Phoenix Water Services Department

2001 Water Quality Annual Report

A Publication for the Citizens of Phoenix May 2002

Phoenix drinking water safe throughout 2001

(NOTE: This report and those for recent years can be found on the city's web site www.phoenix.gov by clicking on "By Department" and selecting "Water Services.")

(NOTA: Este informe contiene información importante sobre su agua potable. Si ustedi quiere el informe en español, llame (602) 262-6251.)

Throughout the year 2001, tap water delivered to the 1.3 million residents served by the City of Phoenix's Water Services Department met or surpassed all health and safety standards for drinking water.

This report summarizes a year-end review of water quality tests for drinking water delivered from January 1 through December 31, 2001. During the year, the department conducted about 95,000 tests for water quality. They showed the water was of higher quality than required by law. The tables at the end of this report show specific levels of substances detected.

In 2001, Phoenix tested for nearly 200 substances, even though tests are necessary for only about 110 substances. Most of the standards are set by the Arizona Department of Environmental Quality (ADEQ) at levels established by the federal government under provisions of the Safe Drinking Water Act (SDWA). The U.S. Environmental Protection Agency (EPA) administers the federal standards.

Phoenix gets most of its water from rivers and canals

More than 96 percent of Phoenix's water comes from rivers. The primary sources of raw (untreated) water are the Salt, Verde and Colorado rivers; some water from the Agua Fria River is mixed with water from the Colorado River.

The Salt and Verde rivers drain about 13,000 square miles of Arizona ranging from parts of the White Mountains near the New Mexico border to Big Chino Valley just south and east of Seligman. Water from the rivers is stored in lakes operated by the Salt River Project (SRP) and delivered to the city via SRP's canals.

The Colorado River drains parts of seven states (Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming) on the west side of the Rocky Mountains. Water from the Colorado River flows to the Phoenix area through the Central Arizona Project (CAP) canal from Lake Havasu. The water can be delivered directly to Phoenix or stored in Lake Pleasant on the Agua Fria River, which drains an area south of Prescott on either side of I-17.

Deep wells that tap high quality aquifers produce the remaining three-to-four percent of the city's water supply. Wells are considered a source of water primarily in case of serious drought. They also are used to supplement surface water supplies during times of high demand, and to supply customers in areas where water mains have not yet been installed to deliver surface water. All required testing was conducted for all wells, showing total compliance with all standards.

Phoenix's water treatment plants could provide about 630 million gallons per day (MGD) of water for customers while the wells could add about 50 MGD to the supply. In comparison, the year's greatest demand by customers was 421 MGD and the average daily demand was about 270 MGD. The city's distribution system, with more than 5,700 miles of water mains, carries water from the treatment plants to customers.

Purification process cleans, disinfects water

Although some minor differences exist between the city's five water treatment plants, the purification process is fairly similar. Consequently, water quality is relatively consistent throughout the city.

Most raw water is delivered to the treatment plants through canals. The first step in the treatment process removes the largest of the particles such as sand, dirt, plant matter and other materials commonly found in river water. For this step the water's movement is slowed so heavier particles can settle to the bottom of a large basin. The small particles remaining in the water are too light to settle easily, so a carefully measured quantity of a chemical coagulant, such as alum or ferric chloride, is added to the water. The coagulant causes the tiny particles to cling together and become heavy enough to settle. Then, the clean water is decanted off the top and passed through filters of sand and gravel – and sometimes hard (anthracite) coal – to remove the last of the particulate matter.

This filtering system produces water of superior clarity. Until Dec. 31, 2001, the federal standard for turbidity (cloudiness) was 0.5 Nephelometric Turbidity Units (NTU – a measure of clarity) in at least 95 percent of the measurements taken each month, and must not have exceeded 5 NTU at any time. Not only did the city's water comply with the standards, it usually was much better. Clarity is particularly important because it is a good indicator that the process is removing organisms and organic matter effectively. Beginning on Jan. 1, 2002, the federal standard for turbidity is 0.3 NTU in at least 95 percent of the samples taken.

Federal law requires specific levels of chlorine, or other disinfectants, to be in drinking water when it is delivered to customers. The minimum disinfectant level in water leaving a water treatment plant is 0.2 parts per million (ppm). In addition, federal law requires there always must be a detectable level of disinfectant throughout the distribution system.

In the final stage of water treatment, a small quantity of disinfectant (chlorine) is added to kill bacteria and viruses that may be in the water. Chlorine, which has been used nationally since the early 1900s, has eliminated outbreaks of waterborne diseases, such as cholera and typhoid fever, throughout the U.S. and Canada. Unfortunately, these diseases still are common in many parts of the world.

Use of disinfectants presents an apparent paradox: it is essential to disinfect the water to prevent widespread outbreaks of serious diseases and comply with EPA standards. However, the use of disinfectants can create disinfection by-products (DBPs), which are formed when natural organic matter in water reacts with chemicals used for disinfection. Some DBPs, such as trihalomethanes (THMs) and Haloacetic Acids (HAAs), are suspected of having long-term health effects.

To help deal with this perplexing problem, EPA established the Information Collection Rule (ICR), the Interim Enhanced Surface Water Treatment Rule (IESWTR), and the Stage I Disinfectants/ Disinfection Biproducts (D/DBP) Rule. Under the ICR, Phoenix and other large water utilities in the country submitted extensive data about water quality and operations. Under the IESWTR, the utilities must monitor their operations to optimize the removal of pathogenic organisms. Under the D/DBP Rule, utilities must minimize DBP formation.

To help reduce the production of DBPs, the city's purification process emphasizes removal of organic matter before most disinfection takes place. This approach helped the city keep THMs well below the established level, minimizing the possible hazard. (See Distribution System Sampling table for details.)

Also added during the final stage of treatment is a small quantity of fluoride to help prevent tooth decay.

Cryptosporidium and your drinking water

For a number of years, Phoenix has tested its water for various microbiological hazards, including Cryptosporidium (often called Crypto, for short) and Giardia. In 2001, tests disclosed no evidence of these potentially hazardous organisms in the city's drinking water.

Crypto must be ingested to cause disease and it can be spread through means other than drinking water. There were no cases of the disease caused by either organism attributed to the public water supply in our service area.

For more information about Cryptosporidium, Giardia and other microbial contaminants, contact the EPA's Safe Drinking Water Hotline (800-426-4791).

Monitoring violation corrected

Every month, the City of Phoenix takes over 330 samples for total coliform throughout the water distribution system. Coliform bacteria are generally not harmful in and of themselves, but are used as indicators that other potentially harmful bacteria may be present.

A total coliform sample that was scheduled to be taken on Sept. 19, 2001 was inadvertently taken at the wrong location. Upon discovering this error the correct site was sampled on Sept. 20, 2001. The results indicated no contamination. This result is in compliance with state law.

Since coliform bacteria were not found, additional sampling by the city was not necessary. There were no potential adverse health effects resulting from this incident.

City works to improve industry practices

Phoenix's efforts on behalf of quality extend far beyond the city's water production and distribution system. Phoenix's Water Services Department works with many organizations to provide clean, safe drinking water. For example, in 1995, Phoenix was a founding participant of the nationwide Partnership for Safe Water. The partnership is a voluntary program developed by the EPA, local water providers, various water industry organizations and governmental agencies to reduce potential risks that microbial contaminants may cause for drinking water consumers.

More information about the Partnership for Safe Water is available from the American Water Works Association's website – http://www.awwa.org/ partner/partner1.htm.

Phoenix's water met standards for lead and copper

The EPA requires water suppliers do periodic tests for lead and copper in household tap water. Tests show quantities of the metals in Phoenix tap water were much less than allowed. However, some customers' homes have hazardous quantities of lead that appear to come from either lead solder used to connect the homes' copper plumbing or fixtures that have lead in them. The lead is leached out of the solder or fixtures by the water.

Infants and young children typically are more vulnerable to lead in drinking water than the general population. Customers should be aware that lead levels in their homes could be greater than in the city's supply due to materials used in the home's plumbing. Those concerned about elevated lead levels in their home's water, may wish to have a private laboratory test their water. If a home has lead in the water, it may be able to be flushed from the pipes. If no water has flowed through the pipes for eight or more hours, run the tap for 30 seconds to two minutes to flush the line. (Because water is so precious here, catch the flush water in a container and use it to water plants inside and outside the home.) It is wise to use only cold water for drinking, cooking or preparing beverages because hot water dissolves lead more quickly than cold water.

Tap water met or surpassed standards for bottled water

Some consumers choose to use bottled water or install filters in their homes. Such a choice is purely personal because the city's tap water meets or surpasses all health and safety standards. The EPA offers these facts for those considering alternatives to using tap water for drinking.

Bottled water and water passed through home filtration systems may contain contaminants, as may tap water. The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. When traveling over the surface of the land or through the ground, water dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or human activity.

To ensure that tap water is safe to drink, the EPA sets regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. The FDA regulations for bottled water are not as comprehensive as the regulations the EPA established for tap water and public water systems.

It is reasonable to expect drinking water, including bottled water, 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 (800-426-4791).

With respect to home use filters, the EPA, Consumer Reports, Reader's Digest and a wide variety of organizations interested in consumer quality generally have said filters are not needed in most large cities to ensure safe drinking water. These consumer, regulatory and testing organizations point out the local water supplier in large cities has excellent equipment and well trained personnel who perform a high level of testing, resulting in water that meets health and safety standards.

Some types of home use filters provide additional protection for members of the community with compromised immune systems. It is important to note that failure to follow the manufacturer's instructions concerning cleaning and/or changing the filter can result in a serious potential for unsafe water.

Customers should understand that some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those undergoing chemotherapy, people who have undergone organ transplants, those with HIV/AIDS or other immune system disorders, some elderly people and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (CDC) guidelines about appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the EPA's Safe Drinking Water Hotline (800-426-4791).

Taste, odor and hardness are aesthetic properties of water

Aesthetics are an aspect of water quality that does not relate to health and safety standards. However, this often is a topic of discussion. Customers sometimes comment that water in Phoenix tastes or smells differently than it does elsewhere.

Water is known as the universal solvent. Given enough time, it will absorb almost anything it contacts. Consequently, many of the contents of the city's water stem from the soils that form the watershed, streams, rivers and canals. Some of these cause the city's water to be considered "hard." Aquatic life in those waterways also can affect the aesthetics of the water.

Water hardness indicates the presence of certain minerals. In Phoenix, the two primary causes of hardness are calcium and magnesium. The degree of hardness is strictly an aesthetic parameter and has no relationship to health and safety standards. Hard water can require somewhat more soap or detergent to obtain suds and can cause some types of scaling on pipes, pots and water heaters. However, on the plus side, Phoenix's water is considered less corrosive than water in many other areas. For data about hardness and related aesthetic measures, see the table titled "Corrosivity Chemical Analysis" at the end of this report.

Algae that grows in the canals during the late summer and fall is a major source of a "musty" odor and taste detected by some customers. When the algae blooms, it produces a strong odor. Even though the algae is completely removed from the water during purification, the odor may linger. (The result is similar to removing a bouquet of fresh roses from a room. Even though the flowers are gone, the aroma remains.)

Although it does not affect the safety of the water, some customers dislike the odor. People with sensitive noses can detect that odor in quantities as tiny as five parts per trillion. The problem usually goes away in December or January with the onset of our coldest weather, which stops the bloom.

It is possible to treat water to remove odor. However, the expense of such treatment would cause a major increase in the cost of water delivered to customers. Treatment with granular activated carbon is an effective way of dealing with the odor problem. Unfortunately, the equipment for additional carbon treatment at the city's water plants would cost more than $325 million, and another $5-10 million a year would be needed to operate the facilities. Most customers find that high-priced alternative unacceptable. That's because people drink only about one-half-of-one-percent of the water they buy; the rest is used to wash dishes, clothes and other things in our homes or to water lawns, trees and shrubs. Discussions with customers indicate they do not want a major rate increase to correct an odor problem when more than 99 percent of the water they buy is used for some purpose other than drinking.

There are a few low-tech approaches many customers say satisfactorily improve the taste and odor of their tap water.

1. Run water from your tap into a pitcher or wide-mouth jar. Leave the container – uncapped – on your counter for 30-60 minutes. Then, cap the container and place it in your refrigerator. The combination of exposing the water to air and chilling the water often eliminates objectionable odors.
2. Run tap water into the pitcher and then pour the water back and forth between the pitcher and another container several times. This more rapidly exposes the water to the air and often helps eliminate odors. Then, refrigerate the water. (In both #1&2, some people like to add a thin slice of lemon or lime to the container before placing it in the refrigerator.)
3. Use additional filtration. Usually, an inexpensive carbon filter is all that's required.

People with a home use filter should be certain to follow the manufacturer's instructions for cleaning and/or replacing the filtering material. Substances that filters remove can build up and become hazardous if not eliminated at the proper times. Also, bacteria may grow in home use filters if they are not properly maintained. More information about filters is available from the Arizona Water Quality Association at (480) 947-9850 or by writing to 6819 E. Diamond St., Scottsdale, AZ 85257.

Although the city has not found a satisfactory solution so far, employees and consultants are continuing a global search for an economical way to eliminate taste and odor occurrences. The Water Services Department also is working with the American Water Works Association Research Foundation and Arizona State University to research the topic.

Testing shows Phoenix's water superior to standards

The tables at the end of this report show substances for which Phoenix's Water Services Department test. The tables show the levels of substances found and the levels below which each substance is considered safe by the EPA, the ADEQ or other regulatory body. **Please note, the simple presence of a substance or contaminant in drinking water does NOT necessarily indicate the drinking water poses a health risk.** Certain quantities of some substances are essential to good health, but excessive quantities can be hazardous. Similarly, small quantities of some substances may have no effect on people, but large quantities can be harmful.

How to learn more about the quality of your water

The Phoenix Water Services Department regularly tests the water it purifies for its customers to make sure it complies with all applicable health and safety standards. This annual report summarizes the results of about 95,000 water quality tests performed during 2001. Even more tests are being conducted this year so customers can be sure their tap water is safe.

Policies and procedures concerning the city's water supply, treatment and delivery are the responsibility of the Director of the Water Services Department and his staff, as authorized by the Phoenix City Council. Customers with questions about this report, concerns about water quality, or input about the city's water supply, treatment and delivery may call our Customer Services Division at (602) 262-6251 during normal business hours (Monday through Friday, except holidays, from 8 a.m. to 5 p.m.), or write to: "Water Quality Questions," c/o City of Phoenix Water Services Department, 200 W. Washington St., 9th Floor, Phoenix, AZ 85003-1611.

For alternate formats, contact Customer Services at (602) 262-6251/Voice, or (602) 534-1113/TTY, or (602) 534-1192/FAX. You also can visit the city's web site at http://www.phoenix.gov for more information.

Or, you may call the EPA's Safe Drinking Water Hotline (800-426-4791) for information about the Safe Drinking Water Act or EPA's other drinking water programs.

World Wide Web sites that provide information about drinking water include:

- American Water Works Association – www.awwa.org
- Arizona Department of Health Services – www.hs.state.az.us
- Maricopa County Environmental Services – www.maricopa.gov/envsvc
- U.S. EPA – www.epa.gov/ogwdw
- Centers for Disease Control – www.cdc.gov
- Arizona Department of Environmental Quality – www.adeq.state.az.us
- Tap Into Quality – www.tapintoquality.com

Definitions of terms

The following are definitions of terms used to describe types of limits for substances that may be found in drinking water and the circumstances under which compliance with the limits may be excused.

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 allow for a margin of safety.

Maximum Contaminant Level (MCL) – The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG as feasible using the best available treatment technology.

Alternative Maximum Contaminant Level (AMCL) – A level higher than the MCL. Community water systems are permitted to comply with the AMCL for radon in lieu of the MCL if there is a multimedia mitigation (MMM) program in place that has been approved by the EPA or ADEQ. MMM programs may use a variety of strategies, including public education, testing, training, technical assistance or other regulatory or non-regulatory measures

Variances and Exceptions – State or EPA permission to not meet an MCL or a treatment technique under certain conditions.

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

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

Part per million/part per billion – One part per million (1 ppm) is equal to one second out of 11.5 days, one inch in 16 miles or one drop of bubble bath in a whole bathtub full of water (about 50 gallons).
One part per billion (1 ppb) is equal to one second in 31 years and eight months, one inch in 16,000 miles (1 inch out of 6.5 trips from New York to Los Angeles) or one drop of bubble bath in 1,000 bathtubs full of water (about 50,000 gallons).

2001 DETECTED Inorganic Substances at Points where Water Enters the Distribution System

Substance	Units	MCL	MCLG	Lowest Detected Level	Highest Detected Level	Major Sources in Drinking Water
1. Arsenic *	ppb	50	NA	ND	13.9	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
2. Barium	ppm	2	2	0.0046	0.109	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
3. Chromium	ppb	100	100	ND	29.7	Discharge from steel and pulp mills; Erosion of natural deposits.
4. Fluoride	ppm	4	4	0.38	0.73	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
5. Mercury	ppb	2	2	ND	0.2	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland
6. Nitrate ** (as N)	ppm	10	10	ND	6.9	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
7. Selenium	ppb	50	50	ND	1.4	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.
8. Sodium	ppm	NA	NA	25	190	
9. Thallium	ppb	2	0.5	ND	1.0	Leaching from ore-processing sites; Discharge from electronics, glass and drug factories.

NOTE: * *Some people who drink water containing Arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer. **Nitrate in drinking water at levels greater than 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall activity. If you are caring for an infant, you should ask for advice from your health care provider.*

2001 DETECTED Radioactive Substances at Points where Water Enters the Distribution System

Substance	Units	MCL	MCLG	Lowest Detected Level	Highest Detected Level	Highest Detected Average[2]	Major Source in Drinking Water
10. Adjusted Gross Alpha	pCi/l	15	0	ND	3.8	3.4	Erosion of natural deposits

2001 DETECTED Regulated Synthetic Organic Substances at Points where Water Enters the Distribution System

Substance	Units	MCL	MCLG	Lowest Detected Level	Highest Detected Level	Highest Detected Average[2]	Major Source in Drinking Water
11. Di (2-ethylhexyl) phthalate	ppb	6	0	ND	1.4	0.5	Discharge from rubber and chemical factories.

2001 DETECTED Regulated Volatile Organic Substances at Points where Water Enters the Distribution System

Substance	Units	MCL	MCLG	Lowest Detected Level	Highest Detected Level	Highest Detected Average[2]	Major Source in Drinking Water
None							

ABBREVIATIONS / FOOTNOTES USED IN TABLES

AL	Action Level
AMCL	Alternative Maximum Contaminant Level
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
MDL	Method Detection Limit
MFL	Million Fibers per Liter
mrem/year	Millirems per year (a measure of radiation absorbed by the body)
NA	Not Applicable
ND	Not detected (any value less than the MDL)
NTU	Nephelometric Turbidity Units
pCi/L	Picocurries per liter (a measure of radioactivity)
ppb	Parts per billion, or micrograms per liter (μg/L)
ppm	Parts per million, or milligrams per liter (mg/L)
ppq	Parts per quadrillion, or picograms per liter (ρg/L)
ppt	Parts per trillion, or nanograms per liter (ηg/L)
TT	Treatment technique
1	Field Measurement
2	All values below the detection limit were calculated as zeros for the purpose of determining the average.
3	The MCL for gross beta is 4 mrem/year. EPA considers 50 pCi/l to be the level of concern for beta particles.
4	Unregulated Substance monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those Substances.

2001 Distribuion System Sampling					
	Substance	**MCL**	**MCLG**	**Value**	**Major Sources in Drinking Water**
1.	Total Coliform Bacteria	No more than 5% of the monthly samples may be total coliform-positive	0		Naturally present in the environment.
	Highest monthly percentage of positive Total Coliform samples			1.68%	
	Highest monthly number of positive Total Coliform samples			6	
2.	Fecal Coliform and E. coli	If a routine sample and a repeat sample are Total Coliform positive, and one is also Fecal Coliform or E. coli positive	0	0	Human and animal fecal waste.
3.	Turbidity	TT (Turbidity of filtered water shall be less than or equal to 0.5 NTU in at least 95% of the measurements taken each month and must not exceed 5 NTU at any time)	NA		Soil runoff.
	Lowest monthly percentage in which turbidity was less than or equal to 0.5 NTU			99.5%	
	Highest single turbidity measurement in any one month (NTU)			0.52	
4.	TTHMs (Total Trihalomethanes)	Running annual average of 100 ppb	0		By-product of drinking water chlorination.
	Running annual system average (ppb)			49	
	Lowest detected level (ppb)			0	
	Highest detected level (ppb)			105	
5.	HAAs (Haloacetic Acids)	NA – Not regulated in year 2001	NA		
	Running annual system average (ppb)			20	
	Lowest detected level (ppb)			0	
	Highest detected level (ppb)			73	
2001 Results of Lead and Copper Sampling from Residential Water Taps					
6.	Lead	90th Percentile not to exceed AL (AL = 15 ppb)	0		Corrosion of household plumbing systems; Erosion of natural deposits.
	Total number of samples collected			62	
	90th Percentile (ppb)			4	
	Number of sampling sites which exceeded the Action Level (AL)			1	
7.	Copper	90th Percentile not to exceed AL (AL = 1.3 ppm)	1.3		Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.
	Total number of samples collected			62	
	90th Percentile (ppm)			0.3	
	Number of sampling sites which exceeded the Action Level (AL)			1	

2001 Results of Corrosivity Chemical Analysis from the Distribution System						
	Substance	**Units**	**MCL**	**MCLG**	**Lowest Detected Level**	**Highest Detected Level**
8.	Alkalinity	ppm	NA	NA	114	218
9.	Calcium Hardness	ppm	NA	NA	82	180
10.	Langlier Index	NA	NA	NA	1.19	0.72
11.	pH[1]	NA	NA	NA	6.8	8.1
12.	Temperature[1]	^{0}C	NA	NA	14	37
13.	Total Dissolved Solids (TDS)	ppm	NA	NA	278	886
14.	Total Hardness	ppm	NA	NA	185	287

Substances tested for and NOT DETECTED			
Inorganic Substances			
1. Antimony	2. Cadmium	3. Cyanide	4. Nitrite (as N)
5. Asbestos	6. Beryllium		
Regulated Synthetic Organic Substances			
1. 2,4,5-TP (Silvex)	2. Alachlor	3. Atrazine	4. Benzo(a)pyrene (PAH)
5. Carbofuran	6. Chlordane	7. Dalapon	8. Di(2-ethylhexyl)adipate
9. Dibromochloropropane (DBCP)	10. Dinoseb	11. Diquat	12. Dioxin (2,3,7,8-TCDD)
13. Endothall	14. Endrin	15. Ethylene dibromide (EDB)	16. Glyphosate
17. Heptachlor	18. Heptachlor epoxide	19. Hexachlorobenzene (HCB)	20. Hexachlorocyclopentadiene
21. Lindane (g-BHC)	22. Methoxychlor	23. Oxamyl (Vyadate)	24. PCBs (Polychlorinated biphenyls)
25. Pentachlorophenol	26. Picloram	27. Simazine	28. Toxaphene
29. 2,4-Dichlorophenoxy (2,4-D)			
Unregulated Synthetic Organic Substances[4]			
1. Aldicarb	2. Aldicarb sulfoxide	3. Aldicarb sulfone	4. Aldrin
5. Butachlor	6. Carbaryl	7. Dicamba	8. Dieldrin
9. 3-Hydrocarbofuran	10. Methomyl	11. Metolachlor	12. Metribuzin
13. Propachlor			
Regulated Volatile Organic Substances			
1. Benzene	2. Carbon Tetrachloride	3. Chlorobenzene	4. o-Dichlorobenzene
5. p-Dichlorobenzene	6. 1,2-Dichloroethane	7. 1,1-Dichloroethylene	8. cis-1,2-Dichloroethylene
9. trans-1,2-Dichloroethylene	10. Dichloromethane	11. 1,2-Dichloropropane	12. 1,2,4-Trichlorobenzene
13. Styrene	14. Tetrachloroethylene	15. 1,1,1-Trichloroethane	16. 1,1,2-Trichloroethane
17. Trichloroethylene (TCE)	18. Toluene	19. Vinyl Chloride	20. Xylenes
Unregulated Volatile Organic Substances[4]			
1. Bromobenzene	2. Bromomethane	3. Chloroethane	4. Dibromomethane
5. o-Chlorotoluene	6. p-Chlorotoluene	7. 1,1-Dichloroethane	8. 1,1-Dichloropropene
9. m-Dichlorobenzene	10. 1,1,1,2-Tetrachloroethane	11. 1,1,2,2-Tetrachloroethane	12. 1,2,3-Trichloropropane
13. 1,3-Dichloropropane	14. 1,3-Dichloropropene	15. 2,2-Dichloropropane	
Radioactive Substances at Points where Water Enters the Distribution System			
1. Gross Beta / Photon emitters			