

# OAK LODGE WATER DISTRICT WATER QUALITY REPORT 2003

*This report includes water quality data for the year 2003. The U.S. Environmental Protection Agency (EPA) requires us to send this report to our customers by July 1, 2004.*

## **Overview**

The Oak Lodge Water District is fortunate to have a reliable high-quality water source, the Clackamas River. Drinking water for Oak Lodge customers is produced by three methods: direct filtration, conventional filtration, and slow sand filtration.

The Allen F. Herr Water Treatment Facility began production in August 1999. The Oak Lodge Water District and Sunrise Water Authority, known as the North Clackamas County Water Commission (NCCWC) jointly own this slow sand filtration plant. The Clackamas River Water Treatment Facility began production in 1964 and started providing water for Oak Lodge customers in 1965. South Fork Water Board treatment facility was built in 1958 and started providing water to Oak Lodge customers in 2002.

Approximately 90 miles of water mains and pipes make up the distribution system that carries water to Oak Lodge customers. The District has four reservoirs with a combined capacity of 15.6 million gallons.

## **Water Source**

The Clackamas River watershed covers almost 1,000 square miles; most of it located within Clackamas County, Oregon. Timothy Lake and Ollalie Lake make up the headwaters of the Clackamas River, and many tributary streams contribute to the flow of the river.

## **Water Treatment**

Oak Lodge customers receive water from the Clackamas River Water direct filtration plant, the South Fork Water Board conventional plant, and the NCCWC slow sand filtration plant.

The slow sand filtration plant operates as follows: untreated water is pumped onto four, ½-acre filter beds. As the water is passed down through the filter bed, the sand layers at and near the surface provides an intense treatment zone where particles are removed and bioadsorption occurs. This treatment zone of organisms and debris is called the schmutzdecke or “dirt blanket”. The schmutzdecke filters out particles and helps to break down organic matter. Chlorine is added to the water to provide a level of treatment and maintain a detectable residual throughout the distribution system.

The direct filtration treatment plant operates as follows: Untreated water from the river is pumped to the CRW treatment plant and immediately pretreated with chlorine. Alum is then added to the water to make particles stick together and form larger particles of “floc”, a process called flocculation. After turbine mixers begin the flocculation process, the water travels to the sedimentation/contact basins, where the larger floc particles settle to the bottom of the basins. The water at the top travels to the mixed media filters as a filter-aiding polymer chemical is added to the flow. After filtration, soda ash is added to the water to achieve an optimal pH level to minimize plumbing corrosion. In addition, chlorine is added to provide a level of treatment and to maintain detectable amount of residual as it flows through the distribution system.

The South Fork Water board conventional treatment plant operates in the same fashion as the direct filtration, with the exception that a polymer is added at the same time as the alum to aide in the formation of “floc”, and the sedimentation process is longer.

## **Water Quality Sampling**

The following tables show the results of water quality analyses on our finished drinking water in 2003. All regulated contaminants detected in the water are listed here. The tables contain the name of each substance, the highest level allowed by regulation, the ideal goals for public health, the highest amount detected, the usual sources of such substances, and whether any detections constituted a violation.

**Finished Water Quality Measured at North Clackamas County Water Commission Treatment Plant**

Contaminant	Units	MCL	MCLG	Highest Detected Level	Range	Major Sources	Violation
Turbidity	NTU	<1.0 NTU	N/A	0.66	0.05 - 0.66	Soil Runoff	No
Nitrate	PPM	10 PPM	10 PPM	0.6 PPM	0.6 PPM	Erosion of natural deposits	No

**Finished Water Quality Measured at Clackamas River Water Treatment Plant**

Contaminant	Units	MCL	MCLG	Highest Detected Level	Range	Major Sources	Violation
Turbidity	NTU	<0.30	N/A	0.06	0.01 - 0.06	Soil Runoff.	No
Nitrate	PPM	10 PPM	10 PPM	0.6 PPM	0.6 PPM	Erosion of natural deposits	No
Copper	PPM	AL = 1.3	1.3	0.01	0.04	Erosion of natural deposits	No

**Finished Water Quality Measured at South Fork Water Treatment Plant**

Contaminant	Units	MCL	MCLG	Highest Average Detected Level	Range	Major Sources	Violation
Turbidity	NTU	<0.30	N/A	0.06	0.02 - 0.06	Soil Runoff.	No

**Water Quality Measured Within the Distribution System**

Contaminant	Units	MCL	MCLG	Highest Detected Level	Range	Major Sources	Violation
Total Coliform	-----	2 Positive samples per month	0	0	0	Naturally present in the environment.	No
Total trihalomethanes (TTHM's)	PPB	80	N/A	31	15 - 31	Byproduct of drinking water chlorination	No
Haloacetic Acids (HAA)	PPB	60	N/A	42	13 - 42	Byproduct of drinking water chlorination	No
Chlorine	PPM	4.0	4.0	0.93	0.23 - 0.93 PPM	Water additive used to control microbes	No

### Raw Water Quality of the Clackamas River

Contaminant	Units	MCL	12 Month Average	Highest Detected Level	Range
Giardia	#cysts / 1.0L	NA	0.95	1.6 cysts/1.0L	.3 – 1.6 cysts/1.0L
Cryptosporidium	#oocysts/1.0L	NA	0.017	.1 oocysts/100L	0 – 0.1 oocysts/ 1.0L

*Giardia* cysts and *Cryptosporidium* Oocysts were **not detected** in your drinking water. Both *Giardia* and *Cryptosporidium* are parasitic organisms found in the intestinal tracts of warm-blooded animals. The presence of these organisms is monitored monthly in the Clackamas River to look for increasing trends in the quantity of organisms present. Customers with compromised immune systems (i.e., HIV, cancer treatments, elderly, and the young) are generally more susceptible to infection by these organisms. These organisms are generally seen in higher concentrations during the summer months as humans and animals frequent the riverbanks.

#### Key to Tables

- EPA ---- U.S. Environmental Protection Agency. This agency enforces the Safe Drinking Water Act nationwide.
- MCLs – 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.
- MCLGs – 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.
- ppm ---- Parts per million, or milligrams per liter.
- ppb ---- Parts per billion, or micrograms per liter.
- AL --- Allowable Level

#### Results of Lead and Copper Sampling at Residential Water Taps

Oak Lodge Water District monitored tap water from a sample group of 60 homes once in 2001. These are homes in our service area where the corrosiveness of the water may contribute to the leaching of metals from the plumbing system when water stands in the plumbing system, causing elevated lead or copper levels. Samples are collected after the water has been standing in plumbing for at least 6 hours. Lead is not detected in Oak Lodge Water District’s source waters.

In the April-May 2001 sampling, the lead levels in more than 10 percent of the sample homes exceeded the lead Action Level of 15 parts per billion set by drinking water regulations. When sample results for more than 10 percent of the sample homes exceed the lead Action Level, the US Environmental Protection Agency (EPA) requires that we inform customers that:

Infants and children who drink water containing lead in excess of the action level could experience delays in their physical and mental development. Children could show slight deficits in attention span and learning disabilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. Infants and children are typically more vulnerable to lead in drinking water than the general population.

#### Unregulated Contaminants

Cryptosporidium and Giardia have been found in the raw water on occasion. Giardia cysts and Cryptosporidium Oocysts were **not detected** in your water. Both Giardia and Cryptosporidium are parasitic organisms found in the intestinal tract of warm-blooded animals. The presence of these organisms is monitored monthly in the Clackamas River to look for increasing trends in the quantity of organisms present. These organisms are generally seen in higher concentrations during the summer months as humans and animals frequent the riverbanks.

#### Additional Health Information

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

Drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than is 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.

Guidelines from the EPA and Centers for Disease Control on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800) 426-4791, or by visiting the EPA website at [www.epa.gov/ow](http://www.epa.gov/ow).

### **Source Water Quality**

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

Contaminants that may be present in source water, prior to treatment, include:

- a) Microbial contaminants, such as viruses, bacteria, and protozoans, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- b) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm runoff, industrial or domestic wastewater discharges, mining, or farming.
- c) Pesticides and herbicides, which may come from a variety of sources such as agriculture, stormwater runoff, and residential uses.
- d) Organic chemical contaminants, including synthetic and volatile organics, which can come from gas stations, urban stormwater runoff and septic systems.

If you have any further questions about water quality, please contact our office at (503) 654-7765.