June 2012

WATER QUALITY REPORT

Town of Marana Municipal Water System

Including DEQ IDs: 10092, 10136, 10138, 10143, 10150, 10329, 10406 and 20611

Este informe contiene información muy importante sobre su agua de beber.
Tradúzcalo ó hable con alguien que lo entienda bien.

The Town of Marana Municipal Water System meets safe drinking standards

The Annual Water Quality Report covers the monitoring period between January 1, 2011 and December 31, 2011. This report is a snapshot of the year's water quality and the services the Town provides. We want you to understand the efforts we make to continually improve our water quality and to protect our water resources. Our goal is and always has been to provide customers with a safe and dependable supply of drinking water. The water we provide meets and/or exceeds the Safe Drinking Water Standards established by the U.S. Environmental Protection Agency (EPA) and the State of Arizona's Department of Environmental Quality (ADEQ).

WHERE DOES OUR WATER COME FROM?

The sources of drinking water (tap and bottled) 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 animals or human activity.

Our source is groundwater from the Lower Santa Cruz portion of the Tucson Basin Aquifer. Our portion of the aquifer was created primarily by runoff from the surrounding mountain ranges of Southern Arizona along with storm water percolating through the ground along the Lower Santa Cruz and its tributaries.

The Town of Marana Municipal Water System consists of seven public water systems and one non-transient non-community water system (Marana Regional Airport). The systems contain 20 potable wells pumping water at depths ranging from 144 to 244 feet below ground from our aquifer. The water from those wells is stored in reservoirs where it is minimally chlorinated and pumped through pipelines to reach homes or businesses.

WHAT TYPE OF CONTAMINANTS MIGHT BE PRESENT IN MY WATER?

Contaminants that may be present in source water include:

- Microbial, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic, such as salts and metals, that can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses.
- Radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can come from gas stations, urban storm water runoff, and septic systems.

VULNERABLE POPULATION

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as people 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 care providers. Call the Safe Drinking Water Hotline at (800) 426-4791 to learn more about EPA and Centers for Disease Control (CDC) guidelines on appropriate means to reduce the risk of infection by cryptosporidium and other microbiological contaminants, as well as other potential health effects.

SOURCE WATER ASSESSMENT PROGRAM (SWAP)

In 2003, ADEQ completed a Source Water Assessment for the Town of Marana's drinking water wells. This assessment reviewed the adjacent land uses that may pose a potential risk to the water sources. The results of the assessment do not mean that contamination has or will occur, but we can use this information to evaluate the need to improve our water treatment capabilities and prepare for future contamination threats. The assessment identified risks that include, but are not limited to, gas stations, landfills, agricultural fields, and wastewater treatment facilities. Only one of our public water systems (DEQ ID# 10150), Marana/ Cortaro (North Marana), has been designated as high risk. A designation of high risk indicates there may be additional source water protection measures that can be implemented on the local level.

Residents can help protect water sources by practicing good septic system maintenance, limiting pesticide and fertilizer use, and taking hazardous household chemicals to appropriate collection sites. Source Water Assessments on file with ADEQ are available for public review. If a Source Water Assessment is available, you may obtain a copy of it by contacting ADEQ at (602) 771-4641.

WHAT WATER SYSTEM DOES MY WATER COME FROM?

Use this table to determine which water system serves your home. The Department of Environmental Quality (DEQ) ID is assigned by DEQ to each Public Water System (PWS). Once you locate your water system name, you can follow your system's most recent detected regulated/unregulated contaminants by looking for the DEQ ID that corresponds to your water system in the tables located under **Detected Contaminants**. Certain contaminants are monitored less than once per year because their concentrations are not expected to vary significantly from year to year or the system is not considered vulnerable to this type of contamination.

DEQ ID	Water System Name (PWS)	General Area
10092	Continental Reserve	Continental Reserve/Picture Rocks/Cortaro & Silverbell Rd
10136	Palo Verde	Twin Peaks Rd & Clayton
10138	Airline/Lambert	Avra Valley Rd/Airline Rd/Lambert Ln/Saguaro Springs/Silverbell Rd & Linda Vista
10143	Cortaro Ranch	Oshrin Park/Cortaro Crossing/Shady Grove/Red Rock Ridge/Willow Ridge
10150	Marana/Cortaro (North Marana)	Gladden Farms/Rancho Marana/Honea Heights/Amole Circle/San Lucas/Yoem Pueblo/Warfield Circle
10329	Hartman Vistas	Hartman Vistas/Hartman 10/Oasis Hills
10406	Airport	Marana Regional Airport
20611	Twin Peaks	Twin Peaks Rd & I-10

DETECTED CONTAMINANTS

Disinfection Byproducts

DEQ ID	Contaminant	MCL	MCLG	Units	Average	Range	Highest RAA	Violation (Yes/No)	Sample Date	Likely Source of Contamination
10092	Haloacetic Acids (HAA)	60	N/A	ppb	5.30	5.30	5.30	No	09/11	Byproduct of drinking water disinfection
10138	Haloacetic Acids (HAA)	60	N/A	ppb	2.30	ND - 4.80	4.80	No	09/11	
10150	Haloacetic Acids (HAA)	60	N/A	ppb	0.17	ND - 1.90	1.90	No	08/09	
10406	Haloacetic Acids (HAA)	60	N/A	ppb	15.00	12.00 - 18.00	18.00	No	09/11	
10092	Total Trihalomethanes (TTHM)	80	N/A	ppb	9.80	9.80	9.80	No	09/11	
10136	Total Trihalomethanes (TTHM)	80	N/A	ppb	0.50	0.50	0.50	No	09/11	
10138	Total Trihalomethanes (TTHM)	80	N/A	ppb	6.60	2.90 - 10.10	10.10	No	09/11	
10143	Total Trihalomethanes (TTHM)	80	N/A	ppb	2.45	1.00 - 3.90	3.90	No	09/11	
10150	Total Trihalomethanes (TTHM)	80	N/A	ppb	1.83	0.50 - 3.20	3.20	No	09/11	
10329	Total Trihalomethanes (TTHM)	80	N/A	ppb	8.00	8.00	8.00	No	09/11	
10406	Total Trihalomethanes (TTHM)	80	N/A	ppb	81.65	58.30 - 105.00	105.00	No	09/11	

Volatile Organic Contaminants

DEQ ID	Contaminant	MCL	MCLG	Units	Level Detected/ Range	Highest Detect	Violation (Yes/No)	Sample Date	Likely Source of Contamination
10138	Ethylbenzene	700	700	ppb	0.81	0.81	No	04/10	Discharge from petroleum refineries
10138	Xylenes	10	10	ppm	0.0026	0.0026	No	04/10	Discharge from petroleum factories; discharge from chemical factories
10406	Xylenes	10	10	ppm	ND - 0.0005	0.0005	No	05/08	

Unregulated Contaminants

DEQ ID	Contaminant	MCL	MCLG	Units	Level Detected/ Range	Highest Detect	Violation (Yes/No)	Sample Date	Likely Source of Contamination
10092	Nickel	N/A	N/A	ppm	0.0051	0.0051	No	02/09	
10092	Sodium	N/A	N/A	ppm	83.00	83.00	No	02/09	
10136	Sodium	N/A	N/A	ppm	65.00	65.00	No	02/03	
10138	Sodium	N/A	N/A	ppm	65.00	65.00	No	02/09	
10143	Sodium	N/A	N/A	ppm	22.00 - 31.00	31.00	No	02/03	
10150	Sodium	N/A	N/A	ppm	34.00 - 51.00	51.00	No	02/11	
10329	Sodium	N/A	N/A	ppm	27.00	27.00	No	12/09	

Microbiological Contaminants

DEQ ID	Contaminant	MCL	MCLG	Unit	Result	Violation (Yes/No)	Sample Date	Likely Source of Contamination
10138	Total Coliform Bacteria for systems that collects <40 samples per month	No more than 1 positive monthly sample	0	Absent or Present	Present	No	12/07	Naturally present in the environment
10150	Total Coliform Bacteria for systems that collects <40 samples per month	No more than 1 positive monthly sample	0	Absent or Present	Present	No	09/08	

Synthetic Organic Contaminants, Including Pesticides and Herbicides

DEQ ID	Contaminant	MCL	MCLG	Units	Level Detected/ Range	Violation (Yes/No)	Sample Date	Likely Source of Contamination
10092	Di (2-ethyhexyl) phthalate	6	0	ppb	0.70	No	08/06	Discharge from rubber and chemical factories
10150	Di (2-ethyhexyl) phthalate	6	0	ppb	0.64	No	08/11	
10092	Simazine	4	4	ppb	0.05	No	03/06	Herbicide runoff

Secondary Contaminants

DEQ ID	Contaminant	Secondary Standard	MCLG	Units	Level Detected/ Range	Highest Detect	Violation (Yes/No)	Sample Date	Likely Source of Contamination
10150	Sulfate	250	N/A	ppm	209.00 – 218.00	218.00	No	12/10	
10406	Sulfate	250	N/A	ppm	237.00	237.00	No	12/10	

Disinfectants

DEQ ID	Contaminant	MRDL	MRDLG	Units	Range	Level Average	Violation (Yes/No)	Year Tested	Likely Source of Contamination
10092	Chlorine Residual	4	4	ppm	0.31 - 1.00	0.69	No	2011	Water additive used to control microbes
10136	Chlorine Residual	4	4	ppm	0.30 - 0.90	0.42	No	2011	
10138	Chlorine Residual	4	4	ppm	0.25 - 1.00	0.51	No	2011	
10143	Chlorine Residual	4	4	ppm	0.20 - 1.00	0.43	No	2011	
10150	Chlorine Residual	4	4	ppm	0.36 - 1.00	0.61	No	2011	
10329	Chlorine Residual	4	4	ppm	0.30 - 1.00	0.62	No	2011	
10406	Chlorine Residual	4	4	ppm	0.10 - 0.80	0.43	No	2011	
20611	Chlorine Residual	4	4	ppm	0.10 - 1.20	0.50	No	2011	

Lead and Copper

DEQ ID	Contaminant	AL	ALG	Units	90th Percentile	Number of Sites over AL	Violation (Yes/No)	Sample Date	Likely Source of Contamination
10092	Copper	1.3	1.3	ppm	0.47	0	No	09/09	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
10136	Copper	1.3	1.3	ppm	0.10	0	No	07/09	
10138	Copper	1.3	1.3	ppm	0.26	0	No	07/09	
10143	Copper	1.3	1.3	ppm	0.03	0	No	06/09	
10150	Copper	1.3	1.3	ppm	0.05	0	No	09/11	
10329	Copper	1.3	1.3	ppm	0.05	0	No	07/09	
10406	Copper	1.3	1.3	ppm	0.08	0	No	09/11	
20611	Copper	1.3	1.3	ppm	0.07	0	No	09/10	
10092	Lead	15	0	ppb	7.00	0	No	09/09	Corrosion of household plumbing systems; erosion of natural deposits
10138	Lead	15	0	ppb	12.00	0	No	07/09	
10150	Lead	15	0	ppb	5.00	0	No	09/11	
10406	Lead	15	0	ppb	2.50	0	No	09/11	

Inorganic Contaminants

DEQ ID	Contaminant	MCL	MCLG	Units	Level Detected/ Range	Highest Detect	Violation (Yes/No)	Sample Date	Likely Source of Contamination
10143	Antimony	6	6	ppb	5.10	5.10	No	03/03	Discharge from petroleum refineries; fire retardants; ceramics, electronics and solder.
10136	Arsenic	10	0	ppb	6.10	6.10	No	03/03	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
10138	Arsenic	10	0	ppb	3.90 - 5.40	5.40	No	03/03	
10150	Arsenic	10	0	ppb	2.90 - 3.40	3.40	No	02/11	
10329	Arsenic	10	0	ppb	1.00	1.00	No	12/09	
10406	Arsenic	10	0	ppb	3.30 - 5.70	5.70	No	02/11	
10136	Barium	2	2	ppm	0.24	0.24	No	03/03	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
10138	Barium	2	2	ppm	0.038 - 0.044	0.044	No	03/03	
10143	Barium	2	2	ppm	0.03 - 1.00	1.00	No	03/03	
10150	Barium	2	2	ppm	0.05 - 0.08	0.08	No	02/11	
10406	Barium	2	2	ppm	0.04 - 0.05	0.05	No	02/11	
20611	Barium	2	2	ppm	0.07	0.07	No	02/10	
10150	Chromium	100	100	ppb	1.30	1.30	No	02/11	Discharge from steel and pulp mills; erosion of natural deposits
10406	Chromium	100	100	ppb	1.30 - 2.10	2.10	No	02/11	
10136	Fluoride	4	4	ppm	0.34	0.34	No	03/03	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
10138	Fluoride	4	4	ppm	0.40 - 0.55	0.55	No	03/03	
10143	Fluoride	4	4	ppm	0.24 - 0.36	0.36	No	03/03	
10150	Fluoride	4	4	ppm	0.65 - 0.68	0.68	No	02/11	
10092	Nitrate (as Nitrogen)	10	10	ppm	4.20 - 4.50	4.50	No	02/11	Runoff from fertilizer use; leaching from septic of natural deposits tanks, sewage; erosion
10136	Nitrate (as Nitrogen)	10	10	ppm	3.90	3.90	No	02/11	
10138	Nitrate (as Nitrogen)	10	10	ppm	3.10 - 5.30	5.30	No	02/11	
10143	Nitrate (as Nitrogen)	10	10	ppm	3.30	3.30	No	02/11	
10150	Nitrate (as Nitrogen)	10	10	ppm	1.30 - 3.46	3.46	No	09/11	
10329	Nitrate (as Nitrogen)	10	10	ppm	1.10	1.10	No	07/11	
10406	Nitrate (as Nitrogen)	10	10	ppm	0.37 - 0.54	0.54	No	02/11	
20611	Nitrate (as Nitrogen)	10	10	ppm	3.70	3.70	No	02/11	

Radionuclides

DEQ ID	Contaminant	MCL	MCLG	Units	Level Detected/ Range	Violation (Yes/No)	Sample Date	Likely Source of Contamination
10138	Combined Radium	5	0	pCi/l	0.40 ± 0.10	No	04/09	Erosion of natural deposits
10092	Combined Uranium	30	0	µg/L	21.90 ± 2.00	No	02/09	

TERMS & ABBREVIATIONS

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

Maximum Contaminant Level (MCL): The "maximum allowed" 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. MCLs are set at stringent levels.

Maximum Contaminant Level Goal (MCLG): The "goal" 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.

MFL: Million fibers per liter.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected health risk. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Millirems per year (MREM): A measure of radiation absorbed by the body.

Not Applicable (NA): Sampling was not completed by regulation or was not required.

Non Detect (ND): The contaminant is below the detection level.

Nephelometric Turbidity Units (NTU): A measure of water clarity.

Picocuries per liter (PCi/L): A measure of the radioactivity in water.

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. ppm x 1,000 = ppb.

Parts per billion (ppb) or Micrograms per liter (µg/L): One part per billion corresponds to one minute in 2,000 years or a single penny in $10,000,000. ppb x 1,000 = ppt.

Parts per trillion (ppt) or Nanograms per liter: ppt x 1,000 = ppq.

Parts per quadrillion (ppq): Also known as Picograms per liter.

Running Annual Average (RAA): An average of monitoring results for the previous 12 calendar months.

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

ADDITIONAL INFORMATION

Arsenic: While your drinking water meets EPA's standards, it contains low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing it from drinking water. EPA continues to research the health effects of low levels of arsenic (a mineral known to cause cancer in humans at high concentrations and is linked to other health effects, such as skin damage and circulatory problems). In 2011, there were no violations with regard to arsenic.

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 have your water tested. Flush your tap for 30 seconds to two (2) minutes before using tap water. Additional information is available from the EPA Safe Drinking Water Hotline at (800) 426-4791. In 2011, there were no violations with regard to lead.

Nitrates: In drinking water at levels above 10 ppm are a health risk for infants younger than six months of age and elderly people on oxygen continually. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, and detected nitrate levels are above 5 ppm, you should seek advice from your healthcare provider. In 2011, there were no violations with regard to nitrates.

HOW DO I KNOW IF MY WATER IS SAFE?

The Town of Marana Municipal Water System, in collaboration with ADEQ Monitoring Assistance Program (MAP), routinely monitors for more than 80 contaminants as required by federal and state regulations. Testing is required for synthetic organic chemicals (SOCs), inorganic chemicals (IOCs), volatile organic chemicals (VOCs), radiochemicals, lead and copper and disinfection byproducts. Bacteriological tests are required monthly.

WHAT HAPPENS IF THE WATER TESTED INDICATES CONTAMINATION?

If a constituent is found to be out of compliance with the Safe Drinking Water Standards, we are required by federal and state law to notify our customers. Notifications can be made by letter, the media or through this report. If a serious situation occurs that may affect the health, safety and well-being of our residents, we will do whatever is necessary to advise our customers and find an alternate source of safe drinking water.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public systems. Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

MONITORING ASSISTANCE PROGRAM (MAP)

The Arizona Department of Environmental Quality has extended this program to ensure water suppliers serving fewer than 10,000 customers complete all monitoring requirements under the rules of the various government agencies responsible for safe drinking water. Under this agreement, the state employs an independent firm to take the required water samples and send them to a laboratory for analysis. The results are sent to the water provider and the Arizona Department of Environmental Quality. In this way, you—our customer—the state and we are guaranteed that tests are done in a timely manner.

REPORT PERIOD

All systems were tested monthly, quarterly or annually for contaminants, depending on the guidelines for each established by the EPA.

SYSTEM VIOLATIONS

In the fourth quarter of 2011, the Town of Marana Municipal Water System failed to monitor for nitrates in the Airline/Lambert Public Water System (DEQ ID# 10138). The MCL for nitrates is 10 ppm. Nitrate levels were monitored during the first three quarters of 2011 and the range for nitrates during that time was 3.10 ppm-5.30 ppm. The nitrate level range for the first two quarters of 2012 was 4.56 ppm-5.21 ppm. Based on samples collected prior to, and after, the fourth quarter of 2011, nitrate levels were well within the MCL during the fourth quarter of 2011.

CHLORINATION

The Town of Marana Utilities Department treats its water with chlorine, the most commonly used disinfectant for water that saves lives by controlling waterborne diseases.

WATER HARDNESS

Arizona water passes through soils that are rich in calcium and magnesium. These harmless, tasteless minerals become completely dissolved, creating what is known as hard water. Water hardness poses no health risk to consumers; however, it can create challenges around the house, such as a reduction in the cleansing ability of laundry soap and deposits left behind on bath fixtures, dishes and glassware.

A table of water hardness for the Town of Marana's water service area is available at www.marana.com/index.aspx?nid=173.

WHOM DO I CONTACT FOR ADDITIONAL INFORMATION ABOUT MY WATER QUALITY?

Questions or comments regarding this report should be directed to Anthony Cuaron, Services Supervisor, at (520) 382-2561. You may also reach him at acuaron@marana.com.

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