



County of San Luis Obispo  
Department of Public Works  
County Government Center, Room 207  
San Luis Obispo, CA 93408

## GENERAL DRINKING WATER INFORMATION

All 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 USEPA's Safe Drinking Water Hotline, 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 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.

Additionally, the EPA Office of Ground Water and Drinking Water maintains a website with useful information on drinking water. The address is [www.epa.gov/safewater/](http://www.epa.gov/safewater/). Information can also be obtained by accessing the American Water Works Association's website at <http://www.awwa.org>, the DHS website at [www.dhs.ca.gov/ps/ddwem/index.htm](http://www.dhs.ca.gov/ps/ddwem/index.htm), or by calling John Beaton, Water Quality Manager, at 781-5111.

## COMMUNITY PARTICIPATION

The San Luis Obispo County Board of Supervisors meets every Tuesday (except the 5<sup>th</sup> Tuesday in a month) in the board chambers located in the Government Center Annex at 1050 Monterey Street, San Luis Obispo. The Board holds budget hearings during the month of June. Interested persons should check the Board's agendas for specific dates. Agendas for all Board of Supervisors meetings are posted in some County libraries, the County Government Center, and on the Board of Supervisors internet web site at <http://www.co.slo.ca.us>.

The public can also participate in the Zone 3 Advisory Group meetings. This group is composed of representatives from the Five-Cities area. The group meets at 6:30 pm on the 3<sup>rd</sup> Thursday of January, March, May, July, September, and November. Information on meeting times and places are published in the newspaper or can be obtained from the County of San Luis Obispo Department of Public Works.

## FOR MORE INFORMATION

If you have questions regarding this report, please contact John Beaton, Water Quality Manager, at (805) 781-5111 or Email: [jbeaton@co.slo.ca.us](mailto:jbeaton@co.slo.ca.us).

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[WWW.SLOCOWATERQUALITYLAB.ORG](http://WWW.SLOCOWATERQUALITYLAB.ORG)



COUNTY OF SAN LUIS OBISPO

June 2003

# 2002 Water Quality Report Zone 3 - Lopez Project

## To our customers

*The County of San Luis Obispo is pleased to present this annual report describing the quality of your drinking water. We sincerely hope this report gives you the information you seek and have a right to know. Este informe contiene información muy importante sobre su agua de beber. Tradúzcalo ó hable con alguien que lo entienda bien.*

## YOUR WATER SUPPLY

Your water comes from a 67 square mile watershed which drains into Lopez Lake, located ten miles east of the City of Arroyo Grande. Lopez Lake has a total capacity of 49,200 acre-feet which allows the Lopez Water Treatment Plant (WTP) to provide six million gallons per day for users. Water from the lake is piped three miles to a terminal reservoir. The water remains in the terminal reservoir for a period of time to minimize the potential for viral contamination from human contact and to aid particle settling prior to filtration and chlorination at the Lopez WTP. The Lopez WTP provides drinking water for Arroyo Grande, Grover Beach, Pismo Beach, Oceano Community Services District, County Service Area 12, and the Avila Beach Community Services District.

Some of these agencies supplement their Lopez and well water supplies with State Water. The County delivers State Water to these agencies through the Lopez distribution system. The County charges State Water users for a portion of Lopez costs thereby reducing the costs of Lopez Water. State Water comes from northern California near Mount Shasta and from the Sacramento Delta area.

The County samples Lopez Lake, Terminal, WTP, and the distribution system on a regular basis and has the water samples analyzed for regulated and unregulated contaminants by a California-certified analytical laboratory. The laboratory results are reviewed and evaluated relative to the California Drinking Water Primary and Secondary Maximum Contaminant Level (MCL) standards. The laboratory results are then submitted to the California Department of Health Services (DHS). In June of 2001, an assessment was completed of Lopez Lake and Terminal Reservoir. The assessment was conducted for the County by Boyle Engineering Corporation with assistance from County staff. The assessment included a review of water system files and previous watershed survey reports prepared in 1996 and 2001. Field surveys were conducted to locate and assess the vulnerability of the surface water sources to possible contamination. The surface water sources at Lopez Lake and Terminal were found to be most vulnerable to the following activities for which no associated contaminants have been detected: livestock near the reservoir and a roadway. A copy of the assessment is available at:

Department of Health Services  
1180 Eugenia Place, Suite 200  
Carpinteria, CA 93013

or

County of San Luis Obispo  
Department of Public Works  
County Government Center, Room 207  
San Luis Obispo, CA 93408

You may also request a summary of the assessment be sent to you by contacting Kurt Souza, DHS District Engineer, at 805-566-1326 or John Beaton, Water Quality Manager, at 805-781-5111.

## KEY TERMS

**Maximum Contaminant Level (MCL)** - The highest level of a contaminant that is allowed in drinking water.

**Maximum Contaminant Level Goal (MCLG) and Public Health Goal (PHG)** - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the United States Environmental Protection Agency and PHGs are set by the California Environmental Protection Agency.

**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 by the U.S. Environmental Protection Agency.

**Primary Drinking Water Standards (PDWS)** - MCLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible.

**KEY TERMS (Continued)**

**Secondary Drinking Water Standards (SDWS)** - MCLs for contaminants to protect the taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect health at the MCL levels.

**Treatment Technique (TT)** - A required process intended to reduce the level of a contaminant in drinking water.

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

**No Standard (NS)** - Contaminant for which there is no established MCL.

**Not Detected (ND)** - Contaminant is not detectable at testing limit.

**Not Analyzed (NA)** - Contaminant was not analyzed.

**pCi/L** - picroCuries per liter (a measure of radioactivity)

**ppm** - parts per million, or milligrams per liter (mg/L)

**ppb** - parts per billion, or micrograms per liter (µg/L)

**CU** - color units

**NTU** - Nephelometric Turbidity Unit

**TON** - Threshold Odor Number

**LI** - Langelier Index; Noncorrosive = Any positive value, Corrosive = Any negative value

**2002 Water Statistics**

- **Lopez Water Production**  
⇒ 4,223 Acre-feet
  - **State Water Delivered**  
⇒ 1,948 Acre-feet
  - **Total Water Delivered**  
⇒ 6,171 Acre-feet
  - **Average Daily Demand**  
⇒ 17 Acre-feet
  - **Habitat Releases**  
⇒ 6,260 Acre-feet
- 1 Acre-foot = 325,851 gallons

**SOURCES OF DRINKING WATER**

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, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic contaminants**, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and 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, the USEPA and the California Department of Health Services (DHS) prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. DHS regulations also establish limits for contaminants in bottled water which must

**WATER TREATMENT PLANT UPGRADE**



In June 2002, County staff applied for a \$18.4 M low interest loan from the State Revolving Fund (SRF) to upgrade the Lopez Water Treatment Plant (LWTP). This upgrade is necessary to meet current and future water quality regulations.

The Board of Supervisors awarded the design contract to Black and Veatch Engineering for a total cost of \$998,000. The first phase of the design consists of selecting the

membrane filtration system, doing the preliminary design and starting the onsite pilot plant to test the new treatment processes of the upgraded plant. The second phase will complete the detailed design and the pilot plant tests. The project design, including environmental and financing efforts, continue on schedule towards a Spring 2004 award date for construction. Project status reports will be presented at the Zone 3 Advisory Committee and Technical Advisory Committee Meetings until project completion, which is anticipated to be Summer 2005.



**LOPEZ PIPELINE CLEANING PROJECT**

**“Pigging” Project**

In March 2003, the County Public Works Department performed a maintenance project on the Lopez Distribution System water main. The Lopez pipeline has been in operation for over 30 years, and after so long, build-up on the inside of the pipeline was beginning to decrease flows to customers. The maintenance project involved cleaning approximately 6 miles of the 8 inch and 6 inch diameter pipeline supplying the Avila Valley area by running a swab or “pig” through the line.

The cleaning increased pipeline flow approximately 20%, enabling a more efficient operation of our system. As a customer, the benefit is the assurance that water pressure in your home or business, as well as essential fire protection, will be maintained in the future.

**DISINFECTION BYPRODUCT COMPLIANCE**

Bacteria, viruses, and parasites normally found in untreated surface water can cause serious health problems such as cholera, cryptosporidiosis, giardiasis, dysentery, and typhoid. To minimize the public’s exposure to these health problems, disinfectants such as chlorine are added to the public water supplies. When a disinfectant is added to water, it can react with substances in the water to form disinfection byproducts (DBPs) such as trihalomethanes, haloacetic acids, chlorite, chlorate, bromate, and other chemicals depending on the disinfectant used. In 2002, the Federal and State Disinfection Byproduct Rule lowered the level of disinfection byproducts permitted in drinking water.

Lopez Project continuously strives to limit the amount of disinfection byproducts in the water delivered to customers. Some people exposed to DBPsm, such as trihalomethanes and haloacetic acids, in excess of the MCL over many years may have an increased risk of getting cancer. On August 9, 2002, Lopez Project switched the pre-disinfectant from chlorine to chlorine dioxide. Chlorine dioxide does not react with organic matter to form trihalomethanes in the same way as chlorine. Lopez Project will continue to evaluate ways to lower the amount of DBPs in your water.

**FOOTNOTES**

- (a) Distribution system samples
- (b) Aluminum was found at levels that exceed the secondary MCL of 200 ppb; the aluminum MCL was set to protect you against unpleasant aesthetic effects such as color, taste, and odor. The high aluminum levels are due to residue from the water treatment process. Since violating this MCL does not pose a risk to public health, the State allows the affected community to decide whether or not to treat to remove it.
- (c) CCWA has developed a flavor-profile analysis method that can more accurately detect odor occurrences. For more information, contact CCWA at (805) 688-2292.
- (d) The range of discreet values for individual sites in 2002 is listed under Lopez WTP Range. A new EPA standard for disinfection by-products limits total trihalomethanes to a running annual average (RAA) of 80 ppb and haloacetic acids to an RAA of 60 ppb. Compliance with the EPA standard is required by December 2002 for large water systems and December 2004 for small water systems. The current State standard for trihalomethanes is 100 ppb as an RAA. The THM value of 82.1 ppb is the highest RAA reported for compliance with the State standard and includes 2001 data. The Lopez Project complied with both the EPA and the State standards in 2002.
- (e) Compliance based on the running quarterly average of treatment plant effluent samples.

## 2002 Water Quality Data for Lopez Project

Tables 1, 2, 3, 4, 5, and 6 list all of the drinking water contaminants that were detected from January 2002 through December 2002, unless otherwise noted. The presence of these contaminants in water does not necessarily indicate that the water poses a health risk. The DHS requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data may be more than one year old, but is still representative of the water quality. Water quality data for State water was provided by the Central Coast Water Authority.

Table 1 - Treatment of surface water sources		
Turbidity Performance Standard - Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. Turbidity of filtered water must: 1. Be less than or equal to 0.3 NTU in 95% of measurements in a month. 2. Not exceed 1.0 NTU for more than eight consecutive hours. 3. Not exceed 5 NTU at any time.	Treatment Technique for Lopez Project Conventional Treatment	Treatment Technique for Central Coast Water Authority (State Water) Conventional Treatment
Lowest monthly percentage of samples that met Turbidity Performance Standard 1.	98.9%	100%
Highest single turbidity measurement during the year.	1.50 NTU	0.24
The number of violations of any surface water treatment requirement.	0	0

Table 2 - Microbiological Contaminants			Lopez WTP		State Water		Potential Source of Contamination
Contaminant (reporting units)	MCL	PHG (MCLG)	Range	Average	Range	Average	
Total Coliform Bacteria (a)	5.0% of monthly samples	(0)	0.0%—1.6%	0.16%	0.0% - 0.8%	0.1%	Naturally present in the environment
Heterotrophic plate count (CFU/mL) (a)	TT	(0)	<1—1200	16	<1—1	<1	Naturally present in the environment.

Table 3 - Detection of Contaminants with a Primary Drinking Water Standard							
Contaminant	MCL	PHG (MCLG)	Range	Average	Range	Average	Potential Source of Contamination
Aluminum (ppb)	1000	600	ND—380	120	ND—60	ND	Erosion of natural deposits; residue from some surface water treatment processes
Arsenic (ppb)	50	-----		3		ND	Runoff from orchards; natural deposits
Fluoride (ppb)	2000	1000		400		ND	Erosion of natural deposits
Nitrate (as NO <sub>3</sub> ) (ppm)	45	45		ND		2.86	Runoff and leaching from fertilizer use; sewage; natural erosion
Nitrite and Nitrate (as N) (ppm)	10	10		ND		0.65	Runoff and leaching from fertilizer use; sewage; natural erosion
Gross Alpha Particle Activity (pCi/L)	15	-----		1.24 (2000)	0.78—2.98	1.46 (1998)	Erosion of natural deposits

Table 4 - Detection of Contaminants with a Secondary Drinking Water Standard							
Contaminant	MCL	PHG (MCLG)	Range	Average	Range	Average	Potential Source of Contamination
Aluminum (ppb)	200	-----	ND—380 (b)	120	ND—60	ND	Residue from some surface water treatment processes
Chloride (ppm)	500	-----		24	50—138	89	Runoff/leaching from natural deposits

Table 4 - Detection of Contaminants with a Secondary Drinking Water Standard (Continued)			Lopez WTP		State Water		Potential Source of Contamination
Contaminant (reporting units)	MCL	PHG (MCLG) or [MRDLG]	Range	Average	Range	Average	
Color (CU)	15	-----		2	0–6	2	Naturally occurring organic materials
Corrosivity (LI)	Noncorrosive	-----		0.5		Noncorrosive	Natural or industrially-influenced balance of hydrogen, carbon and oxygen in the water; affected by temperature and other factors
Odor - Threshold (TON)	3	-----		1.2		(c)	Naturally occurring organic materials
Specific Conductance (micromhos/cm)	1600	-----		660		489	Runoff/leaching from natural deposits
Sulfate (ppm)	500	-----		110		75	Runoff/leaching from natural deposits
Turbidity (NTU)	5	-----		0.18	0.04–0.07	0.06	Soil Runoff
Total Dissolved Solids (ppm)	1000	-----		420		230	Runoff/leaching from natural deposits

Table 5 - Disinfection Byproducts, Disinfectant Residuals, and Disinfection Byproduct Precursors							
Total Trihalomethanes (ppb)	RAA = 80	-----	37.9–81.1 (a)	RAA = 61.0 82.1 (d)	29–62	54(e)	Byproduct of drinking water chlorination.
Haloacetic Acids (ppb)	RAA = 60	-----	9.2–74.7 (a)	RAA = 31.0	3–32	26 (e)	Byproduct of drinking water disinfection.
Total Chlorine Residual (ppm) (a)	MRDL = 4.0 as Cl <sub>2</sub>	[4]	0.58–1.98	1.45	1.2–2.1	1.6	Drinking water disinfectant added for treatment.
Free Chlorine Residual (ppm) (a)	MRDL = 4.0 as Cl <sub>2</sub>	[4]	0.60–3.16	1.96		-----	Drinking water disinfectant added for treatment.
Chlorite (ppb) (a)	1000	(800)	110–970	570		-----	Byproduct of drinking water disinfection.
Chlorate (ppb) (a)	AL = 800	-----	98–610	200		-----	Byproduct of drinking water disinfection.
Chlorine Dioxide (ppb) (a)	800 as ClO <sub>2</sub>	[800]	ND–240	70		-----	Drinking water disinfectant added for treatment.
Total Organic Carbon (ppm)	TT	-----	3.8–5.1	4.5	1.4–3.7	2.4	Various natural and manmade sources.

Table 6 - Detection of Contaminants without a Drinking Water Standard							
Alkalinity as CaCO <sub>3</sub> (ppm)	-----	-----	-----	240	54–92	79	Runoff/leaching from natural deposits; seawater influence
Calcium (ppm)	-----	-----	-----	71	41–72	57	Runoff/leaching from natural deposits; seawater influence
Hardness (ppm)	-----	-----	-----	310	86–132	115	Generally found in ground and surface water
Magnesium (ppm)	-----	-----	-----	38		15	Runoff/leaching from natural deposits; seawater influence
pH	-----	-----	-----	7.75	7.8–8.9	8.2	Runoff/leaching from natural deposits; seawater influence
Potassium (ppm)	-----	-----	-----	NA		2.5	Runoff/leaching from natural deposits; seawater influence
Sodium (ppm)	-----	-----	-----	22		53	Runoff/leaching from natural deposits; seawater influence
Vanadium (ppb)	AL = 50	-----	3.8–6.2	4.9	ND–4.8	1.7	Runoff/leaching from natural deposits