

ANNUAL WATER QUALITY REPORT



WATER TESTING PERFORMED IN 2013



MEETING THE CHALLENGE

We are once again proud to present to you our annual water quality report. This edition covers all testing completed from January 1 through December 31, 2013. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal drinking water standards. We continually strive to adopt new and better methods for delivering the best quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant to meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.



Please share with us your thoughts about the information in this report. After all, well-informed customers are our best allies.

LEAD INFORMATION STATEMENT

Health Effects and Ways to Reduce Exposure

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 Moscow 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 two 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 (800-426-4791) or at www.epa.gov/safewater/lead.

ADDITIONAL HEALTH INFORMATION

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 microbial contaminants are available from the Safe Drinking Water Hotline at 800-426-4791.

WHERE DOES MY WATER COME FROM?

Moscow's drinking water comes from five groundwater sources. Although all the wells are located within the Palouse Basin, Wells #2 and #3 draw water from the basin's shallow aquifer known as the Wanapum, and Wells #6, #8, and #9 draw water from the deep aquifer known as the Grande Ronde.

To protect our source water, the City of Moscow Water Department implements best management practices aimed at protecting the wellheads and surface seals within the zone adjacent to the wells.

SOURCE WATER ASSESSMENT

A Source Water Assessment for the City of Moscow was completed in 2001. The assessment determined that Wells #2 and #3 have overall high susceptibility risk ratings, while Wells #6, #8 and #9 have lower susceptibility scores than Wells #2 and #3. A copy of the Source Water Assessment can be obtained from the State of Idaho Department of Environmental Quality (DEQ). The City of Moscow has never had a sample exceed the Maximum Contaminant Level (MCL) for possible contamination. For more information regarding the assessment, contact Kyle Steele at 208-883-7133.

CITY OF MOSCOW WATER WELL MAINTENANCE

The maintenance on the water wells in Moscow is performed on a five-year rotation. The pump and motor are pulled and sent out to be reconditioned. While the pump and motor are removed the well is inspected with a closed circuit television camera to determine if there are any issues that may need to be addressed. The flow meter is sent to the manufacture to be refurbished and tested for accuracy.

The normal service rotation was interrupted by the failure of Well #9 in the summer of 2012; once the well pump was back online we were able to resume our normal schedule and pull and rehab Well #8. Well #3 was scheduled to be serviced in 2013 but Well #6 failed in July of 2013. After resolving the failure issues, Well #6 was put back into service in May of 2014. Well #3 will be pulled in June 2014 and refurbished. Well #2 will be pulled for service in the October-November 2014 time frame and that will put us back on the normal rotation.



SUBSTANCES THAT COULD BE IN WATER

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

The 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, in some cases radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

- **MICROBIAL CONTAMINANTS**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife
- **INORGANIC CONTAMINANTS**, such as salts and metals, which can be naturally occurring or may result from urban stormwater 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 stormwater runoff, and residential uses
- **ORGANIC CHEMICAL CONTAMINANTS**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and may also come from gas stations, urban stormwater runoff, and septic systems
- **RADIOACTIVE CONTAMINANTS**, which can be naturally occurring or may be the result of oil and gas production and mining activities

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at **800-426-4791**.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call one of the following people:

MIKE DIMMICK , Water Production Lead	208-892-8655
DAVID RICHARDSON , Utility Operations Supervisor	208-883-7108
TOM SCALLORN , Water Manager	208-883-7107
LES MacDONALD , Public Works Director	208-883-7028
KYLE STEELE , Environmental Compliance Coordinator	208-883-7133

WATER DISTRIBUTION

Everyone knows that when you turn on the water to do the dishes, water the lawn, wash your hands, take a shower or flush the commode the water will be there for you. In the rare event it's not, a call to the Water Department will take care of your concerns.

What you may not be aware of is the amount of preventative maintenance required to ensure there is water at the tap when you need it, that it is safe to drink and available to protect property in the event of a fire, and to keep water loss to a minimum.

Whenever possible we try not to interrupt service to you. The most recent example was just last winter. We had a 400 gallon per minute leak on South Highway 95 near Lathen Street that would have disrupted water service to many homes and would have resulted in low pressure to several others if we would have shut down the water main. Instead we made the repair on the water main live. We are not always able to do this, but will whenever we can.

We also conduct valve exercising, which is an important practice that turns the water valve all the way to the closed position and back to the fully opened position. Valve exercising not only keeps our valves operating smoothly, it also serves as a form of preventative maintenance by identifying valves that are not operating correctly. Non-operating valves are then scheduled for replacement which in turn allows us to better serve you, our customer. There are currently 2,676 valves on the City's Public Drinking Water System.

Fire hydrant maintenance is a huge undertaking. There are currently 854 fire hydrants to maintain. We operate hydrants much like we do the water valves to be sure that they are operating properly, making repairs or replacements as needed, and lubricating the threads and painting them for better visibility and identification in the event of an emergency.

We purchased an enclosed trailer that stores all of our traffic signs, cones and delineators that we use to set up traffic control at job sites. Traffic control not only keeps vehicular traffic moving safely through the construction site, it also ensures the safety of pedestrian traffic and protects the workers at the worksite.

Bi-annual flushing is performed in the spring and fall each year and is designed to improve the quality of the water to our customers. We do this at night in an effort to lessen the impact to the public. By doing this for the last several years, we have greatly reduced water quality related complaints. In some areas we have installed automatic flush valves which also operate at night and have timers on them that allow us to flush as often and as long as needed.

Any suggestions on how we can serve you better, please let us know. Contact Kurt Schwendiman, Water Distribution Lead, at kurts@ci.moscow.id.us.

SAMPLING RESULTS

During the past year, we have taken hundreds of water samples in order to identify the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. Although all of the substances listed here are under the Maximum Contaminant Level (MCL), we feel it is important that you know exactly what was detected and how much of the substance was present in the water. The state allows us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

Substance	Unit of Measure	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Amount Detected		Violations	Typical Source
Combined Radium-226 and 228	pCi/L	2013	5	0	0.41		No	Erosion of natural deposits
MRDL Contaminant	Unit of Measure	Sample Date	MCL [MRDL]	MCLG [MRDLG]	Highest Level Detected	Running Annual Average	Violations	Typical Source
Chlorine	ppm	Monthly	4	4	1.7	0.4	No	Water additive used to control microbes
Substance	Unit of Measure	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Lowest Level Detected	Highest Level Detected	Violations	Typical Source
Chromium	ppb	2010	100	100	1.11	1.39	No	Discharge from steel and pulp mills; erosion of natural deposits
Barium	ppm	2010	2	2	0.007	0.17	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride	ppm	2010	4	4	0.5	1.6	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
TTHMs (Total Trihalomethanes)	ppb	2013	80	NA	0.28	3.95	No	By-product of drinking water chlorination

COPPER AND LEAD Tap water samples were collected for lead and copper analyses from sample sites throughout the community.

Substance	Unit of Measure	Year Sampled	AL	MCLG	Amount Detected (90th %tile)	Sites Above AL/ Total Sites	Violations	Typical Source
Copper	ppm	2012	1.3	1.3	0.635	0/30	No	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead	ppb	2012	15	0	8	0/30	No	Corrosion of household plumbing systems; erosion of natural deposits

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

DEFINITIONS

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

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 for 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.

NA (Not Applicable)

pCi/L (Picocuries per Liter) – A measure of radioactivity.

ppb (Parts per Billion) – One part substance per billion parts water (or micrograms per liter).

ppm (Parts per Million) – One part substance per million parts water (or milligrams per liter).

CROSS CONNECTION CONTROL PROGRAM – BACKFLOW PROTECTION

The staff at the Moscow Water Department work hard to produce and distribute safe potable water to you, the citizens of the City of Moscow. The water quality is monitored from the time it is pumped and treated from one of our five wells until it is delivered to homes and businesses through miles of distribution pipes. The result of this vigilant monitoring is reflected in the data you see in this Water Quality Report. This, however, is not the end of the story of your water. The fixtures and faucets in those homes and businesses connected to the distribution pipes are open to the outside world and all of the potentially harmful stuff in it. The Cross Connection Control Program (CCCP) is in place to ensure that undesirable and hazardous materials are not introduced back into your water system, through a process called backflow, and distributed to the rest of the community. This program is required by the "Idaho Rules for Public Drinking Water Systems" (IDAPA 58.01.08) and Moscow City Code Title 7, Chapter 9.

A **cross connection** is any *actual* or *potential* connection to the public water system through which it is possible to introduce anything other than the intended potable water. This includes used water, biological or chemical contaminants, and water from auxiliary (private) wells. **Backflow** is the flow of any liquids (including water), gases, or substances in the wrong direction back into the public water supply. This can happen in two ways: by a drop in pressure in the distribution system that creates backsiphonage, which pulls water backwards; or by an increase in pressure on an external system that creates backpressure, which pushes water backwards.

When it is determined that a cross connection which may endanger the public water supply is present, an approved **backflow assembly** must be installed. A backflow assembly is a device which is designed to be tested and repaired without having to be removed. All backflow assemblies must be inspected and tested annually by a licensed Backflow Assembly Tester (BAT). Note that an assembly that fails testing must be repaired, replaced, or isolated within **ten (10) business days**, or water service **must be shut off**.

This year the Moscow City Council approved changes to Moscow City Code Title 7, Chapter 9 that will help make the CCCP more efficient and effective. Two of those changes are meant to promote communication between customers, BATs, and the water department. First, a tag must be attached to a backflow assembly whenever it is tested. This is an easy and effective form of communication for both BATs and the customer. It can prevent repeat testing and eliminate uncertainty about when/if an assembly was tested. Second, if an assembly fails the annual test, CCCP staff and the owner of the assembly must be notified within one business day. Communication is especially important in the event of a failed test since there is a ten business day limit for repairs to take place. Effective and timely decisions can be made when BATs, customers, and CCCP Staff communicate successfully.

The protection of Moscow's water supply is of critical importance to both the City of Moscow and its citizens. If you have any questions about the CCCP or would like to schedule a cross connection assessment, please contact Ty Thompson at tthompson@ci.moscow.id.us or by calling **208-883-7111**.

WATER CONSERVATION PROGRAM

The City of Moscow Water Department has supplied safe drinking water to the residents and businesses of Moscow, Idaho since the 1890s. An elaborate system of wells, filters, reservoirs, miles of underground infrastructure, and the individuals who manage it, all play a vital role toward delivering the precious underground aquifer to the tap. Conserving this resource has been and will continue to be an important goal for the city.

The City of Moscow has had a long standing conservation program, dating back to the 1970s by supplying effluent reuse water for University of Idaho landscapes. Since that time the program has evolved to include reductions in water use from both commercial and residential customers through the City's regional management approach, rate structure and programs. As one of the pumping entities for the Palouse Ground Water Basin, Moscow agreed to the voluntary goals set by the Palouse Basin Aquifer Committee (PBAC) in 1992. As an active member of the Palouse Basin Water Summit Committee that hosts an annual conference in October, the city continues to work with other communities that share our water source. The year 2004 brought about more additions to conservation efforts, which included the Water Waste Resolution, Irrigation Ordinance, and Water Conservation Plan that suggested a tiered rate billing structure, adopted in 2007. To assist and motivate the residents of Moscow to attain their water conservation goals, the all-encompassing Water Conservation Program is there for the customer at home, at work, and at school. Indoor devices, outdoor devices, the outdoor Wisescape Awards and demonstration garden, booth events and education outreach are some of the available resources.

Thanks to the efforts of our community, the City of Moscow's PBAC goals have been met since 2006. With the past goals successful, and the future goals defined, the City of Moscow Water Utility has been a leader in water conservation. With goal objectives to provide safe water to meet the needs of people, the water conservation program is sure to remain a solid support for the stakeholders to be good stewards of our precious resource, water.

FIND THIS WATER QUALITY REPORT—AND MORE—ONLINE

Go to www.ci.moscow.id.us/water and check out the links on the left side of the page. You can view current and past WQRs. Residential Fat, Oil, and Grease (FOG) Reduction Program, Wastewater Treatment Plant FAQ, and Water Conservation Program information are just a few of the pages available, with more to come. Take a look and let us know if there is anything else you would like to know about.