



Town of Bernalillo

"The City of Coronado"

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2013 Annual Drinking Water Quality Report Town of Bernalillo, PWSS (3508923)

Este informe contiene informacion muy importante sobre la calidad de su agua potable. Por favor lea este informe o comuniquese con alguien que pueda traducir la informacion.

The Town of Bernalillo (Town) is pleased to provide you with this year's Annual Drinking Water Quality Report (Consumer Confidence Report). The Town wants to keep water customers informed about the excellent water and services delivered during calendar year 2013. The Town's goal is and always has been, to provide to customers a safe and dependable supply of drinking water.

This Report provides valuable information and allows customers to make personal health-based decisions regarding their drinking water consumption. The information contained in the report raises awareness of where Town drinking water comes from, helps consumers understand the process by which safe drinking water is delivered, and provides education about the importance of preventative measures, such as source water protection, that ensure a safe drinking water supply. The information in the report can be used by consumers, especially those with special health needs, to make informed decisions regarding the Town's drinking water. The report also provides access through references and telephone numbers to source water assessments, health effects data, and additional information about the water system.

The Town of Bernalillo has two permanent sources of drinking water and one emergency source. Two ground water wells (Well 3 located on NM 528 and Well 4 located US 550) provide drinking water to the town year round. The water from these wells is treated with a pressure filter system which utilizes ferric hydroxide and gas chlorination to remove arsenic and disinfect the water. The Town has installed an emergency connection to the City of Rio Rancho water system which can be used in the event that Wells 3 and 4 are unable to supply enough drinking water to the Town. During the 2013 calendar year the Town of Bernalillo did not use the emergency connection to Rio Rancho.

An analysis of contamination susceptibility of our source water has been done by the New Mexico Environment Department Drinking Water Bureau. The analysis showed that our water's susceptibility to contamination is moderately high. This plan is available for viewing in the Town of Bernalillo Public Works office, online at townofbernalillo.org or at the State of New Mexico Environment Department Drinking Water Bureau, Harold Runnels Building, 1190 St. Francis Drive, Suite S 2050, Santa Fe, NM 87505. Information such as potential sources of contamination is listed in the plan.

The Town wants our valued customers to have an opportunity for public participation in decisions which may affect the quality of the water and to be informed about their water utility. If you want to participate or learn more, please attend any of the Town's regularly scheduled council meetings. They are held on the second and fourth Monday of each month in the Town of Bernalillo Town Hall Council Chambers at 6:30 PM. Town staff and engineers periodically update the Town Council and the public on the status of our drinking water quality at these meetings. Additional information is provided in water billings and in the monthly Town Newsletter. Customers may always call the Town of Bernalillo with questions, concerns or requests for information at 505-867-3311.

This report contains many scientific terms, measures, and abbreviations that may not be familiar to a consumer. These terms definitions, measures, and abbreviations are defined below to help consumers better understand the contents of this report.

- *Maximum Contaminant Level Goal (MCLG)* - The 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.
- *Maximum Contaminant Level (MCL)* - The 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.
- *Action Level Goal (ALG)* – The level a contaminant in drinking water below which there is no know or expected risk to health. ALGs allow for a margin of safety.
- *Action Level (AL)* - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- *Non-Detects (ND)* - laboratory analysis indicates that the constituent is not present.
- *Millirems per year (mrem/yr)* - measure of radiation absorbed by the body.
- *Picocuries per liter (pCi/L)* - picocuries per liter is a measure of the radioactivity in water.
- *Average (avg)* – Regulatory compliance which some MCLs are based on running annual averages of samples

The following is a list of standard measurements used to define the concentration of a contaminant in water and associated abbreviations:

- Milligrams per liter (mg/l)
- Parts per billion (ppb)
- Micrograms per liter (ug/l)
- Parts per million (ppm)

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.

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 EPA's Safe Drinking Water Hotline (800-426-4791).

In order to ensure that tap water is safe to drink, EPA and the State of New Mexico (State) prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

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).

The Town of Bernalillo and State of New Mexico Environment Department routinely monitors for contaminants in the drinking water according to Federal and State laws. The following shows the results of monitoring for the period of January 1st to December 31st, 2013. (Some of the data may be more than one year old because the state allows the Town to monitor for some contaminants less often than once per year.) It's important to remember that the presence of these contaminants does not necessarily pose a health risk.

Microbiological Contaminant Monitoring:

Microbiological contaminants refer to the non-intended or accidental introduction of infectious material like bacteria, virus, protozoa or their toxins and by products into the drinking water. Microbial contaminants may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, microbiological contaminants may be present. The Town collected one hundred and twenty (120) coliform samples during 2013. Coliform bacteria were not found in the samples collected. (Table 1)

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. The Town collected one hundred and twenty (120) coliform samples during 2013. No fecal coliforms or E. coli bacteria were detected in the samples collected. (Table 1)

Table 1

Contaminant	Violation Yes/No	Date Sampled	Highest level Detected	MCL	MCLG	Likely Source of Contamination
Total Coliform Bacteria	No	10 samples per month	0 Positive samples	1 Positive sample during month	0 Positive samples	Naturally present in the environment
Fecal coliform and E.coli	No	10 samples per month	0 Positive samples	a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive	0 Positive samples	Human and animal fecal waste

Disinfection:

Disinfection means the removal, deactivation or killing of pathogenic microorganisms in the drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants. The Town uses gas chlorine as a disinfectant and measures the residual chlorine concentration throughout distribution. These measurements are taken at the same time and location as coliform samples.

If the concentration of chlorine in drinking exceeds the highest level of a disinfectant allowed in drinking water (MRDL) eye irritation, nose irritation, and stomach discomfort can occur. EPA has also established a maximum level of a disinfectant (MRDLG) below which there is no known or expected risk to health. The MRDLGs do not reflect the benefits of the use of disinfectant to control microbial contaminants. Table 2 demonstrates that the Town did not exceed the MRDL for chlorine during calendar year 2013.

Table 2

Contaminant	Violation Yes/No	Date sampled	Highest level detected	Range of levels detected	MRDL	MRDLG	Units	Likely Source of Contamination
Chlorine	No	2013	0.6	0.5-0.6	4	4	ppm	Water additive used to control microbes.

Disinfection Byproducts:

Because the Town uses chlorine as a disinfectant the drinking water must be tested for disinfection byproducts. Specifically the town tests for trihalomethanes and haloacetic acids.

Trihalomethanes occur when naturally-occurring organic and inorganic materials in the water react with the chlorine. Some people who drink water containing total trihalomethanes in excess of the MCL over many years could experience liver, kidney, or central nervous system problems and increased risk of cancer. Table 3 provides results for total trihalomethane testing.

Haloacetic acids also occur when naturally-occurring organic and inorganic materials in the water react with the chlorine. Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer. Table 3 provides results for total trihalomethane testing.

Table 3

Contaminant	Violation Yes/No	Date sampled	Highest level detected	Range of levels detected	MCL	MCLG	Units	Likely Source of Contamination
Haloacetic Acids (HAA5)*	No	2012	0.45	0.45 - 0.45	60	No goal for the total	ppb	By-product of drinking water disinfection.
Total Trihalo-methanes (TTHM)	No	2012	1.2	1.2 - 1.2	80	No goal for the total	ppb	By-product of drinking water disinfection.

Inorganic Contaminant Monitoring:

Inorganic contaminants are mineral-based compounds such as salts, metals, nitrates, and asbestos. These contaminants are naturally-occurring in some water, but can also get into water through farming, urban storm water runoff, industrial or wastewater discharge, oil and gas production, mining, and other human activities. EPA has set a Maximum Contaminant Level for the following inorganic chemicals.

Antimony	Chromium	Nitrate
Arsenic	Copper	Nitrite
Asbestos	Cyanide	Selenium
Barium	Fluoride	Thallium
Beryllium	Lead	
Cadmium	Mercury (inorganic)	

The following provides information for inorganic compounds which have been detected in the latest samples collected by either the Town of Bernalillo or the State of New Mexico Environment Department (Table 4). Inorganic compounds not listed were not detected in water samples.

Arsenic is an element that can be introduced into source water by the erosion of natural deposits; runoff from orchards; or runoff from glass and electronics production wastes. Arsenic in the Towns drinking water is presumed to be naturally occurring. 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.

Barium is an element that can be introduced into source water by discharge of drilling wastes; discharge from metal refineries; or erosion of natural deposits. Barium in the Towns drinking water is presumed to be naturally occurring. Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

Fluoride is an element that can be introduced into source water by erosion of natural deposits; water additive which promotes strong teeth; or discharge from fertilizer and aluminum factories. The Town does not use fluoride as a drinking water additive and the fluoride present in the Towns drinking water is presumed to be naturally occurring. 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.

Nitrate/Nitrite can be introduced into source water by runoff from fertilizer use; leaching from septic tanks, sewage; or erosion of natural deposits. 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.

Selenium is an element that can be introduced into source water by discharge from petroleum and metal refineries; erosion of natural deposits; or discharge from mines. 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.

Table 4

Contaminant	Violation Yes/No	Date sampled	Highest level detected	Range of levels detected	MCL	MCLG	Units	Likely Source of Contamination
Arsenic	Yes	2013	11	3 - 13	10	0	ppb	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
Barium	No	2012	0.047	0.047 - 0.047	2	2	ppm	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Fluoride	No	2011	0.35	0 - 0.35	4	4	mg/L	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Nitrate [measured as Nitrogen]	No	2013	0.31	0 - 0.31	10	0	ppm	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Selenium	No	2012	5.6	5.6 - 5.6	50	50	ppb	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.

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. The violation occurred in the First Quarter (Q1/12) and ended at the end of the quarter. The Town determined that violation was due to operator error of the treatment system. Operation of the system was corrected and subsequent test results have shown compliance with the standard.

Organic Chemical Contaminants

Organic chemical contaminants include both synthetic and volatile organic chemicals. Organic chemicals are human-made chemicals that are used and produced in the manufacture of paints, adhesives, by products of industrial processes and petroleum production, pharmaceuticals, gas stations, urban storm water runoff or septic systems. They often are compounds of fuels, solvents, hydraulic fluids, paint thinners, and dry-cleaning agents commonly used in urban settings. Volatile organic chemicals contamination of drinking water supplies is a human-health concern because many are toxic and are known or suspected human carcinogens.

Synthetic organic compounds are chemicals synthesized from carbon and other elements such as hydrogen, nitrogen, or chlorine. They do not occur naturally, but are manufactured to meet hundreds of needs in our daily lives, ranging from moth balls to hair sprays, from solvents to pesticides. Synthetic organic compounds contamination of drinking water supplies is a human-health concern because many are toxic and are known or suspected human carcinogens.

The Towns drinking water has been tested for the following organic compounds. The most recent water samples resulted in non-detects for these contaminants.

Acrylamide	Trans-1,2-Dichloroethylene	Methoxychlor
Alachlor	Dichloromethane	Oxamyl (Vydate)
Atrazine	1,2-Dichloropropane	Polychlorinated biphenyls (PCBs)
Benzene	Di(2-ethylhexyl) adipate	Pentachlorophenol
Benzopyrene	Di(2-ethylhexyl) phthalate	Picloram
Carbofuran	Dioxin (2,3,7,8-TCDD)	Simazine
Carbon tetrachloride	Diquat	Styrene
Chlordane	Endothall	Tetrachloroethylene
Chlorobenzene	Endrin	Toluene
2,4-D	Epichlorohydrin	Toxaphene
Dalapon	Ethylbenzene	2,4,5-TP (Silvex)
1,2-Dibromo-3-chloropropane (DBCP)	Ethylene dibromide	1,2,4-Trichlorobenzene
Dichlorobenzene	Glyphosate	1,1,1-Trichloroethane
Dichlorobenzene	Heptachlor	1,1,2-Trichloroethane
1,2-Dichloroethane	Heptachlor epoxide	Trichloroethylene
1,1-Dichloroethylene	Hexachlorobenzene	Vinyl chloride
cis-1,2-Dichloroethylene	Hexachlorocyclopentadien	Xylenes (total)
	Lindane	

Radioactive Contaminants:

A radionuclide is an atom with an unstable nucleus which, to become more stable, emits energy in the form of rays or high speed particles. This is called ionizing radiation because it can create "ions" by displacing electrons in the body e.g. in the DNA, disrupting its function. Radioactive contaminants can be naturally occurring or be the result of oil and gas production, and mining activities. The three major types of ionizing radiation are: alpha particles, beta particles and gamma rays. EPA regulates the following radioactive contaminants in drinking water: (Adjusted) Gross Alpha Emitters, Beta Particle and Photon (gamma) Radioactivity, Radium 226 and Radium 228 (Combined) and Uranium.

The following provides information for radionuclides which have been detected in the latest samples collected by either the Town of Bernalillo or the State of New Mexico Environment Department (Table 5).

Radium-226 and 228 are caused from erosion of natural deposits of certain minerals that are radioactive and may emit a form of radiation known as alpha radiation. Radium 226 and radium 228 are combined during analysis. Some people who drink water containing radium 226 or radium 228 in excess of the MCL over many years may have an increased risk of getting cancer.

Gross Alpha is emitted from the erosion of natural deposits of certain minerals that are radioactive and may emit forms of 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.

Beta Particles and Photons are emitted from decay of natural and man-made deposits of certain minerals that are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta particles and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.

Uranium is an element that can be introduced into source water by erosion of natural deposits. Exposure to uranium in drinking water may result in toxic effects to the kidney.

Table 5

Contaminant	Violation Yes/No	Date sampled	Highest level detected	Range of levels detected	MCL	MCLG	Units	Likely Source of Contamination
Beta/photon emitters (pCi/L)	N	2013	6.6**	6.6 - 6.6	0	50*	pCi/L	Decay of natural and man-made deposits.
Combined Radium 226/228	N	2013	0.09	0.09 - 0.09	0	5	pCi/L	Erosion of natural deposits.
Gross alpha excluding radon and uranium	N	2013	1.9	0 - 1.9	0	15	pCi/L	Erosion of natural deposits.
Uranium	N	2013	3	3 - 3	0	30	ug/l	Erosion of natural deposits.

* The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles.

** Because the beta particle results were below 50 pCi/L, no testing for individual beta particle constituents was required.

Lead and Copper Monitoring

Lead and copper enter drinking water primarily through plumbing materials. Exposure to lead and copper may cause health problems ranging from stomach distress to brain damage. Lead and copper are samples are collected from drinking water at customer taps

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Town of Bernalillo is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or <http://water.epa.gov/drink/>. Table 6 provides results for lead and copper monitoring.

Table 6

Lead and Copper	Violation	Date Sampled	ALG	AL	90th Percentile	# Sites Over AL	Units	Likely Source of Contamination
Lead	N	2012	0	15	2	0	ppb	Corrosion of household plumbing systems; Erosion of natural deposits.
Copper	N	2012	1.3	1.3	0.2	0	ppm	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.

Violations

The Town experienced two violations of the State Drinking Water Regulations during calendar year 2013.

The first violation occurred when the Town exceeded the MCL for Arsenic with a running annual average of 11 ppb during the second quarter of 2013. The Town returned to compliance during the third quarter of 2013. The Town determined that violation was due to poor monitoring of the Arsenic removal treatment system. The Town has increased monitoring of the treatment system and subsequent monitoring results indicate the issue has been resolved and the Town water remains in compliance with the MCL. As previously explained, 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.

The second violation was failure to properly monitor and report compliance data for synthetic organic compounds. The Town was required to collect two consecutive quarterly samples during the 2011 – 2013 compliance period. Two samples were collected by the New Mexico Environment Department during the compliance period however they were not in consecutive quarters. Samples were collected on July 19, 2012 and December 30, 2013 during the sampling period. The Town determined that violation was due to poor monitoring of sample schedules. The Town has increased monitoring of sampling schedules and is ensuring that the New Mexico Environment Department Drinking Water Bureau (DWB) collects samples as required. If necessary the Town will ensure compliance by collecting samples. Because the samples were incorrectly collected the health effects of this violation are unknown. Please see attachment A.

Additional Information:

During calendar year 2013 water delivered to you by the Town was normally clear and clean. However, the Town did receive and promptly respond to calls concerning colored water in the distribution system. There are several situations that can cause your water to have a brown, red, or orange tint. Sediment can enter a distribution system from water line breaks and water line repairs or from water pumped from the ground water wells. Color water can also occur when the Arsenic treatment system allows ferric to enter the distribution system. These situations do not occur very often and usually clear up quickly. Color watered can also be caused by scale or rust coming loose from old iron or galvanized steel pipes in the distribution system or house plumbing. Finally water that sits in cul-de-sacs or dead end lines can sometimes stagnate, creating red or brownish water.

The Town is taking several actions to reduce the number the number of calls concerning colored water. Most of these actions will not be noticeable to customers. However the town has implemented a flushing program which may cause customers to see colored water during and immediately after flushing occurs near their residence. More information on the flushing program can be obtained on the Town's website townofbernalillo.org or facebook page.

Attachment A

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER Monitoring Requirements Not Met for Town of Bernalillo

Our water system violated drinking water requirements over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we are doing (did) to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During 2011 to 2013 compliance period we did not complete all monitoring for Synthetic Organic Compounds and therefore cannot be sure of the quality of your drinking water during that time.

What Should I Do?

There is nothing you need to do at this time.

The table below lists the contaminant(s) we did not properly test for during the last year. We were required to collect two consecutive quarterly samples during the compliance period. Two samples were collected during the compliance period however they were not in consecutive quarters. Samples were collected on July 19, 2012 and December 30, 2013 during the sampling period.

Contaminant	Required sampling frequency	Number of samples taken	When samples should have been taken	When samples were taken
SOCs ¹	2 samples every three years	2	2011-2013	February 2012

What Is Being Done?

The Town ensured that the New Mexico Environment Department Drinking Water Bureau collected the first consecutive quarterly sample on March 12, 2014 and will ensure the second quarterly sample is collected in June of 2014. The Town has is now ensuring that NMED samplers collect samples as required. If necessary the Town will ensure compliance by collecting samples. For more information, please contact Andy Edmondson at 505-771-7124.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by the Town of Bernalillo Water System ID#: 3508923.

Date distributed: 7/1/14.

¹ Acrylamide, Alachlor, Aldicarb, Aldicarb sulfoxide, Aldicarb sulfone, Atrazine, Benzo(a)pyrene, Carbofuran, Chlordane, Di(2-ethylhexyl) adipate, Di(2-ethylhexyl) phthalate, Dibromochloro-propane, Dinoseb, Diquat, Endothall, Endrin, Epichlorohydrin TT, Ethylene dibromide, Glyphosate, Heptachlor, Heptachlor epoxide, Hexachlorobenzene, Hexachlorocyclopentadiene (HEX), Lindane, Methoxychlor, Oxamyl (Vydate), Pentachlorophenol, Picloram, Polychlorinated biphenyls (PCBs), Simazine, 2,3,7,8-TCDD (Dioxin), Toxaphene, 2,4,5-TP (Silvex),