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Annual Drinking Water Quality Report

Perquimans County Water System

PWSID # 04-72-025

We're pleased to present to you this year's Annual Quality Water 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 wells which pump from the Yorktown Aquifer.

I'm pleased to report that our drinking water is safe and meets federal and state requirements. If you have any questions about this report or concerning your water utility, please contact Russ Chappell at 426-8230. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the first Monday of every month at 3:00 p.m. in the Courthouse Annex.

Perquimans County Water System routinely monitors for contaminants in your drinking water according to Federal and State laws. This table shows the results of our monitoring for the period of January 1st to December 31st, 2002 and the last test results of contaminants that were not due to be tested in 2002. 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 bottle drinking water, may be reasonably expected to contain at least small amounts of some contaminants. It's important to remember that the presence of these contaminants does not necessarily pose a health risk.

In this table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

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 or a single penny in \$10,000.

Parts per billion (ppb) or Milligrams per liter - one part per billion corresponds to one minute in 2,000 years or a single penny in \$10,000,000.

Parts per trillion (ppt) or Nanograms per liter (nanograms/l) - one part per trillion corresponds to one minute in

2,000,000 years, or a single penny in \$10,000,000,000.

Parts per quadrillion (ppq) or Picograms per liter (picograms/l) - one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.

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

Millirems per year (mrem/yr) - measure of radiation absorbed by the body.

Million Fibers per Liter (MFL) - million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Variances & Exemption (V&E) - State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

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

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

Maximum Contaminant Level - (mandatory language) 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 - (mandatory language) 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.

TEST RESULTS

| Contaminant | Violation Y/N | Level Detected | Unit Measurement | MCLG | MCL | Likely Source of Contamination |
|--|---------------|----------------|------------------|------|--|---|
| Microbiological Contaminants 2002 | | | | | | |
| 1. Total Coliform Bacteria | N | ND | | 0 | presence of coliform bacteria in 5% of monthly samples | Naturally present in the environment |
| 2. Fecal coliform and E.coli | N | ND | | 0 | a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive | |
| 3. Turbidity | | | | n/a | TT | Soil runoff (not required) |
| Radioactive Contaminants May 2001 | | | | | | |
| 4. Beta/photon emitters | N | ND | mrem/yr | 0 | 4 | Decay of natural and man-made deposits |
| 5. Alpha emitters | N | ND | pCi/l | 0 | 15 | Erosion of natural deposits |
| 6. Combined radium | N | ND | pCi/l | 0 | 5 | Erosion of natural deposits |
| Inorganic Contaminants February 2002 | | | | | | |
| 7. Antimony | N | <.003 | ppb | 6 | 6 | Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder |
| 8. Arsenic | N | <.005 | ppb | n/a | 50 | Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes |
| 9. Asbestos | N | ND | MFL | 7 | 7 | Decay of asbestos cement water mains; erosion of natural deposits |
| 10. Barium | N | <.100 | ppm | 2 | 2 | Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits |
| 11. Beryllium | N | <.001 | ppb | 4 | 4 | Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries |
| 12. Cadmium | N | <.001 | ppb | 5 | 5 | Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints |
| 13. Chromium | N | <.005 | ppb | 100 | 100 | Discharge from steel and pulp mills; erosion of natural deposits |
| 14. Copper | N | 1.0 | ppm | 1.3 | AL=1.3 | Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives |
| 15. Cyanide | N | <.040 | ppb | 200 | 200 | Discharge from steel/metal factories; discharge from plastic and fertilizer factories |
| 16. Fluoride | N | <.26 | ppm | 4 | 4 | Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories |
| 17. Lead | N | <.005 | ppb | 0 | AL=15 | Corrosion of household plumbing systems, erosion of natural deposits |
| 18. Mercury (inorganic) | N | <.0002 | ppb | 2 | 2 | Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland |
| 19. Nitrate (as Nitrogen) | N | <.100 | ppm | 10 | 10 | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |
| 20. Nitrite (as Nitrogen) | N | ND | ppm | 1 | 1 | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |
| 21. Selenium | N | <.010 | ppb | 50 | 50 | Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines |
| 22. Thallium | N | <.001 | ppb | 0.5 | 2 | Leaching from ore-processing sites; discharge from electronics, glass, and drug factories |
| Synthetic Organic Contaminants including Pesticides and Herbicides January 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 | Not Req. | | 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. Berzo (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 termiticide |
| 31. Dalapon | Y | .021 | 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 | Not Req. | nanograms/l | 0 | 200 | Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards |
| 35. Dinoseb | N | ND | ppb | 7 | 7 | Runoff from herbicide used on soybeans and vegetables |
| 36. Diquat | N | Not Req. | ppb | 20 | 20 | Runoff from herbicide use |
| 37. Dioxin (2,3,7,8-TCDD) | N | Not Req. | picograms/l | 0 | 30 | Emissions from waste incineration and other combustion; discharge from chemical factories |
| 38. Endothall | N | Not Req. | ppb | 100 | 100 | Runoff from herbicide used |
| 39. Endrin | N | ND | ppb | 2 | 2 | Residue of banned insecticide |
| 40. Epichlorohydrin | N | Not Req. | | 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 | Not Req. | 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 |

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 forms of radiation known as photons and beta 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 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 well 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 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 well 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) Alachlor. Some people who drink water containing alachlor 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.