The Story Behind Your Drinking Water Quality

Water Quality Report for 2008
Las Virgenes Municipal Water District
met all drinking water standards for health and safety again this year. In fact, our water was far better than required for most standards
Annual Water Quality Report ~ Published June 2009
Dear Valued Customer:

As we enter a third year of reduced water supplies across California, hardly a day passes without water being covered as a news topic. While there are no short-term solutions to the challenge of stretching available supplies, as a community we can respond by consciously deciding to be careful stewards of the water that we use.

While the supply of available water has diminished, the quality has not. This publication is our annual report to you on the quality of the water we deliver to our customers. We take pride in the attention given to the quality of water that we serve. You may be confident your water is tested and monitored on an ongoing basis. Over the last year, Los Angeles Municipal Water District (LVMWD) has added to its record of meeting stringent state and federal water quality standards. In many measured categories, your water has performed at a level higher than the specified standards. In addition to the data tables in this report, I ask that you read the information on your water supply along with helpful explanations on several topics of interest.

The importance of water in our lives is immeasurable. We invite you to stay informed on water issues through our website, www.LVMWD.com, or our customer publication The Current Flow, which is included with each billing statement as well as being available online, and through our program of free quarterly facility tours. Our customers are also welcome to attend meetings of the LVMWD Board of Directors, which are scheduled on the second and fourth Tuesday of each month at 5 p.m. at our Headquarters Building, 4232 Las Virgenes Road in Calabasas. Check the website for meeting schedule updates and agenda information.

The journey water makes to our homes, schools and businesses is complex, with many challenges. By reading this report, we hope you feel better informed about the many steps we take to ensure you receive high quality drinking water. If you have questions about any aspect of your water service, please call Customer Service at 818.251.2200.

John R. Mundy
General Manager

Health Advisory for Persons with Weakened Immune Systems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons such as those with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS and other immune-compromising conditions, some elderly, or infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care provider.

Some constituents are known to especially affect people with weakened immune systems. This is the case with a microsporidian parasite called Cryptosporidium, which can cause a life-threatening infection. Cryptosporidium is found in surface water (which comes from rivers, snowmelt and streams as opposed to ground water from wells) and some occasionally pass into the treated water supply. Although Cryptosporidium may be spread via drinking water, it is more commonly spread through contaminated food or contaminated foods.

In 2008, there was no evidence of Cryptosporidium in water leaving Metropolitan Water District of Southern California’s (MWD) Jensen Water Treatment Plant, which disinfects water supplied to LVMWD or at LVMWD’s Westlake Filtration Plant. Guidelines from EPA and the U.S. Centers for Disease Control and Prevention to reduce the risk of infection by Cryptosporidium and other microbial contaminants are available by calling EPA’s Safe Drinking Water Hotline at (800) 426-4791 or visiting www.epa.gov/safewater/.

A Message 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 the water poses a health risk. You can learn more about contaminants and potential health effects by calling the U.S. Environmental Protection Agency’s Safe Drinking Water Hotline at (800) 426-4791 or www.epa.gov/safewater/.

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.

In order to ensure that tap water is safe to drink, U.S. EPA and the California Department of Public Health (formerly Department of Health Services) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Contaminants that may be present in water before some treatment include:

- Inorganic contaminants, such as salts and metals, that can be naturally occurring or come from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming
- Microbial contaminants, such as viruses, bacteria and protozoa that may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife
- Pesticides and herbicides that 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 that are by-products of industrial processes, petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

Your Role in Protecting Water Supplies

Over the past two years, news agencies have published stories regarding the detection of trace levels of pharmaceutical substances across California. For nearly three decades, water managers have been researching this issue and urging the federal government to assist with additional study.

Newer technologies make it possible to now detect the presence of water-borne substances in the parts per billion and in some cases, parts per trillion ranges. A 2006 study of source and treated waters was conducted by the AWWA Research Foundation and California Urban Water Agencies. The survey found trace amounts, in the parts per trillion range, of nine different pharmaceuticals, one human steroid, and two pesticides in the source water entering the Jensen treatment plant. Trace levels, also in the parts per trillion range of two pharmaceutical compounds and one pesticide were also found in the treated water of the Jensen plant.

Research has not yet been able to discern what effects, if any, there may be on human health given the extremely low levels being detected. What is clear is that significantly more research will be required to make any determinations.

The most effective method to reduce the presence of pharmaceutical substances in water is to prevent their entering the nation’s water in the first place. Every person should practice the proper disposal of unused or expired pharmaceuticals and personal care products. Specifically, they should never be disposed of in drains or flushed down the toilet. Additional information may be found at www.nodrugsdownthedrain.com.

Step 1

- Water flows through the Sacramento Bay – San Joaquin Delta. Originally a native marshland, much of this area was developed into wetlands in the 1900s. This complex region contains 700 miles of rivers and sloughs, and almost 550,000 acres of farmland, divided into more than 70 islands with 1,100 miles of levees and roads. Salinity influx is a problem with total influences; upstream reservoirs that store water and then release during the summer help stabilize and improve water quality.

Step 2

- Water flows through the Skinner Fish Facility, built in 1966 - 1970. Here, a large screen helps protect fish by keeping them away from the pumps that lift water into the California Aqueduct. An average of 15 million fish a year are diverted and returned to the Delta (via oxygenated tank trucks).

Step 3

- Water now flows into the Sacramento-San Joaquin Delta. The water flows through the A.D. Edmonston Pumping Plant, which pumps the water 1,926 feet (the highest single lift pumping plant in the world) to enter 8.5 miles of tunnels and pipes that cross the mountain range. 33 feet. An average of 15 million fish a year are diverted and returned to the Delta (via oxygenated tank trucks).

Step 4

- At the Harvey O. Banks Pumping Plant, built 1963 - 1969, water is lifted 244 feet at the first of 6 pumping lifts. It then enters the Bethany Reservoir.

Step 5

- Next our water flows into the Sacramento-San Joaquin Delta. Originally a native marshland, much of this area was developed into wetlands in the 1900s. This complex region contains 700 miles of rivers and sloughs, and almost 550,000 acres of farmland, divided into more than 70 islands with 1,100 miles of levees and roads. Salinity influx is a problem with total influences; upstream reservoirs that store water and then release during the summer help stabilize and improve water quality.

Step 6

- As the water continues south, it passes through the Skinner Fish Facility, built in 1966 - 1970. Here, a giant screen helps protect fish by keeping them away from the pumps that lift water into the California Aqueduct. An average of 15 million fish a year are diverted and returned to the Delta (via oxygenated tank trucks).

Step 7

- At the Tehachapi Mountains, the water faces a major obstacle. At the A.D. Edmonston Pumping Plant, built 1965-1971, giant pumps lift the water 1,926 feet (the highest single lift pumping plant in the world) to enter 8.5 miles of tunnels and pipes that cross the mountain range. Capable of pumping 1 acre-foot of water in about 2 minutes, the water flows into the Antelope Valley where the Aqueduct diverts.

Step 8

- Water flows through the San Joaquin Valley via the California Aqueduct, a major State Water Project (SWP) structure built from 1960 - 1971. From Banks Pumping Plant to Lake Perris, the Aqueduct travels 444 miles, ranging in depth from 7 to 33 feet.

Step 9

- At the Tehachapi Mountains, the water faces a major obstacle. At the A.D. Edmonston Pumping Plant, built 1965-1971, giant pumps lift the water 1,926 feet (the highest single lift pumping plant in the world) to enter 8.5 miles of tunnels and pipes that cross the mountain range. Capable of pumping 1 acre-foot of water in about 2 minutes, the water flows into the Antelope Valley where the Aqueduct diverts.
### Secondar Standards

TOC ppm TT NA 0.30 Range
Chloride ppm NA NA NA Range 72 - 80 73 - 130
pH pH NA NA NA Range 6.65 - 6.66 6.4 - 7.6
Boron ppb NA NL = 1000 100 Range
Chloride ppm 500 NA NA Range
Alkalinity ppm NA NA NA Range
Chromium VI (o) ppb NA NA 1 Range
µS/cm 1600 NA NA Range
Odor Threshold (n) TON 3 NA 1 Range
Color Units 15 NA NA Range
Sulfate ppm 500 NA 0.5 Range
Turbidity (a) NTU 5 NA NA Range
Sulfate ppm 500 NA 0.5 Range
### Additional Parameters

| Parameter | Limits | Units | LVMWD Major Sources in Drinking Water
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>PHG</td>
<td>12.0 - 12.1</td>
<td>NA</td>
<td>0.12 - 0.26&lt;br&gt;Elemental balance in water; affected by temperature, other factors</td>
</tr>
<tr>
<td>DLR</td>
<td>4.9</td>
<td>NA</td>
<td>0.40 - 0.76&lt;br&gt;Industrial waste discharge; could be naturally present as well</td>
</tr>
<tr>
<td>Highest RAA</td>
<td>56 - 120</td>
<td>NA</td>
<td>0.22 - 0.31&lt;br&gt;Residue from water treatment process; natural deposits</td>
</tr>
<tr>
<td>Highest RAA</td>
<td>4.6 - 5.1</td>
<td>NA</td>
<td>0.22 - 0.31&lt;br&gt;Naturally occurring organic materials</td>
</tr>
<tr>
<td>Highest RAA</td>
<td>56 - 120</td>
<td>NA</td>
<td>0.22 - 0.31&lt;br&gt;Runoff/leaching from natural deposits; seawater influence</td>
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### Your Water, From Snowfall to Your Tap . . .

The water from your tap started as snowmelt in the Sierra Mountains. Water is brought to our area through the California Aqueduct and travels more than 440 miles to reach your tap. It is purchased from Metropolitan Water District of Southern California (MWD or Metropolitan). LVMWD must import 100% of our drinking water because there are no native supplies to draw from within our 122-square mile service area. Each year, LVMWD sets aside a portion of the water purchased from MWD as a reserve and stores it in our own Las Virgenes Reservoir. Holding enough water to serve all district customers for about six months, the reservoir provides water “insurance” for times of emergency and peak demand. In addition, it provides flexibility to store water in the off-season when demand is lower.

### Step 1

#### Snowmelt in the High Sierra Mountains

Water released from these lakes enhance fish and wildlife in the area and supplement water supplies.

### Step 3

#### Water next enters the Orovil – Thermalito Complex

Lake Orovil, the State Water Project’s principal reservoir, has a capacity of 3.5 million acre-feet, and stores an enclosed system of connections and pumping stations in the west San Fernando Valley. These pipelines end at LVMWD’s Pumping Station in Calabasas where LVMWD Facilities begin. Overall, LVMWD’s pipeline system of tanks and pumping stations include 350 miles of 4” and larger pipeline (up to 48”) and 25 tanks, ranging from 0.3 to 8 million gallons in capacity.

### Step 10

The East Branch of the Aqueduct carries water to the San Bernardino Mountains and Lake Perris. Water destined for LVMWD travels in the West Branch. After 32 miles, the water reaches Oso Pumping Plant for its final lift of 231 feet (the rest of the journey uses gravity).

### Step 11

#### The water crosses the San Andreas Fault, and flows into Pyramid Lake in Los Angeles County.

Water next enters the Oroville – Thermalito Complex. Lake Oroville, in Los Angeles County. Under construction from 1969 to 1973, Pyramid Lake has a storage capacity of 3.5 million acre-feet, and is capable of processing 15 million gallons per day (MGD). Water is pumped from the base of the dam to a clear well and filtered using diatomaceous earth (DE). Once filtered, the water is disinfected using chloramines (chlorine + ammonia). Disinfection kills bacteria and prevents bacterial growth in the distribution system.

### Step 17

#### Finally, your water is pumped into transmission and distribution water mains where it flows through service lines to individual homes and businesses.
How did we do in 2008? Water Quality Report (based on data collected in 2008)

### Microbial contaminants
- **E. coli**: 0
- **Heterotrophic Plate Count (HPC)**: NA

### Inorganic chemicals
- **Nitrate (as N)**: 0.4 ppm

### Disinfection By-Products, Disinfectant Residuals, and Disinfection By-Products Precursors

#### Bromate
- **Bromate (m) ppb**: 10
- **Range**: 0 - 5.0

#### Chlorine residuals
- **Total Chlorine Residual ppm**: 4.0

#### Nitrite (as N) (h) ppm
- **0.4 ppm**

### Radiologicals
- **Gamma Radiation**: ND
- **Thoron**: 4.1

### Inorganic Chemicals
- **Aluminum (f) ppb**: 1000
- **Total Trihalomethanes (THM) (k) ppb**: 80
- **Total Trihalomethanes (THM) (k) (l) ppb**: 80
- **Haloacids (five) (HAAS) (l) ppb**: 60
- **Total Chlorine Residual ppm**: 4.0
- **Bromate (m) ppb**: 10
- **DBP Precursors Control (TOC) ppm**: TT

### Microbially-Related Parameters

#### Residuals
- **Total Coliform Bacteria (b) %**: 0
- **Heterotrophic Plate Count (HPC) (d,e) CFU/mL**: TT
- **Fluoride (g) Treatment-related ppm**: 2.0
- **Nitrate (as N) (h) ppm**: 10

### Testing results are presented for the Jensen Water-Treatment plant operated by MWD and for L/YWMD’s water delivery system. If you have any questions or need clarification, please call us at 818-251-2200, or contact any of the agencies listed in this report under “More Information.”

### Footnotes

1. For the Jensen plant, the turbidity level of the filtered water shall be less than or equal to 0.3 NTU at 95% of all measurements taken each month and shall not exceed 1.0 NTU at any time. For the Westside plant, the turbidity level of the filtered water shall be less than or equal to 0.5 NTU at 95% of all measurements taken each month and shall not exceed 5.0 NTU at any time. Turbidity is a measure of the cloudiness of the water and is an indicator of treatment performance. The averages and ranges of turbidity shown in the Standard are based on the maximum plant effluent.

2. Total coliform MCL. No more than 5.0% of the monthly samples may be total coliform-positive. The MCL was not violated.

3. E. coli MCL. The occurrence of two consecutive total coliform-positive samples, one of which contains E. coli, constitutes an acute MCL violation. The MCL was not violated.

4. All MWD distribution sample collected detectable total chlorine residuals and no HAA was required. HAA reporting level is 1 ppm/L. The MCL was not violated.

5. This includes all sources of the State’s Fluoridation System Requirements.

6. State MCL is 4 mg/L as nitrate, which is the equivalent of 10 mg/L as N.

7. The gross beta particle activity MCL is 4 millirem/year annual dose equivalent to the total body or any internal organ. The screening level is 50 mCi/L.

8. MCL was in compliance with all provisions of the Stage 1 Disinfectants/Disinfectant By-Products (D/DBP) Rule. Compliance was based on the RAA.

9. Reporting level is 5 ppb for each of the following: bromoacetic acid, bromoform, chloroform, and dibromochloromethane. The MCL was not violated.

10. Bromate reporting level is 3 ppb.

11. MWD utilizes a flavor-profile analysis method that can detect odor occurrences more accurately.

12. Chromium VI reporting level is 0.03 ppb.

13. AI = <120 = Highly aggressive and very corrosive water; AI = 120 - 1.19 = Highly aggressive water; AI = 1.20 - 1.19 = Moderately aggressive water; AI = 1.20 - 1.19 = Non-aggressive water.

14. MicroSiemens per centimeter; or microsiemens per centimeter; or microchro per centimeter (µS/cm).
How did we do in 2008? Water Quality Report (based on data collected in 2008)

Abbreviations and Terms ~
Levels considered to be unsafe or unhealthy.

While the information in these tables is important, what you with a bit of patience and time on your part, you will learn
They contain complex measurements and terminology but
The tables of this report may look complicated but don't let

**Microbiological**
Total Coliform Bacteria (b)  %  5.0  0  NA  Range Average 0.0 - 0.8  0.0 - 0.0  Naturally present in the environment
E. coli (c) (c)  0  NA  Range Average 0.0  0  Human and animal fecal waste
Heterotrophic Plate Count (HPC) (d,e) CFU/ mL TT NA  Range Average TT TT  Naturally present in the environment

**Inorganic Chemicals**
Aluminum (f) ppb 1000  600  50  Range Highest RAA 56 - 120  ND - 87  Residue from water treatment process; natural deposits erosion
Arsenic ppb 10  0.004  2  Range Highest RAA 2.0 - 2.8  1.9 - 2.3  Natural deposits erosion, glass and electronics production wastes
Fluoride (g) Treatment-related ppm 2.0  1  0.1  Range Average 0.6 - 0.9  0.4 - 0.9  Water additive for dental health
Nitrate (as N) (h) ppm 10  10  0.4  Range Highest RAA 0.8 - 0.9  0.6 - 0.9  Runoff and leaching from fertilizer use; septic tank and sewage; natural deposits erosion

**Radiochemicals**
Gross Alpha Particle Activity pCi/L 15  0  3  Range Average ND - 7.3  ND - 8.2  Erosion of natural deposits
Gross Beta Particle Activity (i) pCi/L 50  0  4  Range Average ND - 5.2  ND - 5.4  Decay of natural and man-made deposits
Uranium pCi/L 20  0.43  1  Range Average 1.8 - 2.0  2.0 - 2.5  Erosion of natural deposits

**Disinfection By-Products, Disinfectant Residues, and Disinfection By-Products Precursors (i)**
Total Trihalomethanes (TTHM) (k) ppb 80  NA  1  Range Average 5.4 - 51  26 - 58  By-product of drinking water chlorination
Total Trihalomethanes (TTHM) (k) (l) ppb 80  NA  1  Range Average 5.4 - 51  26 - 58  By-product of drinking water chlorination
Haloacetic Acids (five) (HAAS) (a1) ppm 60  NA  1  Range Average 2.6 - 8.6  ND - 9  By-product of drinking water chlorination
Haloacetic Acids (five) (HAAS) (a1) ppm 60  NA  1  Range Average 2.6 - 8.6  ND - 9  By-product of drinking water chlorination
Total Chlorine Residual ppm 4.0  4.0  NA  Range Highest RAA 1.4 - 3.2  ND - 4  Drinking water disinfectant added for treatment
Bromate ppm 10  0  5.0  Range Average 4.4 - 10  NA  By-product of drinking water ozonation
DBP Precursors Control (TOC) ppm TT NA  0.30  Range Average TT TT  Various natural and man-made sources

**How to Read the Tables**
The tables of this report may look complicated but don’t let that discourage you.
They contain complex measurements and terminology but with a bit of patience and time on your part, you will learn a lot of valuable information about the water delivered to your tap.
While the information in these tables is important, what you don’t see is also significant. Water agencies are required to report contaminants that are detected; none were found at levels considered to be unsafe or unhealthy.

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**Footnotes**
(a) For the Jensen plant, the turbidity level of the filtered water shall be less than or equal to 0.3 NTU in compliance with all provisions taken each month shall not exceed 1.0 NTU at any time. For the Westlake plant, the turbidity level of the filtered water shall be less than or equal to 0.5 NTU in compliance with all provisions taken each month shall not exceed 0.5 NTU at any time. Turbidity is a measure of the cloudiness of the water and is an indicator of treatment performance.
The averages and ranges of turbidity shown in the Secondary standards were based on the maximum plant influent.
(b) Total coliform MCLs: No more than 5.9% of the monthly samples may be total coliform-positive. In 2008, 1018 samples were analyzed. The MCL was not violated.
(c) E. coli MCL: The occurrence of two consecutive total coliform-positive samples, one of which contains E. coli, constitutes an acute MCL violation. The MCL was not violated.
(d) All MWD distribution samples collected had detectable total chlorine residuals and no HPC was required. HPC reporting level is 1 CFU/L.
(e) LTHM distribution system-wide.
(f) Aluminum has both primary and secondary standards.
(g) MWD is in compliance with the provisions of the Stage 1 Disinfectant/Disinfection By-Products (D/DBP) Rule and the Water Quality Laboratory using Standard
(h) The gross beta particle activity MCL is 4 millirem/year annual dose equivalent to the total body or any internal organ. The screening level is 50 pCi/L.
(i) MWD was in compliance with the provisions of the Stage 1 Disinfectant/Disinfection By-Products (D/DBP) Rule. Compliance was based on the RAA.
(j) Reporting level is based on the following: bromochloromethane, bromoform, chloroform, and dibromochloromethane.
(k) Reporting level is 5 ppb for each of the following: chloroform, trichloroacetic acid, trichloroacetic acid, bromoacetic acid, and dibromochloromethane.
(l) Bromate level is 3 ppb.
(m) HPC results of a flavor-profile analysis method that can detect odor occurrences which can detect odor occurrences more accurately.
(n) The acute level is 0.10 µg/L and no other MCLs apply to constituents that may be unhealthy at certain levels.
Your Water, From Snowfall to Your Tap . . .

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The Journey Begins...

Step 1 ~ Snowmelt in the High Sierra Mountains provides water for Southern California. Rain and snow that falls in the northern half of California equals 2/3 of the state’s annual precipitation and is used to supply 2/3 of the state’s population that lives in southern half of California.

Step 2 ~ Snowmelt flows into the Upper Feather River Lakes (Antelope Lake, Frenchman Lake, and Lake Davis) created in the 1960s primarily for recreational use. Water released from these lakes enhance fish and wildlife in the area and supplement water supplies.

Step 3 ~ Water next enters the Oroville – Thermalito Complex. Lake Oroville, the State Water Project’s principal reservoir, has a capacity of 3.5 million acre-feet, enough to supply about 40% of California’s urban water needs for 1 year. Oroville Dam, built in 1968, is the tallest dam in the U.S. at 770 feet. It was built with 72 million cubic yards of talus left by gold miners and also provides flood control. The Thermalito Facilities and Hyatt Pump Power Plant produce an average of 2.2 billion kilowatt hours of electricity each year.

Step 4 ~ On its way downstream, some water enters the Feather River Fish Hatchery. Built in 1967 to replace spawning areas that were lost when the river was blocked by the construction of Oroville Dam, this is where salmon and steelhead eggs are artificially spawned. After hatching, the young fish are raised in rearing races until they are large enough to be released in the Sacramento River or Bay Delta.

Step 10 ~ The East Branch of the Aqueduct carries water to the San Bernardino Mountains and Lake Perris. Water destined for LVMWD travels in the West Branch. After 32 miles, the water reaches Oso Pumping Plant for its final lift of 231 feet (the rest of the journey uses gravity).

Step 11 ~ The water crosses the San Andreas Fault, and flows into Pyramid Lake in Los Angeles County. Under construction from 1969 to 1973, Pyramid Lake has a 172,000 acre-foot capacity.

Step 12 ~ Leaving the lake, water flows through the Angeles Tunnel (7 miles) to Castaic Pump Plant, Castaic Lake, and Castaic Dam constructed between 1965 and 1974. This is the terminus of the West Branch of the California Aqueduct. The lake holds 324,000 acre-feet of water and was built to provide emergency storage during a shutdown of the California Aqueduct.

Step 13 ~ Water then flows to MWD’s Jensen Water Treatment Plant in Granada Hills. This facility provides safe, highly treated drinking water to portions of Ventura, Los Angeles, and Orange Counties. Normally, Jensen Water Treatment Plant receives 100% SWP water, but it can also receive water from the Los Angeles Aqueduct. During the treatment process water undergoes comprehensive treatments including rapid mix, flocculation, sedimentation, filtration and disinfection (via ozonation).

Step 14 ~ After treatment, water leaves Jensen Water Treatment Plant and enters an enclosed system of connections and pumping stations in the west San Fernando Valley. These pipelines end at LVMWD’s Pumping Station in Calabasas where LVMWD Facilities begin. Overall, LVMWD’s pipeline system of tanks and pumping stations include 350 miles of 4’ and larger pipeline (up to 48”) and 25 tanks, ranging from 0.3 to 8 million gallons in capacity.

Step 15 ~ Depending on water demands and the time of year, the water now flows either directly to your home or to LVMWD’s Las Virgenes Reservoir in Westlake Village. Built between 1970 and 1972, the reservoir is able to hold 9,800 acre feet (nearly 3 billion gallons) of treated water from MWD’s Jensen Plant.

Step 16 ~ Water drawn from Las Virgenes Reservoir is filtered and disinfected again at LVMWD’s Westlake Filtration Plant. In operation mainly during the summer, it is capable of processing up to 15 million gallons per day (MGD). Water is pumped from the base of the dam to a clear well and filtered using diatomaceous earth (DE). Once filtered, the water is disinfected using chloramines (chlorine + ammonia). Disinfection kills bacteria and prevents bacterial growth in the distribution system.

Step 17 ~ Finally, your water is pumped into transmission and distribution water mains where it flows through service lines to individual homes and businesses.
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Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders; some elderly, or infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care provider.

Some constituents are known to especially affect people with weakened immune systems. This is the case with a microscopic parasite called "Cryptosporidium", which can cause a life-threatening infection. Cryptosporidium is found in surface water (which comes from rivers, snowmelt, and streams as opposed to ground water from wells) and some occasionally pass into the treated water supply. Although Cryptosporidium may be spread via drinking water, it is more commonly spread through contaminated food or contaminated foods.

In 2008, there was no evidence of Cryptosporidium in water leaving Metropolitan Water District of Southern California’s (MWD) Jensen Water Treatment Plant, which disinfects water supplied to LVMWD or at LVMWD’s Westlake Filtration Plant. Guidelines from EPA and the U.S. Centers for Disease Control and Prevention to reduce the risk of infection by Cryptosporidium and other microbial contaminants are available by calling EPA’s Safe Drinking Water Hotline at (800) 426-4791 or visiting www.epa.gov/safewater/.

A Message 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 the water poses a health risk. You can learn more about contaminants and potential health effects by calling the U.S. Environmental Protection Agency’s Safe Drinking Water Hotline at (800) 426-4791 or www.epa.gov/safewater/.

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.

In order to ensure that tap water is safe to drink, U.S. EPA and the California Department of Public Health (formerly Department of Health Services) prescribe regulations that limit the amounts of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

- Inorganic contaminants, such as salts and metals, that can be naturally occurring or come from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming
- Microbial contaminants, such as viruses, bacteria and protozoa that may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife
- Pesticides and herbicides that 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 that may be by-products of industrial processes, petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

Your Role in Protecting Water Supplies

Over the past two years, news agencies have published stories regarding the detection of trace levels of pharmaceutical substances across the nation. For nearly three decades, water managers have been researching this issue and urging the federal government to assist with additional study.

Newer technologies make it possible to now detect the presence of water-borne substances in the parts per billion and in some cases, parts per trillion ranges. A 2006 study of source and treated waters was conducted by the AWWA Research Foundation and California Urban Water Agencies. The survey found trace amounts, in the parts trillion range, of nine different pharmaceuticals, one human steroid, and two pesticides in the source water entering the Jensen treatment plant. Trace levels, also in the parts per trillion range of two pharmaceutical compounds and one pesticide were also found in the treated water of the Jensen plant.

Research has not yet been able to discern what effects, if any, there may be on human health given the extremely low levels being detected. What is clear is that significantly more research will be required to make any determinations.

The most effective method to reduce the presence of pharmaceutical substances from water is to prevent their entering the nation’s water in the first place. Each person should practice the proper disposal of unused or expired pharmaceuticals and personal care products. Specifically, they should never be disposed of in drains or flushed down the toilet. Additional information may be found at www.nodrugsdownthedrain.com.

Step 5 ~ Next our water flows into the Sacramento Bay – San Joaquin Delta. Originally a native marshland, much of this area was developed into farmland in the 1900s. This complex region contains 700 miles of rivers and sloughs, and almost 550,000 acres of farmland, divided into more than 70 islands with 1,100 miles of levees and roads. Salinity influx is a problem with total influences; upstream reservoirs that store water and then release during the summer help stabilize and improve water quality.

Step 6 ~ As the water continues south, it passes through the Skinner Fish Facility, built in 1966 - 1970. Here, a giant screen helps protect fish by keeping them away from the pumps that lift water into the California Aqueduct. An average of 15 million fish a year are diverted and returned to the Delta (via oxygenated tank trucks).

Step 7 ~ Now the water begins to really travel. At the Harvey O. Banks Pumping Plant, built 1963 - 1969, water is lifted 244 feet at the first of 6 pumping lifts. It enters the Bethany Reservoir.

Step 8 ~ Water flows through the San Joaquin Valley via the California Aqueduct, a major State Water Project (SWP) structure built from 1960 - 1971. From Banks Pumping Plant to Lake Perris, the Aqueduct travels 444 miles, ranging in depth from 7 to 33 feet.

Step 9 ~ At the Tehachapi Mountains, the water faces a major obstacle. At the A.D. Edmonston Pumping Plant, built 1965-1971, giant pumps lift the water 1,926 feet (the highest single lift pumping plant in the world) to enter 8.5 miles of tunnels and siphons that cross the mountain range. Capable of pumping 1 acre-foot of water in about 2 minutes, the water flows into the Antelope Valley where the Aqueduct divides.

Step 10 ~ Aqueduct water then enters the Los Angeles Aqueduct Diversion Dam which diverts water to the Los Angeles Aqueduct. From there, water travels 244 miles through the San Gabriel Valley Aqueduct. The water then travels 33 miles through the West Coast Aqueduct to the City of Los Angeles. The water enters the Bethany Reservoir.
Annual water quality report - Published June 2009
This report contains water quality results for the Las Virgenes Municipal Water District (LVMWD) that met all drinking water standards for health and safety. The report shows that LVMWD 2008 Water Quality Report for 2008

Lake Covelie in northern California

Drinking Water Quality
The Story Behind Your

For More Information

LVMWD
Customer Service
Phone: (818) 251-2200
Fax: (818) 251-2109
E-mail: Customer_Service@LVMWD.com

Additional information about drinking water safety and standards can be found at:

California Department of Public Health
Office of Drinking Water
601 N. 7th St.
Sacramento, CA 94234-7320
www.cdph.ca.gov/certlic/drinkingwater/Pages/default.aspx

U.S. Environmental Protection Agency (EPA)
Office of Ground Water and Drinking Water
401 M Street, SW
Washington, DC 20460
www.epa.gov/safewater/

EPA Safe Drinking Water Hotline
(800) 426-4791
www.epa.gov/safewater/standards.html
(Information on how drinking water laws are established)

U.S. Centers for Disease Control and Prevention
1600 Clifton Road
Atlanta, GA 30333
www.cdc.gov
(800) 311-3435

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