bacteria.

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.

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: Maximum residual disinfectant level. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Nitrates: A dissolved form of nitrogen found in fertilizers and sewage by-products that may leach into groundwater and other water sources. Nitrates may also occur naturally in some waters.

NTU: (Nephelometric turbidity unit) A measure of the clarity of water.

Pathogens: (Disease-causing pathogens, waterborne pathogens) A pathogen is a bacterium, virus, or parasite that causes or is capable of causing disease. Pathogens may contaminate water and cause waterborne disease.

pCi/L: (picocuries per liter) A measurement of radiation released by a set amount of a certain compound.

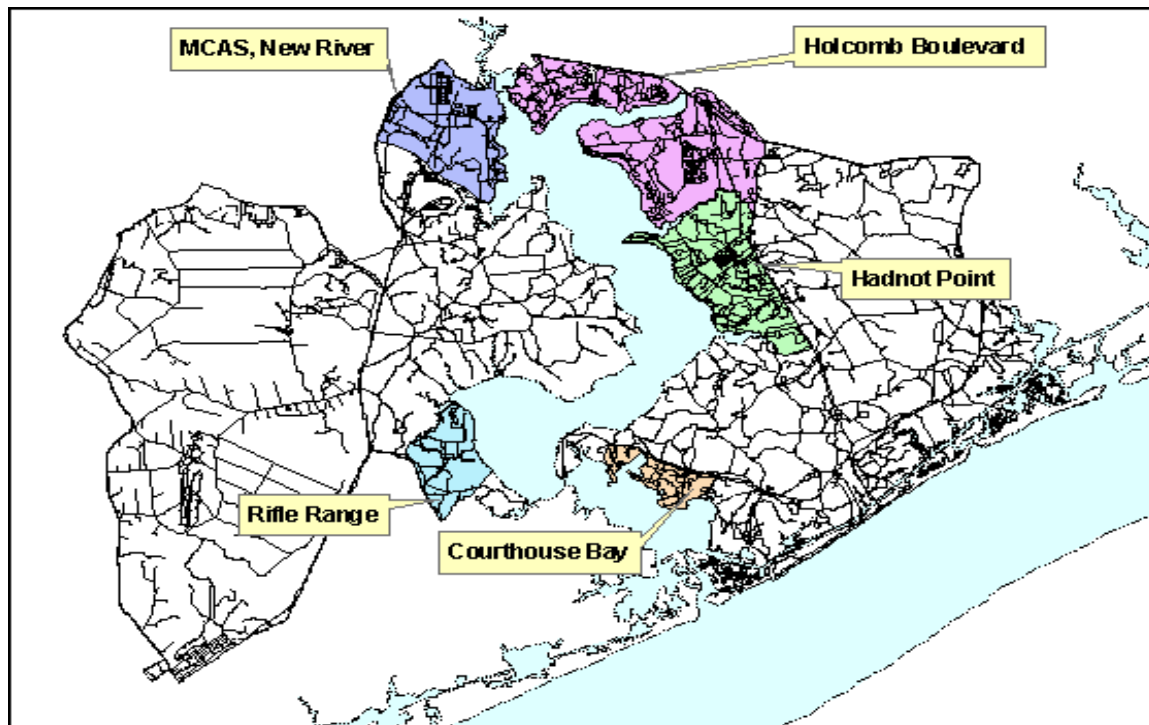
pH: A measure of the acidity or alkalinity of water.

ppb, ppm: (Part per billion, part per million) Measurements of the amount of contaminant per unit of water. A part per million is like one cent in \$10,000 and a part per billion is like one cent in \$10,000,000.

THM: (Trihalomethanes) Four separate compounds (chloroform, dichlorobromomethane, dibromochloromethane, and bromoform) that form as a result of disinfection.

2003 Water Quality Report for Holcomb Boulevard Water Treatment System

(PWS ID: 04-67-043)



For more information

Holcomb Boulevard Water Treatment
Attn: Brynn Ashton
Marine Corps Base, Camp Lejeune
PSC Box 20004
Camp Lejeune, NC 28542-0004

Phone: 910-451-5068
Fax: 910-451-5997
E-mail: ashtonbt@lejeune.usmc.mil

Web Address: www.lejeune.usmc.mil/emd

2003 Water Quality Report for Holcomb Boulevard Water Treatment System

Is my water safe?

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 2003 Water Quality Report for the Holcomb Boulevard Water Treatment System explains where your water comes from and lists all of the contaminants detected in your drinking water. We routinely test your water for over 80 different EPA regulated chemical and microbiological contaminants. In 2003 six samples exceeded the Action Level for lead, and three samples exceeded the action level for Copper at Holcomb Blvd. In May of 2003, Carbon Tetrachloride was detected at the Holcomb Blvd water treatment plant, however, follow up samples tested negative. In 2003, the Holcomb Boulevard water system met all U.S. Environmental Protection Agency (EPA) and State drinking water health standards.

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).

Where does my water come from?

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. This water, which is relatively free of contaminants, is pumped from the wells to a water treatment plant located near the main gate of the Base. As the water enters the water treatment plant it is chlorinated to protect against microbial contamination and placed into a storage reservoir. From the storage reservoir the water is moved 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 clearwell. When water is needed by customers, it is pumped from the clearwell and distributed throughout the Holcomb Boulevard community water system.

How do contaminants get into drinking 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).

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 can pick up substances resulting from the presence of animals or from human activity. Microbial contaminants, such as viruses and bacteria, 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 stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming. Pesticides and herbicides 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 can, also come from gas stations, urban stormwater runoff, and septic systems. Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Educational Statement for Lead

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to flush your tap for at least 60 seconds before using tap water. You may also wish to have your home's water tested. Additional information is available from Safe Drinking Water Hotline (800-426-4791).

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.

<u>Contaminants (units)</u>	<u>MCLG</u>	<u>MCL</u>	<u>Your Water</u>	<u>Range Low High</u>	<u>Sample Date</u>	<u>Violation</u>	<u>Typical Source</u>
Volatile Organic Contaminants							
TTHMs [Total Trihalomethanes] (ppb)	NA	100	50.8	32.1 69.8	---	No	By-product of drinking water disinfection
Carbon Tetrachloride (ppb)	0	5	0.8	----	5/2003	No	Discharge from chemical plants and other industrial activities
<u>Contaminant(s) (units)</u>	<u>MCLG</u>	<u>AL</u>	<u>Your Water</u>	<u># of Samples >AL</u>	<u>Sample Date</u>	<u>Exceeds AL</u>	<u>Typical Source</u>
Inorganic Contaminants							
Copper (ppm)	1.3	1.3	0.21	3	10/2003	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	0	15	7.5	6	10/2003	No	Corrosion of household plumbing systems; Erosion of natural deposits

Units Description:

NA: Not applicable

ND: Not detected

NR: Not reported

MNR: Monitoring not required, but recommended.

ppm: parts per million, or milligrams per liter (mg/L)

ppb: parts per billion, or micrograms per liter (µg/L)

Potential Health Effects:

Carbon Tetrachloride – Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

Copper – Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

Lead – 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.

TTHM – Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Important Drinking Water Definitions:

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

Contaminant: Any natural or man-made physical, chemical, biological, or radiological substance or matter in water, which is at a level that may have an adverse effect on public health, and which is known or anticipated to occur in public water systems.

Coliform: A group of bacteria commonly found in the environment. They are an indicator of potential contamination of water. Adequate and appropriate disinfection effectively destroys coliform bacteria.

Disinfection: A process that effectively destroys coliform bacteria.

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.

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: Maximum residual disinfectant level. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Nitrates: A dissolved form of nitrogen found in fertilizers and sewage by-products that may leach into groundwater and other water sources. Nitrates may also occur naturally in some waters.

NTU: (Nephelometric turbidity unit) A measure of the clarity of water.

Pathogens: (Disease-causing pathogens, waterborne pathogens) A pathogen is a bacterium, virus, or parasite that causes or is capable of causing disease. Pathogens may contaminate water and cause waterborne disease.

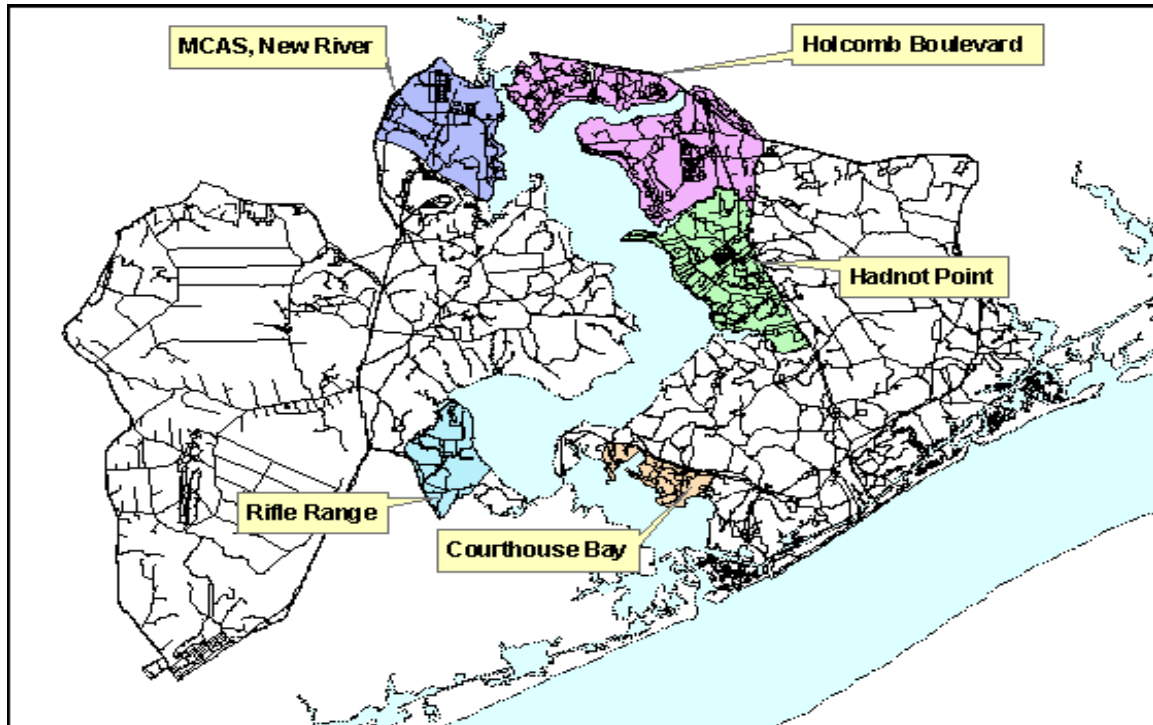
pCi/L: (picocuries per liter) A measurement of radiation released by a set amount of a certain compound.

pH: A measure of the acidity or alkalinity of water.

ppb, ppm: (Part per billion, part per million) Measurements of the amount of contaminant per unit of water. A part per million is like one cent in \$10,000 and a part per billion is like one cent in \$10,000,000.

THM: (Trihalomethanes) Four separate compounds (chloroform, dichlorobromomethane, dibromochloromethane, and bromoform) that form as a result of disinfection.

2003 Water Quality Report for Rifle Range Water Treatment System
(PWS ID: 04-67-046)



For more information

**Rifle Range Water Treatment
Attn: Brynn Ashton
Marine Corps Base, Camp Lejeune
PSC Box 20004
Camp Lejeune, NC 28542-0004**

**Phone: 910-451-5068
Fax: 910-451-5997
E-mail: ashtonbt@lejeune.usmc.mil**

Web Address: www.lejeune.usmc.mil/emd

2003 Water Quality Report for Rifle Range Water Treatment System

Is my water safe?

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 2003 Water Quality Report for the Rifle Range Water Treatment System explains where your water comes from and lists all of the contaminants detected in your drinking water. We routinely test your water for over 80 different EPA regulated chemical and microbiological contaminants. In 2003 three samples exceeded the Action Level for lead at the Rifle Range. In June of 2003, Xylene was detected, however, follow up samples were negative. In August and September of 2003, Chloromethane was detected at the Rifle Range water system, however, follow up samples tested negative. Chloromethane was detected in the Onslow County water system. In 2003, the Rifle Range water system met all U.S. Environmental Protection Agency (EPA) and State drinking water health standards. The Onslow County Water System Consumer Confidence Report can be viewed at http://www.co.onslow.nc.us/public_utilities/.

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).

Where does my water come from?

The Marine Corps Base, Camp Lejeune Rifle Range Water System is supplied with drinking water from Onslow County. Onslow County obtains raw water from the Black Creek and Castle Hayne groundwater aquifers. Onslow County maintains and operates a series of groundwater pumps that are used to withdraw raw water from these aquifers and transfer the raw water to Onslow County's Water Treatment Plant. At the treatment plant, licensed operators are responsible for using state-of-the-art equipment to remove contaminants from the water. As the water is pumped from the water treatment plant, chlorine is added to protect against microbial contamination. This treated water passes through the Onslow County water distribution system and then to the MCB, Camp Lejeune Rifle Range Water System.

How do contaminants get into drinking 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).

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 can pick up substances resulting from the presence of animals or from human activity. Microbial contaminants, such as viruses and bacteria 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 stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming. Pesticides and herbicides 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 can, also come from gas stations, urban stormwater runoff, and septic systems. Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Educational Statement for Lead

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to flush your tap for at least 60 seconds before using tap water. Additional information is available from Safe Drinking Water Hotline (800-426-4791).

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 (units)	MCLG	MCL	Your Water	Range		Sample Date	Violation	Typical Source	
Low	High								
Volatile Organic Contaminants									
TTHMs [Total Trihalomethanes] (ppb)	NA	100	89.41	67.1	105.5	----	No	By-product of drinking water disinfection	
Xylene (ppm)	10	10	0.007	----	----	6/2003	No	Discharge from petroleum/chemical factories	
Contaminant(s) (units)	MCLG	AL	Your Water	# of Samples >AL	Sample Date	Exceeds AL	Typical Source		
Inorganic Contaminants									
Copper (ppm)	1.3	1.3	0.758	0	08/2003	No	Corrosion of household plumbing systems; Erosion of natural deposits		
Lead (ppb)	0	15	14.5	3	08/2003	No	Corrosion of household plumbing systems; Erosion of natural deposits		
Contaminants (units)	MCLG	MCL	Your Water	Range		Sample Date	Violation		
Low	High								
Unregulated Volatile Organic Contaminants									
Chloromethane (Onslow)(ppb)	NA	NA	4.5	1.0	8.0	----	No		
Chloromethane (Lejeune)(ppb)	NA	NA	1.1	0.7	1.5	08/2003, 09/2003	No		

NA: Not applicable
 ND: Not detected
 NR: Not reported
 MNR: Monitoring not required, but recommended.

ppm: parts per million, or milligrams per liter (mg/L)

ppb: parts per billion, or micrograms per liter (µg/L)

Potential Health Effects:

Lead – 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.

TTHM – Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Xylenes – Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.

Important Drinking Water Definitions:

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

Contaminant: Any natural or man-made physical, chemical, biological, or radiological substance or matter in water, which is at a level that may have an adverse effect on public health, and which is known or anticipated to occur in public water systems.

Coliform: A group of bacteria commonly found in the environment. They are an indicator of potential contamination of water. Adequate and appropriate disinfection effectively destroys coliform bacteria.

Disinfection: A process that effectively destroys coliform bacteria.

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.

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: Maximum residual disinfectant level. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Nitrates: A dissolved form of nitrogen found in fertilizers and sewage by-products that may leach into groundwater and other water sources. Nitrates may also occur naturally in some waters.

NTU: (Nephelometric turbidity unit) A measure of the clarity of water.

Pathogens: (Disease-causing pathogens, waterborne pathogens) A pathogen is a bacterium, virus, or parasite that causes or is capable of causing disease. Pathogens may contaminate water and cause waterborne disease.

pCi/L: (picocuries per liter) A measurement of radiation released by a set amount of a certain compound.

pH: A measure of the acidity or alkalinity of water.

ppb, ppm: (Part per billion, part per million) Measurements of the amount of contaminant per unit of water. A part per million is like one cent in \$10,000 and a part per billion is like one cent in \$10,000,000.

THM: (Trihalomethanes) Four separate compounds (chloroform, dichlorobromomethane, dibromochloromethane, and bromoform) that form as a result of disinfection.