

# **Annual Water Quality Report for 2003**

City of Lodi, Published April 2004

*(Este informe contiene informacion muy importante sobre su agua potable. Traduzcalo o hable con alguien que lo entienda bien.)*

This 15th Annual Water Quality Report summarizes testing performed on Lodi's water supply by State certified laboratories. This report follows the "Consumer Confidence Report" (CCR) format required by the U.S. Environmental Protection Agency and the State of California.

## **WHO ARE WE?**

In 1910 your City of Lodi Water Utility officially began operation along with the Electric Utility, and for 93 years, the water system has been owned by the Citizens of Lodi. Ninety-two years ago there were only two wells and a few miles of water mains. In 2003 there were 25 wells, over 210 miles of mains, a water tower and a 1-million-gallon storage tank. Lodi delivers water to approximately 23,000 residential, commercial and industrial customers.

Water rates, system expansion projects, and significant purchases are authorized by the Lodi City Council, which serves as the water utility's official regulatory body. **Lodi City Council meetings are open to the public and are scheduled for the first and third Wednesdays of each month at 305 West Pine Street in Lodi at 7:00 p.m.**

## **YOUR DRINKING WATER SYSTEM**

25 computer controlled wells, located throughout the City, provide high quality groundwater, our sole source of supply. The wells operate automatically on water pressure demand so that when water use increases, more wells come on line. A new well is planned for 2004 to keep up with water supply demands. However, the groundwater basin is being depleted. Lodi has purchased rights to some surface water in the Mokelumne River. The City is currently studying the most effective and cost efficient use of this surface water.

Currently seven wells are fitted with emergency diesel-powered generators. (While these generators will help maintain water pressure during power outages, please refrain from using water during power outages to save the capacity for emergency uses, i.e., fire fighting.) The water delivered to your tap meets or is better than all federal and state water quality standards.

## **BACTERIOLOGICAL WATER QUALITY — CHLORINATION**

Lodi takes over 20 samples per week from throughout Lodi's water distribution system for bacterial water quality. In 2003 the City of Lodi's drinking water met all bacteriological standards.

The water may be periodically chlorinated as a proactive step to help keep the water system in compliance with strict bacteriological standards, however, Lodi's water does not normally contain chlorine. The City will make an effort to inform you in local papers before your water is chlorinated. When necessary however, the drinking water may be chlorinated before you can be informed.

Recently the City of Lodi was ordered to start full time chlorination on the water system. After discussing the issue in detail with State regulators, it was found that there was a misunderstanding on the results of City bacteriological testing and the order was rescinded. The City is also following the development of U.S. EPA draft regulations which may require that nearly every groundwater system like Lodi's chlorinate year-round.

## **DRINKING WATER SOURCE ASSESSMENT**

"An assessment of the drinking water sources for the City of Lodi's water system was completed in February 2003. The sources are considered most vulnerable to the following activities: gas stations (current and historic), chemical/petroleum processing/storage, metal plating/finishing/fabricating, plastic/synthetics producers, dry cleaners, known contaminant plumes, sewer collection systems, fleet/truck/bus terminals, machine shops, utility stations-maintenance areas, agricultural drainage, and photo processing/printing."

A copy of the completed assessment is available at the Public Works Department, City of Lodi, 1331 South Ham Lane, Lodi, CA 95242. You may request that a copy be sent to you by contacting Frank Beeler at (209) 333-6740. A copy of the complete assessment is also available at the Department of Health Services, Drinking Water Field Operations Branch, Stockton District Office, 31 E Channel Street, Room 270, Stockton, California 95202. You may also request that a copy be sent to you by contacting Joseph O. Spano, District Engineer, at (209) 948-7696.

## **DOWNTOWN SOILS CLEAN-UP**

*The City, working with regulatory agencies in a cooperative fashion, is pursuing a resolution to a contamination problem in the north and central downtown Lodi area. While NO operating wells are out of compliance with any drinking water standards, there is PCE (Tetrachloroethylene) and TCE (Trichloroethylene) found in soils and shallow groundwater. The City continues to work towards clean-up/containment of these dry cleaning and industrial solvents through litigation and mediation with the various potentially responsible parties.*

## **DBCP (Dibromochloropropane) UPDATE**

DBCP was used by area farmers to kill nematodes in vineyards. DBCP was banned in California in 1977, but is still present in trace levels in some groundwater. The City of Lodi used 25 wells to provide drinking water in 2003. The wells are rotated so over the course of time, water being delivered is a blend from these wells. Eleven of Lodi's wells had no detectable DBCP. Six wells have filters to remove DBCP. The remaining eight meet State and Federal standards, but have trace amounts of DBCP. **The result is that the people of Lodi are being served water below the DBCP level deemed safe by the U.S. EPA and the State of California.**

DBCP has been shown to increase cancer nodules in rats and mice when exposed to very high levels over their lifetimes. In theory these chemicals may also increase the risk of cancer in humans. Drinking water standards are set to reduce this risk and include a safety factor for the general population and take into account the cost and practicality of removing the particular contaminant. While there are scientists who say this theory is not justifiable, there are also those who feel that the standards do not protect sub-groups, such as children.

As a counterpoint, this theoretical risk of cancer has also been applied to many chemicals that occur in everyday foods. When chemicals that are found in everyday foods are tested in the same way, some scientists have found that many foods have a greater theoretical cancer hazard than DBCP in drinking water.

For more info, see the web site: <http://potency.berkeley.edu/text/lehr.html> (to better understand, the above web site, DBCP levels in Lodi's water would have a HERP% of approximately 0.0005).

The U.S. EPA and State of California drinking water standard for DBCP has been set at 0.2 ppb to reduce the theoretical risk of cancer. This theoretical risk is based on lifetime (70 years) exposure and drinking about two quarts of water every day. The limit of 0.2 ppb equals one drop in 66,000 gallons of water. It would take over 350 years to drink 66,000 gallons of water at 2 quarts/day. Water meeting this standard is considered safe with respect to DBCP by the U.S. EPA and State of California Department of Health Services.

In 1996 the City settled a lawsuit against DBCP manufacturers, who have already paid the City for a large portion of Lodi's costs related to DBCP treatment. The DBCP manufacturers will continue to pay a large portion of the City's DBCP related costs for the settlement's 40-year life.

**If you have any questions about this report or Lodi's water quality, please contact:**

*Assistant Water/Wastewater Superintendent • Frank Beeler*

*1331 S. Ham Lane, Lodi, CA 95242 • Telephone: (209) 333-6740 • E-mail: [fbeeler@lodi.gov](mailto:fbeeler@lodi.gov)*

**To better understand the report, please note the description of terms and abbreviations**

### **Terms and Abbreviations Used:**

**Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCL's are set to protect the odor, taste, and appearance of drinking water.

**Public Health Goal (PHG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

**Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

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

**Primary Drinking Water Standard or PDWS:** MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

**Maximum residual disinfectant level (MRDL):** The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

**Maximum residual disinfectant level goal (MRDLG):** The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set the U.S. Environmental Protection Agency.

**mg/L or ppm:** Milligrams per liter, or parts per million (one ppm equals a concentration of about one cup in a 60,000 gallon swimming pool).

**ug/L or ppb:** Micrograms per liter, or parts per billion (one ppb equals about 4.5 drops in a 60,000 gallon swimming pool).

**ppt:** Parts per trillion (one ppt equals less than 1/200 of a drop in a 60,000 gallon swimming pool).

**pCi/L:** Picocuries per liter (a measurement of radiation).

NA: Not Applicable.

ND: Not Detected at measurable amounts for reporting purposes.

Grains/gal: Grains per gallon. A hardness measurement often used for softeners and dishwashers. (17.1 mg/L = 1 grain/gal).

umhos/cm: Micromhos per centimeter (a measurement of conductance).

< Means less than the amount shown.

> Means more than the amount shown.

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(published April 2004)

Regulated Inorganic Chemicals *2001-2003 Data	MCL	Average of Lodi Wells	Range of Individual Detections	PHG or (MCLG)	Major sources in Drinking water
Aluminum, mg/L	1	0.024	0.22-ND	0.6	Erosion of natural deposits, residue from some surface water treatment processes
Arsenic, ug/L	50	4.2	9.0-ND	NA	Erosion of natural deposits (see message below)
Barium, mg/L	1	0.064	0.23-ND	2	Erosion of natural deposits
Fluoride, mg/L	1.4	0.11	0.22-ND	1	Erosion of natural deposits
Nitrate as NO <sub>3</sub> , mg/L	45	8.6	36-ND	45	Leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits (see Nitrate message)

Bacterial Water Quality Coliform Bacteria 2003 Data	MCL	Total Positive	Monthly High-Low Range	PHG or (MCLG)	Major sources in Drinking water
Total Coliform, Positive	5% /month	0.5%	1.3%- 0%	(0)	Naturally present in the environment
Fecal Coliform & E. coli	>1/mo.	0	0 - 0	(0)	Human and animal fecal waste

Radioactivity, pico Curies per Liter *1999-2003 Data	MCL	Average of Lodi Wells	Range of Individual Detections	PHG or (MCLG)	Major sources in Drinking water
Gross Alpha, pCi/L	15	4.95	15.15-0.96	(0)	Erosion of natural deposits
Radon, pCi/L	NA	378	568-268	NA	Erosion of natural deposits (See message)
Uranium, pCi/L	20	5.81	11.7-2.57	NA	Erosion of natural deposits

Organic Chemicals with at least one confirmed detection in an operational City Well						
Regulated Organic Chemicals 2003 Data	MCL	Average of Lodi Wells	Range of Individual Detections	PHG or (MCLG)	Major sources in Drinking water	Comments:
Tetrachloroethylene, (PCE) ppb	5	0.07	1.3** - ND	0.06	Discharge from factories, dry cleaners, and auto shops (metal degreaser)	Found in Wells # 6R, 8 & 12 at levels below the MCL.
1,1-Dichloroethylene (1,1-DCE), ppb	6	0.02	0.81**- ND	10	Discharge from industries. Local ground contamination from businesses using the chemical.	Only in Well # 2 at levels below the MCL
Trichloroethylene (TCE), ppb	5	0.09	3.0**- ND	0.8	Discharge from industries. Local ground contamination from businesses using the chemical. Breakdown product of Tetrachloroethylene (PCE).	Found in Wells # 2 & 24 at levels below the MCL.

<b>Dibromochloropropane (DBCP), ppt</b>	200	40	350** - ND	1.7	Banned nematocide that may still be present in soils due to runoff/leaching from former use on vineyards.	See DBCP Update
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<b>Secondary Standards Aesthetic Purposes</b>	<b>Secondary</b>	<b>Average of Lodi</b>	<b>Range of Individual</b>	
<b>*2001-2003 Data (see note)</b>	<b>MCL</b>	<b>Wells</b>	<b>Detections</b>	<b>Typical Source of Contaminant</b>
<b>Aluminum, ug/L</b>	200	24	220-ND	Erosion of natural deposits
<b>Chloride, mg/L</b>	500	15	55-2.8	Runoff/leaching from natural deposits; Seawater influence
<b>Color-Units</b>	15	1.8	5-ND	Naturally-occurring organic material
<b>Foaming Agents (MBAS) ug/L</b>	500	2.2	55-ND	Substances that form ions in water, seawater influence
<b>Specific Conductance, umhos/cm</b>	1600	340	800-93	Municipal and industrial waste discharges
<b>Sulfate, mg/L</b>	500	15	35-ND	Runoff/leaching from natural deposits; industrial wastes
<b>Total Dissolved Solids, mg/L</b>	1000	243	500-82	Runoff/leaching from natural deposits
<b>Turbidity, NTU Units</b>	5	0.11	0.49-0.02	Soil Runoff

*Note: Aesthetic problems are only associated with taste, smell, and other problems which are not a health risk.*

<b>Lead &amp; Copper Rule Customer Tap Monitoring 2003 Data</b>	<b>AL (Action Level)</b>	<b>Average 90th Percentile</b>	<b>Range of Individual Detections</b>	<b>PHG or (MCLG)</b>	<b># Samples Exceeding AL (of 52 samples from 52 sites)</b>	<b>Major sources in Drinking Water</b>
<b>Lead, 90th %, ug/L</b>	15	<5.0	5.2-ND	2	0	Internal erosion of household plumbing
<b>Copper, 90th %, mg/L</b>	1.3	0.41	0.55-ND	0.17	0	systems; erosion of natural deposits

<b>Unregulated Contaminants Detected 2003 Data</b>	<b>AL (Action Level)</b>	<b>Average of Lodi Wells</b>	<b>Range of Individual Detections</b>
<b>DCPA (total di-an-mono acid degredates), ug/L</b>	NA	0.032	1.6-ND
<b>Trichloropropane, ug/L</b>	50	26	37-10
<b>Vanadium, ug/L</b>	0.005	0.0049	0.049-ND

**Other non-regulated water constituents found in your water (for your information only)**

<b>Non-regulated water constituents, *2001-2003 Data</b>	<b>Average of Lodi Wells</b>	<b>Range of Detections</b>
<b>Total Hardness, as mg/L</b>	129	330-30
<b>Total Hardness, as grains/gal.</b>	7.6	19-1.8
<b>Calcium, mg/L</b>	29	75-5.9
<b>Sodium, mg/L</b>	21	52-7.2
<b>Potassium, mg/L</b>	6.5	12-2.1
<b>Alkalinity (bicarbonate), mg/L</b>	164	340-55
<b>pH, in pH units</b>	7.3	7.7-6.9
<b>Magnesium, mg/L</b>	14	34-3.7

\* Regulations call for monitoring of some constituents less than once per year because the concentrations on these constituents do not change frequently. Therefore, some of our data, though representative, are more than one year old.

\*\* Averages are used for compliance determination due to the variable nature of individual analyses, and due to the fact that any associated theoretical risks are not acute, but theoretically only after years of exposure to levels above MCLs.

## **THE FOLLOWING MESSAGES ARE REQUIRED BY THE U.S. EPA AND THE STATE OF CALIFORNIA. NOT ALL PORTIONS OF THESE MESSAGES NECESSARILY APPLY TO LODI'S GROUNDWATER.**

- 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 EPA's Safe Drinking Water Hotline at (1-800-426-4791).
- 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. USEPA/Centers for Disease Control (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 (1-800-426-4791).
- 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 source water include:
  - Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plant, septic systems, agricultural livestock operations, and wildlife.
  - Inorganic contaminants, such as salts and metals, that 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 storm water runoff, and residential uses.
  - Organic chemical contaminants, including synthetic and volatile organic chemicals, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
  - Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

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

• Radon is a naturally occurring radioactive gas that you can't see, taste, or smell. It is found throughout the U.S. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air-containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Fix your home if the level of radon in your air is 4 picocuries per liter of air (pCi/L) or higher. There are simple ways to fix a radon problem that aren't too costly. For additional information, call your State radon program or call EPA's Radon Hotline (1-800-SOS-RADON).

**ARSENIC:** *After a long debate, the drinking water standard for Arsenic will be lowered from 50 ppb (parts per billion) to 10 ppb. The following message is required for systems that have some sources containing Arsenic below the new standard of 10 ppb, but over half (5 ppb). The average in Lodi's wells is 4.2 ppb and the highest well is 9.0 ppb.*

While your drinking water meets the current standard for arsenic, it does contain low levels of arsenic. The standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The California Department of Health Services continues to research the health effects of low levels

of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

**NITRATE:** *The following message is required for systems that have some sources containing Nitrate below the standard of 45 ppm (as NO<sub>3</sub>), but over half (23 ppm) of the standard. The average of Lodi's wells is 8.6 ppm and the highest well is 36 ppm.*

Nitrate in drinking water at levels above 45 mg/L is a health risk for infants of less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in a serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 45 mg/L may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with certain specific enzyme deficiencies. If you are caring for an infant, or you are pregnant, you should ask advice from your health care provider.

## **MTBE**

*MTBE (Methyl-Tert-Butyl-Ether) is a controversial additive to gasoline that has been in the news the past few years. One of the main concerns with MTBE is the threat of leaking from service stations into the groundwater. Monitoring of City wells has NOT detected any traces of MTBE to date.*

*The City has a program of monitoring all City wells for MTBE. Wells that are at greater risk (i.e., closer to gasoline stations) are monitored more frequently.*

## **WATER CONSERVATION**

In 2003, 5.422 billion gallons of water were pumped to meet Lodi's water demands. This is 23% less water use per person than in 1986. As Lodi's and California's populations increase, water conservation becomes an important part of meeting demands for fresh water.

The commitment of the citizens of Lodi to conserving water also helps conserve the electrical energy needed to pump the water to homes and businesses. To further conserve water, electrical energy, and wastewater treatment plant capacity, the City has instituted a rebate program for water saving devices such as low-flow toilets. See details below.

Your diligent water conservation practices, as in the past, are needed in 2004. A report calculated dollar savings from water conservation to be far above the cost of the Water Conservation Program! Your water conservation efforts have also averted millions of dollars in capital costs, helping water rates stay as low as possible. The millions of dollars in capital cost savings can easily be lost if water conservation is not continued.

See the summary of the Lodi Water Conservation Ordinance in the next column.

For more information or to report a water waste, call the Water Conservation office at 333-6829.

## **\$ Water Conservation Rebate Program \$**

The City of Lodi is offering rebates on purchases of Water Conserving devices. The rebates are good for installation at residential and commercial water customers within the City of Lodi.

Rebates of up to \$44 are good for Ultra Low-Flow Toilets rated at 1.6 gallons per flush or less and must be replacing units using a higher volume of water per flush. Rebates of up to \$100 are available for pressure assist PF/2 Ultra Low-Flow 1.6 gallon toilets. Additional rebates of 50% are available on Low-Flow Shower Heads, Insulated Hot Water Blankets, and Hose Bib Manual Timers for outside water hoses.

The program is funded by the Water, Wastewater and Electric Utilities. The rebates, given at the time of purchase, are only available at the following Lodi stores:

**Ace Hardware** • 827 West Kettleman Lane  
**Orchard Super Hardware** • 360 South Cherokee Lane  
**Ferguson Enterprises, Inc** • 1435 Academy Street

**Contact the Water Conservation Office at (209) 333-6740 for more detail**

## **Water Conservation Ordinance Summary**

**Ordinance Requirements — Water waste includes but is not limited to the following:**

1. Allowing a controllable leak of water to go unrepaired.
2. Watering lawns, flower beds, landscaping, ornamental plants or gardens except on watering days as follows:  
**Odd-numbered addresses on Wednesday/ Friday/ Sunday; Even-numbered addresses on Tuesday/ Thursday/ Saturday.**  
**(WATERING IS NOT ALLOWED ON MONDAYS)**

3. Watering between **10 a.m. and 6 p.m.** from **May 1 through September 30** each year. **(You may NOT water during these high evaporation times.)**
4. Washing down sidewalks, driveways, parking areas, tennis courts, patios, other paved areas or buildings.
5. Washing any motor vehicle, trailer, boat, moveable equipment except with a bucket. A hose (see # 6 below) shall be used for rinsing only and for not more than three (3) minutes.
6. Use of a hose without a positive shut off nozzle.

**(NO OPEN HOSES)**

7. Allowing excess water to flow into a gutter or any drainage area for longer than three (3) minutes.
  8. Overwatering lawns or landscapes from November 1st through February 28th, or during and immediately after a rain.
- Water Wasting Rates and Enforcement** — Education and cooperation is our first goal, but the following enforcement procedures and charges will be followed for water waste.
- 1st Water Waste** — City will leave an information sheet describing the waste so that it may be corrected.
  - 2nd Water Waste** — City will give written notice requiring corrective action. (Within 12 months of a 1st Water Waste)
  - 3rd Water Waste** — City will give written notice, and a \$35 charge will be added to the next utility bill. (Within 12 months of a 2nd Water Waste)
  - 4th Water Waste** — City will give written notice, and a \$75 charge will be added to the next utility bill. (Within 12 months of a 3rd Water Waste)
  - 5th and Subsequent Water Wastes** — City will give written notice, and a \$150 charge will be added to the next utility bill AND the City may require a water meter and/or flow restrictor to be installed at the waster's expense. (Within 12 months of the previous Water Waste)

If you have any questions, would like further information concerning water conservation, or to report water waste, please call the Water Conservation Office at 333-6829.