

City of Beaverton 2011 Water Quality Report

Your Water Is Our First Priority

The City of Beaverton is pleased to present you with this 2011 Water Quality Report. The purpose of the report is:

To provide you with information about your drinking water and comply with the reporting requirements of the U.S. Environmental Protection Agency (EPA), Consumer Confidence Report Rule, 40 CFR, Part 141, Subpart O.

Using data collected in 2011, this report summarizes information about your water supply sources, the water system facilities that deliver water to your tap, and the quality of your drinking water. Also included is information about programs underway that are helping to ensure that you have safe and dependable drinking water.

The City of Beaverton is proud of the high quality of our water supply, which meets or exceeds state and federal water quality requirements. If you have any

questions regarding your water quality or about information presented in this report, please call us at 503-350-4017.

Si Habla Español: Este informe contiene información muy importante. Tradúscalo ó hable con un amigo quien lo entienda bien.

Information in this report is available upon request in alternative formats by calling the City of Beaverton's Water Quality Report Hotline at 503-350-4017.

City of Beaverton's Web site home page: www.beavertonoregon.gov

City's Web page for Water Quality Report: <http://www.beavertonoregon.gov/Archive.aspx?AMID=37>

Safe Drinking Water Hotline

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. For more information about contaminants and potential health effects, call the U.S. Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (1-800-426-4791).

Drinking Water Fluoridation

The City fluoridates its drinking water to improve the dental health for consumers of Beaverton's water. The City's target fluoridation level is 0.7 parts per million (ppm). Sodium fluoride is added to Beaverton's drinking water after it leaves the Joint Water Commission (JWC) water treatment plant and before entering the City for distribution. The City's fluoride feed facility employs sensitive instruments to measure and maintain the desired level of fluoride in the drinking water system. In addition, seven online electronic fluoride analyzers are situated in different locations throughout the City to monitor fluoride levels in the drinking water 24 hours a day.

Important Information about Water and Your Health

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised people, such as those with cancer undergoing chemotherapy, those 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. The EPA's Center for Disease Control 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).

Water Quality Testing

The City is committed to providing safe drinking water to its water consumers. To ensure that the City's drinking water meets state and federal drinking water standards, the City collects an average of 133 samples per month (1,606 samples per year) for testing by a State-certified

laboratory. A table summarizing 2011 water quality data is provided on the following pages.

For a fee, private laboratories will test your tap water for lead and other substances. Not all laboratories are certified to test for all contaminants. For information regarding water quality

testing, consult the Oregon Drinking Water Program's Web site. Download a complete list of all laboratories certified by the Oregon Department of Human Services. You will need the FREE Adobe Acrobat Reader to view these files.

<http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Documents/acclab.pdf>

City of Beaverton 2011 Water Quality Data

Major Sources: Joint Water Commission Water Treatment Plant, and Aquifer Storage and Recovery Wells

Regulated Contaminants

REGULATED CONTAMINANT ^a	REGULATORY EXCEEDENCE	MEASURED CONCENTRATION		FEDERAL/STATE WATER QUALITY STANDARD/GOAL	TYPICAL SOURCES
		RANGE	AVERAGE ^b		
Microbiological and Geochemical Parameters					
Total Coliform Bacteria	No	No positive detections in 2011	NA	No detection in 5% of monthly samples (MCLG)	Naturally occurring
Turbidity (treatment plant only)	No	ND – 0.07	NA	0.3 NTU (TT)	Soil runoff
Nutrients					
Nitrate	No	0.13 to 0.7 ppm	0.51 ppm	10 ppm (MCL)	Natural erosion, fertilizers, septic tanks, and sewage
Metals and Minerals					
Fluoride (treatment plant and ASR wells)	No	ND to 0.5 ppm	0.28 ppm	4 ppm (MCL)	Naturally occurring, water treatment additive, and fertilizers
Fluoride (City meter)	No	0.000 to 1.195 ppm	0.577 ppm	4 ppm (MCL)	
Barium	No	ND to 0.003	0.004	2 ppm (MCL)	Natural erosion and discharge from metal refineries
JWC Water Treatment Plant and ASR Wells – Next Tap Sampling in 2013					
Copper	No	ND	NA	1.3 ppm (Action Level)	Natural erosion and corrosion of household plumbing
Lead ^c	No	ND	NA	15 ppb (Action Level)	
Radiological – ASR Wells Only					
Gross Alpha	No	2.4 pCi/L	NA	15 pCi/L (MCL)	Natural erosion
Gross Beta	No	3.3 pCi/L	NA	50 pCi/L (MCL)	
Disinfection By-products and Residuals within the Distribution System					
Total Trihalomethanes	No	30.0 to 35.5 ppb ^d	33.5 ppb ^d	80 ppb (MCL)	By-product of drinking water chlorination and disinfection
Total Haloacetic Acids	No	19.9 to 28.8 ppb ^d	23.8 ppb ^d	60 ppb (MCL)	
Chlorine (Beaverton system)	No	0.480 to 0.713 ppm	0.604 ppm	4 ppm (MRDL)	

^a In 2011, the City of Beaverton tested water in its system for total chromium and hexavalent chromium. Results for total chromium were not detected above the laboratory reporting limit and hence are not listed in the table above. There is no federal and/or Oregon standard (e.g., maximum contaminant level) for hexavalent chromium; it is being reviewed by regulatory agencies with a final assessment expected in fourth quarter of 2014. Beaverton voluntarily monitored specifically for hexavalent chromium in 2011 to

develop baseline data for research. For more information on the City's testing results for hexavalent chromium please visit the City's Web site.

^b Average calculations conservatively assume method detection limit value for each non-detect result.

^c 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 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 want 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 www.epa.gov/safewater/lead.

^d Sixteen samples were collected in 2011 from the distribution system and tested for trihalomethanes and haloacetic acids, which are by-products of the disinfection process. The range in values represents the average values collected from multiple sites per quarter. The average value represents the rolling average calculated in the fourth quarter of 2011.

Unregulated Contaminants

CONTAMINANT	SMCL EXCEEDANCE	MEASURED CONCENTRATION		FEDERAL/STATE WATER QUALITY STANDARD (MCL AND MRDL)	TYPICAL SOURCES
		RANGE	AVERAGE		
Radon (ASR wells only – one sample)	NA	681 pCi/L	NA	No standard	Natural erosion
Sodium	No	8.65 to 11.8 ppm	10.0 ppm	20 ppm (Advisory Level)	Natural erosion and treatment additive
Chloride	No	4 to 8.1 ppm	5.6 ppm	250 ppm (SMCL)	Natural erosion and treatment additive
Sulfate	No	7 to 12 ppm	8.7 ppm	250 ppm (SMCL)	Naturally occurring in water
Iron (ASR wells only)	No	ND	NA	300 ppb (SMCL)	Geological rock formation
Total Dissolved Solids	No	71 to 125 ppm	95 ppm	500 ppm (SMCL)	Natural — depends on dissolved constituents

Definitions

Action Level

The concentration of a contaminant that, if exceeded, triggers treatment or other requirements, which a water system provider must follow based on federal and state regulations.

Advisory Level for Sodium

Sodium is included on EPA's contaminant list that may require regulation under the Safe Drinking Water Act. For now, it is merely an advisory level.

Maximum Contaminant Level (MCL)

The highest level of a contaminant that is allowed in drinking water based on federal and state regulations.

Maximum Residual Disinfectant Level (MRDL)

The highest level of a disinfectant allowed in drinking water based on federal and state regulations.

MCL Goal (MCLG)

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 and are non-enforceable public health goals.

NA – Not applicable.

ND – Not detected.

NTU – Nephelometric turbidity unit (measurement of cloudiness in water).

Part Per Billion (ppb)

One part substance per billion parts water (or micrograms per liter).

Part Per Million (ppm)

One part substance per million parts water (or milligrams per liter)

Picocuries Per Liter (pCi/L)

Picocurie is a measurement of radioactivity.

Secondary MCL (SMCL)

National Secondary Drinking Water Regulations (NSDWRs or secondary standards) are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply. However, states may choose to adopt them as enforceable standards.

Treatment Technique (TT)

A required process intended to reduce the level of a contaminant in drinking water.

Turbidity

Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the water treatment plant filtration system.

Additional Water Quality Information from the U.S. Environmental Protection Agency (EPA)

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 and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in the water include:

- Microbial contaminants, such as cryptosporidium, viruses, and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or 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 also can come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or result from oil and gas production and mining activities.

To ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water to provide the same protection for public health.

A source water assessment completed by the Oregon Departments of Environmental Quality (DEQ) and Human Services (DHS) in 2003 is available.

The assessment report can be reviewed at: <http://www.deq.state.or.us/wq/dwp/docs/swasummary/pws00379985.pdf>

Sources of Beaverton's Drinking Water

The primary source of filtered drinking water in Beaverton's service area is the JWC water treatment plant (WTP) located south of Forest Grove. The WTP filters surface water pumped from the nearby upper Tualatin River. The WTP can produce up to 75 million gallons a day (mgd) of finished drinking water. The City owns a 25 percent share in the WTP, allowing the City up to 18.75 mgd of treated water. During 2011, a total of 2.461 billion gallons of drinking water was conveyed approximately 20 miles from the WTP to the City's in-town storage reservoirs and into the pipes in the City streets for distribution to water consumers. Drinking water travels through approximately 276 miles of in-town water mains in the City's distribution piping system to water consumers. There are approximately 17,600 water meters that measure water delivered to City water customers. The City serves a population of 71,500 with City water.

The City is a member of the JWC, which is an intergovernmental water supply group whose owner-members include the Cities of Beaverton, Hillsboro, and Forest Grove, and the Tualatin Valley Water District. The JWC was formed to store, manage, treat, and convey drinking water for each agency in the JWC, which supplies water to as many as 400,000 people.

During the summer, when drinking water demand is high and Tualatin River streamflow is low, water is released from Hagg Lake (Scoggins Reservoir) and Barney Reservoir (formed behind a dam on the Trask River in the Coast Range) to compensate for the amount removed for Beaverton's summer use. Water released from Barney Reservoir is diverted by pipes from the Trask River basin into the upper Tualatin River.

The City owns yearly water rights of up to 1.3 billion gallons (4,000 acre-feet) in Scoggins Reservoir and 1.4 billion gallons (4,300 acre-feet) in Barney Reservoir. Water originating from these two reservoirs is the source of most of the City's raw water (before treatment) during the summer. Release of stored raw water from the two reservoirs increases summertime streamflow in the Tualatin River, helping to sustain a healthy river ecosystem. Every winter and spring, the City uses its 16 mgd natural streamflow water right to meet daily water supply demands. Surface water from the Tualatin River then is filtered in the WTP before delivery to the City.

Finished drinking water from the WTP is pumped about one-half mile up to the Fern Hill Reservoirs, two 20-million-gallon (MG) storage reservoirs situated at 520 feet elevation

above sea level. To transport water from the WTP to Beaverton, the City owns 14 mgd capacity in the JWC South Transmission Line. The City also owns emergency backup capacity in the parallel JWC North Transmission Line. From the Fern Hill Reservoirs, water travels about 20 miles by gravity through transmission lines to Beaverton, where the City's two terminal storage reservoirs are located. The two reservoirs hold a combined total of 20 MG and are owned and operated entirely by the City.

Since 1999, the City has used aquifer storage and recovery (ASR) to delay the purchase of new water supply facilities. During the winter and spring, Beaverton injects treated drinking water from the WTP into natural underground basalt formations (aquifers), displacing native groundwater. During the summer months, treated water is recovered from ASR wells to supplement JWC surface water to help meet peak season demands (up to 17 mgd). Acting as a conservation measure, ASR conserves surface water from primary sources (rivers and dams) during environmentally stressful summer seasons. In 2011, 144 MG of stored water and native groundwater were recovered (pumped into the water system) from the ASR wells to help meet summer customer consumption.

Water Questions? We Have Answers!

Water Billing Question?

☎ Call 503-526-2257

Water Quality Question?

☎ Call Beth Dolbow at 503-781-0704

✉ E-mail bdolbow@beavertonoregon.gov

Water Conservation Question?

☎ Call Glen Dorsey at 503-350-4059

✉ E-mail gdorsey@beavertonoregon.gov

Backflow Prevention Question?

☎ Call Ben Rosales at 503-350-4042

✉ E-mail brosales@beavertonoregon.gov

Water Pressure Question?

☎ Call Rick Weaver at 503-526-2646

✉ E-mail rweaver@beavertonoregon.gov

Future Water Sources Question?

☎ Call David Winship at 503-526-2434

✉ E-mail dwinship@beavertonoregon.gov

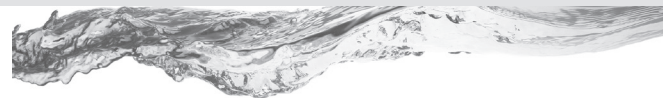
Water Emergency?

☎ Call 503-526-2220

After-hours Water Emergency?

☎ Call 503-526-2260

<http://www.beavertonoregon.gov/index.aspx?nid=334>



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