

# 2014 Annual Water Quality Report

Covering the reporting period of  
January - December 2013

*In 2013, MMWD's water  
met or surpassed all  
federal and state drinking  
water standards.*



**MARIN MUNICIPAL  
WATER DISTRICT**

## MMWD'S *Drinking Water* SOURCES

At the Marin Municipal Water District (MMWD), we are always working to deliver clean, safe water to your tap 24/7. This 2014 report summarizes the results of the thousands of water quality analyses conducted on your drinking water during 2013. We are pleased to report that your water met or surpassed all federal and state drinking water standards over the course of the year.

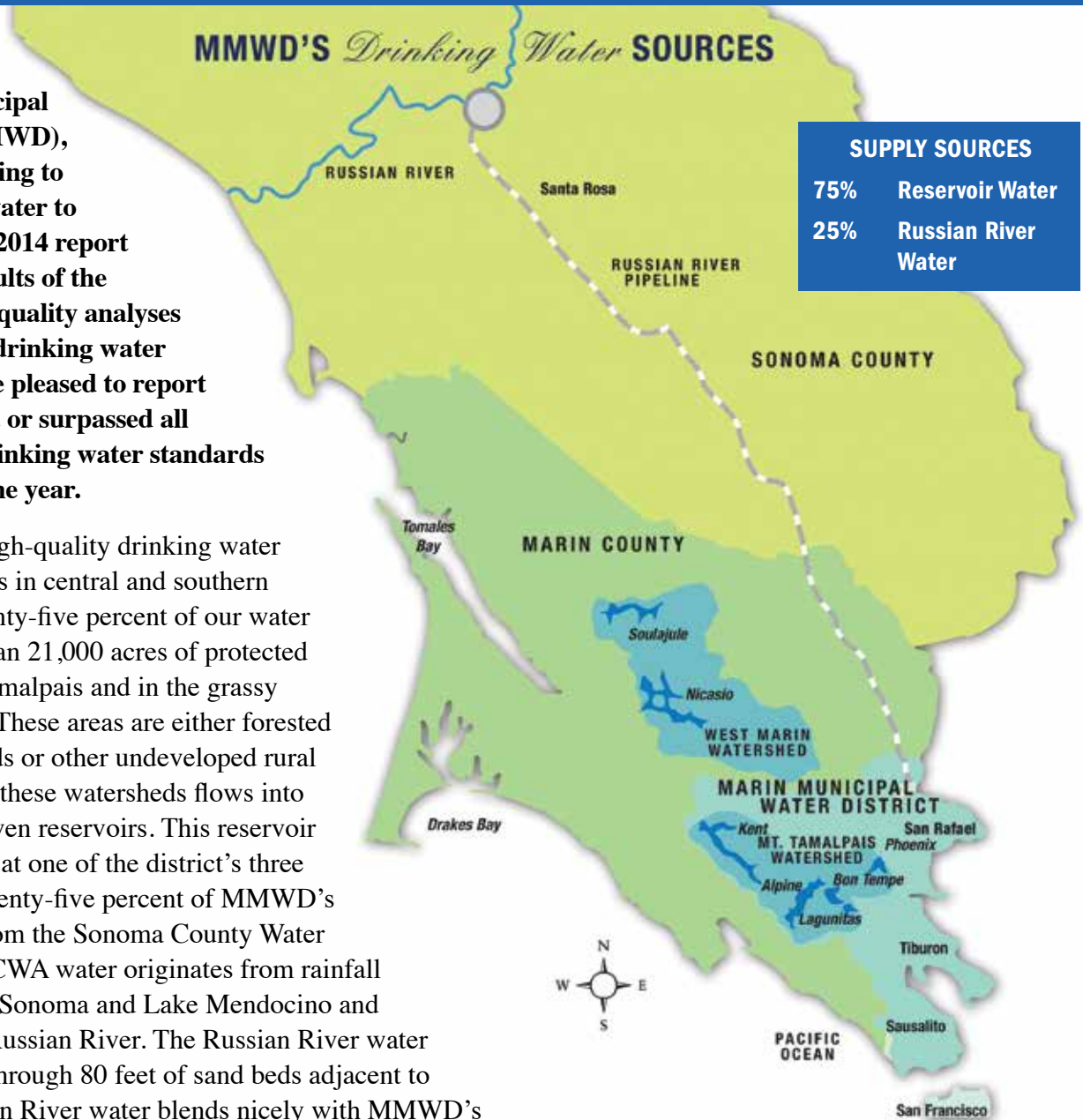
MMWD provides high-quality drinking water to 186,000 customers in central and southern Marin County. Seventy-five percent of our water comes from more than 21,000 acres of protected watershed on Mt. Tamalpais and in the grassy hills of west Marin. These areas are either forested MMWD-owned lands or other undeveloped rural lands. Rainfall from these watersheds flows into one of MMWD's seven reservoirs. This reservoir water is then treated at one of the district's three treatment plants. Twenty-five percent of MMWD's water is imported from the Sonoma County Water Agency (SCWA). SCWA water originates from rainfall that flows into Lake Sonoma and Lake Mendocino and is released into the Russian River. The Russian River water is filtered naturally through 80 feet of sand beds adjacent to the river. The Russian River water blends nicely with MMWD's reservoir water within our distribution system.

MMWD takes many steps to ensure water delivered to your tap is of high quality. These steps include carefully managing our watershed lands and reservoirs, treating the water, operating and monitoring a complex distribution system, and maintaining and upgrading our facilities. Every year MMWD conducts more than 120,000 water quality tests from watershed to faucet to ensure your water is safe to drink. This includes ongoing process control testing at our treatment plants as well as laboratory testing. Many of these samples undergo chemical, bacteriological, and physical analysis in the district's water quality laboratory, which is certified by the California Department of Public Health Environmental Laboratory Accreditation Program. Other samples are sent to specialty labs for testing.

*This information is provided in compliance with requirements established by the California Department of Public Health and the US Environmental Protection Agency and as a policy of the Marin Municipal Water District to inform customers of the contents of their drinking water and water quality standards.*

*This report and additional water quality information is available on our web site: [marinwater.org](http://marinwater.org).*

Cover Photo: Bon Tempe Reservoir on Mt. Tamalpais Watershed, Robert Campbell Photography



# Detected Constituents With Primary MCL, AL, or TT Health-Related Standards

## Distribution System (Blend of Reservoir and SCWA Waters)

CONSTITUENT	UNITS	MCLG (PHG)	MCL	AVG	RANGE	NO. SAMPLES	SOURCE
Coliform Bacteria	% presence	0	5	1.1 [1]	0-1.1	NA	Naturally present in the environment
E. Coli	positives	NA	NA	1 [2]	0-1	NA	Human and animal fecal waste
Copper	mg/L	(0.17)	1.3 [3]	0.07 [4]	ND-0.12	50	Internal corrosion of household plumbing systems
Lead	µg/L	(2)	15 [3]	ND [4]	ND	50	Internal corrosion of household plumbing systems
Haloacetic Acids	µg/L	NA	60 [5]	24 [6]	1-51	NA	By-product of drinking water disinfection
Total Trihalomethanes	µg/L	NA	80 [5]	37 [6]	16-68	NA	By-product of drinking water disinfection
Chloramines	mg/L	4 [7]	4 [7]	1.38	ND-2.2	NA	Drinking water disinfectant added for treatment

[1] Highest percentage of positive samples collected in any one month.

[2] Total number of positives collected in 2013. Repeat samples were negative for total coliforms and E. coli, indicating no contamination occurred.

[3] Action level for 90th percentile value.

[4] The sixth highest value out of 50 values (90th percentile) is listed.

[5] Compliance is based on the locational four quarter running average of distribution system samples.

[6] Highest locational running annual average for 2013. This value is compared to the MCL.

[7] Maximum Disinfection Residual Level (MRDL) is a term used for disinfectants such as chloramine in contrast to Maximum Contaminant Level (MCL) used for other parameters. The Maximum Residual Disinfectant Level Goal (MRDLG) is the same as the MCL. Disinfectants provide protection from viruses and bacteria, such as E. coli.

## Source Water

CONSTITUENT	SOURCE	UNITS	MCLG (PHG)	MCL (AL)	AVG	RANGE	SOURCE
Radium 228	Reservoirs	pCi/L	(0.019)	NA	ND [1]	ND-1.1	Erosion of natural deposits
Fluoride	SCWA	mg/L	(1)	2	ND	ND-0.1	Erosion of natural deposits
Fluoride	Reservoirs	mg/L	(1)	2	ND	ND-0.1	Erosion of natural deposits

[1] 2008 data.

NOTE: An additional 19 contaminants were monitored in 2013. None were detected.

CONSTITUENT	UNITS	PHG	TT	Minimum % meeting turbidity limits	RANGE	SOURCE
Turbidity	NTU	NA	0.3 [1]	100%	0.02-0.10	Soil runoff
Reservoir Water	NTU	NA	1 [2]	100%	0.02-0.10	Soil runoff

[1] 95% of all readings shall be less than or equal to this value.

[2] No single reading shall exceed 1 NTU.

## UNDERSTANDING THIS REPORT

To help you better understand this report, key definitions are shown below.

**Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

**Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the US Environmental Protection Agency.

**Public Health Goal (PHG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

**Maximum Residual Disinfectant Level (MRDL):** The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

**Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the US Environmental Protection Agency.

**Primary Drinking Water Standard (PDWS):** MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements and water treatment requirements.

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

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

# Other Detected Constituents Including Those With Secondary MCLs Aesthetic Standards (Odor, Taste, Appearance)

CONSTITUENT	UNITS	SMCL	Reservoir Water		SCWA Water		SOURCE
			AVG	RANGE	AVG	RANGE	
Odor	TON	3	ND	ND	ND	ND	Naturally occurring organic materials
Chloride	mg/L	250	31	23-45	8	8	Runoff/leaching of natural deposits
Specific Conductance	µS/cm	900	231	192-298	295	255-332	Substances that form ions in water
Sulfate	mg/L	250	5	4-7	13	12-15	Runoff/leaching of natural deposits
Total Dissolved Solids	mg/L	500	120	105-142	172	159-188	Runoff/leaching of natural deposits
Turbidity	NTU	5	0.12	0.07-0.22	0.14	0.08-1.08	Soil runoff
Zinc	mg/L	5	0.45	0.29-0.59	0.29	0.27-0.31	Corrosion inhibitor
Sodium	mg/L	NA	19	15-26	20	18-23	Runoff/leaching of natural deposits
Hardness [1]	mg/L	NA	61	55-65	111	94-126	Runoff/leaching of natural deposits
Hardness	grains/gal	NA	3.6	3.2-3.8	6.5	5.5-7.4	Runoff/leaching of natural deposits
Alkalinity [1]	mg/L	NA	56	45-68	126	112-141	
Radon [2]	pCi/L	NA	NA	NA	100	100	

[1] Expressed as Calcium Carbonate or CaCO<sub>3</sub>.

[2] Radon is a naturally occurring radioactive gas of geologic origin. It can migrate into indoor air through cracks in foundations. Tap water contributions to indoor air are small by comparison. Breathing air containing radon can lead to lung cancer. Ingesting water that contains radon may increase the risk of incurring stomach cancer. For additional information, contact USEPA's radon hotline (800-767-7236). The level of 100 pCi/L found in SCWA water entering the MMWD system in 2013 is far below the proposed regulatory limits of 300 and 4,000 pCi/L.

## UCMR Data\*

CONSTITUENT	UNITS	NL [MCL]	Reservoir Water		SCWA Water		SOURCE
			AVERAGE	RANGE	AVERAGE	RANGE	
NDMA [1]	µg/L	0.01	ND	ND-0.005	ND	ND	By-product of drinking water disinfection
Chromium, Total [2]	µg/L	[50]	ND	ND	0.2	0.2	Erosion of natural deposits
Chromium, Hexavalent [2]	µg/L	NA	0.11	0.09-0.24	0.18	0.18-0.19	Erosion of natural deposits
Chlorate [2]	µg/L	800	103	48-230	68	65-70	By-product of chlorine disinfection
Strontium [2]	µg/L	NA	93	50-130	185	180-190	Erosion of natural deposits
Vanadium [2]	µg/L	50	ND	ND	1.0	0.9-10	Erosion of natural deposits

[1] 2009 Data collected under the USEPA's Unregulated Contaminant Monitoring Rule 2 (UCMR2). The Public Health Goal for NDMA is 0.003 µg/L.

[2] 2013 Data collected under the USEPA's Unregulated Contaminant Monitoring Rule 3 (UCMR3). The Public Health Goal for hexavalent chromium is 0.02 µg/L.

\*Unregulated contaminant monitoring helps USEPA and the California Department of Public Health determine where certain contaminants occur and whether the contaminants need to be regulated. More information on the UCMR is available at [water.epa.gov/lawsregs/rulesregs/sdwa/ucmr](http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr).

## Distribution System Fluoride

UNITS	TT	AVERAGE	RANGE
mg/L	0.8-1.4	0.9	0.8-1.0

Fluoride occurs naturally in almost all surface and ground waters. Following a MMWD voter initiative passed in 1972, the fluoride level is maintained at 0.9 mg/L, the optimum level for cavity prevention.

## What is 1mg/L? ONE MILLIGRAM PER LITER = ONE PART PER MILLION

▶▶▶ Here are some equivalent ratios to help you understand the figures in this report more easily.

ONE PART PER MILLION IS ...

**1¢** one cent in \$10,000

**⌚** one minute in two years

**1"** one inch in 16 miles

## Abbreviations

AVG.....Average

mg/L.....Milligrams per liter (equals parts per million)

µg/L.....Micrograms per liter (equals parts per billion)

TON.....Threshold Odor Number

NA.....Not Applicable

ND.....Not Detected

pCi/L.....PicoCuries per liter

µS/cm.....microSiemens per centimeter

NTU.....Nephelometric Turbidity Units

SCWA.....Sonoma County Water Agency

MCL.....Maximum Contaminant Level

NL.....Notification Level

PHG.....Public Health Goal

UCMR.....Unregulated Contaminant Monitoring Rule

SMCL.....Secondary Maximum Contaminant Level

# Thank You for Using Water Wisely

While the focus of this report is about the quality of our drinking water, we also want to use this opportunity to give you an update on our water supply status. Calendar year 2013 was the driest in MMWD's records, which date back to 1872. Just 10.7 inches of rain fell at Lake Lagunitas in 2013, compared to an annual average of 52 inches. By January 2014, our reservoirs were 30% below normal levels.

In response, we took many actions to preserve our water supply, including activating Phase 1 of our Water Shortage Contingency Plan and asking customers to voluntarily reduce water usage by 25%. Fortunately, unusually wet storms in February, combined with the conservation efforts of our customers, helped replenish our reservoirs. As of mid-June 2014, our reservoirs are at 90 percent of normal. We invite you to visit our website at [marinwater.org](http://marinwater.org) for water supply updates.

Though our water supply situation has improved, it is still important to save water. MMWD offers a variety of programs to help you use water efficiently, including free on-site water-use consultations for your home or business. We also offer rebates to help you replace old water-wasting toilets, clothes washers, and irrigation controllers with new high-efficiency models. Visit [marinwater.org](http://marinwater.org) and click "Conservation" for details.

California is a drought-prone state where we have to make conservation a way of life. Thank you for using water wisely every day.



## Federally Required General Information About Drinking Water

*Federal regulations require us to include the following information in this report. Because it is general information, it does not necessarily apply to the drinking water provided by MMWD. Information specific to MMWD's drinking water can be found in the tables above.*

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 USEPA's Safe Drinking Water Hotline (1-800-426-4791).

## Federally Required Information About Potential Drinking Water Contaminants

Contaminants that may be present in source (untreated) water include:

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

## Special Notice for Immuno-Compromised Persons

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. Persons in these categories should seek advice about drinking water from their health care providers. USEPA/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 Drinking Water Hotline (1-800-426-4791).

## Attention, Landlords and Other Property Managers

We recommend that landlords and other property managers display this report in a public location such as a lobby, laundry room, or community room. If you would like to receive additional copies of this report, please call MMWD's Water Quality Laboratory at 415-945-1550.

## Atención, Consumidores Que Hablan Español

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien. Para más información, o para solicitar una copia del reporte en Español, llame 415-945-1138.

## Public Meetings

MMWD's Board of Directors meets at 7:30 p.m. on the first and third Tuesdays of every month in the MMWD Board Room, 220 Nellen Avenue, Corte Madera. All board meetings are open to the public.



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