WATER QUALITY REPORT

CITY OF MERIDIAN, PUBLIC WORKS







This annual report reflects the quality of our water for 2011



"All the water there will be, is...."

- Anonymous

Thank you for choosing the city of Meridian as your place of residence...

We at Meridian Public Works Water Division are once again pleased to provide you with this year's Annual Water Quality Report celebrating yet another successful year of supplying drinking water that meets or surpasses all established state and federal drinking water quality standards.

Safe drinking water is something we all have come to rely upon and the number one priority of our team of dedicated water professionals.

Our continued commitment to you, our valued customer, is to remain vigilant in protecting our precious water resources while delivering the safest, highest quality drinking water at an affordable price.

Exceptional Service in Every Drop!

In this year's report, you will learn where your drinking water comes from, what it contains, how it is protected, treated and monitored.

You will also learn about how to interpret the enclosed sample data, valuable water conservation tips and how you can help assist us to protect and preserve this invaluable resource for future generations.

Dennís Teller, Water Superíntendent

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Meridian's Water Sources

In Meridian, all of our drinking water is drawn from deep within the Boise Aquifer through 19 individual groundwater wells owned and operated exclusively by the City.

This water is disinfected and distributed into the water system through a network of approximately 400 miles of distribution lines over 4 pressure zones serving nearly 28,000 residential and business connections, 24 hours a day, 7 days a week.

In order to maintain our high quality water, division staff continually monitor the disinfection process, making necessary adjustments. The water quality team also performs water quality tests (over 3,500 last year) in order to properly monitor the quality within our distribution system. Through this continuous process, the Water Division ensures that all drinking water delivered to you, our customer, is safe and meets regulatory requirements.

Meridian's estimated population of approx 77,000 used approximately 2.8 billion gallons of drinking water or 7.7 million gallons per day for its household and commercial uses. By being proactive, the City of Meridian has established water supplies capable of satisfying our current and future water demands.

By improving the operations of our water production and distribution facilities, we will continue to ensure adequate reserves of this valuable, life giving resource, are available for future generations.



Taking Steps for Our Future Now

Upcoming Initiatives:

- The City of Meridian is currently in the planning stages for building its first treatment facility to remove iron and manganese from our production wells. This will help reduce brown water issues and improve water quality.
- The City has moved to Radio Read meter reading technology. A transceiver unit is mounted into the meter lid and allows the meter to be read remotely from a nearby moving vehicle.

Discolored Water

Occasionally you may notice that your water is slightly discolored or brownish in appearance.

This color is caused when a disinfectant (chlorine) mixes with water containing iron or manganese. This chemical reaction causes the minerals to then precipitate out of the water and eventually settle on the bottom of the water lines. During increased water flows caused by high demands, these deposits can be stirred up and carried to homes in the form of brown water.

Although this water may have some color, it is not harmful, and is safe for consumption. However, if you do encounter brown water, run your cold water taps for several minutes and it should clear up. Also, try to avoid running laundry and dishwashers during these brown water times to prevent getting unwanted stains.

Bottle vs. Tap



If you're looking for ways to save money, make the smart choice of drinking tap water instead of bottled water.

Bottled water costs up to 1,000% more than your tap water.

Add to that the environmental cost of the plastic, manufacturing, distribution, and disposal of all those bottles and we think you'll agree—tap water can save you money and is the responsible thing to do!

"Save water; nothing can replace it." – Anonymous

The Hydrologic Cycle

The **Hydrologic Cycle** is how water evaporates, gathers in clouds, and rains or snows onto the land. (See illustration below)

After it rains or the snow melts, the water then either evaporates; is used up by plants; runs off to streams and lakes; or infiltrates into the soil.

Some of this infiltration reaches the ground and will recharge the aquifer.

Recharge can also carry contaminants into groundwater from the land surface.

Therefore, recharge protection is at the center of preventing pollution and maintaining a water supply for drinking water and for freshwater habitats.



Terms For the Hydrologic cycle

- **Precipitation:** Rainfall or cloud vapor forms into heavier droplets and falls to the Earth.
- Surface Runoff: Rainfall flows into creeks and rivers down to lakes and surface water storage.
- **Percolation / Infiltration:** Process in which water is pulled underground into groundwater sources.
- Groundwater: Sources of water located under the Earth's surface.
- **Evaporation:** The process in which water is turned to vapor by the sun's rays and travels into the atmosphere.
- **Transpiration:** The process in which water is vaporized from plants and animals and travels into the atmosphere.

Protecting Our Groundwater



Use Natural Yard Care Practices

- Limit the use of synthetic fertilizer and potent pesticides and herbicides that may impact the aquifer.
- A garden soil test every three to 5 years will give a general nutrient recommendation to help prevent over application of fertilizer.
- Try using non chemical fertilizer alternatives.
- Try native shrubs instead of lawn.
- Try mulching to reduce weeds in plant and flower beds and by pulling weeds by hand.

Maintain Your Vehicle

- Keep your vehicle and machinery free of leaks. Check for oil and other fluids regularly and have them repaired.
- Use cloths or drip pans beneath your vehicle if you have leaks or are doing engine work.
- Never dispose of oil or other fluids into a storm drain, ditch, or the ground surface. Most auto stores will dispose of lubricants at no cost to you.
- Use commercial car washes that recycle water and dispose of wastewater into the sewer.

Businesses

- Properly store products and waste both indoors and outdoors, utilizing secondary containment (a container to catch spills or leaks from the original container).
- Be prepared for spills. Have a spill kit and spill procedures in place and train employees on how to use them.
- Keep lids on dumpsters and waste bins stored outside.
- Minimize the use of toxic cleaning solvents, such as chlorinated solvents, and other toxic chemicals.

Be Vígílant! Clean up chemícal spílls ímmedíately!



What is Hard Water?

Hardness is dissolved calcium and magnesium, which may cause deposits on fixtures and dishes. Our average water hardness is 122 ppm or 7 grains per gallon. According to the National Research Council (National Academy of Sciences), hard water generally contributes a small amount toward total human dietary needs of calcium and magnesium.

Are You Water Wise?

1. True or False: Water is the only substance found on earth naturally in the three forms.

2. How much water does an acre of corn give off per day in evaporation?

3. What were the first water pipes made from in the US?

4. How much water is used in the average five-minute shower?

5. What does a person pay for water on a daily basis?

6. How much does one gallon of water weigh?

7. At what temperature does water vaporize?

8. How much water does it take to process one can of fruit or vegetables?

9. How much water does it take to refine one barrel of crude oil?

10. Does water regulate the earth's temperature?

(Answers on Next Page)



Backflow prevention devices such as this are critical in protecting the integrity of our community's water supply and must be tested annually.

Quiz Answers

- 1 True (solid, liquid, and gas)
- 2 4,000 gallons
- 3 Fire charred bored logs
- 4 25-50 gallons
- 5 National average is 25 cents
- 6 8.34 pounds
- 7 212 degree F, 100 degrees C
- 8 9.3 gallons

9 - 1,851 gallons

10 - Yes (it is a natural

Cross Connections

If you have an irrigation system, fire suppression system, boiler, or even just an ordinary garden hose, it may be possible for you to unknowingly create a potentially hazardous cross connection to your water supply.

A Cross Connection is the ability for contaminated water from other sources such as pressurized irrigation lines, private wells, or even tree wells and planters to flow backward (backflow) by pressure or vacuum through your home's plumbing and into your fresh water supply – not good.....

Recognizing the growing importance of this real and potential hazard to you and the water system, the City of Meridian recently implemented some changes to its existing backflow prevention program. These changes now enforce annual testing compliance of the thousands of existing backflow prevention assemblies located throughout our City.

Backflow Prevention assemblies range from small vacuum breakers on household hose bibs to larger double check and reduced-pressure principal devices. The State of Idaho requires that these devices be tested annually and the results from these tests must be submitted to the City. The City of Meridian understands the inconvenience of incurring this new testing cost and is offering a \$10.00 credit on utility bills to those who test their assemblies on time. Visit the Water Division's section of the City website for an updated list of local professionals who you can hire to perform this testing.

Also addressed is the presence of dual connections between pressurized irrigation systems and private drinking water lines. Dual connections, per Meridian City Code, are not allowed and must be removed.

If you are not sure if you have the proper backflow protection on your plumbing system or if you have a possible Dual Connection in need of removal, please contact the Meridian Water Division at (208) 888-5242 and we would be glad to help.

The Importance of Annual Flushing



Water flushing through fire hydrants and flush lines is a best management practice that helps maintain water quality in the entire distribution system. Flushing clears out the buildup of naturally-occurring sediments within the system that can cause discoloration and taste and odor problems. Therefore, flushing protects all of the water within the system. The flushing is also part of the hydrant maintenance program. This program includes exercising the hydrants to ensure that there is adequate fire flow protection. Most fire hydrants sit idle all year long without water flowing through them, which can lead to stagnant water and water quality issues. Therefore, the Meridian Water Division has developed a routine yearround flushing program as part of its ongoing water quality program.

Please contact the Meridian Water Division at 208-888-5242 for more information or to be added to the electronic flushing notification list for your area.

Conserve Water:

Water is essential to all life on this planet and provides the critical backbone of Idaho's economy. It keeps our families healthy and provides for the excellent quality of life we've become accustomed to.

Even though Meridian has an adequate water supply, there is none to waste. Much of the water we use to drink, bathe, wash our cars, water our lawns, and swim in comes from rain and snow melt that collects in the lakes and reservoirs above our valley.

Periods of drought, though

uncommon to our community, can occur and last for several years or longer. Knowing this requires Meridian residents to take action, not only as a community but as individuals.

Incorporating conservation into our daily lifestyle isn't just a choice, it's our responsibility.

Together, we can do our part to use water wisely and ensure an adequate water supply for today and future generations. Water conservation not only will help you save our precious water resources; it will also help you save money.

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Conserving Your Home's Water... Indoors and Out

Replace old fixtures with high efficiency **WaterSense** faucets, toilets, washers and

other plumbing appliances. Look for the WaterSense label on new appliances at www.epa.gov/watersense/product search.html.

Use this online calculator to estimate how much water you can save by installing **WaterSense** labeled products in your home or apartment. www.epa.gov/WaterSense/calculate_your_water_ savings.html

Turn off the water when you shave or brush your teeth, and shorten your showers by 1 or 2 minutes.

Use a broom to clean sidewalks and driveways.

Repair drips and leaks. A dripping faucet can waste up to 2,000 gallons of water each year. Leaky toilets can waste up to 200 gallons daily and should be dye tested yearly.

To help assist you in finding and repairing water leaks please visit:

www.savingwater.org/inside.htm#leaks

Water early in the morning, as much of the water from daytime watering is lost to evaporation. Overwatering is more damaging to a lawn than underwatering. One inch per week of water should be sufficient for local lawns.

If you have a swimming pool, cover it to save 90 percent of evaporation.

Consider planting native or drought-resident plants, and use water-saving hose nozzles.

Use water from a bucket to wash your car, and save the hose for rinsing.

Check out local resources like your favorite lawn and garden store and the Idaho Native Plant Society at <u>www.idahonativeplants.org</u>.



Overwatering: A Surprising Fact

It may surprise you to learn that an average single-family household in Meridian uses 5,708 gallons of water a month in the winter and 12,178 gallons a month in the summer.

Up to 70% of all household water is used for outdoor needs and uses such as irrigation.

Studies have found that homeowners use two to five times more water than is really needed in their landscapes.

Most landscape watering can be cut in half with no visible effects on the plants.

"A ríver ís the report Card for íts watershed."

— Alan Levere

Share This Important Information

If other people, such as tenants, residents, patients, students, or employees, receive water from you, it is important that you provide this **Water Quality Report** to

them by posting it in a conspicuous location or by direct mail or hand delivery.



"When you gaze out the toward the stars you realize it's an awful long way to the next watering hole." – Loren Acton

Water Quality in Your Neighborhood

Do you have a pool, a water softener, an aquarium or any other equipment within your home that requires water quality information in order to be set up and operate properly?

The water quality information required for these pieces of equipment is a common question. In response to your questions, and to conveniently bring this information to you, we have developed the following chart and corresponding map showing the specific water qualities throughout the City. It is broken into three separate zones each identified by a unique color with some general landmarks to help you determine which zone you live in and the water quality you may have.

Zone	Hardness	Iron	Sodium	TDS
Zone 2	5.5 Grains per Gallon	0.04 PPM	14 PPM	172 PPM
Zone 3	7.3 Grains per Gallon	0.30 PPM	36 PPM	238 PPM
Zone 4	8.0 Grains per Gallon	0.03 PPM	74 PPM	208 PPM



Informational Facts About Drinking Water from the EPA

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 at:

1-800-426-4791 or http://www.epa.gov/safewater/hotline.

In order to ensure your tap water is safe to drink, EPA prescribed regulations which limit the amount of certain contaminates in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health. Contaminants that may be present in source water BEFORE we treat it include:

- **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic Contaminants, such as salt and metals, which can be naturallyoccurring or result from urban storm water runoff, industrial, or domestic water discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such





Special Health 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 and Prevention (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 at1-800-426-4791 or http://www.epa.gov/ safewater/hotline/

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Water Quality



Data

We routinely monitor for contaminants in your drinking water according to federal, state, and local standards.

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The State of Idaho requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are generally stable not expected to vary from year to year, or the system is not considered vulnerable to this type of contamination.



Understanding the Language of Water

Definitions to Help You Understand the Abbreviations Used in This Report

- (AL) Action Level: The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a community water system shall follow.
- (CFU) Colony Forming Units: A measure of microbial quantity.
- (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 a margin of safety.
- (MRDL) Maximum Residual Disinfectant Level: 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.
- (MRDLG) Maximum Residual Disinfectant 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.
- (MPL) Maximum Permissible Level
- (ND) Non-Detect: Not detected in sample.
- (PPM) Parts per million or milligrams per liter (mg/l)
- (PPB) Parts per billion or micrograms per liter (ug/l)
 - (pCi/L) Picocuries per liter: A measure of radioactivity
- **Primary Standards:** Federal drinking water regulations for substances that are health related. Water suppliers must meet all primary drinking water standards.
- Secondary Standards: Federal drinking water measurements for substances that do not have an impact on health. These reflect aesthetic qualities such as taste, odor and appearance. Secondary standards are recommendations, not mandates.
- (THM) Trihalomethanes, chemical compounds that can be formed when water is disinfected with chlorine.
- (TT) Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

Lead....What You Should Know

The City of Meridian along with the Idaho Department of Environmental Quality and the USEPA are concerned about the lead in your drinking water. In 2009, the City of Meridian completed a sampling event for this contaminant and is pleased to report that the results did not exceed the allowable MCL. Even though there was no detectable lead in any of Meridian's water sources, lead is a serious contaminant that can be found in the water of some homes.

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 City of Meridian 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 drinking 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 at http://www.epa.gov/safewater/lead.



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INORGANIC CO	ONTAMINAI	NTS						
Contaminant	Violation (Y/N)	MCL	MCLG	Lo Level Detected	Hi Level Detected	Test Date	Likely Source of Contamination	
Beryllium	Ν	4.0	4.0	ND	0.80	Dec-11	Discharge from metal refineries and coal-burning factories: Discharge from electrical, aerospace, and defense industries.	
Arsenic	Ν	10.0	N/A	<.1	2.50	Dec-11	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.	
Barium	Ν	2.0	2.0	ND	.11	Dec-11	Discharge of drillings wastes; Discharge from metal refineries; Erosion of natural deposits	
Fluoride	Ν	4.0	4.0	0.15	0.53	Dec-11	Erosion of natural deposits; water additive which promotes strong teeth: discharge from fertilizer & aluminum factories.	
Nitrate (as Nitrogen)	Ν	10.0	10.0	<.1	5.39	Dec-11	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	
Nitrate in drinking wa rise quickly for short p	ter at levels aboveriods of time be	ve 10 ppm is ecause of rair	a health risk hfall or agric	for infants of le ultural activity.	ess than six month of c If you are caring for c	ige. High nitrate le an infant, you shou	wels in drinking water can cause blue baby syndrome. Nitrate levels may JId ask advice from you health care provider.	
Cadmium	Ν	5.0	5.0	<.5	1.1	Dec-11	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints.	
Chromium	Ν	100.0	100.0	ND	11.00	Dec-11	Discharge from steel and pulp mills; Erosion of natural deposits.	
VOLATILE ORG		AMINATE						
Atrazine	Ν	3.0	3.0	ND	0.40	Dec-11	Runoff from herbicide used on row crops.	
RADIONUCLIDE	S	Γ						
Gross Alpha	Ν	15.0	15.0	ND	3.7	Dec-11	Erosion of natural deposits.	
Combined Radium	N	5.0	5.0	ND	.7	Feb-10	Erosion of natural deposits.	
Uranium	N	30.0	30.0	ND	26.9	Dec-11	Erosion of natural deposits.	
LEAD AND COP	PER	1	<u> </u>					
Contaminant	Violation Y/N	90th Percentil e	Action Level	MCLG	# of sites above Action Level	Test Date	Likely Source of Contamination	
Lead	Ν	4.1	15.0	0.00	0.00	Jul-09	Corrosion of household plumbing systems: Erosion of	
Copper	Ν	0.1241	1.3	1.30	0.00	Jul-09	natural deposits.	
DISINFECTANT E	SY PRODUC	TS	<u> </u>					
Contaminant	Violation (Y/N)	MCL	Chlorin Ave	ie Annual erage	Hi Level Detected	Test Date	Likely Source of Contamination	
HAA	Ν	60			3.2	Aug-11	By-product of drinking water chlorination.	
THM **(total)	N N	80 4 0		.28	2.40 1.31	Aug-11 Dec-11	By-product of drinking water chlorination. Water Additive used to control microbes	
BACTERIA			1		1.01	200 11		
Contaminant	Violation Y/N	MCL	м	CLG	Highest % positive in a month	Total # positive	Likely Source of Contamination	
Total Coliform	N	>5%		0	1	2	Naturally present in the environment.	

These tables show the results of monitoring for the period of January 1 to December 31, 2011, unless otherwise noted. For more information about this report, or for any questions relating to your drinking water, please contact the Meridian Water Division, at 208-888-5242



MERIDIAN*

WATER DIVISION 2235 NW 8th Street Meridian, ID 83646

Phone: (208) 888-5242 Fax: (208) 884-1159 PRSRT STD U.S. POSTAGE **PAID** BOISE, IDAHO PERMIT NO. 220



"If there is magic on this planet, it is contained in water... " Loren Eisley

Please Recycle

PWS ID # ID4010097

Get Involved.....

It's your drinking water and your input is important to us! You, as a citizen of Meridian, have a voice in the decisions made regarding our drinking water system. You can attend and participate in City Council meetings held every Tuesday evening at Meridian City Hall, located at 33 E Broadway. City Council meetings are also streamed live and video archived on the City of Meridian website at <u>www.meridiancity.org</u>.

Meeting agendas can be found online at <u>www.meridiancity.org</u>, and are posted in the lobby of City Hall and outside its front doors. We also provide a subscription service that you can register with online at <u>www.meridiancity.org</u> to arrange for the latest agendas and minutes to automatically be e-mailed to you.

Additional Information and Links

- Meridian Water Division Contact <u>www.meridiancity.org</u>
- Meridian Backflow Prevention Program <u>backflow@meridiancity.org</u>
- Meridian Environmental Division Contact <u>www.meridiancity.org</u>
- Idaho Department of Environmental Quality <u>www.deq.idaho.gov</u>
- US Environmental Protection Agency (EPA) <u>www.epa.gov/safewater</u>
- Safe Drinking Water Hotline, 800/426-4791
- American Water Works Association <u>www.drinktap.org</u>



An Annual Publication of the City of Meridian Public Works Department Water Division