



2008 ANNUAL WATER QUALITY REPORT



ISSUE 11

Federal Way, WA

JULY 1, 2009

Drinking Water For the Health and Safety of Our Community

Lakehaven Utility District is pleased to present our eleventh annual Water Quality Report that summarizes water quality provided in 2008. We believe it is very important to provide our customers with a clear understanding of where the water comes from and what is in the water. Our goal is to provide our customers with high-quality drinking water and maintain an excellent record of compliance with all state and federal drinking water regulations.

This report is a review of all water quality tests performed in 2008 and is provided to you to comply with Federal and State drinking water regulations. All community water systems must provide a Consumer Confidence Report to their customers and the State Office of Drinking Water by July 1 of each year. The purpose of this report is to provide you, the consumer, with a summary of where your water comes from and how safe and pure your water was during the previous operational year (2008). Much of this information in our water quality report is detailed as required by law. However, we have tried to make an effort to keep it clear, useful and readable for our valued customers.

Where Does Your Water Come From?

During 2008, Lakehaven Utility District delivered 55% of your water from deep wells that are owned and operated by the District. The remaining 45% of water was supplied through the Second Supply Project (SSP) which delivers water from the Green River. The water from SSP is an interruptible source of water available for Lakehaven and is not intended to replace our ground water supply. Rather, it is considered another "alternate source" and its availability can be interrupted due to drought conditions, low river flow volumes in the Green River, or other water quality issues. Lakehaven will continue to utilize water from the SSP as it is available to better manage our water resources and help reduce the demand on our existing ground water system. This will allow some of our aquifers to rest and recharge during the winter months so that more ground water will be available during high demand periods or in the future when surface water may be in short supply.

Our deep wells are owned and operated by Lakehaven Utility District and the water pumped from these wells originates from four deep underground aquifer systems



located below the Federal Way area. These aquifers are identified as: (1) Redondo-Milton Channel Aquifer, (2) Mirror Lake Aquifer, (3) Eastern Upland Aquifers and (4) Federal Way Deep Aquifer. (Note: an aquifer is an underground saturated zone of ground water that has a sufficient economic quantity available for use). At various times of the year the District is able to operate as many as 24 wells that have been completed in these four local aquifer systems. The locations of these production wells are nearly all within the central area of our distribution system.

Our SSP water is from the Green River that originates in the foothills of the Cascade Mountains downstream of Howard Hanson Dam. Water is delivered to the District through a 34 mile pipeline project built by a partnership between Lakehaven, the City of Tacoma, City of Kent, and Covington Water District. The City of Tacoma manages and operates the SSP in cooperation with the project partners.

Safe and Secure Water

Wellhead Protection Program:



Preventing pollution is the first priority in protecting public health and our ground water supply. The District has developed a Wellhead Protection Program intended to identify potential areas where surface water can more readily contribute to the storage of water in our underground aquifer systems and affect the quality of water pumped from our wells. Through this program, we are continuing to work on the development of an appropriate management plan to protect our water quality should a surface contaminant spill occur.

Water System Security:

To assure that your drinking water supply remains safe and secure, Lakehaven Utility District has taken increased security measures to reduce the vulnerability of terrorism, sabotage, and vandalism to our drinking water supply.

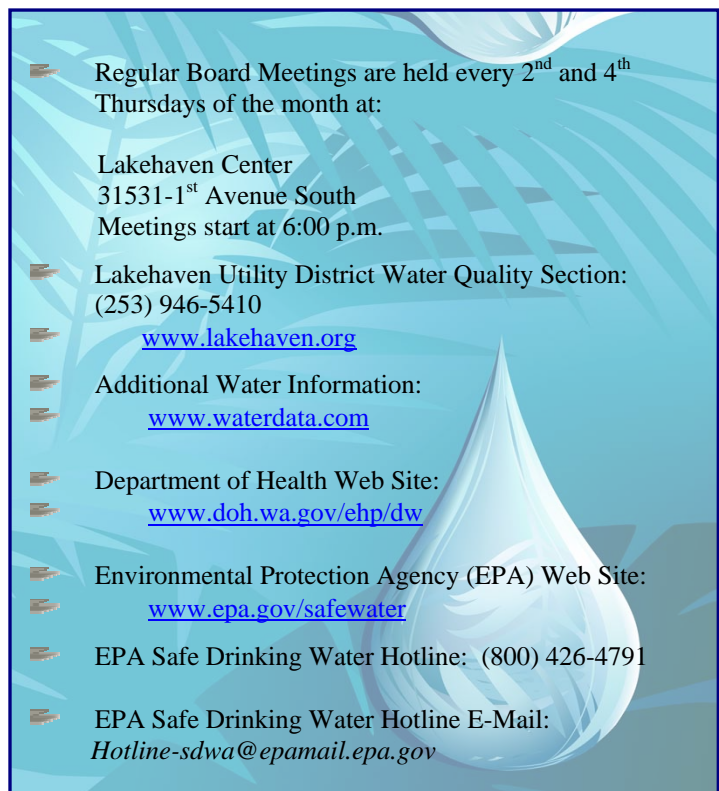
Iron and Manganese Removal:

Iron and manganese are harmless (naturally occurring) minerals found in most public water systems, especially ground water. Underground water in aquifers with a lower pH value commonly contains dissolved iron and manganese ions. Chemical changes that occur after ground water is pumped to the surface can cause these ions to precipitate into a solid oxide compound resulting in staining of clothes washing, dishwashers, household faucets/fixtures, and an accumulation of fine sediment throughout the water distribution system. Removal of iron and manganese by treatment that uses oxidation followed by filtration has been designed for fourteen District wells where dissolved iron and manganese concentrations in the ground water are high. Ten of these wells had treatment systems in operation in 2008. The four remaining wells targeted for removal of iron and manganese are scheduled for operation in 2009. By treating and filtering the water, the District will be able to significantly reduce the accumulation of mineral sediments in the distribution system and prevent the potential staining that occurs in customer households.

Chlorine Treatment:

As an important component of our water treatment program, the Washington State Department of Health requires the addition of chlorine to our drinking water as a disinfectant to make sure that our water remains biologically safe for our customers to use. Just as water is essential to life, chlorine is considered essential to maintaining a safe water supply. Public health officials overwhelmingly agree that the introduction of chlorine into U.S. drinking water supplies back in 1908 was one of our history's great public health advances.

Since the beginning of its use, safe chlorinated water has played a key role in the virtual elimination of cholera, typhoid fever, dysentery and gastroenteritis, as well as many other epidemic waterborne diseases that once killed tens of thousands of Americans. Although Lakehaven Utility District maintained good, high quality untreated drinking water in the past, the risk of waterborne disease decreases significantly when chlorine is used as a disinfectant for our public water supply.



- Regular Board Meetings are held every 2nd and 4th Thursdays of the month at:
Lakehaven Center
31531-1st Avenue South
Meetings start at 6:00 p.m.
- Lakehaven Utility District Water Quality Section:
(253) 946-5410
www.lakehaven.org
- Additional Water Information:
www.waterdata.com
- Department of Health Web Site:
www.doh.wa.gov/ehp/dw
- Environmental Protection Agency (EPA) Web Site:
www.epa.gov/safewater
- EPA Safe Drinking Water Hotline: (800) 426-4791
- EPA Safe Drinking Water Hotline E-Mail:
Hotline-sdwa@epamail.epa.gov

Phosphate & Sodium Hydroxide Treatment:

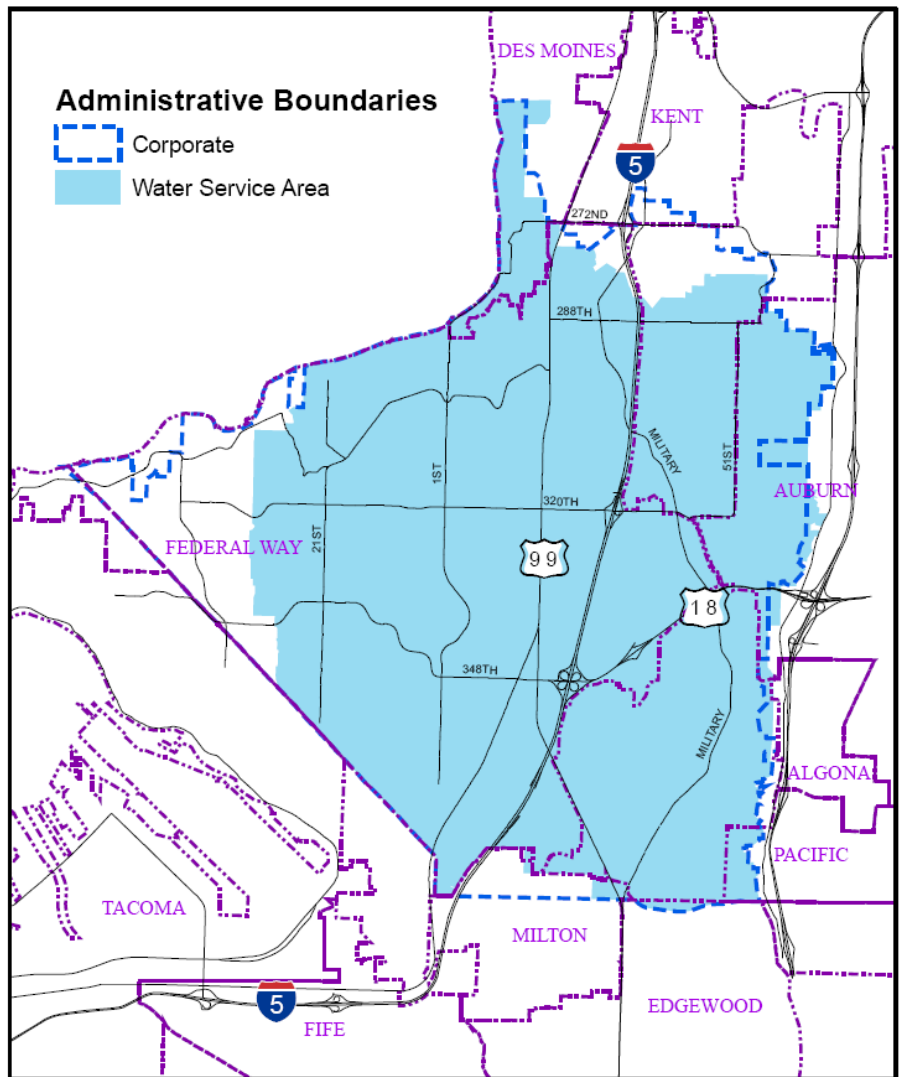
A component of our water treatment program also includes the addition of phosphate to our finished water. Phosphate is used as a corrosion inhibitor to reduce the level of dissolved lead & copper ions that can leach from metal plumbing and faucet fixture units commonly found in homes and businesses. Phosphate also performs a secondary function as a sequestering agent when added to our drinking water and is working to help prevent the formation of stains and mineral deposits caused by dissolved iron and manganese minerals that are found naturally present in our ground water supply.

Sodium Hydroxide is added to ground water pumped from a few of our wells as a treatment process that raises the pH to make the water less acidic. Raising the pH with sodium hydroxide also reduces pipe corrosion and helps meet health requirements by minimizing the amount of lead and copper that can leach from customers' plumbing systems.

Fluoride

Fluoride is a natural element found in the earth's crust and is commonly found in various concentrations in raw water supplies (both surface and ground water). Other than drinking water, toothpaste and food is a major source of fluoride exposure (especially tea and fish) and at low levels, fluoride has been known to prevent dental cavities. However, the natural fluoride levels in Lakehaven Utility District's source "ground water" is considered lower than optimal for helping to prevent dental decay. During 2008, Lakehaven Utility District utilized water from the Second Supply Project (SSP). This secondary source of water is operated by the City of Tacoma and contains fluoride that is equal to the US Public Health Service (USPHS) suggested range in drinking water of about 0.8 to 1.3 parts per million (mg/L). However, the SSP water blends with ground water pumped from Lakehaven wells in the distribution system and fluoride levels become diluted in some locations and are not within the desirable therapeutic range. If you have children on fluoride supplemental treatment, you may want to consult with your dentist or pediatrician about the variable fluoride concentrations that may be present in your drinking water.

As stated on page 1, the SSP water may not be a constant source of water available for Lakehaven and is not intended to replace our ground water supply. Rather, it is considered another "alternate source" and its availability can be interrupted due to drought conditions, low river flow volumes in the Green River, and higher turbidity or other water quality issues.



FACT: In 2008, Lakehaven customers used an average of 89 gallons of water per person, per day.

2008 WATER QUALITY MONITORING RESULTS

What contaminants may be found in drinking water?

There is no such thing as naturally pure water. In nature, all water contains some impurities. As water flows in streams, sits in lakes, and filters through layers of soil and rock in the ground, it dissolves or absorbs the substances that it touches. Some of these substances are harmless. In fact, some people prefer mineral water precisely because minerals (which are chemical substances) give it an appealing taste. However, at certain levels minerals, just like man-made chemicals, are considered contaminants that can make water unpalatable or even unsafe. 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 Safe Drinking Water Hotline (800-426-4791).



What do the tables mean?

The following tables show the results of water quality analyses on your drinking water during 2008. Every regulated contaminant that was “**detected**” in the water during 2008, even in the most minute traces, are listed in these tables along with unregulated, secondary, and physical and chemical parameters. The tables contain the name of each substance, the Maximum Contaminant Level or highest level allowed by regulation (MCL), the Maximum Contaminant Level Goals or ideal goals for public health (MCLG), the amount detected, the usual sources of such contamination, footnotes explaining our findings and a key to units of measurement. We are pleased to report that there were no EPA or State drinking water violations for Lakehaven Utility District in the year 2008.

The regulated items listed in the chart below were detected in *Lakehaven's ground water* during 2008. Not listed is coliform bacteria as no coliform was detected in 2008. Additional information on all data can be obtained by calling Lakehaven Utility District at 253-946-5410.

<i>Contaminant</i>	<i>Date Tested</i>	<i>MCL</i>	<i>MCLG</i>	<i>Highest Detected Level*</i>	<i>Range of Level Detected</i>	<i>Major Sources</i>	<i>Violation</i>
Regulated Analytes Detected In Lakehaven's Ground Water Sources (Wells)							
Arsenic	2008	10 ppb	0 ppb	3 ppb	0 – 3 ppb	Erosion of natural deposits in aquifer	NO
Nitrate	2008	10 ppm	10 ppm	2 ppm	<0.2 – 2 ppm	Runoff from fertilizer use, septic systems	NO
Fluoride	2008	4 ppm	4 ppm	0.2 ppm	0.0 – 0.2 ppm	Erosion of natural deposits in aquifer	NO
Regulated Analytes Detected In Lakehaven's Distribution System							
Total Trihalomethane	2008	80.0 ppb	0 ppb	11.3 ppb (Average)	0.0 – 28.1 ppb	Chlorine Disinfection By-product	NO
Haloacetic Acid	2008	60 ppb	0 ppb	17.5 ppb (Average)	0.0 – 59.6 ppb	Chlorine Disinfection By-product	NO
Free Chlorine Residual	2008	4.0 ppm (MRDL)	4.0 ppm (MRDLG)	1.76 ppm	0.06 – 1.76 ppm	Treatment additive to control bacteria	NO
Unregulated Analytes Detected In Lakehaven's Ground Water Sources (Wells)							
Chloroform	2008	Not Regulated	N/A	36.1 ppb	0.0 - 36.1 ppb	Chlorine Disinfection By-product	NO
Bromodichloro-methane	2008	Not Regulated	N/A	3.3 ppb	0.0 - 3.3 ppb	Chlorine Disinfection By-product	NO
Chlorodibromo-Methane	2008	Not Regulated	N/A	2.4 ppb	0.0 - 2.4 ppb	Chlorine Disinfection By-product	NO
Bromoform	2008	Not Regulated	N/A	0.8	0.0 – 0.8 ppb	Chlorine Disinfection By-product	NO
Secondary Chemical Analytes In Lakehaven's Distribution System							
National Secondary Drinking Water Regulations are non-enforceable guidelines regulating contaminants that may cause cosmetic or aesthetic effects such as taste, color or odor.							
Manganese	2008	0.05 ppm	0 ppm	0.05 ppm	<0.01 – 0.05 ppm	Natural Deposits	NO
Iron	2008	0.3 ppm	0 ppm	0.06 ppm	<0.1 – 0.19 ppm	Natural Deposits	NO

Second Supply Project – Water Available To Lakehaven Utility District - Operated by the City of Tacoma

The following items listed below were detected by Tacoma in Tacoma's water system during 2008.

<i>Contaminant</i>	<i>Date Tested</i>	<i>MCL</i>	<i>MCLG</i>	<i>Highest Detected Level*</i>	<i>Range of Level Detected</i>	<i>Major Sources</i>	<i>Violation</i>
Regulated Analytes Detected At Tacoma's Ground Water Sources (Wells)							
Arsenic	2008	10 ppb	0 ppb	2 ppb	0 – 2 ppb	Erosion of natural deposits	NO
Nitrate	2008	10 ppm	10 ppm	4.48 ppm	<0.5 – 4.48 ppm	Agricultural Uses, Septic Systems	NO
Trichloroethylene	2008	5 ppb	0 ppb	1.2 ppb	0.0 - 1.2 ppb	Industrial Contamination	NO
Xylenes Total	2008	10 ppm	0 ppm	0.6 ppm	0 – 0.6 ppm	Industrial Contamination	NO
Unregulated Analytes Detected At Tacoma's Ground Water Sources (Wells)							
Chloroform	2008	Not regulated	N/A	0.8 ppb	0 – 0.8 ppb	Industrial Contamination	NO
Fluorotrichloromethane	2008	Not regulated	N/A	1.7 ppb	0 – 1.7 ppb	Industrial Contamination	NO
Regulated Analytes At Tacoma's Green River Treatment Plant							
Fluoride	2008	4 ppm	4 ppm	1.03 ppm	0.61 – 1.03 ppm	Treatment Additive	NO
Turbidity	2008	5 NTU	N/A	2.94 NTU	0.10 – 2.94 NTU	Natural Erosion	NO
Regulated Analytes Detected In Tacoma's Distribution System							
Total Trihalomethane	2008	80 ppb	0 ppb	19.7 ppb (Average)	1 – 34 ppb	Chlorine Disinfection By-product	NO
Haloacetic Acid	2008	60 ppb	0 ppb	24 ppb (Average)	1 – 49 ppb	Chlorine Disinfection By-product	NO
Regulated Analytes Detected At The Consumers Tap in Tacoma							
Lead	2008	15 ppb AL*	0 ppb	11 ppb	90 th % < AL*	Household Plumbing	NO
Copper	2008	1.3 ppm AL*	1.3 ppm	0.4 ppm	90 th % < AL*	Household Plumbing	NO
Total Coliform	2008	< 5% Positive	0 Positive	0.002%	0.0% - 0.002%	Sampling Technique	NO

***Water Quality Table Definitions:**

ppb: part per billion **pCi/L:** Picocuries per liter

ppm: part per million

Highest Detected Level: Represents the highest concentration (or flow weighted average) that was measured by laboratory analysis during the entire year of monitoring the quality of our water.

MCL: Maximum Contaminant Level – The highest level of a contaminant that is allowed in drinking water.

MCLG: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a safety of margin.

MRDL: Maximum Residual Disinfectant Level: The highest level of a disinfectant allowed in drinking water.

MRDLG: Maximum Residual Disinfectant Level Goal: The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contamination.

NTU: Nephelometric Turbidity Unit is a standard unit to measure water clarity.

MCLG: Maximum Contaminant Level Goal

NA: Not Applicable

AL: Action Level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirement which a water system must follow. Action Levels are reported at the 90th Percentile for homes at greatest risk.

Additional Water Quality Information

Washington State Department of Health Monitoring Waivers Variances and Exemptions

In 2005, Lakehaven Utility District applied for and received special monitoring waivers for certain targeted wells for the 2005 - 2008 water quality monitoring periods from the Washington State Department of Health. These special monitoring waivers were granted for the purpose of reducing necessary sampling and testing raw ground water for analysis of organic and inorganic chemicals and the more common insecticides, herbicides, and pesticides. The District received these waivers because ground water from most District wells has a low susceptibility to contamination. In addition, state laboratory tests on our ground water indicate that these chemicals are not detectable in our groundwater supply.

Additional Contaminants Monitored

Lakehaven Utility District also tests for other substances and microscopic organisms found in our ground water for which no mandatory testing standards have been set. Many substances and microscopic organisms found in water may be a concern if they occur at high concentrations. Because of this, the District has been monitoring heterotrophic (HPC) bacteria in our water for many years. The HPC test measures a broad group of microorganisms that are commonly found in drinking water and this test is used by our "Water Quality

Monitoring Program" as a tool to track the concentration of these "background" microorganisms in our distribution system. The EPA has determined that a well operated water system with a well maintained distribution system should have HPC bacteria populations of less than 500 colonies per milliliter (ml). A



sample with a count higher than 500/ml is undesirable and should be investigated to determine the cause. During 2008 the District sampled and tested for HPC bacteria each week (using a state certified laboratory and government approved techniques) and found the annual average concentration of these organisms is well below an average of 5 colonies per milliliter. To make sure these organisms remain in low concentrations, we'll keep testing and keep you informed.

Cryptosporidium

Cryptosporidium is a microscopic organism related to surface water

supplies that, when ingested, can result in diarrhea, fever and other gastrointestinal symptoms. Tacoma Water has tested for Cryptosporidium in the Green River since 1993 and no evidence of actual Cryptosporidium-related health problems have been detected in areas served with Green River water. The Washington State Department of Health has not required Lakehaven Utility District to monitor or test for the presence of the protozoan Cryptosporidium in our drinking water supply because our source ground water (pumped from protected deep aquifers) is not vulnerable to this type of biological contaminant.

Arsenic

In 2008, laboratory reports on "raw" untreated ground water pumped from a Lakehaven Utility District well showed the presence of low levels of arsenic that was less than the maximum contaminant level (MCL) standard of 10 parts per billion set by the Environmental Protection Agency (EPA). There is a small chance that some people who drink water containing low levels of arsenic for many years could develop circulatory disease, cancer, or other health problems. Most types of cancer and circulatory diseases are due to factors other than exposure to arsenic. EPA's standard balances the current understanding of arsenic's health effects against the costs of removing arsenic from drinking water.

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. EPA/CDC (Center for Disease Control) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline.

Water Use Efficiency (WUE) Performance Report

12-Month Performance Reporting Period: January 2008 to December 2008 (Month/Year)

In 2003 the Washington State Legislature passed ESSHB 1338, better known as the Municipal Water Law (MWL), to address the increasing demand on our state's water resources. The law establishes that all municipal water suppliers (MWS) must use water more efficiently in exchange for water right certainty and flexibility to help them meet future demand. The MWL directed Department of Health (DOH) to adopt a water use efficiency rule which now replaces the 1994 Conservation Planning Requirements guidance document. The WUE rule requires water systems to engage their customers and interested public in a public forum setting when establishing their water efficiency goals. It ensures customers and the public can provide input on the decisions made by the governing body. It also helps the public understand the need to use water more efficiently and to educate them on how they can help the water system achieve the goal(s).

Distribution System Leakage Summary:	
Total Water Produced and Purchased – Annual Volume	3,776 <input checked="" type="checkbox"/> millions of gallons* <input type="checkbox"/> gallons*
Distribution System Leakage - Volume	351 <input checked="" type="checkbox"/> million of gallons* <input type="checkbox"/> gallons*
Distribution System Leakage – Percent**	9.3 %

Report volume in millions of gallons or gallons: 100 cubic foot = 748 gallons

*** This number represents unbilled water. Actual leakage amount is less.*

Lakehaven Utility District WUE Goal:

Achieve a water use reduction of 10% over 10 years from 2000 to 2010 consistent with our Memorandum of Agreement between the SSP partners and The Department of Health and Department of Ecology.

Lakehaven Utility District WUE Goal Progress: The average water use in the District in 2000 was approximately 261 gallons/ERU/day (*An ERU is a unit of measure used to equate non-residential or multi-family residential water usage to a specific number of single family residences.*). A 10% reduction in this rate would equate to an average use of approximately 235 gallons/ERU/day by 2010. The average water use in the District for 2008 was approximately 242 gallons/ERU/day, resulting in an average water use reduction of 7.3 % in 2008. The District hopes to reach its goal of 10% reduction by continuing to engage in water conservation activities. The District participates in a number of local civic events and activities during the year to promote and encourage water conservation for the purpose of educating the public about the benefits of water conservation. The District maintains a low-water use demonstration garden at Lakehaven Center to educate customers about outdoor water conservation. The District continues to detect system leaks and is administering a water service connection/meter replacement program. The District provides indoor water conservation devices and informational materials to its customer upon request. The District uses conservation pricing and seasonal demand management by administering an inverted block rate structure. In the future, the District hopes to work with the City of Federal Way to explore opportunities in Federal Way's Landscape Code to improve water use efficiency during new landscape development.

We feel that through our continuous water conservation activities, we are on track to reach our goal of 10% reduction in normal water use by 2010.



Lakehaven Utility District
31627 - 1st Avenue South
P.O. Box 4249
Federal Way, WA 98063

2008 WATER QUALITY REPORT

This report was prepared by the Lakehaven Utility District Water Operations Department. For more information, call our Water Quality Section of Lakehaven Utility District at 253-946-5410 or access our web site at www.lakehaven.org. Water Quality Data for community water systems throughout the United States is available at www.waterdata.com.